ELECTRICAL SYSTEM

SECTION EL

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

NLEL0001

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to NISSAN MODEL V10 is as follows (The composition varies according to the destination and optional equipment.):

- For a frontal collision
  The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), front 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), side air bag (satellite) sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. 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.**

Precautions for Trouble Diagnosis

NLEL0678

CAN SYSTEM

NLEL0678S01

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

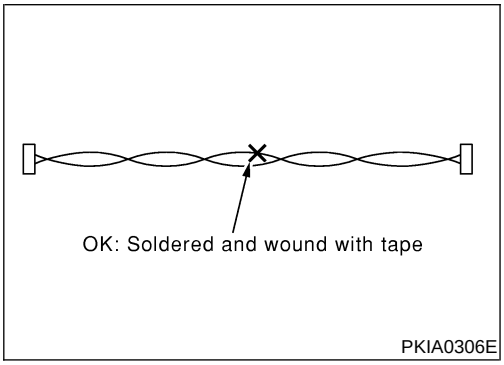
Precautions for Harness Repair

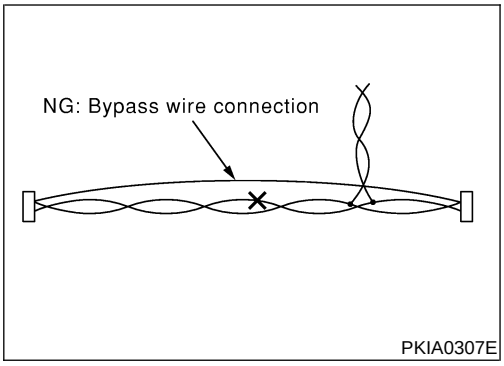
NLEL0679

CAN SYSTEM

NLEL0679S01

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





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

Wiring Diagrams and Trouble Diagnosis

NLEL0002

When you read wiring diagrams, refer to the following:

- Refer to GI-11, "HOW TO READ WIRING DIAGRAMS"
- Refer to EL-12, "POWER SUPPLY ROUTING" for power distribution circuit

When you perform trouble diagnosis, refer to the following:

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

Check for any Service bulletins before servicing the vehicle.

Description

NLEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

NLEL0003S01

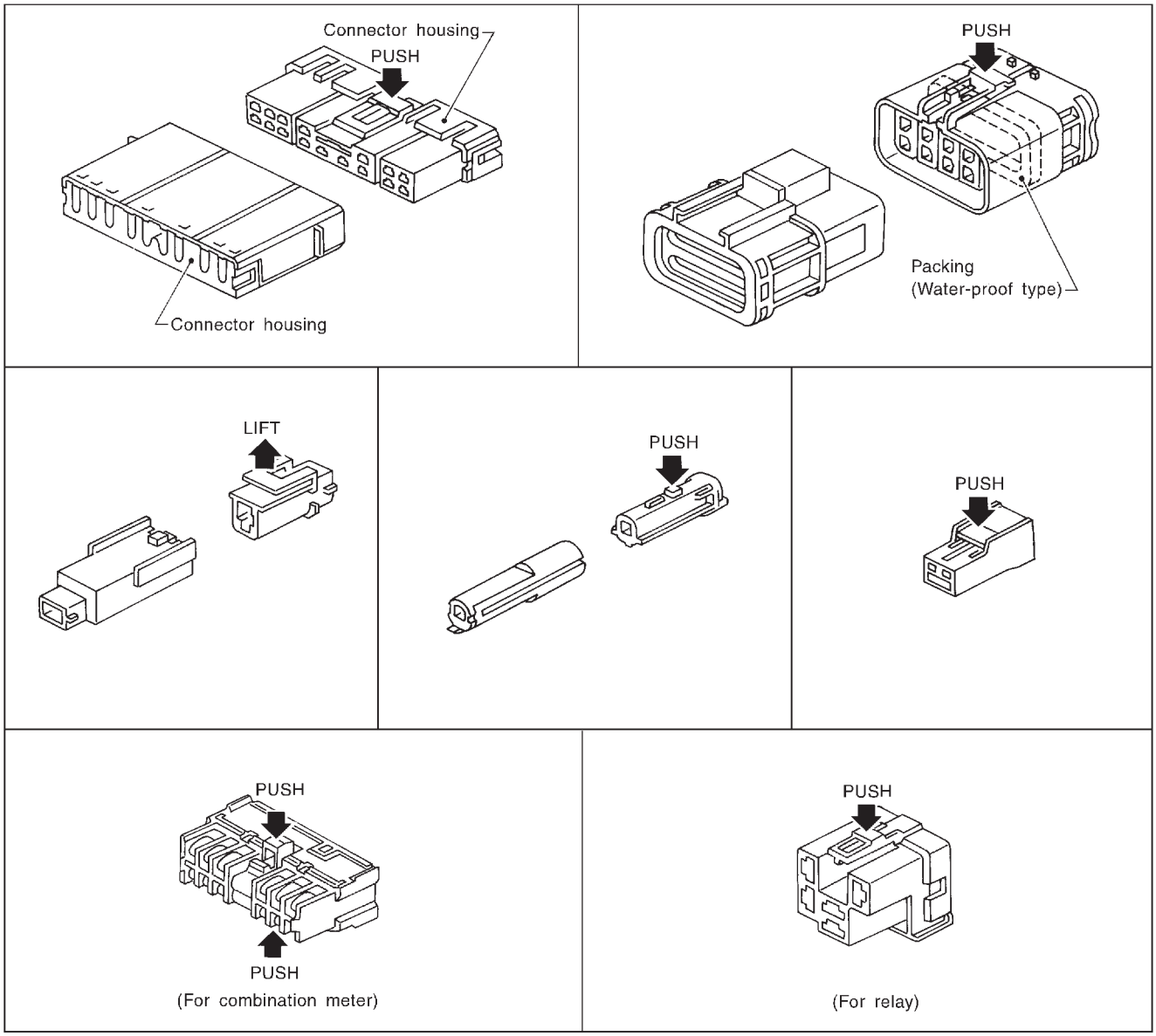
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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

CAUTION:

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

[Example]



SEL769DA

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

=NLEL0003S02

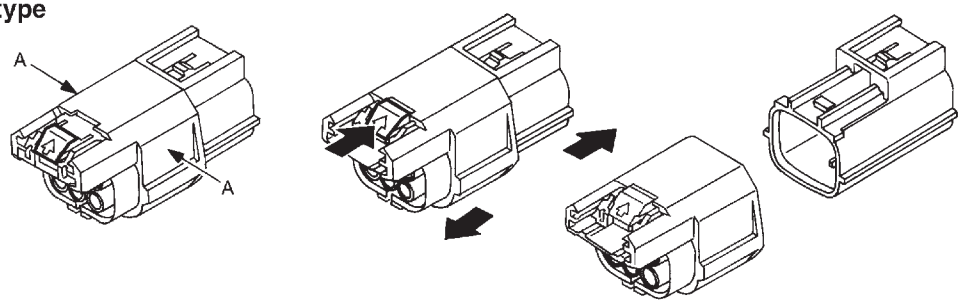
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

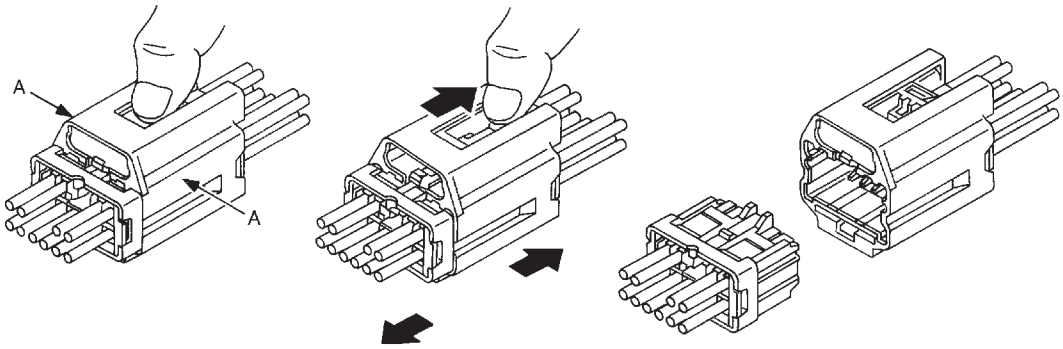


① Firmly grasp shell of connector housing at A.

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

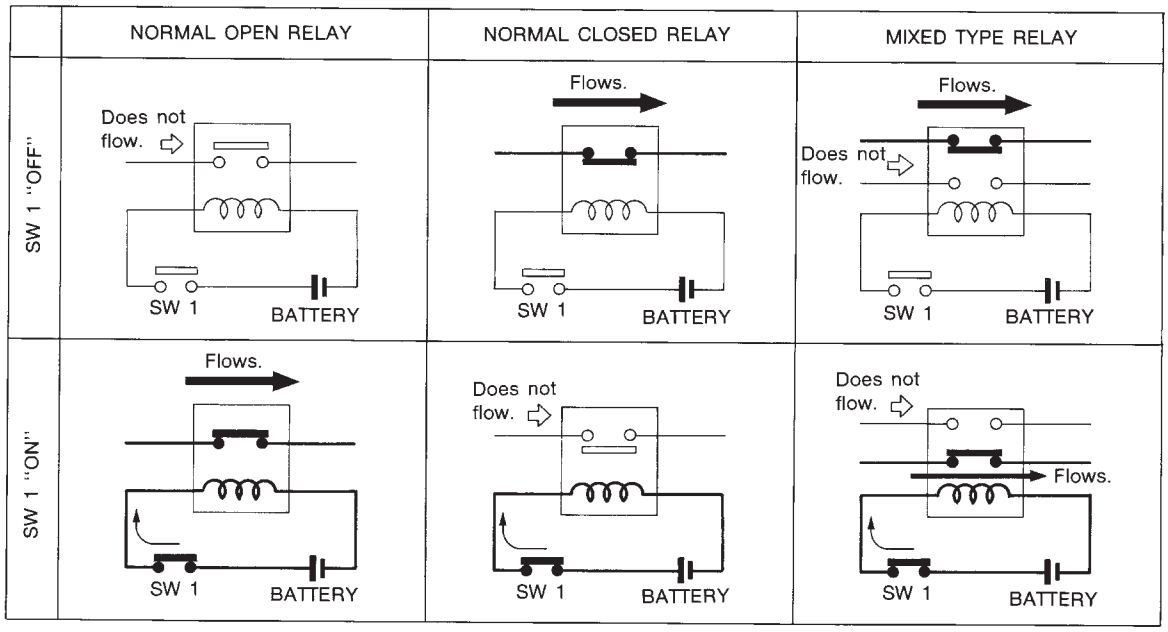
Description

NLEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NLEL0004S01

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

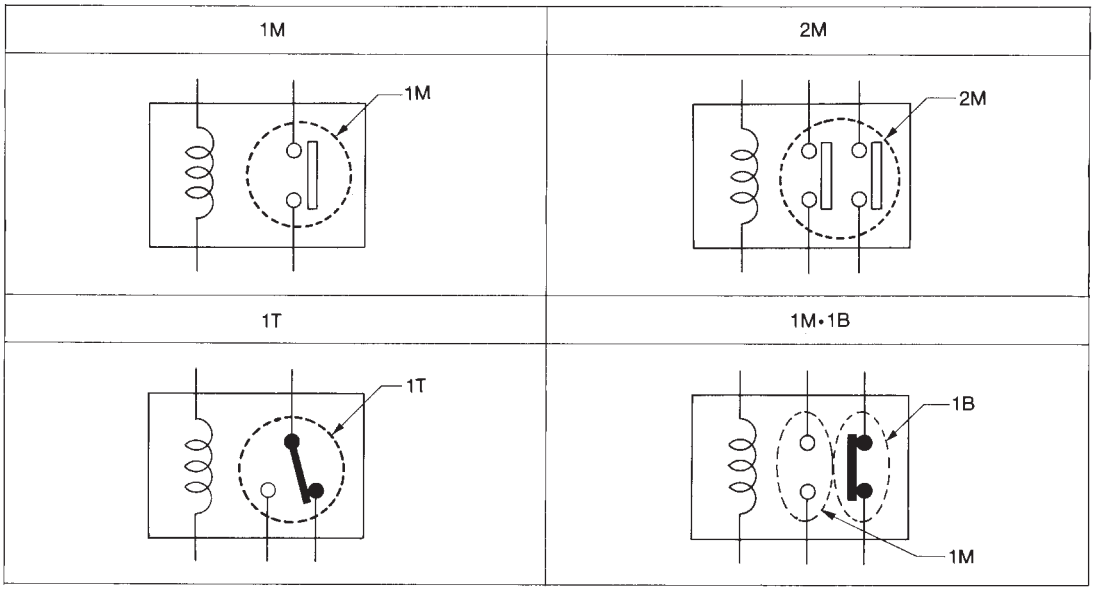


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TYPE OF STANDARDIZED RELAYS

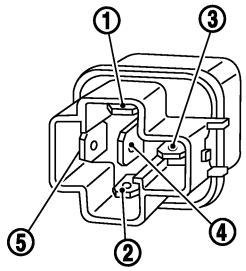
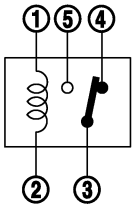
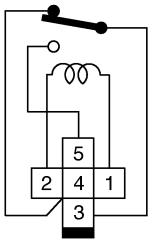
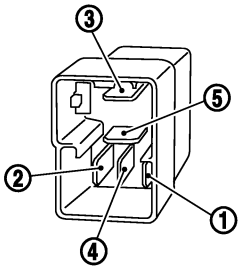
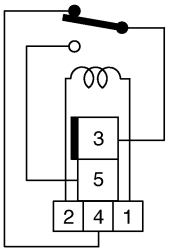
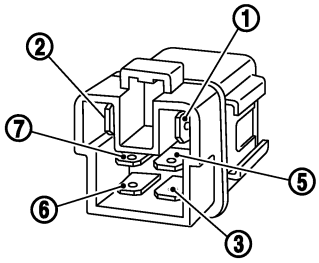
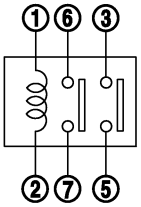
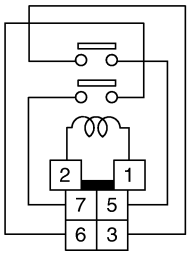
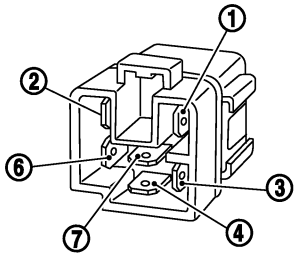
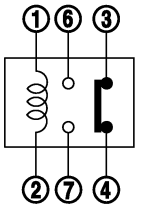
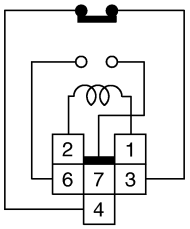
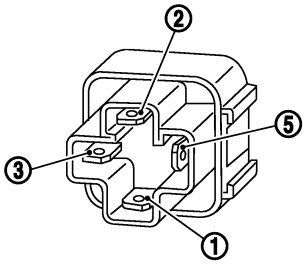
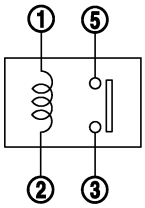
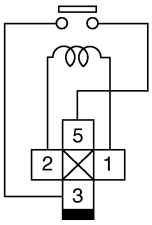
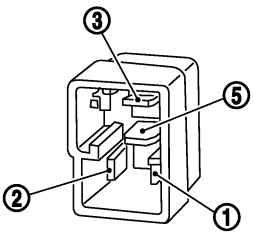
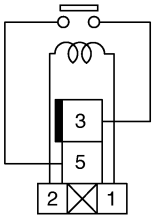
NLEL0004S02

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



SEL882H

Description (Cont'd)

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

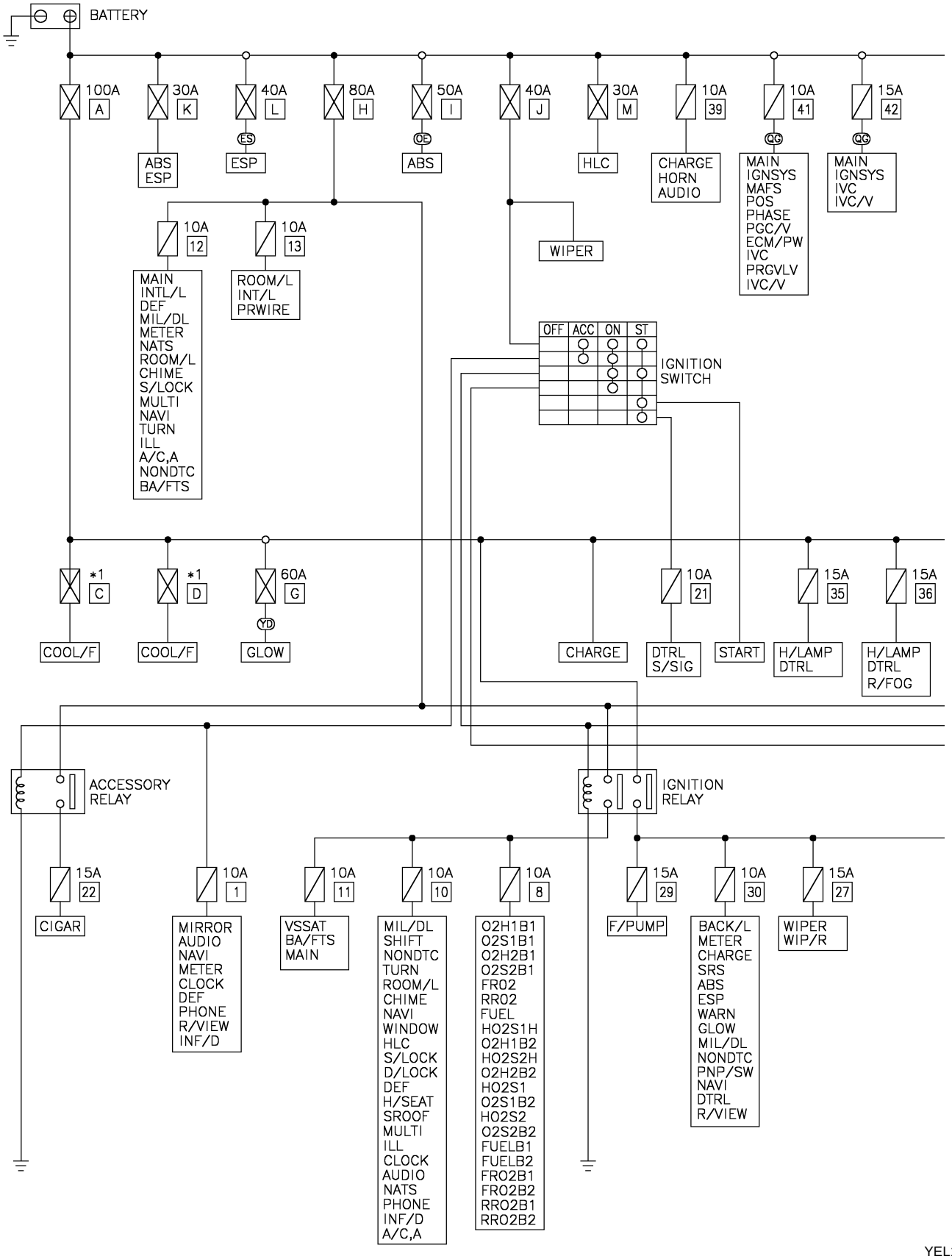
The arrangement of terminal numbers on the actual relays may differ from those shown above.

GEL264

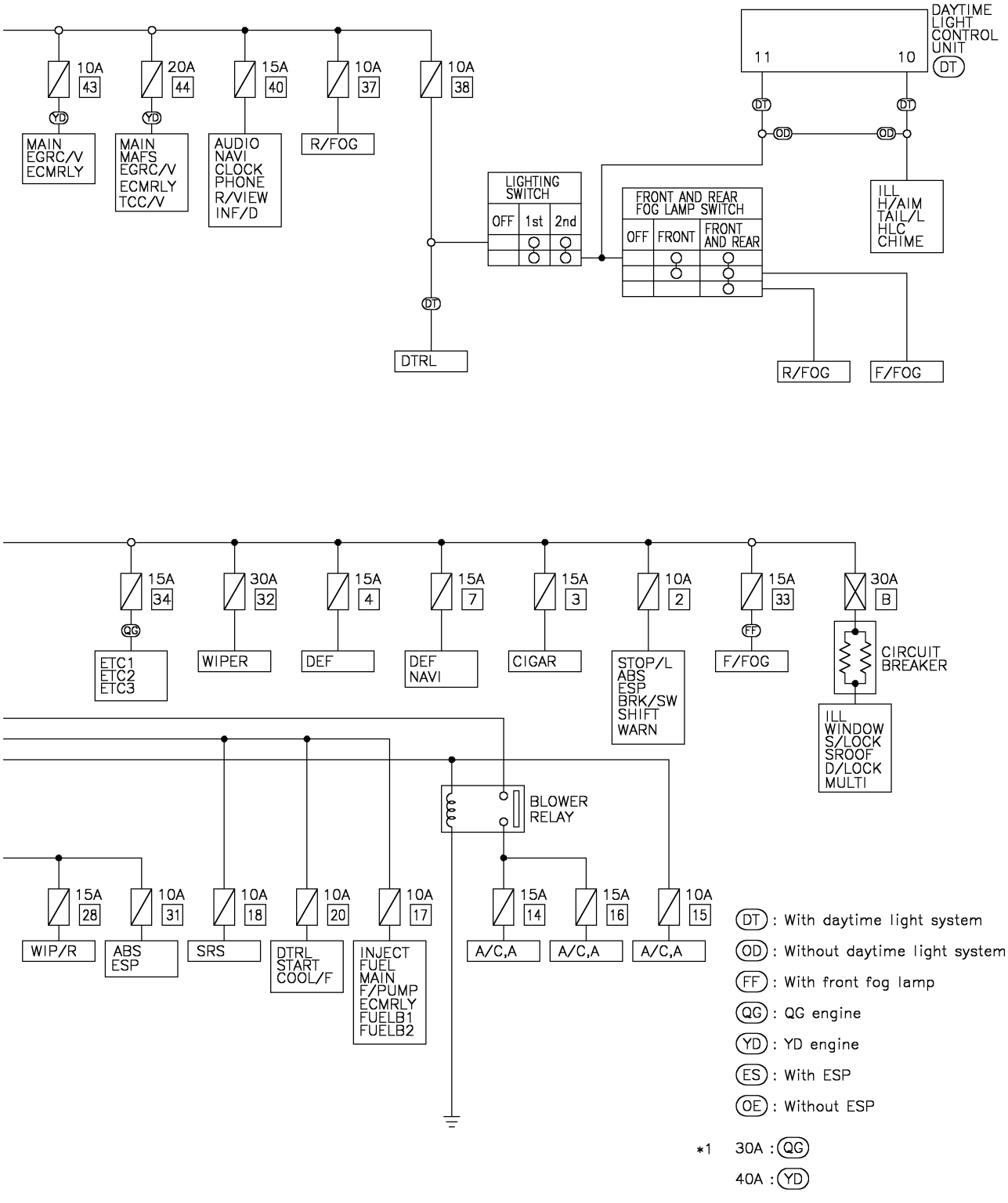
NOTE:

Schematic

NLEL0418



YEL109E


10A 43
20A 44
15A 40
10A 37
10A 38
MAIN EGRC/V ECMRLY
MAIN MAFS EGRC/V ECMRLY TCC/V
AUDIO NAVI CLOCK PHONE R/VIEW INF/D
R/FOG
DTRL
LIGHTING SWITCH
OFF 1st 2nd
FRONT AND REAR FOG LAMP SWITCH
OFF FRONT FRONT AND REAR
DAYTIME LIGHT CONTROL UNIT
11 10
ILL H/AIM TAIL/L HLC CHIME
R/FOG
F/FOG
15A 34
30A 32
15A 4
15A 7
15A 3
10A 2
15A 33
30A B
ETC1 ETC2 ETC3
WIPER
DEF
DEF NAVI
CIGAR
STOP/L ABS ESP BRK/SW SHIFT WARN
F/FOG
CIRCUIT BREAKER
ILL WINDOW S/LOCK SROOF D/LOCK MULTI
BLOWER RELAY
15A 28
10A 31
10A 18
10A 20
10A 17
15A 14
15A 16
10A 15
WIP/R
ABS ESP
SRS
DTRL START COOL/F
INJECT FUEL MAIN F/PUMP ECMRLY FUELB1 FUELB2
A/C,A
A/C,A
A/C,A
(DT) : With daytime light system
(OD) : Without daytime light system
(FF) : With front fog lamp
(QG) : QG engine
(YD) : YD engine
(ES) : With ESP
(OE) : Without ESP
*1 30A : (QG)
40A : (YD)

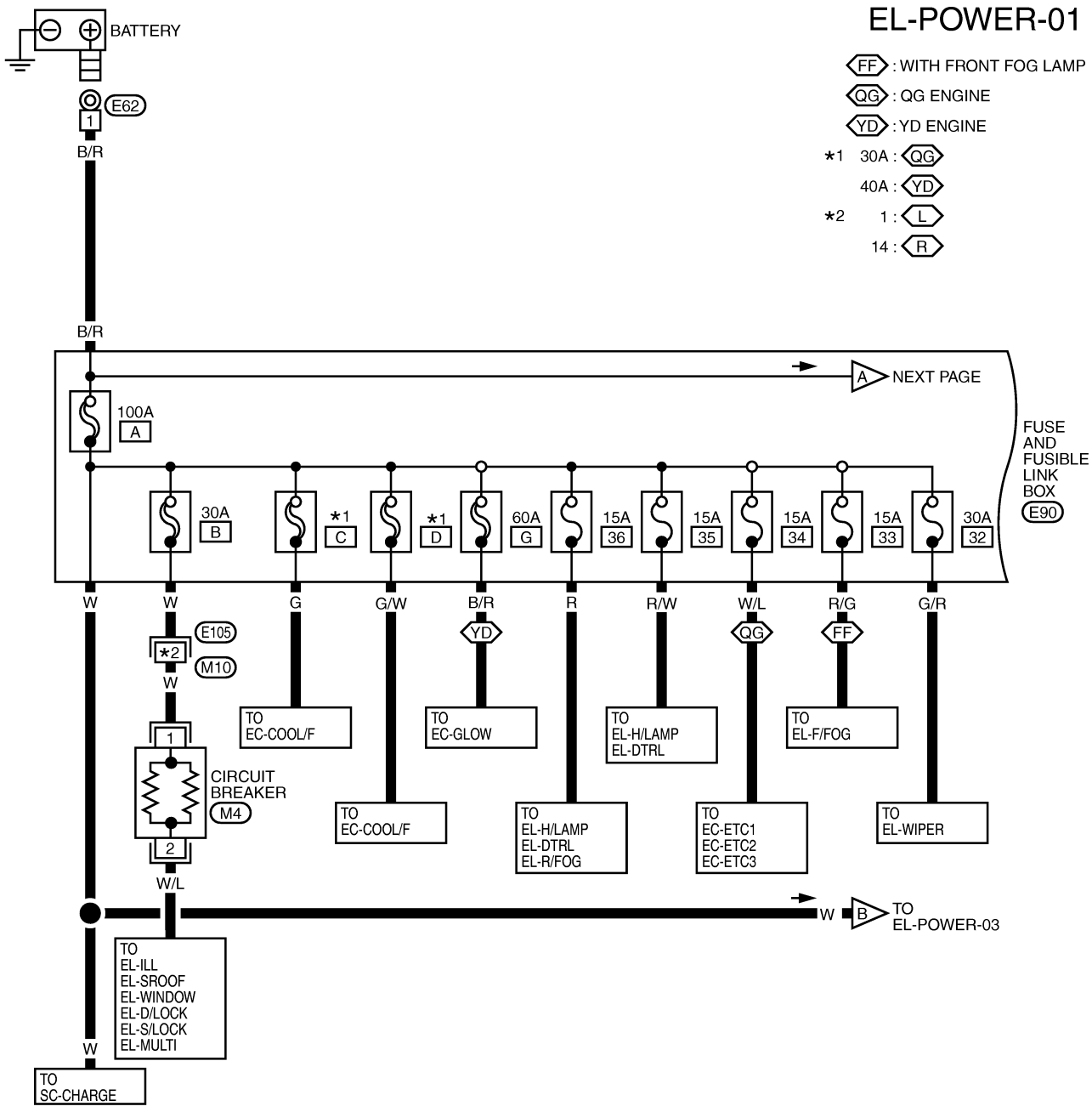
YEL110E

Wiring Diagram — POWER —

NLEL0419

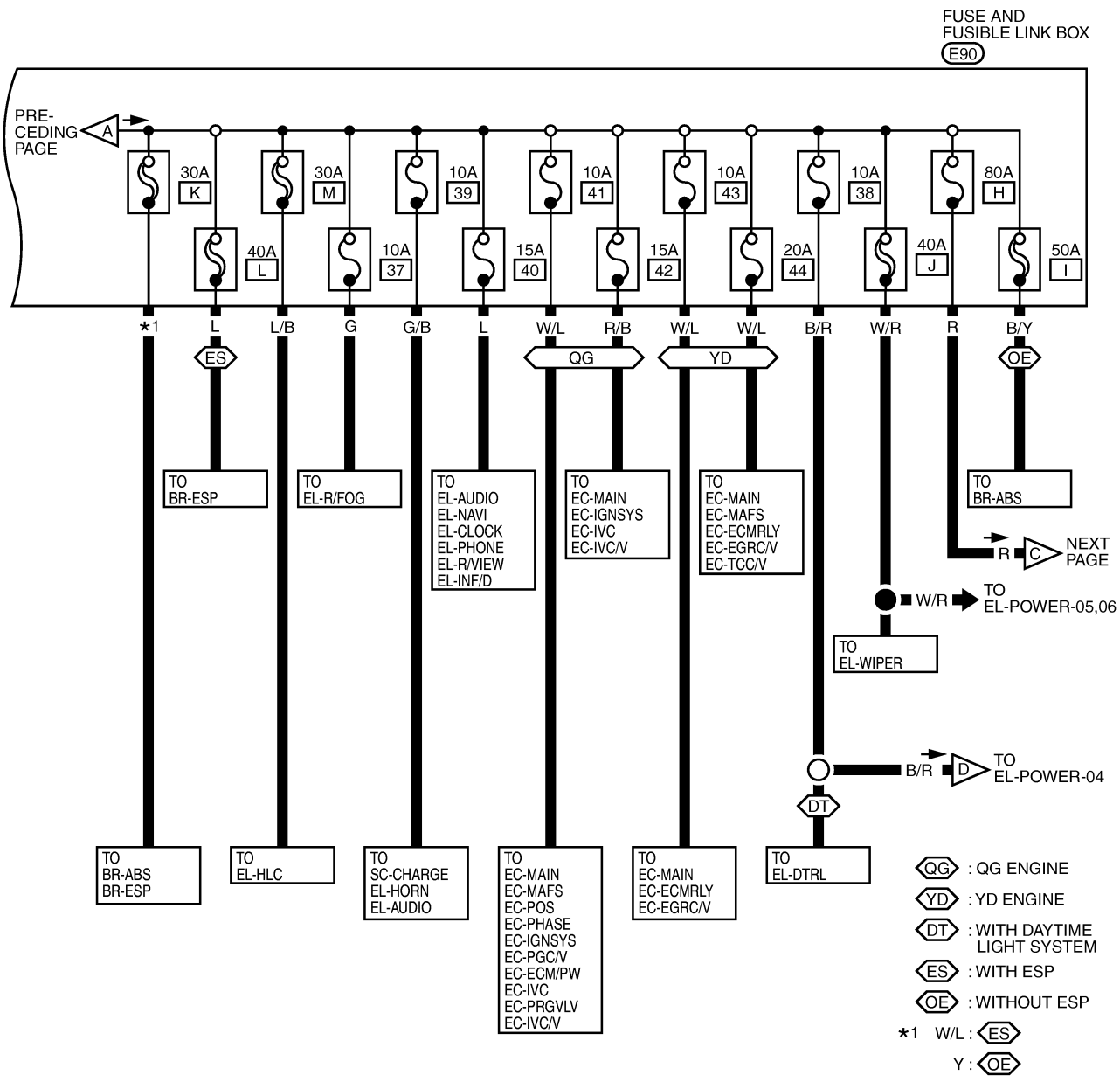
BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

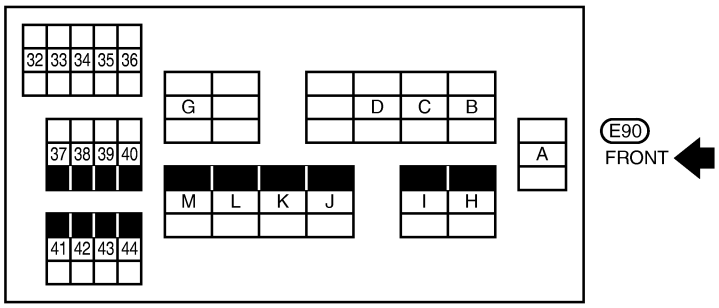
NLEL0419S01



YEL111E

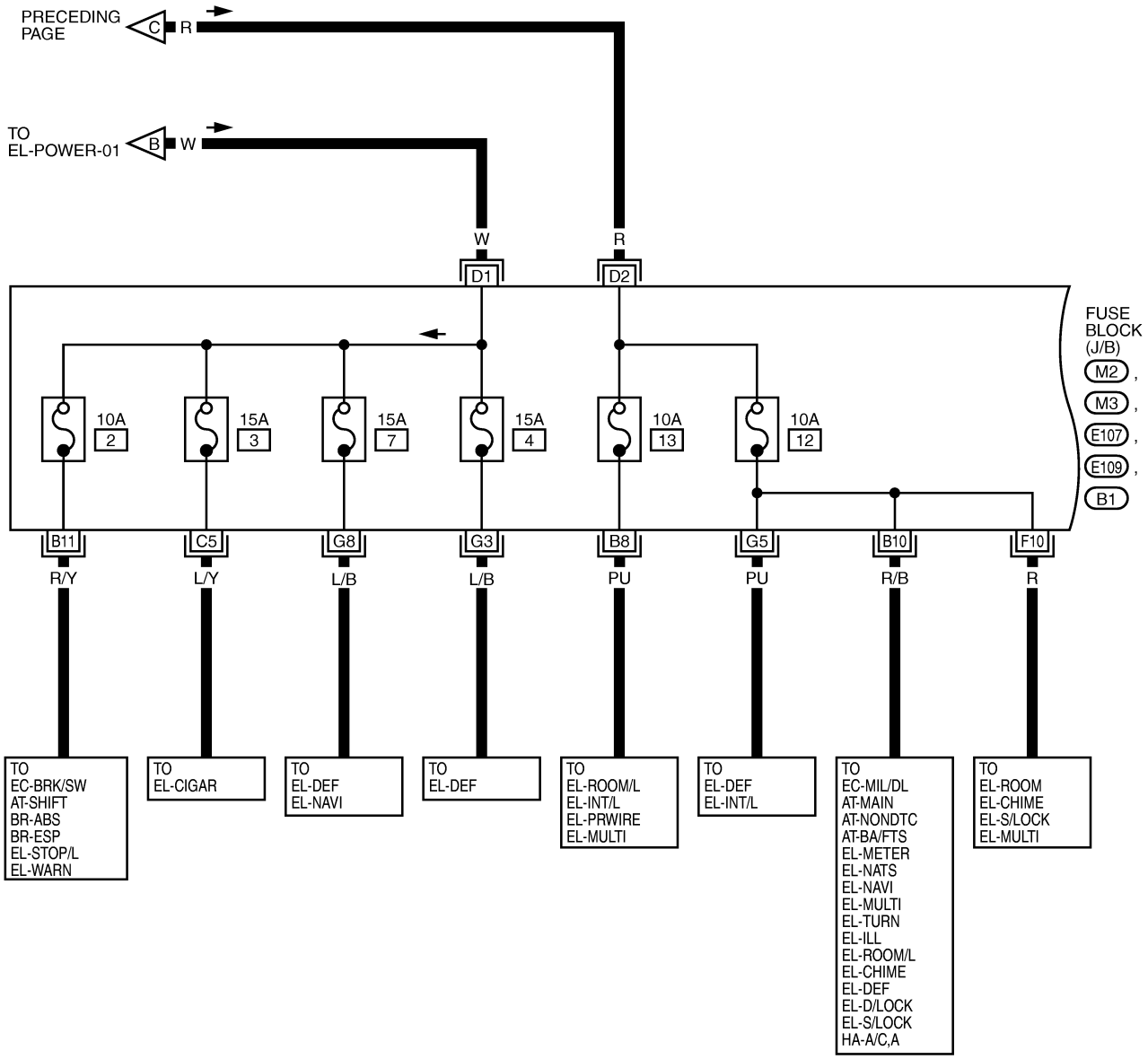
EL-POWER-02





YEL112E

EL-POWER-03

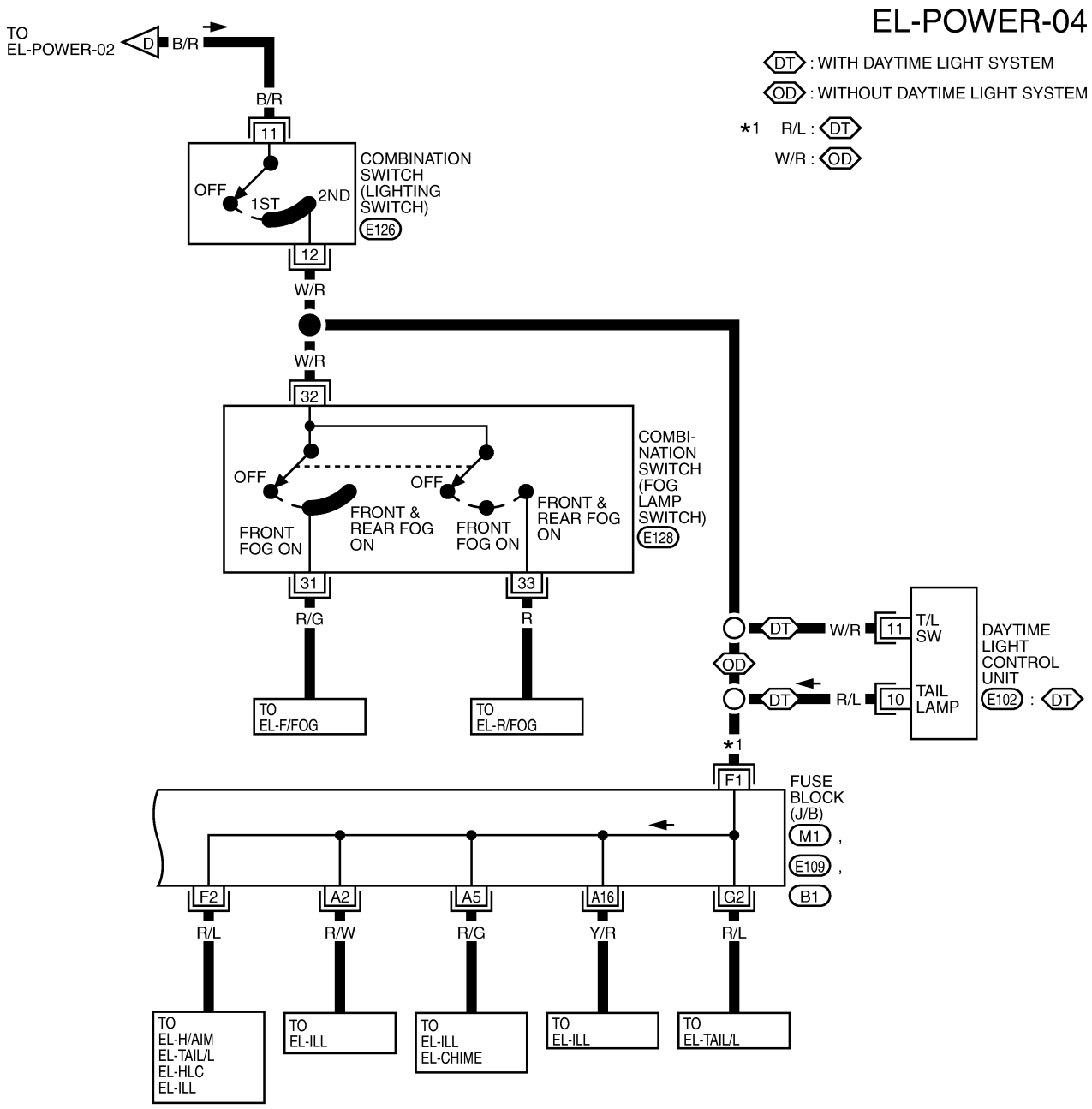


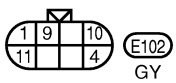
REFER TO THE FOLLOWING.

M2 , M3 , E107 , E109 ,
B1 -FUSE BLOCK-
JUNCTION BOX (J/B)

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

YEL113E







REFER TO THE FOLLOWING.

M1 , E109 , B1
-FUSE BLOCK-
JUNCTION BOX (J/B)

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

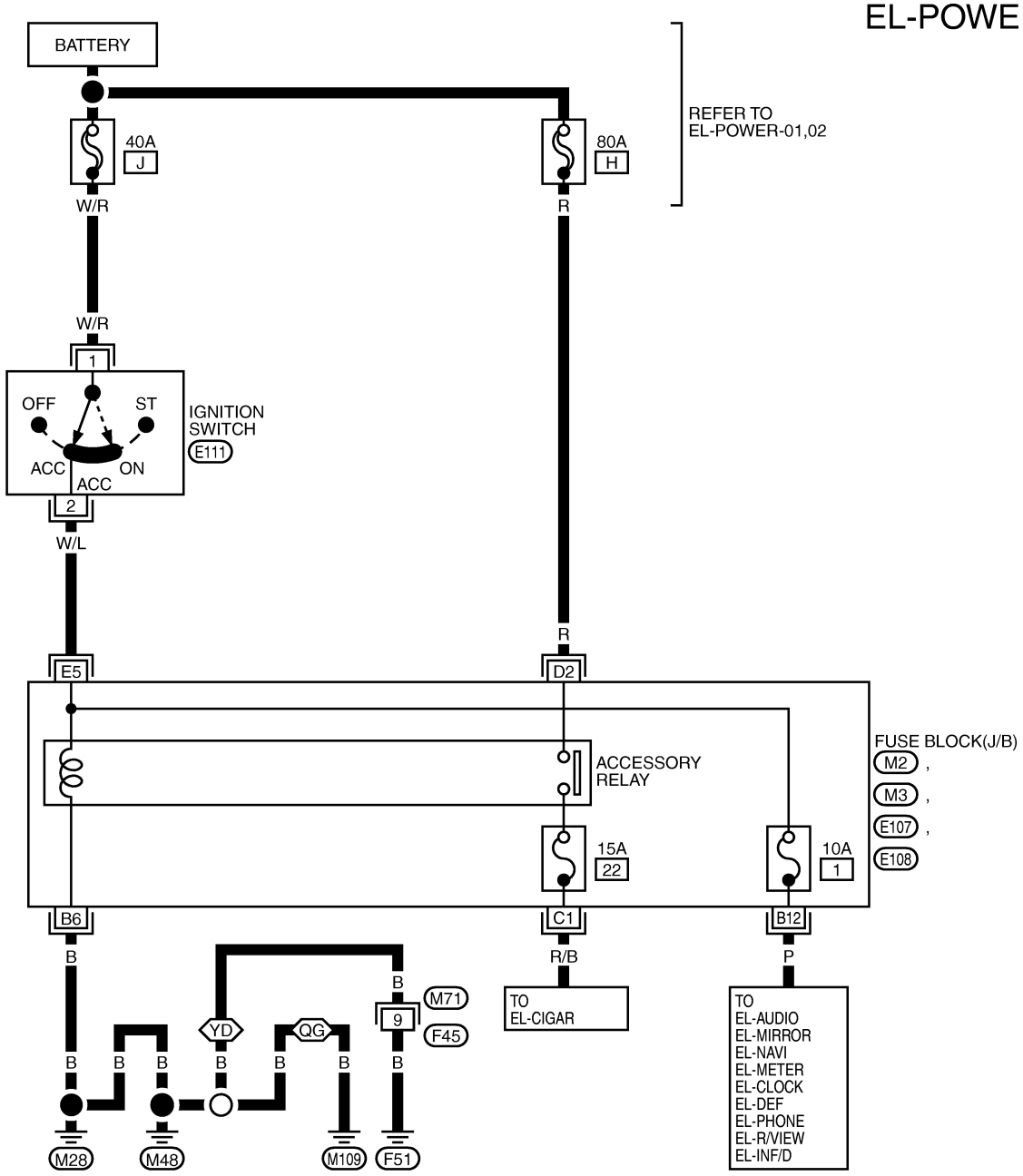
YEL114E

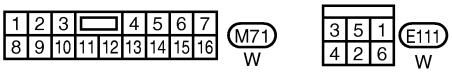
Wiring Diagram — POWER — (Cont'd)

ACCESSORY POWER SUPPLY — IGNITION SWITCH IN "ACC" OR "ON"

NLEL0419S04

EL-POWER-05





REFER TO THE FOLLOWING.

M2 , M3 , E107 , E108

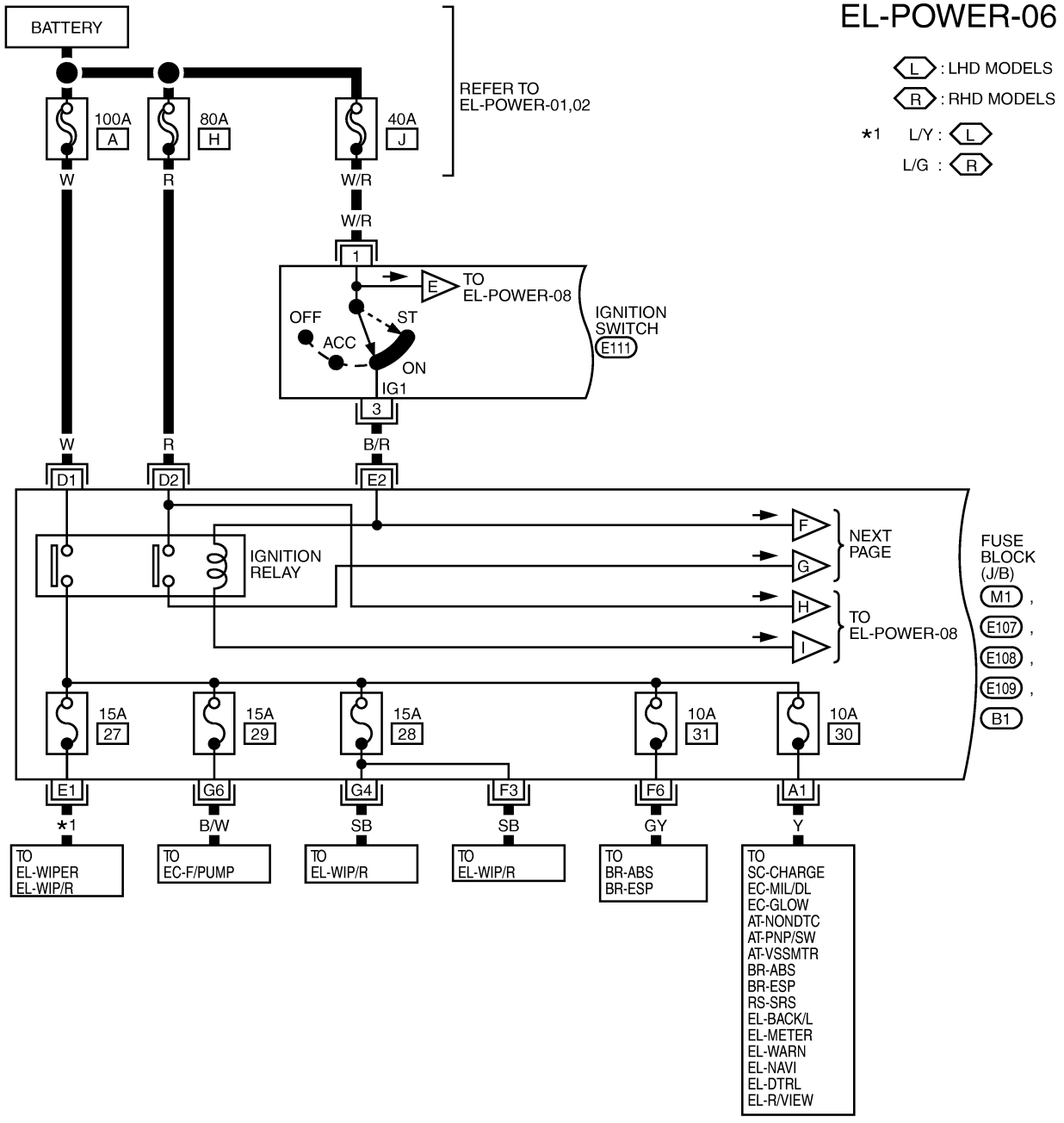
-FUSE BLOCK-
JUNCTION BOX (J/B)

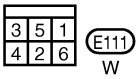
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16			17	18	19	20
21	22	23	24	25	26	27	28	29	30	31

YEL115E

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

NLEL0419S05





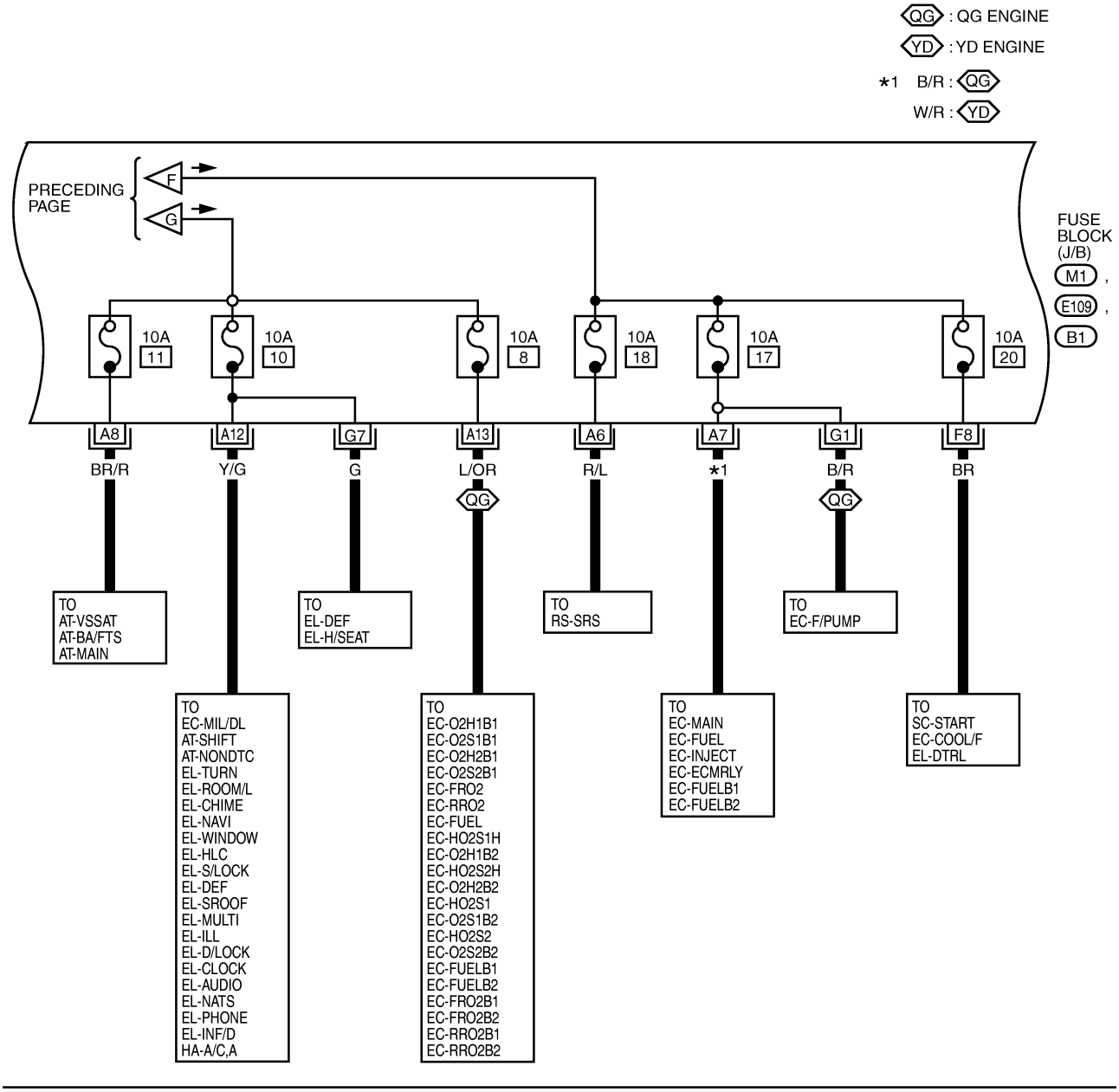
REFER TO THE FOLLOWING.

M1 , E107 , E108 , E109 , B1 -FUSE BLOCK- JUNCTION BOX (J/B)

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

YEL116E

EL-POWER-07



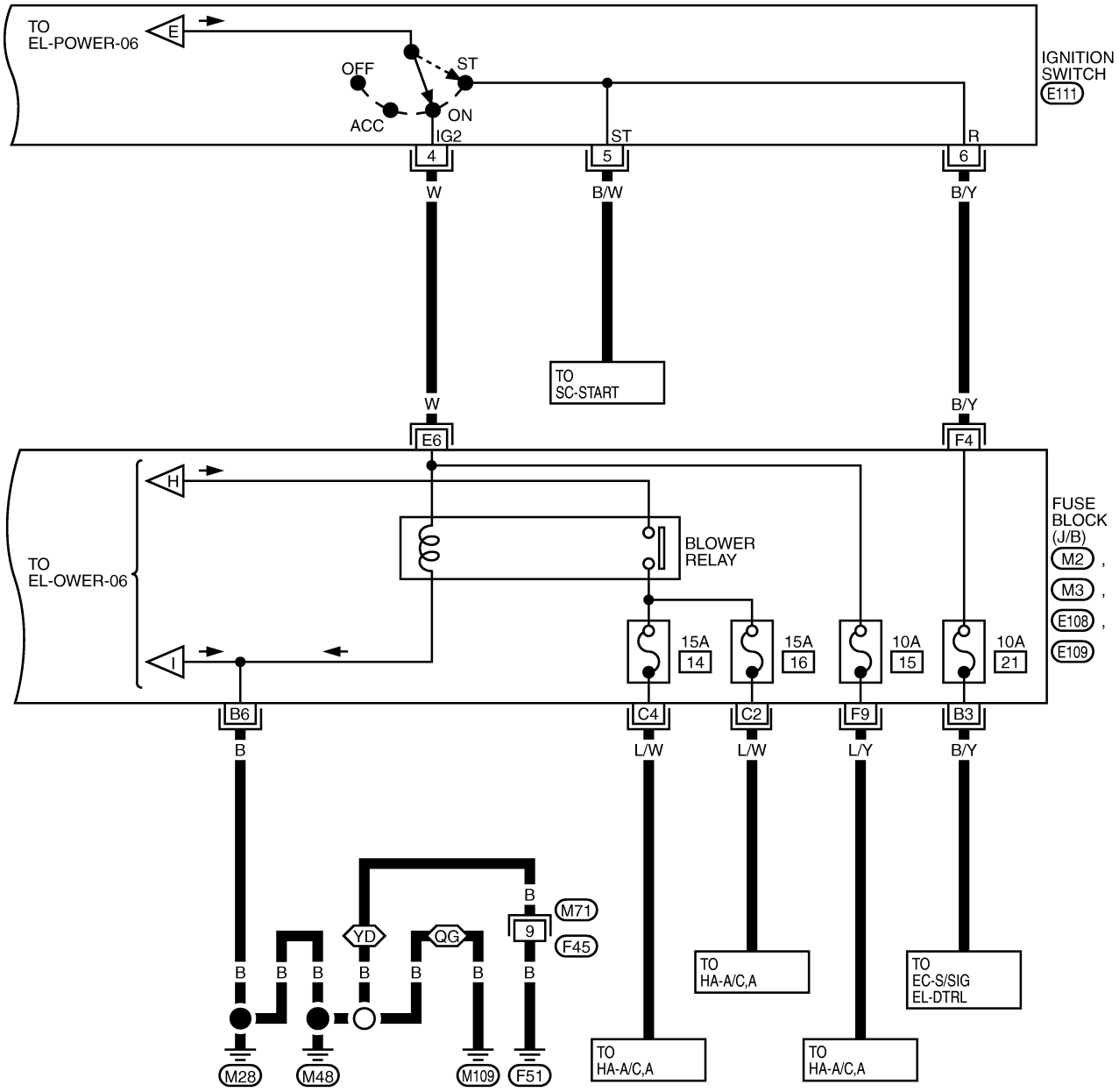
REFER TO THE FOLLOWING.

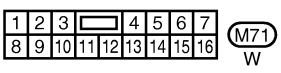
M1 , E109 , B1
-FUSE BLOCK-
JUNCTION BOX (J/B)

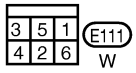
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16			17	18	19	20
21	22	23	24	25	26	27	28	29	30	31

YEL117E

EL-POWER-08





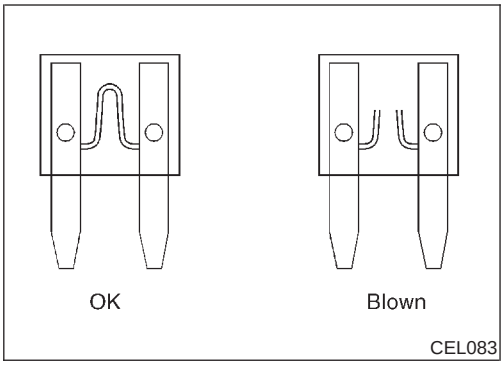


REFER TO THE FOLLOWING.

M2 , M3 , E108 , E109
-FUSE BLOCK-
JUNCTION BOX (J/B)

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

YEL118E



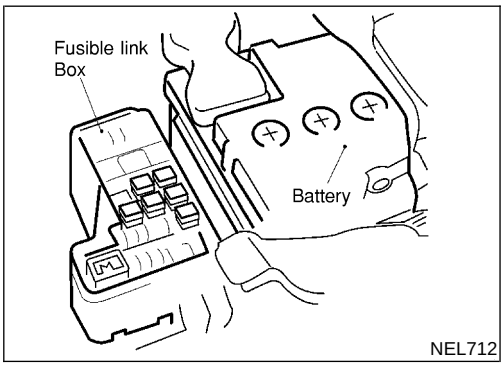
Inspection

NLEL0007

FUSE

NLEL0007S01

- **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.**



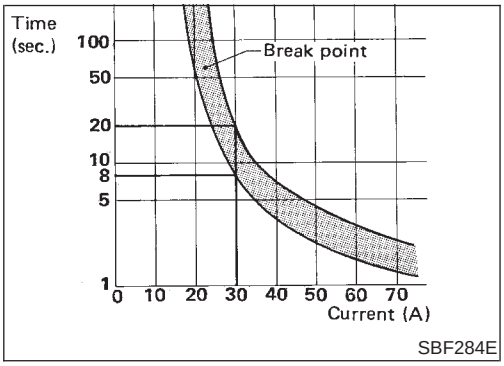
FUSIBLE LINK

NLEL0007S02

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:

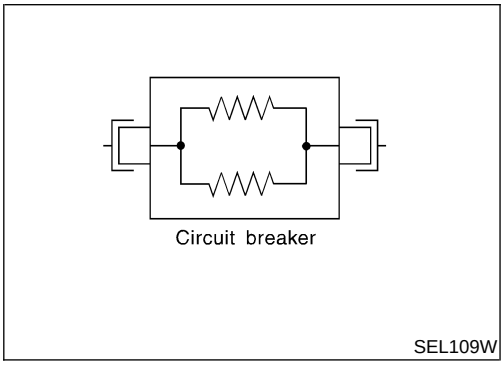
- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of problem.**
- **Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other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



CIRCUIT BREAKER

NLEL0007S03

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



CIRCUIT BREAKER (PTC THERMISTOR TYPE)

NLEL0007S04

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

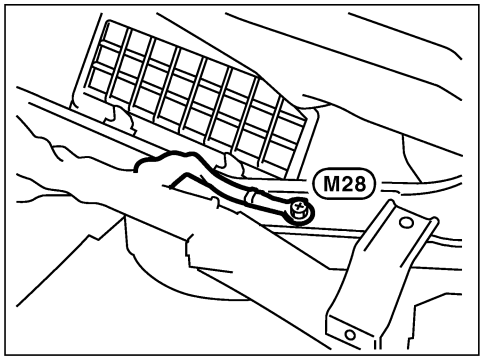
Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

Ground Distribution

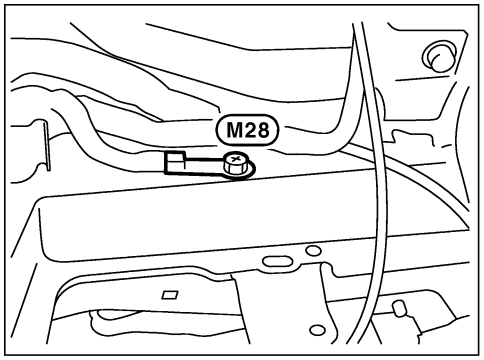
NLEL0008

MAIN HARNESS

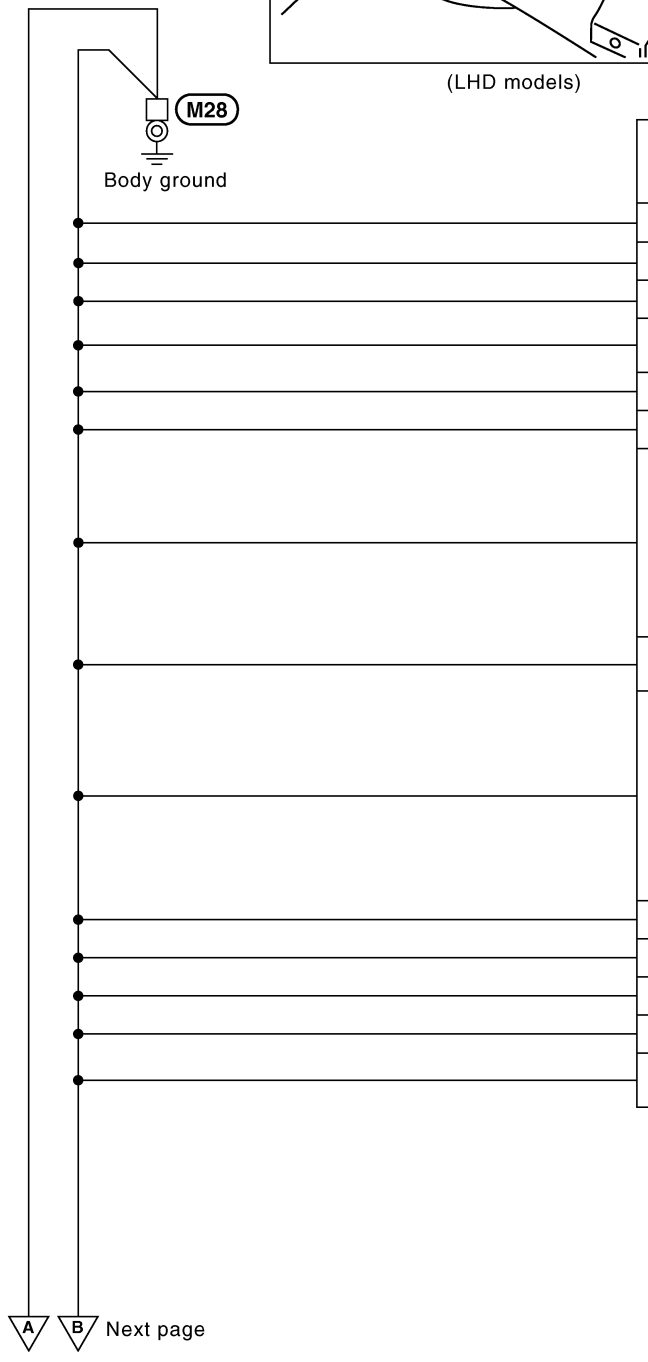
NLEL0008S01



(LHD models)

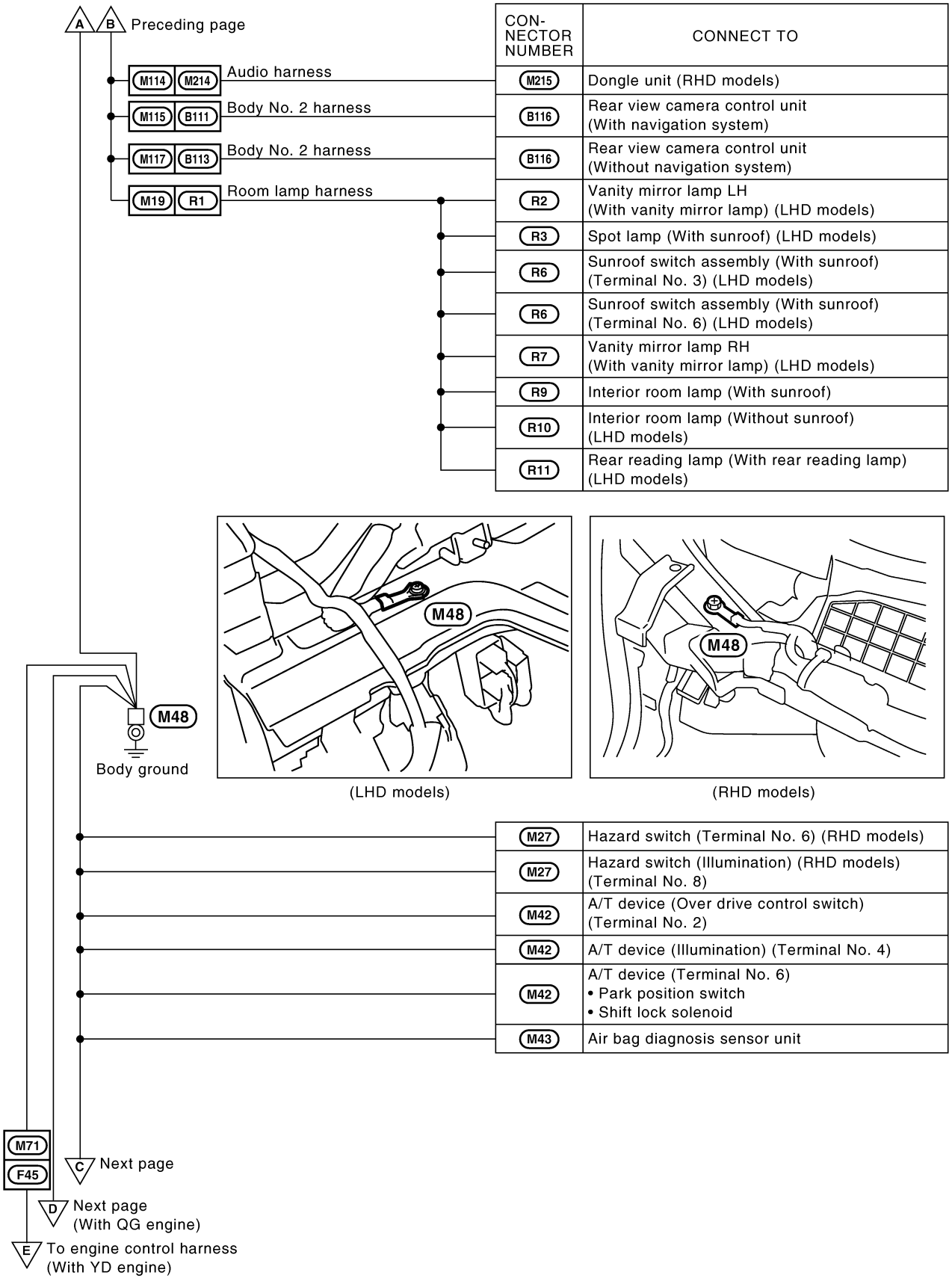


(RHD models)



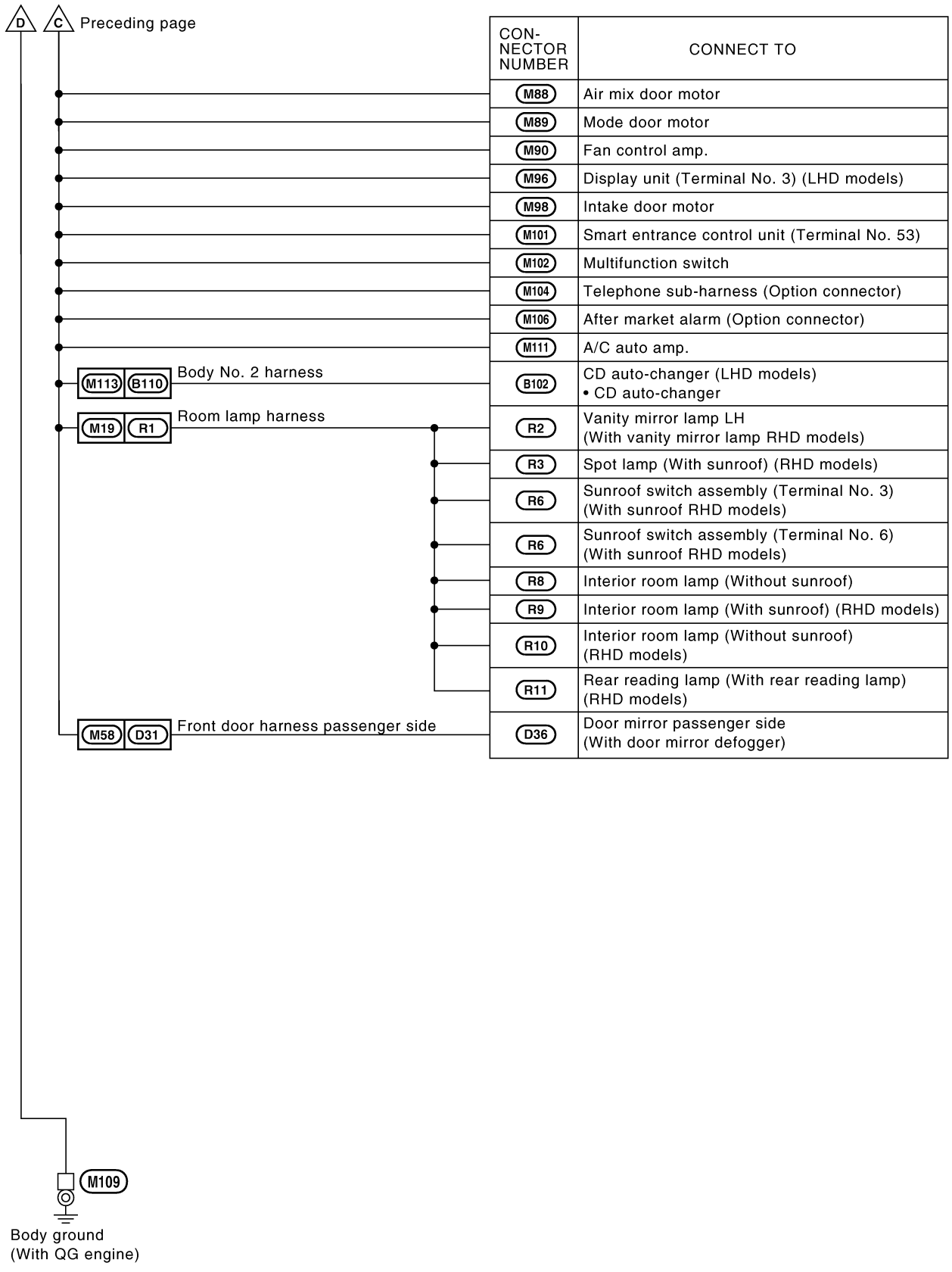
CON-NECTOR NUMBER	CONNECT TO
M5	Power window relay
M6	Data link connector (Terminal No. 4)
M6	Data link connector (Terminal No. 5)
M27	Hazard switch (Illumination) (LHD models) (Terminal No. 8)
M27	Hazard switch (LHD models) (Terminal No. 6)
M60	Door mirror remote control switch
M84	Combination meter (Terminal No. 4) • Turn signal • Fuel gauge • Speedometer • Tachometer • Unified meter control unit (With odo/trip meter) • Water temperature gauge
M84	Combination meter (Illumination) (Terminal No. 1)
M85	Combination meter (LHD models) (Terminal No. 47) • ABS warning lamp • Air bag warning lamp • Front fog indicator lamp • High beam indicator lamp • Rear fog indicator lamp • Illumination
M96	Display unit (Terminal No. 1)
M96	Display unit (Terminal No. 3) (RHD models)
M97	Display (Terminal No. 22)
M97	Display (Terminal No. 24)
M106	After market alarm (option connector) (RHD models)

YEL093E



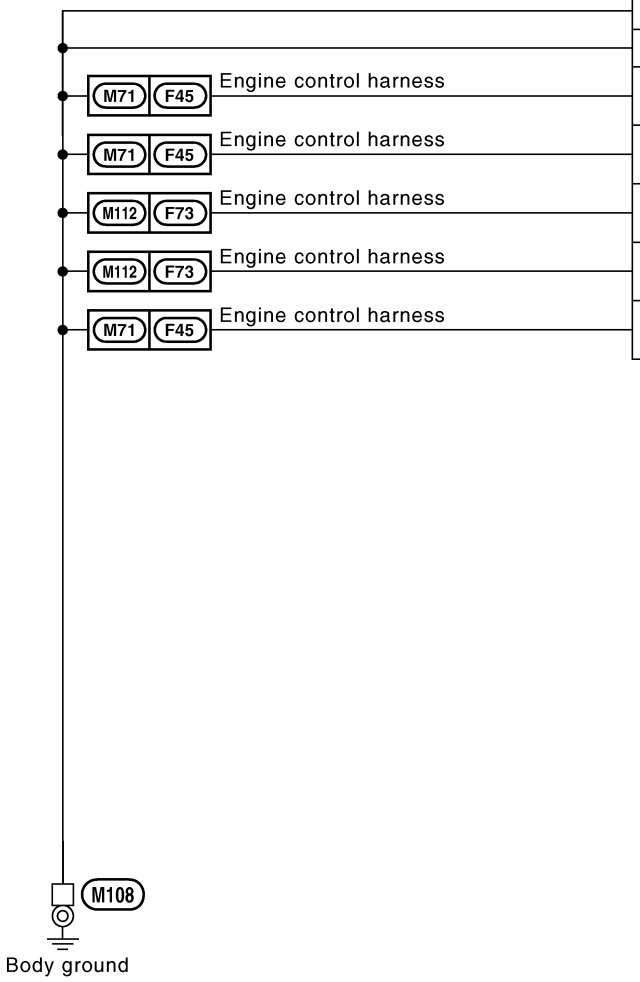
CONNECTOR NUMBER	CONNECT TO
M215	Dongle unit (RHD models)
B116	Rear view camera control unit (With navigation system)
B116	Rear view camera control unit (Without navigation system)
R2	Vanity mirror lamp LH (With vanity mirror lamp) (LHD models)
R3	Spot lamp (With sunroof) (LHD models)
R6	Sunroof switch assembly (With sunroof) (Terminal No. 3) (LHD models)
R6	Sunroof switch assembly (With sunroof) (Terminal No. 6) (LHD models)
R7	Vanity mirror lamp RH (With vanity mirror lamp) (LHD models)
R9	Interior room lamp (With sunroof)
R10	Interior room lamp (Without sunroof) (LHD models)
R11	Rear reading lamp (With rear reading lamp) (LHD models)
M27	Hazard switch (Terminal No. 6) (RHD models)
M27	Hazard switch (Illumination) (RHD models) (Terminal No. 8)
M42	A/T device (Over drive control switch) (Terminal No. 2)
M42	A/T device (Illumination) (Terminal No. 4)
M42	A/T device (Terminal No. 6) • Park position switch • Shift lock solenoid
M43	Air bag diagnosis sensor unit

YEL094E



CONNECTOR NUMBER	CONNECT TO
M88	Air mix door motor
M89	Mode door motor
M90	Fan control amp.
M96	Display unit (Terminal No. 3) (LHD models)
M98	Intake door motor
M101	Smart entrance control unit (Terminal No. 53)
M102	Multifunction switch
M104	Telephone sub-harness (Option connector)
M106	After market alarm (Option connector)
M111	A/C auto amp.
B102	CD auto-changer (LHD models) • CD auto-changer
R2	Vanity mirror lamp LH (With vanity mirror lamp RHD models)
R3	Spot lamp (With sunroof) (RHD models)
R6	Sunroof switch assembly (Terminal No. 3) (With sunroof RHD models)
R6	Sunroof switch assembly (Terminal No. 6) (With sunroof RHD models)
R8	Interior room lamp (Without sunroof)
R9	Interior room lamp (With sunroof) (RHD models)
R10	Interior room lamp (Without sunroof) (RHD models)
R11	Rear reading lamp (With rear reading lamp) (RHD models)
D36	Door mirror passenger side (With door mirror defogger)

YEL095E

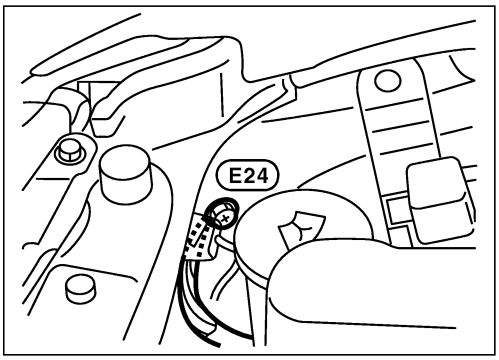


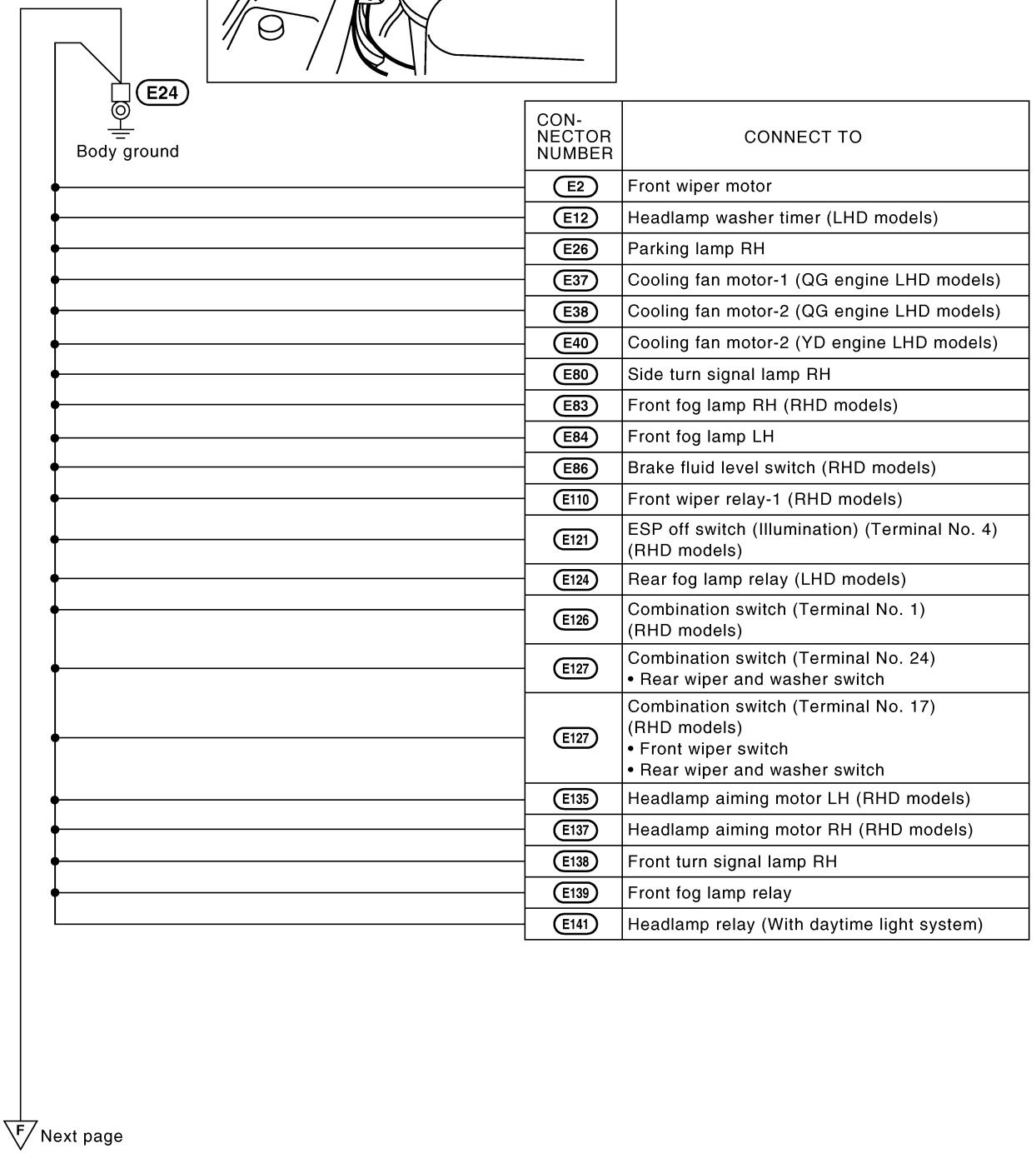
CON-NECTOR NUMBER	CONNECT TO
M107	ECM (Terminal No. 115) (QG engine)
M107	ECM (Terminal No. 116) (QG engine)
F31	Park/neutral position (PNP) switch (M/T models for QG engine)
F70	ECM (Terminal No. 1) (QG engine)
F72	TCM (Terminal No. 25) (A/T models)
F72	TCM (Terminal No. 48) (A/T models)
F83	Shield wire [Electric throttle control actuator (QG engine)]

YEL096E

ENGINE ROOM HARNESS

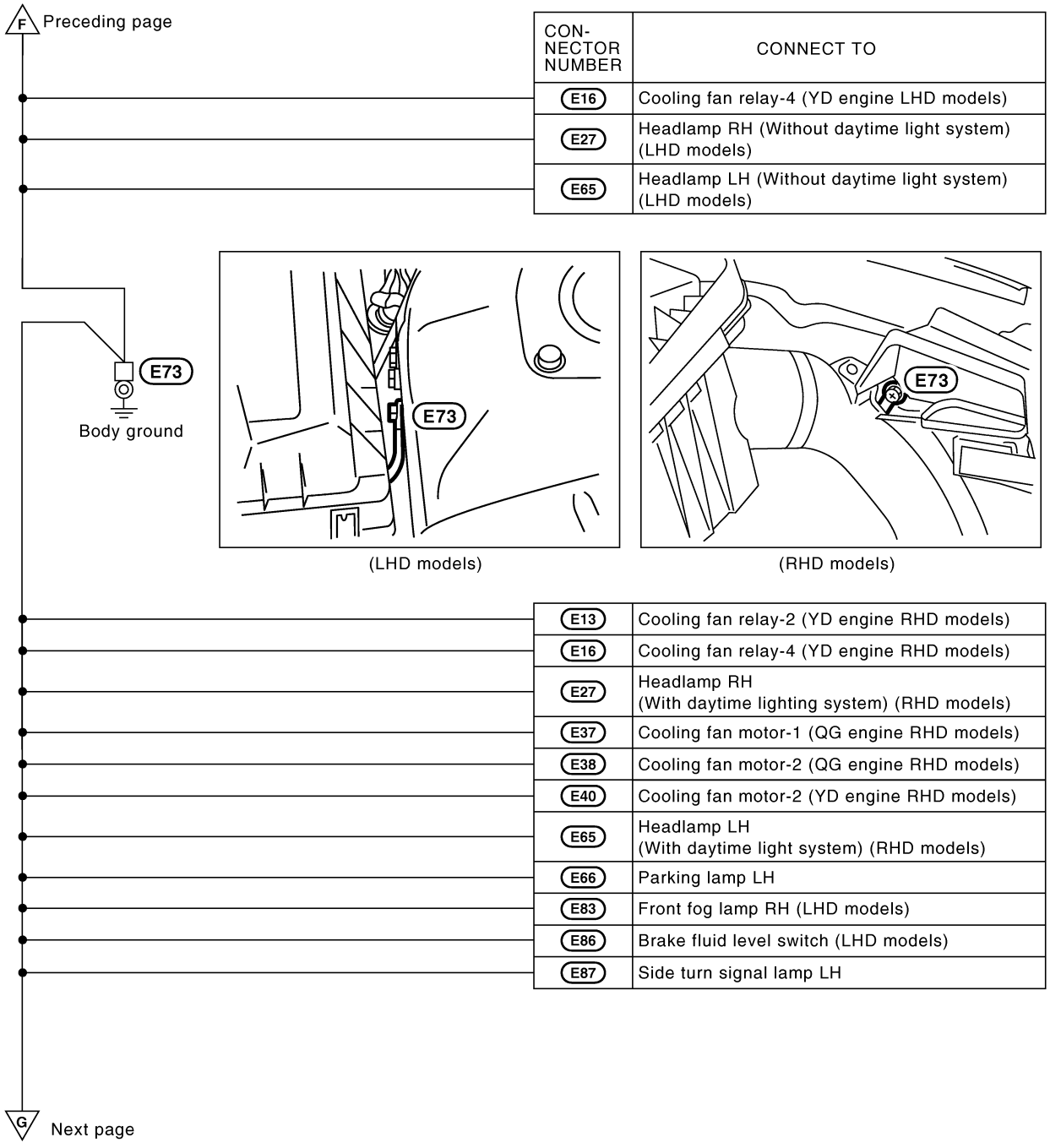
NLEL0008S02





CON-NECTOR NUMBER	CONNECT TO
E2	Front wiper motor
E12	Headlamp washer timer (LHD models)
E26	Parking lamp RH
E37	Cooling fan motor-1 (QG engine LHD models)
E38	Cooling fan motor-2 (QG engine LHD models)
E40	Cooling fan motor-2 (YD engine LHD models)
E80	Side turn signal lamp RH
E83	Front fog lamp RH (RHD models)
E84	Front fog lamp LH
E86	Brake fluid level switch (RHD models)
E110	Front wiper relay-1 (RHD models)
E121	ESP off switch (Illumination) (Terminal No. 4) (RHD models)
E124	Rear fog lamp relay (LHD models)
E126	Combination switch (Terminal No. 1) (RHD models)
E127	Combination switch (Terminal No. 24) • Rear wiper and washer switch
E127	Combination switch (Terminal No. 17) (RHD models) • Front wiper switch • Rear wiper and washer switch
E135	Headlamp aiming motor LH (RHD models)
E137	Headlamp aiming motor RH (RHD models)
E138	Front turn signal lamp RH
E139	Front fog lamp relay
E141	Headlamp relay (With daytime light system)

YEL097E

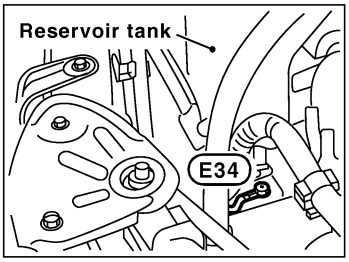


CON-NECTOR NUMBER	CONNECT TO
E16	Cooling fan relay-4 (YD engine LHD models)
E27	Headlamp RH (Without daytime light system) (LHD models)
E65	Headlamp LH (Without daytime light system) (LHD models)
E13	Cooling fan relay-2 (YD engine RHD models)
E16	Cooling fan relay-4 (YD engine RHD models)
E27	Headlamp RH (With daytime lighting system) (RHD models)
E37	Cooling fan motor-1 (QG engine RHD models)
E38	Cooling fan motor-2 (QG engine RHD models)
E40	Cooling fan motor-2 (YD engine RHD models)
E65	Headlamp LH (With daytime light system) (RHD models)
E66	Parking lamp LH
E83	Front fog lamp RH (LHD models)
E86	Brake fluid level switch (LHD models)
E87	Side turn signal lamp LH

YEL098E

G Preceding page

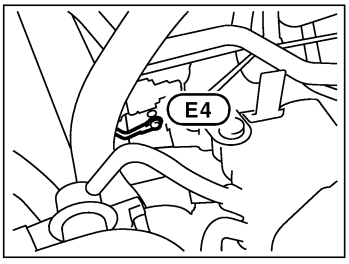
CONNECTOR NUMBER	CONNECT TO
E102	Daytime light control unit (With daytime light system)
E110	Front wiper relay-1 (LHD models)
E121	ESP off switch (Terminal No. 2)
E121	ESP off switch (Illumination) (Terminal No. 4) (LHD models)
E122	Headlamp washer switch (Terminal No. 3) (With headlamp washer)
E122	Headlamp washer switch (Illumination) (Terminal No. 5) (With headlamp washer)
E124	Rear fog lamp relay (LHD models)
E126	Combination switch (LHD models) • Turn signal switch
E127	Combination switch (Terminal No. 4) (LHD models) • Rear wiper and washer switch • Variable intermittent wiper volume
E127	Combination switch (Terminal No. 17) (LHD models) • Front wiper switch
E134	Front turn signal lamp LH
E135	Headlamp aiming motor LH (LHD models)
E137	Headlamp aiming motor RH (LHD models)
E146	Combination meter (Terminal No. 47) (RHD models) • Front fog indicator lamp • Rear fog indicator lamp • Illumination



E34

Body ground

CONNECTOR NUMBER	CONNECT TO
E29	Alternator (E)



E4

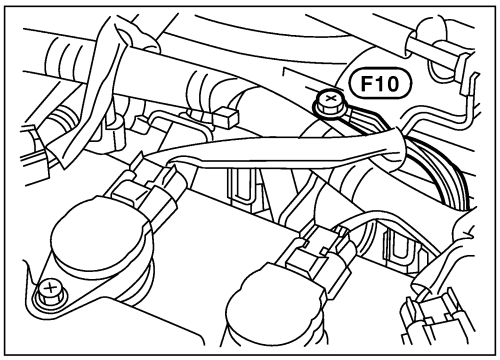
Body ground

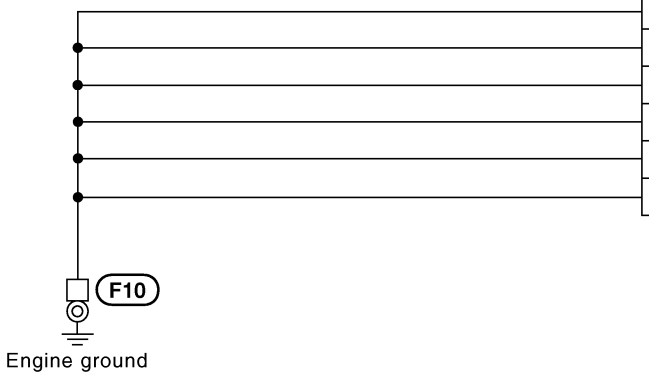
CONNECTOR NUMBER	CONNECT TO
E141	ABS actuator and electric unit (Control unit) (Terminal No. 1)
E141	ABS actuator and electric unit (Control unit) (Terminal No. 4)
E143	ABS actuator and electric unit (ESP) (Control unit) (Terminal No. 16)
E143	ABS actuator and electric unit (ESP) (Control unit) (Terminal No. 47)

YEL099E

ENGINE CONTROL HARNESS/QG ENGINE MODELS

NLEL0008S03



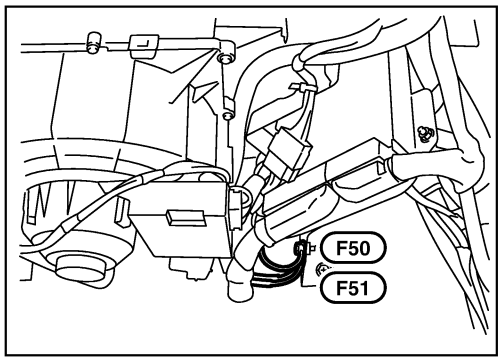


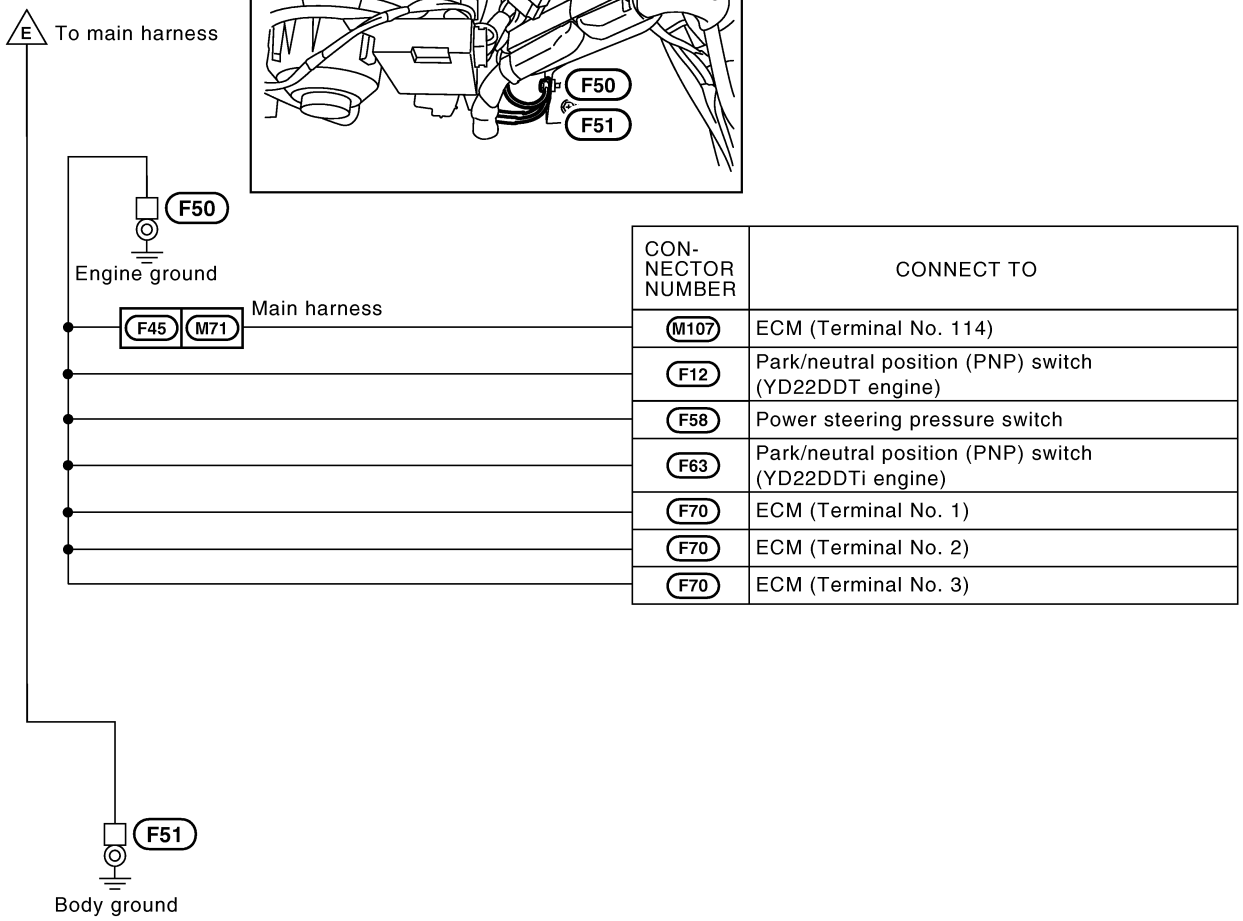
CON-NECTOR NUMBER	CONNECT TO
F4	Condenser
F11	Ignition coil No. 1 (With power transistor)
F12	Ignition coil No. 2 (With power transistor)
F14	Ignition coil No. 3 (With power transistor)
F15	Ignition coil No. 4 (With power transistor)
F81	Park/neutral position (PNP) switch

YEL100E

ENGINE CONTROL HARNESS/YD ENGINE MODELS

NLEL0008S09



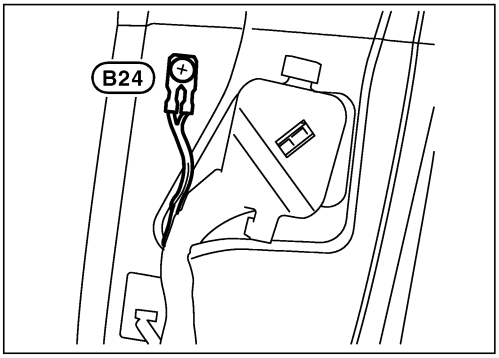


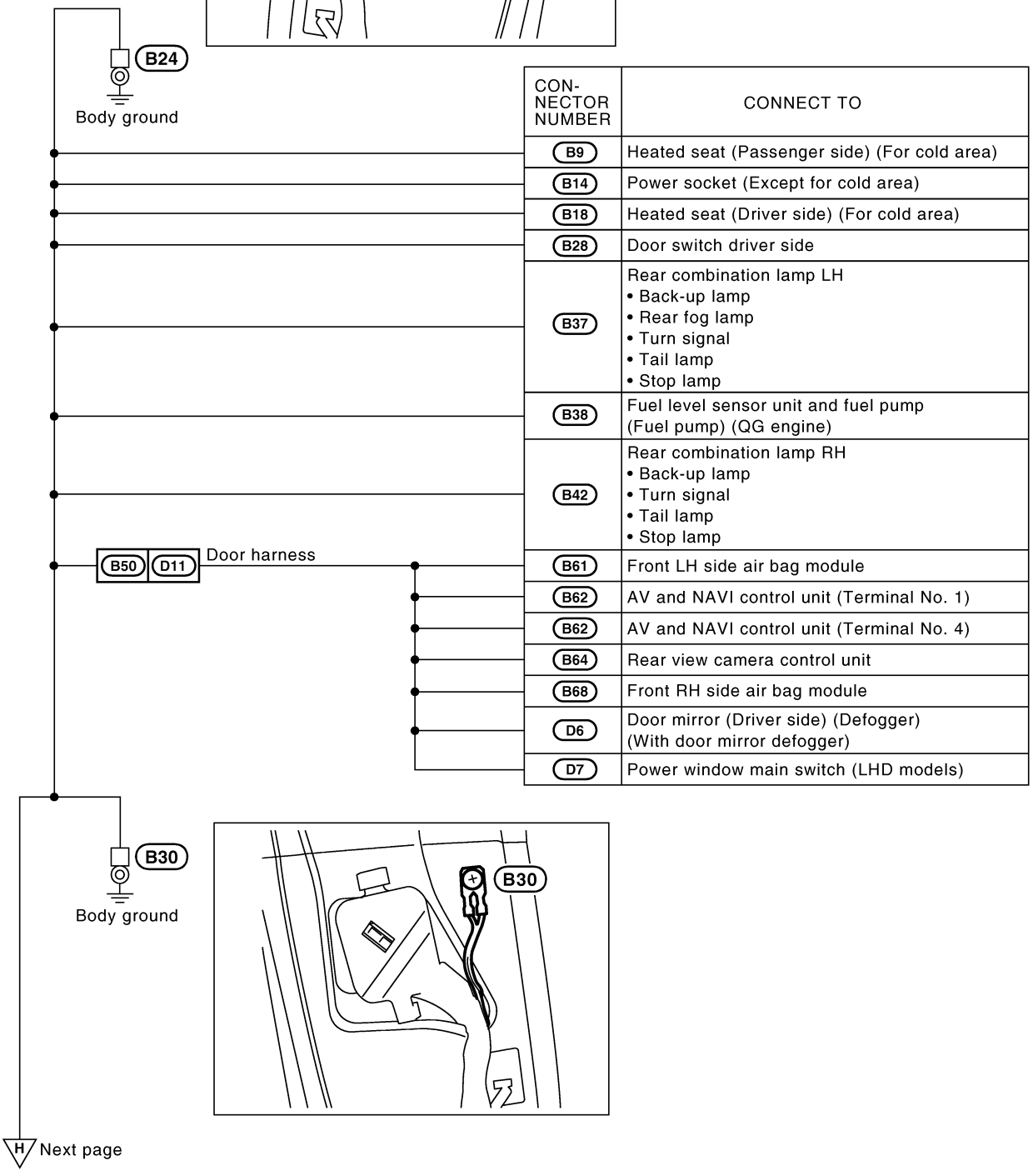
CON-NECTOR NUMBER	CONNECT TO
M107	ECM (Terminal No. 114)
F12	Park/neutral position (PNP) switch (YD22DDT engine)
F58	Power steering pressure switch
F63	Park/neutral position (PNP) switch (YD22DDTi engine)
F70	ECM (Terminal No. 1)
F70	ECM (Terminal No. 2)
F70	ECM (Terminal No. 3)

YEL101E

BODY HARNESS/LHD MODELS

NLEL0008S04

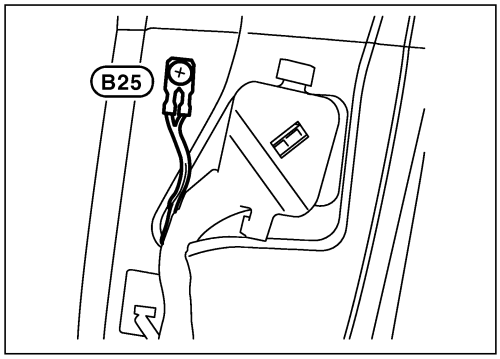




CONNECTOR NUMBER	CONNECT TO
B9	Heated seat (Passenger side) (For cold area)
B14	Power socket (Except for cold area)
B18	Heated seat (Driver side) (For cold area)
B28	Door switch driver side
B37	Rear combination lamp LH • Back-up lamp • Rear fog lamp • Turn signal • Tail lamp • Stop lamp
B38	Fuel level sensor unit and fuel pump (Fuel pump) (QG engine)
B42	Rear combination lamp RH • Back-up lamp • Turn signal • Tail lamp • Stop lamp
B61	Front LH side air bag module
B62	AV and NAVI control unit (Terminal No. 1)
B62	AV and NAVI control unit (Terminal No. 4)
B64	Rear view camera control unit
B68	Front RH side air bag module
D6	Door mirror (Driver side) (Defogger) (With door mirror defogger)
D7	Power window main switch (LHD models)

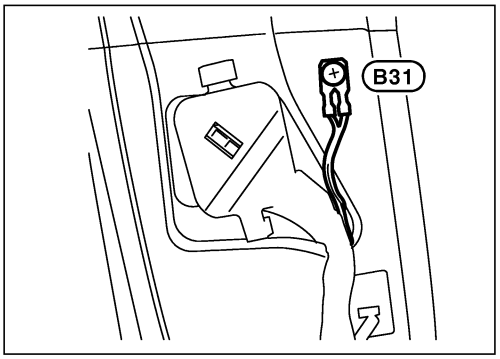
YEL102E

H Preceding page



CON-NECTOR NUMBER	CONNECT TO
B20	Shield wire [RH side air bag (Satellite) sensor (With side air bag)]

B25
Body ground



B26	Shield wire [LH side air bag (Satellite) sensor (With side air bag)]

B31
Body ground

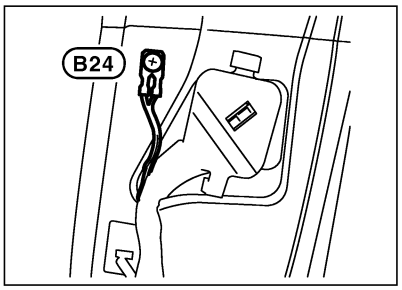
B36
D81

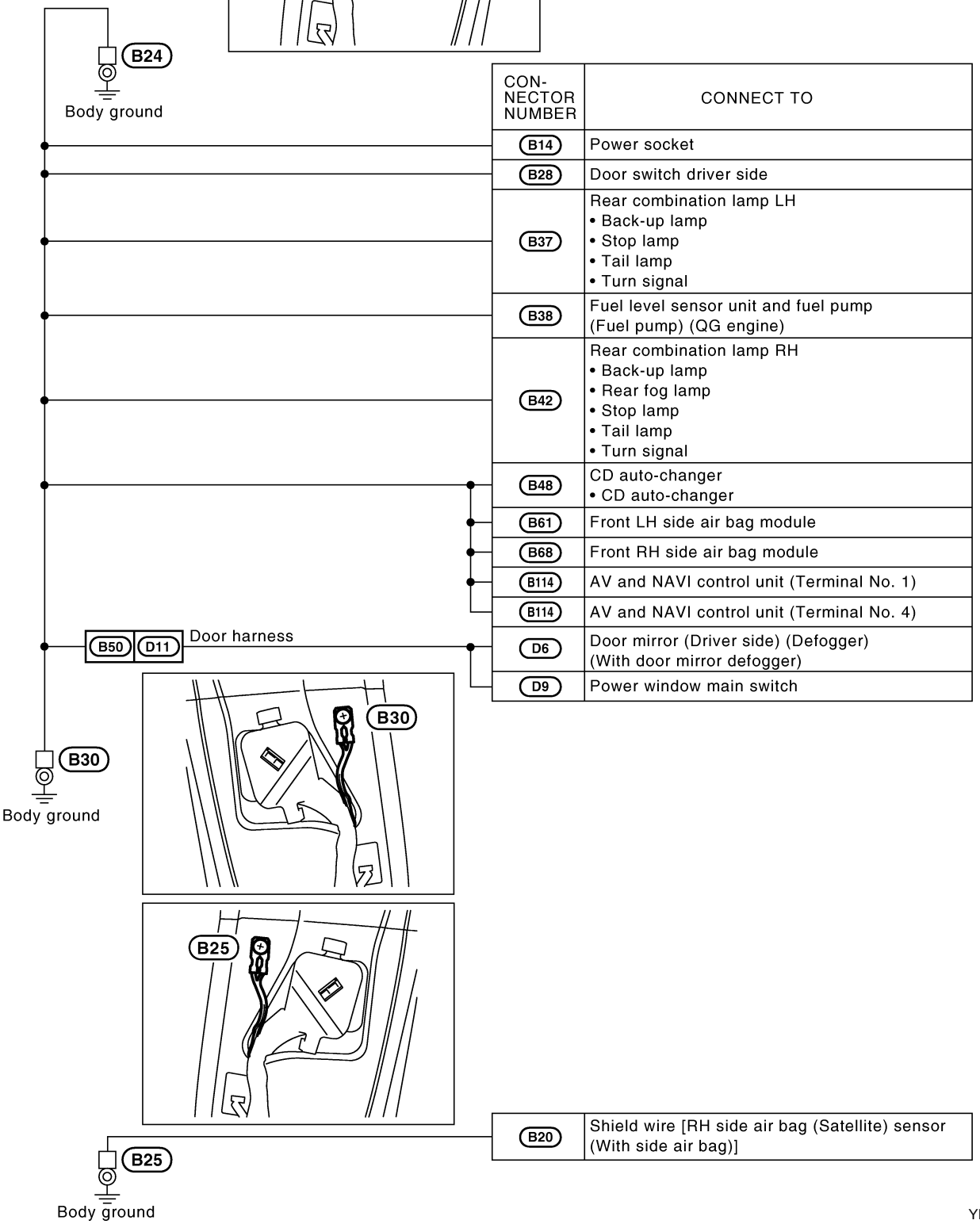
J To back door harness

YEL103E

BODY HARNESS/RHD MODELS

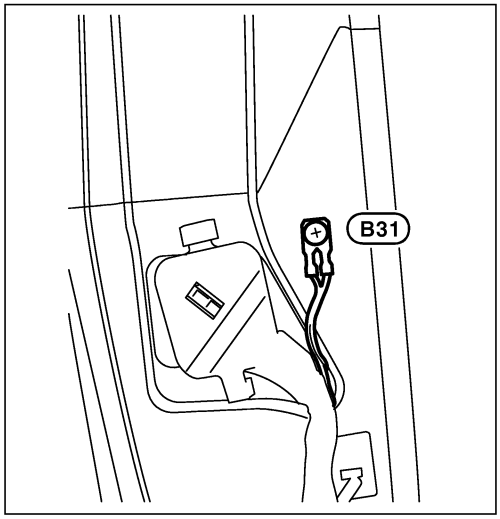
NLEL0008S10





CON-NECTOR NUMBER	CONNECT TO
B14	Power socket
B28	Door switch driver side
B37	Rear combination lamp LH • Back-up lamp • Stop lamp • Tail lamp • Turn signal
B38	Fuel level sensor unit and fuel pump (Fuel pump) (QG engine)
B42	Rear combination lamp RH • Back-up lamp • Rear fog lamp • Stop lamp • Tail lamp • Turn signal
B48	CD auto-changer • CD auto-changer
B61	Front LH side air bag module
B68	Front RH side air bag module
B114	AV and NAVI control unit (Terminal No. 1)
B114	AV and NAVI control unit (Terminal No. 4)
D6	Door mirror (Driver side) (Defogger) (With door mirror defogger)
D9	Power window main switch
B20	Shield wire [RH side air bag (Satellite) sensor (With side air bag)]

YEL104E



CON-NECTOR NUMBER	CONNECT TO
B26	Shield wire [LH side air bag (Satellite) sensor (With side air bag)]

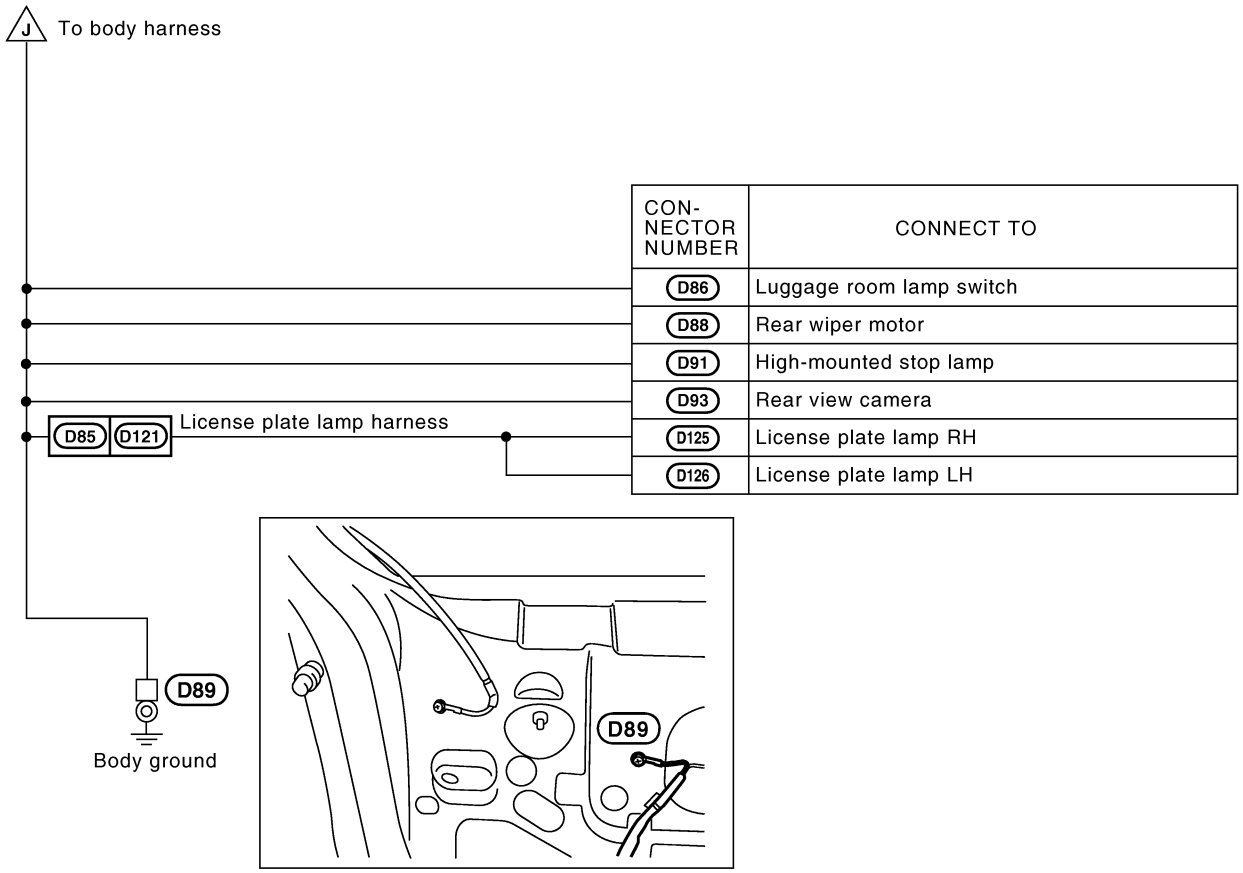
B31

Body ground

YEL979B

BACK DOOR HARNESS/LHD MODELS

NLEL0008S11

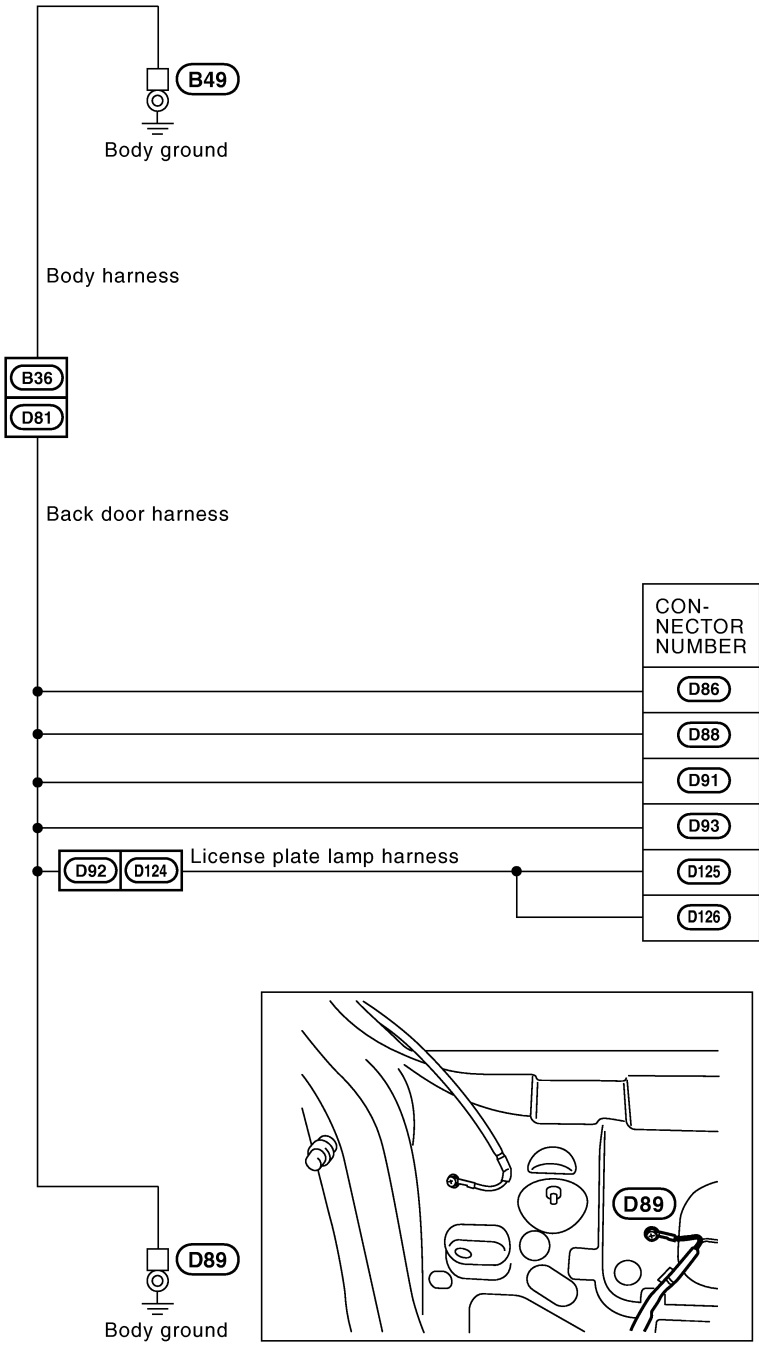


CON-NECTOR NUMBER	CONNECT TO
D86	Luggage room lamp switch
D88	Rear wiper motor
D91	High-mounted stop lamp
D93	Rear view camera
D125	License plate lamp RH
D126	License plate lamp LH

YEL106E

BACK DOOR HARNESS/RHD MODELS

NLEL0008S13

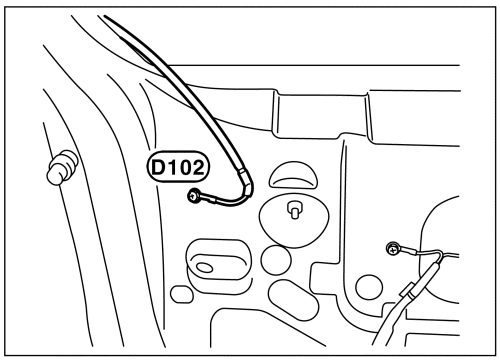


CON-NECTOR NUMBER	CONNECT TO
D86	Luggage room lamp switch
D88	Rear wiper motor
D91	High-mounted stop lamp
D93	Rear view camera
D125	License plate lamp RH
D126	License plate lamp LH

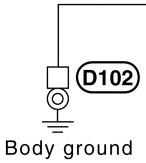
YEL107E

REAR WINDOW DEFOGGER HARNESS

NLEL0008S08



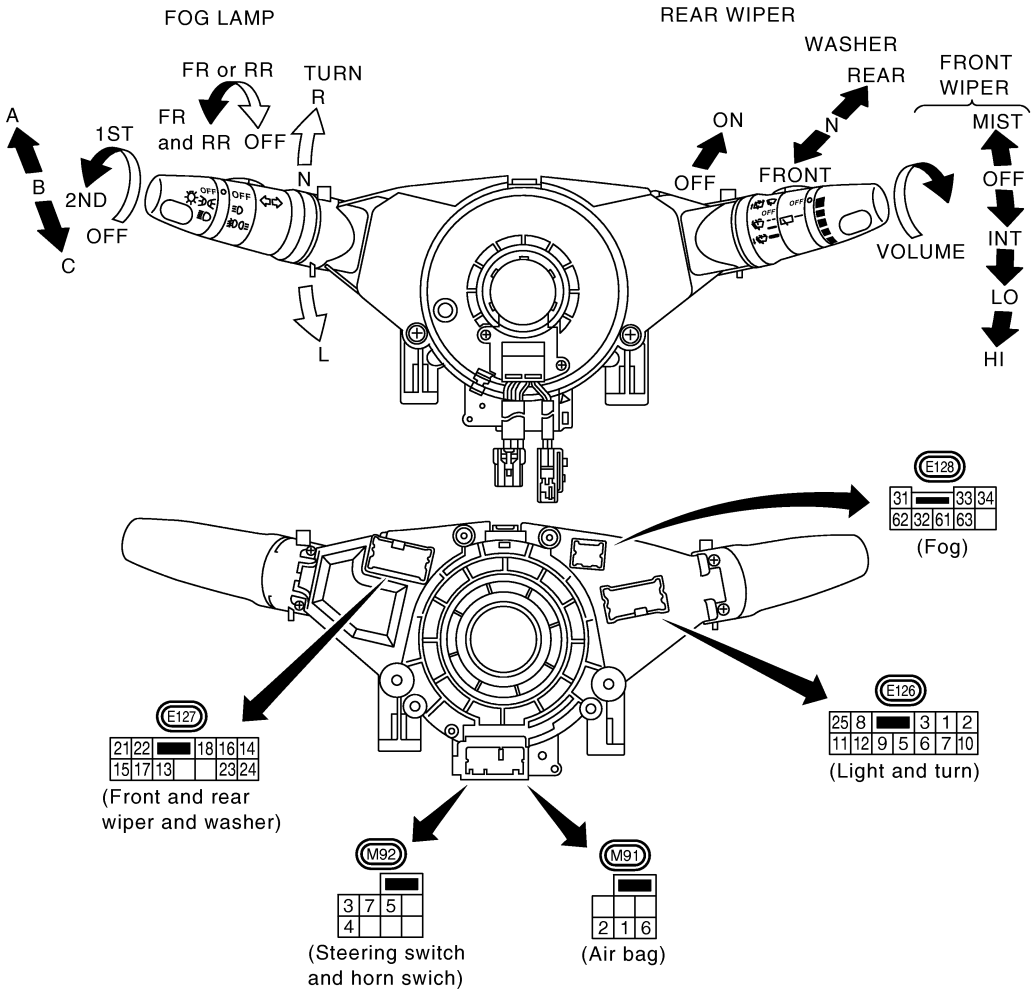
CON-NECTOR NUMBER	CONNECT TO
D101	Rear window defogger



YEL508C

Check

NLEL0423



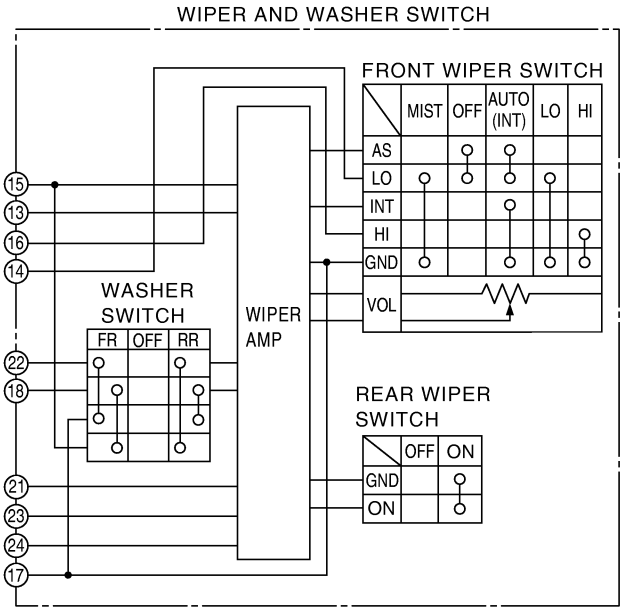
LIGHTING SWITCH
(With rear fog lamp)

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

LIGHTING SWITCH
(With front and
rear fog lamp)

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

WIPER AND WASHER SWITCH



FOG LAMP SWITCH
(With rear fog lamp)

	OFF	RR
34		○
33		○

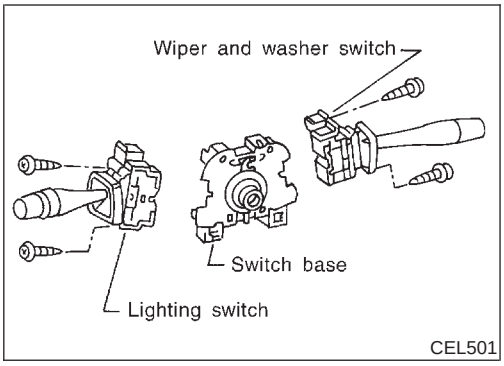
FOG LAMP SWITCH
(With front and
rear fog lamp)

	OFF	FR	FR AND RR
31		○	○
32		○	○
33			○

TURN SIGNAL
SWITCH

	R	N	L
1	○		○
2	○		
3			○

YEL089E

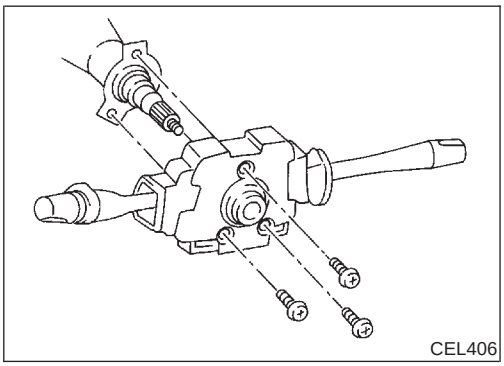


Replacement

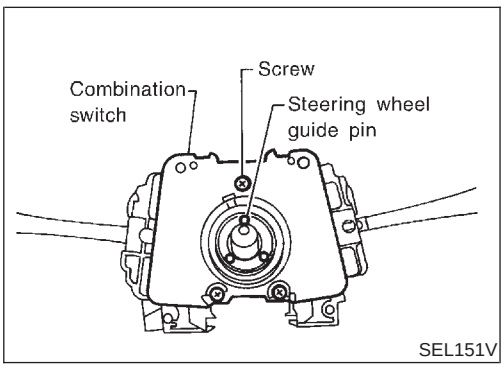
NLEL0010

For removal and installation of spiral cable, refer to RS-24 “Installation — Air Bag Module and Spiral Cable”.

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



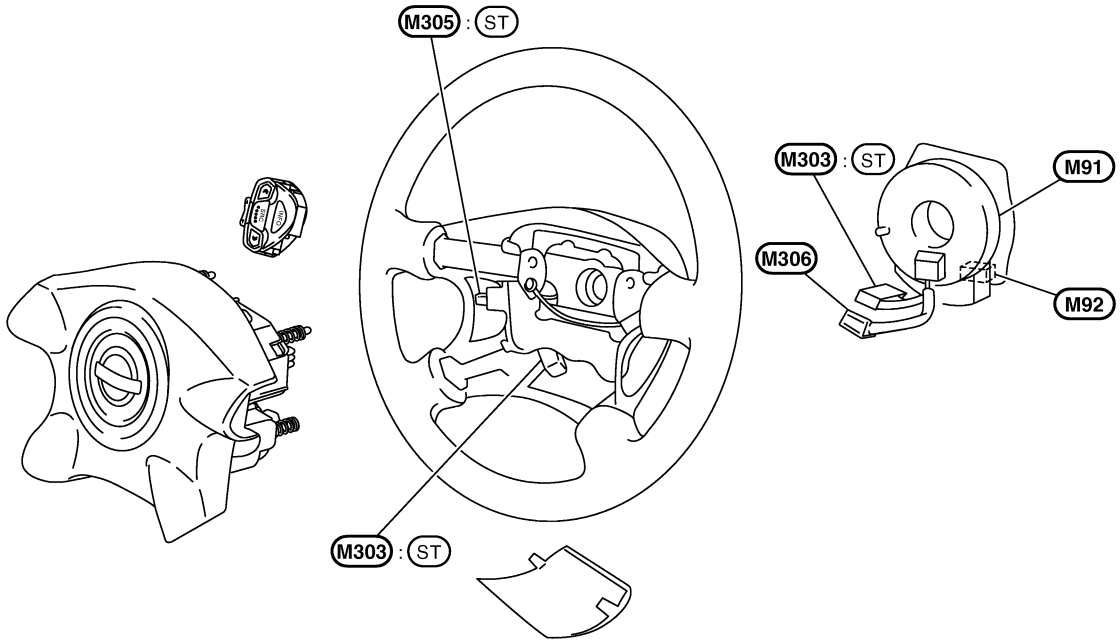
- To remove combination switch base, remove base attaching screw.

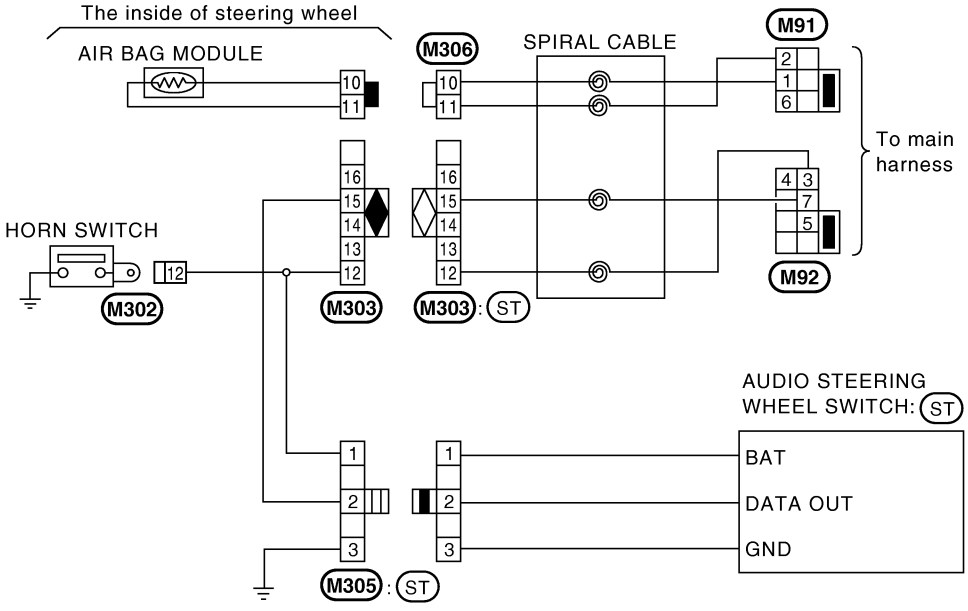


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NLEL0350



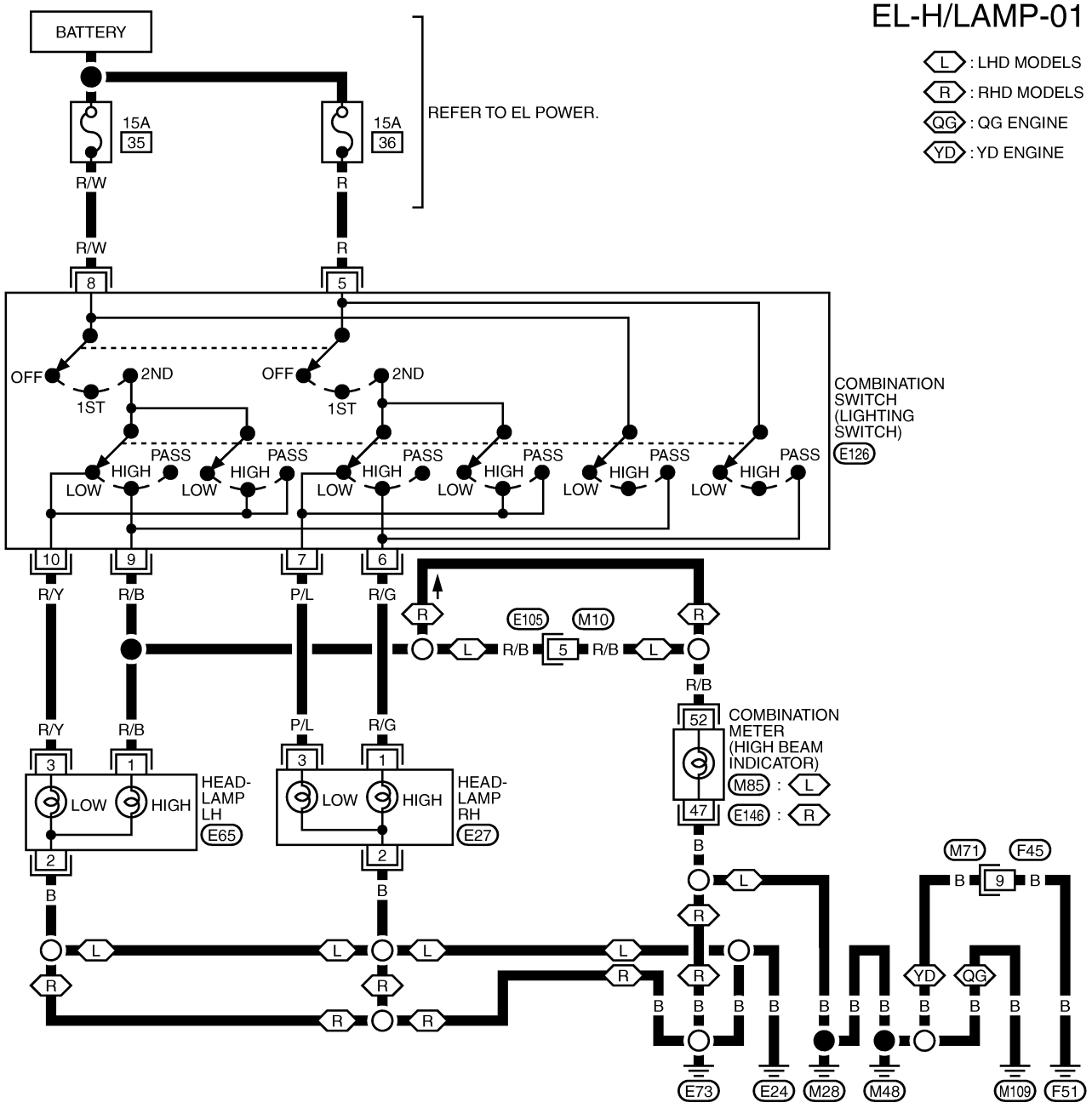


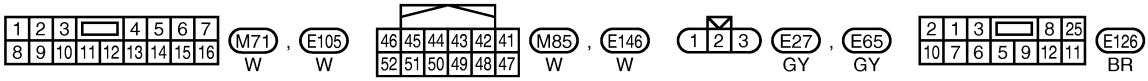
ST : With audio steering switch

YEL090E

Wiring Diagram — H/LAMP —

NLEL0420



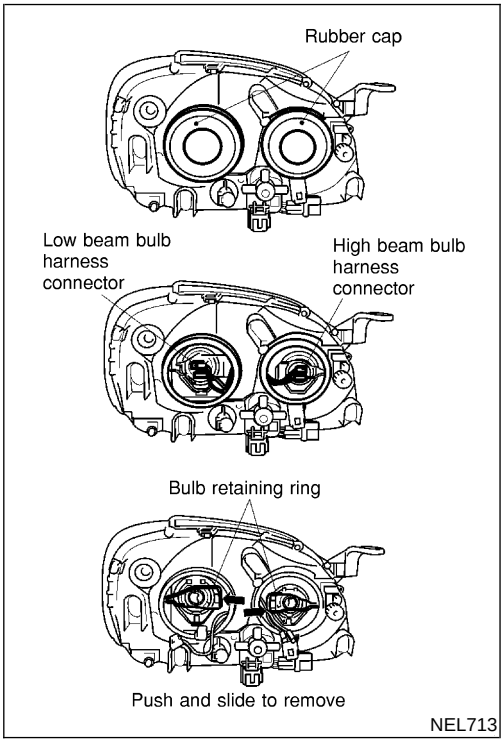


YEL926D

Trouble Diagnoses

NLEL0202

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. Lighting switch	1. Check lighting switch.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp LH ground circuit 3. Lighting switch	1. Check 15A fuse. Verify battery positive voltage is present at lighting switch terminal 8. 2. Check headlamp LH ground circuit. 3. Check lighting switch.
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp RH ground circuit 3. Lighting switch	1. Check 15A fuse. Verify battery positive voltage is present at lighting switch terminal 5. 2. Check headlamp RH ground circuit. 3. Check lighting switch.
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and LH high beam 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 beam circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and LH low beam for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam does operate.	1. Bulb 2. Open in RH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and RH high beam 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 beam circuit 3. Lighting switch	1. Check bulb. 2. Check the harness between lighting switch and RH low beam for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Ground circuit 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check harness between high beam indicator and ground. 3. Check the harness between lighting switch and combination meter for an open circuit.



Bulb Replacement

NLEL0015

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. Pull off the rubber cap.
3. Disconnect the harness connector from the back side of the bulb.
4. Remove the bulb retaining ring.
5. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. Install in the reverse order of removal.

CAUTION:

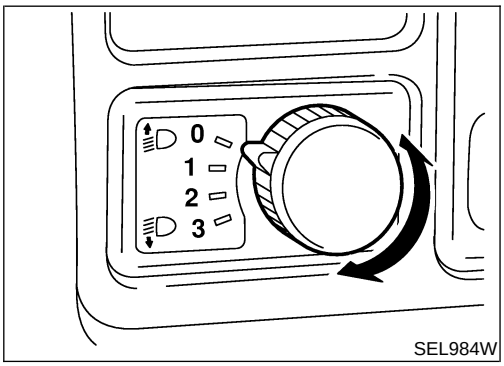
Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.

Aiming Adjustment

NLEL0016

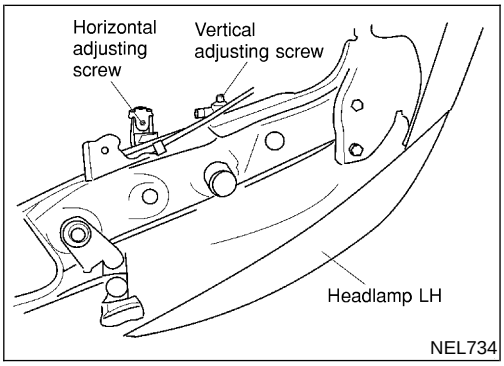
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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



SEL984W

CAUTION:
Be sure aiming switch is set to "0" when performing aiming adjustment on vehicles equipped with headlamp aiming control.



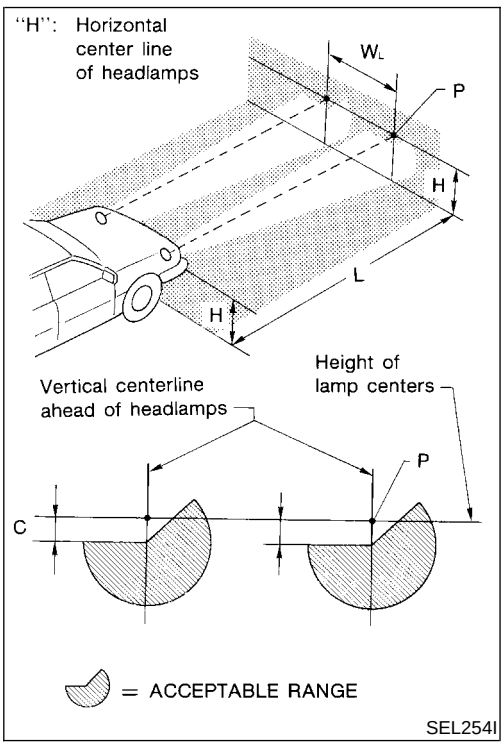
NEL734

LOW BEAM

NLEL0016S02

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.**



SEL254I

- **Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in illustration.**
- **Figure to the left shows headlamp aiming pattern for driving on right side of road; for driving on left side of road, aiming pattern is reversed.**
- **Dotted lines to point P in illustration show center of headlamp.**

"H": Horizontal center line of headlamps
"W_L": Distance between each headlamp center
"L": 5,000 mm (196.85 in)
"C": 65 mm (2.56 in)

System Description

NLEL0351

The headlamp system on vehicles for North Europe contains a daytime light unit. The unit activates the following whenever the engine is running with the lighting switch in the OFF position:

- Low beam headlamps
- Parking, license, tail and illumination lamps

Power is supplied at all times

- through 10A fuse (No. 38, located in the fuse and fusible link box)
- to daytime light unit terminal 1 and
- to lighting switch terminal 11.

Power is also supplied at all times

- through 15A fuse (No. 36, located in the fuse and fusible link box)
- to daytime light unit terminal 3 and
- to lighting switch terminal 5.

Power is also supplied at all times

- through 15A fuse (No. 35, located in the fuse and fusible link box)
- to daytime light unit terminal 2 and
- to lighting switch terminal 8.

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

- through 10A fuse [No. 20, located in the fuse block (J/B)]
- to daytime light unit terminal 7.

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

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

Ground is supplied to daytime light unit terminal 9 through body grounds E24 and E73.

HEADLAMP OPERATION (DAYTIME LIGHT CANCEL OPERATION)

NLEL0351S01

When the lighting switch is turned to the 1st or 2nd position, power is supplied

- through lighting switch terminal 12,
- to daytime light unit terminal 11.

Then daytime light will be canceled. And the lighting system operation will be the same as no daytime light system.

DAYTIME LIGHT OPERATION

NLEL0351S02

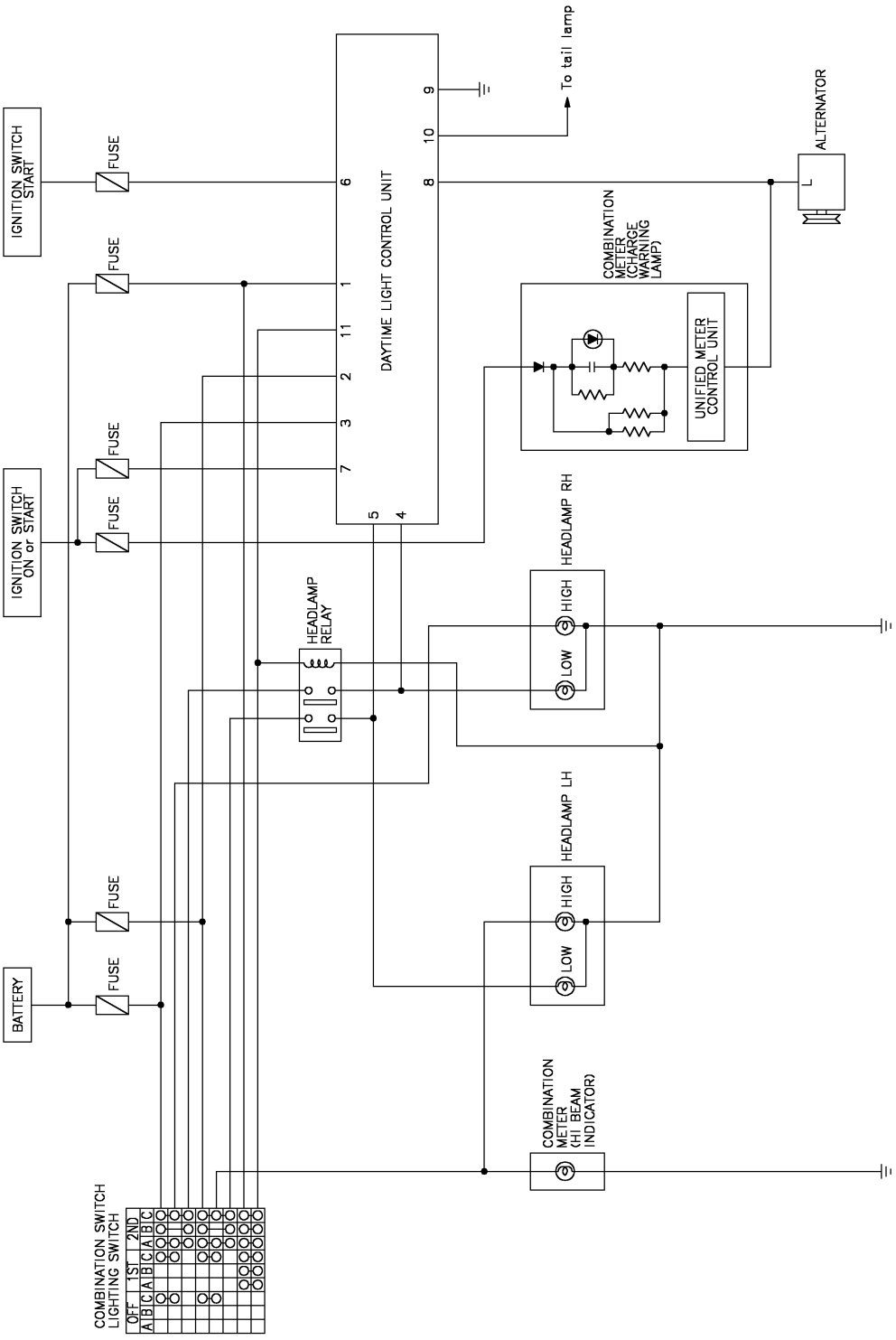
With the engine running and the lighting switch in the OFF position, power is supplied

- from alternator terminal 3
- to daytime light unit terminal 8,
- through daytime light unit terminal 5
- to terminal 3 of headlamp LH,
- through daytime light unit terminal 4
- to terminal 3 of headlamp RH and
- through daytime light unit terminal 10
- to tail lamp and illumination.

Ground is supplied to terminal 2 of each headlamp through body grounds E24 and E73.

Schematic

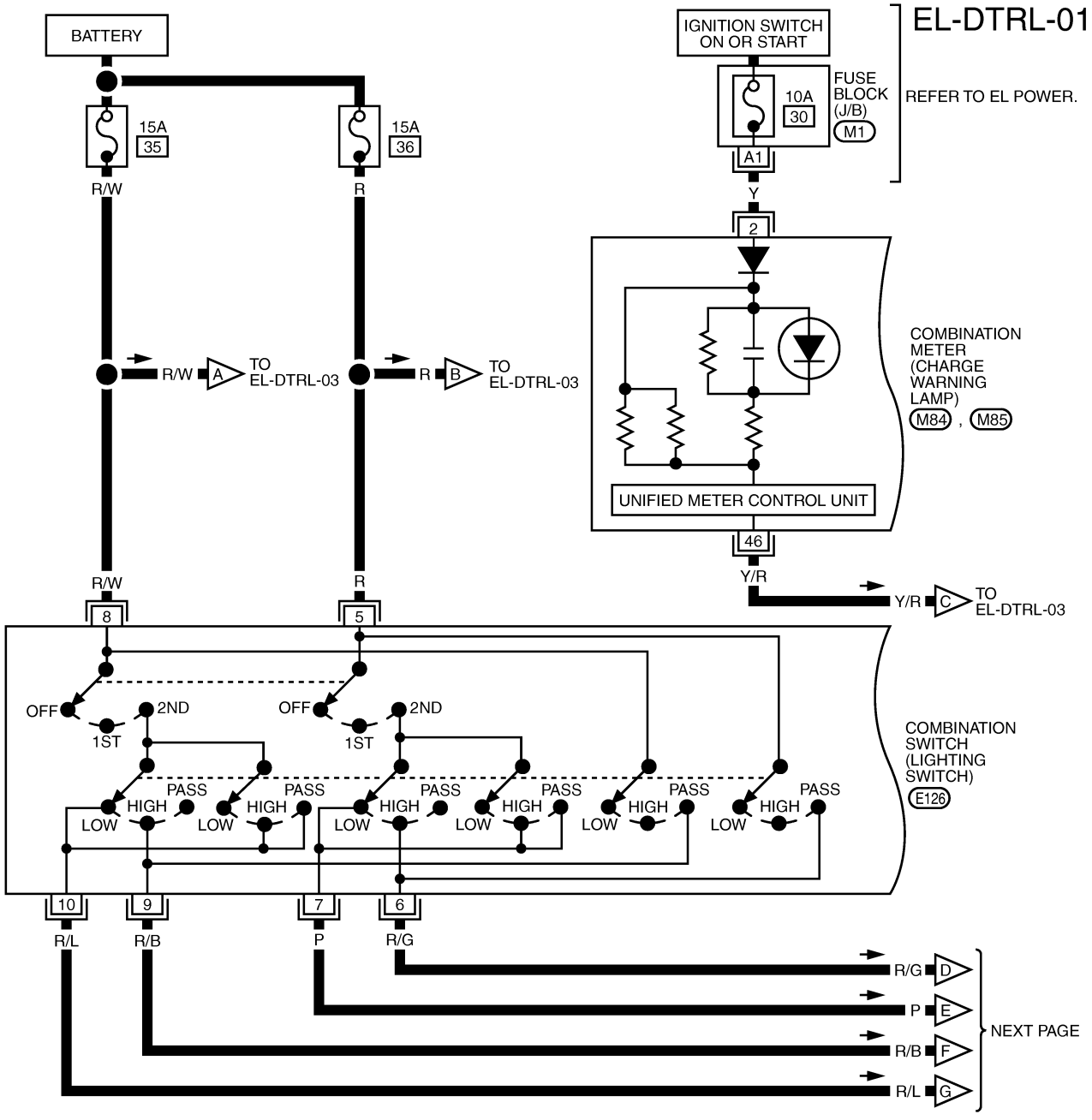
NLEL0421

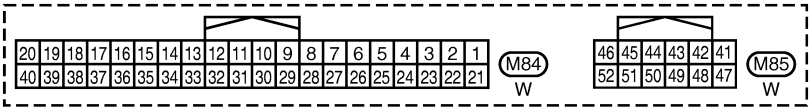


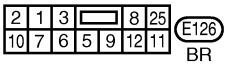
YEL927D

Wiring Diagram — DTRL —

NLEL0422



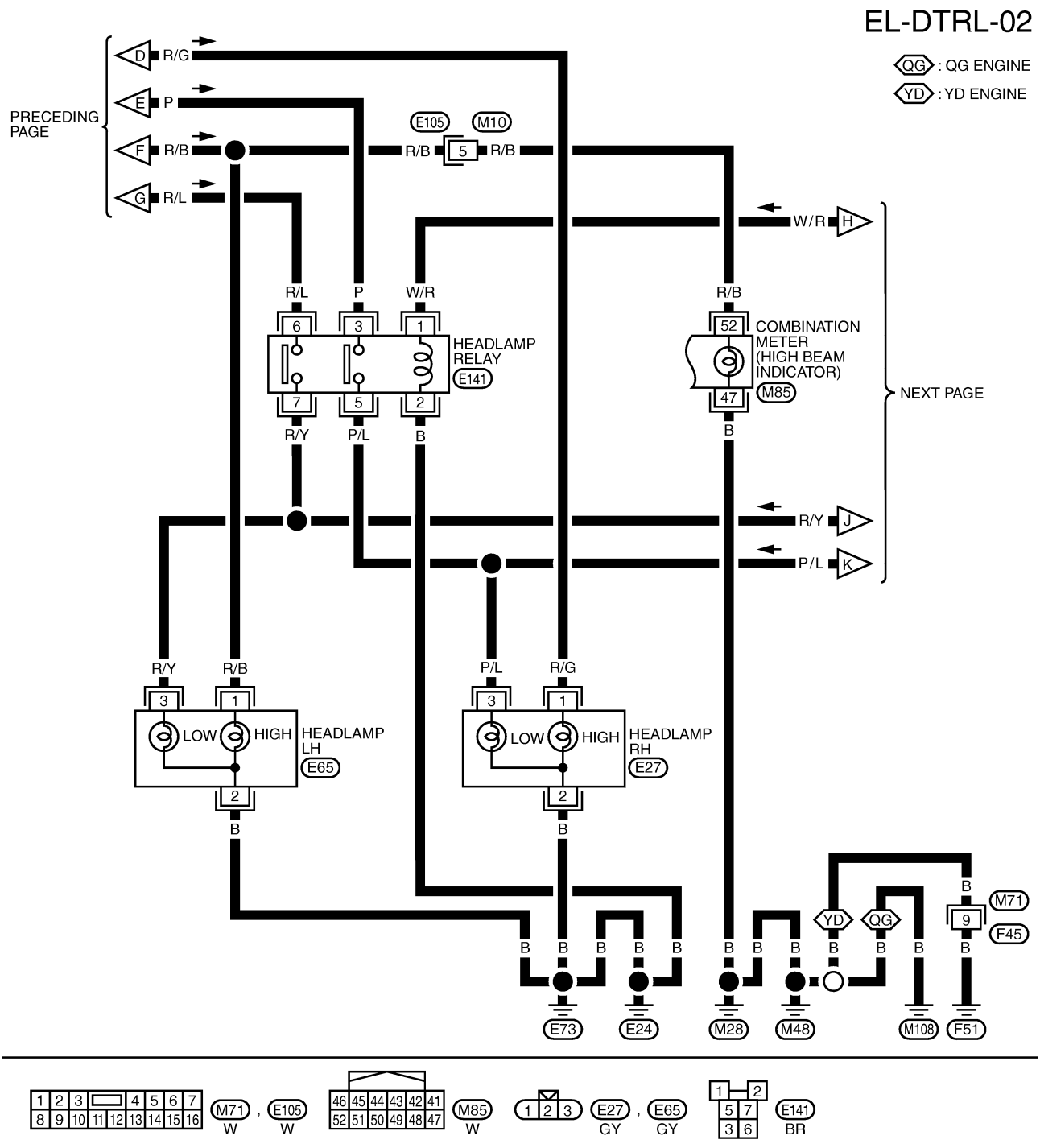




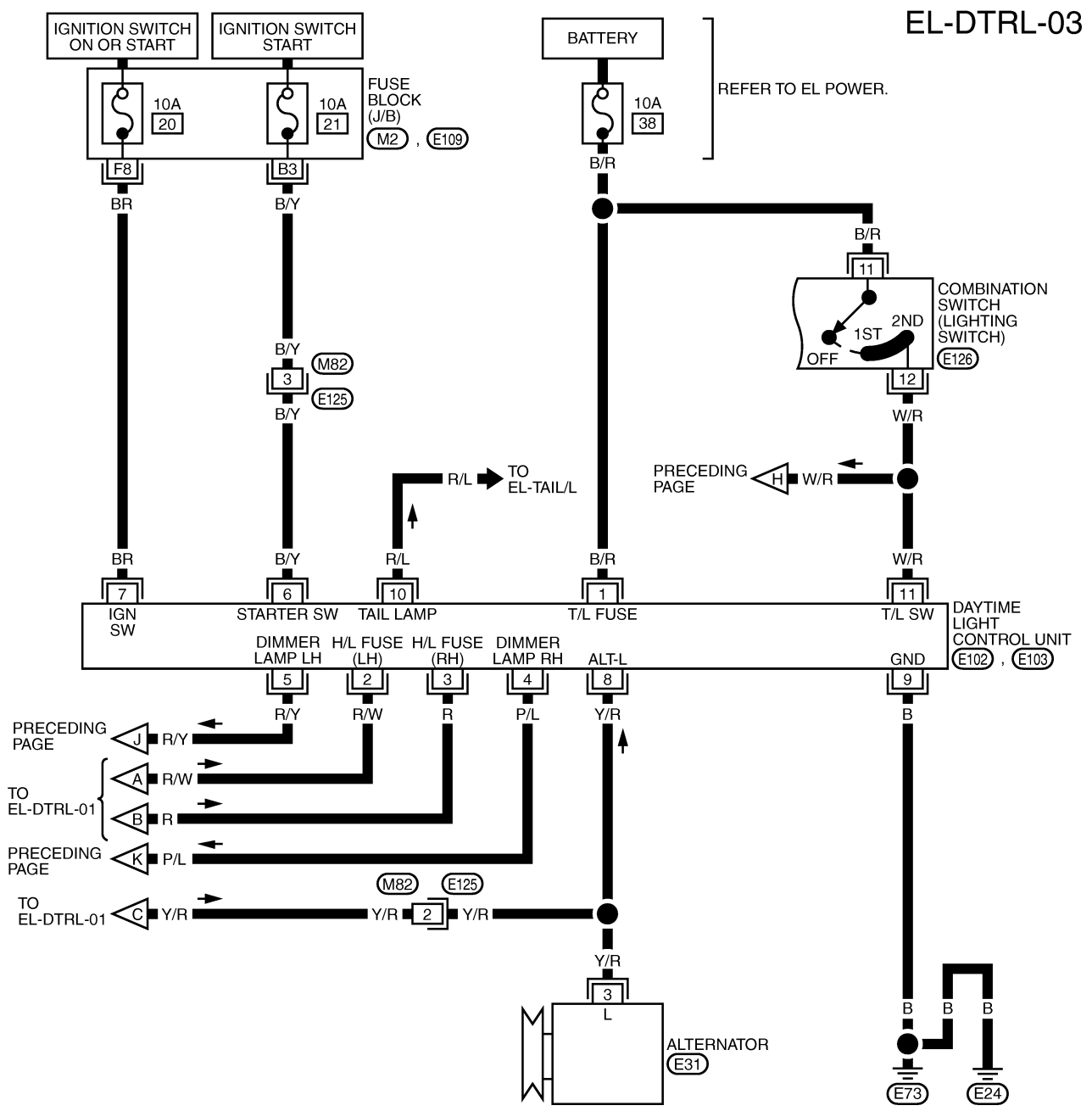
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

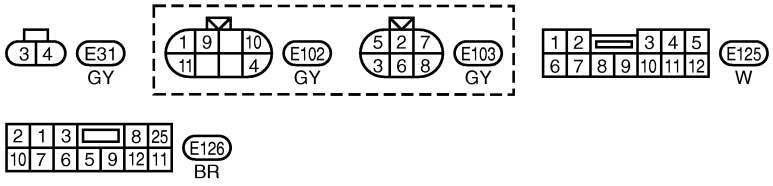
YEL928D

Wiring Diagram — DTRL — (Cont'd)



YEL929D





REFER TO THE FOLLOWING.
M2 , E109 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL930D

Trouble Diagnoses

NLEL0354

DAYTIME LIGHT UNIT INSPECTION TABLE

NLEL0354S01

Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Power source for illumination & tail lamp	—	—		12
2	Power source for headlamp LH	—	—		12
3	Power source for headlamp RH	—	—		12
4	Headlamp RH	O	ON (daytime light operating*)		12
			OFF		0
5	Headlamp LH	O	ON (daytime light operating*)		12
			OFF		0
6	Start signal	I	Ignition switch	START	12
				ON, ACC or OFF	0
7	Power source	—	Ignition switch	ON or START	12
				ACC or OFF	0
8	Alternator “L” terminal	I	Engine	Running	12
				Stopped	0
9	Ground	—	—		—
10	Illumination & tail lamp	O	ON (daytime light operating*)		12
			OFF		0
11	Lighting switch	I	1ST·2ND position		12
			OFF		0

*: Daytime light operating: Lighting switch in “OFF” position with engine running.

Bulb Replacement

NLEL0355

Refer to “HEADLAMP” (EL-43).

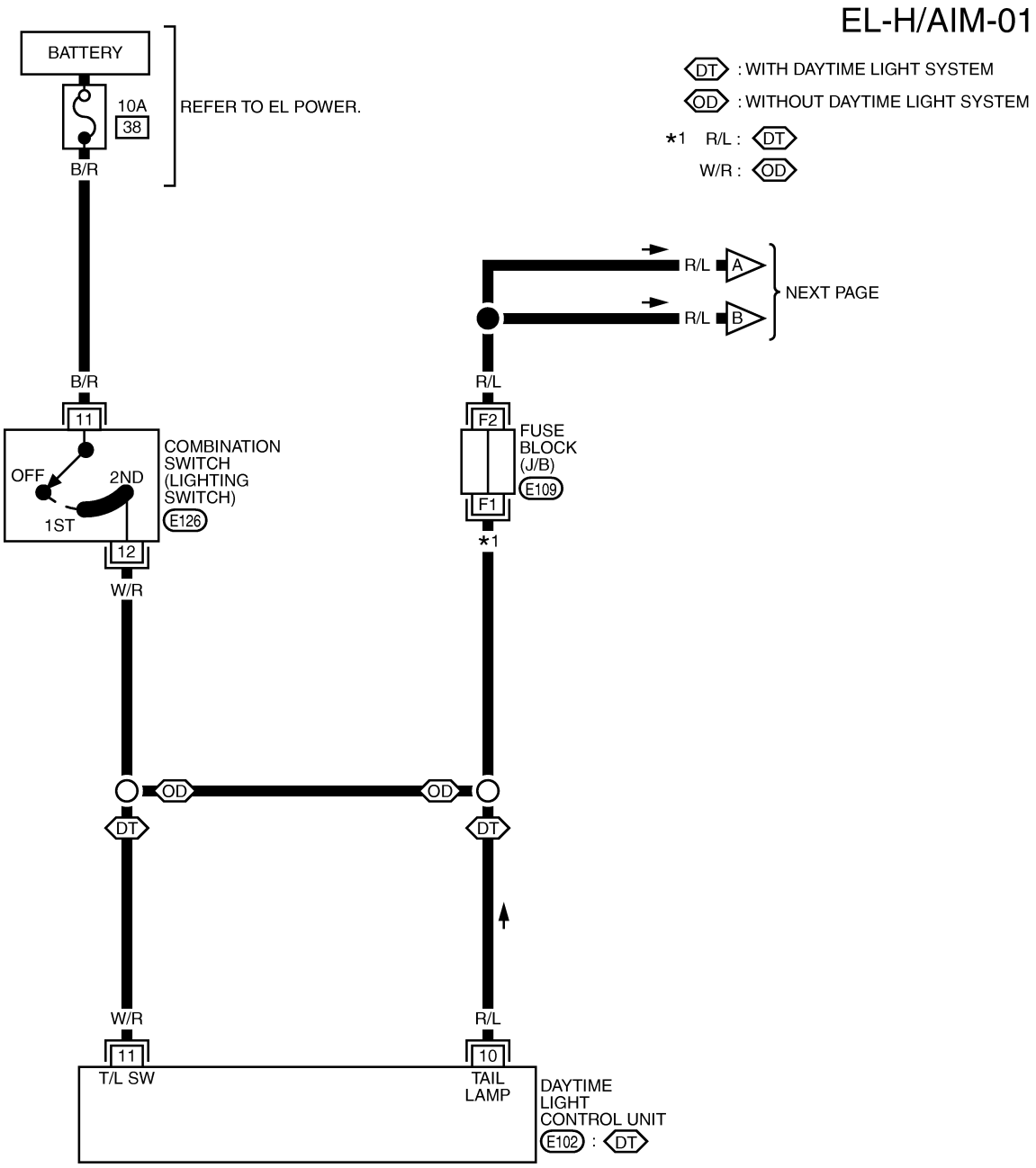
Aiming Adjustment

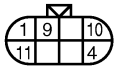
NLEL0356

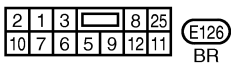
Refer to “HEADLAMP” (EL-44).

Wiring Diagram — H/AIM —

NLEL0424

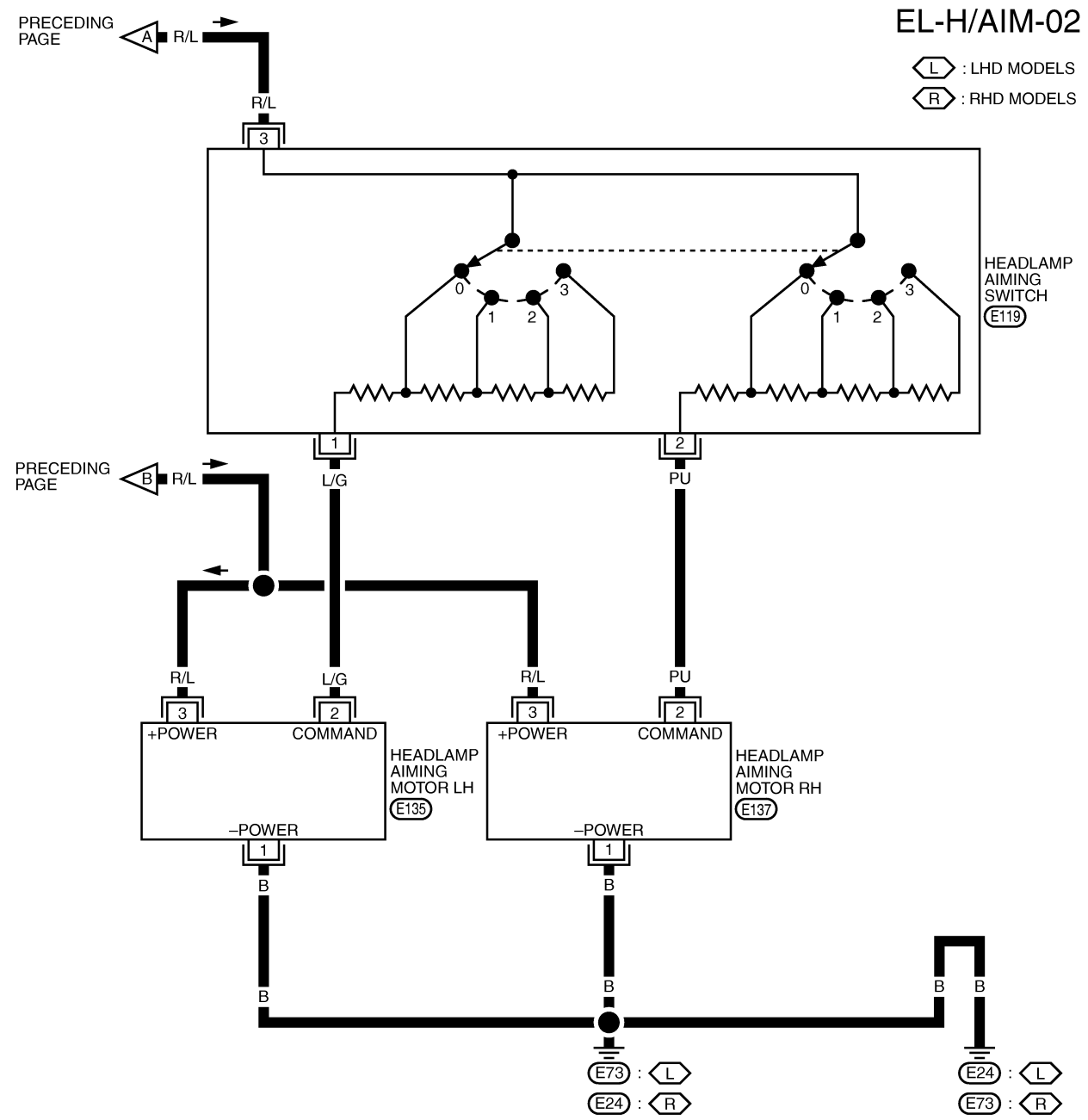


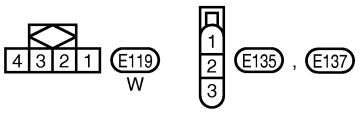




REFER TO THE FOLLOWING.
E109 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL931D

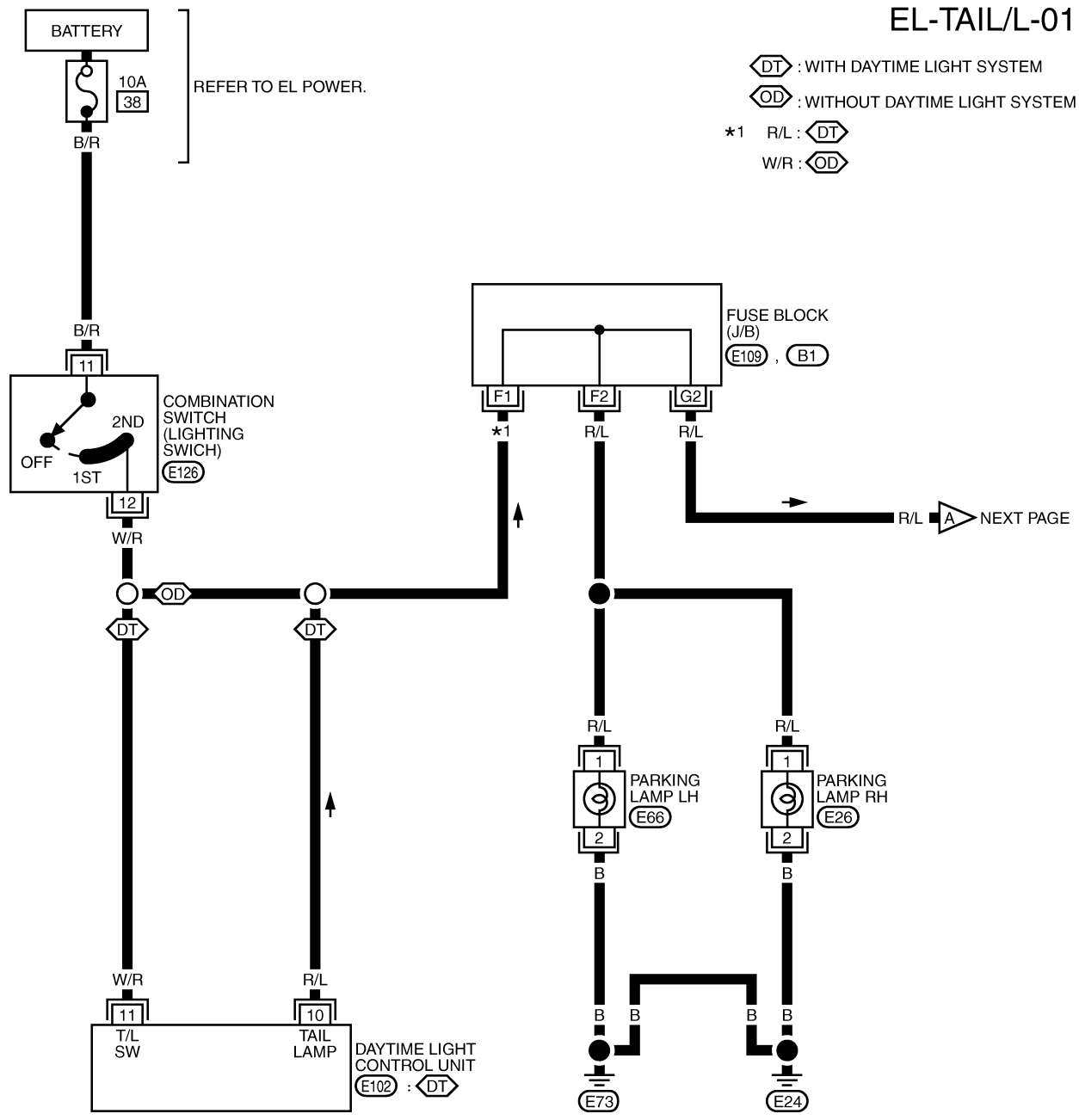

EL-H/AIM-02
L : LHD MODELS
R : RHD MODELS
PRECEDING PAGE
A
R/L
R/L
3
HEADLAMP AIMING SWITCH
E119
0
1
2
3
1
L/G
2
PU
PRECEDING PAGE
B
R/L
R/L
L/G
R/L
PU
3
2
+POWER
COMMAND
HEADLAMP AIMING MOTOR LH
E135
–POWER
HEADLAMP AIMING MOTOR RH
E137
B
E73 : L
E24 : R
E24 : L
E73 : R

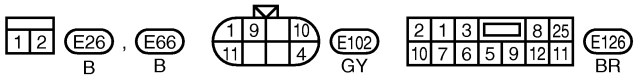

4 3 2 1
E119
W
1 2 3
E135 , E137

YEL932D

Wiring Diagram — TAIL/L —

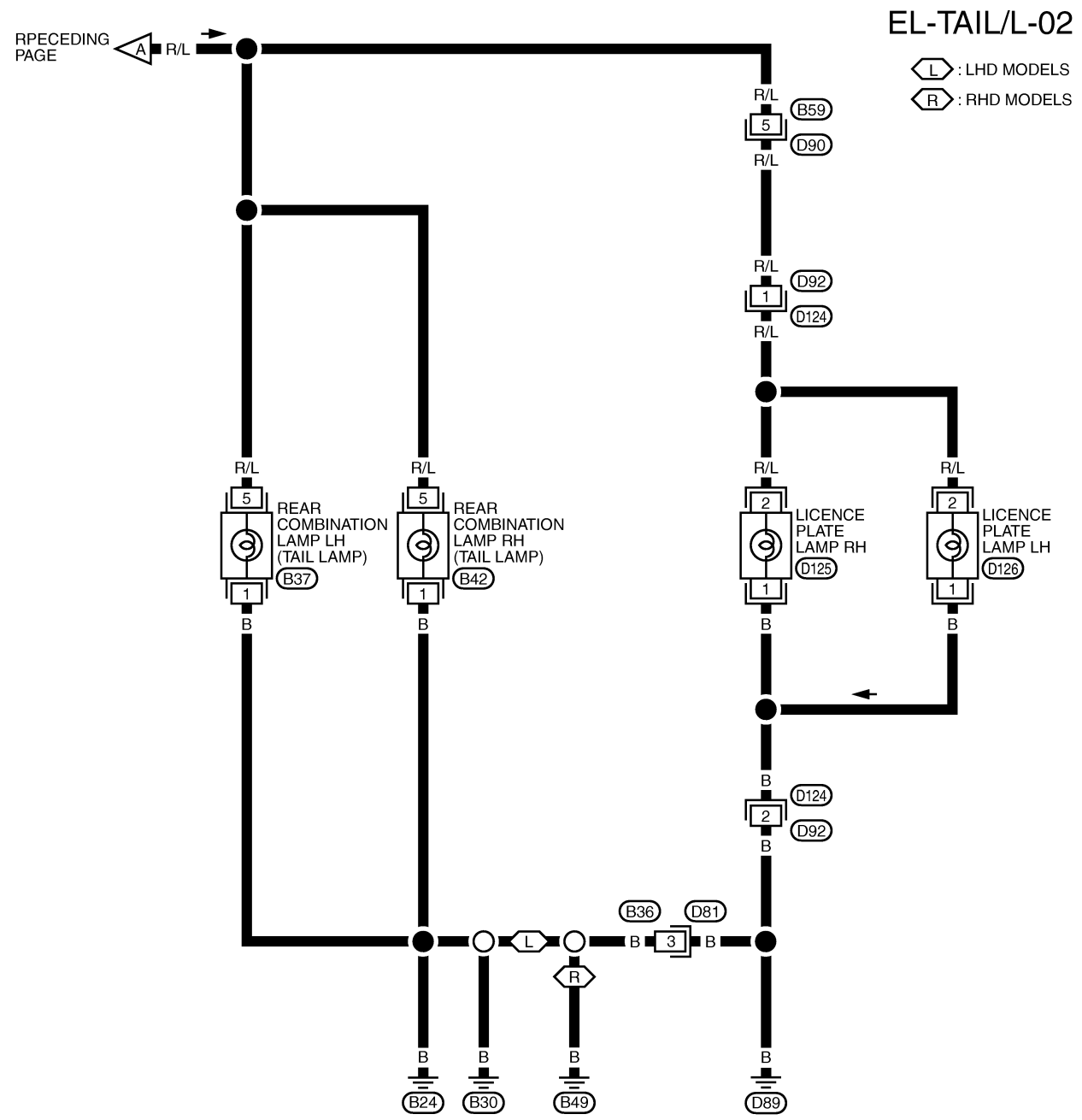
NLEL0425

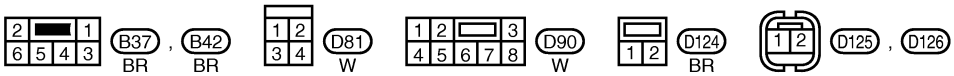




REFER TO THE FOLLOWING.
E109 , B1 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL933D

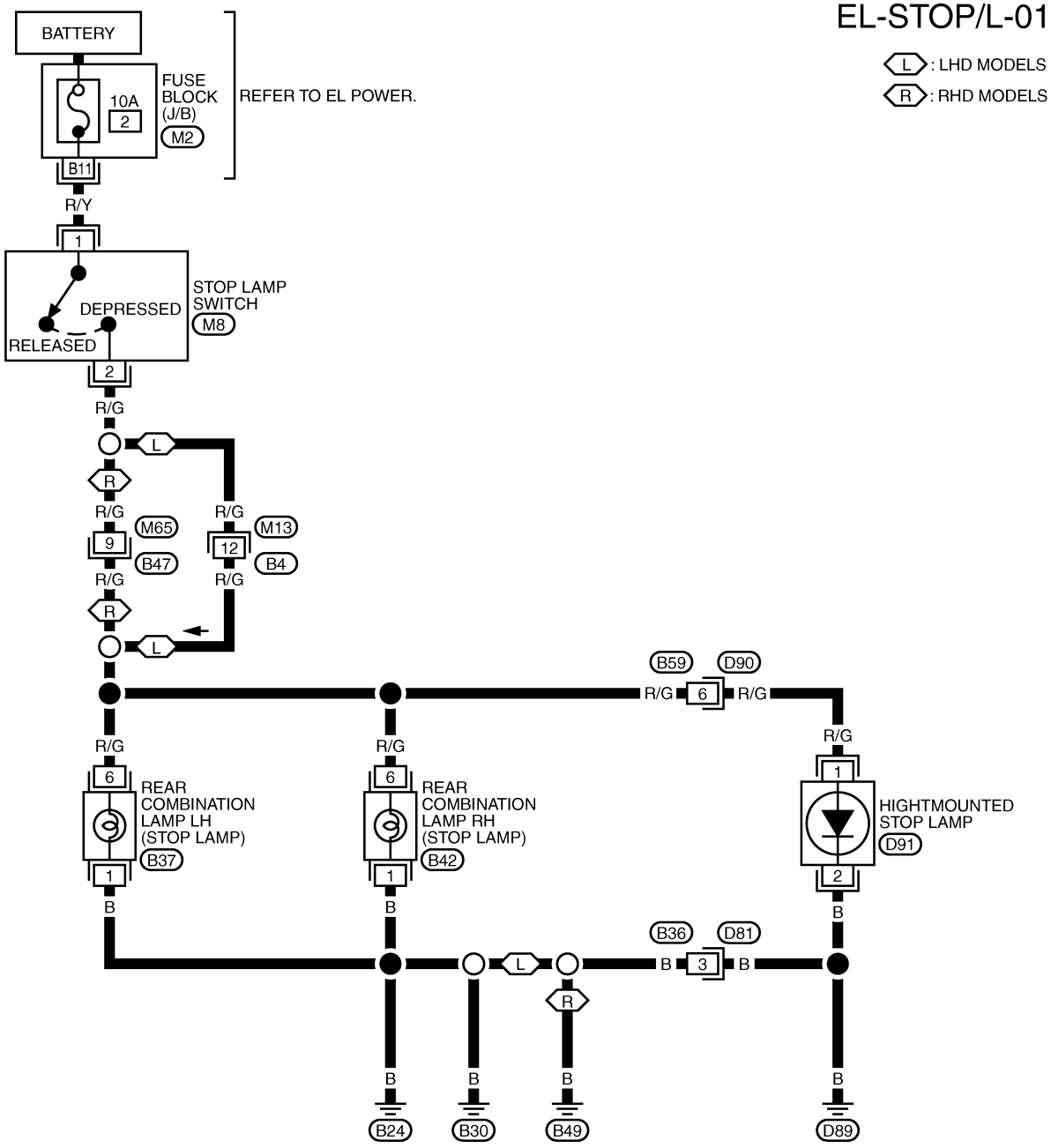

EL-TAIL/L-02
L : LHD MODELS
R : RHD MODELS
RPECEDING PAGE
A
R/L
B59
D90
D92
D124
REAR COMBINATION LAMP LH (TAIL LAMP)
B37
REAR COMBINATION LAMP RH (TAIL LAMP)
B42
LICENCE PLATE LAMP RH
D125
LICENCE PLATE LAMP LH
D126
B36
D81
B24
B30
B49
D89

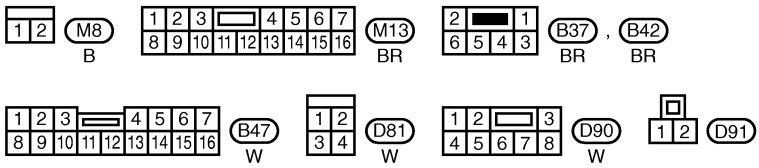

B37 BR
B42 BR
D81 W
D90 W
D124 BR
D125
D126

YEL934D

Wiring Diagram — STOP/L —

NLEL0426





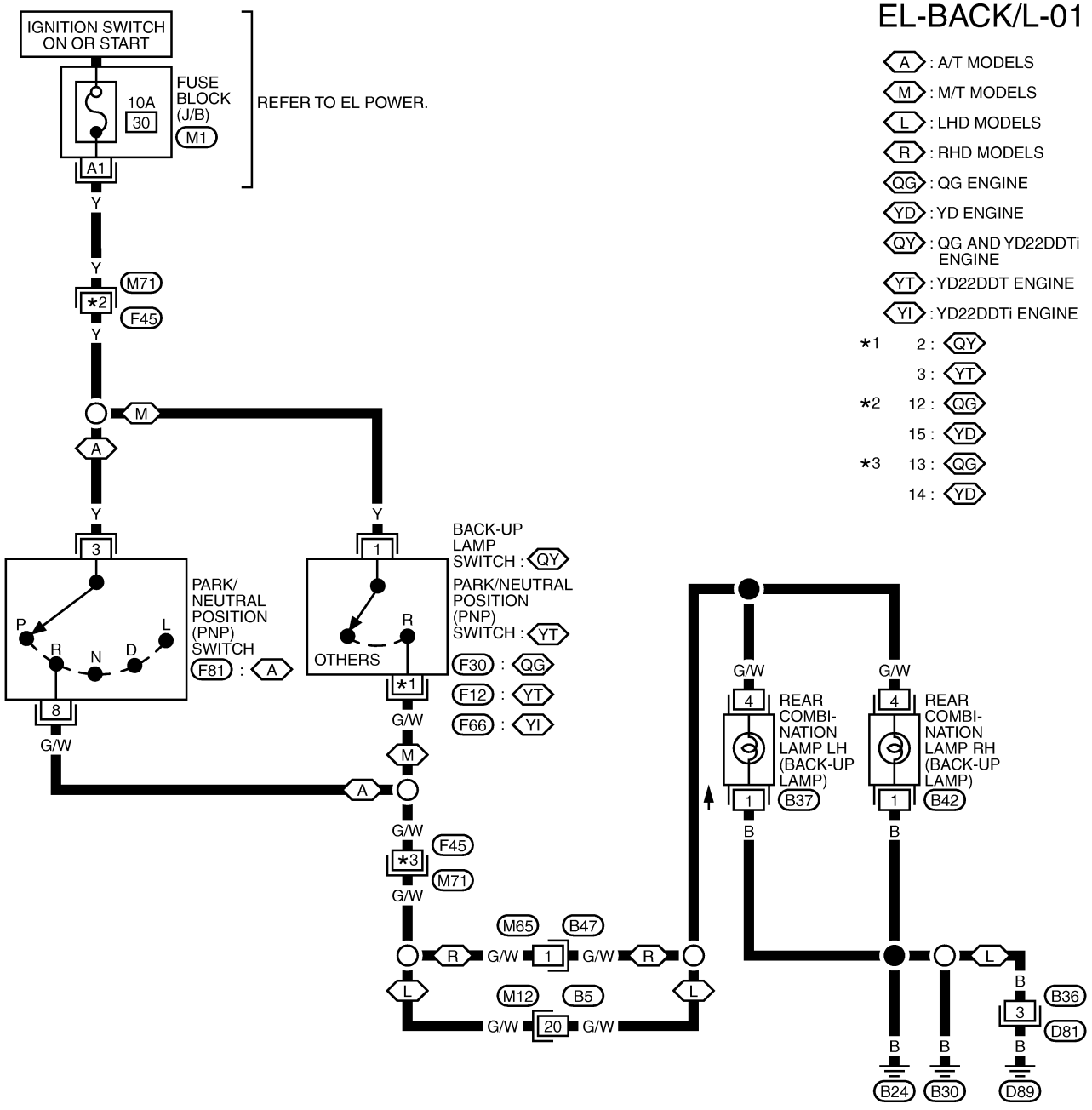
REFER TO THE FOLLOWING.

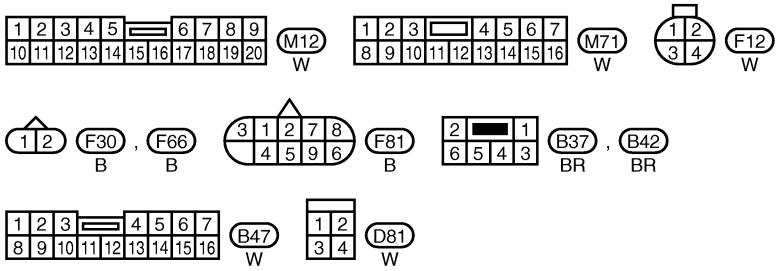
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL935D

Wiring Diagram — BACK/L —

NLEL0427





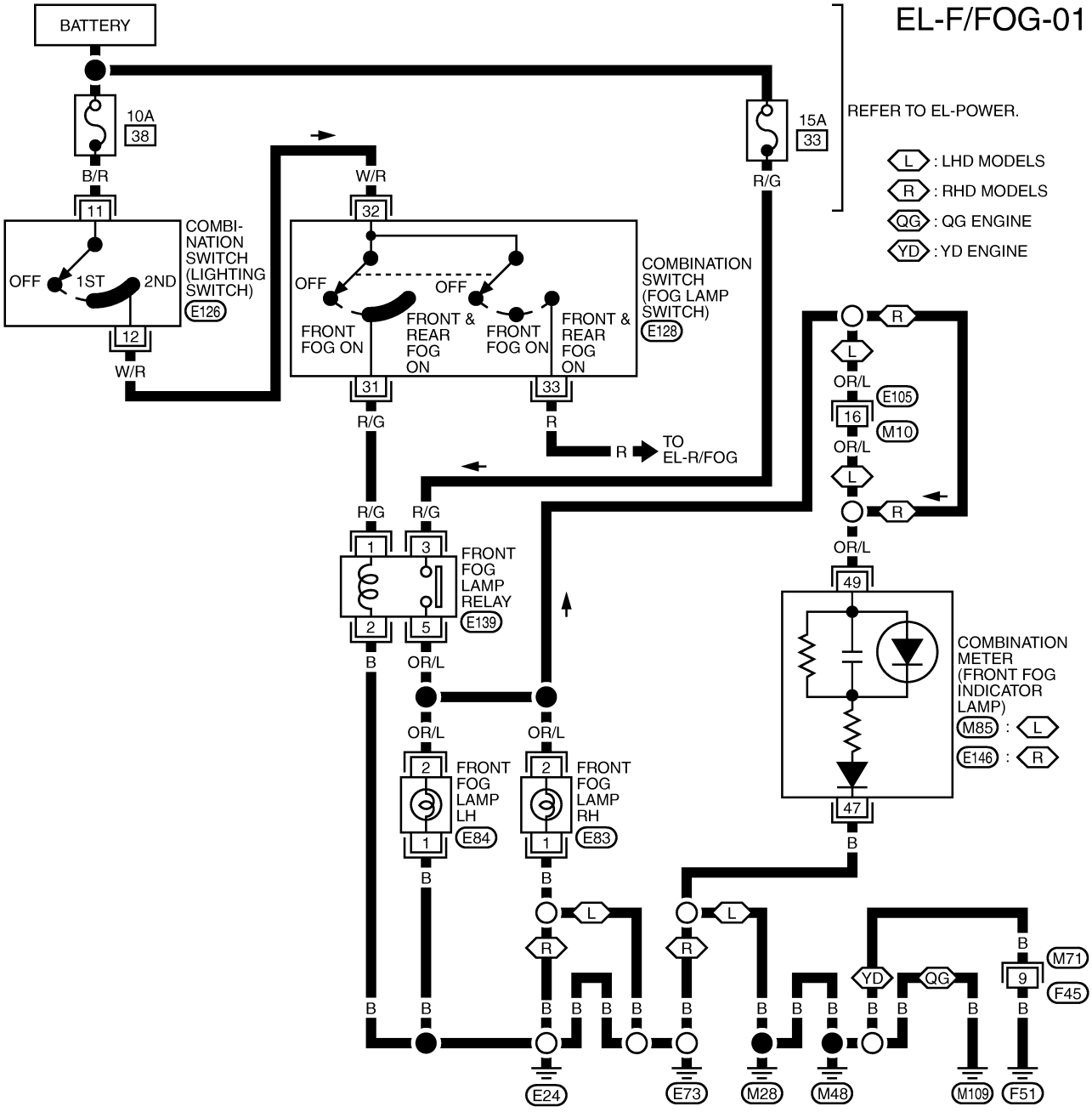
REFER TO THE FOLLOWING.

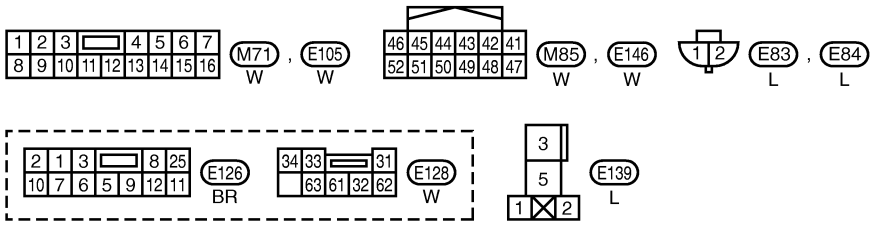
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL936D

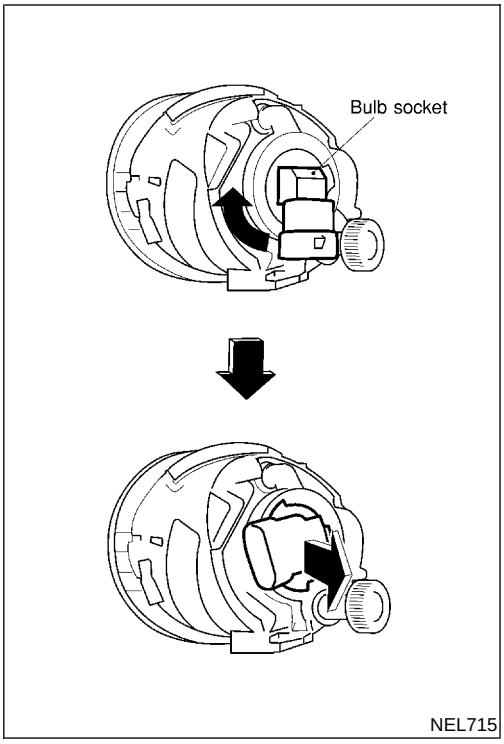
Wiring Diagram — F/FOG —

NLEL0428





YEL937D



Bulb Replacement

NLEL0314

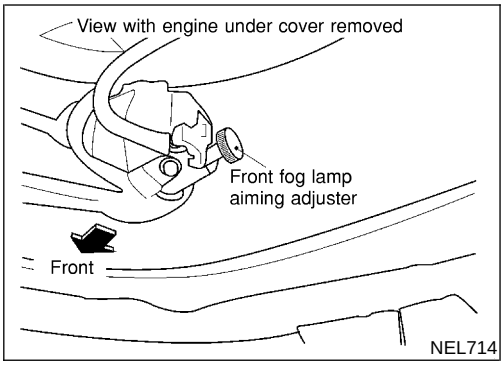
The front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

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

1. Disconnect the battery cable.
2. Disconnect the harness connector.
3. Remove the front fog lamp bulb carefully. Do not shake the bulb when removing it.
4. Install in the reverse order of removal.

CAUTION:

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



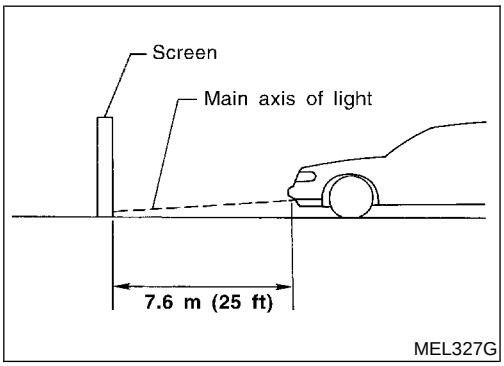
Aiming Adjustment

=NLEL0029

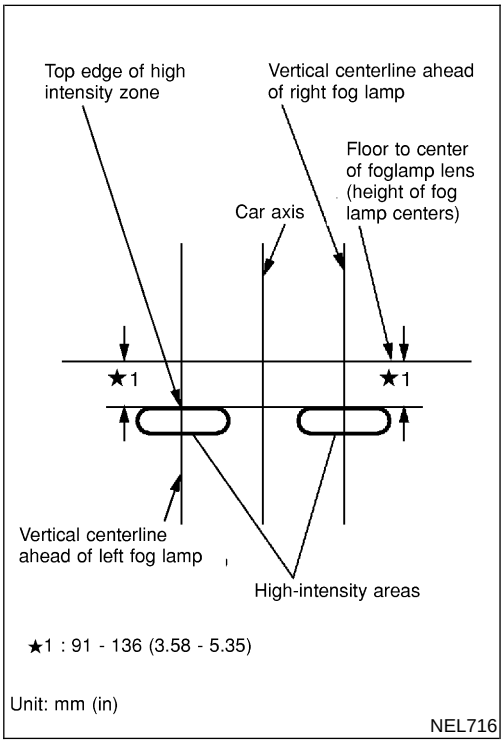
Before performing aiming adjustment, make sure of the following.

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 91 to 136 mm (3.58 to 5.35 in) below the height of the fog lamp centers as shown at left.

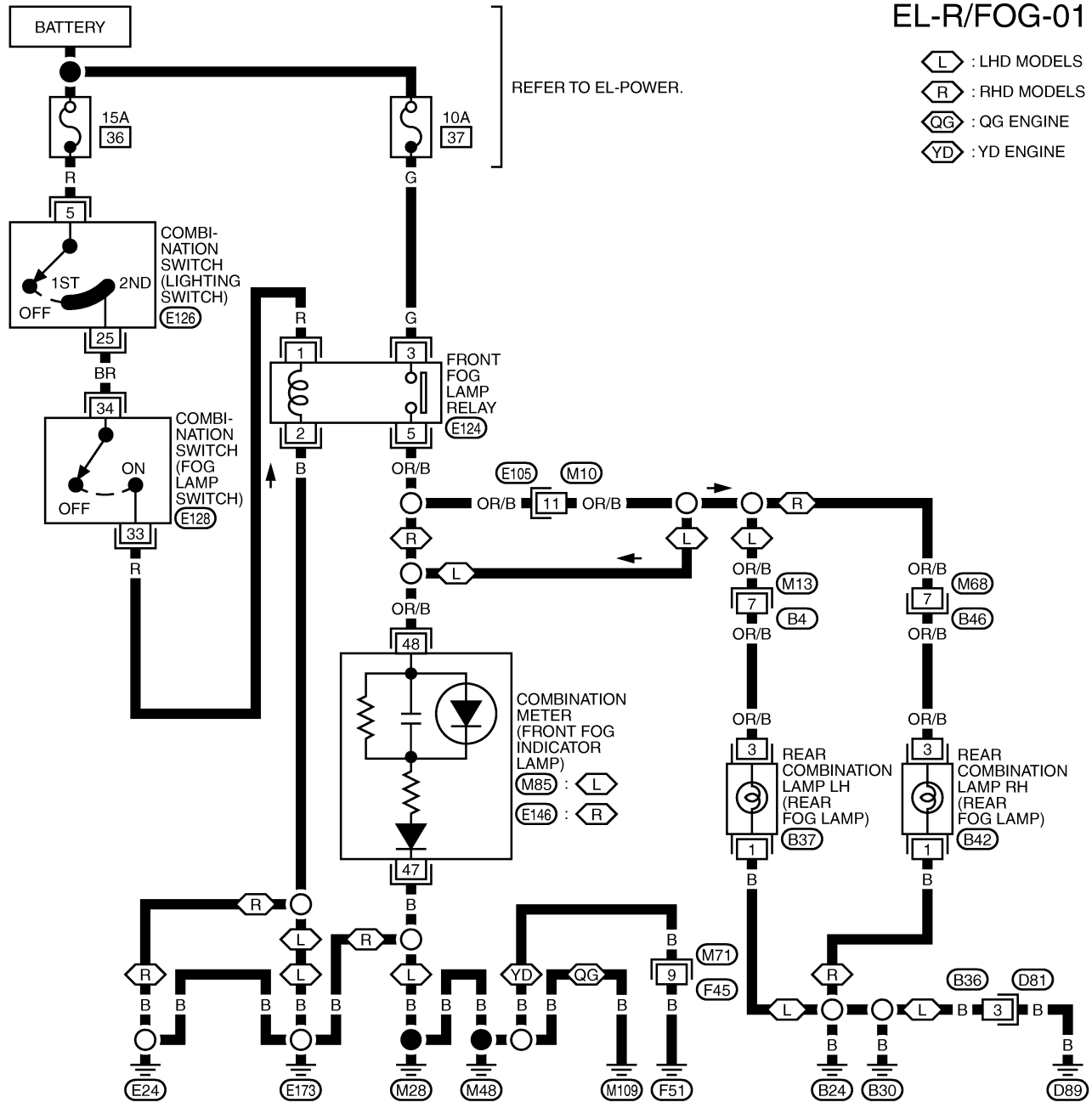
- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.

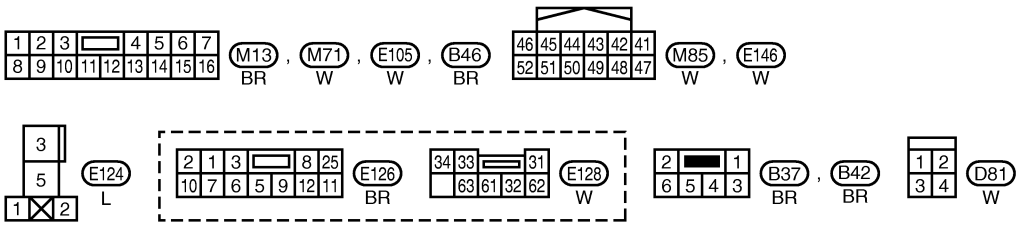
Wiring Diagram — R/FOG —

NLEL0429

TYPE 1

NLEL0429S01

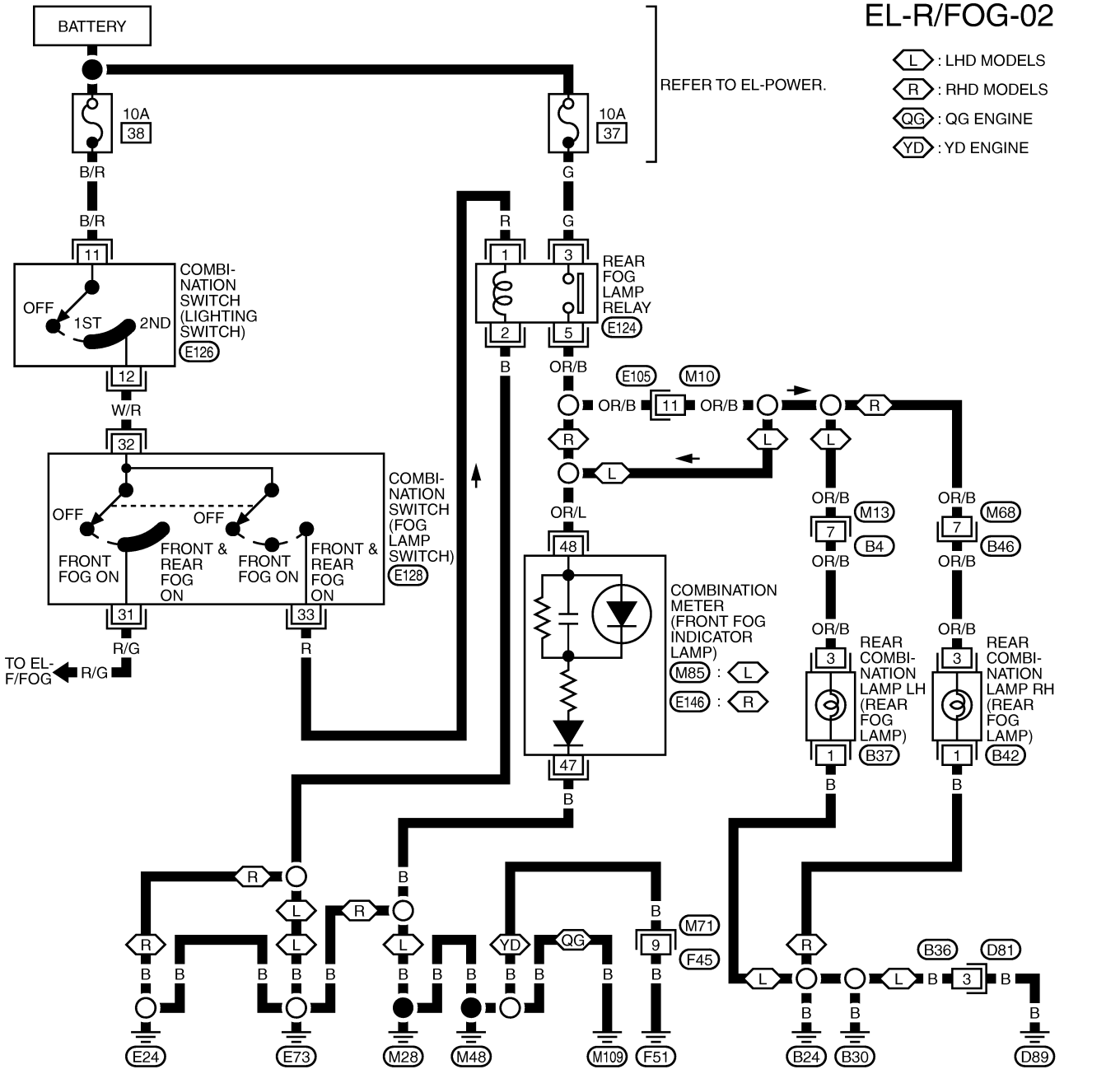


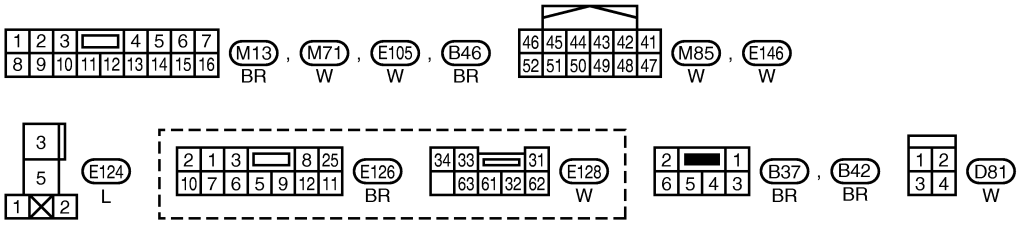


Wiring Diagram — R/FOG — (Cont'd)

TYPE 2

NLEL0429S02





YEL939D

System Description

NLEL0430

TURN SIGNAL OPERATION

NLEL0430S01

Power is supplied at all times

- through 10A fuse [No. 12, located in fuse block (J/B)]
- to smart entrance control unit terminal 56, and
- to combination meter terminal 3.

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

- through 10A fuse [No. 10, located in fuse block (J/B)]
- to smart entrance control unit terminal 29

Ground is supplied to smart entrance control unit terminal 53.

- through body grounds M28, M48 and M109 (QG engine models) or
- through body grounds M28, M48 and F51 (YD engine models).

LH Turn

NLEL0430S0101

When the turn signal switch is moved to the L position, ground is supplied from body grounds E24 and E73

- to smart entrance control unit terminal 25
- through turn signal switch terminals 3 and 1

With ground is supplied, smart entrance control unit controls the flashing of the LH turn signal lamps.
Power is supplied from smart entrance control unit terminal 64

- to front turn signal lamp LH terminal 1,
- to side turn signal lamp LH terminal 2 and
- to rear combination lamp LH terminal 2

Ground is supplied to the front turn signal lamp LH terminal 2 through body grounds E24 and E73.
Ground is supplied to the side turn signal lamp LH terminal 1 through body grounds E24 and E73.
Ground is supplied to the rear combination lamp LH terminal 1 through body grounds B24, B30 or D89 (LHD models).

RH Turn

NLEL0430S0102

When the turn signal switch is moved to the R position, ground is supplied from body grounds E24 and E73

- to smart entrance control unit terminal 26
- through turn signal switch terminals 2 and 1

With ground is supplied, smart entrance control unit controls the flashing of the RH turn signal lamps.
Power is supplied from smart entrance control unit terminal 63

- to front turn signal lamp RH terminal 1,
- to side turn signal lamp RH terminal 2 and
- to rear combination lamp RH terminal 2

Ground is supplied to the front turn signal lamp RH terminal 2 through body grounds E24 and E73.
Ground is supplied to the side turn signal lamp RH terminal 1 through body grounds E24 and E73.
Ground is supplied to the rear combination lamp RH terminal 1 through body grounds B24, B30 or D89 (LHD models).

HAZARD LAMP OPERATION

NLEL0430S02

With the hazard switch in the ON position, ground is supplied from body grounds M28 and M48

- to smart entrance control unit terminal 30
- through hazard switch terminals 6 and 4

With ground is supplied, smart entrance control unit controls the flashing of the hazard warning lamps.
Power is supplied from smart entrance control unit terminal 64

- to front turn signal lamp LH terminal 1,
- to side turn signal lamp LH terminal 2 and
- to rear combination lamp LH terminal 2

Power is supplied from smart entrance control unit terminal 63

- to front turn signal lamp RH terminal 1,
- to side turn signal lamp RH terminal 2 and
- to rear combination lamp RH terminal 2

Ground is supplied to terminal 2 of each front turn signal lamp through body grounds E24 and E73.
Ground is supplied to terminal 1 of each side turn signal lamp through body grounds E24 and E73.
Ground is supplied to terminal 1 of each rear combination lamp through body grounds B24, B30 or D89 (LHD models).
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps, and smart entrance control unit sent flashing indicator signal (hazard warning signal) to combination meter via CAN communication line.

- to combination meter terminals 39 and 40
- from smart entrance control unit terminals 8 and 11.

HAZARD REMINDER OPERATION FOR MULTI-REMOTE CONTROL SYSTEM

NLEL0430S04

When the doors are locked or unlocked by multi-remote controller, smart entrance control unit controls turn lamps hazard reminder flashes as follows.

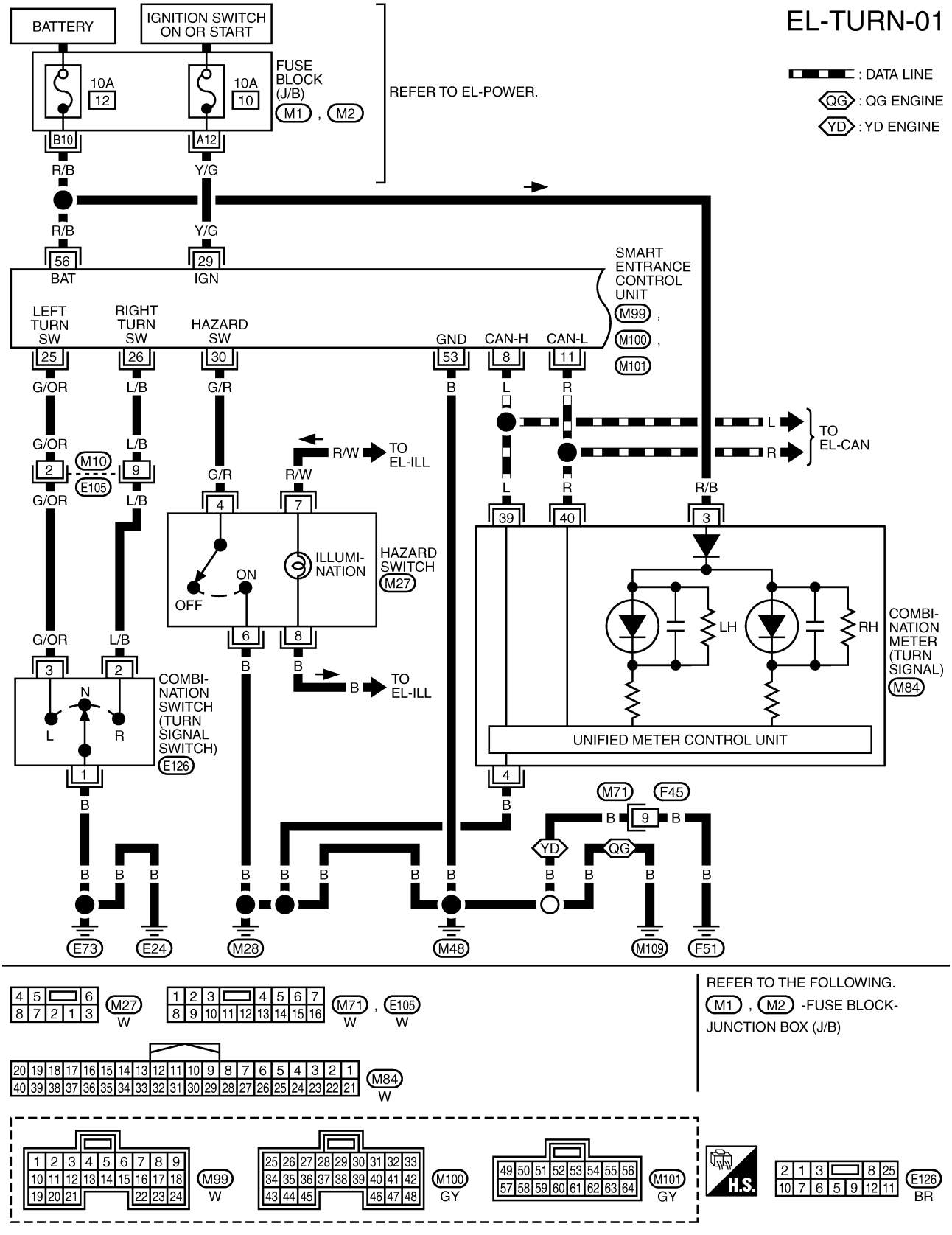
- Locked operation: Flash once
- Unlock operation: Flash twice

Wiring Diagram — TURN —

NLEL0431

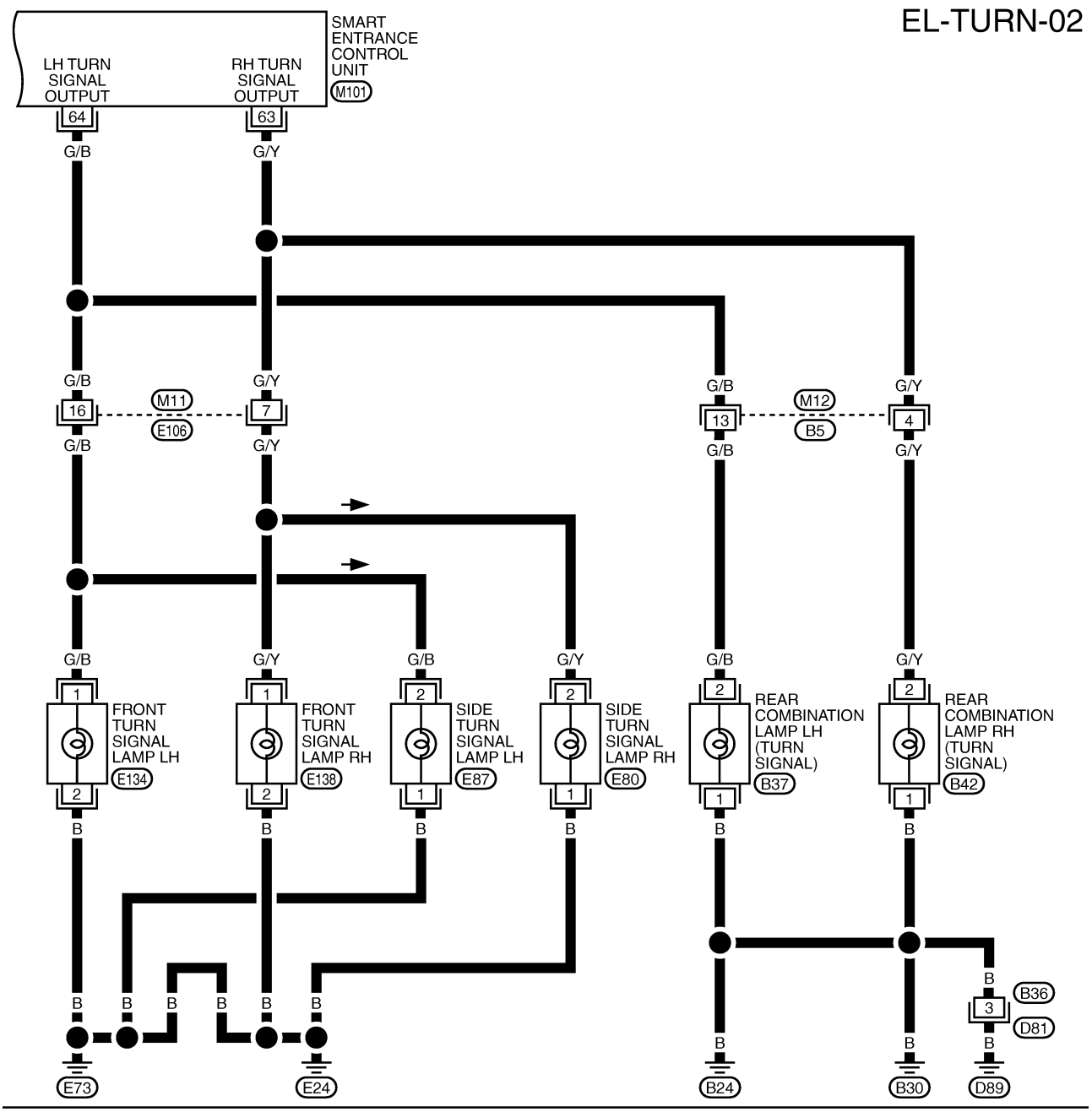
LHD MODELS

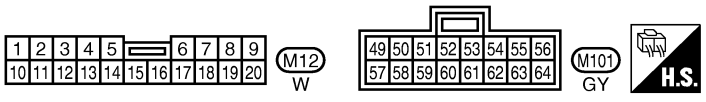
NLEL0431S01

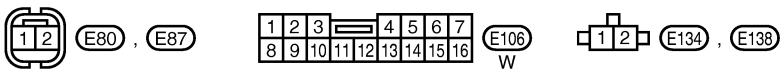


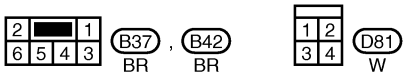
YEL940D

Wiring Diagram — TURN — (Cont'd)





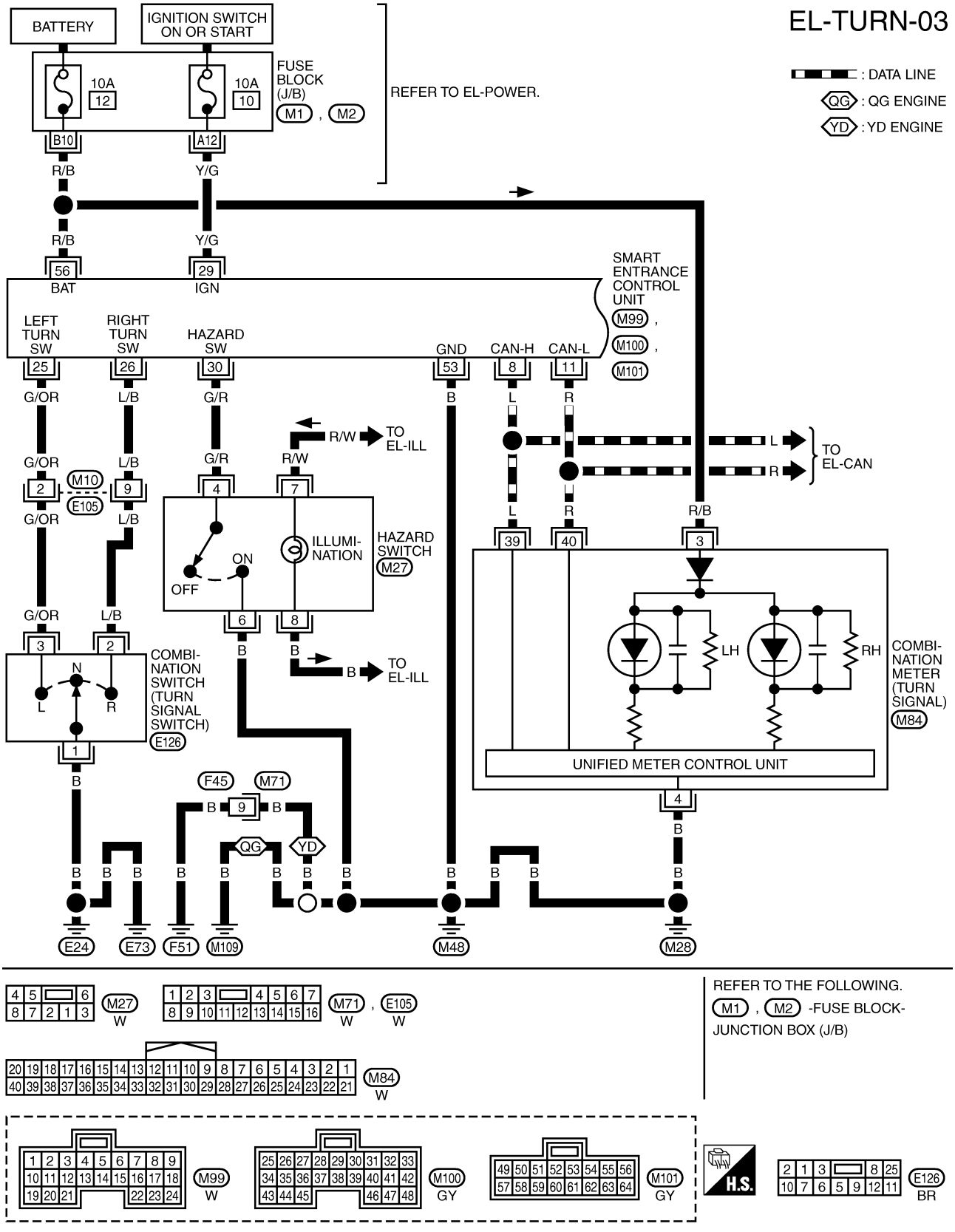




YEL941D

RHD MODELS

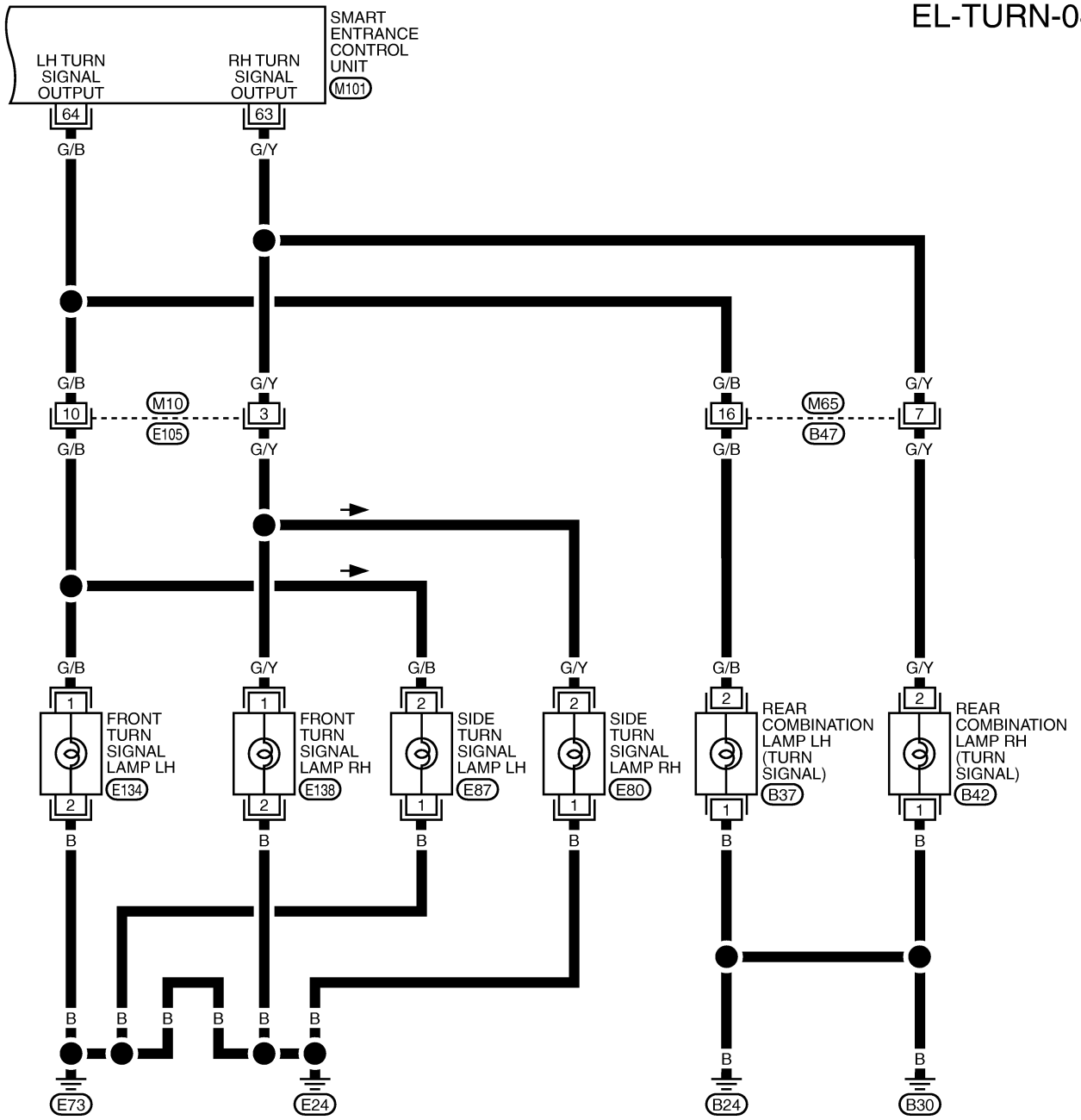
NLEL0431S02

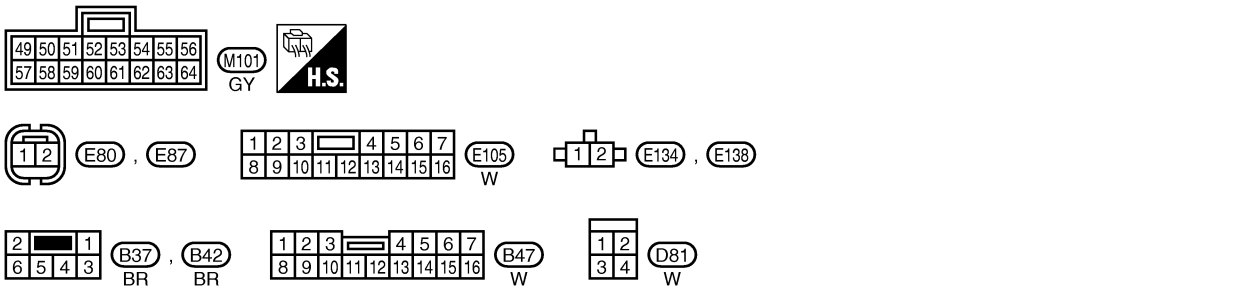


REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL045E

EL-TURN-04





YEL571E

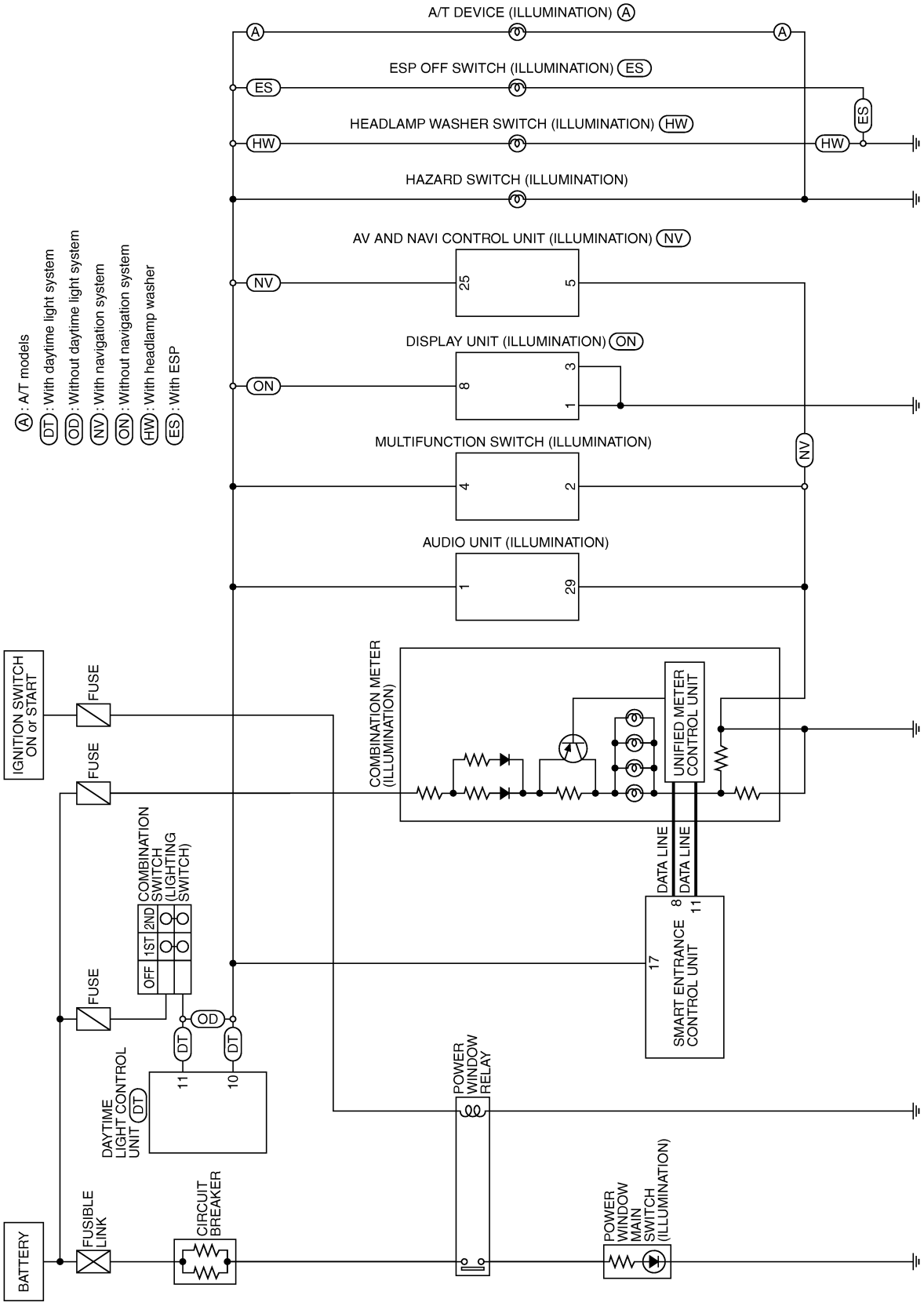
Trouble Diagnoses

NLEL0432

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Smart entrance control unit 2. Smart entrance control unit circuit	1. Check power door lock operation. 2. Check power supply and ground circuit for smart entrance control unit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. Turn signal switch 2. Open in turn signal switch circuit	1. Check turn signal switch. 2. Check turn signal switch ground for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. Hazard switch 2. Open in hazard switch circuit	1. Check hazard switch. 2. Check the following. ● Harness for open or short between smart entrance control unit and ground ● Hazard switch ground for open circuit
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Open in front turn signal lamp circuit	1. Check bulb. 2. Check power supply and ground circuit for front turn signal lamp.
Side turn signal lamp LH or RH does not operate.	1. Bulb 2. Open in side turn signal lamp circuit	1. Check bulb. 2. Check power supply and ground circuit for side turn signal lamp.
Rear combination lamp LH or RH does not operate.	1. Bulb 2. Open in rear combination lamp circuit	1. Check bulb. 2. Check grounds check power supply and ground circuit for rear combination lamp.
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds E24, E73, B30 or D89 (LHD models) 2. Perform self-diagnosis for smart entrance control unit with CONSULT-II. ● If self-diagnosis result is OK, replace combination meter. ● If self-diagnosis result is NG, refer to EL-351, “CAN Communication Line Check”.
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.

Schematic

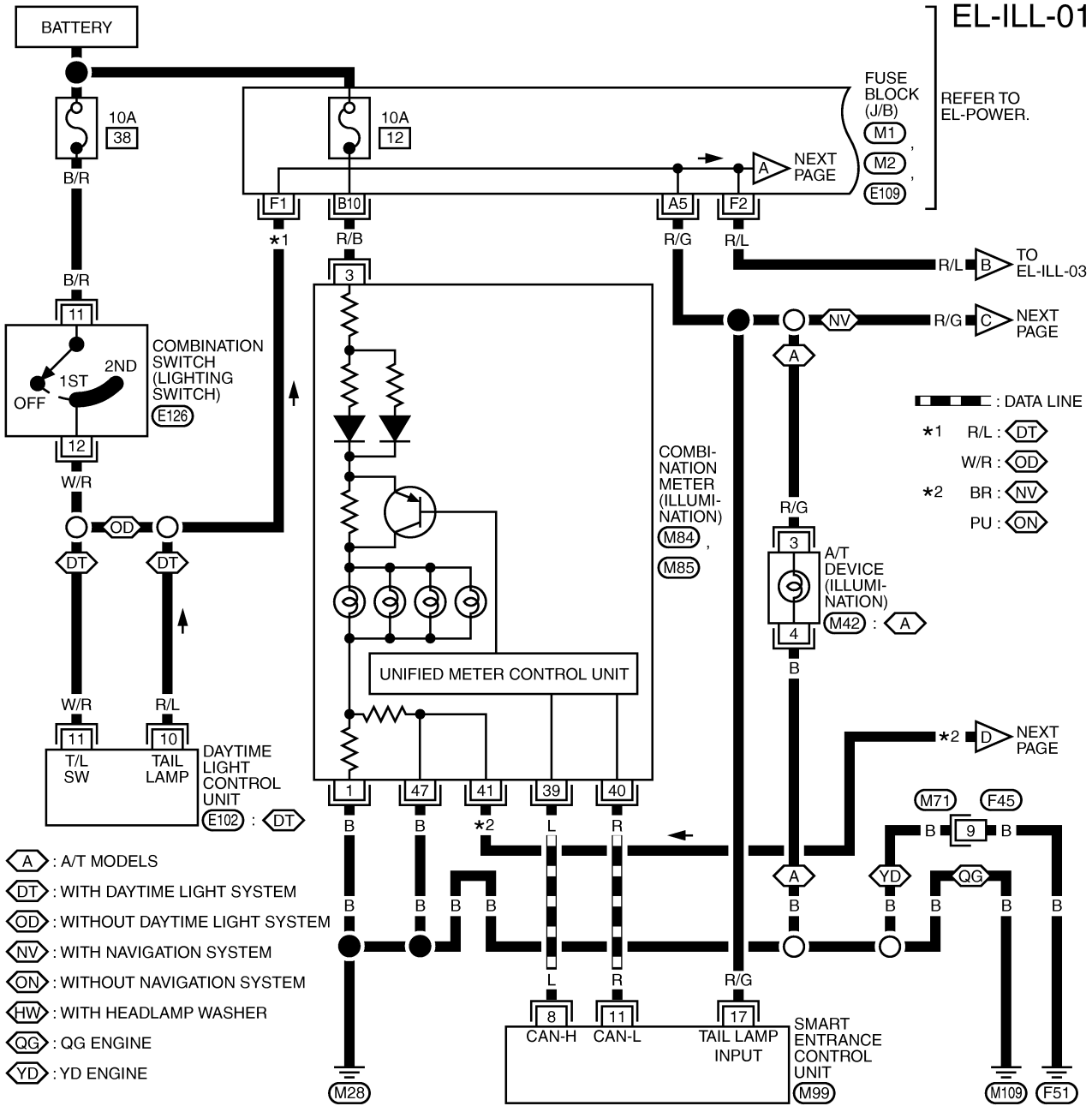
NLEL0433

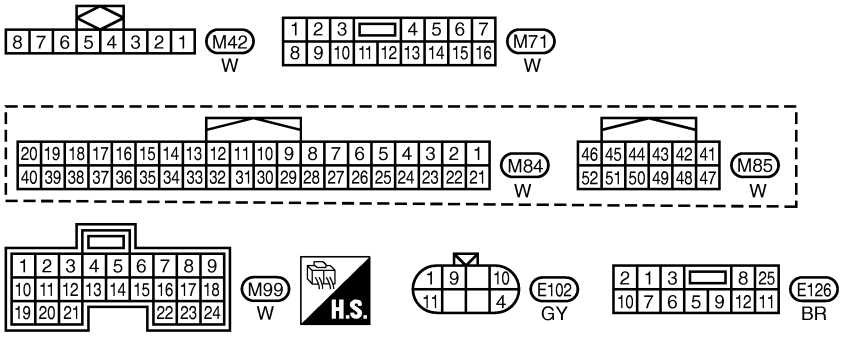


YEL942D

Wiring Diagram — ILL —

NLEL0434





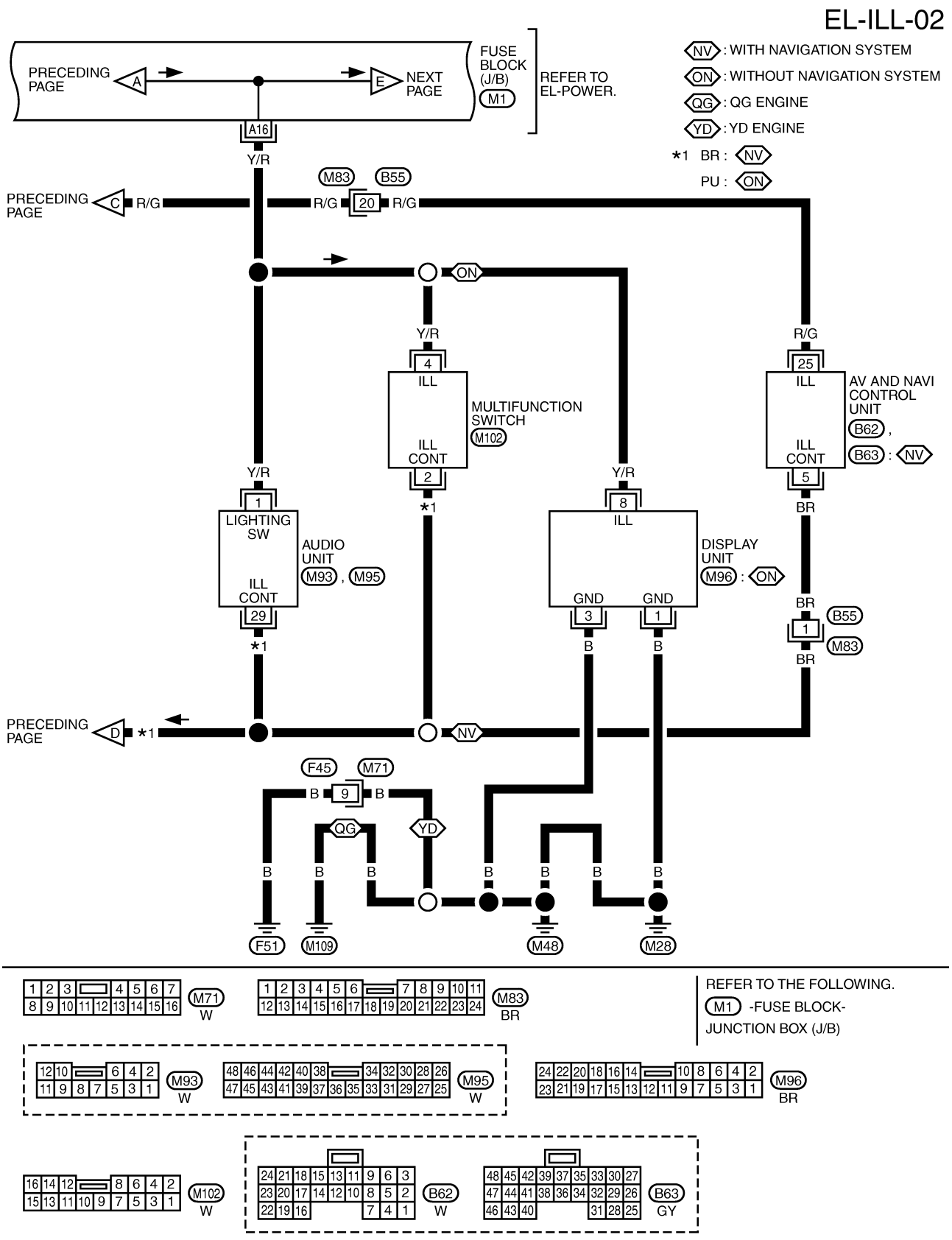
REFER TO THE FOLLOWING.

M1 , M2 , E109

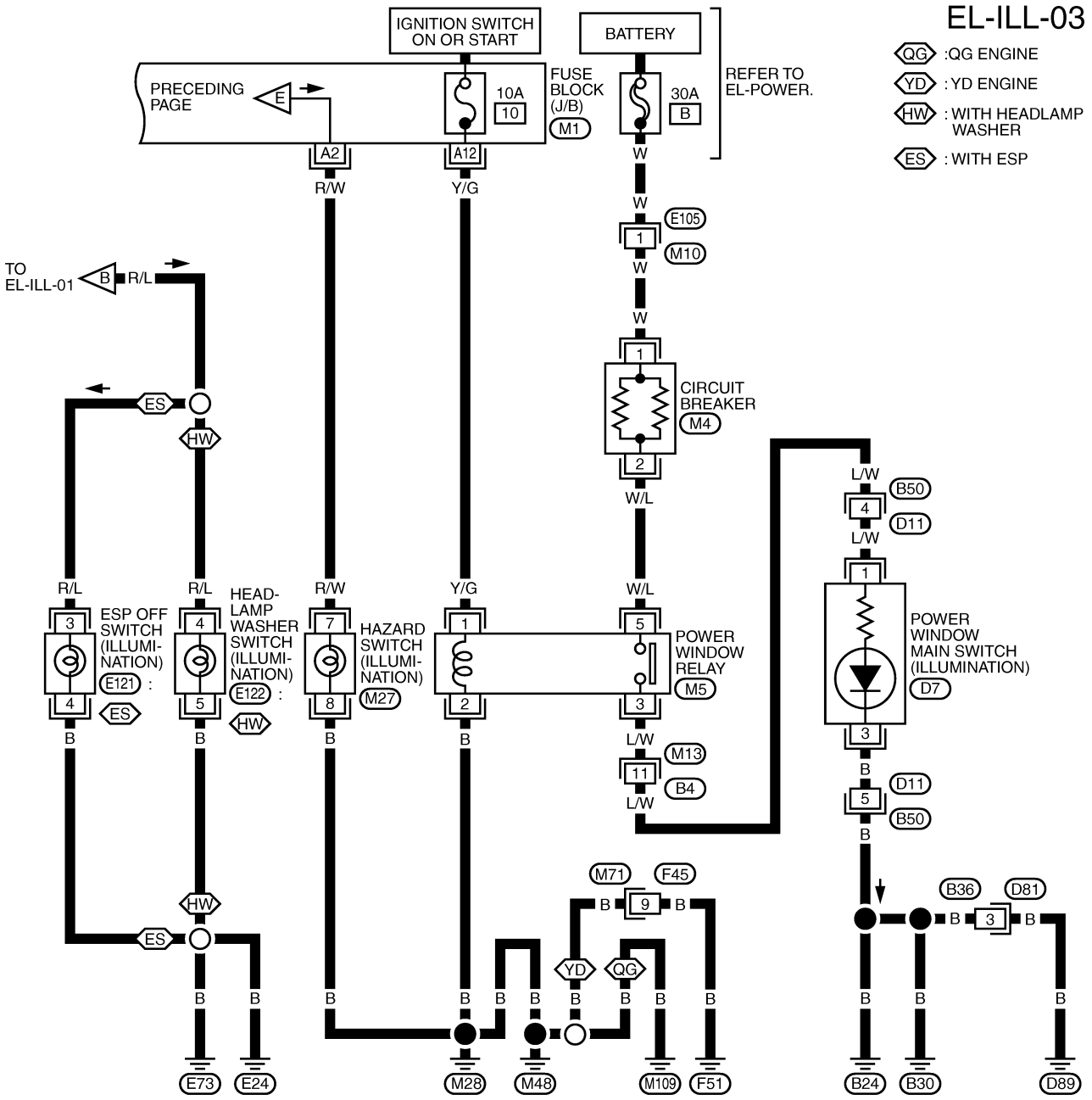
-FUSE BLOCK- JUNCTION BOX (J/B)

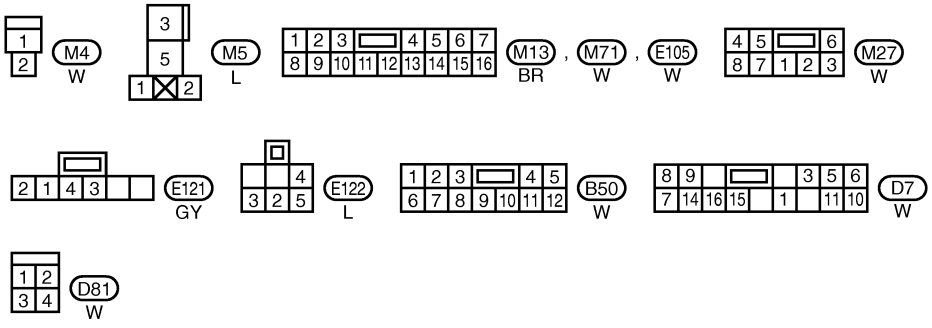
YEL943D

Wiring Diagram — ILL — (Cont'd)



YEL944D

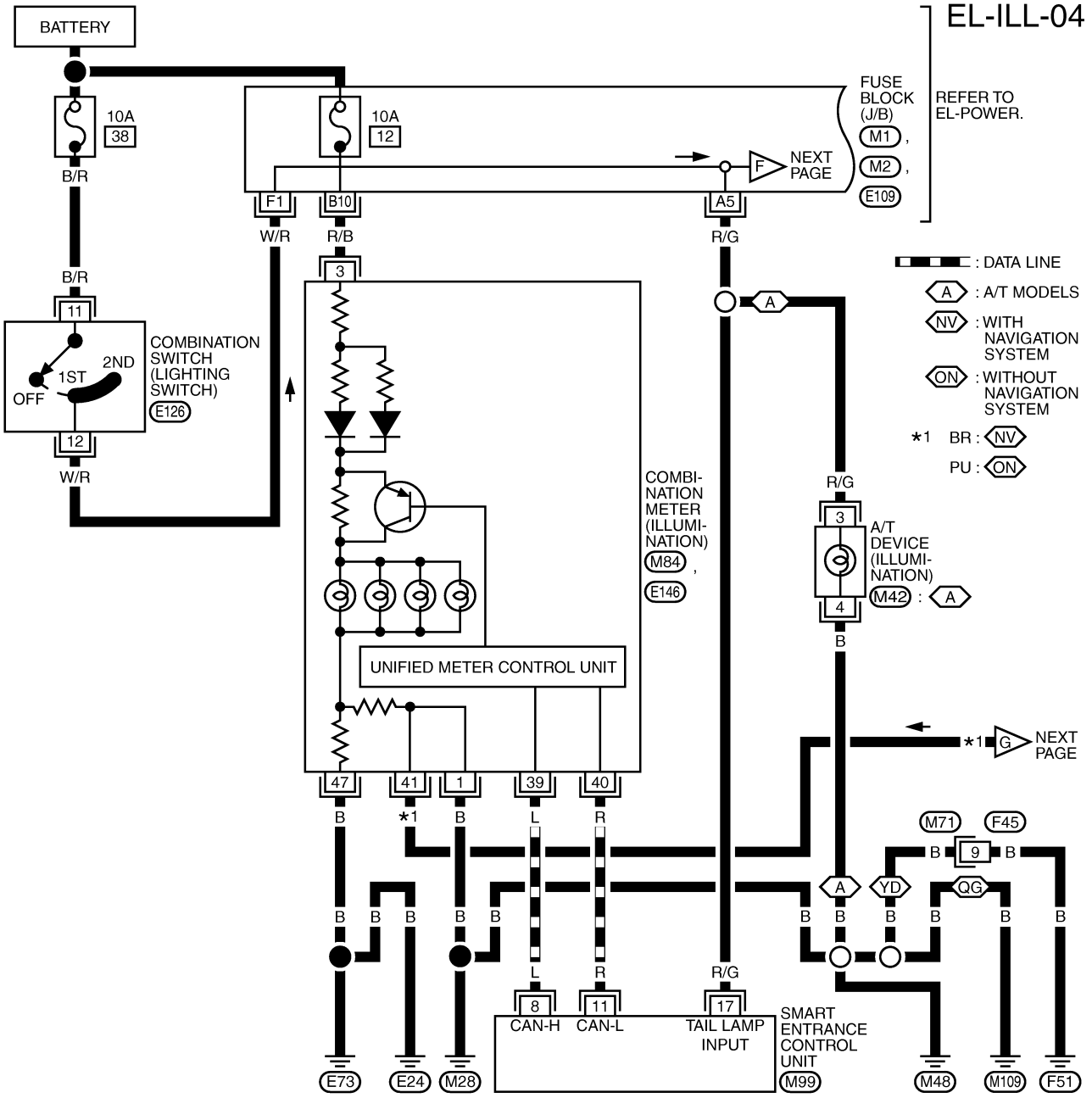


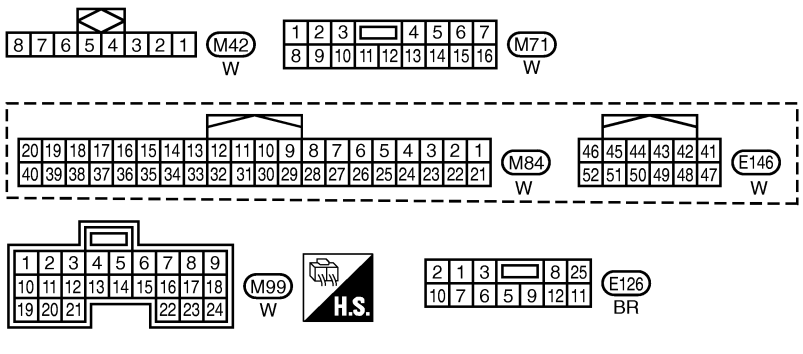


REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL945D

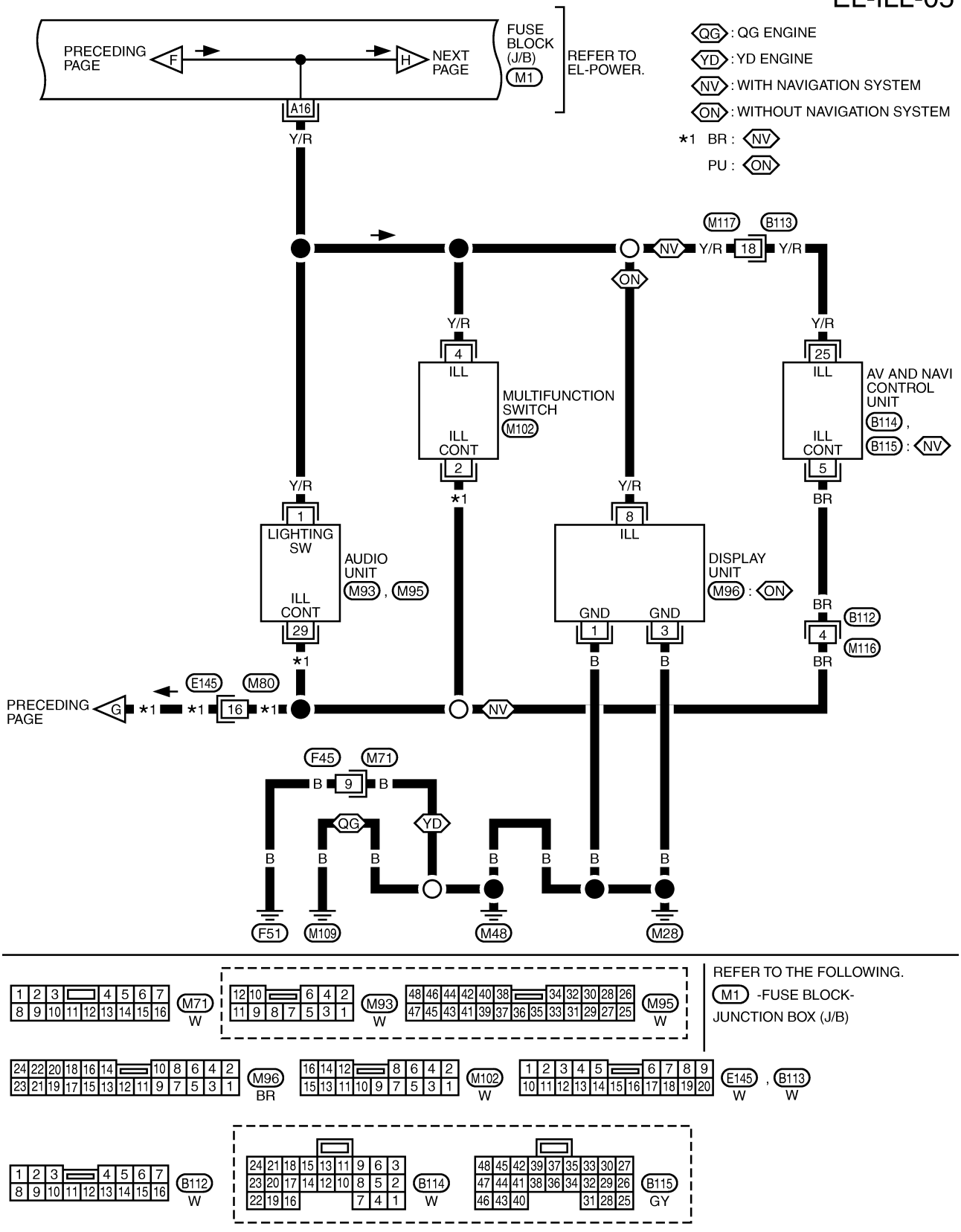




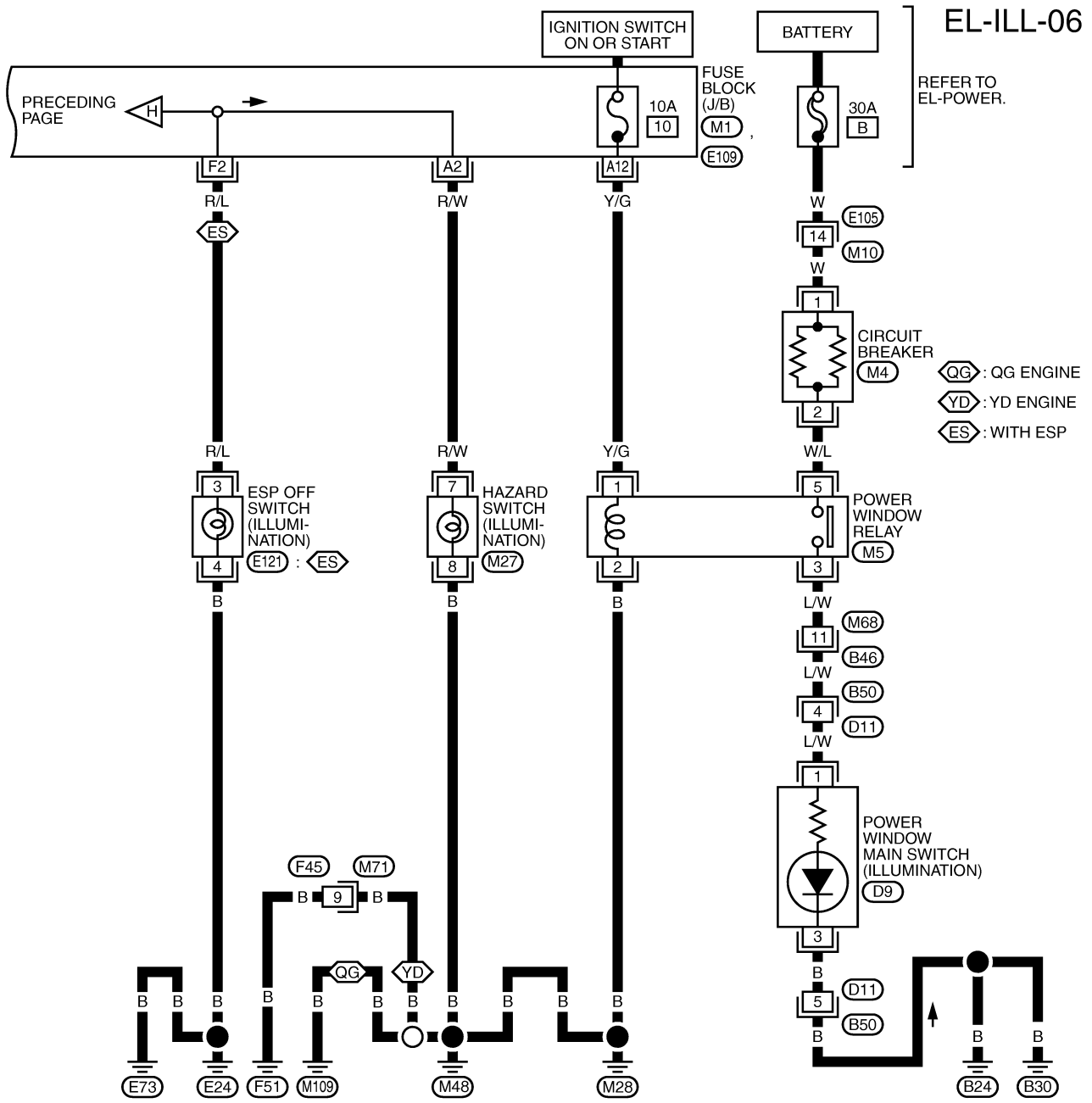
REFER TO THE FOLLOWING.
M1 , M2 , E109
-FUSE BLOCK- JUNCTION BOX (J/B)

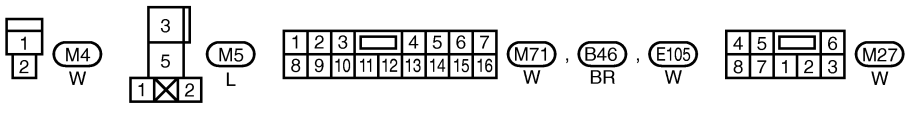
YEL946D

EL-ILL-05



YEL947D





REFER TO THE FOLLOWING.
M1 , E109 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL948D

System Description

NLEL0435

POWER SUPPLY AND GROUND

NLEL0435S01

Power is supplied at all times:

- through 15A fuse [No. 5, located in the fuse block (J/B)]
- to smart entrance control unit terminal 56,
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to spot lamp terminal 1,
- to interior room lamp terminal 1 (with sunroof),
- to interior room lamp terminal 5 (without sunroof), or
- to rear reading lamp terminal 5 (with rear reading lamp).
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 1 (for RHD models).

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

- through key switch terminal 2
- to smart entrance control unit terminal 5.

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 29.

Ground is supplied:

- through body grounds terminals M28, M48 and M109 (QG engine models) or F51 (YD engine models).
- to smart entrance control unit terminal 53

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

- through body grounds B24 and B30 or D89 (for LHD models)
- to door switch driver side terminal 3
- from door switch driver side terminal 2
- to smart entrance control unit terminal 43.

When any door is opened, ground is supplied:

- through case ground of each door switch
- to each door switch terminal 1
- to smart entrance control unit terminal 44.

When the driver side door is unlocked by the door lock/unlock switch, the smart entrance control unit receives a ground signal:

- through body grounds B24 and B30, or D89 (for LHD models)
- to power window main switch terminal 3
- from power window main switch terminal 7
- to smart entrance control unit terminal 14.

When the driver side door is locked by the door lock/unlock switch, the smart entrance control unit receives a ground signal:

- through body grounds B24 and B30, or D89 (for LHD models)
- to power window main switch terminal 3
- from power window main switch terminal 14
- to smart entrance control unit terminal 13.

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

- through smart entrance control unit terminal 28
- to interior room lamp terminal 5.

With power and ground supplied, the interior room lamp illuminates when the lamp switch is in “DOOR” position.

SWITCH OPERATION

NLEL0435S02

When interior room lamp switch is in “ON” position, ground is supplied:

- through body grounds M28, M48, M109 (QG engine) or F51 (YD engine)
- to interior room lamp terminal 3.

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

- through body grounds M28, M48, M109 (QG engine models) or F51 (YD engine models)
- to spot lamp terminal 2.

When rear reading lamp (LH or RH) is ON, ground is supplied:

- through body grounds M28, M48, M109 (QG engine models) or F51 (YD engine models)
- to rear reading lamp terminal 6.

With power and ground supplied, the interior room lamp, spot lamp or rear reading lamp illuminates.

INTERIOR ROOM LAMP TIMER OPERATION

NLEL0435S03

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

- unlock signal is supplied from door lock/unlock switch while all doors are closed
- unlock signal is supplied from remote controller or door key cylinder while all doors are closed
- key is removed from ignition key cylinder while all doors are closed (with super lock system)
- driver's door is opened and then closed

The timer is canceled when:

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

ON-OFF CONTROL

NLEL0435S04

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.

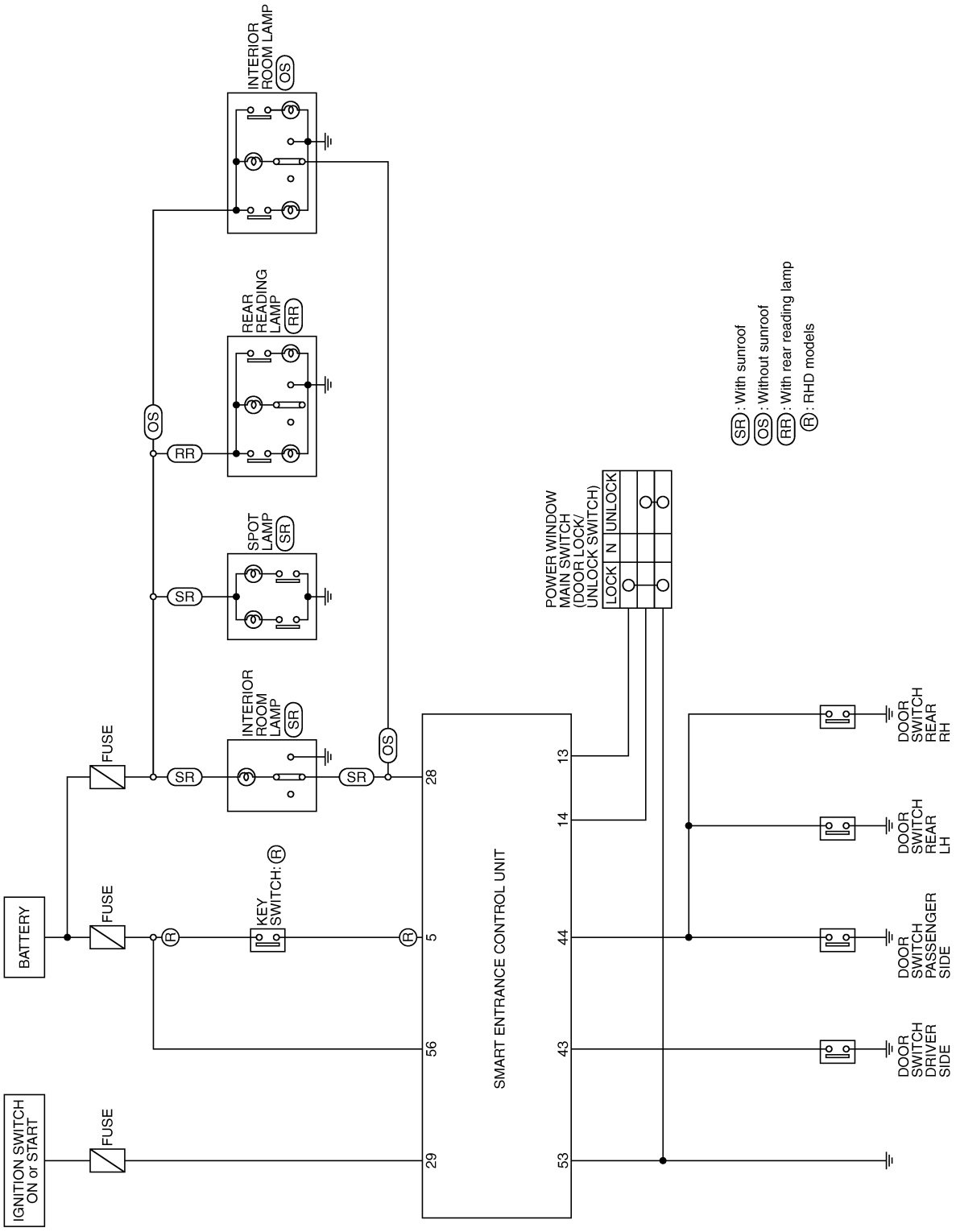
BATTERY SAVER

NLEL0435S11

The interior room lamp is turned OFF automatically with the lamp switch in the "DOOR" position after about 30 minutes, if the lamp remains lit by the door switch open signal.

Schematic

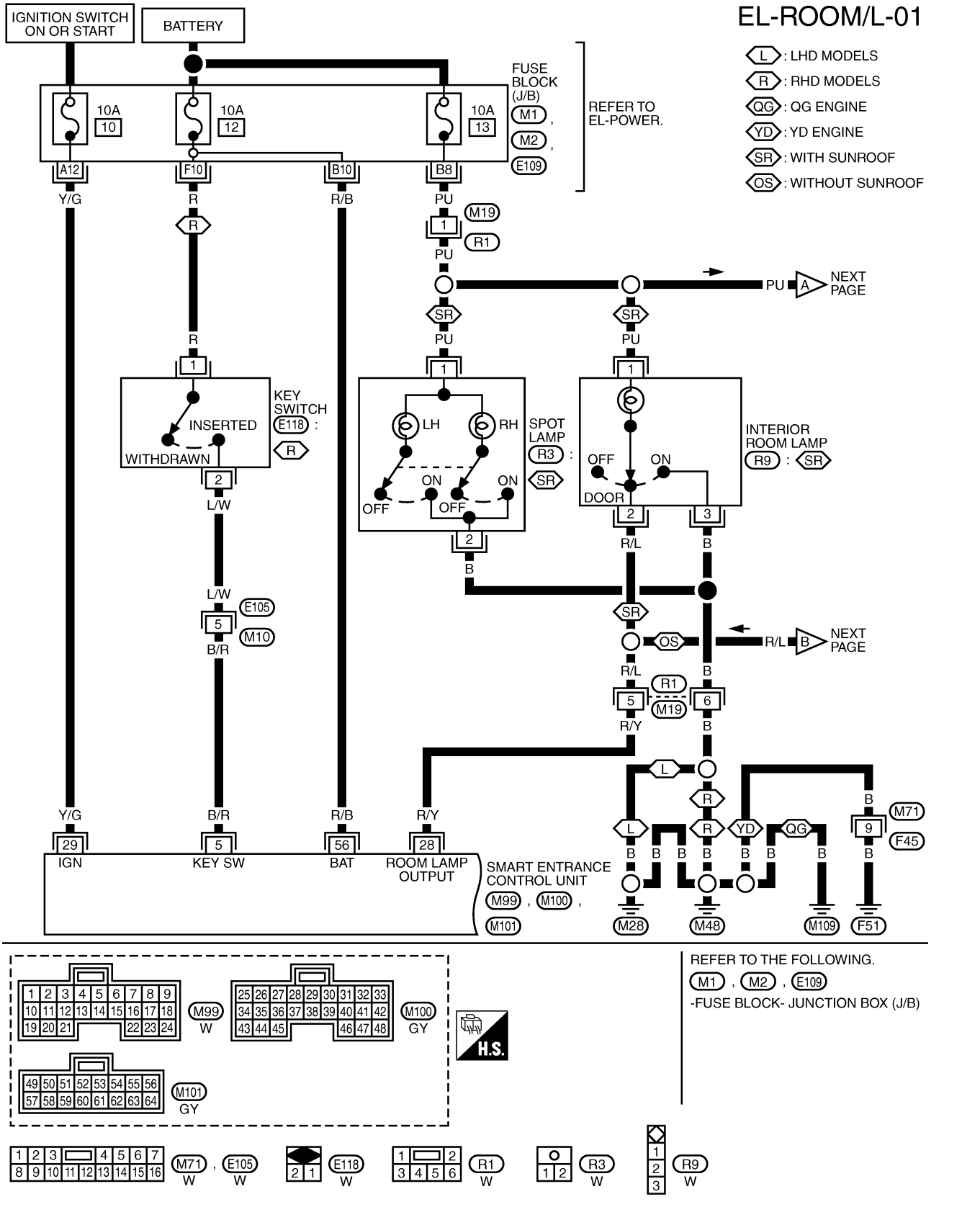
NLEL0637



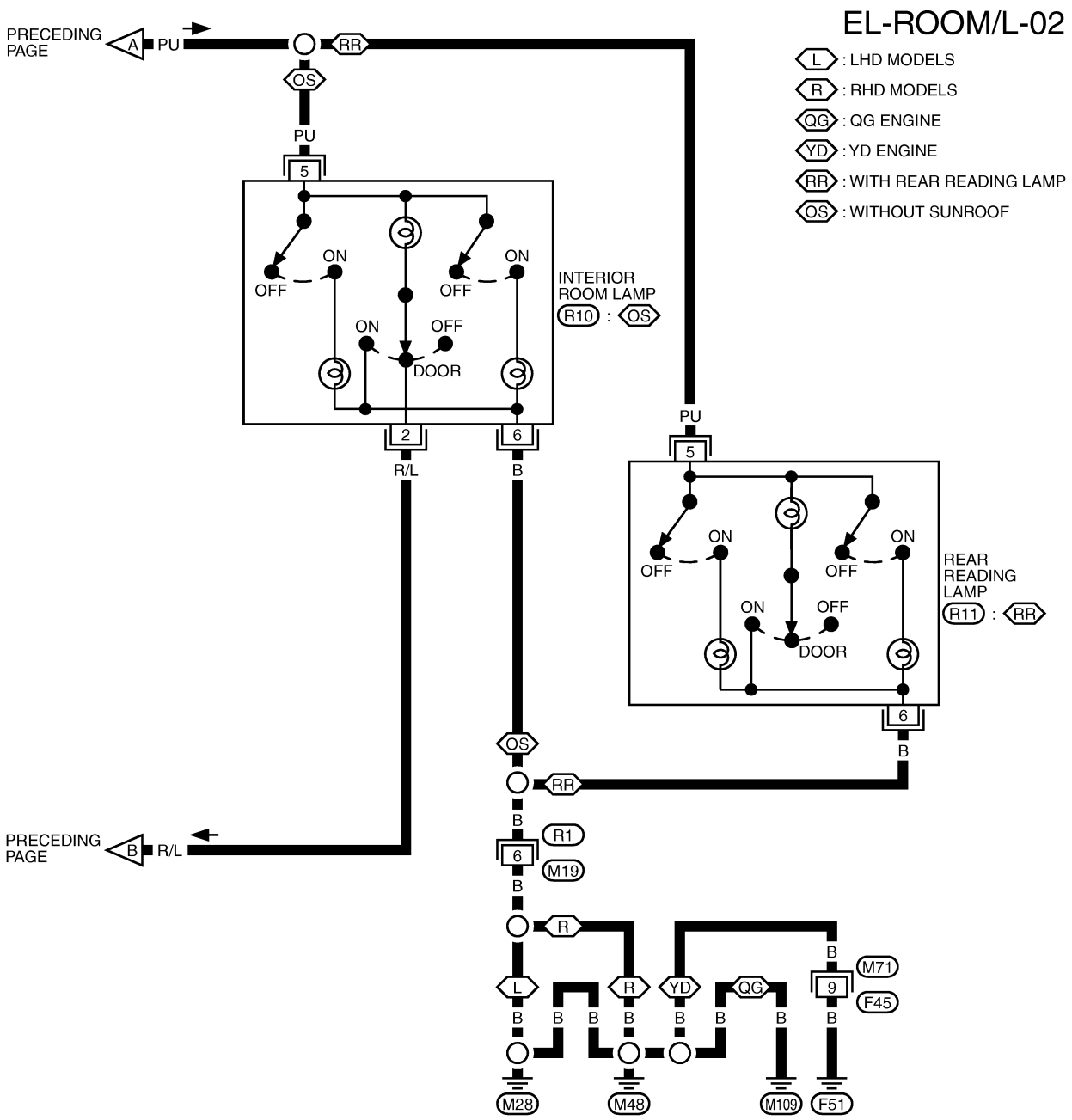
YEL949D

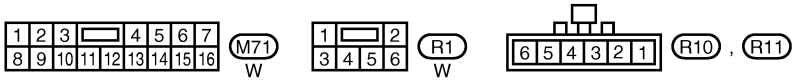
Wiring Diagram — ROOM/L —

NLEL0436



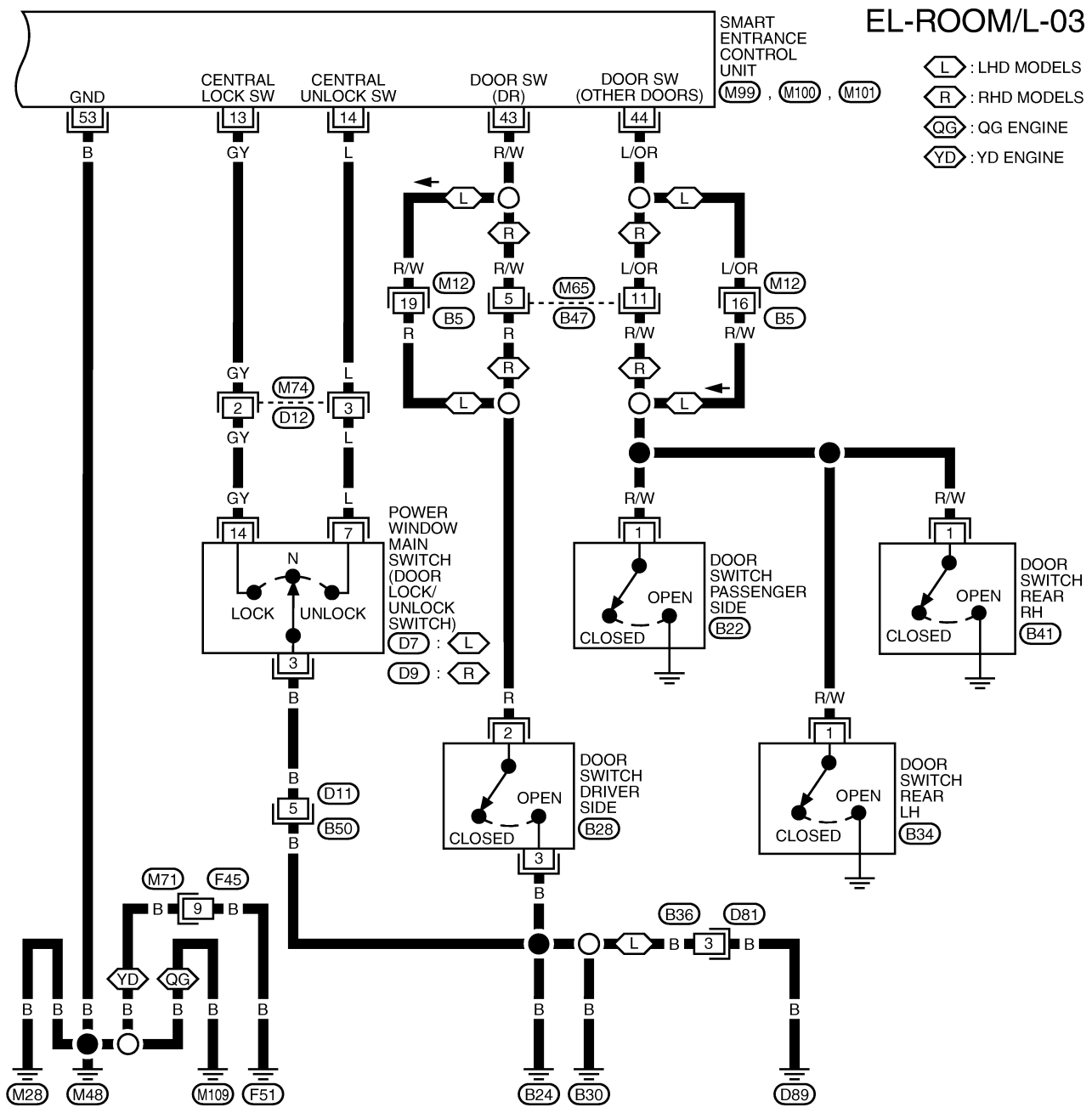
YEL950D


EL-ROOM/L-02
L : LHD MODELS
R : RHD MODELS
QG : QG ENGINE
YD : YD ENGINE
RR : WITH REAR READING LAMP
OS : WITHOUT SUNROOF
PRECEDING PAGE
A
PU
RR
OS
PU
5
ON
OFF
ON
OFF
ON
OFF
DOOR
INTERIOR ROOM LAMP
R10 : OS
2
6
R/L
B
PU
5
ON
OFF
ON
OFF
ON
OFF
DOOR
REAR READING LAMP
R11 : RR
6
B
OS
RR
B
R1
6
M19
B
PRECEDING PAGE
B
R/L
R
L
R
YD
QG
B
M71
9
F45
B
B
B
B
B
B
B
B
M28
M48
M109
F51


1 2 3 4 5 6 7
8 9 10 11 12 13 14 15 16
M71
W
1 2
3 4 5 6
R1
W
6 5 4 3 2 1
R10 , R11

YEL951D

Wiring Diagram — ROOM/L — (Cont'd)

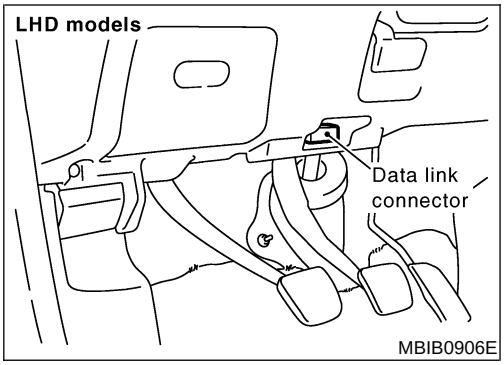


YEL952D

Terminal and Reference Valve for Smart Entrance Control Unit

NLEL0680

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
5	B/R	Key switch	Ignition key Removed → Inserted	0V → 12V
13	GY	Door lock/unlock switches	Neutral → Locks	12V → 0V
14	L	Door lock/unlock switches	Neutral → Unlocks	12V → 0V
28	R/Y	Interior room lamp	When interior lamp is operated using remote controller (Lamp switch in “DOOR” position)	12V → 0V
29	Y/G	Ignition key switch	Ignition key is in “ON” position	12V
43	R/W	Front door switch	Front door (Driver side): Open → Closed	12V → 0V
44	L/OR	Front door switch (Passenger side)	Front door (Passenger side): Open → Closed	0V → 12V
53	B	Ground	—	0V
56	R/B	Power source	—	12V



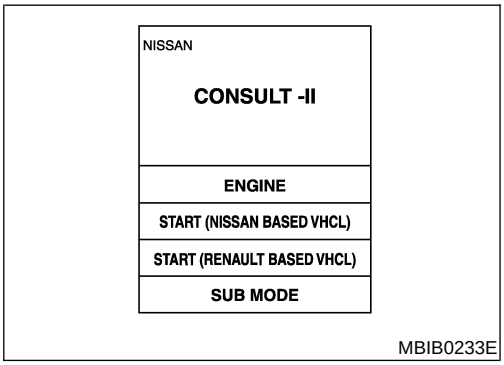
MBIB0906E

CONSULT-II Inspection Procedure

=NLEL0681

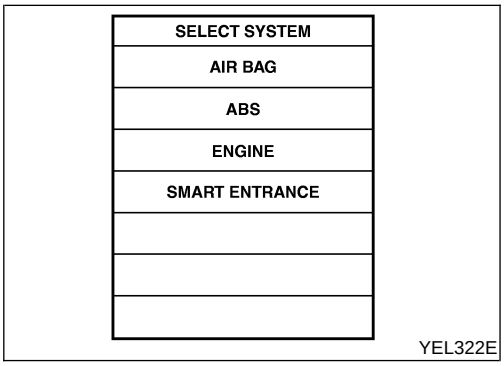
“ROOM LAMP”

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



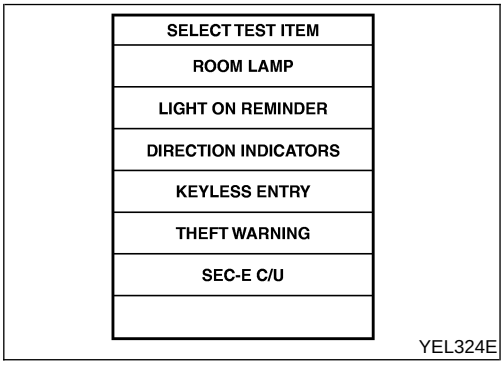
MBIB0233E

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



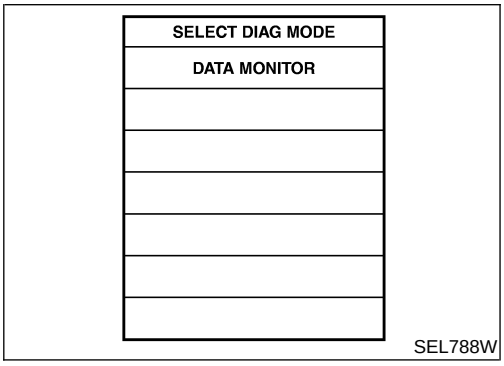
YEL322E

5. Touch “SMART ENTRANCE”.



YEL324E

6. Touch “ROOM LAMP”.



SEL788W

7. Select diagnosis mode.
   “DATA MONITOR” are available for “ROOM LAMP”.

CONSULT-II Application Items

NLEL0682

ROOM LAMP
Data Monitor Mode

Item (CONSULT-II screen terms)	Diagnosed system
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
KEY IN DETECT	Indicates [ON/OFF] condition of electronic key switch.
DOOR SW DR RR	Indicates [ON/OFF] condition of rear door switch (driver side).
DOOR SW AS RR	Indicates [ON/OFF] condition of rear door switch (passenger side).
AS DOOR SW	Indicates [ON/OFF] condition of front door switch (passenger side).
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch (lock signal).
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch (unlock signal).
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.
RKE UNLOCK	Indicates [ON/OFF] condition of unlock signal from remote controller.
RKE SEL UNLOCK	Indicates [ON/OFF] condition of select unlock signal from remote controller.
KEY CYL LK	Indicates [ON/OFF] condition of lock signal from door key cylinder.
KEY CYL UNLK	Indicates [ON/OFF] condition of unlock signal from door key cylinder.

Trouble Diagnoses

=NLEL0533

DIAGNOSTIC PROCEDURE 1

NLEL0533S04

Symptom: Interior room lamp timer does not operate

NLEL0533S0401

1	CHECK IGNITION ON SIGNAL

WITH CONSULT-II

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

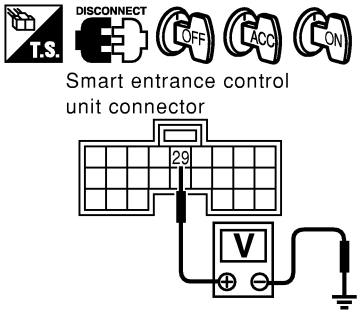
DATA MONITOR	
MONITOR	
IGNITION SW	ON

MKIB0196E

When ignition switch is ON: IGNITION SW ON
When ignition switch is OFF: IGNITION SW OFF

WITHOUT CONSULT-II

1. Disconnect smart entrance control unit.
2. Check voltage between smart entrance control unit harness connector M100 terminal 29 (Y/G) and ground.



MKIB0072E

Terminals			Ignition switch position		
(+)		(—)	OFF	ACC	ON
Connector	Terminal (wire color)				
M100	29 (Y/G)	Ground	0V	0V	Battery voltage

MTBL1635

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 ("DR DOOR SW") in "DATA MONITOR" mode with CONSULT-II.

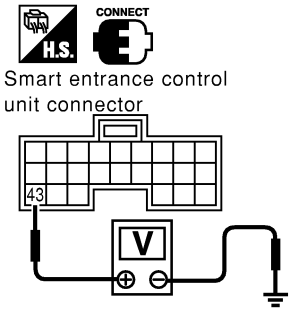
DATA MONITOR	
MONITOR	
DR DOOR SW	ON

MKIB0197E

When driver's door switch is open: DR DOOR SW ON
When driver's door switch is closed: DR DOOR SW OFF

WITHOUT CONSULT-II

1. Connect smart entrance control unit connector.
2. Check voltage between smart entrance control unit harness connector M100 terminal 43 (R/W) and ground.



MKIB0073E

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

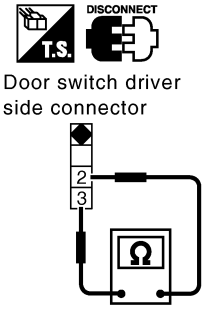
MTBL1423

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DRIVER SIDE DOOR SWITCH

1. Disconnect door switch driver side connector.
2. Check continuity between door switch driver side harness connector B28 terminals 2 and 3.



Door switch driver side connector

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

YEL348E

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and door switch driver side.
NG	▶	Replace door switch driver side.

4	CHECK DOOR LOCK/UNLOCK SWITCH

WITH CONSULT-II

Check door lock/unlock switch signal ("CDL LOCK SW" or "CDL UNLOCK SW") in "DATA MONITOR" mode with CONSULT-II.

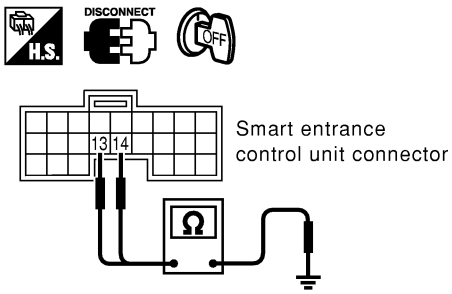
DATA MONITOR	
MONITOR	
CDL LOCK SW	OFF
CDL UNLOCK SW	ON

MKIB0198E

When door lock/unlock is locked:
CDL LOCK SW ON
CDL UNLOCK SW OFF
When door lock/unlock is unlocked:
CDL LOCK SW OFF
CDL UNLOCK SW ON

WITHOUT CONSULT-II

Check voltage between smart entrance control unit harness connector M99 terminals 13 (GY), 14 (L) and ground.



SIIA1567E

Terminals (+) Connector	Terminals (+) Terminal (wire color)	Terminals (—)	Condition (Door lock/unlock switch)	Voltage [V]
M99	13 (GY)	Ground	Locked	0
			Unlocked	Approx. 12
	14 (L)		Locked	Approx. 12
			Unlocked	0

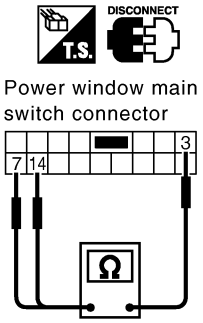
MTBL1636

OK or NG

OK	▶	GO TO 6.
NG	▶	GO TO 5.

5	CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect power window main switch (door lock/unlock switch) harness connector.
2. Check continuity between power window main switch (door lock/unlock switch) harness connector D7 (LHD models) or D9 (RHD models) terminals 7, 14 and 3.



Condition	Terminals		
	3	14	7
Lock	○	○	
N	No continuity		
Unlock	○		○

YEL349E

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and power window main switch (door lock/unlock switch).
NG	▶	Replace power window main switch.

6	CHECK OTHER DOORS SWITCHES INPUT SIGNAL

WITH CONSULT-II

Check other doors switch signal ("AS DOOR SW", "RR DOOR SW" or "RR RH DOOR SW") in "DATA MONITOR" mode with CONSULT-II.

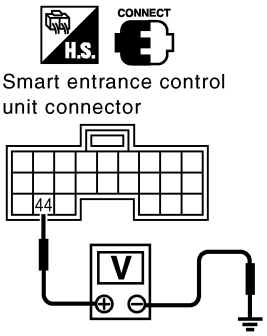
DATA MONITOR	
MONITOR	
AS DOOR SW	ON

YEL325E

When each doors is open: AS DOOR SW ON
When each doors is closed: AS DOOR SW OFF

WITHOUT CONSULT-II

Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



Condition (each door)	Voltage [V]
Closed	Approx. 12
Open	Approx. 0

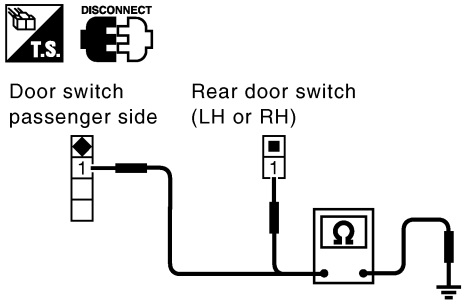
YEL326E

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 terminal 1 and ground.



YEL327E

Door switch	Connector	Condition (Passenger or rear door)	Continuity
Passenger side	B22	Open	Yes
		Closed	No
Rear LH side	B41	Open	Yes
		Closed	No
Rear RH side	B34	Open	Yes
		Closed	No

MTBL1637

OK or NG

OK	▶	Check 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 signal ("KEY IN DETECT") in "DATA MONITOR" mode with CONSULT-II.

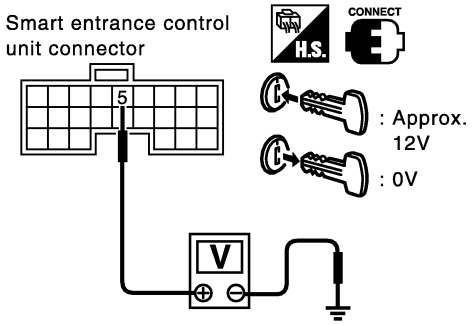
DATA MONITOR	
MONITOR	
KEY IN DETECT	ON

MKIB0200E

When key is inserted: KEY IN DETECT ON
When key is removed: KEY IN DETECT OFF

WITHOUT CONSULT-II

Check voltage between smart entrance control unit harness connector M193 terminal 5 (L/W) and ground.



MKIB0079E

Condition	Voltage [V]
Key is inserted from ignition key cylinder.	Approx. 12
Key is removed from ignition key cylinder.	0

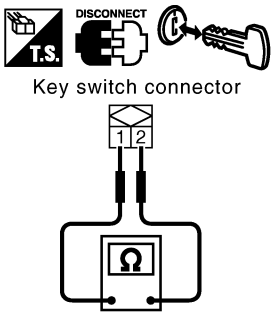
MTBL1430

OK or NG

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

9	CHECK KEY SWITCH (INSERT)

1. Disconnect key switch connector.
2. Check continuity between 1 and 2.



Key switch connector

YEL574E

Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

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

=NLEL0533S05

Symptom: Interior room lamp timer does not cancel

NLEL0533S0501

1 CHECK IGNITION ON SIGNAL

WITH CONSULT-II

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

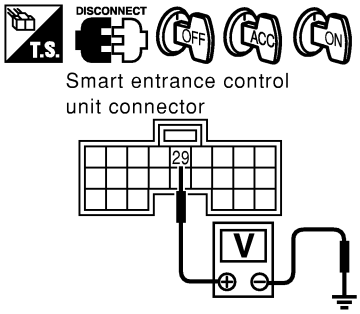
DATA MONITOR	
MONITOR	
IGNITION SW	ON

MKIB0196E

When ignition switch is ON: IGNITION SW ON
When ignition switch is OFF: IGNITION SW OFF

WITHOUT CONSULT-II

1. Disconnect smart entrance control unit connector.
2. Check voltage between smart entrance control unit harness connector M100 terminal 29 (Y/G) and ground.



MKIB0072E

Terminals			Ignition switch position		
(+)		(—)	OFF	ACC	ON
Connector	Terminal (wire color)				
M100	29 (Y/G)	Ground	0V	0V	Battery voltage

MTBL1638

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 ("DR DOOR SW") in "DATA MONITOR" mode with CONSULT-II.

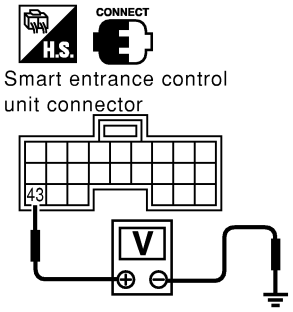
DATA MONITOR	
MONITOR	
DR DOOR SW	ON

MKIB0197E

When driver's door switch is open: DR DOOR SW ON
When driver's door switch is closed: DR DOOR SW OFF

WITHOUT CONSULT-II

1. Connect smart entrance control unit connector.
2. Check voltage between smart entrance control unit harness connector M100 terminal 43 (R/W) and ground.



MKIB0073E

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

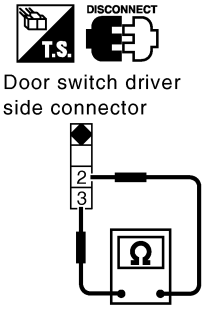
MTBL1433

OK or NG

OK	▶	GO TO 4.
NG	▶	GO TO 3.

3	CHECK DOOR SWITCH DRIVER SIDE

1. Disconnect door switch driver side connector.
2. Check continuity between door switch driver side harness connector B28 terminals 2 and 3.



Door switch driver side connector

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

YEL348E

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and door switch driver side.
NG	▶	Replace door switch driver side.

4	CHECK DOOR LOCK/UNLOCK SWITCH

WITH CONSULT-II

Check door lock/unlock switch signal ("CDL LOCK SW" or "CDL UNLOCK SW") in "DATA MONITOR" mode with CONSULT-II.

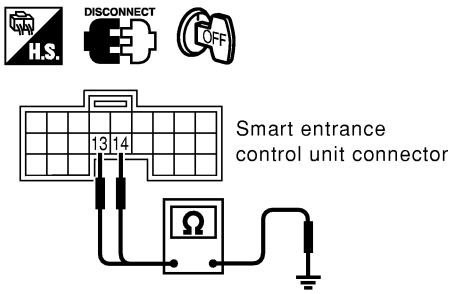
DATA MONITOR	
MONITOR	
CDL LOCK SW	OFF
CDL UNLOCK SW	ON

MKIB0198E

When door lock/unlock is locked:
CDL LOCK SW ON
CDL UNLOCK SW OFF
When door lock/unlock is unlocked:
CDL LOCK SW OFF
CDL UNLOCK SW ON

WITHOUT CONSULT-II

Check voltage between smart entrance control unit harness connector M99 terminals 13 (GY), 14 (L) and ground.



SIIA1567E

Terminals			Condition (Door lock/ unlock switch)	Voltage [V]
(+)		(—)		
Connector	Terminal (wire color)			
M99	13 (GY)	Ground	Locked	0
			Unlocked	Approx. 12
	14 (L)		Locked	Approx. 12
			Unlocked	0

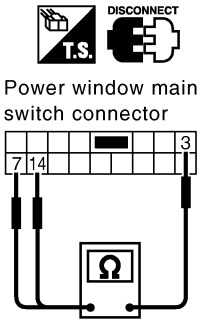
MTBL1639

OK or NG

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

5	CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect power window main switch (door lock/unlock switch) harness connector.
2. Check continuity between power window main switch (door lock/unlock switch) harness connector D7 (LHD models) or D9 (RHD models) terminal 7, 14 and 3.



Condition	Terminals		
	3	14	7
Lock	○	○	
N	No continuity		
Unlock	○		○

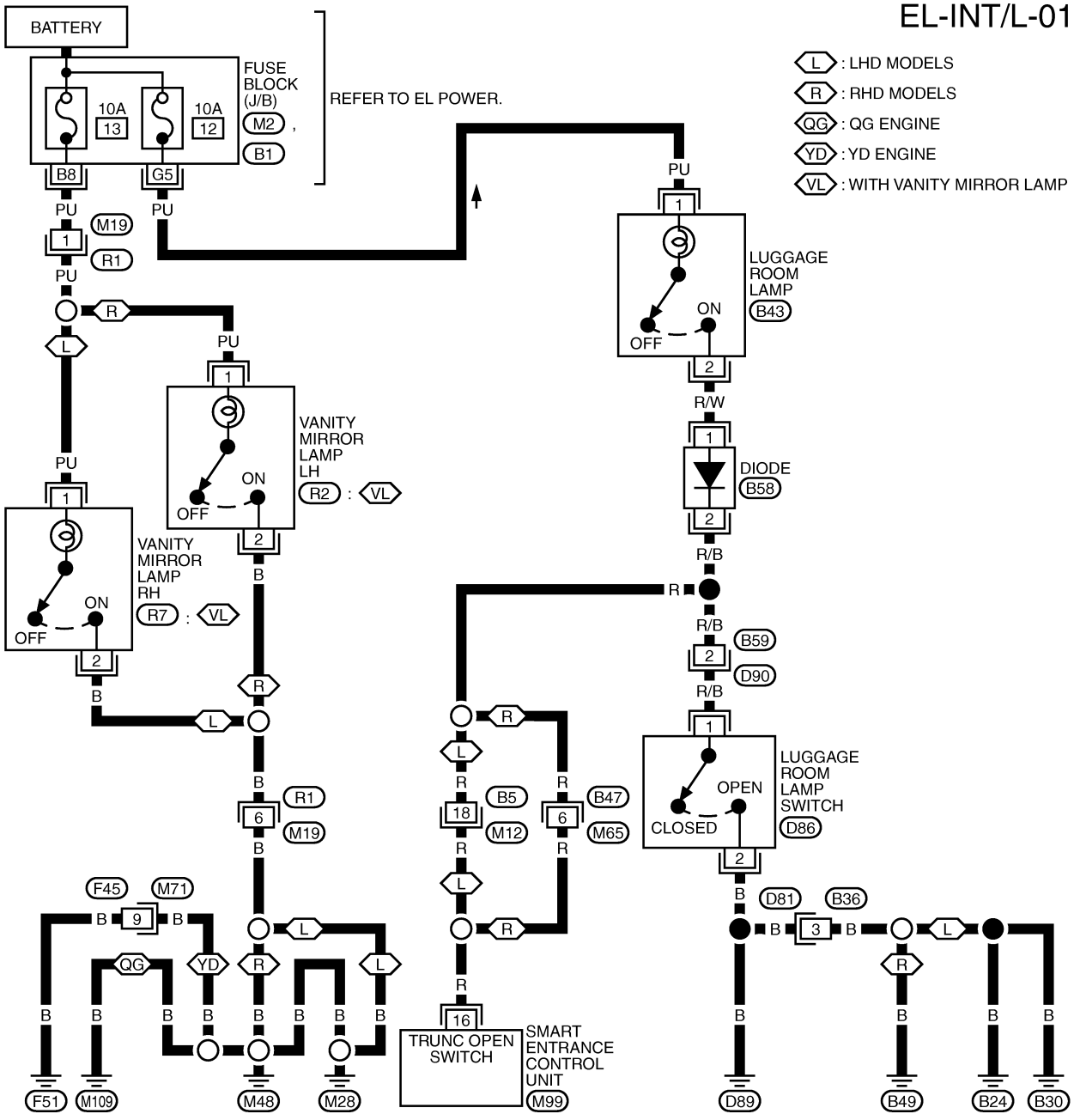
YEL349E

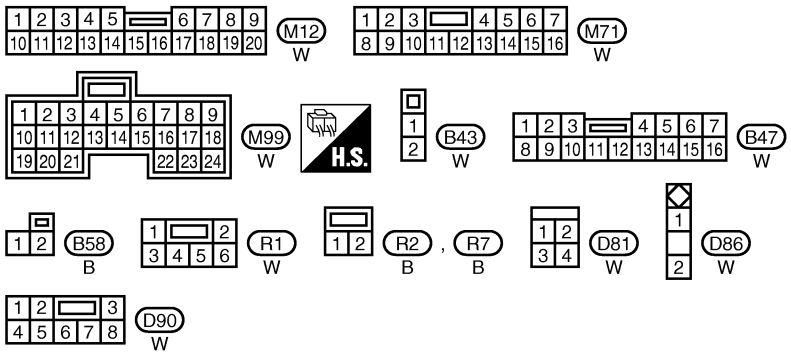
OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and door lock/ unlock switch.
NG	▶	Replace lock/unlock switch.

Wiring Diagram — INT/L —

NLEL0532



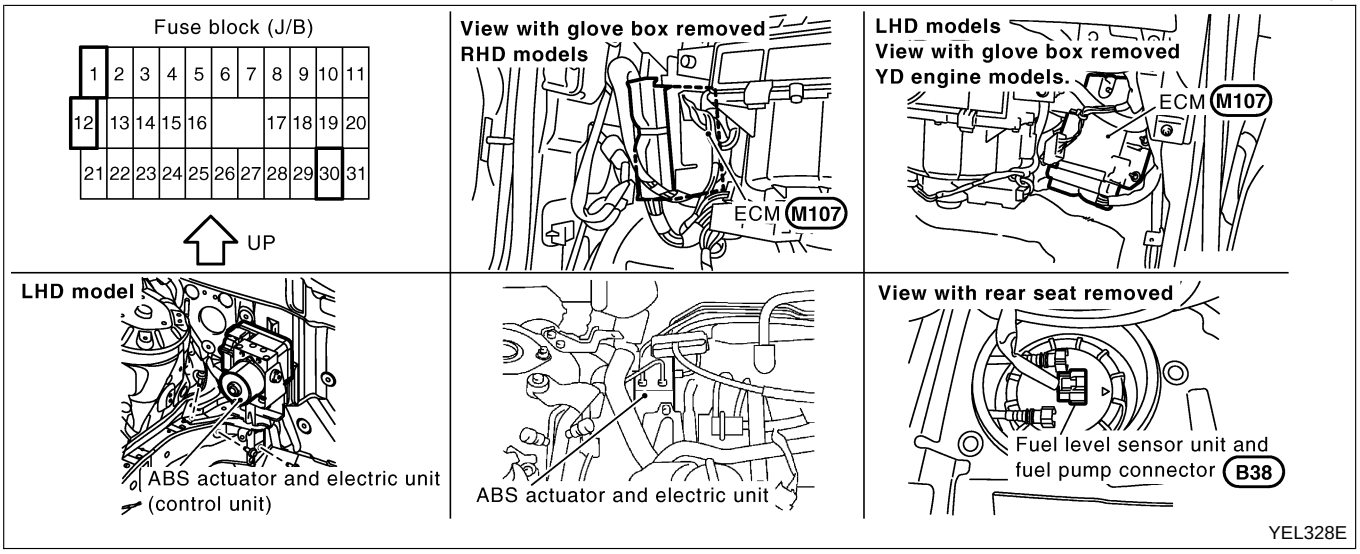


REFER TO THE FOLLOWING.
M2 , B1 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL953D

Component Parts and Harness Connector Location

NLEL0441



System Description

NLEL0442

UNIFIED CONTROL METER

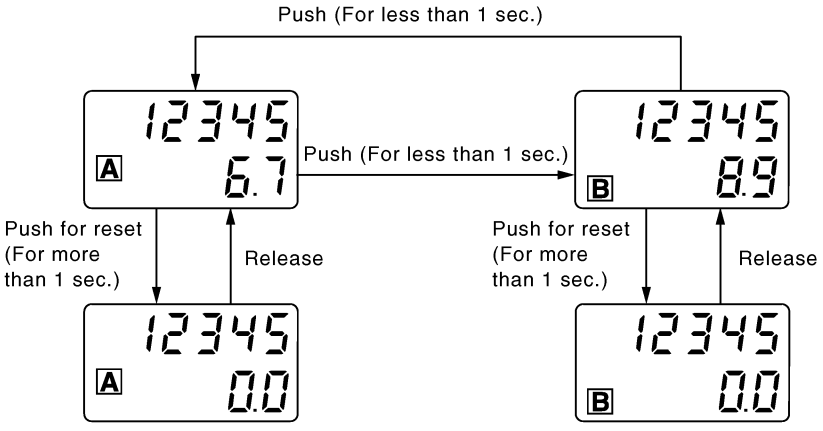
NLEL0442S01

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

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

NLEL0442S02

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



YEL329E

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

POWER SUPPLY AND GROUND CIRCUIT

=NLEL0442S03

Power is supplied at all times

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to combination meter terminal 3.

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 2.

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 combination meter terminal 5.

Ground is supplied

- through body grounds M28, M48, M109 (QG engine) or F51 (YD engine)
- to combination meter terminal 7.

WATER TEMPERATURE GAUGE

NLEL0442S04

The water temperature gauge indicates the engine coolant temperature.
ECM provides a engine coolant temperature signal to combination meter for water temperature gauge via CAN communication line.

TACHOMETER

NLEL0442S05

The tachometer indicates engine speed in revolution per minutes (rpm). ECM provides an engine speed signal to combination meter for tachometer via CAN communication line.

FUEL GAUGE

NLEL0442S06

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- from body grounds M28, M48, M109 (QG engine) or F51 (YD engine)
- through terminals 4 and 26 of combination meter,
- through terminal 1 of the fuel level sensor unit and
- through terminal 4 of the fuel level sensor unit
- to combination meter terminal 25 for the fuel gauge.

SPEEDOMETER

NLEL0442S07

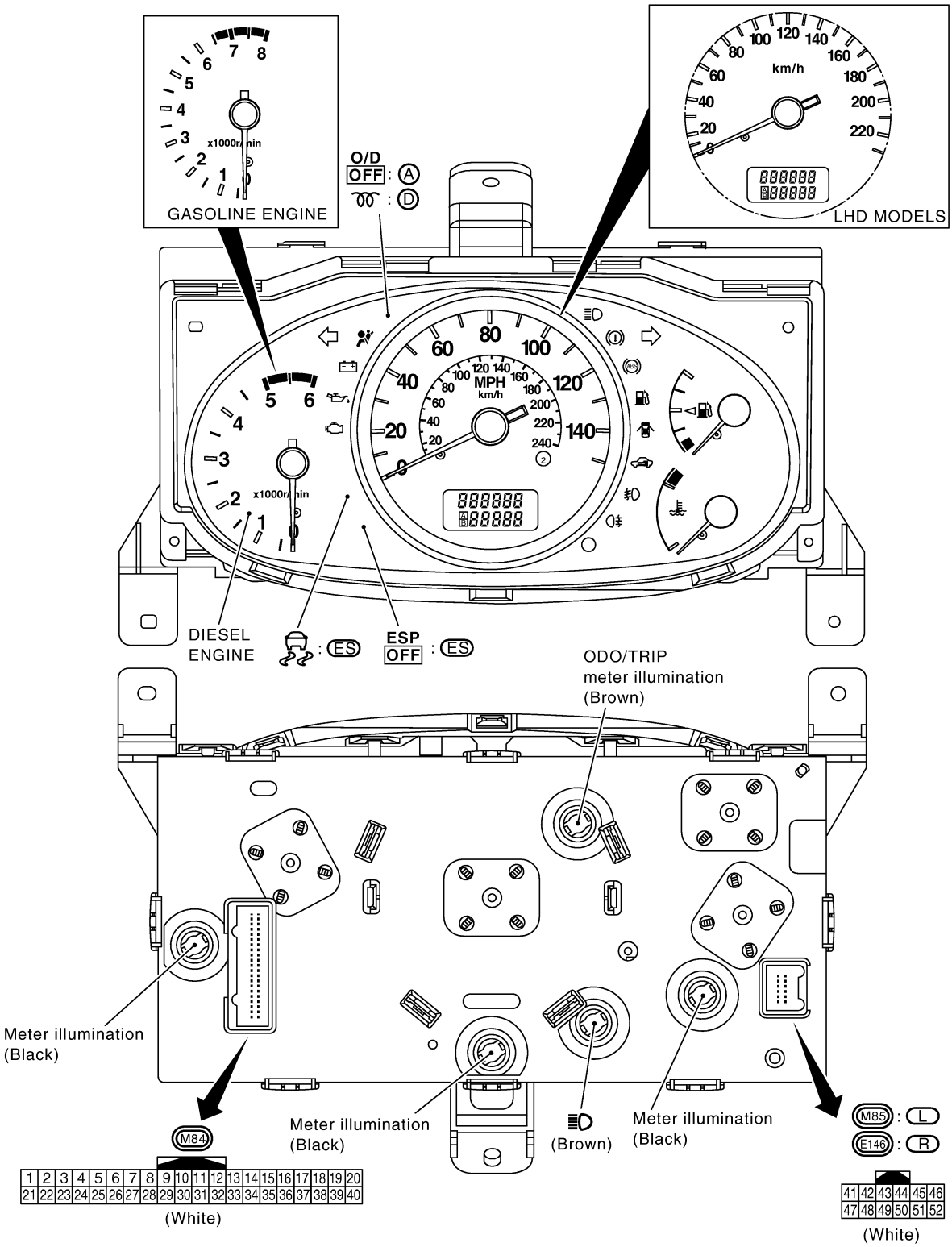
The combination meter receives a signal from the ABS actuator and electric unit (control unit) via CAN communication line. The speedometer converts the signal into the vehicle speed displayed.

Combination Meter

NLEL0443

CHECK

NLEL0443S01



Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

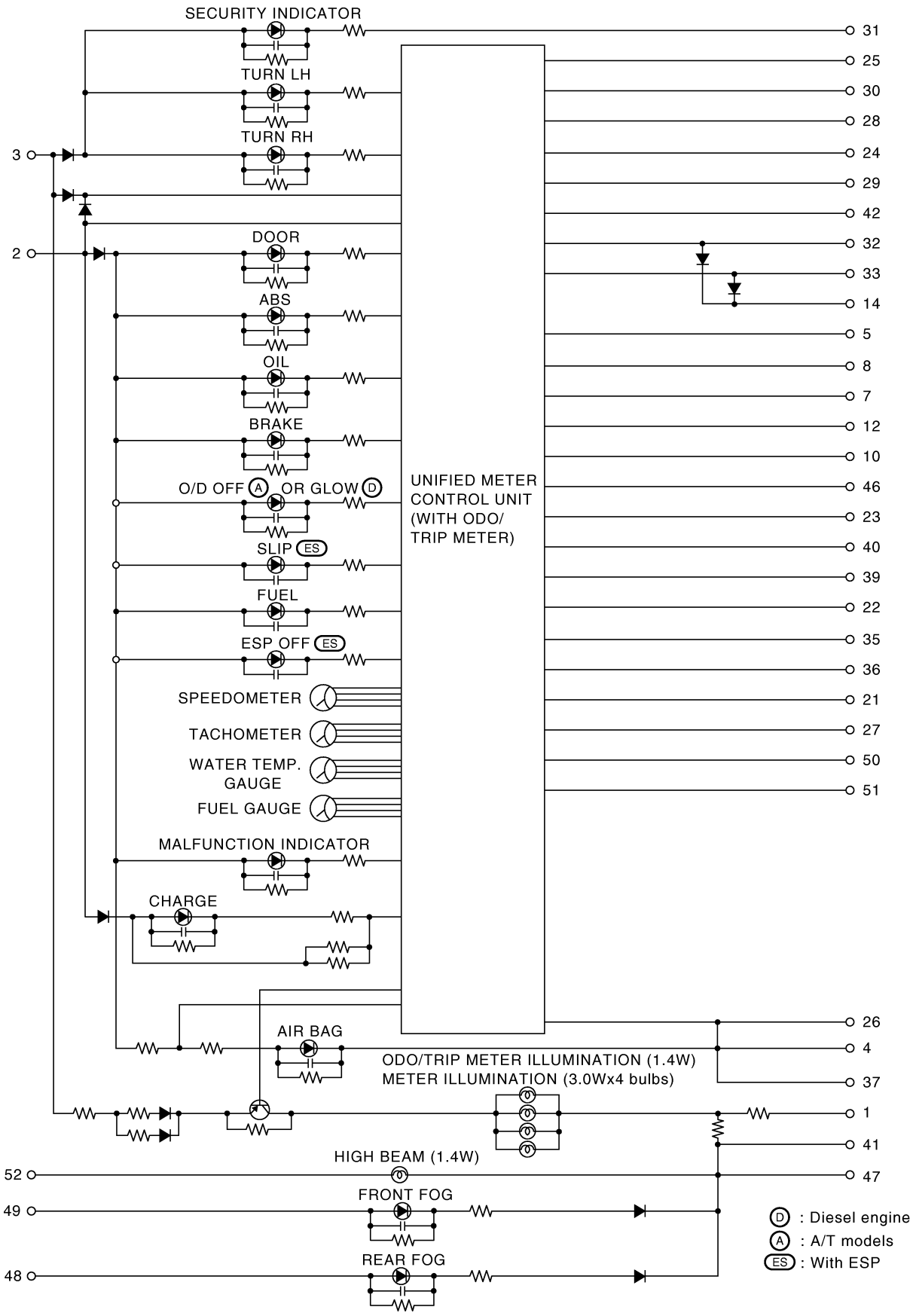
( ) : Warning bulb socket color

L : LHD models
R : RHD models
A : A/T models
D : Diesel engine
ES : With ESP

YEL091E

Schematic

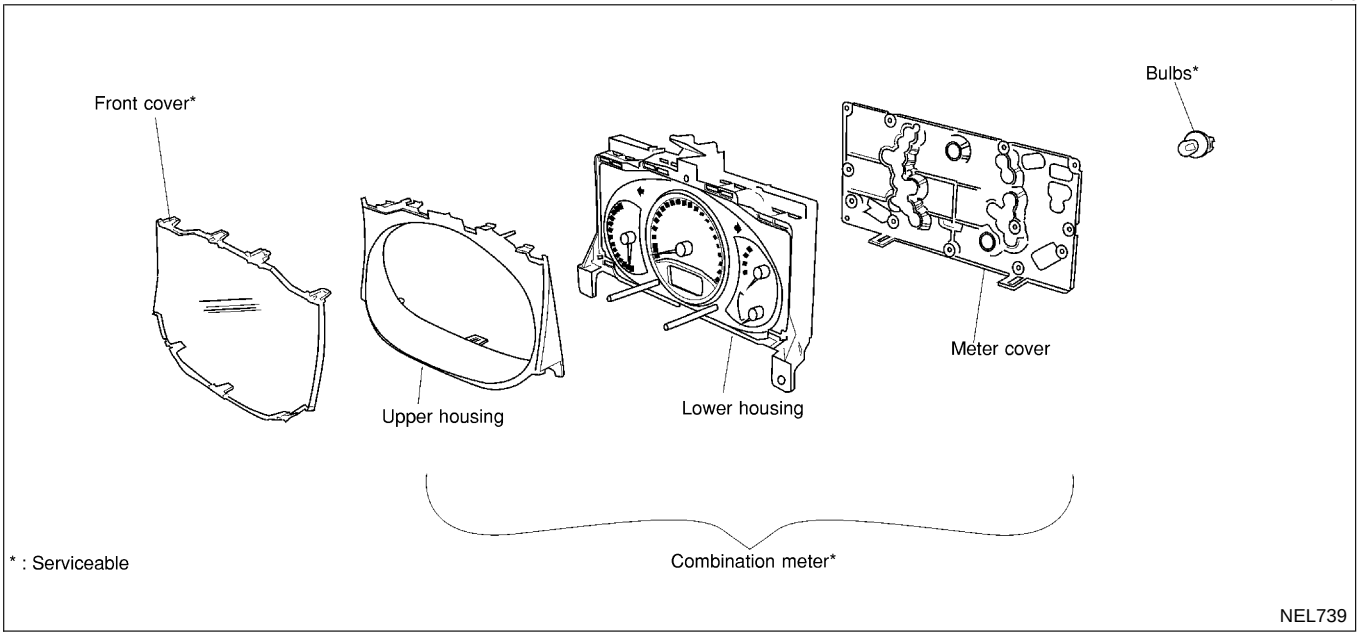
NLEL0444



YEL092E

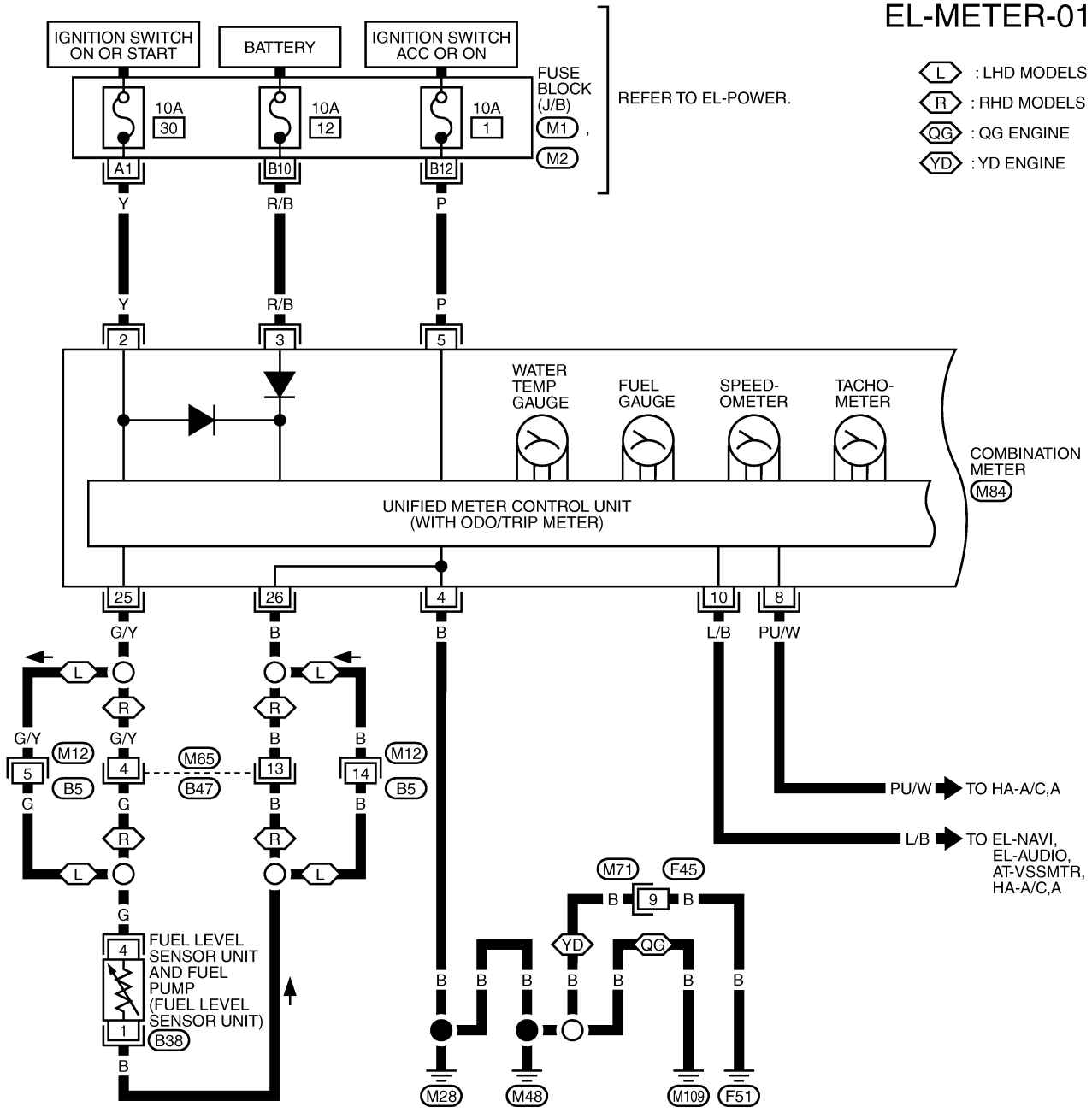
Construction

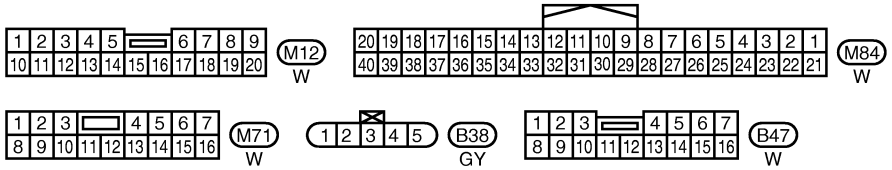
NLEL0445



Wiring Diagram — METER —

NLEL0446

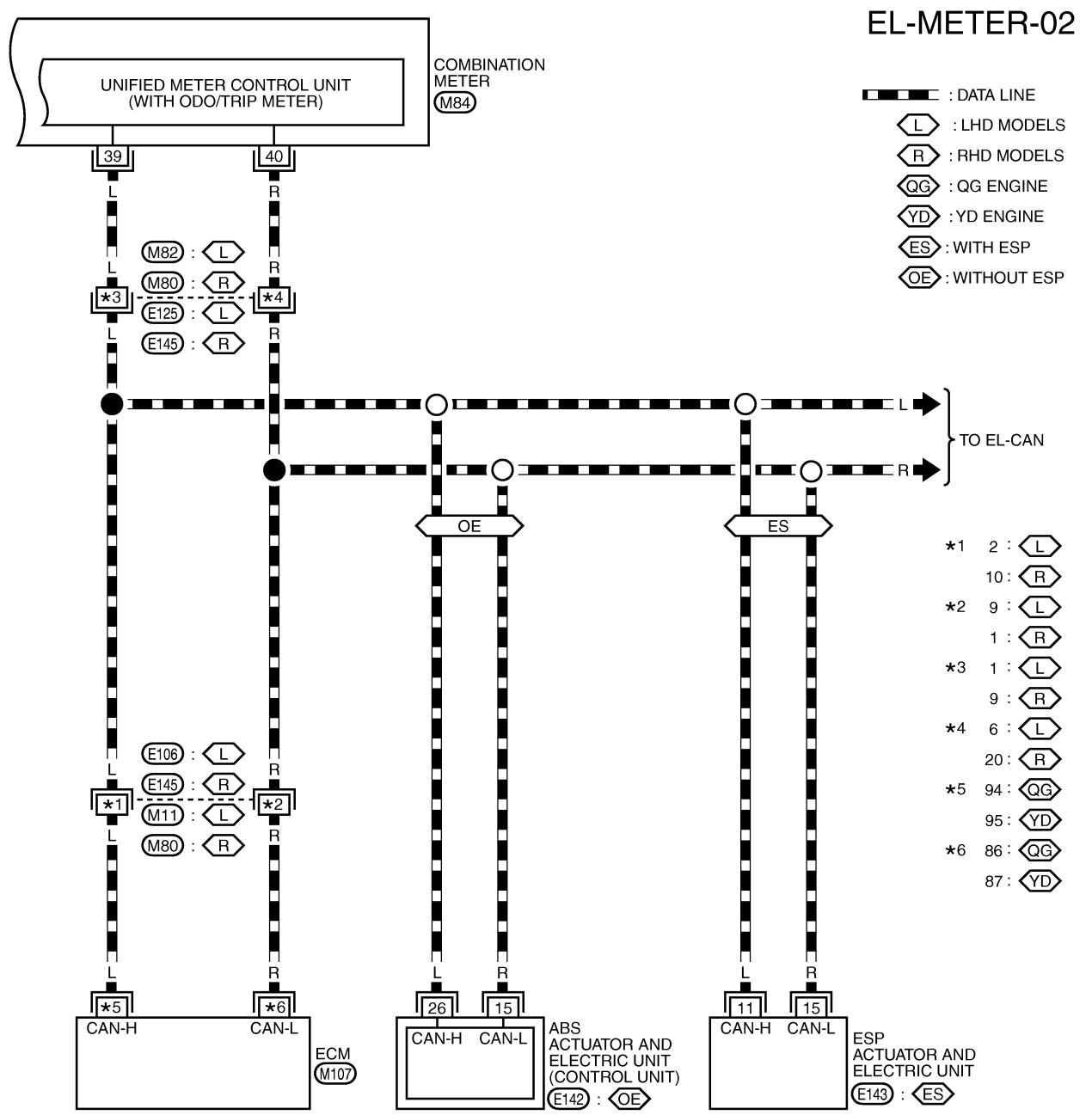


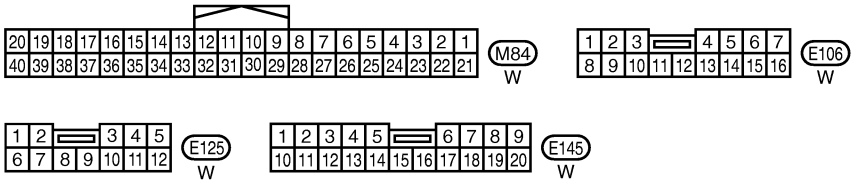


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL954D

Wiring Diagram — METER — (Cont'd)





REFER TO THE FOLLOWING.
M107 , E142 , E143
-ELECTRICAL UNITS

YEL134E

Combination Meter Self-Diagnosis

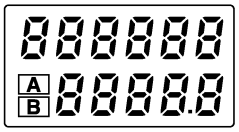
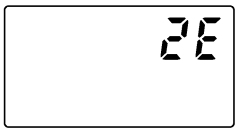
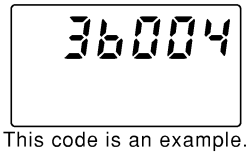
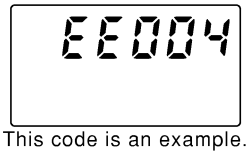
NLEL0447

PERFORMING SELF-DIAGNOSIS MODE

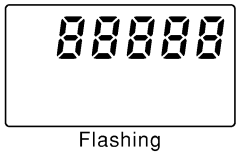
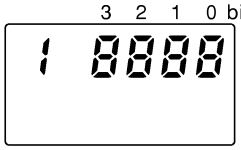
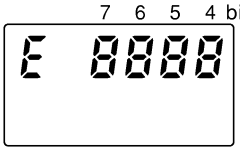
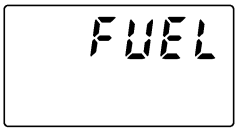
NLEL0447S01

1. Turn the ignition switch to the “LOCK” position.
2. Press odo/trip meter switch on the combination meter and keep them depressed.
3. Turn the ignition switch to the “ON” position, while keeping the odo/trip meter switch pressed.
4. Release odo/trip meter switch then self-diagnosis will start. The sequence (A to J) is activated by press the either odo/trip meter switch.

NOTE:
If either odo/trip meter switch is not pressed for 20 seconds at each step or if the ignition switch is turned OFF, the self-diagnosis mode is exited.

	Check items	Display	Remarks
A)	Odometer segment test	 MKIB0001E	All odo trip meter segments are ON.
B)	Work instruction code	 This code is an example. MKIB0002E	This information is not used for service. Please skip this step.
C)	Software code	 This code is an example. MKIB0003E	This information is not used for service. Please skip this step.
D)	EEPROM code	 This code is an example. MKIB0004E	This information is not used for service. Please skip this step.
E)	Hardware code	 This code is an example. MKIB0005E	This information is not used for service. Please skip this step.

Combination Meter Self-Diagnosis (Cont'd)

	Check items	Display	Remarks
F)	PCB code	 This code is an example. MKIB0006E	This information is not used for service. Please skip this step.
G)	Meter/gauge test (Sweeping movement)	 Flashing MKIB0007E	Tachometer, speedometer, fuel level gauge and water temperature gauge have sweeping movement test. (The meter/gauges operate MIN. → MAX., MAX. → MIN. for 2 times) The odo trip meter segment flashes during the sweep movement.
H)	Error 1 (Bit 0 - Bit 3)	3 2 1 0 bit  This value is an example. MKIB0008E	The segment of each bit displays "0", meaning no failure. If the bit(s) displays figures other than "0", the item of the bit has failed. For details, refer to "Failure chart for Error 1 and Error E" below.
I)	Error E (Bit 4 - Bit 7)	7 6 5 4 bit  This value is an example. MKIB0009E	
J)	Fuel warning lamp test	 Flashing MKIB0010E	All warning lamps and indicator lamps (except security indicator) are on and odo trip meter segment "FUEL" flashes.

Failure Chart for "Error 1" and "Error E"

=NLEL0447S0101

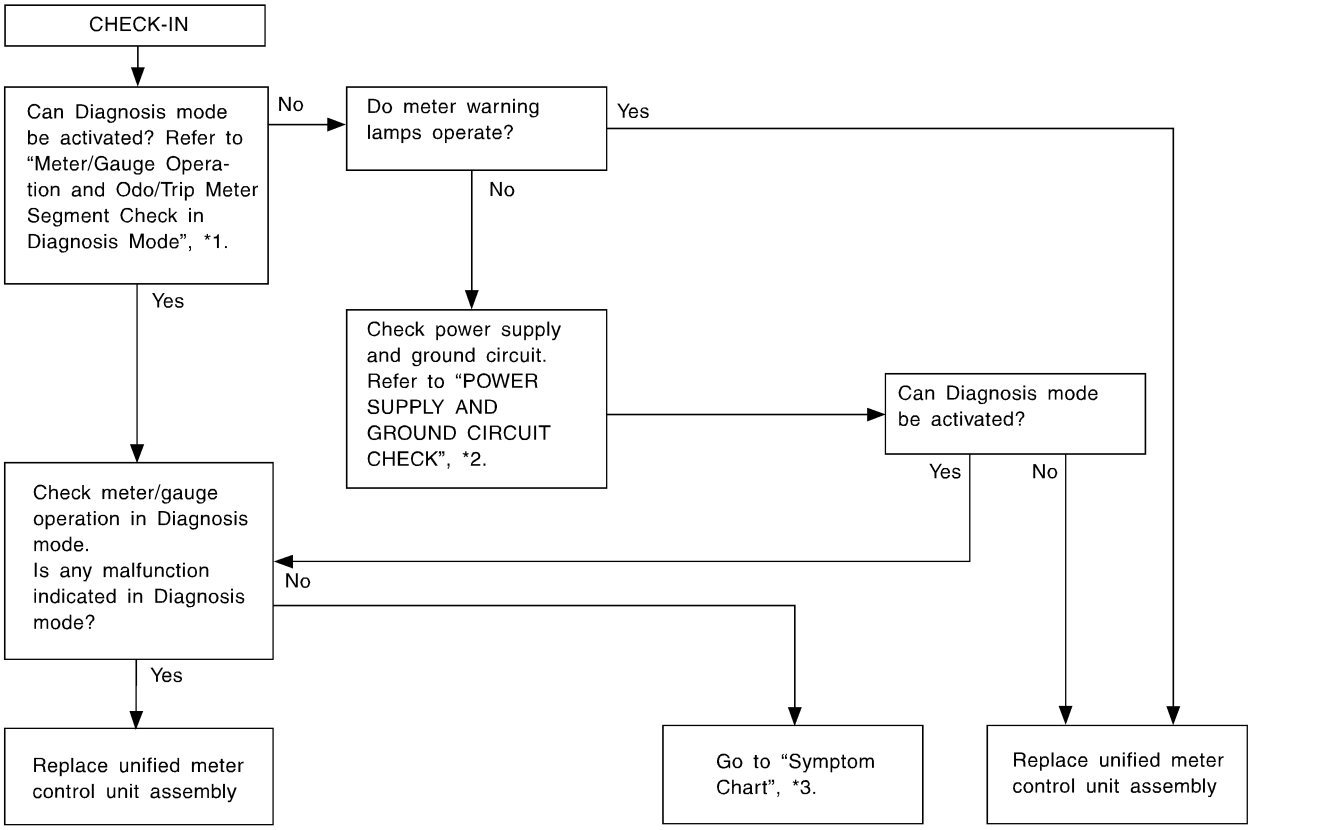
Bit	Detectable items	Description of the failure	Displayed figure on the bit	
			Failure	No failure
0	Speedometer input signal	No input signal When no signal is detected for 30 minutes continuously with the ignition ON, it should be judged as signal failure. (If input signal is detected later, then the judgement will be canceled immediately.)	1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal failure.	2	
1	Tachometer input signal	No input signal When no signal is detected for 30 minutes continuously with the ignition ON, it should be judged as signal failure. (If input signal is detected later, then the judgement will be canceled immediately.)	1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal failure.	2	
2	Fuel level input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit failure.	1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit failure.	2	
3	Water temperature input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit failure.	1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit failure.	2	
4	—	—	0	0
5	Reset buttons	Short circuit for reset buttons When the short circuit is continuously detected for 5 minutes or more, it should be judged as short-circuit failure.	1	0
6	—	—	0	0
7	—	—	0	0

Trouble Diagnoses

NLEL0448

PRELIMINARY CHECK

NLEL0448S01



SEL494Y

*1: Combination Meter Self-Diagnosis (EL-107)

*2: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-111)

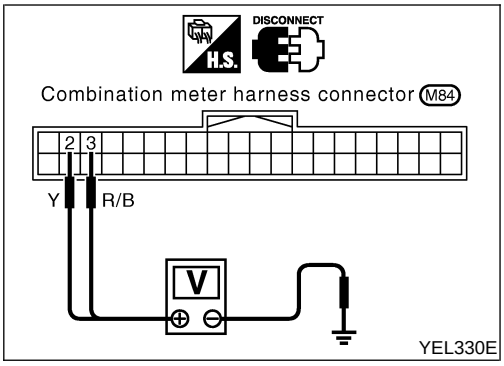
*3: Symptom Chart (EL-110)

SYMPTOM CHART

NLEL0448S02

Symptom	Possible causes	Repair order
One of speedometer/ tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Engine speed signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SIGNAL (WITH ESP SYSTEM) (Refer to EL-112.) INSPECTION/VEHICLE SPEED SIGNAL (WITHOUT ESP SYSTEM) (Refer to EL-112.) INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-112.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-113.) INSPECTION/WATER TEMPERATURE SIGNAL (Refer to EL-114.) 2. Replace unified meter control unit assembly.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)	Unified meter control unit	

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-110.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NLEL0448S03

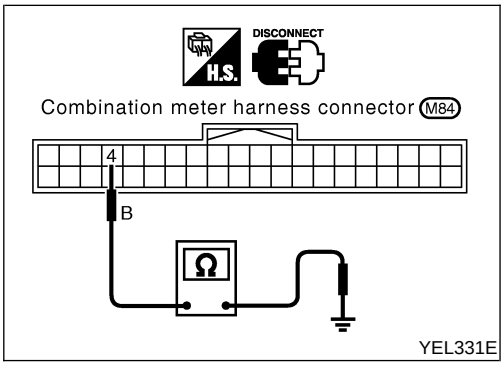
Power Supply Circuit Check

NLEL0448S0301

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
3	Ground	Battery voltage	Battery voltage	Battery voltage
2	Ground	0V	0V	Battery voltage
5	Ground	0V	Battery voltage	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)]
- 10A fuse [No. 1, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground Circuit Check

NLEL0448S0302

Terminals	Continuity
4 - Ground	Yes

INSPECTION/VEHICLE SPEED SIGNAL (WITH ESP SYSTEM)

=NLEL0448S04

1	CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) OUTPUT	
Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BR-62, "CONSULT-II Functions".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Check ABS actuator and electric unit (control unit). Refer to BR-70, "Trouble Diagnosis".

INSPECTION/VEHICLE SPEED SIGNAL (WITHOUT ESP SYSTEM)

NLEL0448S12

1	CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) OUTPUT	
Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BR-110, "CONSULT-II Functions".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Check ABS actuator and electric unit (control unit). Refer to BR-97, "Trouble Diagnosis".

INSPECTION/ENGINE REVOLUTION SIGNAL

NLEL0448S05

1	CHECK ECM SELF-DIAGNOSIS	
Perform ECM self-diagnosis. Refer to EC-55, EC-581, EC-958 or EC-1272, "Emission-related Diagnostic Information".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Perform "Diagnostic Procedure" for displayed DTC.

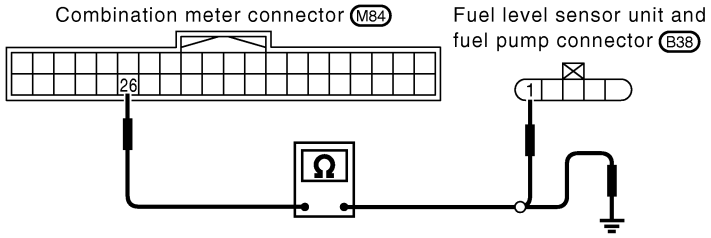
INSPECTION/FUEL LEVEL SENSOR UNIT

=NLEL0448S06

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and fuel level sensor unit and fuel pump.
3. Check continuity between combination meter harness connector M84 terminal 26 (B) and fuel level sensor unit and fuel pump harness connector B38 terminal 1 (B).
4. Check continuity between combination meter harness connector M84 terminal 26 (B) and ground.





Terminals		Continuity
26	1	Yes
26	Ground	No

YEL332E

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-114).

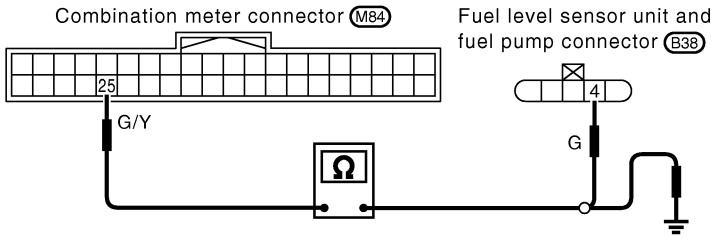
OK or NG

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 harness connector M84 terminal 25 (G/Y) and fuel level sensor unit and fuel pump harness connector B38 terminal 4 (G).
3. Check continuity between combination meter harness connector M84 terminal 25 (G/Y) and ground.





Terminals		Continuity
25	4	Yes
25	Ground	No

YEL333E

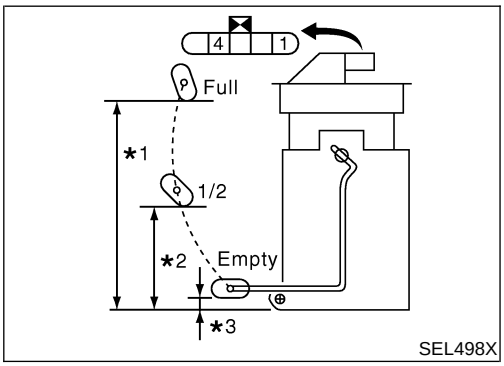
OK or NG

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

INSPECTION/WATER TEMPERATURE SIGNAL

NLEL0448S07

1	CHECK ECM SELF-DIAGNOSIS	
Perform ECM self-diagnosis. Refer to EC-55, EC-581, EC-958 or EC-1272, "Emission-related Diagnostic Information".		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Perform "Diagnostic Procedure" for display DTC.



Electrical Components Inspection

NLEL0449

FUEL LEVEL SENSOR UNIT CHECK

NLEL0449S02

- For removal, refer to FE-6 (QG), FE-20 (YD), "FUEL SYSTEM".

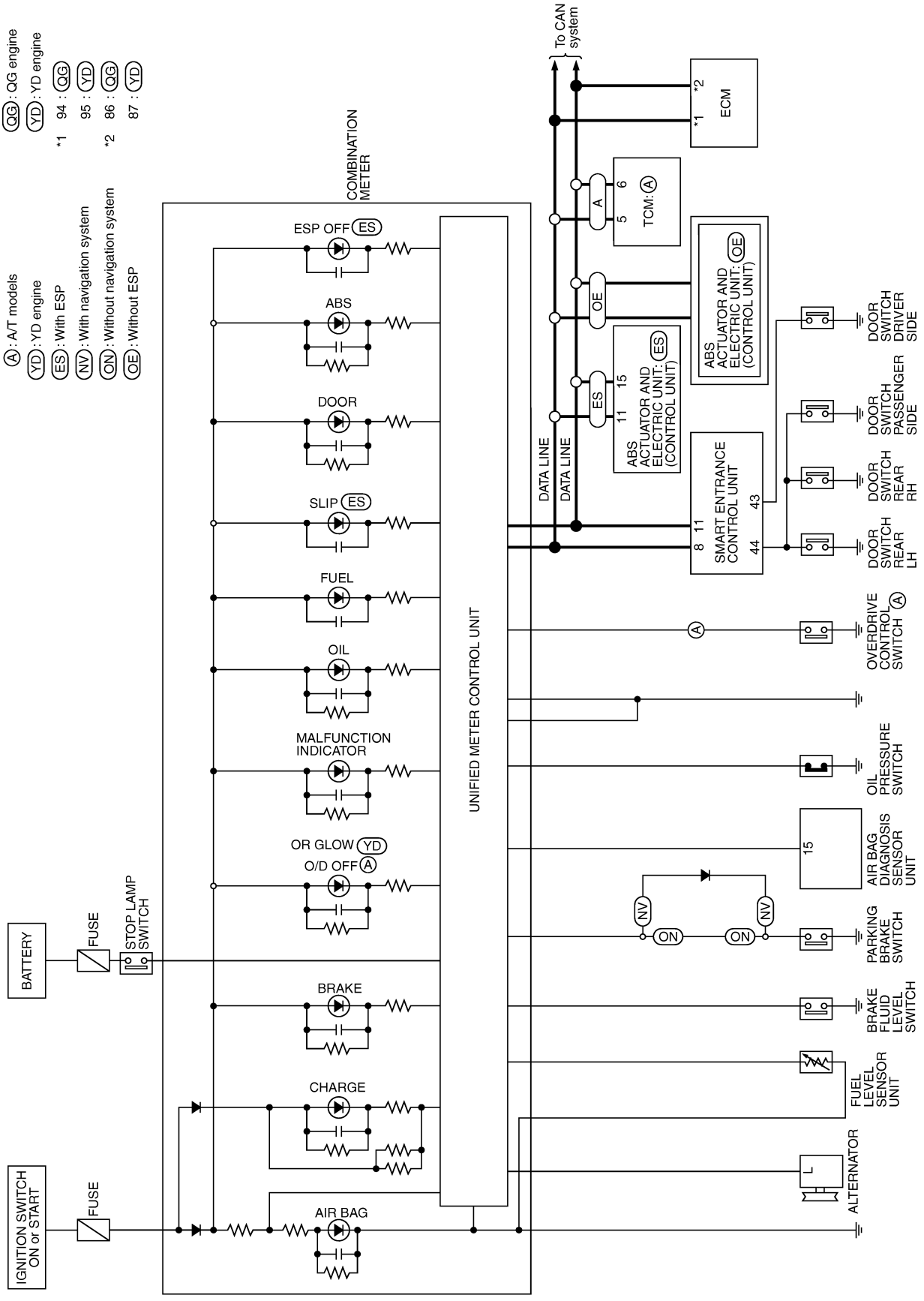
Check the resistance between terminals 4 and 1.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(−)				
4	1	*1	Full	139.5 - 145.5 (5.49 - 5.73)	Approx. 4 - 6
		*2	1/2	86.7 - 90.7 (3.41 - 3.57)	32 - 33
		*3	Empty	10.1 - 12.1 (0.40 - 0.48)	80 - 83

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

Schematic

NLEL0450



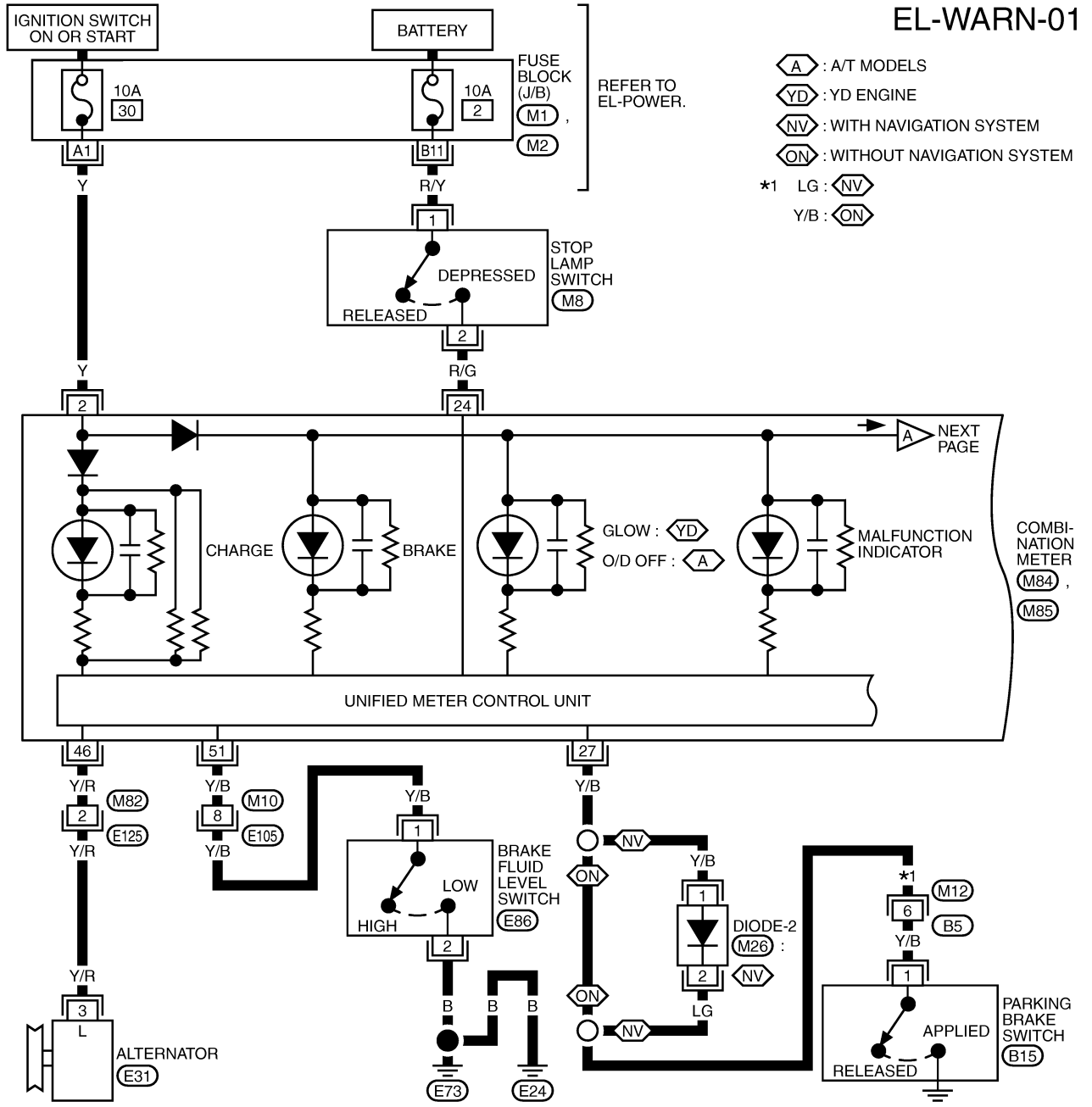
YEL955D

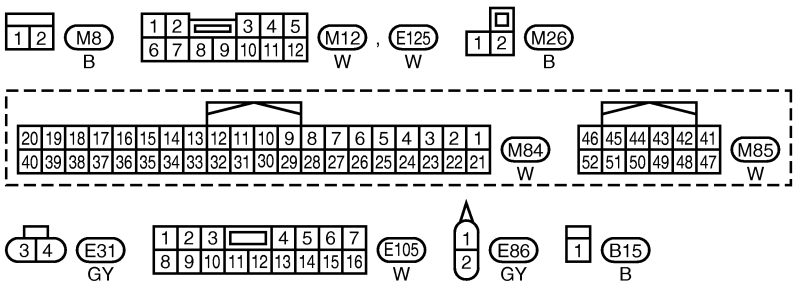
Wiring Diagram — WARN —

NLEL0451

LHD MODELS

NLEL0451S01

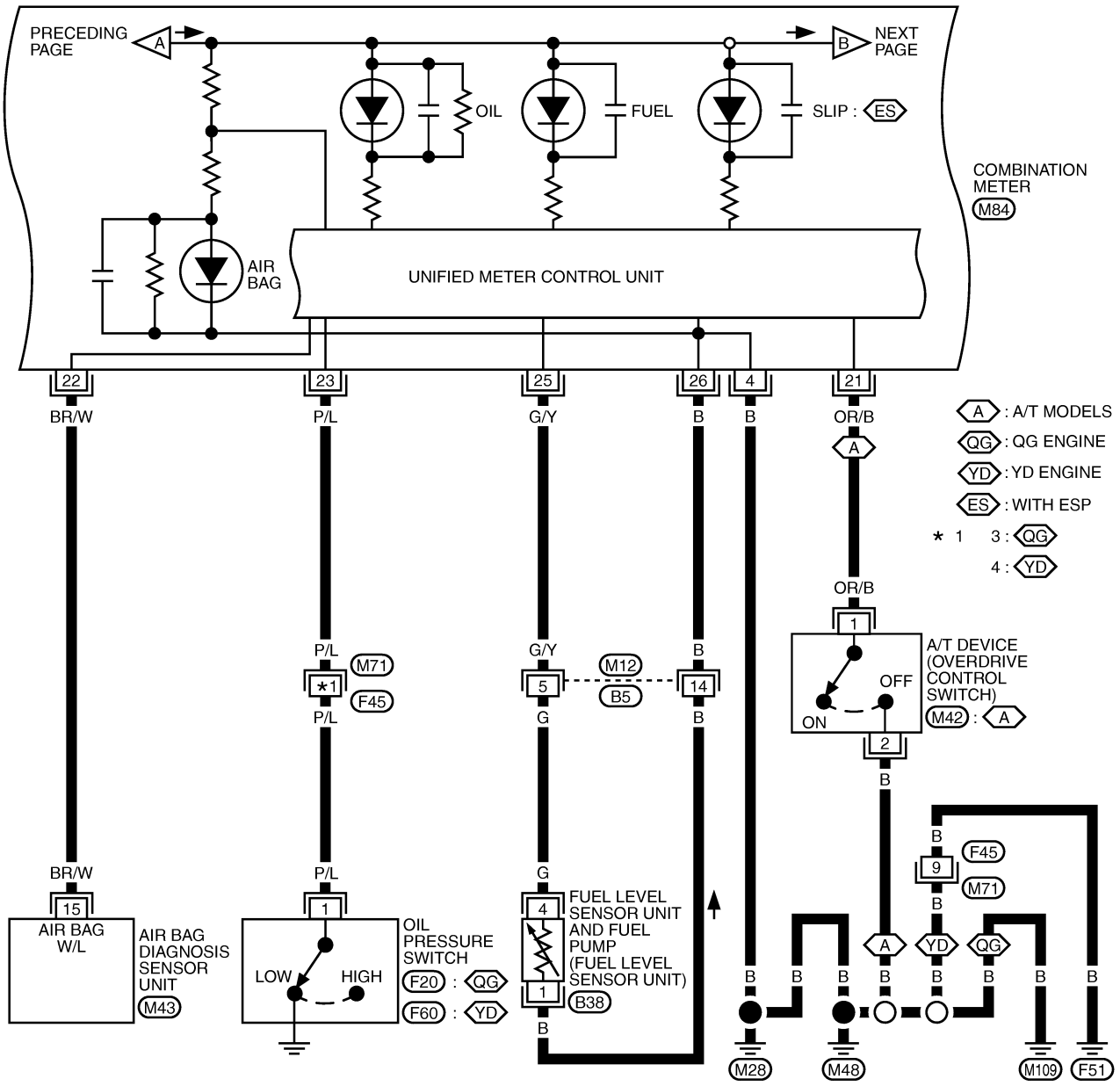


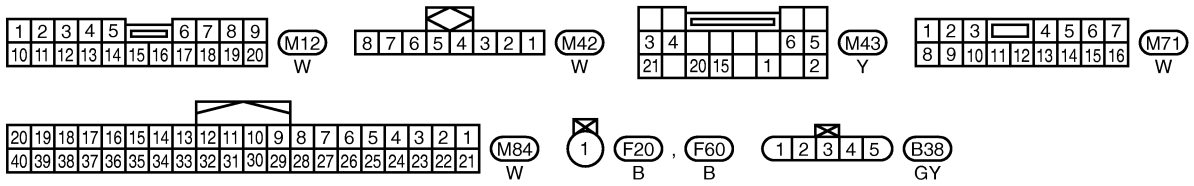


REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL956D

EL-WARN-02

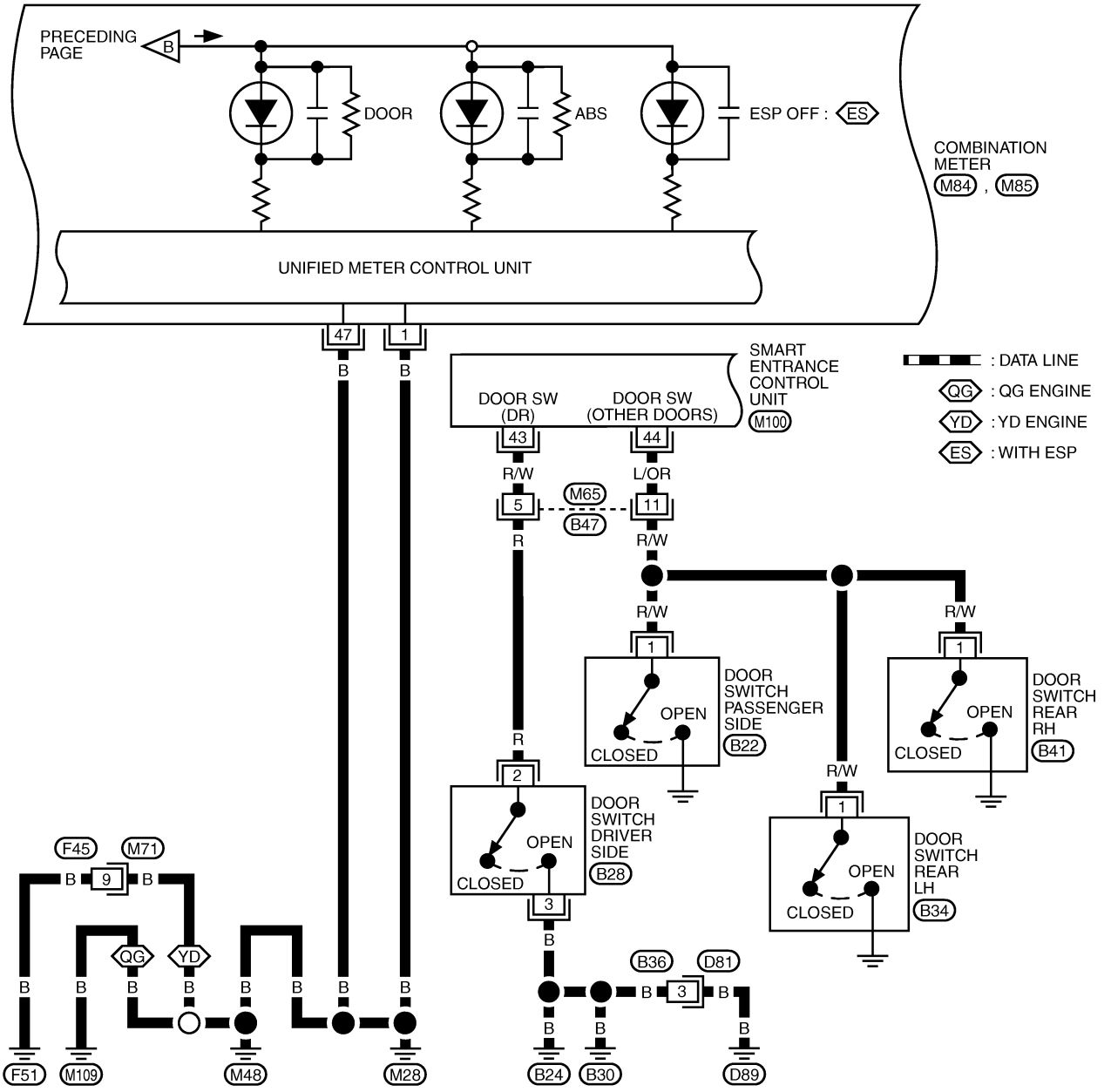


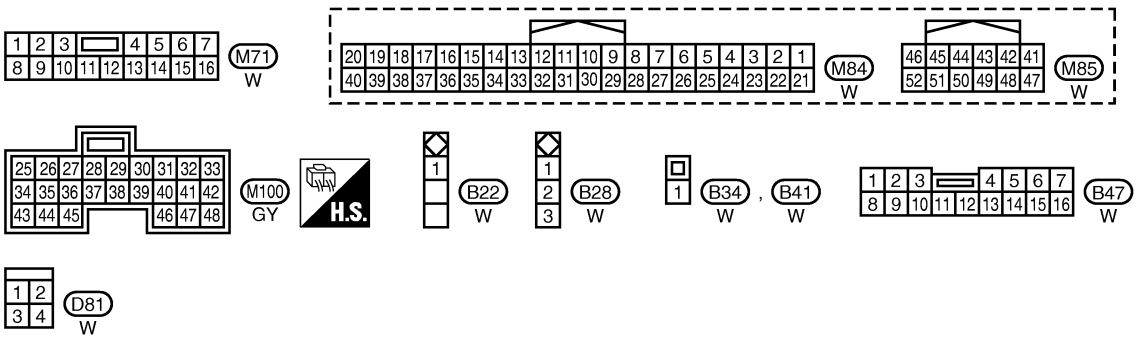


YEL957D

Wiring Diagram — WARN — (Cont'd)

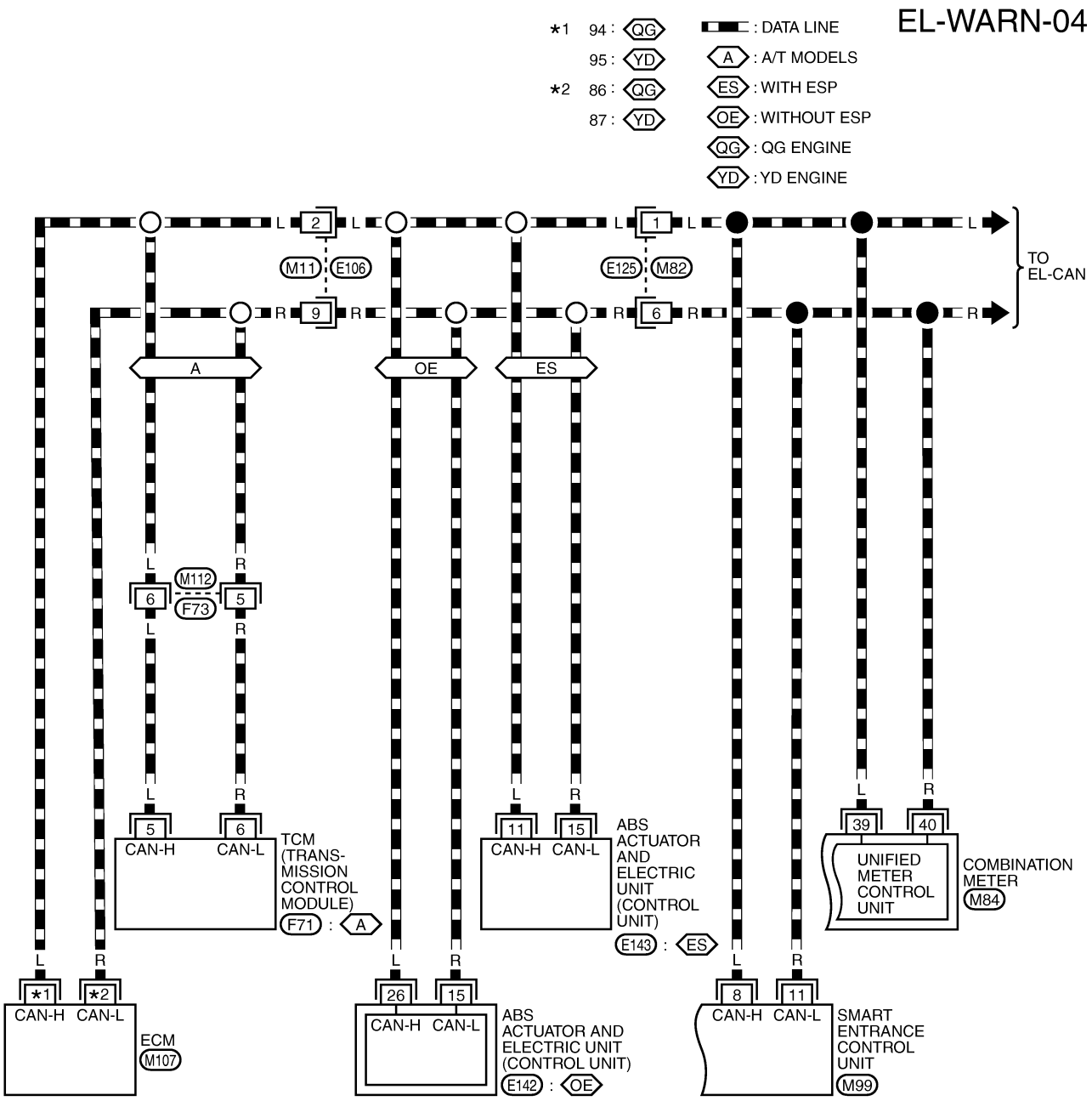
EL-WARN-03

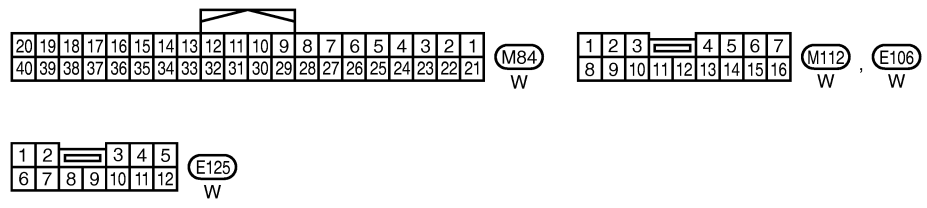




YEL958D

EL-WARN-04





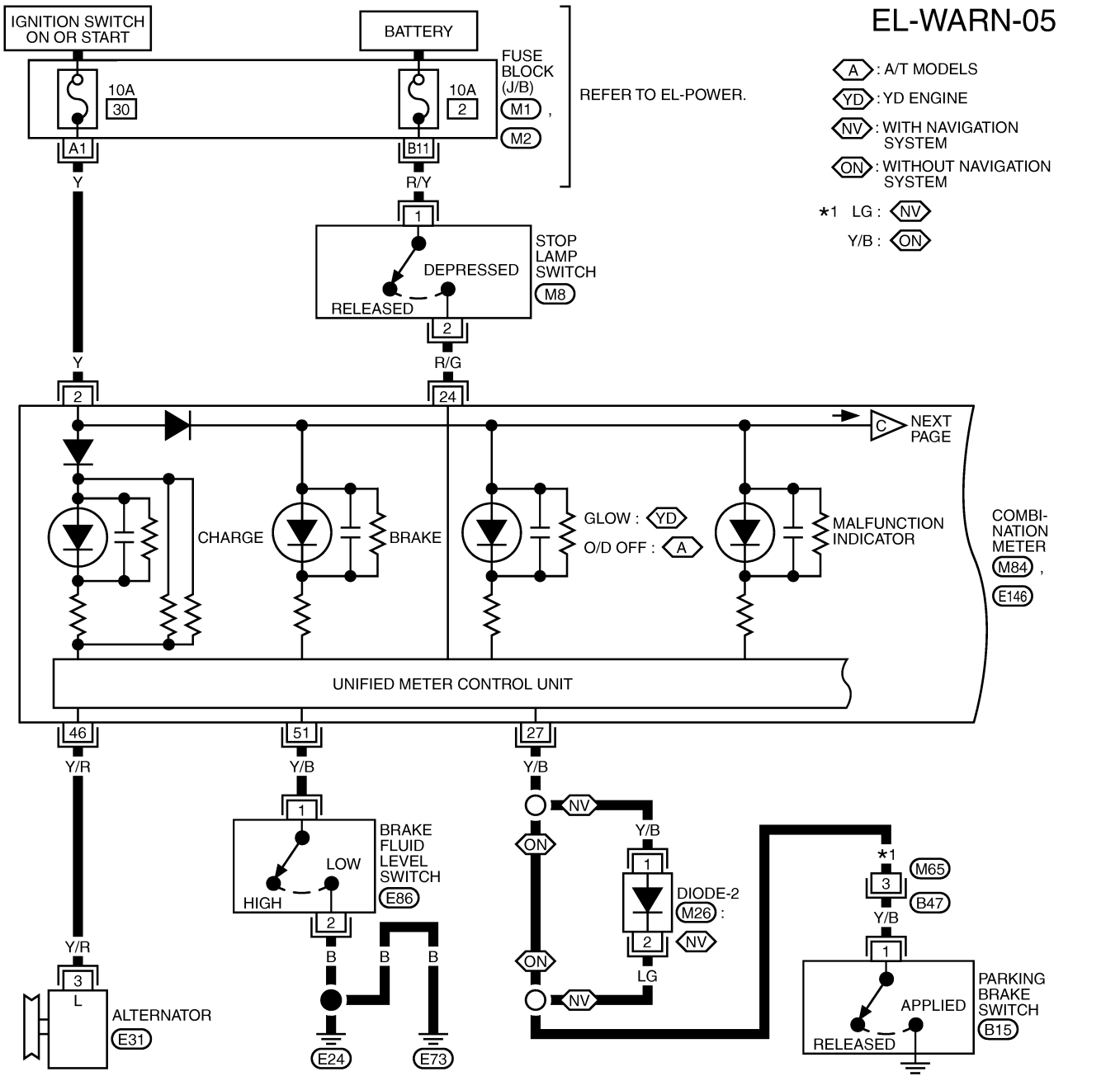
REFER TO THE FOLLOWING.
M99 , M107 , E142 , E143 ,
F71 -ELECTRICAL UNITS

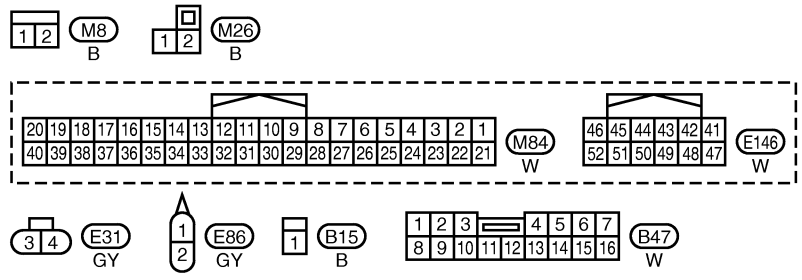
YEL046E

Wiring Diagram — WARN — (Cont'd)

RHD MODELS

NLEL0451S02

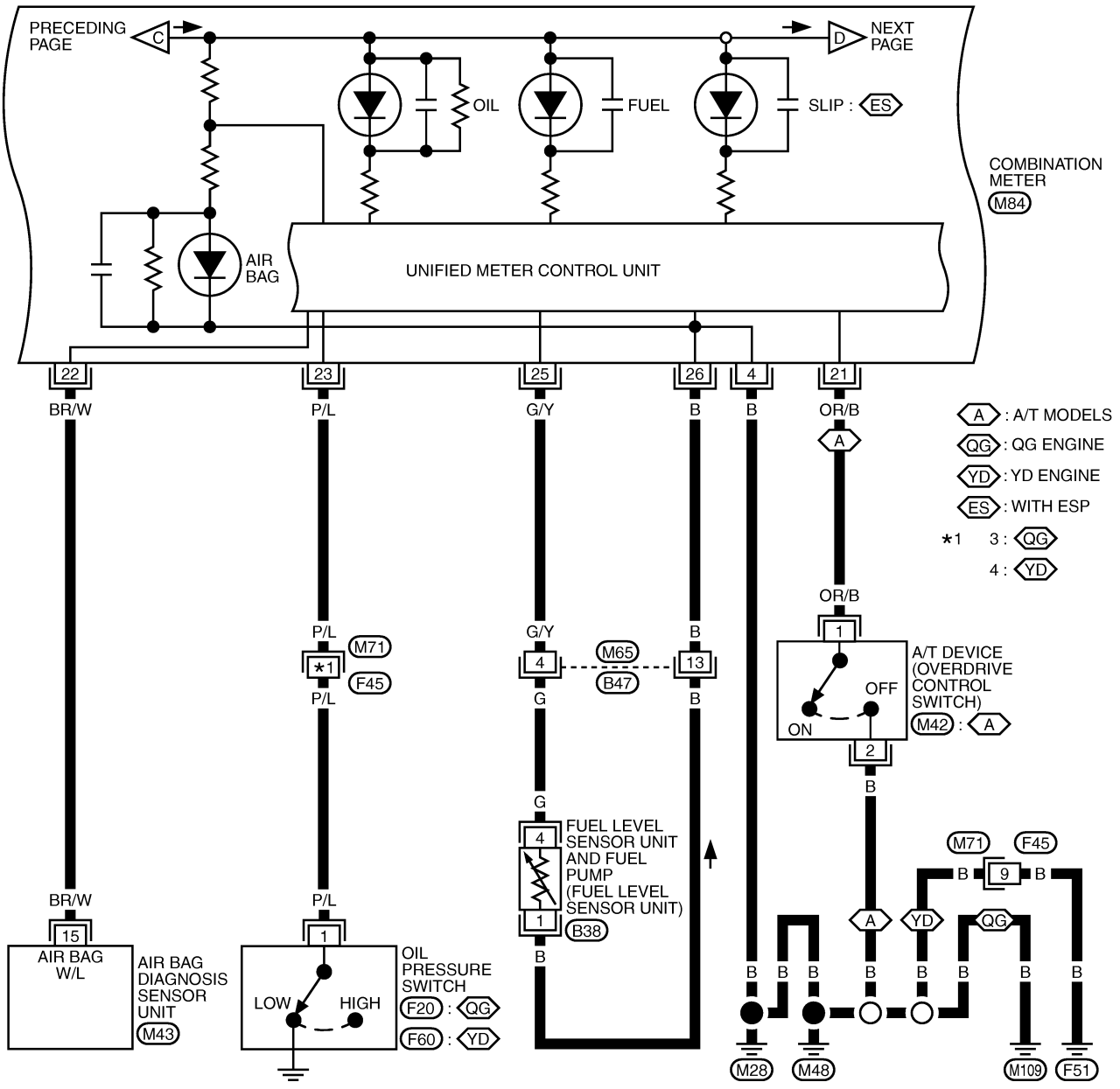


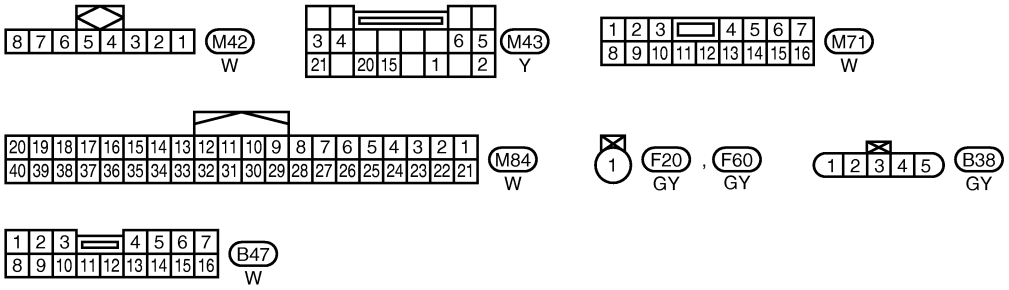


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-
JUNCTION BOX (J/B)

YEL959D

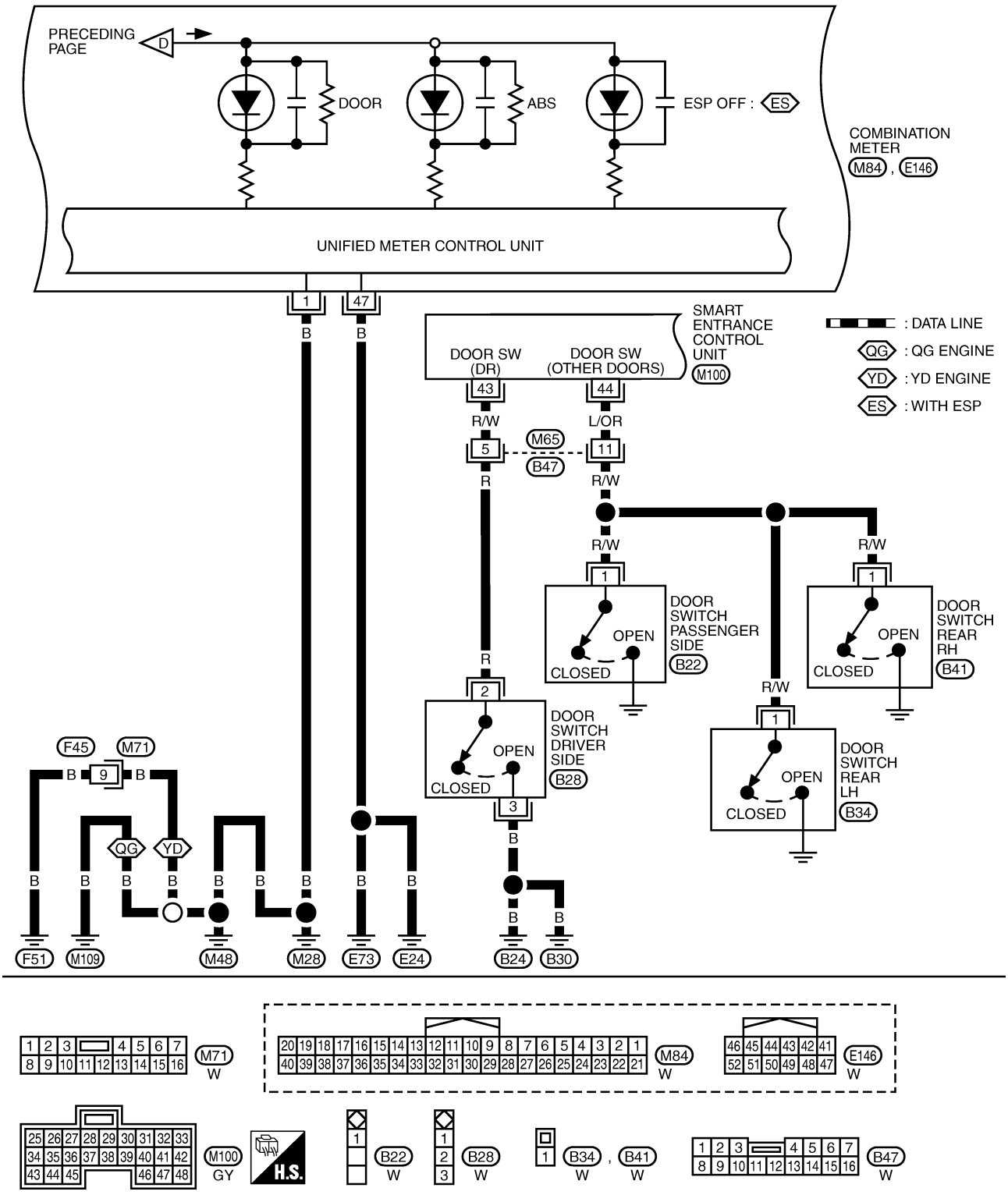
EL-WARN-06





YEL960D

EL-WARN-07

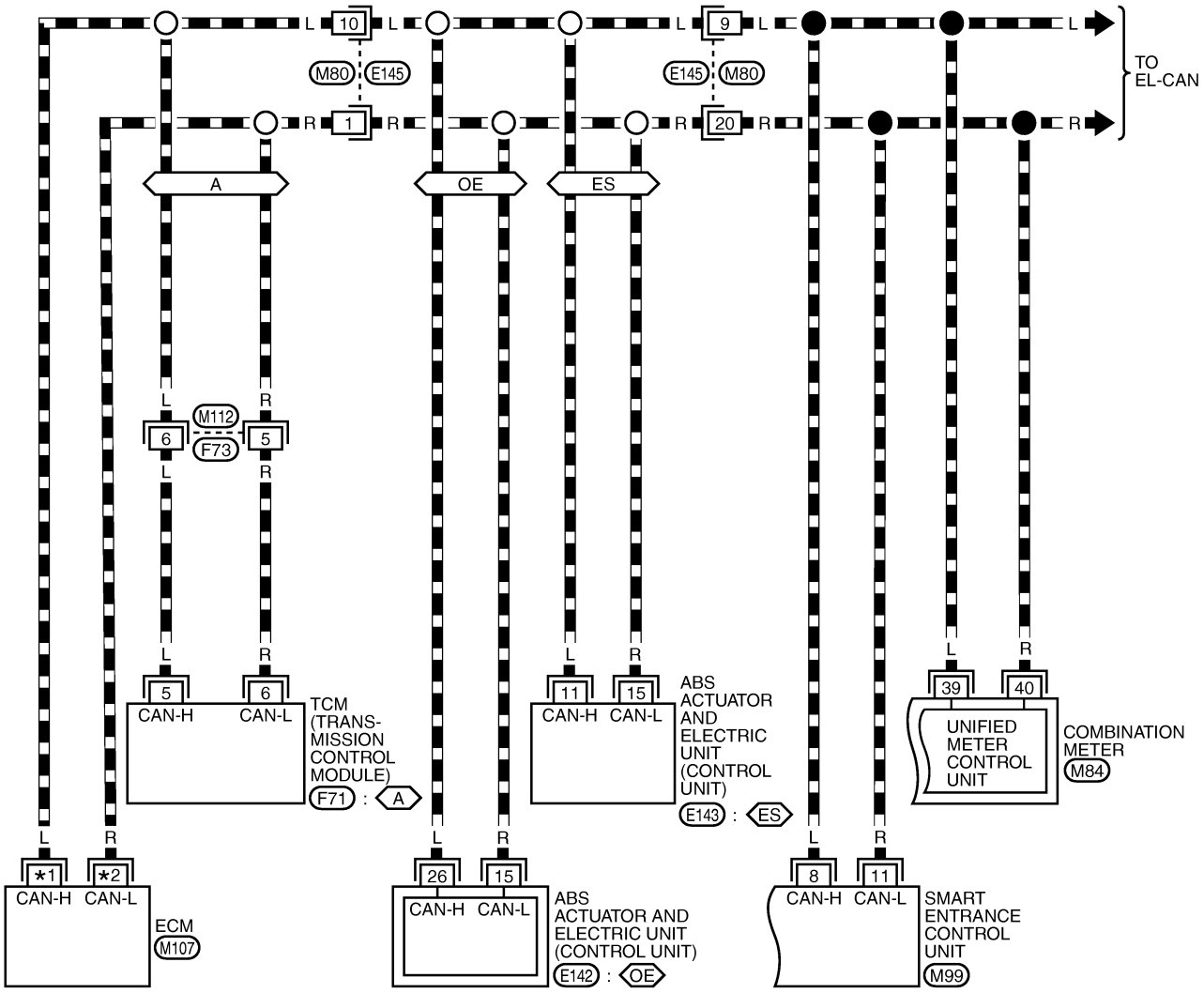


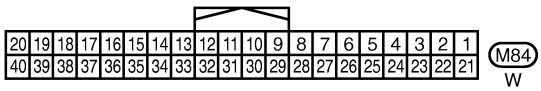
YEL961D

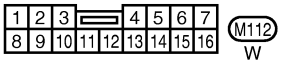
EL-WARN-08

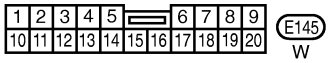
*1 94 : QG
95 : YD
*2 86 : QG
87 : YD

: DATA LINE
A : A/T MODELS
ES : WITH ESP
OE : WITHOUT ESP
QG : QG ENGINE
YD : YD ENGINE



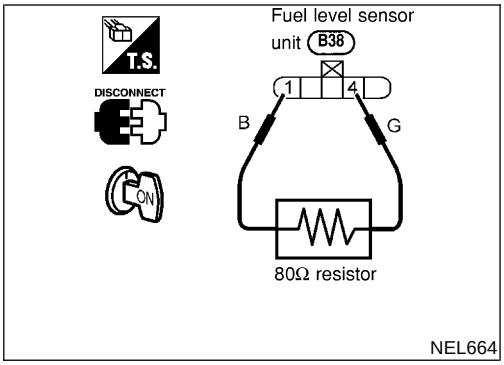

M84 W


M112 W

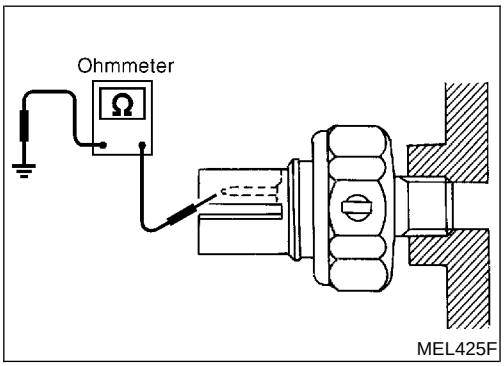

E145 W

REFER TO THE FOLLOWING.
M99 , M107 , E142 , E143 ,
F71 -ELECTRICAL UNITS

YEL133E



NEL664



MEL425F

Electrical Components Inspection

NLEL0051

FUEL WARNING LAMP OPERATION CHECK

NLEL0051S01

1. Turn ignition switch “OFF”.
2. Disconnect fuel level sensor unit harness connector B38.
3. Connect a resistor (80Ω) between fuel level sensor unit harness connector terminals 4 and 1.
4. Turn ignition switch “ON”.

The fuel warning lamp should come on.

OIL PRESSURE SWITCH CHECK

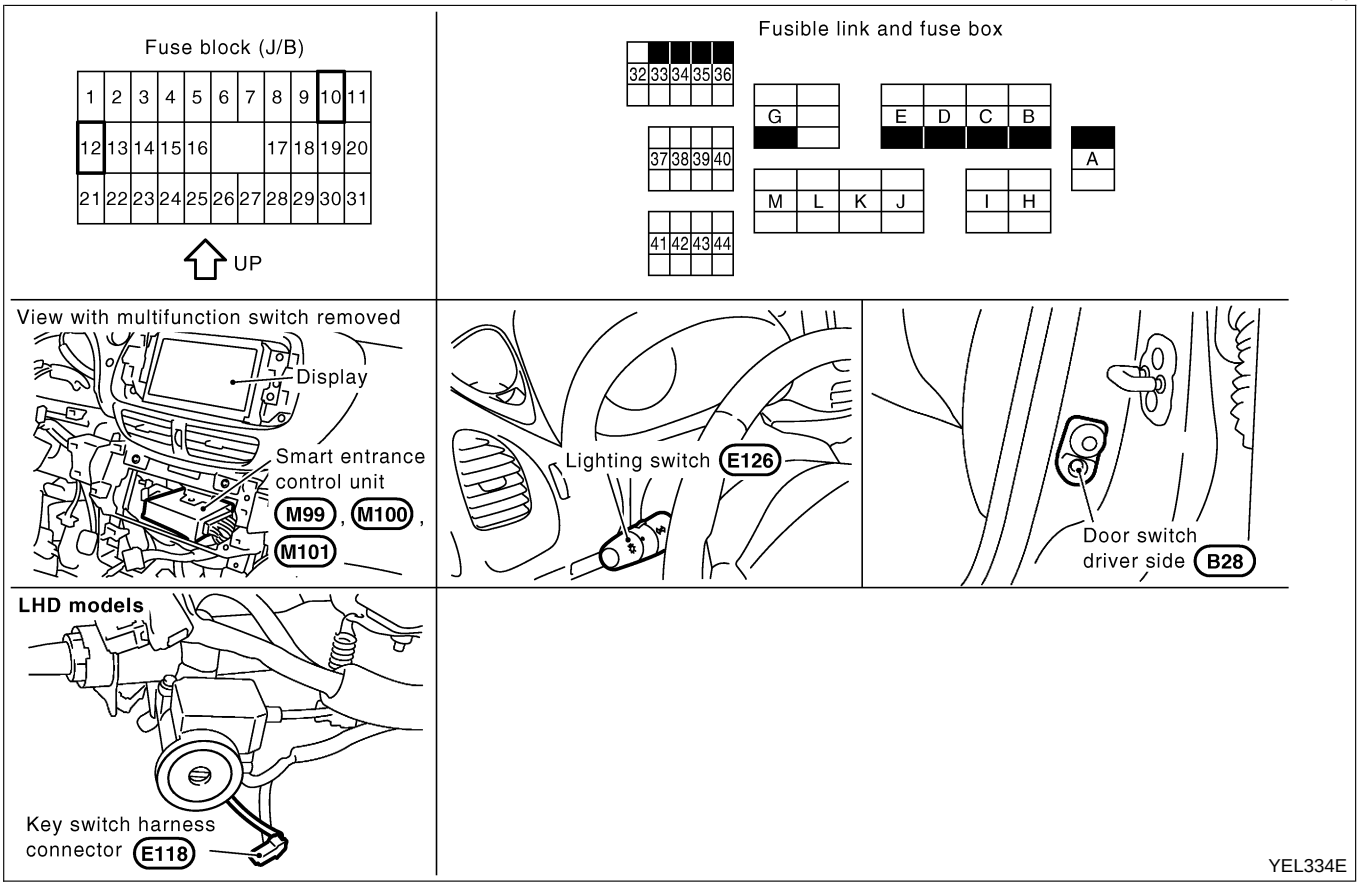
NLEL0051S02

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

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

Component Parts and Harness Connector Location

NLEL0452



System Description

NLEL0453

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 15A fuse [No. 5, located in fuse block (J/B)]
- to smart entrance control unit terminal 56,
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 1 (RHD models), and
- through 10A fuse (No. 38, located in the fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 29.

Ground is supplied to smart entrance control unit terminal 53 through body grounds M28, M48, M109 (QG engine models).

IGNITION KEY WARNING CHIME/FOR RHD MODELS

NLEL0453S01

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

- from key switch terminal 2
- to smart entrance control unit terminal 5.

Ground is supplied

- from body grounds B24, B30 or D89 (LHD models)
- through door switch driver side terminals 3 and 2
- to smart entrance control unit terminal 43.

LIGHT WARNING CHIME

NLEL0453S02

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

- from lighting switch terminal 12
- through daytime light control unit terminals 11 and 10 (with daytime light system)
- to smart entrance control unit terminal 17

Ground is supplied

- from door switch driver side terminal 2
- to smart entrance control unit terminal 43.

Door switch driver side terminal 3 is grounded through body grounds B24, B30 or D89 (LHD models).

TRAILER DIRECTION INDICATOR WARNING CHIME

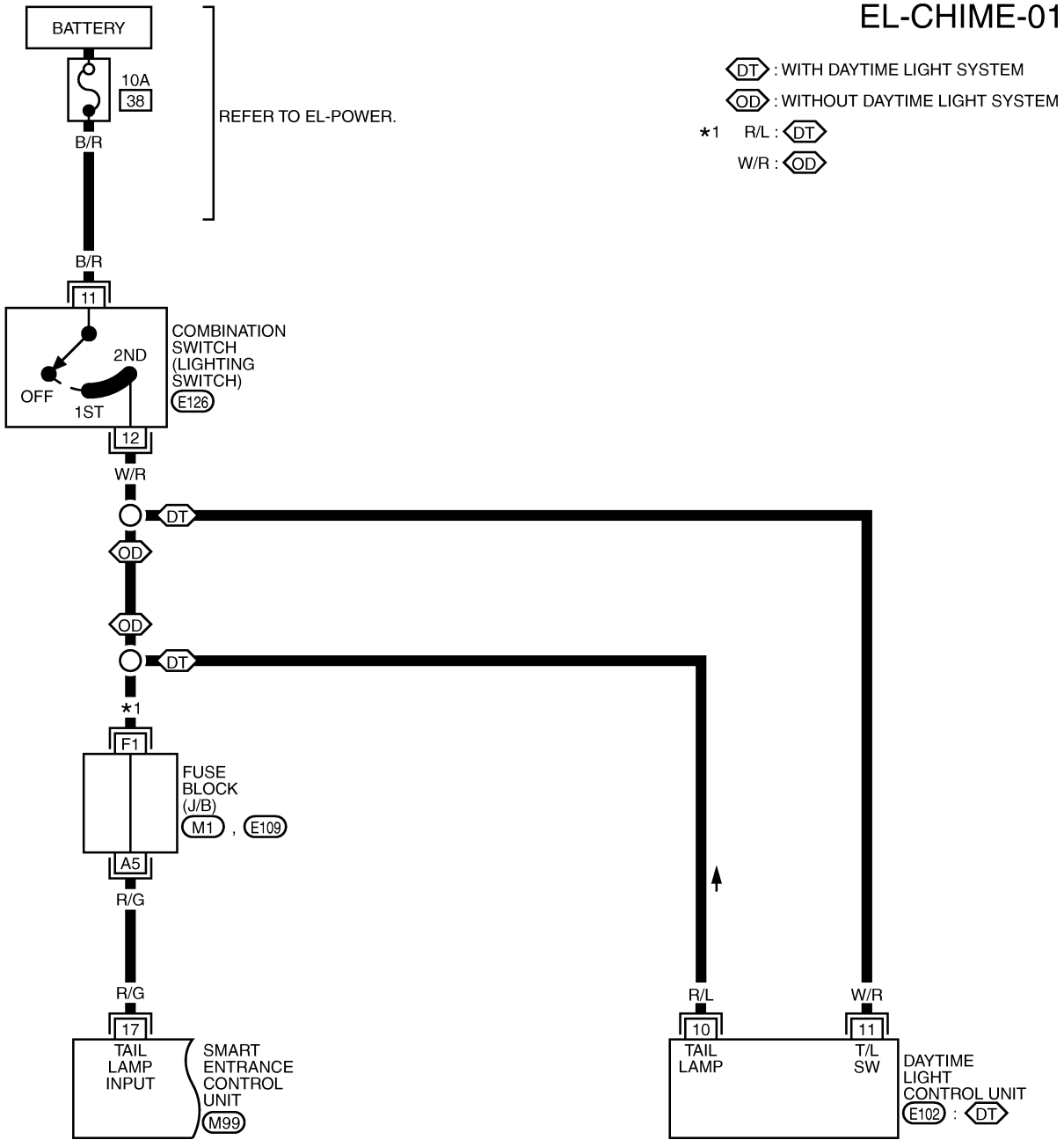
NLEL0453S04

This warning chime will be sounded while the direction indicator (turn signal lamp) is in operation with towing the trailer.
This is an audible feedback (warning chime) to the driver.
If no audible feedback is heard while towing the trailer and operating the turn signal, this indicates the bulb failure of the trailer.

Smart entrance control unit will detect the additional electrical load of a turn signal lamp for trailer automatically. Then the chime will be sounded by the smart entrance control unit internally with the operation of the turn signal.

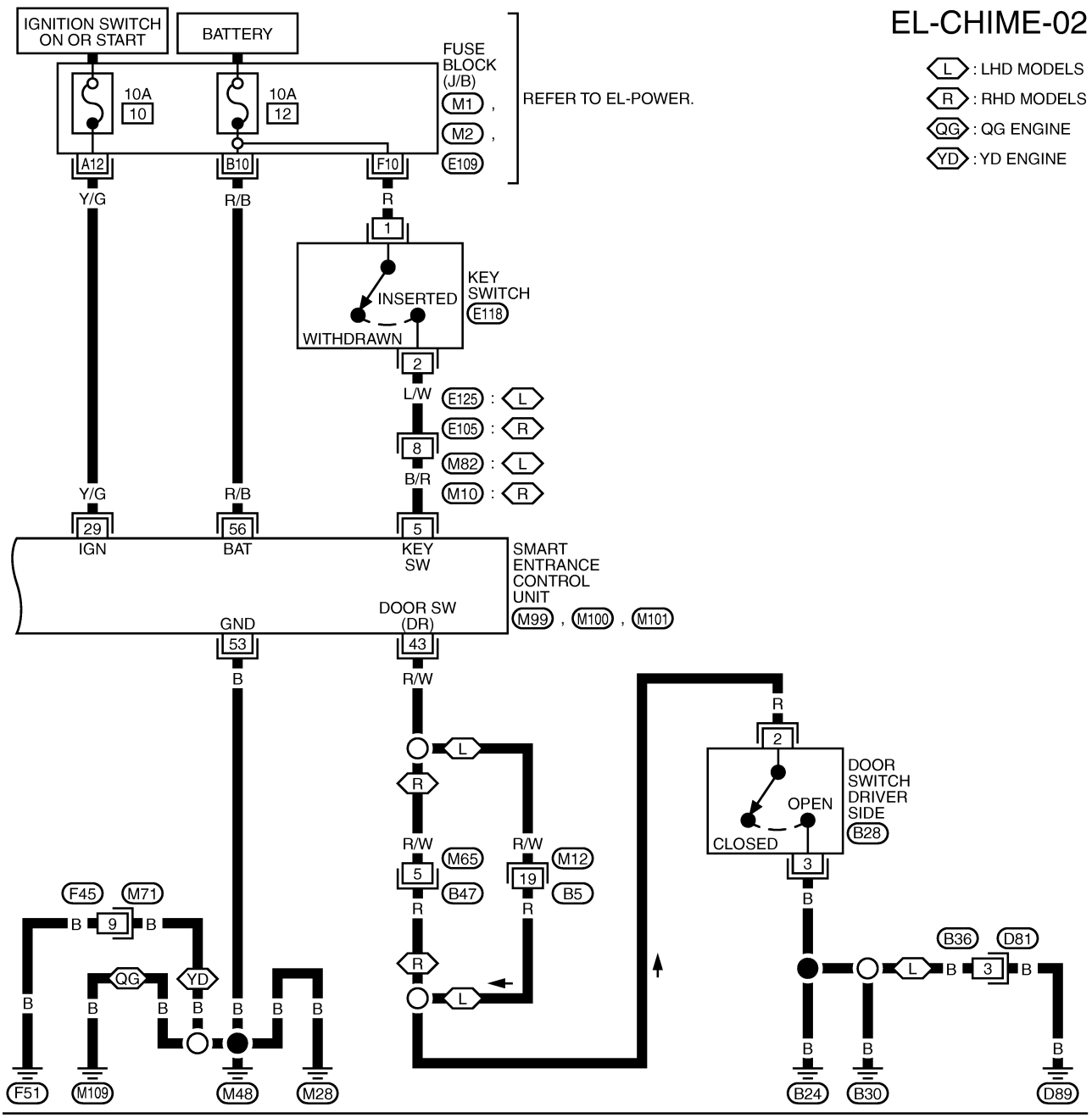
Wiring Diagram — CHIME —

NLEL0454

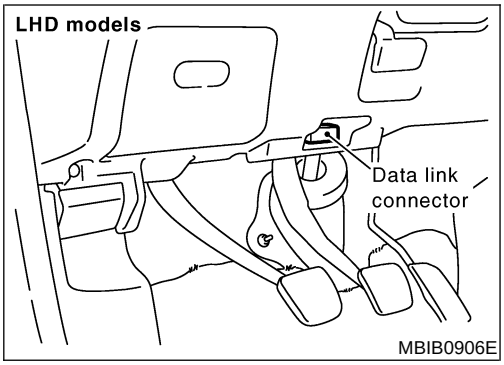


YEL962D

Wiring Diagram — CHIME — (Cont'd)



YEL963D

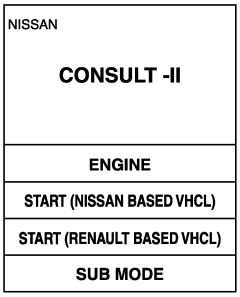


MBIB0906E

CONSULT-II Inspection Procedure “KEY REMINDER”, “LIGHT ON RIMINDER”

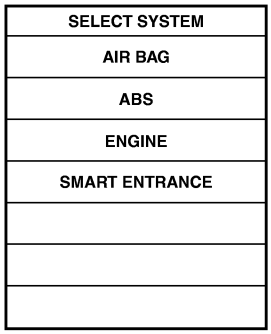
NLEL0683

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



MBIB0233E

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



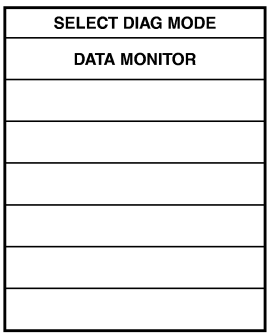
YEL322E

5. Touch “SMART ENTRANCE”.



YEL324E

6. Touch “LIGHT ON REMINDER” or “KEY REMINDER” (RHD models).



SEL788W

7. Select diagnosis mode.
   “DATA MONITOR” is available for “LIGHT ON REMINDER”.

CONSULT-II Appication Items

NLEL0684

DATA MONITOR ITEM (KEY REMINDER)

NLEL0684S01

Monitored item	Description
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
KEY IN DETECT	Indicates [ON/OFF] condition of electronic key switch.
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch.
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.

DATA MONITOR ITEM (LIGHT ON RIMINDER)

NLEL0684S02

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
TAIL LAMP ON	Indicates [ON/OFF] condition of lighting switch.

Trouble Diagnoses

NLEL0455

SYMPTOM CHART

NLEL0455S01

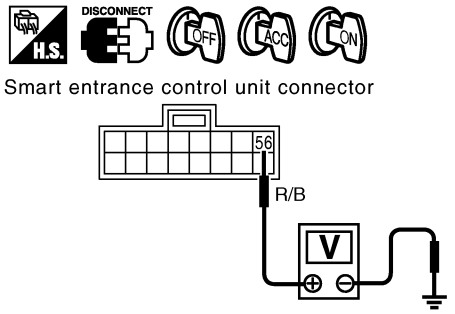
REFERENCE PAGE (EL-)	131	132	135	138
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 3
Light warning chime does not activate.	X	X		X
Ignition key warning chime does not activate.	X		X	X
All warning chimes do not activate.	X			X

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NLEL0455S02

Power Supply Circuit Check

NLEL0455S0201



Battery voltage should exist.

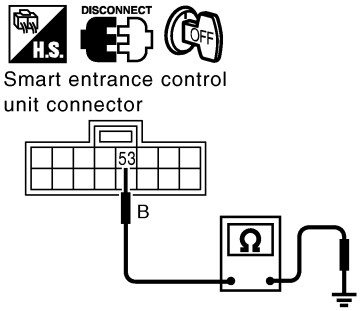
YEL335E

If NG, check the following.

- 15A fuse [No. 5, located in fuse block]
- Harness for open or short between smart entrance control unit and fuse

Ground Circuit Check

NLEL0455S0202



Continuity should exist.

YEL336E

If NG, check ground circuit for open or short.

DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)

=NLEL0455S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Check lighting switch ("TAIL LAMP ON") in "DATA MONITOR" mode with CONSULT-II.

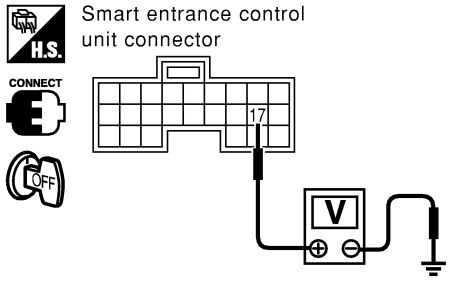
DATA MONITOR	
MONITOR	NO DTC
IGNITION SW	ON
DR DOOR SW	OFF
TAIL LAMP ON	OFF

MKIB0192E

When lighting switch is in 1st or 2nd position:
TAIL LAMP ON ON
When lighting switch is in OFF position:
TAIL LAMP ON OFF

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M193 terminal 17 (R/G) and ground.



MKIB0015E

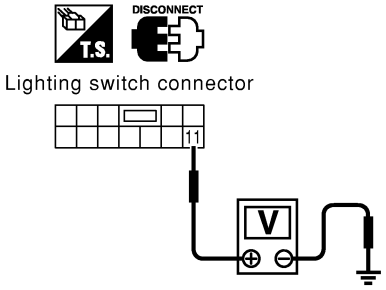
Condition of switch
Voltage [V]
Lighting switch: 1st or 2nd
Approx. 12V
Lighting switch: OFF
0V

OK or NG

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

2	CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT FOR OPEN OR SHORT

1. Disconnect lighting switch harness connector.
2. Check voltage between lighting switch harness connector E126 terminal 11 (B/R) and ground.



MKIB0029E

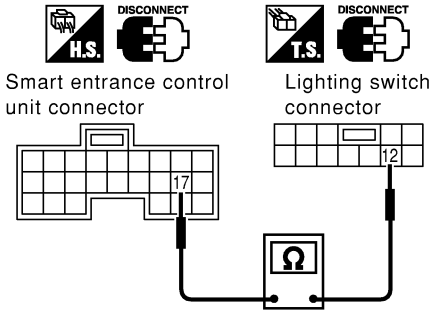
Battery voltage should exist.

OK or NG

OK	▶	GO TO 3. (Without daytime light system) GO TO 4. (With daytime light system)
NG	▶	**Check the following.** ● 10A fuse (No. 38 located in the fuse and fusible link box) ● Harness for open or short between lighting switch and fuse

3	CHECK LIGHTING SWITCH INPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit.
3. Check harness continuity between lighting switch harness connector E126 terminal 12 (W/R) and smart entrance control unit harness connector M99 terminal 17 (R/G).



MKIB0030E

Continuity should exist.

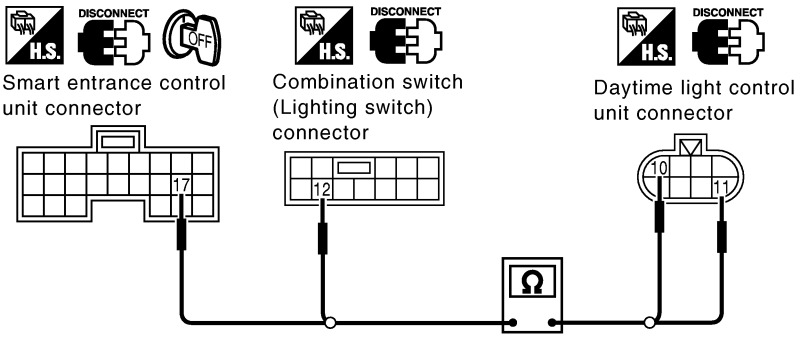
OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and lighting switch. ● Harness for open or short between smart entrance control unit and lighting switch/ daytime light control unit (with daytime light control unit).

4	CHECK DAYTIME LIGHT CIRCUIT

1. Disconnect smart entrance control unit connector and daytime light control unit connector.
2. Check the following.

- Continuity between combination switch harness connector E126 terminal 12 (W/R) and daytime light control unit harness connector E102 terminal 11 (W/R)
- Continuity between daytime light control unit harness connector E102 terminal 10 (R/L) and smart entrance control unit harness connector M99 terminal 17 (R/G)



Continuity should exist.

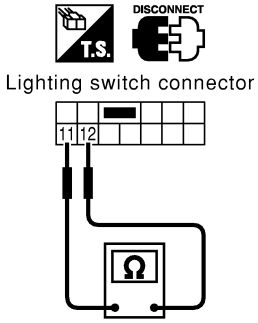
YEL607E

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and daytime light control unit ● Harness for open or short between daytime light control unit and combination switch

5	CHECK LIGHTING SWITCH

Check continuity between lighting switch harness connector E126 terminals 11 and 12.



MKIB0031E

Terminals			Lighting switch condition	Continuity
(+)		(—)		
Connector	Terminal	Terminal		
E209	11	12	OFF position	No
			1st or 2nd position	Yes

MTBL1640

OK or NG

OK	▶	Lighting switch is OK.
NG	▶	Replace lighting switch.

DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INSERT SIGNAL CHECK)/FOR RHD MODELS

=NLEL0455S04

1	CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

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

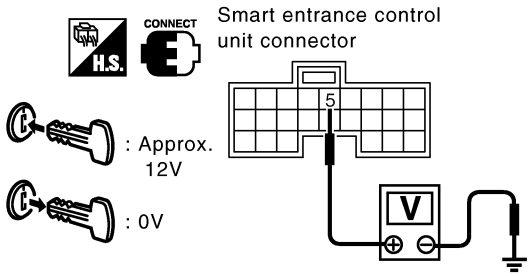
DATA MONITOR	
MONITOR	NO DTC
IGNITION SW	ON
KEY IN DETECT	ON
DR DOOR SW	ON
CDL LOCK SW	OFF
RKE LOCK	OFF

MKIB0193E

When key is inserted to ignition key cylinder:
KEY IN DETECT ON
When key is removed from ignition key cylinder:
KEY IN DETECT OFF

Without CONSULT-II

Check voltage between smart entrance control unit harness connector M118 terminal 5 (B/R) and ground.



YEL337E

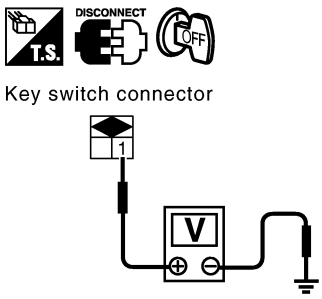
Condition of key switch
Voltage [V]
When key is inserted to ignition key cylinder:
Approx. 12V
When key is removed from ignition key cylinder:
0V

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect key switch harness connector.
3. Check voltage between key switch harness connector E118 terminal 1 (R) and ground.



YEL256E

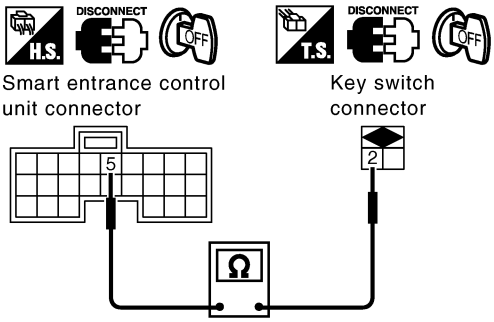
Battery voltage should exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 10A fuse [No. 12 located in fuse block (J/B)] ● Harness for open or short between key switch and fuse

3	CHECK KEY SWITCH INPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

1. Disconnect smart entrance control unit.
2. Check harness continuity between key switch harness connector E118 terminal 2 (L/W) and smart entrance control unit harness connector M99 terminal 5 (B/R).



YEL257E

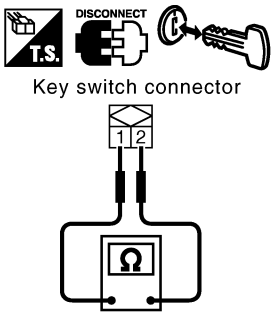
Continuity should exist.

OK or NG

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

4	CHECK KEY SWITCH

Check continuity between key switch harness connector E118 terminals 1 and 2.



YEL574E

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

OK or NG

OK	▶	Key switch is OK.
NG	▶	Replace key switch.

DIAGNOSTIC PROCEDURE 3

=NLEL0455S05

1	CHECK IGNITION ON SIGNAL

With CONSULT-II

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

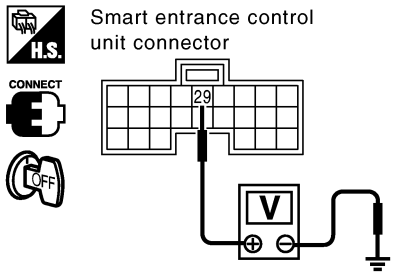
DATA MONITOR	
MONITOR	NO DTC
IGNITION SW	ON
KEY IN DETECT	ON
DR DOOR SW	ON
CDL LOCK SW	OFF
RKE LOCK	OFF

MKIB0193E

When turning ignition switch ON:
IGNITION SW ON
When turning ignition switch OFF:
IGNITION SW OFF

Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit.
3. Check voltage between smart entrance control unit harness connector M100 terminal 29 (Y/G) and ground.



YEL339E

Terminal		Ignition switch position		
(+)	(—)	OFF	ACC	ON
43 (R/W)	Ground	0V	0V	Battery voltage

MTBL1642

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 DRIVER SIDE INPUT SIGNAL

With CONSULT-II

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

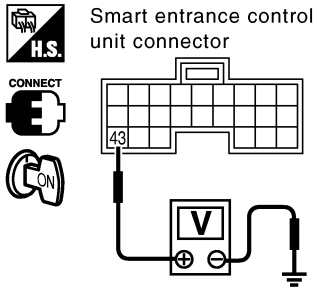
DATA MONITOR	
MONITOR	NO DTC
IGNITION SW	ON
KEY IN DETECT	ON
DR DOOR SW	ON
CDL LOCK SW	OFF
RKE LOCK	OFF

MKIB0193E

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

Without CONSULT-II

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit harness connector M100 terminal 43 (R/W) and ground.



YEL338E

Terminal (+)	Terminal (—)	Condition (Driver's door)	Voltage [V]
43 (R/W)	Ground	Open	Approx. 5
		Closed	0

MTBL1441

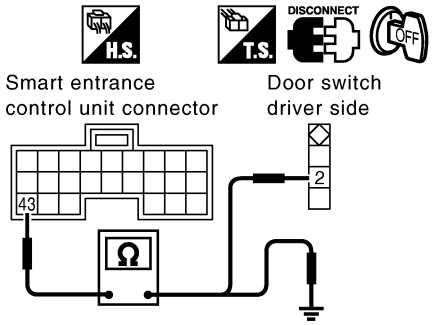
OK or NG

OK	▶	INSPECTION END
NG	▶	GO TO 3.

3	CHECK DOOR SWITCH OPEN OR SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit harness connector and door switch driver side connector.
3. Check the following.

– Harness continuity between smart entrance control unit harness connector M100 terminal 43 (R/W) and door switch driver side connector B28 terminal 2 (R).
– Harness continuity between smart entrance control unit harness connector M100 terminal 43 (R/W) and body ground.



YEL350E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M100	43 (R/W)	B28	2 (R)	Yes
M100	43 (R/W)	Ground		No

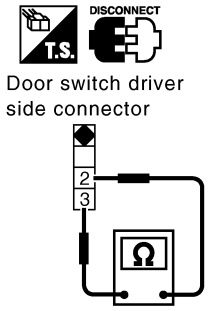
MTBL1643

OK or NG

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

4	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between door switch driver side harness connector B28 terminals 2 and 3.



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

YEL348E

OK or NG

OK	▶	Door switch driver side is OK.
NG	▶	Replace door switch driver side.

System Description

NLEL0456

WIPER OPERATION

NLEL0456S01

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

- LO speed
- HI speed
- INT (Intermittent)
- MIST

Power is supplied at all time

- through 30A fuse (No. 32, located in fuse and fusible link box)
- to front wiper relay-1 terminal 5, and
- through 40A fusible link (letter **J**, located in fuse and fusible link box)
- through ignition switch terminal 1 and 3 when the switch is in the ON or START position
- to front wiper relay-1 terminal 1.

Ground is supplied

- to front wiper relay-1 terminal 2
- through body grounds E24 and E73

With power and ground supplied, the front wiper relay-1 is energized.

Low and High Speed Wiper Operation

NLEL0456S0101

Ground is supplied to wiper and washer switch terminal 17 through body grounds E24 and E73.
When the wiper switch is placed in the LO position, ground is supplied

- through terminal 14 of the front wiper and washer switch
- to front wiper motor terminal 4.

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 front wiper and washer switch
- to wiper motor terminal 5.

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

Auto Stop Operation

NLEL0456S0102

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 front wiper and washer switch
- to front wiper motor terminal 4, in order to continue wiper motor operation at low speed.

Ground is also supplied

- through terminal 13 of the front wiper and washer switch
- to front wiper motor terminal 2
- through terminal 3 of front wiper motor
- through body grounds E24 and E73.

When wiper arms reach base of windshield, front wiper motor terminals 2 and 3 are connected instead of terminals 2 and 1. Wiper motor will then stop wiper arms at the STOP position.

Intermittent Operation

NLEL0456S0103

The front wiper motor operates the wiper arms one time at low speed at a set interval of approximately 1 to 13 seconds. This feature is controlled by the wiper amplifier (INT SW) combined with front wiper switch.
When the wiper switch is placed in the INT position, ground is supplied to wiper amplifier (WIPER SW INT).
The desired interval time is input to wiper amplifier (INT VR) from wiper volume switch combined with front wiper and washer switch.
Then intermittent ground is supplied

- through wiper amplifier (OUTPUT) and
- through terminal 14 of front wiper and washer switch
- to terminal 4 of front wiper motor.

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

MIST Operation

NLEL0456S0104

When the wiper switch is turned to the MIST position, wiper low speed operation cycles once and then stops. If the switch is held in the MIST position, low speed operation continues.

WASHER OPERATION

NLEL0456S02

With the ignition switch in the ON or START position and the lever is pulled to the WASH/FR position, power is supplied

- through 10A fuse [No. 27, located in the fuse block (J/B)]
- to front wiper switch terminal 5.
- through front wiper and washer switch terminal 18
- to front washer motor terminal 1.

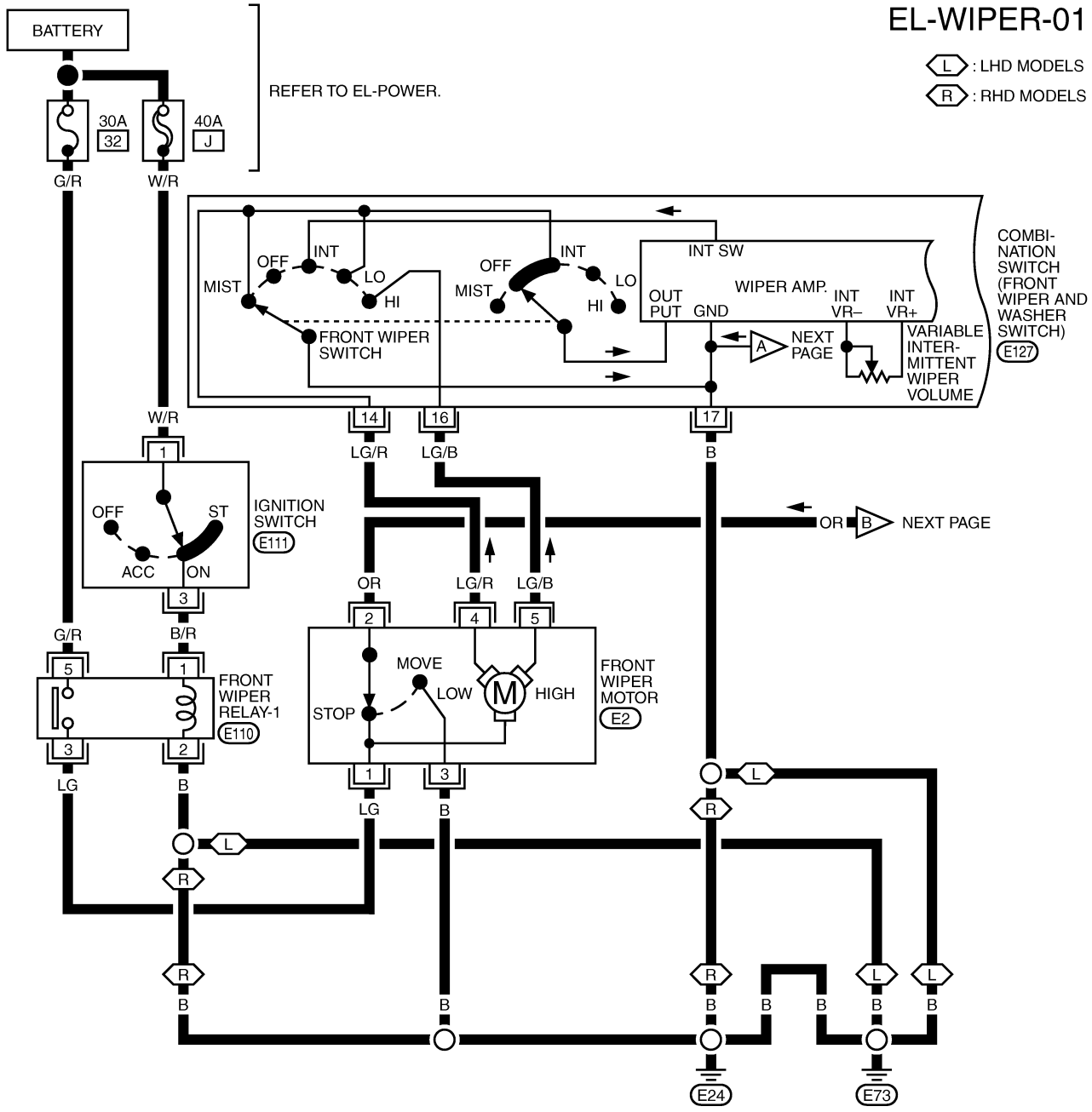
When the lever is pulled to the WASH/FR position, ground is supplied

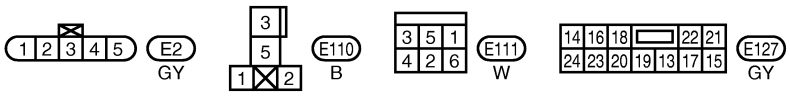
- from body grounds E24 and E73
- through terminal 17 of the front wiper and washer switch
- through terminal 22 of the front wiper and washer switch
- to front washer motor terminal 2.

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.

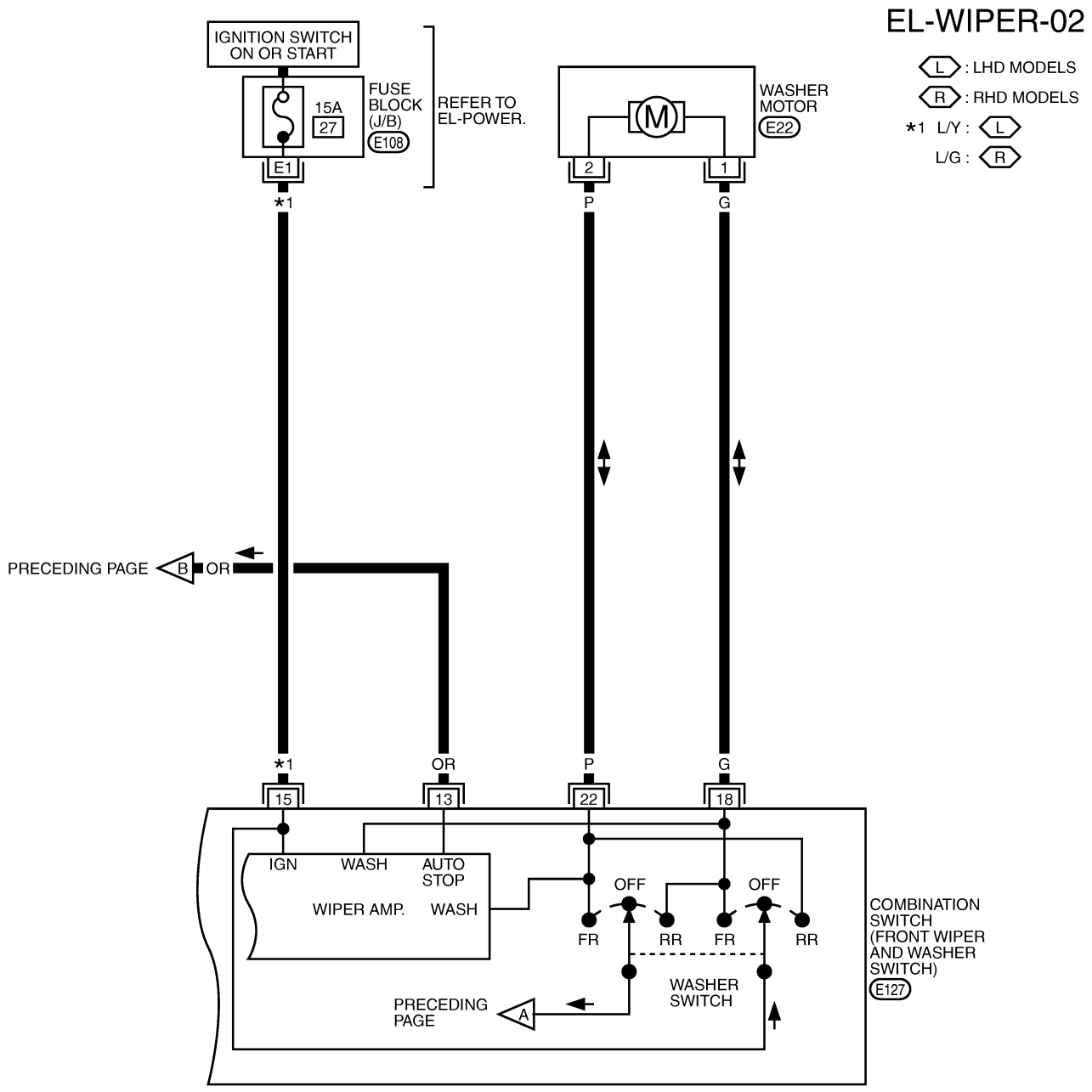
Wiring Diagram — WIPER —

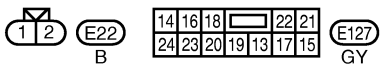
NLEL0457





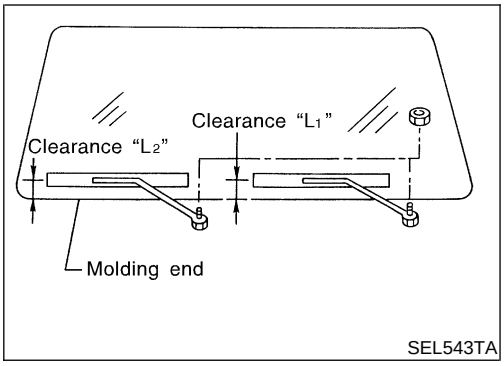
YEL964D





REFER TO THE FOLLOWING.
E108 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL965D



SEL543TA

Removal and Installation

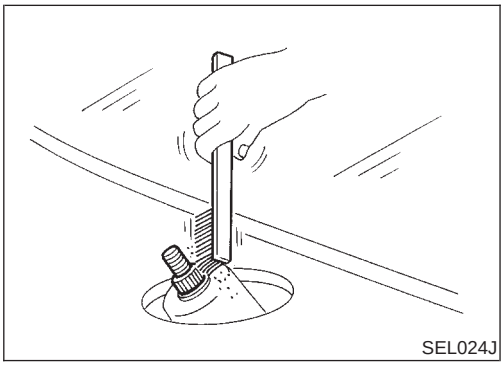
NLEL0060

WIPER ARMS

NLEL0060S01

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": 20.4 - 34.4 mm (0.803 - 1.354 in)
   Clearance "L_2": 61.8 - 75.8 mm (2.433 - 2.984 in)

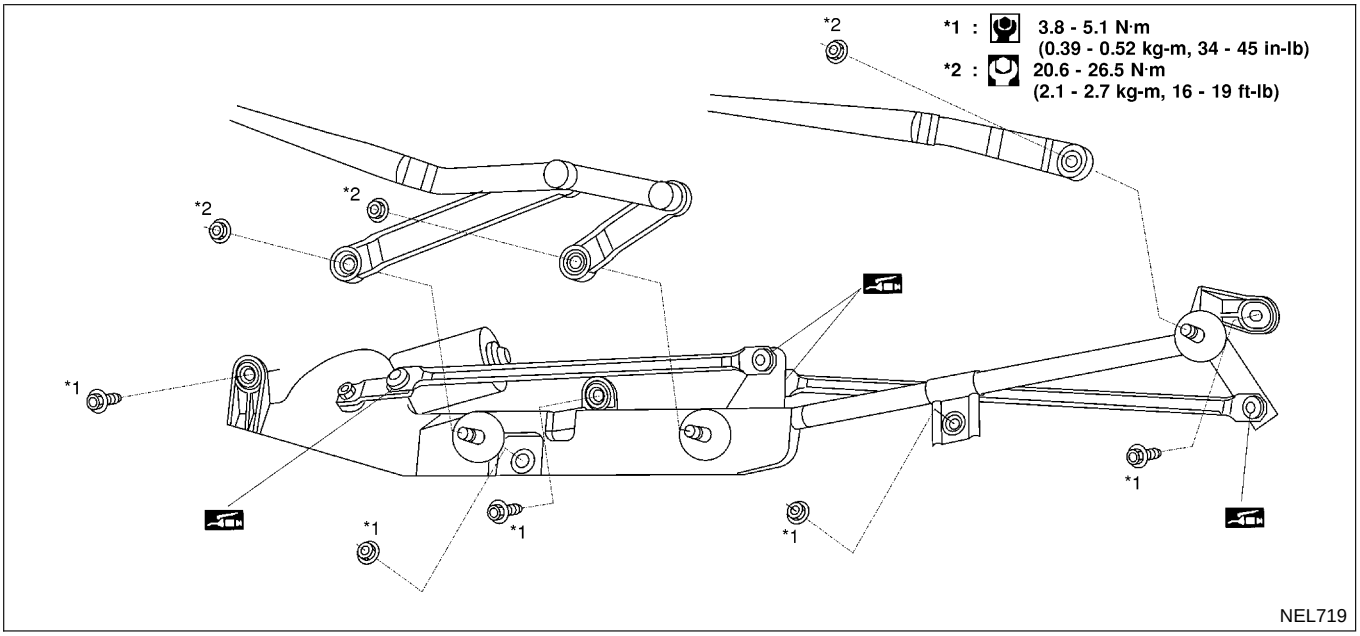
- Tighten wiper arm nuts to specified torque.
  Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 16 - 19 ft-lb)


SEL024J

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

WIPER LINKAGE

NLEL0060S02



NEL719

Removal

NLEL0060S0201

1. Remove wiper arms and cowl top cover.
2. Remove wiper motor connector.
3. Remove 5 screws and 3 nuts.
4. Remove wiper linkage.

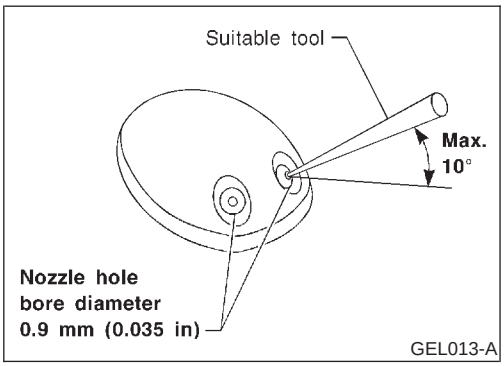
Be careful not to break ball joint rubber boot.

Installation

NLEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.

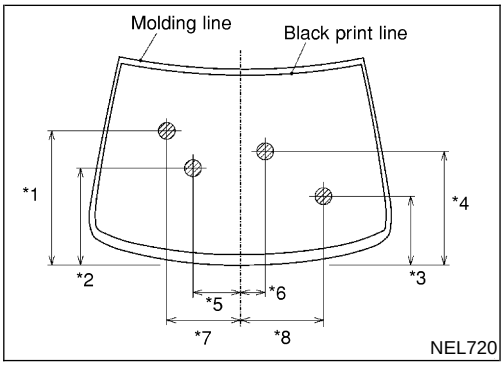


Washer Nozzle Adjustment

NLEL0061

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

Adjustable range: ±10° (In any direction)



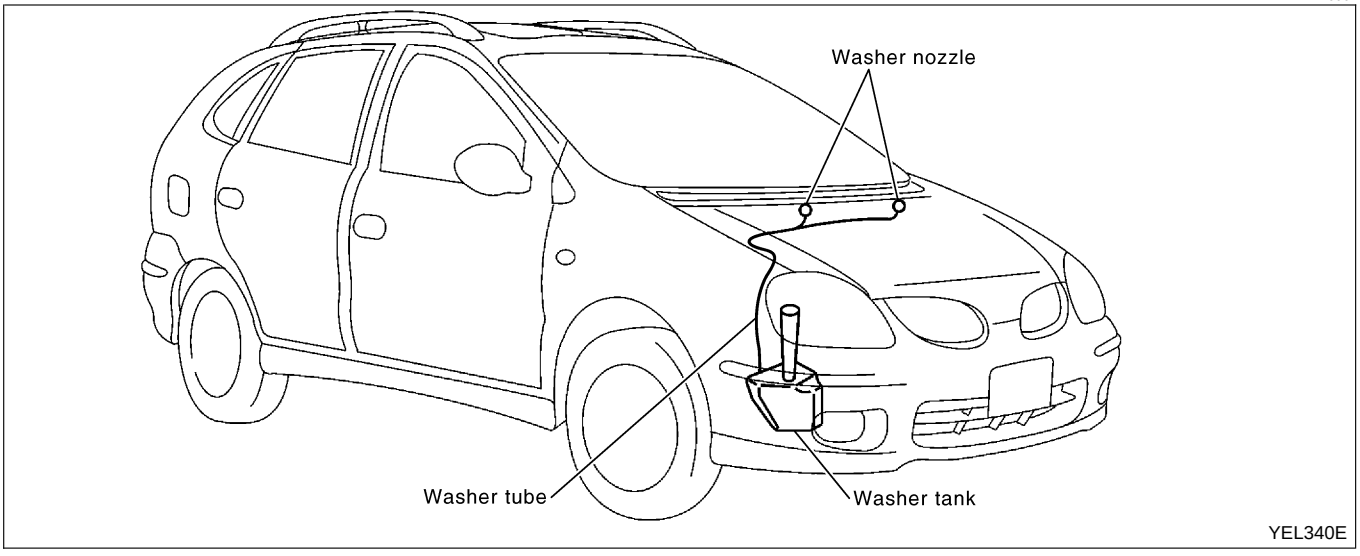
Unit: mm (in)

*1	646.9 (25.47)	*5	230.1 (9.06)
*2	470.2 (18.51)	*6	16.8 (0.66)
*3	332.9 (13.11)	*7	356.5 (14.04)
*4	550.9 (21.69)	*8	394.8 (15.54)

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

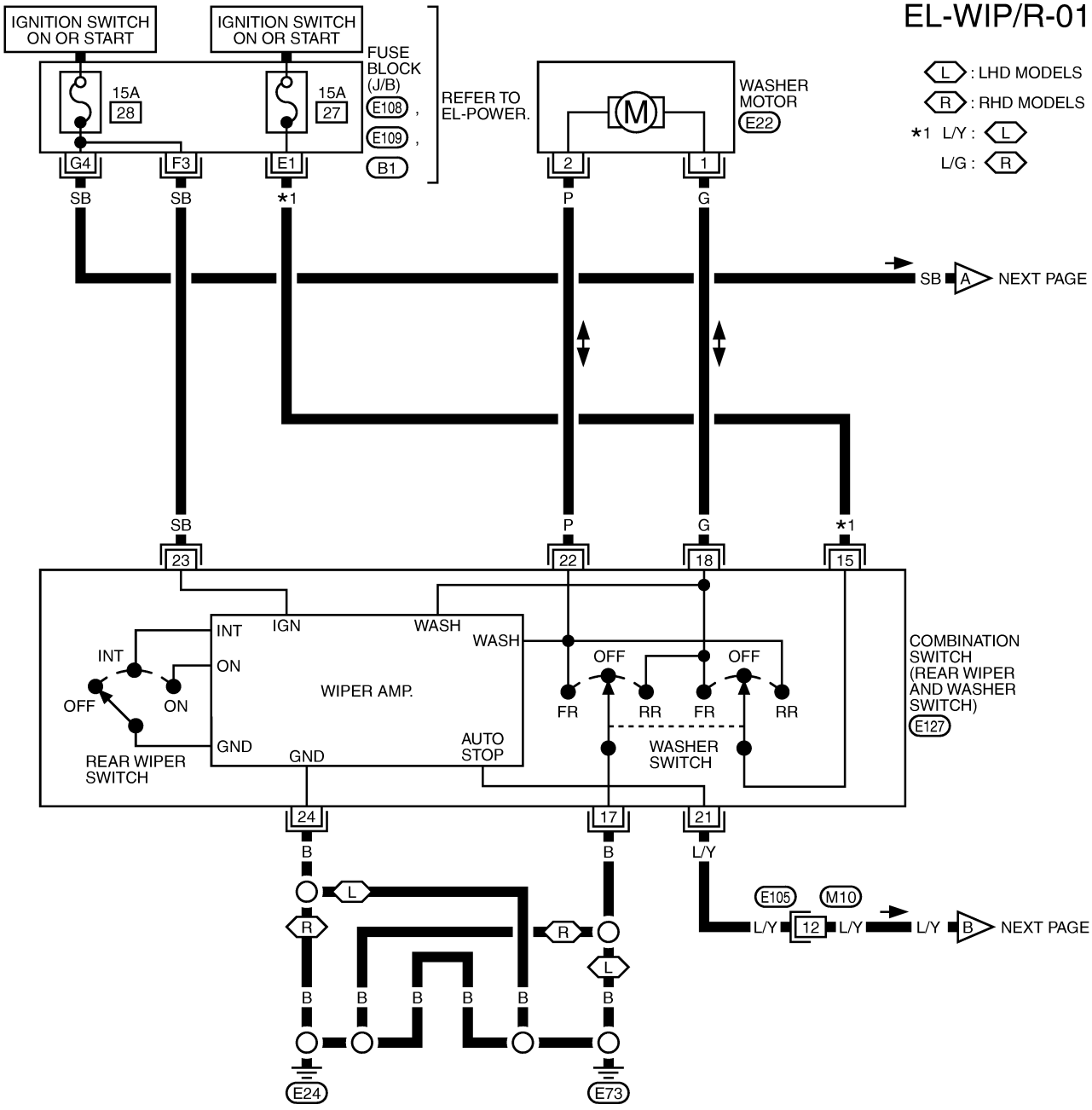
Washer Tube Layout

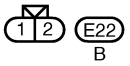
NLEL0062

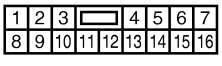


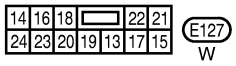
Wiring Diagram — WIP/R —

NLEL0458









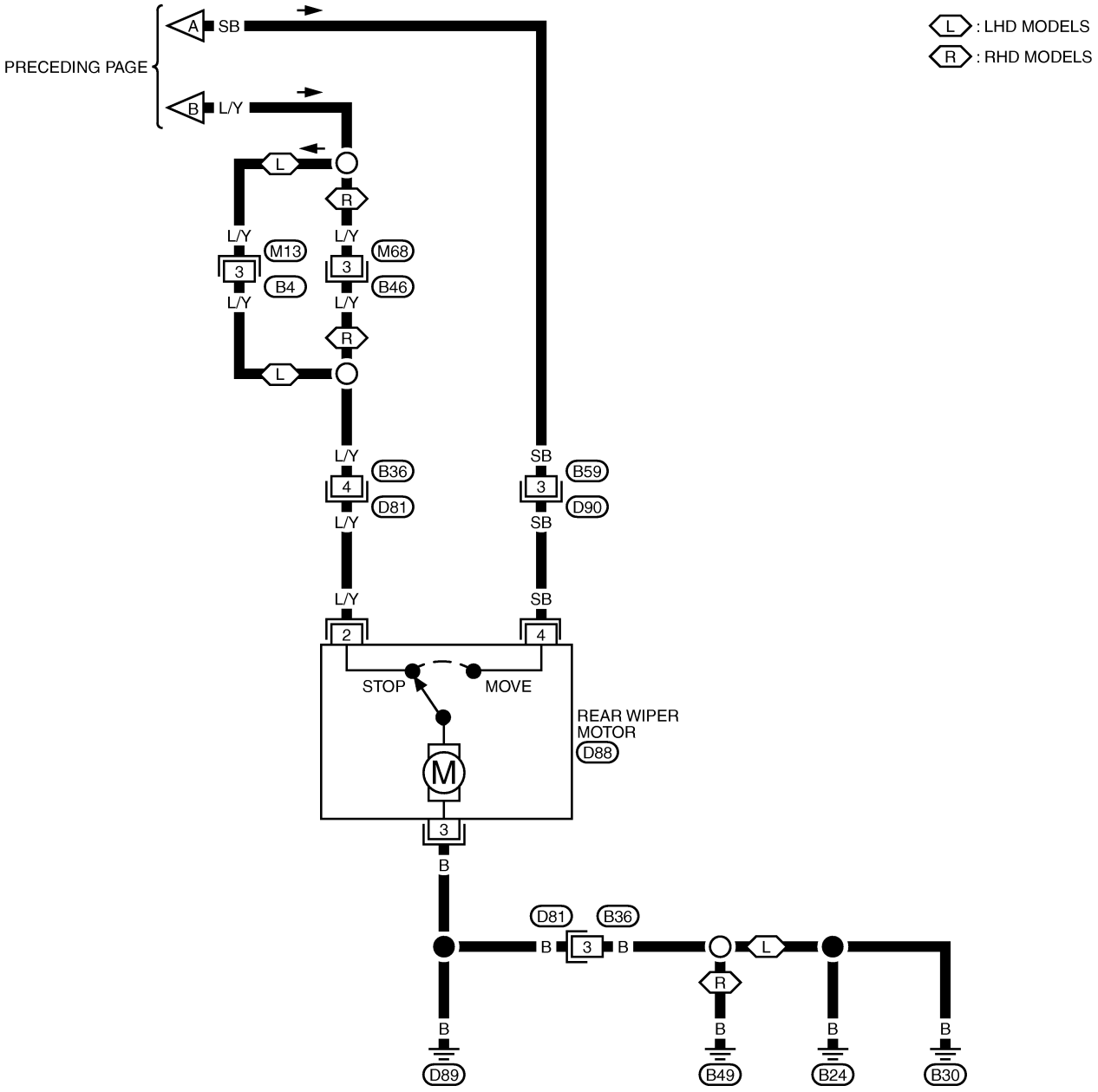
REFER TO THE FOLLOWING.

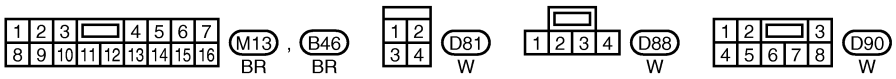
E108 , E109 , B1

-FUSE BLOCK- JUNCTION BOX (J/B)

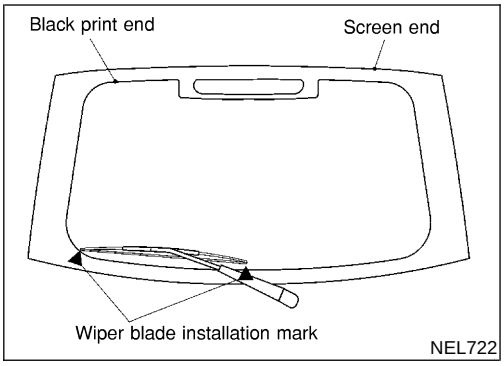
YEL966D

EL-WIP/R-02





YEL967D



Removal and Installation

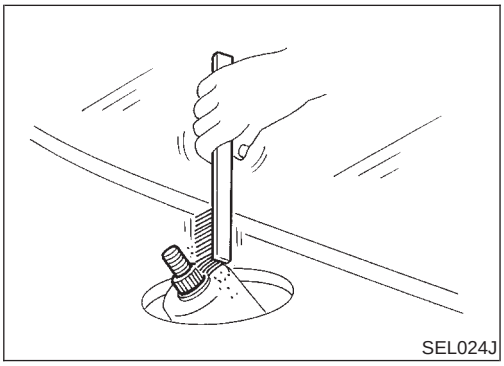
NLEL0301

WIPER ARMS

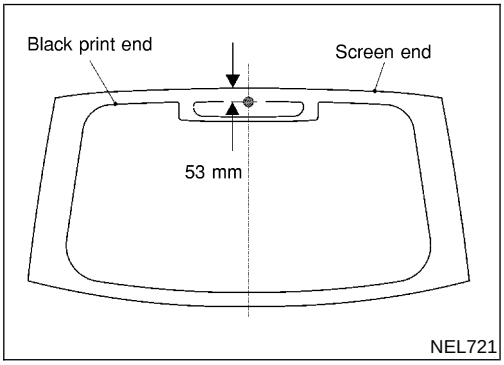
NLEL0301S01

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. Set the black center to clearance “E” immediately before tightening the nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it “OFF”.
4. Ensure that wiper blades stop on the lowest heat wire.

- **Tighten windshield wiper arm nuts to specified torque.**
  : 12.7 - 17.6 N·m (1.3 - 1.8 kg-m, 10 - 13 ft-lb)



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



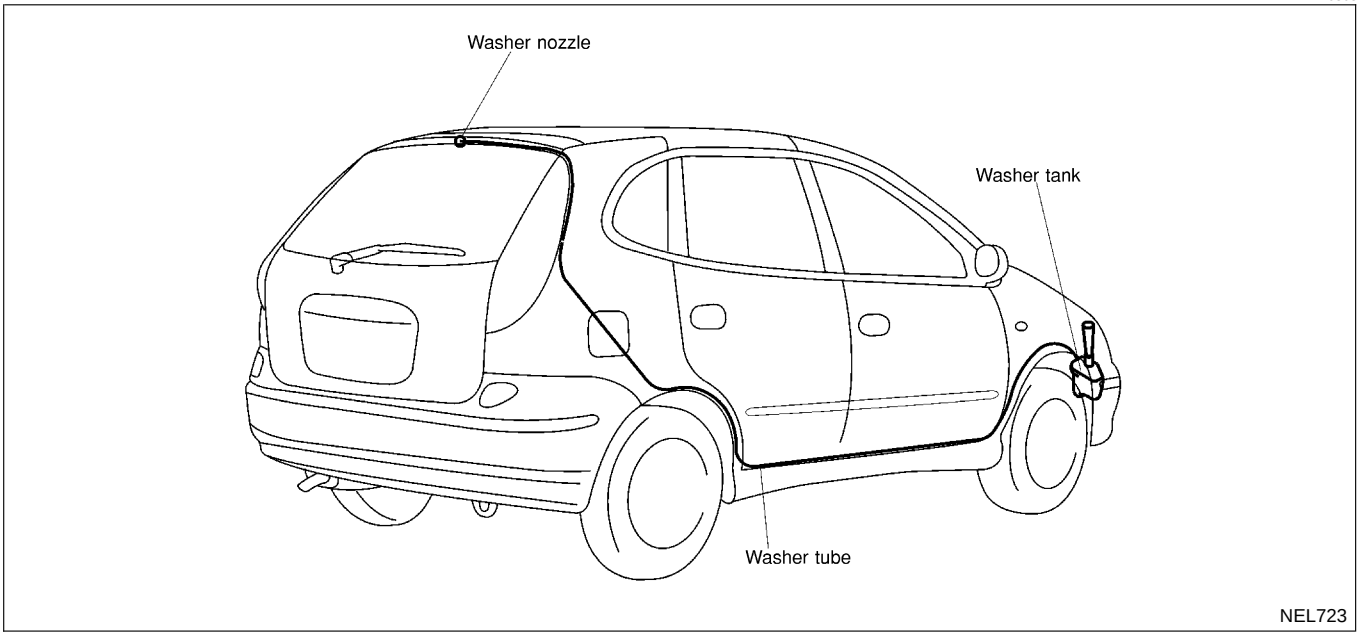
Washer Nozzle Adjustment

NLEL0302

The diameter of the washer spit circle is less than 30 mm (1.18 in).

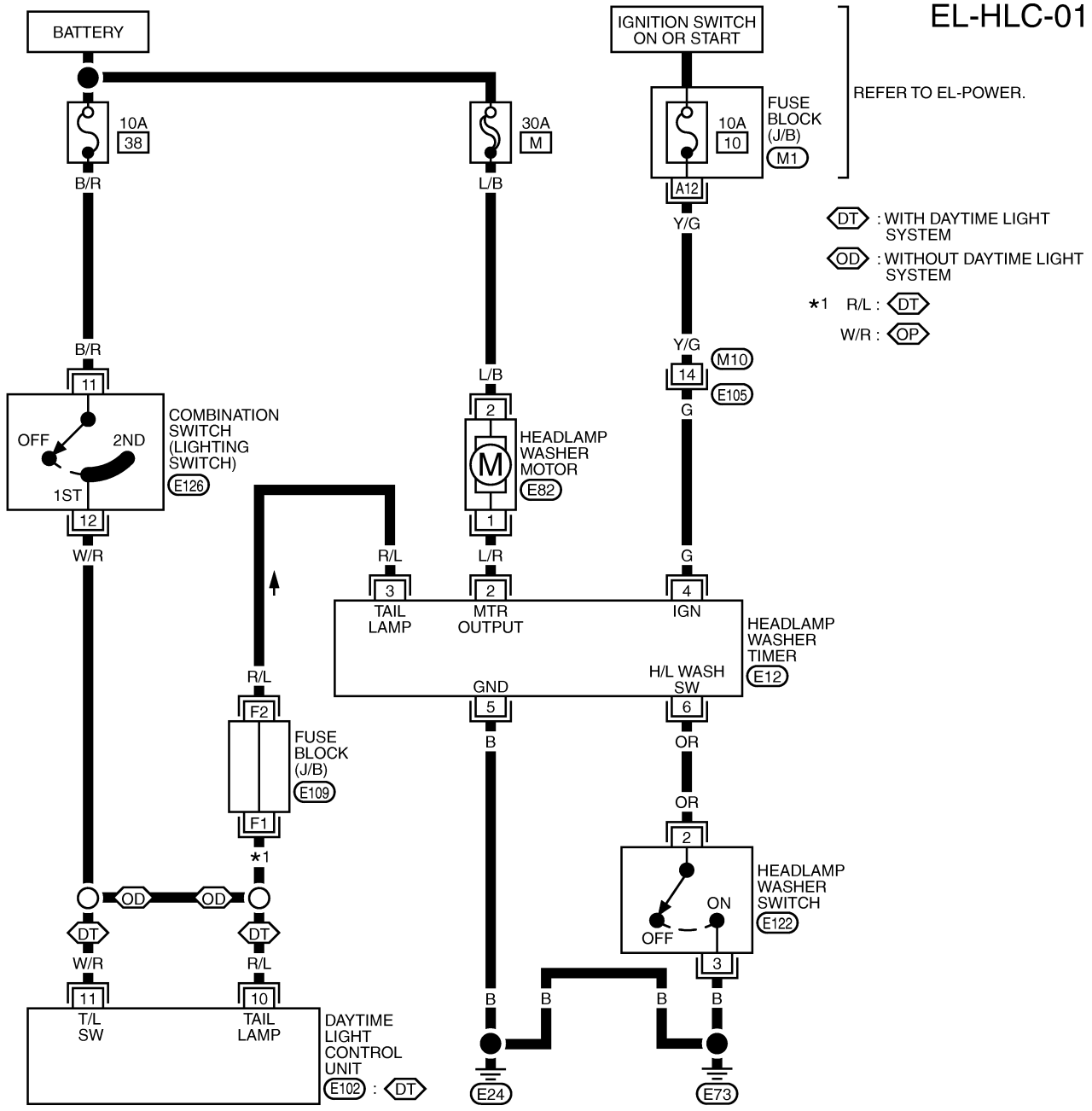
Washer Tube Layout

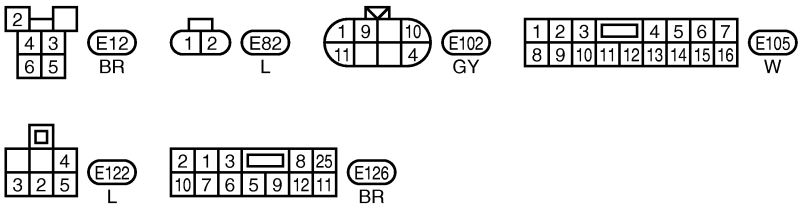
NLEL0303



Wiring Diagram — HLC —

NLEL0459



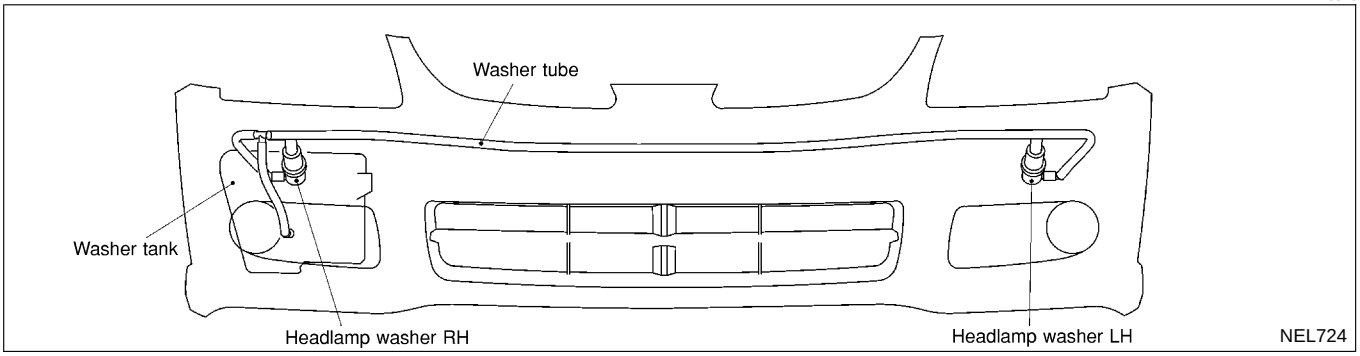


REFER TO THE FOLLOWING.
M1 , E109 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL968D

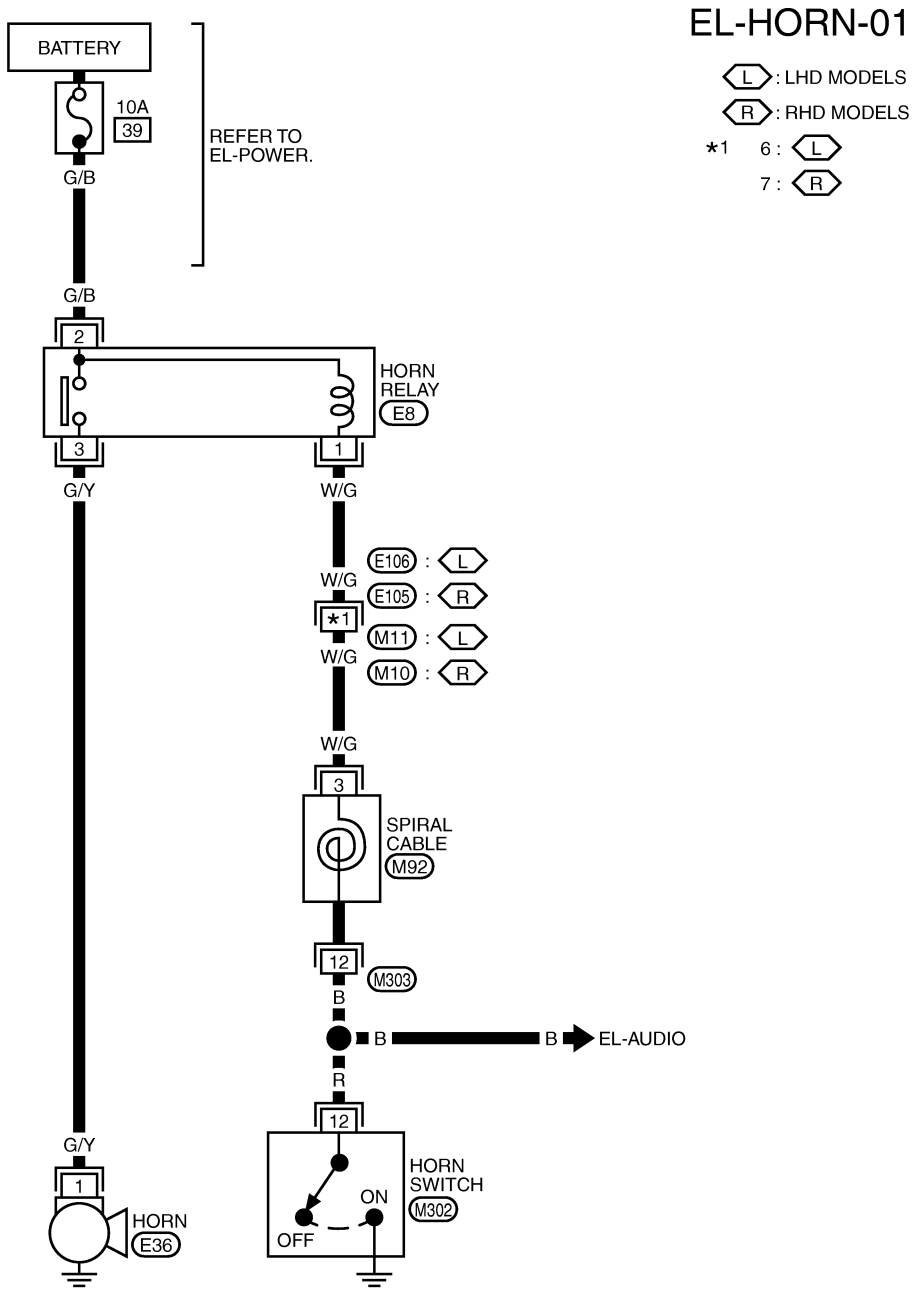
Washer Tube Layout

NLEL0376



Wiring Diagram — HORN —

NLEL0460

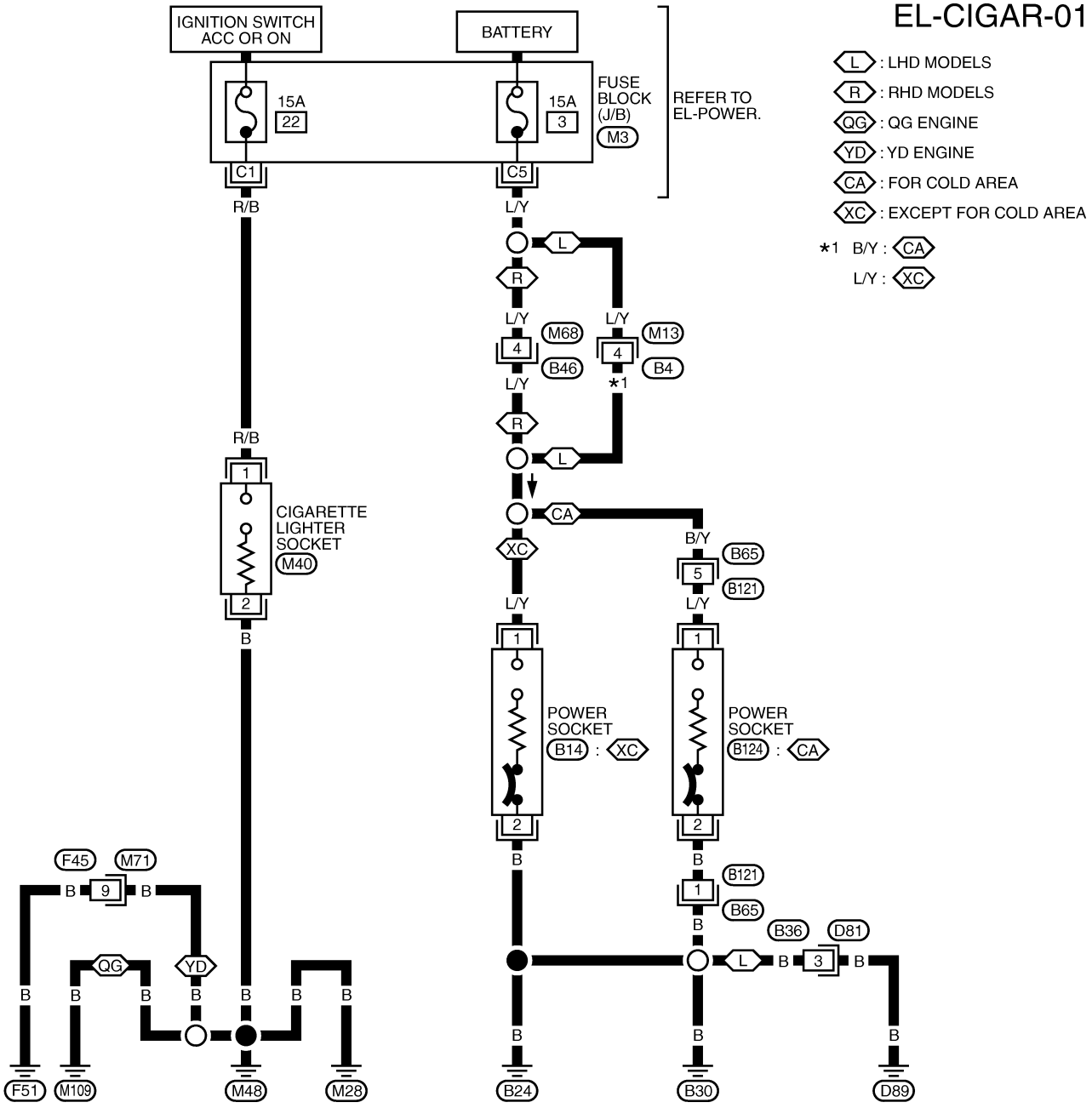


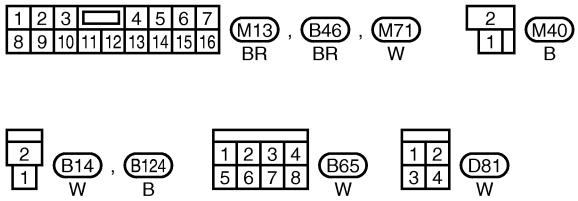
*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, EL SECTION.

YEL969D

Wiring Diagram — CIGAR —

NLEL0461





REFER TO THE FOLLOWING.

M3 -FUSE BLOCK-JUNCTION BOX (J/B)

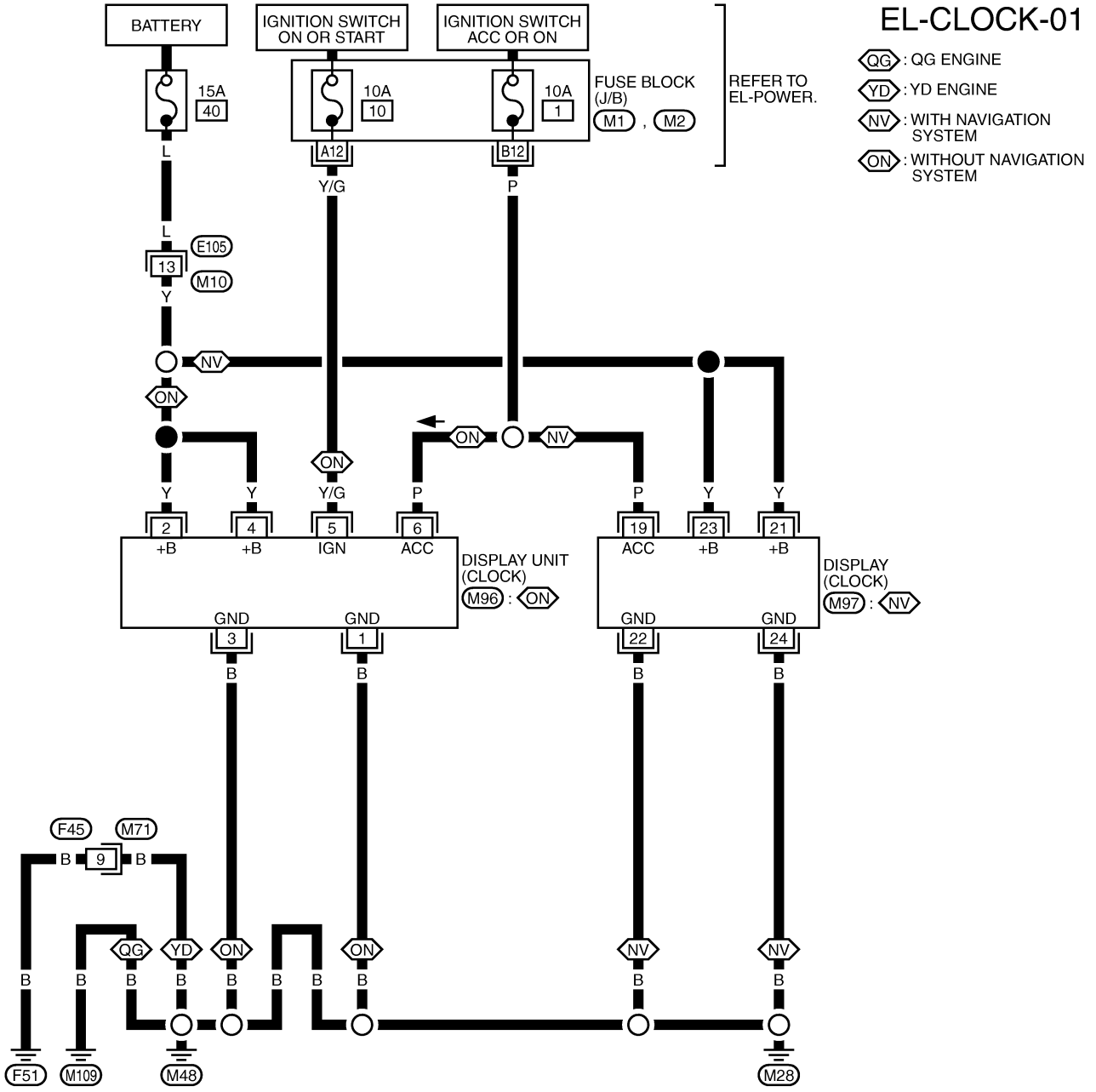
YEL970D

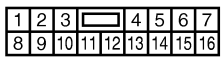
Wiring Diagram — CLOCK —

NLEL0462

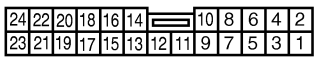
LHD MODELS

NLEL0462S01





M71 , E105
W W



M96 , M97
BR GY

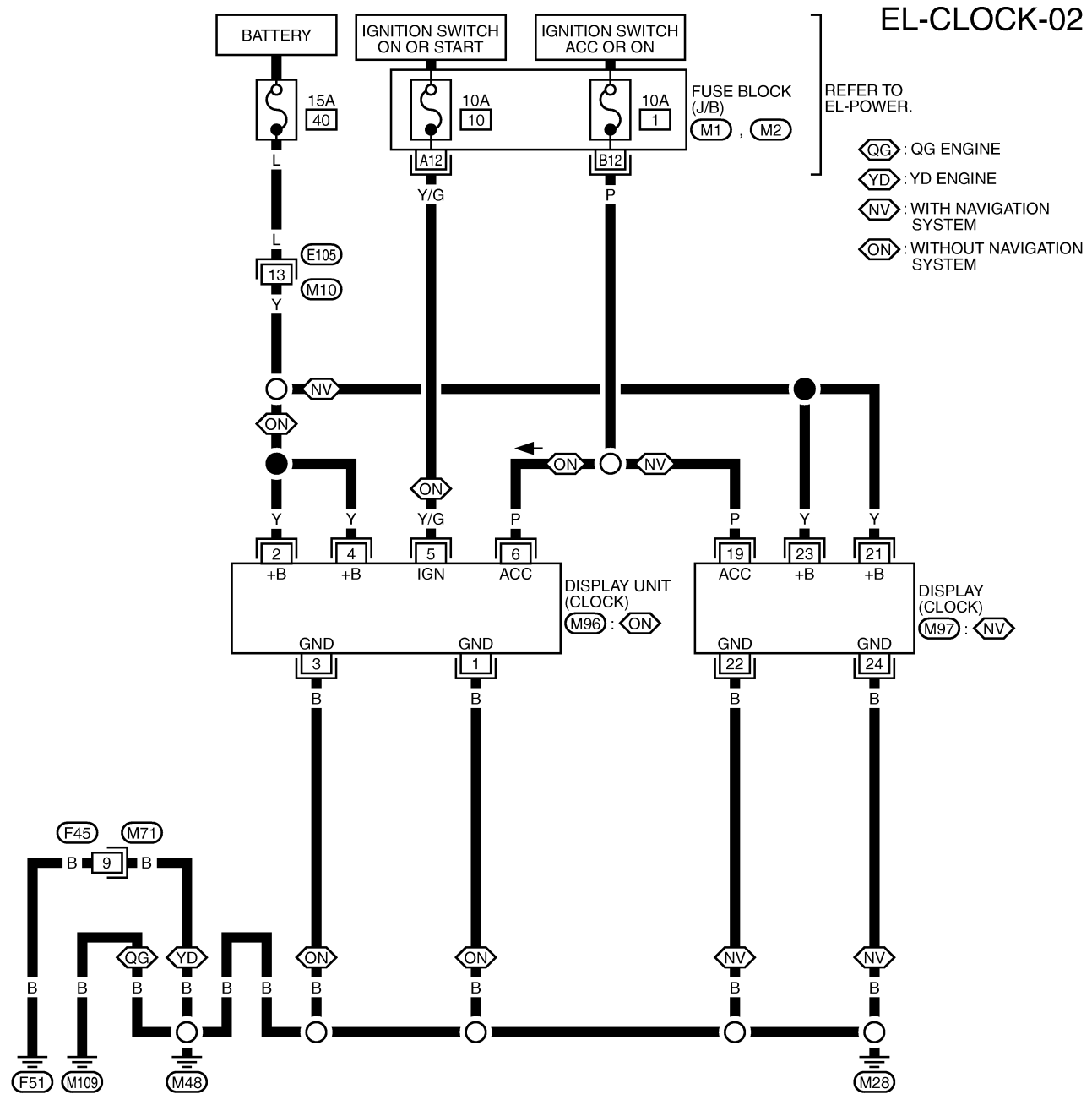
REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

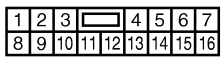
YEL971D

Wiring Diagram — CLOCK — (Cont'd)

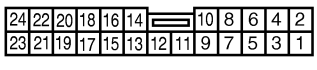
RHD MODELS

NLEL0462S02





M71 W , E105 W



M96 BR , M97 GY

REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL972D

System Description

NLEL0534

- The rearview monitor is equipped to check the rearward of the vehicle with display when the selector lever is in R position.
- The lines of vehicle sides and the distance from the rear end of the vehicle are provided on display as a guide. It allows the driver to know the distance between the vehicle and a rearward object, and the width of the vehicle much easier.

POWER SUPPLY AND GROUND

NLEL0534S01

Power is supplied at all time
- through 15A fuse (No. 40, located in fuse and fusible link box)
- to rearview camera control unit terminal 7.

When ignition switch is ACC or ON position, power is supplied
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to rearview camera control unit terminal 6.

When ignition switch is ON or START position, power is supplied
- through 10A fuse [No. 30, located in fuse block (J/B)]
- to back−up lamp switch terminal 1 (M/T models) or
- to park/neutral position switch terminal 3 (A/T model).

Ground is supplied
LHD models
- to rearview camera control unit terminal 16 and
- to rearview camera terminal 3
- through body ground B24, B30, and D89

RHD models
- to rearview camera control unit terminal 16
- through body ground M28, M48, M109 (QG engine) or F51 (YD engine)
- to rearview camera terminal 3
- through body ground D89 and B49.

REARVIEW CAMERA OPERATION

NLEL0534S02

When A/T selector lever or gear position is reverse position
- through back-up lamp switch terminal 2 in (QG and YD22DDTi engines) or
- through park/neutral position switch terminal 3 (YD22DDT engine)
- through park/neutral position switch terminal 8 (A/T model)
- to rearview camera control unit terminal 14, and
- to AV and NAVI control unit terminal 32 (with navigation system) or
- to display unit terminal 7 (without navigation system).

Then, camera ON signal is sent
- through rearview camera control unit terminal 5
- to rearview camera terminal 4.

An image taken by rearview camera is sent
- through rearview camera terminal 2
- to rearview camera control unit terminal 3.

Then an image is sent
- through rearview camera control unit terminal 2 and 13
- to display terminal 9 and 10 (with navigation system) or
- to display unit terminal 23 and 24 (without navigation system).

An image of rearview will be projected on the display.

Rearview Camera Guide Line (With Navigation System)

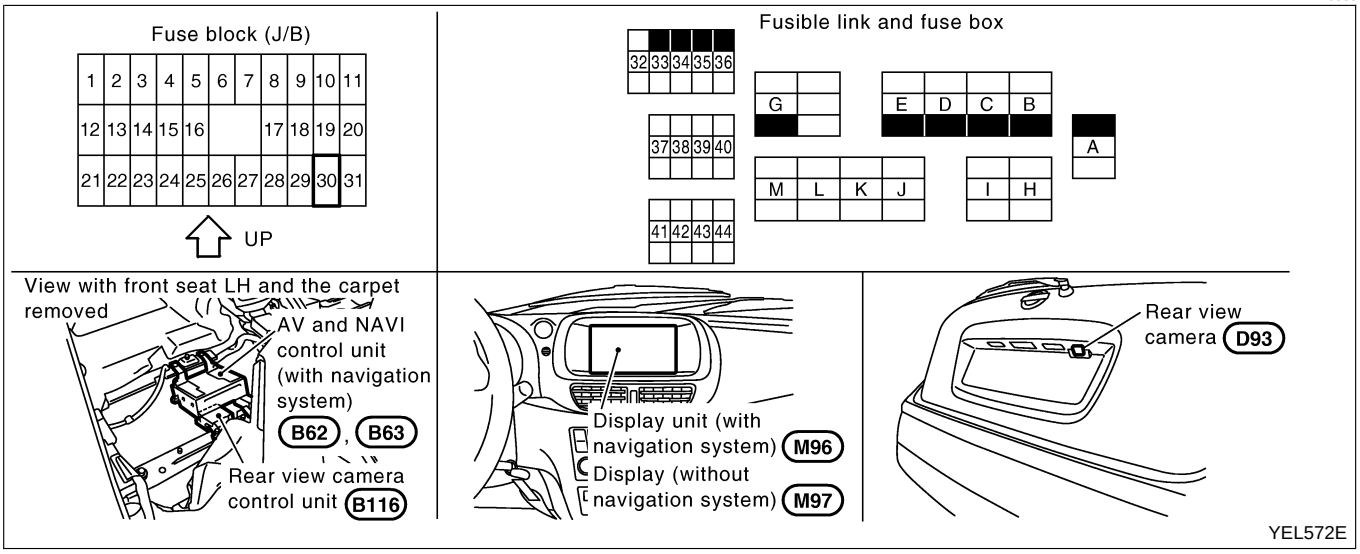
NLEL0534S0201

- from AV and NAVI control unit terminal 37
- to rearview camera control unit terminal 15.

Rearview guideline will be projected on the display.

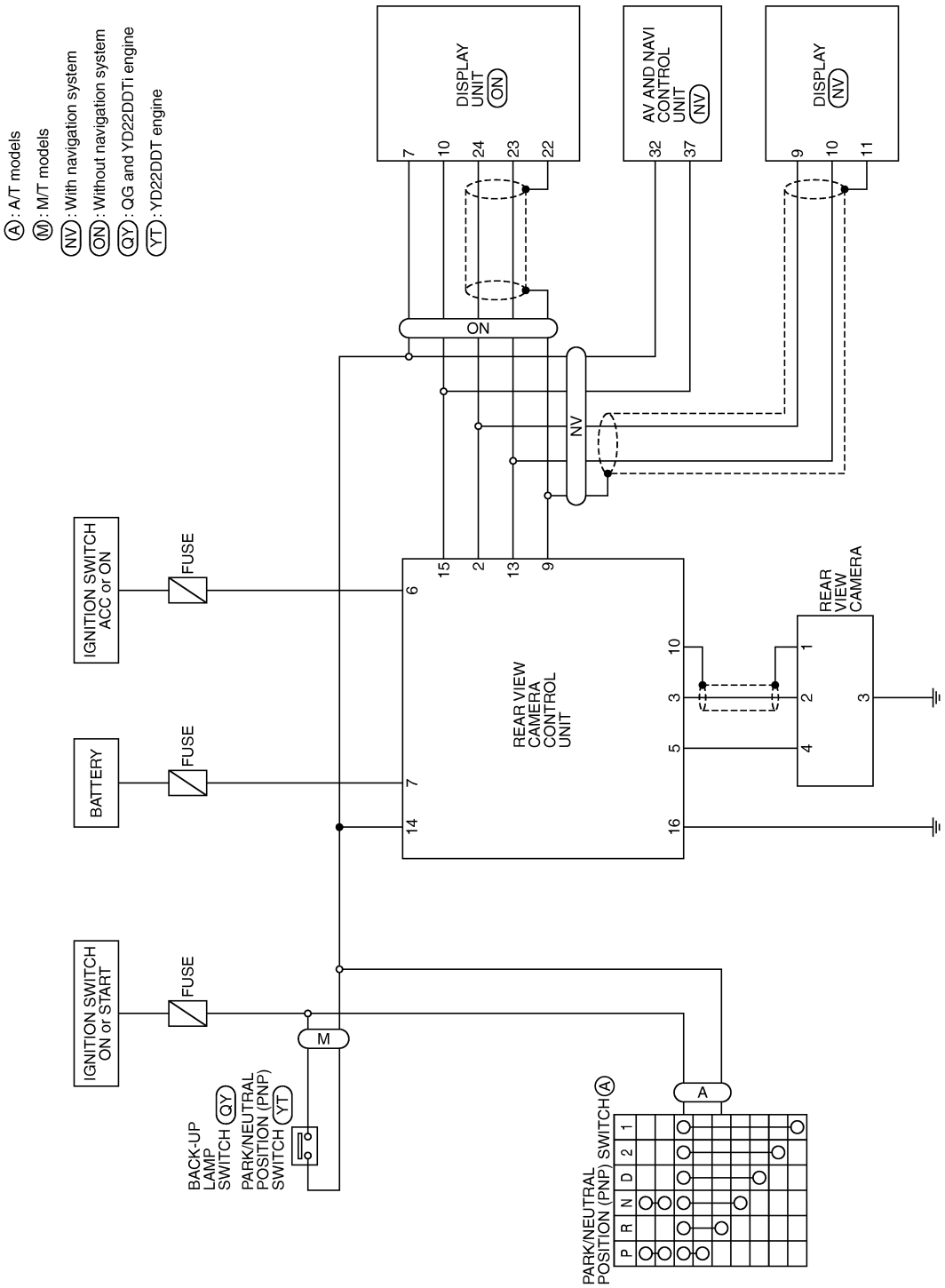
Component Parts and Harness Connector Location

NLEL0538



Schematic

NLEL0539



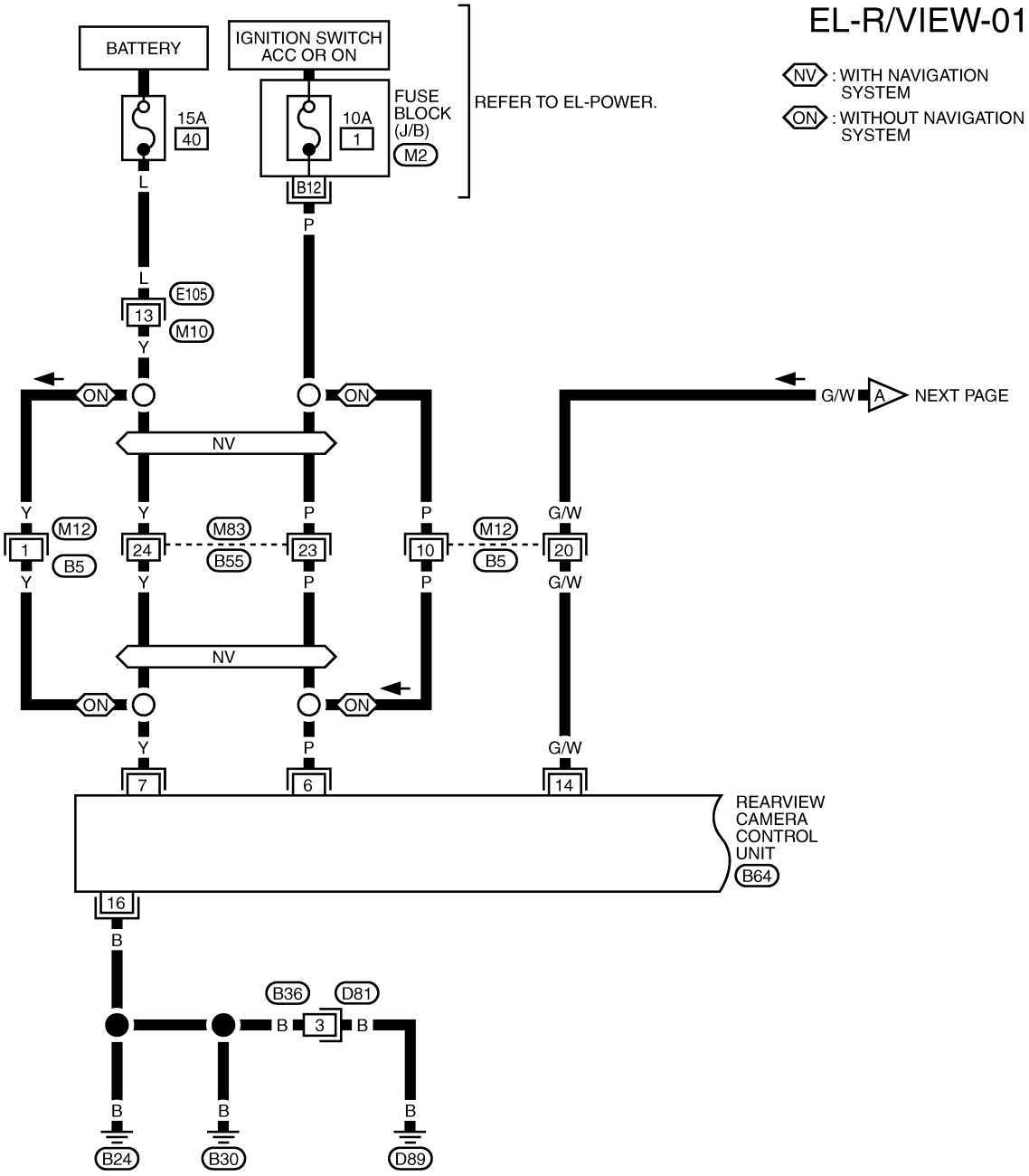
YEL036E

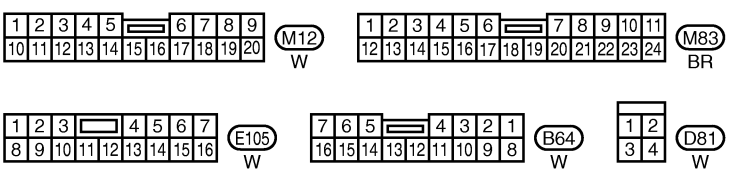
Wiring Diagram — R/VIEW —

NLEL0540

LHD MODELS

NLEL0540S01

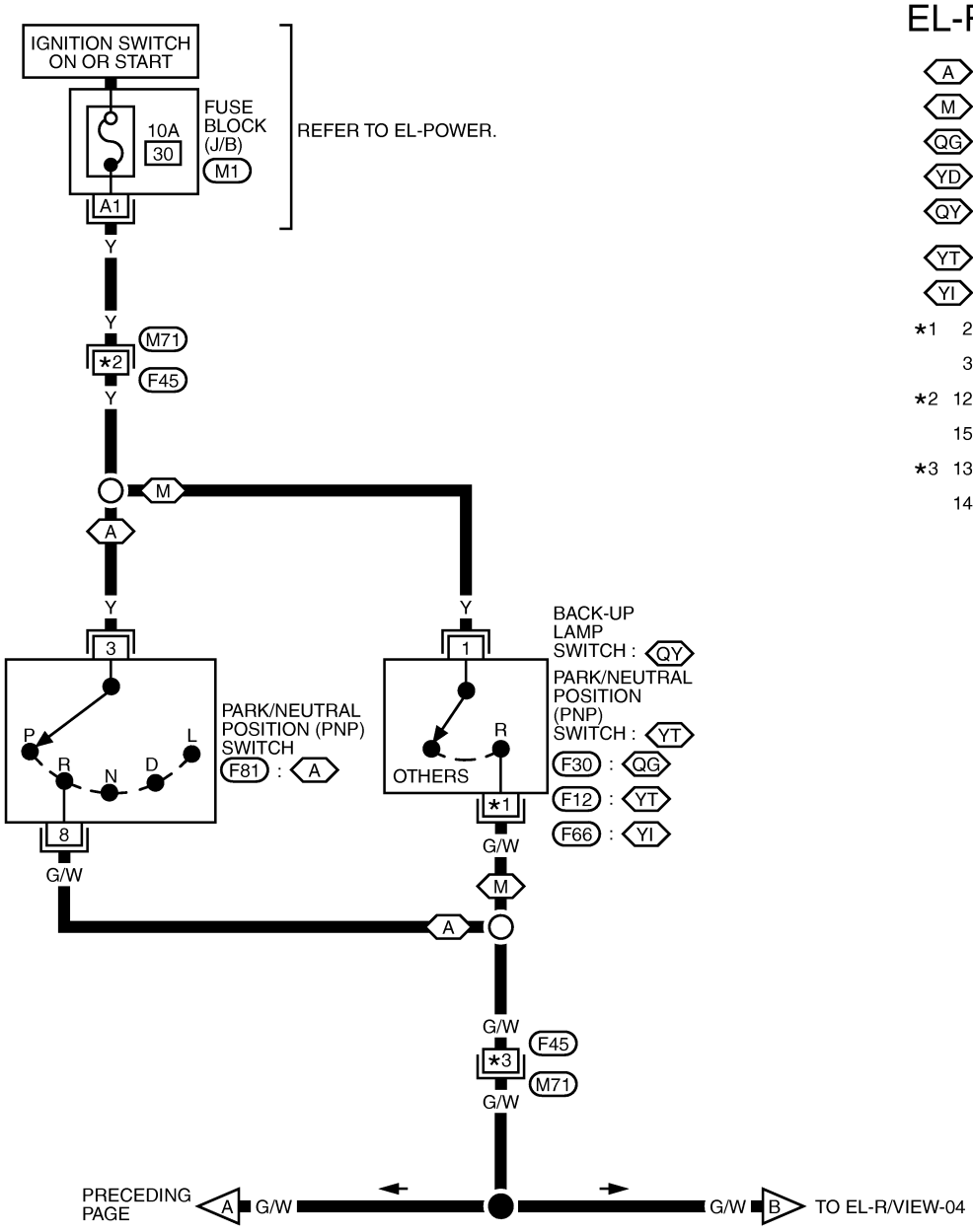




REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

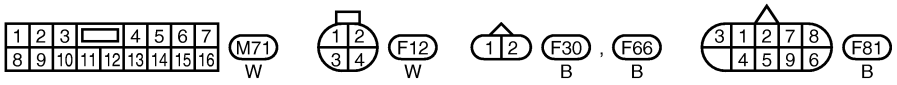
YEL037E

EL-R/VIEW-02



A : A/T MODELS
M : M/T MODELS
QG : QG ENGINE
YD : YD ENGINE
QY : QG AND YD22DDTi ENGINE
YT : YD22DDT ENGINE
YI : YD22DDTi ENGINE

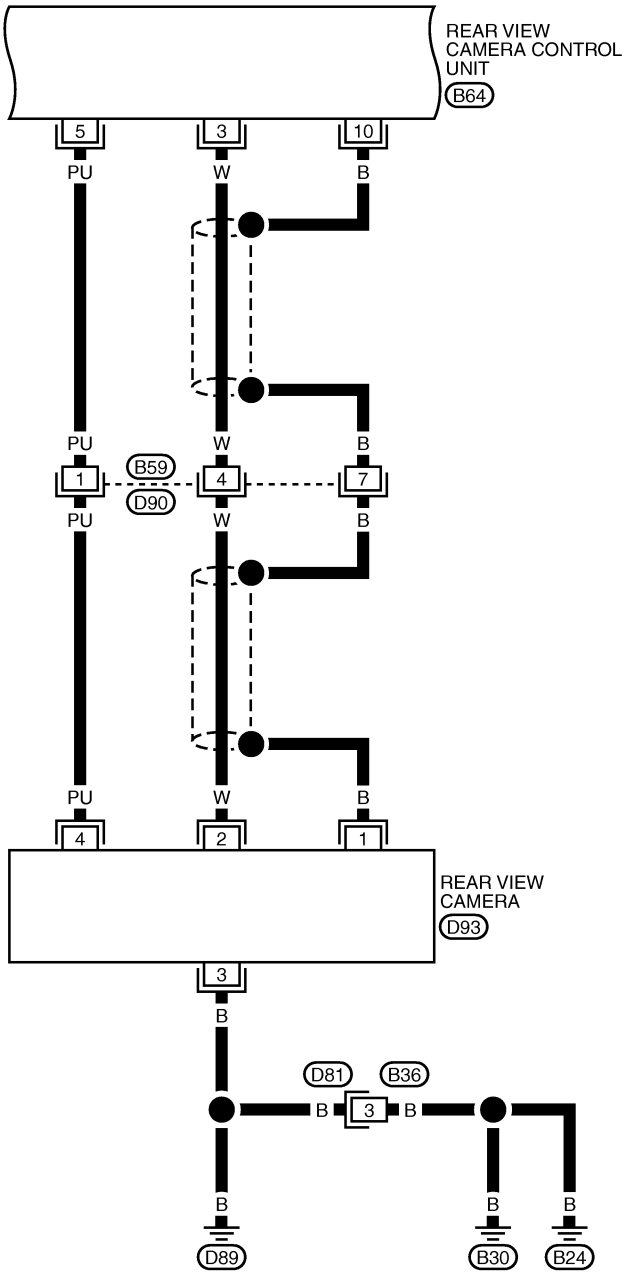
*1 2 : QY
3 : YT
*2 12 : QG
15 : YD
*3 13 : QG
14 : YD

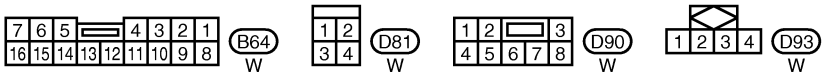


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-
JUNCTION BOX (J/B)

YEL038E

EL-R/VIEW-03



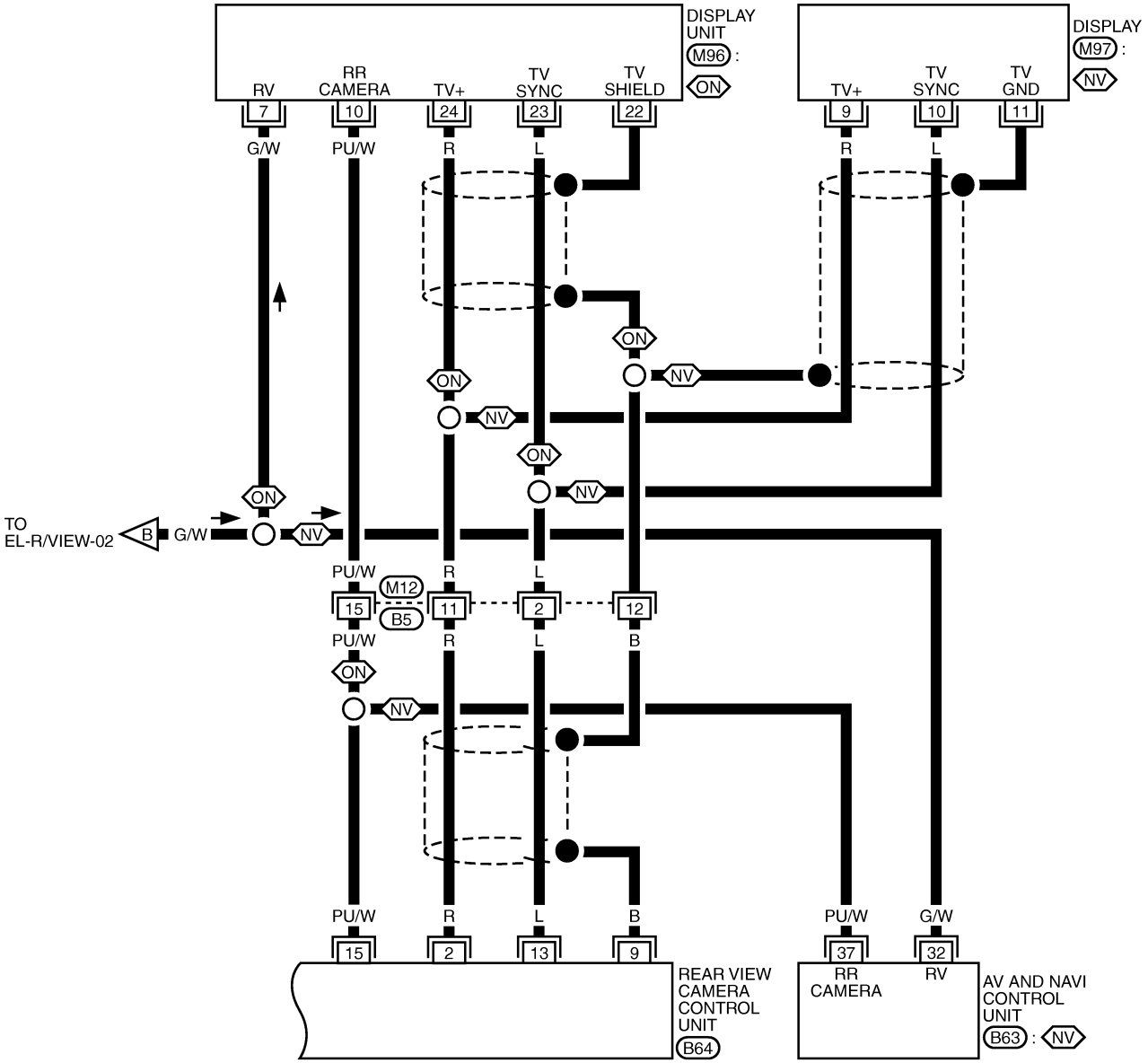


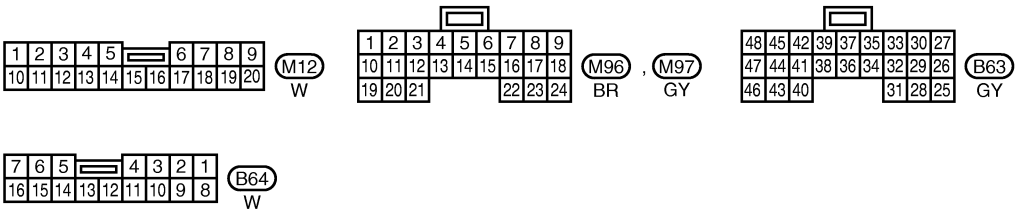
YEL039E

EL-R/VIEW-04

NV : WITH NAVIGATION SYSTEM

ON : WITHOUT NAVIGATION SYSTEM

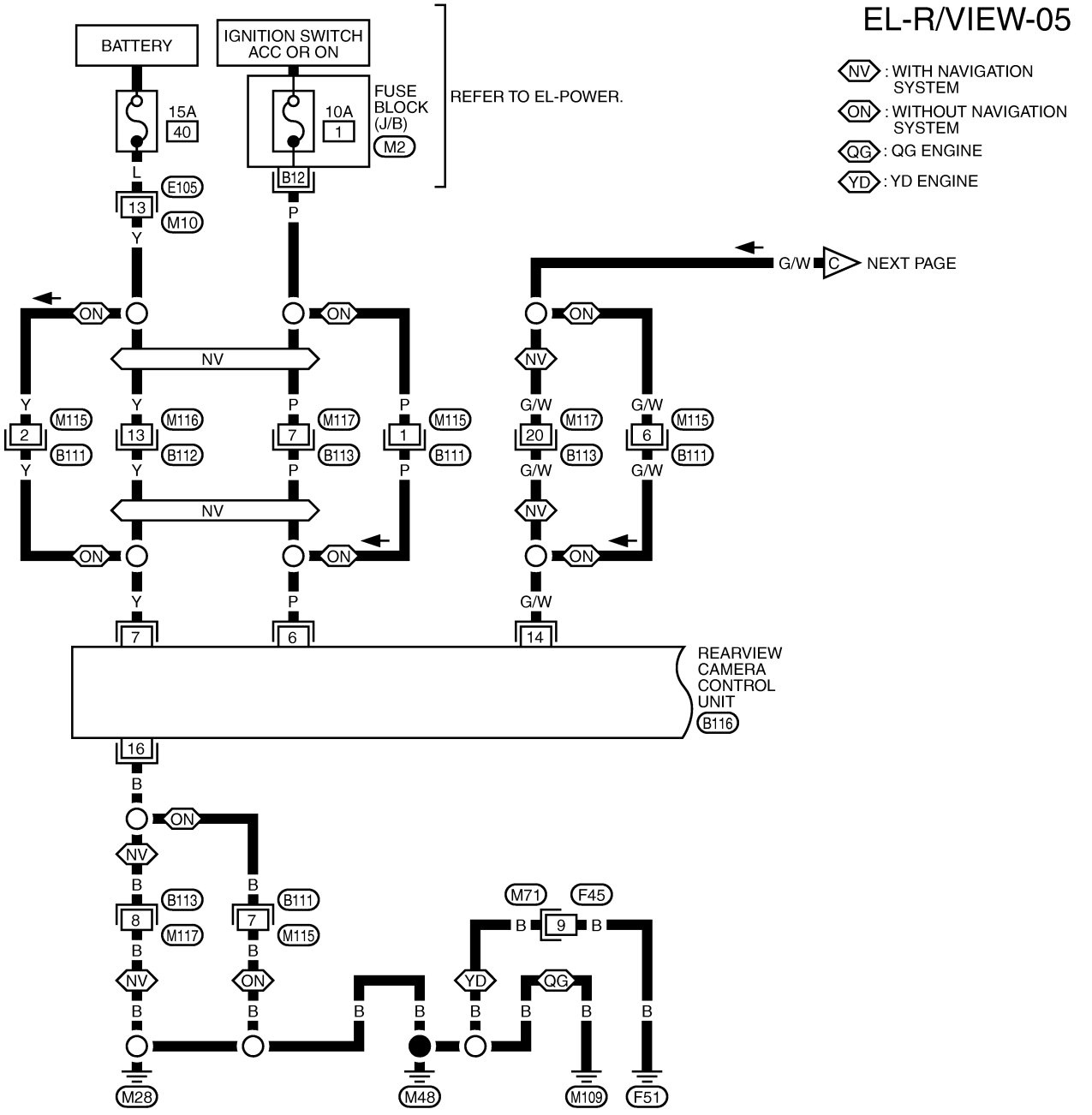




YEL040E

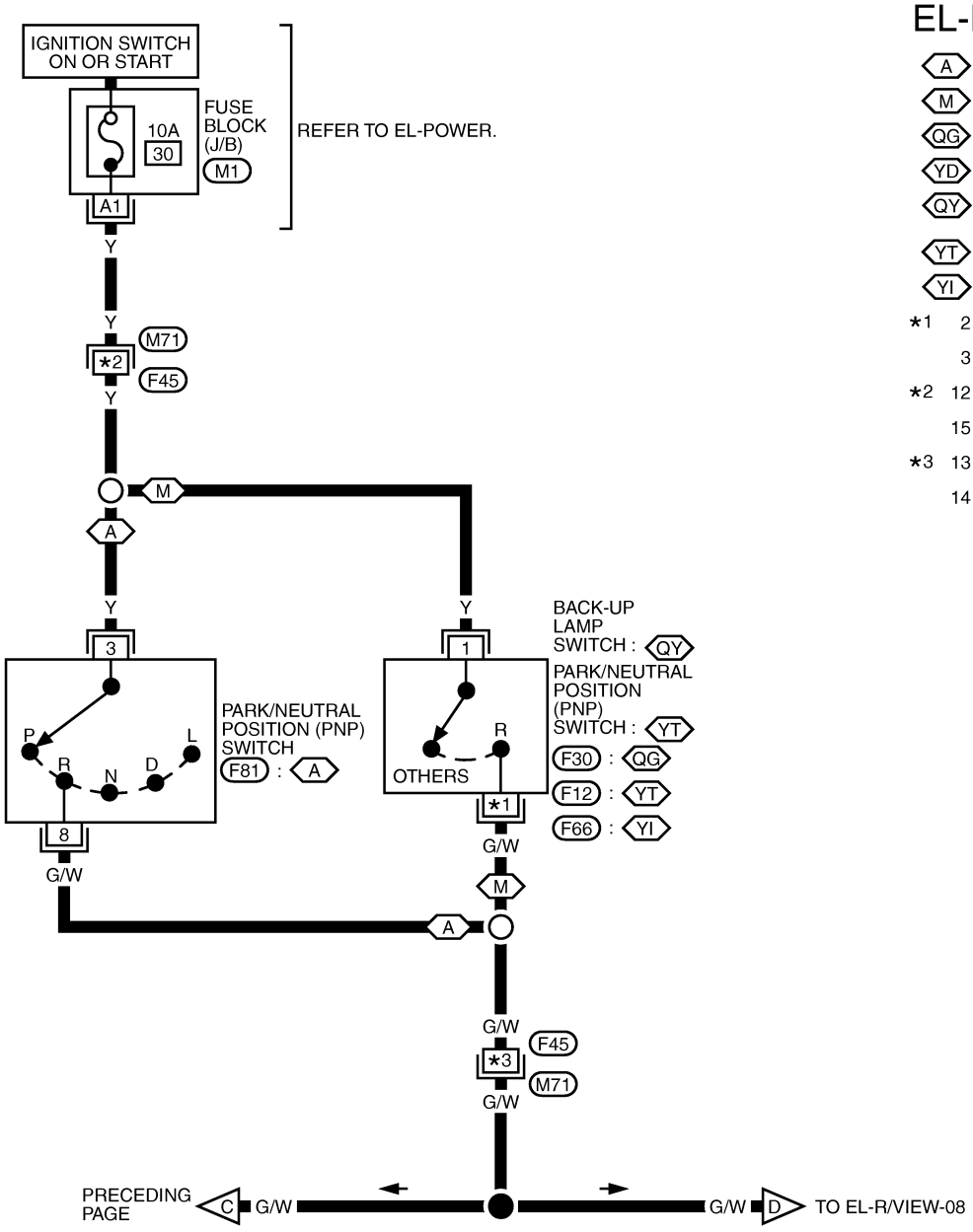
RHD MODELS

NLEL0540S02

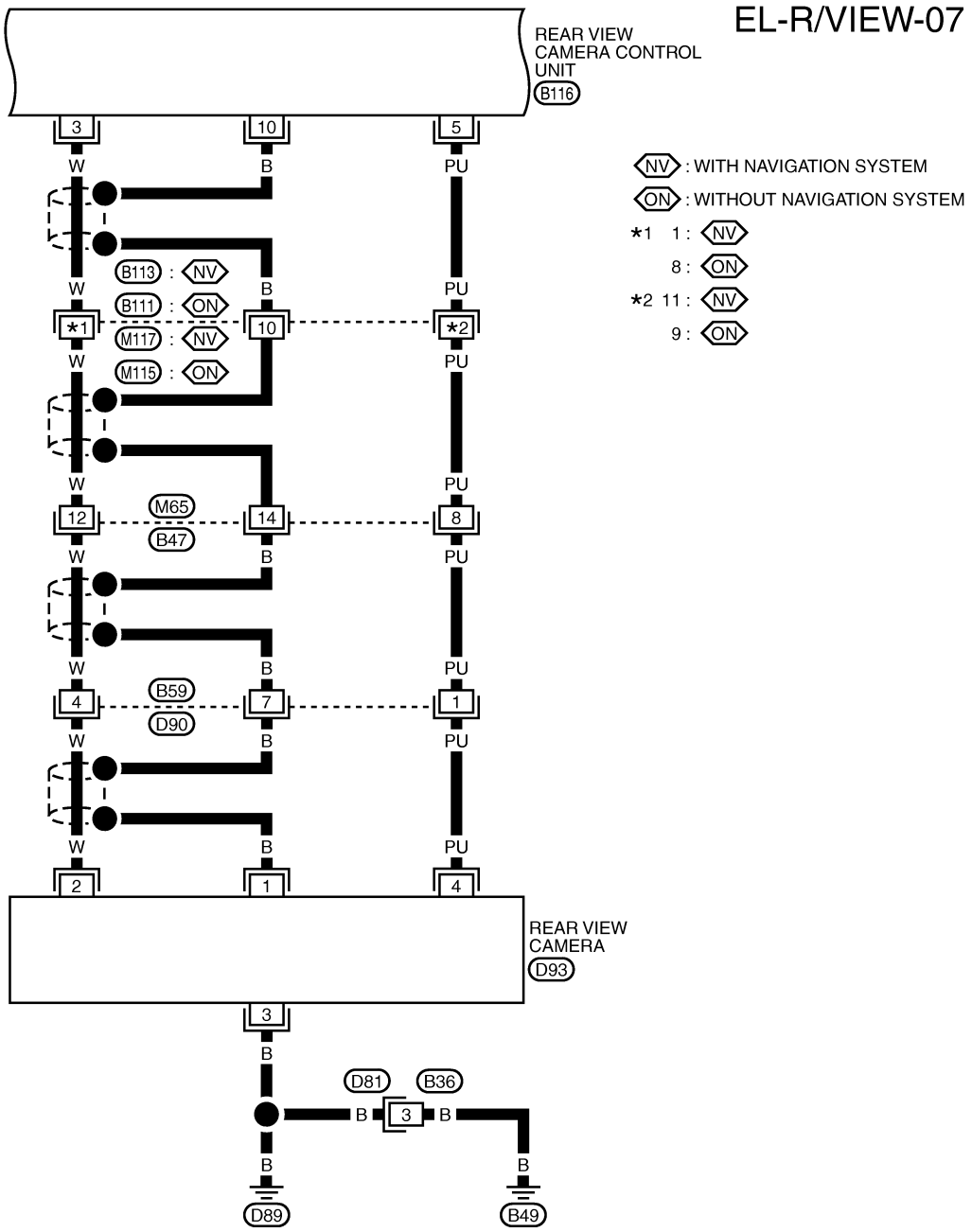


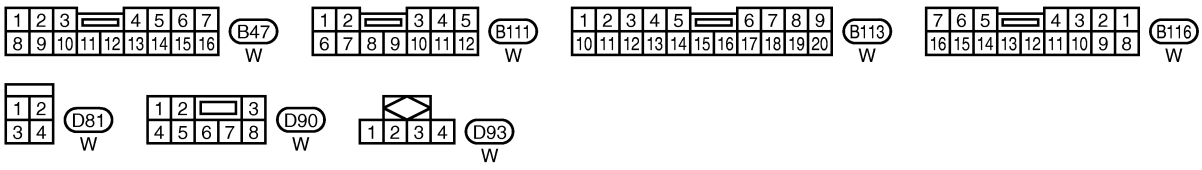
REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL041E


EL-R/VIEW-06
A : A/T MODELS
M : M/T MODELS
QG : QG ENGINE
YD : YD ENGINE
QY : QG AND YD22DDTi ENGINE
YT : YD22DDT ENGINE
YI : YD22DDTi ENGINE
*1 2 : QY
3 : YT
*2 12 : QG
15 : YD
*3 13 : QG
14 : YD
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
10A 30
M1
A1
REFER TO EL-POWER.
Y
M71
*2
F45
M
A
3
P
R
N
D
L
PARK/NEUTRAL POSITION (PNP) SWITCH
F81 : A
8
G/W
1
BACK-UP LAMP SWITCH : QY
PARK/NEUTRAL POSITION (PNP) SWITCH : YT
OTHERS
F30 : QG
F12 : YT
F66 : YI
*1
PRECEDING PAGE
C
D
TO EL-R/VIEW-08
M71
W
F12
W
F30
B
F66
B
F81
B
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-
JUNCTION BOX (J/B)

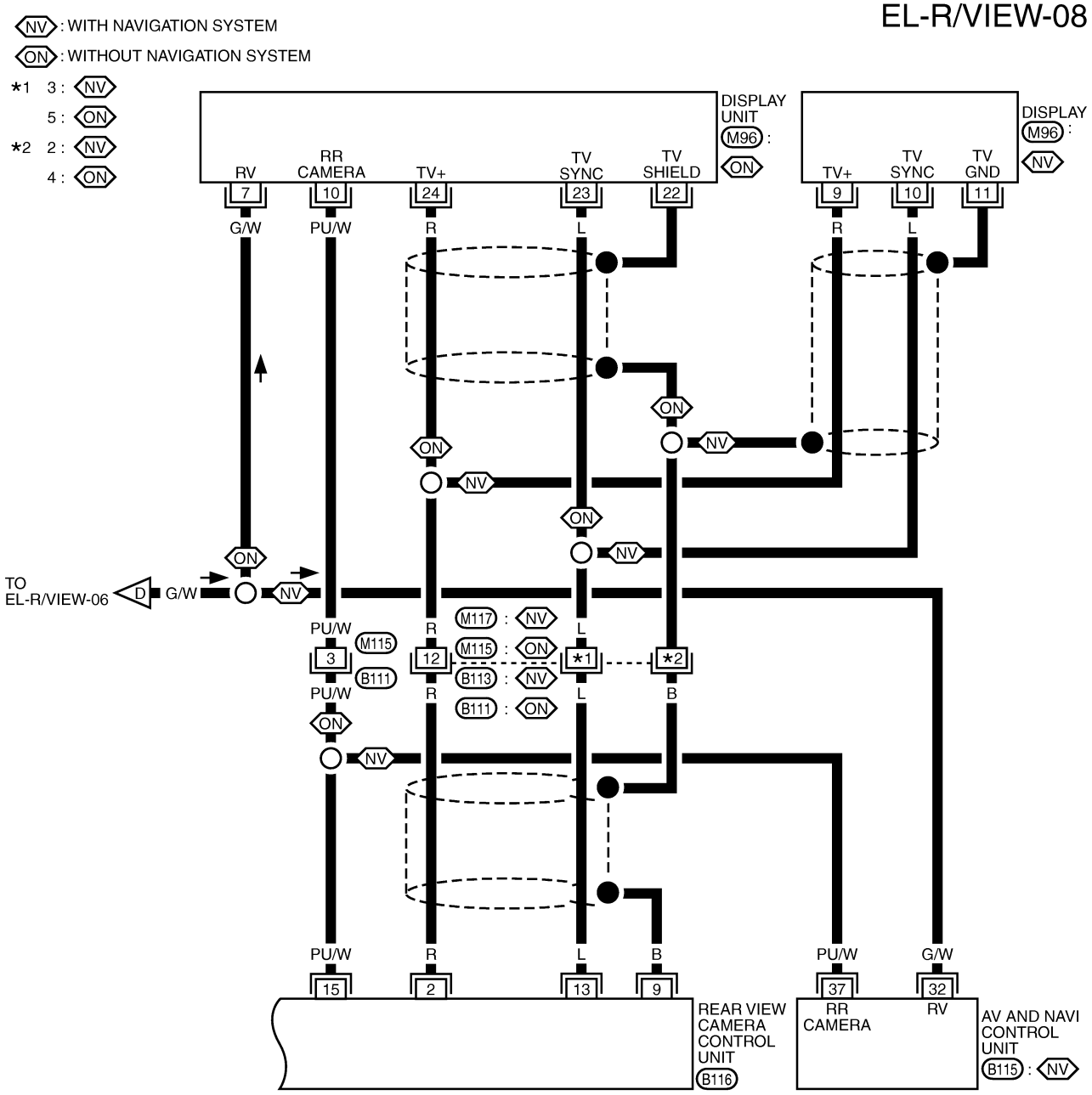
YEL042E

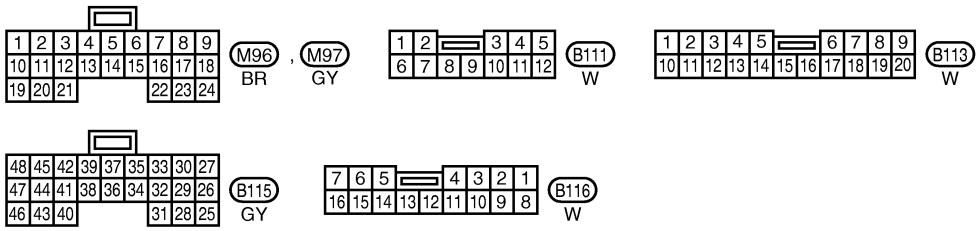

EL-R/VIEW-07
REAR VIEW CAMERA CONTROL UNIT
B116
3
10
5
W
B
PU
NV : WITH NAVIGATION SYSTEM
ON : WITHOUT NAVIGATION SYSTEM
*1 1 : NV
8 : ON
*2 11 : NV
9 : ON
B113 : NV
B111 : ON
M117 : NV
M115 : ON
*1
*2
12
14
8
M65
B47
4
7
1
B59
D90
2
1
4
REAR VIEW CAMERA
D93
3
D81
B36
D89
B49


B47
B111
B113
B116
D81
D90
D93
W

YEL043E

EL-R/VIEW-08

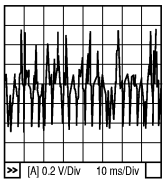
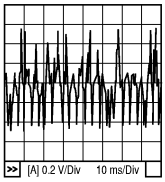
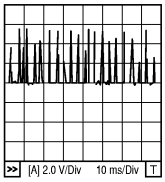




YEL044E

Terminals and Reference Value

NLEL0688

TERMINALS			ITEM	CONDITION		Voltage [V]
(+)		(–)				
TERMINAL	WIRE COLOR			Ignition switch	Operation	
2	R	Ground	Image signal (output	ON	Gear position: “R” position	Approximately 0V  MKIB0189E
3	W	Ground	Camera image signal (input)	ON	Gear position “R” position	Approximately 0V  MKIB0189E
5	PU	Ground	Camera power output	ON	Gear position: R-position	Approximately 6.5V
6	P	Ground	ACC power	ACC	—	Battery voltage
7	Y	Ground	Battery power	OFF	—	Battery voltage
9	B	Ground	Shield ground	ON	—	—
10	B	Ground	Shield ground	ON	—	—
13	L	Ground	Image synchronous signal (output)	ON	Gear position: R-position	Approximately 5V  MKIB0190E
14	G/W	Ground	Reverse signal input	ON	Gear position: “R” position	Battery voltage
					Gear position: Other position	Approximately 0V
15	PU/W	Ground	Connected recognition signal	ON	—	Approximately 0V
16	B	Ground	Ground	ON	—	—

Trouble Diagnosis

NLEL0541

POWER SUPPLY AND GROUND CIRCUIT CHECK

NLEL0541S02

1 CHECK THE FUSES

- Check that the fuses for rearview camera control unit are blown.

Unit	Power source	Fuse No.
Rearview camera control unit	Battery Power	40
	Ignition switch ACC or ON	1

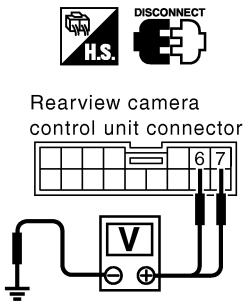
MTBL1644

OK or NG

OK	▶	GO TO 2.
NG	▶	If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to EL-12.

2 POWER SUPPLY CIRCUIT CHECK

1. Disconnect camera controller connector.
2. Check voltage rearview camera control unit B64 (LHD models) or B116 (RHD models) terminal 6 (P) and 7(Y), and ground.



YEL604E

Terminals			OFF	ACC	ON
(+)		(−)			
Connector	Terminal (Wire color)				
B64 or B116	6 (P)	Ground	0V	Battery voltage	Battery voltage
	7 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage

MTBL1645

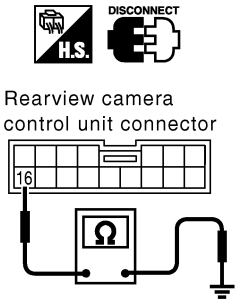
OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between rearview camera control unit and fuse.

3	GROUND CIRCUIT CHECK

Check the following.

- Continuity between rearview camera control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 16 (B) and ground.



YEL606E

Continuity should exist.

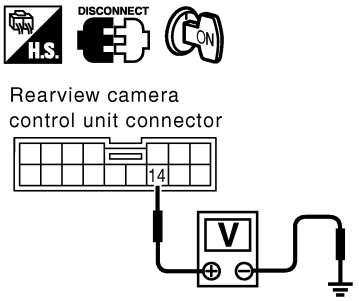
OK or NG

OK	▶	INSPECTION END
NG	▶	Check ground harness.

REARVIEW IS NOT DISPLAYED WITH THE SELECTOR LEVER IN R-POSITION.

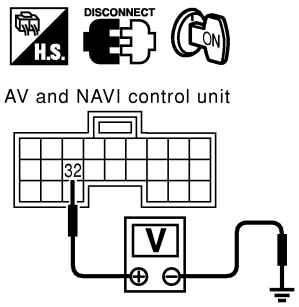
=NLEL0541S03

1	BACKUP LAMP INSPECTION	
1. Turn ignition switch ON position. 2. Shift the selector lever to R-position. **Does backup lamp illuminate?**		
Yes	▶	GO TO 2.
No	▶	Check backup lamp system.

2	CHECK REVERSE POSITION INPUT SIGNAL I	
1. Turn ignition switch OFF. 2. Disconnect rearview camera control unit connector. 3. Turn ignition switch ON. 4. Shift the selector lever to R-position. 5. Check voltage between rearview camera control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 14 (G/W) and ground.  YEL603E **Battery voltage should exist.** **OK or NG**		
OK	▶	GO TO 3. (With navigation system)
OK	▶	GO TO 4. (Without navigation system)
NG	▶	Check harness for open or short between rearview camera control unit and backup lamp switch (M/T models) or park/neutral position switch (A/T models).

3	CHECK REVERSE POSITION INPUT SIGNAL/WITH NAVIGATION SYSTEM

1. Turn ignition switch OFF.
2. Disconnect rear AV and NAVI control unit connector.
3. Turn ignition switch ON.
4. Shift the selector lever to R-position.
5. Check voltage between AV and NAVI control unit harness connector B63 (LHD models) B115 (RHD models) terminal 32 (G/W) and ground.



MKIB0179E

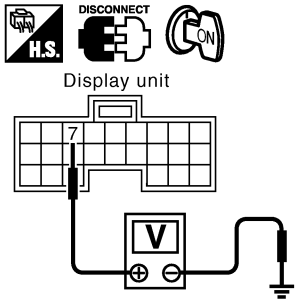
Battery voltage should exist.

OK or NG

OK	▶	GO TO 5.
NG	▶	Check harness for open or short between AV and NAVI control unit and backup lamp switch (M/T models) or park/neutral position switch (A/T model).

4	CHECK REVERSE POSITION INPUT SIGNAL/WITHOUT NAVIGATION SYSTEM

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Turn ignition switch ON.
4. Shift the selector lever to R-position.
5. Check voltage between display unit harness connector M96 terminal 7 (G/W) and ground.



Battery voltage should exist.

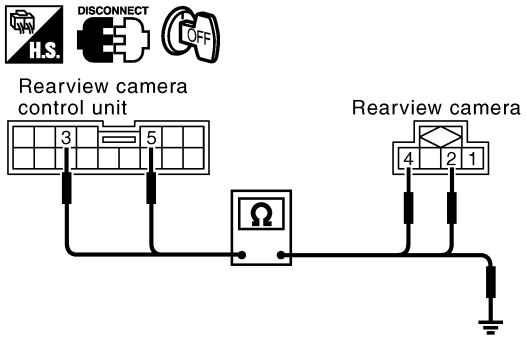
YEL579E

OK or NG

OK	▶	GO TO 5.
NG	▶	Check harness for open or short between display unit and back up lamp switch (M/T models) or park/neutral position switch (A/T model).

5	CHECK REARVIEW CAMERA CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rearview camera control unit connector and rearview camera connector.
3. Check continuity between rearview camera control unit and rearview camera.



YEL576E

Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
LHD: B64 RHD: B116	3 (W)	D93	2 (W)	Yes
LHD: B64 RHD: B116	5 (PU)	D93	4 (PU)	Yes
LHD: B64 RHD: B116	3 (W)	Ground		No
LHD: B64 RHD: B116	5 (PU)	Ground		No

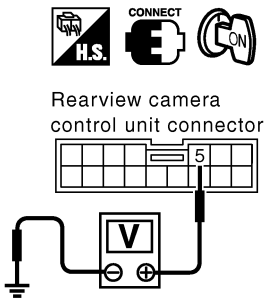
MTBL1646

OK or NG

OK	▶	GO TO 6.
NG	▶	Repair or replace harness.

6	CHECK REARVIEW CAMERA CONTROL UNIT OUTPUT SIGNAL

1. Connect rearview camera control unit connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R-position.
4. Check voltage between rearview camera control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 5 (PU) and ground.



YEL605E

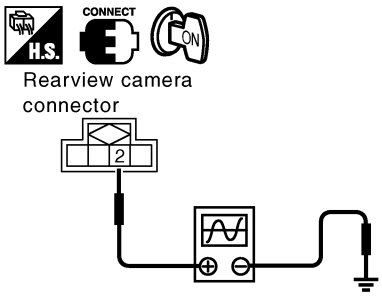
Approx. 6.5V

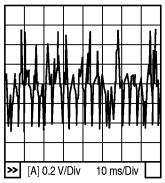
OK or NG

OK	▶	GO TO 7.
NG	▶	Replace rearview camera control unit.

7	CHECK REARVIEW CAMERA SIGNAL

1. Connect the rearview camera connector.
2. Check voltage between rearview camera harness connector T5 (sedan models), D91 (wagon models) or B56 (hatch back models) each terminal 2 (W) and ground.





YEL577E

OK or NG

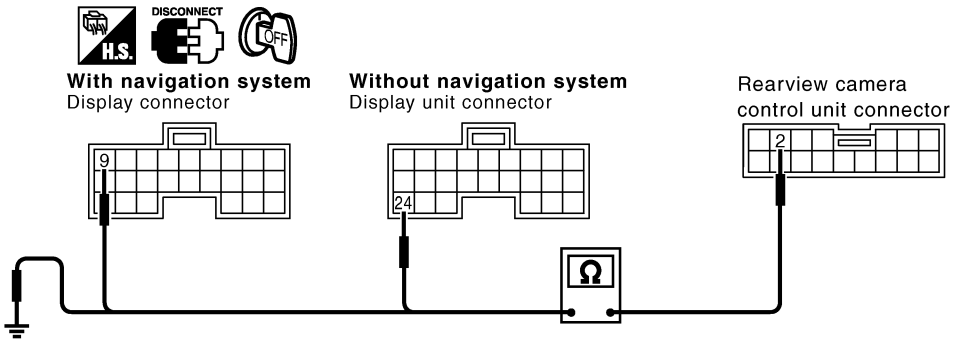
OK	▶	Replace rearview camera control unit.
NG	▶	Replace rearview camera.

THE REARVIEW IMAGE IS DISTORTED.

=NLEL0541S04

1 **CHECK SYNCHRO SIGNAL OPEN OR SHORT CIRCUIT**

1. Turn ignition switch OFF.
2. Disconnect rearview camera control unit connector and display unit.
3. Check continuity between display (with navigation system), display unit (without navigation system) and rearview camera control unit.



YEL580E

Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal	
B64 or B116	2 (R)	M61	24 (R)	Yes
	2 (R)	M63	9 (R)	Yes
	2 (R)	Ground		No

MTBL1647

OK or NG

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

2	CHECK SYNCHRO SIGNAL OPEN OR SHORT CIRCUIT

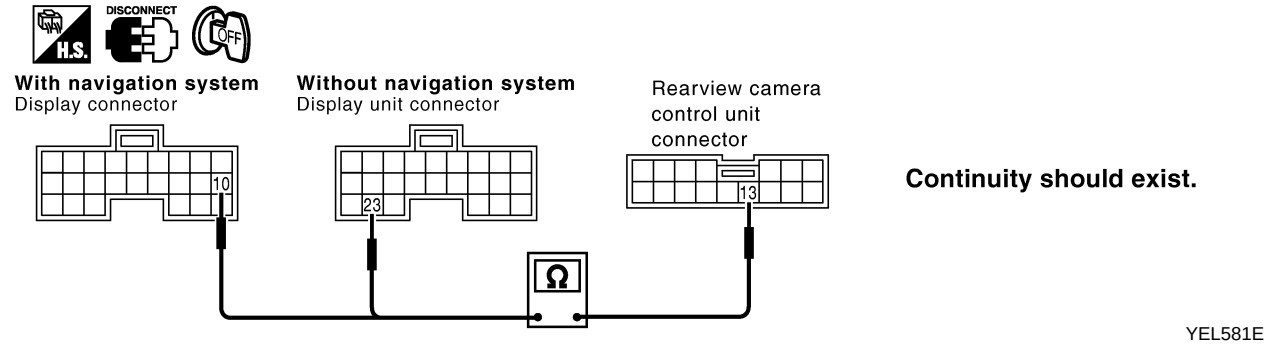
Check the following.

With navigation system

- Continuity between display harness connector M96 terminal 10 (L) and rearview camera control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 13 (L).

Without navigation system

- Continuity between display unit harness connector M96 terminal 23 (L) and rearview camera harness connector M64 (LHD models) B116 (RHD models) control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 13 (L).



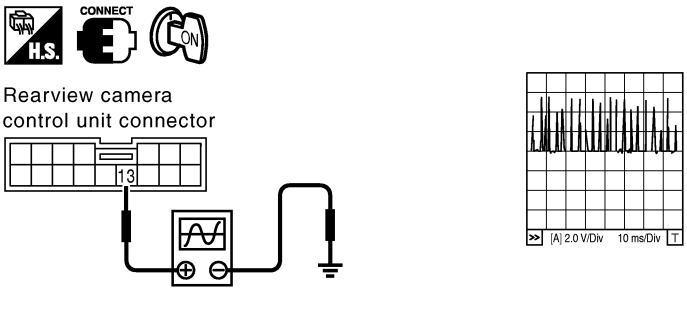
Continuity should exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace harness.

3	CHECK REARVIEW CONTROL UNIT SYNCHRO SIGNAL

1. Connect rearview camera control unit connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R-position.
4. Check signal between rearview camera control unit harness connector B64 (LHD models) or B116 (RHD models) terminal 13 (L) and ground with oscilloscope or CONSULT-II.



OK or NG

OK	▶	Replace display unit or display.
NG	▶	Replace rearview camera control unit.

System Description

=NLEL0463

The rear window defogger system is controlled by the smart entrance control unit. The rear window defogger operates only for approximately 15 minutes.
Rear window defogger switch is built into the multi-function switch.
Power is supplied at all times

- through 15A fuse [No. 7, located in the fuse block (J/B)] and 15A fuse [No. 4, located in the fuse block (J/B)]
- to rear window defogger relay terminal 5 (B8 relay models) or 3 (B7 relay models)
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to rear window defogger relay terminal 6 (B7 relay models).
- through 15A fuse [No. 5, located in the fuse block (J/B)]
- to smart entrance control unit terminal 56.

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 29.

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 multi-function switch terminal 6

Ground is supplied

- to terminal 1 of the multi-function switch (rear window defogger switch)
- through body grounds M28, M48, M109 (QG engine) or F51 (YD engine).

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

- through terminal 9 of the multi-function switch (rear defogger switch)
- to smart entrance control unit terminal 22.

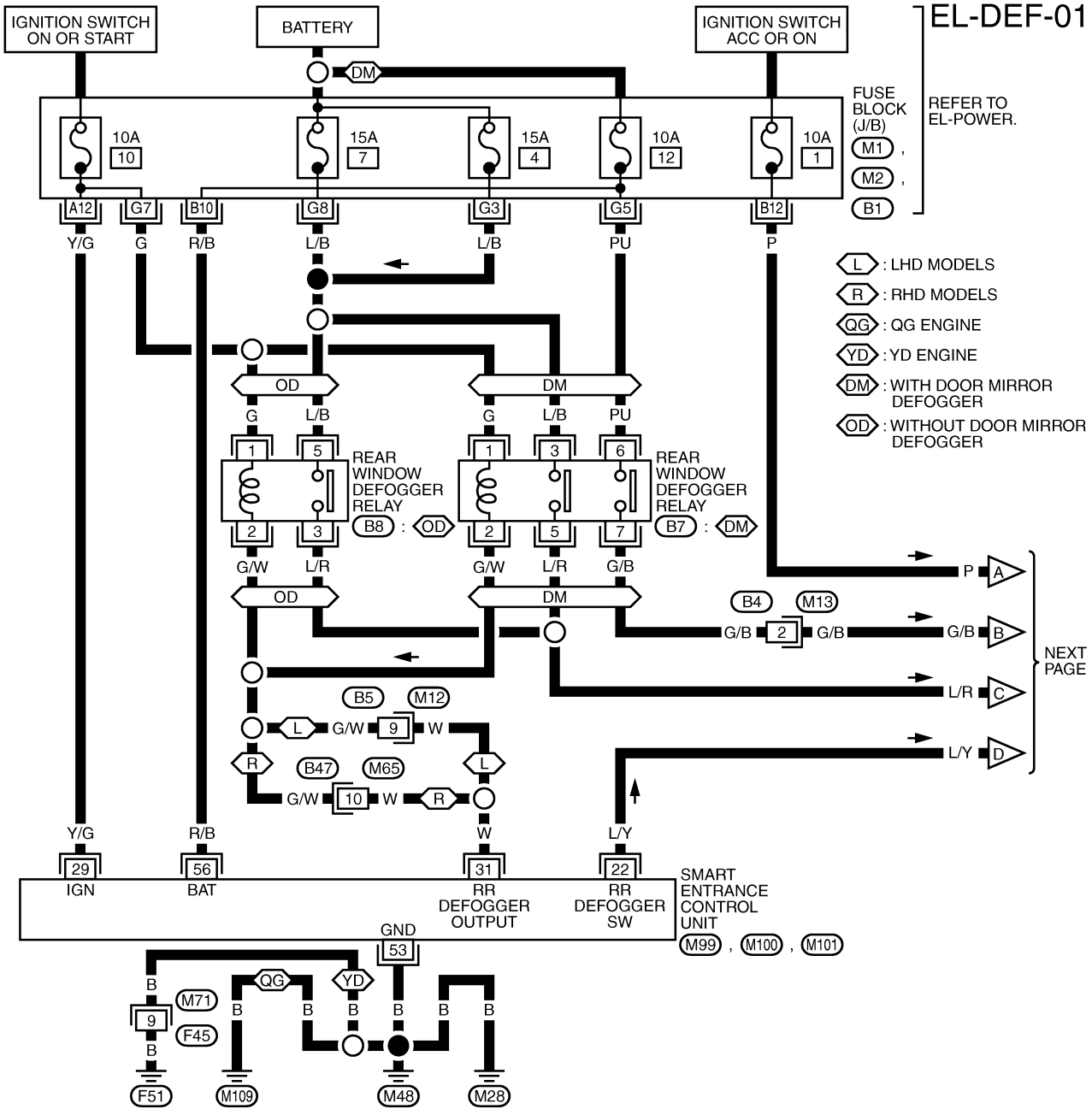
Terminal 31 of smart entrance control unit then supplies ground to the rear window defogger relay terminal 2.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied

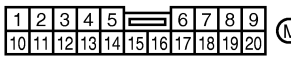
- through terminals 5 and 7 of the rear window defogger relay (B7 relay models) or
- through terminal 3 of the rear window defogger relay (B8 relay models)
- to the rear window defogger (and door mirror defogger).

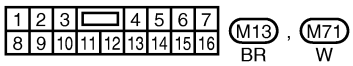
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.

Wiring Diagram — DEF —

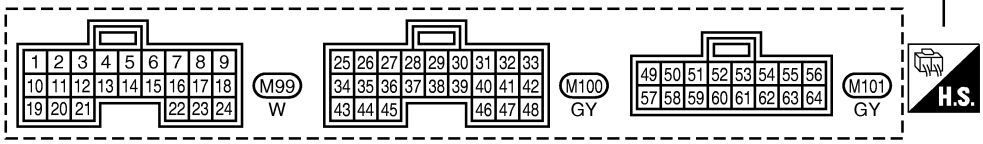
=NLEL0464

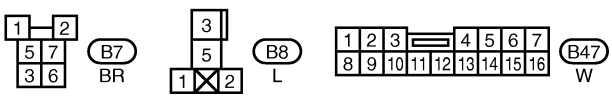




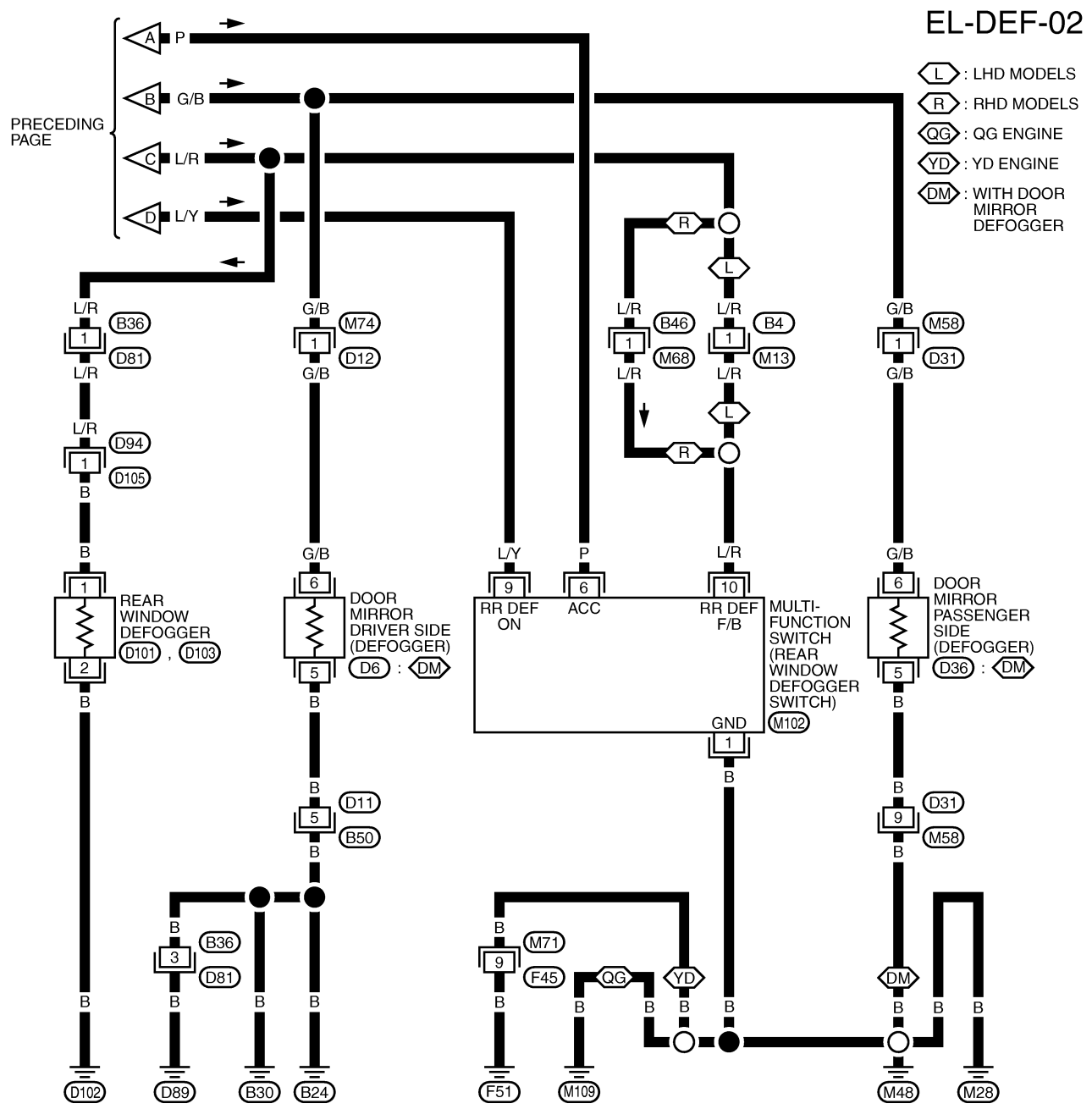


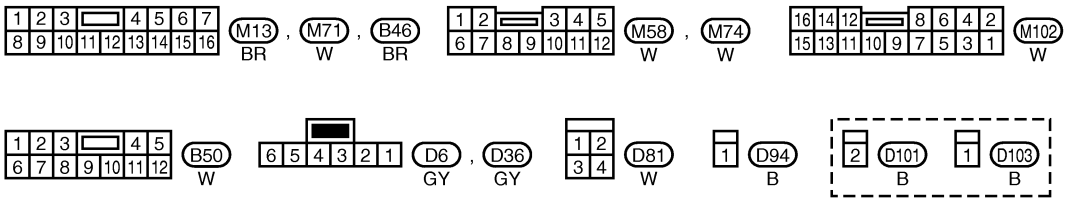
REFER TO THE FOLLOWING.
M1, M2, B1
-FUSE BLOCK- JUNCTION BOX (J/B)





YEL973D


EL-DEF-02
L : LHD MODELS
R : RHD MODELS
QG : QG ENGINE
YD : YD ENGINE
DM : WITH DOOR MIRROR DEFOGGER
PRECEDING PAGE
A P
B G/B
C L/R
D L/Y
REAR WINDOW DEFOGGER
D101 , D103
DOOR MIRROR DRIVER SIDE (DEFOGGER)
D6 : DM
RR DEF ON
ACC
RR DEF F/B
MULTI-FUNCTION SWITCH (REAR WINDOW DEFOGGER SWITCH)
M102
GND
DOOR MIRROR PASSENGER SIDE (DEFOGGER)
D36 : DM
B36
D81
D94
D105
M74
D12
B46
M68
B4
M13
M58
D31
D11
B50
M71
F45
M109
F51
B30
B24
D89
D102
M48
M28


M13 BR , M71 W , B46 BR
M58 W , M74 W
M102 W
B50 W
D6 GY , D36 GY
D81 W
D94 B
D101 B
D103 B

YEL974D

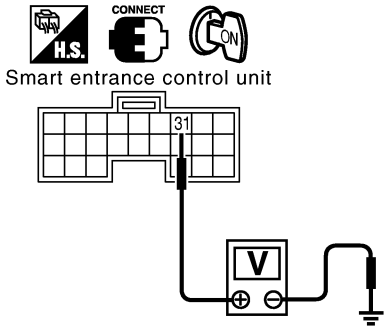
Trouble Diagnoses

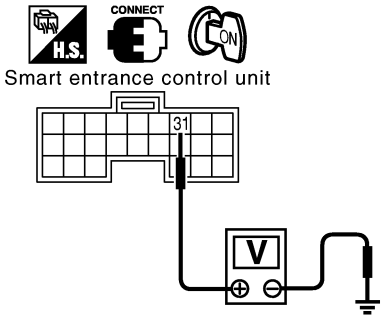
NLEL0465

DIAGNOSTIC PROCEDURE

NLEL0465S01

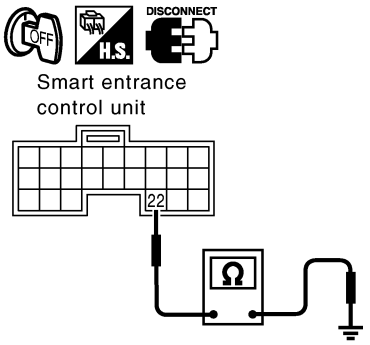
SYMPTOM: Rear window defogger does not activate, or does not go off after activating.

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL	
1. Turn ignition switch to ON position. 2. Check voltage between smart entrance control unit harness connector M100 terminal 31 (W) and ground.  **Voltage [V]:** **Rear window defogger switch is “OFF”** **Approx. 12** **Rear window defogger switch is “ON”** **0** YEL341E **OK or NG**		
OK	▶	**Check the following.** ● Rear window defogger relay (Refer to EL-183.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-184.)
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT	
1. Disconnect smart entrance control unit connector. 2. Turn ignition switch to ON position. 3. Check voltage between smart entrance control unit harness connector M100 terminal 31 (W) and ground.  **Battery voltage should exist.** YEL342E **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

1. Connect smart entrance control unit connector.
2. Disconnect multi-function switch connector.
3. Check voltage between smart entrance control unit harness connector M99 terminal 22 (L/Y) and ground.



Battery voltage should exist.

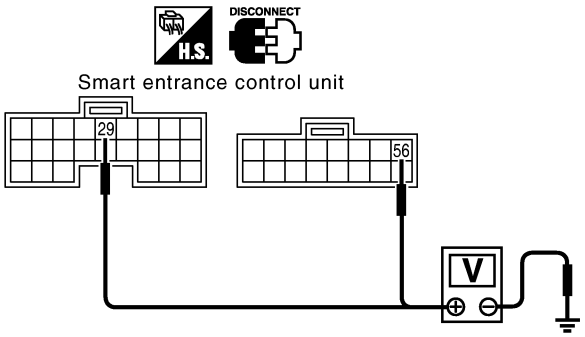
YEL343E

OK or NG

OK	▶	GO TO 6.
NG	▶	GO TO 4.

4	CHECK POWER SUPPLY AND IGNITION INPUT SIGNAL

Check voltage between smart entrance control unit harness connector M100 terminal 29 (Y/G) and M101 terminals 56 (R/B) and ground.



Terminals		Ignition switch position		
(+)	(-)	OFF	ACC	ON
56	Ground	Battery voltage	Battery voltage	Battery voltage
29	Ground	0V	0V	Battery voltage

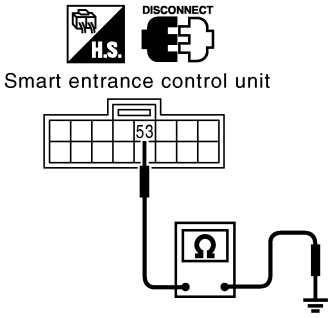
YEL344E

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 10A fuse or 15A fuse [No. 10 or No. 5, 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

1. Turn ignition switch OFF.
2. Check continuity between smart entrance control unit terminal 53 (B) and ground.



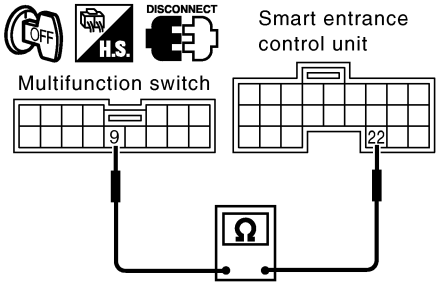
Continuity should exist.

YEL345E

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

6	CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

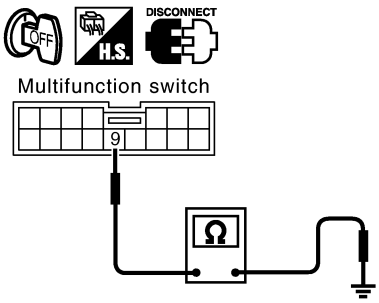
1. Disconnect smart entrance control unit connector.
2. Check continuity between multifunction switch harness connector M102 terminal 9 (L/Y) and smart entrance control unit harness connector M99 terminal 22 (L/Y).



Continuity should exist.

YEL472E

3. Check continuity between multifunction switch harness connector M102 terminal 9 (L/Y) and ground.



Continuity should not exist.

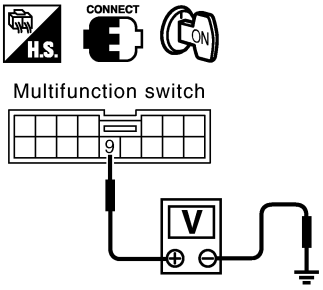
YEL346E

OK or NG

OK	▶	GO TO 7.
NG	▶	Replace harness or connector.

7	CHECK REAR WINDOW DEFOGGER ON SIGNAL

1. Connect multifunction switch connector and smart entrance control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between multifunction switch harness connector M102 terminal 9 (L/Y) and ground.



Voltage [V]:

Rear window deffoger switch is pushed

Approx. 5

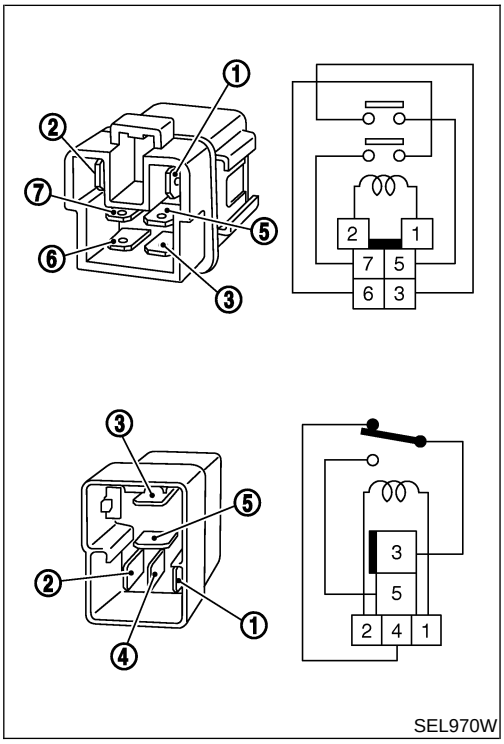
Rear window deffoger switch is released

0

YEL347E

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Check multifunction switch. Refer to EL-232.



SEL970W

Electrical Components Inspection

NLEL0076

REAR WINDOW DEFOGGER RELAY

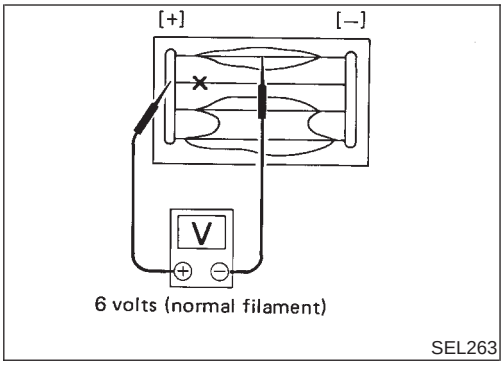
NLEL0076S01

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

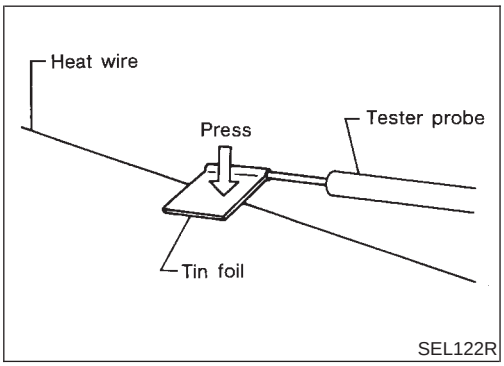
Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

Filament Check

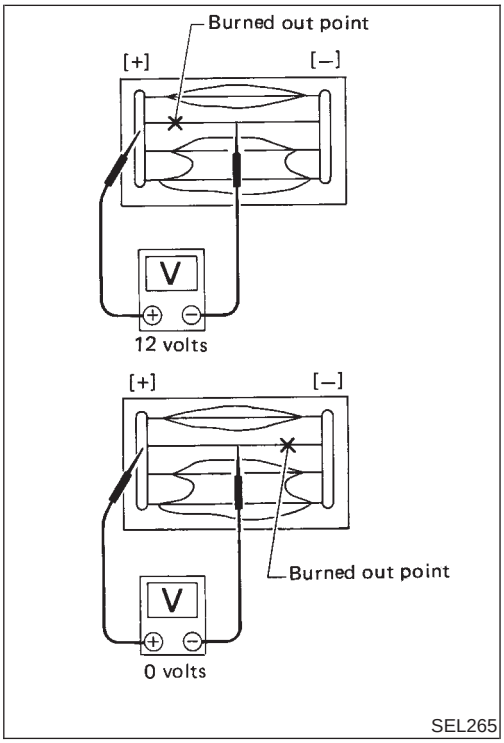
=NLEL0077



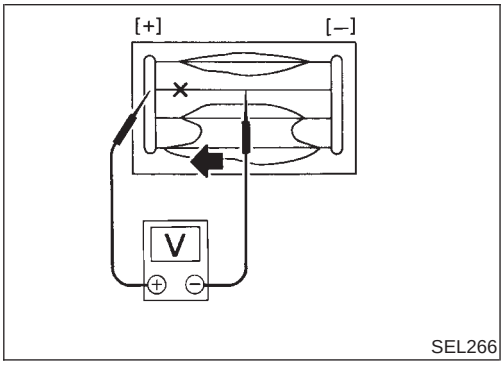
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **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.

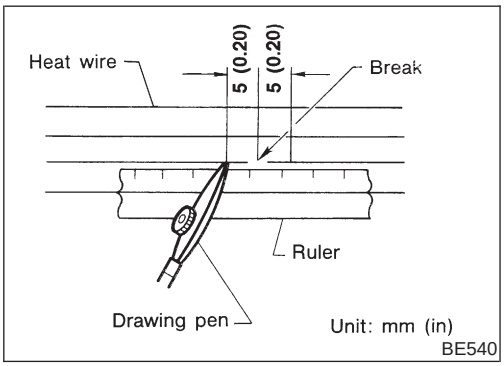
Filament Repair

NLEL0078

REPAIR EQUIPMENT

NLEL0078S01

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



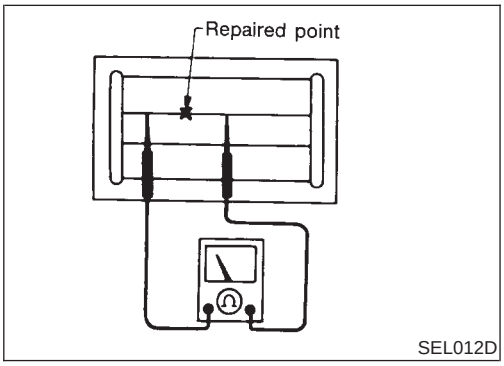
REPAIRING PROCEDURE

NLEL0078S02

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.

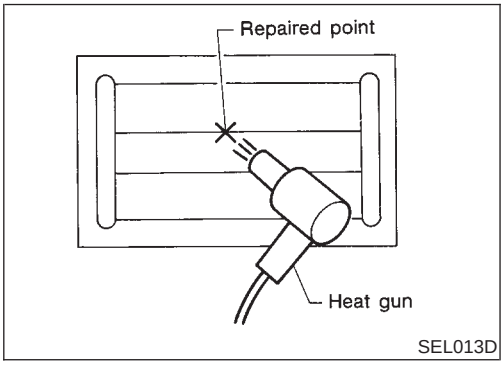
Shake silver composition container before use.

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

=NLEL0542

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

- through 15A fuse (No. 40, located in the fuse and fusible link box)
- to audio unit terminals 3 and 4, and
- to display terminals 21 and 23.

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 2,
- to multifunction switch terminal 6 and
- to display terminal 19.

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

- through body grounds M28, M67 and F118 (QG engine models)
- to multifunction switch terminal 1 and
- to display terminals 22 and 24.

Audio signals are supplied

- through audio unit terminals 5, 6, 7, 8, 9, 10, 11, 12
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH

AV COMMUNICATION LINE

NLEL0542S03

Audio system is contained and the AV communication line is connected as follows:

- Display unit terminals 12 and 13, and
- Multifunction switch terminals 12 and 14.
- Multifunction switch terminals 11 and 13, and
- Audio unit terminals 31 and 32.
- Audio unit terminals 35 and 36, and
- AV and NAVI control unit terminals 47 and 48 (with navigation system).

The operation is controlled by operation signals from multifunction switch, then audio screen is displayed.

NAVIGATION SYSTEM OF GUIDANCE VOICE OPERATION

NLEL0542S04

When navigation system is used, guidance voice signal is supplied

- from AV and NAVI control unit terminals 7 and 8
- to audio unit terminals 35 and 36.

Navigation system of guidance voice will be sounded.

NATS AUDIO LINK

NLEL0542S05

Description

NLEL0542S0501

The link with the NATS IMMU implies that the audio unit can basically only be operated if connected to the matching NATS IMMU to which the audio unit was initially fitted on the production line.
Since radio operation is impossible after the link with the NATS is disrupted theft of the audio unit is basically useless since special equipment is required to reset the audio unit.

Initialization process for audio units that are linked to the NATS IMMU

- Perform initialization with CONSULT-II
- For initialization, refer to "CONSULT-II operation manual NATS".

Normal operation

Each time the audio unit is switched on afterwards, the audio unit code will be verified between the audio unit and the NATS before the audio unit becomes operational.

When the radio is locked

When NATS link problems occur "SECURE" message will be displayed in three ways indicating three different NATS link malfunctions.
"SECURE" on a red background indicates that there is a malfunction in the link between NAVI control unit and audio, suggesting that there is either a Navigation system malfunction or the NAVI control unit has previously

been fitted in another vehicle.
"SECURE" on a green background indicates that there is a malfunction in the link between NATS IMMU and audio, suggesting that there is an audio malfunction or the audio unit has previously been fitted in another vehicle.
"SECURE" on a yellow background indicates that the transponder (NATS key) is not working correctly or it has previously been fitted in another vehicle.
When a "SECURE" message (of any type) is displayed, it can be cleared by re-initializing the NATS system using CONSULT-II and the associated Immobilizer PIN code (there is no need to return the audio to a Clarion service centre). If re-initializing fails to clear a "SECURE" message then the component (identified by background color) is malfunction and should be replaced.

NOTE:
When the "SECURE" is displayed on VFD display or audio unit, the communication of IMMU and radio, radio unit or transponder has malfunction.

Service Procedure

NLEL0542S0502

Item	Service procedure	Description
Battery disconnection	No additional action required.	—
Radio needs repair	Repair needs to be done by authorized representative of radio manufacturer since radio cannot be operated unless it is reset to NEW state, using special decoding equipment.	—
Replacement of radio by new part	No additional action required.	Radio is delivered in NEW state.
Transferring radio to another vehicle/ replacement of radio by an "old" part	Radio needs to be reset by using CONSULT-II and the associated immobilizer PIN code (there is no need to return the audio or NAVI units to a Clarion service center).	—
Replacement of IMMU	The communication between IMMU and radio need to be reset by using CONSULT-II and the associated immobilizer PIN code.	After switching on the radio, it will display "SECURE" on a green background.
No communication from IMMU to radio	1. If NATS is malfunctioning, check NATS system. 2. After NATS is repaired, reset radio to "SECURE" on a green background state by using CONSULT-II and the associated immobilizer PIN code (there is no need to return the audio to a Clarion service center).	After switching on the radio, the display unit will display "SECURE" on a green background. Further use of radio is impossible until communication is established again, or after radio is reset by using CONSULT-II and the associated Immobilizer PIN code (there is no need to return the audio to a Clarion service centre).

SPEED DEPENDENT VOLUME CONTROL

NLEL0542S06

Description

NLEL0542S0601

If activated, the radio output volume will be automatically adjusted to compensate for increased driving noises at higher driving speeds.
The radio receives a speed signal from the combination meter and selects the output volume.

PERSONAL AUDIO SETTINGS

NLEL0542S07

Description

NLEL0542S0701

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

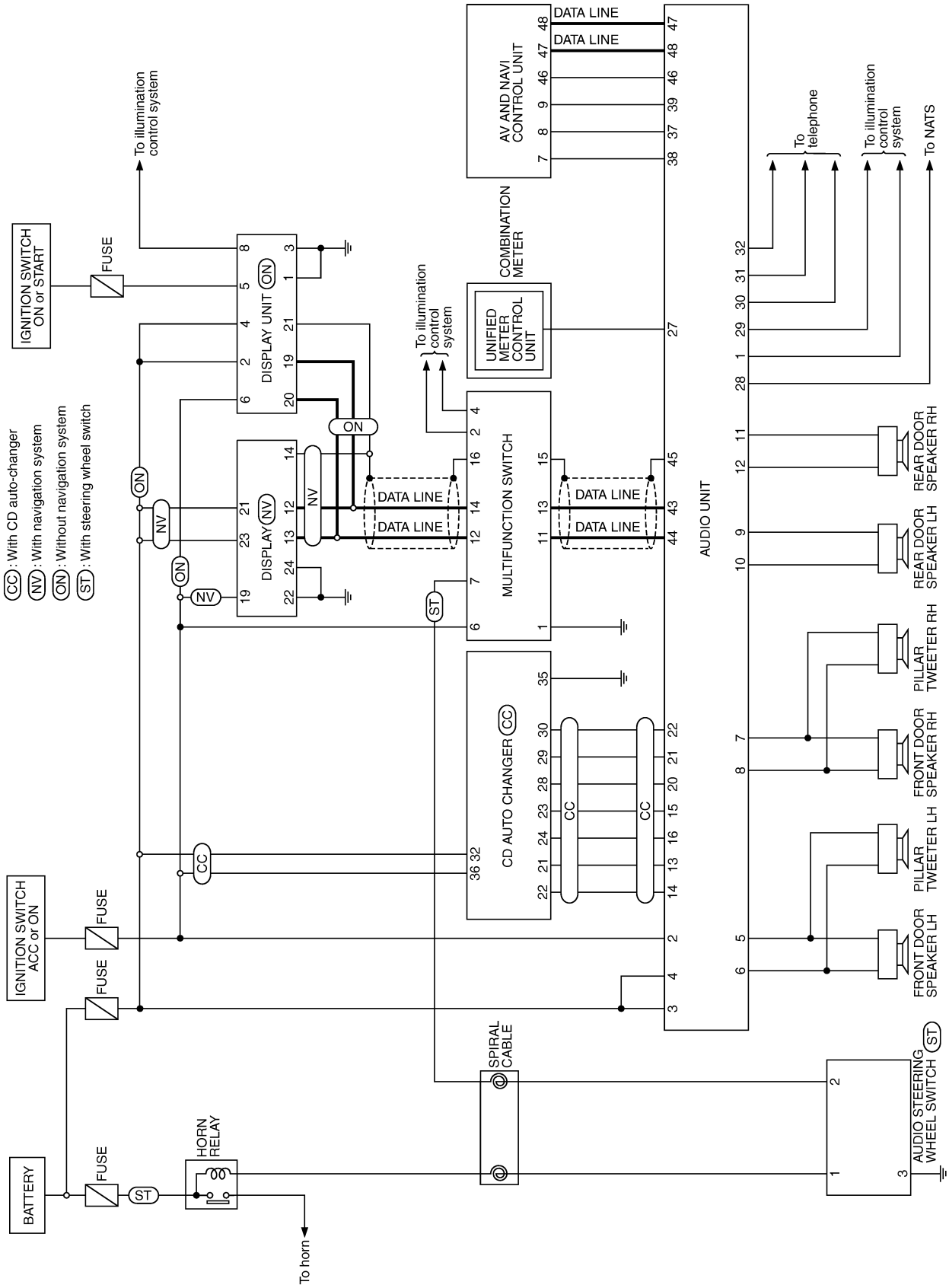
Component Parts Location

NLEL0543

EL-596, “ELECTRIC UNIT LOCATION”.

Schematic

NLEL0466



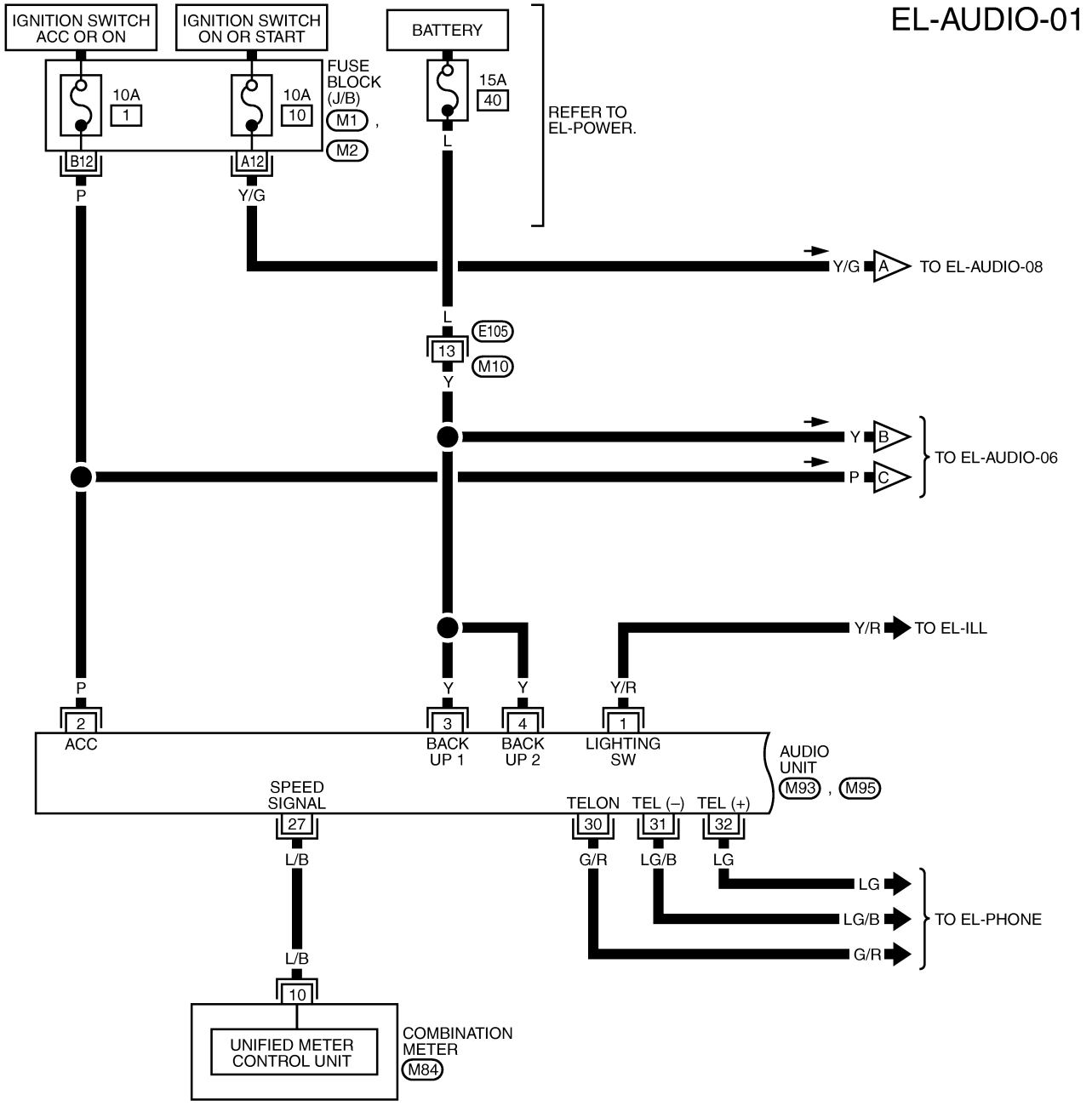
YEL975D

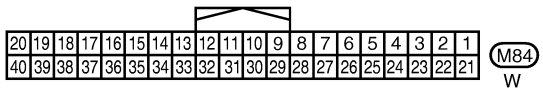
Wiring Diagram — AUDIO —

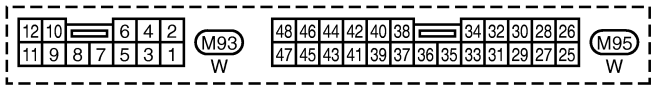
NLEL0467

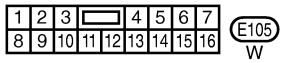
WITHOUT NAVIGATION SYSTEM

NLEL0467S03



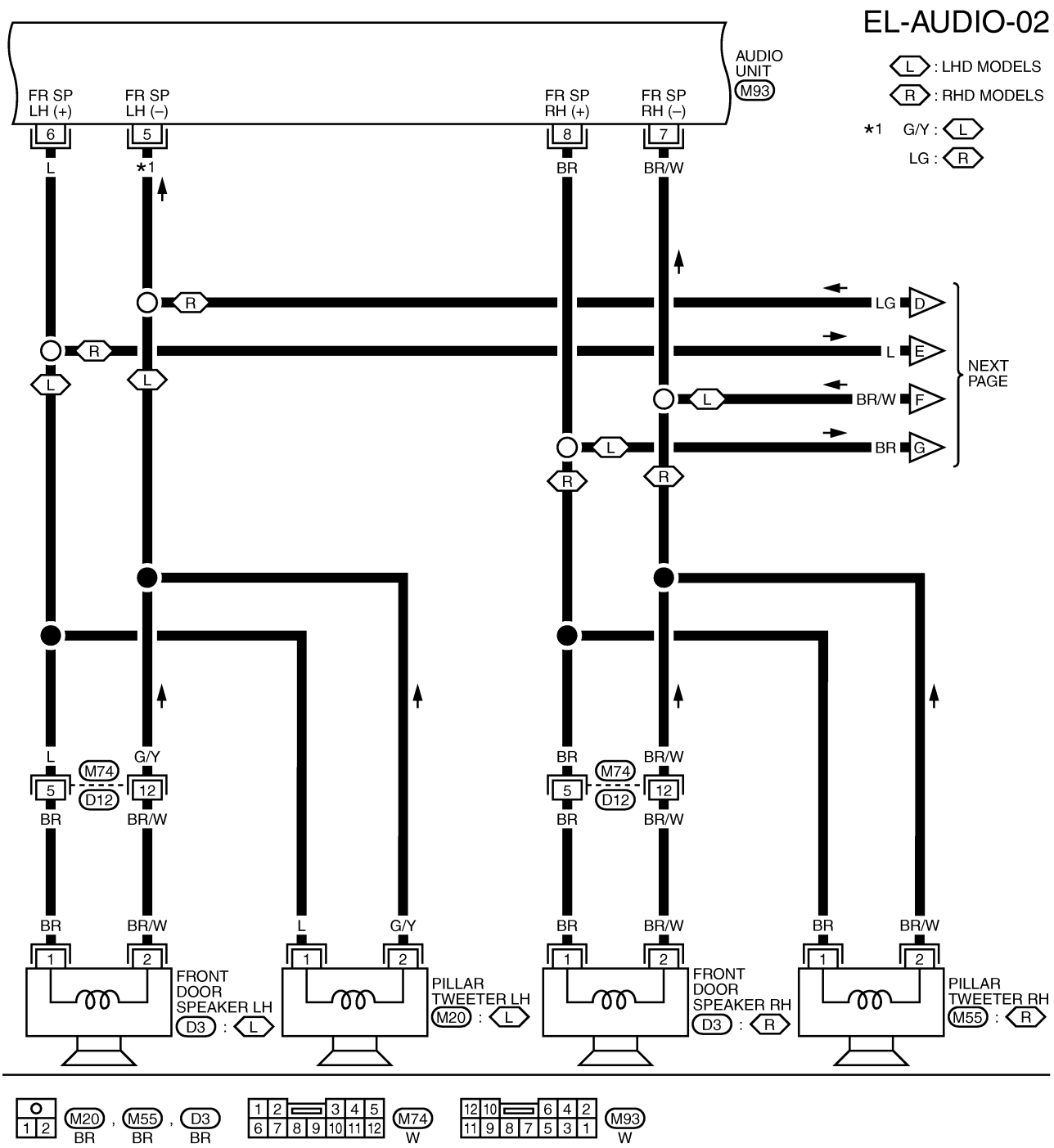






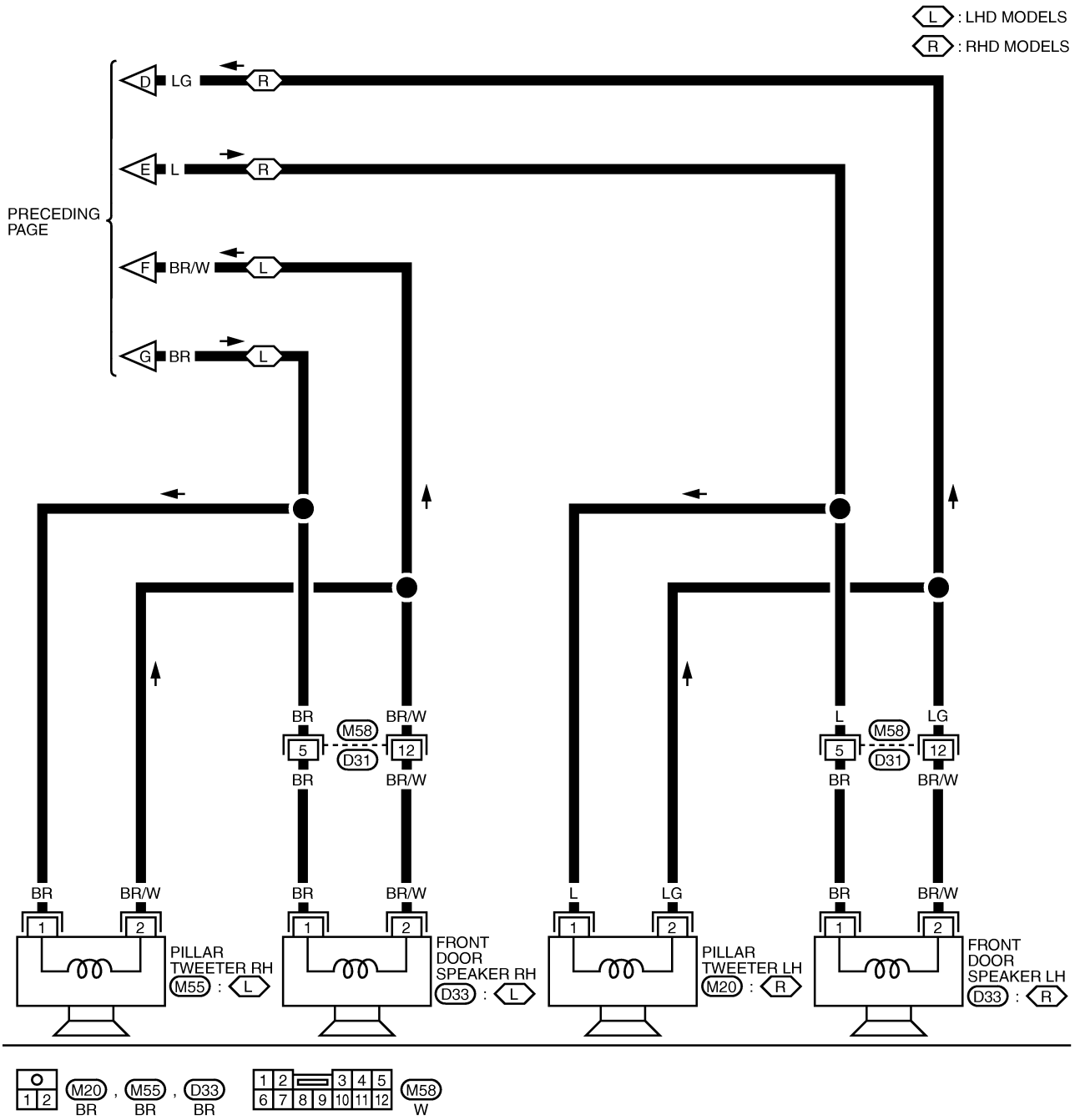
REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL976D


EL-AUDIO-02
AUDIO UNIT M93
FR SP LH (+)
FR SP LH (–)
FR SP RH (+)
FR SP RH (–)
6
5
8
7
L
*1
BR
BR/W
L : LHD MODELS
R : RHD MODELS
*1 G/Y : L
LG : R
LG D
L E
BR/W F
BR G
NEXT PAGE
M74
D12
5
12
G/Y
FRONT DOOR SPEAKER LH D3 : L
PILLAR TWEETER LH M20 : L
FRONT DOOR SPEAKER RH D3 : R
PILLAR TWEETER RH M55 : R
1
2
M20 BR , M55 BR , D3 BR
M74 W
M93 W

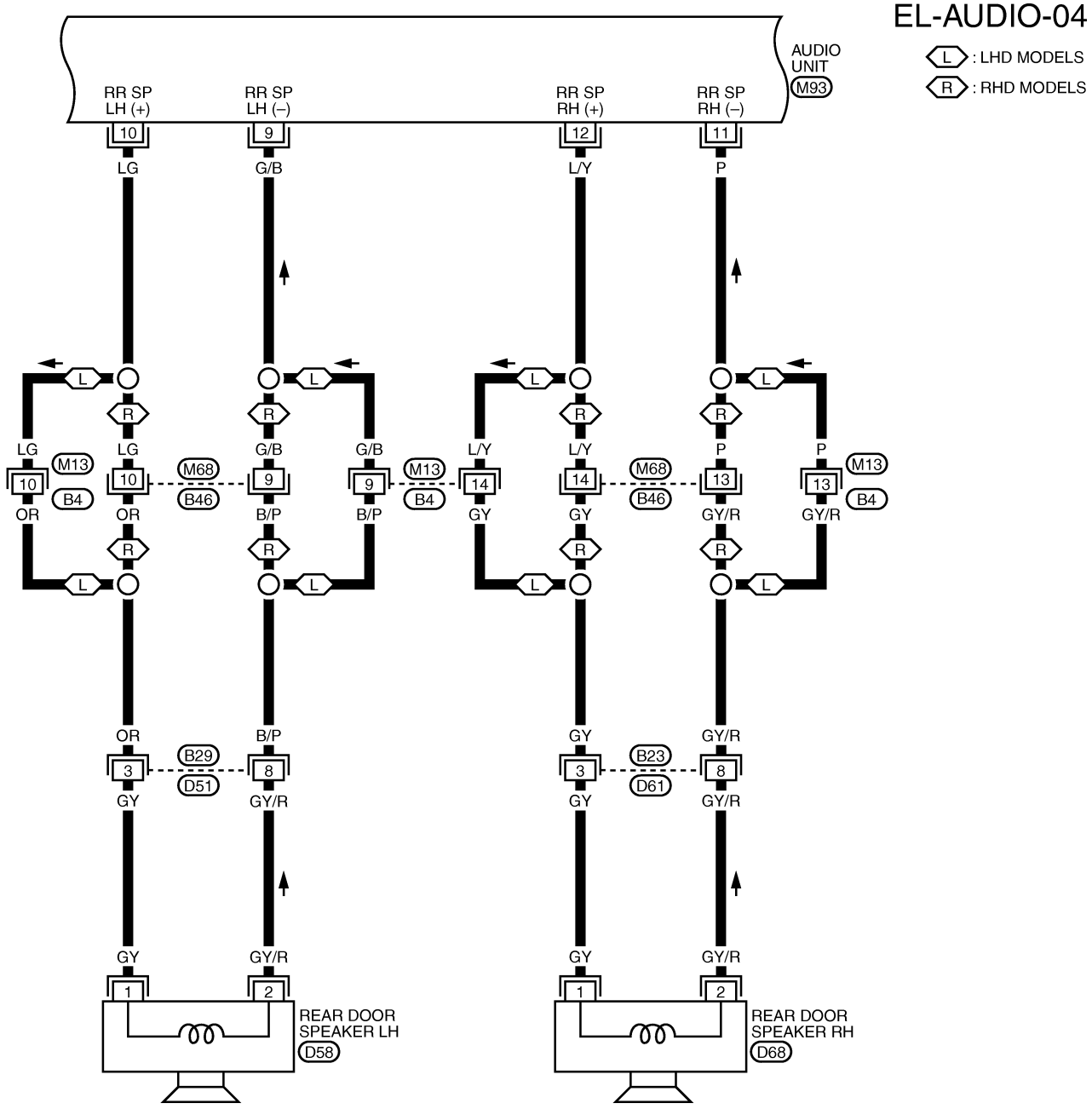
YEL977D

EL-AUDIO-03



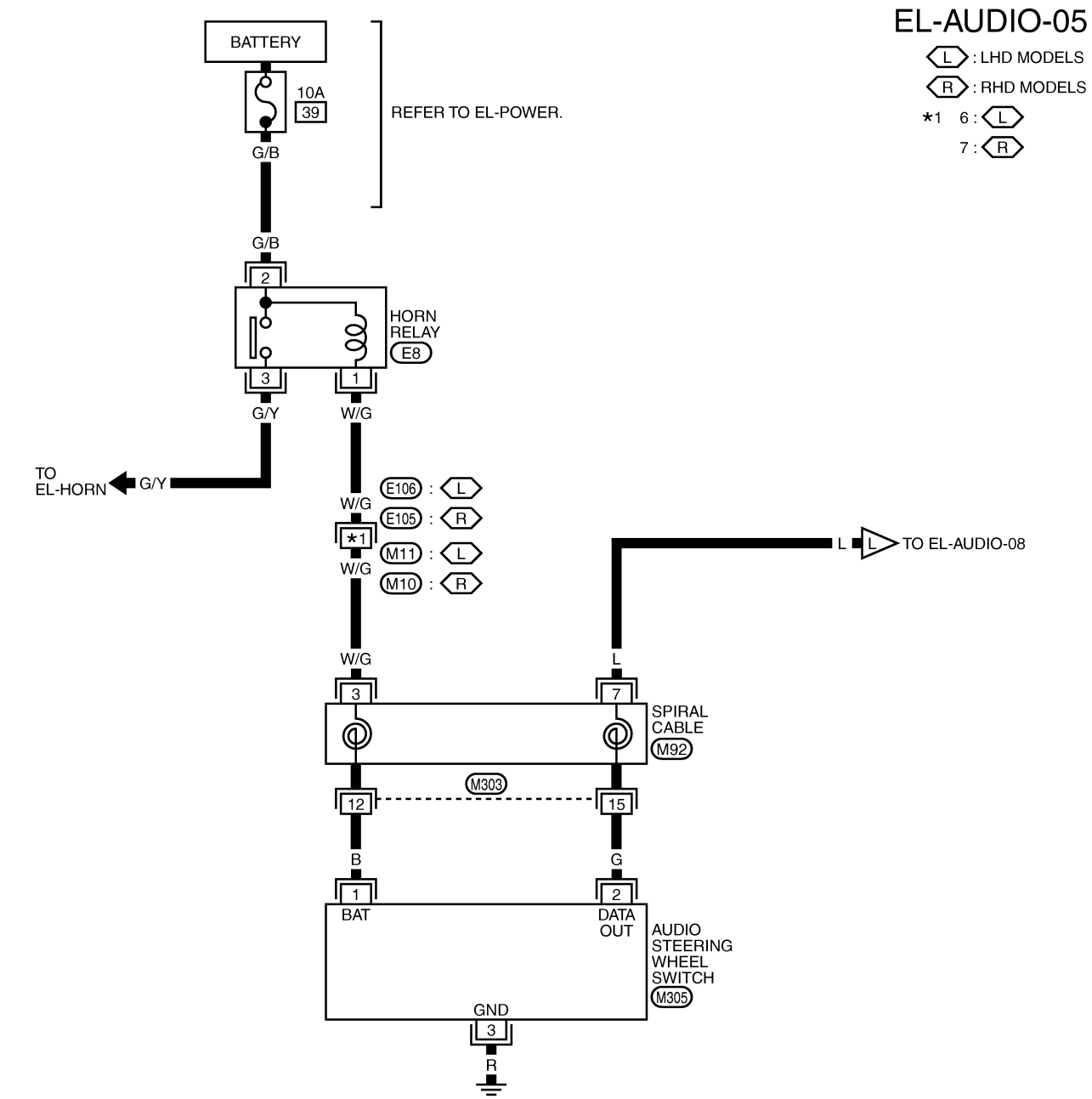
YEL978D

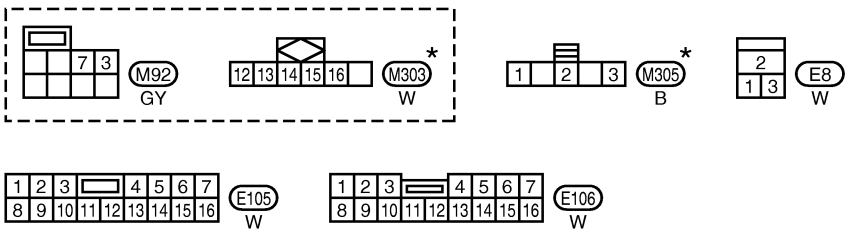
EL-AUDIO-04





YEL979D

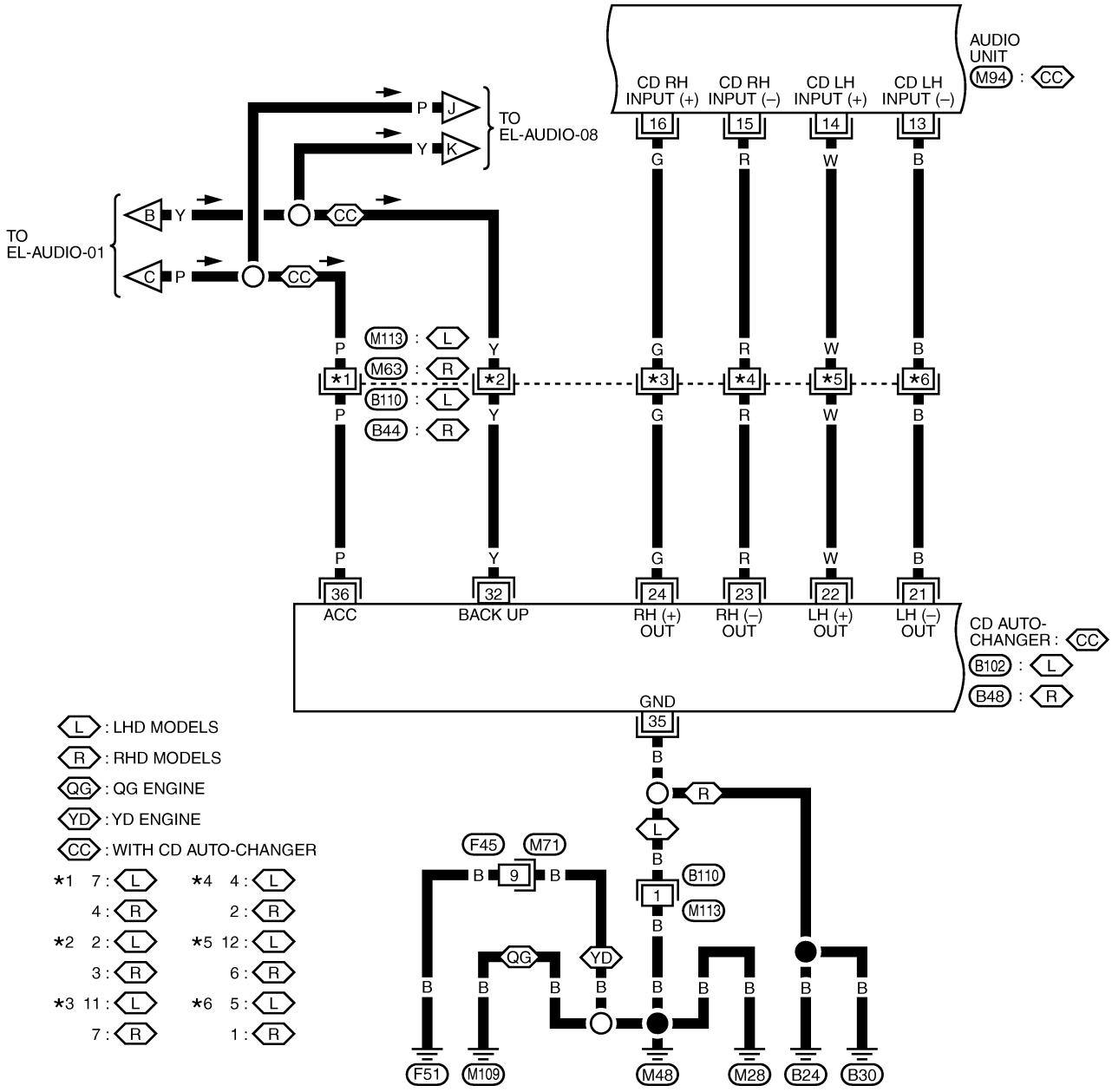


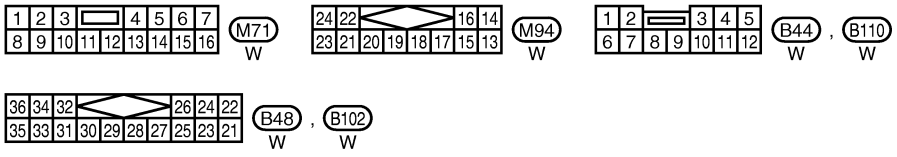


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

YEL980D

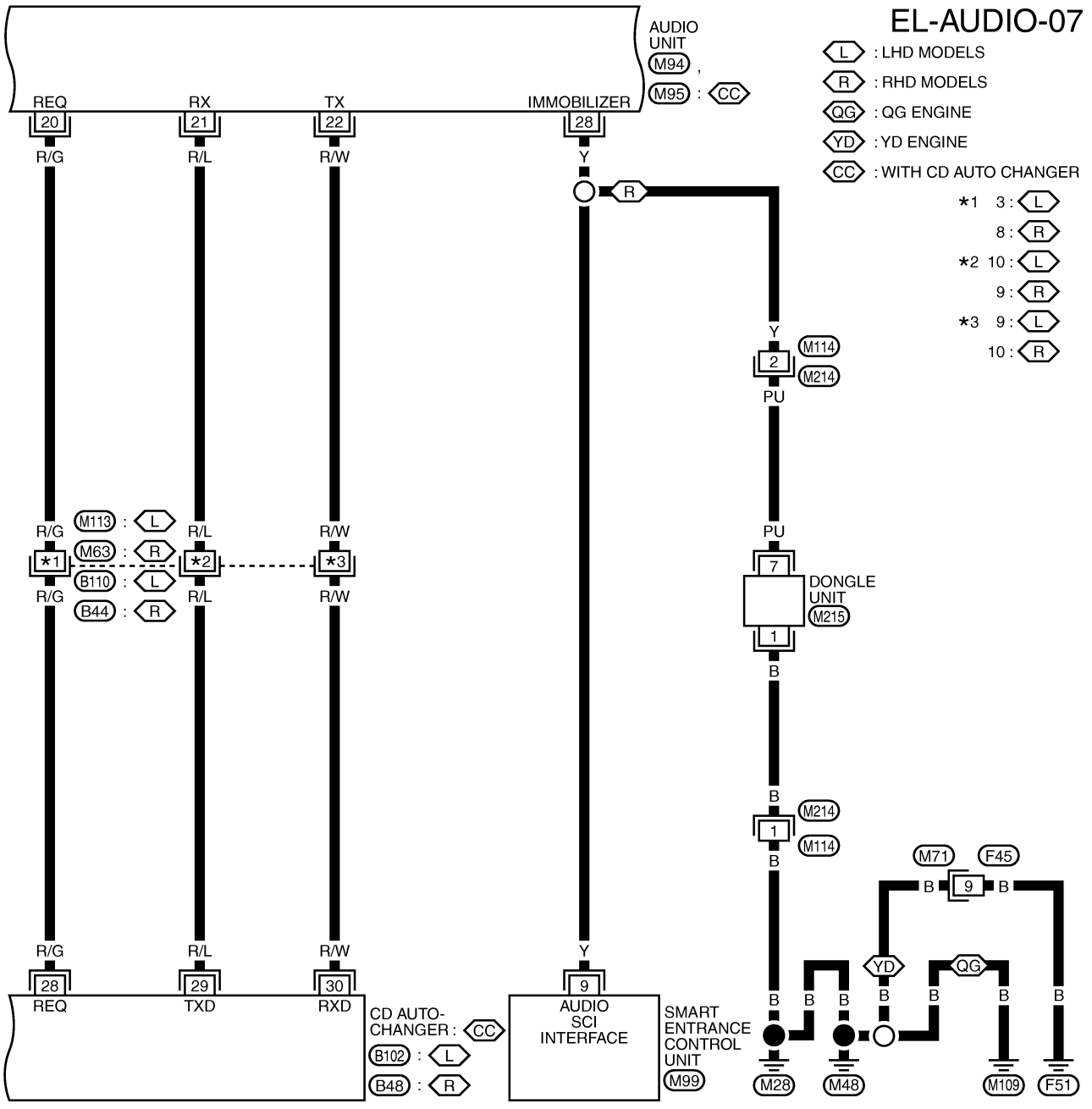
EL-AUDIO-06





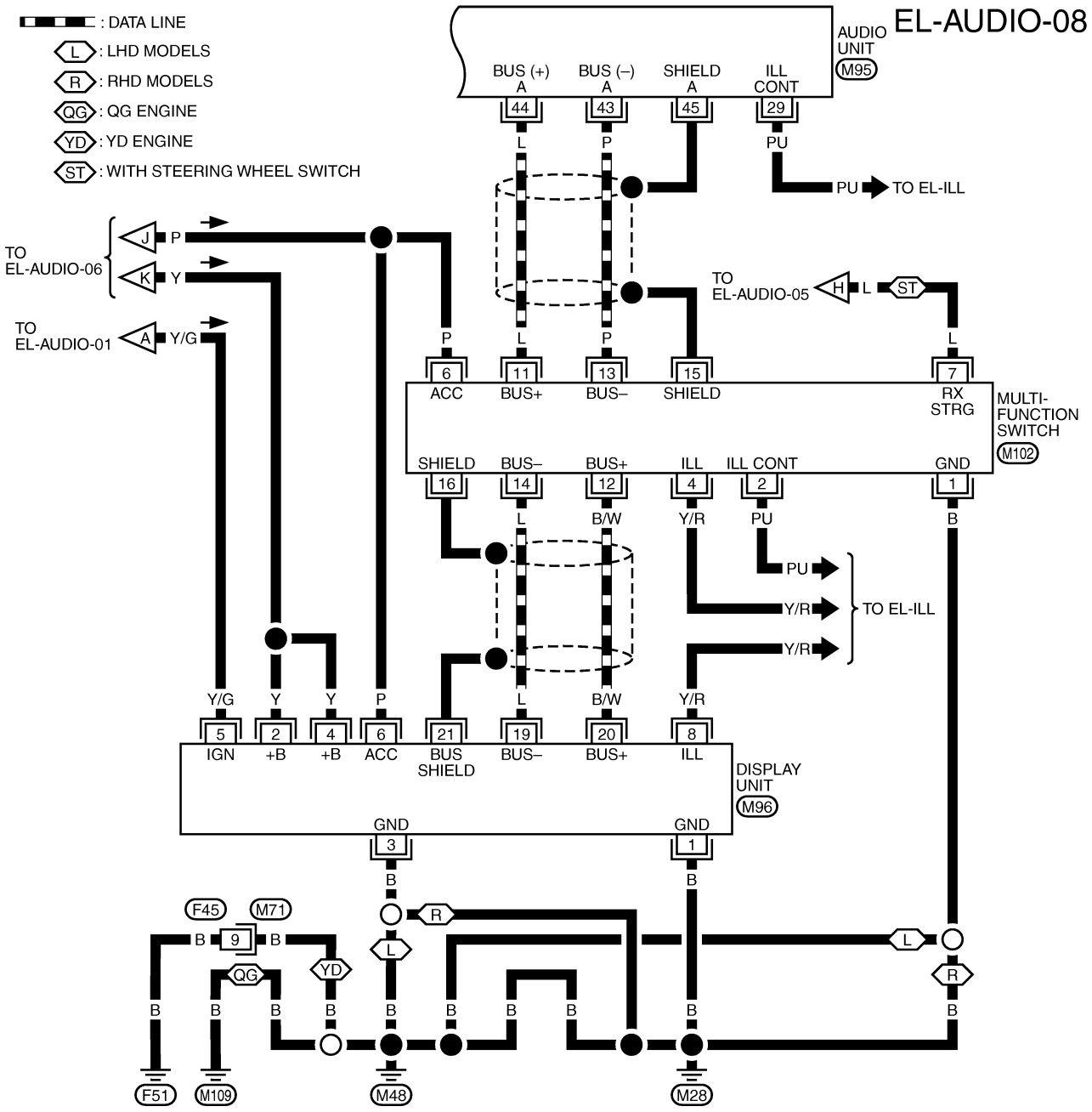
YEL981D

Wiring Diagram — AUDIO — (Cont'd)



YEL987D

EL-AUDIO-08



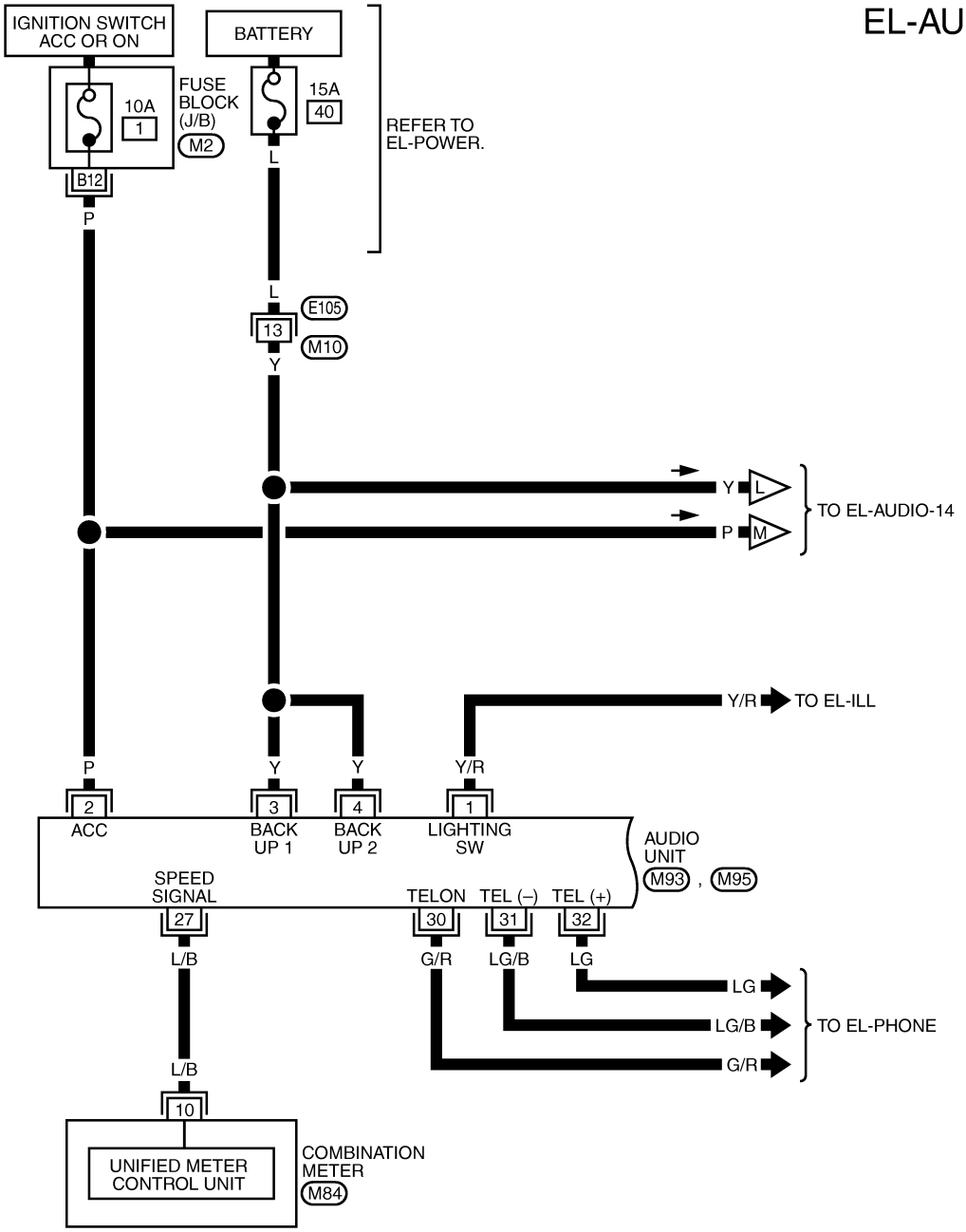
YEL985D

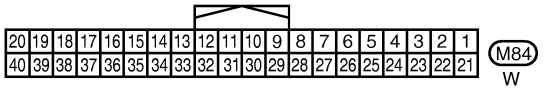
Wiring Diagram — AUDIO — (Cont'd)

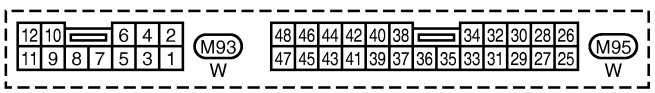
WITH NAVIGATION SYSTEM

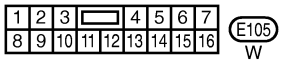
NLEL0467S04

EL-AUDIO-09







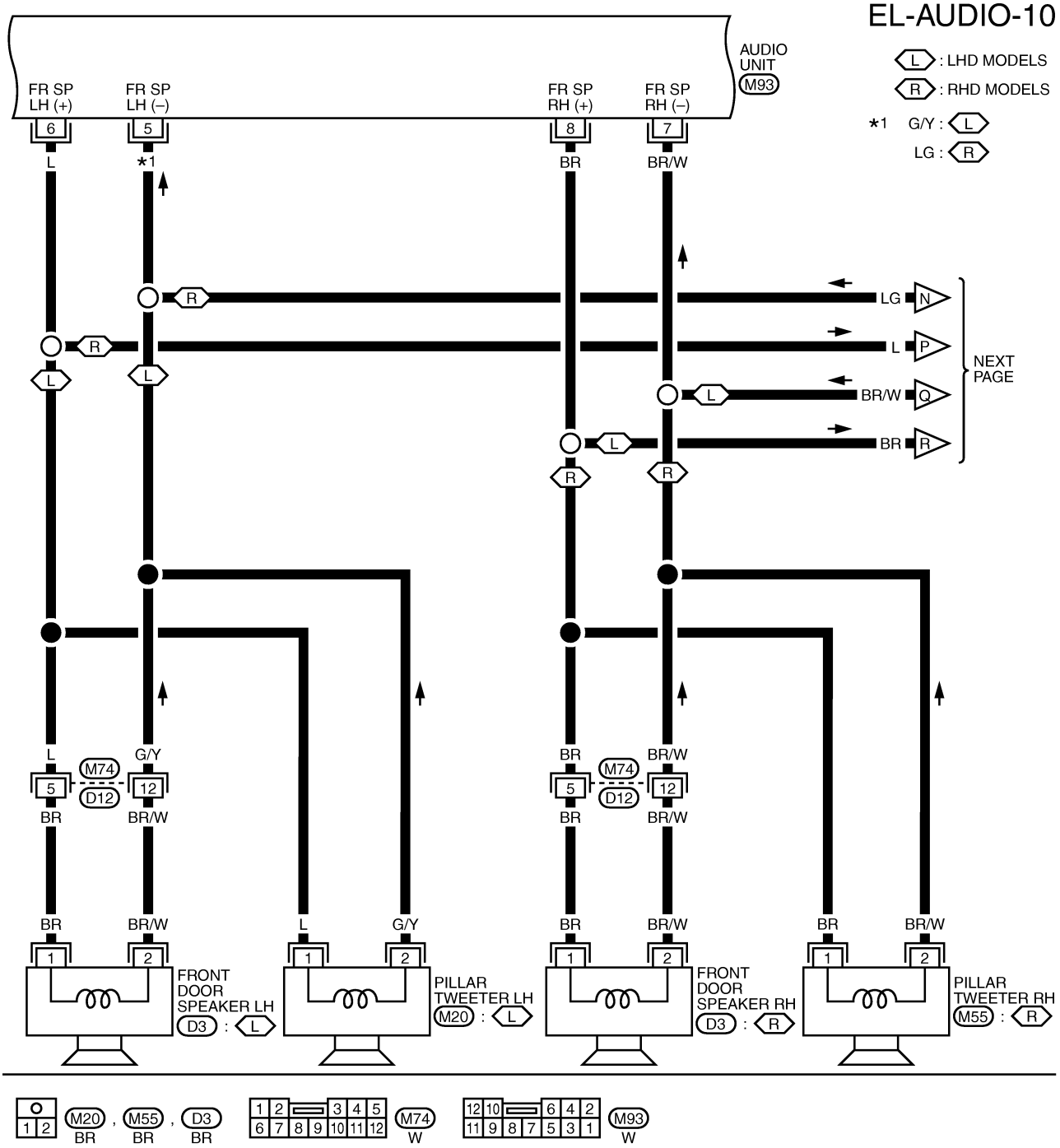


REFER TO THE FOLLOWING.

M2 -FUSE BLOCK-JUNCTION BOX (J/B)

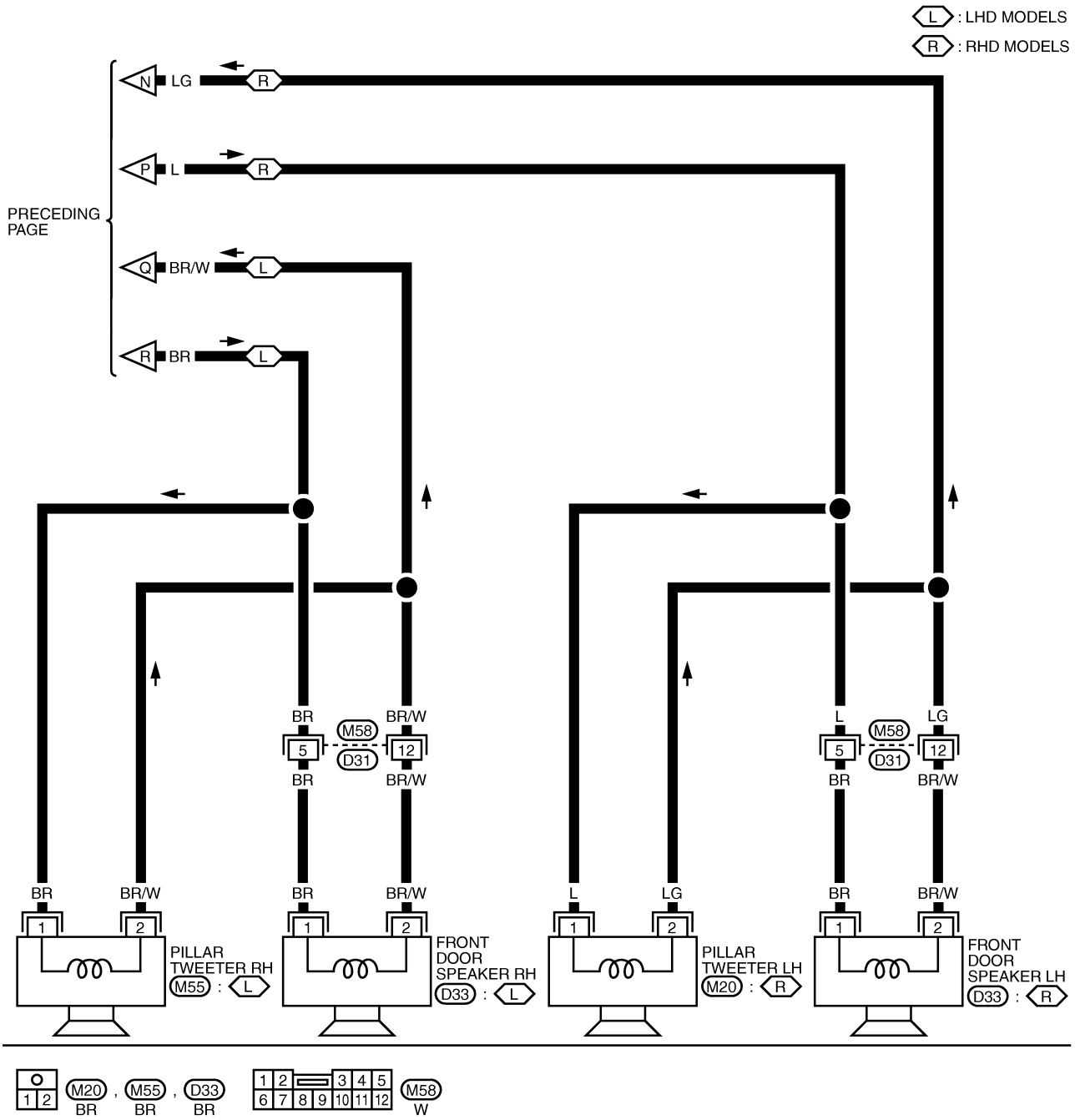
YEL135E

EL-AUDIO-10



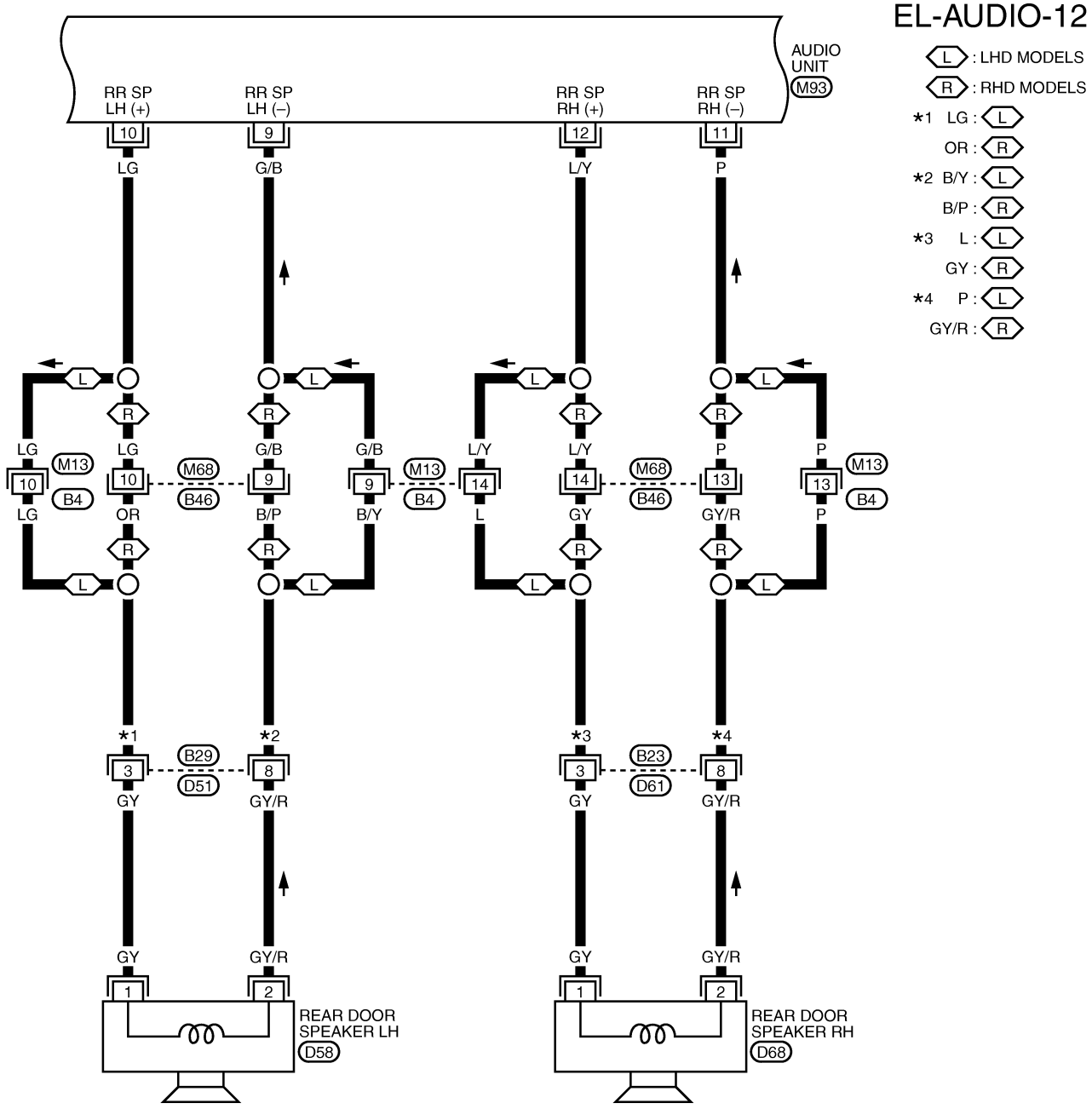
YEL136E

EL-AUDIO-11



YEL137E

EL-AUDIO-12



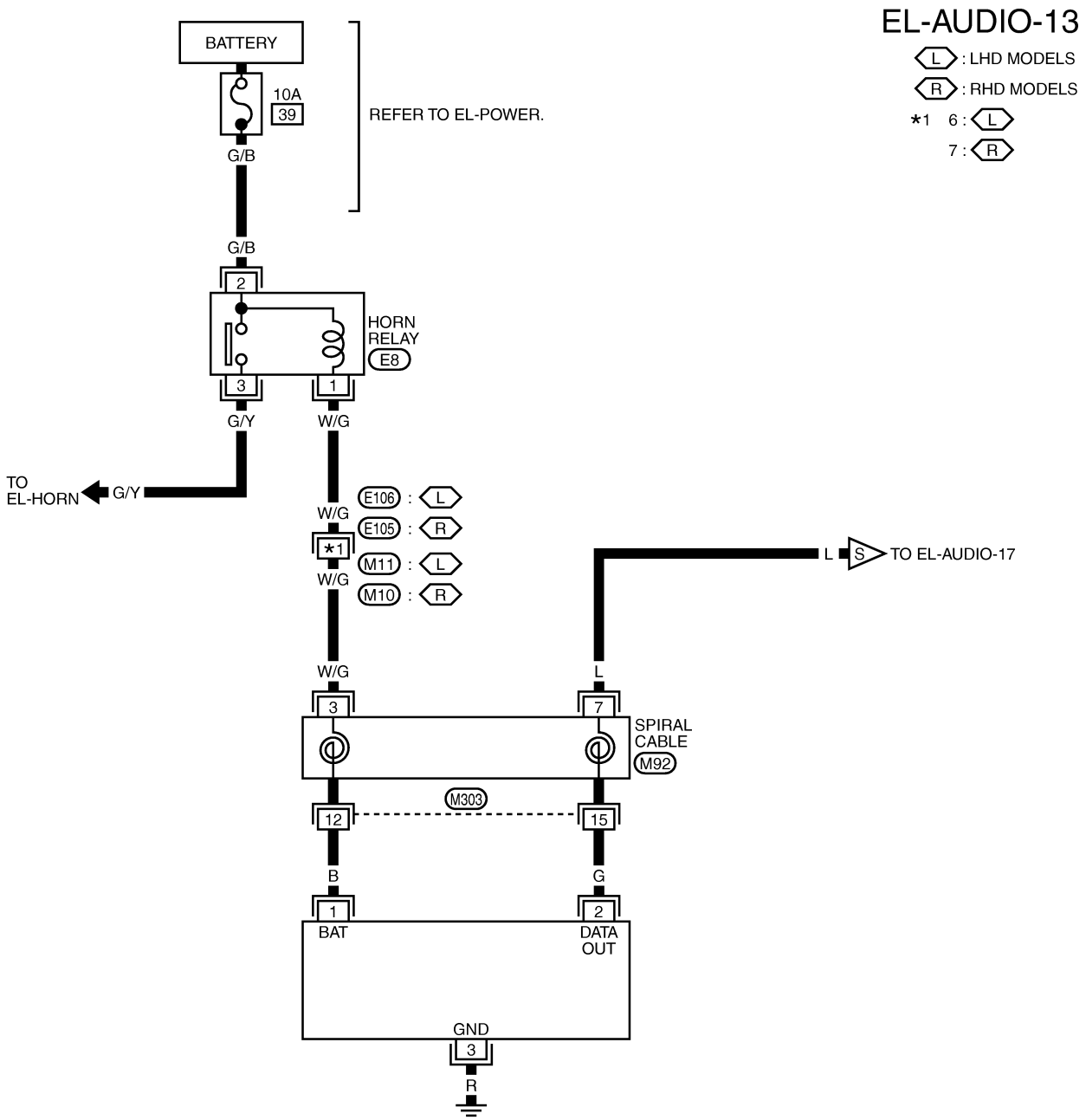
: LHD MODELS
: RHD MODELS

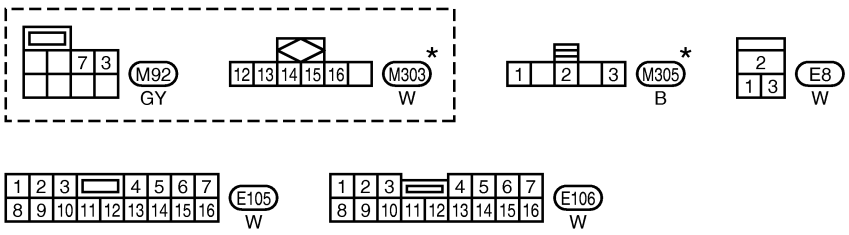
*1 LG : L
OR : R
*2 B/Y : L
B/P : R
*3 L : L
GY : R
*4 P : L
GY/R : R



YEL138E

Wiring Diagram — AUDIO — (Cont'd)

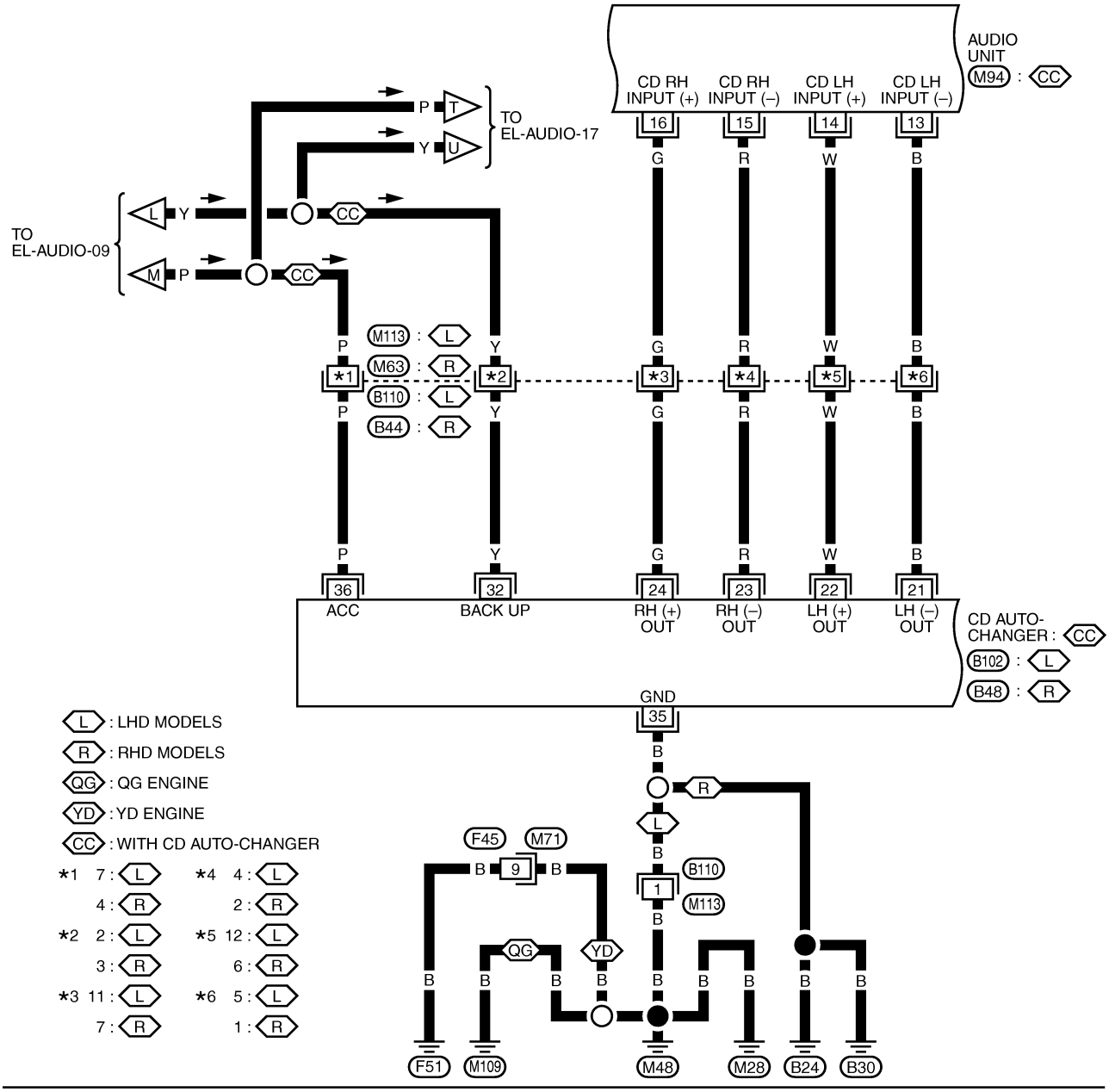


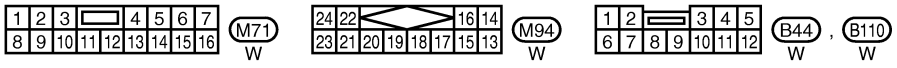


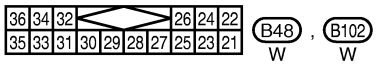
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

YEL139E

EL-AUDIO-14

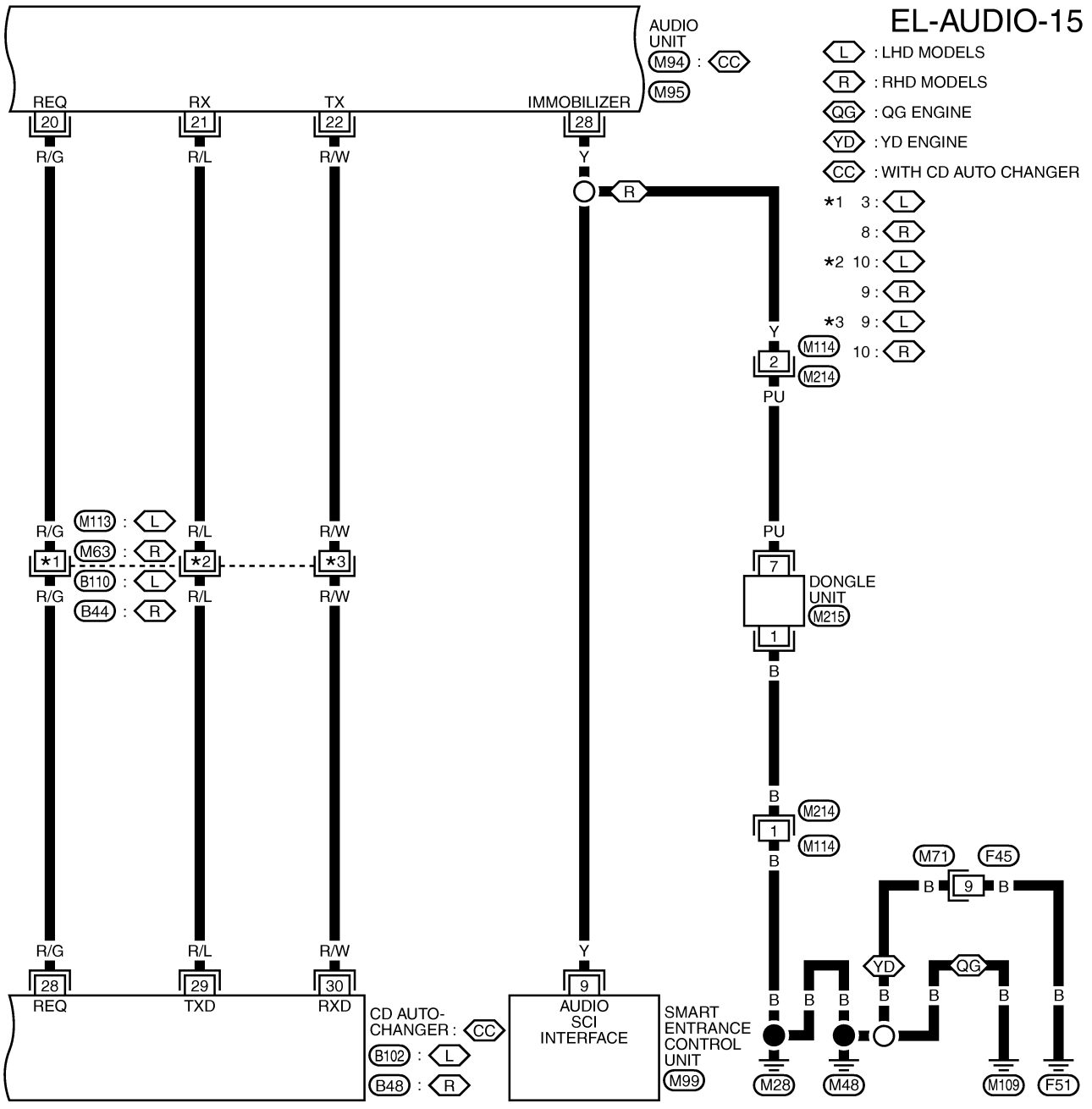


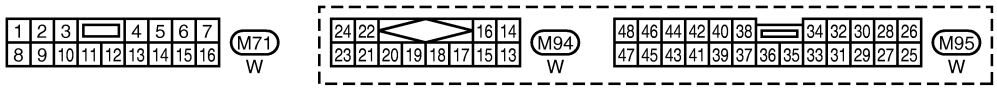


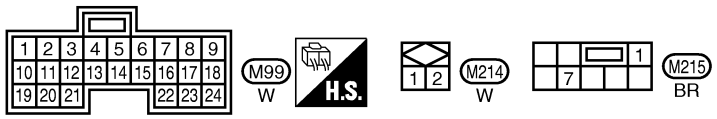


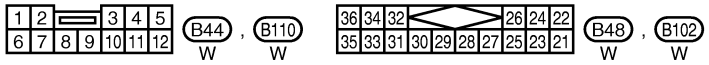
YEL140E

Wiring Diagram — AUDIO — (Cont'd)



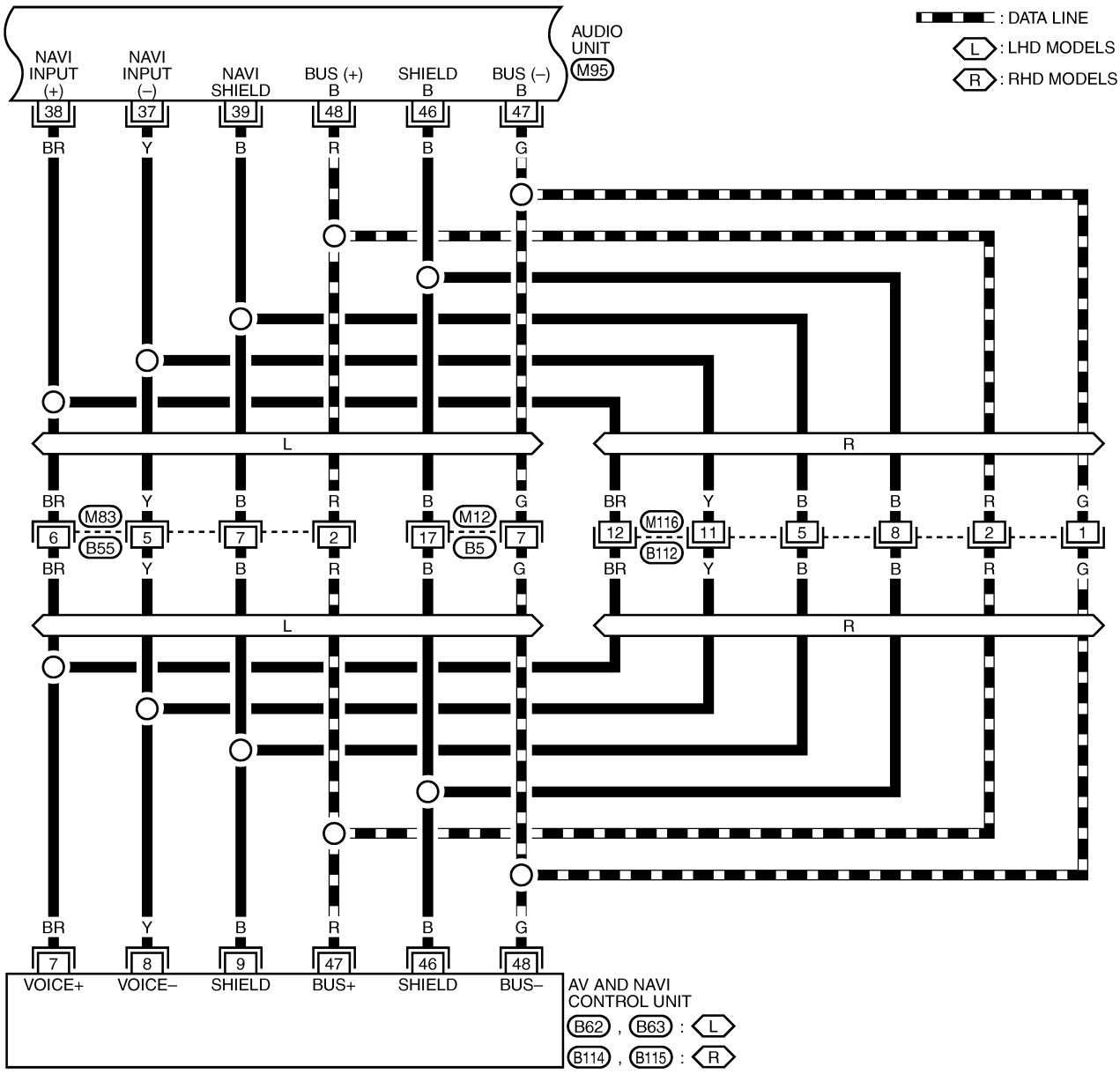


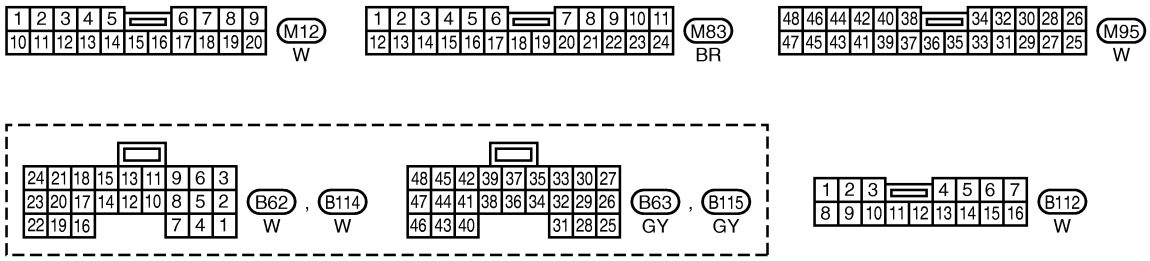




YEL141E

EL-AUDIO-16

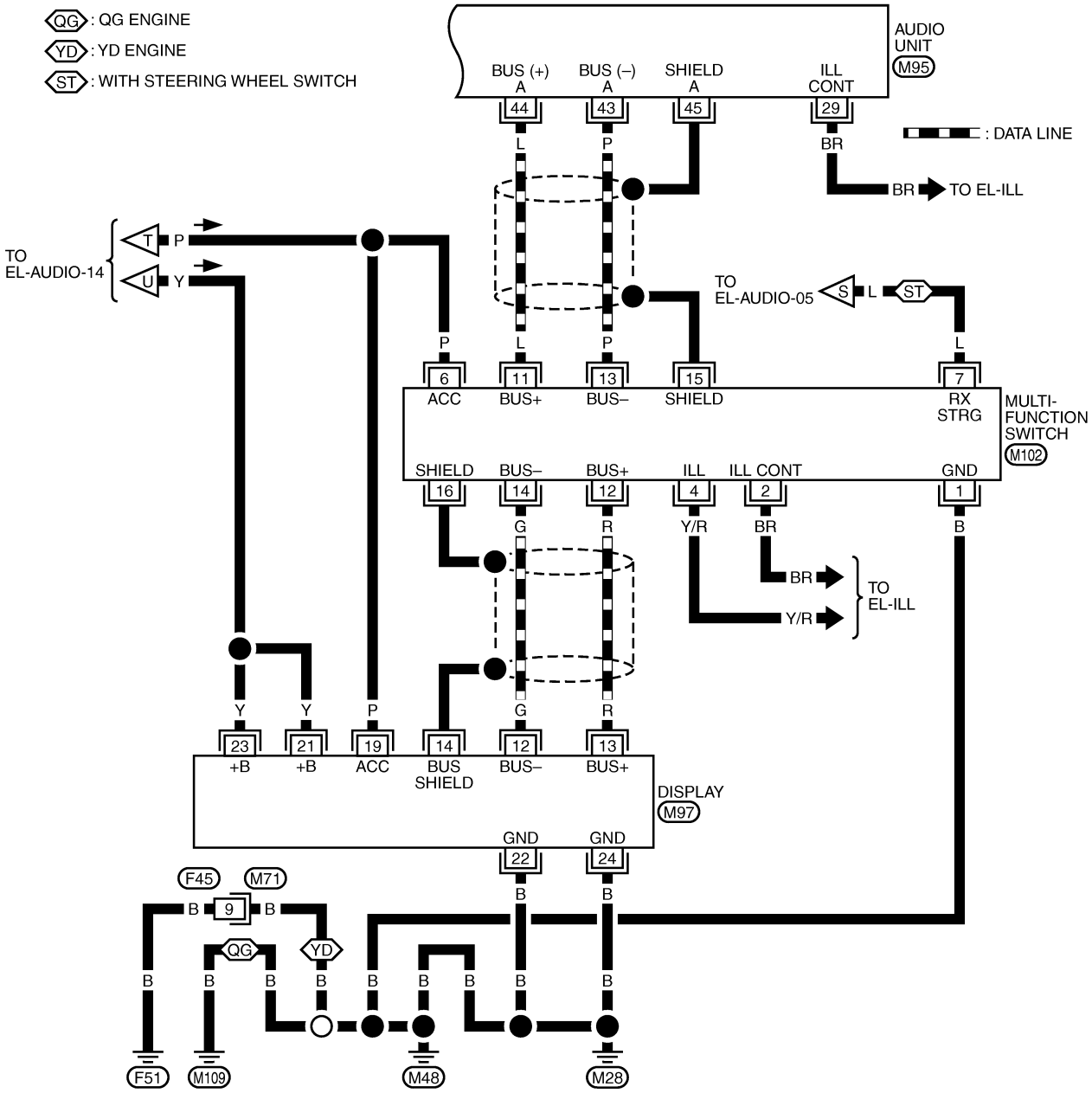


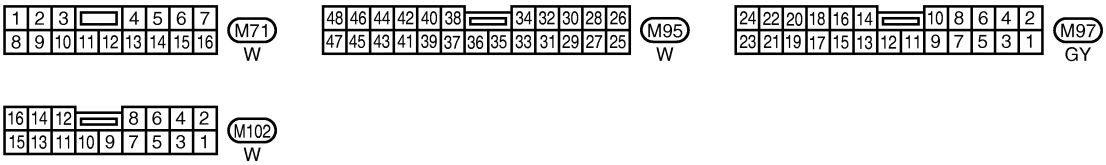


YEL983D

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-17





YEL984D

Trouble Diagnosis

NLEL0544

SELF-DIAGNOSIS FUNCTION

NLEL0544S01

Description

NLEL0544S0101

- Diagnosis function consists of the self-diagnosis mode, and the "CONFIRMATION/ADJUSTMENT" mode.
- Self-diagnosis mode checks for connection among audio unit, and CD auto changer and analyzes each unit, then displays the results.

Diagnosis Item

NLEL0544S0102

Mode	Description
Self-diagnosis	• Check that communication lines between system components are properly connected. • Perform the unit diagnosis of audio unit and CD auto changer.

SELF-DIAGNOSIS MODE

NLEL0544S02

Operation Procedure

NLEL0544S0201

- To start the self-diagnosis mode and to check the diagnostic result, EL-407 for models with navigation system, or EL-225 (LCD) for models without navigation system.

MALFUNCTION WITH RADIO, TAPE, AND CD

NLEL0544S03

Symptom	Check items	Possible cause
Inoperative	• Make sure that the ignition switch is in the ACC position.	• Audio unit • Audio unit power circuit
No sound	• Make sure that the volume is not turned down. • Make sure that the balance and fader control knobs are centered.	• Audio unit • Audio unit power circuit • Speaker • Sound signal circuit between speaker and audio unit
Poor sound	• Make sure that the bass and treble adjustment knobs are centered.	• Audio unit • CD auto changer • Speaker
Noisy	—	• Audio unit • CD auto changer • Each electrical equipment

FOR RADIO ONLY

NLEL0544S04

Symptom	Check items	Possible cause
No sound	• Make sure that the radio is tuned to a station's frequency.	• Audio unit • Antenna feeder • Roof antenna
Noisy	• Make sure that the radio is tuned to a station's frequency. • Make sure that the signal of the received station is not weak. • Check whether or not the malfunction occurs only in a particular area. (Note)	• Audio unit • Antenna feeder • Roof antenna • Noise prevention parts • Each electrical equipment • Wire harness of each piece of electrical equipment
Selected radio stations stored in memory are deleted	—	• Audio unit • Audio unit power circuit

NOTE:

- This is noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.
  - Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
  - Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off of mountains or buildings.

Trouble Diagnosis (Cont'd)

FOR CASSETTE PLAYER ONLY

NLEL0544S05

Symptom	Check items	Possible cause
Cassette tape cannot be inserted.	• Make sure that a cassette tape is not already inserted. • Make sure that the cassette has no deformation or other unusual conditions.	Audio unit, audio unit power circuit
Cassette tape cannot be ejected.	• Make sure that the cassette has no deformation or other unusual conditions. • Make sure that the cassette tape does not sag.	
Auto reverse does not work, or the tape direction changes in the middle of play.	• There is an error with tape winding. Check that there is no slack or other unusual conditions. • Make sure that an old cassette tape is not being used.	Audio unit
There is much noise.	• Make sure that the cassette tape itself does not have a lot of noise, or that the tape does not have a low recording level.	
The sound is not clear.	• Make sure that the tune is recorded on tape with Dolby B NR OFF and played with Dolby B NR ON. • Make sure that the sound quality of the cassette tape itself is not poor.	
Sound fluctuates/tape speed not correct.	• Make sure that there is no tape winding error, sagging, stretching, or other unusual conditions. • Make sure that there is no problem with the recording speed of the cassette tape.	
No sound.	• Make sure that the cassette tape has been recorded on.	

FOR CD ONLY

NLEL0544S06

Symptom	Check items	Possible cause
The CD cannot be played.	• Make sure that the CD is not upside down. • Make sure that there is no dirt, damage, or water on the disc.	• CD auto changer • Audio unit
The sound skips, stops suddenly, or is distorted.	• Make sure that there is no dirt, damage, or water on the disc. • Make sure that the error is not due to strong vibration.	

NOISE INSPECTION

NLEL0544S07

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunction. Check if noise is caused and/or changed by engine rotation, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

NOTE:
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

NLEL0544S0701

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Malfunction with the ignition condenser
	A whistling noise occurs while the engine speed is high. A booming noise occurs while the engine is running and the light switch is ON.	• Malfunction with the alternator

Occurrence condition		Possible cause
The occurrence of the noise is linked with the operation of the fuel pump.		• Malfunction with the fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, radio malfunction
	The noise occurs when various motors are operating.	• Malfunction with the motor case ground • Malfunction with the motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna amplifier or antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		• Malfunction with the ground wire of body parts • Malfunction with ground due to part installation problem • Malfunction with wiring connections or a short circuit

POWER SUPPLY CIRCUIT INSPECTION

=NLEL0544S08

1 CHECK FUSE

- Check that the following fuses of the auto unit, and CD auto changer are not blown.

Unit	Terminals (+) Connector	Terminals (+) Terminals (Wire color)	Terminals (−)	Signal name	Fuse No.
Audio unit	M93	3 (Y), 4 (Y)	Ground	Battery power	33
	M93	2 (P)	Ground	ACC power	1
CD Auto changer	LHD: B102 RHD: B48	32 (Y)	Ground	Battery power	33
		36 (P)	Ground	ACC power	1

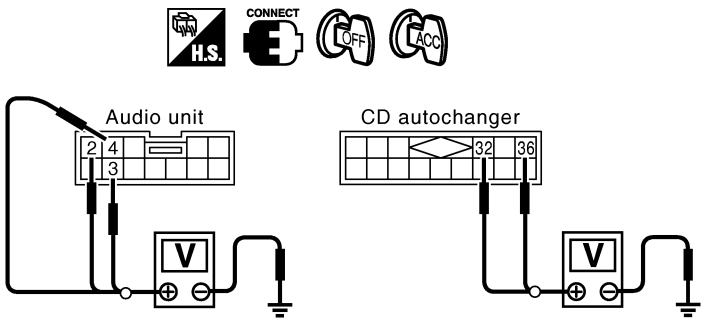
MTBL1648

OK or NG

OK	▶	GO TO 2.
NG	▶	If use is blown, be sure to eliminate cause of malfunction before installing new fuse.

2 POWER SUPPLY CIRCUIT CHECK

Disconnect the connector. Check voltage between the following harness connector terminal (+) and ground (−).



YEL471E

Unit	Terminal No. (+) Connector	Terminal No. (+) Terminal (Wire color)	Terminal No. (−)	Ignition switch position OFF	ACC	ON
Audio unit	M93	3 (Y), 4 (Y)	Ground	Battery power	Battery voltage	Battery voltage
	M93	2 (P)	Ground	0V	Battery voltage	Battery voltage
CD auto changer	LHD: B102 RHD: B48	32 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
		36 (P)	Ground	0V	Battery voltage	Battery voltage

MTBL1649

OK or NG

OK	▶	Inspection end.
NG	▶	Repair or replace harness.

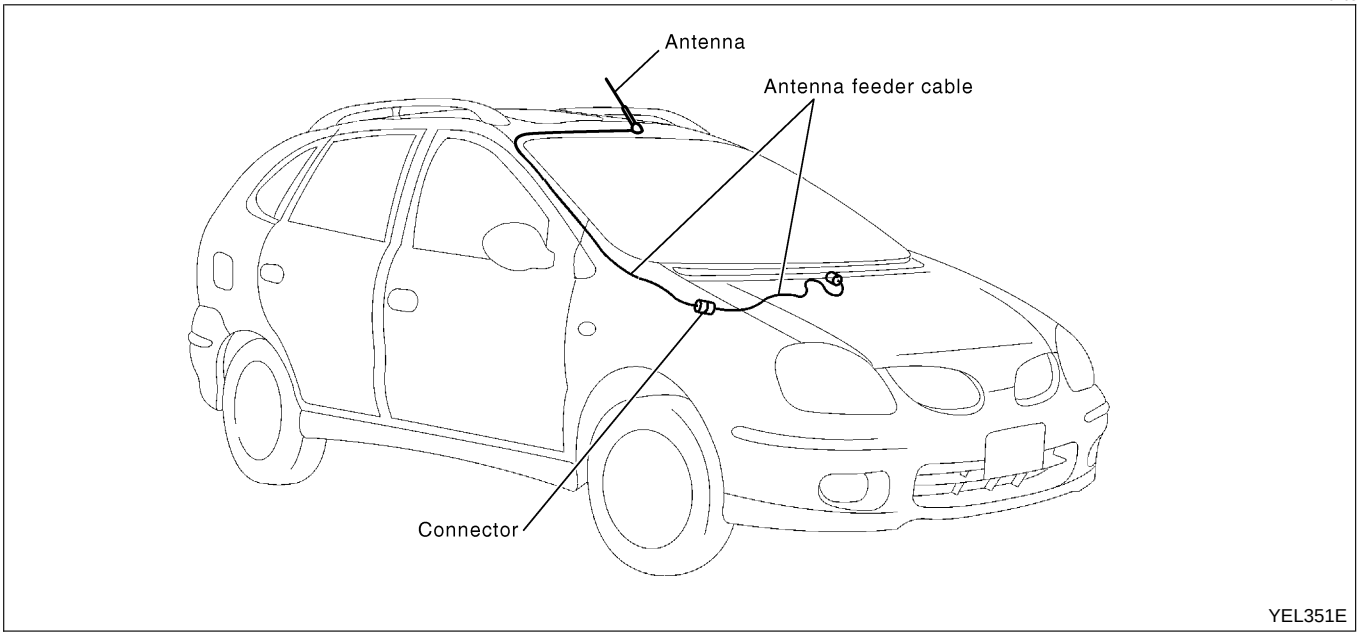
AUDIO SYSTEM DOES NOT TURN ON.

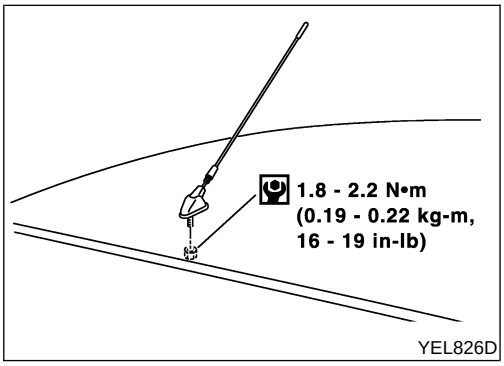
NLEL0544S09

1	SELF-DIAGNOSIS	
1. Perform self-diagnosis. Refer to EL-407 for models with navigation system, EL-225, for models LCD without navigation system. **OK or NG**		
OK	▶	Replace audio unit.
NG	▶	Check the malfunctioned area according to the self-diagnostic result.

Location of Antenna

NLEL0468





Antenna Rod Replacement

NLEL0469

REMOVAL

NLEL0469S01

Models with the fixing nut

NLEL0469S0101

1. Remove front portion of head lining.
2. Remove antenna base cover.
3. Remove antenna base fixing nut and antenna base.

System Description

NLEL0545

MULTIFUNCTION SWITCH SYSTEM

NLEL0545S01

Refer to Owner's Manual for multifunction switch operating instructions.

Using the multifunction switch at the center of the instrument panel, the controls of the following systems are centralized:

- Auto A/C system
- Vehicle information system
- Audio system

PRECAUTION OF LCD MONITOR

NLEL0545S02

- When passenger compartment temperature is low, the LCD monitor sometimes dims because of the brightness of the back light (small fluorescent light) integrated into the LCD monitor decrease. In this case, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger compartment becomes warm, however, the LCD recovers the normal display.
- Sometimes, black or bright dots peculiar to LCD monitor can be seen on the display.
- Back light sometimes flickers or darkens according to the total consumption hours and the number of ON and OFF switching. In this case, the back light should be replaced (display unit assembly).

POWER SUPPLY AND GROUND

NLEL0545S03

Power is Supplied at All Times

NLEL0545S0301

- through 15A fuse (No. 40, located in fuse and fusible link box)
- to display unit terminals 2 and 4
- to audio unit terminals 3 and 4.

When Ignition Switch is in ACC or ON Position, Power is Supplied

NLEL0545S0302

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to display unit terminal 6,
- to multifunction switch terminal 6 and
- to audio unit terminal 2.

When Ignition Switch is in ON or START Position, Power is Supplied

NLEL0545S0303

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

Ground is Supplied

NLEL0545S0304

- to multifunction switch terminal 1 and
- to display unit terminals 1 and 3
- through body grounds M28, M48 and M109 (QG engine models) or F51 (YD engine models).

AV COMMUNICATION LINE

NLEL0545S04

Display unit is controlled by the following unit with AV communication line.

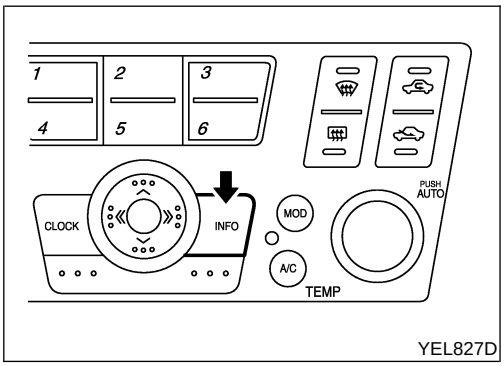
- Multifunction switch
- Audio unit

VEHICLE INFORMATION SYSTEM

NLEL0545S05

Refer to Owner's Manual for vehicle information system operating instructions.

Vehicle information system is monitoring to drive information, fuel economy information and maintenance information.

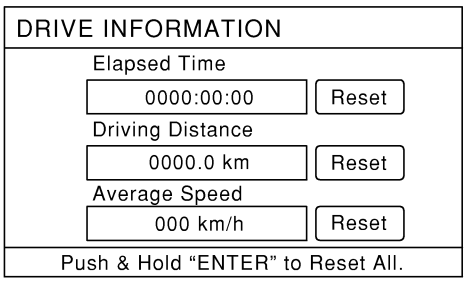


YEL827D

1. Press "INFO" switch to display vehicle information display.
2. Select "Drive", "Fuel Economy" or "Maintenance".

Display items		Display/Setting contents
Drive	Elapsed Time	Displays driving time with a range of 0000:00:00 to 9999:59:59.
	Driving Distance (km)	Displays driving distance with a range of 00000.0 to 99999.9.
	Average Speed (km/h)	Displays average speed with a range of 000.0 to 999.9.
Fuel Economy	Average Fuel Economy (ℓ/100 km)	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.
	Distance to Empty (km)	Displays possible driving distance with remaining fuel.
	Fuel Economy (ℓ/100 km)	Displays fuel economy each approx. 100 ms.
	Fuel Economy Record (ℓ/100 km)	Displays Average Fuel Consumption History.
Maintenance (with Maintenance Information*)	Engine Oil	Maintenance intervals of engine oil and setting of oil change cycle
	Oil Filter	Maintenance intervals of oil filter and setting of filter replacement cycle
	Custom 1	Determines when maintenance intervals are needed.
	Custom 2	Determines when maintenance intervals are needed.

*: Maintenance information displays the change cycle of engine oil, oil filter, custom 1 and custom 2 on LCD monitor depending on the driving distance specified by a driver or a technician.

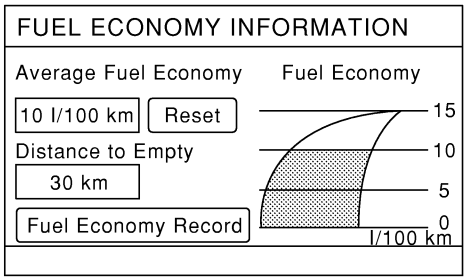


MKIB0144E

Drive Information

NLEL0545S0501

1. Select "Drive".
2. Elapsed time, driving distance and average speed are displayed as drive information. When pushing "ENTER", elapsed time, driving distance and average speed are all reset.

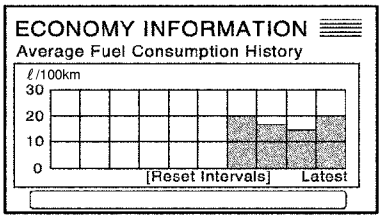


MKIB0145E

Fuel Economy Information

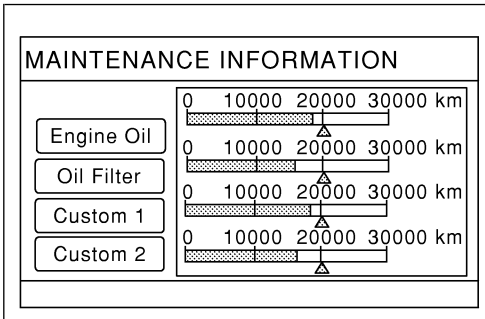
NLEL0545S0502

1. Select "Fuel Economy".
2. Average Fuel Economy, Distance to Empty, Fuel Economy are displayed as Fuel Economy information.



SKIA0772E

3. Select "Fuel Economy Record". The average fuel consumption history will be displayed in graph along with the average for the previous Reset – to – Reset period.



MKIB0146E

Maintenance Information

NLEL0545S0503

1. Select "Maintenance".
2. Engine Oil, Oil Filter, Custom 1 and Custom 2 are displayed as maintenance information.

WARNING INDICATIONS

=NLEL0545S06

When combination meter receives warning signal from some control units or sensors, then combination meter warning lamp is illuminated.
Then combination meter sends warning signal to display unit warning indications on the screen.

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
ENGINE	ENGINE	Detection condition	Warning lamp ON signal is detected while engine is running.	ECM malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
ENGINE OIL PRESSURE	Engine oil pressure	Detection condition	Warning lamp ON signal is detected for at least approx. 5 seconds while engine is running.	Engine oil pressure decreases.
		Cancel condition	Warning lamp OFF signal is detected.	
AIR BAG	Air bag	Detection condition	Warning lamp ON signal is detected for at least approx. 10 seconds after ignition switch is turned ON.	SRS air bag system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW BRAKE FLUID	Brake	Detection condition	Warning lamp ON signal (fluid level) is detected.	Low brake fluid level
		Cancel condition	Warning lamp OFF signal is detected.	
OVERHEATING	–	Detection condition	Engine coolant temperature as being approx. 119°C (246°F) min.	Engine cooling system malfunction
		Cancel condition	Engine coolant temperature as being approx. 105°C (221°F) max.	
CHARGE	Charge	Detection condition	Warning lamp ON signal is detected while engine is running. Charging system malfunction	Charging system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW WASHER FLUID	–	Detection condition	Washer liquid level falls below approx. 0.8 ℓ (1-3/8 Imp pt)	Low washer liquid level
		Cancel condition	Except above condition.	
LOW FUEL	Fuel level	Detection condition	After warning lamp ON signal is detected, vehicle is driven for over specified distance. [Fuel level: Approx. 9.6 ℓ (8-1/2 Imp pt)]	Low fuel level
		Cancel condition	Warning lamp OFF signal is detected.	

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
PARKING BRAKE	Brake	Detection condition	Parking brake ON signal is detected while vehicle is running [approx. 5 km/h (3 MPH) or faster].	Parking brake remains engaged.
		Cancel condition	Vehicle is stopped, or parking brake OFF signal is detected.	
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors lock.	
ABS	ABS	Detection condition	Warning lamp ON signal is detected when engine is running.	ABS control system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
ESP ELECTRONIC CONTROL SYSTEM	ESP	Detection condition	Warning lamp ON signal is detected when engine is running.	ESP system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CVT ELECTRONIC CONTROL SYSTEM	CVT	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	TCM system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CRUISE CONTROL SYSTEM	CRUISE	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	ICC system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	

Precautions for Display Unit Replacement

=NLEL0546

- Record the following memorized contents before replacing the control unit.

<FM·AM>

- **Preset frequency**
- **Area for indicating station, selection of overlapped stations**

<CD>

- **Program status**

<Sound quality>

- **Volume balance memory set values**
- **Equalizer memory set values**

<Image quality>

- **Brightness of light when ON/OFF**
- **Dimming switching**
- **Display color switching**
- Replace the display unit after disconnecting both battery cables.

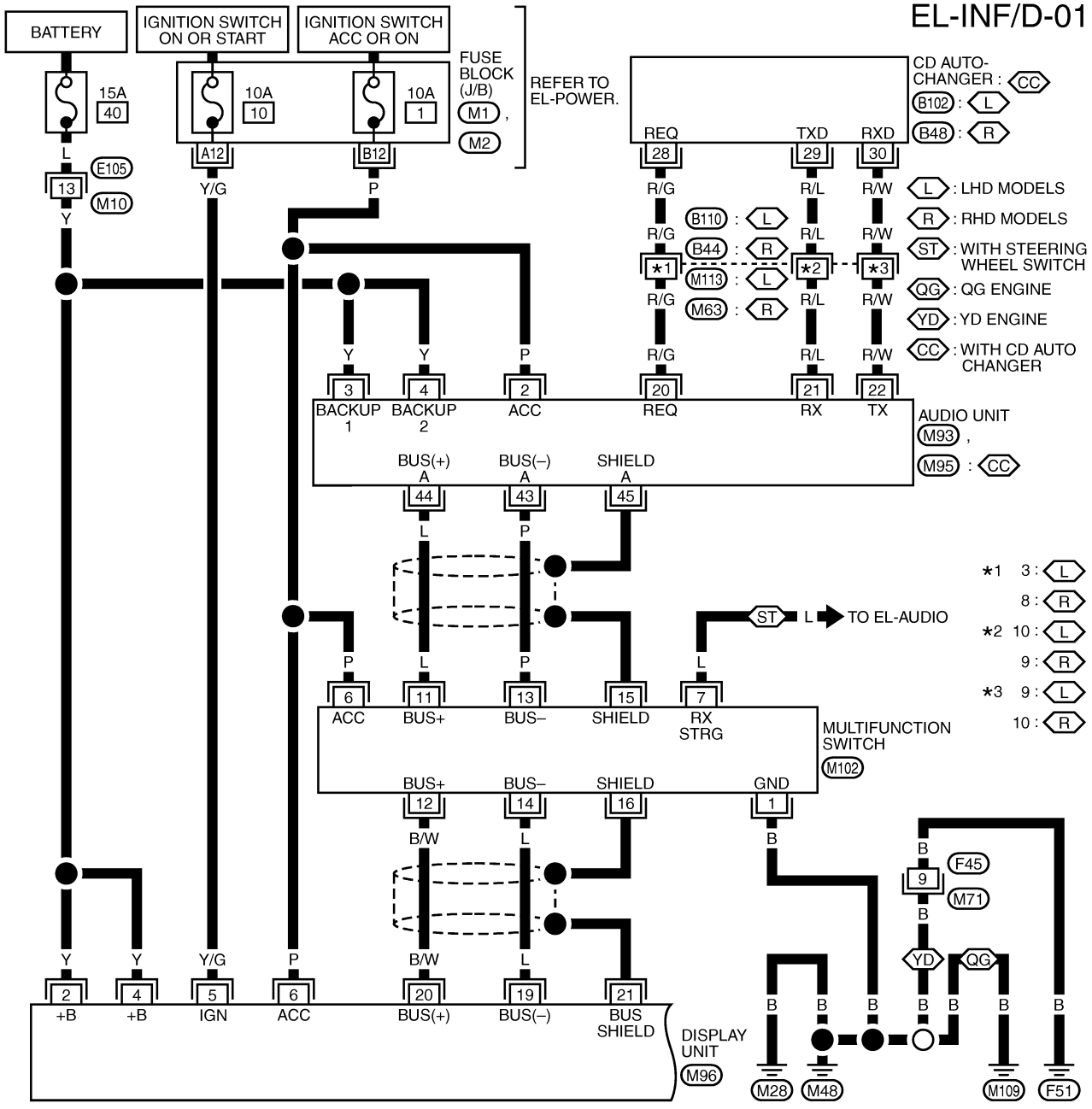
Component Parts and Harness Connector Location

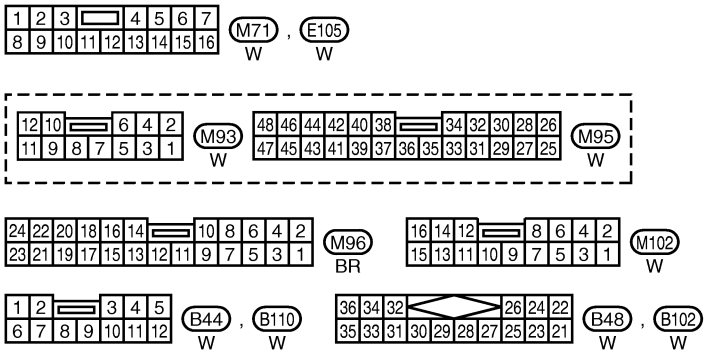
NLEL0547

For details, refer to “ELECTRICAL UNIT LOCATION” (EL-596) and “HARNESS LAYOUT” (EL-600).

Wiring Diagram — INF/D —

NLEL0548

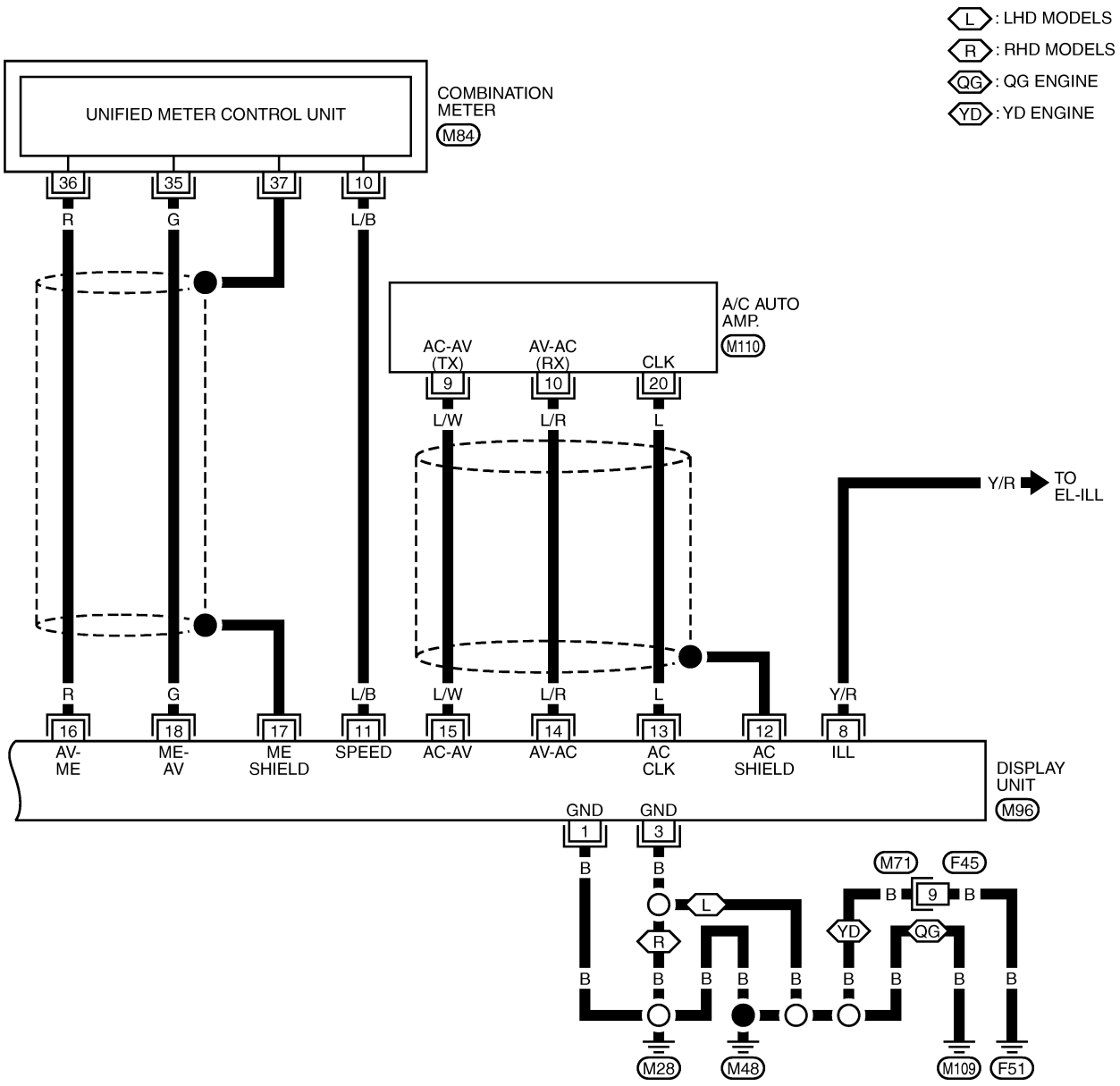


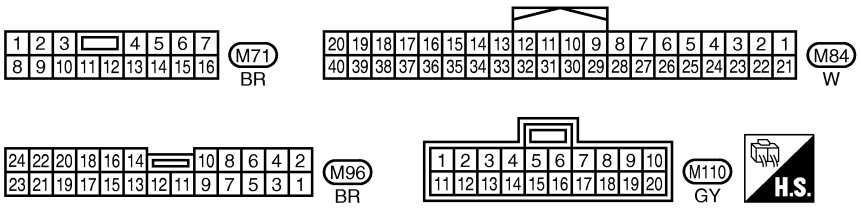


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL124E

EL-INF/D-02

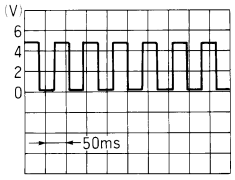
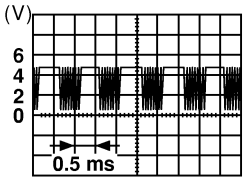
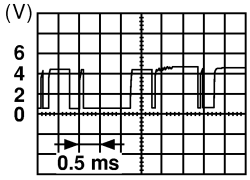
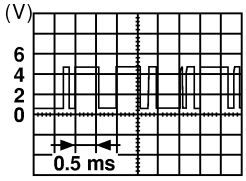




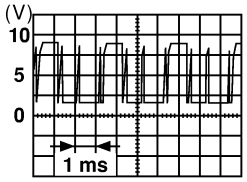
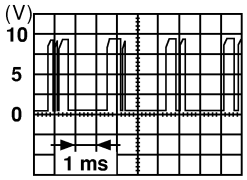
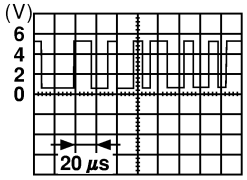
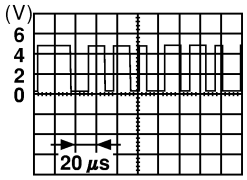
YEL125E

Terminals and Reference Value for Display Unit

NLEL0549

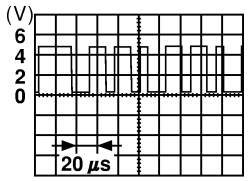
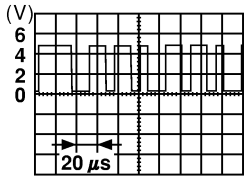
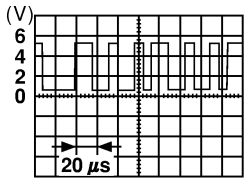
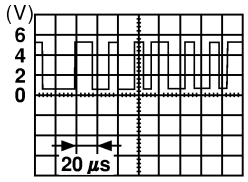
TERMINALS (+) TERMINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION: IGNITION SWITCH	CONDITION: OPERATION		VOLTAGE
1	B	Ground	—	—	—		—
2	Y	Ground	Battery power	OFF	—		Battery voltage
3	B	Ground	—	—	—		—
4	Y	Ground	Battery power	OFF	—		Battery voltage
5	Y/G	Ground	Ignition signal	ON	—		—
6	P	Ground	ACC signal	ACC	—		—
8	Y/R	Ground	Illumination control signal	ON	Lighting switch position	1st or 2nd	Battery voltage
						OFF	0V
11	L/B	Ground	Vehicle speed signal (2-pulse)	ON	When vehicle speed is approx. 20 km/h (12 MPH)		 ELF1080D
12	—	—	Shield ground	—	—		—
13	L	Ground	A/C clock signal	ON	—		 SKIA0174E
14	L/R	Ground	A/C communication signal (AV-AC)	ON	—		 SKIA0172E
15	L/W	Ground	A/C communication signal (AV-AC)	ON	—		 SKIA0173E

Terminals and Reference Value for Display Unit (Cont'd)

TERMINALS			SIGNAL	CONDITION		VOLTAGE
(+)		(–)		IGNITION SWITCH	OPERATION	
TERMINAL	WIRE COLOR					
16	R	Ground	Communication signal (AV-ME)	ON	Display the vehicle information screen.	 SKIA0169E
17	—	—	Shield ground	—	—	—
18	G	Ground	Communication signal (ME-AV)	ON	Perform various settings on the vehicle information screen.	 SKIA0170E
19	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
20	B/W	Ground	Communication signal (+)	ON	—	 SKIA0175E
21	–	Ground	Shield ground	—	—	—

Terminals and Reference Value for Multifunction Switch

=NLEL0550

TERMINALS (+) TERMINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION IGNITION SWITCH	CONDITION OPERATION	DATA
6	P	Ground	ACC	ACC	—	Battery voltage
1	B	Ground	Ground	ON	—	Apporox. 0V
11	L	Ground	Communication signal (+)	ON	—	 SKIA0175E
12	B/W	Ground	Communication signal (+)	ON	—	 SKIA0175E
13	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
14	P	Ground	Communication signal (-)	ON	—	 SKIA0176E
15	—	Ground	Shield ground	ON	—	—
16	—	Ground	Shield ground	ON	—	—

On Board Self-diagnosis Function

NLEL0551

DESCRIPTION

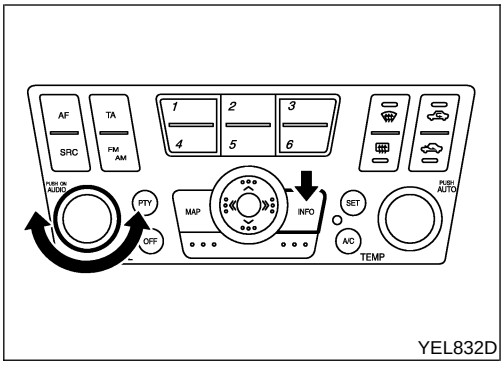
=NLEL0551S01

- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that require operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value.

DIAGNOSIS ITEM

NLEL0551S02

Mode			Description	Reference page
Self-diagnosis			● Center control unit (display unit) diagnosis. ● Analyzes connection between the display unit and each unit, and operation of each unit.	EL-225
CONFIRMATION/ ADJUSTMENT	Display Diagnosis	Display Color Spectrum Bar	Color of display can be checked in this mode.	EL-228
		Display Gradation Bar	Gray gradation of display can be checked in this mode.	
	Vehicle Signals	Vehicle Speed	Vehicle speed input signal to center control unit (display unit), can be monitored in this mode.	EL-229
		Light	Light input signal to center control unit (display unit), can be monitored in this mode.	
		IGN	Ignition input signal to center control unit (display unit), can be monitored in this mode.	
	Auto Climate Control		Trouble diagnosis for auto climate control unit (A/C auto amp), can be checked in this mode.	ATC-41
	Service		Service schedule can be changed in this mode	EL-229



YEL832D

Self-diagnosis Mode

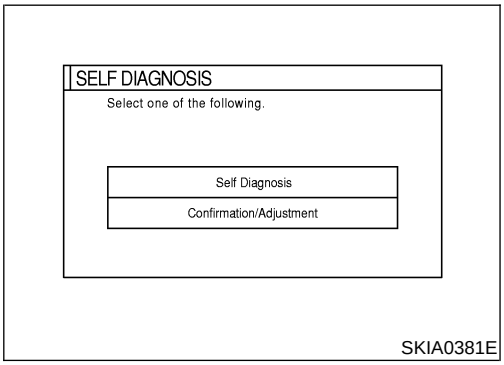
NLEL0552

OPERATION PROCEDURES

=NLEL0552S01

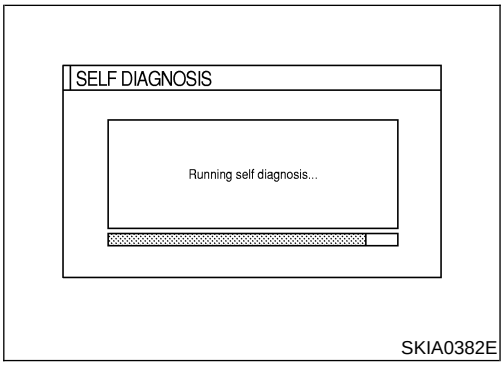
1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)

- Shifting from current screen to previous screen is performed by pressing “BACK” switch.



SKIA0381E

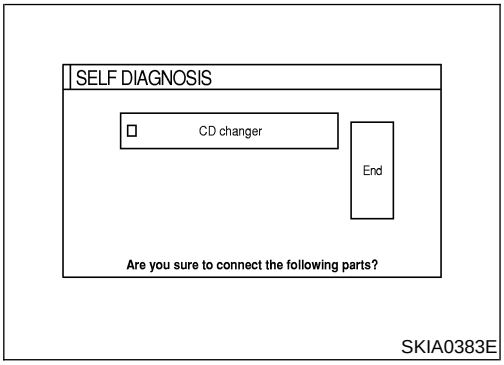
4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.



SKIA0382E

5. Perform self-diagnosis by selecting the “SELF-DIAGNOSIS”.

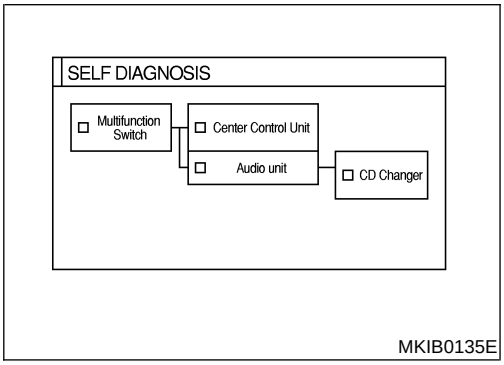
- Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
- A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



SKIA0383E

6. When the self-diagnosis completes, optional part confirmation screen will be shown.

- When connection of an optional part is judged malfunction, a screen to check if the optional part is fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and press “END”. Then the “Self-diagnosis” screen will be shown.
- When the optional part is connected normally, the switch for the part will not appear on the screen.

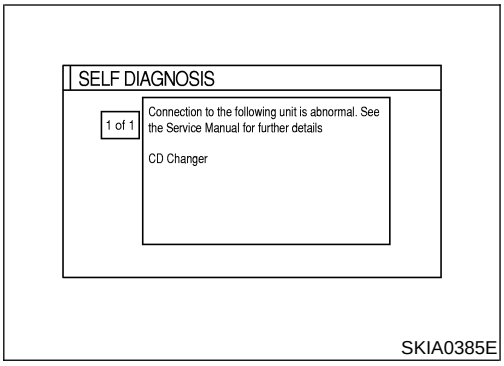


MKIB0135E

7. On the “Self-diagnosis” screen, each unit name will be colored according to the diagnosis result, as follows.

Green: No malfunctioning.
Yellow: Cannot be judged by self-diagnosis results.
Red: Unit is malfunctioning.

- If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the "Self-diagnosis" screen and comments for the diagnosis results will be shown.

- When the switch is green, the following comment will be shown. "Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the "confirmation and adjustments" menu or refer to the service manual".
- When the switch is yellow, the following comment will be shown. "Connection to the following unit is abnormal. See the service manual for further details".
- When the switch is red, the following comment will be shown. "Center Control Unit is abnormal".

CAUTION:

If self-diagnosis cannot activated, refer to EL-242.

SELF-DIAGNOSIS RESULT

NLEL0552S02

Quick reference table

1. Select an applicable diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to the AV communication line circuit diagram.
3. Turn the ignition switch to OFF and perform self-diagnosis again.

Screen switch					Diagnosis No.
Switch color	Center control unit *	Multifunction switch	Audio unit	CD auto changer	
Red	×				1
Yellow	×	×			2
	×		×	×	3
	×			×	4
	×	×	×	×	5

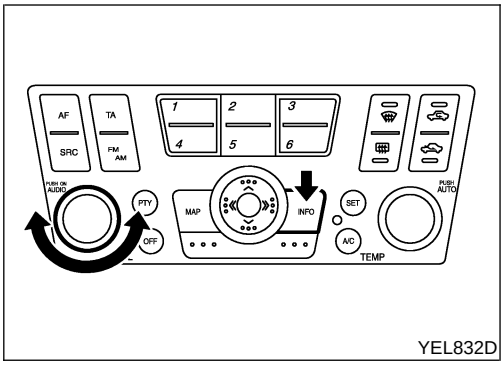
*: Center control unit = Display unit

CAUTION:

When an error is in the AV communication line, it cannot be detected on the screen because self-diagnosis is inoperative.

SELF-DIAGNOSIS CODES

Diagnosis No.	Possible cause	Reference page
1	Display unit malfunction.	–
2	Multifunction switch power supply and ground circuit.	EL-232
3	Audio unit power supply and ground circuit. AV communication line between multi-function switch and the display unit. Audio unit internal communication circuit.	EL-210
4	CD auto changer power supply and ground circuit. AV communication line between CD auto changer and audio unit.	EL-210
5	AV communication line circuit malfunction.	EL-242



YEL832D

Confirmation/Adjustment Mode

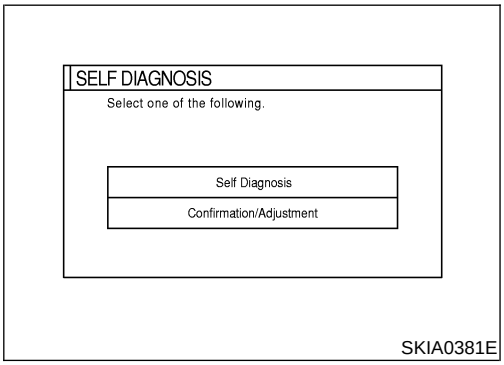
=NLEL0553

OPERATION PROCEDURE

NLEL0553S01

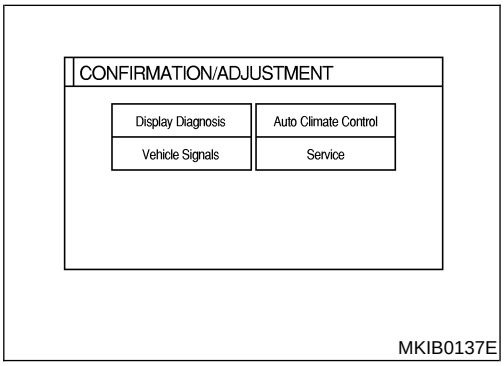
1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)

- Shifting from current screen to previous screen is performed by pressing “BACK” switch.



SKIA0381E

4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.



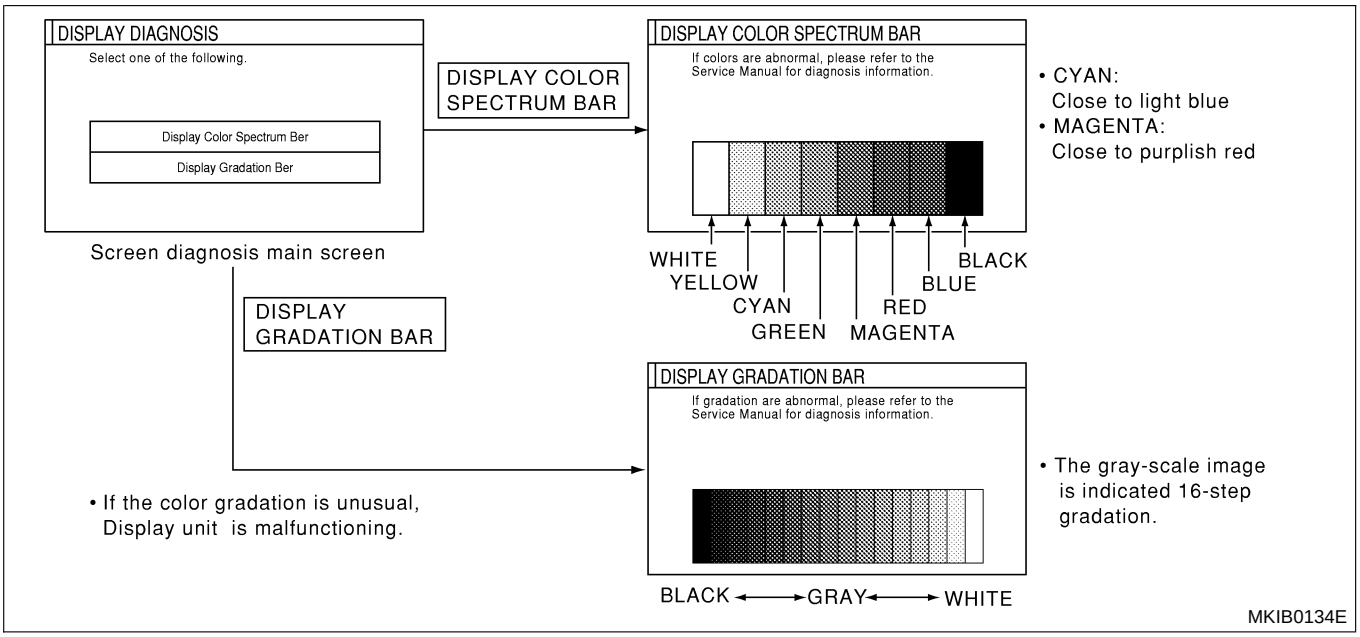
MKIB0137E

5. When “CONFIRMATION/ADJUSTMENT” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.

DISPLAY DIAGNOSIS

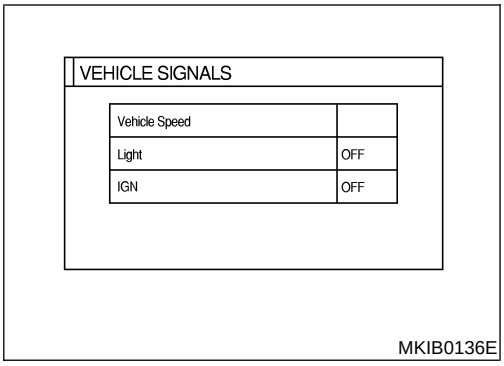
=NLEL0553S02

Use this mode to check the display color brightness and setting. The display unit must be replaced if the color brightness and shading are unusual.



CAUTION:

When Display Color Spectrum Bar screen is completed after "BACK" switch is pressed, the screen color changes once. This is normal.



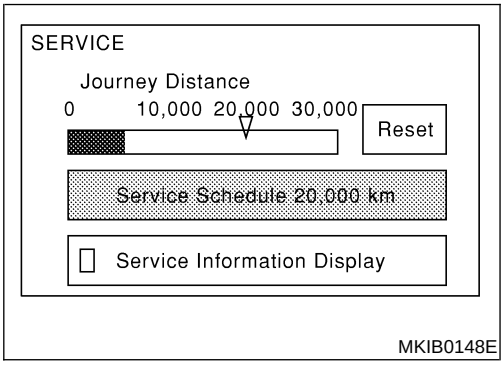
VEHICLE SIGNALS

=NLEL0553S03

- In this mode, following input signals to the display unit can be checked on the display.

Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed is greater than 0 km/h (0 MPH).	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed is 0 km /h (0 MPH).	
	–	Ignition switch is in "ACC" position.	
Light	ON	Lighting switch is 1st or 2nd position.	—
	OFF	Lighting switch is "OFF" position.	
IGN	ON	Ignition switch is in "ON" position.	—
	OFF	Ignition switch is in "ACC" or "OFF" position.	

- If vehicle speed is NG, refer to EL-234.
- If light is NG, refer to EL-236.
- If IGN is NG, refer to EL-236.



SERVICE

NLEL0553S04

- In this mode, service schedule can be set on this display.

NOTE:

- To set service schedule, change journey distance.
- When the indicator of "Service Information Display" is set green, the color of the journey distance marker will be red. And automatically service information screen will be displayed when journey distance is reached on service schedule.

Trouble Diagnoses

=NLEL0689

POWER SUPPLY AND GROUND CIRCUIT CHECK FOR DISPLAY UNIT

NLEL0689S01

1 **CHECK FUSE**

Check that the following fuses in display are blown.

Unit	Power souce	Fuse No.
Display	Battery Power	40
	Ignition switch ACC or ON	1

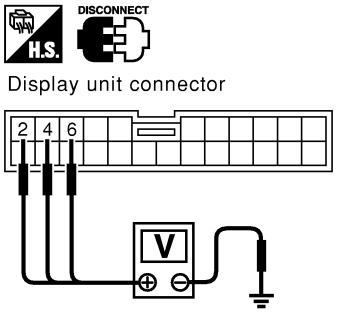
MTBL1650

OK or NG

OK	▶	GO TO 2.
NG	▶	If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2 **POWER SUPPLY CIRCUIT CHECK**

1. Disconnect display connector.



MKIB0101E

2. Check voltage between display unit connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M96	2 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	4 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	6 (Y)	Ground	0V	Battery voltage	Battery voltage

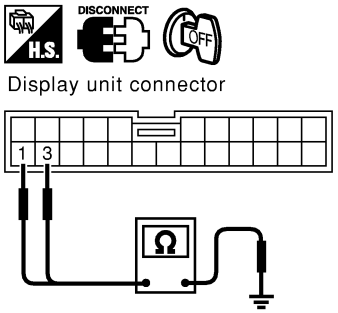
MTBL1651

OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between display and fuse.

3	GROUND CIRCUIT CHECK

Check continuity between display unit and ground.



MKIB0102E

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
M96	1 (B)	Ground	Yes
	3 (B)	Ground	Yes

MTBL1652

OK or NG

OK	▶	INSPECTION END
NG	▶	Check ground harness.

POWER SUPPLY AND GROUND CIRCUIT CHECK FOR MULTIFUNCTION SWITCH

=NLEL0689S02

1 CHECK FUSES

Check the fuse below.

Unit	Power source	Fuse No.
Multifunction switch	Ignition switch ACC or ON	1

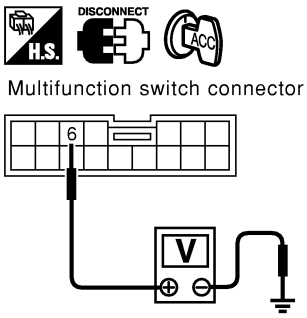
MTBL1653

OK or NG

OK	▶	GO TO 2.
NG	▶	If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2 POWER SUPPLY CIRCUIT CHECK

1. Disconnect multifunction switch connector.



MKIB0103E

2. Check voltage between multifunction switch and ground.

Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M102	6 (P)	Ground	0V	Battery voltage	Battery voltage

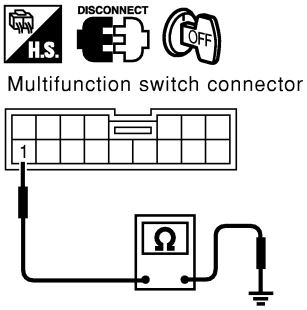
MTBL1654

OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between multifunction switch and fuse.

3	GROUND CIRCUIT CHECK

Check continuity between multifunction switch harness connector M102 terminal 1 (B) and ground.



MKIB0104E

Continuity should exist.

OK or NG

OK	▶	INSPECTION END
NG	▶	Check ground harness.

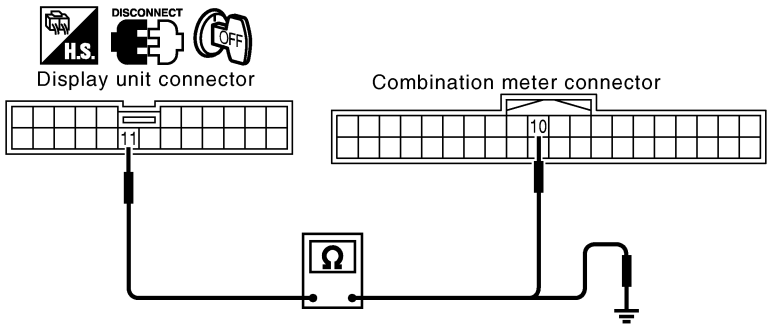
VEHICLE SPEED SIGNAL CHECK

=NLEL0689S03

1	HARNESS CHECK

1. Disconnect display unit connector and combination meter.
2. Check the following.

– Continuity between display unit connector M96 terminal 11 (L/B) and combination meter connector M84 terminal 10 (L/B).



YEL404E

Continuity should exist.

– Continuity between display unit connector M96 terminal 11 (L/B) and ground.

Continuity should not exist.

OK or NG

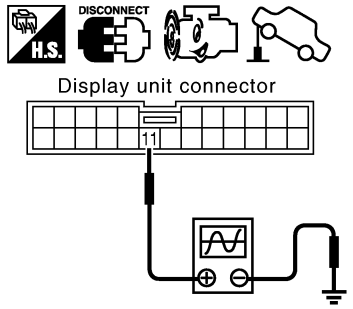
OK	▶	GO TO 2.
NG	▶	Replace harness or connector.

2	VEHICLE SPEED SIGNAL CHECK

Connect combination meter connector and display unit connector.

With CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12 MPH).
3. Check signal between display unit connector M96 terminal 11 (L/B) and ground when rotating wheels with engine at idle. (Use "SIMPLE OSCILLOSCOPE" in "SUB MODE" with CONSULT-II.)

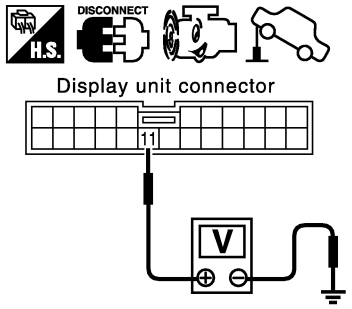


YEL573E

11 - Ground: "Terminal and Reference Value for Display" EL-221

Without CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12 MPH).
3. Check voltage between display unit connector M96 terminal 11 (L/B) and ground when rotating wheels with engine at idle.



MKIB0208E

Voltage: Approximately 0 - 5V

OK or NG

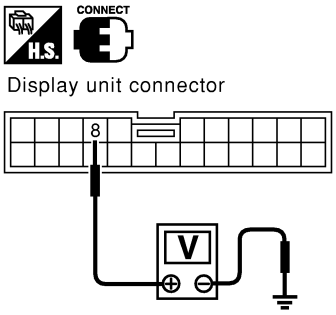
OK	▶	Replace display unit.
NG	▶	Check combination meter system. Refer to EL-107, "Combination Meter Self-Diagnoses".

ILLUMINATION CONTROL SIGNAL CHECK

=NLEL0689S04

1	ILLUMINATION CONTROL SIGNAL CHECK

1. Turn ignition switch ON.
2. Check voltage between display unit and ground.



MKIB0105E

Terminals			Condition	Voltage [V]
(+)		(–)		
Connector	Terminal (Wire color)			
M96	8 (Y/R)	Ground	Lighting switch 1st or 2nd position	Battery voltage
			OFF	Approx. 0

MTBL1655

OK or NG

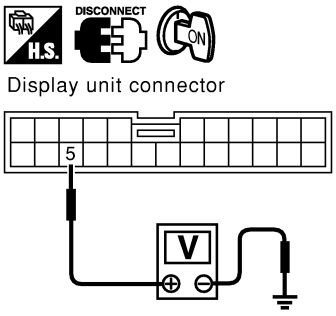
OK	▶	Replace display unit.
NG	▶	Check harness for open or short between display unit and lighting switch.

IGNITION SIGNAL CHECK

NLEL0689S05

1	IGNITION SIGNAL CHECK

1. Disconnect the display unit connector.
2. Check voltage between display unit harness connector M96 terminal 5 (Y/G) and ground.



MKIB0106E

Battery voltage should exist.

OK or NG

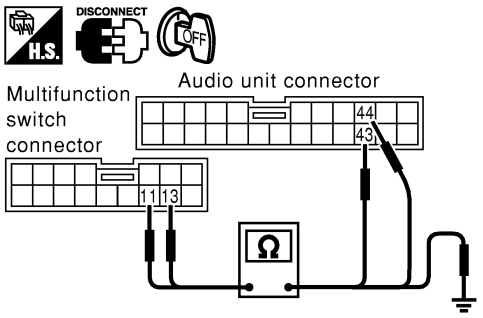
OK	▶	Replace display unit.
NG	▶	Check harness for open or short between display unit and fuse.

AUDIO CIRCUIT CHECK

NLEL0689S06

1 AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



MKIB0132E

Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M102	11 (L)	M95	44 (L)	Yes
	13 (P)		43 (P)	

MTBL1656

4. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M102	11 (L)	Ground	No
	13 (P)		

MTBL1657

OK or NG

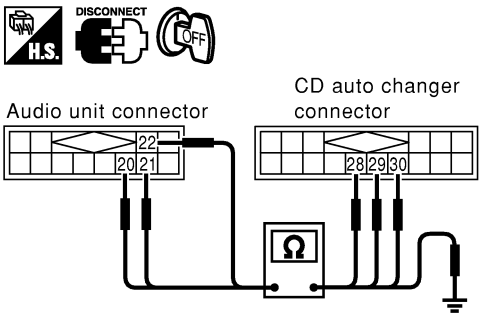
OK	▶	Replace audio unit.
NG	▶	Replace harness or connector.

CD AUTO CHANGER CIRCUIT CHECK

NLEL0689S07

1 CD AUTO CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.



MKIB0133E

2. Check continuity between audio unit and CD auto changer.

Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M94	20 (R/G)	LHD: B102 RHD: B48	28 (R/G)	Yes
	21 (R/L)		29 (R/L)	
	22 (R/W)		30 (R/W)	

MTBL1658

3. Check continuity between audio unit and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M94	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

MTBL1659

OK or NG

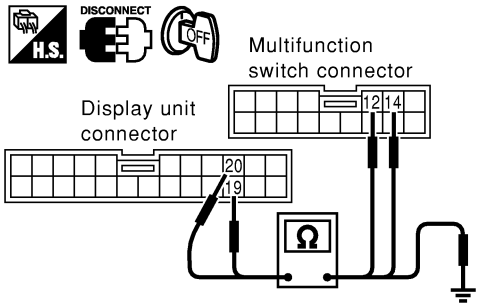
OK	▶	Replace CD auto changer.
NG	▶	Replace harness or connector.

AV COMMUNICATION LINE CHECK

NLEL0689S08

1 MULTIFUNCTION SWITCH CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect display unit connector and multifunction switch connector.
3. Check continuity between display unit and multifunction switch.



MKIB0131E

Terminals				Continuity
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M96	19 (L)	M102	14 (L)	Yes
	20 (B/W)		12 (B/W)	

MTBL1660

4. Check continuity between display unit and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M96	19 (L)	Ground	No
	20 (B/W)		

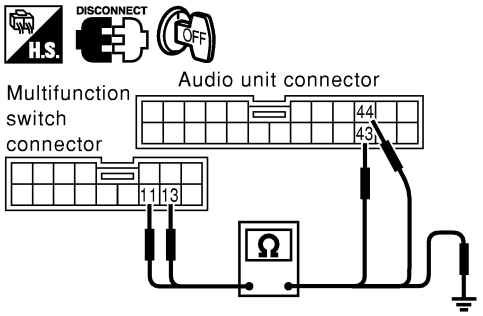
MTBL1661

OK or NG

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

2 AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



MKIB0132E

Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M102	11 (L)	M95	44 (L)	Yes
	13 (P)		43 (P)	

MTBL1662

4. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M102	11 (L)	Ground	No
	13 (P)		

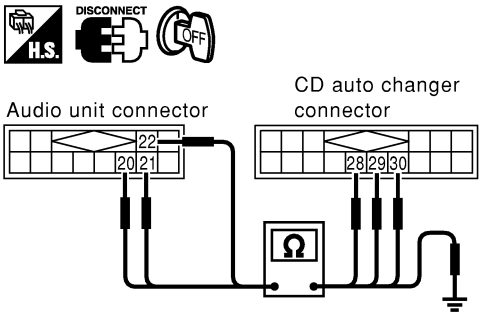
MTBL1663

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace harness or connector.

3 CD CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.



MKIB0133E

2. Check continuity between audio unit and CD auto changer.

Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M94	20 (R/G)	LHD: B102 RHD: B48	28 (R/G)	Yes
	21 (R/L)		29 (R/L)	
	22 (R/W)		30 (R/W)	

MTBL1664

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M94	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

MTBL1665

OK or NG

OK	▶	Replace display unit.
NG	▶	Replace harness or connector.

SELF-DIAGNOSIS DOES NOT PERFORM

=NLEL0689S09

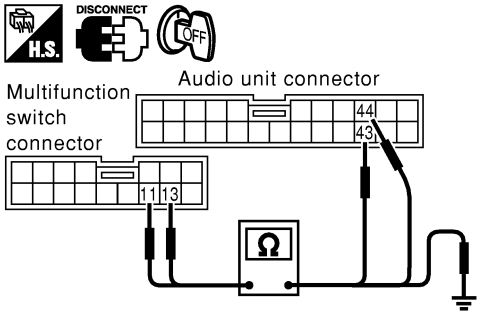
1	MULTIFUNCTION SWITCH CHECK
Check multifunction switch power and ground circuit. Refer to EL-232.	
▶	GO TO 2.

2	DISPLAY UNIT CHECK
Check display unit power and ground circuit. Refer to EL-230.	
▶	GO TO 3.

3	SELF-DIAGNOSIS CHECK
1. Disconnect audio unit connector M95. 2. Perform self-diagnosis mode. **Can self-diagnosis mode be activated?**	
Yes ▶	GO TO 4.
No ▶	AV communication line check. Refer to EL-239.

4	MULTIFUNCTION SWITCH CIRCUIT CHECK

1. Disconnect multifunction switch connector.
2. Check continuity between multifunction switch and audio unit.



MKIB0132E

Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M102	11 (L)	M95	44 (L)	Yes
	13 (P)		43 (P)	

MTBL1666

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M102	11 (L)	Ground	No
	13 (P)		

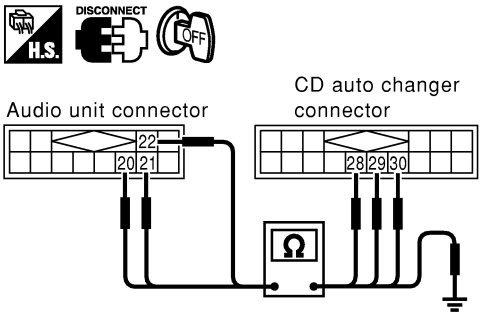
MTBL1667

OK or NG

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

5 **AUDIO UNIT CIRCUIT CHECK**

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



MKIB0133E

Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M94	20 (R/G)	LHD: B102 RHD: B48	28 (R/G)	Yes
	21 (R/L)		29 (R/L)	
	22 (R/W)		30 (R/W)	

MTBL1668

3. Check continuity between audio unit and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M94	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

MTBL1669

OK or NG

OK	▶	Inspection end.
NG	▶	Replace harness or connector.

RGB SCREEN IS NOT SHOWN

NLEL0689S10

Replace display unit.

COLOR OF RGB IMAGE IS NOT PROPER

NLEL0689S11

Replace display unit.

RGB SCREEN IS ROLLING

NLEL0689S12

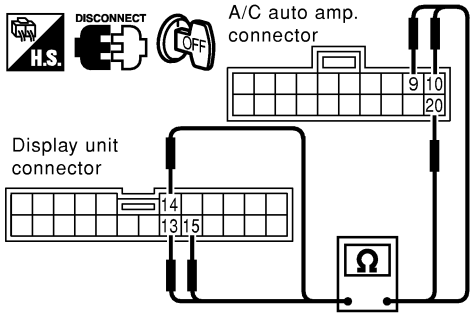
Replace display unit.

AIR CONDITIONING CONTROLS (ONLY) ARE INEFFECTIVE (REAR DEFOGGER CONTROL EXCLUDED).

NLEL0689S13

1 | **A/C AUTO AMP. AND DISPLAY UNIT CIRCUIT CHECK**

1. Turn the ignition switch OFF.
2. Disconnect A/C auto amp. connector and display unit connector.
3. Check continuity between display unit and A/C auto amp.

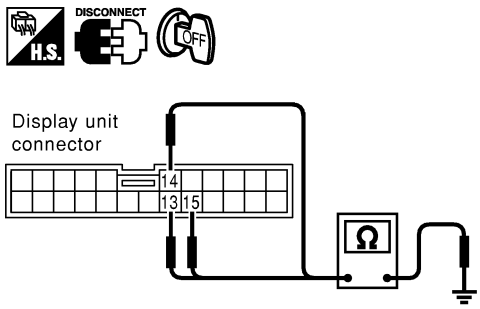


MKIB0149E

Terminals				Continuity
Display unit (+)		A/C auto amp. (–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M96	13 (L)	M110	20 (L)	Yes
	14 (L/R)		10 (L/R)	
	15 (L/W)		9 (L/W)	

MTBL1670

4. Check continuity between display unit and ground.



MKIB0150E

Terminals			Continuity
Connector	Terminal (Wire color)	(–)	
M96	13 (L)	Ground	No
	14 (L/R)		
	15 (L/W)		

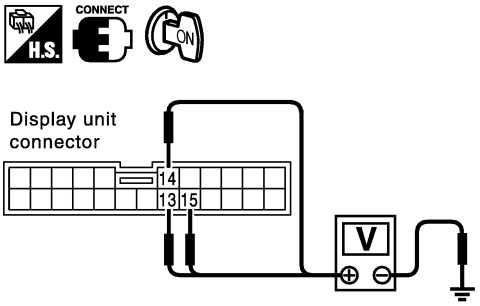
MTBL1671

OK or NG

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

2	A/C-AV, AV-AC, AC-CLK COMMUNICATION SIGNAL CHECK

1. Connect A/C auto amp. connector.
2. Turn the ignition switch ON.
3. Check voltage between display unit and ground.



MKIB0203E

Terminals			Voltage [v]
(+)		(–)	
Connector	Terminal (Wire color)		
M96	13 (L)	Ground	Approx. 3.5 or more
	14 (L/R)		
	15 (L/W)		

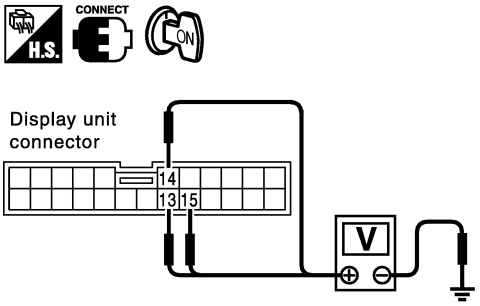
MTBL1672

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace A/C auto amp.

3 **A/C-AV, AV-AC, AC-CLK COMMUNICATION SIGNAL CHECK**

1. Connect display unit connector.
2. Turn the ignition switch ON.
3. Check voltage signal between display unit and ground with oscilloscope or CONSULT-II.



MKIB0203E

Terminals			Reference signal
(+)		(–)	
Connector	Terminal (Wire color)		
M61	13 (L)	Ground	Refer to "Terminals and Reference Value for Display".
	14 (L/R)		
	15 (L/W)		

MTBL1673

OK or NG

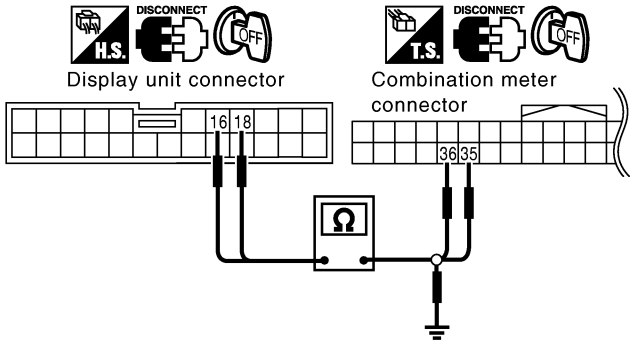
OK	▶	Replace A/C auto amp.
NG	▶	Replace display unit.

NO FUEL INFORMATION IS DISPLAYED/NO WARNING MESSAGE IS DISPLAYED

NLEL0689S14

1 COMMUNICATION LINE (MA-AV, AV-ME) CIRCUIT CHECK

1. Disconnect the display unit connector and combination meter connector.
2. Check continuity between display unit and ground.



YEL405E

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M96	16 (R)	Ground	No
	18 (G)		

MTBL1674

3. Check continuity between display unit and combination meter.

Terminals				Continuity
Display unit		Combination meter		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M96	16 (R)	M84	36 (R)	Yes
	18 (G)		35 (G)	

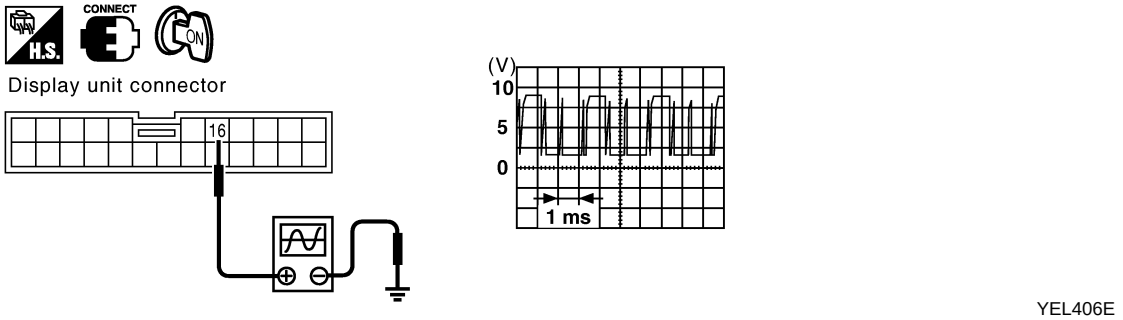
MTBL1675

OK or NG

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

2	COMMUNICATION SIGNAL (AV-ME) CHECK

1. Connect display unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between display unit terminal 16 (R) and ground with oscilloscope or CONSULT-II.



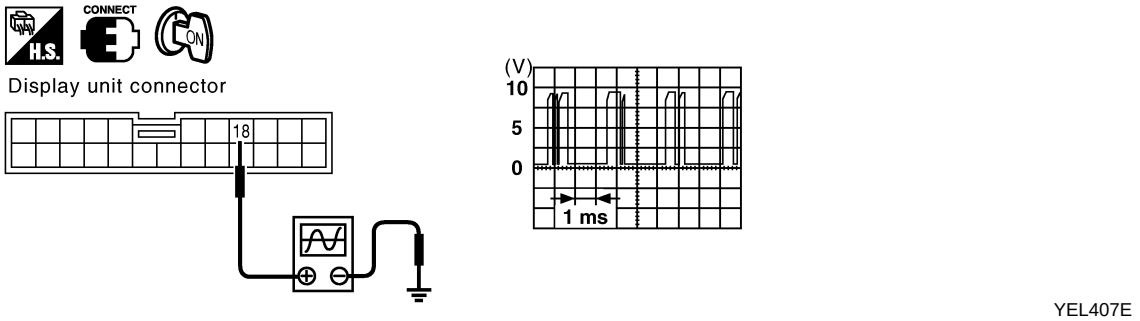
YEL406E

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace display unit.

3	COMMUNICATION SIGNAL (ME-AV) CHECK

1. Turn ignition switch to ON and display.
2. Check voltage signal between display unit connector terminal 18 (G) and ground with oscilloscope or CONSULT-II.



YEL407E

OK or NG

OK	▶	Replace display unit.
NG	▶	Replace combination meter.

MULTIFUNCTION SWITCH DOES NOT OPERATE.

NLEL0689S15

1	POWER AND GROUND CIRCUIT CHECK

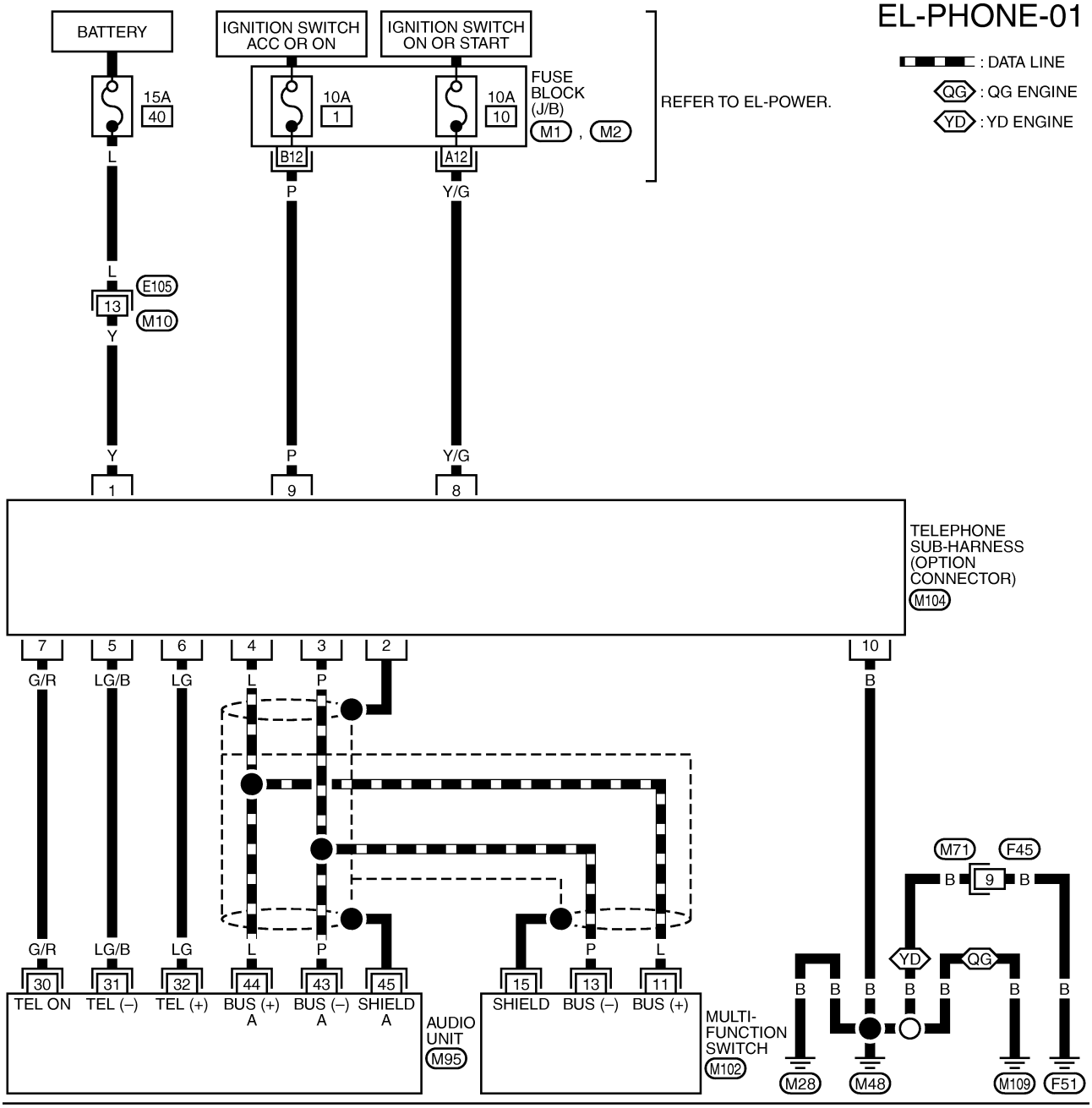
- Check power and ground circuit. Refer to EL-230.

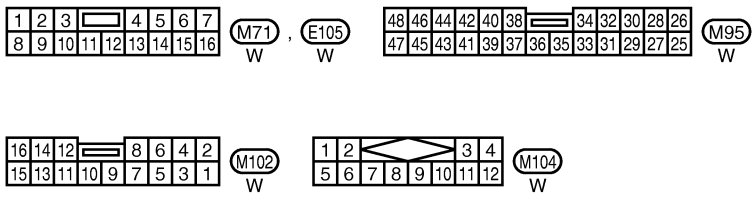
OK or NG

OK	▶	Replace multifunction switch.
NG	▶	Repair or replace harness.

Wiring Diagram — PHONE —

NLEL0571



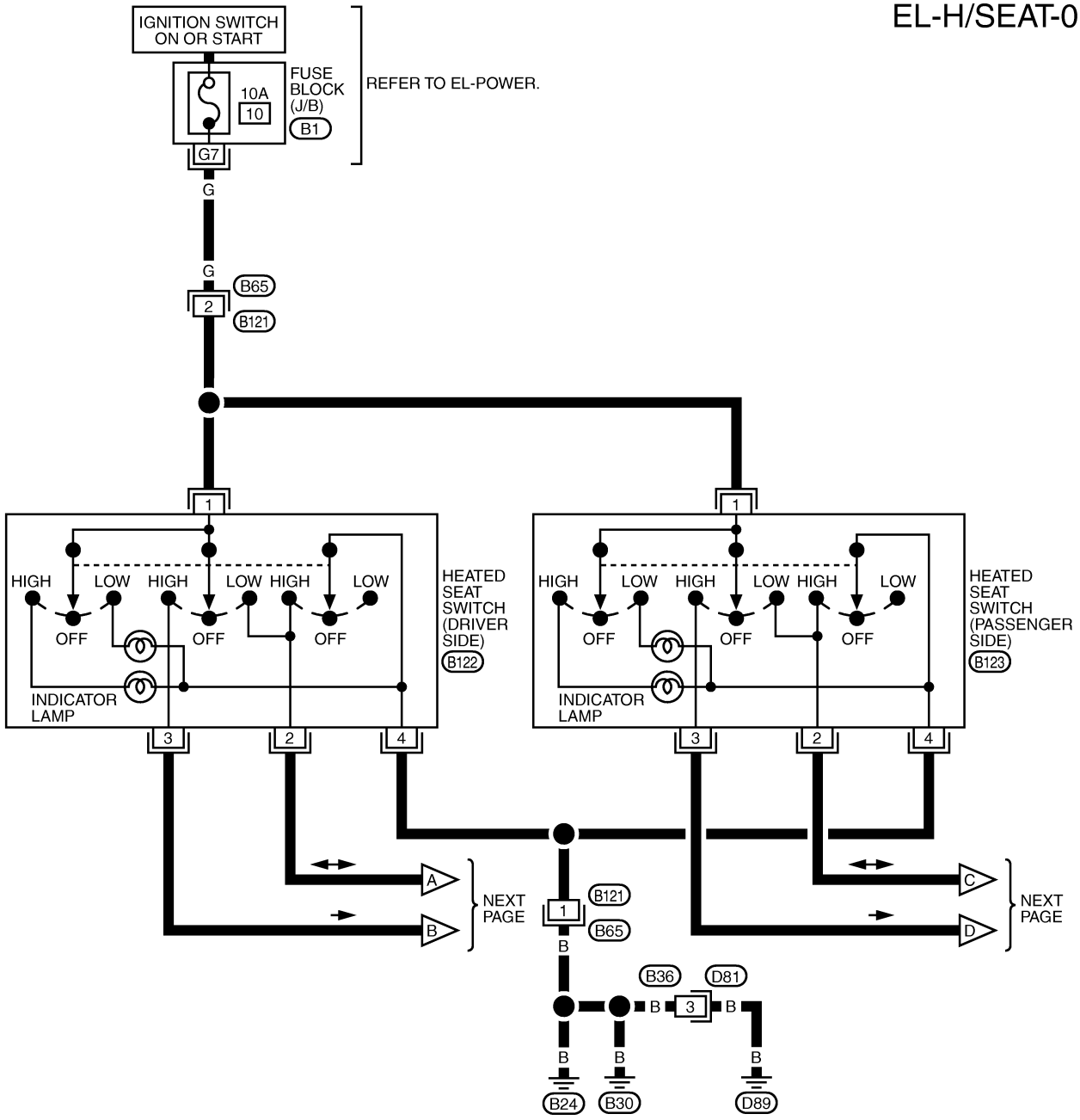


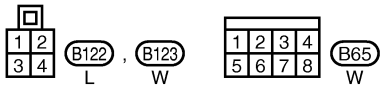
REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL034E

Wiring Diagram — H/SEAT —

NLEL0471

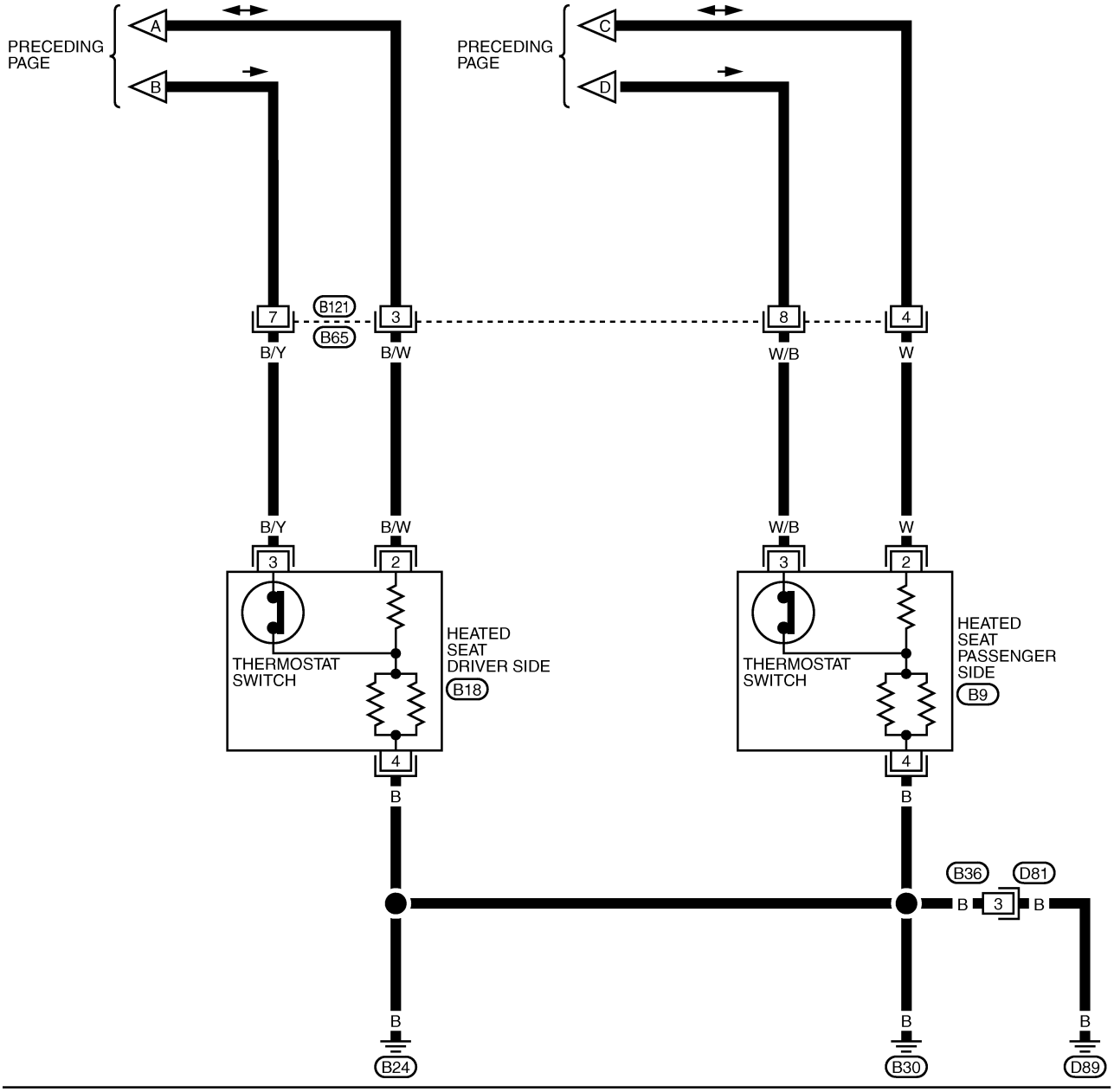




REFER TO THE FOLLOWING.
B1 -FUSE BLOCK-
JUNCTION BOX (J/B)

YEL991D

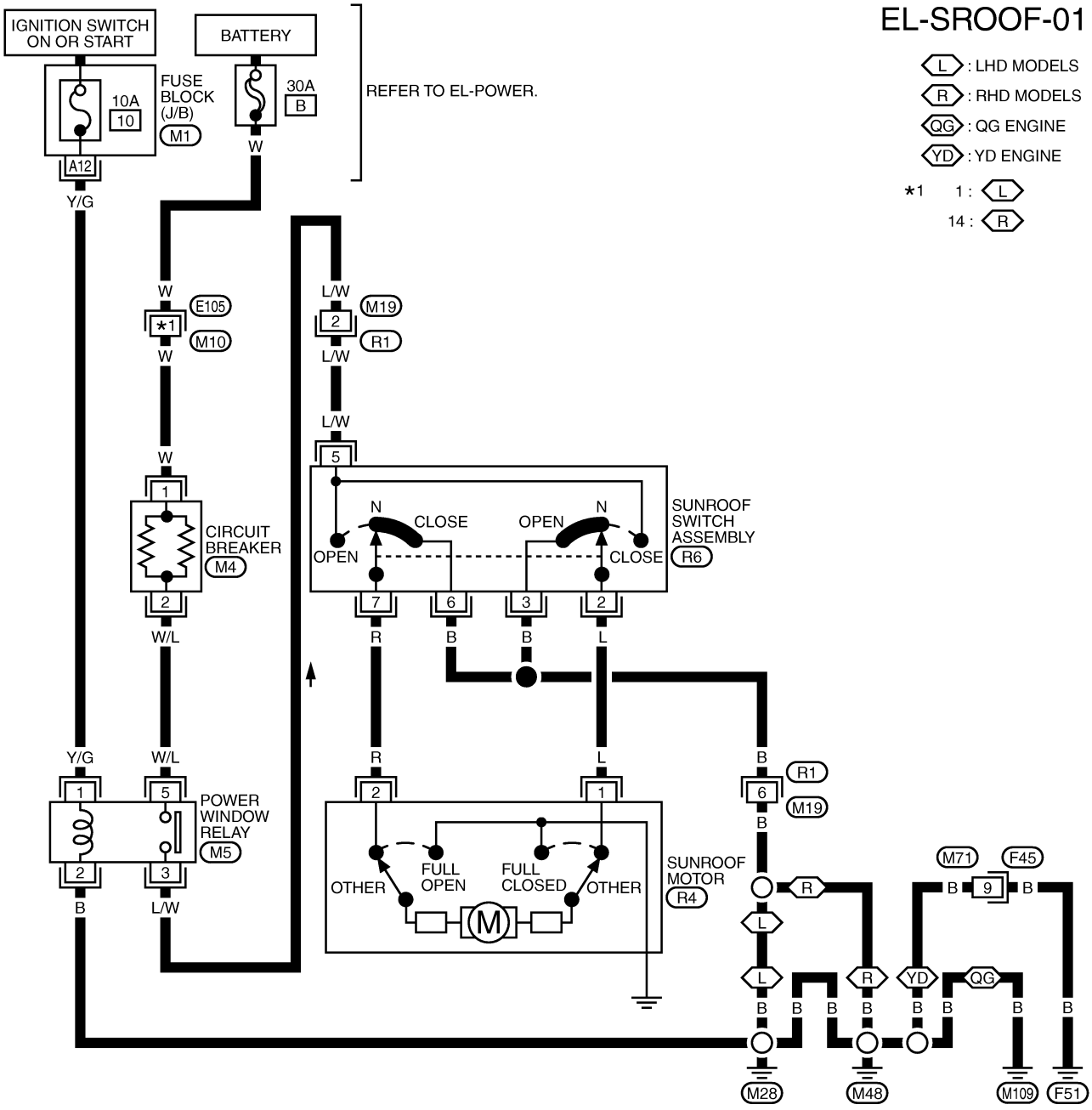
EL-H/SEAT-02

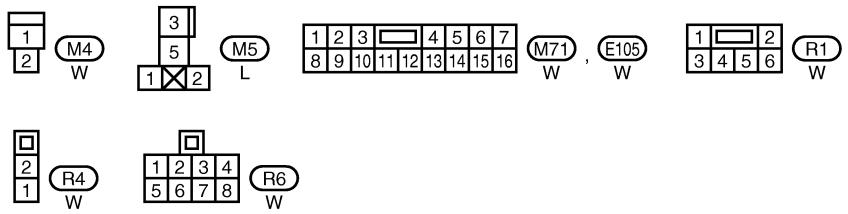


YEL992D

Wiring Diagram — SROOF —

NLEL0089





REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL995D

Trouble Diagnoses

NLEL0225

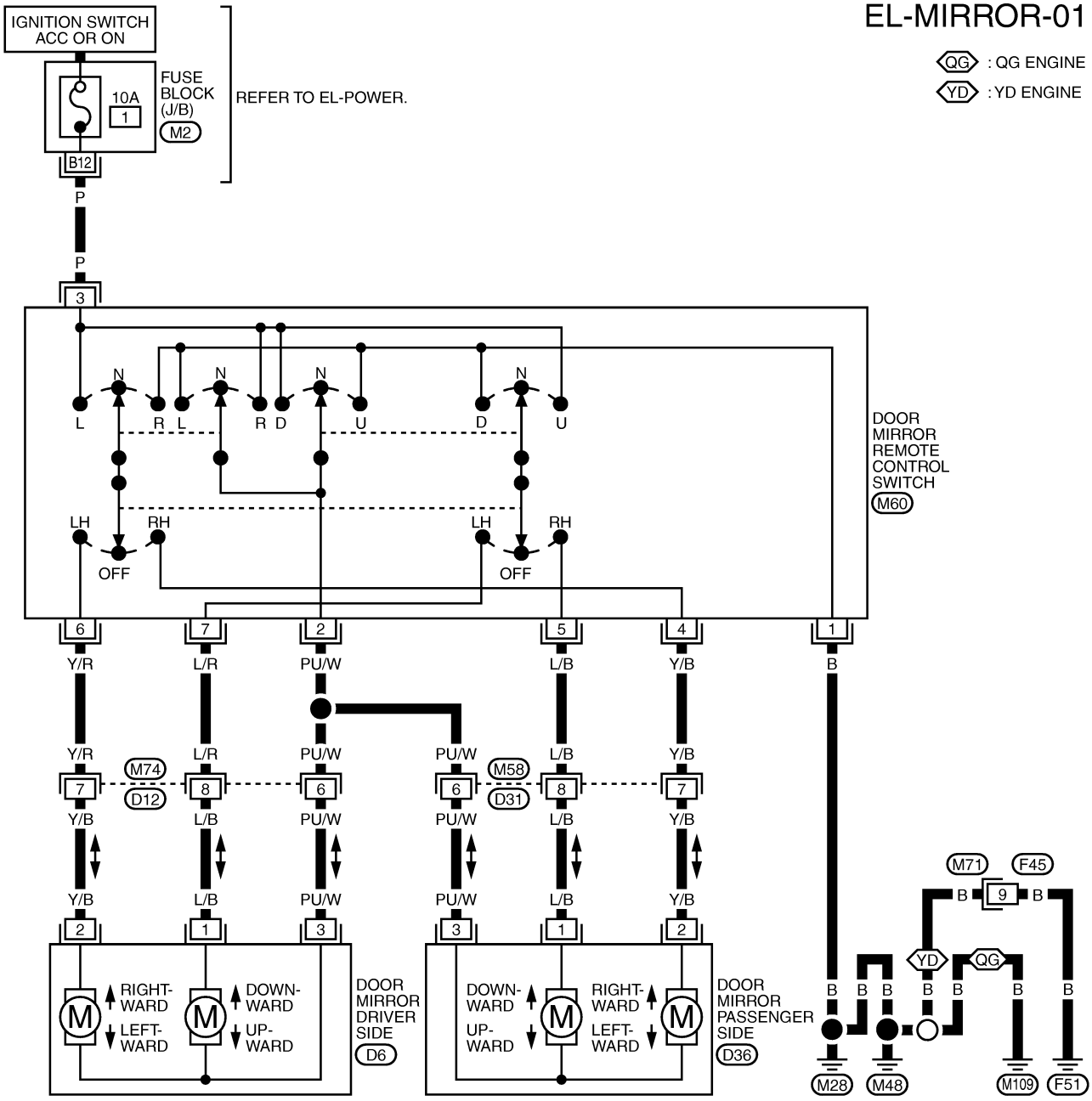
Symptom	Possible cause	Repair order
Power sunroof cannot be operated using any switch.	1. 10A fuse, 30A fusible link and M4 circuit breaker 2. Sunroof switch ground circuit 3. Sunroof switch 4. Sunroof switch circuit 5. Sunroof motor	1. Check 10A fuse [No. 10, located in fuse block (J/B)], 30A fusible link and M4 circuit breaker. Verify battery positive voltage is present at terminal 5 of power window relay. And then turn ignition switch “ON” and verify battery positive voltage is present at terminal 5 of sunroof switch assembly. 2. Check sunroof switch ground circuit. 3. Check sunroof switch. 4. Check harness between sunroof switch and sunroof motor. 5. Check sunroof motor.
Power sunroof cannot be operated using one of the sunroof switches.	1. Sunroof switch 2. Sunroof switch circuit	1. Check sunroof switch. 2. Check the harness between sunroof motor and sunroof switch.

Wiring Diagram — MIRROR —

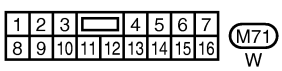
NLEL0472

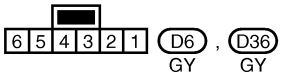
LHD MODELS

NLEL0472S03









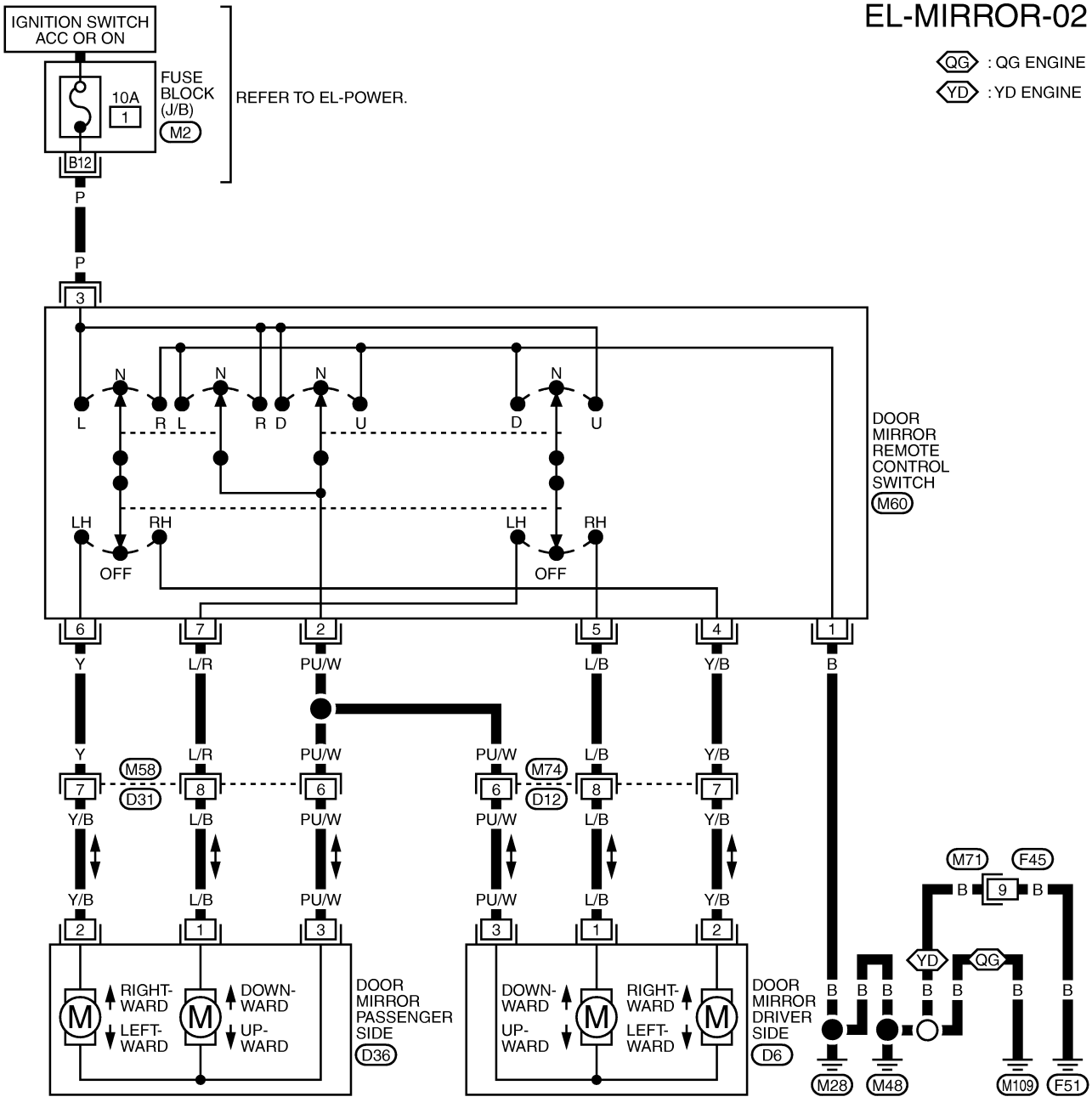
REFER TO THE FOLLOWING.

M2 -FUSE BLOCK-JUNCTION BOX (J/B)

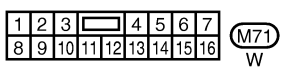
YEL993D

RHD MODELS

NLEL0472S04









REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-
JUNCTION BOX (J/B)

YEL994D

System Description

=NLEL0498

Power is supplied at all times
- from 30A fusible link (letter **B**, located in fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to power window relay terminal 5.

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 1

Ground is supplied to power window relay terminal 2
- through body grounds M28 and M48.

The power window relay is energized and power is supplied
- through power window relay terminal 3
- to power window main switch terminal 1,
- to power window sub-switch front passenger side terminal 5,
- to power window sub-switch rear LH and RH terminals 5 (models with rear power window).

MANUAL OPERATION

NLEL0498S01

Front Door (Driver Side)

NLEL0498S0101

Ground is supplied
- to power window main switch terminal 3
- through body grounds B24, B30 or D89 (LHD models).

WINDOW UP
When the driver's window switch in the power window main switch is pressed in the up position, power is supplied
- through power window main switch terminal 9
- to driver side power window regulator terminal 2.

Ground is supplied
- through power window main switch terminal 1
- to driver side power window regulator terminal 8.

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

WINDOW DOWN
When the driver's window switch in the power window main switch is pressed in the down position, power is supplied
- through power window main switch terminal 8
- to driver side power window regulator terminal 1.

Ground is supplied
- to driver side power window regulator terminal 2
- through power window main switch terminal 9.

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

Front Door (Passenger Side)

NLEL0498S0102

Ground is supplied
- to power window main switch terminal 3
- through body grounds B24, B30 or D89 (LHD models).

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

POWER WINDOW MAIN SWITCH OPERATION
Power is supplied
- through power window main switch (5, 6)
- to power window sub-switch front passenger side (3, 4).

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

- through front power window sub-switch (1, 2)
- to power window regulator front passenger side (2, 1).

Ground is supplied

- to front passenger side power window regulator (1, 2)
- through front power window sub-switch (2, 1)
- to front power window sub-switch (4, 3)
- through power window main switch (6, 5).

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

Rear Door

NLEL0498S0103

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

POWER WINDOW LOCK

NLEL0498S02

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 sub-switches in the power window main switch is disconnected. This prevents the power window motors from operating.

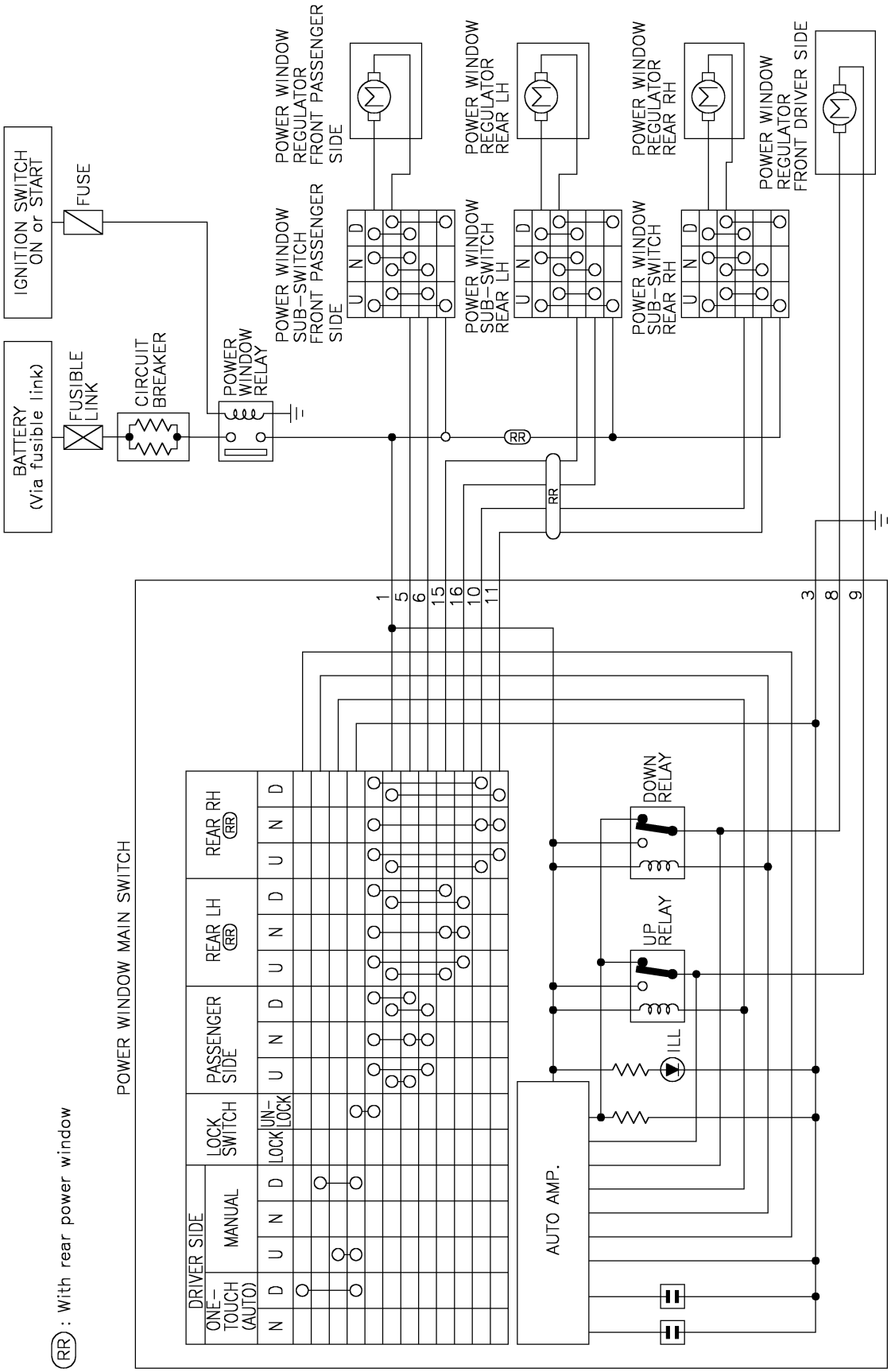
AUTO OPERATION

NLEL0498S03

The power window AUTO feature enables the driver to open the driver's window without holding the window switch in the down position.
The AUTO feature operates on the driver's window.

Schematic

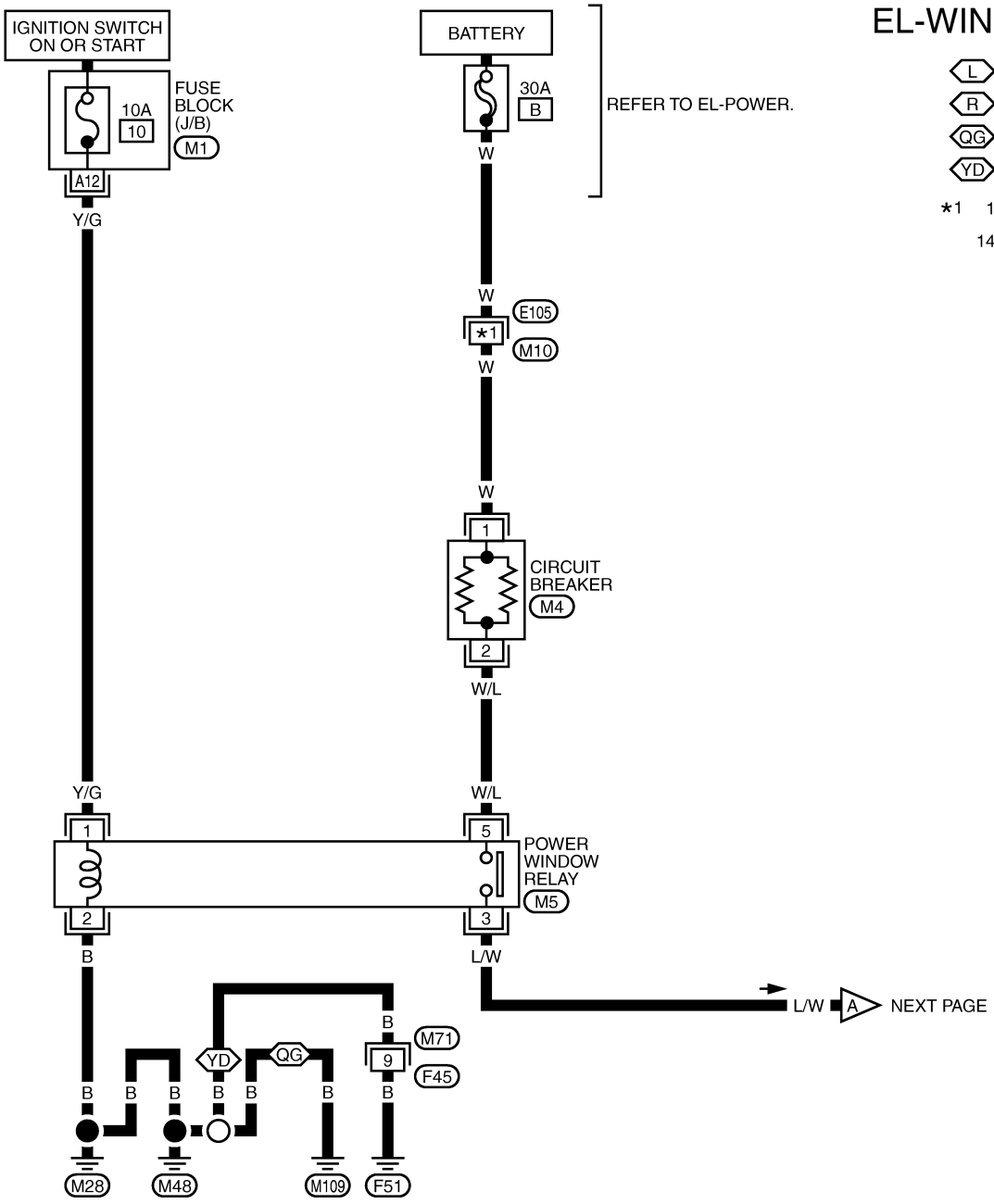
NLEL0499

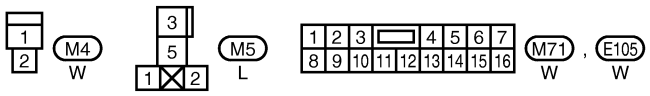


YEL996D

Wiring Diagram — WINDOW —

NLEL0500

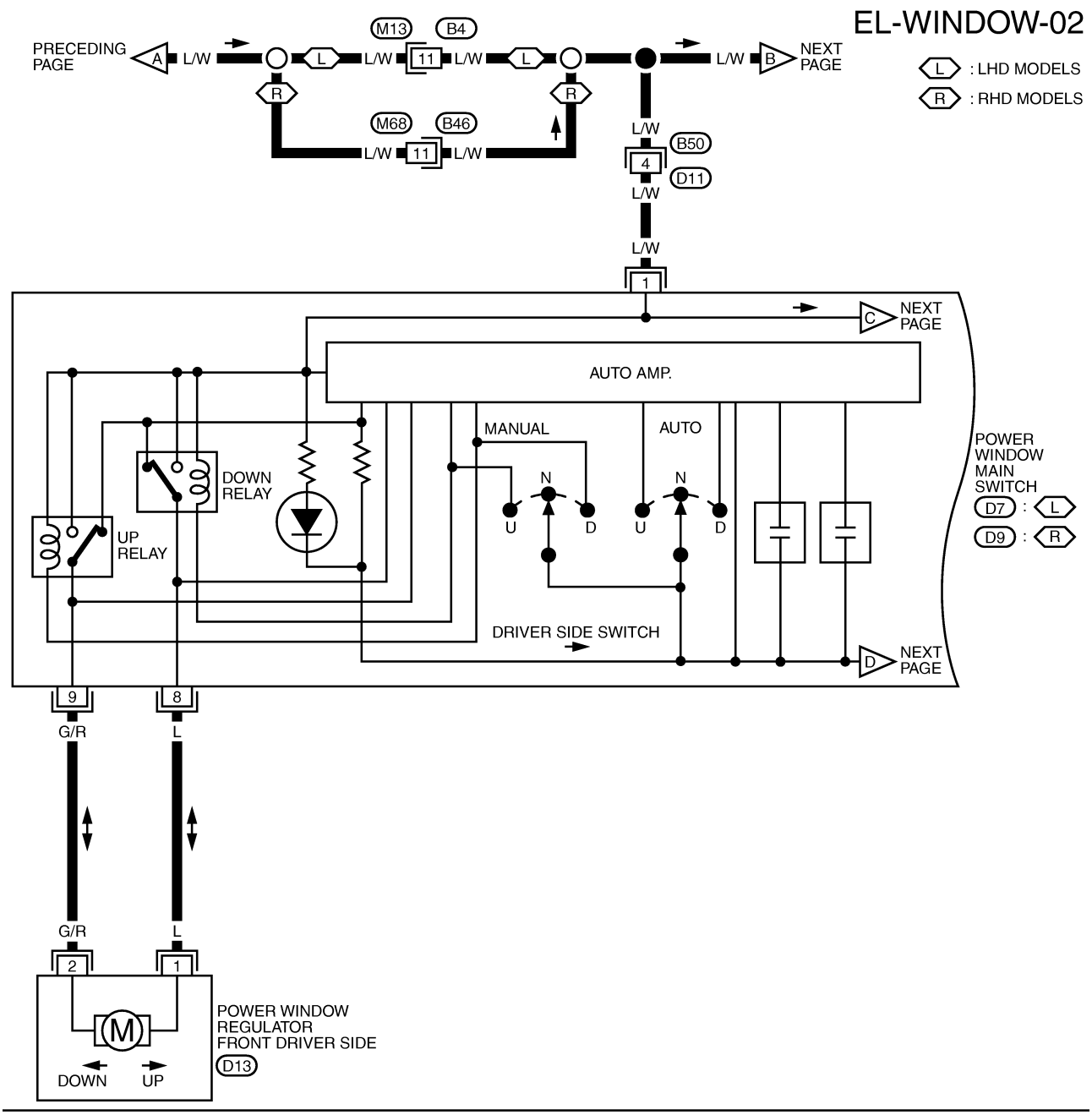


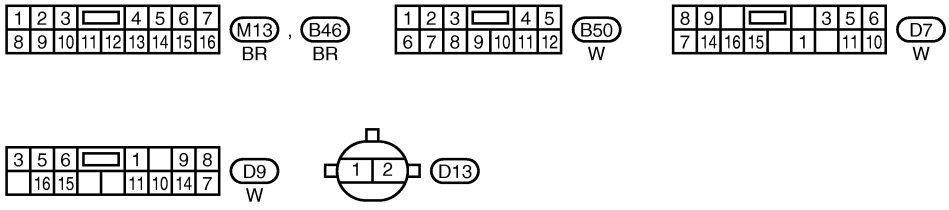


REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

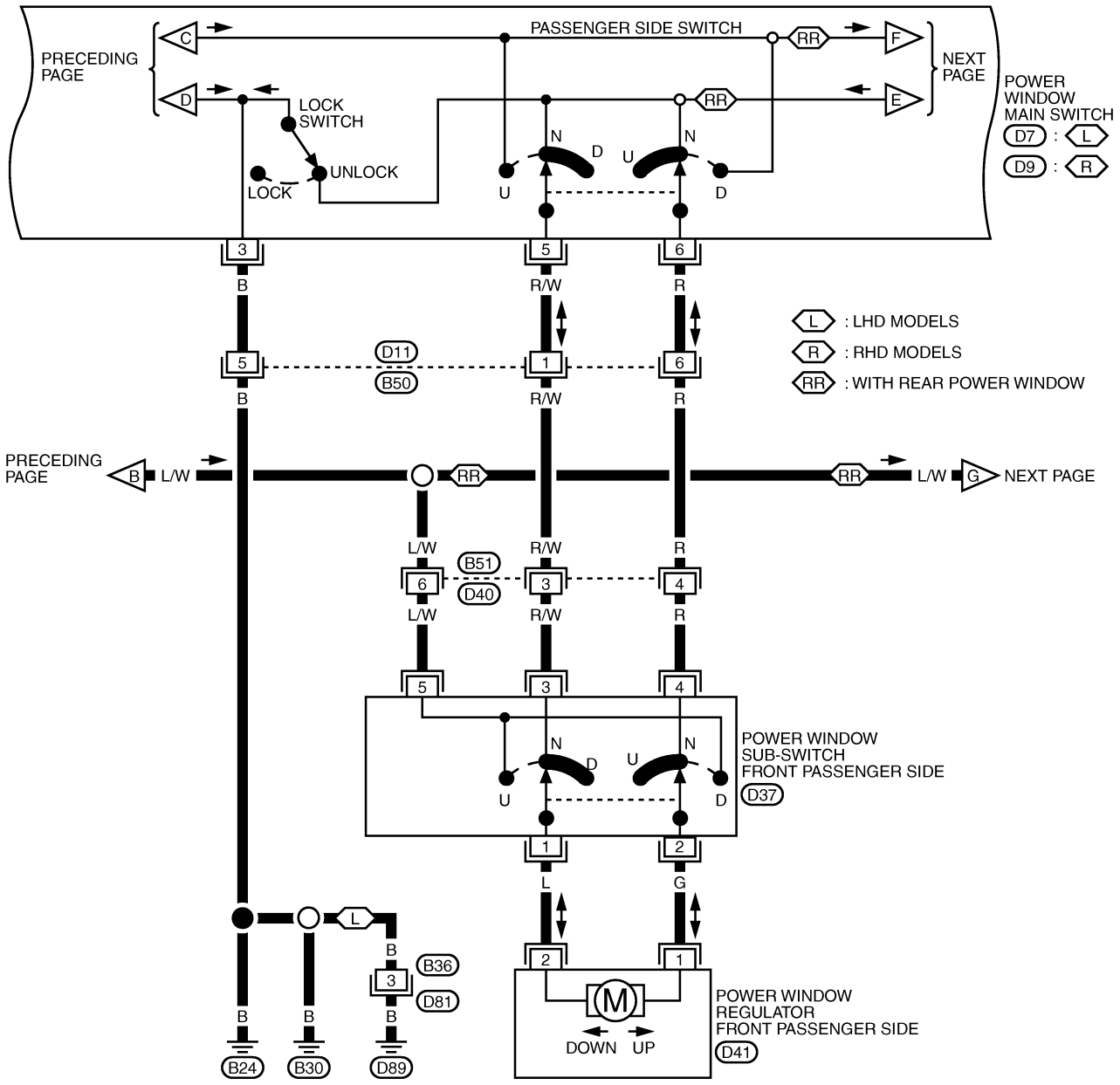
YEL997D

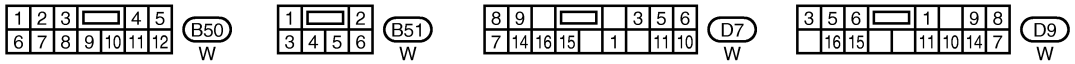

EL-WINDOW-02
L : LHD MODELS
R : RHD MODELS
PRECEDING PAGE
NEXT PAGE
M13
B4
M68
B46
B50
D11
L/W
AUTO AMP.
MANUAL
AUTO
DOWN RELAY
UP RELAY
DRIVER SIDE SWITCH
POWER WINDOW MAIN SWITCH
D7 : L
D9 : R
G/R
L
POWER WINDOW REGULATOR FRONT DRIVER SIDE
D13
DOWN
UP

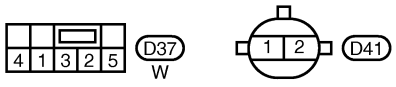

M13 BR
B46 BR
B50 W
D7 W
D9 W
D13

YEL998D

EL-WINDOW-03

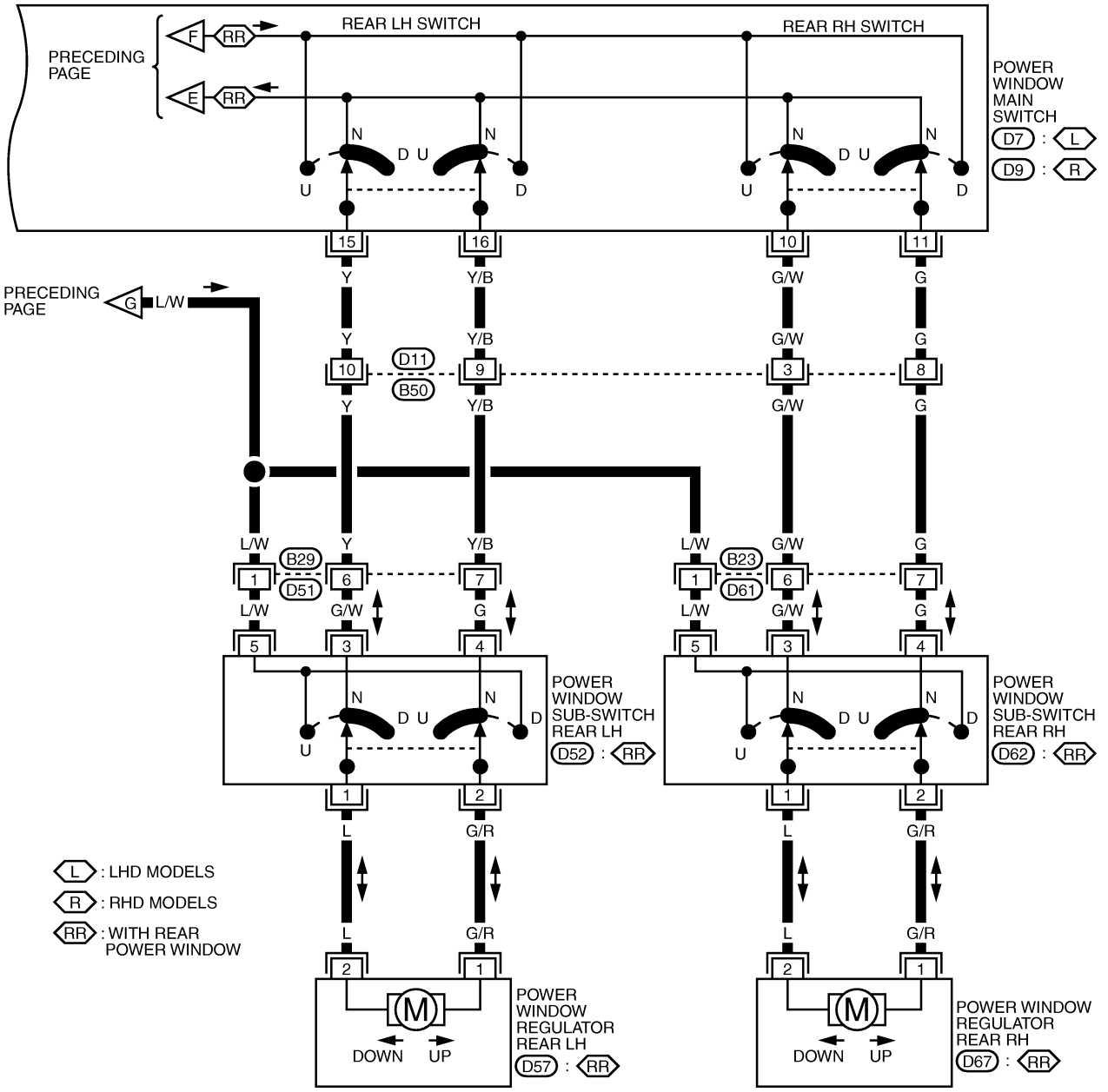


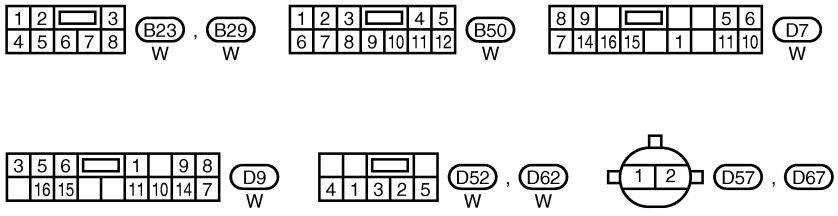




YEL999D

EL-WINDOW-04





YEL001E

Trouble Diagnoses

NLEL0501

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 10A fuse 2. 30A fusible link, M4 circuit breaker 3. Power window relay 4. Ground circuit 5. Power window main switch	1. Check 10A fuse [No. 10, located in fuse block (J/B)] Turn ignition switch “ON” and verify positive battery voltage is present at terminal 1 of power window relay. 2. Check 30A fusible link (letter **B**, located in fuse and fusible link box) and M4 circuit breaker. Verify positive battery voltage is present at terminal 5 of power window relay. 3. Check power window relay. 4. Check the following: a. Check ground circuit of power window main switch. b. Check power window relay ground circuit. 5. Check power window main switch.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit 2. Driver side power window regulator 3. Power window main switch	1. Check harness between power window main switch and driver side power window regulator for open or short circuit. 2. Check driver side power window regulator. 3. Check power window main switch.
One or more power windows except driver’s side window cannot be operated.	1. Power window sub-switches 2. Power window regulators 3. Power window main switch 4. Power window circuit	1. Check power window sub-switch. 2. Check power window regulator. 3. Check power window main switch. 4. Check the following. a. Check harness between the power window relay terminal 3 and power window sub-switch terminal 5. b. Check harnesses between power window main switch and power window sub-switch for open/short circuit. c. Check harnesses between power window sub-switch and power window regulator for open/short circuit.
Power windows except driver’s side window cannot be operated using power window main switch but can be operated by power window sub-switch.	1. Power window main switch	1. Check power window main switch.
Driver side power window automatic operation does not function properly.	1. Power window main switch	1. Check power window main switch.

Component Parts and Harness Connector Location

NLEL0526

For details, refer to “ELECTRICAL UNIT LOCATION” (EL-594) and “HARNESS LAYOUT” (EL-600).

System Description

NLEL0502

OPERATION

NLEL0502S02

Power door lock/unlock operation by door key cylinder

- With the key inserted into front door key cylinder, turning it to LOCK will lock all doors.
- With the key inserted into front door key cylinder, turning it to UNLOCK will unlock all doors.

Power door lock/unlock operation by multi-remote controller (If equipped)

- Pressing multi-remote controller LOCK button will lock all doors.
- Pressing multi-remote controller UNLOCK button once will unlock driver door. Then, if an unlock signal is sent from the remote controller again within 5 seconds, all other doors will be unlocked.

Power door lock/unlock operation by lock/unlock switch

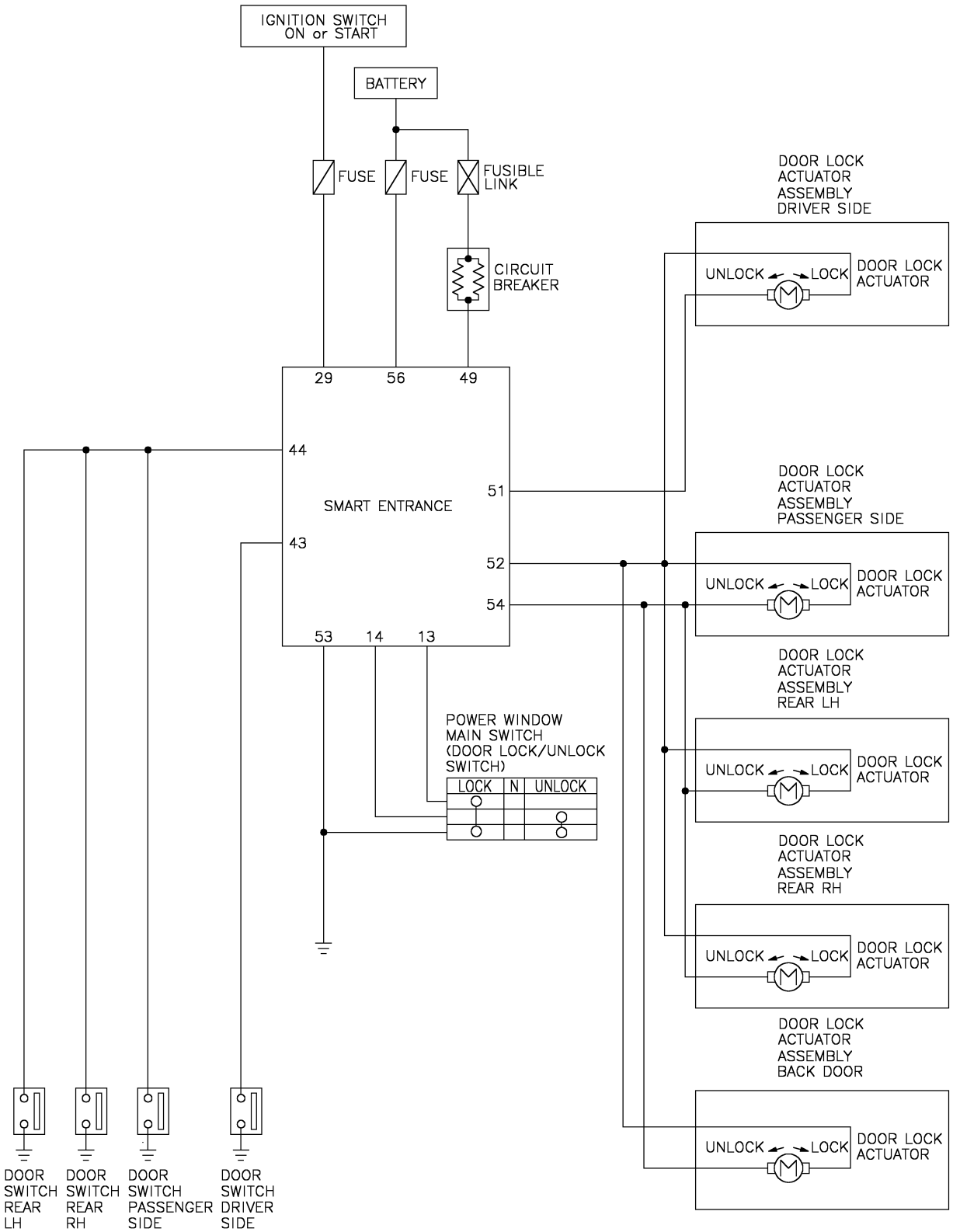
- With lock/unlock switch on driver door trim setting to LOCK will lock all doors.
- With lock/unlock switch on driver door trim setting to UNLOCK will unlock all doors.

Key reminder system

- If the ignition key is in the ignition key cylinder and driver door is open, setting lock/unlock switch, lock knob, key or multi-remote controller to “LOCK” locks the door once but then immediately unlocks all doors. (signal from door unlock sensor driver side)

Schematic

NLEL0503



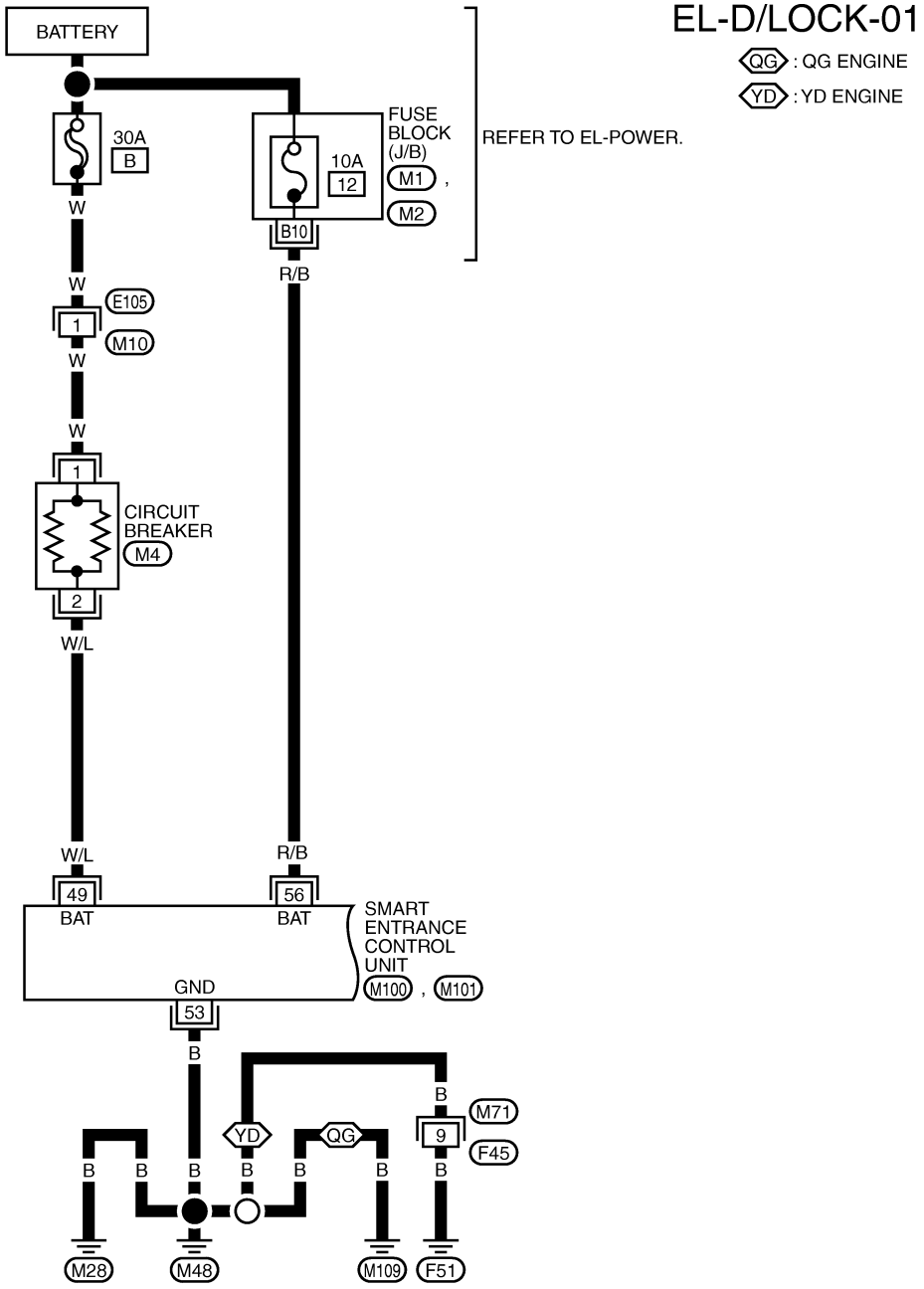
YEL002E

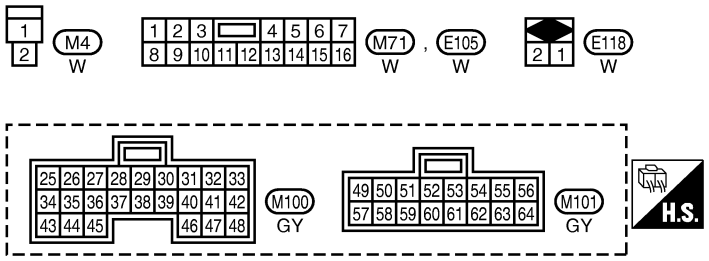
Wiring Diagram — D/LOCK —

NLEL0504

FIG. 1

NLEL0504S14





REFER TO THE FOLLOWING.

M1 , M2

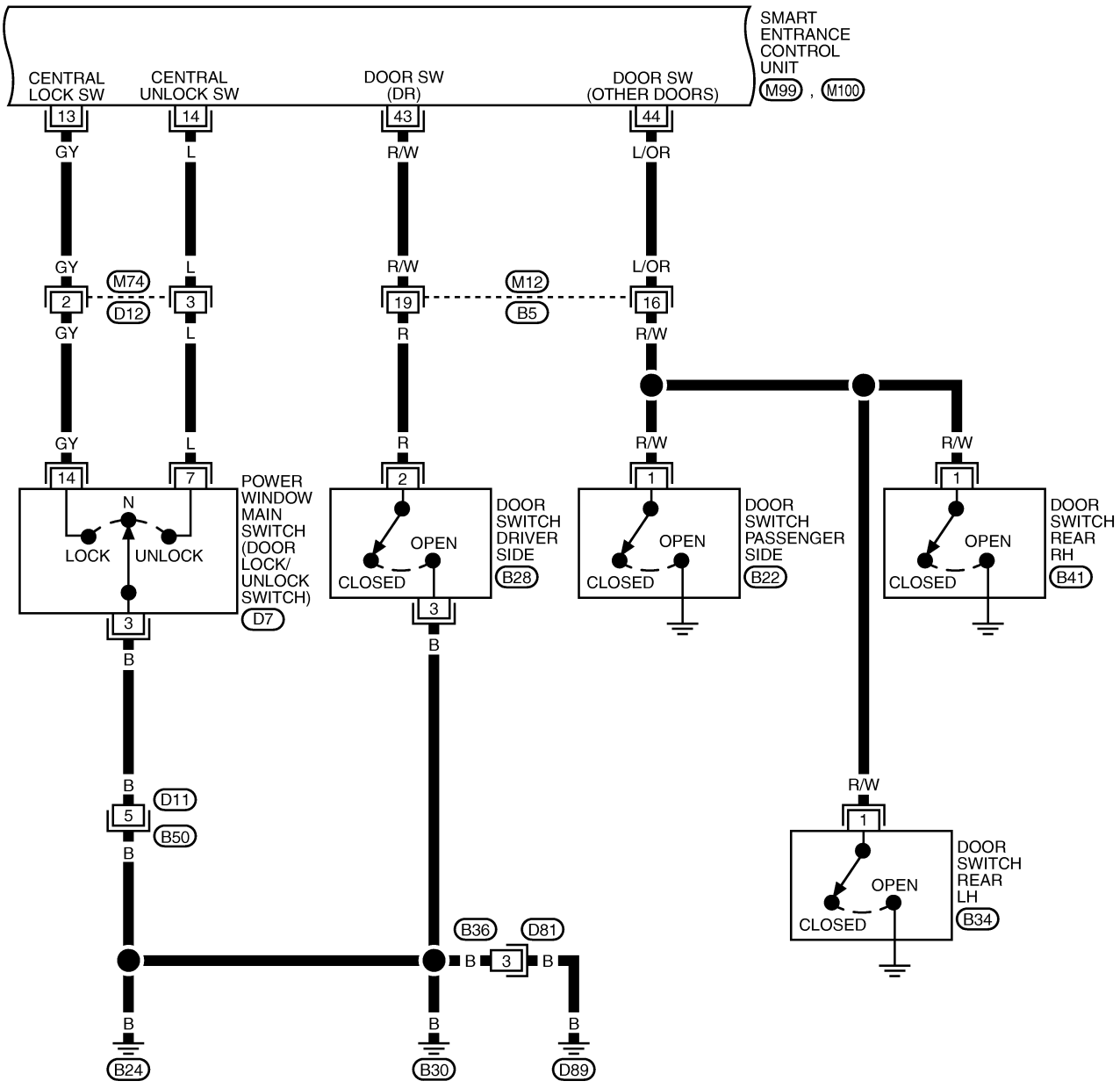
-FUSE BLOCK- JUNCTION BOX (J/B)

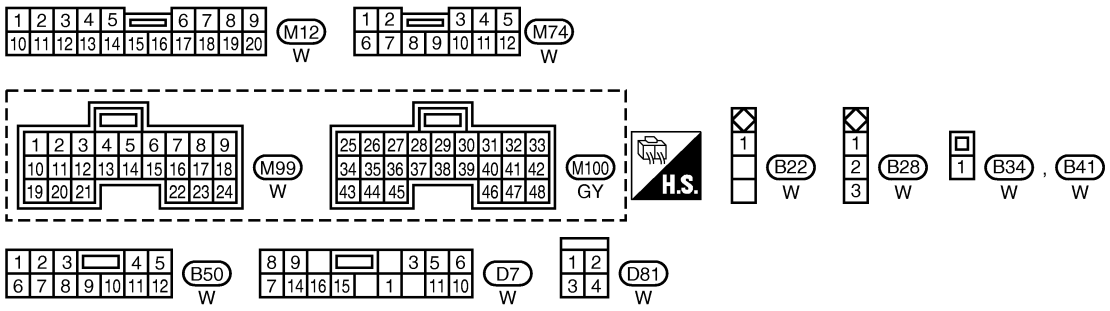
YEL004E

FIG. 2

NLEL0504S15

EL-D/LOCK-02





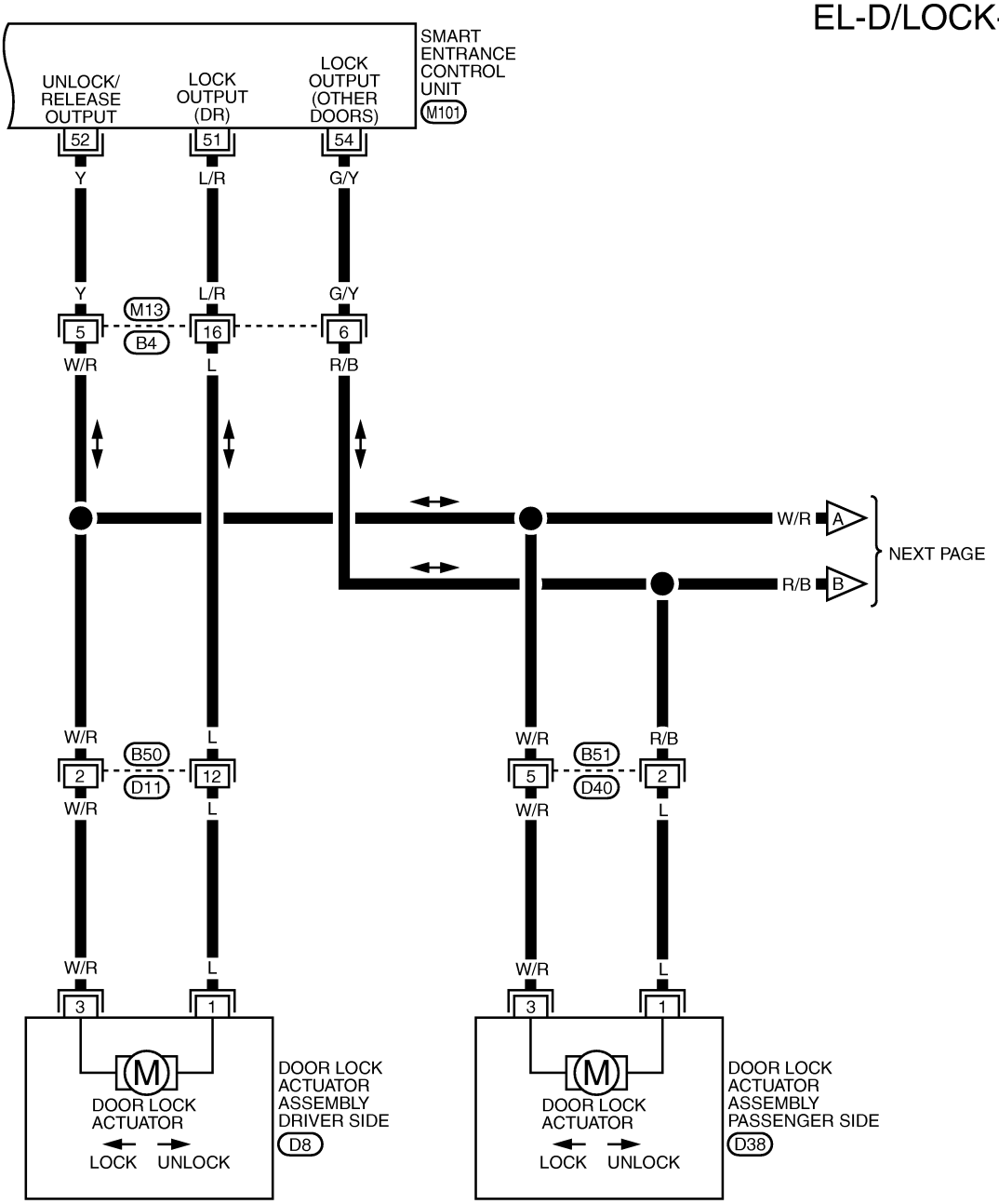
YEL005E

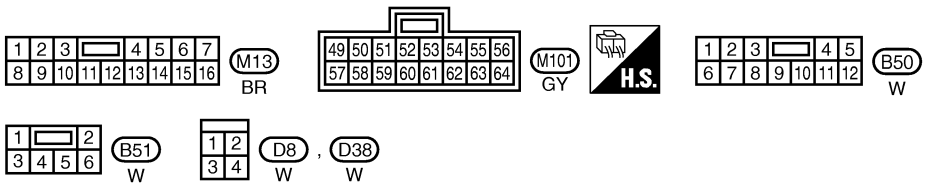
Wiring Diagram — D/LOCK — (Cont'd)

FIG. 3

NLEL0504S16

EL-D/LOCK-03



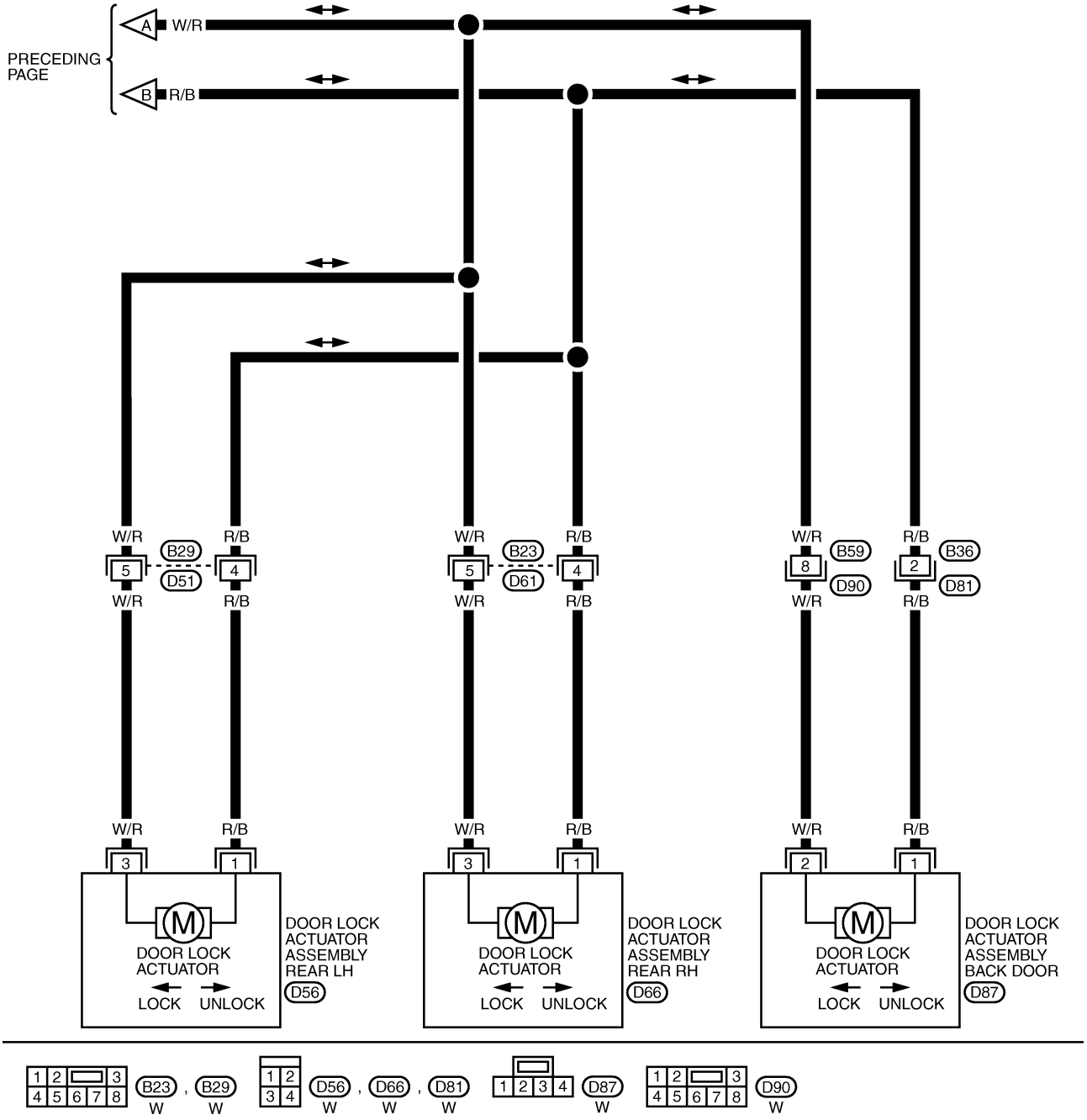


YEL006E

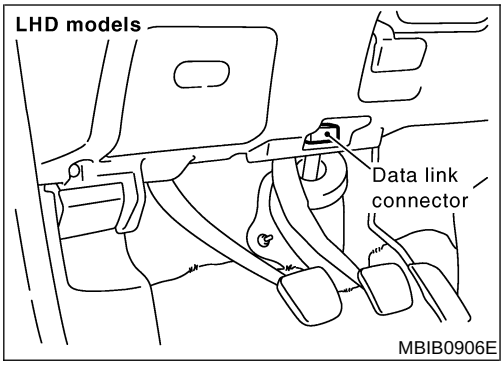
FIG. 4

NLEL0504S17

EL-D/LOCK-04



YEL007E



MBIB0906E

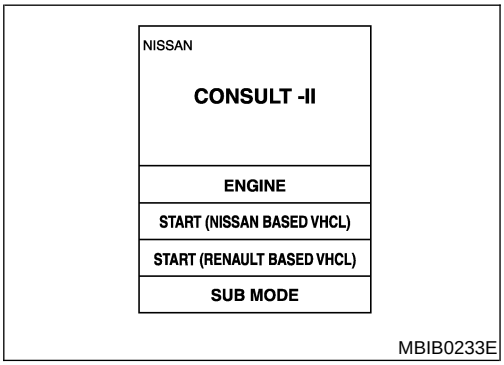
Trouble Diagnosis

NLEL0572

CONSULT-II INSPECTION PROCEDURE “DOOR LOCKING”

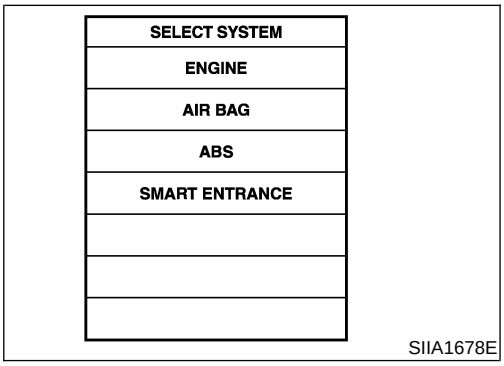
NLEL0572S01

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



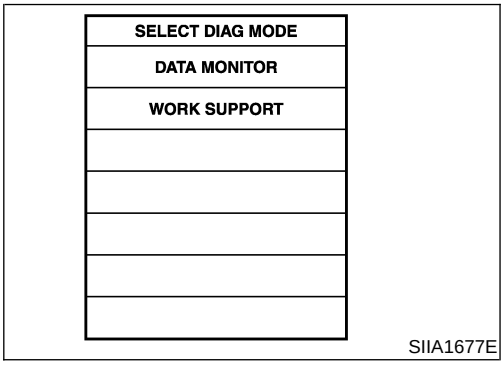
MBIB0233E

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



SIIA1678E

5. Touch “SMART ENTRANCE”.
6. Touch “DOOR LOCKING” or “TRUNK RELEASE”.



SIIA1677E

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

CONSULT-II APPLICATION ITEMS

=NLEL0572S02

Door Locking

NLEL0572S0201

DATA MONITOR

Monitored Item	Description
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW DR RR	Indicates [ON/OFF] condition of rear door switch (driver side).
DOOR SW AS RR	Indicates [ON/OFF] condition of rear door switch (passenger side).
AS DOOR SW	Indicates [ON/OFF] condition of front door switch (passenger side).
DR DOOR SW	Indicates [ON\OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of lock signal from door lock/ unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of unlock signal from door lock/ unlock switch.
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.
RKE UNLOCK	Indicates [ON/OFF] condition of unlock signal from remote controller.
RKE SEL UNLOCK	Indicates [ON/OFF] condition of select unlock signal from remote controller.
KEY CYL LK	Indicates [ON/OFF] condition of lock signal from door key cylinder.
KEY CYL UNLK	Indicates [ON/OFF] condition of unlock signal from door key cylinder.

WORK SUPPORT

Monitored Item	Description
AUTO RE-LOCK	Auto re-lock function can be changed in this mode. The re-lock mode will be changed when "CHANGE MODE" on CONSULT-II screen is touched.
SELECTIVE UNLOCK	Selective unlock function can be changed in this mode. The unlock mode will be changed when "CHANGE SET" on CONSULT-II screen is touched.

SYMPTOM CHART

NLEL0572S03

First perform the "SELF-DIAG RESULTS" in "SMART ENTRANCE" with CONSULT-II, when perform the each trouble diagnosis. Refer to EL-270, "CONSULT-II INSPECTION PROCEDURE".

Symptom	Malfunctioning system	Reference page
Power door lock does not operate using any switch	Power supply and ground circuit check	EL-272
	Door lock actuator check	EL-276
	If above systems are OK, replace smart entrance control unit.	—
Power door lock does not operate with lock/unlock switch.	Door lock/unlock switch check	EL-274
	If above system is OK, replace smart entrance control unit.	—
Specific door lock actuator does not operate.	Door lock actuator check	EL-276
*Key reminder system does not operate.	Door switch check	EL-282
	If above system is OK, replace smart entrance control unit.	—

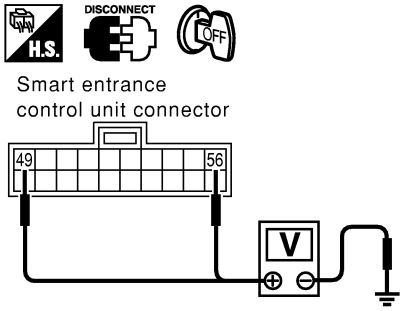
*: Make sure the power door lock system operates properly.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NLEL0572S04

1 CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit connector.
3. Check voltage between smart entrance control unit harness connector M101 terminal 49 (W/L), 56 (R/B) and ground.



SIIA1564E

Terminal		Ignition switch position		
(+)	(—)	OFF	ACC	ON
49 (W/L)	Ground	Battery voltage	Battery voltage	Battery voltage
56 (R/B)				

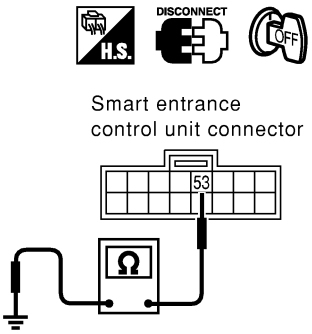
MTBL1676

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 30A fusible link (letter **B**, located in fuse and fusible link box) ● Circuit breaker ● 15A fuse [No. 5, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse ● Harness for open or short between smart entrance control unit and circuit breaker ● Harness for open or short between circuit breaker and fusible link

2	CHECK GROUND CIRCUIT

Check continuity between smart entrance control unit harness connector M101 terminal 53 (B) and ground.



SIIA1565E

Terminal		Continuity
+	—	
53 (B)	Ground	Yes

MTBL1481

OK or NG

OK	▶	Power supply and ground circuit is OK.
NG	▶	Check smart entrance control unit ground circuit for open or short.

DOOR LOCK/UNLOCK SWITCH CHECK

NLEL0572S05

1 **CHECK DOOR LOCK/UNLOCK SWITCH SIGNAL**

With CONSULT-II

- Check door lock/unlock switch input signal ("CDL LOCK SW" "CDL UNLOCK SW") in "DATA MONITOR" mode with CONSULT-II.

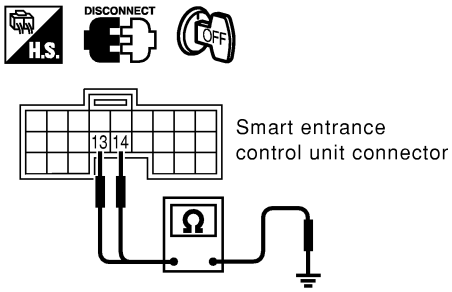
DATA MONITOR	
MONITOR	
CDL LOCK SW	ON
CDL UNLOCK SW	ON

SIIA1566E

When door lock/unlock switch is turned to LOCK:
CDL LOCK SW ⇒ ON
When door lock/unlock switch is turned to UNLOCK:
CDL UNLOCK SW ⇒ ON

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit harness connector M99 terminal 13 (GY), 14 (L) and ground.



SIIA1567E

Terminals	Door lock/unlock switch operation	Continuity
13 — Ground	Lock position	Yes
	Neutral or Unlock position	No
14 — Ground	Unlock position	Yes
	Neutral or Lock position	No

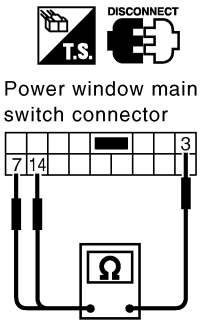
MTBL1482

OK or NG

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

2	CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect power window main switch harness connector.
2. Check continuity between power window main switch (door lock/unlock switch) terminals.



Condition	Terminals		
	3	14	7
Lock	○	○	
N	No continuity		
Unlock	○		○

YEL349E

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 power window main switch (door lock/unlock switch).

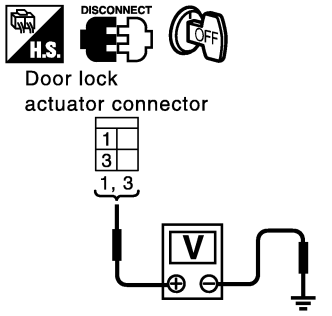
DOOR LOCK ACTUATOR CHECK
Driver Side

=NLEL0572S06

NLEL0572S0601

1	CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly driver side harness connector.
2. Check voltage between door lock actuator assembly driver side harness connector D8 terminal 1 (L), 3 (W/R) and ground.



YEL834D

Door lock/unlock switch	Terminals		Voltage
	+	—	
Lock position	1 (L)	Ground	Approx. 12
Unlock position	3 (W/R)	Ground	

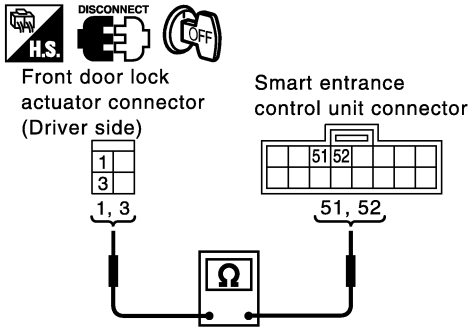
MTBL1484

OK or NG

OK	▶	Replace door lock actuator assembly driver side.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator assembly driver side harness connector D27 terminal 1 (L), 3 (W/R) and smart entrance control unit harness connector M101 terminal 51 (L/R), 52 (W/R).



YEL836D

Terminal		Continuity
Door lock actuator	Smart entrrance control unit	
1 (L)	51 (L/R)	Yes
3 (W/R)	52 (Y)	Yes

MTBL1677

OK or NG

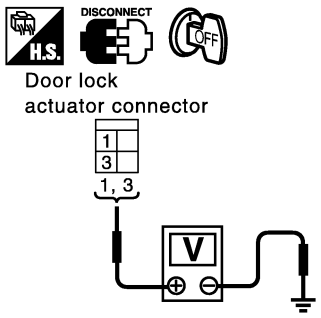
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator (driver side).

Passenger Side

=NLEL0572S0602

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly passenger side harness connector.
2. Check voltage between door lock actuator assembly passenger side harness connector D38 terminal 1 (R/B), 3 (W/R) and ground.



YEL834D

Door lock/unlock switch	Terminals		Voltage
	(+)	(—)	
Lock position	1 (L)	Ground	Approx. 12
Unlock position	3 (W/R)	Ground	

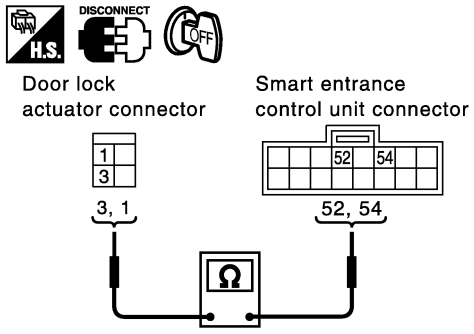
MTBL1678

OK or NG

OK	▶	Replace door lock assembly passenger side.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator assembly passenger side harness connector D38 terminal 1 (L), 3 (W/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL837D

Terminal		Continuity
Door lock actuator	Smart entrrance control unit	
3 (W/R)	52 (Y)	Yes
1 (L)	54 (G/Y)	Yes

MTBL1679

OK or NG

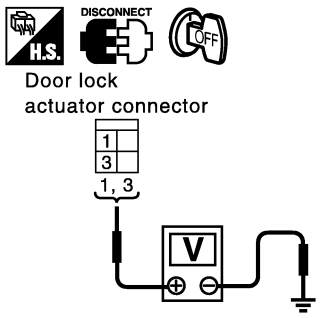
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator assembly passenger side.

Rear LH Side

=NLEL0572S0603

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly rear LH harness connector.
2. Check voltage between door lock actuator assembly rear LH harness connector D56 terminal 1 (R/B), 3 (W/R) and ground.



YEL834D

Door lock/unlock switch	Terminals		Voltage
	+	—	
Lock position	1 (R/B)	Ground	Approx. 12
Unlock position	3 (W/R)	Ground	

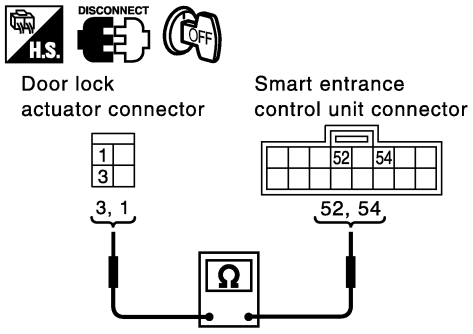
MTBL1490

OK or NG

OK	▶	Replace door lock actuator assembly rear LH.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator assembly rear LH harness connector D56 terminal 1 (R/B), 3 (W/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL837D

Terminal		Continuity
Door lock actuator	Smart entrrance control unit	
1 (R/B)	54 (G/Y)	Yes
3 (W/R)	52 (Y)	Yes

MTBL1680

OK or NG

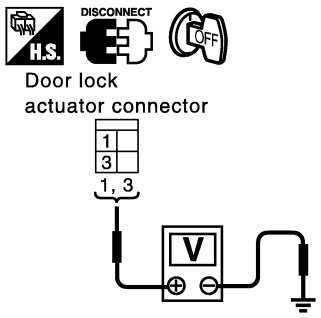
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and rear door lock actuator LH.

Rear RH Side

=NLEL0572S0604

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly rear RH harness connector.
2. Check voltage between door lock actuator assembly rear RH harness connector D66 terminal 1 (R/B), 3 (W/R) and ground.



YEL834D

Door lock/unlock switch	Terminals		Voltage
	+	—	
Lock position	1 (R/B)	Ground	Approx. 12
Unlock position	3 (W/R)	Ground	

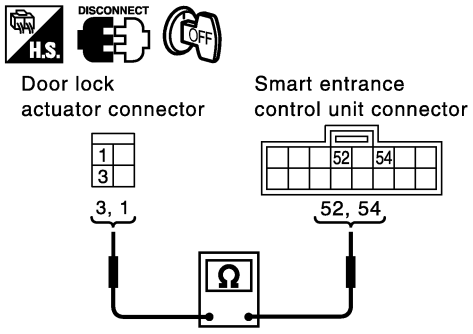
MTBL1493

OK or NG

OK	▶	Replace door lock actuator assembly rear RH.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator rear RH harness connector D66 terminal 1 (R/B), 3 (W/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL837D

Terminal		Continuity
Door lock actuator	Smart entrrance control unit	
3 (W/R)	52 (Y)	Yes
1 (R/B)	54 (G/Y)	Yes

MTBL1681

OK or NG

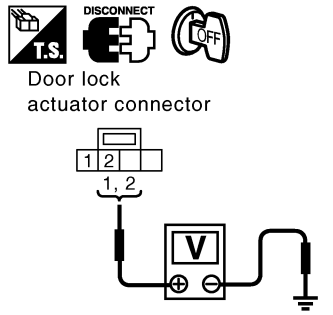
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and rear door lock actuator RH.

Back Side

=NLEL0572S0605

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly back door harness connector.
2. Check voltage between door lock actuator assembly back door harness connector D87 terminal 1 (R/B), 2 (W/R) and ground.



YEL352E

Door lock/unlock switch	Terminals		Voltage
	(+)	(—)	
Lock position	1 (R/B)	Ground	Approx. 12
Unlock position	2 (W/R)	Ground	

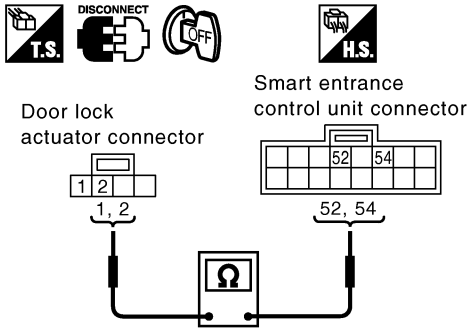
MTBL1682

OK or NG

OK	▶	Replace door lock actuator assembly back door.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator assembly back door harness connector D87 terminal 1 (R/B), 2 (W/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL353E

Terminal		Continuity
Door lock actuator	Smart entrrance control unit	
1 (R/B)	54 (G/Y)	Yes
2 (W/R)	52 (Y)	Yes

MTBL1683

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator (driver side).

DOOR SWITCH CHECK
Driver Side

NLEL0572S07

NLEL0572S0701

1 **CHECK DOOR SWITCH INPUT SIGNAL**

With CONSULT-II

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

DATA MONITOR	
MONITOR	
DR DOOR SW	ON

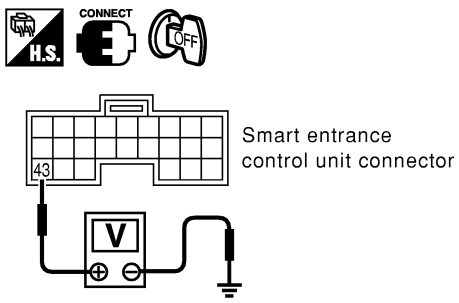
SIIA1590E

	Monitor item	Condition
DR DOOR SW	Door switch driver side	Open: ON
		Close: OFF

MTBL1684

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 43 (R/W) and ground.



SIIA1588E

Terminal		driver's door	Voltage [V]
(+)	(—)		
43 (R/W)	Ground	Closed	Approx. 5
		Open	0

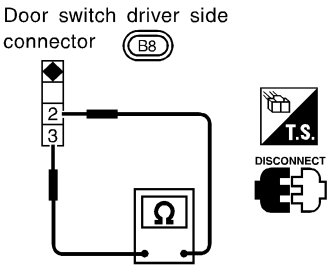
MTBL1685

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH

Check continuity between door switch driver side harness connector B28 terminals 2 and 3.



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

SEL325WA

OK or NG

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

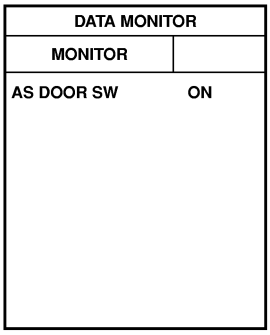
Passenger Side

NLEL0572S0702

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

- Check door switch "AS DOOR SW" in "DATA MONITOR" mode with CONSULT-II.



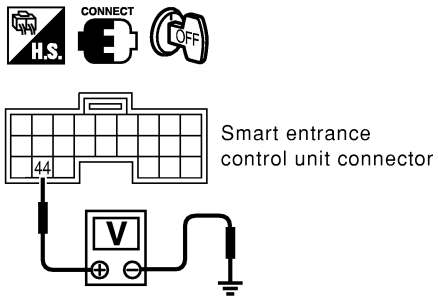
SIIA1591E

	Monitor item	Condition
AS DOOR SW	Door switch passenger side	Open: ON
		Close: OFF

MTBL1686

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal (+)	Terminal (—)	Passenger's door	Voltage [V]
44 (L/OR)	Ground	Closed	Approx. 5
		Open	0

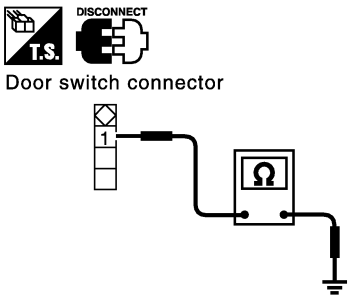
MTBL1687

OK or NG

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

2	CHECK DOOR SWITCH

Check continuity between door switch passenger side harness connector B22 terminal 1 (R/W) and ground.



SIIA1589E

Terminal		Door switch passenger side	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1688

OK or NG

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

Rear LH Side

NLEL0572S0703

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

- Check door switch "RR LH DOOR SW" in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
RR LH DOOR SW	ON

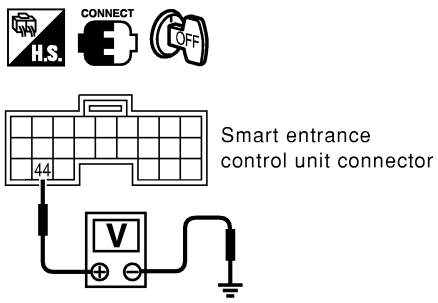
SIIA1593E

	Monitor item	Condition
RR LH DOOR SW	Door switch rear LH	Open: ON
		Close: OFF

MTBL1689

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal		Rear door LH	Voltage [V]
(+)	(—)		
39 (BR/W)	Ground	Closed	Approx. 5
		Open	0

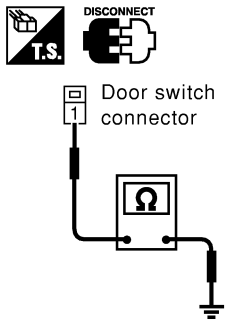
MTBL1690

OK or NG

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

2	CHECK DOOR SWITCH

Check continuity between door switch rear LH harness connector B34 terminal 1 (R/W) and ground.



SIIA1595E

Terminal		Door switch rear LH	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1691

OK or NG

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

Rear RH Side

NLEL0572S0704

1 **CHECK DOOR SWITCH INPUT SIGNAL**

With CONSULT-II

- Check door switch "RR RH DOOR SW" in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
RR RH DOOR SW	ON

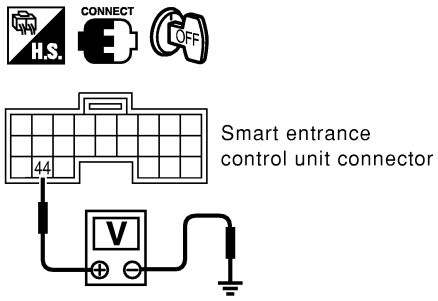
SIIA1596E

	Monitor item	Condition
RR RH DOOR SW	Door switch rear RH	Open: ON
		Close: OFF

MTBL1692

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal		Rear door RH	Voltage
(+)	(—)		
44 (L/OR)	Ground	Closed	Approx. 5
		Open	0

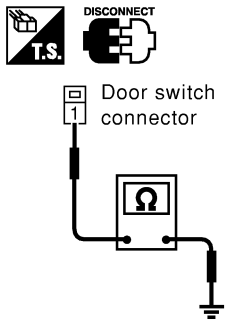
MTBL1693

OK or NG

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

2	CHECK DOOR SWITCH

Check continuity between door switch rear RH harness connector B41 terminal 1 (R/W) and ground.



SIIA1595E

Terminal		Door rear RH switch	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1694

OK or NG

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

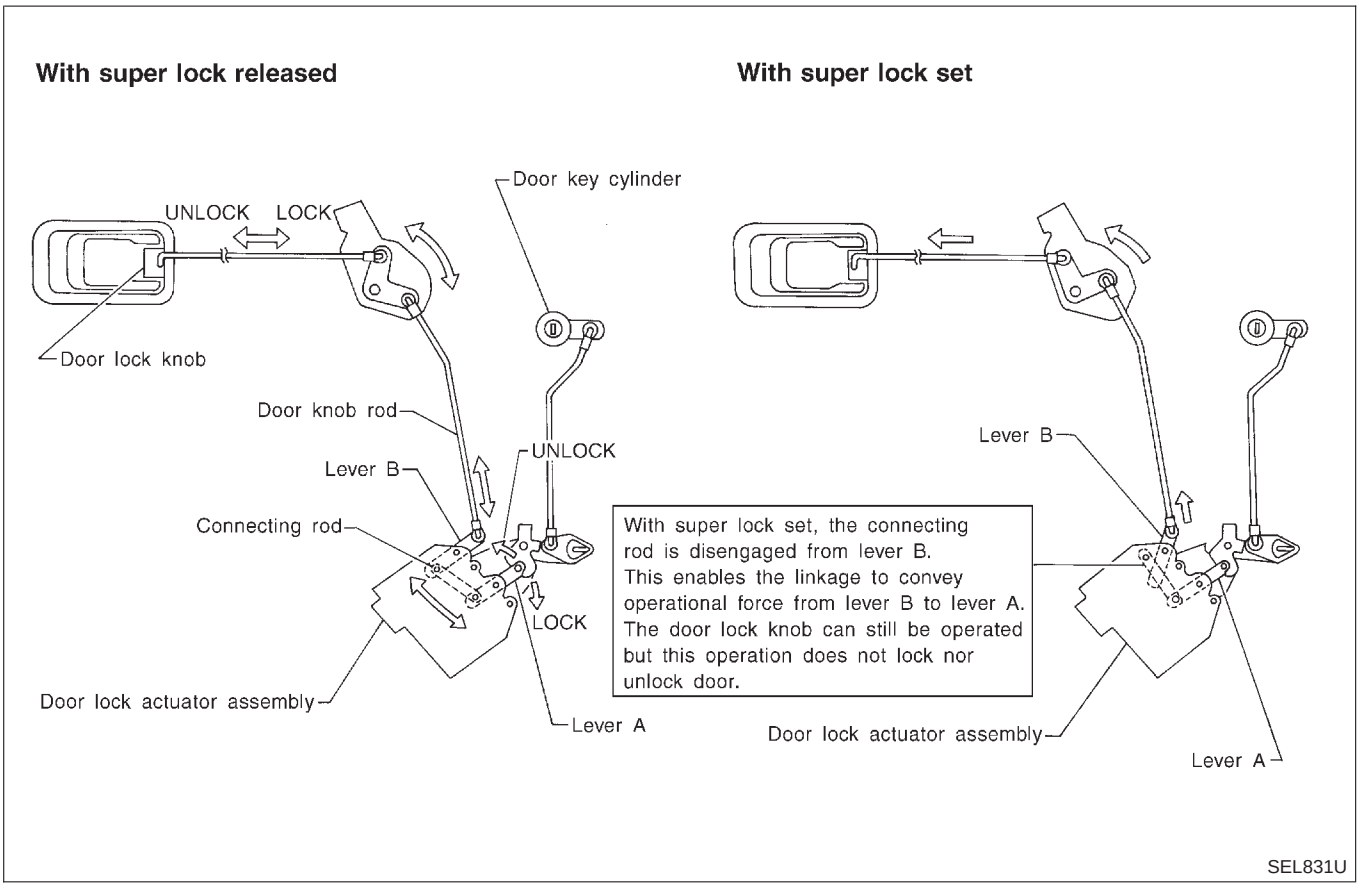
System Description

NLEL0395

OUTLINE

NLEL0395S01

Power door lock system with super lock and key reminder is controlled by time control unit. Super lock has a higher anti-theft performance than conventional power door lock systems.
When super lock is in released condition, lock knob operation locks or unlocks door.
When super lock is in set condition, lock knob operation cannot lock nor unlock door.



OPERATION

NLEL0395S02

Power door lock/unlock and super lock set/release operation by door key cylinder

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

Power door lock/unlock and super lock set/release operation by multi-remote controller (If equipped)

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

Power door lock and super lock release operation (by NATS IMMU signal)

- When the super lock is set, turning the ignition key switch to ON will release the super lock. All doors will unlock once, but then immediately lock again.

Power door lock/unlock operation by lock/unlock switch

- With lock/unlock switch on driver door trim setting to LOCK will lock all doors.
- With lock/unlock switch on driver door trim setting to UNLOCK will unlock all doors.

Lock/unlock switch operation cannot control super lock.

Key reminder system

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

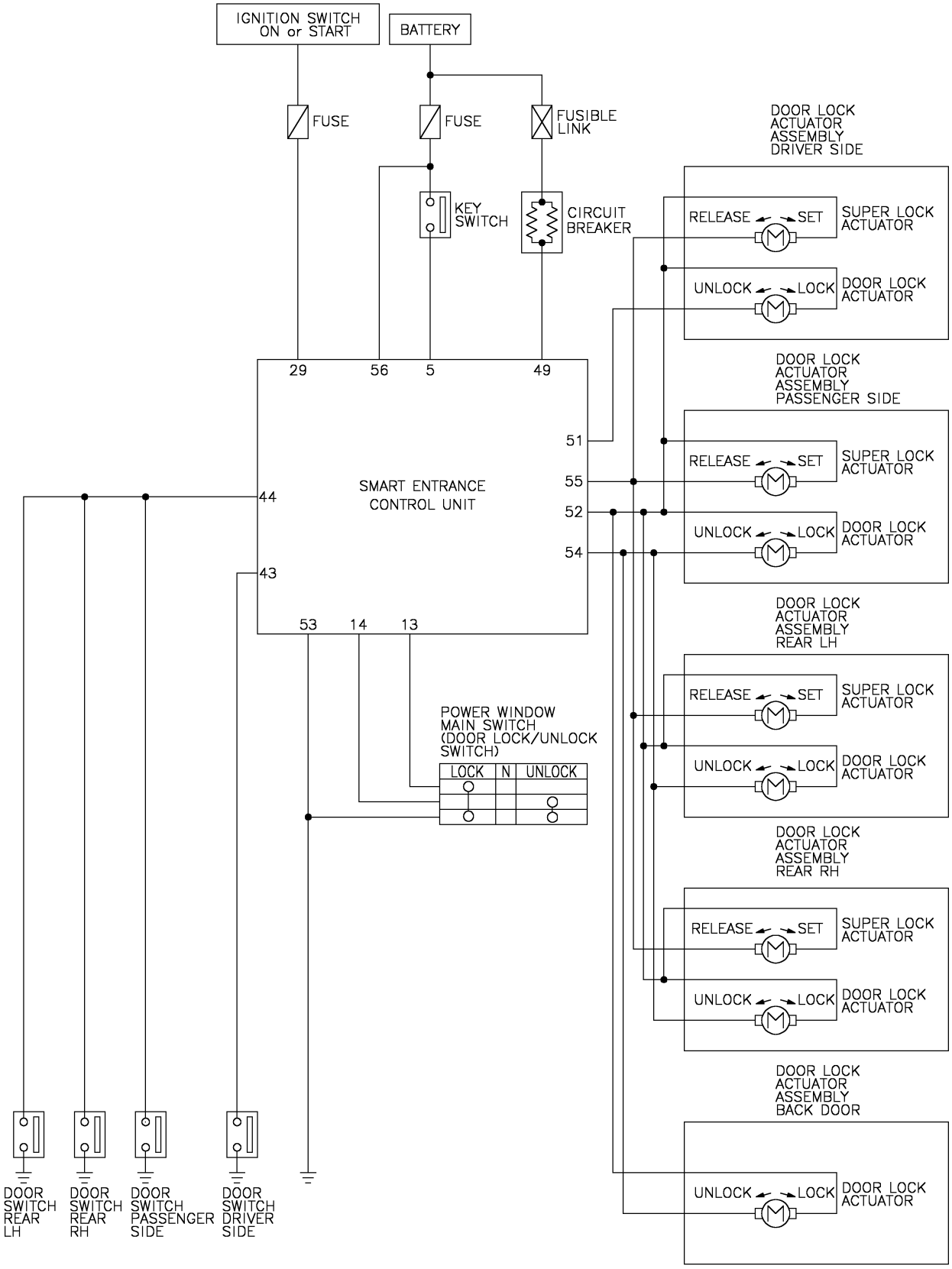
knob, key or multi-remote controller to "LOCK" locks the door once but then immediately unlocks all doors. (signal from door unlock sensor driver side)

System initialization

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

Schematic

NLEL0475



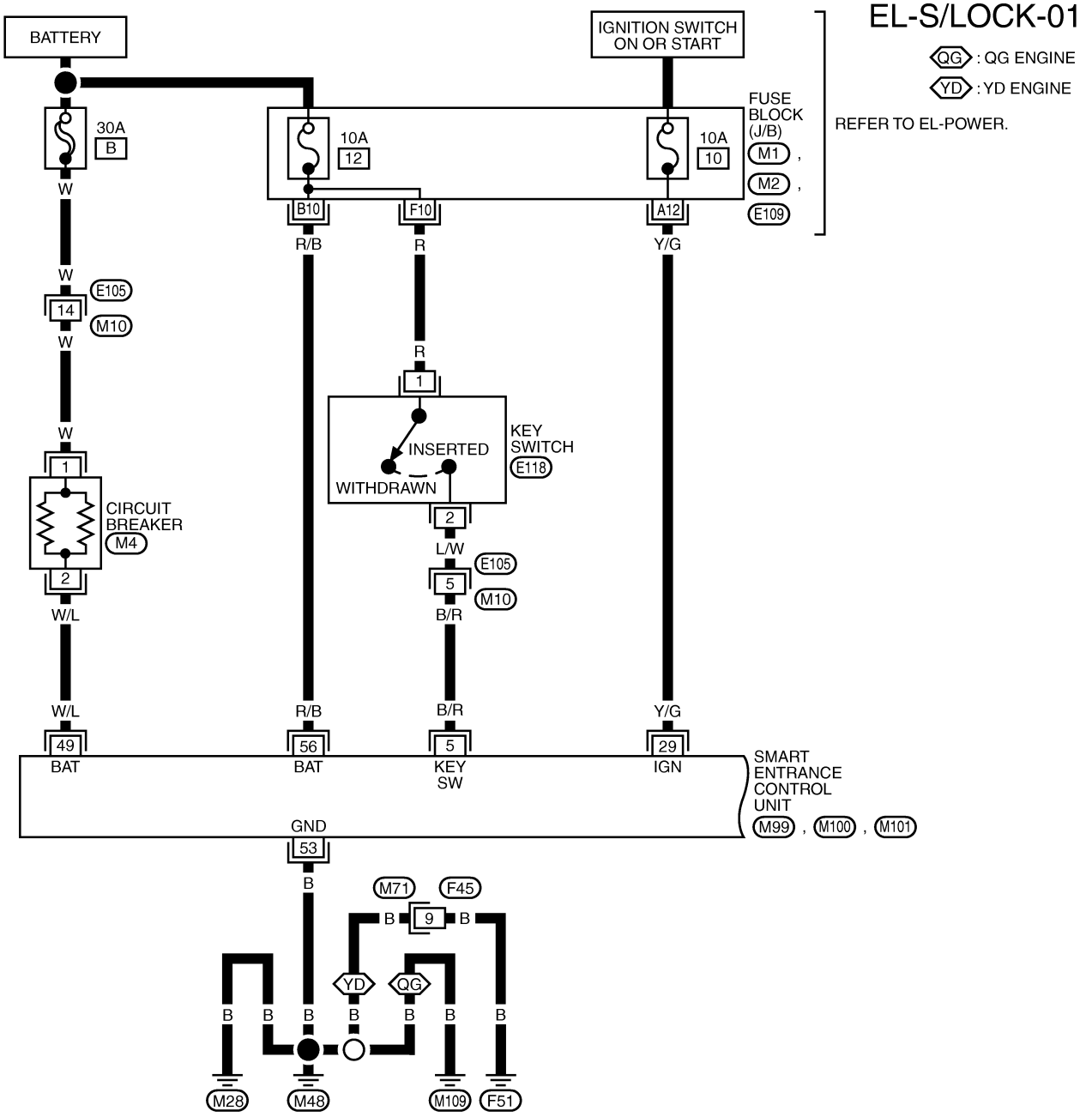
YEL008E

Wiring Diagram — S/LOCK —

NLEL0476

FIG. 1

NLEL0476S12



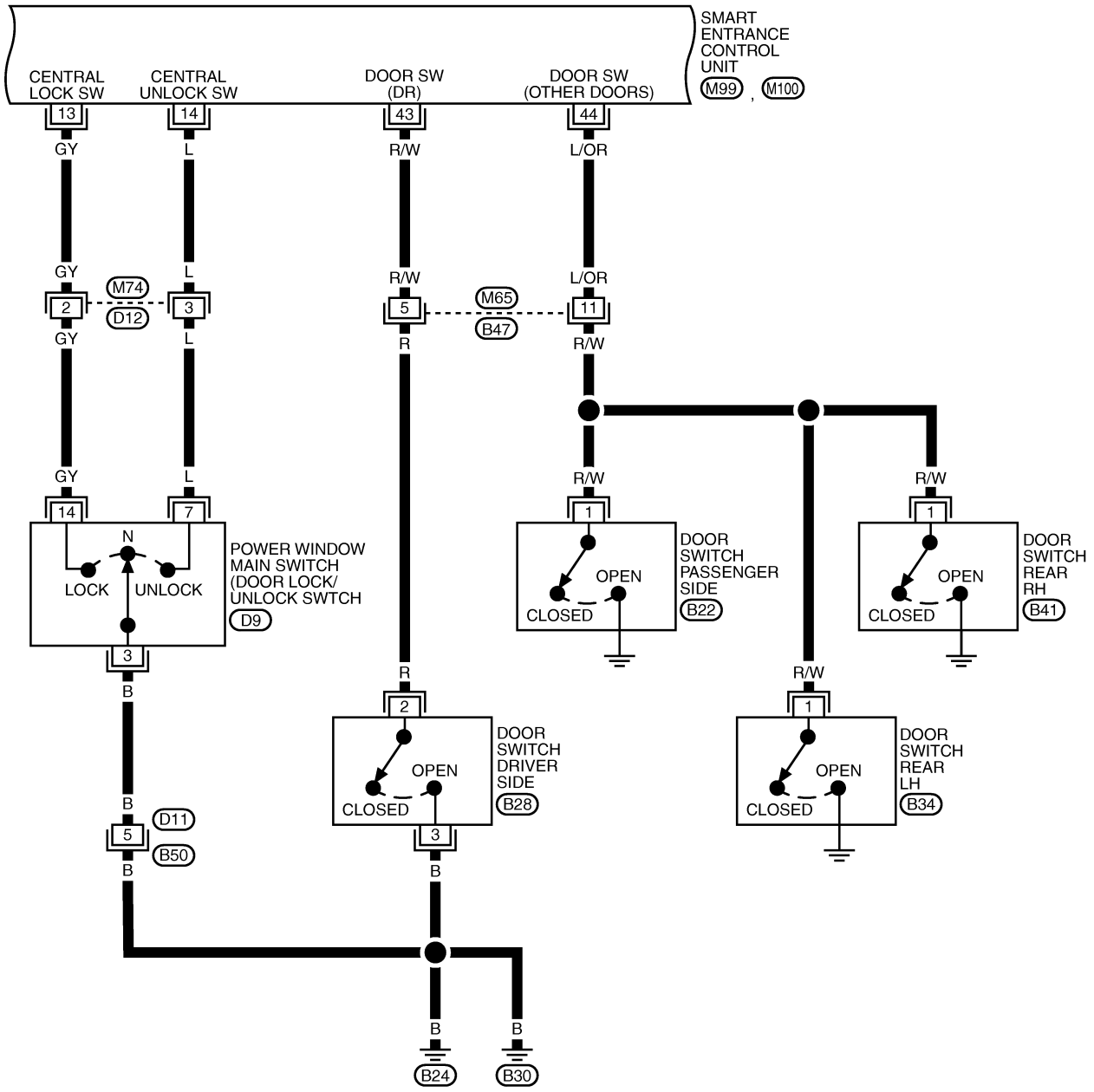
YEL010E

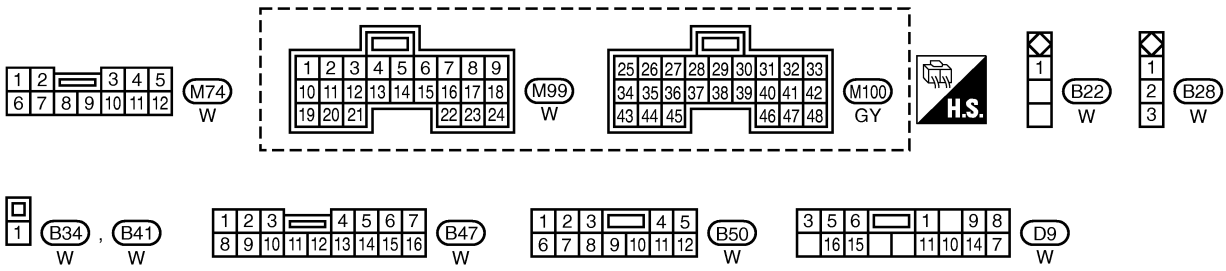
Wiring Diagram — S/LOCK — (Cont'd)

FIG. 2

NLEL0476S13

EL-S/LOCK-02



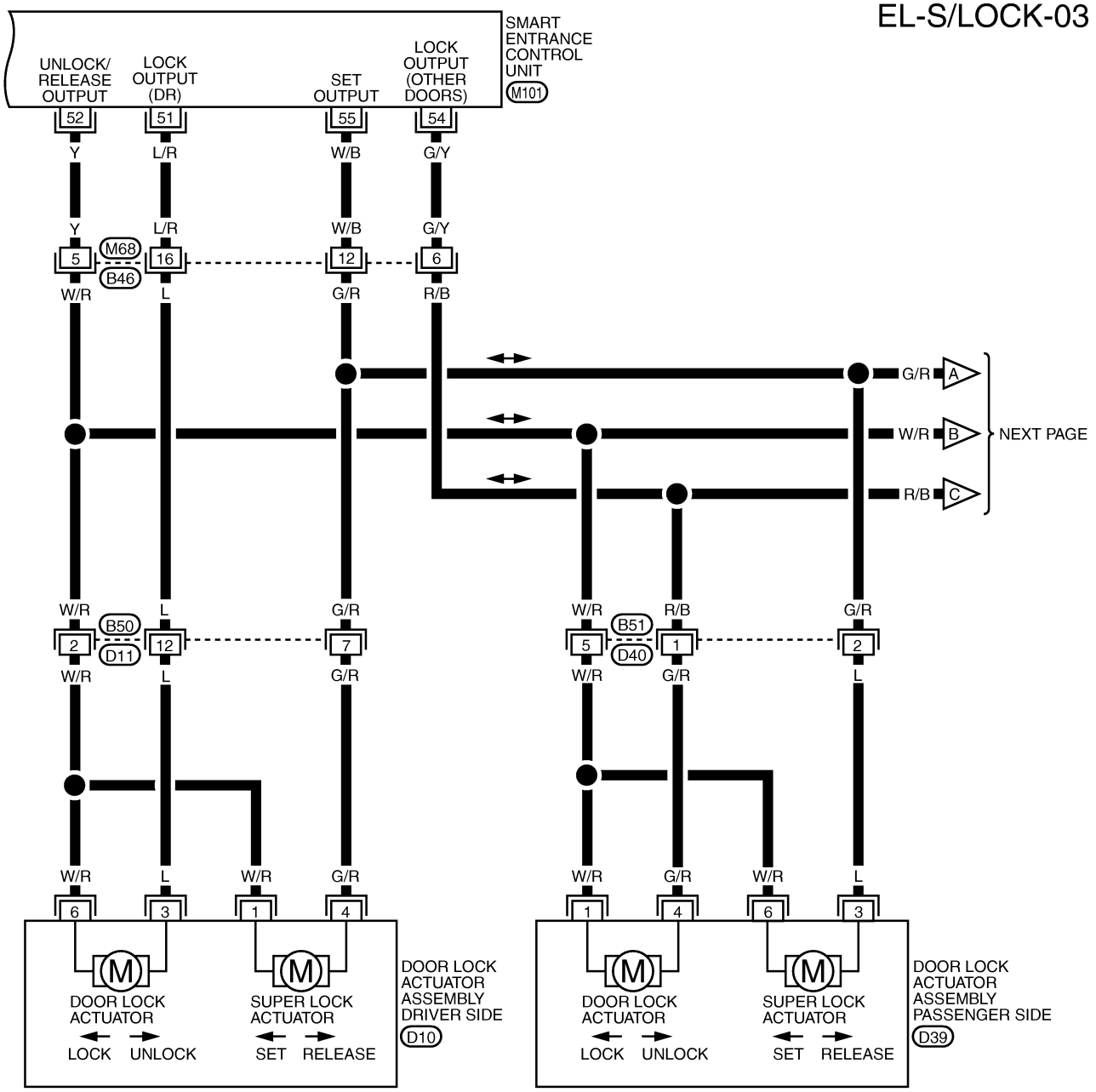


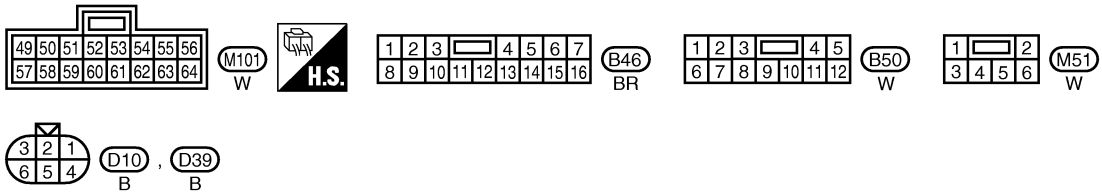
YEL012E

FIG. 3

NLEL0476S14

EL-S/LOCK-03





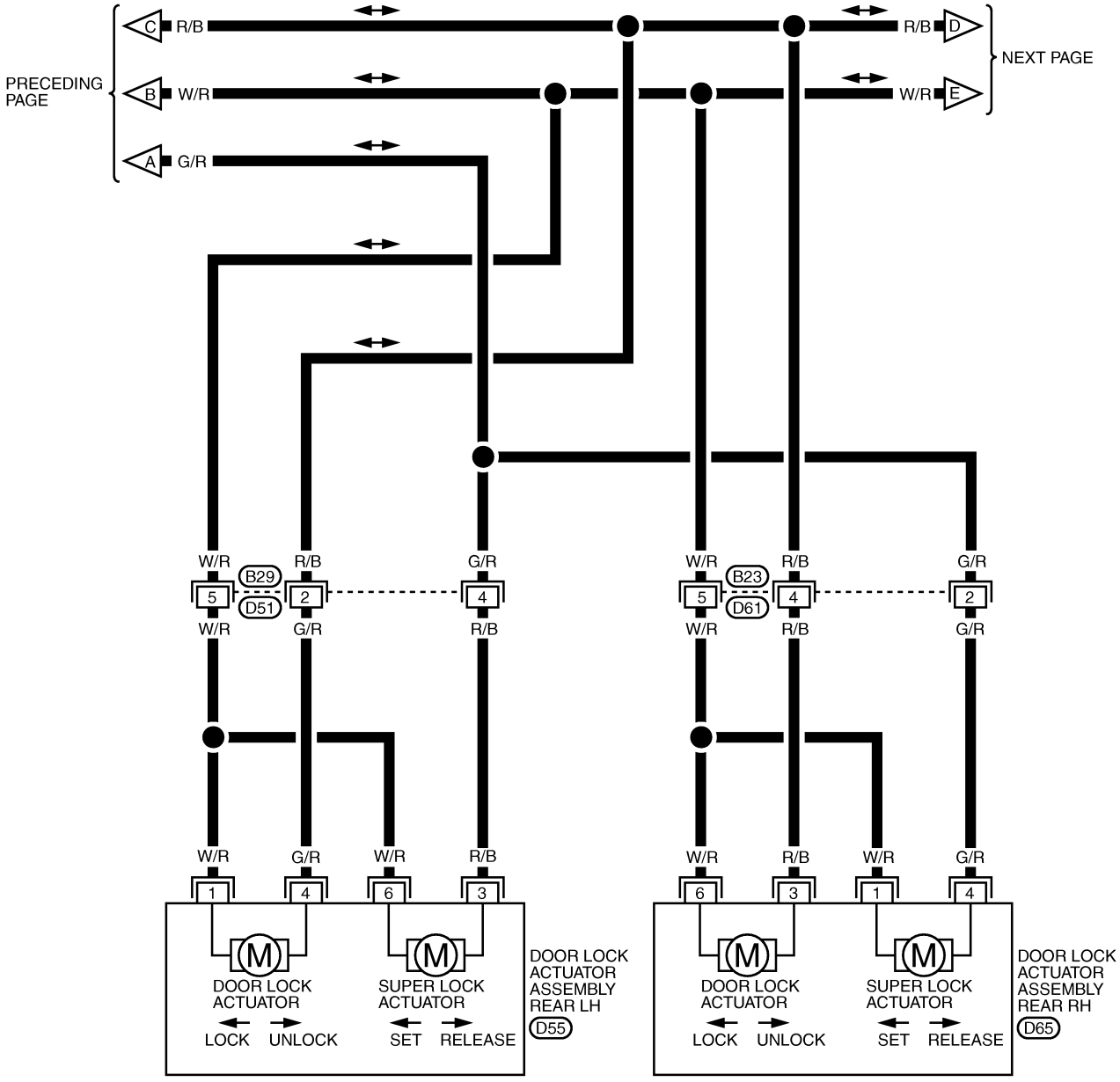
YEL013E

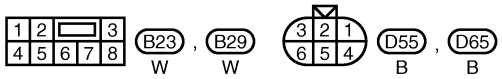
Wiring Diagram — S/LOCK — (Cont'd)

FIG. 4

NLEL0476S15

EL-S/LOCK-04



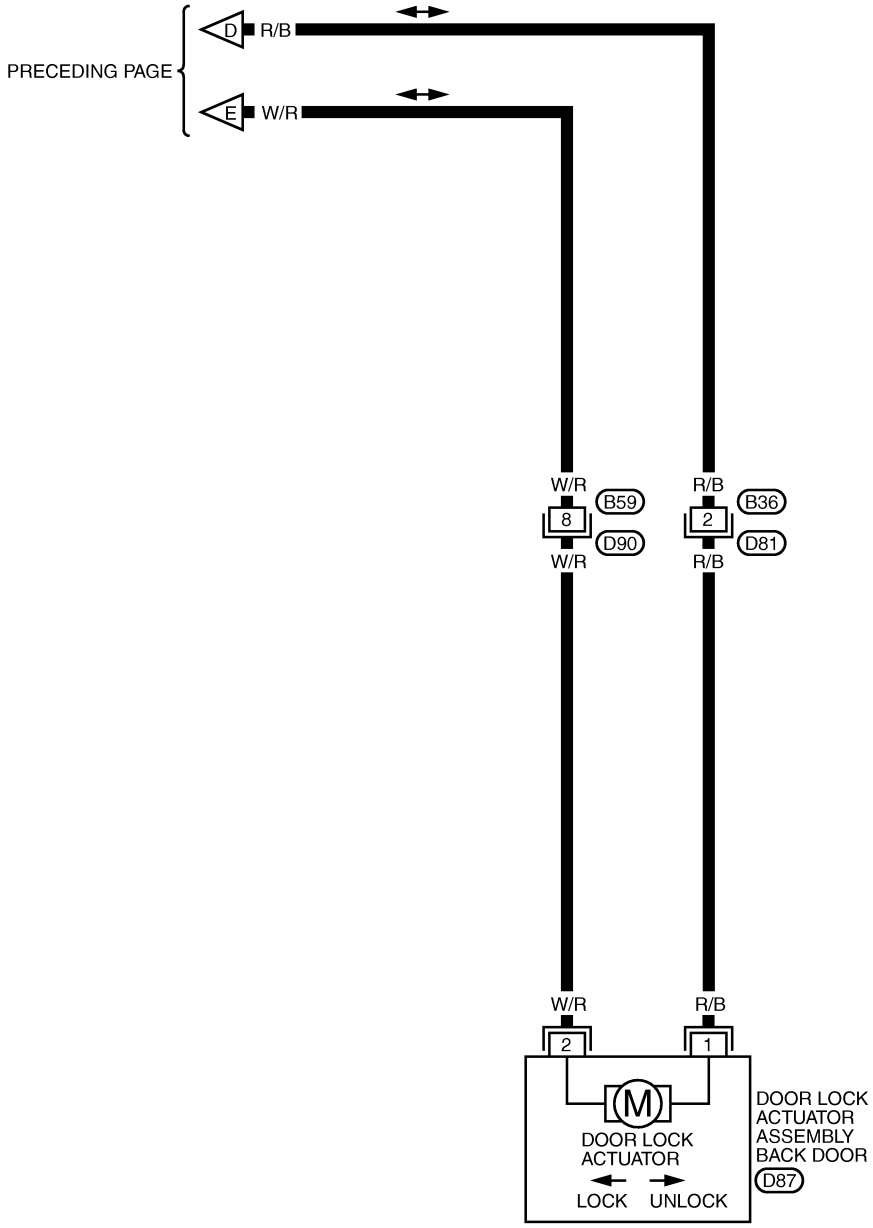


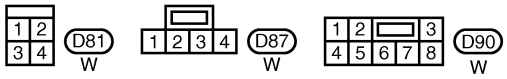
YEL014E

FIG. 5

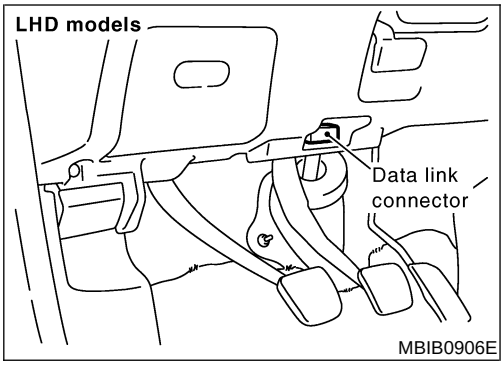
NLEL0476S16

EL-S/LOCK-05





YEL015E



MBIB0906E

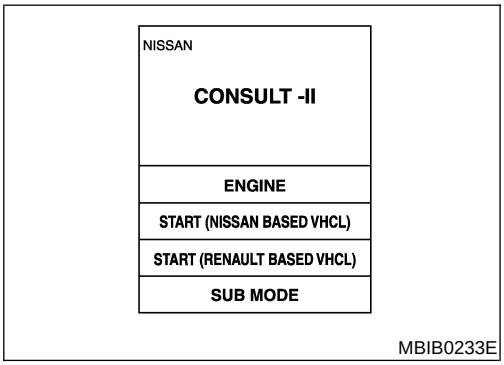
Trouble Diagnosis

NLEL0573

CONSULT-II INSPECTION PROCEDURE

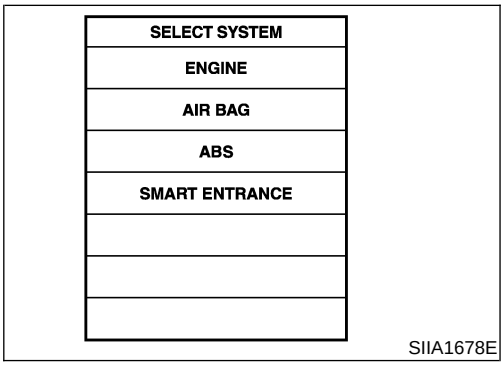
NLEL0573S01

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



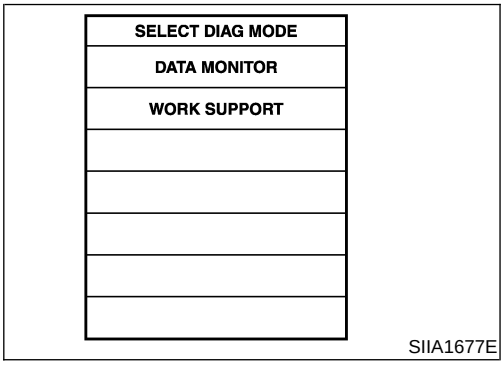
MBIB0233E

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



SIIA1678E

5. Touch “SMART ENTRANCE”.
6. Touch “DOOR LOCK”.



SIIA1677E

7. Select diagnosis mode.
   “DATA MONITOR” and “WORK SUPPROT” are available.

CONSULT-II APPLICATION ITEMS
Door Locking

=NLEL0573S02

NLEL0573S0201

DATA MONITOR

Monitored Item	Description
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
KEY IN DETECT	Indicates [ON/OFF] condition of key switch.
DOOR SW DR RR	Indicates [ON/OFF] condition of rear door switch (driver side).
DOOR SW AS RR	Indicates [ON/OFF] condition of rear door switch (passenger side).
AS DOOR SW	Indicates [ON/OFF] condition of front door switch (passenger side).
DR DOOR SW	Indicates [ON\OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of lock signal from door lock/ unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of unlock signal from door lock/ unlock switch.
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.
RKE UNLOCK	Indicates [ON/OFF] condition of unlock signal from remote controller.
RKE SEL UNLOCK	Indicates [ON/OFF] condition of select unlock signal from remote controller.

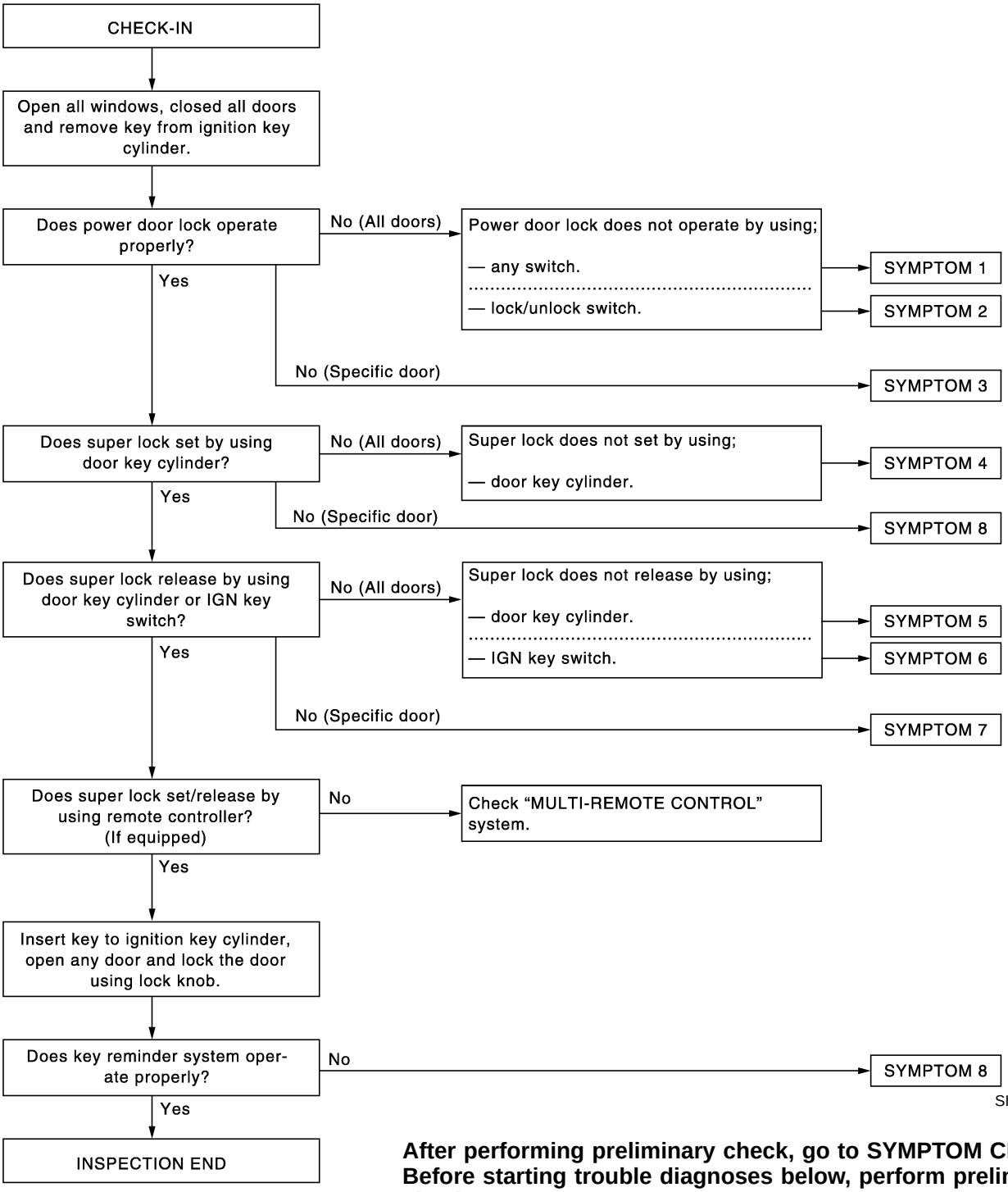
WORK SUPPORT

Monitored Item	Description
AUTO RE-LOCK	Auto re-lock function can be changed in this mode. The re-lock mode will be changed when "CHANGE MODE" on CONSULT-II screen is touched.
SELECTIVE UNLOCK	Selective unlock function can be changed in this mode. The unlock mode will be changed when "CHANGE SET" on CONSULT-II screen is touched.

PRELIMINARY CHECK

=NLEL0573S03

First perform the "SELF-DIAG RESULTS" in "SMART ENTRANCE" with CONSULT-II, when perform the each trouble diagnosis. Refer to EL-298, "CONSULT-II INSPECTION PROCEDURE".



SIIA1601E

After performing preliminary check, go to SYMPTOM CHART. Before starting trouble diagnoses below, perform preliminary check.

Symptom numbers in the symptom chart correspond with those of Preliminary check.

SYMPTOM CHART

NLEL0573S04

Symptom	Malfunctioning system	Reference page
SYMPTOM 1 Power door lock does not operate using any switch	Power supply and ground circuit check	EL-302
	Door lock actuator check	EL-306
	If above systems are OK, replace smart entrance control unit.	—
SYMPTOM 2 Power door lock does not operate with lock/unlock switch.	Door lock/unlock switch check	EL-304
	If above system is OK, replace smart entrance control unit.	—
SYMPTOM 3 Specific door lock actuator does not operate.	Door lock actuator check	EL-306
	If above system is OK, replace smart entrance control unit.	—
SYMPTOM 4 Super lock cannot be set by door key cylinder.	Super lock actuator check	EL-320
	Key switch check	EL-318
	Ignition switch ON circuit check	EL-303
	If above systems are OK, replace smart entrance control unit.	—
SYMPTOM 5 *Super lock cannot be released by door key cylinder.	Super lock actuator check	EL-320
	If above systems are OK, replace smart entrance control unit.	—
SYMPTOM 6 *Super lock cannot be released by ignition key switch.	Super lock actuator check	EL-320
	Ignition switch "ON" circuit check	EL-303
	If above systems are OK, replace smart entrance control unit.	—
SYMPTOM 7 Specific super lock actuator does not operate.	Super lock actuator check	EL-320
	If above system is OK, replace smart entrance control unit.	—
SYMPTOM 8 *Key reminder system does not operate.	Door switch check	EL-310
	Trunk room lamp switch or back door switch check	—
	Key switch check	EL-318
	If above system is OK, replace smart entrance control unit.	—

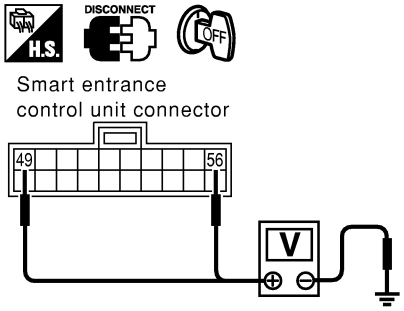
*: Make sure the power door lock system operates properly.

POWER SUPPLY AND GROUND CIRCUIT CHECK

NLEL0573S05

1 CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit connector.
3. Check voltage between smart entrance control unit harness connector M101 terminal 49 (W/L), 56 (R/B) and ground.



SIIA1564E

Terminal		Voltage
+	—	
49 (W/L)	Ground	Battery voltage
56 (R/B)		

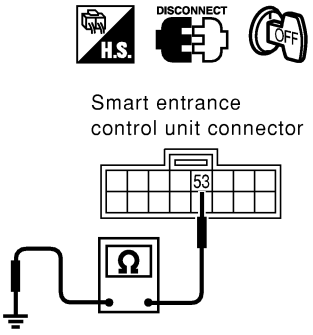
MTBL1480

OK or NG

OK	▶	GO TO 2.
NG	▶	Check smart entrance control unit power supply circuit for open or short.

2 CHECK GROUND CIRCUIT

Check continuity between smart entrance control unit harness connector M195 terminal 53 (B) and ground.



SIIA1565E

Terminal		Continuity
+	—	
53 (B)	Ground	Yes

MTBL1481

OK or NG

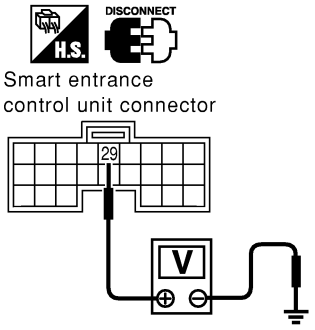
OK	▶	Power supply and ground circuit is OK.
NG	▶	Check smart entrance control unit ground circuit for open or short.

IGNITION SWITCH "ON" CIRCUIT CHECK

NLEL0573S06

1 CHECK IGNITION ON SIGNAL

1. Disconnect smart entrance control unit connector.
2. Check voltage between smart entrance control unit harness connector M100 terminal 29 (Y/G) and ground.



SIIA1602E

Terminal		Ignition switch position: ON
(+)	(—)	
29 (Y/G)	Ground	Battery voltage

MTBL1553

OK or NG

OK	▶	Ignition ON signal is OK.
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

DOOR LOCK/UNLOCK SWITCH CHECK

NLEL0573S07

1 CHECK DOOR LOCK/UNLOCK SWITCH SIGNAL

With CONSULT-II

- Check door lock/unlock switch input signal ("CDL LOCK SW" "CDL UNLOCK SW") in "DATA MONITOR" mode with CONSULT-II.

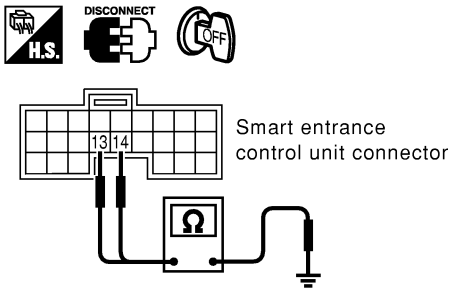
DATA MONITOR	
MONITOR	
CDL LOCK SW	ON
CDL UNLOCK SW	ON

SIIA1566E

When door lock/unlock switch is turned to LOCK:
CDL LOCK SW ⇒ ON
When door lock/unlock switch is turned to UNLOCK:
CDL UNLOCK SW ⇒ ON

Without CONSULT-II

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit harness connector M99 terminal 13 (GY), 14 (L) and ground.



SIIA1567E

Terminals	Door lock/unlock switch operation	Continuity
13 — Ground	Lock position	Yes
	Neutral or Unlock position	No
14 — Ground	Unlock position	Yes
	Neutral or Lock position	No

MTBL1482

OK or NG

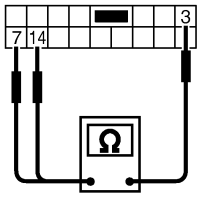
OK	▶	Door lock/unlock switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect power window main switch connector.
2. Check continuity between power window main switch terminals.



Power window main switch connector



Condition	Terminals		
	3	14	7
Lock	○	○	
N	No continuity		
Unlock	○		○

YEL349E

OK or NG

OK	▶	**Check the following.** ● Ground circuit for power window main switch ● Harness for open or short between power window main switch and smart entrance control unit connector
NG	▶	Replace power window main switch (door lock/unlock switch).

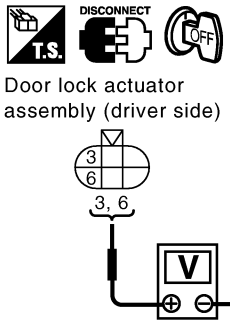
DOOR LOCK ACTUATOR CHECK
Driver Side

=NLEL0573S08

NLEL0573S0801

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator (driver side) harness connector.
2. Check voltage between door lock actuator harness connector D10 terminal 3 (L), 6 (W/R) and ground.



YEL354E

Door lock/unlock switch	Terminals		Voltage [V]
	(+)	(—)	
Lock position	3 (L)	Ground	Approx. 12
Unlock position	6 (W/R)	Ground	

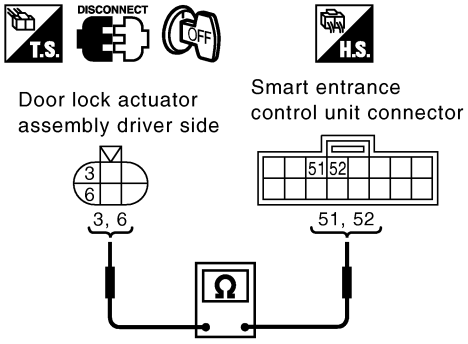
MTBL1695

OK or NG

OK	▶	Replace door lock actuator assembly driver side.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator (driver side) harness connector D10 terminal 3 (L), 6 (W/R) and smart entrance control unit harness connector M101 terminal 51 (L/R), 52 (Y).



YEL355E

Terminal		Continuity
Door lock actuator assembly driver side	Smart entrrance control unit	
3 (L)	51 (L/R)	Yes
6 (W/R)	52 (Y)	Yes

MTBL1696

OK or NG

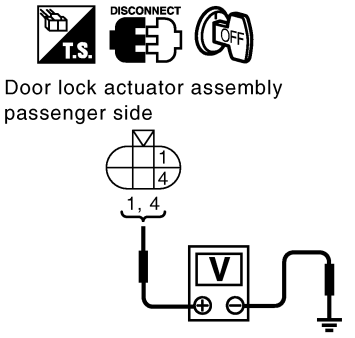
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator assembly driver side.

Passenger Side

=NLEL0573S0802

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator (passenger side) harness connector.
2. Check voltage between door lock actuator harness connector D39 terminal 1 (W/R), 4 (G/R) and ground.



YEL356E

Door lock/unlock switch	Terminals		Voltage [V]
	(+)	(—)	
Lock position	4 (G/R)	Ground	Approx. 12
Unlock position	1 (W/R)	Ground	

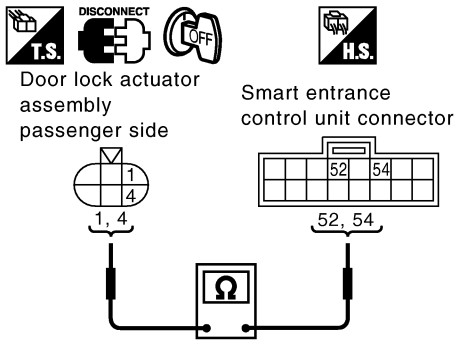
MTBL1697

OK or NG

OK	▶	Replace door lock actuator assembly passenger side.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check continuity between door lock actuator assembly passenger side harness connector D39 terminal 1 (W/R), 4 (G/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL357E

Terminal		Continuity
Door lock actuator assembly passenger side	Smart entrrance control unit	
1 (W/R)	52 (Y)	Yes
4 (G/R)	54 (G/Y)	Yes

MTBL1698

OK or NG

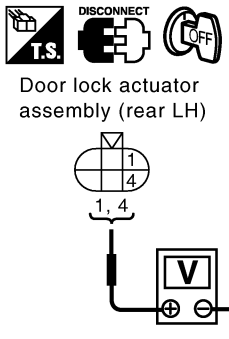
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator assembly passenger side.

Rear LH Side

NLEL0573S0803

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly rear LH harness connector.
2. Check voltage between door lock actuator assembly rear LH harness connector D55 terminal 1 (W/R), 4 (G/R) and ground.



YEL358E

Door lock/unlock switch	Terminals		Voltage [V]
	(+)	(—)	
Lock position	4 (G/R)	Ground	Approx. 12
Unlock position	1 (W/R)	Ground	

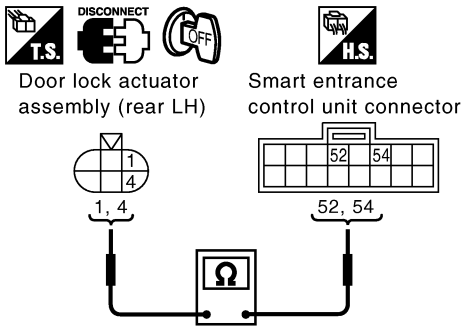
MTBL1699

OK or NG

OK	▶	Replace door lock actuator assembly rear LH.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator assembly rear LH harness connector D55 terminal 1 (W/R), 4 (G/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL359E

Terminal		Continuity
Door lock actuator assembly rear LH	Smart entrrance control unit	
4 (G/R)	54 (G/Y)	Yes
1 (W/R)	52 (Y)	Yes

MTBL1700

OK or NG

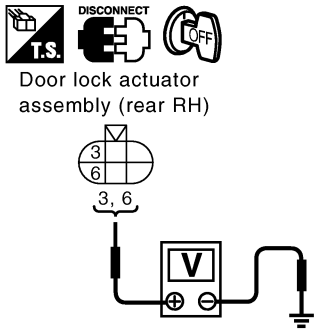
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator assembly rear LH.

Rear RH Side

NLEL0573S0804

1 CHECK DOOR LOCK SIGNAL

1. Disconnect door lock actuator assembly rear RH harness connector.
2. Check voltage between door lock actuator assembly rear RH harness connector D65 terminal 3 (R/B), 6 (W/R) and ground.



YEL360E

Door lock/unlock switch	Terminals		Voltage [V]
	(+)	(—)	
Lock position	3 (R/B)	Ground	Approx. 12
Unlock position	6 (W/R)	Ground	

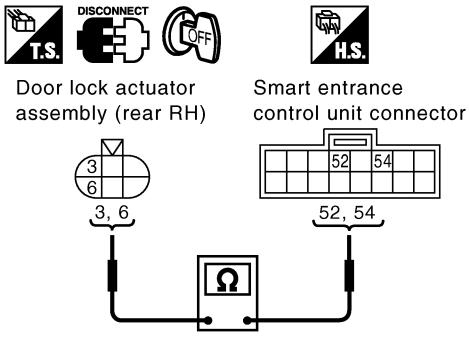
MTBL1701

OK or NG

OK	▶	Replace door lock actuator assembly rear RH.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK ACTUATOR CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between door lock actuator rear RH harness connector D65 terminal 3 (R/B), 6 (W/R) and smart entrance control unit harness connector M101 terminal 52 (Y), 54 (G/Y).



YEL361E

Terminal		Continuity
Door lock actuator assembly rear RH	Smart entrrance control unit	
6(W/R)	52 (W/R)	Yes
3(R/B)	54 (R/B)	Yes

MTBL1702

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between smart entrance control unit and door lock actuator rear RH.

DOOR SWITCH CHECK
Driver Side

NLEL0573S09

NLEL0573S0901

1 **CHECK DOOR SWITCH INPUT SIGNAL**

With CONSULT-II

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

DATA MONITOR	
MONITOR	
DR DOOR SW	ON

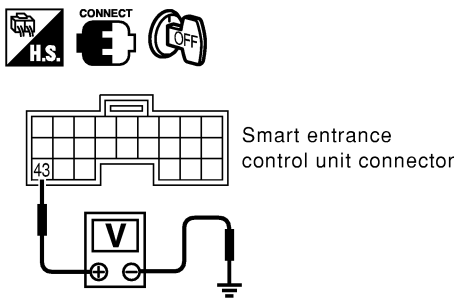
SIIA1590E

	Monitor item	Condition
DR DOOR SW	Door switch driver side	Open: ON
		Close: OFF

MTBL1703

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 43 (R/W) and ground.



SIIA1588E

Terminal		Driver's door	Voltage [V]
(+)	(—)		
43 (R/W)	Ground	Closed	Approx. 5
		Open	0

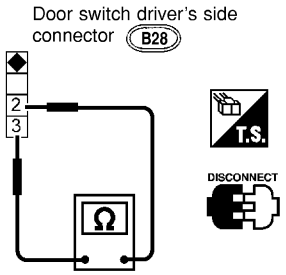
MTBL1704

OK or NG

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

2	CHECK DOOR SWITCH

Check continuity between door switch driver side connector B28 terminals 2 and 3.



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

NEL648

OK or NG

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

Passenger Side

NLEL0573S0902

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

- Check door switch "AS DOOR SW" in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
AS DOOR SW	ON

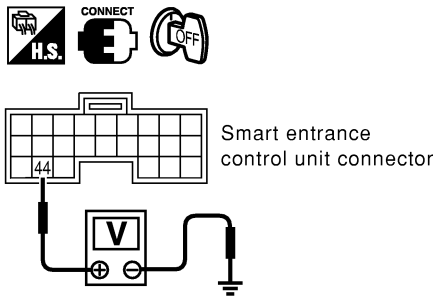
SIIA1591E

	Monitor item	Condition
AS DOOR SW	Door switch passenger side	Open: ON
		Close: OFF

MTBL1705

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal		Passenger's door	Voltage [V]
(+)	(—)		
44 (L/OR)	Ground	Closed	Approx. 5
		Open	0

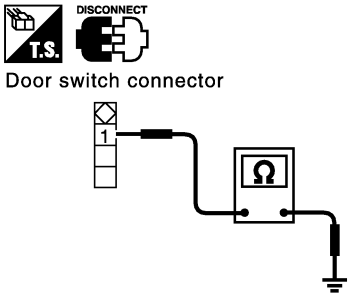
MTBL1706

OK or NG

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

2 CHECK DOOR SWITCH

1. Disconnect door switch passenger side connector.
2. Check continuity between door switch passenger side harness connector B22 terminal 1 (R/W) and ground.



SIIA1589E

Terminal		Door switch passenger side	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1707

OK or NG

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

Rear LH Side

NLEL0573S0903

1 **CHECK DOOR SWITCH INPUT SIGNAL**

With CONSULT-II

- Check door switch "RR LH DOOR SW" in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
RR LH DOOR SW	ON

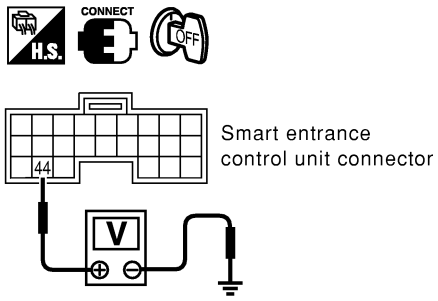
SIIA1593E

	Monitor item	Condition
RR LH DOOR SW	Rear door switch LH	Open: ON
		Close: OFF

MTBL1502

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal (+)	Terminal (—)	Rear door LH	Voltage [V]
44 (L/OR)	Ground	Closed	Approx. 5
		Open	0

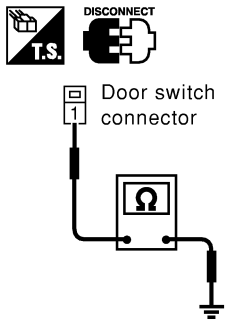
MTBL1708

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH

Check continuity between door switch rear LH harness connector B34 terminal 1 (R/W) and ground.



SIIA1595E

Terminal		Door switch rear LH	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1709

OK or NG

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

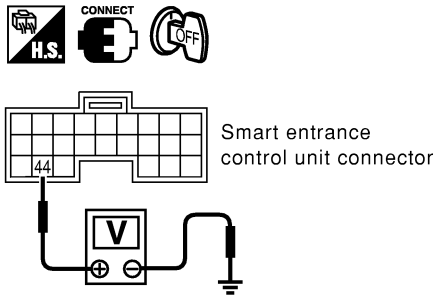
Rear RH Side

NLEL0573S0904

1 CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT-II

- Check door switch "RR RH DOOR SW" in "DATA MONITOR" mode with CONSULT-II.



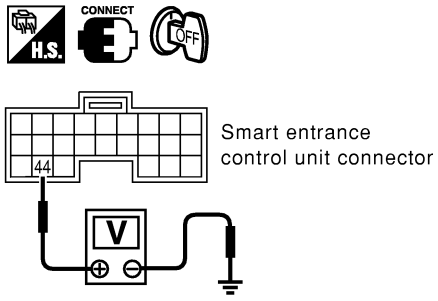
SIIA1592E

	Monitor item	Condition
RR RH DOOR SW	Door switch rear RH	Open: ON
		Close: OFF

MTBL1710

Without CONSULT-II

1. Turn ignition switch OFF.
2. Check voltage between smart entrance control unit harness connector M100 terminal 44 (L/OR) and ground.



SIIA1592E

Terminal		Rear door RH	Voltage [V]
(+)	(—)		
44 (L/OR)	Ground	Closed	Approx. 5
		Open	0

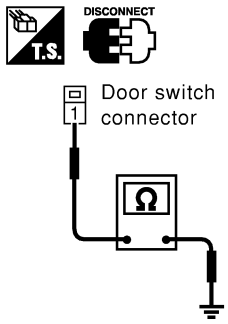
MTBL1711

OK or NG

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

2 CHECK DOOR SWITCH

Check continuity between rear door switch RH harness connector B41 terminal 1 (B/W) and ground.



SIIA1595E

Terminal		Door switch rear RH	Continuity
(+)	(—)		
1 (R/W)	Ground	Pushed	No
		Released	Yes

MTBL1712

OK or NG

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

KEY SWITCH CHECK

NLEL0573S10

1 CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

- Check key switch input signal "KEY IN DETECT" in "DATA MONITOR" mode with CONSULT-II.

DATA MONITOR	
MONITOR	
KEY IN DETECT	ON

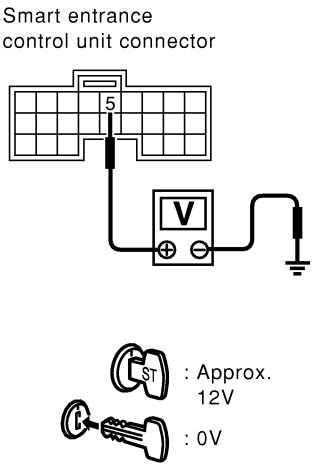
SIIA1598E

When key is inserted in ignition key cylinder:
KEY IN DETECT ⇒ ON
When key is removed from ignition key cylinder:
KEY IN DETECT ⇒ OFF

Without CONSULT-II

- Check voltage between smart entrance control unit harness connector M99 terminal 5 (B/R) and ground.





SIIA1599E

Terminals		Key switch	Voltage [V]
(+)	(—)		
5 (B/R)	Ground	Key is inserted	Approx. 12
		Key is removed	0

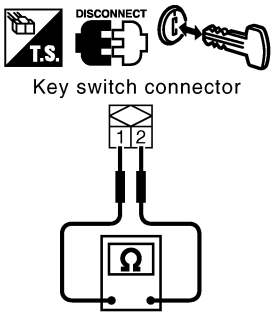
MTBL1713

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

1. Disconnect key switch connector.
2. Check continuity between key switch harness connector E118 terminals 1 and 2.



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

YEL574E

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.

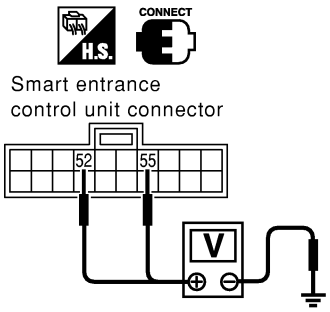
SUPER LOCK ACTUATOR CHECK
Front Door

=NLEL0573S11

NLEL0573S1101

1	CHECK OUTPUT SIGNAL FOR SUPER LOCK ACTUATOR

Check voltage between smart entrance control unit harness connector M101 terminal 52 (Y), 55 (W/B) and ground.



SIIA1609E

Door key cylinder (Driver side)	Terminals (+)	Terminals (—)	Voltage [V]
Lock (Set)	55 (W/B)	Ground	Approx. 12
Unlock (Released)	52 (Y)		

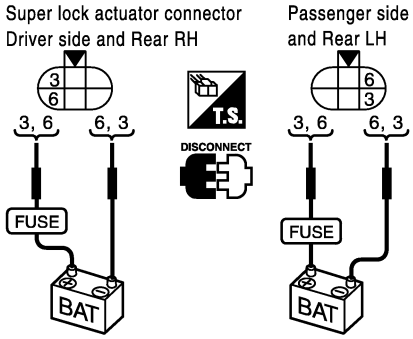
MTBL1714

OK or NG

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

2	CHECK SUPER LOCK ACTUATOR

1. Disconnect door lock actuator assembly connector.
   Door lock actuator connector (Driver side): D10
   Door lock actuator connector (Passenger side): D39
2. Apply 12V direct current to door lock actuator assembly and check operation.



YEL841D

Terminals (+)	Terminals (—)	Super lock actuator operation
6	3	Release → Set
3	6	Set → Release

MTBL1715

OK or NG

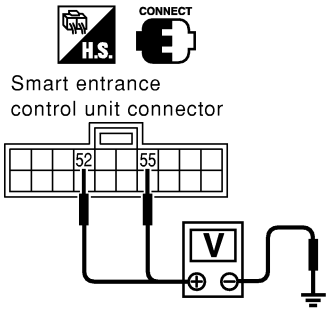
OK	▶	Check harness for open or short between smart entrance control unit and super lock actuator.
NG	▶	Replace super lock actuator (door lock actuator).

Rear Door

=NLEL0573S1102

1	CHECK OUTPUT SIGNAL FOR SUPER LOCK ACTUATOR

Check voltage between smart entrance control unit harness connector M101 terminal 55 (W/B), 52 (Y) and ground.



SIIA1609E

Door key cylinder (Driver side)	Terminals (+)	Terminals (—)	Voltage [V]
Lock (Set)	55 (W/B)	Ground	Approx. 12
Unlock (Released)	52 (Y)		

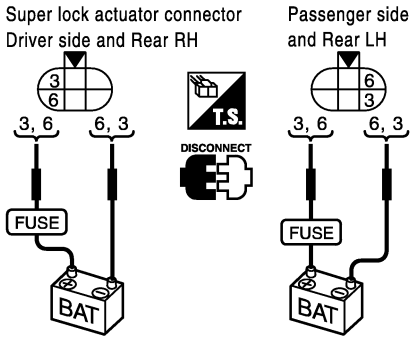
MTBL1716

OK or NG

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

2	CHECK SUPER LOCK ACTUATOR

1. Disconnect door lock actuator assembly connector.
   Door lock actuator connector (Rear LH side): D55
   Door lock actuator connector (Rear RH side): D65
2. Apply 12V direct current to door lock actuator assembly and check operation.



YEL841D

Terminal (+)	Terminal (—)	Super lock actuator operation
6	3	Release → Set
3	6	Set → Release

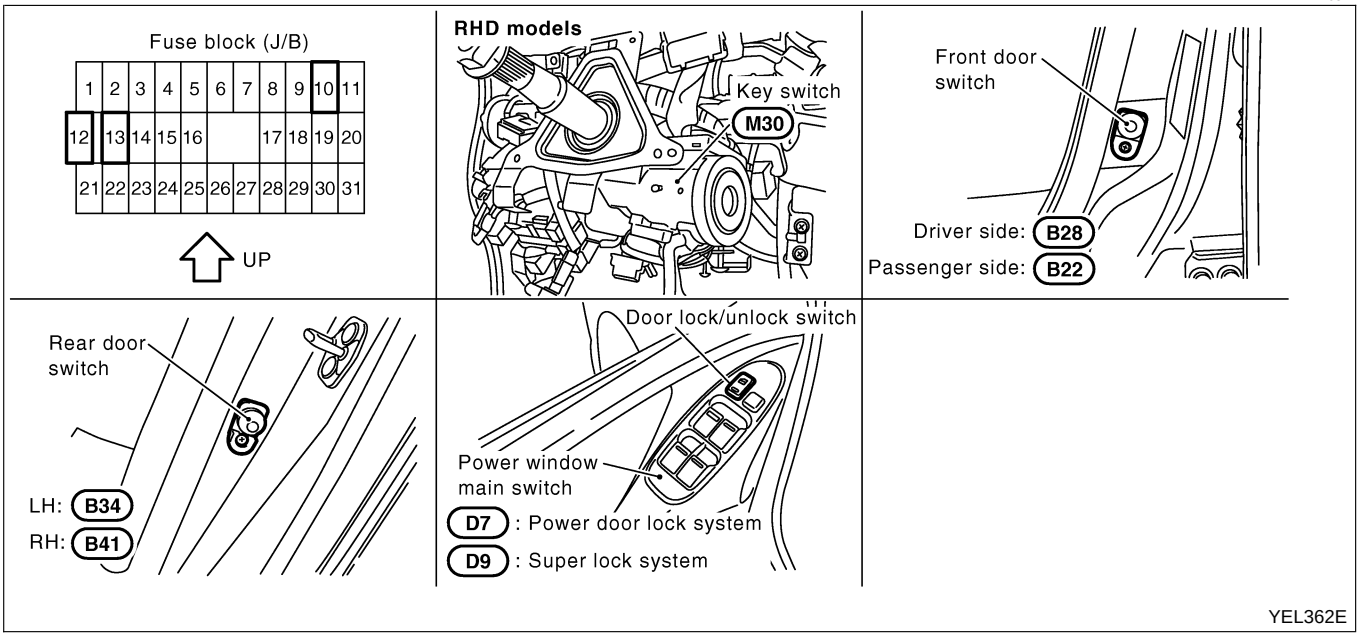
MTBL1555

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and super lock actuator.
NG	▶	Replace super lock actuator (door lock actuator).

Component Parts and Harness Connector Location

NLEL0574



System Description

NLEL0480

NLEL0480S06

INPUTS

Power is supplied at all times

- to smart entrance control unit terminal 51 and
- through 15A fuse [No. 5, located in the fuse block (J/B)], and
- to key switch terminal 1
- 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 2
- to smart entrance control unit terminal 5.

When the door switch driver side is ON (door is OPEN), ground is supplied

- to smart entrance control unit terminal 43
- through door switch driver side terminal 2
- to door switch driver side terminal 1
- through body grounds B24, B30 and D89.

When the door switch passenger side is ON (door is OPEN), ground is supplied

- to smart entrance control unit terminal 44
- through door switch passenger side terminal 1

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

- to smart entrance control unit terminal 44
- through front door switches terminal 1
- to front door switches case grounds, and
- through rear door switches terminal 1
- to rear door switches case grounds

When lock/unlock switch is LOCK, ground is supplied

- to power window main switch terminal 3
- through body grounds B24, B30 and D89.

Door lock or unlock operation signal is supplied

- through power window main switch terminal 14
- to smart entrance control unit terminal 13.

Door lock or unlock operation signal is supplied
- through power window main switch terminal 7
- to smart entrance control unit terminal 14.

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

FUNCTION

NLEL0480S01

Multi-remote control system has the following function.
- Door lock (and set super lock)
- Door unlock (and release super lock)
- Hazard reminder

LOCK OPERATION

NLEL0480S02

To lock door by multi-remote controller, the key switch must be at OFF.
When the LOCK signal is input to smart entrance control unit, the antenna of the system is combined with time control unit.
Then smart entrance control unit controls to lock doors and set super lock (models with super lock).

UNLOCK OPERATION

NLEL0480S03

Normal Mode

NLEL0480S0301

When UNLOCK signal is input to smart entrance control unit, the antenna of the system is combined with smart entrance control unit.
Smart entrance control unit controls to unlock doors and release super lock (models with super lock).

Anti Hi-jack Mode

NLEL0480S0302

When the UNLOCK signal is input to smart entrance control unit (the antenna of the system is combined with time control unit)
Smart entrance control unit controls to unlock driver's door and release super lock (models with super lock).
Then, if an unlock signal is sent from the remote controller again within 5 seconds, all other doors will be unlocked.
Unlock operation mode can be changed to "SELECTIVE UNLOCK" by CONSULT-II (EL-271).

HAZARD REMINDER

NLEL0480S04

When the doors are locked or unlocked by multi-remote controller, supply power to turn lamps hazard reminder flashes as follows
- Lock operation: Flash once
- Unlock operation: Flash twice

AUTO DOOR LOCK OPERATION

NLEL0480S07

Auto lock function signal is sent for operation when any of the following signals are not sent within 5 minutes after the unlock signal is sent from the multi-remote controller:
- when door switch is turned ON for open
- when the ignition switch is turned ON
- when the lock signal is sent from the multi-remote controller
- when ignition switch is inserted in ignition key cylinder

Auto door lock mode can be changed to "AUTO RE-LOCK" by CONSULT-II (EL-271).

MULTI-REMOTE CONTROLLER ID CODE ENTRY

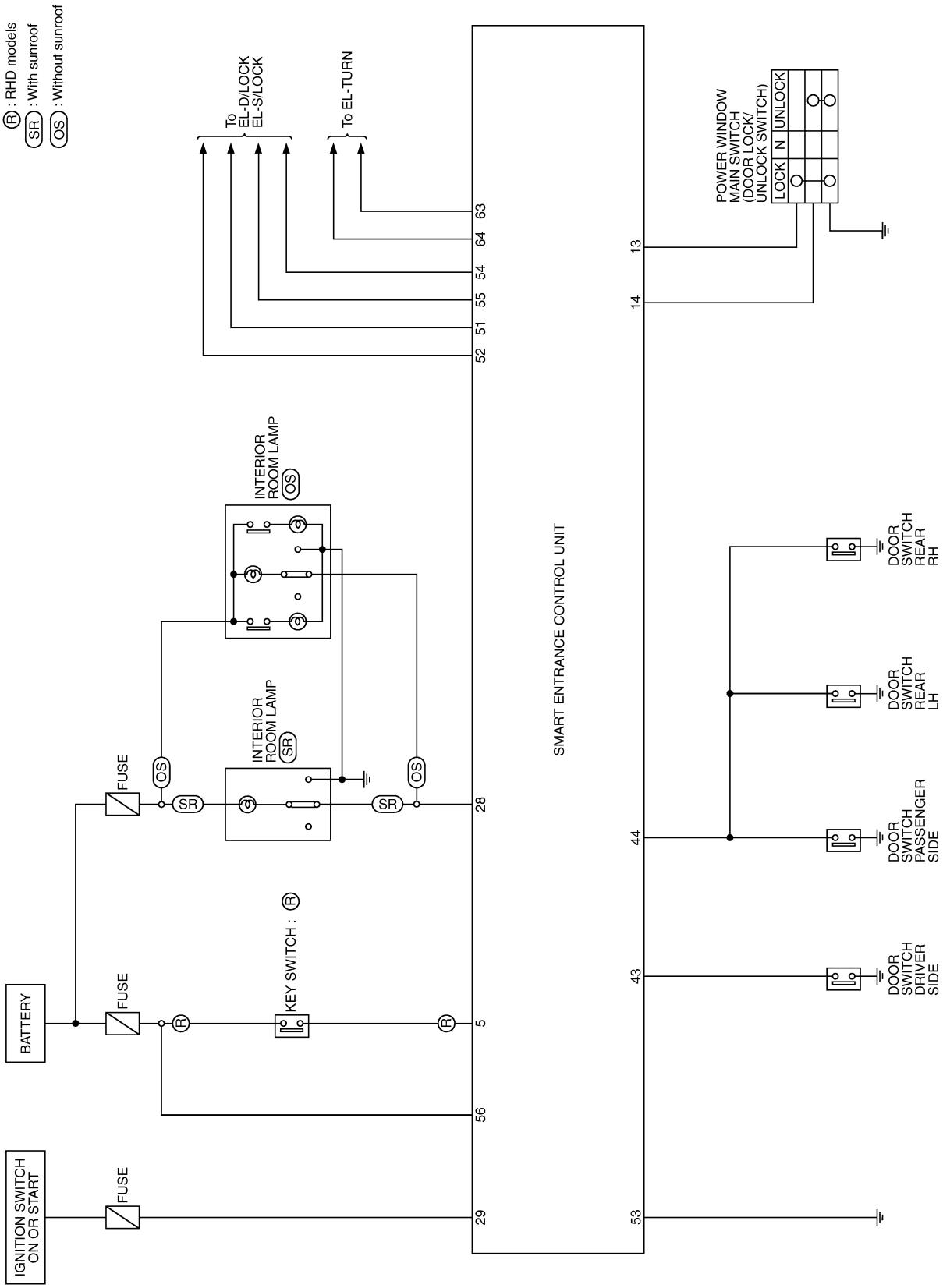
NLEL0480S05

A maximum of four remote controllers can be entered.
To enter ID code entry, the following signals must be input to the time control unit.
- Ignition switch (ON)
- Signal from remote controller

For detailed procedure, refer to "ID Code Entry Procedure" in EL-336.

Schematic

NLEL0692



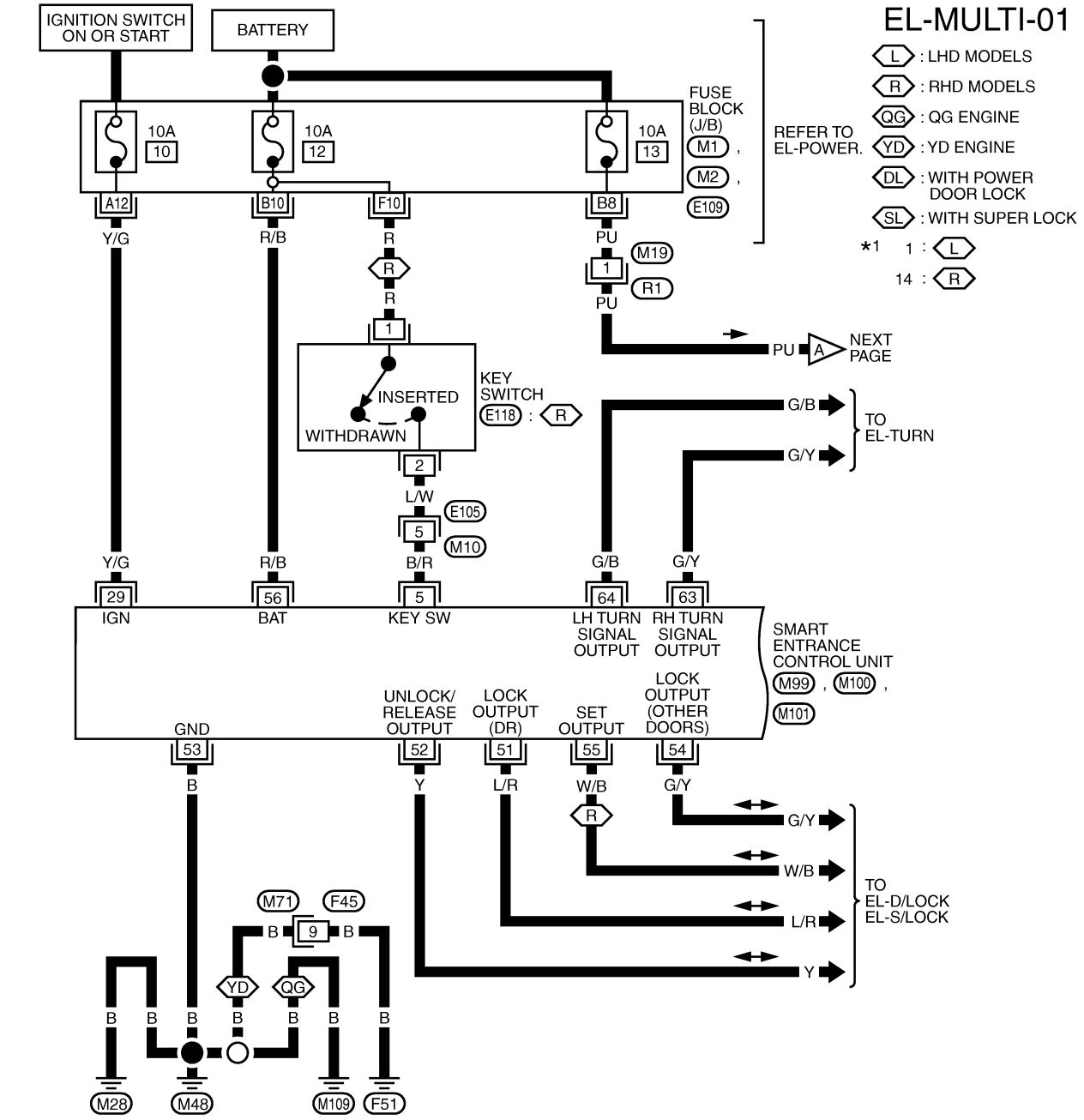
YEL473E

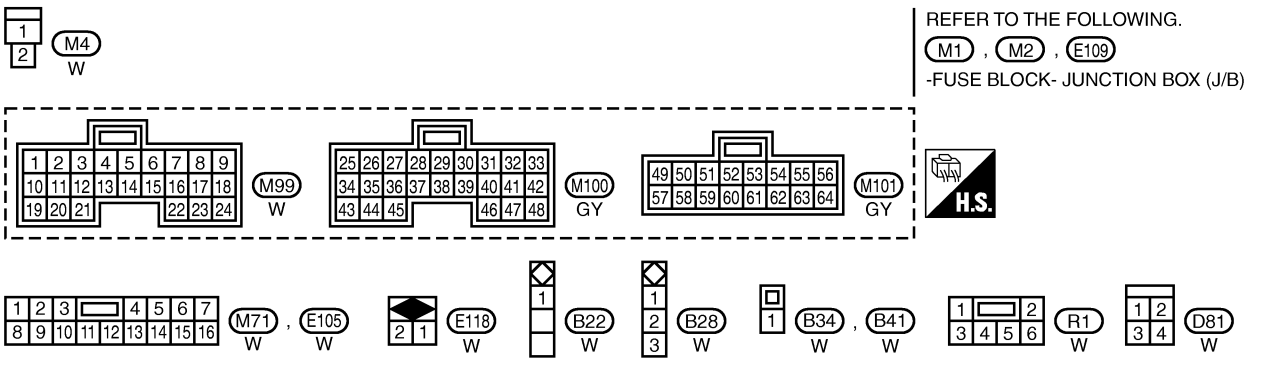
Wiring Diagram — MULTI —

NLEL0481

FIG. 1

NLEL0481S06



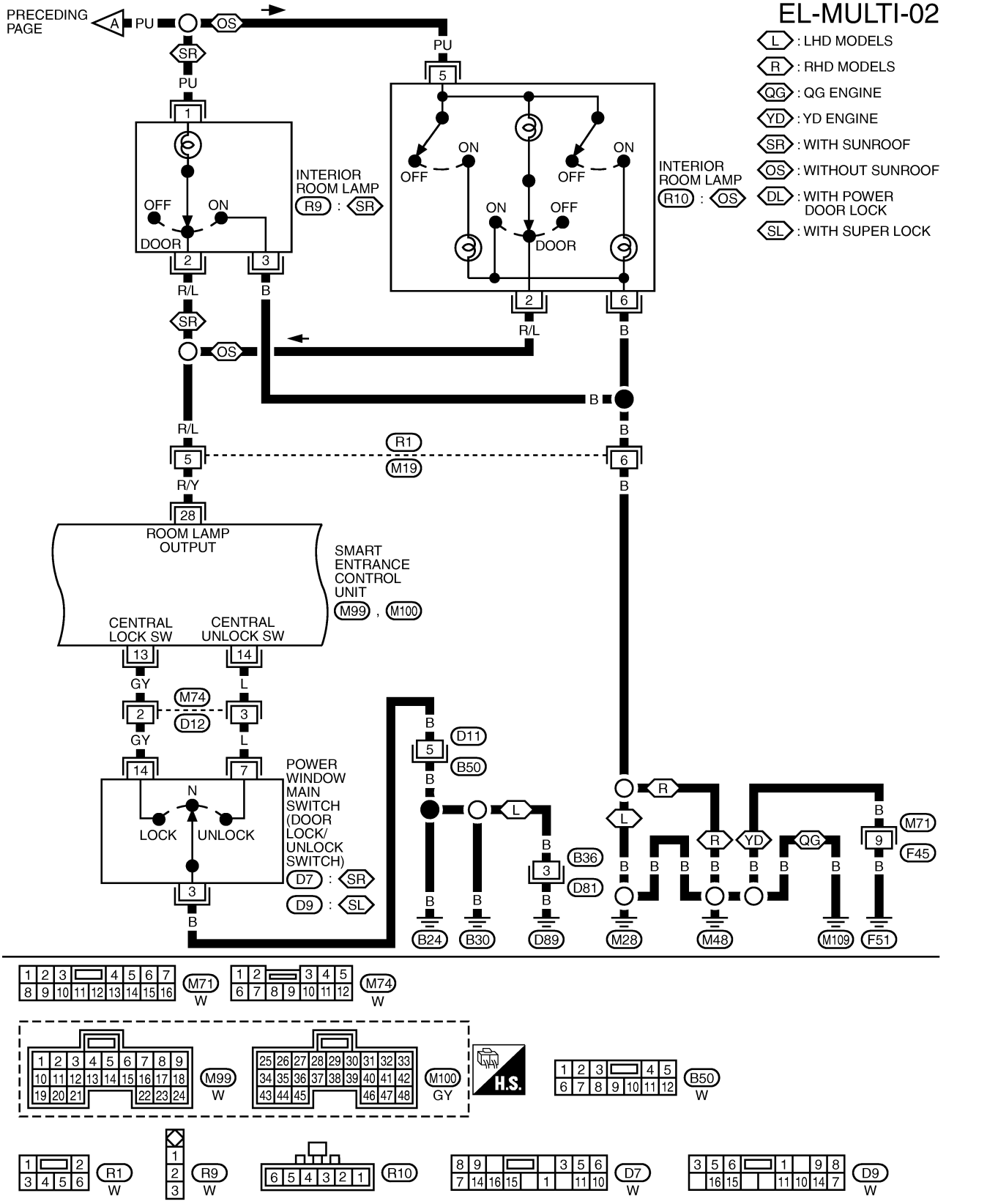


YEL016E

Wiring Diagram — MULTI — (Cont'd)

FIG. 2

NLEL0481S07

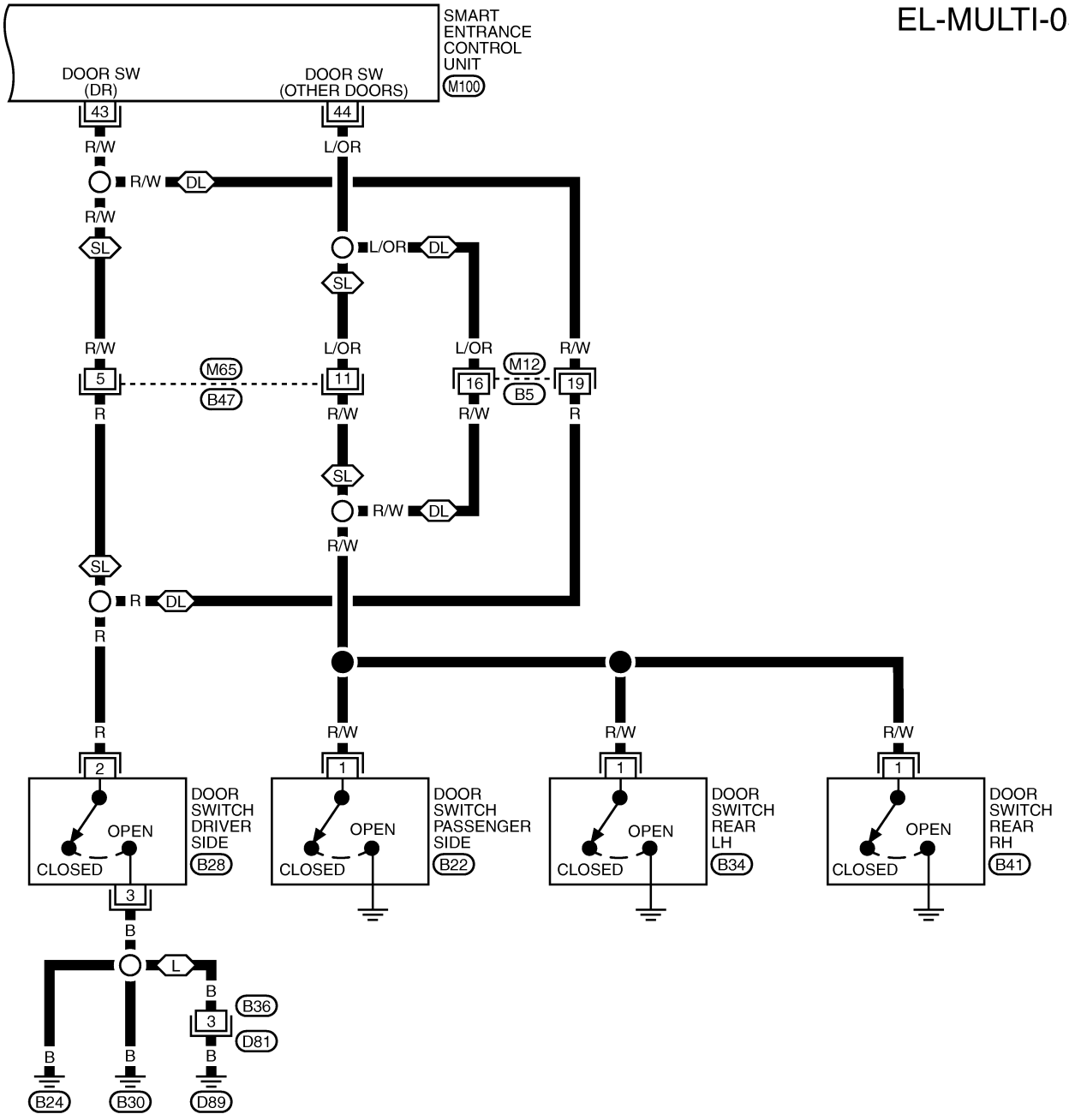


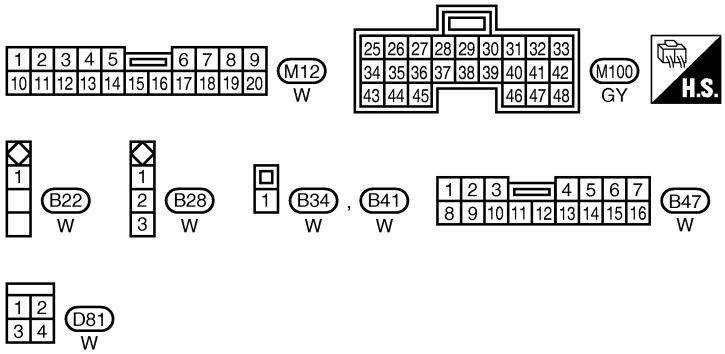
YEL017E

FIG. 3

NLEL0481S08

EL-MULTI-03

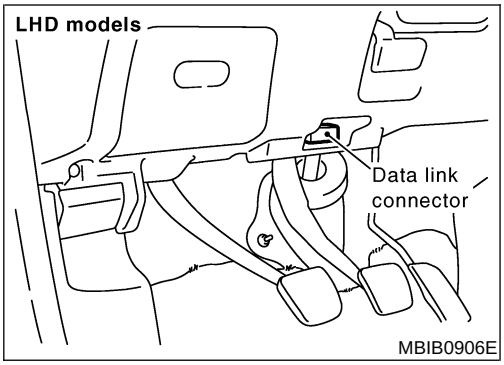




YEL474E

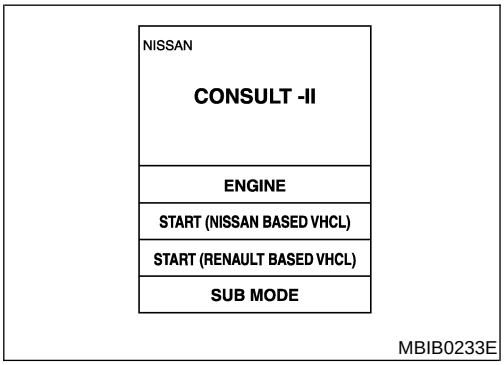
CONSULT-II Inspection Procedure

NLEL0685



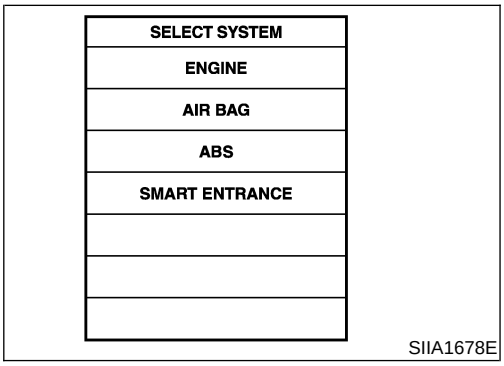
MBIB0906E

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



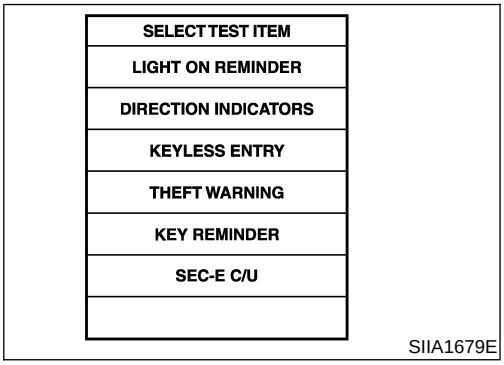
MBIB0233E

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



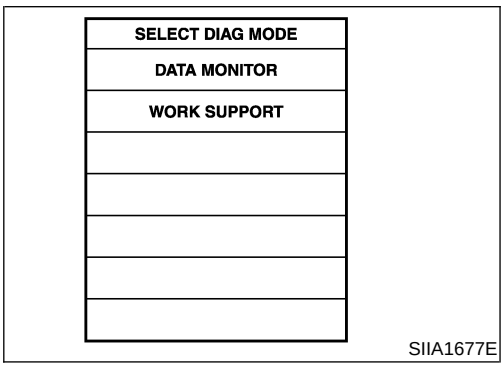
SIIA1678E

5. Touch “SMART ENTRANCE”.



SIIA1679E

6. Touch “KEYLESS ENTRY”.



SIIA1677E

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

CONSULT-II Application Items

NLEL0686

DATA MONITOR

Monitored Item	Description
IGNITION SW	Indicates [ON/OFF] condition of ignition switch in ON position.
TRUNK OPEN SW	Indicates [ON/OFF] condition of back door switch.
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.
RKE UNLOCK	Indicates [ON/OFF] condition of unlock signal from remote controller.
RKE SEL UNLOCK	Indicates [ON/OFF] condition of select unlock signal from remote controller.
RKE TRUNK REL	Indicates [ON/OFF] condition of back door open signal from back door release switch.
BATTERY CHECK	Indicates [OK/NG] condition of remote controller battery.
MODE	Indicates [CMFRT/SCRTY] condition of multi-remote control system.

WORK SUPPORT

Test Item	Description
KEYLESS CHECK	It can be checked whether remote controller ID code is registered or not in this mode.
KEYLESS REGISTRATION	Remote controller ID code can be registered.
KEYLESS DI FLASH	This mode can be setting hazard reminder function. ● MODE 1: Nothing ● MODE 2: Lock operation only ● MODE 3: Unlock operation only ● MODE 4: Both lock and unlock operation

Trouble Diagnoses

NLEL0482

SYMPTOM CHART

=NLEL0482S01

NOTE:

Always check remote controller battery before replacing remote controller.

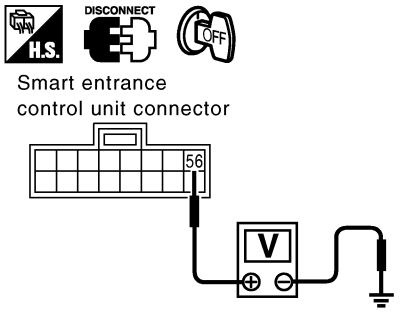
Symptom	Diagnoses/service procedure	Reference page (EL-)
No doors can be locked or unlocked by remote control operation. (Make sure that power door lock operates properly. If NG, check power door lock.)	1. Remote controller battery check	332
	2. Power supply and ground circuit for time control unit check	331
	3. Replace remote controller. Refer to ID Code Entry Procedure.	336
The new ID of remote controller cannot be entered.	1. Remote controller battery check	332
	2. Power supply and ground circuit for time control unit check	331
	3. Ignition “ON” power supply circuit for time control unit	333
	4. Replace remote controller. Refer to ID Code Entry Procedure.	336
Hazard reminder does not activate properly when pressing lock or unlock button of remote controller.	1. Remote controller battery	332
	2. Hazard reminder check	334
	3. Replace remote controller. Refer to ID Code Entry Procedure.	336
Auto door lock does not activate properly. (All other multi-remote control system functions are OK.)	1. Check auto door lock operation setting.	271
	2. Replace smart entrance control unit.	—
Interior room lamp does not activate properly.	1. Check interior room lamp operation.	335
	2. Check door switch.	282
	3. Replace smart entrance control unit.	—

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NLEL0482S03

1 CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect smart entrance control unit connector.
3. Check voltage between smart entrance control unit harness connector M101 terminal 56 (R/B) and ground.



YEL363E

Terminal		Voltage [V]
(+)	(—)	
56 (R/B)	Ground	Battery voltage

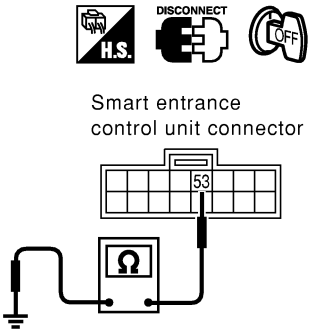
MTBL1717

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 15A fuse [No. 5, located in fuse and fusible link box (J/B)] ● Harness for open or short between smart entrance control unit and fuse

2 CHECK GROUND CIRCUIT

Check continuity between smart entrance control unit harness connector M101 terminal 53 (B) and ground.



SIIA1565E

Terminal		Continuity
(+)	(—)	
53 (B)	Ground	Yes

MTBL1718

OK or NG

OK	▶	Power supply and ground circuit is OK.
NG	▶	Check smart entrance control unit ground circuit for open or short.

REMOTE CONTROLLER BATTERY AND FUNCTION CHECK

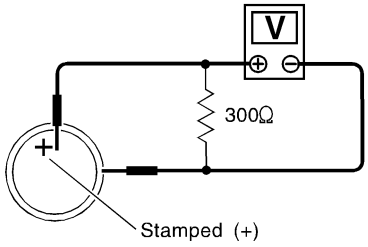
=NLEL0482S02

1	CHECK REMOTE CONTROLLER BATTERY

Remove battery (refer to EL-339) and measure voltage across battery positive and negative terminals, (+) and (−) with using 300Ω resistor as shown in figure.

Voltage [V]:
2.5 - 3.0

NOTE:
Remote controller does not function if battery is not set correctly.



SEL237W

OK or NG

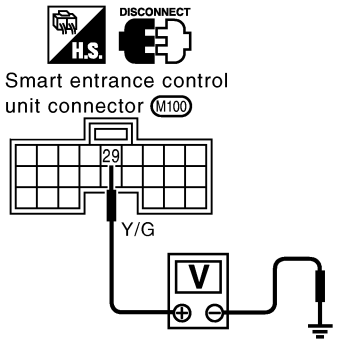
OK	▶	Check remote controller battery terminals for corrosion or damage.
NG	▶	Replace battery.

IGNITION "ON" POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

=NLEL0482S17

1	CHECK IGNITION "ON" POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

1. Disconnected time control unit harness connector.
2. Check voltage between smart entrance control unit terminal 29 (Y/G) and ground.



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

YEL364E

OK or NG

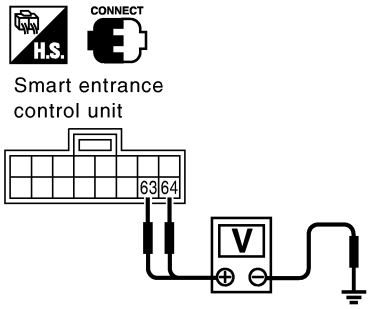
OK	▶	Ignition "ON" power supply circuit is OK.
NG	▶	**Check the following.** ● 10A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse.

HAZARD REMINDER CHECK

=NLEL0482S18

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

2	CHECK HAZARD REMINDER OPERATION	
Check the following at when push the remote controller switch. Check voltage between smart entrance control unit harness connector M101 terminal 63 (G/Y), 64 (G/B) and ground.		



YEL365E

Remote controller	Voltage (Approximate values)
Pushing LOCK button	0V → 12V → 0V
Pushing UNLOCK button	0V → 12V → 0V → 12V → 0V

MTBL1515

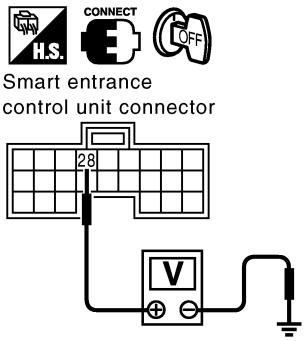
OK or NG

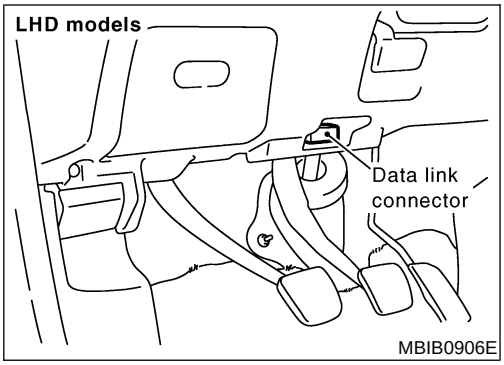
OK	▶	Check harness for open or short between smart entrance control unit and hazard switch.
NG	▶	**Check the following before replacing the smart entrance control unit.** ● Multi-remote controller ID is registered. ● Multi-remote controller battery is OK.

INTERIOR ROOM LAMP OPERATION CHECK

=NLEL0482S22

1	CHECK ROOM INTERIOR LAMP	
Check if the interior room lamp switch is in the "ON" position and the lamp illuminates. **Does interior room lamp illuminate?**		
Yes	▶	GO TO 2.
No	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and interior room lamp ● Interior room lamp

2	CHECK INTERIOR ROOM LAMP OPERATION	
Push unlock button of multi-remote controller with all doors closed and driver's door locked, and check voltage between smart entrance control unit harness connector M100 terminal 28 (R/Y) and ground.  YEL366E **Voltage [V]:** **Unlock button is pushed.** **0 (For approx. 30 seconds.)** **Unlock button is not pushed.** **Battery voltage** **OK or NG**		
OK	▶	System is OK.
NG	▶	**Check the following before replacing the smart entrance control unit.** ● Multi-remote controller ID is registered. ● Multi-remote controller battery is OK.



MBIB0906E

ID Code Entry Procedure

=NLEL0483

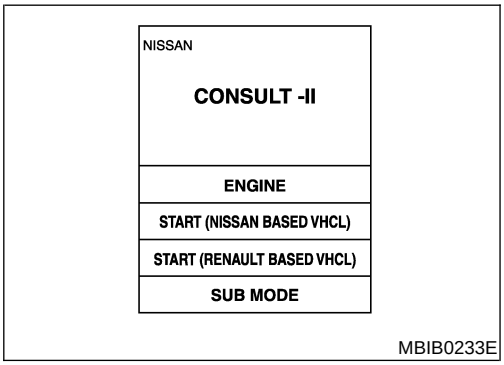
REMOTE CONTROLLER ID SET UP WITH CONSULT-II

NLEL0483S02

NOTE:

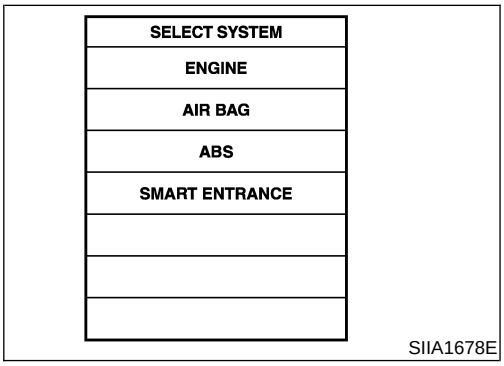
If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. When the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.

1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” to the data link connector.
3. Turn ignition switch “ON”.
4. Touch “START”.



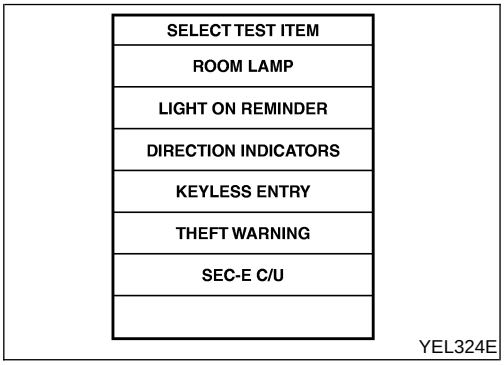
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5. Touch “SMART ENTRANCE”.



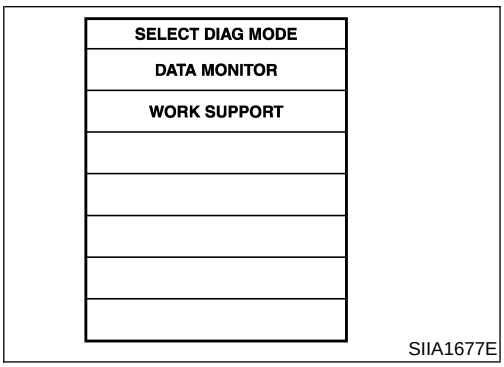
SIIA1678E

6. Touch “KEYLESS ENTRY”.

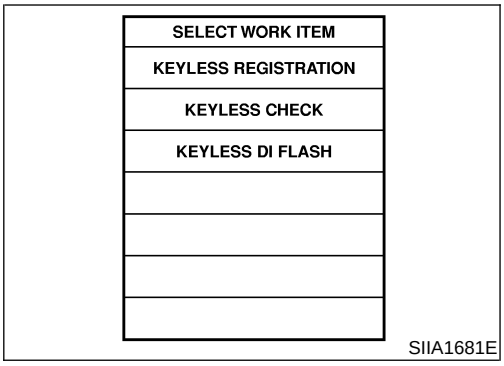


YEL324E

7. Touch “WORK SUPPORT”.



SIIA1677E



8. The items are shown on the figure at left can be set up.

- "KEYLESS CHECK"
  Use this mode to confirm if a remote controller ID code is registered or not.
- "KEYLESS REGISTRATION"
  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.

- "KEYLESS DI FLASH"
  This mode can be setting remote controller function.

REMOTE CONTROLLER ID SET UP WITHOUT CONSULT-II

NLEL0483S03

Activation of the registration mode:

The vehicle must have been unlocked by either the multi-remote controller or a transponder OK signal (TPOK) from the vehicle's immobilizer.
Preparation:
- Make sure all doors unlock.
- Make sure all multi-remote controllers to be registered are available.
- Make sure the batteries of all multi-remote controllers are in a good condition.
- Make sure all transmitting sources are out of the neighbourhood of the vehicle.
- Make sure the battery of the vehicle is in a good condition.

↓

Switch ignition-switch exactly six times from the "LOCK" to the "ON" position within 10 seconds and return the ignition switch to the "LOCK" position (leaving the key in the ignition switch).

↓

After 2 seconds the registration mode is activated. The turn signal lamps will flash twice.

NG → Switch ignition-switch exactly six times from the "LOCK" to the "ON" position within 10 seconds and return the ignition switch to the "LOCK" position (leaving the key in the ignition switch).

↓ OK

Proceed with the registration mode.

NOTE
The registration mode is exited when:
- The ignition-switch is turned to the "ON" position.
- A multi-remote controller ID code had registered after 4 ID codes have been registered (then, all of the registered ID codes are erased).
- No multi-remote controller or ignition switch input is received within 120 seconds.

↓

Registration mode

Press and hold the "UNLOCK" button of the multi-remote controller.

↓

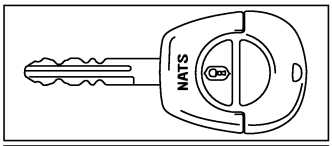
Press the "LOCK" button 3 times.

↓

Release the "UNLOCK" button.
(At this time, the original (previous) ID code(s) are erased.)

→ If the multi-remote controller code is registered correctly, the turn signal lamp will flash once.
(If 4 ID codes have been registered, the turn signal lamp will flash 3 times.)

NG → Press and hold the "UNLOCK" button of the multi-remote controller.



Do you want to register another multi-remote controller? (max. 4)
(If 4 controllers have been registered, you should turn the ignition switch to the ON position.)

OK ← If the multi-remote controller code is registered correctly, the turn signal lamp will flash once.
(If 4 ID codes have been registered, the turn signal lamp will flash 3 times.)

No ↓

Yes → Press and hold the "UNLOCK" button of the multi-remote controller.

Turn the ignition switch to the ON position.

→ If the multi-remote controller registration is performed correctly, the turn signal lamp will flash twice.
(If 4 ID codes have been registered, the turn signal lamp will not flash.)

OK → Take the ignition key out of the ignition switch and confirm the functioning of all multi-remote controllers by locking and unlocking the vehicle with each of the multi-remote controllers.

NG → Press and hold the "UNLOCK" button of the multi-remote controller.

↓

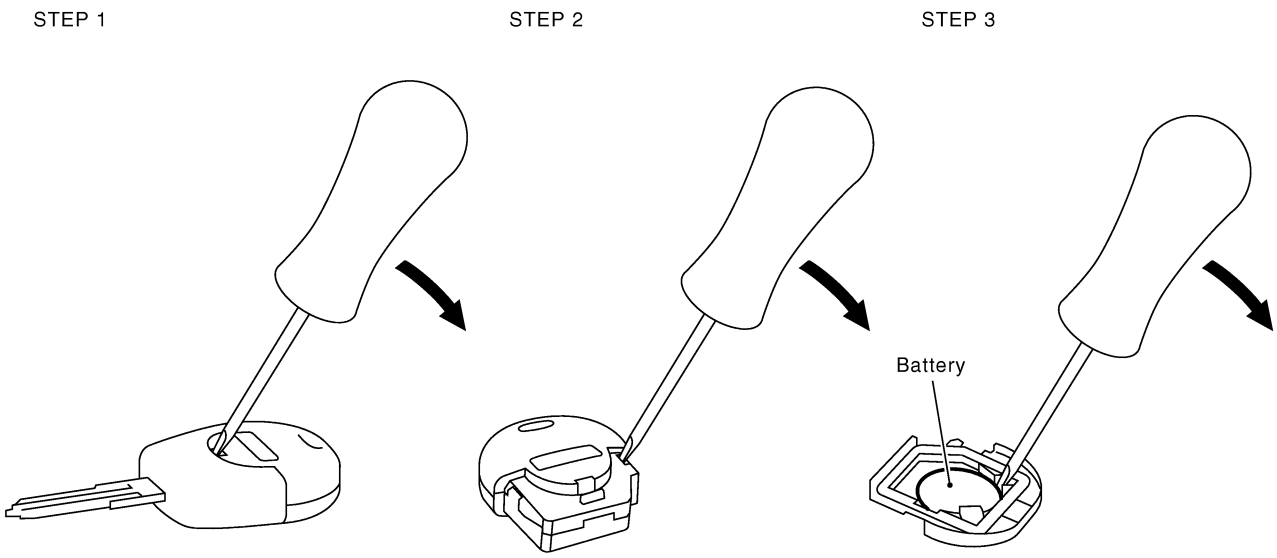
End

SEL497X

Remote Controller Battery Replacement

NLEL0484

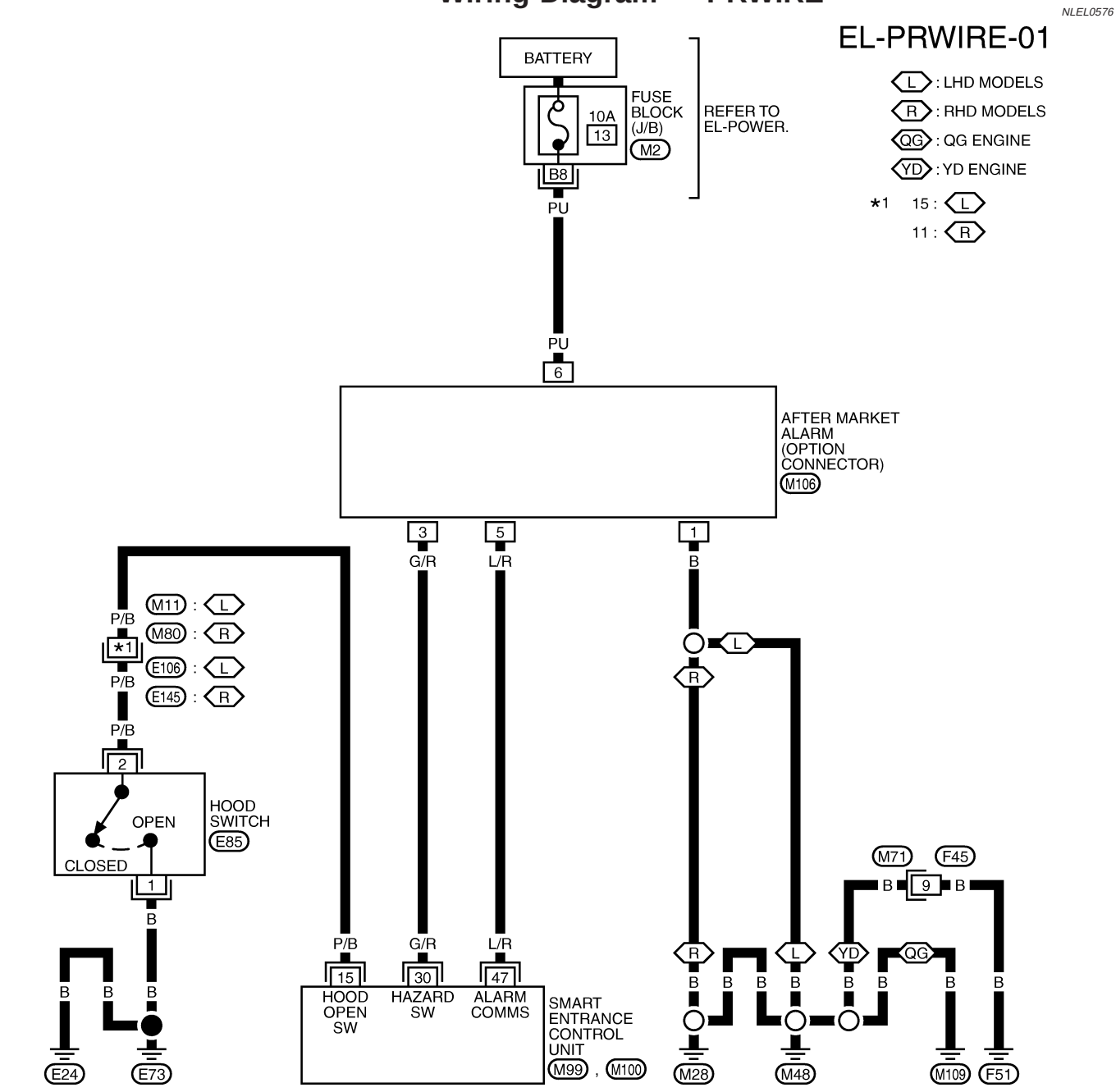
NOTE:
- **Be careful not to touch the circuit board or battery terminal.**
- **The remote controller is water-resistant. However, if it does get wet, immediately wipe it dry.**
- **Push the remote controller button two or three times to check its operation after replacing battery.**



SEL241X

Wiring Diagram — PRWIRE —

NLEL0576



REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-
JUNCTION BOX (J/B)

YEL035E

Description

NLEL0577

OUTLINE

NLEL0577S01

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

- Warning chime, refer to EL-125, “WARNING CHIME”.
- Rear defogger and door mirror defogger, refer to EL-177, “REAR WINDOW DEFOGGER”.
- Power door lock, refer to EL-264, “POWER DOOR LOCK SYSTEM”.
- Power door lock - Super lock - (RHD models), refer to EL-290, “POWER DOOR LOCK — SUPER LOCK —”.
- Multi-remote control system, refer to EL-322, “MULTI-REMOTE CONTROL SYSTEM”.
- NATS (Nissan Anti-Theft system), refer to EL-352, “NATS (NISSAN ANTI-THEFT SYSTEM)”.
- Interior lamp, refer to EL-77, “INTERIOR ROOM LAMP”.

Also, smart entrance control unit has the “sleep/wake-up control” function. Smart entrance control unit puts itself (the whole smart entrance control unit) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to EL-341, “SLEEP/WAKE-UP CONTROL”.

INTERIOR LAMP/SPOT LAMP/VANITY MIRROR ILLUMINATION

NLEL0577S02

The lamps turn off automatically when the interior lamp, spot lamp or/and vanity mirror illumination are illuminated with the ignition key in the OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in the ON position for more than 30 minutes.
After lamps are turned off by the smart entrance control unit, the lamps illuminate again when:

- Driver’s door is locked or unlocked with remote controller, door lock/unlock switch or door key cylinder.
- Ignition switch is turned to ON.
- Door is opened or closed,
- Key is inserted into ignition key cylinder.

REAR WINDOW DEFOGGER/DOOR MIRROR DEFOGGER

NLEL0577S03

Rear window defogger is turned off in approximately 15 minutes after the rear window defogger switch is turned on.

SLEEP/WAKE-UP CONTROL

NLEL0577S04

Sleep Control

NLEL0577S0401

“Sleep” control prevents unnecessary power consumption. After the following conditions are met, the smart entrance control unit suspends the operation. The whole smart entrance control unit is set in the “sleep” mode.

- Ignition switch “OFF”
- All electrical loads (in the smart entrance control unit) “OFF”
- Timer “OFF”
- Each switch do not input

Wake-up Control

NLEL0577S0402

When the smart entrance control unit detects a “wake-up” signal, it wakes up the whole system and starts operating again. When any one of the following switches are turned ON, the “sleep” mode is canceled:

- Ignition switch
- Hazard switch
- Headlamp switch
- Hood switch
- Luggage room lamp switch
- Each door switch

Description (Cont'd)

INPUT/OUTPUT

=NLEL0577S05

System	Input	Output
Power door lock	Door lock/unlock switch Key switch (Insert) Door switches	Door lock actuators Back door release actuator
Multi-remote control	Key switch (Insert) (For RHD models) Ignition switch (ON) Door switches Multi-remote controller signal Door lock/unlock switch	Hazard warning lamp Door lock actuator Interior room lamp
Warning chime	Key switch (Insert) (For RHD models) Ignition switch (ON) Lighting switch (1st) Door switch driver side	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
Interior room lamp	Door switches Multi-remote controller signal (lock/unlock) Door lock/unlock switches (lock/unlock) Luggage room lamp switch (sedan models) Ignition switch (ON) Key switch (Insert)	Interior room lamp Luggage room lamp Step lamp Spot lamp Vanity mirror

CONSULT-II

=NLEL0578

DIAGNOSTIC ITEMS APPLICATION

NLEL0578S01

Item (CONSULT-II screen terms)	Diagnosed system	DATA MONITOR	WORK SUPPORT
DOOR LOCKING	Power door lock (For LHD models) Super lock (For RHD models)	X	X
RR DEFOG	Rear window defogger	X	
KEY REMINDER	Warning chime (For LHD models)	X	
LIGHT ON REMINDER	Warning chime	X	
ROOM LAMP	Interior room lamps	X	
THEFT WARNING	Theft warning system	X	X
KEYLESS ENTRY	Multi-remote control system	X	X
DIRECTION INDICATORS	Direction indicator sound	X	X
SEC-E C/U	SEC self-diagnosis	X	

X: Applicable

For diagnostic item in each control system, refer to the relevant pages for each system.

The description of DATA MONITOR and WORK SUPORT, refer to EL-343, “DATA MONITOR MODE or EL-344, WORK SUPPORT MODE”.

DATA MONITOR MODE

NLEL0578S02

Item (CONSULT-II screen terms)	Diagnosed system
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
KEY IN DETECT	Indicates [ON/OFF] condition of electronic key switch.
DOOR SW DR RR	Indicates [ON/OFF] condition of rear door switch (driver side).
DOOR SW AS RR	Indicates [ON/OFF] condition of rear door switch (passenger side).
AS DOOR SW	Indicates [ON/OFF] condition of front door switch (passenger side).
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch (lock signal).
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch (unlock signal).
TRUNK OPEN SW	Indicates [ON/OFF] condition of
HOOD OPEN SW	Indicates [ON/OFF] condition of hood switch.
HAZARD SW	Indicates [ON/OFF] condition of hazard switch.
RH TURN SW	Indicates [ON/OFF] condition of turn signal switch.
LH TURN SW	Indicates [ON/OFF] condition of turn signal switch.
REAR DEF SW	Indicates [ON/OFF] condition of multifunction switch (defogger switch).
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.
RKE UNLOCK	Indicates [ON/OFF] condition of unlock signal from remote controller.
RKE SEL UNLOCK	Indicates [ON/OFF] condition of select unlock signal from remote controller.
RKE TRUNK REL	Indicates [ON/OFF] condition of trunk open signal from remote controller.
BATTERY CHECK	Indicates [ON/OFF] condition of remote controller battery.
TAIL LAMP ON	Indicates [ON/OFF] condition of lighting switch.

CONSULT-II (Cont'd)

Item (CONSULT-II screen terms)	Diagnosed system
KEY CYL LK	Indicates [ON/OFF] condition of lock signal from door key cylinder.
KEY CYL UNLK	Indicates [ON/OFF] condition of unlock signal from door key cylinder.
MODE	Indicates [CMFRT/SCRTY] condition of multi-remote control system.
CAN COMM	Indicates the communication condition of CAN communication line.
CAN CIRC 1	
CAN CIRC 2	
CAN CIRC 3	

WORK SUPPORT MODE

NLEL0578S03

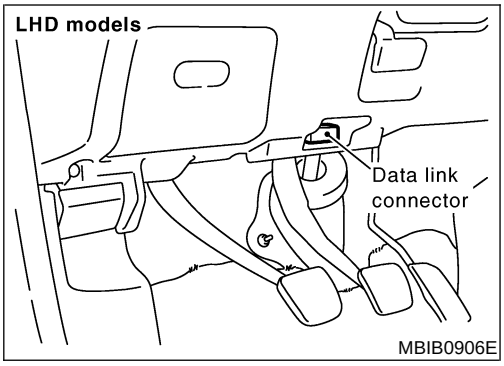
Mode	Description	Test item
DOOR LOCKING	AUTO RE-LOCK	This mode can set auto re-lock function.
	SELECTIVE UNLOCK	This mode can set select unlock function.
KEYLESS ENTRY	KEYLESS REGISTRATION	This mode can register remote controller ID.
	KEYLESS CHECK	This mode can check whether water remote controller ID code is registered or not.
	KEYLESS DI FLASH	This mode can set remote controller function.
DIRECTION INDICATORS	AUDIBLE TRAILER WARNING	This mode can set audible trailer warning function.

SELF-DIAG RESULTS MODE

NLEL0578S04

Diagnosis item	Description	Repair order
RH FLASHER (S) BULB BROKEN	RH turn signal lamp system is malfunctioning.	Check turn signal lamp system. Refer to EL-77, "TURN SIGNAL AND HAZARD WARNING LAMPS".
LH FLASHER (S) BULB BROKEN	LH turn signal lamp system is malfunctioning.	Check turn signal lamp system. Refer to EL-125, "TURN SIGNAL AND HAZARD WARNING LAMPS".
RH FLASHER CIRCUIT OVER CURRENT	RH turn signal lamp circuit is open or shorted.	Check turn signal lamp system. Refer to EL-125, "TURN SIGNAL AND HAZARD WARNING LAMPS".
LH FLASHER CIRCUIT OVER CURRENT	LH turn signal lamp circuit is open or shorted.	Check turn signal lamp system. Refer to EL-125, "TURN SIGNAL AND HAZARD WARNING LAMPS".
CAN COMM CIRCUIT*	CAN communication line is open or shorted.	Check CAN communication line. Refer to EL-351, "CAN Communication Line Check".

*: If this malfunction is displayed, first perform the trouble diagnosis.

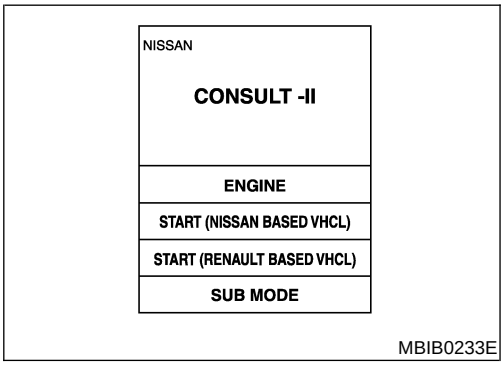


MBIB0906E

CONSULT-II INSPECTION PROCEDURE

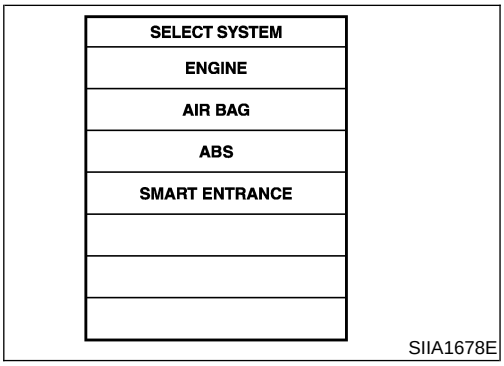
=NLEL0578S05

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



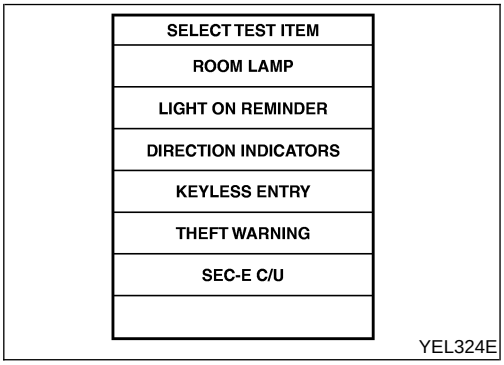
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3. Turn ignition switch "ON".
4. Touch "START".



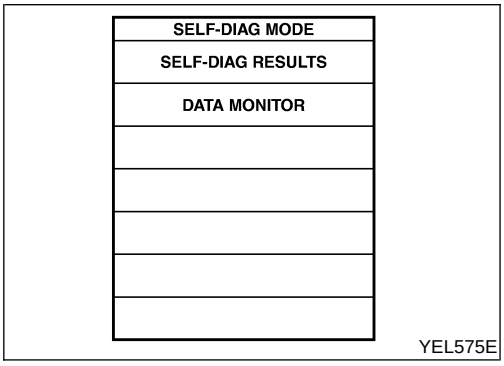
SIIA1678E

5. Touch "SMART ENTRANCE".



YEL324E

6. Touch "SEC-E C/U".

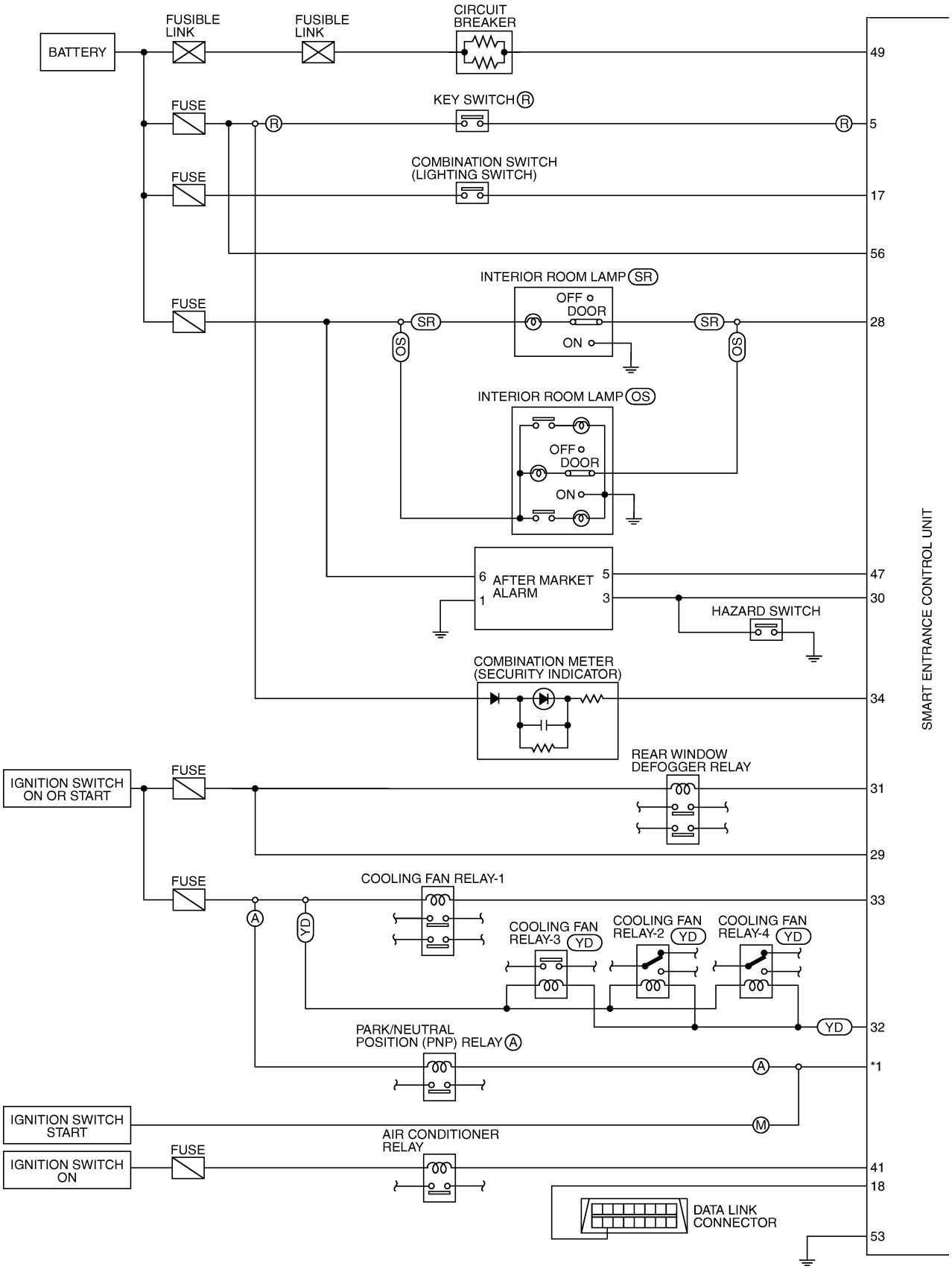


YEL575E

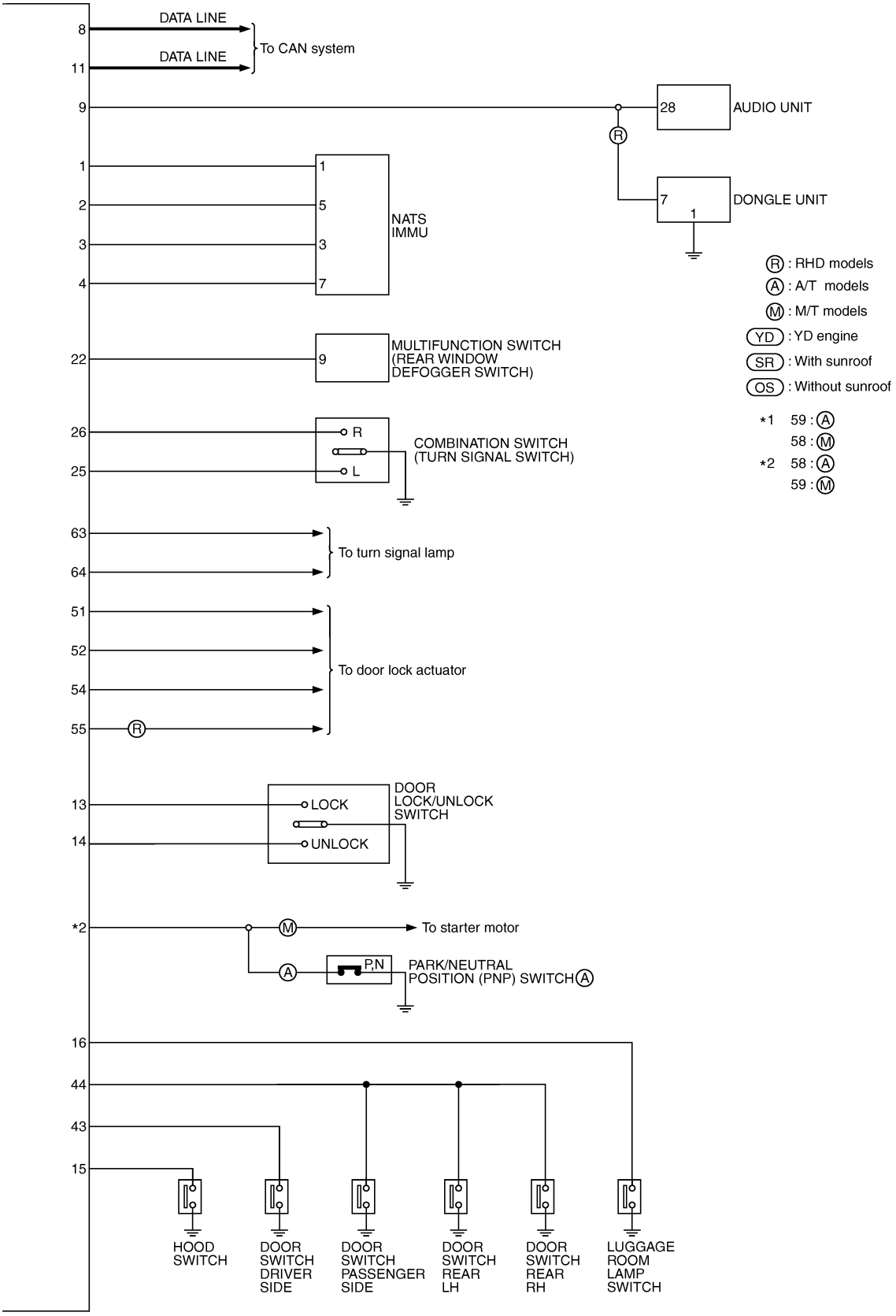
7. Select self-diag mode.
   "SELF-DIAG RESULTS" and "DATA MONITOR" are available.

Schematic

NLEL0579



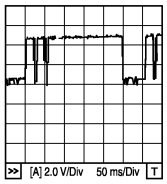
YEL018E


DATA LINE
8
To CAN system
DATA LINE
11
9
28
AUDIO UNIT
R
7
1
DONGLE UNIT
1
2
3
4
1
5
3
7
NATS IMMU
22
9
MULTIFUNCTION SWITCH (REAR WINDOW DEFOGGER SWITCH)
26
25
R
L
COMBINATION SWITCH (TURN SIGNAL SWITCH)
63
64
To turn signal lamp
51
52
54
55
R
To door lock actuator
13
14
LOCK
UNLOCK
DOOR LOCK/UNLOCK SWITCH
*2
M
To starter motor
A
P,N
PARK/NEUTRAL POSITION (PNP) SWITCH A
16
44
43
15
HOOD SWITCH
DOOR SWITCH DRIVER SIDE
DOOR SWITCH PASSENGER SIDE
DOOR SWITCH REAR LH
DOOR SWITCH REAR RH
LUGGAGE ROOM LAMP SWITCH
R : RHD models
A : A/T models
M : M/T models
YD : YD engine
SR : With sunroof
OS : Without sunroof
*1 59 : A
58 : M
*2 58 : A
59 : M

YEL019E

Smart Entrance Control Unit Inspection Table

NLEL0580

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
1	G	NATS antenna amp. (Power supply)	—	Approx. 5V
2	G/OR	NATS antenna amp. (Ground)	—	—
3	G/W	NATS antenna amp. (Signal line)	Moment when key was inserted.	The needle of analog tester swings immediately after inserting key.
4	G/Y	NATS antenna amp. (Signal line)	Moment when key was inserted	The needle of analog tester swings immediately after inserting key.
5	B/R	Key switch	Ignition key Removed → Inserted	0V → 12V
8	L	CAN communication line	—	—
9	Y	Audio unit	Ignition key removed or inserted	 MKIB0191E
11	R	CAN communication line	—	—
13	GY	Door lock/unlock switches	Neutral → Locks	12V → 0V
14	L	Door lock/unlock switches	Neutral → Unlocks	12V → 0V
15	LG	Hood switch	Hood switch: ON (Open) → OFF (Closed)	0V → 12V
17	R/G	Tail lamp switch	Lighting switch: OFF → 1st or 2nd	0V → 12V
18	LG	CONSULT-II	—	—
22	L/Y	Multifunction switch (Rear window defogger switch)	[Ignition switch “ON”] Multifunction switch: Press → Release (Only when pressed)	7V → 0V
25	G/OR	Combination switch (Turn signal switch)	Turn signal switch: Neutral → Left turn position	12V → 0V
26	L/B	Combination switch (Turn signal switch)	Turn signal switch: Neutral → Right turn position	12V → 0V
27	Y/B	Vehicle security horn relay (RHD models)	When theft warning system: Armed → Disarmed	0V → 12V
28	R/Y	Interior room lamp	When interior lamp is operated using remote controller (Lamp switch in “DOOR” position)	12V → 0V
29	Y/G	Ignition key switch	Ignition key is in “ON” position	12V
30	G/R	Hazard switch	Hazard switch: OFF → ON	12V → 0V
31	W	Rear window defogger relay	[Ignition switch “ON”] Rear window defogger switch: OFF → ON	12V → 0V

Smart Entrance Control Unit Inspection Table (Cont'd)

Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
32	LG/B	Cooling fan relay	[Ignition switch" ON"] Cooling fan: Operating → Not operating	0V → 12V
33	LG/R	Cooling fan relay	[Ignition switch "ON"] Cooling fan: Operating → Not operating	0V → 12V
34	L/Y	Security indicator	Ignition switch ON → OFF	12V → 0V
41	L	Air conditioner relay	[Engine is running] Air conditioner switch: ON → OFF	12V → 0V
43	R/W	Front door switch (Driver side)	Front door (Driver side): Open → Closed	12V → 0V
44	L/OR	Front door switch (Passenger side)	Front door (Passenger side): Open → Closed	0V → 12V
49	W/L	Power source	—	12V
51	L/R	Driver door lock actuator	Door lock & unlock switch: Free → Lock	0V → 12V
52	Y	Door lock actuators	Door lock & unlock switch: Free → Unlock	0V → 12V
53	B	Ground	—	0V
54	G/Y	Door lock actuators	Door lock & unlock switch: Free → Unlock	0V → 12V
55	W/B	Power door super lock actuator (Front)	Remote controller door lock switch: Free → Unlock	0V → 12V
56	R/B	Power source	—	12V
58	*1	Starter motor (M/T or A/T models)	Ignition switch: OFF → START position	0V → 12V
59	*2	Starter motor (M/T or A/T models)	Ignition switch: OFF → START position	0V → 12V
62	L/R	Headlamp washer motor	[Headlamp switch 1st or 2nd position] Washer switch: OFF → ON	12V → 0V
63	G/Y	RH turn signal lamp	[When door lock or unlock is operated using remote controller] Turn signal lamp: OFF → ON → OFF	0V → 12V → 0V
64	G/B	LH turn signal lamp	[When door lock or unlock is operated using remote controller] Turn signal lamp: OFF → ON → OFF	0V → 12V → 0V

*1: B/Y (M/T models), G/OR (A/T models)
*2: B/W (M/T models), P (A/T models)

Trouble Diagnoses

=NLEL0581

PRELIMINARY CHECK

NLEL0581S01

1	CHECK “SELF-DIAG RESULTS” MODE WITH CONSULT-II	
Check smart entrance system trouble diagnosis (SELF-DIAG RESULTS) in “SEC-E CE” mode with CONSULT-II. Refer to EL-344, “SELF-DIAG RESULTS MODE”.		
Can “SELF-DIAG RESULTS” mode be displayed?		
Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK DISPLAY ITEM	
Check display item in “SELF-DIAG RESULTS” mode.		
Is any malfunction indicated in “SELF-DIAG RESULTS” mode?		
Yes	▶	GO TO EL-344, “SELF-DIAG RESULTS MODE”.
No	▶	Inspection end.

3	CHECK POWER SUPPLY AND GROUND CIRCUIT	
Refer to EL-330, “Power Supply and Ground Circuit Check”.		
OK or NG		
OK	▶	Replace smart entrance control unit.
NG	▶	Repair or replace harness.

CAN Communication Line Check

=NLEL0583

1	CHECK CAN COMMUNICATION CIRCUIT	
1. Turn ignition switch “ON”. 2. Select “SELF-DIAG RESULTS” in “SEC-E CE” mode with CONSULT-II. 3. The “CAN COMM CIRCUIT” is detected.		
Yes or No		
Yes	▶	Print out CONSULT-II screen, GO TO 2.
No	▶	INSPECTION END

2	CHECK CAN COMMUNICATION SIGNALS	
1. Turn ignition switch “ON”. 2. Select “CAN DIAG SUPPORT MNTR” in ”SEC-E CE” mode with CONSULT-II. 3. Print out the CONSULT-II screen.		
	▶	GO TO EL-459, “CAN COMMUNICATION”.

OK data

DATA MONITOR	
MONITOR	
CAN COMM	OK
CAN CIRC 1	OK
CAN CIRC 2	OK
CAN CIRC 3	OK

NG data

DATA MONITOR	
MONITOR	
CAN COMM	OK
CAN CIRC 1	UNKWN
CAN CIRC 2	UNKWN
CAN CIRC 3	UNKWN

SEC898C

Component Parts and Harness Connetor Location

NLEL0584

For details, refer to “ELECTRICAL UNIT LOCATION” (EL-600) and “HARNESS LAYOUT” (EL-596).

System Description

NLEL0585

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

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

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

- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II NATS software.
  Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-II operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of Security Indicator Lamp) or**

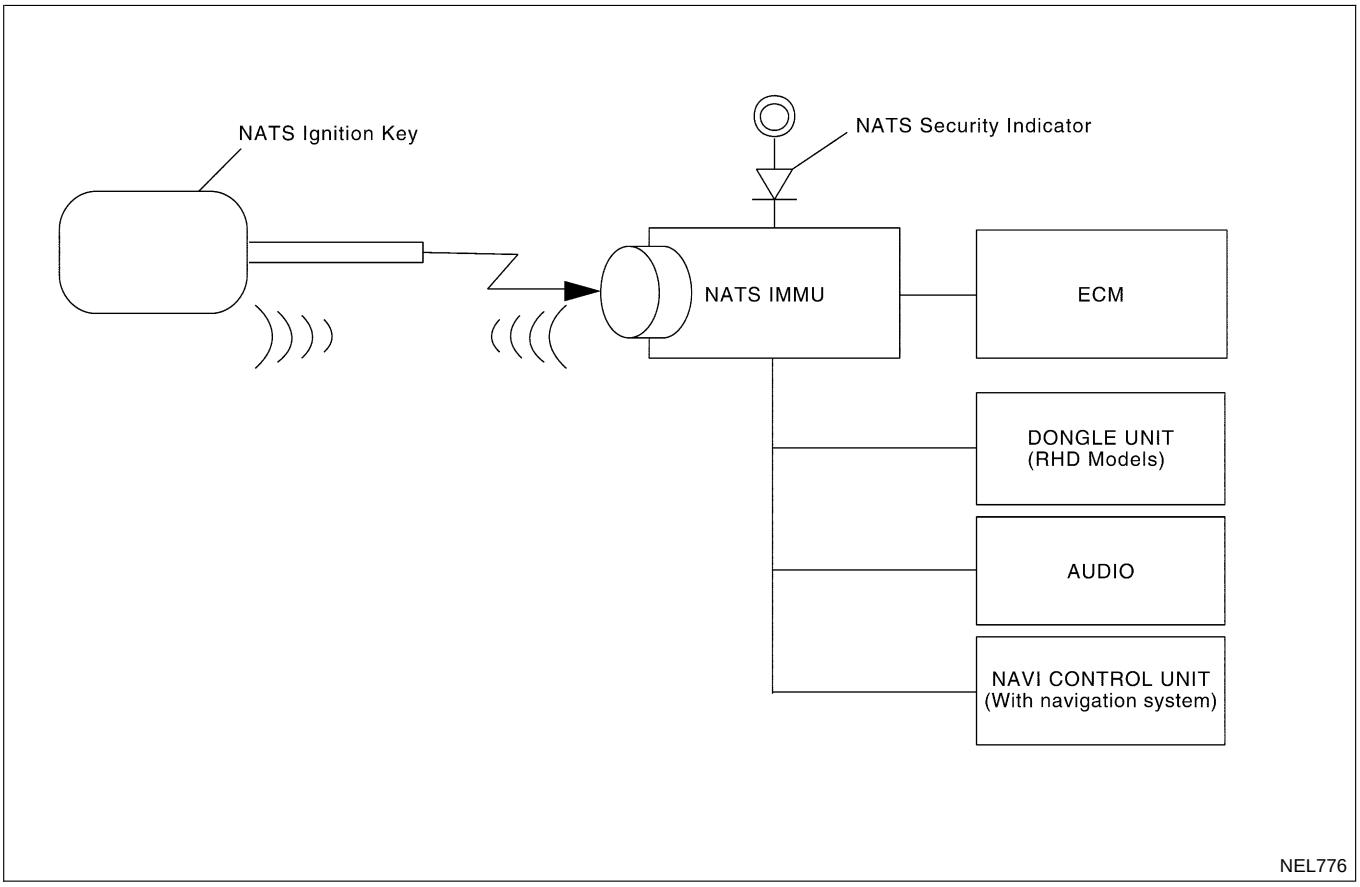
registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.

System Composition

NLEL0586

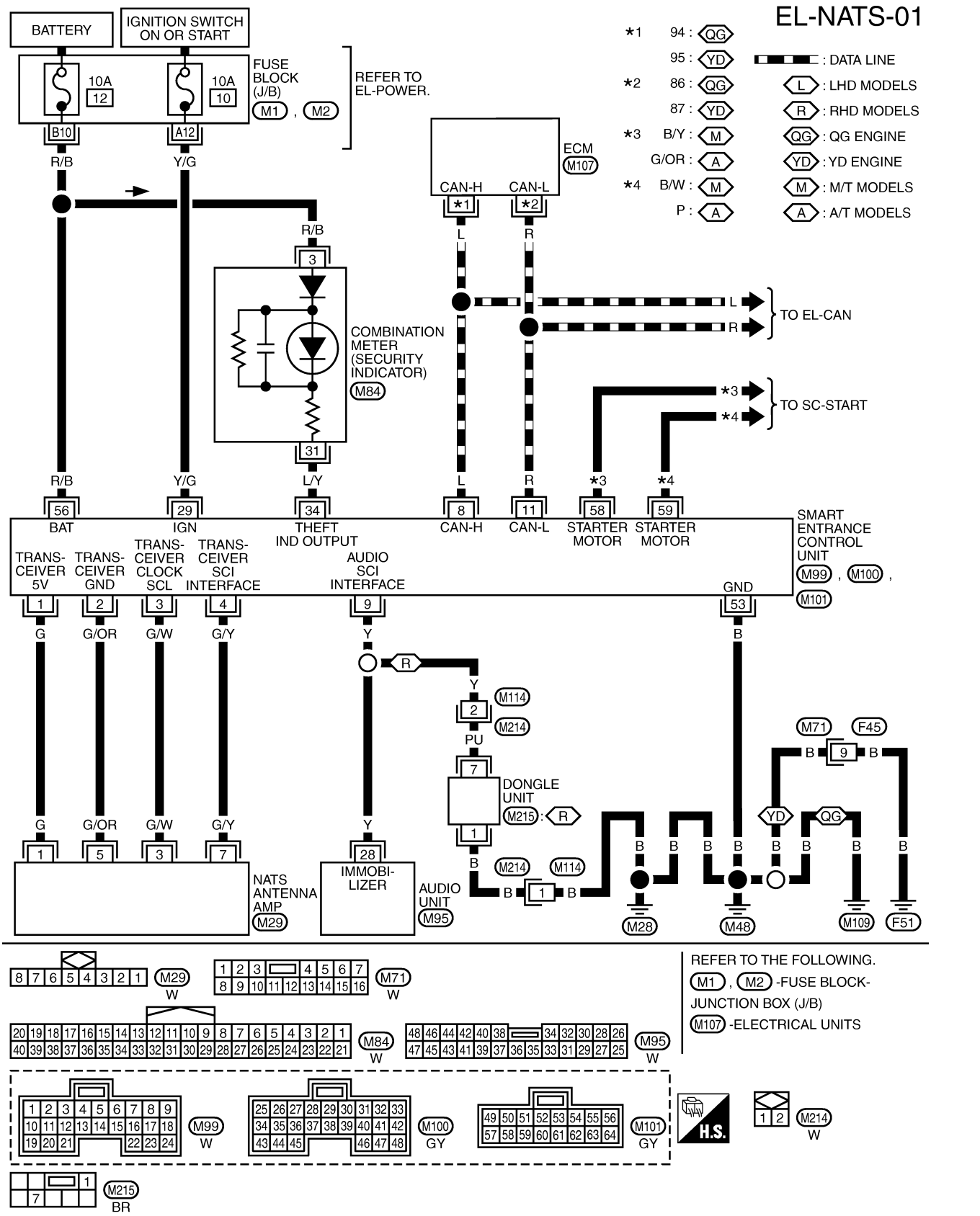
The immobilizer function of the NATS consists of the following:

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

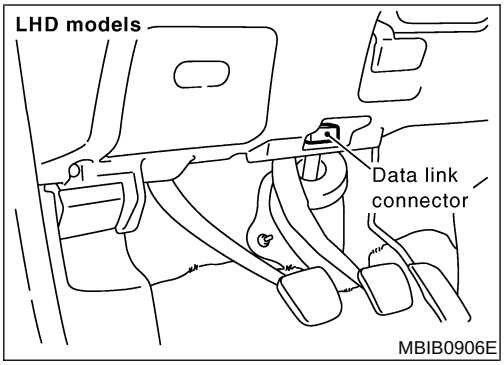


Wiring Diagram — NATS —

NLEL0587



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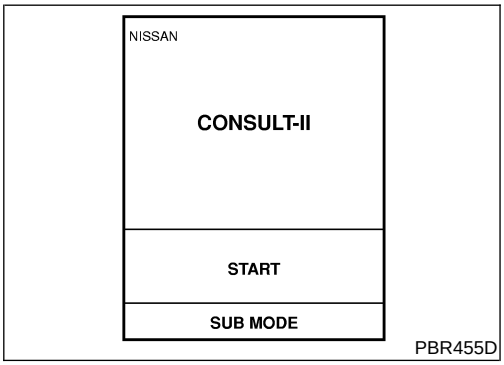
CONSULT-II

NLEL0588

CONSULT-II INSPECTION PROCEDURE

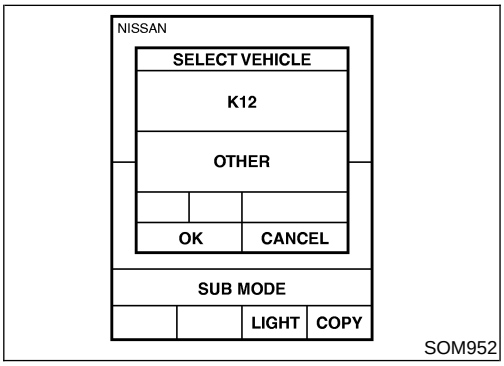
NLEL0588S01

1. Turn ignition switch OFF.



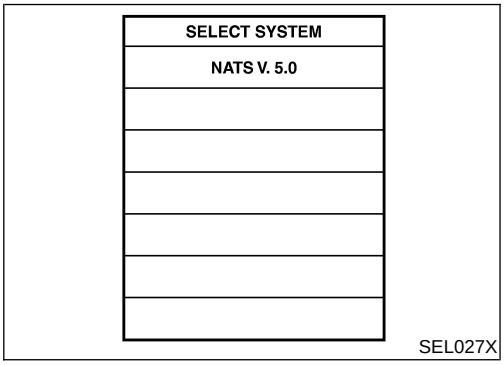
PBR455D

2. Insert NATS program card into CONSULT-II.
   ⬅: Program card
   NATS-AEN02C
3. Connect CONSULT-II to data link connector.
4. Turn ignition switch ON.
5. Touch “START”.



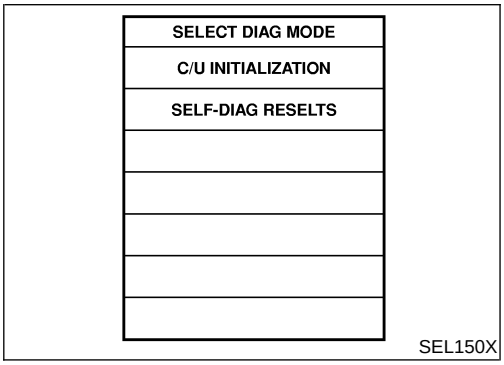
SOM952

6. Select “OTHER”.



SEL027X

7. Select “NATS V.5.0”.



SEL150X

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

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

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

=NLEL0588S02

CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following components, C/U initialization and re-registration of all NATS ignition keys are necessary. [NATS ignition key/IMMU/ECM/Dongle unit]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart EL-356.

NOTE:

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

HOW TO READ SELF-DIAGNOSTIC RESULTS

NLEL0588S03

Result display screen (When no malfunction is detected)

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

Result display screen (When malfunction is detected)

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

Detected items

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

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

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

When touched, the results are printed out.

SEL151X

NATS SELF-DIAGNOSTIC RESULTS ITEM CHART

=NLEL0588S04

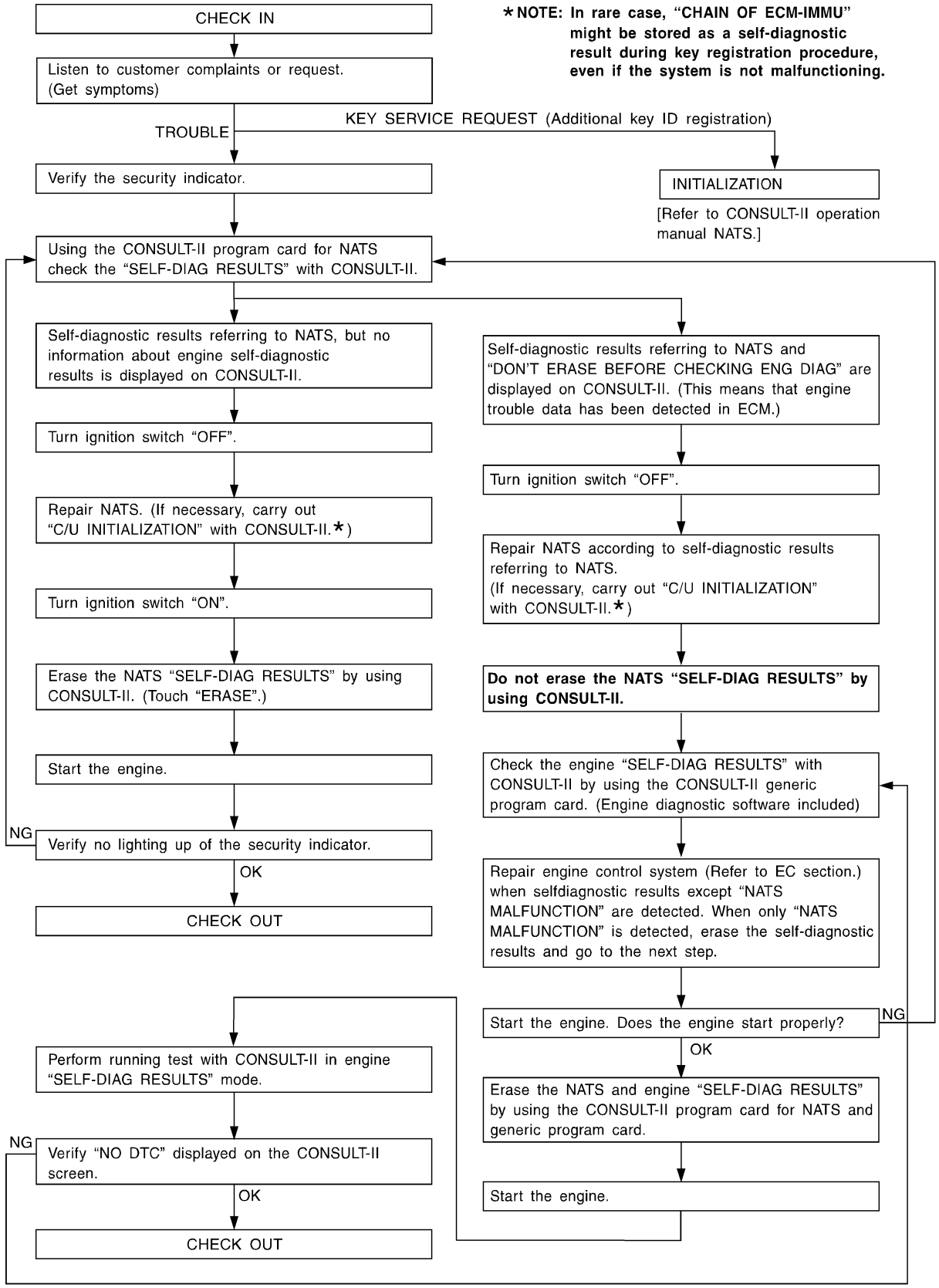
Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE"	Malfunction is detected when	Reference page
ECM INT CIRC-IMMU	NATS MALFUNCTION P1613	The malfunction of ECM internal circuit of IMMU communication line is detected.	EL-361
CHAIN OF ECM-IMMU	NATS MALFUNCTION 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-362
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-364
CHAIN OF IMMU-KEY	NATS MALFUNCTION P1614	IMMU cannot receive the key ID signal.	EL-365
ID DISCORD, IMM-ECM	NATS MALFUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-368
LOCK MODE	NATS MALFUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, NATS will shift the mode to one which prevents the engine from being started. ● Unregistered ignition key is used. ● IMMU or ECM's malfunctioning.	EL-371
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except NATS trouble code has been detected in ECM.	EL-358

Trouble Diagnoses

NLEL0589

WORK FLOW

NLEL0589S01



***NOTE: 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.**

SEL729WE

First perform the "SELF-DIAG RESULTS" in "SMART ENTRANCE" with CONSULT-II, when perform the each trouble diagnosis. Refer to EL-355, "CONSULT-II INSPECTION PROCEDURE".

SYMPTOM MATRIX CHART 1

NLEL0589S02

Self-diagnosis related item

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON SYSTEM DIAGRAM
• Security indicator lighting up* • Engine cannot be started	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-361, "Diagnostic Procedure 1")	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-362, "Diagnostic Procedure 2")	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-364, "Diagnostic Procedure 3")	Unregistered key	D
			IMMU	A

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON SYSTEM DIAGRAM
• Security indicator lighting up* • Engine cannot be started	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-365, "Diagnostic Procedure 4")	Malfunction of key ID chip	E5
			Communication line between ANT/ AMP and IMMU: Open circuit or short circuit of battery voltage line or ground line	E1
				E2
			Open circuit in power source line of ANT/ AMP circuit	E3
			Open circuit in ground line of ANT/ AMP circuit	E4
			Antenna amp.	E6
			Dongle unit	G
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-368, "Diagnostic Procedure 5")	System initialization has not yet been completed.	F
			ECM	B
	LOCK MODE	PROCEDURE 7 (EL-371, "Diagnostic Procedure 7")	LOCK MODE	D
Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-358, "Work Flow")	Engine trouble data and NATS trouble data have been detected in ECM	—

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

SYMPTOM MATRIX CHART 2

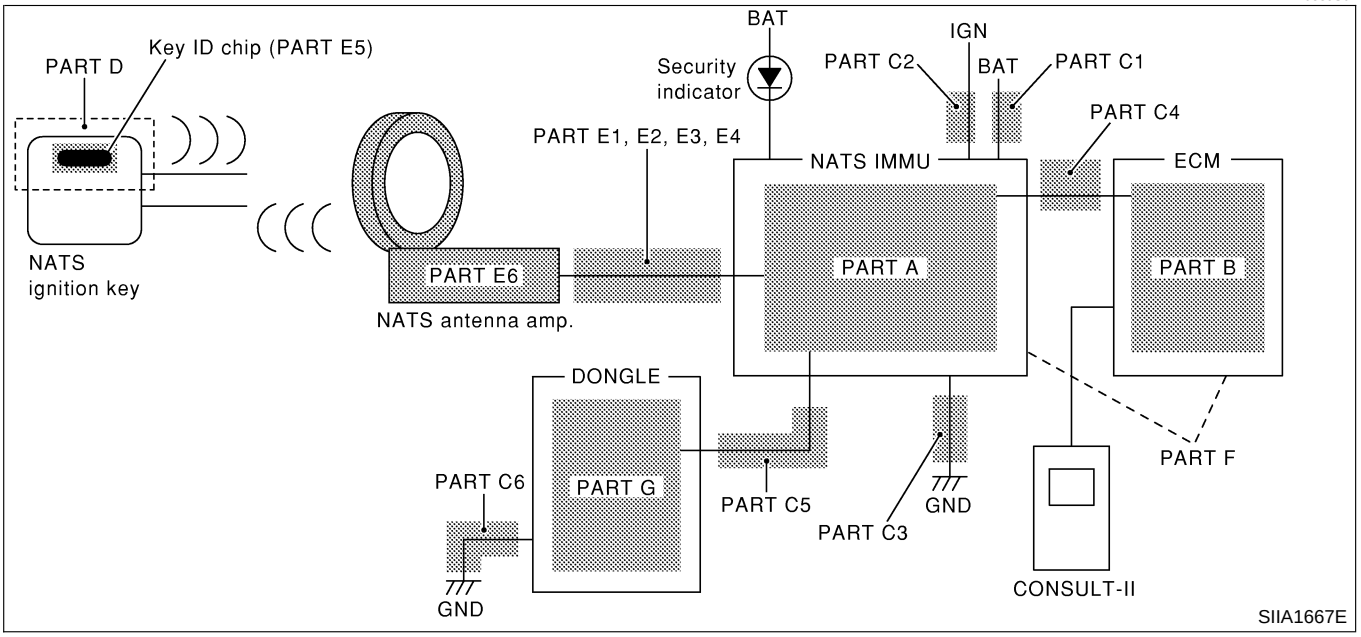
NLEL0589S03

Non self-diagnosis related item

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON SYSTEM DIAGRAM
Security ind. does not light up.	PROCEDURE 6 (EL-369, "Diagnostic Procedure 6")	Security ind.	—
		Open circuit between Fuse and IMMU	—
		Continuation of initialization mode	—
		IMMU	A
Security ind. does not blink just after initialization even if the vehicle is equipped with dongle unit.	PROCEDURE 8 (EL-373, "RHD models only: Diagnostic Procedure 8")	NATS might be initialized without connecting dongle unit properly.	—
Security ind. does not blink just after ignition switch is turned to ON when some malfunction related to NATS is detected even if the vehicle is equipped with dongle unit.		Open circuit in ground line of dongle unit circuit	C6
		Open or short circuit in communication line between IMMU and dongle unit	C5
		Dongle unit	G

DIAGNOSTIC SYSTEM DIAGRAM

NLEL0589S04



SELF-DIAG RESULTS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL152X

DIAGNOSTIC PROCEDURE 1

NLEL0589S05

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.
2. Replace ECM.
   Ref. part No. B
3. Perform initialization with CONSULT-II.
   For initialization, refer to "CONSULT-II operation manual NATS".

DIAGNOSTIC PROCEDURE 2

=NLEL0589S06

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

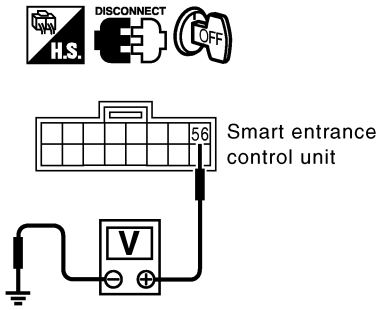
SEL292W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO EL-359, "SYMPTOM MATRIX CHART 1".

2	CHECK POWER SUPPLY CIRCUIT FOR IMMU

1. Disconnect IMMU connector.
2. Check voltage between IMMU (Smart entrance control unit) harness connector M101 terminal 56 (R/B) and ground.



YEL368E

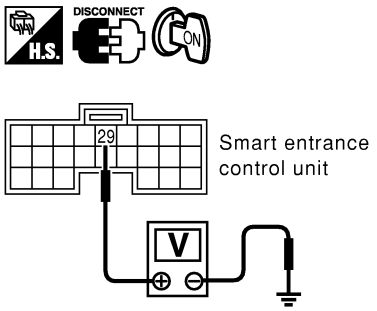
Battery voltage should exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following** ● 10A fuse [No. 12, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU connector **Ref. Part No. C1**

3	CHECK IGN SW. ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IMMU (Smart entrance control unit) harness connector M100 terminal 29 (Y/G) and ground.



SIIA1668E

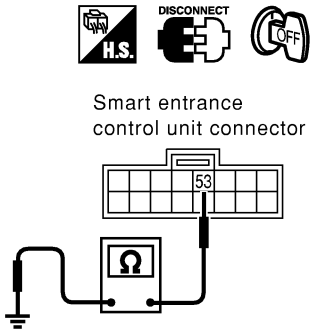
Battery voltage should exist.

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following** ● 10A fuse [No. 10, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU (Smart entrance control unit) **Ref. part No. C2**

4	CHECK GROUND CIRCUIT FOR IMMU

1. Turn ignition OFF.
2. Check continuity between IMMU (Smart entrance control unit) harness connector M101 terminal 53 (B) and ground.



SIIA1565E

Continuity should exist.

OK or NG

OK	▶	GO TO 5.
NG	▶	Repair harness. **Ref. part No. C3**

5	REPLACE IMMU (SMART ENTRANCE CONTROL UNIT)

1. Replace IMMU (Smart entrance control unit) **Ref. part No. A**
2. Perform initialization with CONSULT-II.
   For initialization, refer to "CONSULT-II operation manual NATS".

Does the engine start?

Yes	▶	IMMU (Smart entrance control unit) is malfunctioning.
No	▶	● ECM is malfunctioning. ● Replace ECM. **Ref. part No. B** ● Perform initialization with CONSULT-II For initialization, refer to "CONSULT-II operation manual NATS"

DIAGNOSTIC PROCEDURE 3

NLEL0589S07

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL367X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO EL-359, "SYMPTOM MATRIX CHART 1".

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all NATS ignition key IDs.
For initialization and registration of NATS ignition key IDs, refer to "CONSULT-II operation manual NATS".
NOTE:
If the initialization is not completed or fails, CONSULT-II shows above message on the screen.

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

Can the system be initialized and can the engine be started with re-registered NATS ignition key?

Yes	▶	• Ignition key ID was unregistered. **Ref. part No. D**
No	▶	• IMMU (Smart entrance control unit) is malfunctioning. • Replace IMMU (Smart entrance control unit). **Ref. part No. A** • Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

DIAGNOSTIC PROCEDURE 4

=NLEL0589S08

Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT-II screen.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

SEL957W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO EL-359, "SYMPTOM MATRIX CHART 1".

2	CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to EL-374, "How to Replace NATS Antenna Amp".

OK or NG

Yes	▶	GO TO 3.
No	▶	Reinstall NATS antenna amp. correctly.

3	CHECK NATS IGNITION KEY ID CHIP

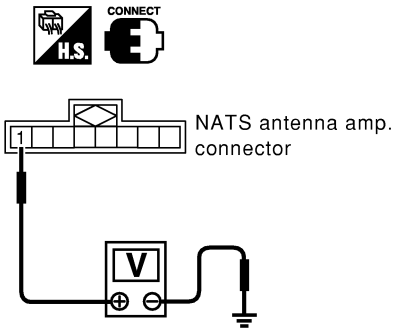
Start engine with another registered NATS ignition key.

Does the engine start?

Yes	▶	• Ignition key ID chip is malfunctioning. • Replace the ignition key. • **Ref. part No. E5** • Perform initialization with CONSULT-II. • For initialization, refer to "CONSULT-II Operation Manual NATS".
No	▶	GO TO 4.

4	CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

Check voltage between NATS antenna amp. harness connector M29 terminal 1 (G) and ground with analogue tester.



SIIA1670E

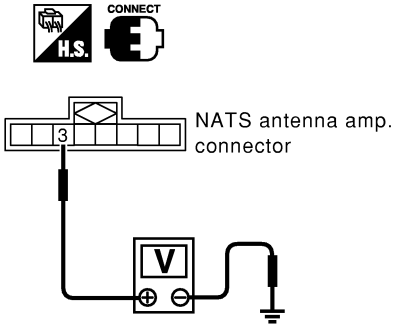
Before turning ignition switch "ON"
Voltage: 0V
Just after turning ignition switch "ON":
Pointer of tester should move.

OK or NG

OK	▶	GO TO 5.
NG	▶	• Check harness for open or short between NATS antenna amp and IMMU (Smart entrance control unit). **NOTE:** If harness is OK, replace IMMU (Smart entrance control unit), perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

5	CHECK NATS ANTENNA AMP. SIGNAL LINE-1

Check voltage between NATS antenna amp. harness connector M29 terminal 3 (G/W) and ground with analogue tester.



SIIA1671E

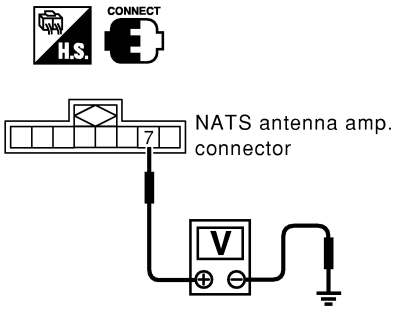
Before turning ignition switch "ON"
Voltage: 0V
Just after turning ignition switch "ON":
Pointer of tester should move.

OK or NG

OK	▶	GO TO 6.
NG	▶	• Check harness for open or short between NATS antenna amp and IMMU (Smart entrance control unit). **NOTE:** If harness is OK, replace IMMU (Smart entrance control unit), perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

6	CHECK NATS ANTENNA AMP. SIGNAL LINE-2

Check voltage between NATS antenna amp. harness connector M29 terminal 7 (Y/G) and ground with analogue tester.



SIIA1672E

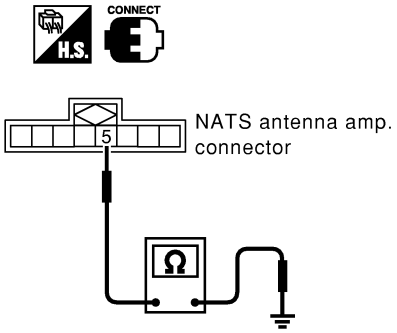
Before turning ignition switch "ON"
Voltage: 0V
Just after turning ignition switch "ON":
Pointer of tester should move.

OK or NG

OK	▶	GO TO 7.
NG	▶	• Check harness for open or short between NATS antenna amp and IMMU (Smart entrance control unit). **NOTE:** If harness is OK, replace IMMU (Smart entrance control unit), perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

7	CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

1. Turn ignition switch "OFF"
2. Disconnect NATS antenna amp connector.
3. Check continuity between NATS antenna amp. harness connector M29 terminal 5 (G/OR) and ground.



SIIA1673E

Continuity should exist.

OK or NG

OK	▶	• NATS antenna amp. malfunctioning. **Ref. part No. E6**
NG	▶	• Check harness for open or short between NATS antenna amp and IMMU (Smart entrance control unit). **NOTE:** If harness is OK, replace IMMU (Smart entrance control unit), perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

DIAGNOSTIC PROCEDURE 5

=NLEL0589S09

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.
NOTE:
"ID DISCORD IMMU-ECM":
Registered ID of IMMU is in discord with that of ECM.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL958W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO EL-359, "SYMPTOM MATRIX CHART 1".

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all NATS ignition key IDs.
For initialization, refer to "CONSULT-II operation manual NATS".

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?

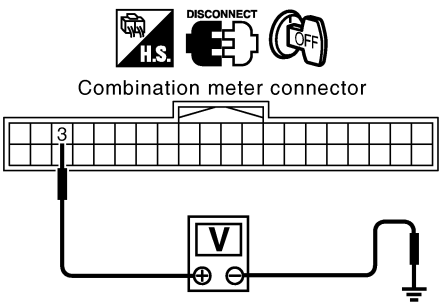
Yes	▶	• Start engine. (END) • (System initialization had not been completed. **Ref. part No. B**)
No	▶	• ECM is malfunctioning. • Replace ECM. **Ref. part No. B** • Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

DIAGNOSTIC PROCEDURE 6
"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

=NLEL0589S10

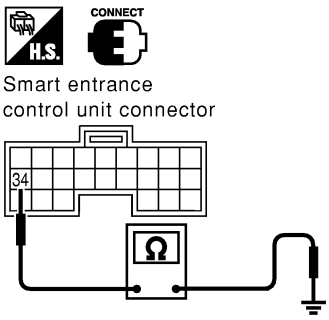
1	CHECK FUSE	
Check 10A fuse [No. 12, located in the fuse block (J/B)] **10A fuse OK?**		
OK	▶	GO TO 2.
NG	▶	Replace fuse.

2	CHECK SECURITY INDICATOR LAMP	
1. Install 10A fuse. 2. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II Operation Manual NATS". 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting. **Security indicator lamp should be light up.** **OK or NG**		
OK	▶	INSPECTION END.
NG	▶	GO TO 3.

3	CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT	
1. Disconnect combination meter connector. 2. Check voltage between combination meter harness connector M84 terminal 3 (R/B) and ground.  YEL369E **Battery voltage should exist.** **OK or NG**		
OK	▶	GO TO 4.
NG	▶	Check harness for open or short between fuse and combination meter.

4	CHECK SMART ENTRANCE CONTROL UNIT FUNCTION

1. Disconnect combination meter connector.
2. Connect smart entrance control unit connector.
3. Check continuity between smart entrance control unit harness connector M100 terminal 34 (L/Y) and ground.



SIIA1654E

Continuity should exist intermittently.

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and combination meter.
NG	▶	**IMMU (Smart entrance control unit) is malfunctioning.** ● Replace smart entrance control unit **Ref. part No. A** ● Perform initialization with CONSULT-II For initialization, refer to "CONSULT-II operation manual NATS"

DIAGNOSTIC PROCEDURE 7

=NLEL0589S11

Self-diagnostic results:
"LOCK MODE" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT-II screen.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL960W

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO EL-359, "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	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II.
For initialization, refer to "CONSULT-II operation manual NATS".

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

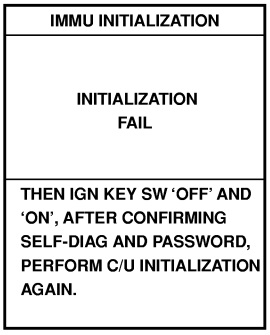
NOTE:
If the initialization is not completed or fails, CONSULT-II shows the above message on the screen.

Can the system be initialized?

Yes	▶	System is OK.
No	▶	GO TO 4.

4	PERFORM INITIALIZATION WITH CONSULT-II AGAIN

1. Replace IMMU (Smart entrance control unit).
2. Perform initialization with CONSULT-II.
   For initialization, refer to "CONSULT-II operation manual NATS".



SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows the above message on the screen.

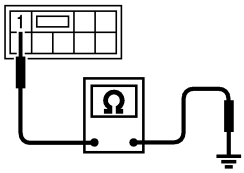
Can the system be initialized?

Yes	▶	System is OK. (IMMU is malfunctioning. **Ref. part No. A**)
No	▶	• ECM is malfunctioning. Replace ECM. **Ref. part No. B** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual NATS".

DIAGNOSTIC PROCEDURE 8

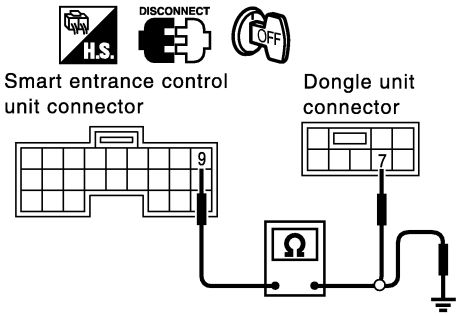
=NLEL0589S12

1	CHECK HARNESS CONNECTOR CONNECTION	
Perform initialization with CONSULT-II Check harness connector connection between Dongle unit harness connector M215 and IMMU (Smart entrance control unit) harness connector M99. Then initialize NATS. For the initialization operation, refer to "CONSULT-II operation manual NATS" **Does the security indicator blink just after initialization?**		
Yes	▶	System is OK. (The malfunction is caused by improper connector connection.)
No	▶	GO TO 2.

2	CHECK GROUND CIRCUIT FOR DONGLE UNIT	
1. Turn ignition switch OFF. 2. Disconnect dongle unit harness connector. 3. Check continuity between dongle unit harness connector M215 terminal 1 (B) and ground.		
 Dongle unit connector  SIIA1674E		
Continuity should exist. **OK or NG**		
OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK INTERFACE CIRCUIT

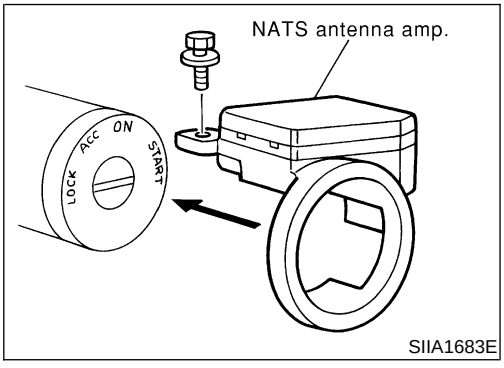
1. Disconnect IMMU (Smart entrance control unit) harness connector.
2. Check continuity between IMMU (Smart entrance control unit) harness connector M99 terminal 9 (Y) and dongle unit harness connector M215 terminal 7 (PU).
   Continuity should exist.
3. Check continuity between (Smart entrance control unit) harness connector M99 terminal 9 (PU) and ground.
   Continuity should not exist.



SIIA1675E

OK or NG

OK	▶	**Dongle unit is malfunctioning.** 1. Replace dongle unit. 2. Perform initialization with CONSULT-II. For initialization procedure, refer to "CONSULT-II Operation Manual NATS".
NG	▶	Repair harness.



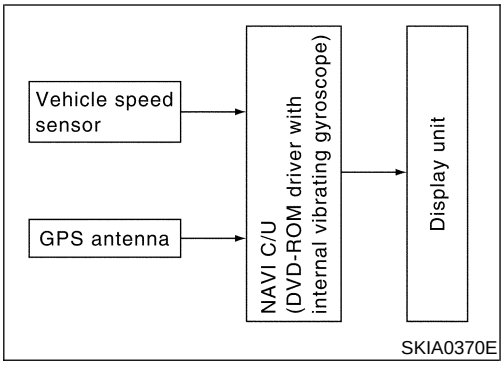
SIIA1683E

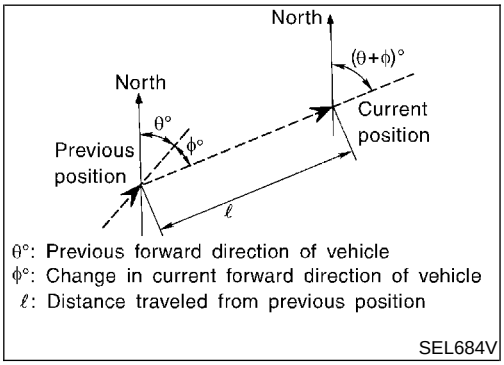
How to Replace NATS Antenna Amp

NLEL0590

NOTE:

- **If NATS antenna amp. is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE" or "CHAIN OF IMMU- KEY".**
- **Initialization is not necessary only when NATS antenna amp. is replaced with a new one.**





System Description

NLEL0593

The navigation system periodically calculates the vehicle's current position according to the following three signals: Travel distance of the vehicle as determined by the vehicle speed sensor, turning angle of the vehicle as determined by the gyroscope (angular velocity sensor), and the direction of vehicle travel as determined by the GPS antenna (GPS information).
The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current-location mark.

By comparing the vehicle position detection results found by the GPS and by map-matching, more accurate vehicle position data can be used.
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

TRAVEL DISTANCE

NLEL0593S01

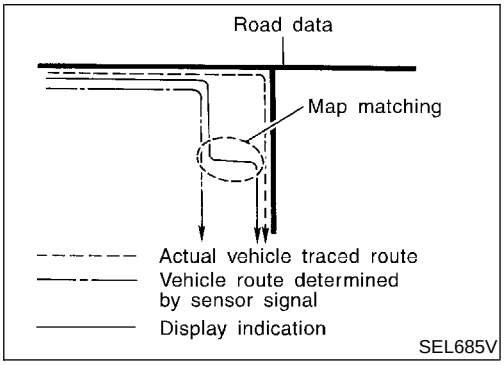
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment function has been adopted.

TRAVEL DIRECTION

NLEL0593S02

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). As the gyroscope and GPS antenna have both merit and demerit, input signals from them are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	• Can detect the vehicle's turning angle quite accurately.	• Direction errors may accumulate when the vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	• Can detect the vehicle's travel direction (North/South/East/West).	• Correct direction cannot be detected when the vehicle speed is low.

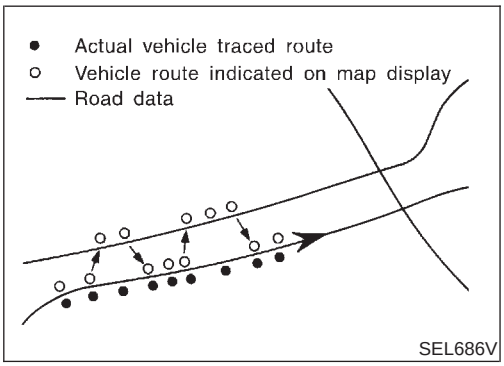


MAP-MATCHING

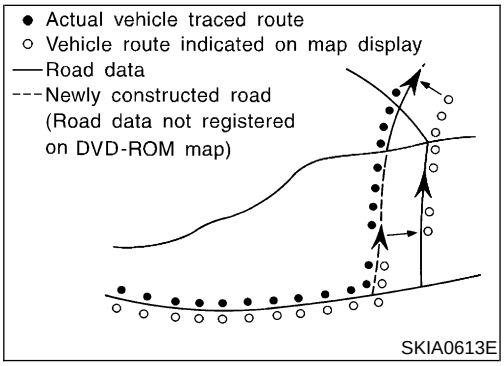
NLEL0593S03

Map-matching is a function that repositions the vehicle on the road map when a new location is judged to be the most accurate. This is done by comparing the current vehicle position, calculated by the method described in the position detection principle, with the road map data around the vehicle, read from the map DVD-ROM stored in the DVD-ROM drive.
Therefore, the vehicle position may not be corrected after the vehicle is driven over a certain distance or time in which GPS information is hard to receive. In this case, the current-location mark on the display must be corrected manually.

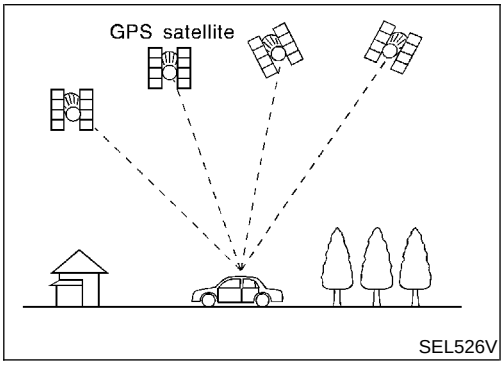
NOTE:
The road map data is based on data stored in the map DVD-ROM.



- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the current-location mark has been repositioned.
  If there is an error in distance and/or direction, the alternative routes will be shown in different order of priority, and the wrong road can be avoided.
  If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



- Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the map DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.
  When driving on a road not present in the map, the map-matching function may find another road and position the current-location mark on it. Then, when the correct road is detected, the current-location mark may leap to it.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map DVD-ROM is limited. Therefore, when there is an excessive gap between the current vehicle position and the position on the map, correction by map-matching is not possible.



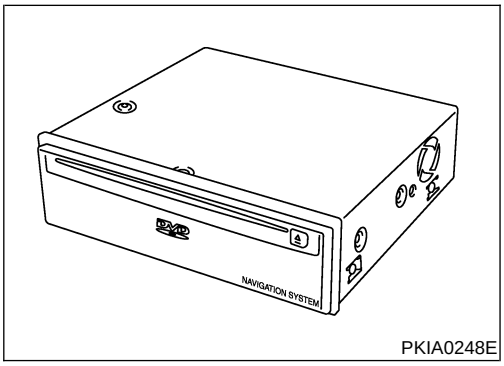
GPS (GLOBAL POSITIONING SYSTEM)

NLEL0593S04

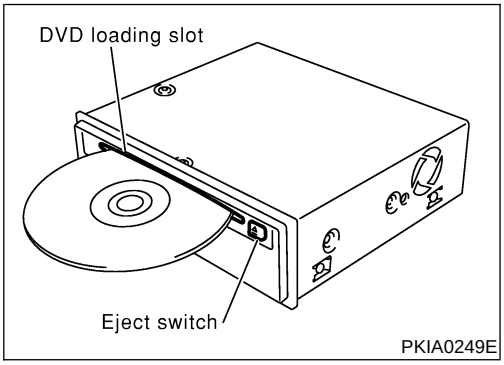
GPS (Global Positioning System) has been developed and controlled by the US Department of Defense. The system utilizes GPS satellite (NAVSTAR), sending out radio waves while flying on an orbit around the earth at the height of approx. 21,000 km (13,000 miles).
The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three-dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), utilizing the altitude

data calculated previously by using radio waves from four or more GPS satellites (two-dimensional positioning).
Accuracy of the GPS will deteriorate under the following conditions.

- In two-dimensional positioning, the GPS accuracy will deteriorate when the altitude of the vehicle position changes.
- There may be an error of approximately 10 m (30 ft.) in position detected by three-dimensional positioning, which is more accurate than two-dimensional positioning. The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when the vehicle is in an area where radio waves from the GPS satellite do not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from the GPS satellites may not be received when some object is located over the GPS antenna.
- Position correction by GPS is not available while the vehicle is stopped.



PKIA0248E



PKIA0249E

COMPONENT DESCRIPTION

NLEL0593S05

AV and NAVI Control Unit

NLEL0593S0501

- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Locational information is shown on liquid crystal display panel.

DVD-ROM Drive

NLEL0593S0502

Maps, traffic control regulations, and other pertinent information can be easily read from the DVD-ROM disc.

Map DVD-ROM

NLEL0593S0503

- The map DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

Gyro (Angular Speed Sensor)

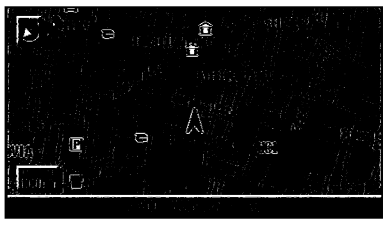
NLEL0593S0504

- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The gyro is built into the navigation (AV and NAVI) control unit.

BIRDVIEW®

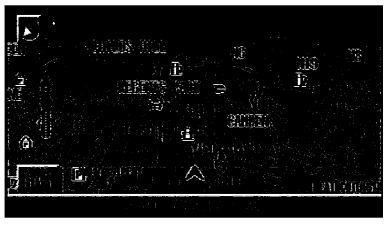
=NLEL0593S06

The BIRDVIEW® provides a detailed and easily seen display of road conditions covering the vehicle's immediate to distant area.



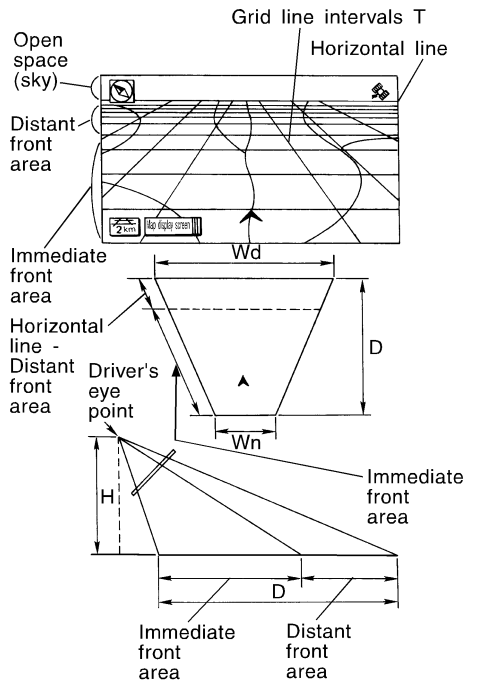
SKIA1377E

- MAP DISPLAY



SKIA1378E

- BIRDVIEW®

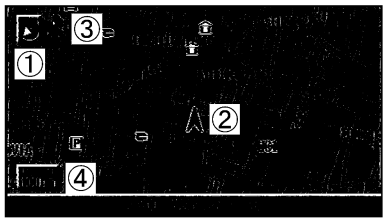


SEL691V

Description

NLEL0593S0601

- Display area: Trapezoidal representation showing approximate distances (Wn, D, and Wd).
- Ten horizontal grid lines indicate display width while six vertical grid lines indicate display depth and direction.
- Drawing line area shows open space, depth, and immediate front area. Each area is to a scale of approximately 5:6:25.
- Pushing the "ZOOM IN" button during operation displays the scale change and the view point height on the left side of the screen.
  The height of the view point increases or decreases when "ZOOM" or "WIDE" is selected with the joystick.



SKIA1379E

MAP DISPLAY

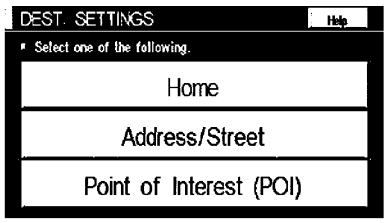
NLEL0593S07

Function of each icon is as follows:

1. Azimuth indication.
2. Position marker.

– The tip of the arrow shows the current position. The shaft of the arrow indicates the direction in which the vehicle is traveling.

3. GPS reception signal (indicates current reception conditions).
4. Distance display (shows the distance in a reduced scale).



SKIA1623E

FUNCTION OF MULTIFUNCTION SWITCH

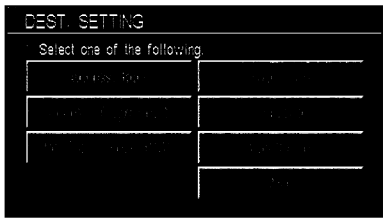
NLEL0593S08

Display With Pushed "DEST" Switch

NLEL0593S0801

- Easy Mode

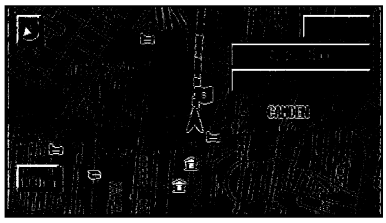
- Expert Mode



SKIA1381E

The Function of Each Icon Is as Follows:

Icon	MODE		Description
	Easy	Expert	
Address Book		×	Favorite place can be saved to memory.
Address/Street	×	×	The destination can be searched from the address.
Point of Interest (POI)	×	×	The destination of favorite facility can be searched.
Previous Dest.		×	The previous ten destinations stored in memory are displayed.
Intersection		×	The destination can be searched from the intersection.
City Center		×	The destination can be searched from city name.
Map		×	The destination can be searched from the map.
Home	×		Sets the home as a destination.
Help	×		Explanation of Navigational functions appear on the Display.

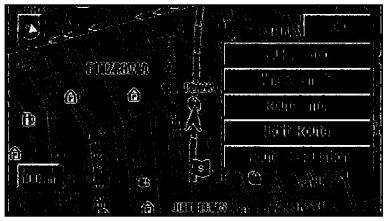


SKIA1382E

Display With Pushed "ROUTE" Switch

NLEL0593S0802

- Easy Mode



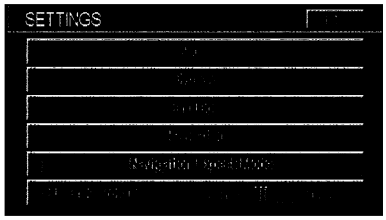
SKIA1383E

- Expert Mode

The Function of Each Icon Is as Follows:

Icon	MODE		Description
	Easy	Expert	
Quick Stop	×	×	The selected facility is set as the destination or waypoint. (Route guidance has been turned OFF or the destination has been reached)
Where am I?	×	×	Next, current and previous street names can be displayed.
Route Info.*		×	The following items can be set. ● Complete Route ● Turn List ● Route Simulation (Displayed only when the destination area has been set.)
Edit Route*		×	Change the destination or add the transit points of the route set in the route guide. (Displayed only when the automatic reroute function has been turned OFF and the recommended route is not followed.)
Route Calculation		×	This key is used to start the route calculation after all the settings are completed.
Help	×		Explanation of Navigational functions appear on the Display.

*: When destinations have been entered, route guidance has been turned OFF or destination has been reached, "Route Info." and "Edit Route" are not displayed.



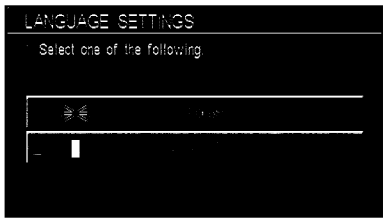
SKIA1384E

Display With Pushed "SETTING" Switch

NLEL0593S0803

The Function of Each Icon Is as Follows:

Icon	Description
Audio	Sound quality can be adjusted, and also ON/OFF setting of switch beep sound can be performed. Noise Compensation ON/OFF setting can be performed.
Display	Settings of display can be performed.
Language	Language can be selected for the display and voice guidance. Use the program CD-ROM disc to change the language.
Navigation	Settings and adjusting of navigation can be performed.
Navigation Expert Mode	Easy Mode and Expert Mode can be switched.
Guidance Volume	The volume and/or on/off of voice prompt can be controlled by the joystick.
Help	Explanation of Navigational Functions Appear on the Display.



SKIA1399E

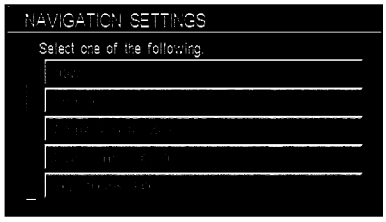
"LANGUAGE" mode

NLEL0593S0804

Select one of the languages which appear on the screen.

NOTE:

Languages that do not appear on the screen must be loaded from program disk.



SKIA1385E

Navigation Settings

NLEL0593S0805

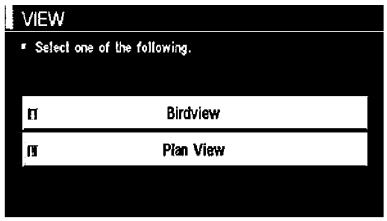
How To Perform Navigation Settings

1. Start the engine.
2. Push "SETTING" switch.
3. Select "NAVIGATION".

Application Items

Icon	Description	Reference page
View	Map display mode can be switched.	EL-382
Heading	Heading of the map display can be customized for either north heading or the actual driving direction of the vehicle.	EL-382
Nearby Display Icons	Icons of facilities can be displayed. Facilities to be displayed can be selected from the variety selections.	EL-382
Save Current Location	Current vehicle location can be registered in Address Book.	EL-383

Icon	Description	Reference page
Edit Address Book	Address Book can be edited.	EL-383
Clear Memory	Address Book, Previous destination or Avoid area can be deleted.	EL-383
Auto Re-route ON/OFF	ON/OFF of Auto Re-route can be switched.	EL-383
Quick Stop Customer Setting	One facility of your selection can be added to your Quick Stop.	EL-383
Set Average speed for Estimated Journey Time	Average vehicle speed can be set to calibrate estimated journey time for the destination.	EL-384
GPS Information	The GPS data includes longitude, latitude and altitude (distance above sea level) of the present vehicle position, and current date and time for the area in which the vehicle is being driven. Also indicated are the GPS reception conditions and the GPS satellite position.	EL-384
Avoid Area Setting	A particular area can be avoided when routing.	—
Tracking on/off	Tracking to the present vehicle position can be displayed.	EL-384
Adjust Current Location	Current location of position marker can be adjusted. Direction of position marker also can be calibrated when heading direction of the vehicle on the display is not matched with the actual direction.	EL-384



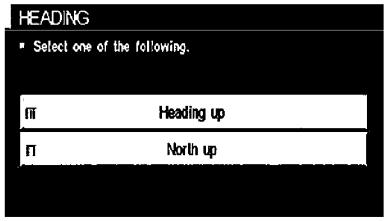
SKIA0554E

"VIEW" MODE

NLEL0593S09

Select "Bird View®" or "Plan view" icon.

- To open the map screen display with Bird View®, select "Bird View®".
- To open the map screen display with Plan View, select "Plan View".

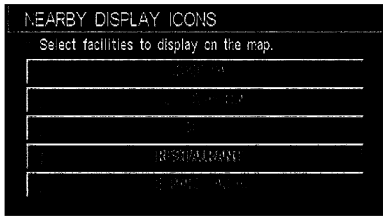


SKIA0561E

"HEADING" MODE

NLEL0593S10

- To display North up, select "North up".
- To display the car heading up, select "Heading up".

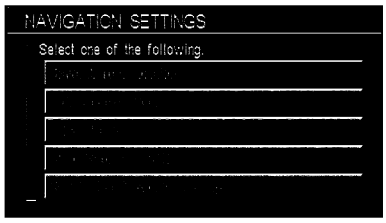


SKIA1394E

"NEARBY DISPLAY ICONS" MODE

NLEL0593S11

- Select an icon to display on the map screen.



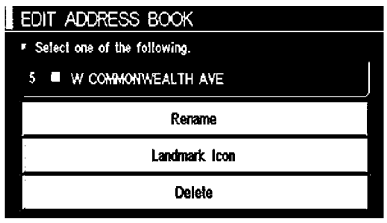
SKIA1388E

"SAVE CURRENT LOCATION" MODE

NLEL0593S12

- The current vehicle location can be registered in "Address Book".

NOTE:
"Address Book" can store 50 items max.

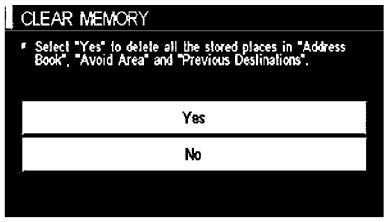


SKIA0560E

"EDIT ADDRESS BOOK" MODE

NLEL0593S13

- Edit the items registered in Address Book.

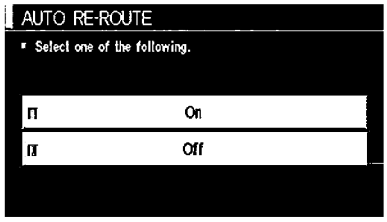


SKIA0566E

"CLEAR MEMORY" MODE

NLEL0593S14

- To delete all the stored places in "Address Book", "Avoid Area" and "Previous Dest", select "Yes".

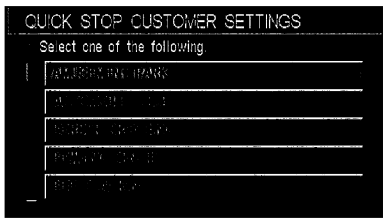


SKIA0558E

"AUTO RE-ROUTE" MODE

NLEL0593S15

- To Perform the auto re-route of route, select "ON".
- Not to Perform the auto re-route of route, select "OFF".

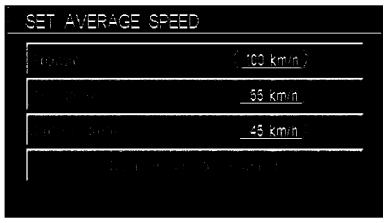


SKIA1389E

"QUICK STOP CUSTOMER SETTINGS" MODE

NLEL0593S16

- Select a category for the "Quick Stop" menu.

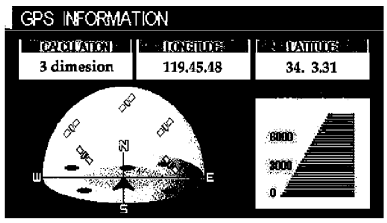


SKIA1397E

"SET AVERAGE SPEED FOR ESTIMATED JOURNEY TIME" MODE

NLEL0593S17

- Set the average vehicle speed to calibrate the estimated journey time for the destination.
- Set three items; "Freeway", "Main Roads", and "Ordinary Roads".



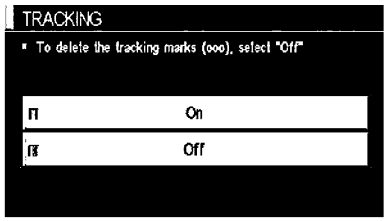
SKIA0555E

"GPS INFORMATION" MODE

NLEL0593S18

- Latitude, longitude, altitude, astrometric state, and satellite location are displayed as GPS information.

NOTE:
Altitude is displayed only in three-dimensional status.



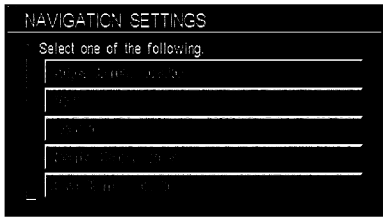
SKIA0559E

"TRACKING" MODE

NLEL0593S19

- To leave no trail on the map, select "Off".
- To leave a trail in the map, select "On".

NOTE:
When a trail display is turned OFF, trail data is erased from the memory.

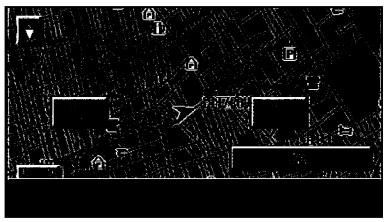


SKIA1395E

"ADJUST CURRENT LOCATION" MODE

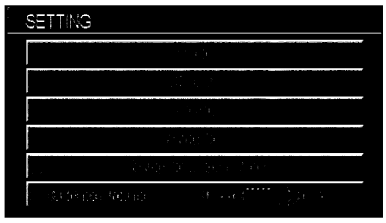
NLEL0593S20

1. Select an icon "right" or "left" to calibrate the heading direction. (Arrow marks will rotate corresponding to the calibration key.)



SKIA1396E

2. Select "Set". Then the vehicle mark will be matched to the arrow mark.



SKIA1400E

GUIDE VOLUME SETTING

NLEL0593S21

Description

NLEL0593S2101

Following voice guidance setting can be changed.

Activation/Deactivation Setting

NLEL0593S2102

- The voice prompt can be turned on/off by pressing the "Guidance Volume" button.

Voice Volume Setting

NLEL0593S2103

- Volume of the voice can be controlled by bending the joystick to left/right.

NATS NAVI LINK

NLEL0593S22

Description

NLEL0593S2201

The link with the NATS IMMU implies that the AV and NAVI control unit can basically only be operated if connected to the matching NATS IMMU to which the AV and NAVI control unit was initially fitted on the production line.
The Navigation system does not operate because it is judged that the code collation with NATS IMMU is illegal when the control unit of other cars is installed.

Precautions for AV and NAVI Control Unit Replacement

NLEL0594

- When replacing the AV and NAVI control unit, eject the map DVD-ROM before disconnecting the battery.
- The AV and NAVI control unit has the following information stored in its memory. Record the memory contents before replacing the control unit, and input them in the new unit as necessary.

<RADIO>

- **Preset frequency**
- **Area for indicating station, selection of overlapped stations**

<CD>

- **Program status**

<Sound quality>

- **Volume balance memory set values**
- **Equalizer memory set values**

<Image quality>

- **Brightness of light when ON/OFF**
- **Dimming switching**
- **Display color switching**

<Navigation mode>

- **Latest status (map screen/bird view®, reduced scale, rotation angle of map screen, route guide ON/OFF, track ON/OFF, etc.)**
- **Current position**
- **Destination, passing point 1 - 5**
- **Registered places, their names, etc.**

NOTE:
Only removing the battery does not erase the memory.

Component Parts Location

NLEL0595

For details, refer to "ELECTRICAL UNIT LOCATION" (EL-596) and "HARNESS LAYOUT" (EL-600).

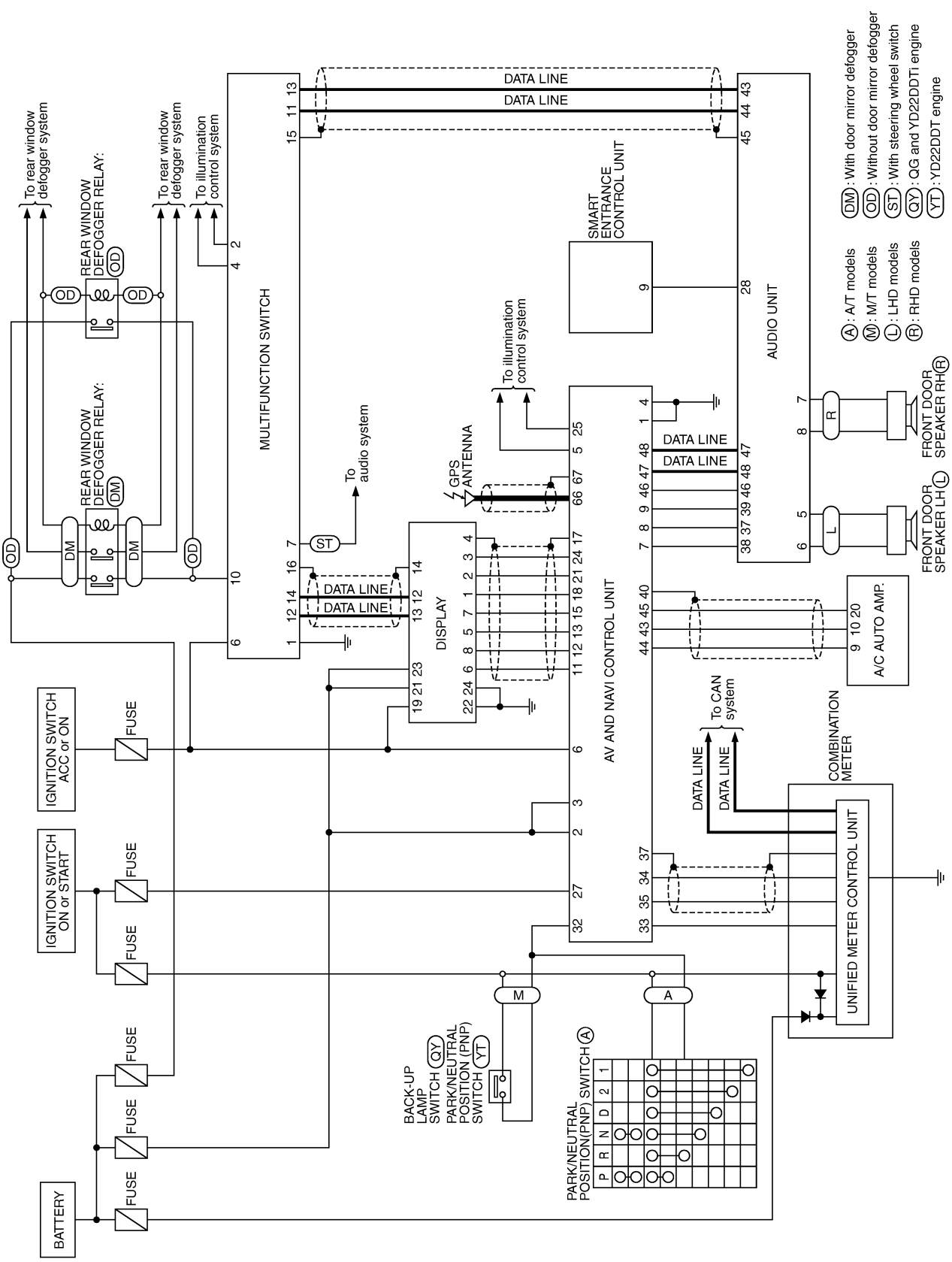
Location of Antenna

NLEL0596

Refer to EL-212, "Location of Antenna".

Schematic

NLEL0597



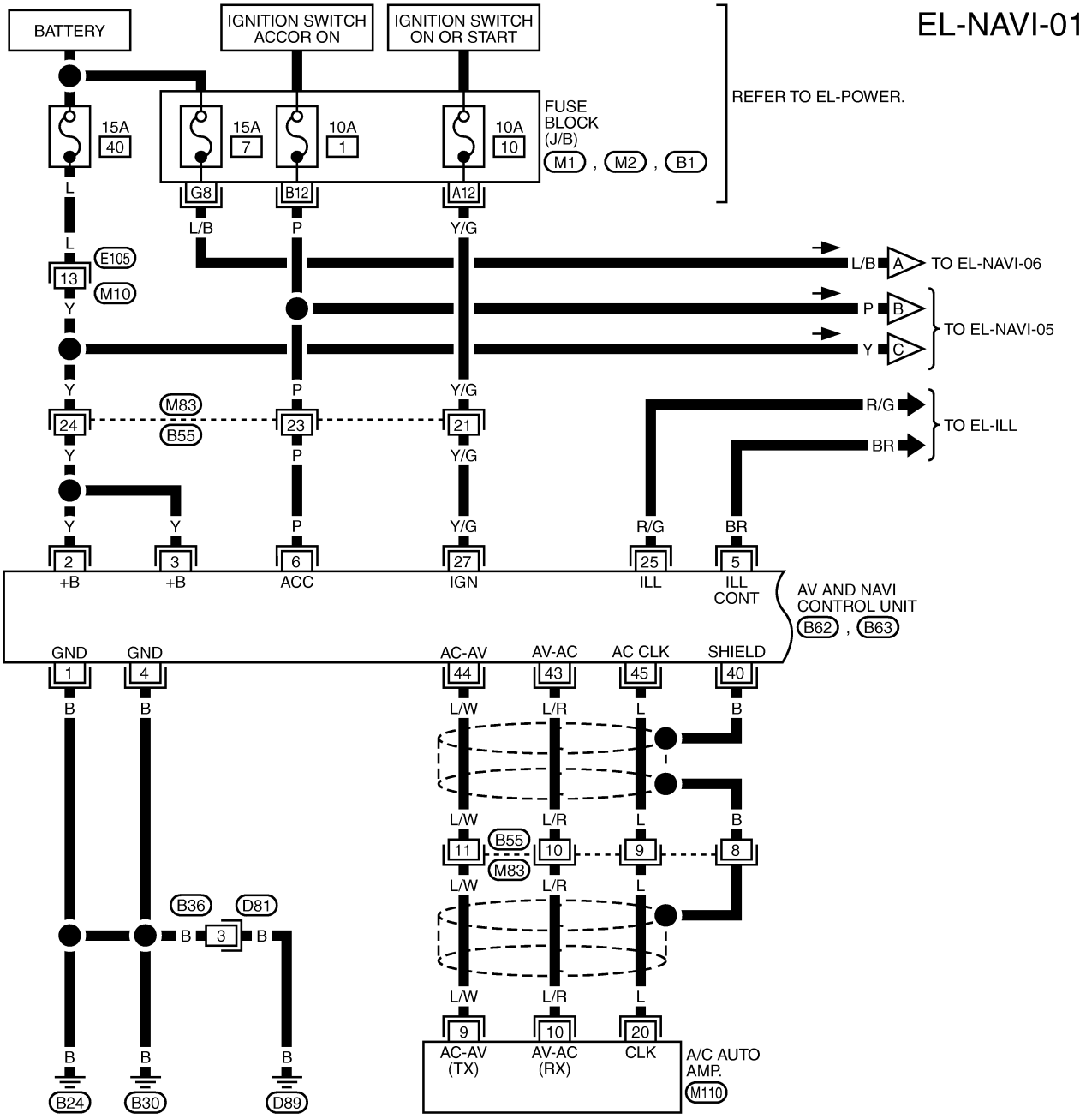
YEL021E

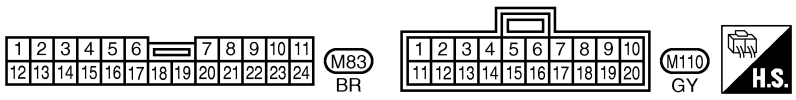
Wiring Diagram — NAVI —

NLEL0598

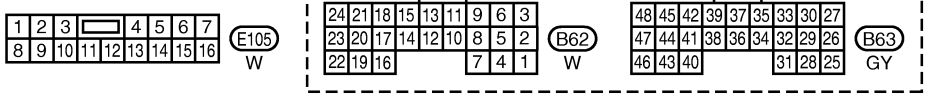
LHD MODELS

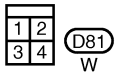
NLEL0598S01



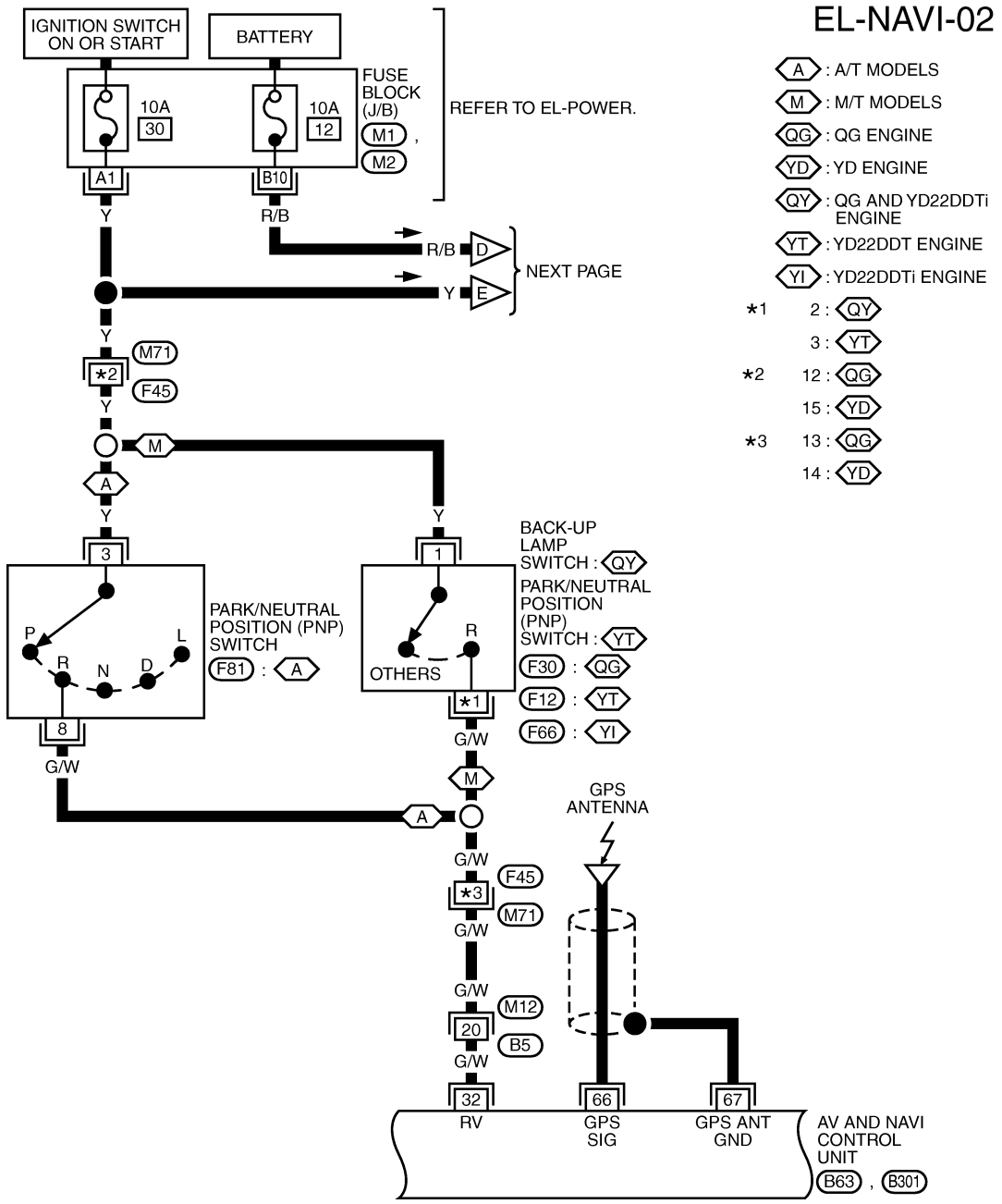


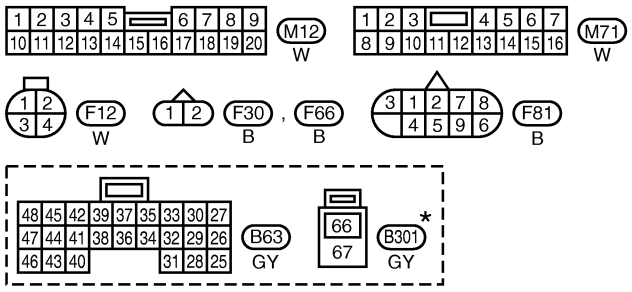
REFER TO THE FOLLOWING.
M1 , M2 , B1
-FUSE BLOCK- JUNCTION BOX (J/B)





YEL022E



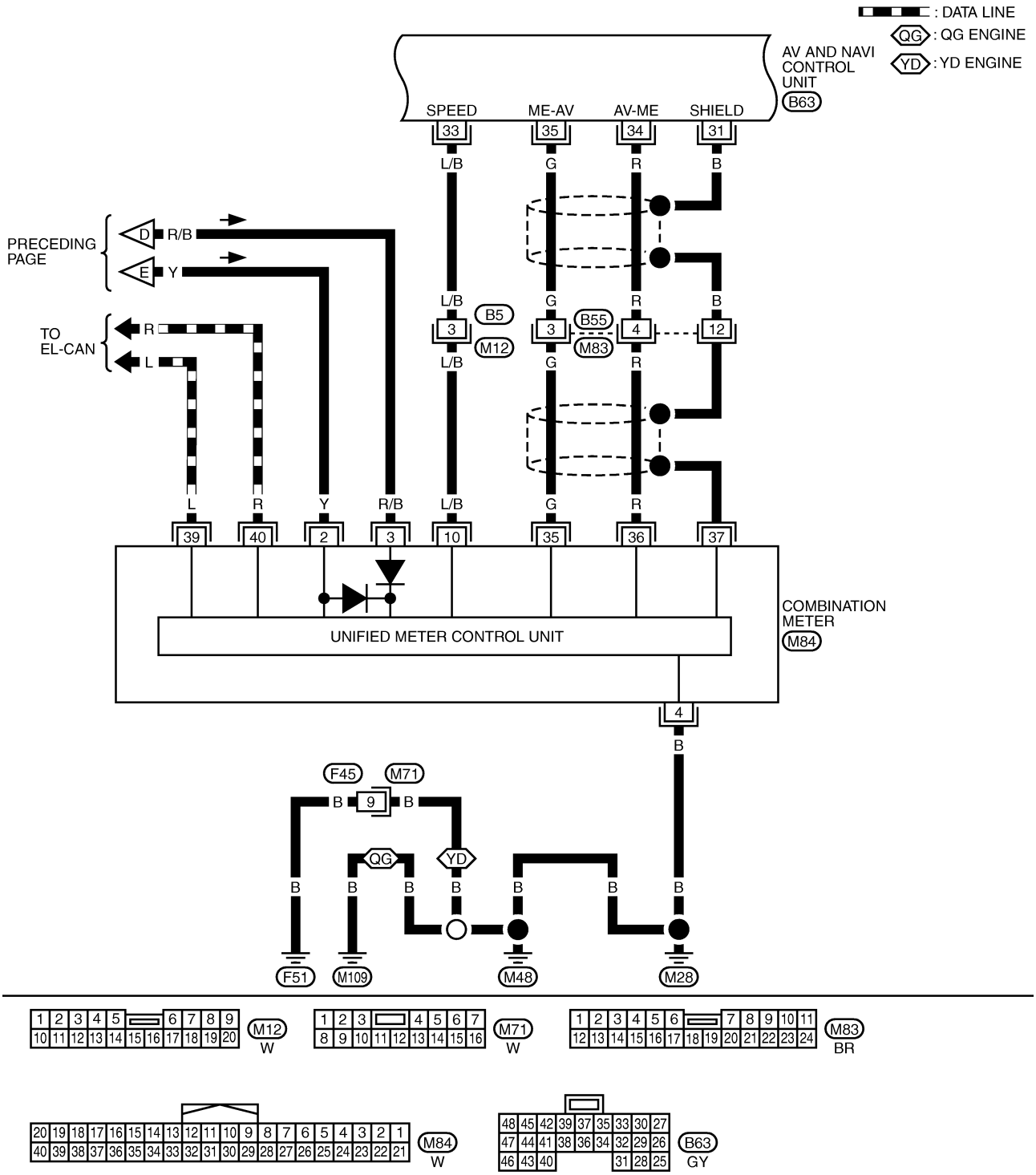


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

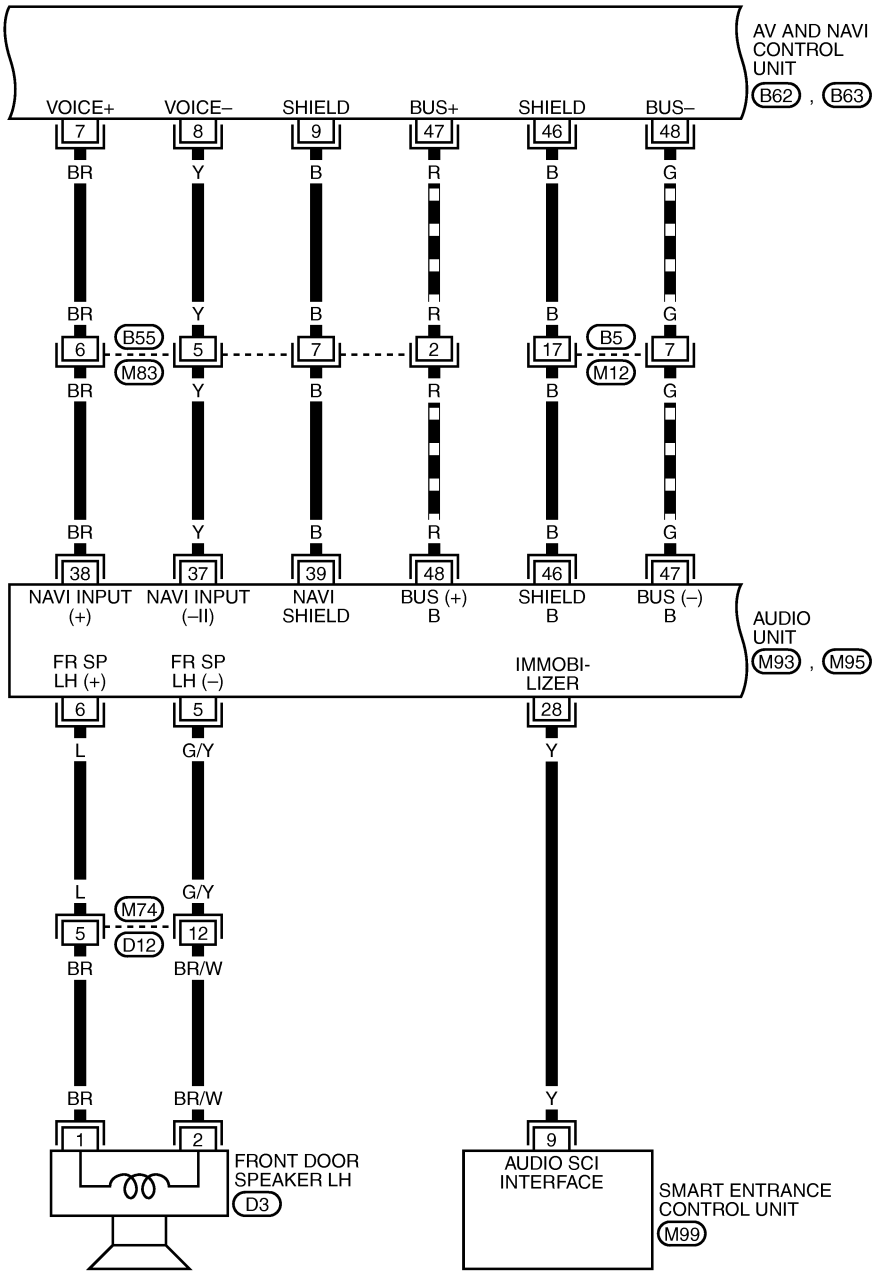
YEL023E

EL-NAVI-03

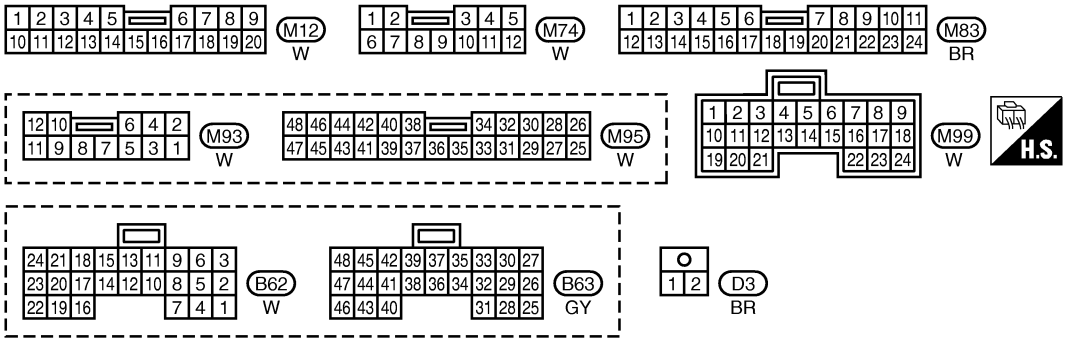


YEL024E

EL-NAVI-04

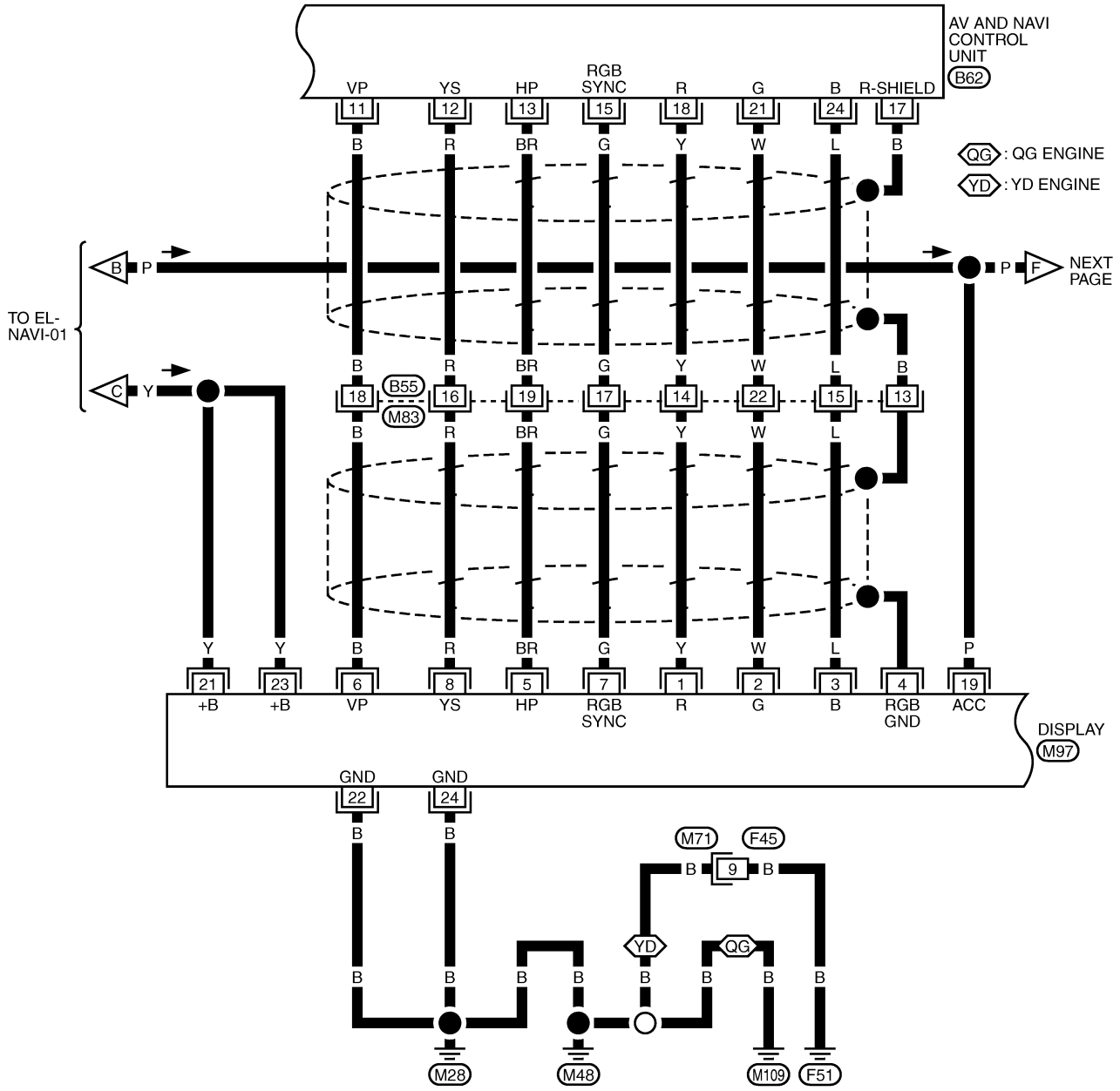


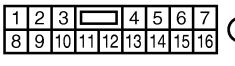
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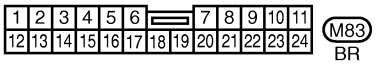


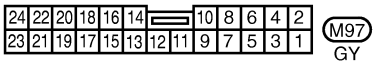
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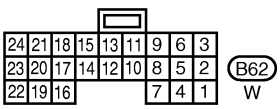
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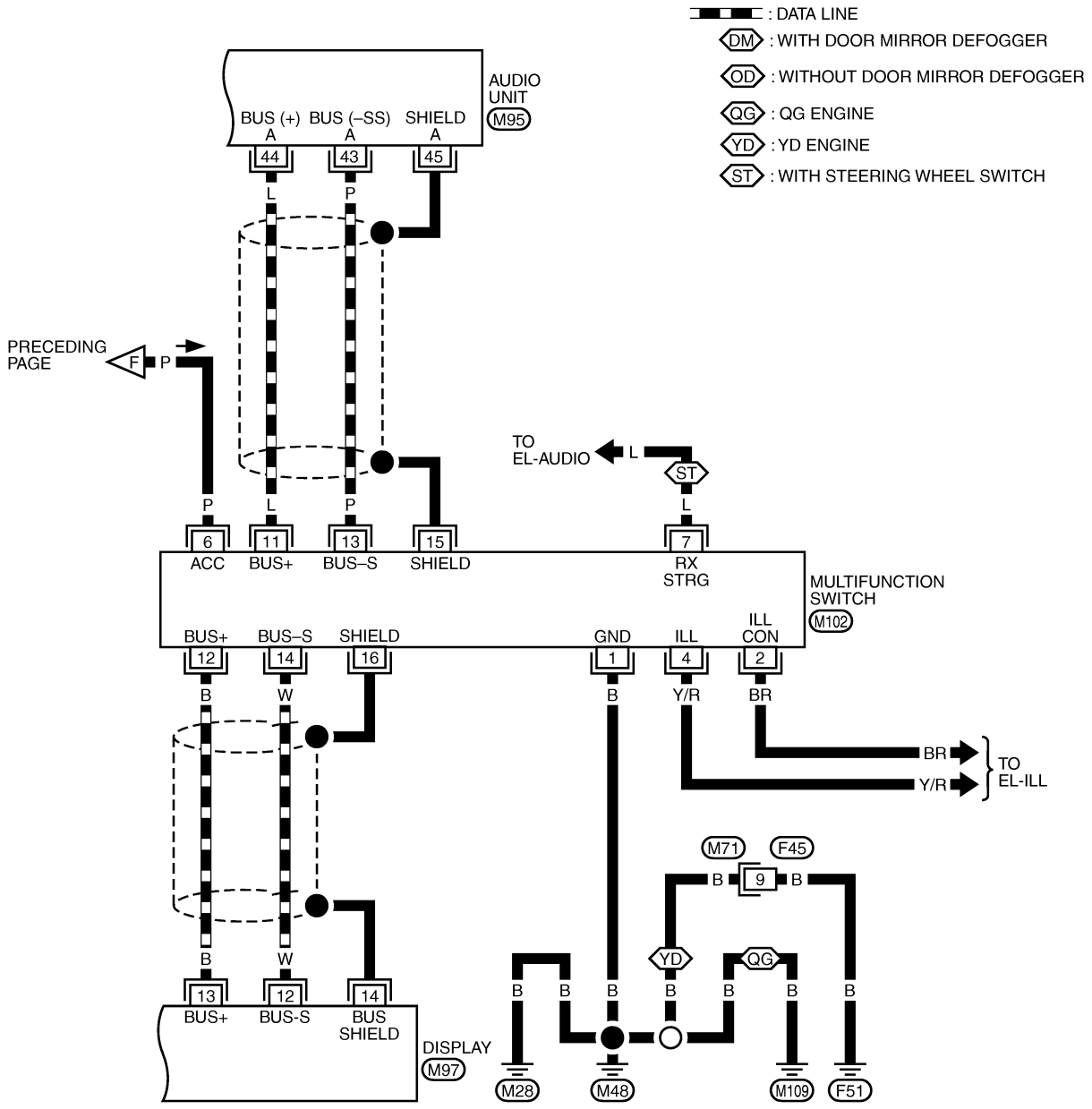


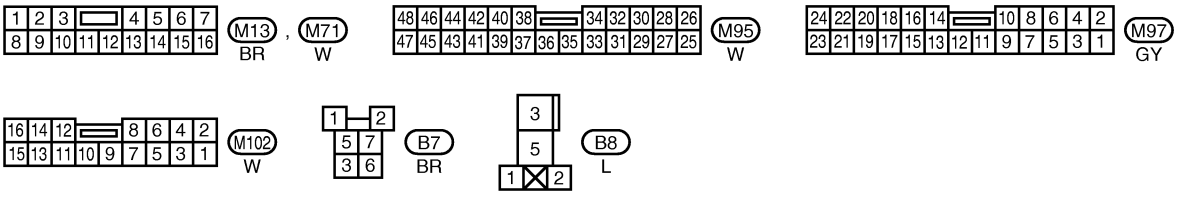




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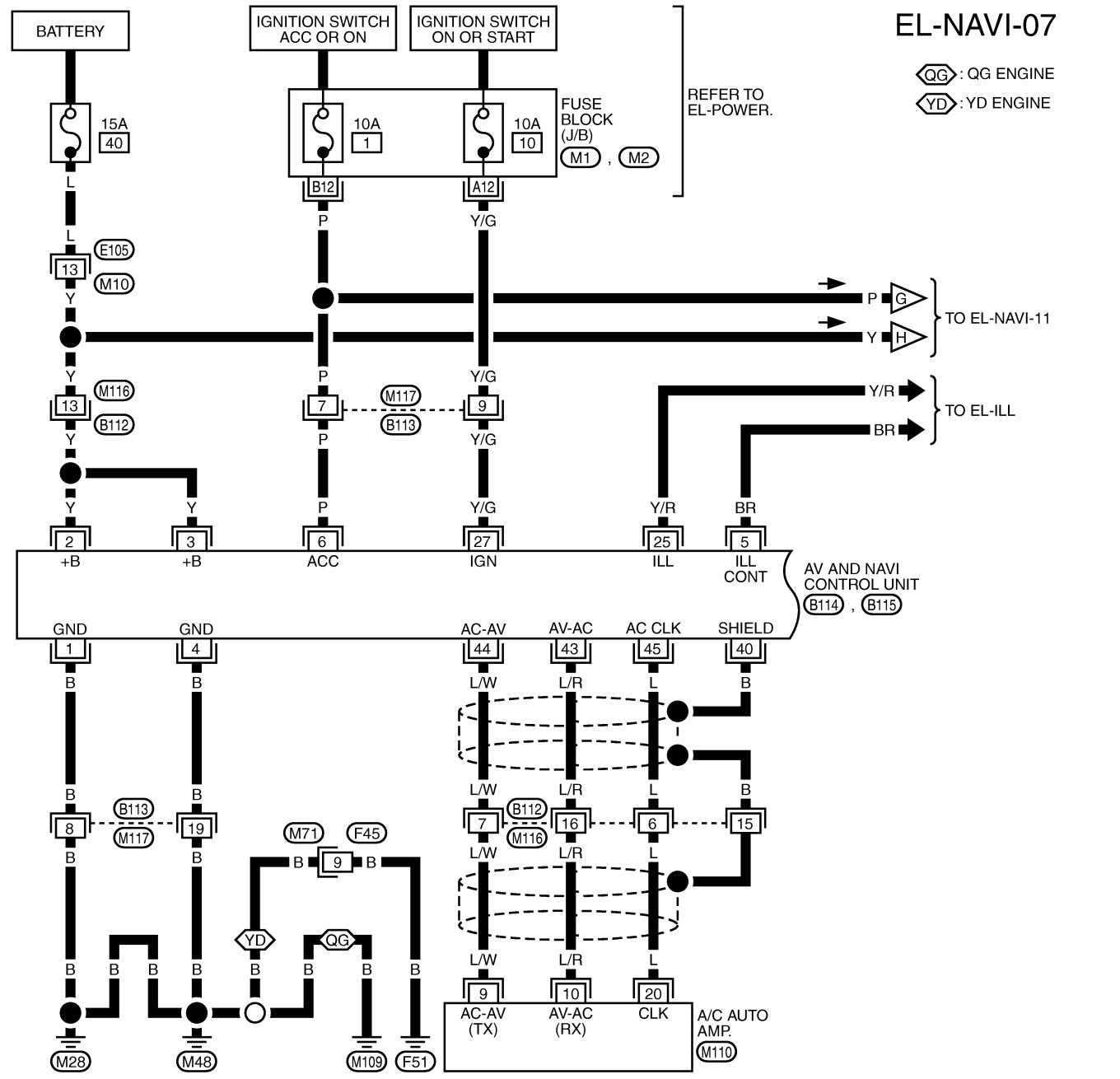


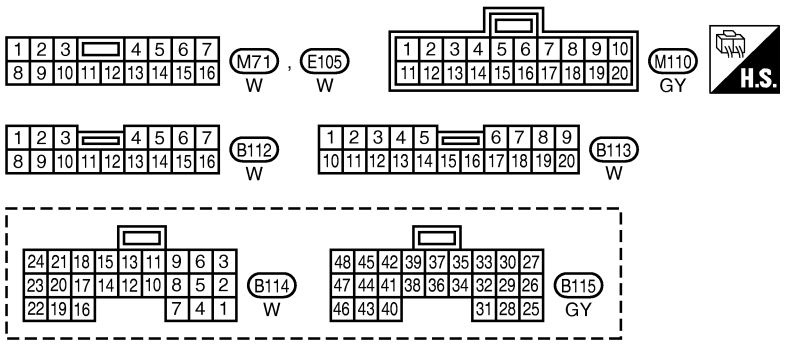


YEL027E

RHD MODELS

NLEL0598S02



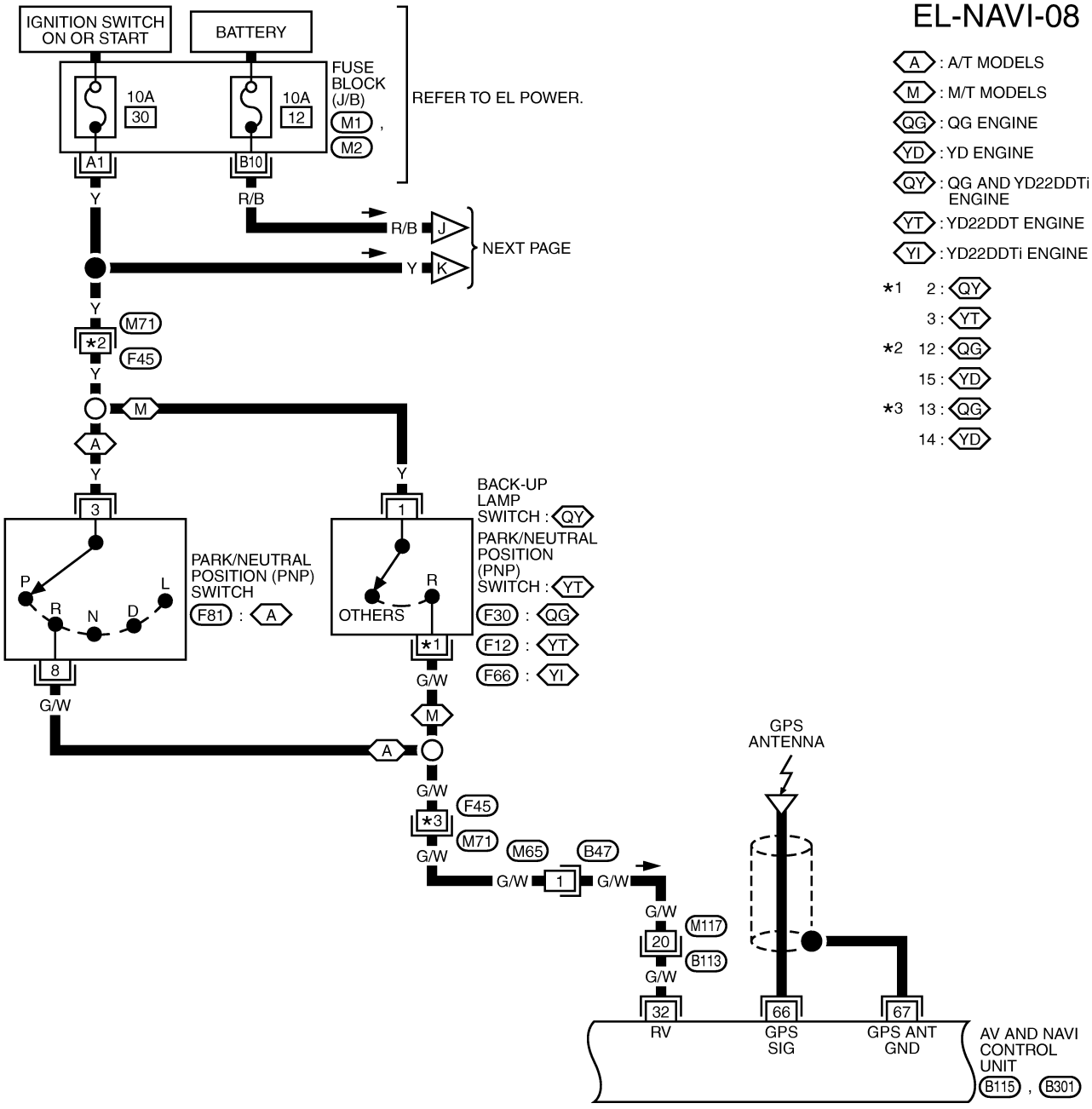


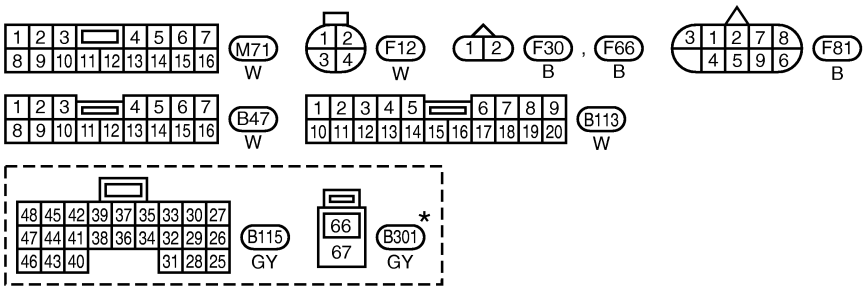
REFER TO THE FOLLOWING.

M1 , M2

-FUSE BLOCK- JUNCTION BOX (J/B)

YEL028E



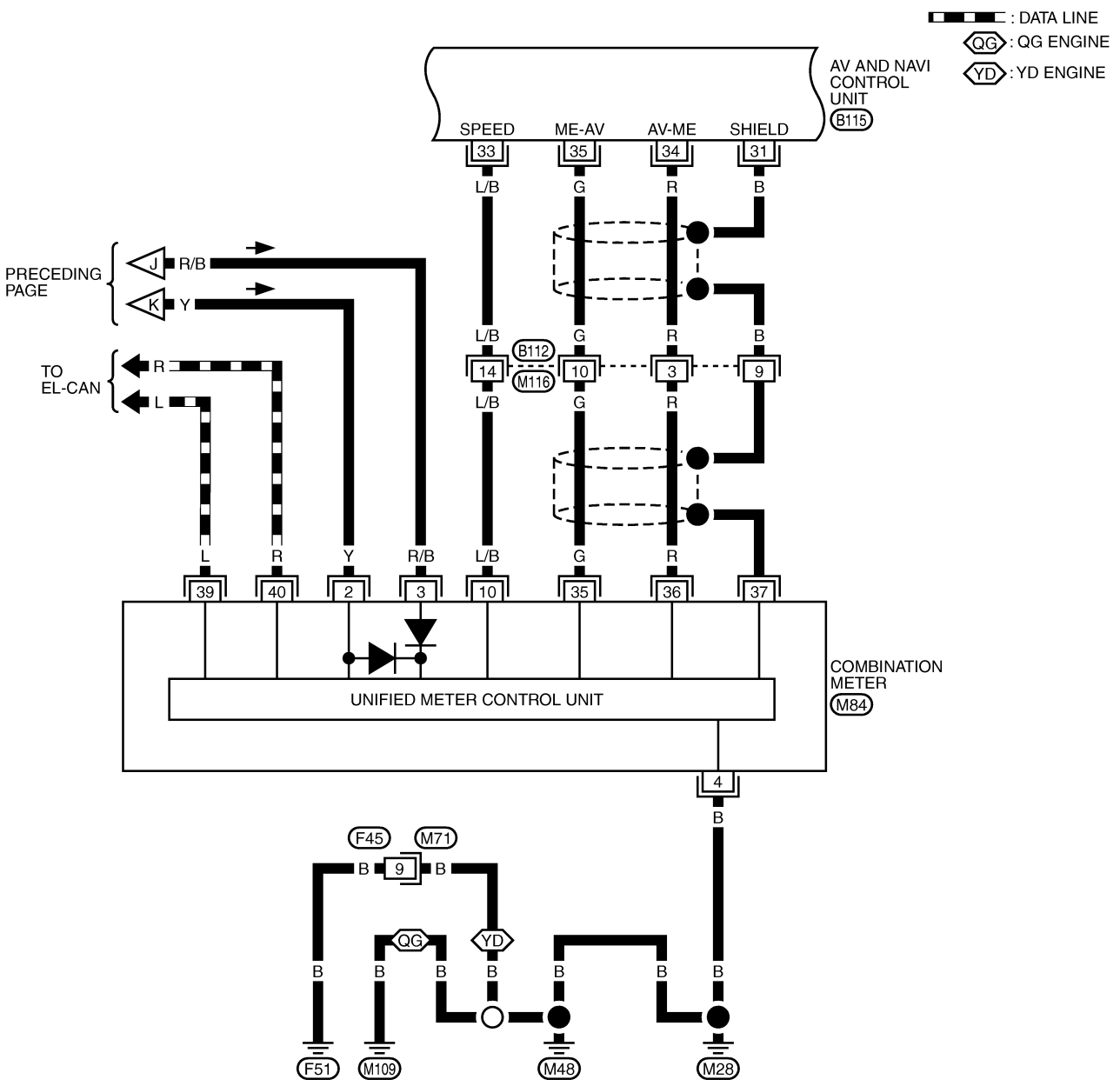


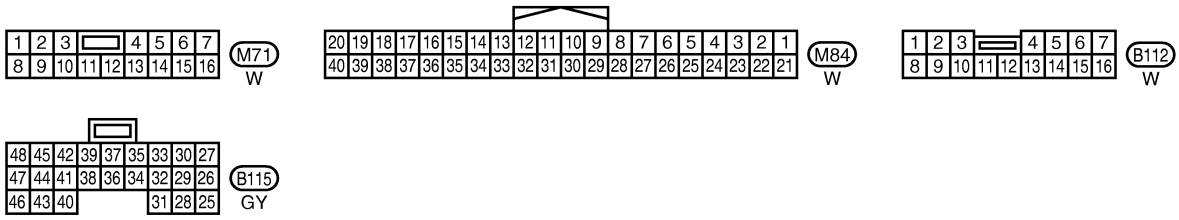
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

YEL029E

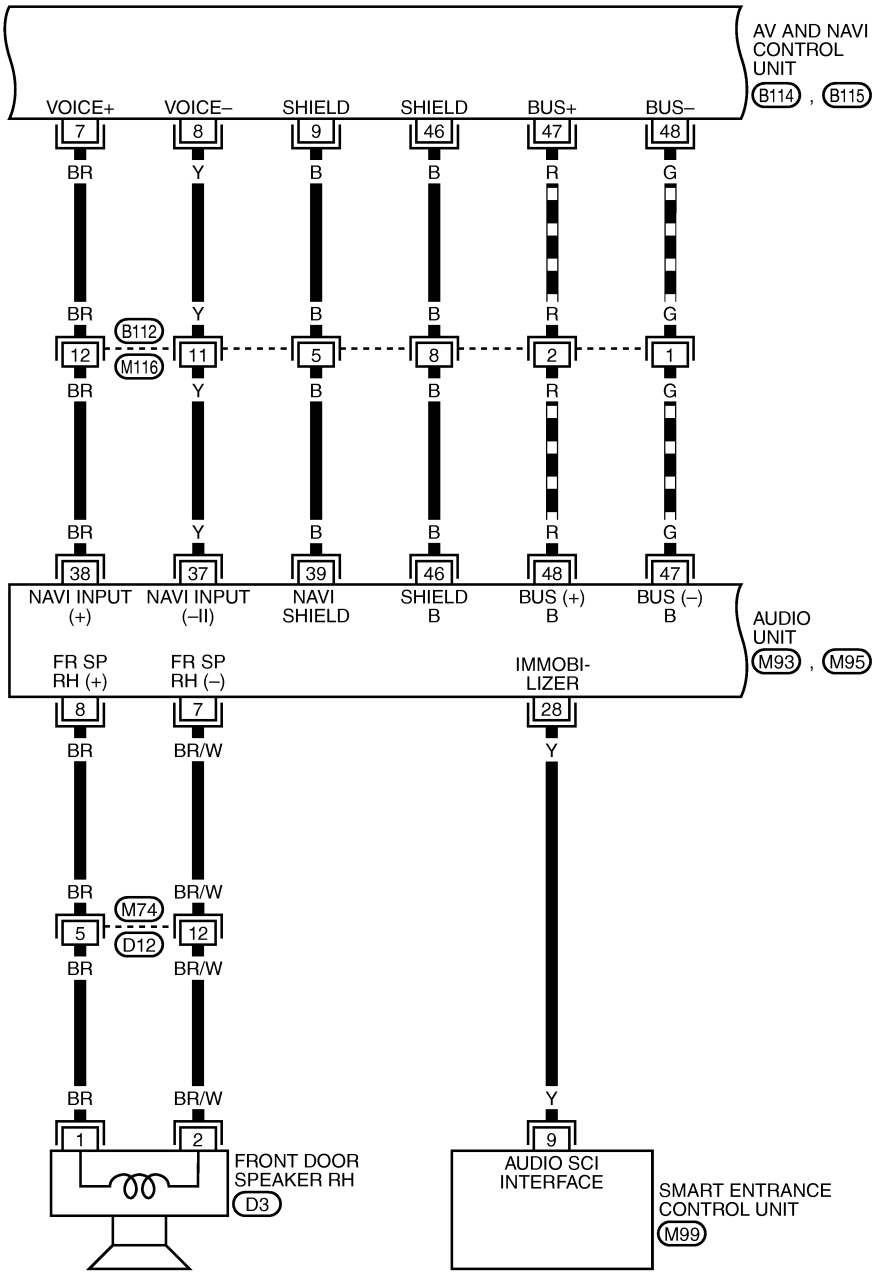
EL-NAVI-09



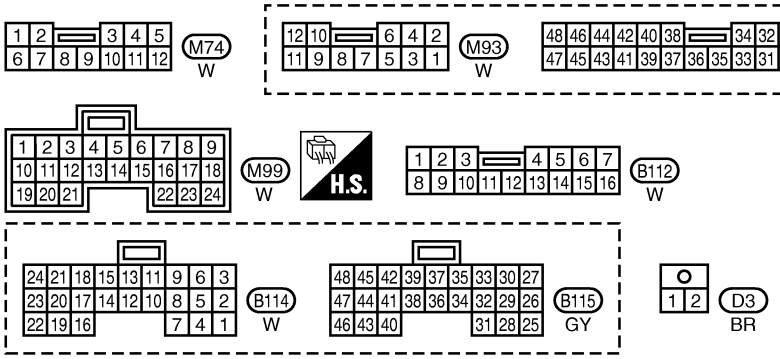


YEL030E

EL-NAVI-10

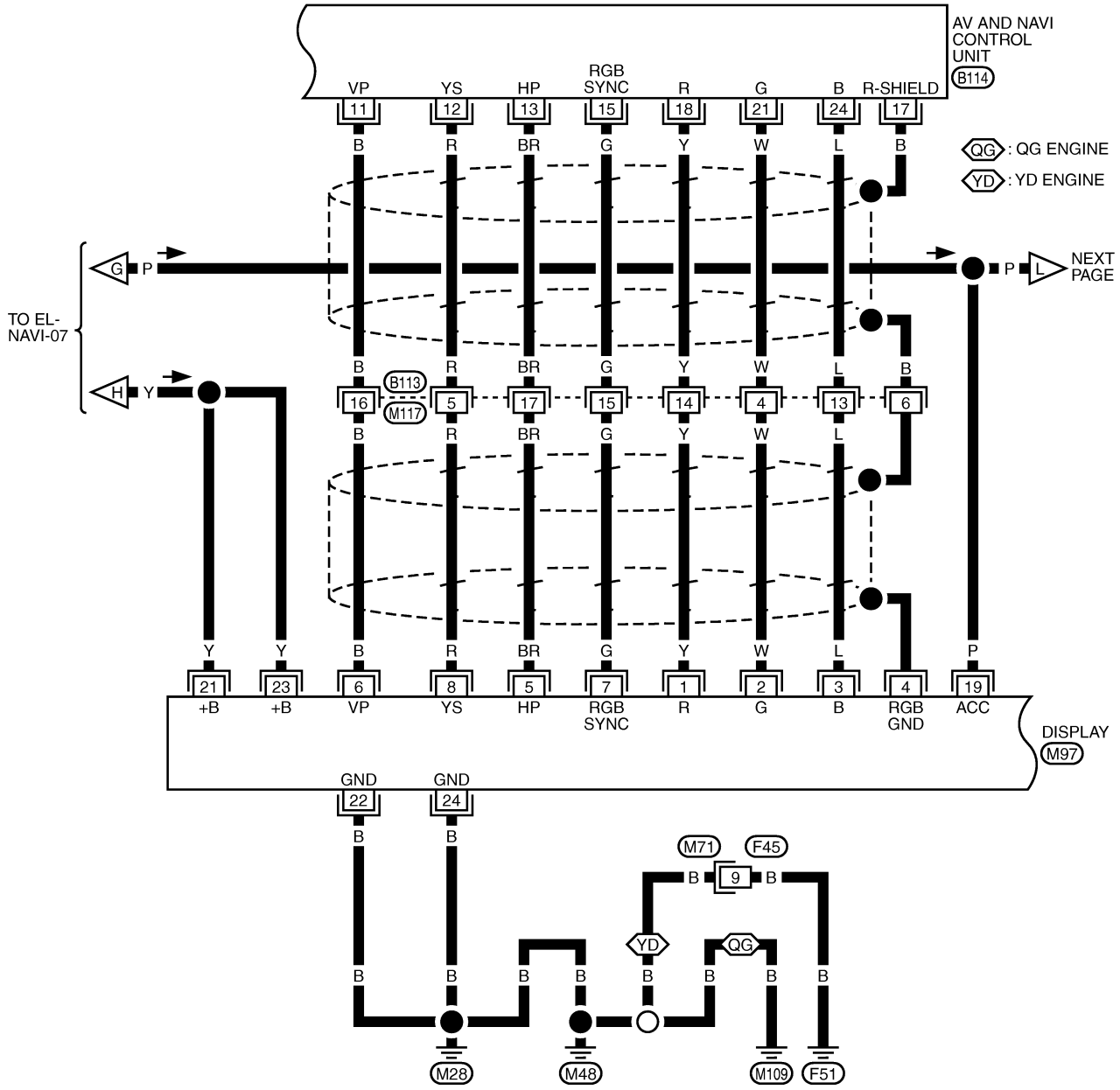


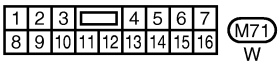
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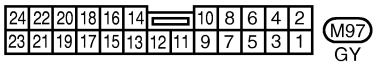


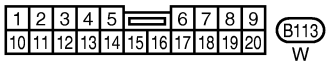
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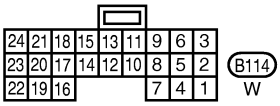
EL-NAVI-11





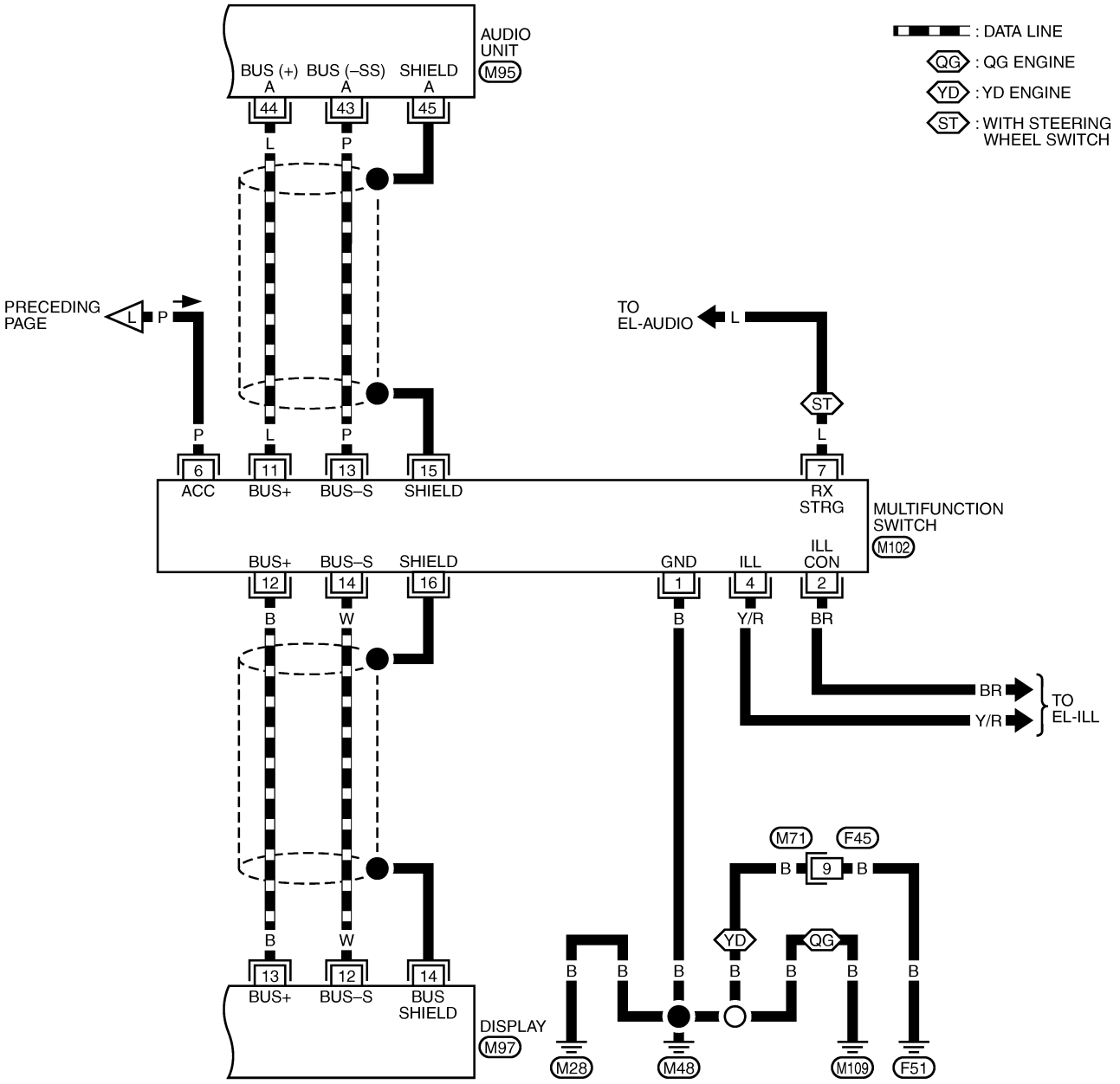


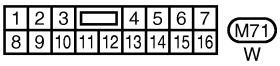


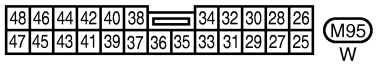


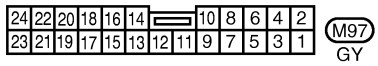
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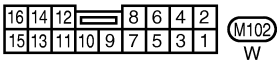
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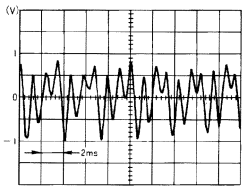
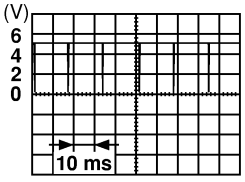
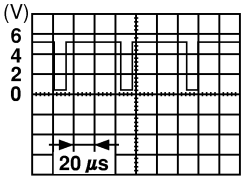
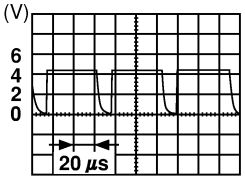


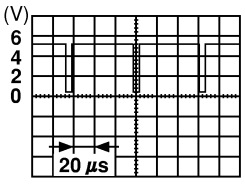
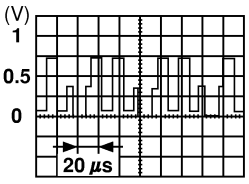
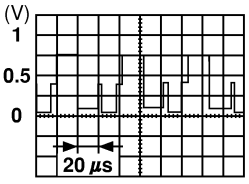
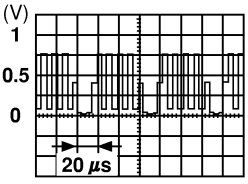
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Terminals and Reference Value for AV and NAVI Control Unit

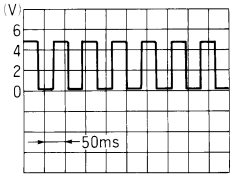
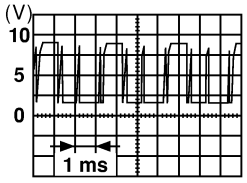
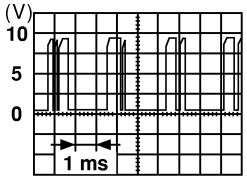
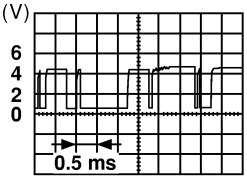
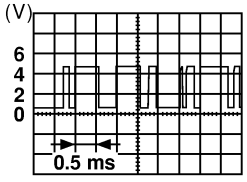
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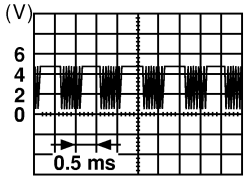
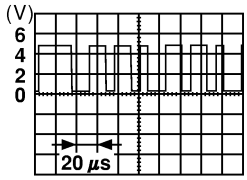
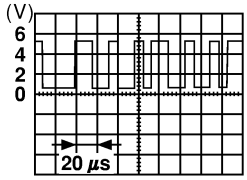
- For measurements made with IGN switch ON, if possible, measure with engine running to prevent battery discharge.
- Use a circuit tester and oscilloscope or CONSULT-ll for measurement.

Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	–			Ignition switch	Operation		
1 (B)	ground	Ground	—	ON	—	Approx. 0V	—
2 (Y)	ground	Battery power	Input	OFF	—	Battery voltage	System does not work properly.
3 (Y)							
4 (B)	ground	Ground	—	ON	—	Approx. 0V	—
5 (BR)	ground	Illumination ground	—	ON	—	Approx. 0V	—
6 (P)	ground	ACC signal	Input	ACC	—	Battery voltage	System does not work properly.
7 (BR)	8 (Y)	voice guide signal	Output	ON	Press the “voice” switch.	 SKIA0171J	Only route guide and operation guide are not heard.
9(B)	—	Shield ground	—	—	—	—	—
11 (B)	17	Vertical synchronizing signal	Input	ON	—	 SKIA0161E	Superimposed screen is rolling.
12 (R)	17	RGB area signal	Output	ON	Press the “info”switch.	 SKIA0162E	RGB screen is not shown.
13 (BR)	17	Horizontal synchronizing signal	Input	ON	Select“ Display” in “Setting” mode and display the rear-view picture on the screen.	 SKIA0163E	Superimposed screen is not shown.

Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	–			Ignition switch	Operation		
15 (G)	17	RGB synchronizing signal	Output	ON	Press the "MAP" switch.	 SKIA0164E	RGB screen is rolling.
17 (B)	ground	RGB Ground	—	ON	—	Approx. 0V	—
18 (Y)	17	RGB signal (R: red)	Output	ON	Select "SCREEN ADJUSTMENT" of CONFIRMATION/ ADJUSTMENT function.	 SKIA0165E	RGB screen looks bluish.
21 (W)	17	RGB signal (G: green)	Output	ON	Select "SCREEN ADJUSTMENT" of CONFIRMATION/ ADJUSTMENT function.	 SKIA0166E	RGB screen looks reddish.
24 (L)	17	RGB signal (B: blue)	Output	ON	Select "SCREEN ADJUSTMENT" of CONFIRMATION/ ADJUSTMENT function.	 SKIA0167E	RGB screen looks yellowish.
25 LHD: (R/G) RHD: (Y/R)	ground	Illumination control signal	Input	ON	Lighting switch ON (position 1)	Battery voltage	Screen does not switch between daytime mode and nighttime mode.
					Lighting switch OFF	Approx. 0	
27 (Y/G)	ground	Ignition signal	Input	ON	—	Battery voltage	A/C operation is not possible. Vehicle information setting is not possible.
31 (B)	—	Shield ground	—	—	—	—	—

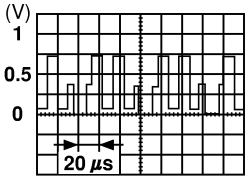
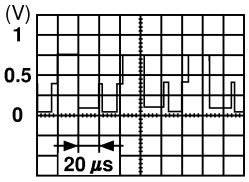
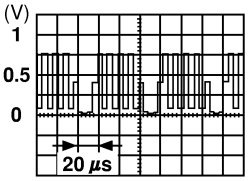
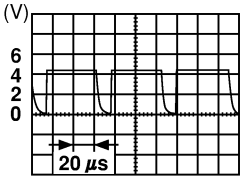
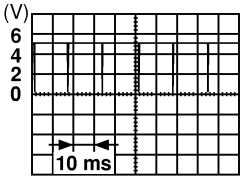
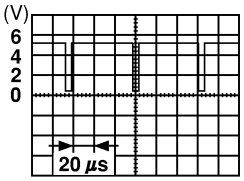
Terminals and Reference Value for AV and NAVI Control Unit (Cont'd)

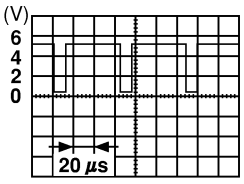
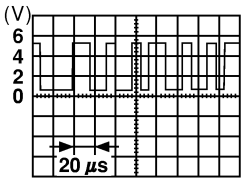
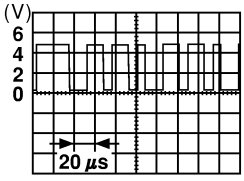
Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	–			Ignition switch	Operation		
32 (G/W)	ground	Reverse signal	Input	ON	AT selector lever in R-position	Battery voltage	The navigation current-location mark moves strangely when the vehicle is moving backwards.
					AT selector lever not in R-position	Approx. 3.0V or less	
33 (L/B)	ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 ELF1080D	Navigation current-location mark does not indicate the correct position.
34 (R)	ground	Communication signal (AV - ME)	Output	ON	Display the vehicle information screen.	 SKIA0169E	Clock cannot be adjusted. Vehicle information screen is not shown.
35 (G)	ground	Communication signal (ME - AV)	Input	ON	Perform various settings on the vehicle information screen.	 SKIA0170E	Clock cannot be adjusted. Vehicle information screen is not shown.
40 (B)	—	Shield ground	—	—	—	—	—
43 (L/R)	ground	A/C communication signal (AV - AC)	Output	ON	—	 SKIA0172E	A/C operation is not possible.
44 (L/W)	ground	A/C communication signal (AV - AC)	Input	ON	—	 SKIA0173E	A/C status is not indicated correctly.

Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	–			Ignition switch	Operation		
45 (L)	ground	A/C clock signal	Input	ON	—	 SKIA0174E	A/C status is not indicated correctly.
46 (B)	—	Shield ground	—	—	—	—	—
47 (R)	ground	Communication signal (+)	Input/ output	ON	—	 SKIA0175E	System does not work properly.
48 (G)	ground	Communication signal (-)	Input/ output	ON	—	 SKIA0176E	System does not work properly.
66	67	GPS signal	Input	ON	Connector is not connected.	Approx. 5 V	Navigation system GPS correction is not possible.

Terminals and Reference Value for Display

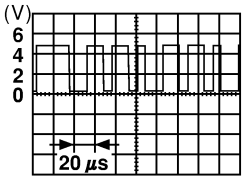
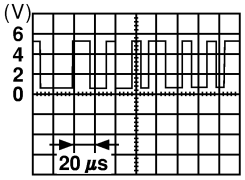
NLEL0601

Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	4	RGB signal (R: red)	Input	ON	Select “SCREEN ADJUSTMENT” of CONFIRMATION/ ADJUSTMENT function.	 SKIA0165E	RGB screen looks bluish.
2 (W)	4	RGB signal (G: green)	Input	ON	Select “SCREEN ADJUSTMENT” of CONFIRMATION/ ADJUSTMENT function.	 SKIA0166E	RGB screen looks reddish.
3 (L)	4	RGB signal (B: blue)	Input	ON	Select “SCREEN ADJUSTMENT” of CONFIRMATION/ ADJUSTMENT function.	 SKIA0167E	RGB screen looks yellowish.
4	—	Shield ground	—	—	—	—	—
5 (BR)	4	Horizontal synchronizing signal	Output	ON	Select“ Display” in “Setting” mode and display the rear view picture on the screen.	 SKIA0163E	Superimposed screen is not shown.
6 (B)	4	Vertical synchronizing signal	Output	ON	—	 SKIA0161E	Superimposed screen is rolling.
7 (G)	4	RGB synchronizing signal	Input	ON	Press the “MAP” switch.	 SKIA0164E	RGB screen is rolling.

Terminal No. (wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	−			Ignition switch	Operation		
8 (R)	4	RGB area signal	Input	ON	Press the "info" switch.	 SKIA0162E	RGB screen is not shown.
12 (W)	ground	Communication signal (-)	Input/ output	ON	—	 SKIA0176E	System does not work properly.
13 (B)	ground	Communication signal (+)	Input/ output	ON	—	 SKIA0175E	System does not work properly.
14	—	Shield ground	—	—	—	—	—
19 (P)	ground	ACC signal	Input	ACC	—	Battery voltage	Screen is not shown.
21 (Y)	ground	Battery power	Input	OFF	—	Battery voltage	Screen is not shown.
23 (Y)							
22 (B)	ground	Ground	—	ON	—	Approx. 0V	—
24 (B)	ground	Ground	—	ON	—	Approx. 0V	—

Terminals and Reference Value for Multifunction Switch

=NLEL0602

Terminal No. (wire color)		Item	Signal input/ output	Condition			Voltage	Example of symptom
+	–			Ignition switch	Operation			
1 (B)	ground	Ground	—	ON	—		—	All operations do not work.
2 (BR)	ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in 1st position.		Changes between approx. 0 and approx. 12V.	Multifunction Switch illumination cannot be controlled.
4 (Y/R)	ground	Illumination control signal	Input	ON	Lighting switch ON (position 1)	Optical sensor is exposed to light.	Approx. 3.5V or more	Screen does not switch between daytime mode and nighttime mode.
						Optical sensor is not exposed to light.	Approx. 1.5V or less	
6 (P)	ground	ACC	Input	ACC	—		Battery voltage	All operations do not work.
11 (L) 12 (B)	ground	Communication signal (+)	Input/ output	ON	—		 SKIA0175E	System does not work properly.
13 (P) 14 (W)	ground	Communication signal (-)	Input/ output	ON	—		 SKIA0176E	System does not work properly.
15 16	ground	Shield ground	—	ON	—		—	—

Self-Diagnosis Function

=NLEL0603

DESCRIPTION

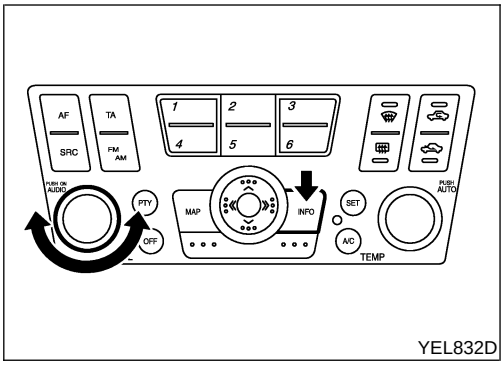
NLEL0603S01

- Diagnosis function consists of the self-diagnosis mode performed automatically and the confirmation/ adjustment mode operated manually.
- Self-diagnosis mode checks connections between all units and performs individual unit diagnosis for all units in system. Results are displayed on LCD display.
- Check/adjustment mode is used to perform trouble diagnosis that require operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value, and to display the error record of the navigation system.

SELF-DIAGNOSIS ITEM

NLEL0603S02

Mode			Diagnosis content
Self-diagnosis			• Control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it.) • Performs diagnosis of connections between C/U and GPS antenna and between C/U and all units.
Confirmation/ adjustment	Display		Color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle signals		The following signals can be diagnosed: vehicle speed, parking brake, light, IGN (IGN SW), and reverse.
	History of Errors		Displays the navigation system-related problems that occurred in the past and the number of their occurrence. When a trouble symptom is selected, the time and place of the latest occurrence will be shown.
	Auto Climate Control		All A/C screen displays on LCD monitor and the A/C SW indicator lamp are illuminated.
	Navigation	Display Longitude & Latitude	Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.
		Angle adjustment	Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.
		Distance adjustment	Corrects difference between the current-location mark on the display and actual position of the vehicle.
		Initialize Location	Location memorized by AV and NAVI control unit can be initialized in this mode.
	Service		Service schedule can be changed in this mode.



YEL832D

Self-Diagnosis Mode

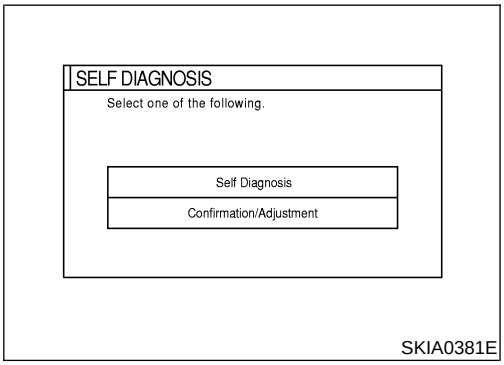
=NLEL0604

OPERATION PROCEDURE

NLEL0604S01

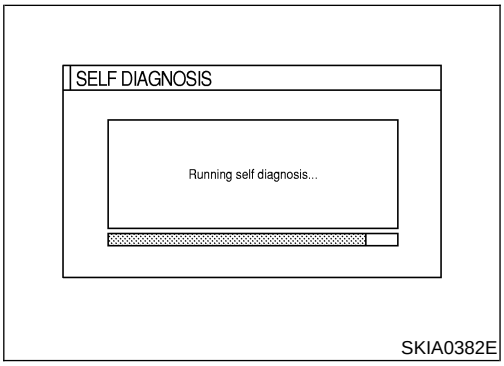
1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)

- Shifting from current screen to previous screen is performed by pressing “BACK” switch.



SKIA0381E

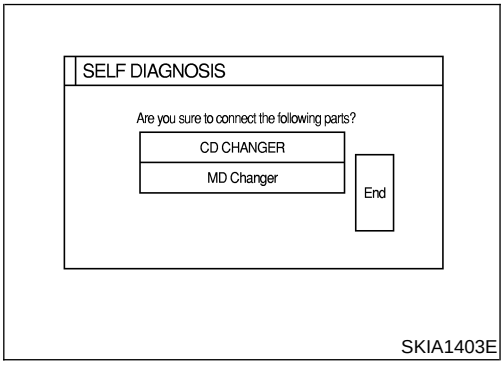
4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.



SKIA0382E

5. Perform self-diagnosis by selecting the “SELF-DIAGNOSIS”.

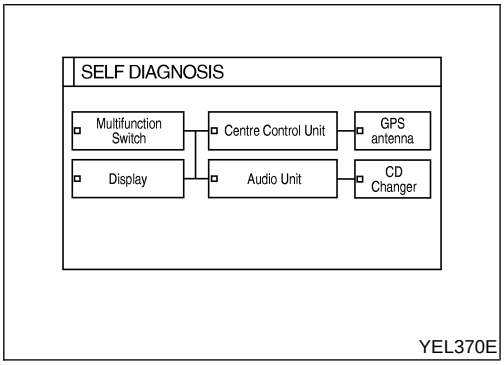
- Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
- A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



SKIA1403E

6. When the self-diagnosis completes, optional part confirmation screen will be shown.

- When connection of an optional part is judged faulty, a screen to check if the optional part is actually fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and press “END”. Then the “Self-diagnosis” screen will be shown.
- When the optional part is connected normally, the switch for the part will not appear on the screen.

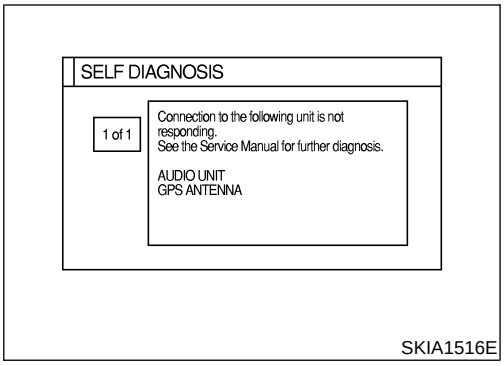


YEL370E

7. On the “Self-diagnosis” screen, each unit name will be colored according to the diagnosis result, as follows.

Green: No malfunctioning.
Yellow: Cannot be judged by self-diagnosis results.
Red: Unit is malfunctioning.
Gray: Diagnosis has not been done.

- If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the "Self-diagnosis" screen and comments for the diagnosis results will be shown.

- When the switch is green, the following comment will be shown. "Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the "confirmation and adjustments" menu or refer to the service manual".
- When the switch is yellow, the following comment will be shown. "Connection to the following unit is abnormal. See the service manual for further details".
- When the switch is red, the following comment will be shown. "Center Control Unit is abnormal".
- When the switch is gray, the following comment will be shown. "Self-diagnosis for DVD-ROM DRIVER of NAVI was not conducted because no DVD-ROM was available".

Self-Diagnosis Mode (Cont'd)

DIAGNOSIS CHART

=NLEL0604S02

1. Find applicable diagnosis number from chart.
2. Find possible causes from diagnosis number chart. Perform check with Wiring Diagram — NAVI —.
3. Turn ignition switch ON, then perform self-diagnosis again.

Screen switch						Diagnosis No.
Switch color	Control unit	Display	Audio unit	CD auto changer	GPS antenna	
Red	×					Diagnosis 1
Gray	×					Diagnosis 2
Yellow	×					Diagnosis 3
	×					Diagnosis 4
	×	×				Diagnosis 5
	×		×	×		Diagnosis 6
				×		Diagnosis 7
	×				×	Diagnosis 8

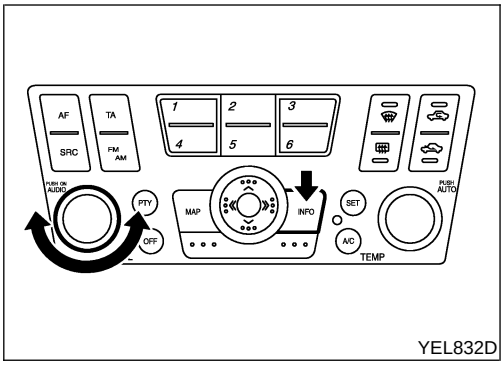
CAUTION:

If multifunction switch is malfunctioning, self-diagnosis mode cannot be started.

DIAGNOSIS NUMBER CHART

NLEL0604S03

Diagnosis No.	Possible causes
Diagnosis 1	Control unit (AV and NAVI control unit) is malfunctioning.
Diagnosis 2	AV and NAVI control unit determines that no map DVD-ROM is inserted.
Diagnosis 3	If "DVD-ROM is malfunctioning. Check disc." is displayed: 1. Remove inserted map DVD-ROM and check that it is correct special DVD-ROM. 2. Check that there is no dirt, damage, or warping on removed DVD-ROM. 3. If above checks reveal nothing unusual, insert another map DVD-ROM with same contents. Then check whether same diagnosis result is obtained when "Self-diagnosis" is performed. If result is same, AV and NAVI control unit is malfunctioning. If not same, map DVD-ROM should be replaced.
Diagnosis 4	"DVD-ROM or DVD-ROM driver in AV and NAVI control unit is malfunctioning. Follow maintenance procedures to diagnose." is displayed: Perform check as described in Diagnosis 3.
Diagnosis 5	• Display power supply or ground line • AV communication line between Display and multifunction switch
Diagnosis 6	Audio unit power supply or ground line
Diagnosis 7	CD auto changer power supply and ground circuit, Communication line between CD auto changer and audio unit
Diagnosis 8	GPS antenna system 1. Visually check for open circuit in GPS antenna coaxial cable. 2. Disconnect GPS antenna connector and check AV and NAVI control unit outputs approx. 5V. If there is no voltage, AV and NAVI control unit is malfunctioning. If there is, replace GPS antenna. If connection is inoperative after performing self-diagnosis again, AV and NAVI control unit is malfunctioning.



YEL832D

Confirmation/Adjustment Mode

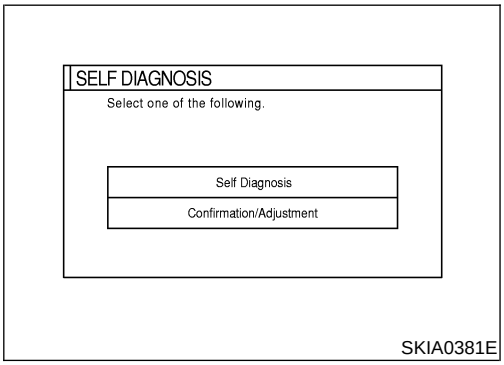
NLEL0605

OPERATION PROCEDURE

NLEL0605S01

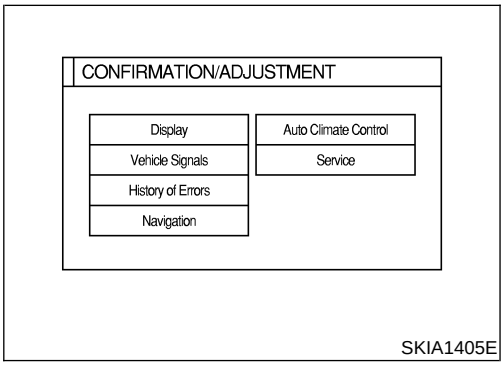
1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)

- Shifting from current screen to previous screen is performed by pressing “BACK” switch.



SKIA0381E

4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.

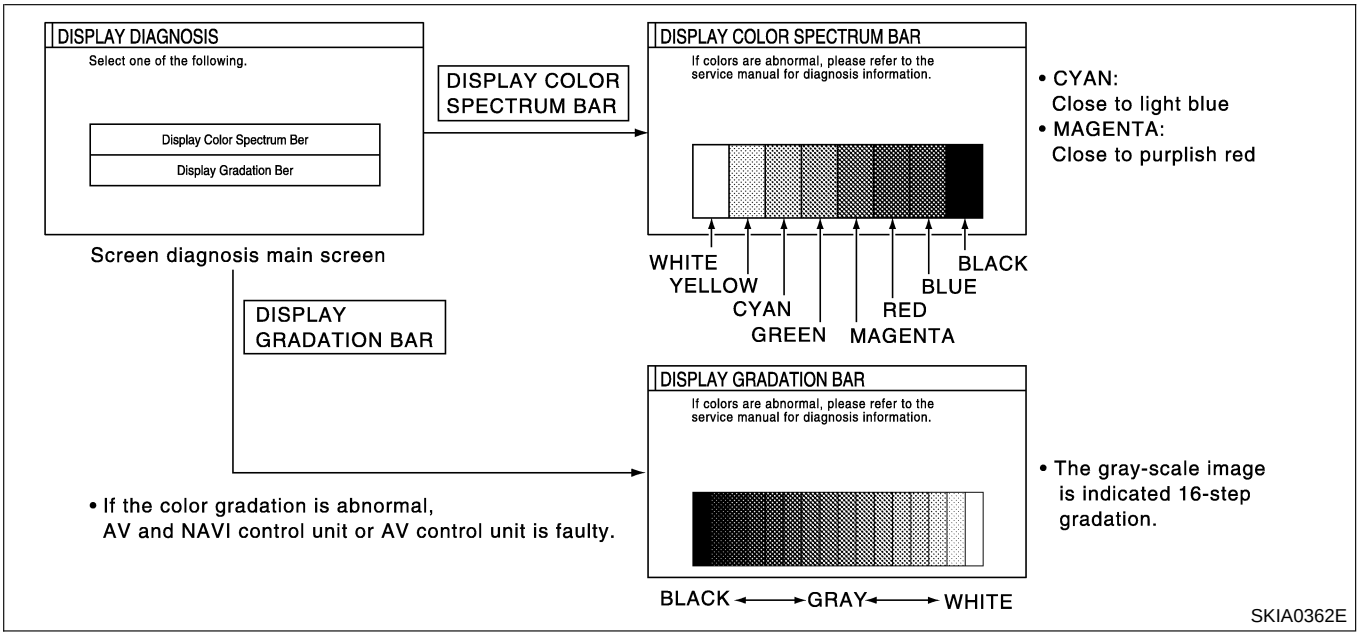


SKIA1405E

5. When “CONFIRMATION/ADJUSTMENT” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.

DISPLAY

NLEL0605S02



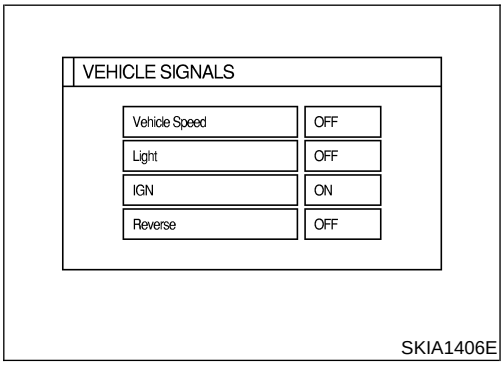
SKIA0362E

- When RGB signal error occurred in the RGB system, tone of

the color bar will change as follows.

R (red) signal error: Screen looks bluish
G (green) signal error: Screen looks yellowish
B (blue) signal error: Screen looks reddish

- When the color of the screen looks unusual, EL-430, "Color of RGB Image Is Not Proper".



SKIA1406E

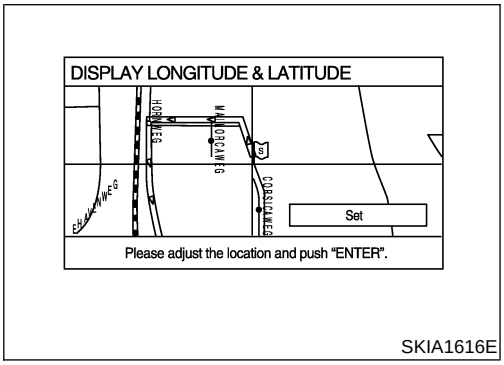
VEHICLE SIGNALS

NLEL0605S03

- A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
Lights	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	
IGN	ON	Ignition switch ON	—
	OFF	Ignition switch ACC or OFF	
Reverse	ON	Selector lever in R-position	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Selector lever in other than R-position	
	—	Ignition switch in ACC position	

- If vehicle speed is NG, EL-423, "Vehicle Speed Signal Check".
- If light is NG, EL-424, "Illumination Control Signal Check".
- If IGN is NG, EL-425, "Ignition signal Check".
- If reverse is NG, EL-426, "Reverse Signal Check".



SKIA1616E

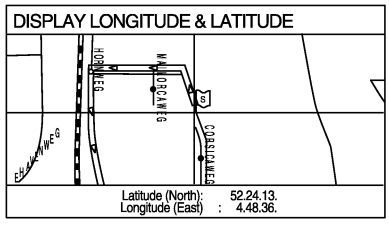
NAVIGATION

NLEL0605S04

Display Longitude & Latitude

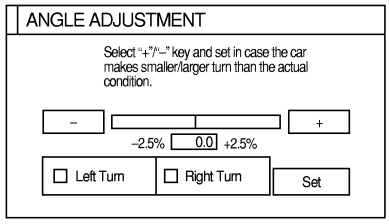
NLEL0605S0401

- Adjust the pointer with using the joystick and touch "Set".



SKIA1617E

- The longitude and latitude are displayed.

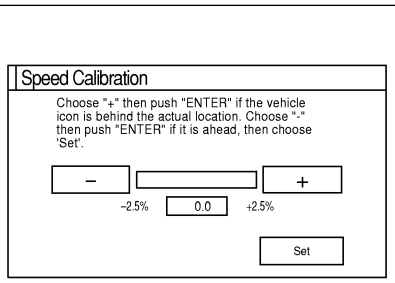


SKIA1517E

Angle Adjustment

NLEL0605S0402

- Adjusts turning angle output detected by the gyroscope.



SKIA0365E

Speed Calibration

NLEL0605S0403

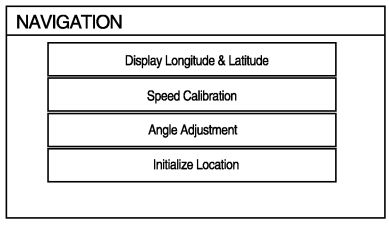
- During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.

Initialize Location

NLEL0605S0404

Description

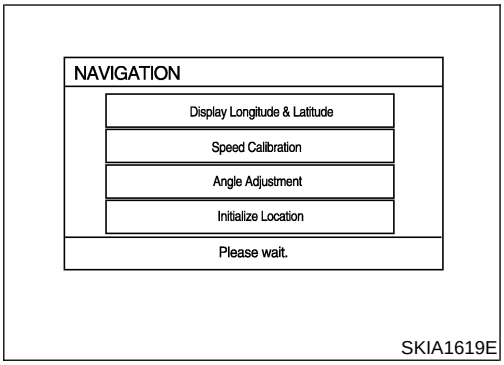
- Location data for GPS in the Center control unit is initialized in Europe by this mode. Then it is possible for Center control unit to receive GPS signals for short time.



SKIA1618E

How to perform "Initialize location" mode

1. Select "Initialize Location", and push "ENTER".



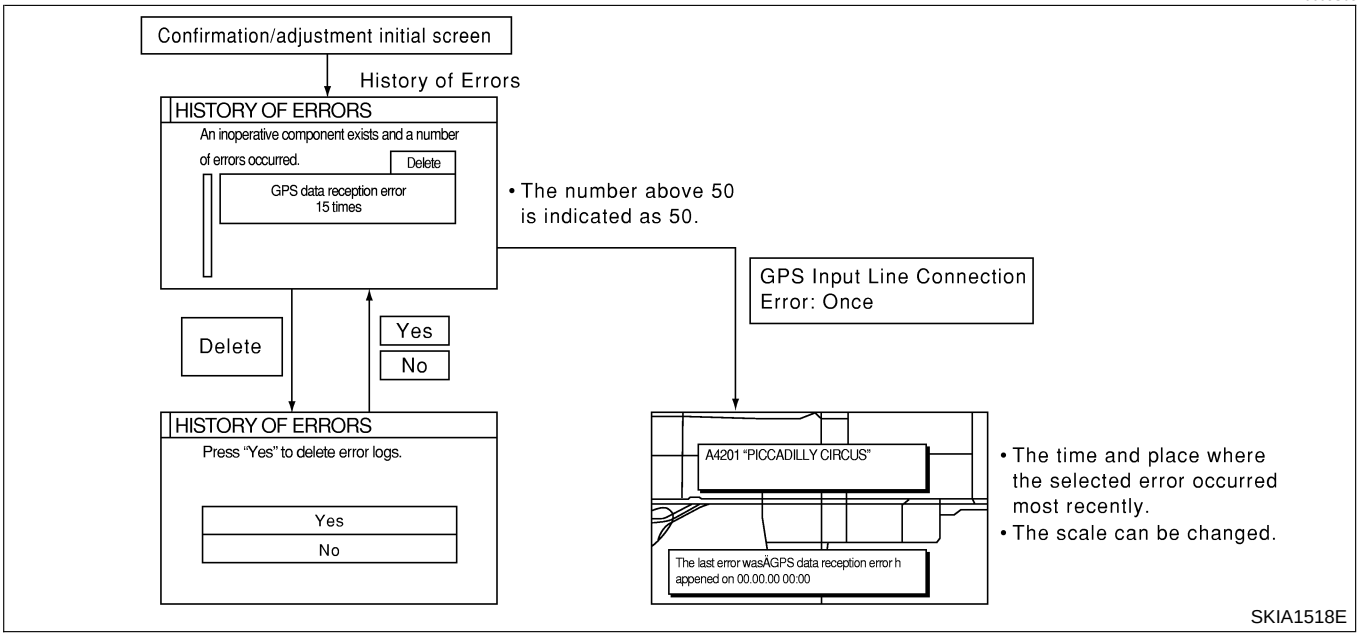
2. A message "Please wait." is displayed and then backs to another display of "Confirmation/Adjustment" mode.

NOTE:

- To continue GPS initialized operation, operate as follows back to "Map" screen.
- − Push "BACK" button twice.
- − Push "MAP" button.
- After above operation, GPS indicator changes to green color within half a minute, unless improper GPS located condition.
- This operation should be performed in outside field.

HISTORY OF ERRORS

NLEL0605S05



DIAGNOSIS BY HISTORY OF ERRORS

NLEL0605S06

The "Self-diagnosis" results indicate whether an error occurred during the period from when the ignition switch is turned to ON until "Self-diagnosis" is completed.

If an error occurred before the ignition switch was turned to ON and does not occur again until the "Self-diagnosis" is completed, the diagnosis result will be judged normal. Therefore, those errors in the past, which cannot be found by the "Self-diagnosis," must be found by diagnosing the "History of Errors".

The History of Errors displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- Correct time of the error occurrence may not be displayed when the GPS antenna substrate within the AV and NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the current-location mark at the time when the error occurred. If the current-location mark has deviated from the correct position, then the place of the error occurrence max be located correctly.
- The maximum number of occurrences which can be stored is 50. For the 51st and later occurrences, the displayed number remains 50.

When a reproducible malfunction occurred but its cause cannot be identified because several errors are present, record the item, number and place (longitude/latitude) of error occurrence (or delete the

History of Errors), then turn the ignition switch from OFF to ON to reproduce the malfunction. Check the History of Errors to find the items which show an increased number of occurrences, and diagnose the item.

Error item	Possible causes Action/symptom	Example of symptom
Gyro sensor disconnected	Communications malfunction between AV and NAVI control unit and internal gyro ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
GPS disconnected	Communication error between AV and NAVI control unit and internal GPS substrate ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS transmission cable malfunction	Malfunctioning transmission wires to AV and NAVI control unit and internal GPS substrate ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● During self-diagnosis, GPS diagnosis is not performed.
GPS input line connection error	Malfunctioning receiving wires to AV and NAVI control unit and internal GPS substrate ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference, or the control unit may have been subjected to excessively high or low temperatures.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning. ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Location detection accuracy of the navigation system will deteriorate, depending on the failed area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not performed.)
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning. ● Perform the self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Correct time may not be displayed. ● After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) ● Correct time of error occurrence may not be stored in the "History of Errors".

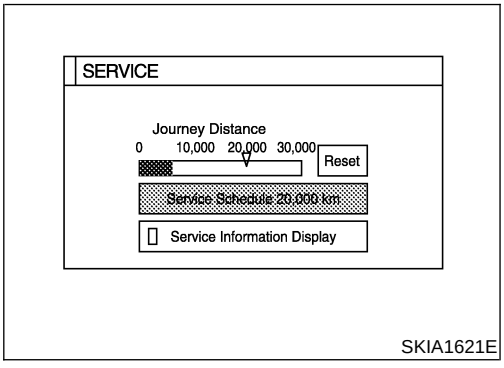
Confirmation/Adjustment Mode (Cont'd)

Error item	Possible causes Action/symptom	Example of symptom
GPS antenna disconnected	Malfunctioning connection between GPS substrate in AV and NAVI control unit and GPS antenna. ● Perform the self-diagnosis. ● When connection between AV and NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased. ● Perform the self-diagnosis. ● When connection between AV and NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
DVD-ROM Malfunction DVD-ROM Read error DVD-ROM Response Error	Malfunctioning AV and NAVI control unit	—
	Dedicated map DVD-ROM is in the system, but the data cannot be read. ● Is map DVD-ROM damaged, warped, or dirty? – If damaged or warped, the map DVD-ROM is malfunctioning. – If dirty, wipe the DVD-ROM clean with a soft cloth. ● Perform the self-diagnosis. ● When AV and NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.	● The map of a particular location cannot be displayed. ● Specific guidance information cannot be displayed. ● Map display is slow. ● Guidance information display is slow. ● System has been affected by vibration.

AUTO CLIMATE CONTROL

NLEL0605S07

- "ATC Automatic Air Conditioner" ATC-41, "Self-diagnosis Function" for the details.

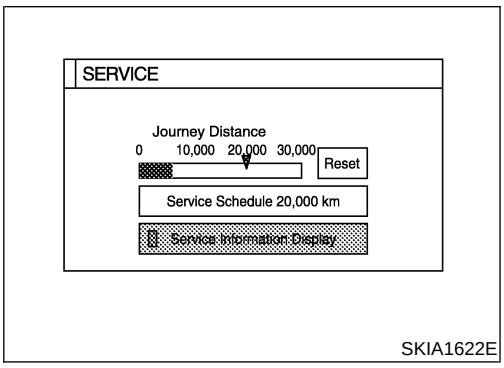


SKIA1621E

SERVICE

NLEL0605S08

- To set Service schedule, change Journey distance with joystick. At the same time, the marker of journey distance will be moved.



SKIA1622E

- To reset to initial distance, select "Reset" and push "ENTER".
- When the indicator of "Service Information Display" is set green, the color of the journey distance marker will be red. And automatically Service information screen will be displayed when journey distance is reached on service schedule.

Trouble Diagnoses

POWER SUPPLY AND GROUND CIRCUIT CHECK

NLEL0687

NLEL0687S01

1 CHECK FUSE

Check that the following fuses of the AV and NAVI control unit are not blown.

Terminals		Power source	Fuse No.
Connector	Terminal (wire color)		
M95	2 (Y), 3 (Y)	Battery power	40
M96	27 (Y/G)	Ignition power	10
M95	6 (P)	ACC power	1

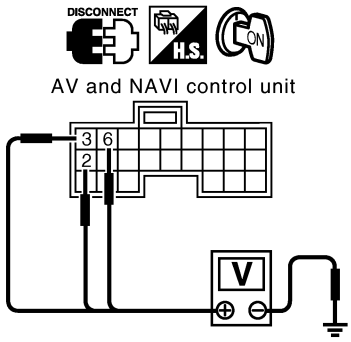
MTBL1516

OK or NG

OK	▶	GO TO 2.
NG	▶	If fuse is blown, be sure to eliminate case of problem before installing new fuse. EL-12, “POWER SUPPLY ROUTING”.

2 POWER SUPPLY CIRCUIT CHECK

1. Disconnect the AV and NAVI control unit connector.
2. Check voltage between AV and NAVI control unit and ground.



YEL371E

Terminals			Ignition switch position		
(+)		(—)			
Connector	Terminal (wire color)		OFF	ACC	ON
LHD: B62 RHD: B114	2 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	3 (Y)		Battery voltage	Battery voltage	Battery voltage
	6 (P)		0 V	Battery voltage	Battery voltage

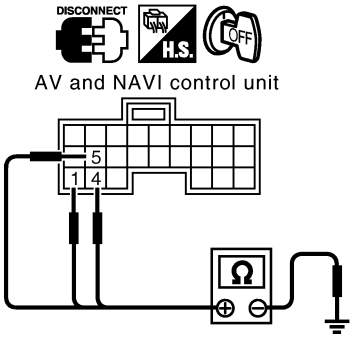
MTBL1719

OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between AV and NAVI control unit and fuse.

3	GROUND CIRCUIT CHECK.

1. Turn the ignition switch OFF.
2. Check continuity between the following AV and NAVI control unit harness connector M95 1 (B), 4 (B), 5 (BR) and ground.



YEL372E

Continuity should exist.

OK or NG

OK	▶	INSPECTION END.
NG	▶	Repair or replace harness.

CHECK POWER SUPPLY AND GROUND CIRCUIT FOR DISPLAY

=NLEL0687S02

1 CHECK FUSE

Check for blown fuses at display unit along with multifunction switch fuses listed below.

Unit	Terminal No.	Signal designation	Fuse No.
Display	21 (Y), 23 (Y)	Battery	40
	19 (P)	ACC	1
Multifunction switch	6 (P)	ACC	1

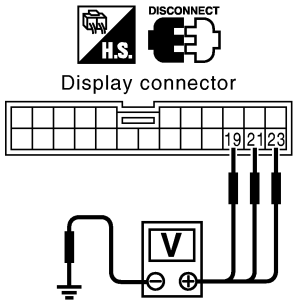
MTBL1518

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace the fuse.

2 POWER SUPPLY CIRCUIT INSPECTION

1. Disconnect display unit or multifunction switch connector.
2. Check voltage between display harness connector M97 and ground.



YEL373E

Unit	Terminals		Ignition switch position		
	Connector	Terminal (wire color)	OFF	ACC	ON
Display	M97	21 (Y)	Battery voltage	Battery voltage	Battery voltage
		23 (Y)	Battery voltage	Battery voltage	Battery voltage
		19 (P)	0 V	Battery voltage	Battery voltage

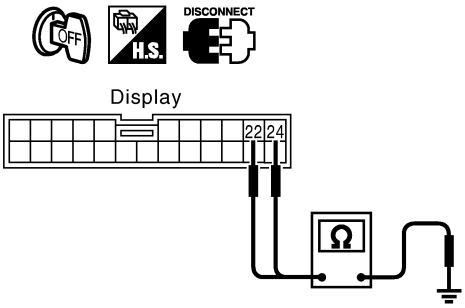
MTBL1720

OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between display and fuse.

3	GROUND CIRCUIT INSPECTION

Check continuity between display and ground.



YEL374E

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
M97	22 (B)	Ground	Yes
	24 (B)		

MTBL1721

OK or NG

OK	▶	INSPECTION END
NG	▶	Check ground circuit.

CHECK POWER SUPPLY AND GROUND CIRCUIT FOR MULTIFUNCTION SWITCH

=NLEL0687S03

1 CHECK FUSE

Check for blown fuses at display unit along with multifunction switch fuses listed below.

Unit	Terminal No.	Signal designation	Fuse No.
Multifunction switch	6 (P)	ACC	1

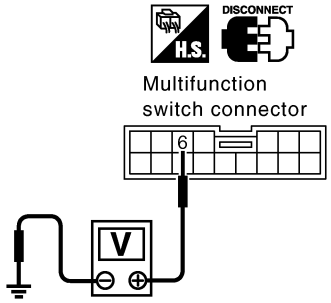
MTBL1722

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace the fuse.

2 POWER SUPPLY CIRCUIT INSPECTION

1. Disconnect display unit or multifunction switch connector.
2. Check voltage between multifunction switch and ground.



YEL375E

Unit	Terminals		Ignition switch position		
	Connector	Terminal (wire color)	OFF	ACC	ON
Multifunction switch	M102	6 (P)	0 V	Battery voltage	Battery voltage

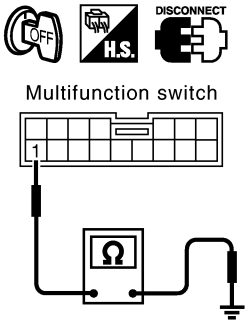
MTBL1723

OK or NG

OK	▶	GO TO 3.
NG	▶	Check harness for open or short between multifunction switch and fuse.

3	GROUND CIRCUIT INSPECTION

Check continuity between multifunction switch and ground.



YEL376E

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
M102	1 (B)	Ground	Yes

MTBL1724

OK or NG

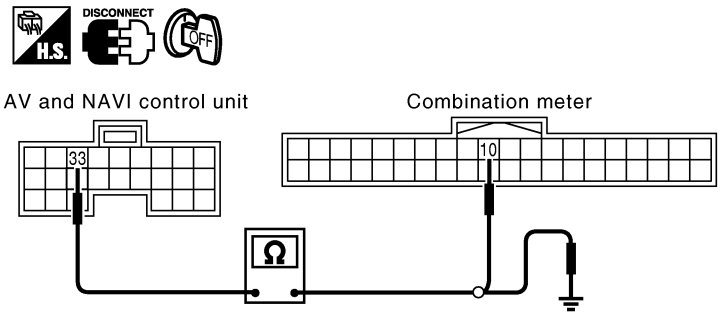
OK	▶	INSPECTION END
NG	▶	Check ground circuit.

VEHICLE SPEED SIGNAL CHECK

=NLEL0687S04

1 CHECK VEHICLE SPEED CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and combination meter connector.
3. Check continuity AV and NAVI control unit and combination meter.



YEL377E

Terminals				Continuity
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B115	33 (L/B)	M84	10(L/B)	Yes
		Ground		No

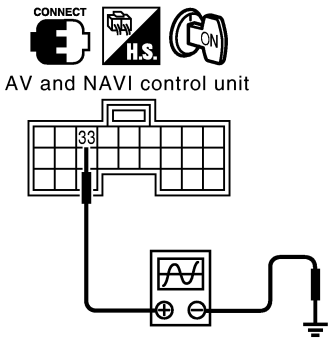
MTBL1725

OK or NG

OK	▶	GO TO 2.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

2 CHECK VEHICLE SPEED SIGNAL

1. Connect combination meter connector.
2. While driving vehicle at a constant speed.
3. Check voltage signal between AV and NAVI control unit and ground with oscilloscope or CONSULT-II.



YEL378E

33 (L/B)-ground:
EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

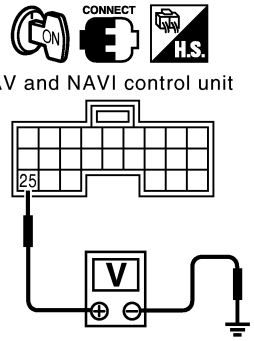
OK	▶	Replace AV and NAVI control unit.
NG	▶	Check combination meter system. EL-107, "Combination Meter Self-Diagnosis".

ILLUMINATION CONTROL SIGNAL CHECK

NLEL0687S05

1 ILLUMINATION CONTROL SIGNAL CHECK

1. Turn the ignition switch ON.
2. Check voltage between AV and NAVI control unit and ground.



YEL379E

Terminals (+) Connector	Terminals (+) Terminal (wire color)	Terminals (—)	Lighting switch condition	Voltage [V]
LHD: B63 RHD: B115	25 (*1)	Ground	1st or 2nd position	Battery voltage
			OFF	Approx. 0

*1 R/G: LHD Models
Y/G: LHD Models

MTBL1726

OK or NG

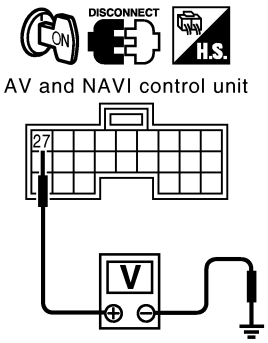
OK	▶	Replace AV and NAVI control unit.
NG	▶	Check harness for open or short between AV and NAVI control unit and combination switch.

IGNITION SIGNAL CHECK

NLEL0687S06

1 IGNITION SIGNAL CHECK

1. Disconnect the AV and NAVI control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between AV and NAVI control unit and ground.



YEL380E

Terminals			Ignition switch position		
(+)		(—)			
Connector	Terminal (wire color)		OFF	ACC	ON
LHD: B63 RHD: B115	27 (Y/G)	Ground	0V	0V	Battery voltage

MTBL1727

OK or NG

OK	▶	Replace AV and NAVI control unit.
NG	▶	Check harness for open or short between AV and NAVI control unit and fuse.

REVERSE SIGNAL CHECK

=NLEL0687S07

1	REVERSE LAMP CHECK

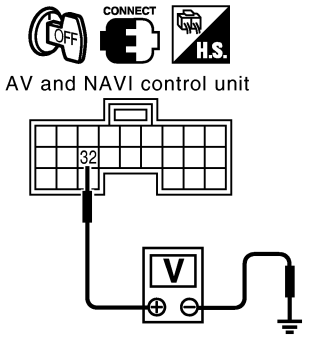
1. Turn the ignition switch ON.
2. A/T shift selector lever or gear position into R-position. Does "R" in the back-up lamp illuminate?

Yes or No

Yes	▶	GO TO 2.
No	▶	Check back-up lamp circuit. Refer to EL-57, "Wiring Diagram — BACK/L —".

2	REVERSE SIGNAL CHECK

1. With the selector lever in R-position.
2. Check voltage between AV and NAVI control unit and ground.



YEL381E

Terminals			A/T selector lever or gear position	Voltage [V]
(+)		(—)		
Connector	Terminal (wire color)			
LHD: B63 RHD: B115	32 (G/W)	Ground	R-position	Battery voltage
			Other than R-position	Approx. 3.0V or less

MTBL1728

OK or NG

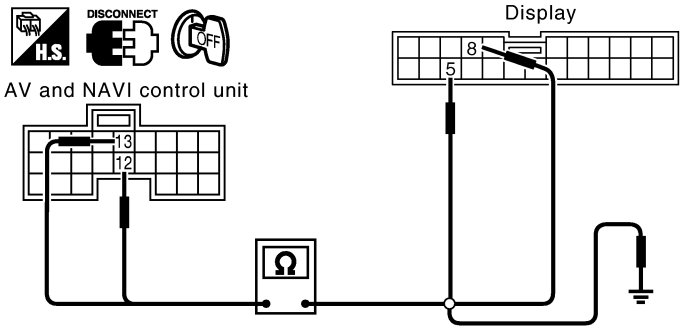
OK	▶	Replace AV and NAVI control unit.
NG	▶	**Check the following.** ● Harness for open or short between AV and NAVI control unit and park/neutral position switch (A/T models and YD22DDTi engine models) ● Harness for open or short between AV and NAVI control unit and back-up lamp switch (QG engine and YD22DDT engine models)

RGB SCREEN IS NOT SHOWN

NLEL0687S08

1 HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and Display connector.
3. Check continuity between AV and NAVI control unit and Display.



YEL382E

Terminals				Continuity
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	12 (R)	M97	8 (R)	Yes
	13 (BR)		5 (BR)	

MTBL1729

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	12 (R), 13 (BR)	Ground	No

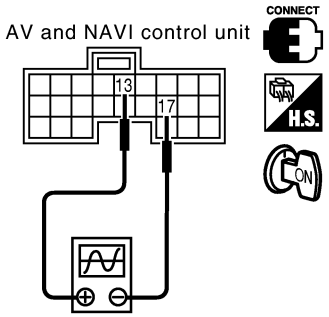
MTBL1730

OK or NG

OK	▶	GO TO 2.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

2	HORIZONTAL SYNCHRONIZATION SIGNAL CHECK

1. Connect AV and NAVI control unit connector and Display connector.
2. Turn the ignition switch ON.
3. Check voltage signal between AV and NAVI control unit connector terminals 13 (BR) and 17 with oscilloscope or CONSULT-II.



YEL383E

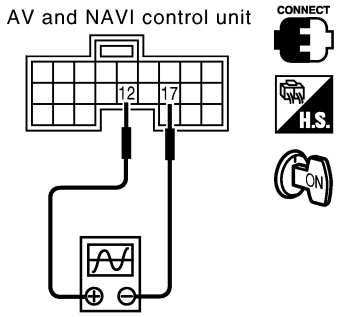
13 (BR)-17: EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace the display unit.

3	RGB AREA SIGNAL CHECK

1. Press "INFO" switch.
2. Check voltage signal between AV and NAVI control unit connector terminals 12 (R) and 17with oscilloscope or CONSULT-II.



YEL384E

12 (R)-17: EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

OK	▶	Replace the display unit.
NG	▶	Replace AV and NAVI control unit.

NO SCREENS APPEAR

=NLEL0687S09

1	CHECK SYMPTOM	
Check possibility to operate air conditioning and audio unit by multifunction switch.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	EL-447, "System Does Not Start".

2	DISPLAY UNIT POWER SYSTEM HARNESS CHECK	
Check voltage between Display and ground. EL-419 , "Check Power Supply and Ground Circuit for Display".		
OK or NG		
OK	▶	Replace the display unit.
NG	▶	Open or short in display unit power system harness.

COLOR OF RGB IMAGE IS NOT PROPER

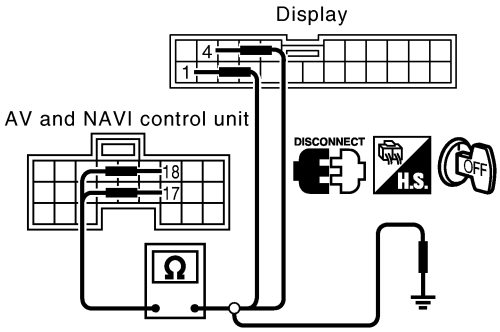
=NLEL0687S10

1	COLOR BAR DIAGNOSIS CHECK	
Check color tone by "SCREEN ADJUSTMENT" of CONFIRMATION/ADJUSTMENT function.		
OK or NG		
OK	▶	INSPECTION END.
NG	▶	GO TO 2.

2 HARNESS CHECK-1

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and Display connector.
3. Check continuity between AV and NAVI control unit and Display.
4. Check continuity between AV and NAVI control unit and ground.

- When the screen looks bluish



YEL385E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	18 (Y)	M97	1 (Y)	Yes
LHD: B62 RHD: B114	17 (B)	M97	4	Yes

MTBL1731

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	17 (B), 18 (Y)	Ground	No

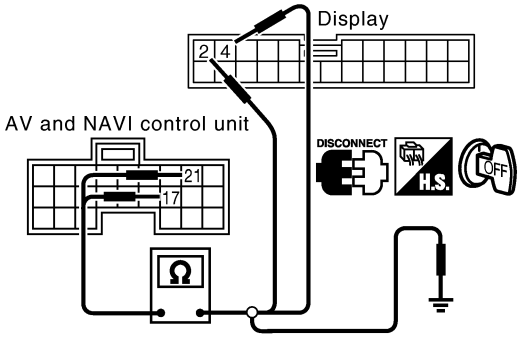
MTBL1732

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

3 **HARNESS CHECK-2**

1. Check continuity between AV and NAVI control unit and ground.
- When the screen looks reddish



YEL386E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	21 (W)	M97	2 (W)	Yes
LHD: B62 RHD: 114	17 (B)	M97	4	Yes

MTBL1733

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	17 (B), 21 (W)	Ground	No

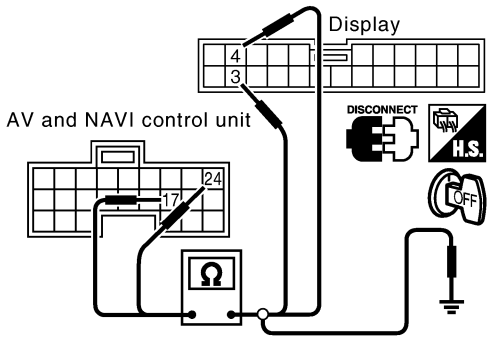
MTBL1734

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

4	HARNESS CHECK-3

1. Check continuity between AV and NAVI control unit and ground.
- When the screen looks yellowish



YEL387E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	24 (L)	M97	3 (L)	Yes
LHD: B62 RHD: B114	17 (B)	M97	4	Yes

MTBL1735

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	17 (B), 24 (L)	Ground	No

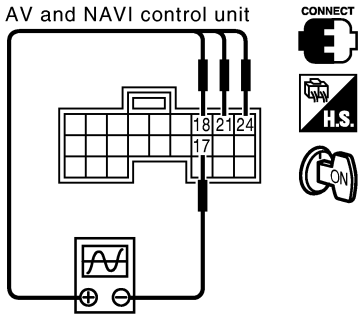
MTBL1736

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

5 **RGB SIGNAL CHECK**

1. Connect AV and NAVI control unit connector and Display connector.



YEL388E

2. Turn the ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check voltage signal between AV and NAVI control unit terminals 18, 21, 24 and 17 with oscilloscope or CONSULT-II.

- When the screen looks bluish

Terminals				Voltage [V]
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal	
LHD: B62 RHD: B114	18 (Y)	LHD: B62 RHD: B114	17 (B)	Refer to "Terminals and Reference Value for AV and NAVI Control Unit".

MTBL1737

- When the screen looks reddish

Terminals				Voltage [V]
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal	
LHD: B62 RHD: B114	21 (W)	LHD: B62 RHD: B114	17 (B)	Refer to "Terminals and Reference Value for AV and NAVI Control Unit".

MTBL1738

- When the screen looks yellowish

Terminals				Voltage [V]
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal	
LHD: B62 RHD: B114	24 (L)	LHD: B62 RHD: B114	17 (B)	Refer to "Terminals and Reference Value for AV and NAVI Control Unit".

MTBL1739

OK or NG

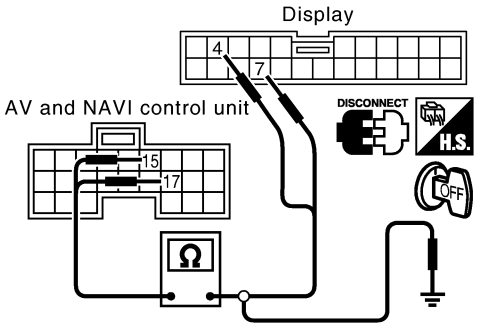
OK	▶	Replace the display unit.
NG	▶	Replace AV and NAVI control unit.

RGB SCREEN IS ROLLING

NLEL0687S11

1 COLOR BAR DIAGNOSIS CHECK

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and Display connector.
3. Check continuity between AV and NAVI control unit and Display.



YEL389E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	15 (G)	M97	7 (G)	Yes
LHD: B62 RHD: B114	17 (B)	M97	4	Yes

MTBL1740

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	17 (B), 15 (G)	Ground	No

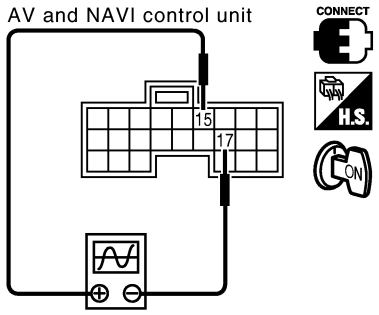
MTBL1741

OK or NG

OK	▶	GO TO 2.
NG	▶	• Check harness for open or short between AV and NAVI control unit and Display for open or short circuit. • Check connector housings for disconnected or loose terminals.

2	RGB SYNCHRONIZING SIGNAL CHECK

1. Connect AV and NAVI control unit connector and Display connector.
2. Turn the ignition switch ON.
3. Check voltage between AV and NAVI control unit terminals 15 (G) and 17 (B).



YEL390E

15 (G)-17: EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

OK	▶	Replace the display unit.
NG	▶	Replace AV and NAVI control unit.

GUIDE SOUND IS NOT HEARD

=NLEL0687S12

1	CHECK VOICE GUIDE SETTING

- While driving in the dark pink route, voice guide does not operate. (note)
- Is volume setting not switched ON?

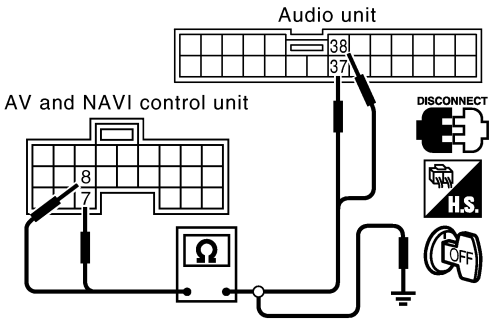
NOTE:
Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.

Yes or No

Yes	▶	GO TO 2.
No	▶	Switch the setting ON and turn the volume up.

2	HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and audio unit connector.
3. Check continuity between AV and NAVI control unit and audio unit.



YEL391E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B62 RHD: B114	7 (BR)	M95	38 (BR)	Yes
LHD: B62 RHD: B114	8 (Y)	M95	37 (Y)	Yes

MTBL1742

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B62 RHD: B114	7 (BR), 8 (Y)	Ground	No

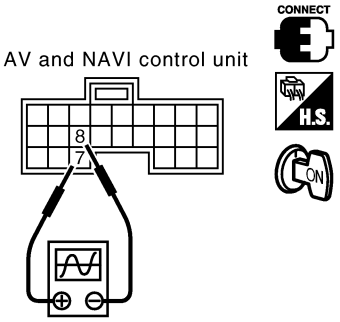
MTBL1743

OK or NG

OK	▶	GO TO 3.
NG	▶	● Repair harness. ● Check connector housings for disconnected or loose terminals.

3	VOICE GUIDE CHECK

1. Connect AV and NAVI control unit connector and audio unit connector.
2. Turn the ignition switch ON.
3. Check voltage signal between AV and NAVI control unit terminals 8 (Y) and 7 (BR).



YEL392E

Terminals				Reference signal
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B64 RHD: B114	7 (BR)	LHD: B64 RHD: B114	8 (Y)	Refer to "Terminals and Reference Value for AV and NAVI Control Unit"

MTBL1744

OK or NG

OK	▶	Replace Audio unit.
NG	▶	Replace AV and NAVI control unit.

MULTIFUNCTION SWITCH CONTROLS ARE INEFFECTIVE (REAR DEFOGGER CONTROL EXCLUDED)

NLEL0687S13

1	CHECK POWER AND GROUND SYSTEMS

Check voltage between multifunction switch and ground. EL-421, "Check Power Supply and Ground Circuit Check for Multifunction Switch".

OK or NG

OK	▶	GO TO 2.
NG	▶	Malfunction of multifunction switch ACC power or ground harness

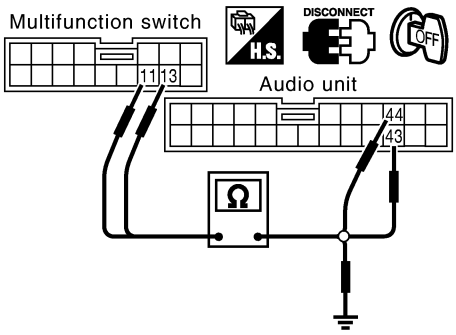
2	CHECK SYMPTOM

Turn ignition switch to ACC position. Is screen changed to audio control screen when CD is inserted?

Switches.	▶	GO TO 3.
Does not switch.	▶	GO TO 5.

3 **HARNESS CHECK**

1. Turn the ignition switch OFF.
2. Disconnect multifunction switch connector and audio unit connector.
3. Check continuity between multifunction switch and audio unit.



YEL393E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M102	11 (L)	M95	44 (L)	Yes
	13 (P)		43 (P)	

MTBL1745

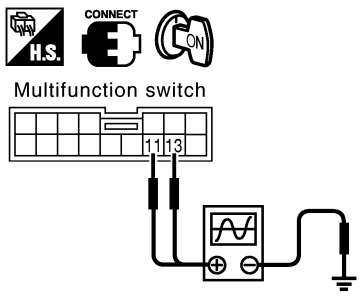
4. Check continuity between multifunction switch harness connector M102 terminals 11 (L), 13 (P) and ground.
   Continuity should not exist.

OK or NG

OK	▶	GO TO 4.
NG	▶	• Replace harness. • Check connector housings for disconnected or loose terminals.

4 **COMMUNICATION SIGNAL INSPECTION**

1. Connect multifunction switch and Audio unit connectors.
2. Check voltage signal between multifunction switch harness connector M102 terminals 11 (L), 13 (P) and ground.



YEL394E

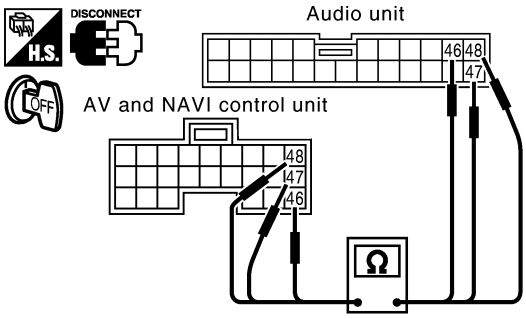
11 (L), 13 (P) - ground:
EL-400, "Terminals and Reference Value for Multifunction Switch"

OK or NG

OK	▶	Replace audio unit.
NG	▶	Replace multifunction switch.

5 HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect AV and NAVI control unit connector and audio unit connector.
3. Check continuity between AV and NAVI control unit and audio unit.

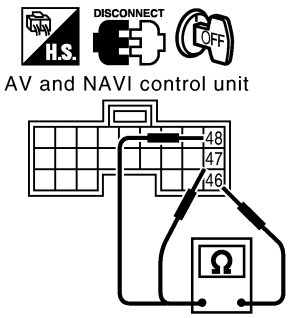


YEL395E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B63 RHD: B115	46 (B)	M95	46 (B)	Yes
	47 (R)		48 (R)	
	48 (G)		47 (G)	

MTBL1746

4. Check continuity between terminals 47, 48 and 46.



YEL396E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B63 RHD: B115	47 (R), 48 (G)	LHD: B63 RHD: B115	46 (B)	No

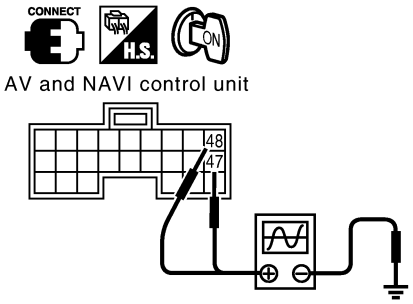
MTBL1747

OK or NG

OK	▶	GO TO 6.
NG	▶	• Replace harness. • Check connector housings for disconnected or loose terminals.

6	COMMUNICATION SIGNAL INSPECTION

1. Connect audio unit to AV and NAVI control unit connector.
2. Check voltage signal between AV and NAVI control unit terminals 47 (R), 48 (G) and ground.



YEL397E

47 (R), 48 (G)-ground:
EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

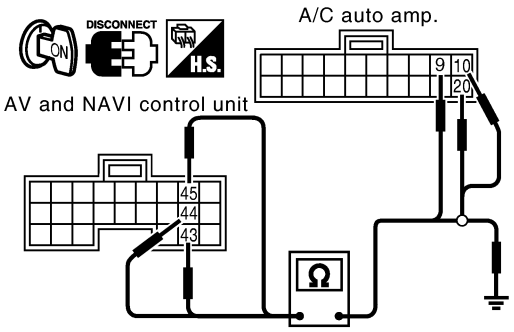
OK	▶	Replace audio unit.
NG	▶	Replace AV and NAVI control unit.

AIR CONDITIONING CONTROLS (ONLY) ARE INEFFECTIVE (REAR DEFOGGER CONTROL EXCLUDED)

NLEL0687S14

1 HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect A/C auto amp. connector and AV and NAVI control unit connector.
3. Check continuity between A/C auto amp. and AV and NAVI control unit.



YEL398E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B63 RHD: B115	43 (L/R)	M110	10 (L/R)	Yes
	44 (L/W)		9 (L/W)	
	45 (L)		20 (L)	

MTBL1748

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B63 RHD: B115	43 (L/R), 44 (L/W), 45 (L)	Ground	No

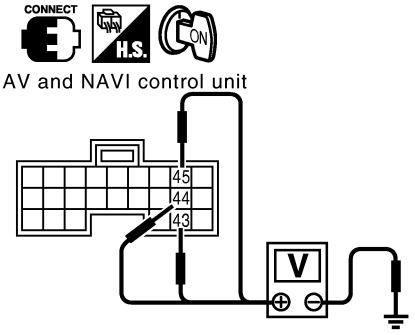
MTBL1749

OK or NG

OK	▶	GO TO 2.
NG	▶	• Check harness between A/C auto amp. and AV and NAVI control unit. • Check connector housings for disconnected or loose terminals.

2	A/C-AV, AV-AC, AC-CLK COMMUNICATION SIGNAL CHECK

1. Connect A/C AUTO AMP. connector.
2. Turn the ignition switch ON.
3. Check voltage between AV and NAVI control unit and ground.



YEL399E

Terminals			Voltage [V]
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B63 RHD: B115	43 (L/R), 44 (L/W), 45 (L)	Ground	Approx. 3.5 or more

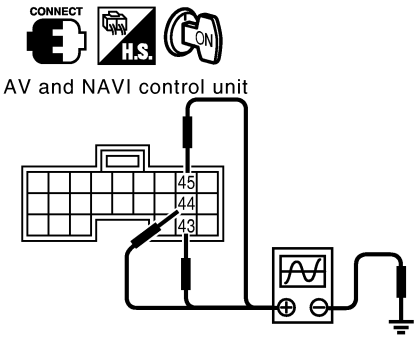
MTBL1750

OK or NG

OK	▶	GO TO 3.
NG	▶	• Replace harness. • Replace A/C AUTO AMP.

3	A/C-AV, AV-AC, AC-CLK COMMUNICATION SIGNAL CHECK

1. Connect AV and NAVI control unit connector.
2. Turn the ignition switch ON.
3. Check voltage signal between AV and NAVI control unit terminals 43, 44, 45 and ground.



YEL400E

Terminals			Reference signal
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B63 RHD: B115	43 (L/R), 44 (L/W), 45 (L)	Ground	Refer to "Terminals and Reference Value for AV and NAVI Control Unit"

MTBL1751

OK or NG

OK	▶	Replace A/C auto amplifier.
NG	▶	Replace AV and NAVI control unit.

NO FUEL INFORMATION IS DISPLAYED/NO WARNING MESSAGE IS DISPLAYED

=NLEL0687S15

1 CHECK DISPLAY CONDITIONS

Check display conditions for all warning screens.

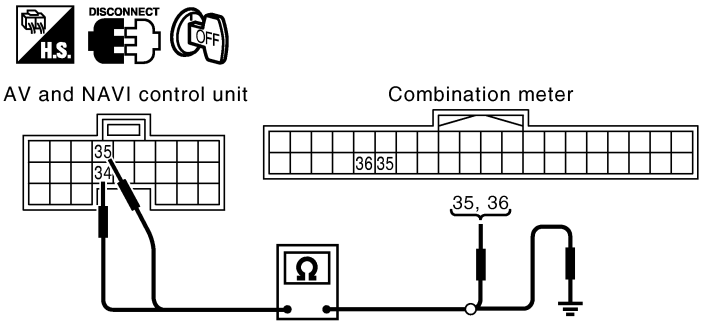
Display Items	Display condition
Parking brake drag, door ajar	PKB switch or any door switch is ON and vehicle speed is approximately 5 km/h (3 MPH) or higher.
Remaining fuel	After driving approximately 20 km/h (13 MPH) beyond the point where gauge warning lamp illuminates.
Other than above	Gauge warning lamp illuminated.

MTBL1549

▶ GO TO 2.

2 HARNESS CHECK

1. Turn the ignition switch OFF.
2. Disconnect connectors of combination meter and AV and NAVI control unit.
3. Check continuity between AV and NAVI control unit and combination meter.



YEL401E

Terminals				Continuity
(+)		(—)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
LHD: B63 RHD: B115	34 (R)	M84	36 (R)	Yes
	35 (G)		35 (G)	

MTBL1752

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B63 RHD: B115	34 (R), 35 (G)	Ground	No

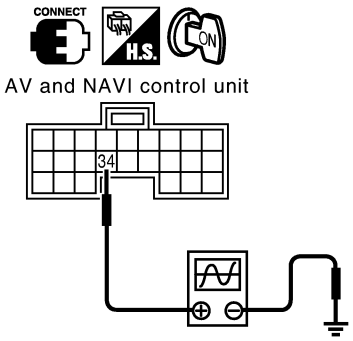
MTBL1753

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness. • Check connector housings for disconnected or loose terminals.

3 **COMMUNICATION SIGNAL (AV-ME) CHECK**

1. Connect connectors of combination meter and AV and NAVI control unit.
2. Turn the ignition switch ON.
3. Check voltage signal between AV and NAVI control unit terminal 34 (R) and ground.



YEL402E

Terminals			Reference signal
(+)		(—)	
Connector	Terminal (wire color)		
LHD: B64 RHD: B115	34 (R)	Ground	Refer to "Terminals and Reference Value for AV and NAVI Control Unit"

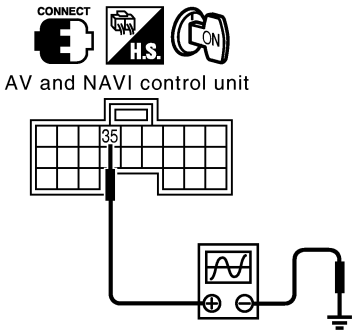
MTBL1754

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace AV and NAVI control unit.

4 **COMMUNICATION SIGNAL (ME-AV) CHECK**

1. Turn ignition switch to ON and display "VEHICLE ELECTRONIC SYSTEMS" screen.
2. Check voltage signal between AV and NAVI control unit harness connector M96 terminal 35 (G) and ground.



YEL403E

35 (G)-ground:
EL-400, "Terminals and Reference Value for AV and NAVI Control Unit"

OK or NG

OK	▶	Replace AV and NAVI control unit.
NG	▶	Check combination meter system. EL-107, "Combination Meter Self-Diagnosis".

PREVIOUS CONDITIONS ARE NOT STORED

NLEL0687S16

1	BATTERY POWER CHECK	
● Check AV and NAVI control unit battery power. Refer to EL-417, "Power Supply and Ground Circuit Check".		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	Check AV and NAVI control unit battery power system harness.

RADIO WAVE FROM THE GPS SATELLITE IS NOT RECEIVED

NLEL0687S17

1	ENVIRONMENT CHECK	
● Check if any metal object that intercepts radio waves or an object that emits radio waves (such as a portable phone) is located near the GPS antenna. Check if the vehicle is shielded by a building.		
OK or NG		
OK	▶	● System is normal. The GPS antenna may not be able to receive radio waves from the GPS satellite if it is shielded by metal object or an object emitting radio waves is placed near it.
NG	▶	GO TO 2.

2	SELF-DIAGNOSIS	
● Refer to EL-408, "Self-Diagnosis Mode".		
OK or NG		
OK	▶	Replace GPS antenna.
NG	▶	Check the applicable parts.

DISPLAY DOES NOT CHANGE WHEN SCREEN ADJUSTMENT IS PERFORMED

NLEL0687S18

1	CHECK SYMPTOM	
Do other systems operate properly?		
Do operate.	▶	Replace the display unit.
Do not operate.	▶	Check the problem again.

DAY/NIGHT DISPLAY SWITCHING IS NOT DONE. NIGHT ILLUMINATION FOR AV AND NAVI CONTROL UNIT DOES NOT ILLUMINATE

NLEL0687S19

1	VEHICLE SIGNAL CHECK	
1. Start the engine. 2. Diagnose the following items with EL-412, "VEHICLE SIGNALS" in CONFIRMATION/ADJUSTMENT mode. **<Lamp signals>** **Lighting switch position 1: ON** **Lighting switch OFF: OFF**		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	EL-424, "Illumination Control Signal Check".

ON MULTIFUNCTION SWITCH, A SPECIFIC SWITCH DOES NOT OPERATE IN ALL CONDITIONS

NLEL0687S20

1	
Replace multifunction switch.	
▶	

DRIVING INFORMATION IS INACCURATE. MAINTENANCE INFORMATION IS INACCURATE

NLEL0687S21

1	VEHICLE SPEED SIGNAL INSPECTION	
Check vehicle speed signal. EL-423, "Vehicle Speed Signal Check".		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	Check combination meter system. EL-107, "Combination Meter Self-Diagnosis"

SYSTEM DOES NOT START

NLEL0687S22

1	INSPECT POWER SYSTEM	
Inspect power system of AV and NAVI control unit. EL-417, "Power Supply and Ground Circuit Check".		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	Malfunction in power system of AV and NAVI control unit

THE CURRENT POSITION MARK IS IN THE WRONG PLACE

NLEL0687S23

1	INSPECT POWER SYSTEM.	
• EL-450, "Example of Symptoms Judged Not Malfunction?"		
Yes or No		
Yes	▶	The limit of the navigation location detection capability has been reached.
No	▶	GO TO 2.

2	SELF-DIAGNOSIS	
• Perform EL-408, "Self-Diagnosis Mode".		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Check the applicable parts.

3	ERROR RECORD DIAGNOSIS	
• Is there an error listed in EL-414, "HISTORY OF ERRORS" in "CONFIRMATION/ADJUSTMENT" mode?		
Yes or No		
Yes	▶	EL-414, "DIAGNOSIS BY HISTORY OF ERRORS".
No	▶	GO TO 4.

4	VEHICLE SIGNAL DIAGNOSIS	
• Start the engine. • Diagnose the following items with EL-412, "VEHICLE SIGNALS" in "CONFIRMATION/ADJUSTMENT" mode. **<Vehicle speed signal> Vehicle running: ON While the vehicle is stopped: OFF <Reverse signal> Selector lever in R-position: ON Selector lever in other than R-position: OFF**		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	• If vehicle speed is NG, proceed to EL-423, "Vehicle Speed Signal Check". • If reverse is NG, proceed to EL-426, "Reverse Signal Check".

THE CURRENT-LOCATION MARK WILL NOT MOVE FORWARD/BACKWARD

NLEL0687S24

1	VEHICLE SIGNAL DIAGNOSIS	
• Start the engine. • Diagnose the following items with EL-412, "VEHICLE SIGNALS" in "CONFIRMATION/ADJUSTMENT" mode. **<Vehicle speed signal> Vehicle running: ON While the vehicle is stopped: OFF <Reverse signal> Selector lever in R-position: ON Selector lever in other than R-position: OFF**		
OK or NG		
OK	▶	Replace AV and NAVI control unit.
NG	▶	• If vehicle speed is NG, proceed to EL-423, "Vehicle Speed Signal Check". • If reverse is NG, proceed to EL-426, "Reverse Signal Check".

THE POSITION OF THE CURRENT-LOCATION MARK IS NOT CORRECT

NLEL0687S25

Inspection procedure

1	SELF-DIAGNOSIS	
• EL-408, "Operation Procedure" in "Self-Diagnosis Mode".		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Check the applicable parts.

2	ERROR RECORD DIAGNOSIS	
• Is there an error listed in EL-414, "HISTORY OF ERRORS" in "CONFIRMATION/ADJUSTMENT" mode?		
Is there an error history?		
Yes	▶	EL-414, "DIAGNOSIS BY HISTORY OF ERRORS".
No	▶	EL-449, "Driving Test"

DRIVING TEST

NLEL0687S26

1	DRIVING TEST 1	
1. Scroll the map screen to display the area to make correction. Press "ENTER" and select "CURRENT LOCATION CORRECTION". 2. Correct direction of the vehicle mark. 3. Perform the distance correction of the CONFIRMATION/ADJUSTMENT mode. **NOTE:** Normally, adjustment is not necessary because this system has automatic distance correction function. However, when a tire chain is fitted, adjustment in accordance with the tire diameter ratio must be made. 4. Are symptoms applicable to the EL-450, "Example of Symptoms Judged Not Malfunction" present after driving the vehicle?		
Yes or No		
Yes	▶	Limit of the location detection capacity of the navigation system
No	▶	GO TO 2.

2	DRIVING TEST 2	
● Did any problem occur when the proper test in the following test patterns is performed? ● Test pattern Driving test finds the difference between the symptoms monitored with and without each sensor. – Test pattern 1: Test method with no GPS location correction Disconnect the GPS antenna connector connected to the AV and NAVI control unit. Accurately adjust the current position and the direction, then drive the vehicle. – Test pattern 2: Test method with no map-matching Accurately adjust the current position and the direction. Eject the map DVD-ROM from the AV and NAVI control unit with the ignition switch turned to OFF, then drive the vehicle. After driving, insert the map DVD-ROM back in the unit, display the track of the vehicle on the map screen and compare it with the actual road configuration. ● Sample tests – <To determine if the current-location mark skips at the same position, if so, whether it is caused by map-matching or by GPS> Perform test pattern 1. – <To determine if the pattern of streets displayed is correct or not> Perform test pattern 1 & 2. Compare the track of the vehicle on the map screen and the actual road configuration. For fairly accurate tracking, plotting shall be made every several hundred meters. – <When the distance is adjusted accurately> Perform test pattern 1 & 2. Drive on a road of which distance is accurately known (by utilizing distance posts on a highway). Calculate the rate of change (increased/decreased) of the distance by comparing with the actual distance. Correction = A/B A: Distance shown on the screen B: Actual distance		
Yes or No		
Yes	▶	● If adjustment is insufficient, perform adjustment again. ● If any error is found in the map, please let us know. ● Replace AV and NAVI control unit
No	▶	Limit of the location detection capacity of the navigation system

Example of Symptoms Judged Not Malfunction

=NLEL0634

BASIC OPERATION

NLEL0634S01

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunction.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display.	System is not malfunction.

VEHICLE MARK

NLEL0634S02

Symptom	Cause	Remedy
Map screen and BIRDVIEW® Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunction.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the “SWITCH SCREENS” when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by “SWITCH SCREENS”.
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press “MAP” switch to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press “MAP” switch to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS signal cannot be received because something is placed on driver’s side instrument panel.	Do not place anything on driver’s side instrument panel.
	GPS satellites are located badly.	Wait until the location becomes better.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD-ROM will be released once a year.

DESTINATION, PASSING POINTS, AND MENU ITEMS CANNOT BE SELECTED/SET

=NLEL0634S03

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn the route guide ON.
	Route information is not available on the dark pink route.	System is not malfunction.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re-search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunction.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunction.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

VOICE GUIDE

NLEL0634S04

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunction.
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.
	Voice guide is turned OFF.	Turn the voice guide ON.
	Route guide is turned OFF.	Turn the route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

Example of Symptoms Judged Not Malfunction (Cont'd)

ROUTE SEARCHING

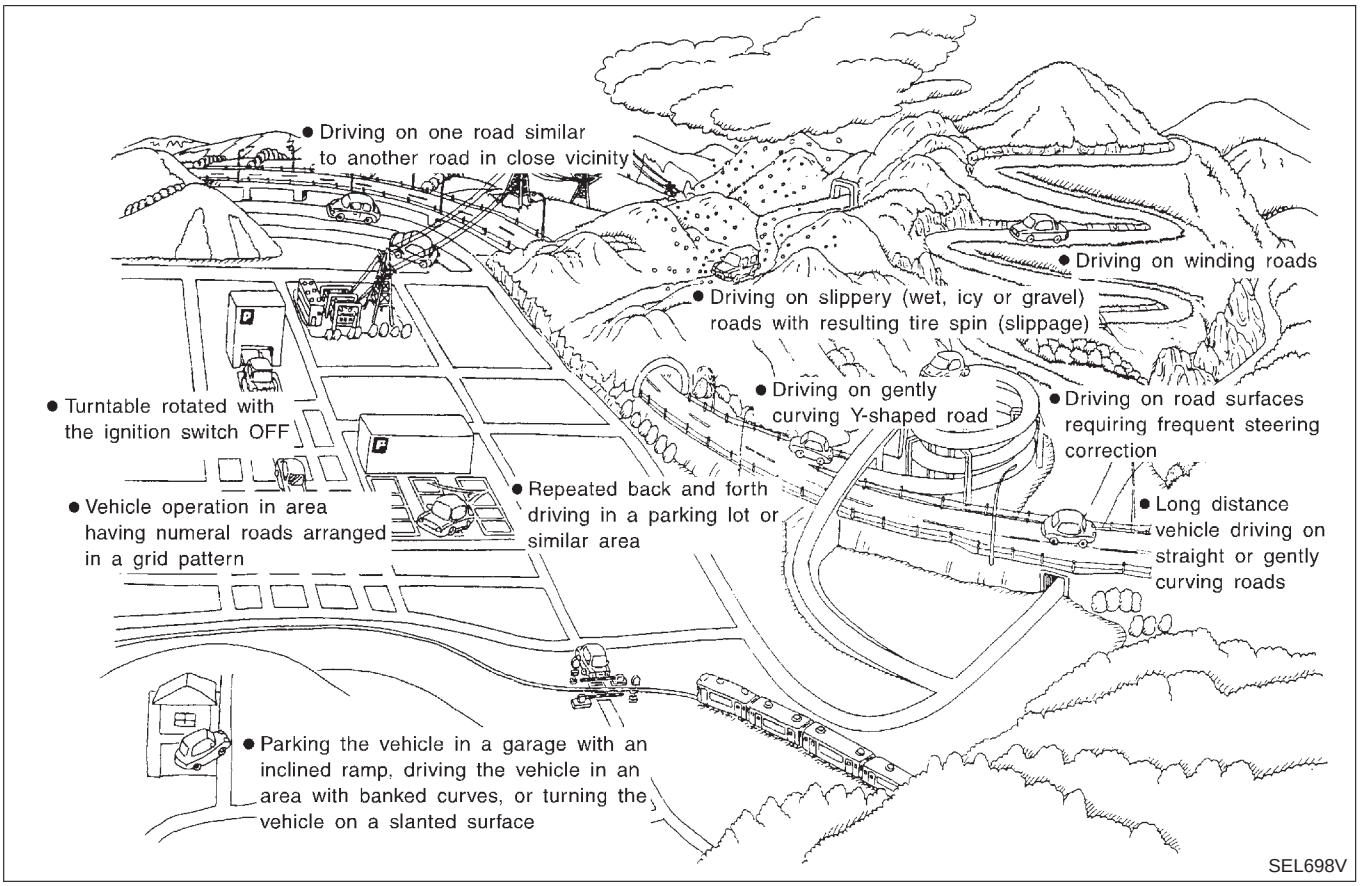
NLEL0634S05

Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current position or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search Therefore, the route to the current position or the passing points may be intermittent.	System is not malfunction.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunction.
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current position and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunction.
Landmarks on the map do not match the actual ones.	This can happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

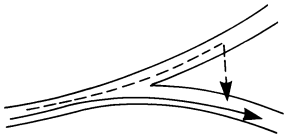
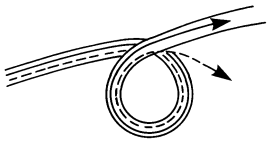
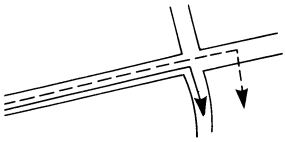
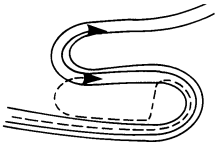
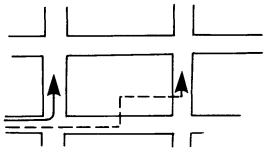
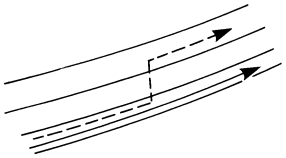
EXAMPLES OF CURRENT-LOCATION MARK DISPLACEMENT

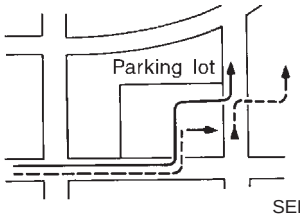
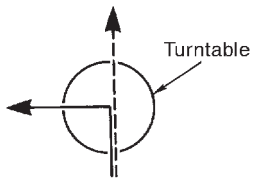
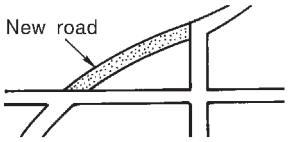
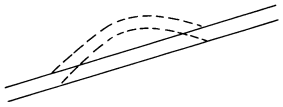
=NLEL0634S06

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.

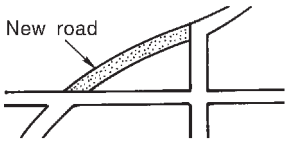
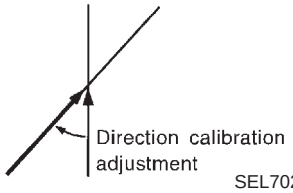


Example of Symptoms Judged Not Malfunction (Cont'd)

Cause (condition) -:While driving ooo:Display		Driving condition	Remarks (correction, etc.)
Road configuration	Y-intersections  ELK0192D	At a Y intersection or similar gradual division of roads, error the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
	Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle turned at a corner.	
	Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
	Roads laid out in a grid pattern  ELK0196D	When driving at where roads are laid out in a grid pattern, where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

Cause (condition) -:While driving ooo:Display		Driving condition	Remarks (correction, etc.)
Place	In a parking lot  SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turn table  SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turn table with the ignition switch OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  SEL699V	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  ELK0201D	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance is still deviated, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

Example of Symptoms Judged Not Malfunction (Cont'd)

Cause (condition) -:While driving ooo:Display		Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven off just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.	Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable to perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy  SEL699V	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.	Enter in the road displayed on the screen with an accuracy of approx. 1 MM. **NOTE:** Whenever possible, use detailed map for the correction.
	Direction when location is corrected  SEL702V	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

THE CURRENT POSITION MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG.

NLEL0634S07

In the following cases, the current-location mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
- − If the receiving conditions of the GPS satellite signal is poor, if the current-location mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed
- − Because calculation of the current location cannot be done when travelling with the ignition OFF, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

THE CURRENT POSITION MARK JUMPS.

NLEL0634S08

In the following cases, the current-location mark may appear to jump as a result of automatic correction of the current location.

- When map matching has been done
- − If the current location and the current-location mark are different when map matching is done, the current-location mark may seem to jump. At this time, the location may be "corrected" to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- − If the current location and the current-location mark are different when the location is corrected using GPS

measurements, the current-location mark may seem to jump. At this time, the location may be "corrected" to a location which is not on a road.

THE CURRENT LOCATION MARK IS IN A RIVER OR THE SEA.

NLEL0634S09

The navigation system moves the current location mark with no distinction between land and rivers or sea. If the location mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

WHEN DRIVING ON THE SAME ROAD, SOMETIMES THE CURRENT-LOCATION MARK IS IN THE RIGHT PLACE AND SOMETIMES IT IS THE WRONG PLACE.

NLEL0634S10

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

LOCATION CORRECTION BY MAP MATCHING IS SLOW.

NLEL0634S11

- The map matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

ALTHOUGH THE GPS RECEIVING DISPLAY IS GREEN, THE VEHICLE MARK DOES NOT RETURN TO THE CORRECT LOCATION.

NLEL0634S12

- The GPS accuracy has an error of about 10 m (30 ft). In some cases the current-location mark may not be on the correct street, even when GPS location-correction is done.
- The navigation system compares the results of GPS location detection with the results from map-matching location detection. The one which is determined to have higher accuracy is used.
- GPS location correction may not be performed when the vehicle is stopped.

THE NAME OF THE CURRENT PLACE IS NOT DISPLAYED.

NLEL0634S13

The current place name may not be displayed if there are no place names displayed on the map screen.

CONTENTS OF THE DISPLAY DIFFER FOR THE BIRDVIEW® AND THE (FLAT) MAP SCREEN.

NLEL0634S14

Difference of the BIRDVIEW® Screen From the Flat Map Screen Are as Follows.

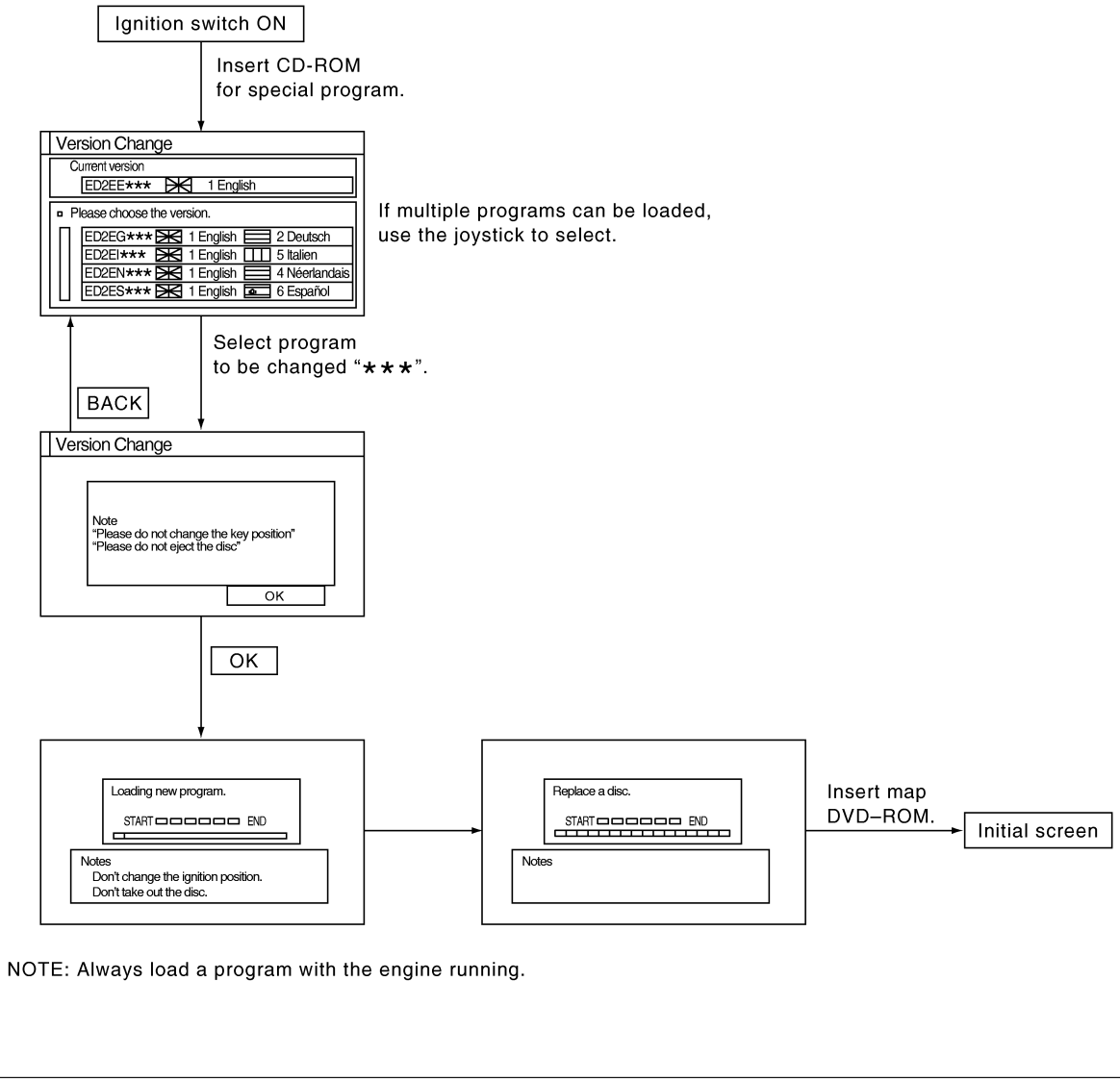
NLEL0634S1401

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Program Loading

=NLEL0635

NOTE:
Program loading is operated when the version of soft is upgraded to the latest one, or when language is switched.



NOTE: Always load a program with the engine running.

YEL490E

System Description

NLEL0690

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

NLEL0691

Go to CAN system, when selecting your car model from the following table.

Body type	MPV					
Axle	2WD					
Engine	QG18DE		YD22	QG18DE		YD22
Transmission	A/T	M/T		A/T	M/T	
Brake control	ESP			ABS		
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×			×		
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Steering angle sensor	×	×	×			
Smart entrance control unit	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×
CAN communication type	Type 1 (EL-460)	Type 2/Type 3 (EL-462)		Type 4 (EL-464)	Type 5/Type 6 (EL-466)	
CAN system trouble diagnosis	Type 1 (EL-467)	Type 2 (EL-493)	Type 3 (EL-514)	Type 4 (EL-535)	Type 5 (EL-558)	Type 6 (EL-576)

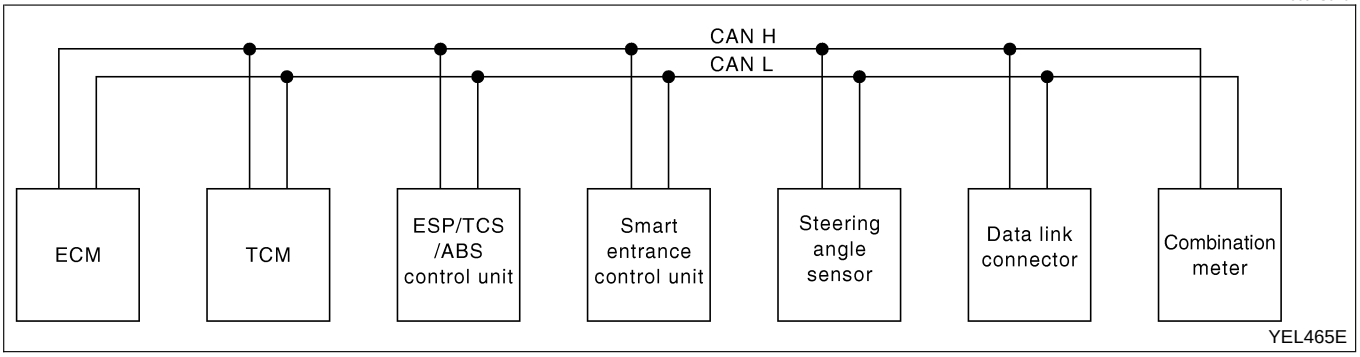
×: Applicable

TYPE 1

NLEL0691S01

System Diagram

NLEL0691S0101



Input/Output Signal Chart

NLEL0691S0102

T: Transmit R: Receive

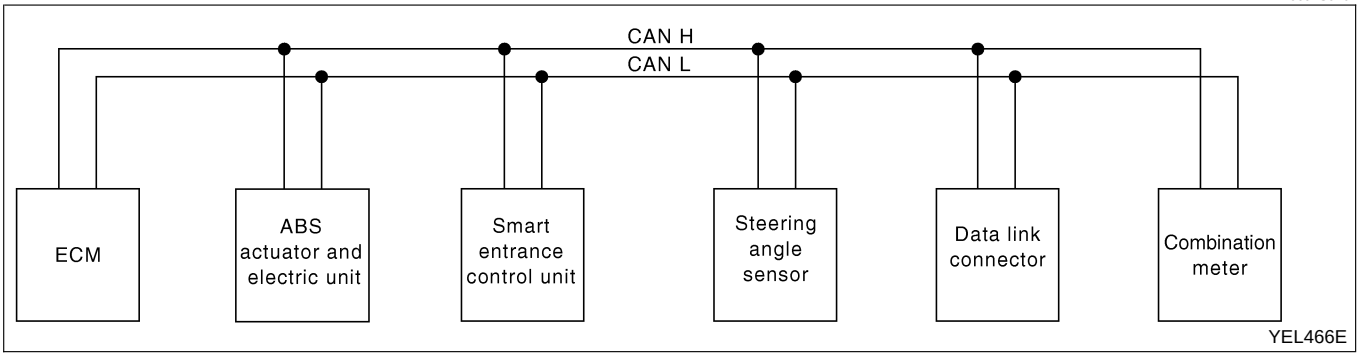
Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Steering angle sensor	Combination meter
Engine speed signal	T		R			R
Brake switch signal		R				T
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Door switches state signal				T		R
A/C compressor signal	T			R		
A/C compressor feedback signal	T					R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Steering angle sensor	Combination meter
Accelerator pedal position signal	T		R			
Output shaft revolution signal	R	T				
OD OFF switch signal		R				T
OD OFF indicator signal		T				R
A/T self-diagnosis signal	R	T				
P range signal		T	R			
Steering angle sensor signal			R		T	
A/T position indicator signal	R	T	R			R
ABS warning lamp signal			T			R
Slip indicator lamp signal			T			R
ESP Off indicator lamp signal			T			R
Brake warning lamp signal			T			R
N range switch signal		R				T
P range switch signal		R				T

TYPE 2/TYPE 3
System Diagram

=NLEL0691S02

NLEL0691S0201



Input/Output Signal Chart

NLEL0691S0202

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Steering angle sensor	Combination meter
Engine speed signal	T	R			R
Rear window defogger signal[*1]	R		T		
Heater fan switch signal[*1]	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Glow indicator lamp signal[*2]	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal			R		T
Headlamp switch signal			T		R
Flashing indicator signal			T		R
Engine cooling fan speed signal	T		R		
Door switches state signal			T		R
A/C compressor signal	T		R		
A/C compressor feedback signal[*1]	T				R

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Steering angle sensor	Combination meter
Accelerator pedal position signal	T	R			
Steering angle sensor signal		R		T	
ABS warning lamp signal		T			R
Slip indicator lamp signal		T			R
ESP off indicator lamp signal		T			R
Brake warning lamp signal		T			R

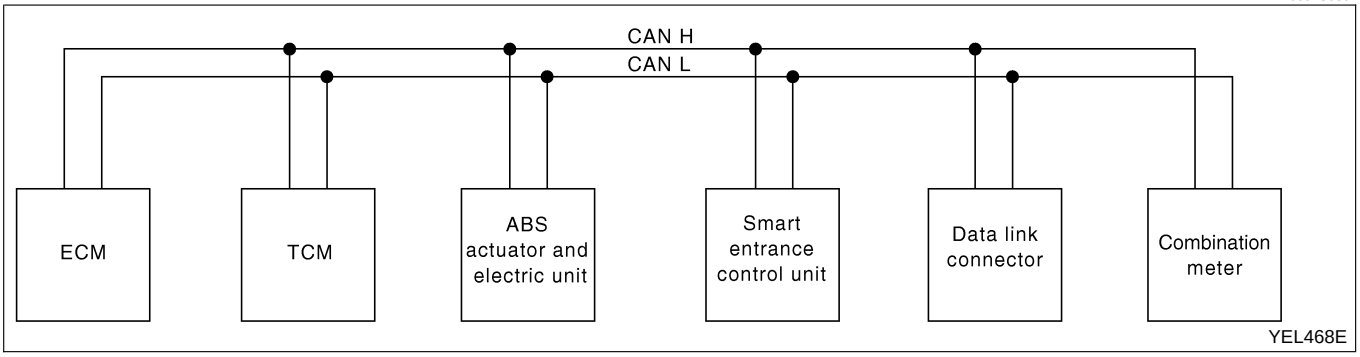
*1: For QG engine models
*2: For YD engine models

TYPE 4

System Diagram

=NLEL0691S03

NLEL0691S0301



Input/Output Signal Chart

NLEL0691S0302

T: Transmit R: Receive

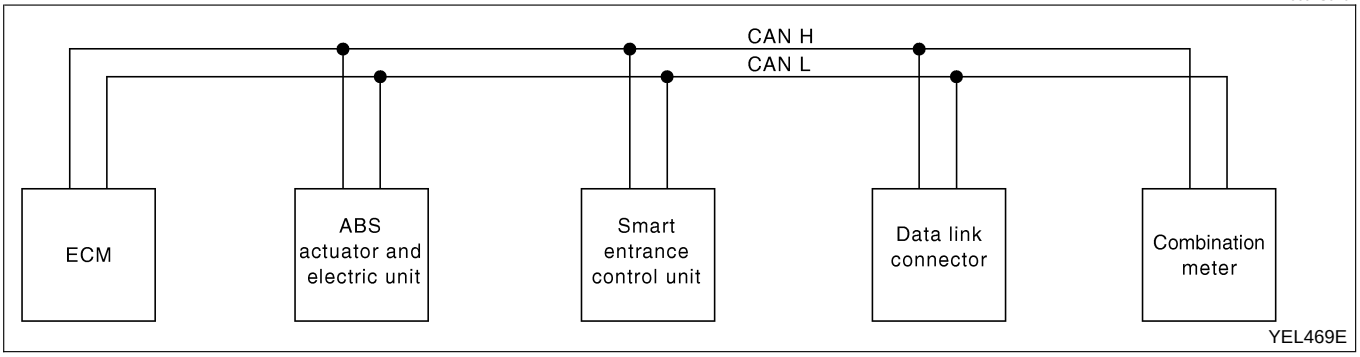
Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T				R
Brake switch signal		R			T
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Door switches state signal				T	R
A/C compressor signal	T			R	
A/C compressor feedback signal	T				R
Accelerator pedal position signal	T	R			

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Output shaft revolution signal	R	T			
ABS operation signal			T		R
OD OFF switch signal		R			T
OD OFF indicator signal		T			R
A/T self-diagnosis signal	R	T			
ABS warning lamp signal			T		R
N range switch signal		R			T
P range switch signal		R			T

TYPE 5/TYPE 6
System Diagram

=NLEL0691S04

NLEL0691S0401



Input/Output Signal Chart

NLEL0691S0402

T: Transmit R: Receive

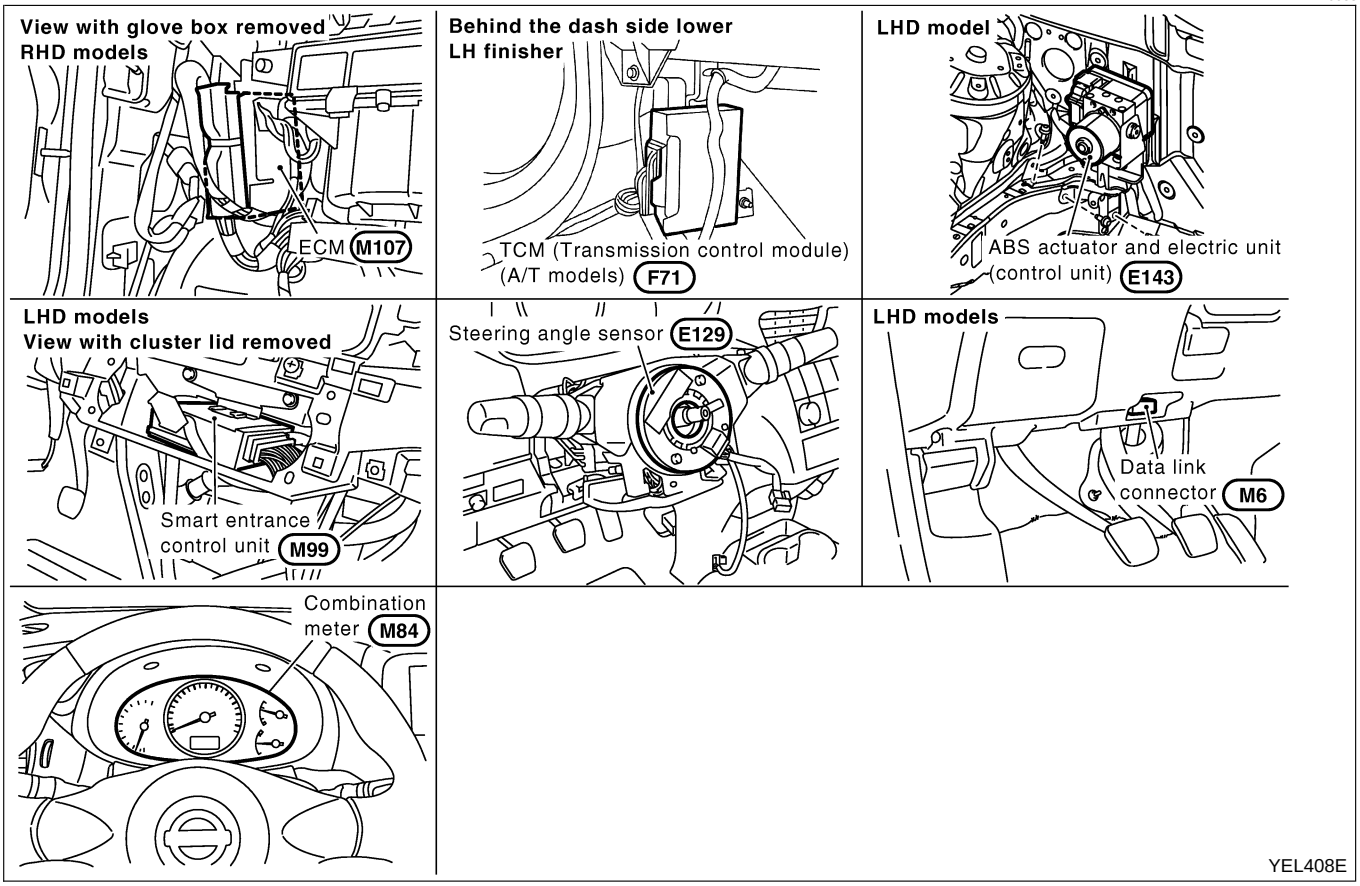
Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T			R
Rear window defogger signal*1	R		T	
Heater fan switch signal*1	R			T
Air conditioner switch signal	R			T
MI signal	T			R
Glow indicator lamp signal*2	T			R
Engine coolant temperature signal	T			R
Fuel consumption signal	T			R
Vehicle speed signal		T		R
	R			T
Seat belt reminder signal			R	T
Headlamp switch signal			T	R
Flashing indicator signal			T	R
Engine cooling fan speed signal	T		R	
Door switches state signal			T	R
A/C compressor signal	T		R	
A/C compressor feedback signal*1	T			R
ABS operation signal		T		R
ABS warning lamp signal		T		R

*1: For QG engine models

*2: For YD engine models

Component Parts and Harness Connector Location

NLEL0638



System Description

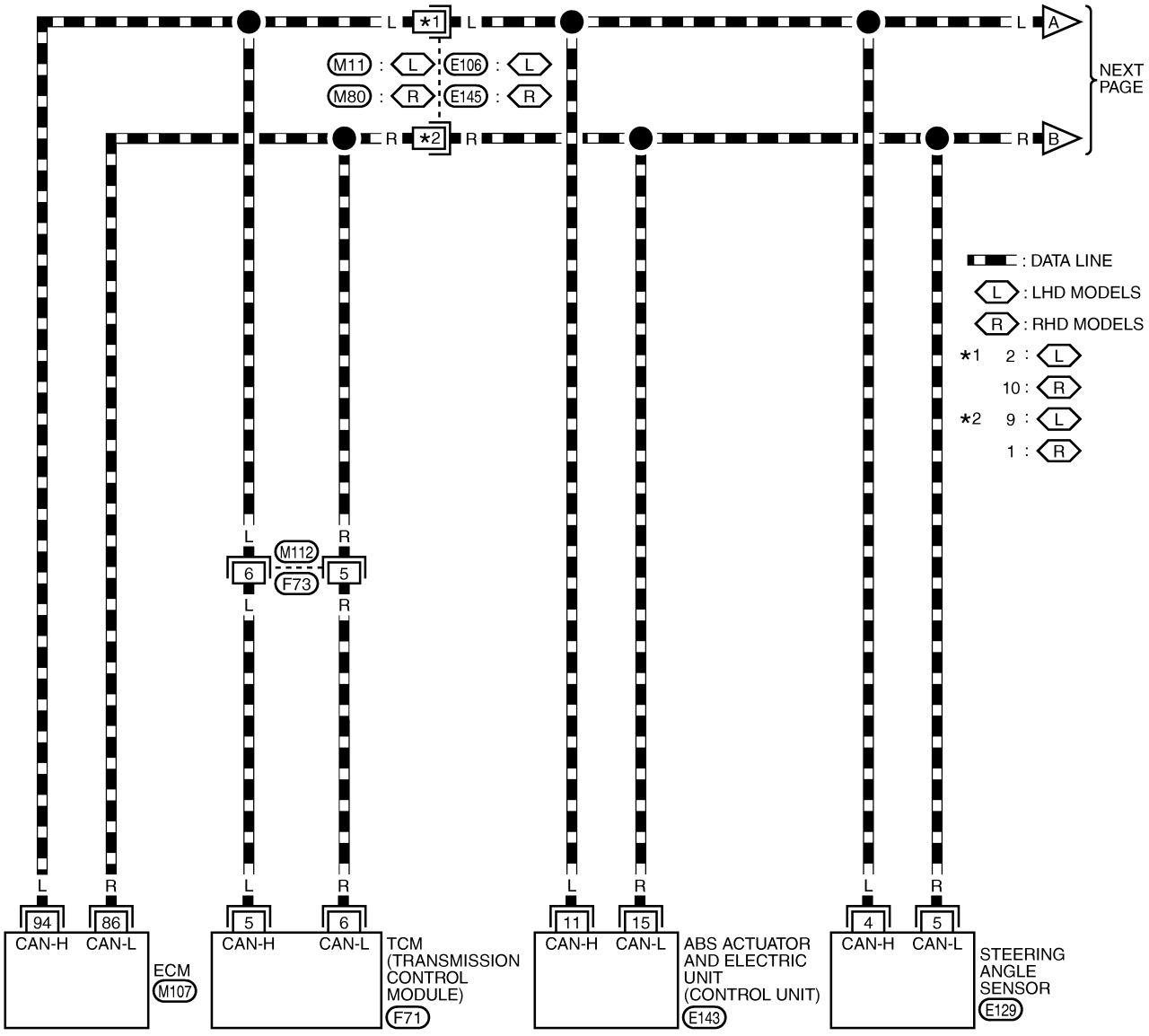
NLEL0639

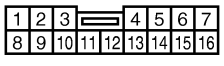
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

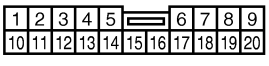
NLEL0640

EL-CAN-01



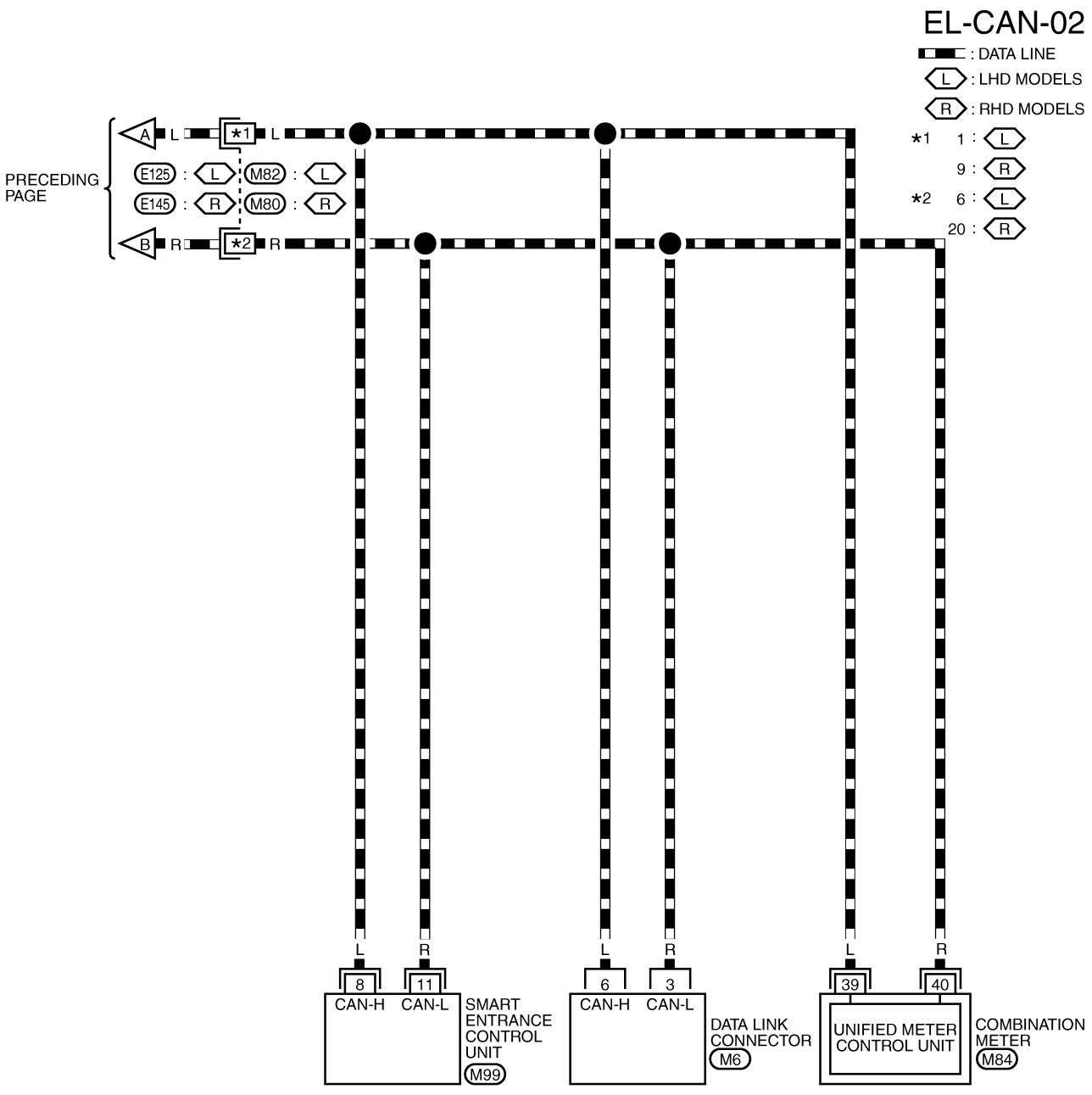

M112 W , E106 W


E129 W


E145 W

REFER TO THE FOLLOWING.
M107 , E143 , F71
-ELECTRICAL UNITS

YEL047E


EL-CAN-02
: DATA LINE
L : LHD MODELS
R : RHD MODELS
*1 1 : L
9 : R
*2 6 : L
20 : R
PRECEDING PAGE
A L *1 L
E125 : L M82 : L
E145 : R M80 : R
B R *2 R
L R L R L R
8 11 6 3 39 40
CAN-H CAN-L
SMART ENTRANCE CONTROL UNIT
M99
CAN-H CAN-L
DATA LINK CONNECTOR
M6
UNIFIED METER CONTROL UNIT
COMBINATION METER
M84
M6 W
M84 W
M99 W
H.S.
E125 W
E145 W

YEL048E

Trouble Diagnoses

NLEL0641

WORK FLOW

NLEL0641S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITH EURO-OBD) (EC-145) for “ENGINE”
- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITHOUT EURO-OBD) (EC-651) for “ENGINE”
- “DTC U1000 CAN COMMUNICATION LINE” (WITH EURO-OBD) (AT-194) for “A/T”
- “CAN COMMUNICATION LINE” (All) (AT-399) for “A/T”
- “Inspection 13 CAN Communication System” (BR-140) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-471).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-471).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-472).

CHECK SHEET

NLEL0641S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of A/T SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS	Attach copy of SMART ENTRANCE SELF-DIAG RESULTS
Attach copy of ENGINE DATA MONITOR	Attach copy of A/T DATA MONITOR	Attach copy of ABS DATA MONITOR	Attach copy of SMART ENTRANCE DATA MONITOR

YEL409E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0641S03

Case 1: Replace ECM

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

YEL410E

Case 4: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 6

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

YEL411E

Case 9

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2 ✔	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3 ✔	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3 ✔	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	CAN CIRC 3 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3

Case 12

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6 ✔	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	—	CAN CIRC 3 ✔

Case 13

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	CAN CIRC 3 ✔

Case 14

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 2 ✔	CAN CIRC 3 ✔	—	CAN CIRC 6 ✔	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	CAN CIRC 3 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	—	CAN CIRC 3 ✔

YEL412E

INSPECTION

NLEL0641S04

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace TCM.
Case 3: Replace ABS actuator and electric unit (control unit)
Case 4: Replace smart entrance control unit.
Case 5: Check harness between TCM and ABS actuator and electric unit (control unit). Refer to "CIRCUIT CHECK BETWEEN TCM AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)" (EL-476).
Case 6: Check harness between ABS actuator and electric unit (control unit) and steering angle sensor. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR" (EL-478).
Case 7: Check harness between steering angle sensor and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT" (EL-479).
Case 8: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-481).
Case 9: Check TCM circuit. Refer to "TCM CIRCUIT CHECK" (EL-482).
Case 10: Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-483).
Case 11: Check steering angle sensor circuit. Refer to "STEERING ANGLE SENSOR CIRCUIT CHECK" (EL-484).
Case 12: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-485).
Case 13: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-486).
Case 14: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-487).

CIRCUIT CHECK BETWEEN TCM AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

=NLEL0641S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector M11
- Harness connector E106

RHD models

- Harness connector M80
- Harness connector E145

OK or NG

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

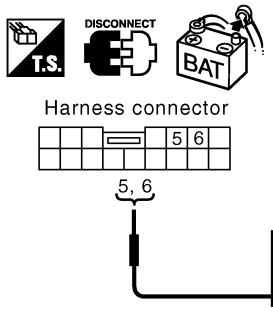
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M11 (LHD models) or harness connector M80 (RHD models).
2. Check the following.

LHD models

- Continuity between harness connector M112 terminals 6 (L), 5 (R) and harness connector M11 terminals 2 (L), 9 (R)

LHD models



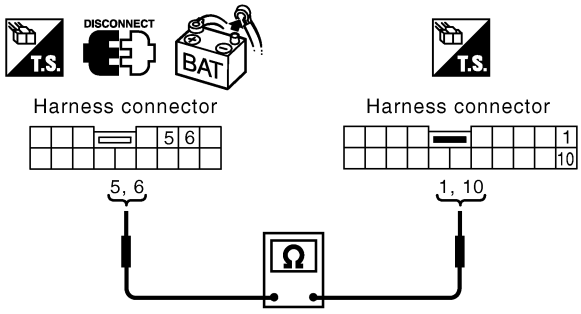
Terminals		Continuity
6	2	Yes
5	9	

YEL413E

RHD models

- Continuity between harness connector M112 terminals 6 (L), 5 (R) and harness connector M80 terminals 10 (L), 1 (R)

RHD models



Terminals		Continuity
6	10	Yes
5	1	

YEL414E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

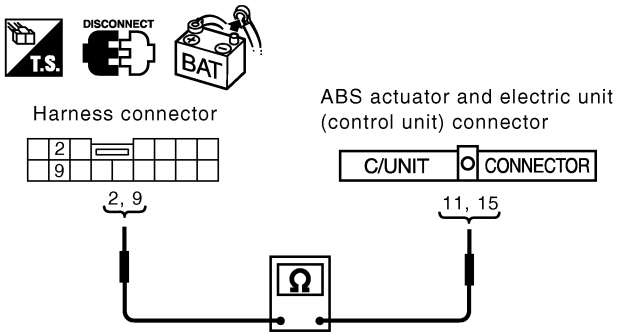
3 CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector E106 terminals 2 (L), 9 (R) and ABS actuator and electric unit (control unit) connector E143 terminals 11 (L), 15 (R)

LHD models



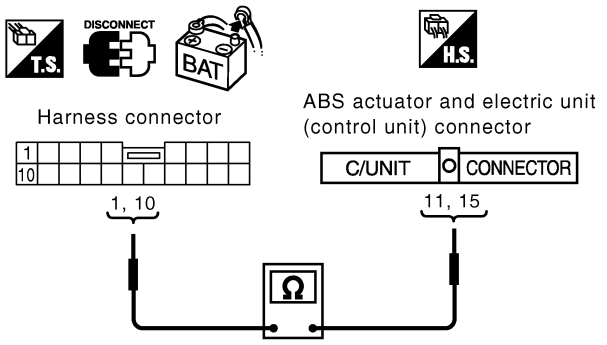
Terminals		Continuity
2	11	Yes
9	15	

YEL416E

RHD models

- Continuity between harness connector E145 terminals 10 (L), 1 (R) and ABS actuator and electric unit (control unit) connector E143 terminals 11 (L), 15 (R)

RHD models



Terminals		Continuity
10	11	Yes
1	15	

YEL417E

OK or NG

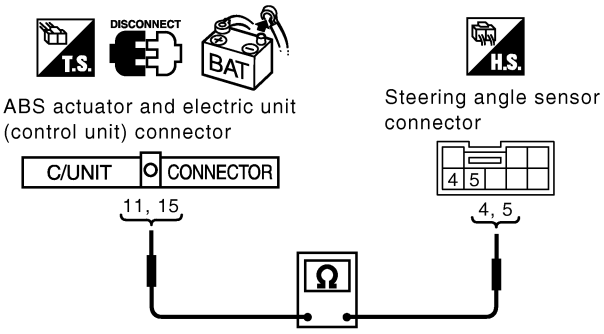
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" • "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" • "Inspection 13 CAN Communication System" (BR-140) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR

=NLEL0641S07

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Disconnect ABS actuator and electric unit (control unit) connector and steering angle sensor connector.
4. Check continuity between ABS actuator and electric uit (control unit) harness connector E143 terminals 11 (L), 15 (R) and steering angle sensor harness connector E129 terminals 4 (L), 5 (R).



Terminals		Continuity
11	4	Yes
15	5	

YEL422E

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" ● "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" ● "Inspection 13 CAN Communication System" (BR-140) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT

=NLEL0641S06

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector E125
- Harness connector M82

RHD models

- Harness connector E145
- Harness connector M80

OK or NG

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

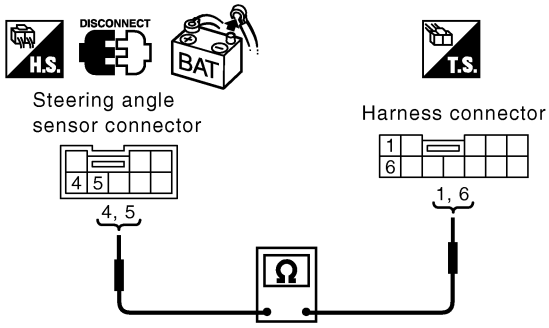
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models

- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models



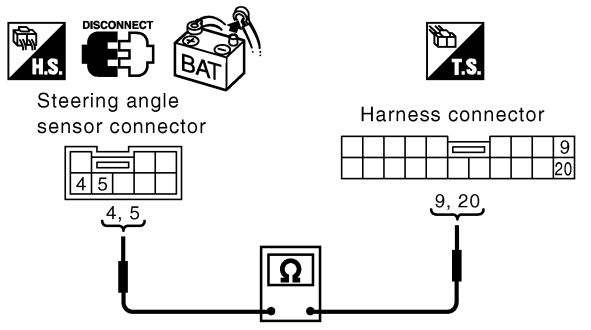
Terminals		Continuity
4	1	Yes
5	6	

YEL418E

RHD models

- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
4	9	Yes
5	20	

YEL419E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

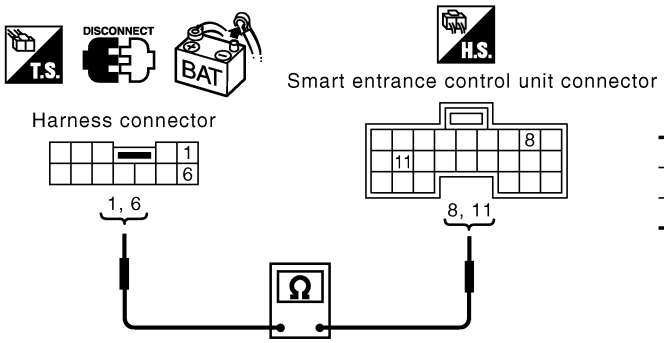
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

LHD models



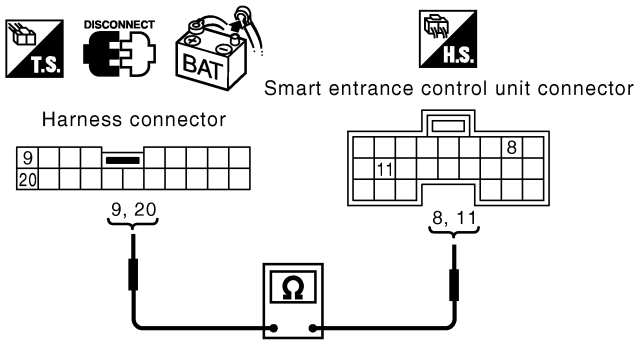
Terminals		Continuity
1	8	Yes
6	11	

YEL420E

RHD models

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL421E

OK or NG

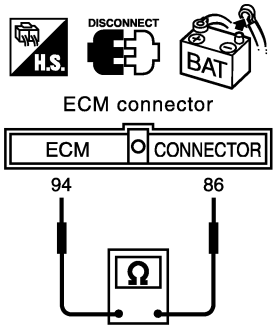
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" ● "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" ● "Inspection 13 CAN Communication System" (BR-140) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0641S08

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 94 (L) and 86 (R).		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and TCM.



Approx. 108 - 132 Ω

SEL812Y

TCM CIRCUIT CHECK

=NLEL0641S09

1	CHECK CONNECTOR

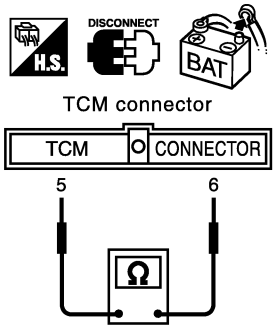
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of TCM for damage, bend and loose connection (control module side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector F71 terminals 5 (L) and 6 (R).



Approx. 54 - 66 Ω

SEL813Y

OK or NG

OK	▶	Replace TCM.
NG	▶	Repair harness between TCM and ABS actuator and electric unit (control unit).

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0641S10

1	CHECK CONNECTOR

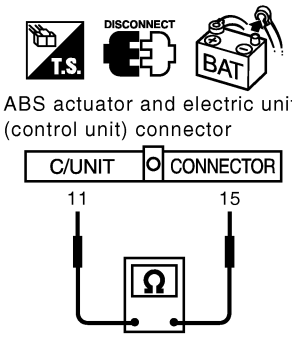
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Approx. 54 - 66 Ω

YEL423E

OK or NG

OK	▶	Replace ABS actuator and electric unit (control unit).
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

STEERING ANGLE SENSOR CIRCUIT CHECK

=NLEL0641S12

1	CHECK CONNECTOR

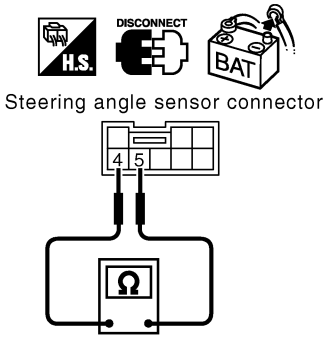
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector E129 terminals 4 (L) and 5 (R).



Approx. 54 - 66 Ω

YEL424E

OK or NG

OK	▶	Replace steering angle sensor.
NG	▶	Repair harness between steering angle sensor and ABS actuator and electric unit (control unit).

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

=NLEL0641S11

1	CHECK CONNECTOR

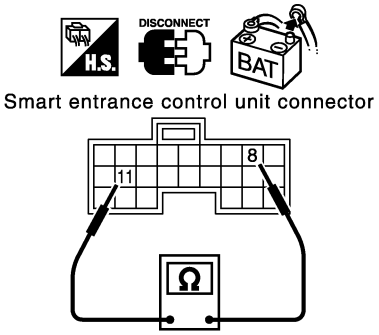
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).



Approx. 54 - 66 Ω

SEL814Y

OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.

COMBINATION METER CIRCUIT CHECK

=NLEL0641S13

1	CHECK CONNECTOR

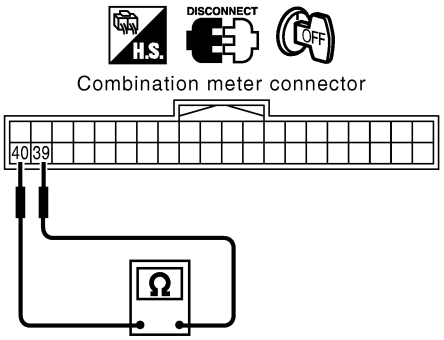
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).



Approx. 108 - 132 Ω

YEL425E

OK or NG

OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.

CAN COMMUNICATION CIRCUIT CHECK

=NLEL0641S14

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side).

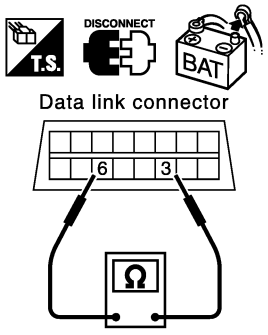
- Combination meter
- Smart entrance control unit
- TCM
- ECM
- ABS actuator and electric unit (control unit)
- Steering angle sensor
- Between ECM and data link connector

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, smart entrance control unit connector, and harness connector M82 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).



Continuity should not exist.

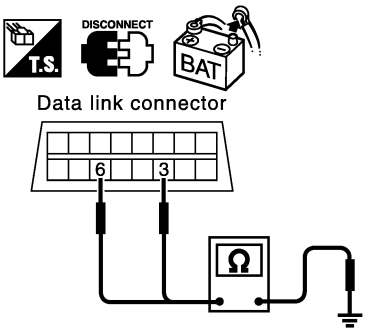
SEL816Y

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M6 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

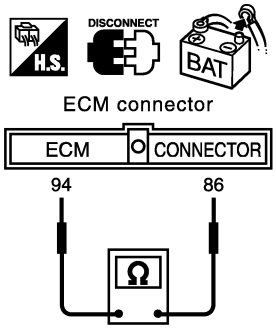
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector, harness connector M112 and harness connector M11 (LHD models).
2. Check continuity between ECM harness connector M107 terminals 94 (L) and 86 (R).



Continuity should not exist.

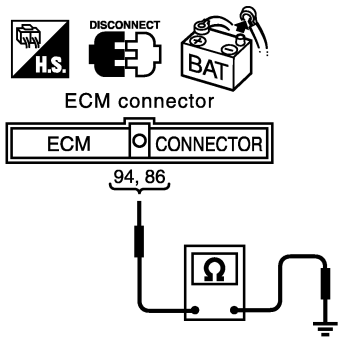
SEL820Y

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models). • Repair harness between ECM and harness connector M112.

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M107 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

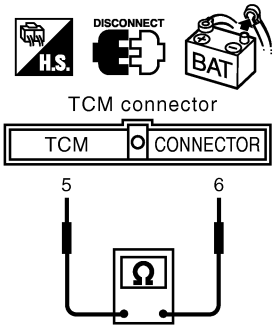
SEL821Y

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models). • Repair harness between ECM and harness connector M112.

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector F71 terminals 5 (L) and 6 (R).



Continuity should not exist.

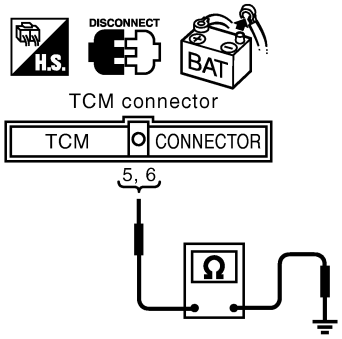
YEL428E

OK or NG

OK	▶	GO TO 7.
NG	▶	Repair harness between TCM and harness connector F73.

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between TCM harness connector F71 terminals 5 (L), 6 (R) and ground.



Continuity should not exist.

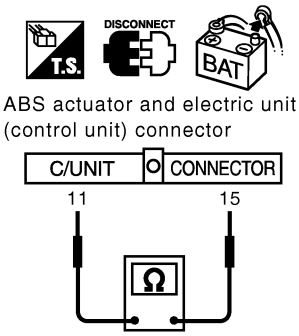
YEL429E

OK or NG

OK	▶	GO TO 8.
NG	▶	Repair harness between TCM and harness connector F73.

8	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and steering angle sensor connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Continuity should not exist.

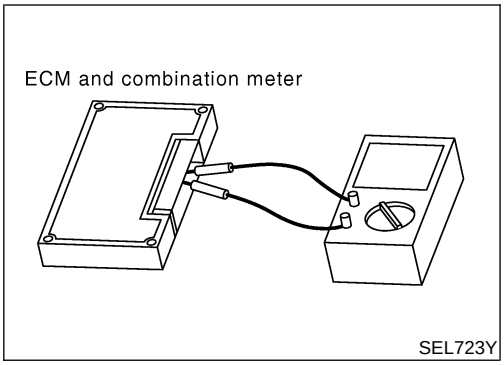
YEL426E

OK or NG

OK	▶	GO TO 9.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor. • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

9	CHECK HARNESS FOR SHORT CIRCUIT	
Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) , 15 (R) and ground.  **Continuity should not exist.** **OK or NG**		
OK	▶	GO TO 10.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor. • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

10	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION	
Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-492). **OK or NG**		
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" • "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" • "Inspection 13 CAN Communication System" (BR-140) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0642

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

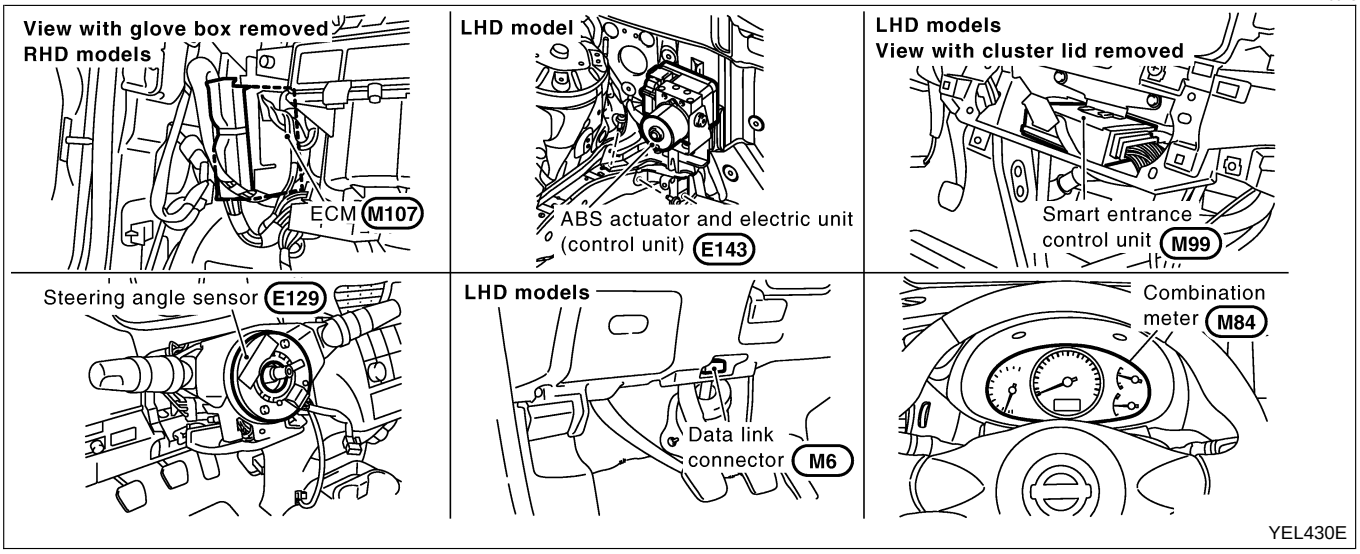
NLEL0642S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 39 and 40.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	39 - 40	

Component Parts and Harness Connector Location

NLEL0643



System Description

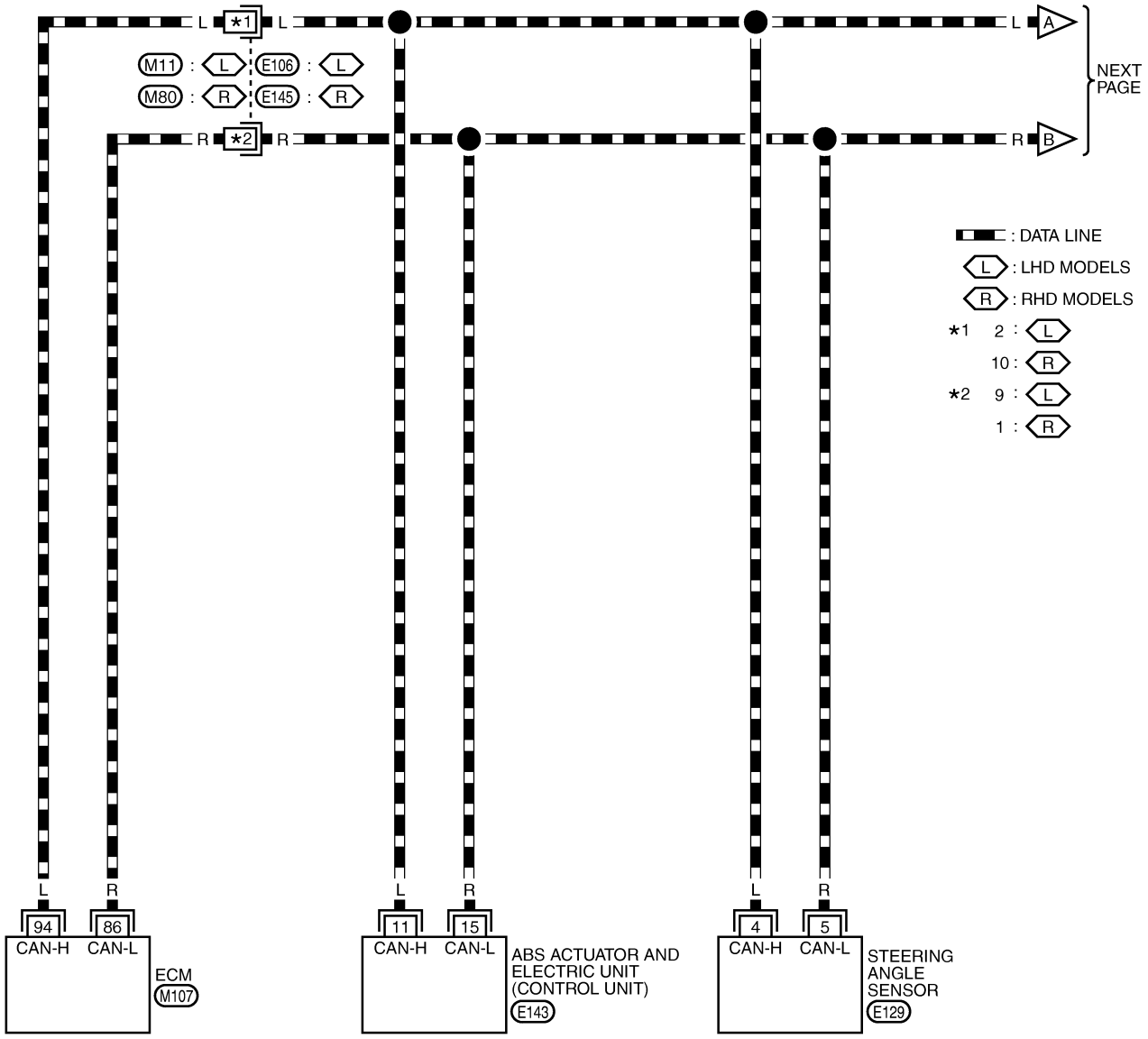
NLEL0644

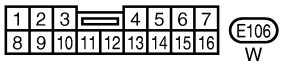
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

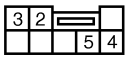
NLEL0645

EL-CAN-03

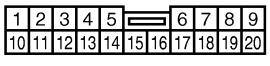




E106
W



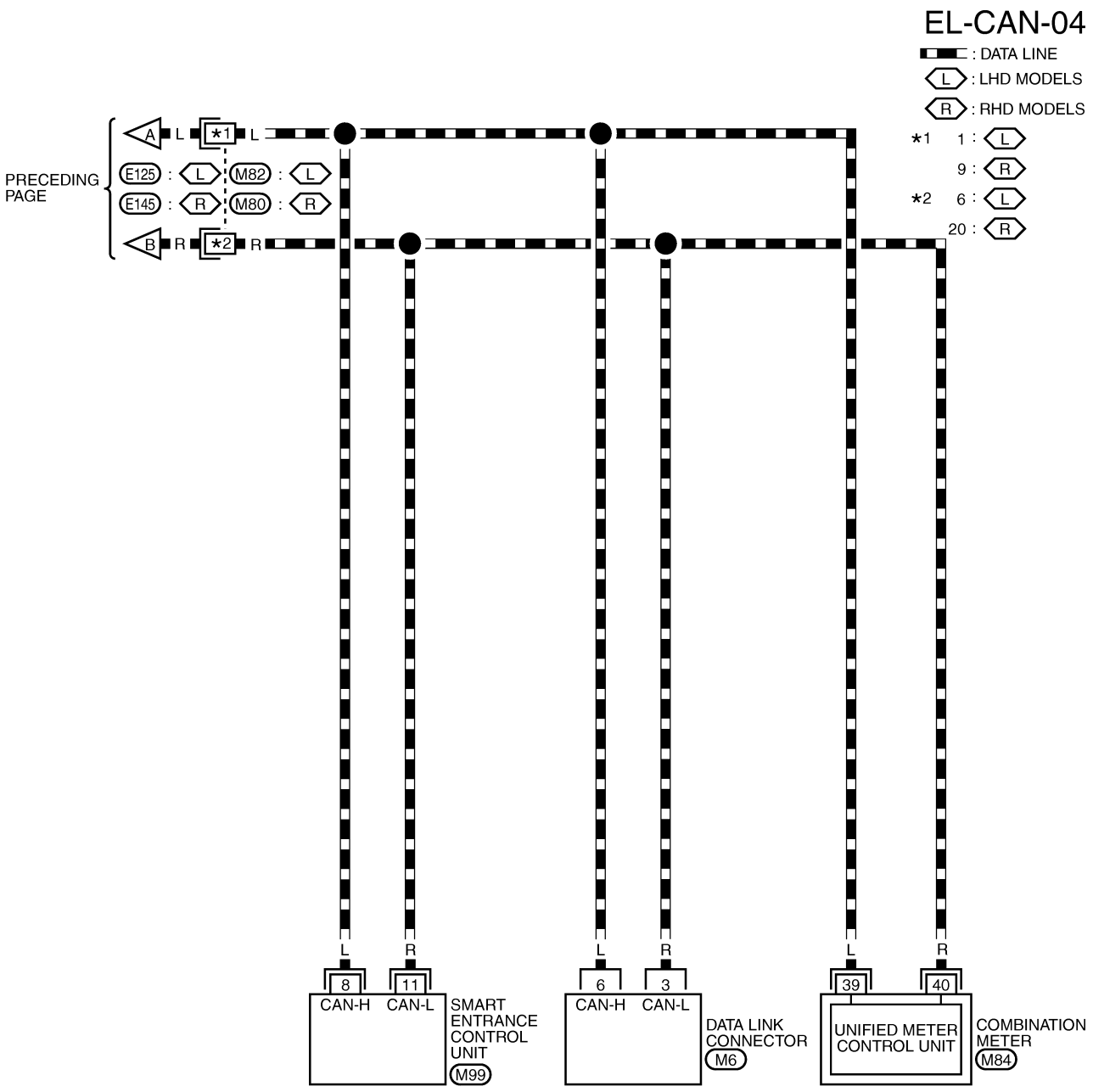
E129
W



E145
W

REFER TO THE FOLLOWING.
M107 , E143
-ELECTRICAL UNITS

YEL049E


EL-CAN-04
: DATA LINE
L : LHD MODELS
R : RHD MODELS
PRECEDING PAGE
A L *1 L
E125 : L M82 : L
E145 : R M80 : R
B R *2 R
*1 1 : L
9 : R
*2 6 : L
20 : R
L R L R L R
8 11 6 3 39 40
CAN-H CAN-L
SMART ENTRANCE CONTROL UNIT
M99
CAN-H CAN-L
DATA LINK CONNECTOR
M6
UNIFIED METER CONTROL UNIT
COMBINATION METER
M84
M6 W
M84 W
M99 W
H.S.
E125 W
E145 W

YEL050E

Trouble Diagnoses

NLEL0646

WORK FLOW

NLEL0646S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITH EURO-OBD) (EC-145) for “ENGINE”
- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITHOUT EURO-OBD) (EC-651) for “ENGINE”
- “Inspection 13 CAN Communication System” (BR-140) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-497).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-497).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-498).

CHECK SHEET

NLEL0646S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

YEL431E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0646S03

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	–	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	CAN CIRC 5 ✔	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3 ✔

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5 ✔	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3

YEL432E

Case 6

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 3 ✔	—	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3 ✔	—	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 6 ✔	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

Case 10

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 6	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3 ✔

Case 11

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 3 ✔	—	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

YEL433E

INSPECTION

NLEL0646S04

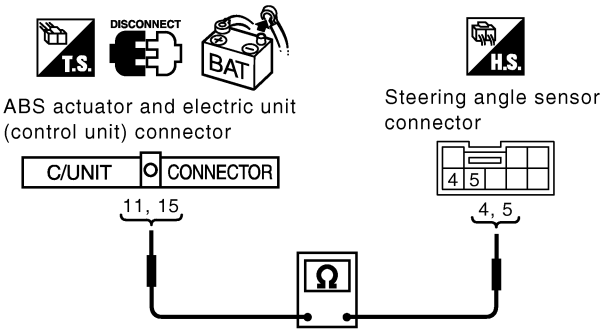
Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace ABS actuator and electric unit (control unit).
Case 3: Replace smart entrance control unit.
Case 4: Check harness between ABS actuator and electric unit (control unit) and steering angle sensor. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR" (EL-502).
Case 5: Check harness between steering angle sensor and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT" (EL-502).
Case 6: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-504).
Case 7: Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-505).
Case 8: Check steering angle sensor circuit. Refer to "STEERING ANGLE SENSOR CIRCUIT CHECK" (EL-506).
Case 9: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-507).
Case 10: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-508).
Case 11: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-509).

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR

=NLEL0646S06

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Disconnect ABS actuator and electric unit (control unit) connector and steering angle sensor connector.
4. Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L), 15 (R) and steering angle sensor harness connector E129 terminals 4 (L), 5 (R).



Terminals		Continuity
11	4	Yes
15	5	

YEL422E

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "Inspection 13 CAN Communication System" (BR-140) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT

=NLEL0646S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector E125
- Harness connector M82

RHD models

- Harness connector E145
- Harness connector M80

OK or NG

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

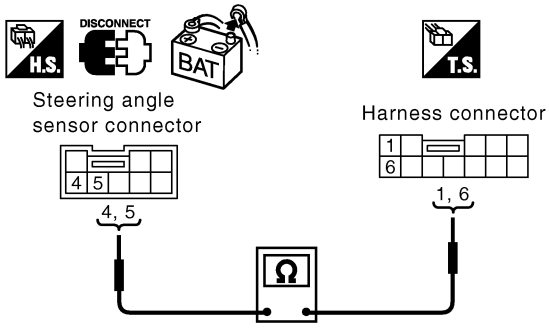
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models

- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models



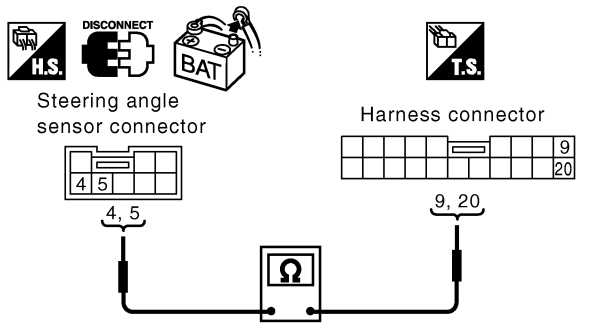
Terminals		Continuity
4	1	Yes
5	6	

YEL418E

RHD models

- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
4	9	Yes
5	20	

YEL419E

OK or NG

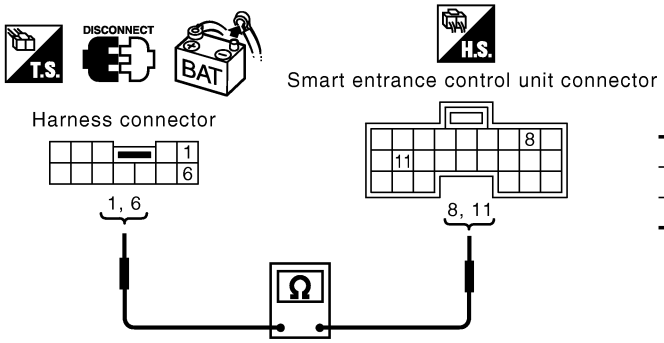
OK	▶	GO TO 3.
NG	▶	Repair harness.

3 CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R) (LHD models)

LHD models

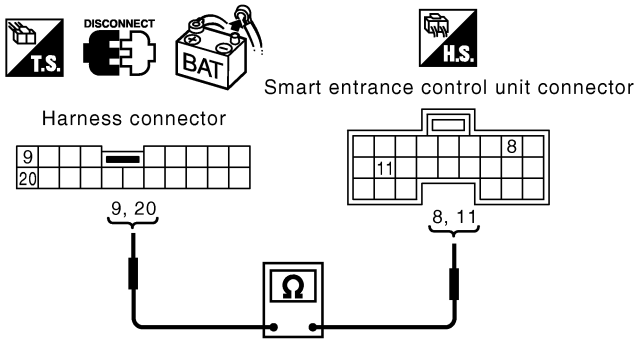


Terminals		Continuity
1	8	Yes
6	11	

YEL420E

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R) (RHD models)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL421E

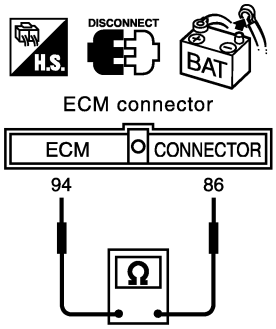
OK or NG

OK ▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "Inspection 13 CAN Communication System" (BR-140) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG ▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0646S07

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side). **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 94 (L) and 86 (R).  **Approx. 108 - 132 Ω** SEL812Y **OK or NG**		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and ABS actuator and electric unit (control unit).

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0646S08

1	CHECK CONNECTOR

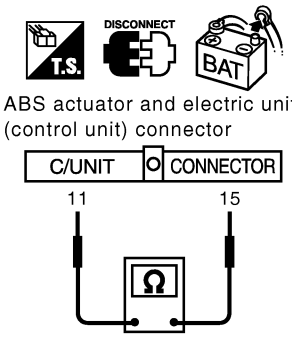
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Approx. 54 - 66 Ω

YEL423E

OK or NG

OK	▶	Replace ABS actuator and electric unit (control unit).
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

STEERING ANGLE SENSOR CIRCUIT CHECK

=NLEL0646S10

1	CHECK CONNECTOR

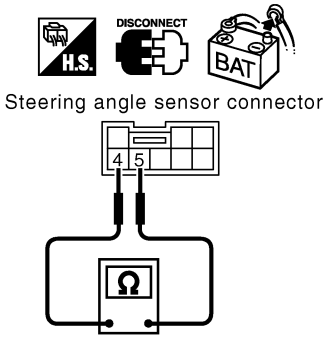
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector E129 terminals 4 (L) and 5 (R).



Approx. 54 - 66 Ω

YEL424E

OK or NG

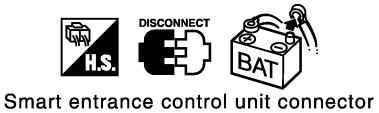
OK	▶	Replace steering angle sensor.
NG	▶	Repair harness between steering angle sensor and ABS actuator and electric unit (control unit).

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

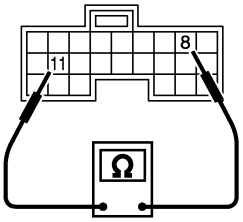
=NLEL0646S09

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect smart entrance control unit connector. 2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).		
OK or NG		
OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.



Smart entrance control unit connector



Approx. 54 - 66 Ω

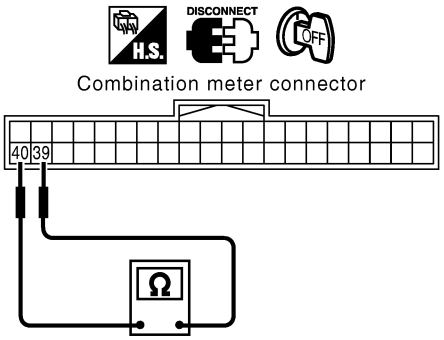
SEL814Y

COMBINATION METER CIRCUIT CHECK

=NLEL0646S11

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.



Approx. 108 - 132 Ω

YEL425E

CAN COMMUNICATION CIRCUIT CHECK

=NLEL0646S12

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side).

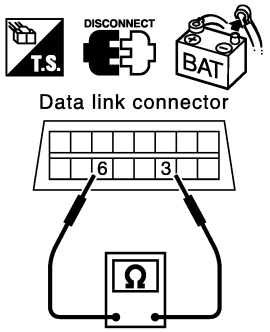
- Combination meter
- Smart entrance control unit
- ECM
- ABS actuator and electric unit (control unit)
- Steering angle sensor
- Between ECM and data link connector

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, smart entrance control unit connector, and harness connector M82 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).



SEL816Y

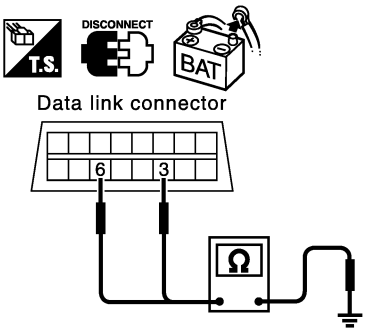
Continuity should not exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M6 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

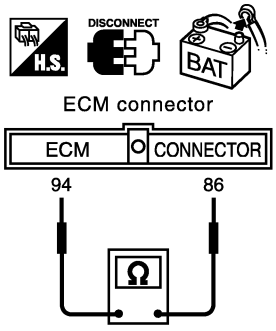
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector M11 (LHD models).
2. Check continuity between ECM harness connector M107 terminals 94 (L) and 86 (R).



Continuity should not exist.

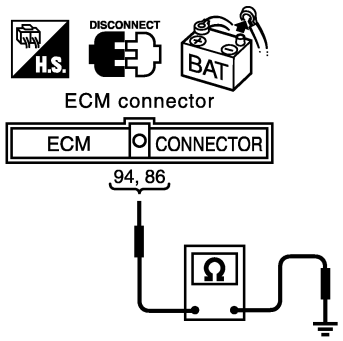
SEL820Y

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M107 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

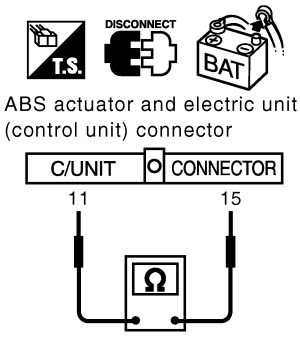
SEL821Y

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and steering angle sensor connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Continuity should not exist.

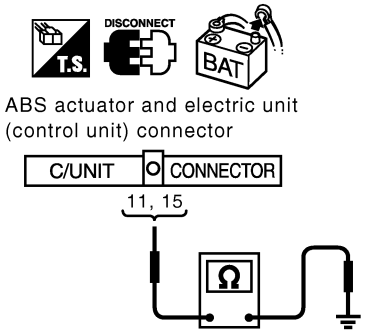
YEL426E

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor. • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) , 15 (R) and ground.



Continuity should not exist.

YEL427E

OK or NG

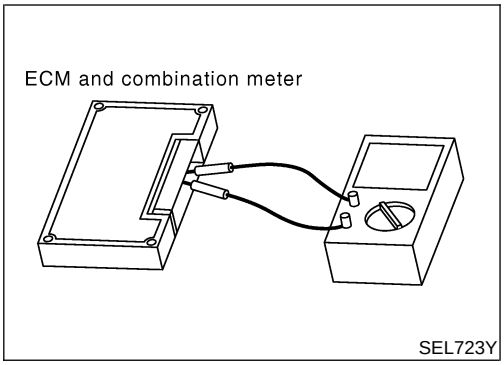
OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor.

8	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-492).

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "Inspection 13 CAN Communication System" (BR-140) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0647

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

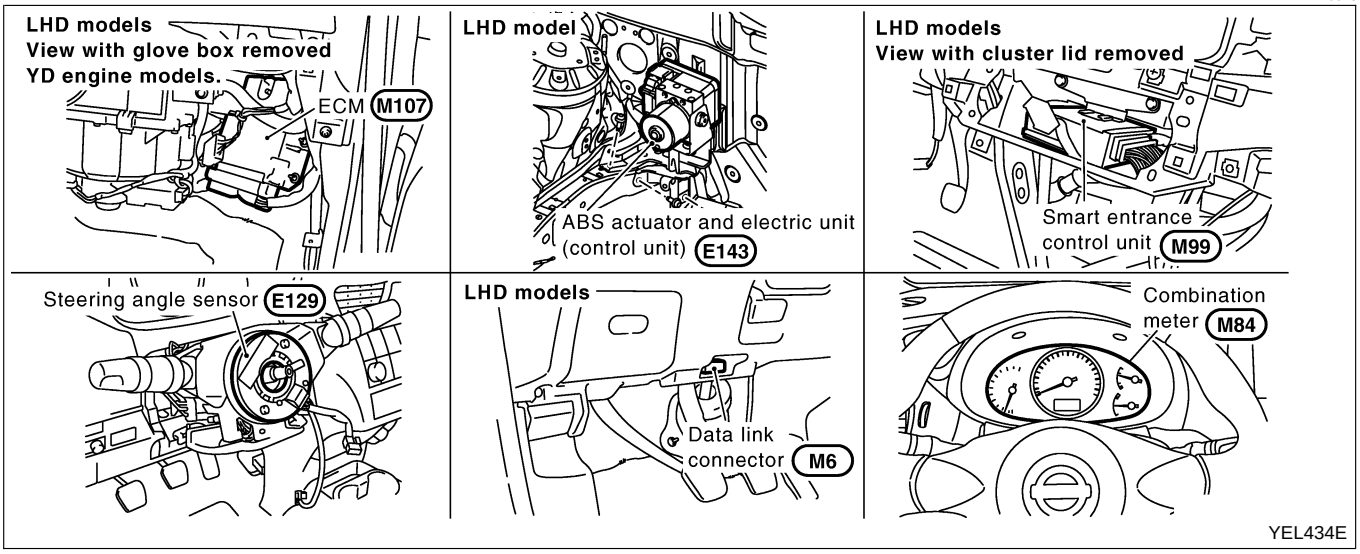
NLEL0647S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 39 and 40.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	39 - 40	

Component Parts and Harness Connector Location

NLEL0648



System Description

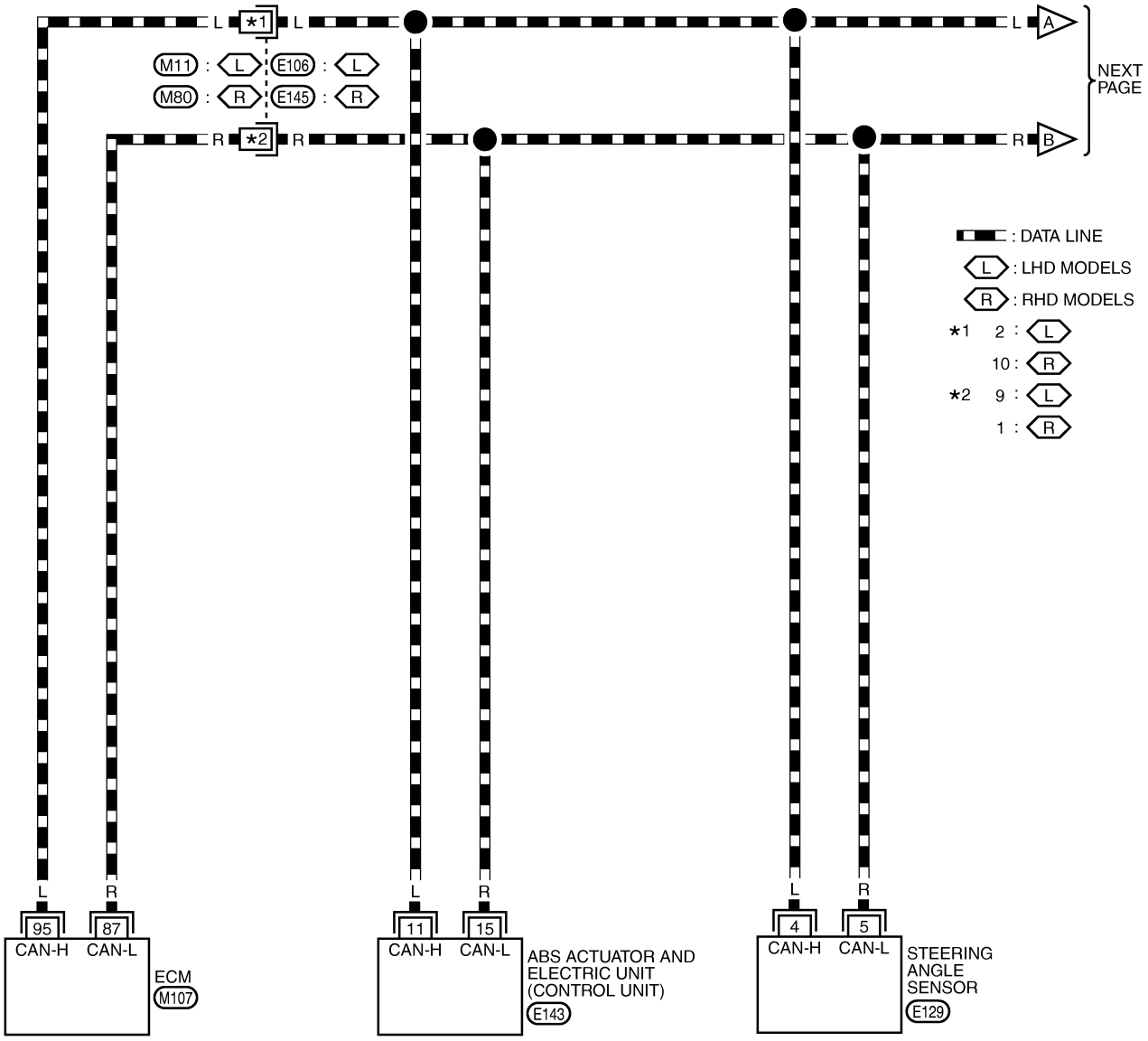
NLEL0649

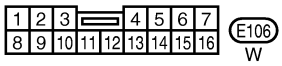
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

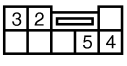
NLEL0650

EL-CAN-05

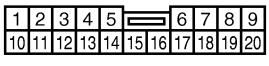




E106
W



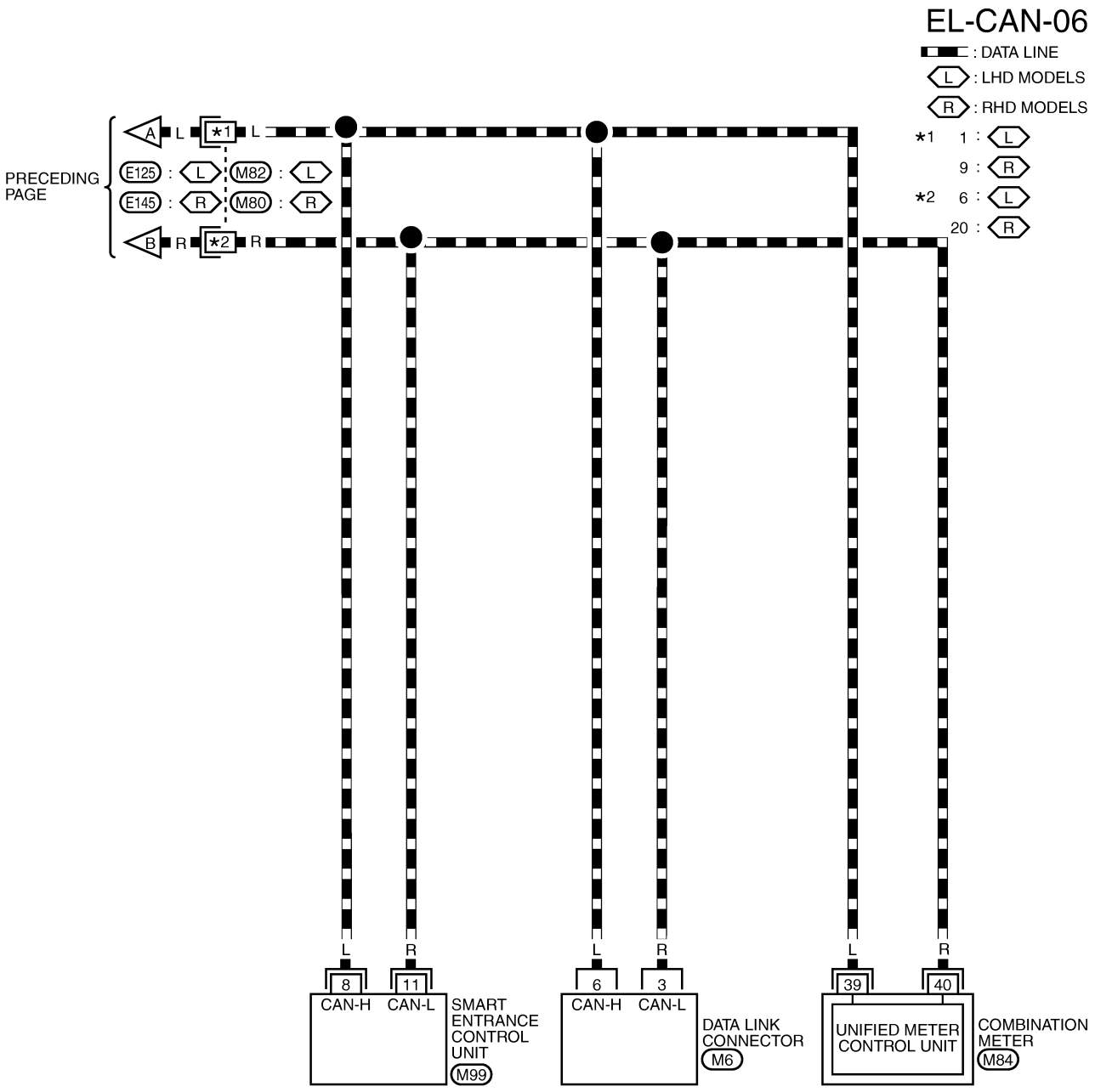
E129
W

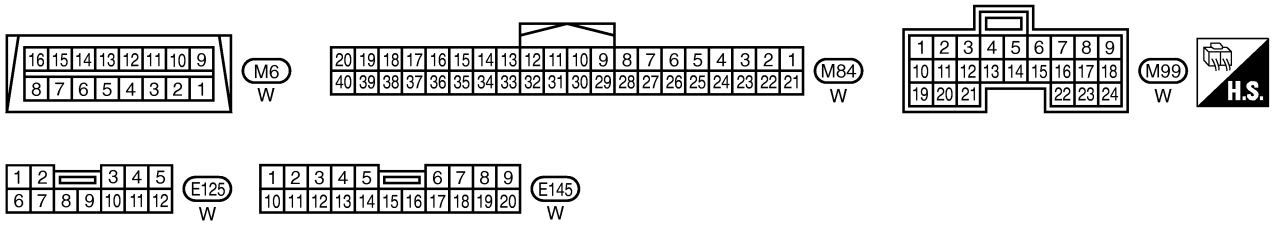


E145
W

REFER TO THE FOLLOWING.
M107 , E143
-ELECTRICAL UNITS

YEL051E


EL-CAN-06
: DATA LINE
L : LHD MODELS
R : RHD MODELS
*1 1 : L
9 : R
*2 6 : L
20 : R
PRECEDING PAGE
A L *1 L
E125 : L M82 : L
E145 : R M80 : R
B R *2 R
L R L R L R
8 11 6 3 39 40
CAN-H CAN-L
SMART ENTRANCE CONTROL UNIT M99
CAN-H CAN-L
DATA LINK CONNECTOR M6
UNIFIED METER CONTROL UNIT
COMBINATION METER M84


M6 W
M84 W
M99 W
H.S.
E125 W
E145 W

YEL126E

Trouble Diagnoses

NLEL0651

WORK FLOW

NLEL0651S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (EC-1011 or EC-1318) for “ENGINE”
- “Inspection 13 CAN Communication System” (BR-140) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-518).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-518).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-519).

CHECK SHEET

NLEL0651S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

YEL435E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0651S03

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	CAN CIRC 5 ✔	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

Case 3: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3 ✔

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5 ✔	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	CAN CIRC 5	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–	CAN CIRC 3

YEL436E

Case 6

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

Case 10

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3 ✔

Case 11

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 3 ✔	—	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 5 ✔	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

YEL437E

INSPECTION

NLEL0651S04

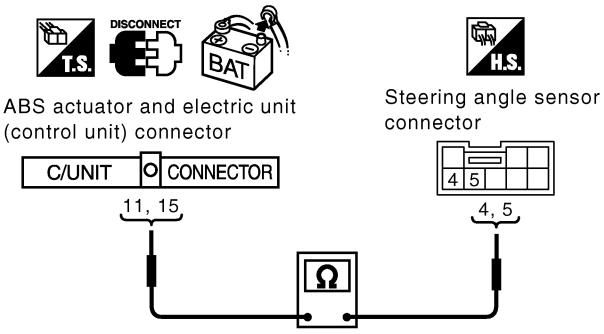
Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace ABS actuator and electric unit (control unit).
Case 3: Replace smart entrance control unit.
Case 4: Check harness between ABS actuator and electric unit (control unit) and steering angle sensor. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR" (EL-522).
Case 5: Check harness between steering angle sensor and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT" (EL-523).
Case 6: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-525).
Case 7: Check ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-526).
Case 8: Check steering angle sensor circuit. Refer to "STEERING ANGLE SENSOR CIRCUIT CHECK" (EL-527).
Case 9: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-528).
Case 10: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-529).
Case 11: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-530).

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND STEERING ANGLE SENSOR

=NLEL0651S06

1	CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Disconnect ABS actuator and electric unit (control unit) connector and steering angle sensor connector.
4. Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L), 15 (R) and steering angle sensor harness connector E129 terminals 4 (L), 5 (R).



Terminals		Continuity
11	4	Yes
15	5	

YEL422E

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (EC-1011 or EC-1318) for "ENGINE" ● "Inspection 13 CAN Communication System" (BR-140) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

CIRCUIT CHECK BETWEEN STEERING ANGLE SENSOR AND SMART ENTRANCE CONTROL UNIT

=NLEL0651S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models
- Harness connector E125
- Harness connector M82

RHD models
- Harness connector E145
- Harness connector M80

OK or NG

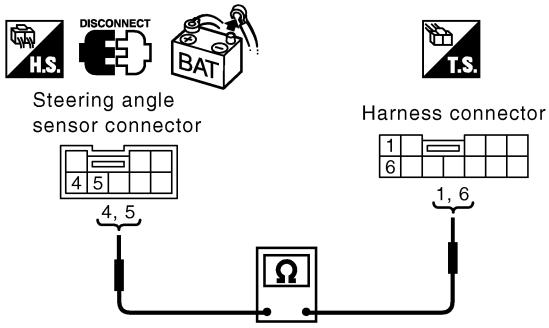
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models
- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models

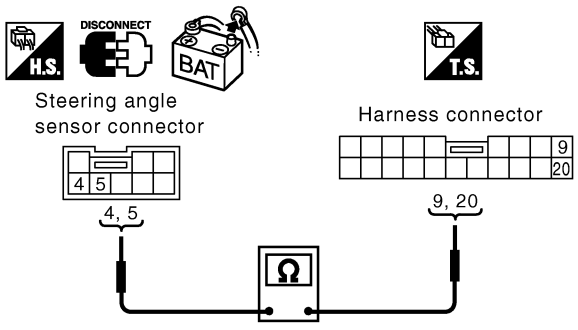


Terminals		Continuity
4	1	Yes
5	6	

YEL418E

RHD models
- Continuity between steering angle sensor harness connector E129 terminals 4 (L), 5 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
4	9	Yes
5	20	

YEL419E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

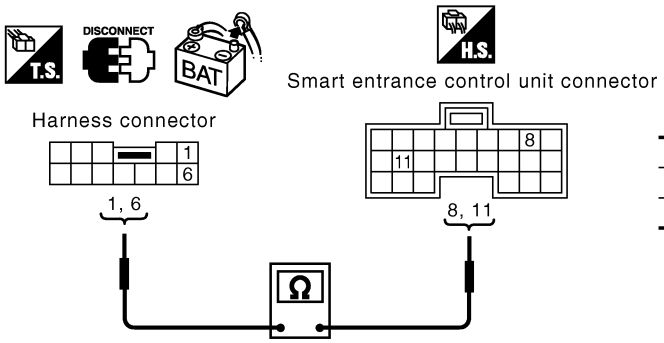
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

LHD models



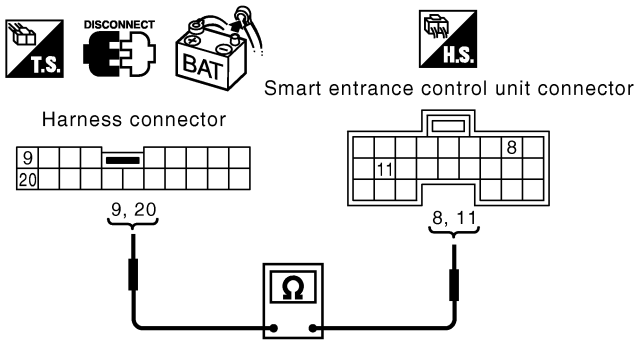
Terminals		Continuity
1	8	Yes
6	11	

YEL420E

RHD models

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL421E

OK or NG

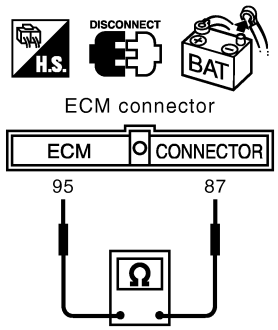
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (EC-1011 or EC-1318) for "ENGINE" ● "Inspection 13 CAN Communication System" (BR-140) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0651S07

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 95 (L) and 87 (R).		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and ABS actuator and electric unit (control unit).



Approx. 108 - 132 Ω

YEL438E

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0651S08

1	CHECK CONNECTOR

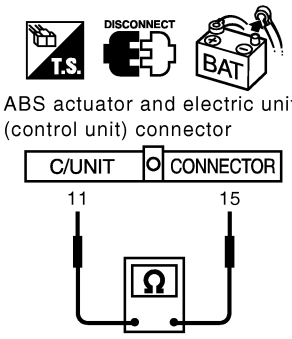
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Approx. 54 - 66 Ω

YEL423E

OK or NG

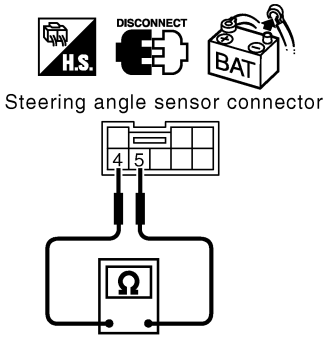
OK	▶	Replace TCM.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

STEERING ANGLE SENSOR CIRCUIT CHECK

=NLEL0651S10

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of steering angle sensor for damage, bend and loose connection (sensor side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect steering angle sensor connector. 2. Check resistance between steering angle sensor harness connector E129 terminals 4 (L) and 5 (R).		
OK or NG		
OK	▶	Replace steering angle sensor.
NG	▶	Repair harness between steering angle sensor and ABS actuator and electric unit (control unit).



Approx. 54 - 66 Ω

YEL424E

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

=NLEL0651S09

1	CHECK CONNECTOR

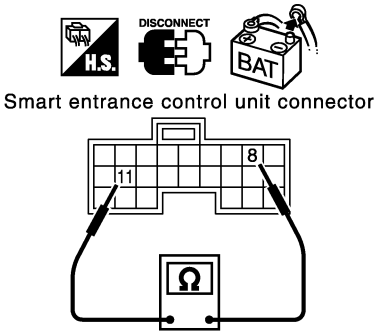
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).



Approx. 54 - 66 Ω

SEL814Y

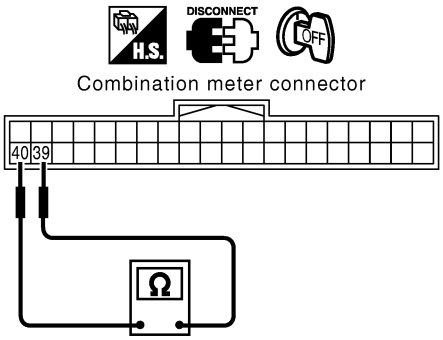
OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.

COMBINATION METER CIRCUIT CHECK

=NLEL0651S11

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).		
 **Approx. 108 - 132 Ω** YEL425E		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.

CAN COMMUNICATION CIRCUIT CHECK

=NLEL0651S12

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side).

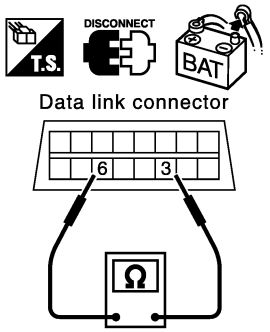
- Combination meter
- Smart entrance control unit
- ECM
- ABS actuator and electric unit (control unit)
- Steering angle sensor
- Between ECM and data link connector

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, smart entrance control unit connector, and harness connector M82 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).



Continuity should not exist.

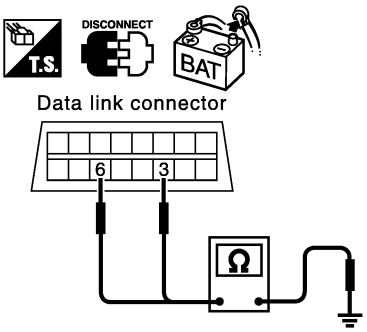
SEL816Y

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M29 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

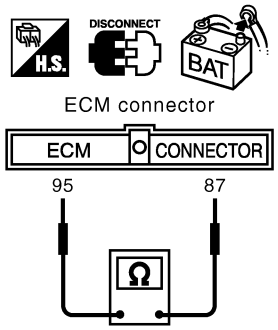
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector M11 (LHD models).
2. Check continuity between ECM harness connector M107 terminals 95 (L) and 87 (R).



Continuity should not exist.

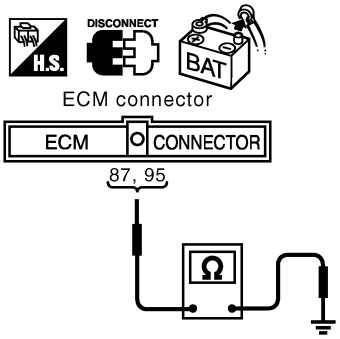
YEL439E

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M107 terminals 95 (L), 87 (R) and ground.



Continuity should not exist.

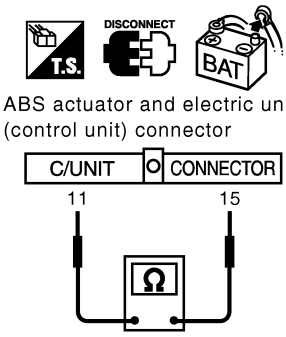
YEL440E

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) and 15 (R).



Continuity should not exist.

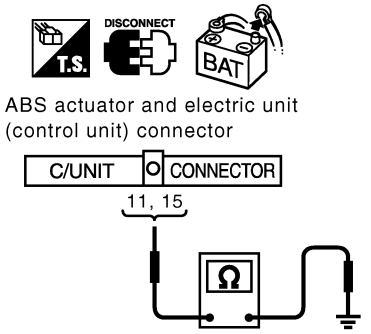
YEL426E

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models). • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor. • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models).

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E143 terminals 11 (L) , 15 (R) and ground.



Continuity should not exist.

YEL427E

OK or NG

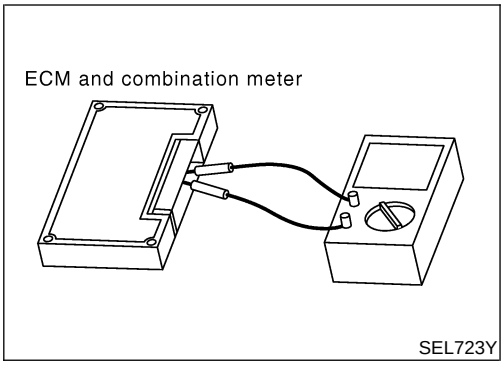
OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models). • Repair harness between ABS actuator and electric unit (control unit) and steering angle sensor. • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106 (LHD models).

8	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-492).

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (EC-1011 or EC-1318) for "ENGINE" • "Inspection 13 CAN Communication System" (BR-140) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0652

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

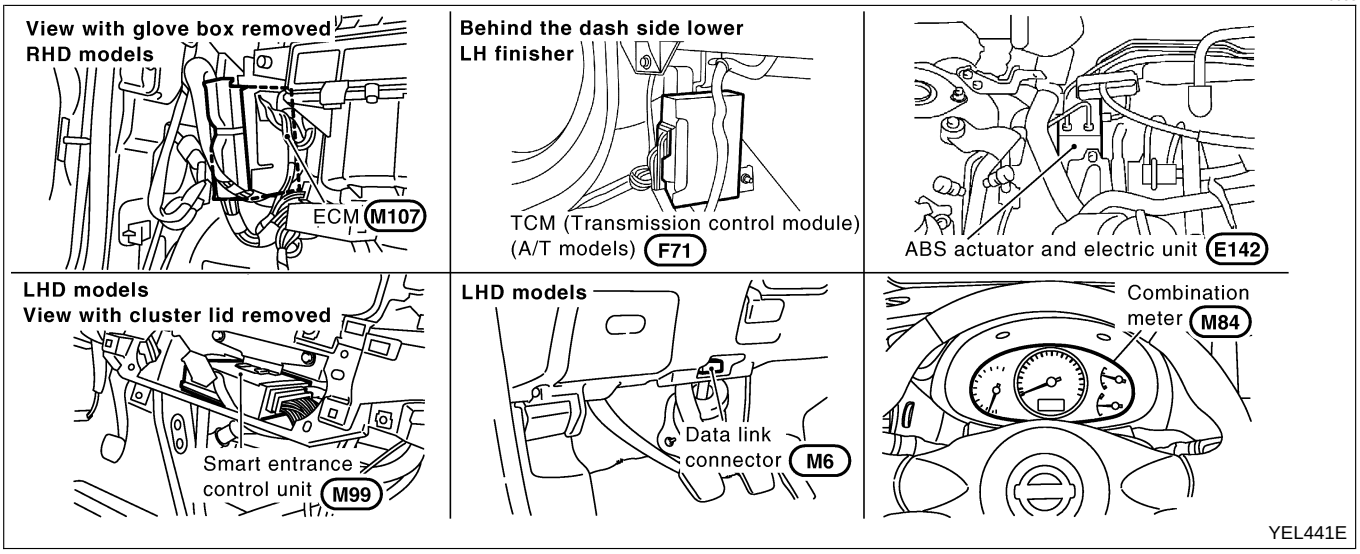
NLEL0652S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 95 and 87.
- Check resistance between combination meter terminals 39 and 40.

Unit	Terminal	Resistance value (Ω)
ECM	95 - 87	Approx. 108 - 132
Combination meter	39 - 40	

Component Parts and Harness Connector Location

NLEL0653



System Description

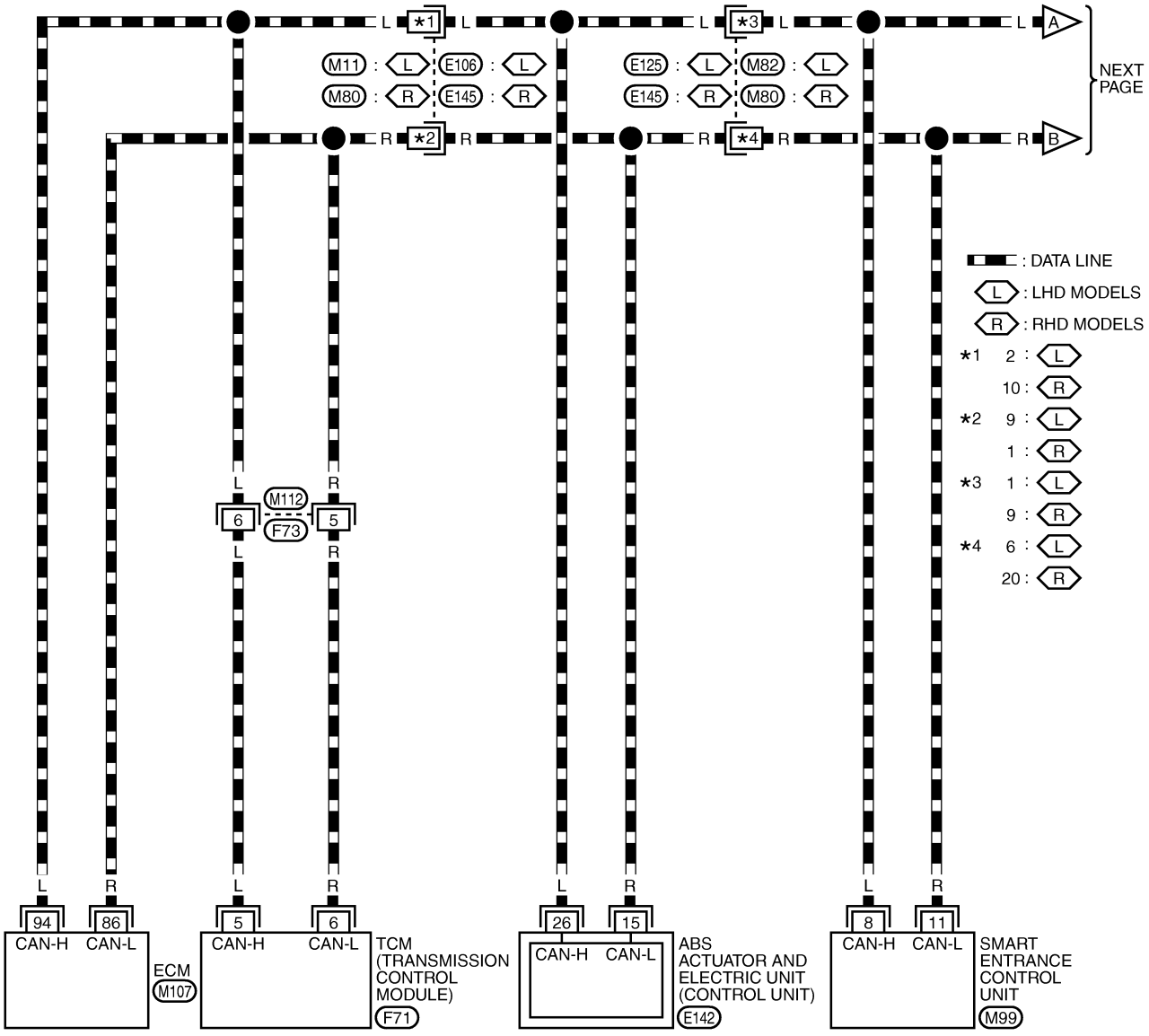
NLEL0654

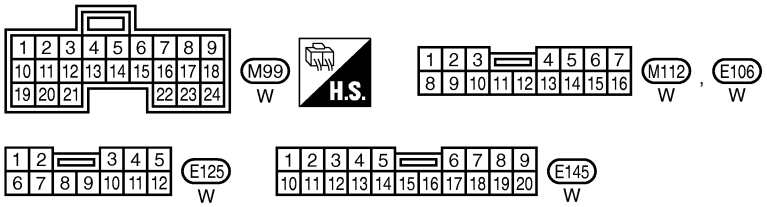
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

NLEL0655

EL-CAN-07



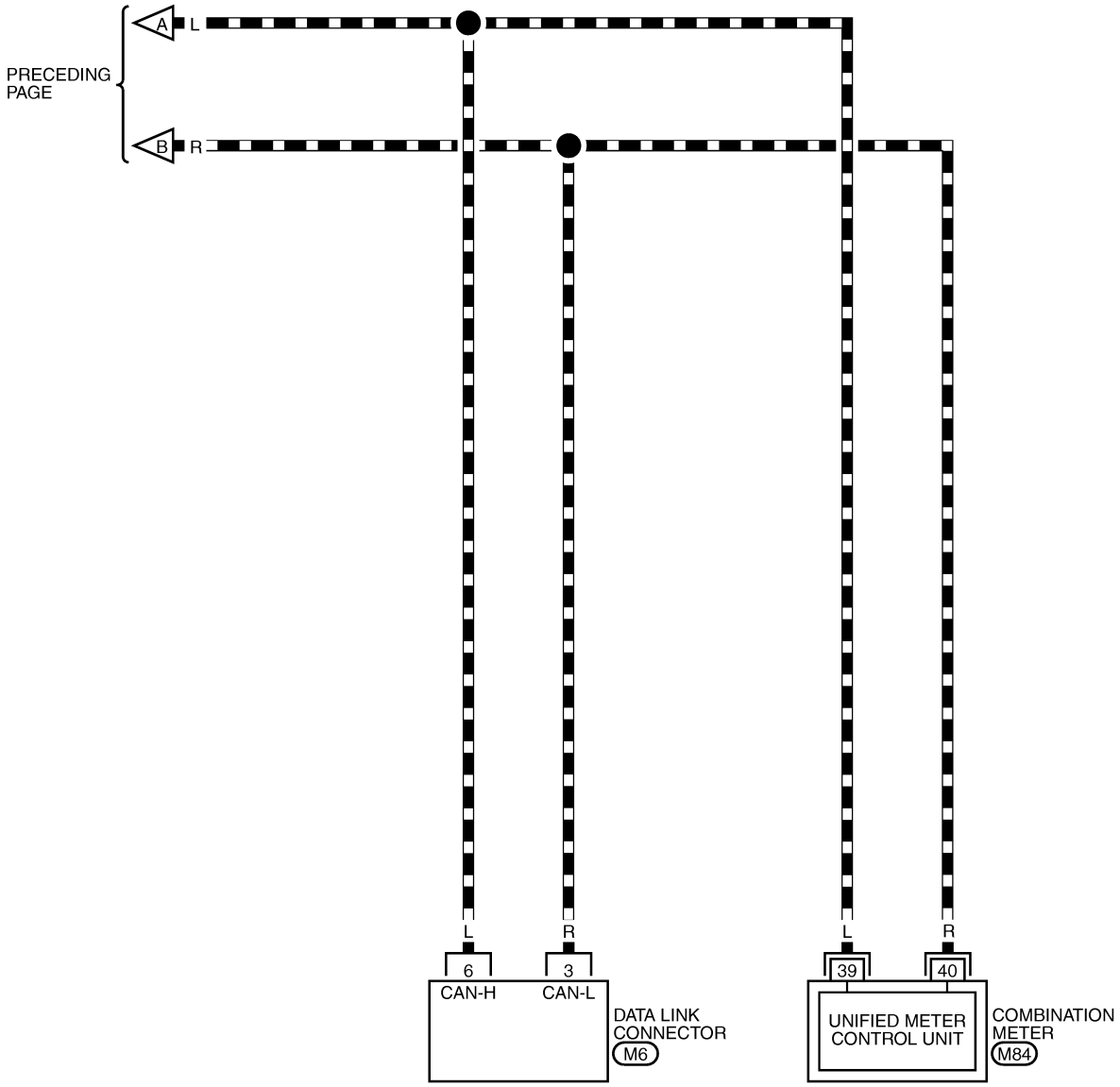


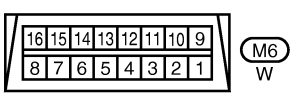
REFER TO THE FOLLOWING.
M107 , E142 , F71
-ELECTRICAL UNITS

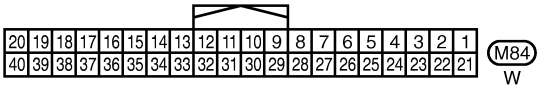
YEL127E

EL-CAN-08

: DATA LINE







YEL128E

Trouble Diagnoses

NLEL0656

WORK FLOW

NLEL0656S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “A/T” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITH EURO-OBD) (EC-145) for “ENGINE”
- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITHOUT EURO-OBD) (EC-651) for “ENGINE”
- “DTC U1000 CAN COMMUNICATION LINE” (WITH EURO-OBD) (AT-194) for “A/T”
- “CAN COMMUNICATION LINE” (All) (AT-399) for “A/T”
- “CAN Communication System” (BR-73) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-539).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-539).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-540).

CHECK SHEET

NLEL0656S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Symptoms:

Attach copy of ENGINE SELF-DIAG RESULTS	Attach copy of A/T SELF-DIAG RESULTS	Attach copy of ABS SELF-DIAG RESULTS	Attach copy of SMART ENTRANCE SELF-DIAG RESULTS
Attach copy of ENGINE DATA MONITOR	Attach copy of A/T DATA MONITOR	Attach copy of ABS DATA MONITOR	Attach copy of SMART ENTRANCE DATA MONITOR

YEL442E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0656S03

Case 1: Replace ECM

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 2: Replace TCM

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 3: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 4: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

YEL443E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6 ✔	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 2 ✔	CAN CIRC 3 ✔	CAN CIRC 6 ✔	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2 ✔	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 3 ✔	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3 ✔	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3 ✔	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3

Case 10

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6 ✔	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

Case 11

ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	CAN CIRC 3 ✔

Case 12

ENGINE	CAN COMM	CAN CIRC 1 ✔	—	CAN CIRC 2 ✔	CAN CIRC 3 ✔	CAN CIRC 6 ✔	CAN CIRC 4 ✔
A/T	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	CAN CIRC 3 ✔	—	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✔	CAN CIRC 2 ✔	—	—	—	CAN CIRC 3 ✔

YEL444E

INSPECTION

NLEL0656S04

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace TCM.
Case 3: Replace ABS actuator and electric unit (control unit).
Case 4: Replace smart entrance control unit.
Case 5: Check harness between TCM and ABS actuator and electric unit (control unit). Refer to "CIRCUIT CHECK BETWEEN TCM AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)" (EL-543).
Case 6: Check harness between ABS actuator and electric unit (control unit) and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT" (EL-545).
Case 7: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-547).
Case 8: Check TCM circuit. Refer to "TCM CIRCUIT CHECK" (EL-548).
Case 9: Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-549).
Case 10: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-550).
Case 11: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-551).
Case 12: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-552).

CIRCUIT CHECK BETWEEN TCM AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

=NLEL0656S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector M11
- Harness connector E106

RHD models

- Harness connector M80
- Harness connector E145

OK or NG

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

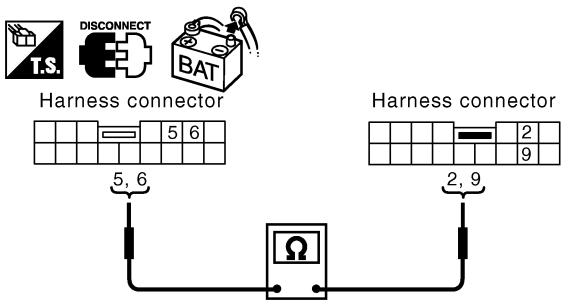
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M112 and harness connector M11 (LHD models) or harness connector M80 (RHD models).
2. Check the following.

LHD models

- Continuity between harness connector M112 terminals 6 (L), 5 (R) and harness connector M11 terminals 2 (L), 9 (R)

LHD models



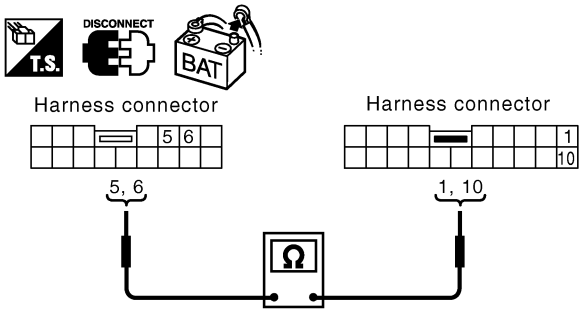
Terminals		Continuity
6	2	Yes
5	9	

YEL446E

RHD models

- Continuity between harness connector M112 terminals 6 (L), 5 (R) and harness connector M80 terminals 10 (L), 1 (R)

RHD models



Terminals		Continuity
6	10	Yes
5	1	

YEL447E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

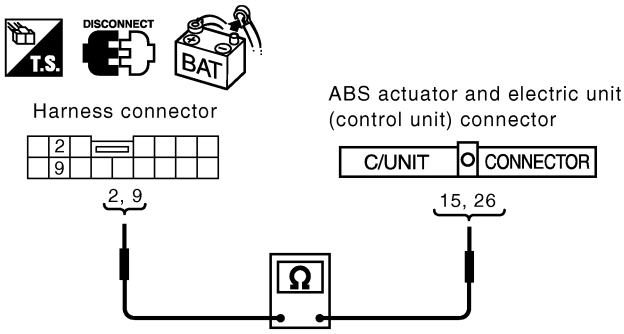
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check the following.

LHD models

- Continuity between harness connector E106 terminals 2 (L), 9 (R) and ABS actuator and electric unit (control unit) connector E142 terminals 26 (L), 15 (R)

LHD models



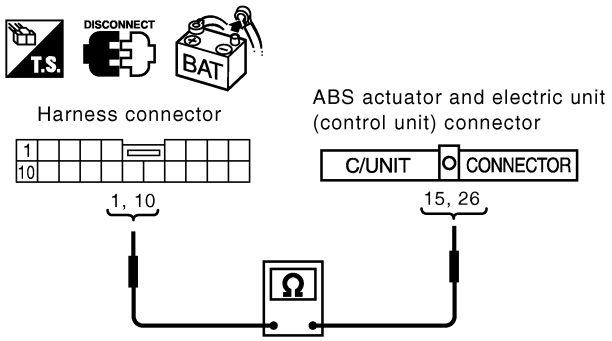
Terminals		Continuity
2	26	Yes
9	15	

YEL448E

RHD models

- Continuity between harness connector E145 terminals 10 (L), 1 (R) and ABS actuator and electric unit (control unit) connector E142 terminals 26 (L), 15 (R)

RHD models



Terminals		Continuity
10	26	Yes
1	15	

YEL449E

OK or NG

OK ▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" ● "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" ● "CAN Communication System" (BR-73) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG ▶	Repair harness.

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT

=NLEL0656S06

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector E125
- Harness connector M82

RHD models

- Harness connector E145
- Harness connector M80

OK or NG

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

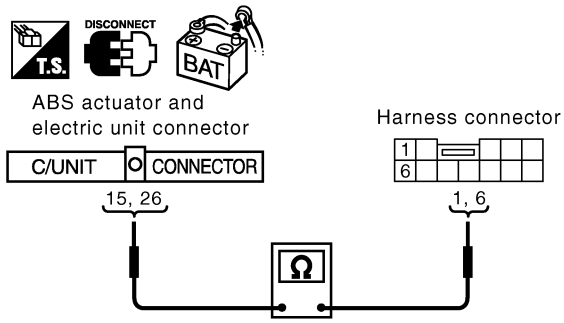
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models



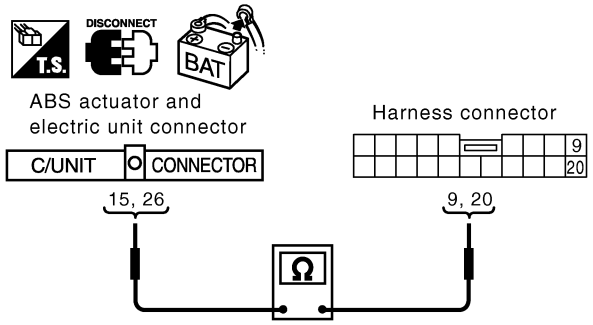
Terminals		Continuity
26	1	Yes
15	6	

YEL450E

RHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
26	9	Yes
15	20	

YEL451E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

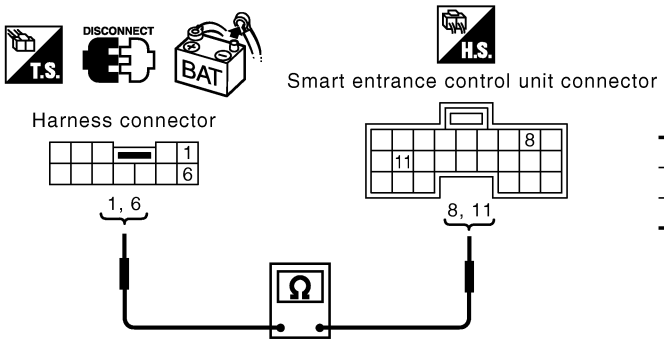
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

LHD models



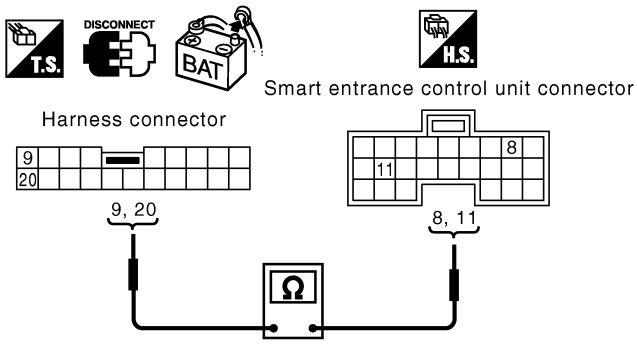
Terminals		Continuity
1	8	Yes
6	11	

YEL452E

RHD models

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL453E

OK or NG

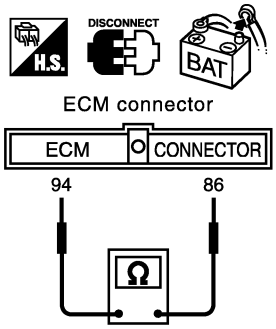
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" ● "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" ● "CAN Communication System" (BR-73) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0656S07

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 94 (L) and 86 (R).		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and TCM.



Approx. 108 - 132 Ω

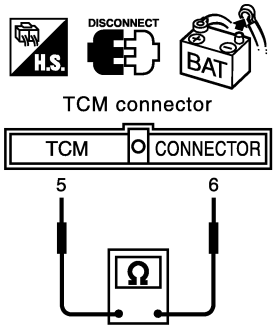
SEL812Y

TCM CIRCUIT CHECK

=NLEL0656S08

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of TCM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect TCM connector. 2. Check resistance between TCM harness connector F71 terminals 5 (L) and 6 (R).		
OK or NG		
OK	▶	Replace TCM.
NG	▶	● Repair harness between TCM and harness connector M11 (LHD models). ● Repair harness between TCM and harness connector M80 (RHD models).



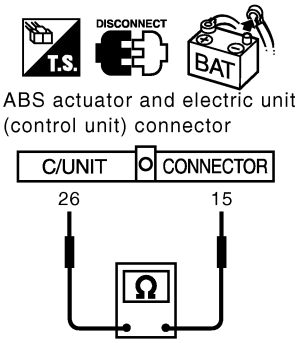
Approx. 54 - 66 Ω

SEL813Y

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0656S09

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ABS actuator and electric unit (control unit) connector. 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).		
 YEL454E		**Approx. 54 - 66 Ω**
OK or NG		
OK	▶	Replace ABS actuator and electric unit (control unit).
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

=NLEL0656S10

1	CHECK CONNECTOR

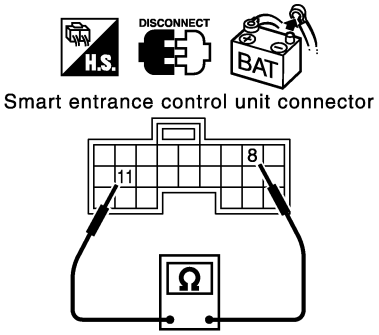
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).



Approx. 54 - 66 Ω

SEL814Y

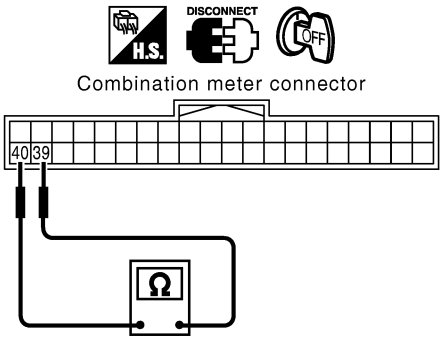
OK or NG

OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.

COMBINATION METER CIRCUIT CHECK

=NLEL0656S11

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect combination meter connector. 2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).		
 **Approx. 108 - 132 Ω** YEL425E		
OK or NG		
OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.

CAN COMMUNICATION CIRCUIT CHECK

=NLEL0656S12

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side).

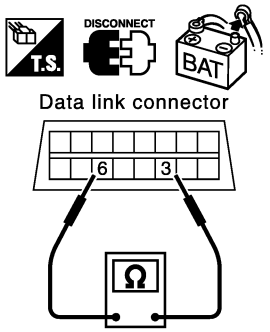
- Combination meter
- Smart entrance control unit
- TCM
- ECM
- ABS actuator and electric unit (control unit)
- Between ECM and data link connector

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, smart entrance control unit connector and harness connector M82 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).



Continuity should not exist.

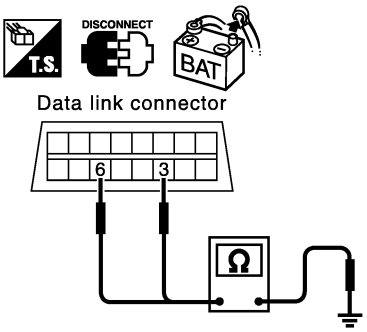
SEL816Y

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M6 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

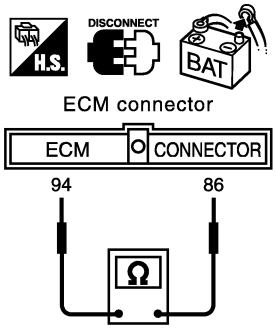
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector, harness connector M112 harness connector M11 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between ECM harness connector M107 terminals 94 (L) and 86 (R).



Continuity should not exist.

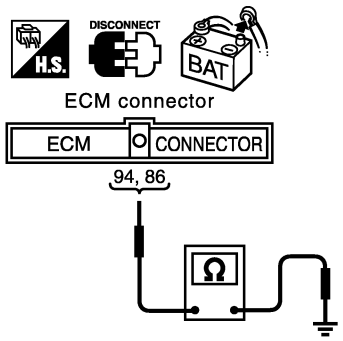
SEL820Y

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models). • Repair harness between ECM and harness connector M112.

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M112 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

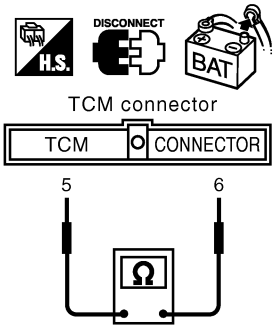
SEL821Y

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models). • Repair harness between ECM and harness connector M112.

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector F71 terminals 5 (L) and 6 (R).

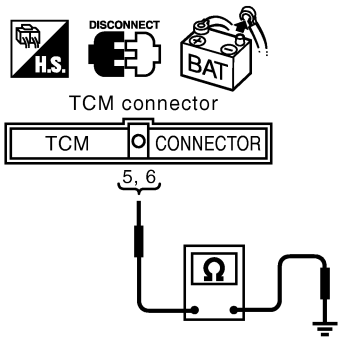


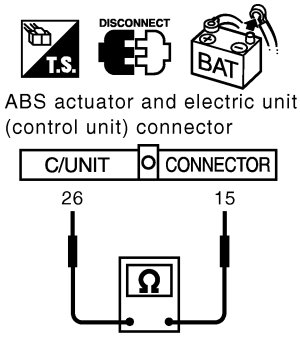
Continuity should not exist.

YEL428E

OK or NG

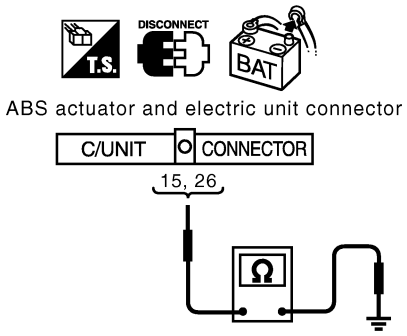
OK	▶	GO TO 7.
NG	▶	Repair harness between TCM and harness connector F73.

7	CHECK HARNESS FOR SHORT CIRCUIT	
Check continuity between TCM harness connector F71 terminals 5 (L), 6 (R) and ground.  **Continuity should not exist.** YEL429E		
OK or NG		
OK	▶	GO TO 8.
NG	▶	Repair harness between TCM and harness connector F73.

8	CHECK HARNESS FOR SHORT CIRCUIT	
1. Disconnect harness connector ABS actuator and electric unit (control unit). 2. Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).  **Continuity should not exist.** YEL455E		
OK or NG		
OK	▶	GO TO 9.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

9	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) , 15 (R) and ground.



Continuity should not exist.

YEL456E

OK or NG

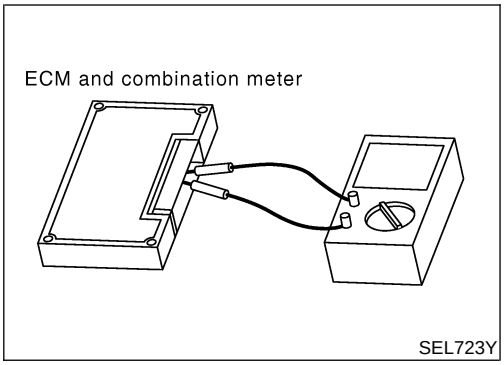
OK	▶	GO TO 10.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

10	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-557).

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "DTC U1000 CAN COMMUNICATION LINE" (WITH EURO-OBD) (AT-194) for "A/T" • "CAN COMMUNICATION LINE" (All) (AT-399) for "A/T" • "CAN Communication System" (BR-73) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0657

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

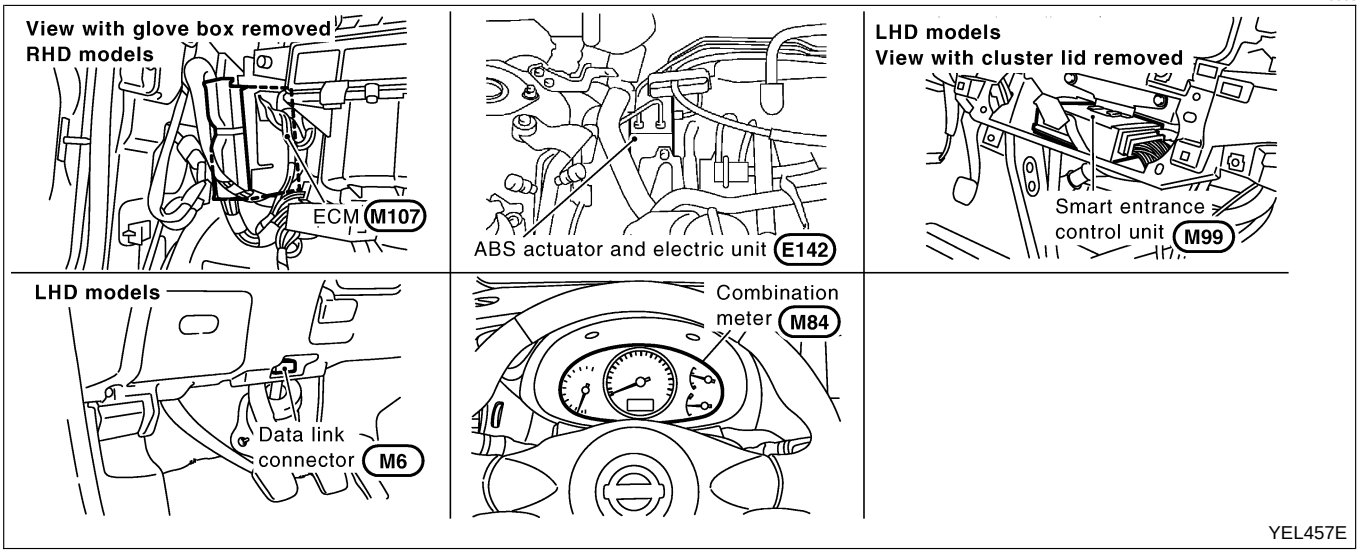
NLEL0657S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 39 and 40.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	39 - 40	

Component Parts and Harness Connector Location

NLEL0668



System Description

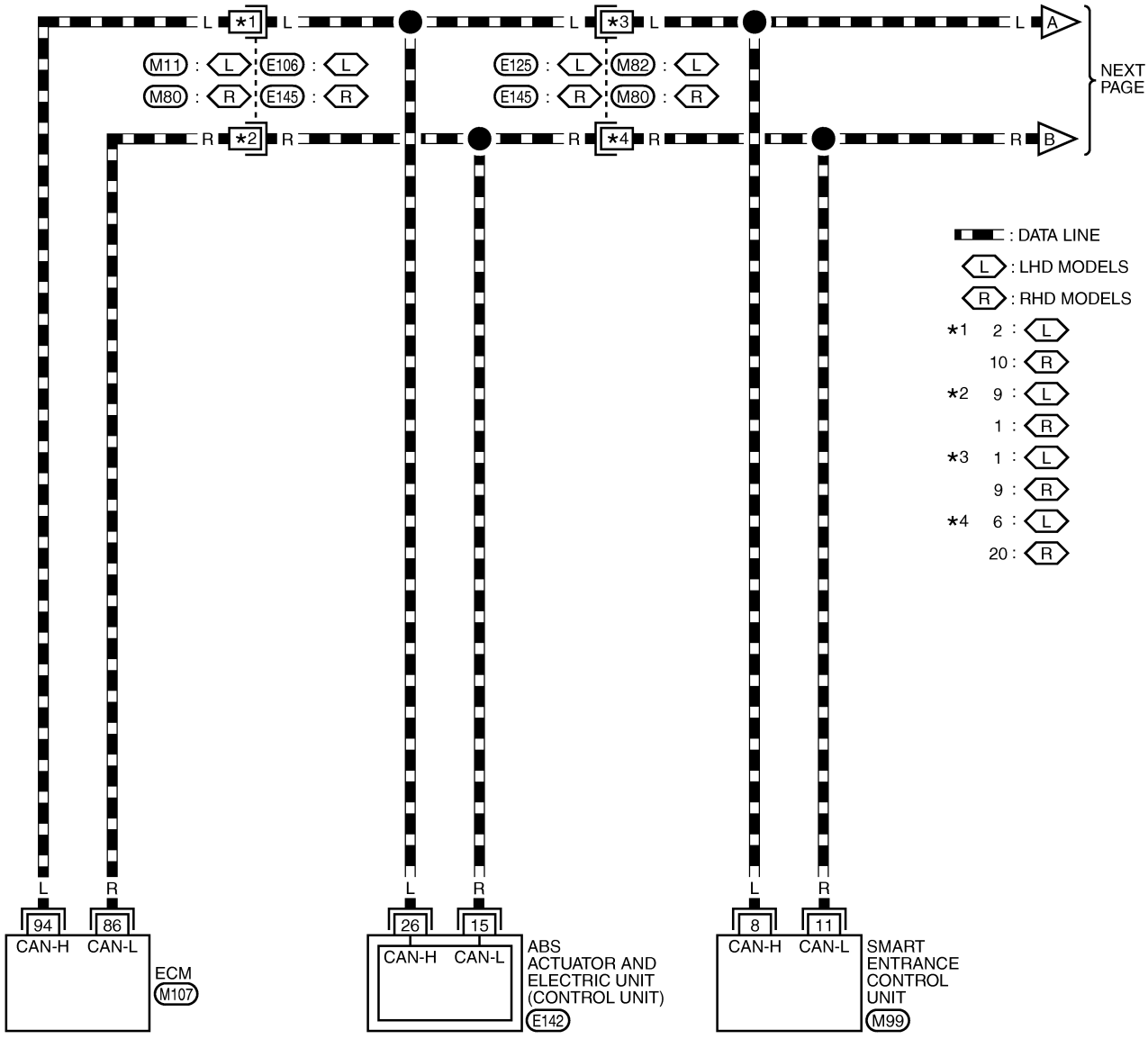
NLEL0669

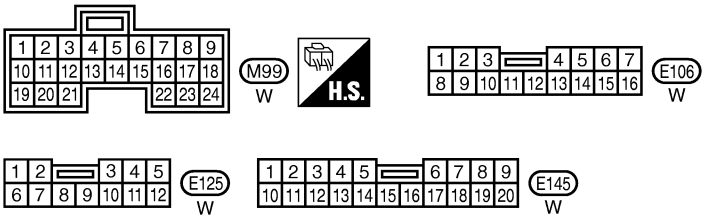
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

NLEL0670

EL-CAN-09

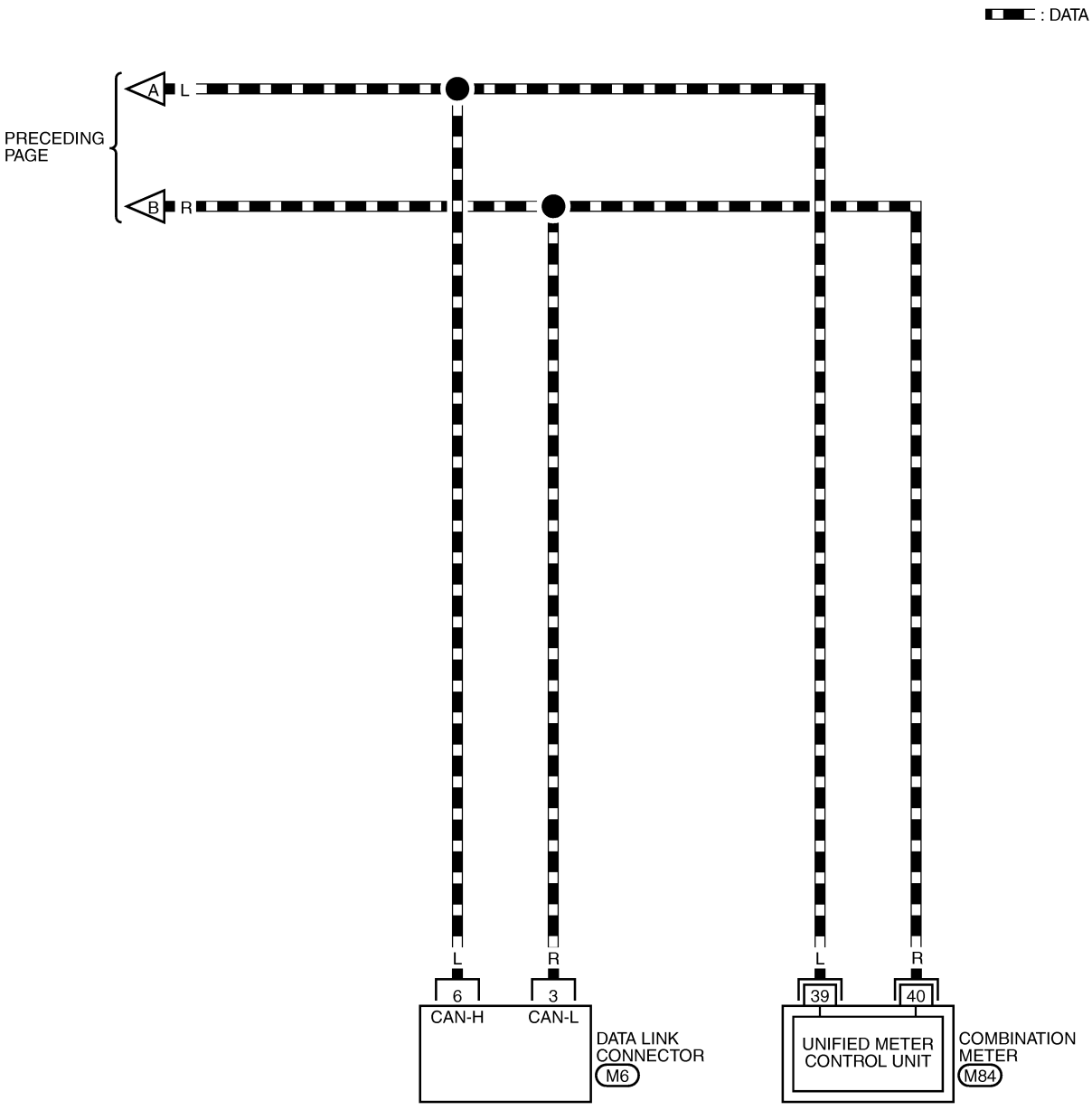


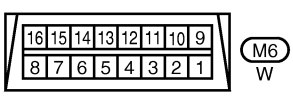


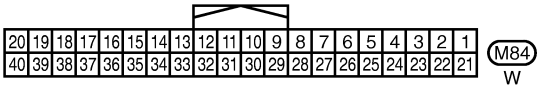
REFER TO THE FOLLOWING.
M107 , E142
-ELECTRICAL UNITS

YEL129E

EL-CAN-10







YEL130E

Trouble Diagnoses

NLEL0671

WORK FLOW

NLEL0671S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITH EURO-OBD) (EC-145) for “ENGINE”
- “DTC U1000, U1001 CAN COMMUNICATION LINE” (WITHOUT EURO-OBD) (EC-651) for “ENGINE”
- “CAN Communication System” (BR-73) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-562).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-562).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-563).

CHECK SHEET

NLEL0671S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

YEL458E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0671S03

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 3: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3 ✔

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1 ✔	–	CAN CIRC 3 ✔	CAN CIRC 6 ✔	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3

YEL459E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6 ✓	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	CAN CIRC 6	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	CAN CIRC 6 ✓	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

YEL460E

INSPECTION

NLEL0671S04

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace ABS actuator and electric unit (control unit).
Case 3: Replace smart entrance control unit.
Case 4: Check harness between ABS actuator and electric unit (control unit) and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT" (EL-565).
Case 5: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-567).
Case 6: Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-568).
Case 7: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-569).
Case 8: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-570).
Case 9: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-571).

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT

NLEL0671S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector E125
- Harness connector M82

RHD models

- Harness connector E145
- Harness connector M80

OK or NG

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

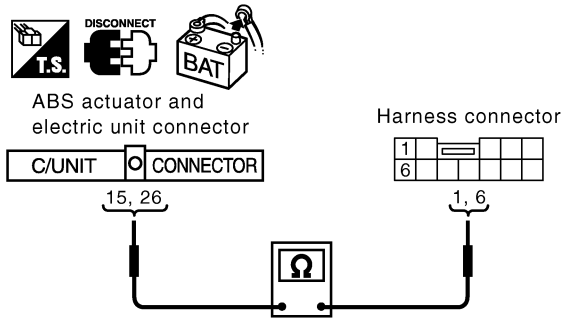
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models



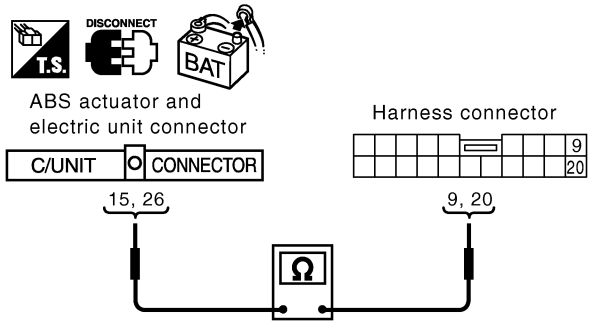
Terminals		Continuity
26	1	Yes
15	6	

YEL450E

RHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
26	9	Yes
15	20	

YEL451E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

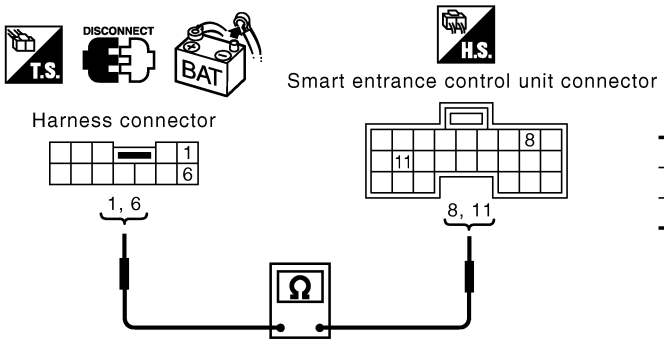
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

LHD models



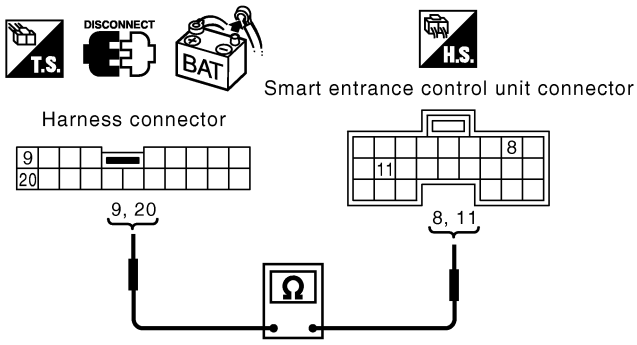
Terminals		Continuity
1	8	Yes
6	11	

YEL452E

RHD models

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit connector M99 terminals 8 (L), 11 (R)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL453E

OK or NG

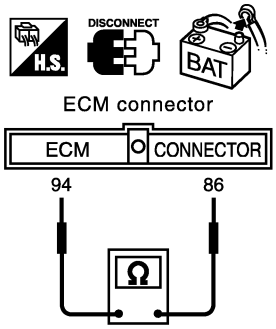
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" ● "CAN Communication System" (BR-73) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0671S06

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 94 (L) and 86 (R).		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and ABS actuator and electric unit (control unit).



Approx. 108 - 132 Ω

SEL812Y

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0671S07

1	CHECK CONNECTOR

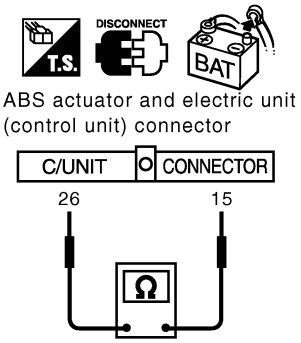
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).



Approx. 54 - 66 Ω

YEL454E

OK or NG

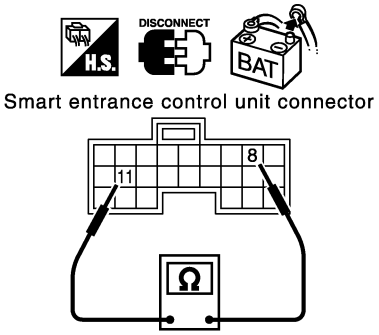
OK	▶	Replace TCM.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

=NLEL0671S08

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect smart entrance control unit connector. 2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).		
OK or NG		
OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.



Approx. 54 - 66 Ω

SEL814Y

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

COMBINATION METER CIRCUIT CHECK

=NLEL0671S09

1	CHECK CONNECTOR

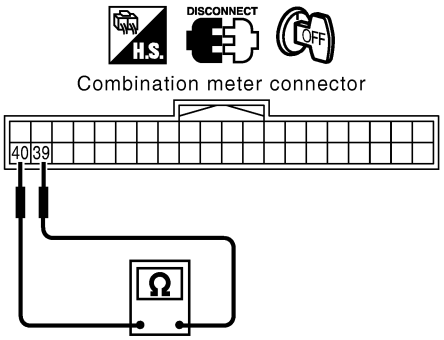
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).



Approx. 108 - 132 Ω

YEL425E

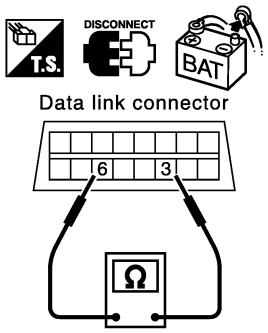
OK or NG

OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.

CAN COMMUNICATION CIRCUIT CHECK

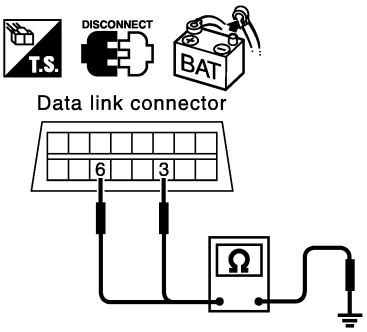
=NLEL0671S10

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side). ● Combination meter ● Smart entrance control unit ● ECM ● ABS actuator and electric unit (control unit) ● Between ECM and data link connector		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR SHORT CIRCUIT	
1. Disconnect combination meter connector, smart entrance control unit connector and harness connector M82 (LHD models) or harness connector M80 (RHD models). 2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).  **Continuity should not exist.** SEL816Y		
OK or NG		
OK	▶	GO TO 3.
NG	▶	● Repair harness between data link connector and harness connector M82 (LHD models). ● Repair harness between data link connector and harness connector M80 (RHD models). ● Repair harness between data link connector and smart entrance control unit. ● Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M6 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

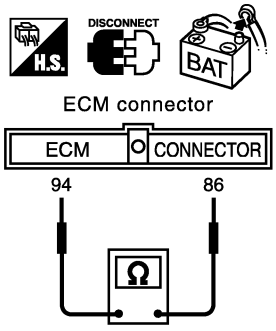
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector M11 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between ECM harness connector M107 terminals 94 (L) and 86 (R).



Continuity should not exist.

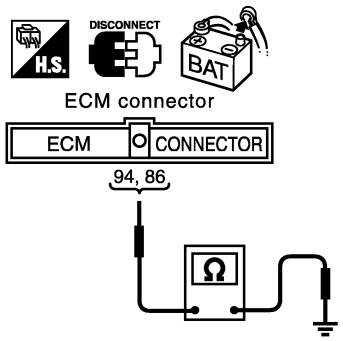
SEL820Y

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M107 terminals 94 (L), 86 (R) and ground.



Continuity should not exist.

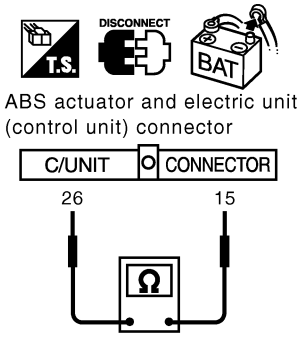
SEL821Y

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector ABS actuator and electric unit (control unit).
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).



Continuity should not exist.

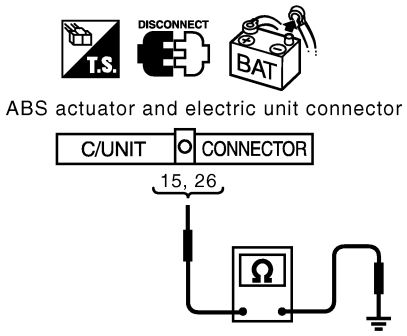
YEL455E

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) , 15 (R) and ground.



Continuity should not exist.

YEL456E

OK or NG

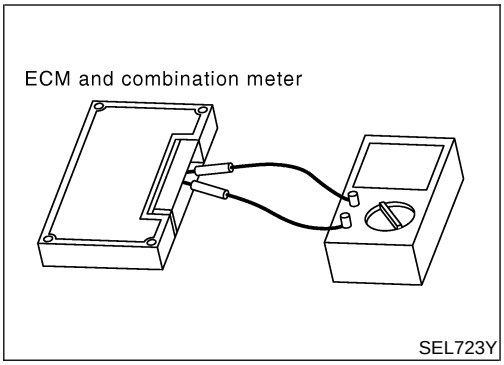
OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

8	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-575).

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) (EC-145) for "ENGINE" • "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) (EC-651) for "ENGINE" • "CAN Communication System" (BR-73) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0672

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

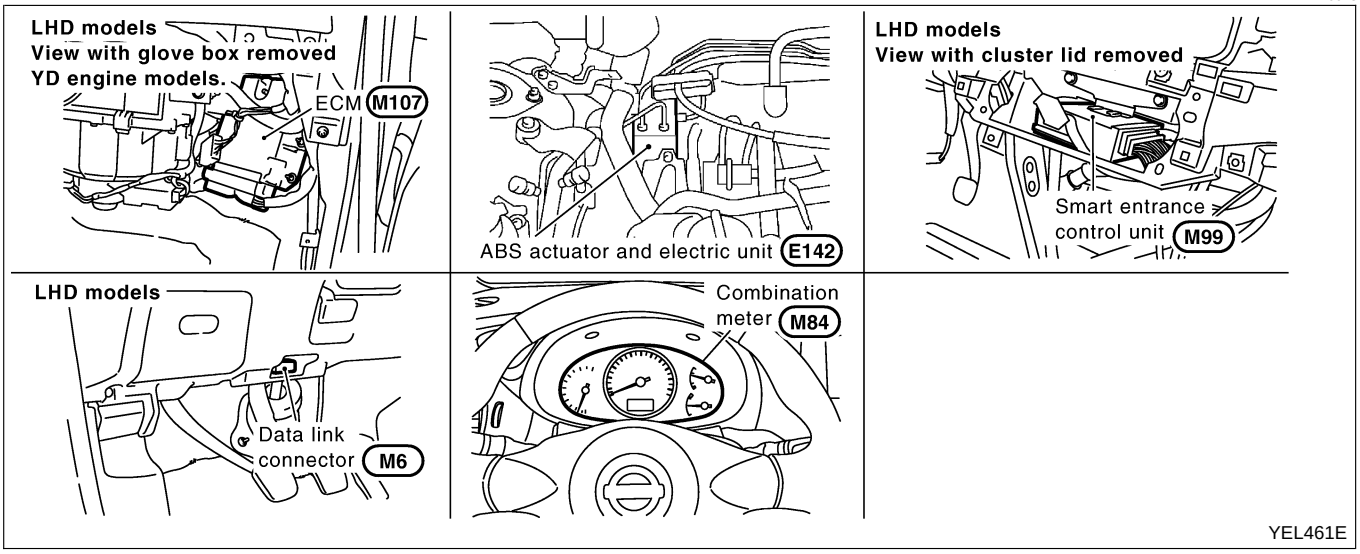
NLEL0672S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between combination meter terminals 39 and 40.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	39 - 40	

Component Parts and Harness Connector Location

NLEL0673



System Description

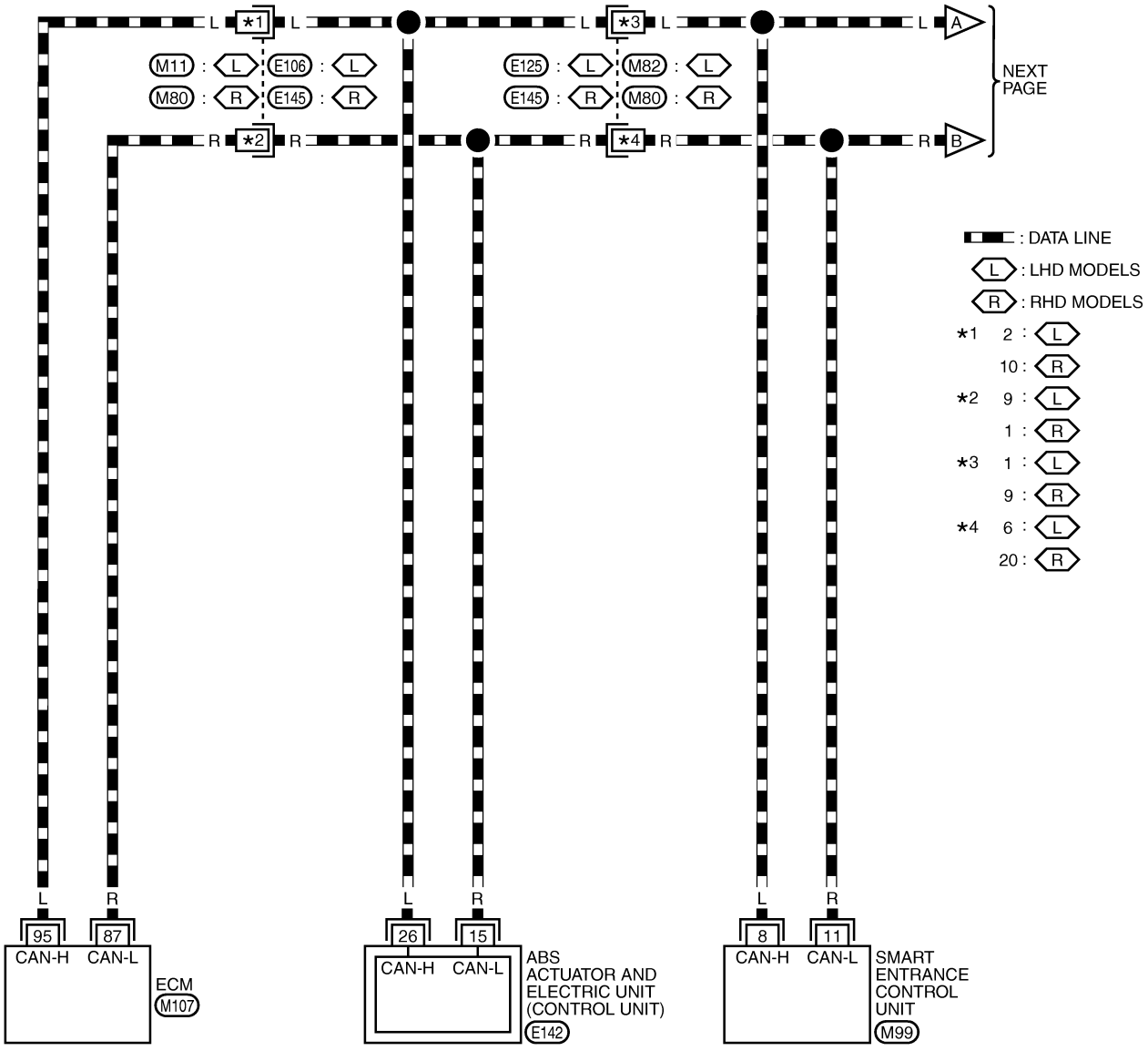
NLEL0674

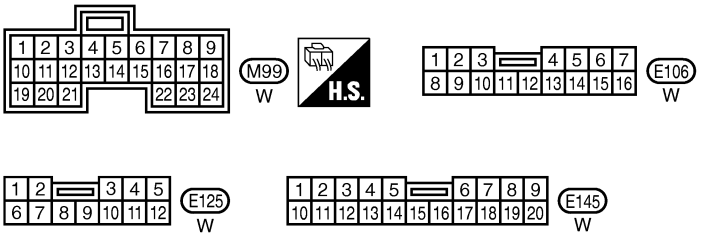
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electonic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Wiring Diagram — CAN —

NLEL0675

EL-CAN-11

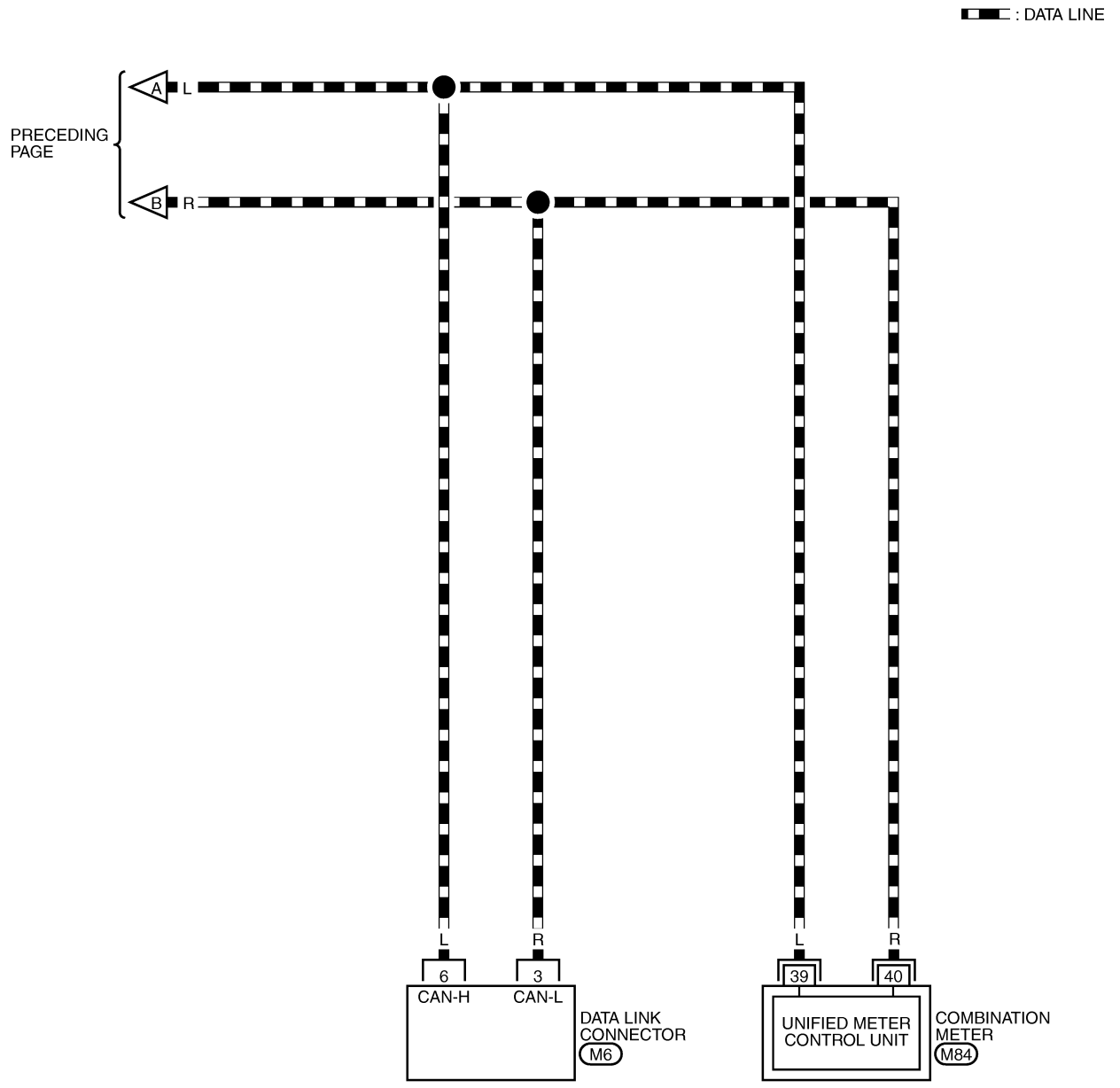


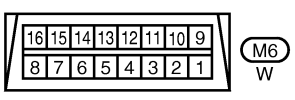


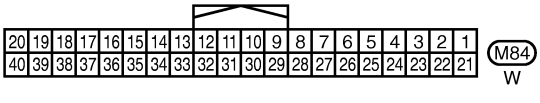
REFER TO THE FOLLOWING.
M107 , E142
-ELECTRICAL UNITS

YEL131E

EL-CAN-12







YEL132E

Trouble Diagnoses

NLEL0676

WORK FLOW

NLEL0676S01

1. Print all the data of “SELF-DIAG RESULTS” and “DATA MONITOR” for “ENGINE”, “ABS” and “SMART ENTRANCE” displayed on CONSULT-II. Refer to the following.

- “DTC U1000, U1001 CAN COMMUNICATION LINE” (EC-1011 or EC-1318) for “ENGINE”
- “CAN Communication System” (BR-73) for “ABS”
- “CAN Communication Line Check” (EL-351) for “SMART ENTRANCE”

2. Attach the printed sheet of “SELF-DIAG RESULTS” and “DATA MONITOR” onto the check sheet. Refer to “CHECK SHEET” (EL-580).
3. Based on the data monitor results, put “v” marks onto the items with “UNKWN” or “NG” in the check sheet table. Refer to “CHECK SHEET“ (EL-580).

NOTE:
If “NG” is displayed on “CAN COMM” for the diagnosed control unit, replace the control unit.

4. According to the check sheet results (example), start inspection. Refer to “CHECK SHEET RESULTS (EXAMPLE)” (EL-581).

CHECK SHEET

NLEL0676S02

Check sheet table

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Symptoms:

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
SMART ENTRANCE
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
SMART ENTRANCE
DATA MONITOR

YEL462E

CHECK SHEET RESULTS (EXAMPLE)

NLEL0676S03

Case 1: Replace ECM

ENGINE	CAN COMM ✔	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 2: Replace ABS actuator and electric unit (control unit)

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✔	–	CAN CIRC 4
ABS	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 3: Replace smart entrance control unit

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3 ✔

Case 4

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3

Case 5

ENGINE	CAN COMM	CAN CIRC 1 ✔	–	CAN CIRC 3 ✔	–	CAN CIRC 4 ✔
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	–	–	CAN CIRC 3

YEL463E

Case 6

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3 ✓	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

Case 8

ENGINE	CAN COMM	CAN CIRC 1	–	CAN CIRC 3	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	–	–	CAN CIRC 3 ✓

Case 9

ENGINE	CAN COMM	CAN CIRC 1 ✓	–	CAN CIRC 3 ✓	–	CAN CIRC 4 ✓
ABS	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	–
SMART ENTRANCE	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	–	–	CAN CIRC 3 ✓

YEL464E

INSPECTION

NLEL0676S04

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace ABS actuator and electric unit (control unit).
Case 3: Replace smart entrance control unit.
Case 4: Check harness between ABS actuator and electric unit (control unit) and smart entrance control unit. Refer to "CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT" (EL-583).
Case 5: Check ECM circuit. Refer to "ECM CIRCUIT CHECK" (EL-585).
Case 6: Check ABS actuator and electric unit (control unit) circuit. Refer to "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK" (EL-586).
Case 7: Check smart entrance control unit circuit. Refer to "SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK" (EL-587).
Case 8: Check combination meter circuit. Refer to "COMBINATION METER CIRCUIT CHECK" (EL-588).
Case 9: Check CAN communication circuit. Refer to "CAN COMMUNICATION CIRCUIT CHECK" (EL-589).

CIRCUIT CHECK BETWEEN ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) AND SMART ENTRANCE CONTROL UNIT

NLEL0676S05

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector for damage, bend and loose connection (connector side and harness side).

LHD models

- Harness connector E125
- Harness connector M82

RHD models

- Harness connector E145
- Harness connector M80

OK or NG

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

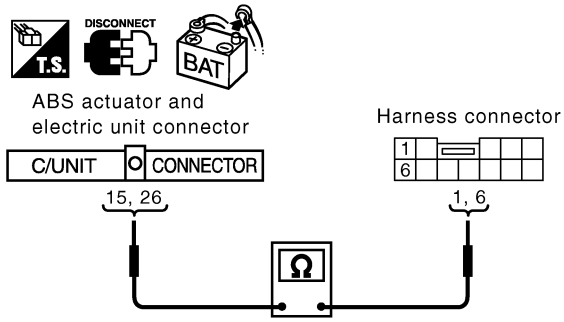
2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E125 (LHD models) or harness connector E145 (RHD models).
2. Check the following.

LHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E125 terminals 1 (L), 6 (R)

LHD models



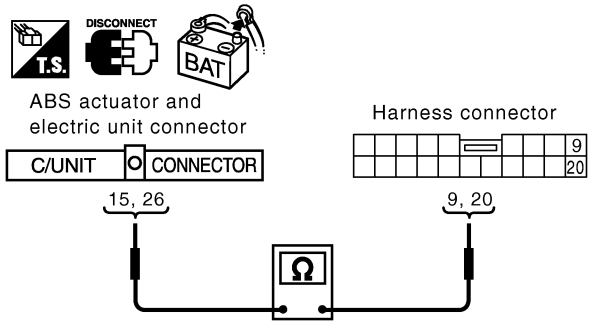
Terminals		Continuity
26	1	Yes
15	6	

YEL450E

RHD models

- Continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L), 15 (R) and harness connector E145 terminals 9 (L), 20 (R)

RHD models



Terminals		Continuity
26	9	Yes
15	20	

YEL451E

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness.

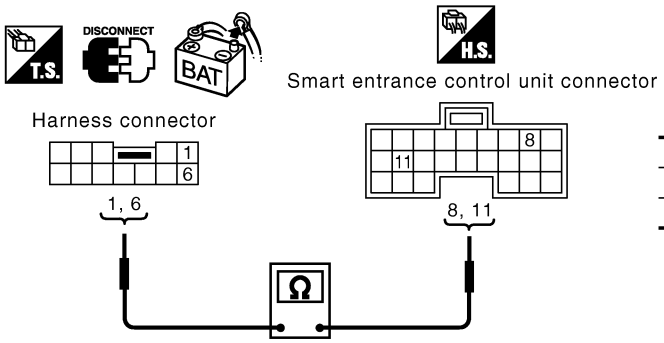
3	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect smart entrance control unit connector.
2. Check the following.

LHD models

- Continuity between harness connector M82 terminals 1 (L), 6 (R) and smart entrance control unit harness connector M99 terminals 8 (L), 11 (R)

LHD models



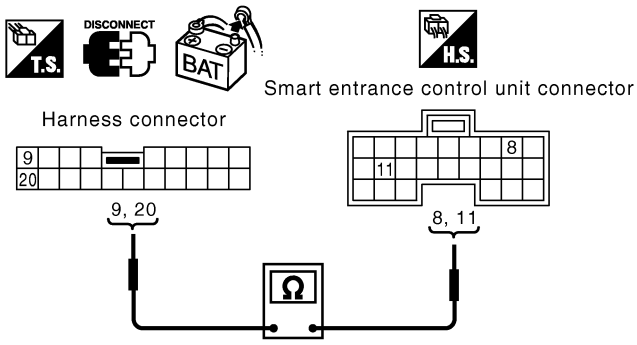
Terminals		Continuity
1	8	Yes
6	11	

YEL452E

RHD models

- Continuity between harness connector M80 terminals 9 (L), 20 (R) and smart entrance control unit harness connector M99 terminals 8 (L), 11 (R)

RHD models



Terminals		Continuity
9	8	Yes
20	11	

YEL453E

OK or NG

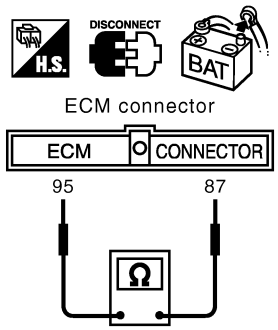
OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. ● "DTC U1000, U1001 CAN COMMUNICATION LINE" (EC-1011 or EC-1318) for "ENGINE" ● "CAN Communication System" (BR-73) for "ABS" ● "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Repair harness.

ECM CIRCUIT CHECK

=NLEL0676S06

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of ECM for damage, bend and loose connection (control module side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ECM connector. 2. Check resistance between ECM harness connector M107 terminals 95 (L) and 87 (R).		
OK or NG		
OK	▶	Replace ECM.
NG	▶	Repair harness between ECM and ABS actuator and electric unit (control unit).



Approx. 108 - 132 Ω

YEL438E

ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CIRCUIT CHECK

=NLEL0676S07

1	CHECK CONNECTOR

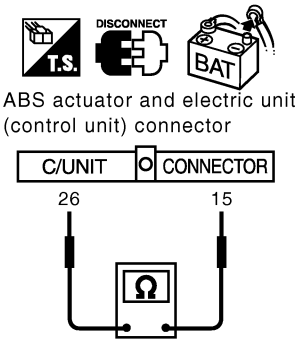
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check the terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).



Approx. 54 - 66 Ω

YEL454E

OK or NG

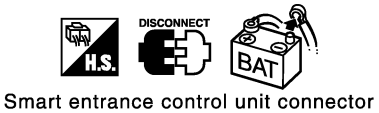
OK	▶	Replace TCM.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125 (LHD models). • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145 (RHD models).

SMART ENTRANCE CONTROL UNIT CIRCUIT CHECK

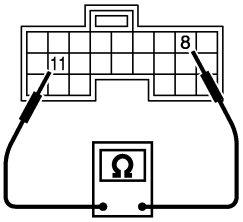
=NLEL0676S08

1	CHECK CONNECTOR	
1. Turn ignition switch OFF. 2. Disconnect the negative battery cable. 3. Check the terminals and connector of smart entrance control unit for damage, bend and loose connection (control unit side and harness side).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair terminal or connector.

2	CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect smart entrance control unit connector. 2. Check resistance between smart entrance control unit harness connector M99 terminals 8 (L) and 11 (R).		
OK or NG		
OK	▶	Replace smart entrance control unit.
NG	▶	Repair harness between smart entrance control unit and data link connector.



Smart entrance control unit connector



Approx. 54 - 66 Ω

SEL814Y

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

COMBINATION METER CIRCUIT CHECK

=NLEL0676S09

1	CHECK CONNECTOR

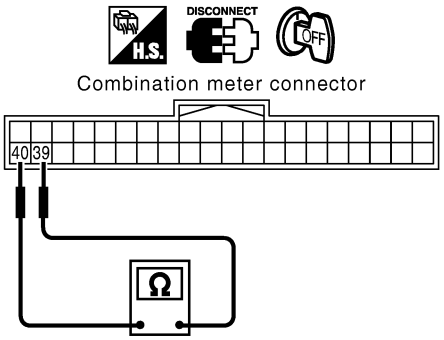
1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

OK or NG

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

2	CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M84 terminals 39 (L) and 40 (R).



Approx. 108 - 132 Ω

YEL425E

OK or NG

OK	▶	Replace combination meter.
NG	▶	Repair harness between combination meter and data link connector.

CAN COMMUNICATION CIRCUIT CHECK

=NLEL0676S10

1	CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery cable.
3. Check following terminals and connector of combination meter for damage, bend and loose connection (meter side, control unit side, control module side and harness side).

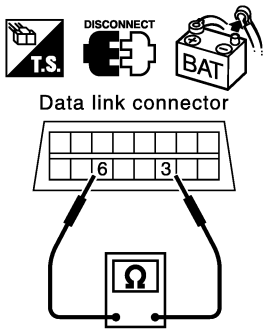
- Combination meter
- Smart entrance control unit
- ECM
- ABS actuator and electric unit (control unit)
- Between ECM and data link connector

OK or NG

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

2	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect combination meter connector, smart entrance control unit connector and harness connector M82 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between data link connector M6 terminals 6 (L) and 3 (R).



Continuity should not exist.

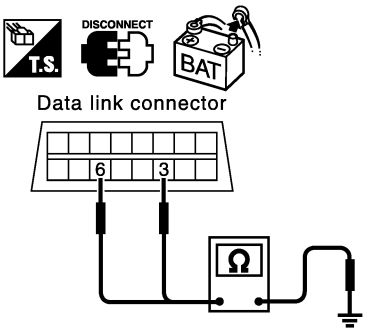
SEL816Y

OK or NG

OK	▶	GO TO 3.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

3	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M6 terminals 6 (L), 3 (R) and ground.



Continuity should not exist.

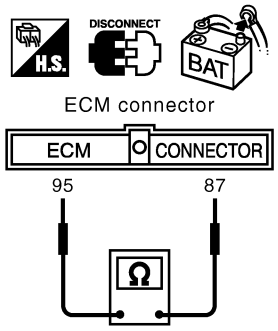
SEL817Y

OK or NG

OK	▶	GO TO 4.
NG	▶	• Repair harness between data link connector and harness connector M82 (LHD models). • Repair harness between data link connector and harness connector M80 (RHD models). • Repair harness between data link connector and smart entrance control unit. • Repair harness between data link connector and combination meter.

4	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector M11 (LHD models) or harness connector M80 (RHD models).
2. Check continuity between ECM harness connector M107 terminals 95 (L) and 87 (R).



Continuity should not exist.

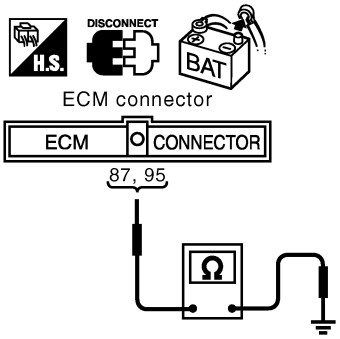
YEL439E

OK or NG

OK	▶	GO TO 5.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

5	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector M112 terminals 95 (L), 87 (R) and ground.



Continuity should not exist.

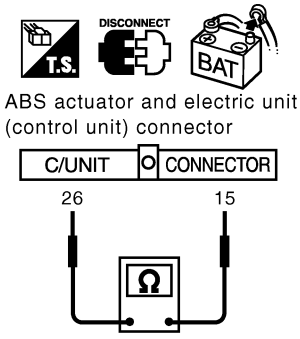
YEL440E

OK or NG

OK	▶	GO TO 6.
NG	▶	• Repair harness between ECM and harness connector M11 (LHD models). • Repair harness between ECM and harness connector M80 (RHD models).

6	CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect harness connector ABS actuator and electric unit (control unit).
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) and 15 (R).



Continuity should not exist.

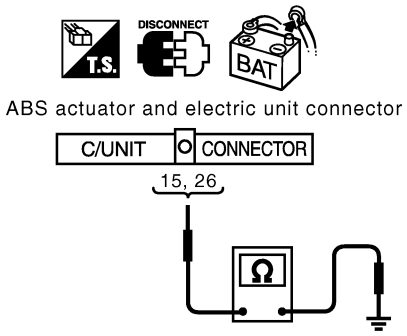
YEL455E

OK or NG

OK	▶	GO TO 7.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

7	CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E142 terminals 26 (L) , 15 (R) and ground.



Continuity should not exist.

YEL456E

OK or NG

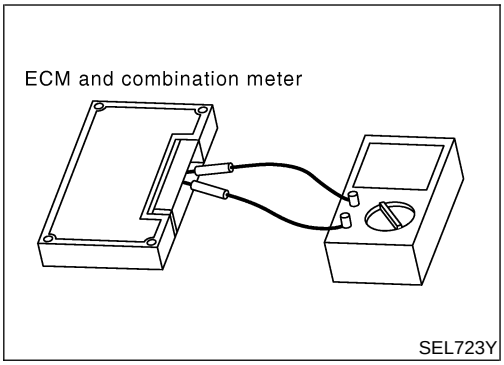
OK	▶	GO TO 8.
NG	▶	• Repair harness between ABS actuator and electric unit (control unit) and harness connector E125. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E106. (LHD models) • Repair harness between ABS actuator and electric unit (control unit) and harness connector E145. (RHD models)

8	ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to "ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION" (EL-593).

OK or NG

OK	▶	Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS" and "SMART ENTRANCE" displayed on CONSULT-II. Refer to the following. • "DTC U1000, U1001 CAN COMMUNICATION LINE" (EC-1011 or EC-1318) for "ENGINE" • "CAN Communication System" (BR-73) for "ABS" • "CAN Communication Line Check" (EL-351) for "SMART ENTRANCE"
NG	▶	Replace ECM and/or combination meter.



Component Inspection

=NLEL0677

ECM/COMBINATION METER INTERNAL CIRCUIT INSPECTION

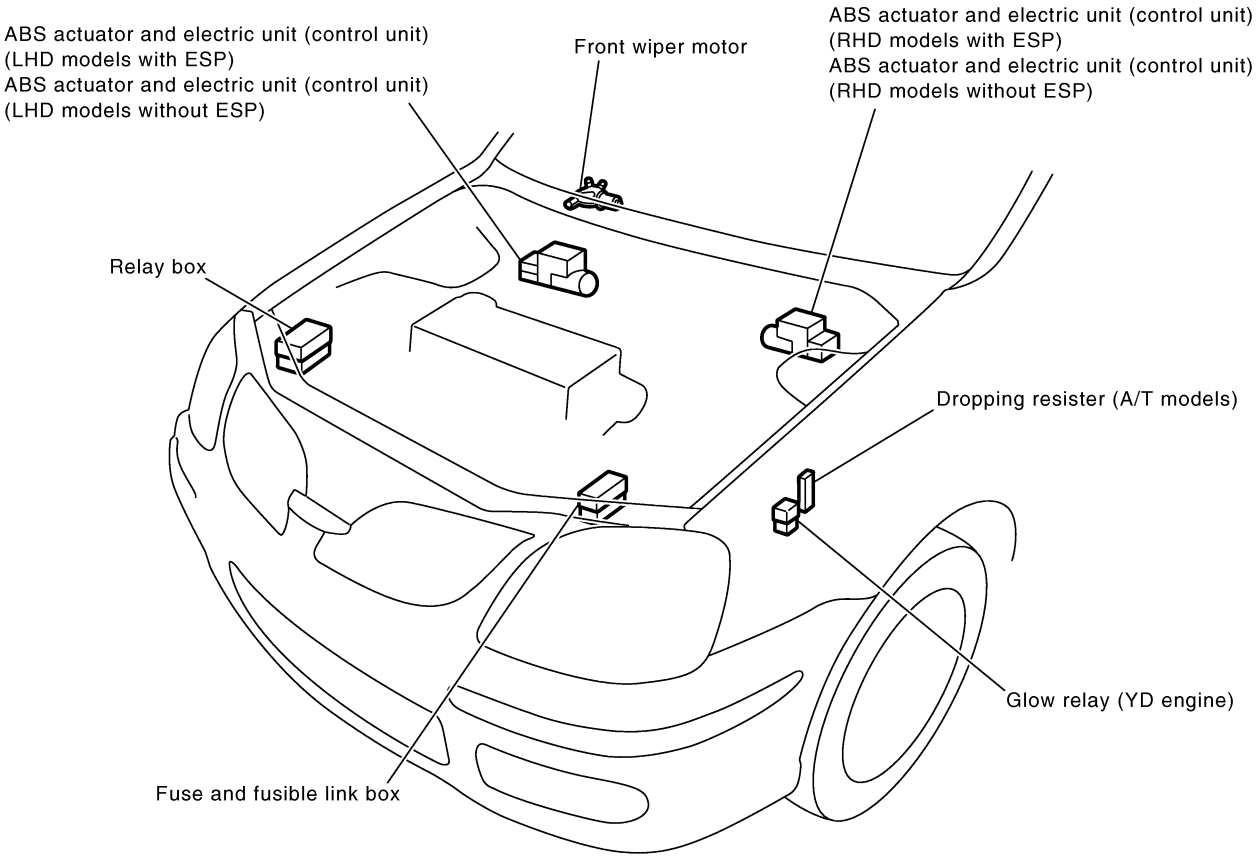
NLEL0677S01

- Remove ECM and combination meter from vehicle.
- Check resistance between ECM terminals 95 and 87.
- Check resistance between combination meter terminals 39 and 40.

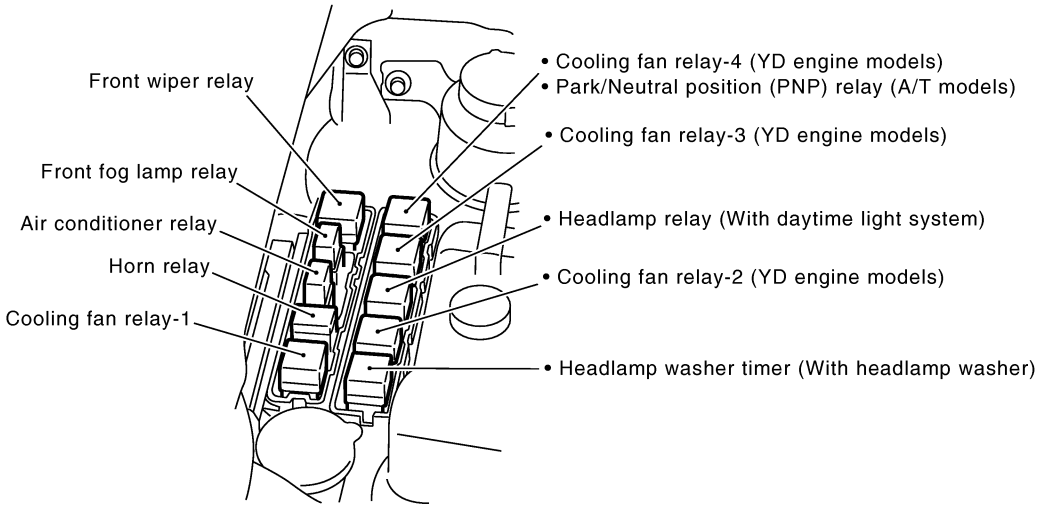
Unit	Terminal	Resistance value (Ω)
ECM	95 - 87	Approx. 108 - 132
Combination meter	39 - 40	

Engine Compartment

NLEL0129



RELAY BOX



YEL119E

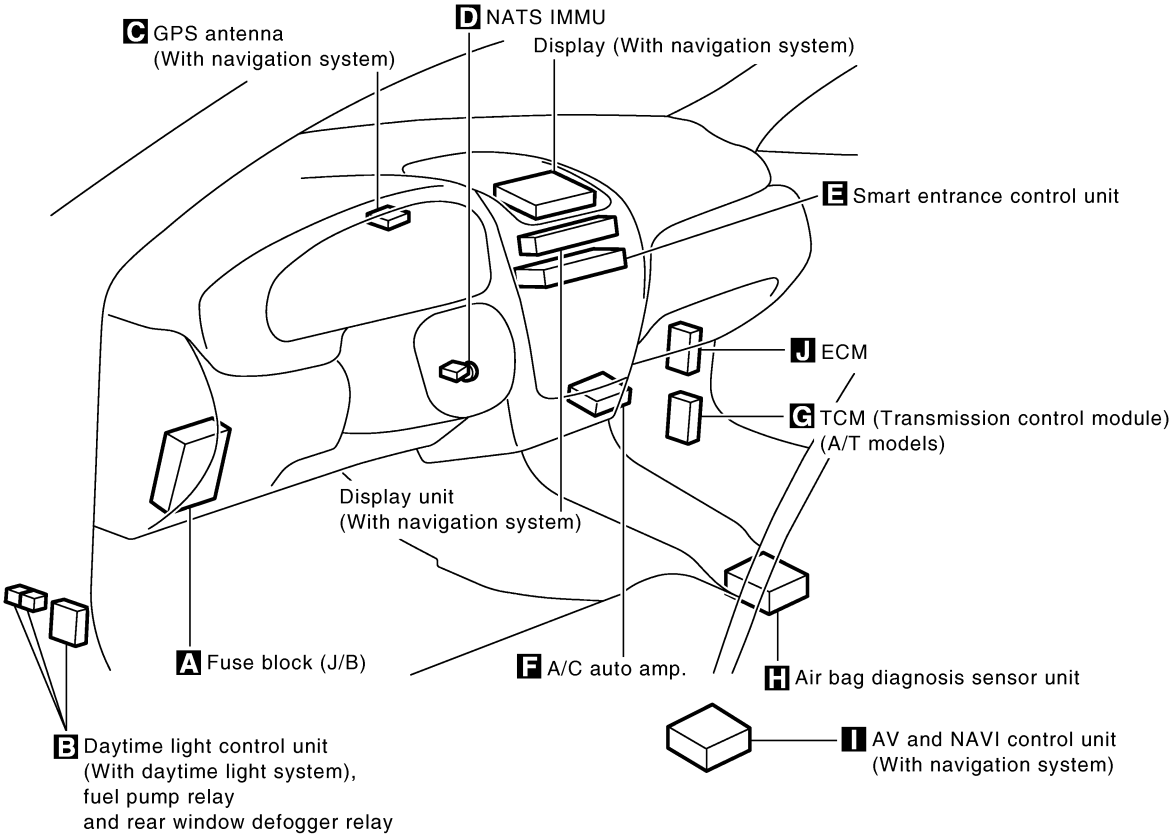
NOTE:

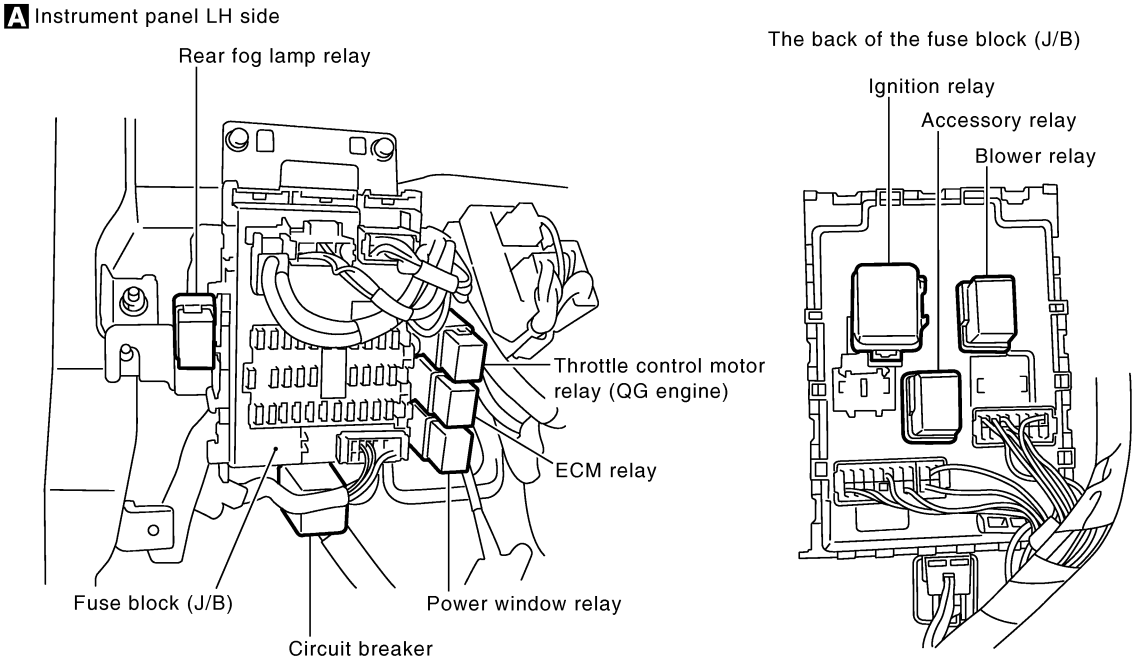
Passenger Compartment

NLEL0130

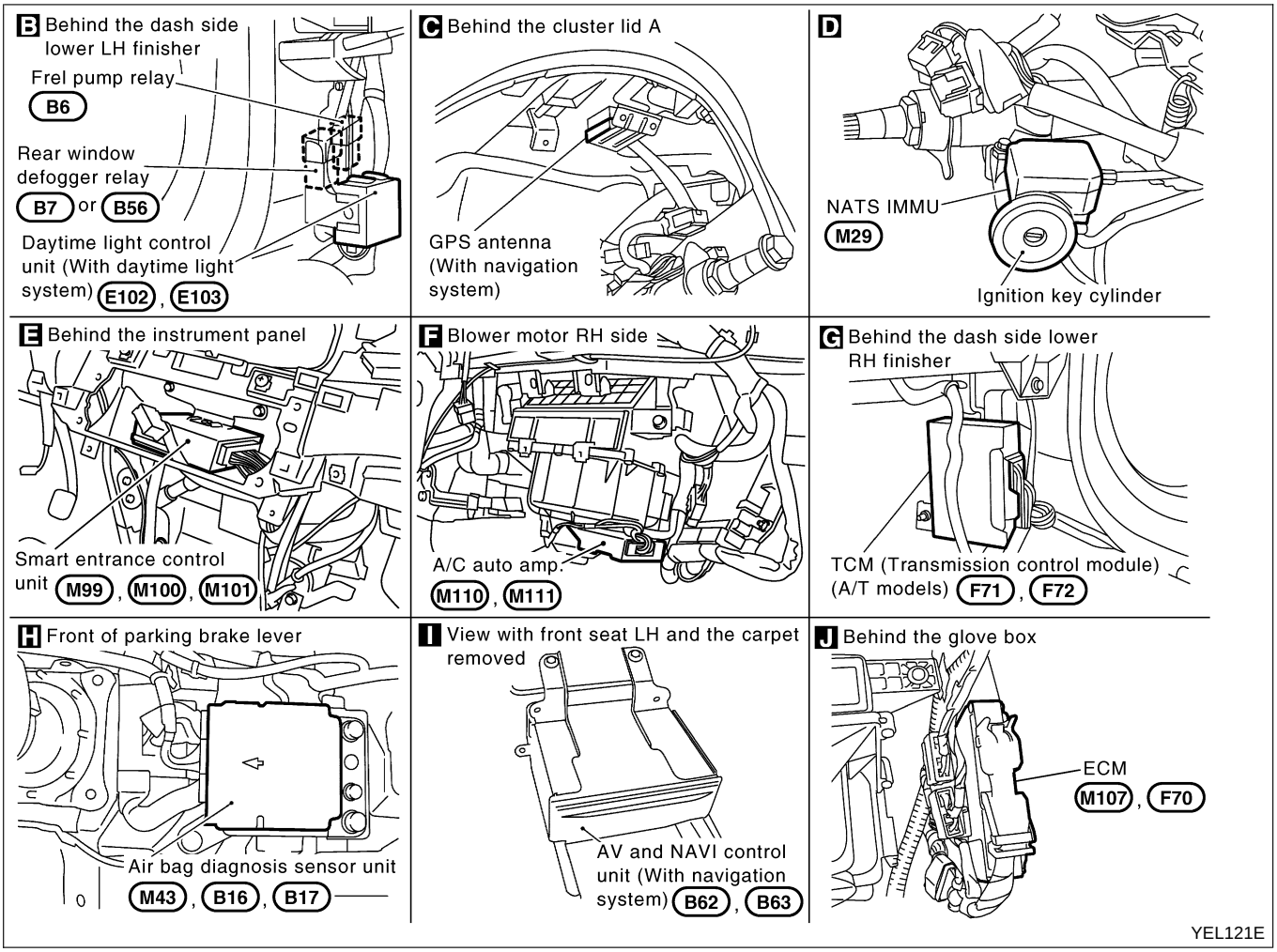
LHD MODELS

NLEL0130S07



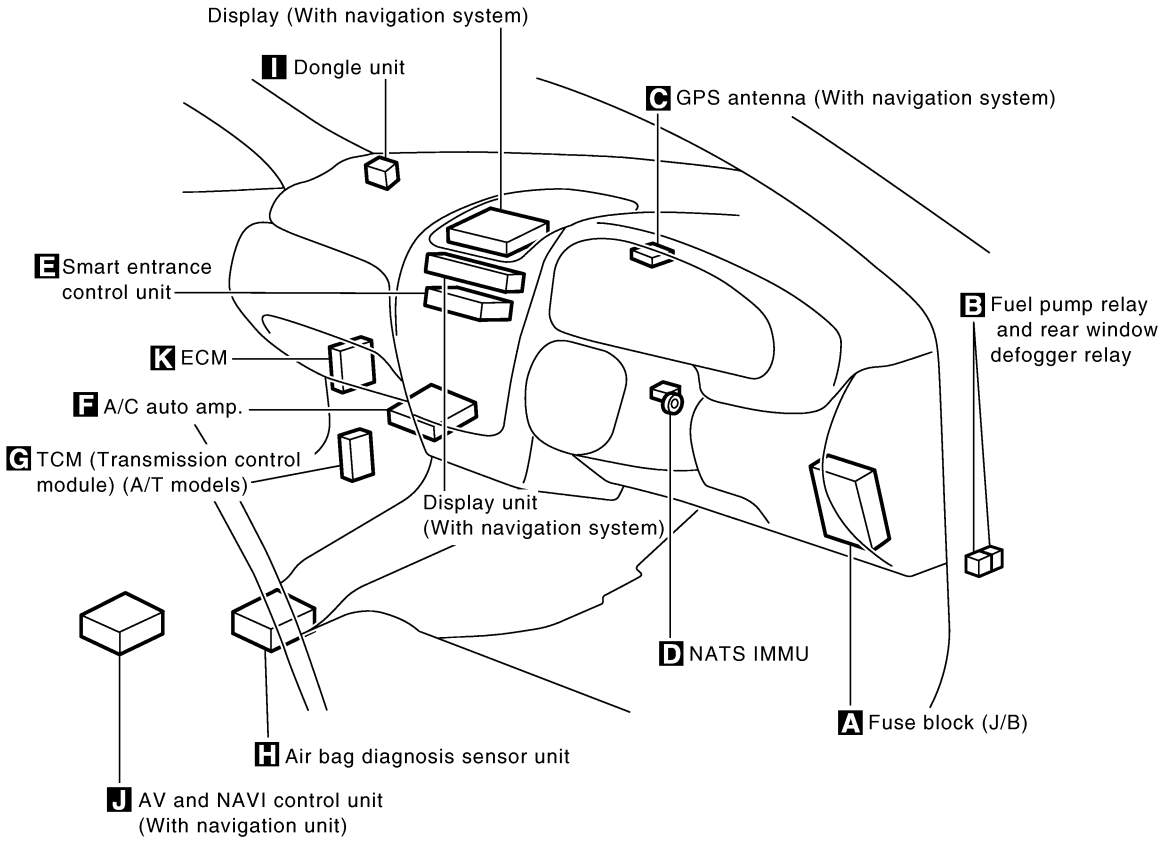


YEL120E

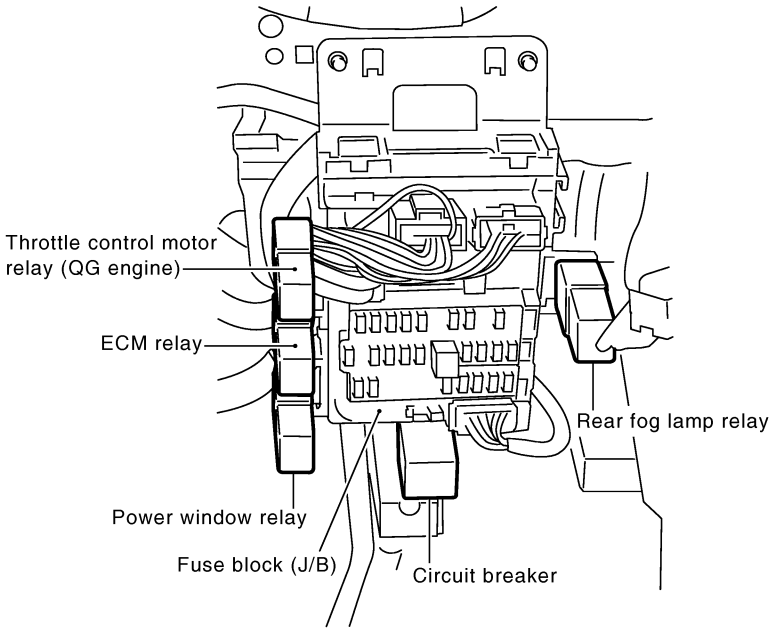

B Behind the dash side lower LH finisher
Frel pump relay
B6
Rear window defogger relay
B7 or B56
Daytime light control unit (With daytime light system) E102, E103
C Behind the cluster lid A
GPS antenna (With navigation system)
D
NATS IMMU
M29
Ignition key cylinder
E Behind the instrument panel
Smart entrance control unit M99, M100, M101
F Blower motor RH side
A/C auto amp.
M110, M111
G Behind the dash side lower RH finisher
TCM (Transmission control module) (A/T models) F71, F72
H Front of parking brake lever
Air bag diagnosis sensor unit
M43, B16, B17
I View with front seat LH and the carpet removed
AV and NAVI control unit (With navigation system) B62, B63
J Behind the glove box
ECM
M107, F70
YEL121E

RHD MODELS

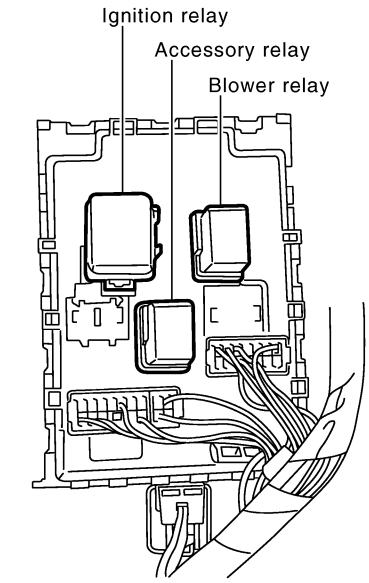
NLEL0130S08



A Instrument panel RH side

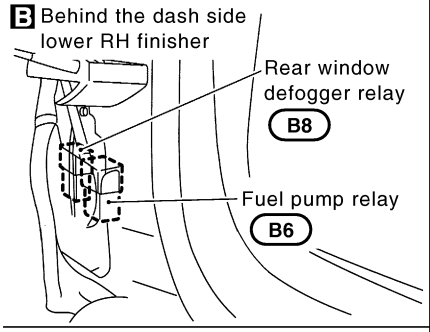


The back of the fuse block (J/B)

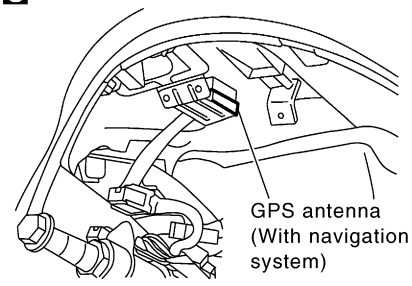


YEL122E

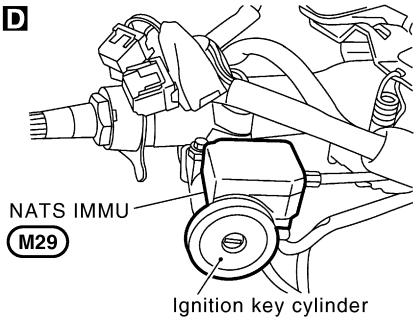
B Behind the dash side lower RH finisher



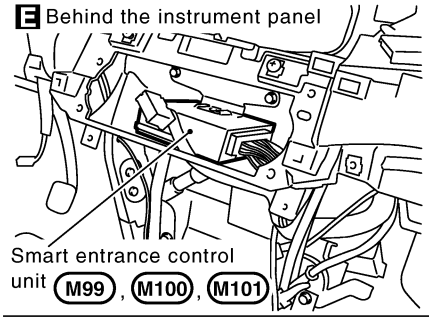
C Behind the cluster lid A



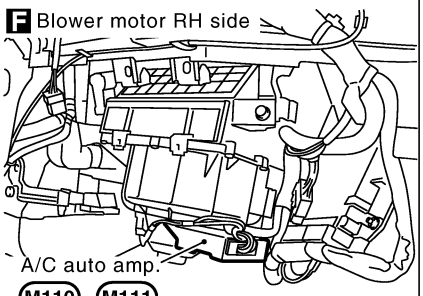
D



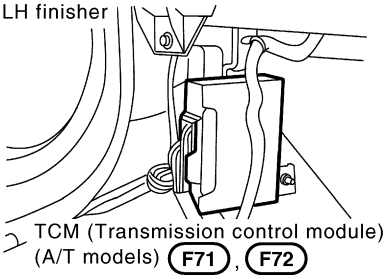
E Behind the instrument panel



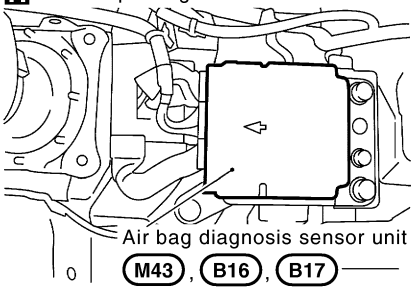
F Blower motor RH side



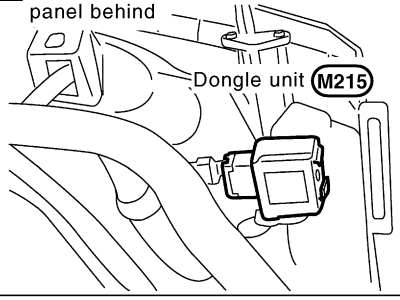
G Behind the dash side lower LH finisher



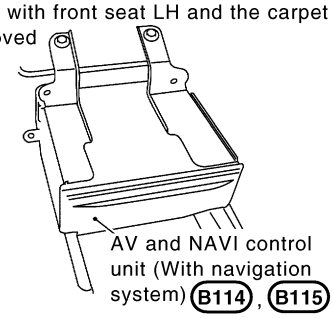
H Front of parking brake lever



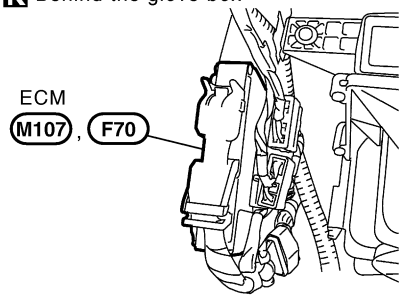
I The view with instrument panel behind



J View with front seat LH and the carpet removed



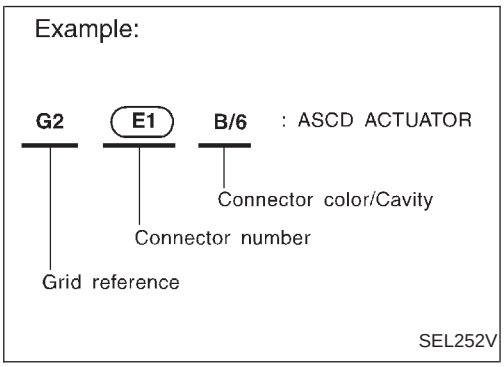
K Behind the glove box



YEL123E

How to Read Harness Layout

NLEL0131



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)
- Engine Control Harness
- Body Harness

TO USE THE GRID REFERENCE

NLEL0131S01

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

NLEL0131S02

Main symbols of connector (in Harness Layout) are indicated in the below.

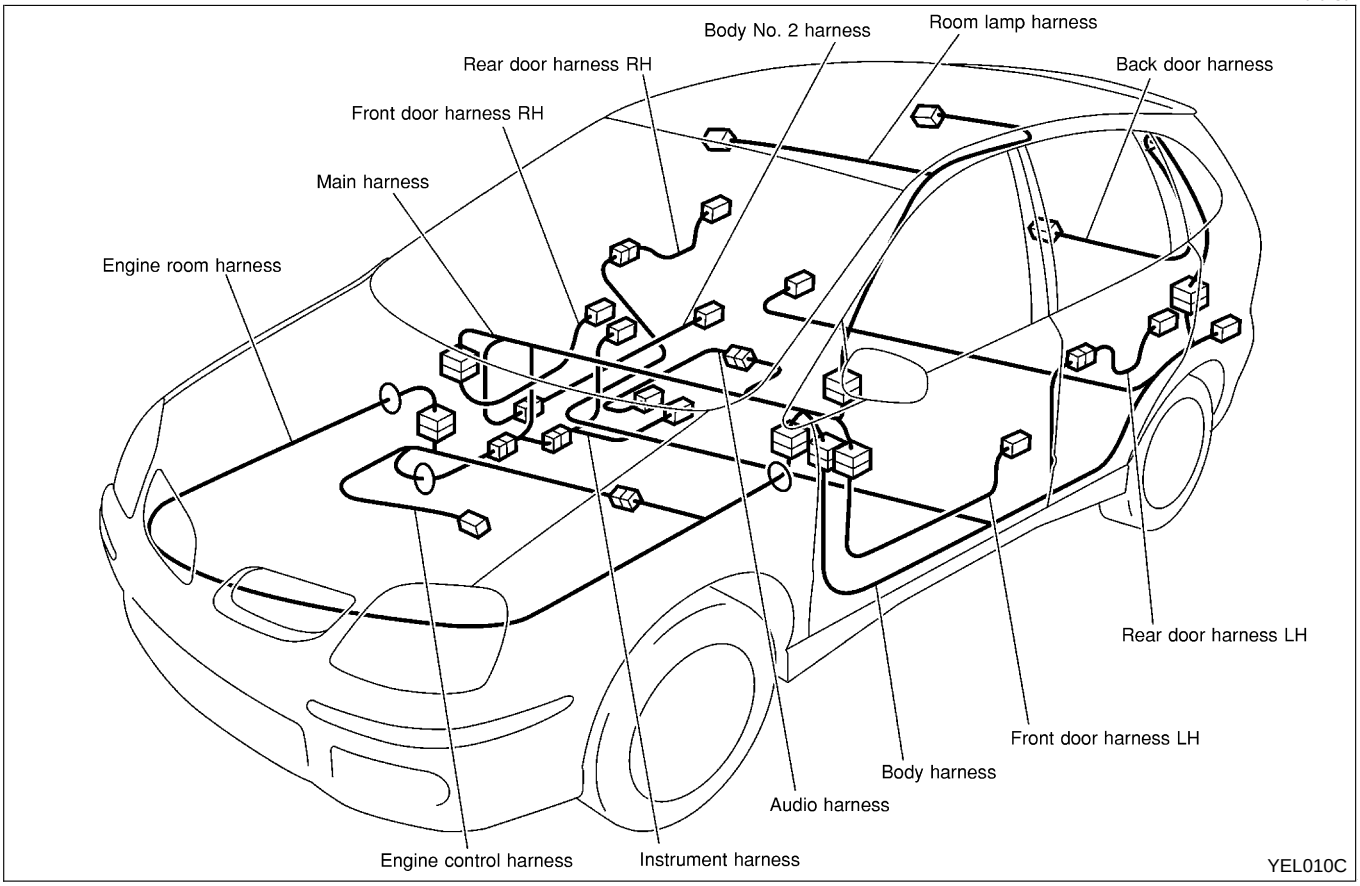
Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9				
• Ground terminal etc.	—			

Outline

NLEL0491

LHD MODELS

NLEL0491S01

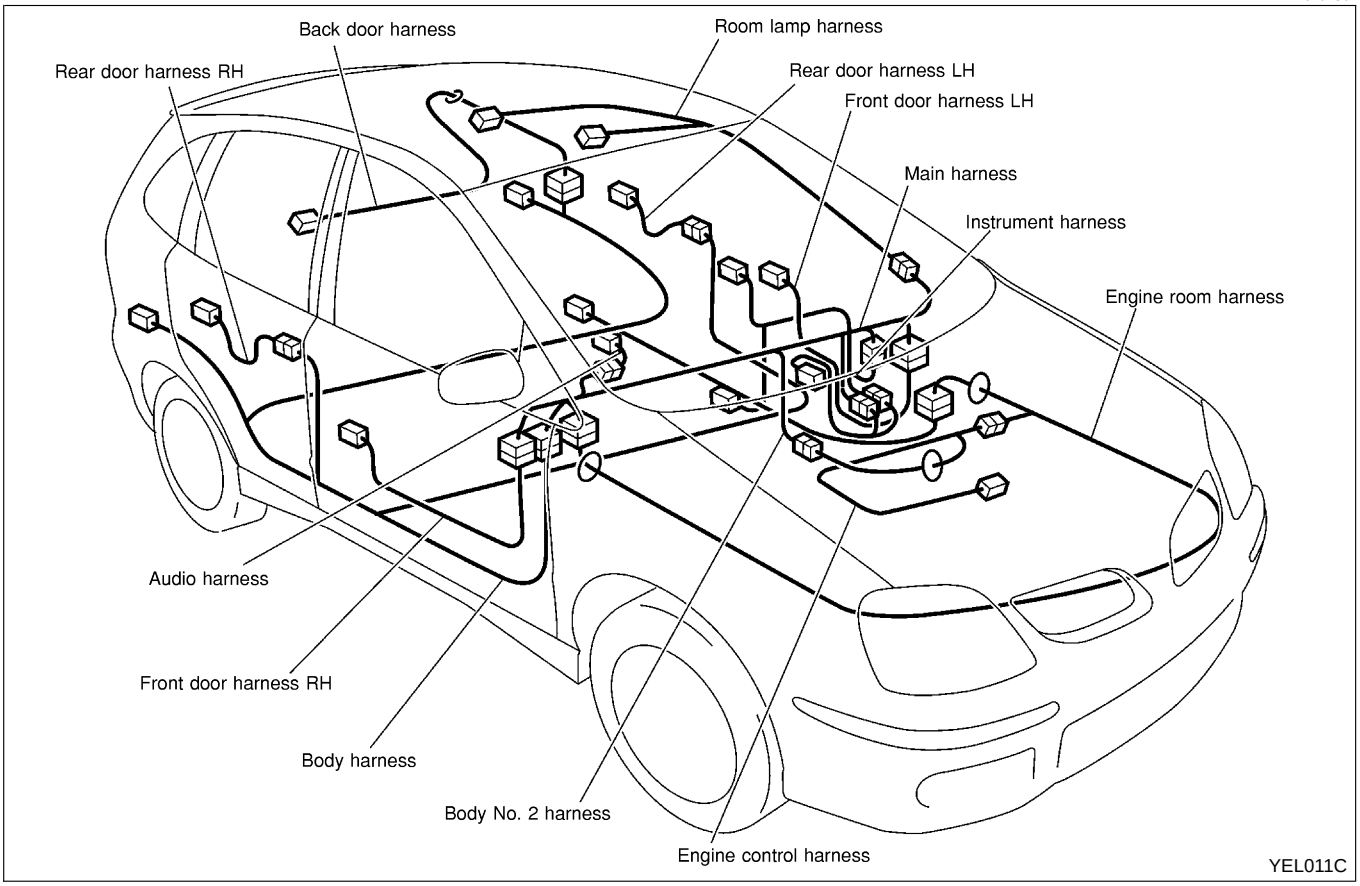


NOTE:
For detailed ground distribution information, refer to “Ground Distribution”, “GROUND”, EL-23.

Outline (Cont'd)

RHD MODELS

NLEL0491S02



NOTE:
For detailed ground distribution information, refer to "Ground Distribution", "GROUND", EL-23.

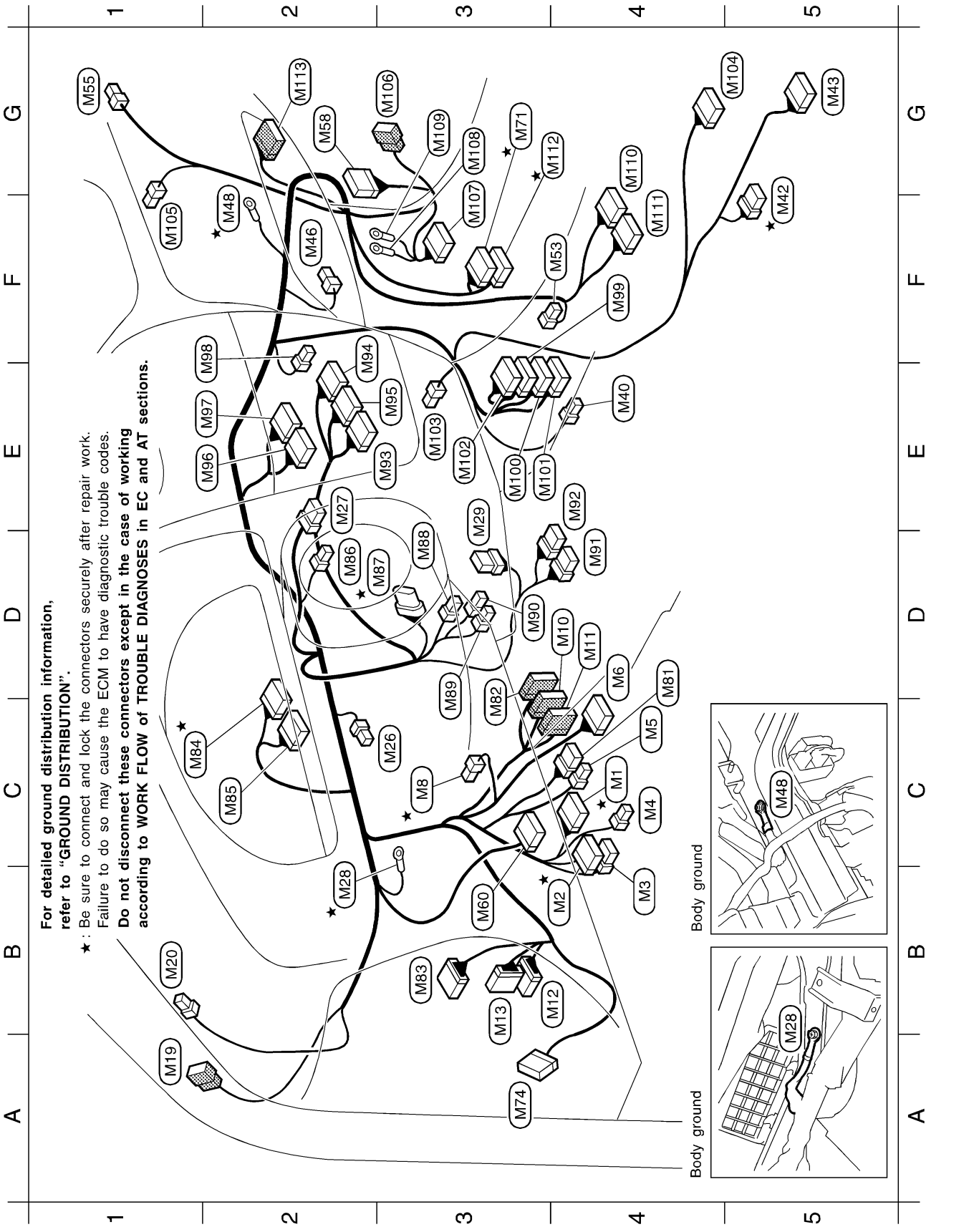
NOTE:

Main Harness

NLEL0347

NLEL0347S01

LHD MODELS



YEL056E

C4 ★M1 W/16 : Fuse block (J/B)
B3 ★M2 W/12 : Fuse block (J/B)
B4 M3 W/6 : Fuse block (J/B)
C4 M4 W/2 : Circuit breaker
C4 M5 L/4 : Power window relay
D4 M6 W/16 : Data link connector
C3 ★M8 B/2 : Stop lamp switch
D3 M10 W/16 : To E105
D4 M11 W/16 : To E106
B3 M12 W/20 : To B5
B3 M13 BR/16 : To B4
A1 M19 W/6 : To R1
B1 M20 BR/2 : Piller tweeter LH
C2 M26 B/2 : Diode-2 (With navigation system)
E2 M27 W/8 : Hazard switch
B2 ★M28 – : Body ground
E3 M29 W/8 : NATS IMMU
E4 M40 B/2 : Cigarette lighter socket
G5 ★M42 W/8 : A/T device (A/T models)
G5 M43 Y/20 : Air bag diagnosis sensor unit
F2 M46 Y/2 : Front passenger air bag module (squib)
G1 ★M48 – : Body ground
F3 M53 W2 : Blower motor
G1 M55 BR/2 : Piller tweeter RH
G2 M58 W/12 : To D31
B3 M60 W/10 : Door mirror remote control switch
G3 M71 W/16 : To F45
A3 M74 W/12 : To D12
D4 M81 BR/6 : ECM relay
D3 M82 W/12 : To E125
B2 M83 BR/24 : To B55
C1 M84 W/40 : Combination meter
C1 M85 W/12 : Combination meter
D2 M86 W/2 : In-vehicle sensor
D2 M87 –/6 : Accelerator pedal position sensor
E3 M88 W/3 : Air mix door motor
D3 M89 W/3 : Mode door motor

D3 M90 W/4 : Fan control amp.
D4 M91 Y/6 : Spiral cable
E3 M92 GY/8 : Spiral cable
E2 M93 W/12 : Audio unit
E1 M94 W/12 : Audio unit (With CD auto-changer)
D1 M95 W/24 : Audio unit
E1 M96 BR/24 : Display unit (Without navigation system)
E1 M97 GY/24 : Display (With navigation system)
F1 M98 W/3 : Intake door motor
F4 M99 W/24 : Smart entrance control unit
E3 M100 GY/24 : Smart entrance control unit
E3 M101 GY/16 : Smart entrance control unit
F4 M102 W/16 : Multi function switch
E3 M103 W/2 : Intake sensor
G4 M104 W/12 : Telephone sub-harness
G1 M105 B/2 : Sun load sensor
G2 M106 W/6 : After market alarm
F3 M107 –/40 : ECM
G2 M108 – : Engine ground (QG engine)
G2 M109 – : Engine ground (QG engine)
G4 M110 GY/20 : A/C auto amp.
G4 M111 GY/16 : A/C auto amp.
G3 M113 W/16 : To F73 (QG engine)
G2 M112 W/12 : To B110

Diode-2 M26

Combination meter — Parking brake switch

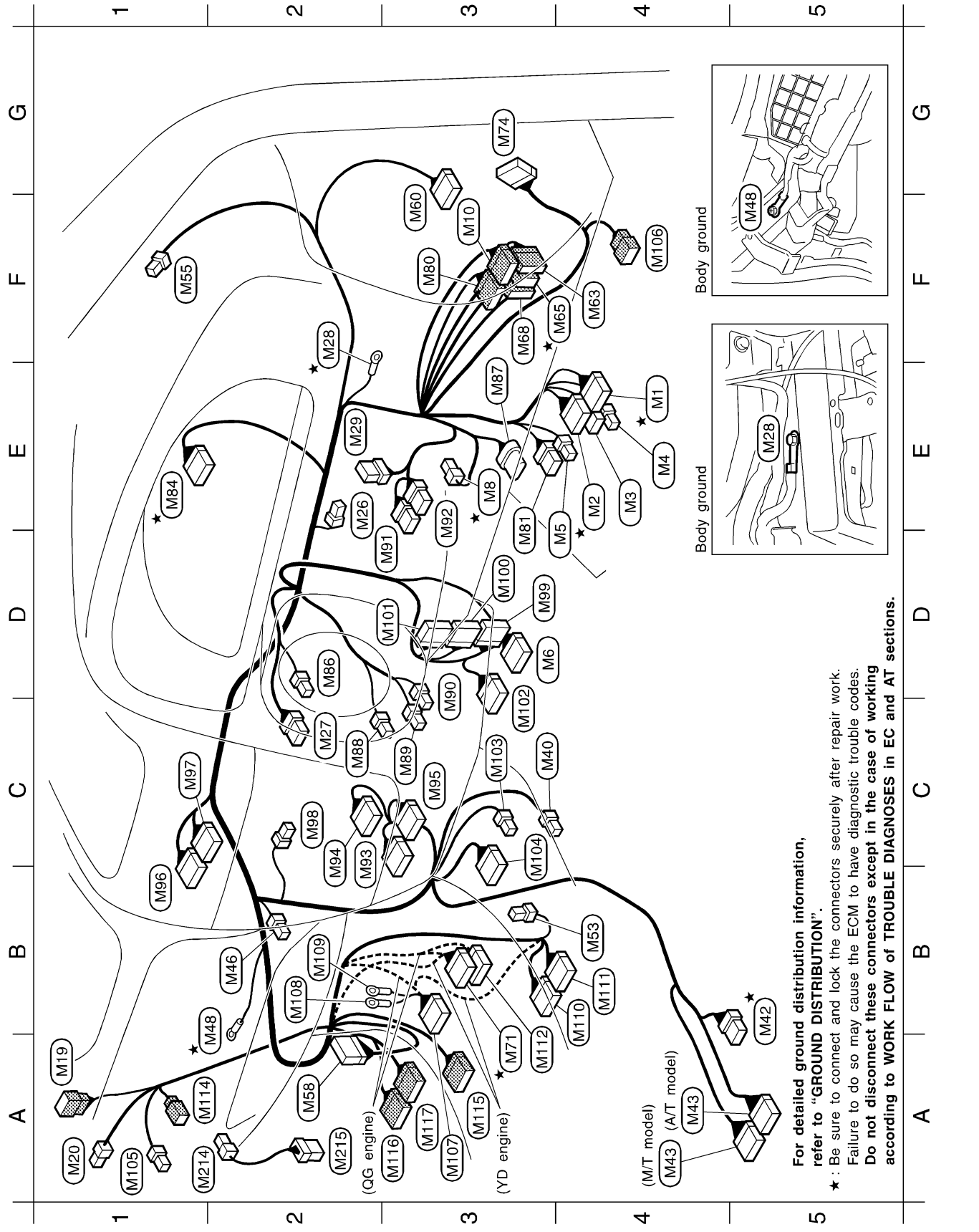
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

YEL057E

RHD MODELS

NLEL0347S02



YEL058E

E4 ★M1 W/16 : Fuse block (J/B)
E4 ★M2 W/12 : Fuse block (J/B)
E4 M3 W/6 : Fuse block (J/B)
E4 M4 W/2 : Circuit breaker
E4 M5 L/4 : Power window relay
D3 M6 W/16 : Data link connector
E3 ★M8 B/2 : Stop lamp switch
F3 M10 W/16 : To E105
A1 M19 W/6 : To R1
A1 M20 BR/2 : Piller tweeter LH
E2 M26 B/2 : Diode-2 (With navigation system)
C2 M27 W/8 : Hazard switch
F2 ★M28 – : Body ground
E2 M29 W/8 : NATS IMMU
C3 M40 B/2 : Cigarette lighter socket
B5 ★M42 W/8 : A/T device (A/T models)
A4 M43 Y/20 : Air bag diagnosis sensor unit
B2 M46 Y/2 : Front passenger air bag module (squib)
B1 ★M48 – : Body ground
B4 M53 W/2 : Blower motor
F1 M55 BR/2 : Piller tweeter RH
A2 M58 W/12 : To D31
G3 M60 W/10 : Door mirror remote control switch
F4 M63 W/12 : To B44
F4 M65 W/16 : To B47
F3 M68 BR/16 : To B46
B3 M71 W/16 : To F45
G3 M74 W/12 : To D12
F3 M80 W/20 : To E145
E3 M81 BR/6 : ECM relay
E1 M84 W/40 : Combination meter
D2 M86 W/2 : In-vehicle sensor
E3 M87 –/6 : Accelerator pedal position sensor
C3 M88 W/3 : Air mix door motor
C3 M89 W/3 : Mode door motor
C3 M90 W/4 : Fan control amp.
E3 M91 Y/6 : Spiral cable
E3 M92 GY/8 : Spiral cable

C2 M93 W/12 : Audio unit
C2 M94 W/12 : Audio unit (With CD auto-changer)
C3 M95 W/24 : Audio unit
B1 M96 BR/24 : Display unit (Without navigation system)
C1 M97 GY/24 : Display (With navigation system)
C2 M98 W/3 : Intake door motor
D3 M99 W/24 : Smart entrance control unit
D3 M100 GY/24 : Smart entrance control unit
D3 M101 GY/16 : Smart entrance control unit
D3 M102 W/16 : Multi function switch
C3 M103 W/2 : Intake sensor
C3 M104 W/12 : Telephone sub-harness
A1 M105 B/2 : Sun load sensor
F4 M105 W/6 : After market alarm
B3 M107 –/40 : ECM
A2 M108 – : Engine ground (QG engine)
B2 M109 – : Engine ground (QG engine)
B4 M110 GY/20 : A/C auto amp.
B4 M111 GY/16 : A/C auto amp.
M113 W/16 : To F73 (QG engine)
A1 M114 W/2 : To M214
A3 M113 W/12 : To B111
A3 M116 W/16 : To B112
A3 M117 W/20 : To B113

Audio harness

A2 M214 W/2 : To M114
A2 M215 BR/8 : Dongle unit

Diode-2 M26

Combination meter — Parking brake switch

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

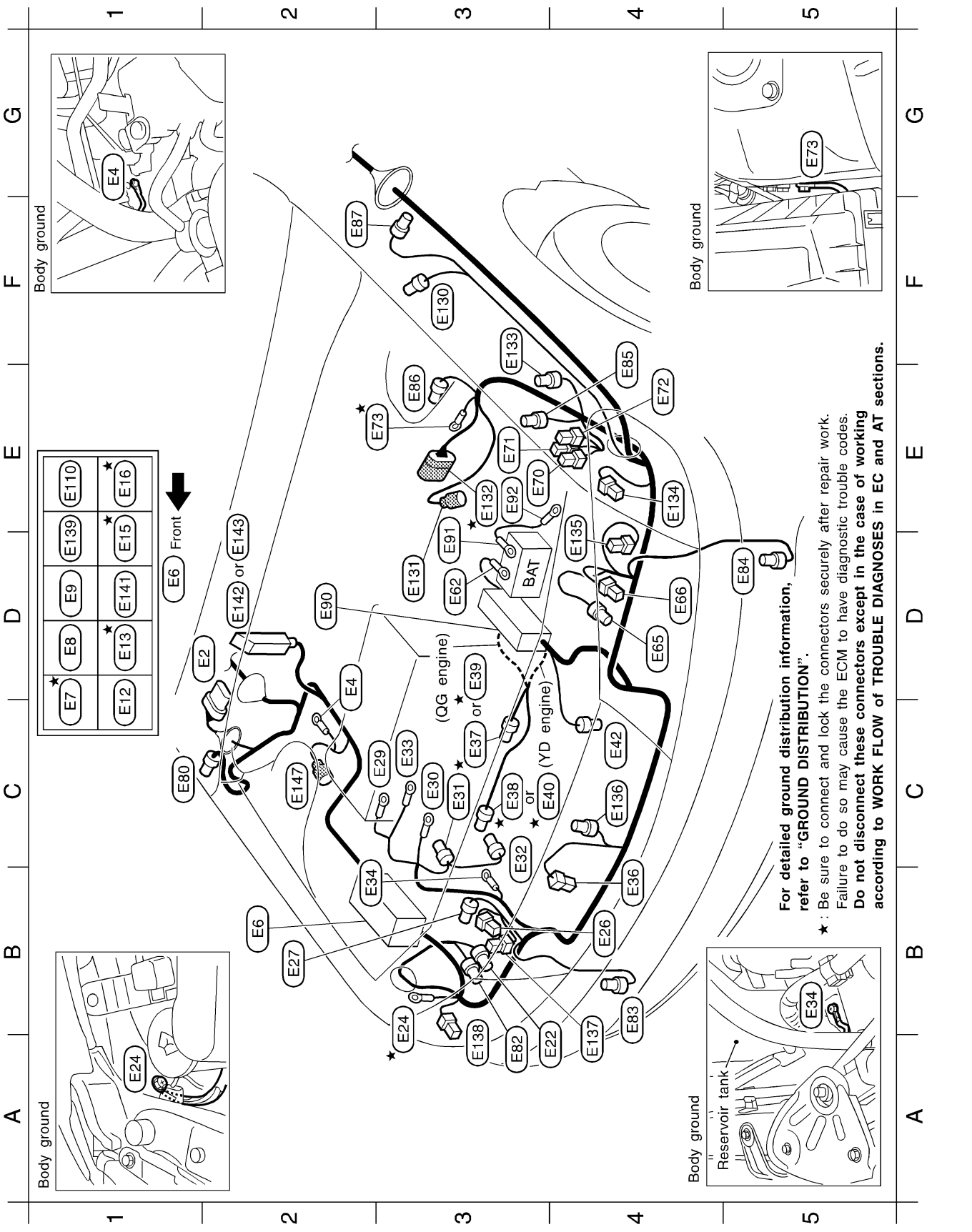
YEL059E

Engine Room Harness

NLEL0342

ENGINE COMPARTMENT — LHD MODELS

NLEL0342S01



YEL060E

D1 E2 GY/5 : Front wiper motor
D2 E4 – : Body ground
B2★ E6 – : Relay box
D1 E7 BR/6 : Cooling fan relay-1 (QG engine)
–/4 : Cooling fan relay-1 (YD engine)
D1 E8 W/3 : Horn relay
D1 E9 L/4 : Air conditioner relay
D1 E12 BR/6 : Headlamp washer timer (With headlamp washer)
D1 E13 B/5 : Cooling fan relay-2 (YD engine)
D1★ E15 B/4 : Cooling fan relay-3 (YD engine)
E1 E16 L/4 : Park/neutral position (PNP) relay (A/T models)
E1★ E16 B/5 : Cooling fan relay-4 (YD engine)
B3 E22 B/2 : Washer motor
B3★ E24 – : Body ground
B4 E26 B/2 : Parking lamp RH
B2 E27 GY/3 : Headlamp RH
C3 E29 – : Alternator (E)
C3 E30 – : Alternator (B)
C3 E31 GY/2 : Alternator (S, L)
C3 E32 B/1 : Compressor
C3 E33 – : Glow plug (YD engine)
B2 E34 – : Body ground
B4 E36 B/1 : Horn
C3★ E37 B/2 : Cooling fan motor-1 (QG engine)
C3★ E38 B/2 : Cooling fan motor-2 (QG engine)
D3★ E39 B/2 : Cooling fan motor-1 (YD engine)
C3★ E40 B/2 : Cooling fan motor-2 (YD engine)
C4 E42 B/2 : Dual pressure switch (YD engine)
D3 E62 – : Battery (+)
D4 E65 GY/3 : Headlamp LH
D4 E66 B/2 : Parking lamp LH
E3 E70 G/2 : Glow relay (YD engine)
E3 E71 W/1 : Glow relay (YD engine)
E4 E72 W/1 : Glow relay (YD engine)
E2★ E73 – : Body ground
C1 E80 –/2 : Side turn signal lamp RH
A3 E82 L/2 : Headlamp washer motor (With headlamp washer)
B4 E83 –/2 : Front fog lamp RH
D5 E84 –/2 : Front fog lamp LH
F4 E85 W/2 : Hood switch
E3 E86 GY/2 : Brake fluid level switch
F2 E87 –/2 : Side turn signal lamp LH
D2★ E90 – : Fuse and fusible link box
E1 E110 B/5 : Front wiper relay
F3 E130 –/3 : Brake pressure sensor (With ESP)
D3 E131 L/2 : Front wheel sensor LH
E3 E132 GY/9 : To F78 (A/T models)
F3 E133 GY/2 : Dropping resistor (A/T models)
E4 E134 –/2 : Front turn signal lamp LH
E4 E135 –/3 : Headlamp aiming motor LH
C4 E136 B/2 : Ambient sensor
B4 E137 –/3 : Headlamp aiming motor RH
B3 E138 –/2 : Front turn signal lamp RH
E1 E139 L/4 : Front fog lamp relay
D1 E141 BR/6 : Headlamp relay (With daytime light system)
D2 E142 –/26 : ABS actuator and electric unit (control unit) (Without ESP)
D2 E143 –/47 : ABS actuator and electric unit (control unit) (With ESP)
C2 E147 GY/2 : Front wheel sensor RH

Battery cable

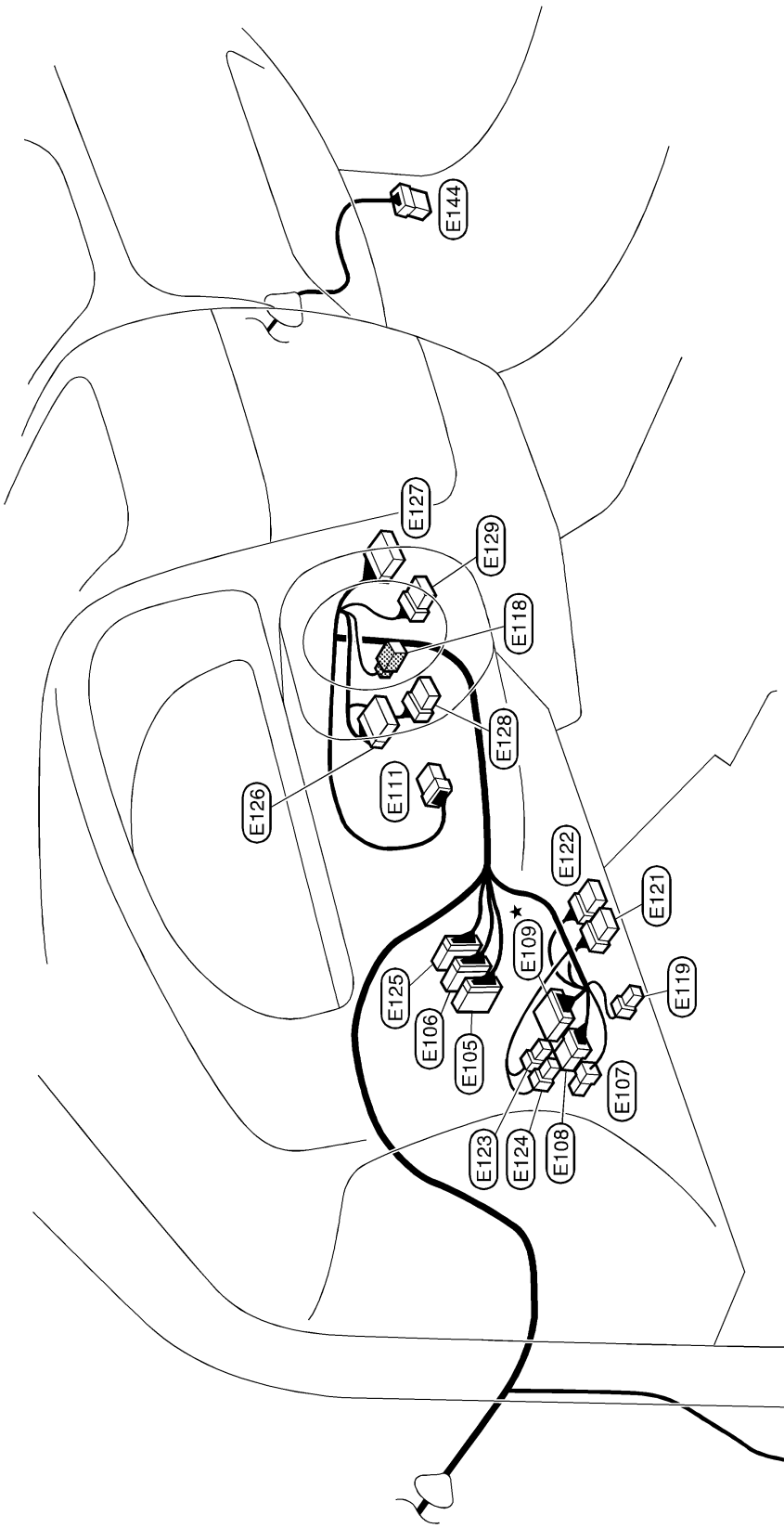
D3 E91 – : Battery (–)
E3 E92 – : Body ground

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

YEL061E

PASSENGER COMPARTMENT — LHD MODELS

NLEL0342S04



★: 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.**

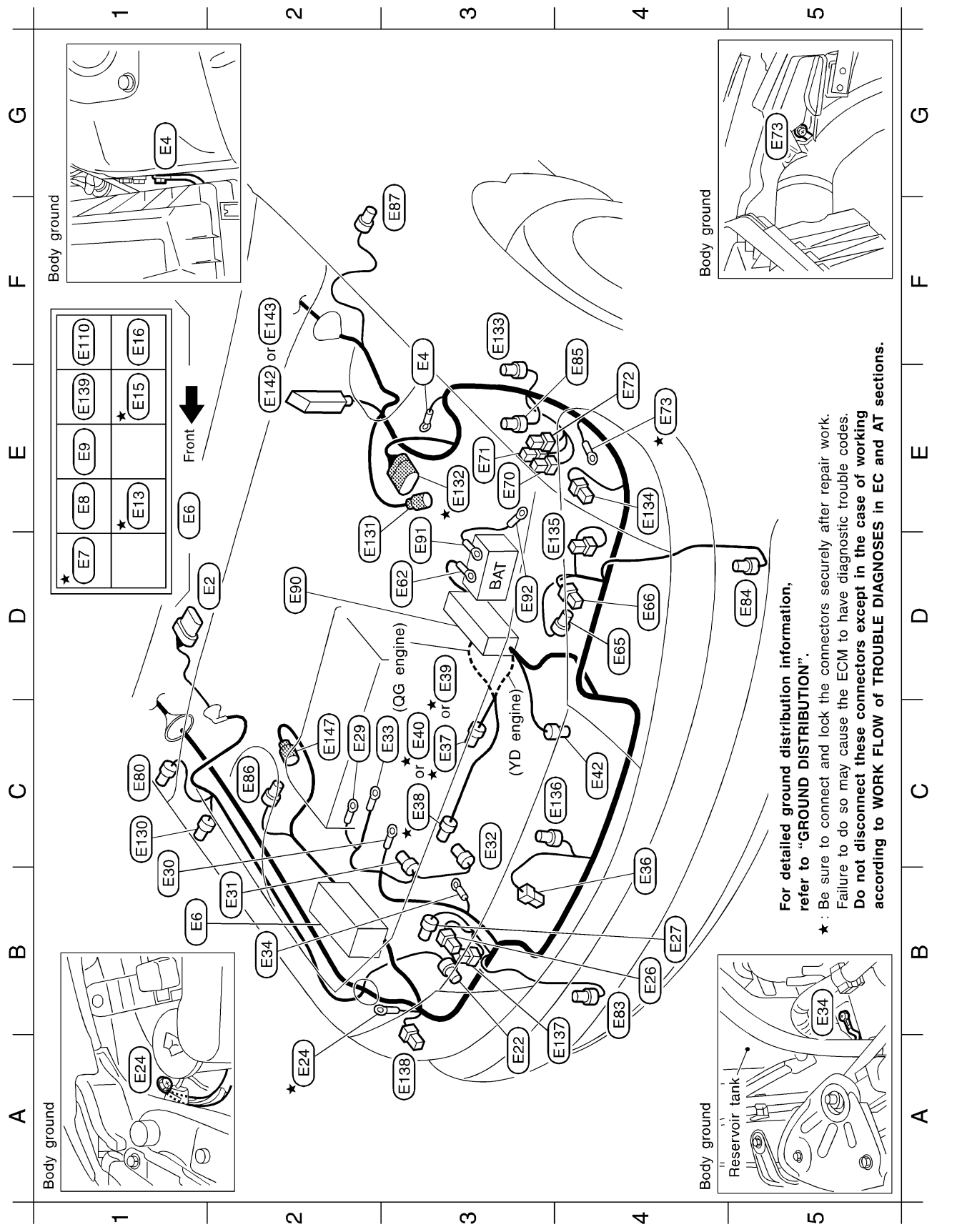
E102	GY/8	: Daytime light control unit (With daytime light system)	E121	GY/6	: ESP off switch (With ESP)
E103	GY/6	: Daytime light control unit (With daytime light system)	E122	L/6	: Headlamp washer switch (With headlamp washer)
E105	W/16	: To M10	E123	L/4	: Throttle control motor relay (QG engine)
E106	W/16	: To M11	E124	L/4	: Rear fog lamp relay
E107	B/2	: Fuse block (J/B)	E125	W/12	: To M82
E108	W/6	: Fuse block (J/B)	E126	BR/12	: Combination switch (Lighting and turn signal switch)
★ E109	W/10	: Fuse block (J/B)	E127	GY/12	: Combination switch (Wiper and washer switch)
E111	W/6	: Ignition switch	E128	W/8	: Combination switch (Front and rear fog lamp switch)
E118	W/2	: Not used	E129	W/8	: Steering angle sensor (With ESP)
E119	W/4	: Headlamp aiming switch	E144	GY/8	: To B69

YEL062E

NOTE:

ENGINE COMPARTMENT — RHD MODELS

NLEL0342S03



YEL063E

D2 E2 GY/5 : Front wiper motor
F3 E4 – : Body ground
B1★ E6 – : Relay box
D1 E7 BR/6 : Cooling fan relay-1 (QG engine)
–/4 : Cooling fan relay-1 (YD engine)
E8 W/3 : Horn relay
E1 E9 L/4 : Air conditioner relay
E1 E13 B/5 : Cooling fan relay-2 (YD engine)
E1★ E15 B/4 : Cooling fan relay-3 (YD engine)
F1 E16 L/4 : Park/neutral position (PNP) relay (A/T models)
F1 E16 B/5 : Cooling fan relay-4 (YD engine)
A3 E22 B/2 : Washer motor
A2★ E24 – : Body ground
B4 E26 B/2 : Parking lamp RH
B4 E27 GY/3 : Headlamp RH
C2 E29 – : Alternator (E)
B1 E30 – : Alternator (B)
B2 E31 GY/2 : Alternator (S, L)
C3 E32 B/1 : Compressor
C3 E33 – : Glow plug (YD engine)
B2 E34 – : Body ground
B4 E36 B/1 : Horn
C3★ E37 B/2 : Cooling fan motor-1 (QG engine)
C3★ E38 B/2 : Cooling fan motor-2 (QG engine)
D3★ E39 B/2 : Cooling fan motor-1 (YD engine)
C3★ E40 B/2 : Cooling fan motor-2 (YD engine)
C4 E42 B/2 : Dual pressure switch (YD engine)
D3 E62 – : Battery (+)
D4 E65 GY/3 : Headlamp LH
D4 E66 B/2 : Parking lamp LH
E3 E70 G/2 : Glow relay (YD engine)
E3 E71 W/1 : Glow relay (YD engine)
F4 E72 W/1 : Glow relay (YD engine)
E4★ E73 – : Body ground
C1 E80 –/2 : Side turn signal lamp RH
B4 E83 –/2 : Front fog lamp RH
D5 E84 –/2 : Front fog lamp LH
F4 E85 W/2 : Hood switch
C2 E86 GY/2 : Brake fluid level switch
F3 E87 –/2 : Side turn signal lamp LH
D2★ E90 – : Fuse and fusible link box
F1 E110 B/5 : Front wiper relay
C1 E130 –/3 : Brake pressure sensor (With ESP)
D3 E131 L/2 : Front wheel sensor LH
E3 E132 GY/9 : To F78 (A/T models)
F3 E133 GY/2 : Dropping resistor (A/T models)
E4 E134 –/2 : Front turn signal lamp LH
E4 E135 –/3 : Headlamp aiming motor LH
C4 E136 B/2 : Ambient sensor
A4 E137 –/3 : Headlamp aiming motor RH
A3 E138 –/2 : Front turn signal lamp RH
E1 E139 L/4 : Front fog lamp relay
E2 E142 –/26 : ABS actuator and electric unit (control unit) (Without ESP)
E2 E143 –/47 : ABS actuator and electric unit (control unit) (With ESP)
C2 E147 GY/2 : Front wheel sensor RH

Battery cable

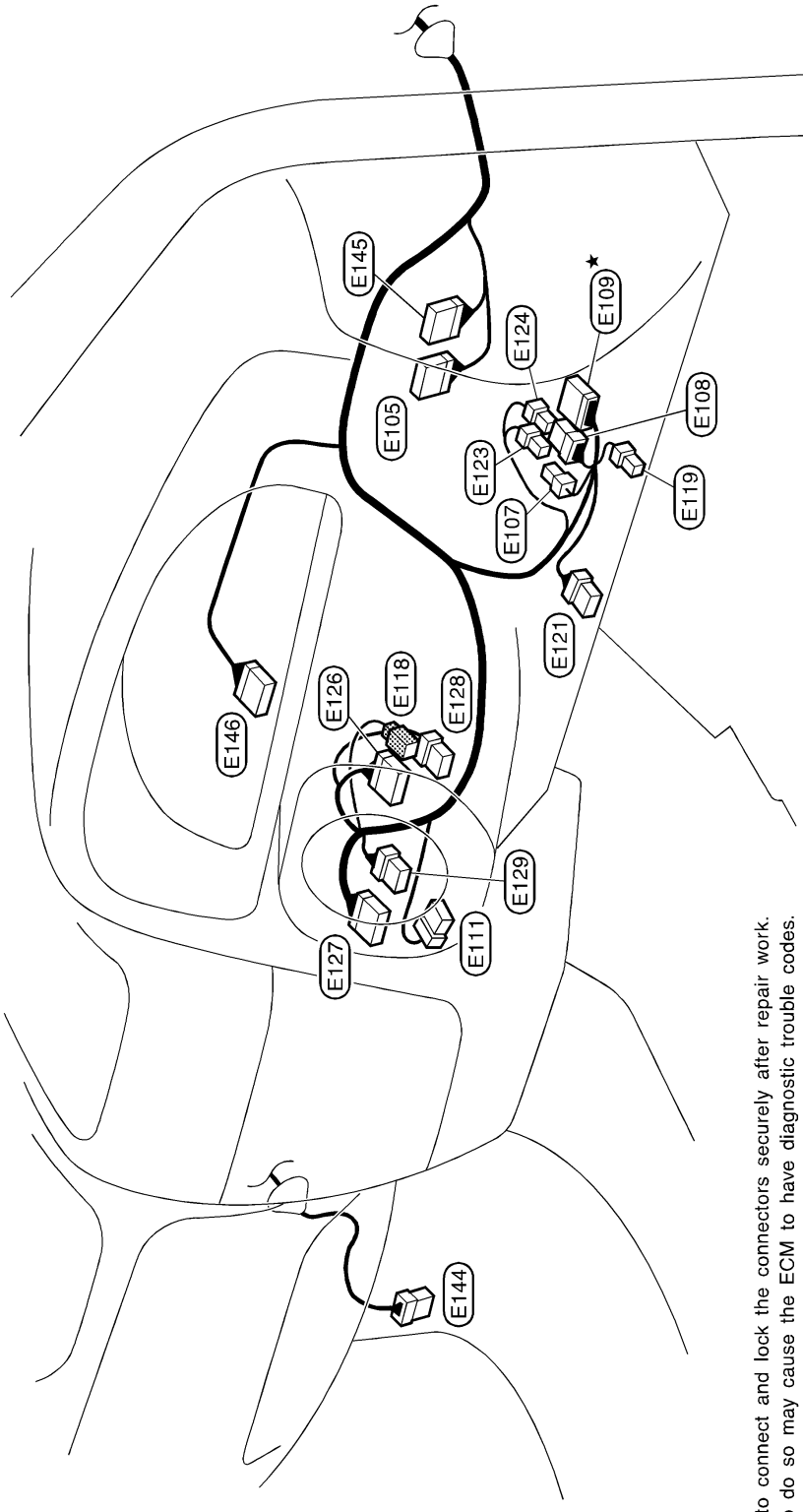
D3 E91 – : Battery (–)
D3 E92 – : Body ground

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

YEL064E

PASSENGER COMPARTMENT — RHD MODELS

NLEL0342S05



★: 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.**

E105	W/16	: To M10		E124	L/4	: Rear fog lamp relay	
E107	B/2	: Fuse block (J/B)		E126	BR/12	: Combination switch (Lighting and turn signal switch)	
E108	W/6	: Fuse block (J/B)		E127	GY/12	: Combination switch (Wiper and washer switch)	
★ E109	W/10	: Fuse block (J/B)		E128	W/8	: Combination switch (Front and rear fog lamp switch)	
E111	W/6	: Ignition switch		E129	W/8	: Steering angle sensor (With ESP)	
E118	W/2	: Key switch		E144	GY/8	: To B69	
E119	W/4	: Headlamp aiming switch		E145	W/20	: To M80	
E121	GY/6	: ESP off switch (With ESP)		E146	W/12	: Combination meter	
E123	L/4	: Throttle control motor relay (QG engine)					

YEL065E

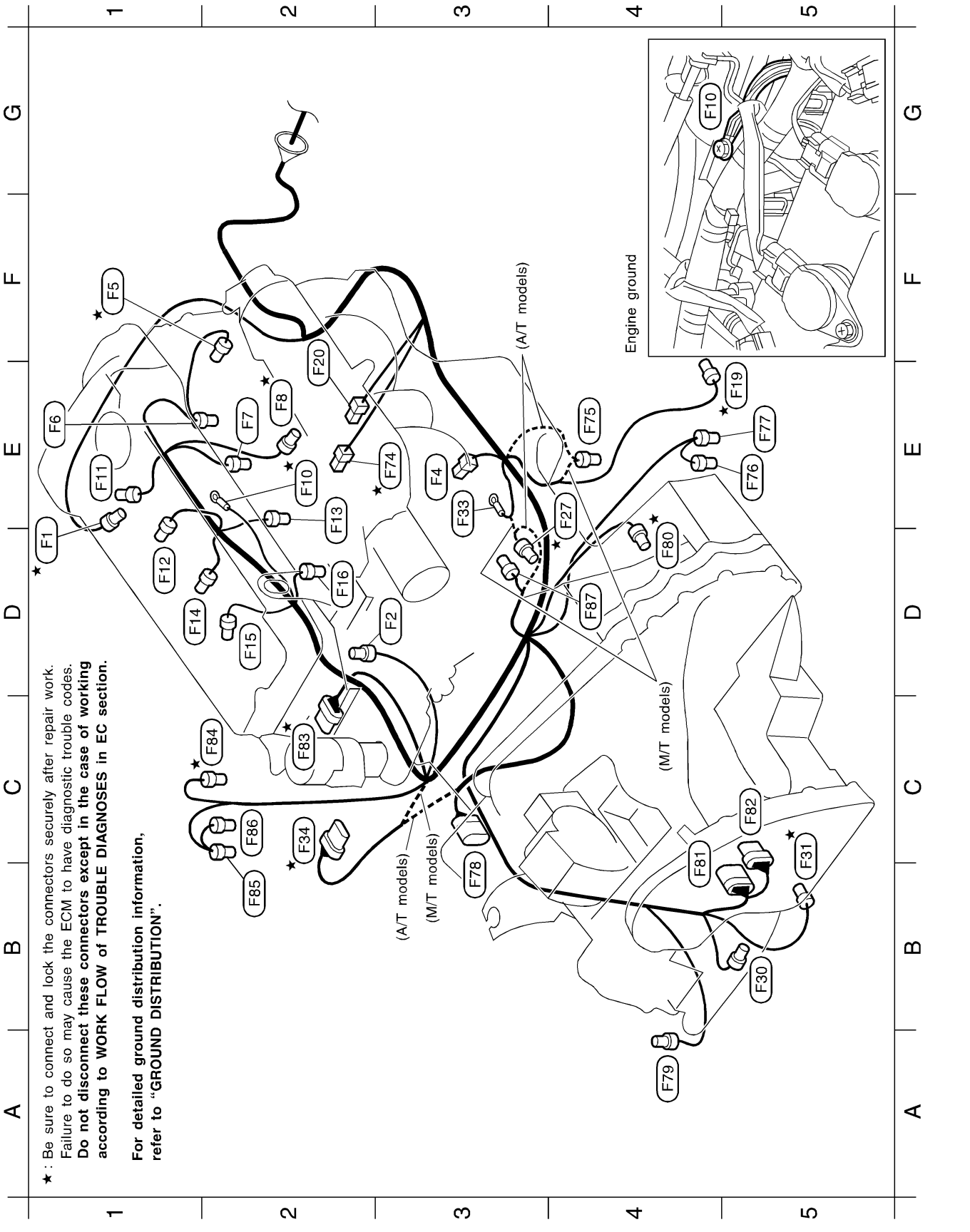
NOTE:

Engine Control Harness/QG Engine Models

NLEL0135

LHD MODELS

NLEL0135S01



YEL066E

D1 ★(F1) GY/2 : Engine coolant temperature sensor
D2 ★(F2) B/3 : Camshaft position sensor (PHASE)
E3 (F4) W/2 : Condenser
F1 ★(F5) G/2 : Intake valve timing control solenoid valve
E1 (F6) GY/2 : Injector No. 1
E2 (F7) GY/2 : Injector No. 2
E2 ★(F8) L/2 : EVAP canister purge volume control solenoid valve
E2 ★(F10) – : Engine ground
E1 (F11) GY/3 : Ignition coil No. 1
D1 (F12) GY/3 : Ignition coil No. 2
D3 (F13) GY/2 : Injector No. 3
D1 (F14) GY/3 : Ignition coil No. 3
D2 (F15) GY/3 : Ignition coil No. 4
D2 (F16) GY/2 : Injector No. 4
E5 ★(F19) G/4 : Heated oxygen sensor 2 (Rear) (M/T models)
E2 (F20) B/1 : Oil pressure switch
E4 ★(F27) B/3 : Crankshaft position sensor (POS)
B5 (F30) B/2 : Back-up lamp switch (M/T models)
B5 ★(F31) B/2 : Park/neutral position (PNP) switch (M/T models)
E3 (F33) – : Starter motor (M/T models)
C2 ★(F34) GY/5 : Mass air flow sensor
(F45) W/16 : To (M71)
(F70) –/81 : ECM
(F71) W/24 : TCM (Transmission control module) (A/T models)
(F72) GY/24 : TCM (Transmission control module) (A/T models)
(F73) W/16 : To (M112) (A/T models)
E3 (F74) –/2 : Knock sensor
E4 (F75) B/3 : Power steering oil pressure sensor
E4 (F76) G/4 : Heated oxygen sensor 2 (Bank 1) (A/T models)
E4 (F77) G/4 : Heated oxygen sensor 2 (Bank 2) (A/T models)
B3 (F78) GY/9 : To (E132) (A/T models)
A4 (F79) B/3 : Refrigerant pressure sensor
D4 (F80) BR/3 : Revolution sensor (A/T models)
C5 (F81) B/10 : Park/neutral position (PNP) switch (A/T models)
C5 (F82) B/8 : Terminal cord assembly (A/T models)
C2 (F83) G/6 : Electric throttle control actuator
C2 (F84) G/4 : Heated oxygen sensor 1 (Front) (M/T models)
C2 (F85) G/4 : Heated oxygen sensor 1 (Bank 1) (A/T models)
C2 (F86) G/4 : Heated oxygen sensor 1 (Bank 2) (A/T models)
D4 (F87) GY/1 : Starter motor (A/T models)

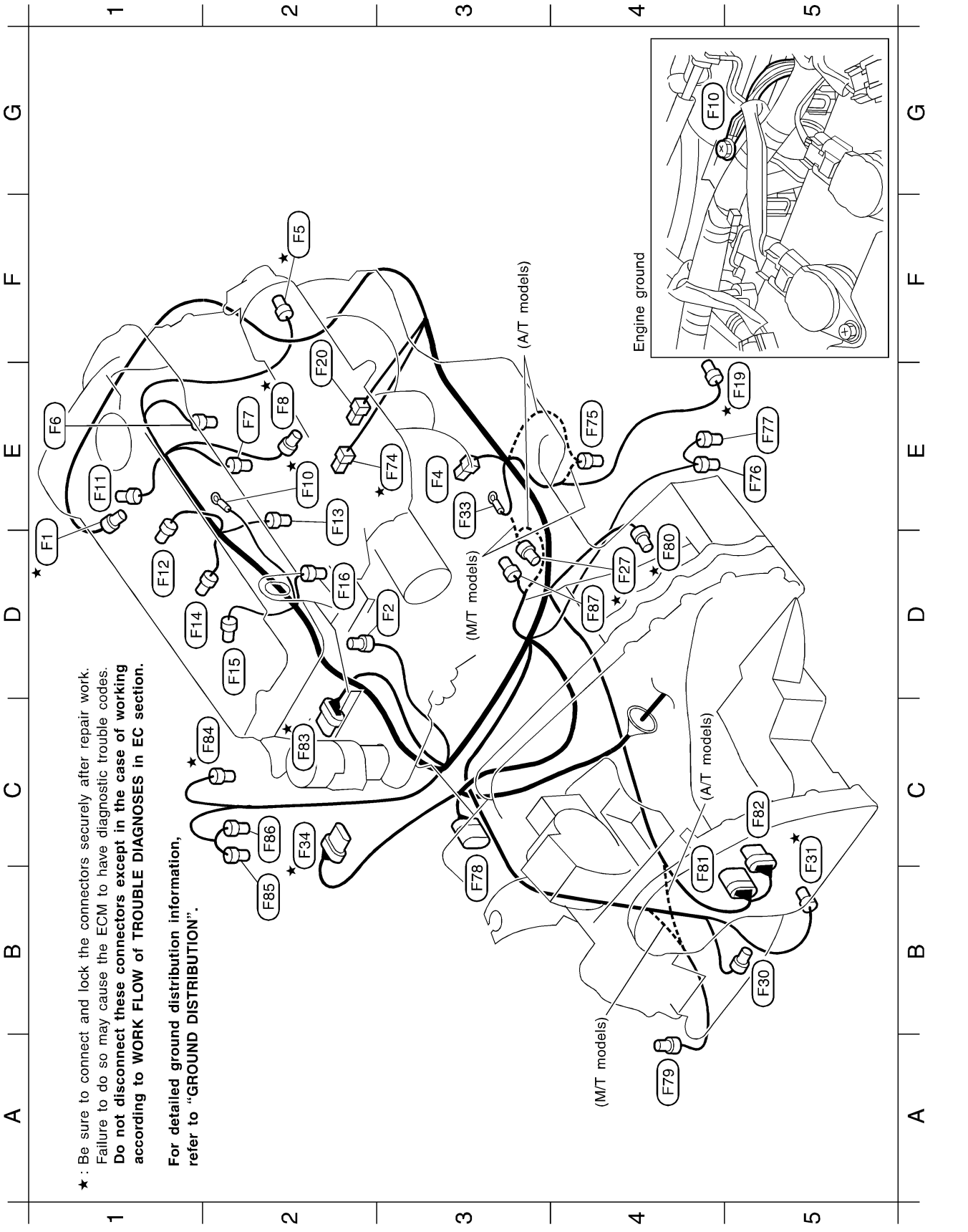
PASSENGER COMPARTMENT

★: 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 section.**

YEL067E

RHD MODELS

NLEL0135S02



★: 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 section.**

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

YEL068E

D1 ★ F1 GY/2 : Engine coolant temperature sensor
F1 ★ F2 B/3 : Camshaft position sensor (PHASE)
E3 F4 W/2 : Condenser
F2 ★ F5 G/2 : Intake valve timing control solenoid valve
E1 F6 GY/2 : Injector No. 1
E2 F7 GY/2 : Injector No. 2
E2 ★ F8 L/2 : EVAP canister purge volume control solenoid valve
E2 ★ F10 – : Engine ground
E1 F11 GY/3 : Ignition coil No. 1
D1 F12 GY/3 : Ignition coil No. 2
D3 F13 GY/2 : Injector No. 3
D1 F14 GY/3 : Ignition coil No. 3
D2 F15 GY/3 : Ignition coil No. 4
D2 F16 GY/2 : Injector No. 4
E5 ★ F19 G/4 : Heated oxygen sensor 2 (Rear) (M/T models)
E2 F20 B/1 : Oil pressure switch
E4 ★ F27 B/3 : Crankshaft position sensor (POS)
B5 F30 B/2 : Back-up lamp switch (M/T models)
B5 ★ F31 B/2 : Park/neutral position (PNP) switch (M/T models)
E3 F33 – : Starter motor (M/T models)
C2 ★ F34 GY/5 : Mass air flow sensor
F45 W/16 : To M71
F70 –/81 : ECM
F71 W/24 : TCM (Transmission control module) (A/T models)
F72 GY/24 : TCM (Transmission control module) (A/T models)
F73 W/16 : To M112 (A/T models)
E3 F74 –/2 : Knock sensor
E4 F75 B/3 : Power steering oil pressure sensor
E4 F76 G/4 : Heated oxygen sensor 2 (Bank 1) (A/T models)
E5 F77 G/4 : Heated oxygen sensor 2 (Bank 2) (A/T models)
B3 F78 GY/9 : To E132 (A/T models)
A4 F79 B/3 : Refrigerant pressure sensor
D4 F80 BR/3 : Revolution sensor (A/T models)
B5 F81 B/10 : Park/neutral position (PNP) switch (A/T models)
B5 F82 B/8 : Terminal cord assembly (A/T models)
C2 F83 G/6 : Electric throttle control actuator
C2 F84 G/4 : Heated oxygen sensor 1 (Front) (M/T models)
C2 F85 G/4 : Heated oxygen sensor 1 (Bank 1) (A/T models)
C2 F86 G/4 : Heated oxygen sensor 1 (Bank 2) (A/T models)
D4 F87 GY/1 : Starter motor (A/T models)

PASSENGER COMPARTMENT

★ : 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 section.**

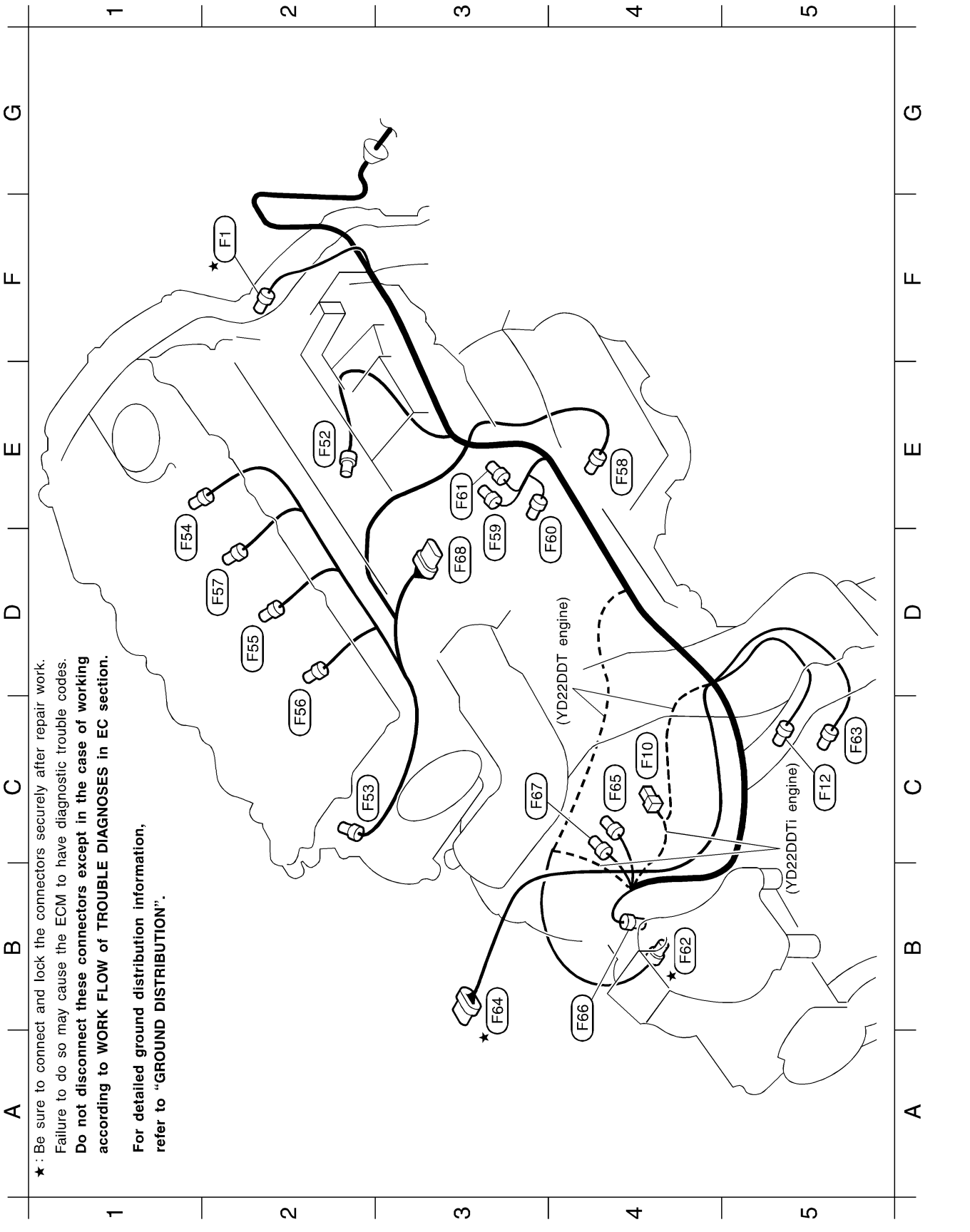
YEL069E

Engine Control Harness/YD Engine Models

NLEL0343

LHD MODELS

NLEL0343S01



★: 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 section.

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

YEL070E

PASSENGER COMPARTMENT

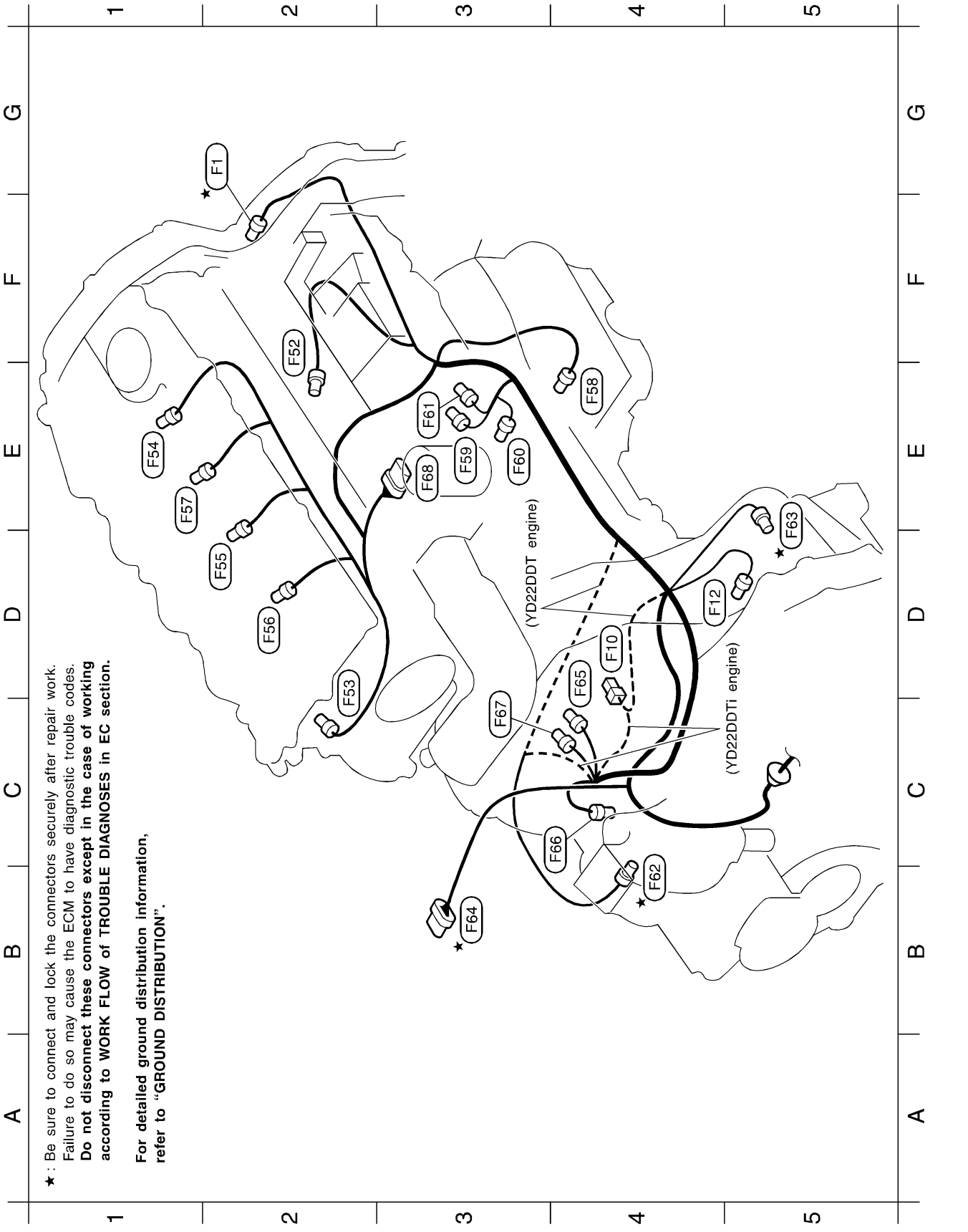
★F2	(F1)	GY/2	: Engine coolant temperature sensor
C4	(F10)	B/1	: Starter motor
C5	(F12)	W/4	: Park/neutral position (PNP) switch (YD22DDT engine)
★	(F45)	W/16	: To (M71)
	(F50)	–	: Body ground
	(F51)	–	: Body ground
E2	(F52)	B/3	: Fuel rail pressure sensor
C2	(F53)	B/3	: Camshaft position sensor
E1	(F54)	W/4	: Fuel injector No. 1
D2	(F55)	W/4	: Fuel injector No. 2
C2	(F56)	W/4	: Fuel injector No. 3
D2	(F57)	W/4	: Fuel injector No. 4
E4	(F58)	B/2	: Power steering pressure switch
D3	(F59)	G/2	: Fuel pump temperature sensor
D3	(F60)	GY/1	: Oil pressure switch
E3	(F61)	GY/2	: Fuel pump
D3	★(F62)	B/3	: Crankshaft position sensor
C5	(F63)	B/2	: Park/neutral position (PNP) switch (YD22DDTi engine)
A3	★(F64)	B/6	: Mass air flow sensor
C4	(F65)	GY/2	: Turbocharger boost control solenoid valve (YD22DDTi engine)
B4	(F66)	B/2	: Back-up lamp switch (YD22DDTi engine)
B4	(F67)	GY/3	: Turbocharger boost sensor (YD22DDTi engine)
D2	(F68)	GY/6	: EGR volume control valve
	★(F70)	–	: ECM

★: 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 section.**

YEL071E

RHD MODELS

NLEL0343S02



YEL072E

G2 ★(F1) GY/2 : Engine coolant temperature sensor
D4 (F10) B/1 : Starter motor
D4 (F12) W/4 : Park/neutral position (PNP) switch (YD22DDT engine)
★(F45) W/16 : To (M71)
(F50) – : Body ground
(F51) – : Body ground
E2 (F52) B/3 : Fuel rail pressure sensor
C2 (F53) B/3 : Camshaft position sensor
E1 (F54) W/4 : Fuel injector No. 1
D2 (F55) W/4 : Fuel injector No. 2
D2 (F56) W/4 : Fuel injector No. 3
E2 (F57) W/4 : Fuel injector No. 4
F4 (F58) B/2 : Power steering pressure switch
E3 (F59) G/2 : Fuel pump temperature sensor
E3 (F60) GY/1 : Oil pressure switch
E3 (F61) GY/2 : Fuel pump
B4 ★(F62) B/3 : Crankshaft position sensor
E5 ★(F63) B/2 : Park/neutral position (PNP) switch (YD22DDTi engine)
B3 ★(F64) B/6 : Mass air flow sensor
D4 (F65) GY/2 : Turbocharger boost control solenoid valve (YD22DDTi engine)
C4 (F66) B/2 : Back-up lamp switch (YD22DDTi engine)
C4 (F67) GY/3 : Turbocharger boost sensor (YD22DDTi engine)
E3 (F68) GY/6 : EGR volume control valve
★(F70) – : ECM

PASSENGER COMPARTMENT

★: 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 section.**

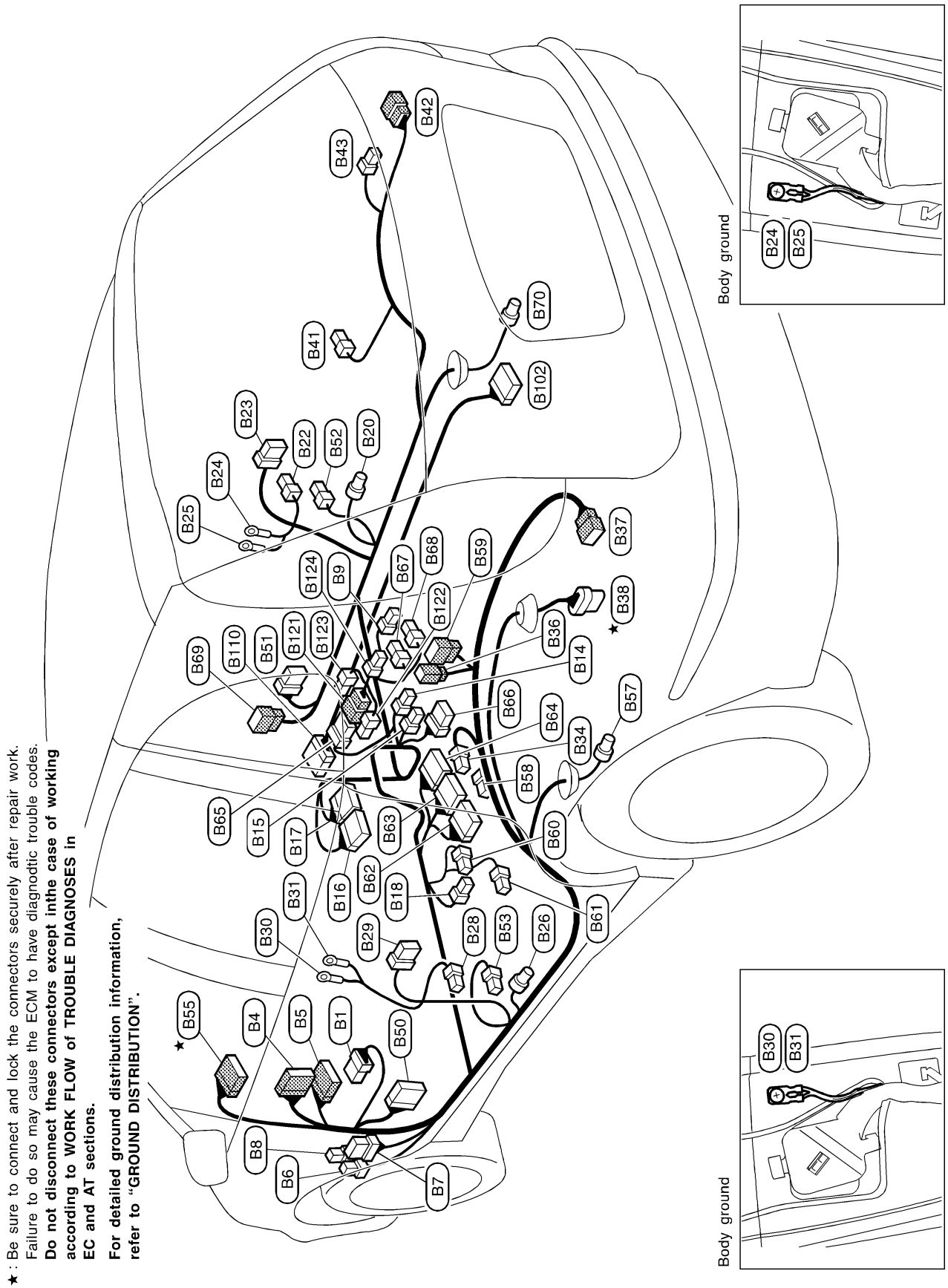
YEL073E

Body Harness

NLEL0348

NLEL0348S01

LHD MODELS



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

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

YEL074E

B1 W/8 : Fuse block (J/B)
B4 BR/16 : To M13
B5 W/20 : To M12
B6 L/4 : Fuel pump relay
B7 BR/6 : Rear window defogger relay (With door mirror defogger)
B8 L/4 : Rear window defogger relay (Without door mirror defogger)
B9 W/3 : Heated seat passenger side (For cold area)
B14 W/2 : Power socket (Except for cold area)
B15 B/1 : Parking brake switch
B16 Y/12 : Air bag diagnosis sensor unit
B17 Y/12 : Air bag diagnosis sensor unit
B18 W/3 : Heated seat driver side (For cold area)
B20 Y/2 : RH side air bag (Satellite) sensor (With side air bag)
B22 W/3 : Door switch passenger side
B23 W/8 : To D61
B24 – : Body ground
B25 – : Body ground (With side air bag)
B26 Y/2 : LH side air bag (Satellite) sensor (With side air bag)
B28 W/3 : Door switch driver side
B29 W/8 : To D51
B30 – : Body ground
B31 – : Body ground (With side air bag)
B34 W/1 : Door switch rear LH
B36 W/4 : To D81
B37 BR/6 : Rear combination lamp LH
★ B38 GY/5 : Fuel level sensor unit and fuel pump
B41 W/1 : Door switch rear RH
B42 BR/6 : Rear combination lamp RH
B43 W/2 : Luggage room lamp
B50 W/12 : To D11
B51 W/6 : To D40
B52 Y/2 : Front RH seat belt pre-tensioner
B53 Y/2 : Front LH seat belt pre-tensioner
★ B55 BR/24 : To M83 (With navigation system)
B57 B/2 : Rear wheel sensor LH
B58 B/2 : Diode
B59 W/8 : To D90
B60 –/2 : Front LH side air bag module (With side air bag)
B61 –/1 : Front LH side air bag module (With side air bag)
B62 W/24 : AV and NAVI control unit (With navigation system)
B63 GY/24 : AV and NAVI control unit (With navigation system)
B64 W/16 : Rear view camera control unit (With rear view monitor)
B65 W/8 : To B121
B66 –/6 : Yaw rate/Side G sensor
B67 –/2 : Front RH side air bag module (With side air bag)
B68 –/1 : Front RH side air bag module (With side air bag)
B69 GY/8 : To E144
B70 B/2 : Rear wheel sensor RH

Body No. 2 harness

B102 W/16 : CD auto-changer (With CD auto-changer)
B110 W/12 : To M113

Console harness

B121 W/8 : To B65
B122 L/4 : Heated seat switch (Driver side)
B123 W/4 : Heated seat switch (Passenger side)
B124 B/2 : Power socket

★ : 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.**

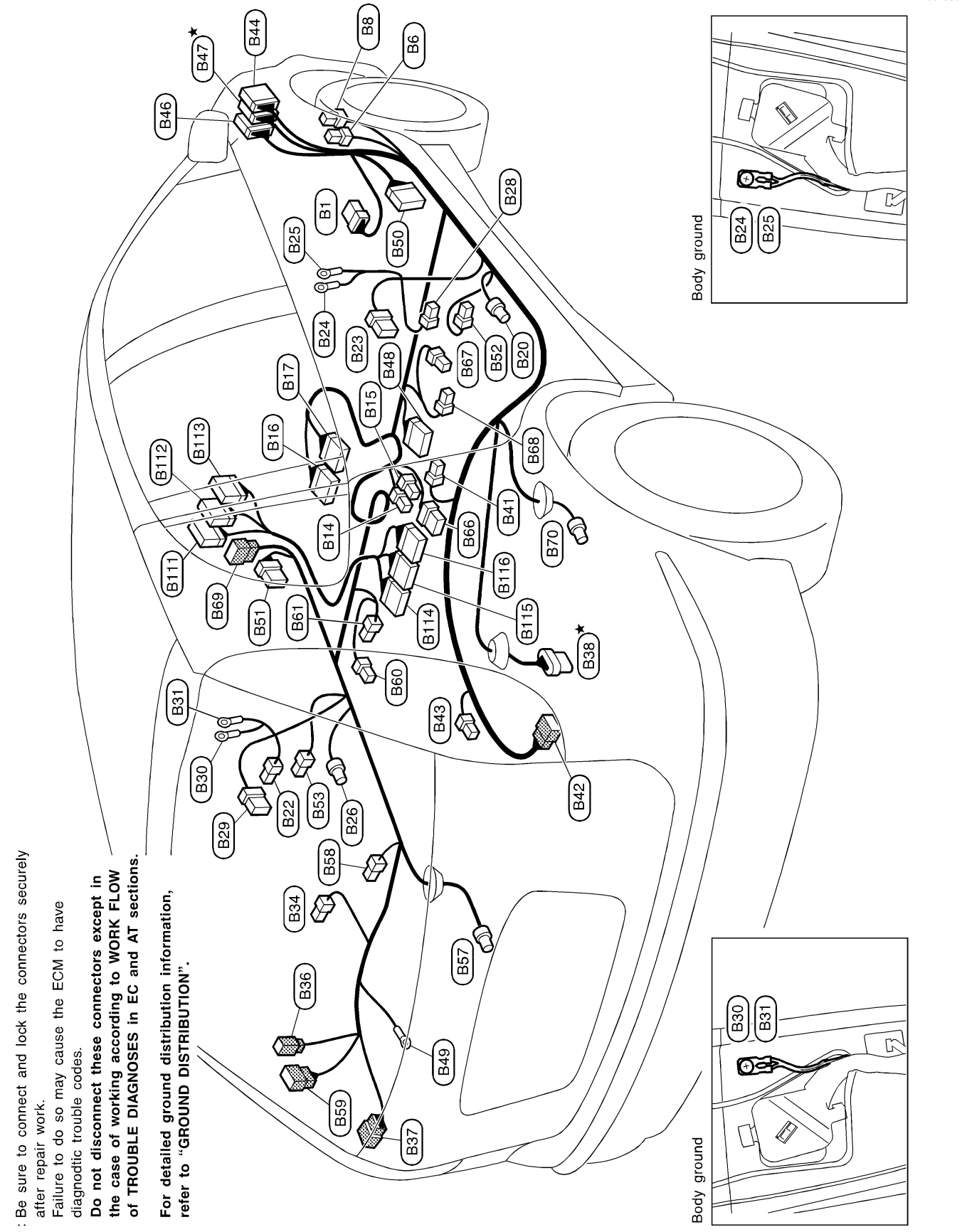
Diode B58

Luggage room lamp — Luggage room lamp switch and smart entrance control unit

YEL075E

RHD MODELS

NLEL0348S02



★: Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the ECM to have diagnodtic 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.

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

YEL076E

B1	W/8	:	Fuse block (J/B)
B6	L/4	:	Fuel pump relay
B8	L/4	:	Rear window defogger relay (For rear window defogger only)
B14	W/2	:	Power socket
B15	B/1	:	Parking brake switch
B16	Y/12	:	Air bag diagnosis sensor unit
B17	Y/12	:	Air bag diagnosis sensor unit
B20	Y/2	:	RH side air bag (Satellite) sensor (With side air bag)
B22	W/3	:	Door switch passenger side
B23	W/8	:	To D61
B24	–	:	Body ground
B25	–	:	Body ground (With side air bag)
B26	Y/2	:	LH side air bag (Satellite) sensor (With side air bag)
B28	W/3	:	Door switch driver side
B29	W/8	:	To D51
B30	–	:	Body ground
B31	–	:	Body ground (With side air bag)
B34	W/1	:	Door switch rear LH
B36	W/4	:	To D81
B37	BR/6	:	Rear combination lamp LH
★ B38	GY/5	:	Fuel level sensor unit and fuel pump
B41	W/1	:	Door switch rear RH
B42	BR/6	:	Rear combination lamp RH
B43	W/2	:	Luggage room lamp
B44	W/12	:	To M63 (With CD auto-changer)
★ B46	BR/16	:	To M68
★ B47	W/16	:	To M65
B48	W/16	:	CD auto-changer (With CD auto-changer)
B49	–	:	Body ground
B50	W/12	:	To D11
B51	W/6	:	To D40
B52	Y/2	:	Front RH seat belt pre-tensioner
B53	Y/2	:	Front LH seat belt pre-tensioner
B57	B/2	:	Rear wheel sensor LH
B58	B/2	:	Diode
B59	W/8	:	To D90
B60	–/2	:	Front LH side air bag module (With side air bag)
B61	–/1	:	Front LH side air bag module (With side air bag)
B66	–/6	:	Yaw rate/Side G sensor
B67	–/2	:	Front RH side air bag module (With side air bag)
B68	–/1	:	Front RH side air bag module (With side air bag)
B69	GY/8	:	To E144
B70	B/2	:	Rear wheel sensor RH

Body No. 2 harness

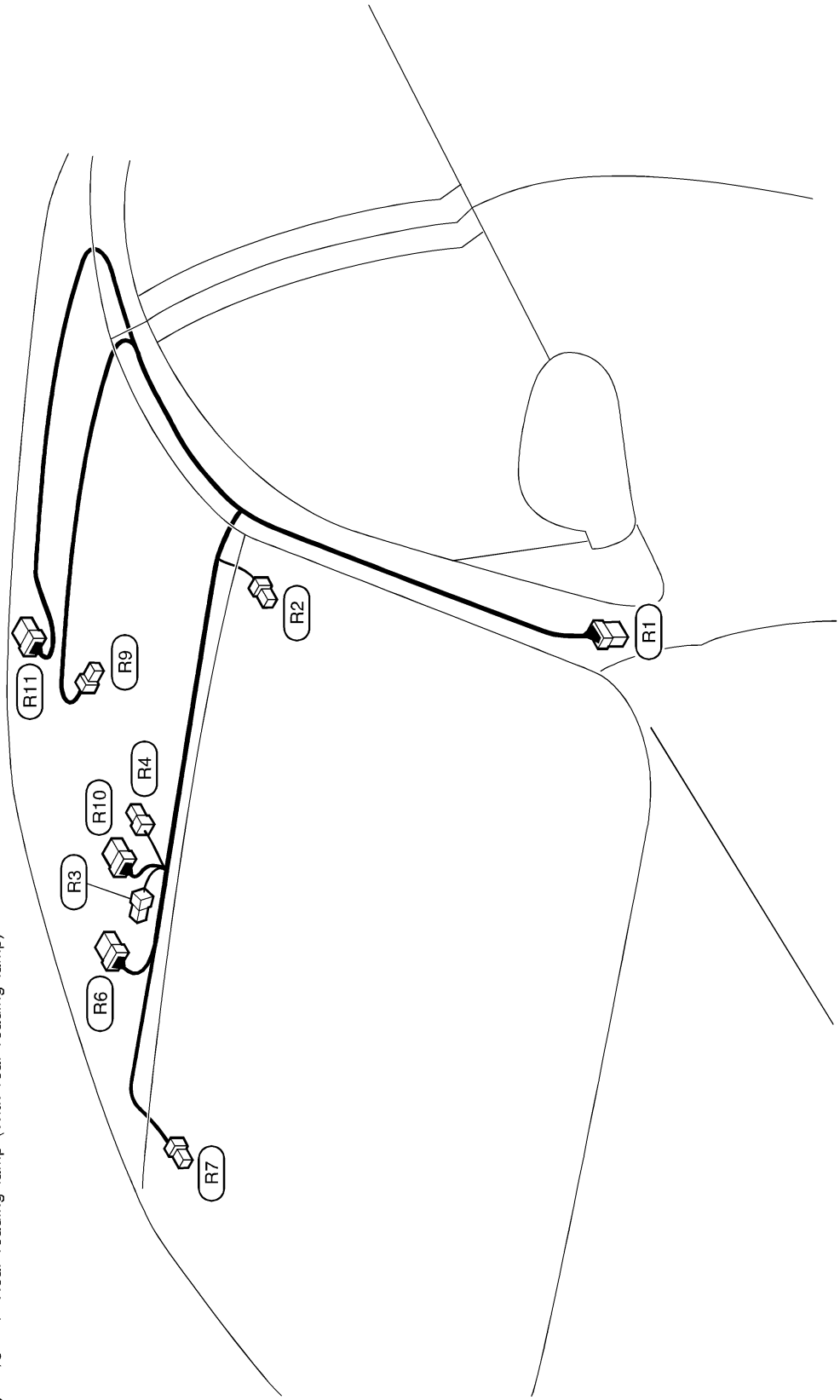
B111	W/12	:	To M115 (With rear view monitor)
B112	W/16	:	To M116 (With navigation system)
B113	W/20	:	To M117 (With navigation system)
B114	W/24	:	AV and NAVI control unit (With navigation system)
B115	GY/24	:	AV and NAVI control unit (With navigation system)
B116	W/16	:	Rear view camera control unit (With rear view monitor)

★: 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.**

YEL077E

Room Lamp Harness

NLEL0140



R1	W/6	:	To M19
R2	B/2	:	Vanity mirror lamp LH (With vanity lamp for RHD models)
R3	W/2	:	Spot lamp (With sunroof)
R4	W/2	:	Sunroof motor (With sunroof)
R6	W/8	:	Sunroof switch assembly (With sunroof)
R7	B/2	:	Vanity mirror lamp RH (With vanity lamp for LHD models)
R9	W/3	:	Interior room lamp (With sunroof)
R10	–/6	:	Interior room lamp (Without sunroof)
R11	–/6	:	Rear reading lamp (With rear reading lamp)

YEL078E

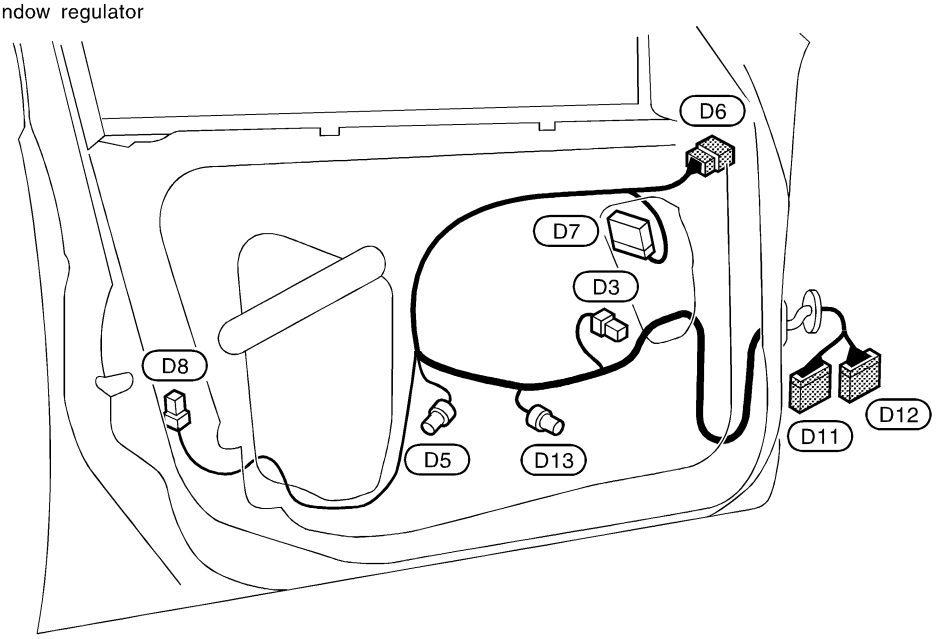
Front Door Harness/LHD Models

NLEL0142

LH SIDE

NLEL0142S07

(D3) BR/2 : Front door speaker LH
(D5) BR/3 : Not used
(D6) GY/6 : Door mirror
(D7) W/16 : Power window main switch
(D8) W/4 : Door lock actuator assembly
(D11) W/12 : To (B50)
(D12) W/12 : To (M74)
(D13) –/2 : Power window regulator

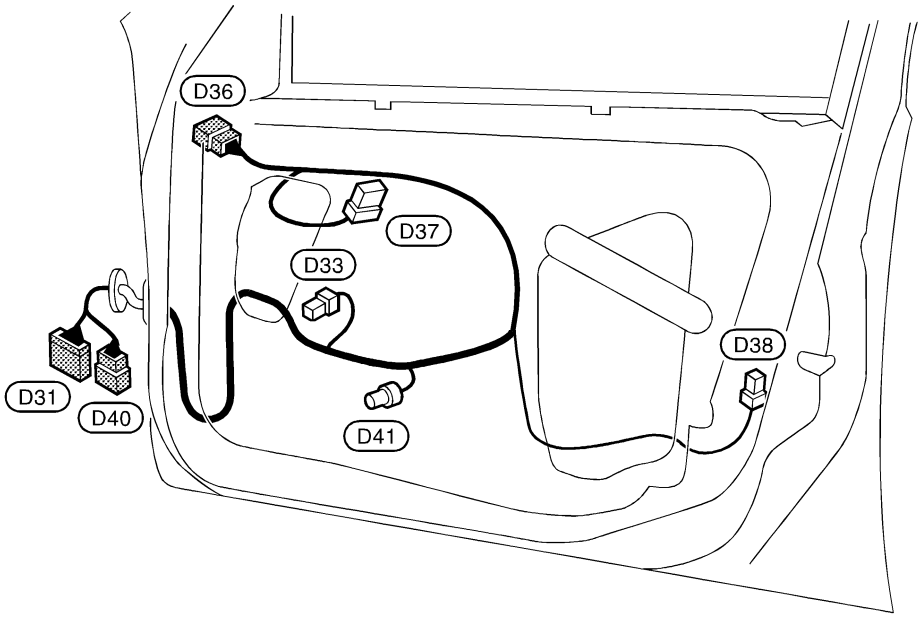


YEL079E

RH SIDE

NLEL0142S06

(D31) W/12 : To (M58)
(D33) BR/2 : Front door speaker RH
(D36) GY/6 : Door mirror
(D37) W/8 : Power window sub-switch
(D38) W/4 : Door lock actuator assembly
(D40) W/6 : To (B51)
(D41) –/2 : Power window regulator



YEL080E

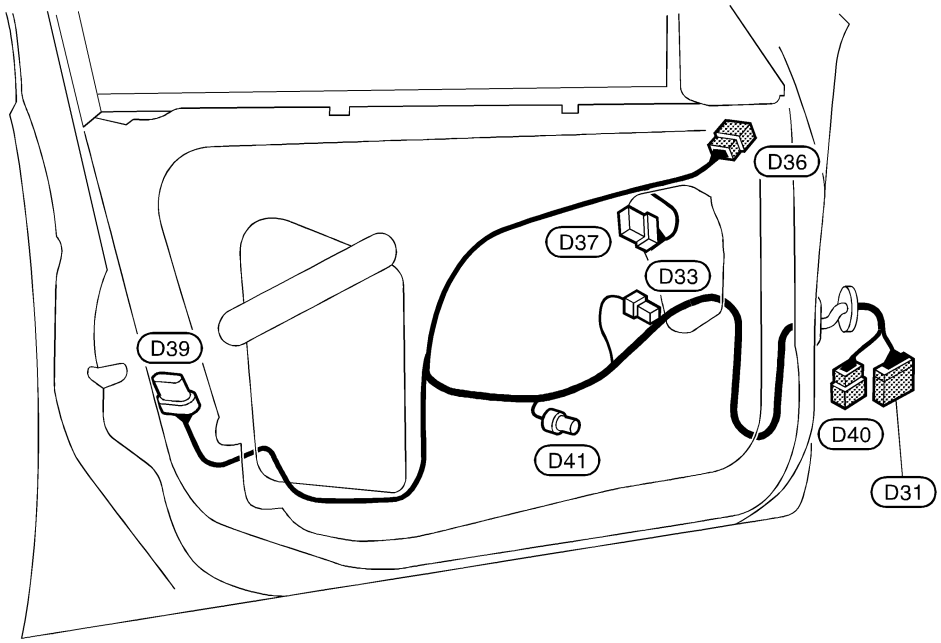
Front Door Harness/RHD Models

NLEL0349

LH SIDE

NLEL0349S01

(D31) W/12 : To (M58)
(D33) BR/2 : Front door speaker LH
(D36) GY/6 : Door mirror
(D37) W/8 : Power window sub-switch
(D39) B/6 : Door lock actuator assembly
(D40) W/6 : To (B51)
(D41) –/2 : Power window regulator

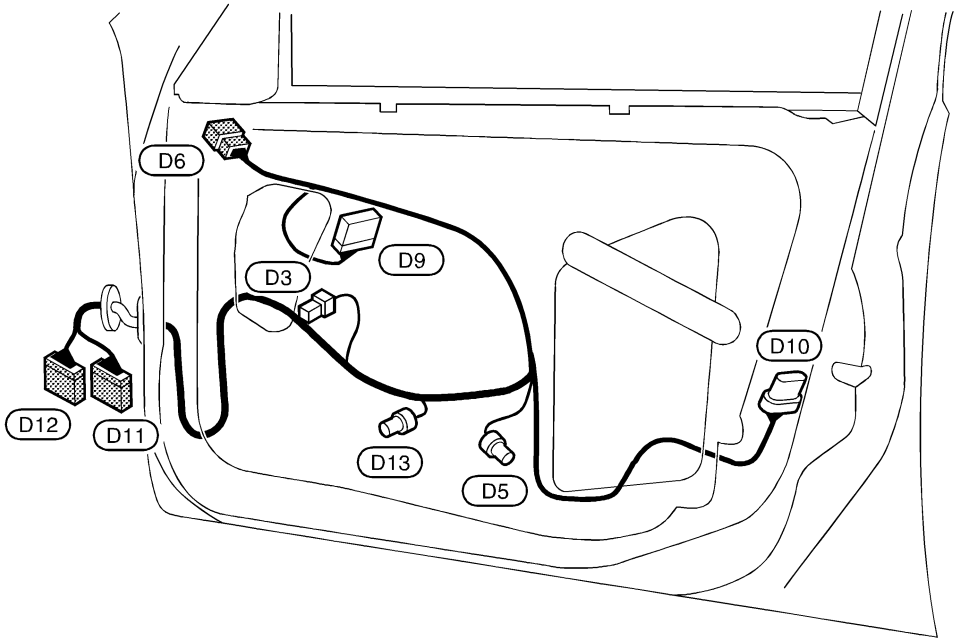


YEL081E

RH SIDE

NLEL0349S03

D3	BR/2	:	Front door speaker RH	D10	B/6	:	Door lock actuator assembly
D5	BR/3	:	Not used	D11	W/12	:	To B50
D6	GY/6	:	Door mirror	D12	W/12	:	To M74
D9	W/16	:	Power window main switch	D13	–/2	:	Power window regulator



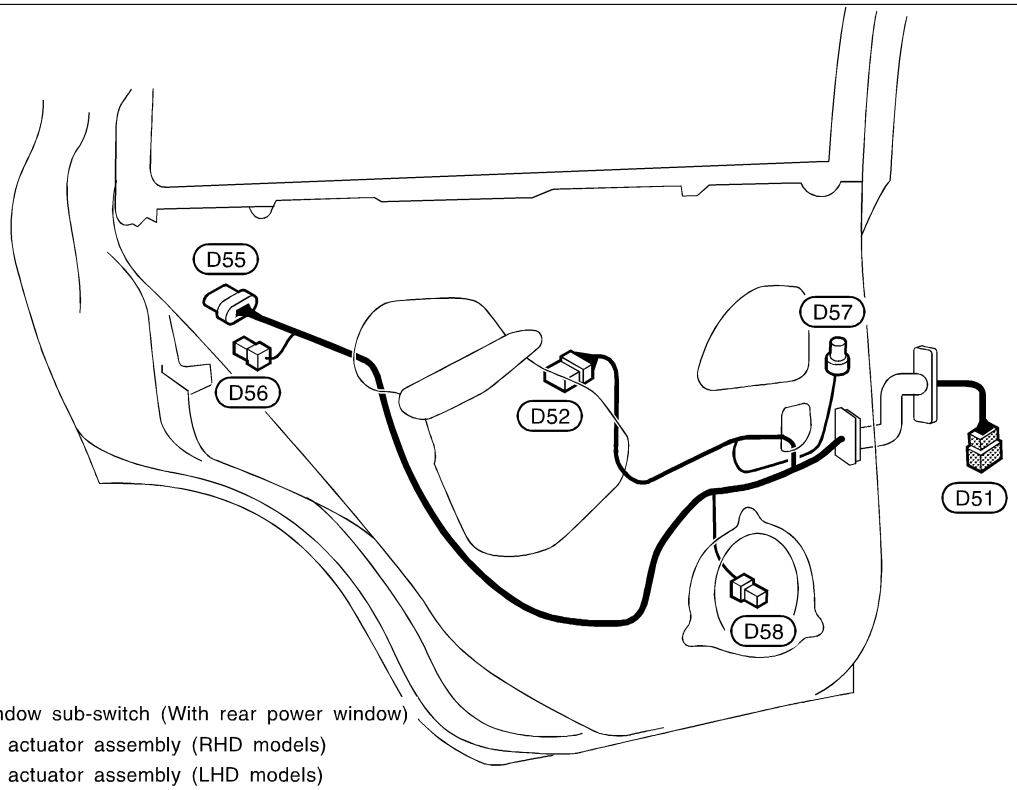
YEL082E

Rear Door Harness

NLEL0416

LH SIDE

NLEL0416S01

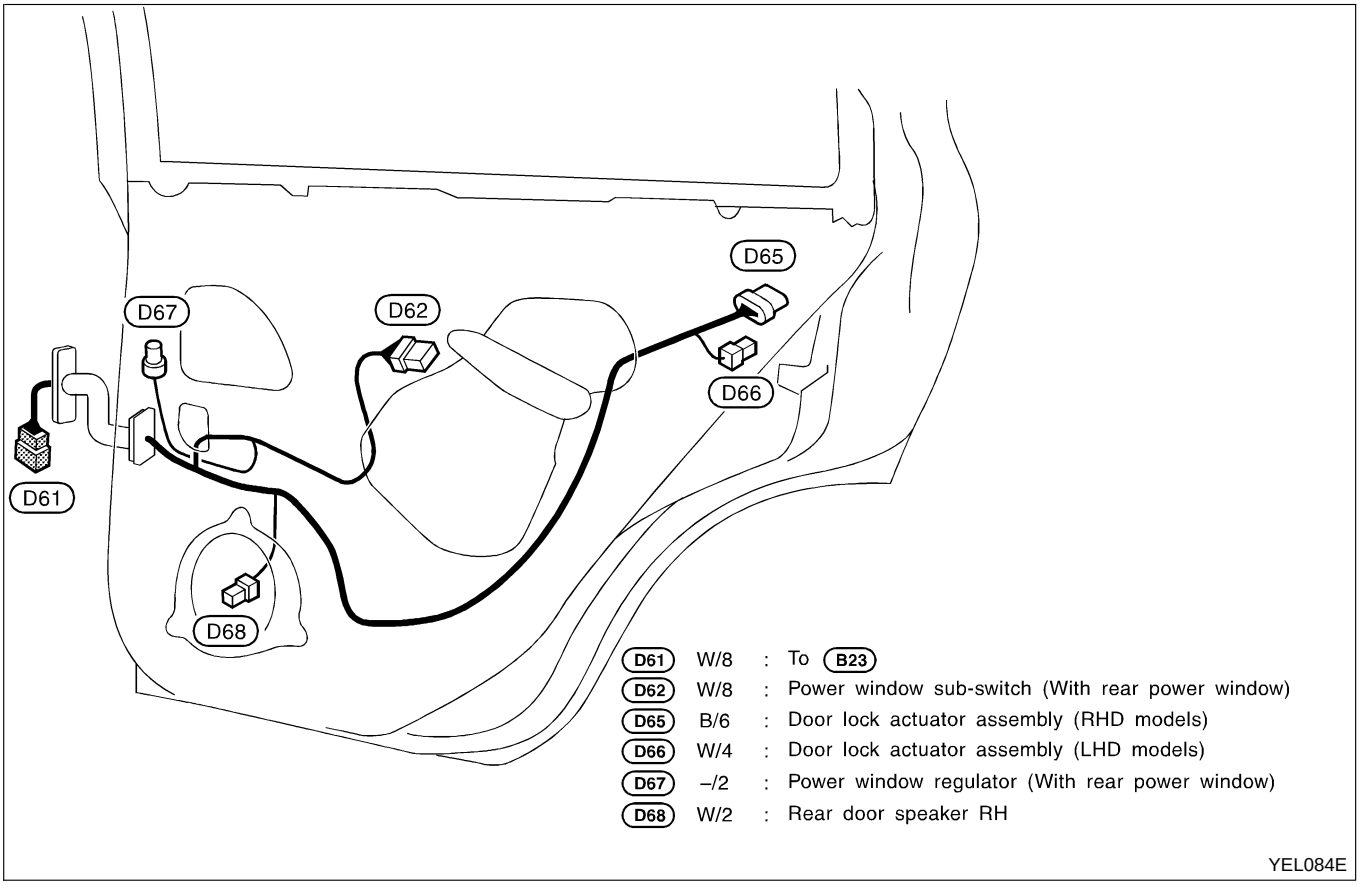


D51	W/8	:	To B29
D52	W/8	:	Power window sub-switch (With rear power window)
D55	B/6	:	Door lock actuator assembly (RHD models)
D56	W/4	:	Door lock actuator assembly (LHD models)
D57	–/2	:	Power window regulator (With rear power window)
D58	W/2	:	Rear door speaker LH

YEL083E

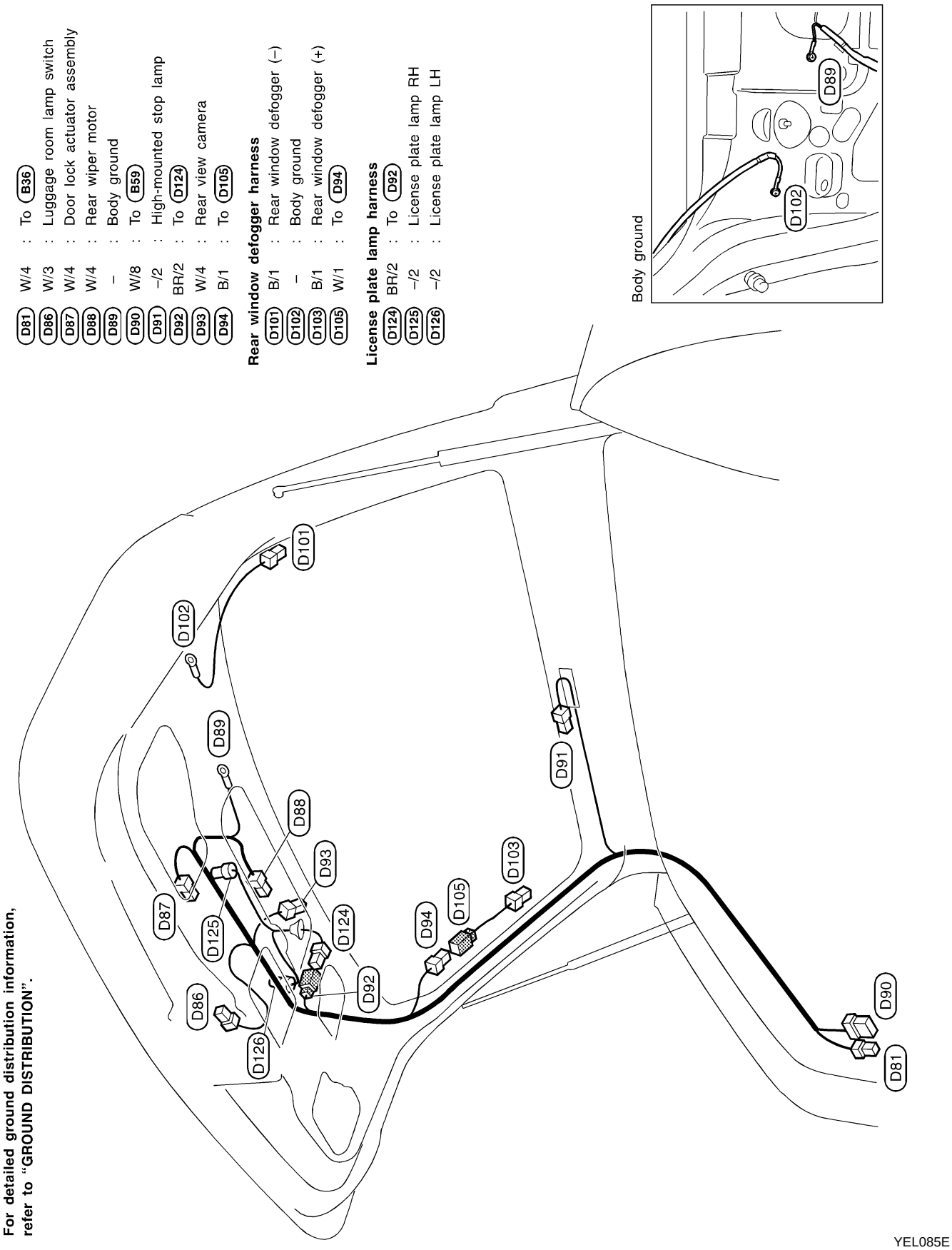
RH SIDE

NLEL0416S02



Back Door Harness

NLEL0492



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

YEL085E

BULB SPECIFICATIONS

Headlamp

Headlamp

NLEL0144S03

Item	Wattage (Bulb type)
High/Low (Semi-sealed beam)	55 (H7)/55 (H7)

Exterior Lamp

NLEL0144S01

Item		Wattage (Bulb type)
Front fog lamp		51 (HB4)
Front turn signal lamp		21
Side turn signal lamp		5
Parking lamp		5
Rear combination lamp	Turn signal	16
	Stop/Tail	21/5
	Back-up	18
	Rear fog lamp	21
Rear side marker lamp		3.8
License lamp		5
High-mounted stop lamp		LED (Not serviceable)

Interior Lamp

NLEL0144S02

Item	Wattage (Bulb type)
Interior room lamp	5
Map lamp	5
Rear personal lamp	5
Luggage room lamp	5

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 Gear Function
2NDSIG	AT	A/T 2ND Gear Function
3RDSIG	AT	A/T 3RD Gear Function
4THSIG	AT	A/T 4TH Gear Function
A/C, A	HA	Auto Air Conditioner
ABS	BR	ABS
APPS1	EC	Accelerator Pedal Position Sensor
APPS1PW	EC	Accelerator Pedal Position Sensor
APPS2	EC	Accelerator Pedal Position Sensor
APPS2PW	EC	Accelerator Pedal Position Sensor
APPS3	EC	Accelerator Pedal Position Sensor
AUDIO	EL	Audio
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
BACK/L	EL	Back-up Lamp
BOOST	EC	Turbocharger Boost Sensor
BRK/SW	EC	Brake Switch
CAN	AT	CAN Communication Line
CAN	EC	CAN Communication Line
CAN	EL	CAN System
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor
CLOCK	EL	Clock
CMPS	EC	Camshaft Position Sensor
COOL/F	EC	Engine Over Temperature
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp — Daytime Light System —
ECM/PW	EC	ECM Power Supply
ECMRLY	EC	ECM Relay
ECTS	EC	Engine Coolant Temperature Sensor
EGRC/V	EC	EGR Volume Control System
ENGSS	AT	Engine Speed Signal
ESP	BR	ESP
ETC1	EC	Electric Throttle Control Function
ETC2	EC	Electric Throttle Control Function
ETC3	EC	Electric Throttle Control Function
F/FOG	EL	Front Fog Lamp
F/PUMP	EC	Fuel Pump
FIRE	EC	Fuel Injection Adjustment Resistor
FRO2	EC	Heated Oxygen Sensor 1 (Front)
FRO2B1	EC	Heated Oxygen Sensor 1 Heater (Bank 1)
FRO2B2	EC	Heated Oxygen Sensor 1 Heater (Bank 2)
FRPS	EC	Fuel Rail Pressure Sensor
FTS	AT	A/T Fluid Temperature Sensor
FTS	EC	Fuel Pump Temperature Sensor
FUEL	EC	Fuel Injection System Function
FUELB1	EC	Fuel Injection System Function
FUELB2	EC	Fuel Injection System Function
GLOW	EC	Glow Control System
H/AIM	EL	Headlamp — Headlamp Aiming Control —
H/LAMP	EL	Headlamp
HLC	EL	Headlamp Washer
HORN	EL	Horn
H/SEAT	EL	Heated Seat
HO2S1	EC	Heated Oxygen sensor 1 (Front)
HO2S2	EC	Heated Oxygen sensor 2 (Rear)
HO2S1H	EC	Heated Oxygen sensor 1 (Front)
HO2S2H	EC	Heated Oxygen sensor 2 (Rear)
IATS	EC	Intake Air Temperature Sensor
IATSEN	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition Signal
ILL	EL	Illumination
INF/D	EL	LCD Display
INJ/PW	EC	Injector
INJECT	EC	Injector
INT/L	EL	Interior and Luggage Room Lamps

Code	Section	Wiring Diagram Name
IVC	EC	Intake Valve Timing Control Solenoid Valve
IVC/V	EC	Intake Valve Timing Control Solenoid Valve
KS	EC	Knock Sensor
LOAD	EC	Electrical Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Water Temp., and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	NVIS (NISSAN Anti-theft System)
NAVI	EL	Navigation System
NONDTC	AT	Trouble Diagnoses For Symptoms
O2H1B1	EC	Heated Oxygen Sensor 1 Heater (Bank 1)
O2H1B2	EC	Heated Oxygen Sensor 1 Heater (Bank 2)
O2H2B1	EC	Heated Oxygen Sensor 2 Heater (Bank 1)
O2H2B2	EC	Heated Oxygen Sensor 2 Heater (Bank 2)
O2S1B1	EC	Heated Oxygen Sensor 1 (Bank 1)
O2S1B2	EC	Heated Oxygen Sensor 1 (Bank 2)
O2S2B1	EC	Heated Oxygen Sensor 2 (Bank 1)
O2S2B2	EC	Heated Oxygen Sensor 2 (Bank 2)
OVRCSV	AT	Overrun Clutch Solenoid Valve
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHASE	EC	Camshaft Position Sensor
PHONE	EL	Telephone
PNP/SW	AT	Park/Neutral Position (PNP) Switch
PNP/SW	EC	Park/Neutral Position (PNP) Switch
PNPSW1	EC	Park/Neutral Position (PNP) Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	EL	Power Supply Routing
PREWIRE	EL	Theft Warning System
PRGVLV	EC	EVAP Canister Purge Volume Control Solenoid Valve
PS/SEN	EC	Power Steering Oil Pressure Sensor
PST/SW	EC	Power Steering Pressure Switch
R/FOG	EL	Rear Fog Lamp
R/VIEW	EL	Rear View Monitor
RP/SEN	EC	Referigerant Pressure Sensor
RRO2	EC	Heated Oxygen Sensor 2 (Rear)
RRO2B1	EC	Heated Oxygen Sensor 2 Heater (Bank 1)
RRO2B2	EC	Heated Oxygen Sensor 2 Heater (Bank 2)
ROOM/L	EL	Interior Room Lamp
S/LOCK	EL	Door Lock — Super Lock —
S/SIG	EC	Start Signal
SEN/PW	EC	Electric Throttle Control Actuator
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Power Sunroof
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop Lamp
TAIL/L	EL	Parking, License and Tail Lamps
TCC/V	EC	Turbocharger Boost Control Solenoid Valve
TCV	AT	Torque Converter Clutch Solenoid Valve
TPS	AT	Throttle Position Sensor
TPS1	EC	Throttle Position Sensor
TPS2	EC	Throttle Position Sensor
TPS3	EC	Throttle Position Sensor
TURN	EL	Turn Signal and Hazard Warning Lamps
VSSAT	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window

Code	Section	Wiring Diagram Name
WIP/R	EL	Rear Wiper and Washer
WIPER	EL	Front Wiper and Washer

NOTES