ELECTRICAL SYSTEM

SECTION EL

CONTENTS

CONTENTS (Cont'd)

CONTENTS (Cont'd)

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

NCEL0001

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to INFINITI G20 is as follows:

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

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses (except “SEAT BELT PRE-TENSIONER” connector) can be identified by yellow harness connector.**

Wiring Diagrams and Trouble Diagnosis

NCEL0002

When you read wiring diagrams, refer to the following:

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

When you perform trouble diagnosis, refer to the following:

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

Check for any Service bulletins before servicing the vehicle.

Description

NCEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

NCEL0003S01

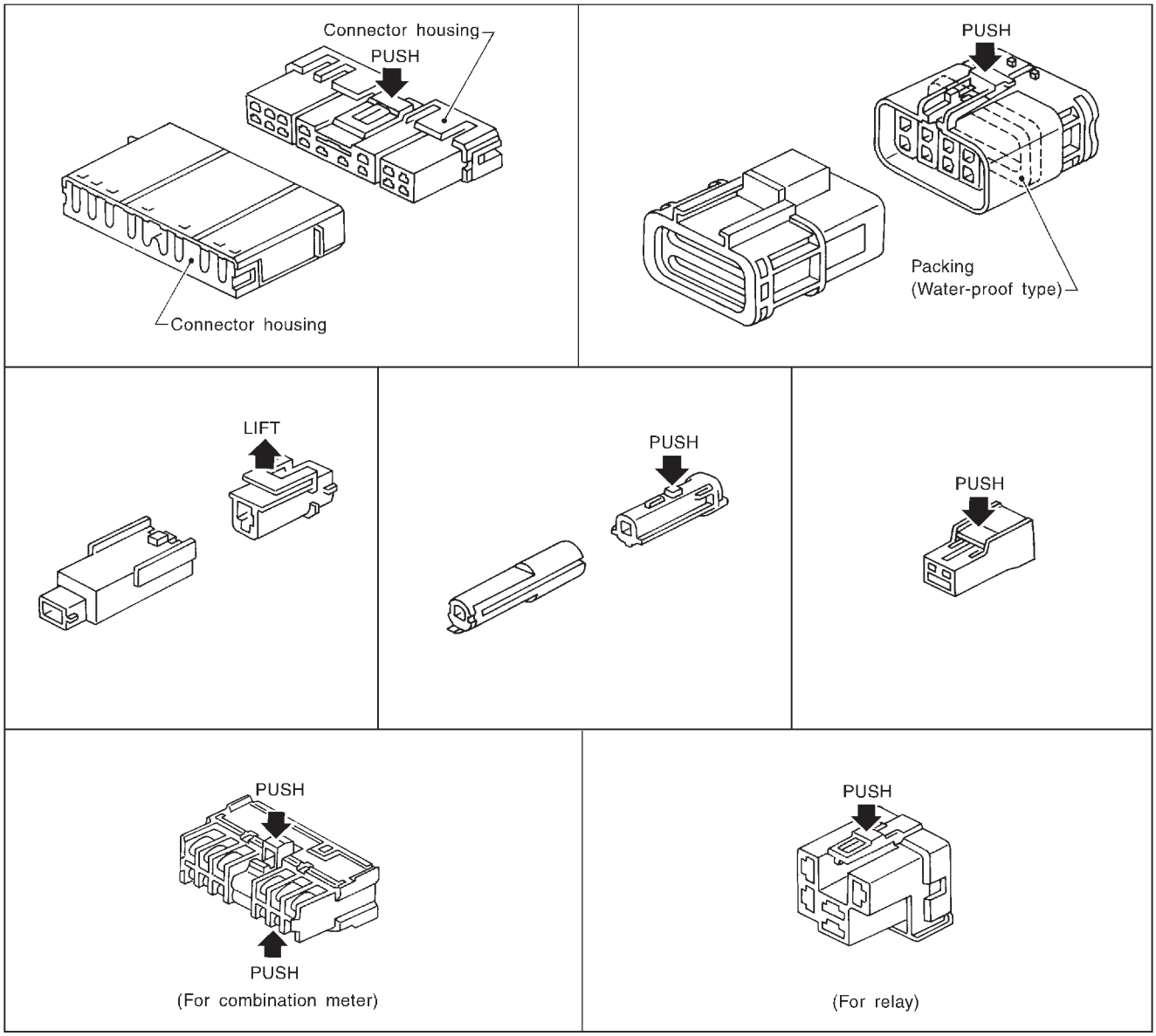
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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)

=NCEL0003S02

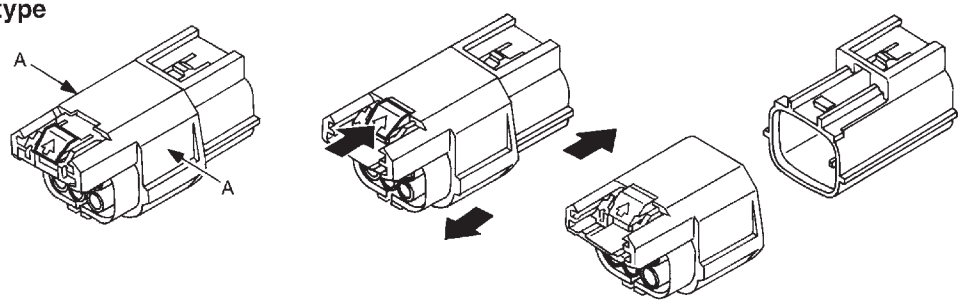
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

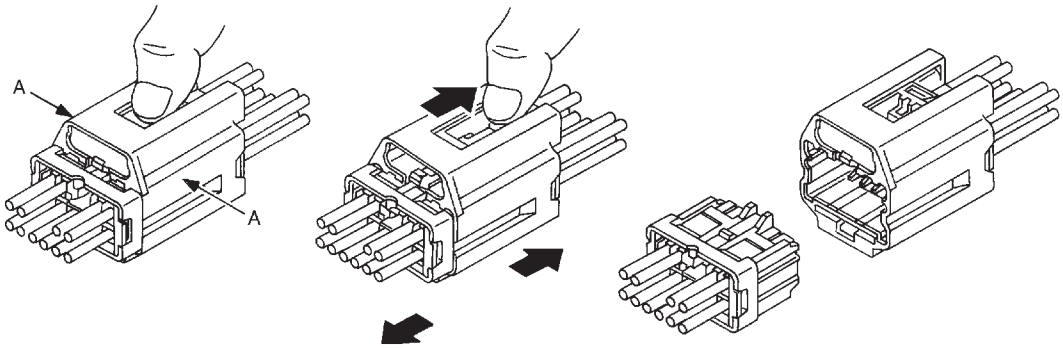


① Firmly grasp shell of connector housing at A.

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

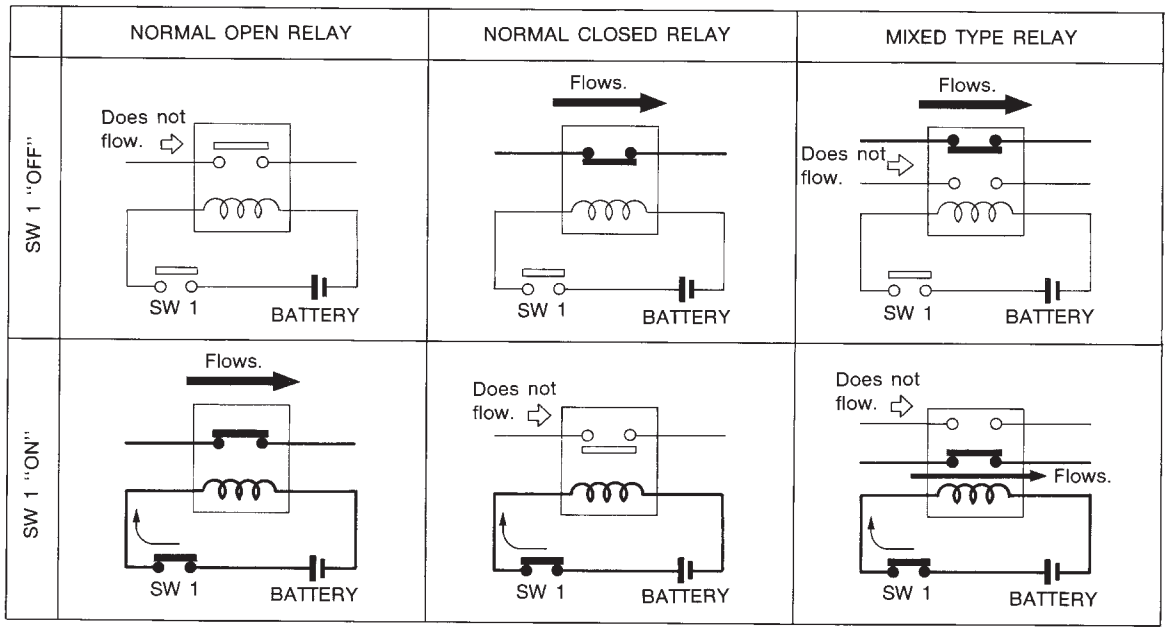
Description

NCEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NCEL0004S01

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

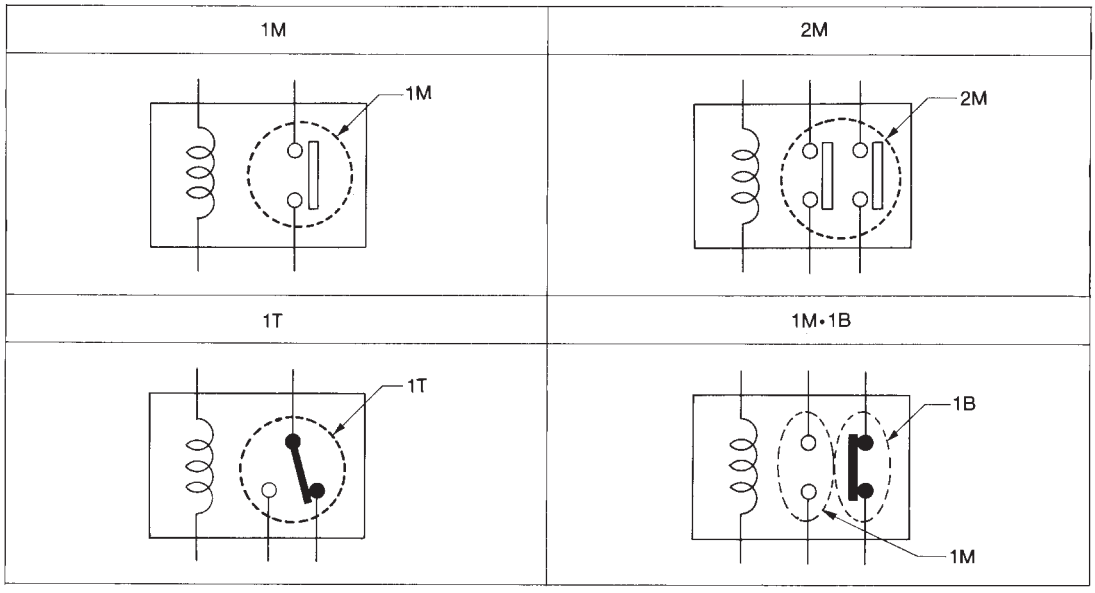


SEL881H

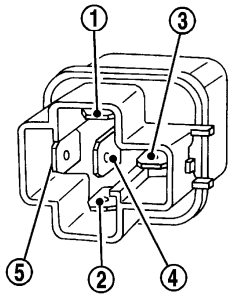
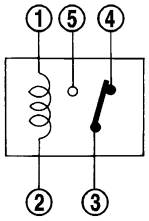
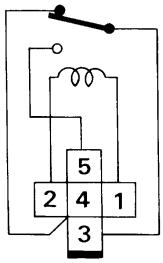
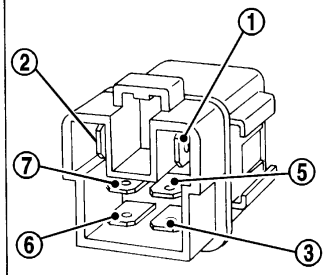
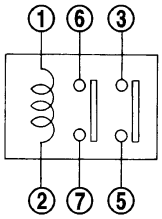
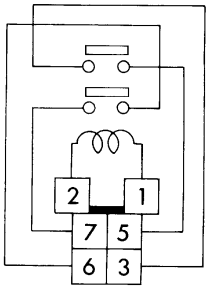
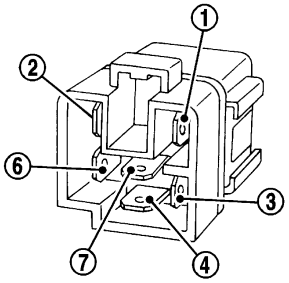
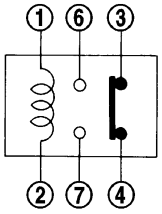
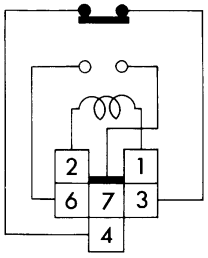
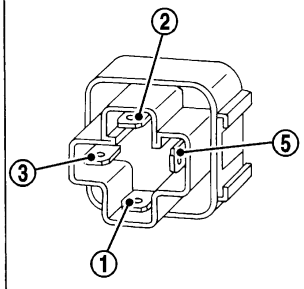
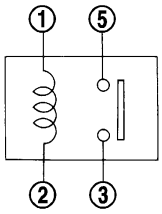
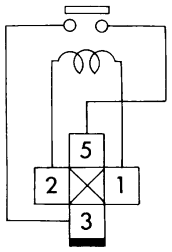
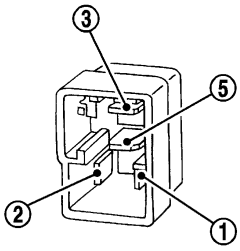
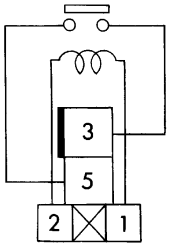
TYPE OF STANDARDIZED RELAYS

NCEL0004S02

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



SEL882H

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

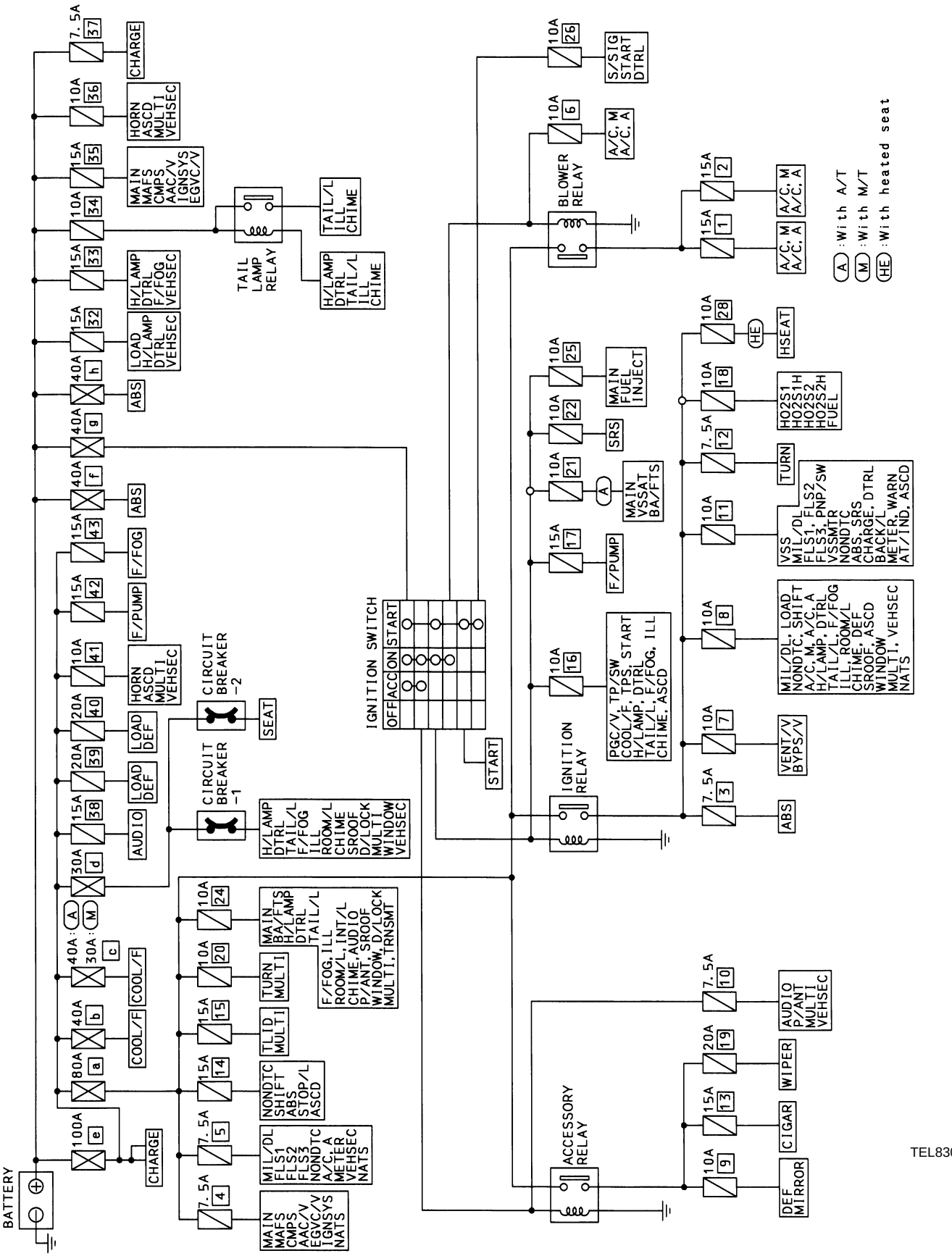
The arrangement of terminal numbers on the actual relays may differ from those shown above.

SEL188W

Schematic

NCEL0005

NOTE:
For detailed ground distribution information, refer to “GROUND DISTRIBUTION”, EL-18.



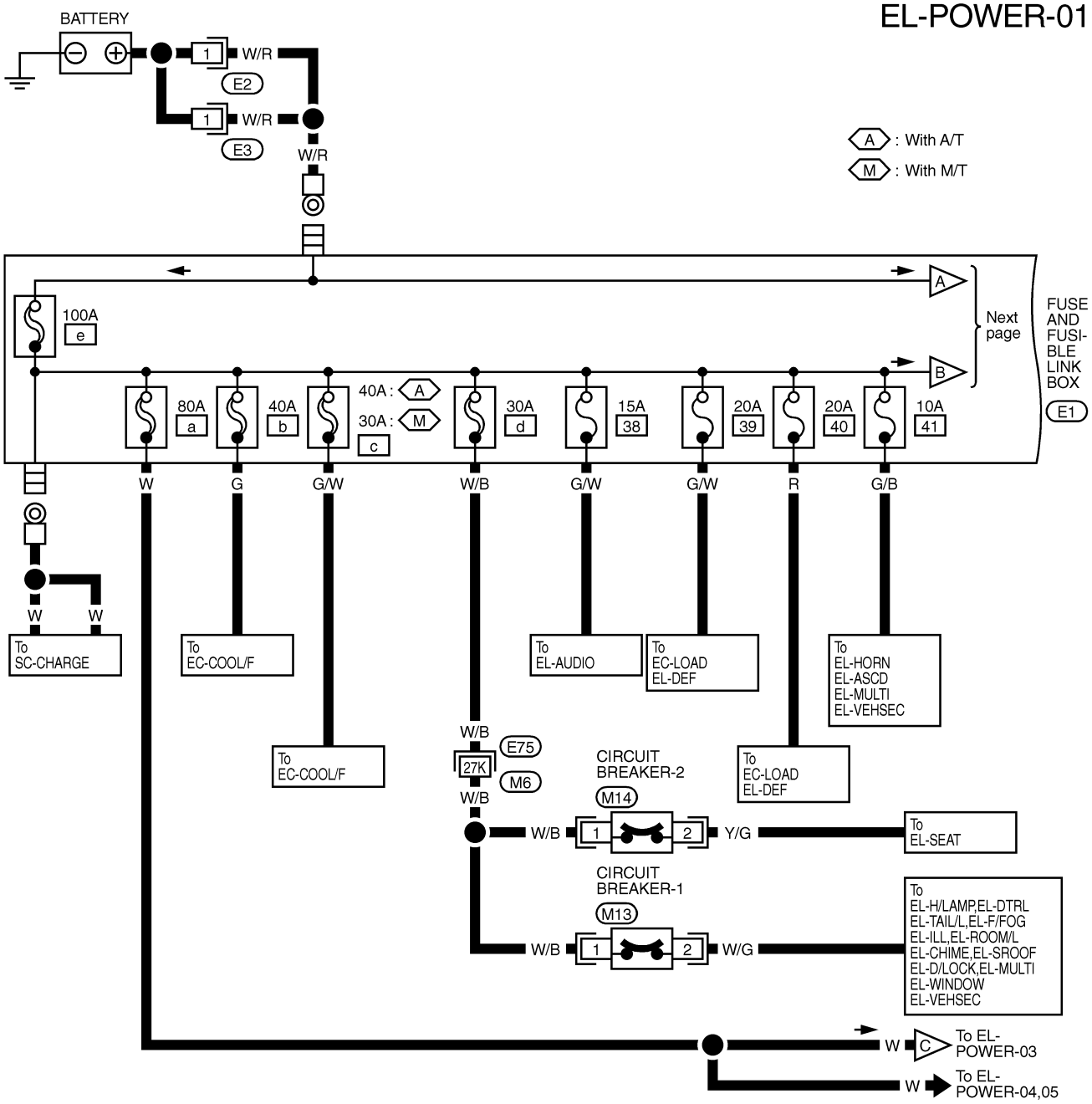
Wiring Diagram — POWER —

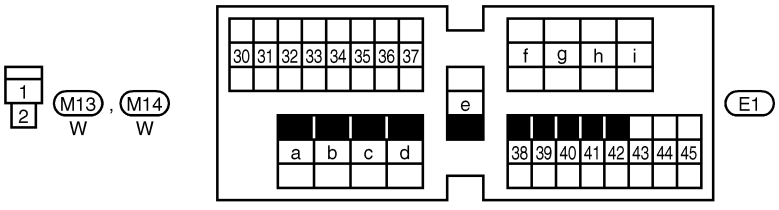
NCEL0006

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

NCEL0006S01

EL-POWER-01

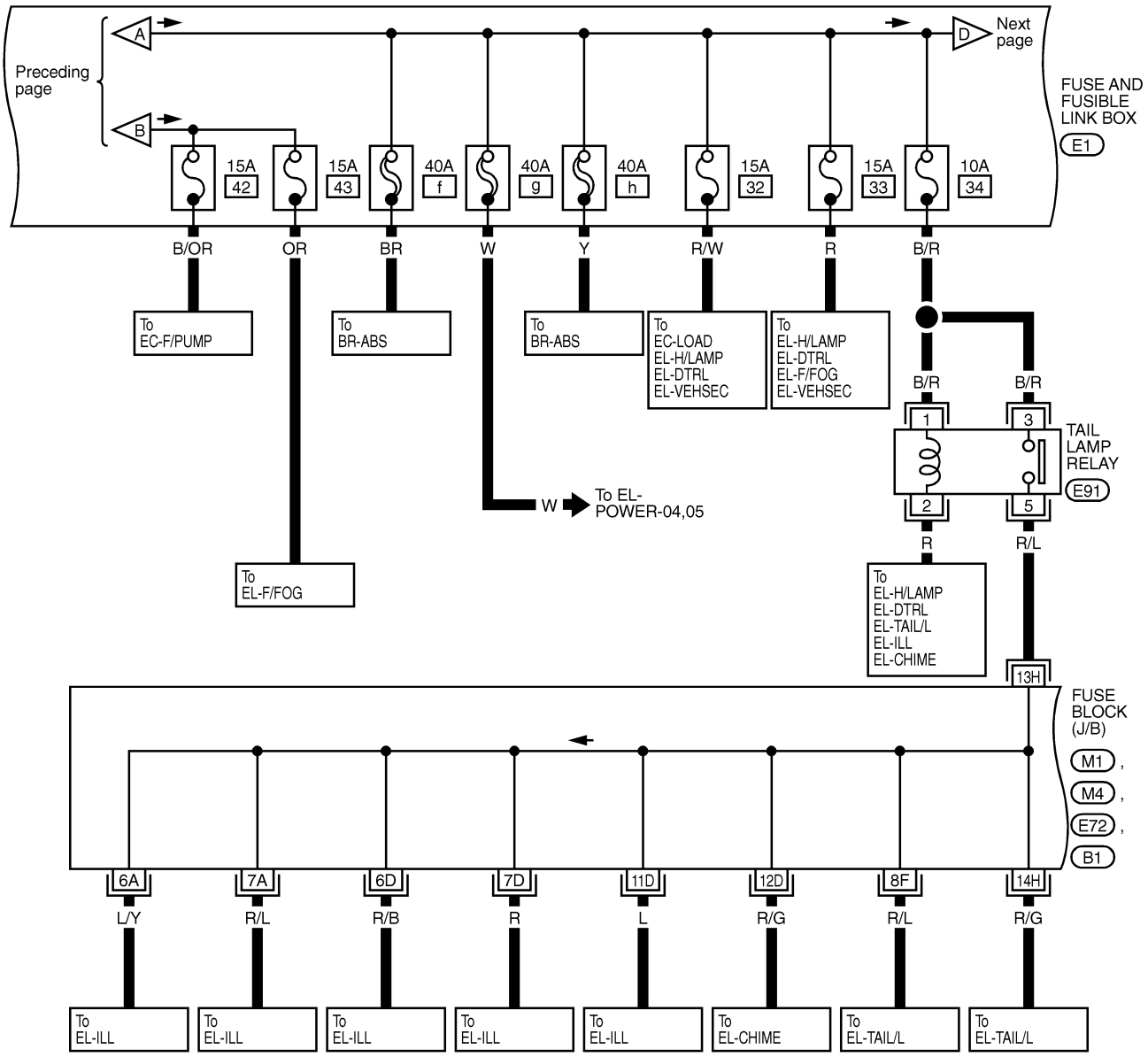


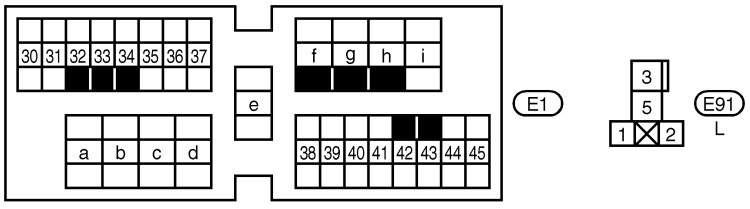


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

TEL831B

EL-POWER-02





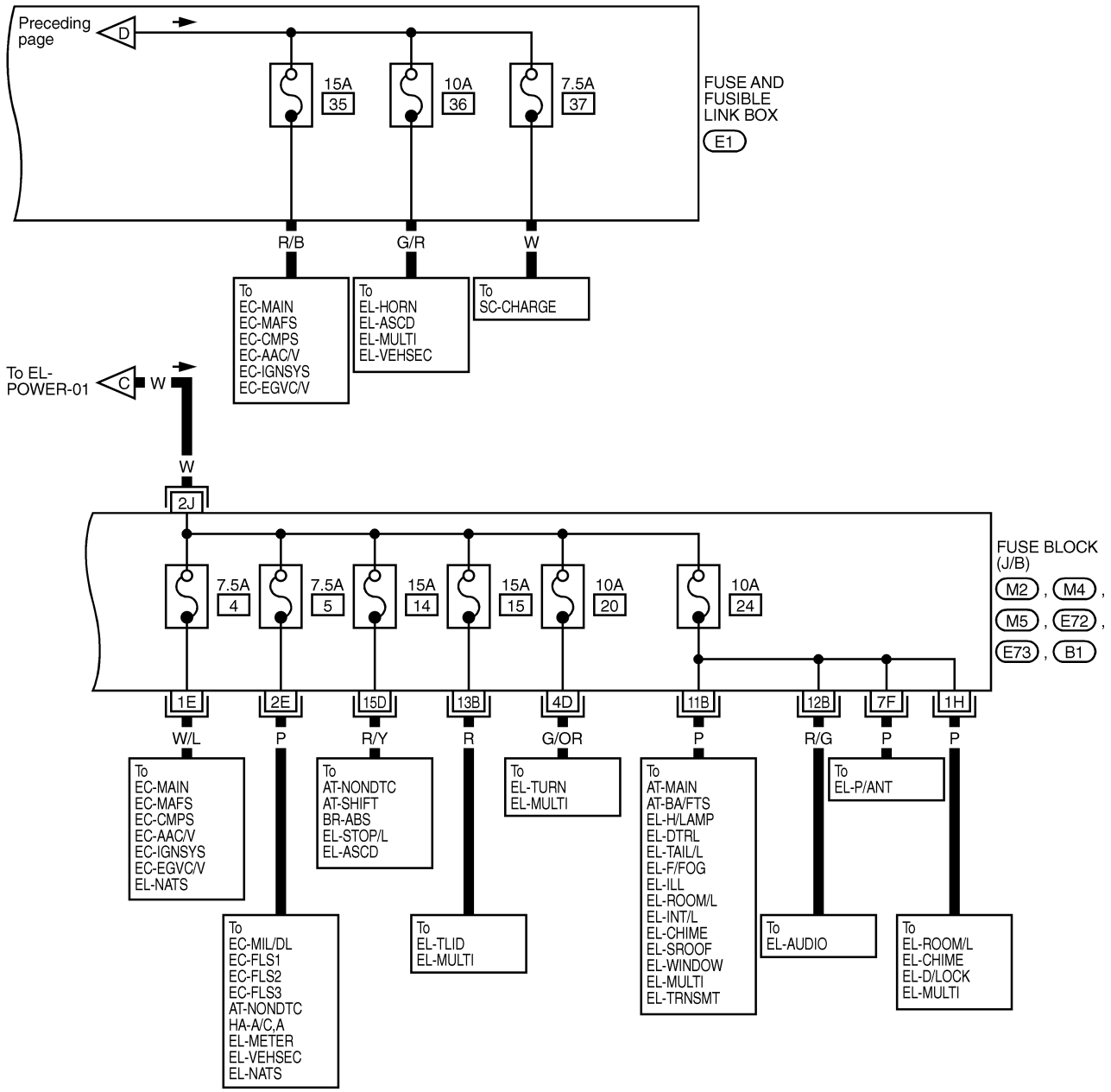
REFER TO THE FOLLOWING.

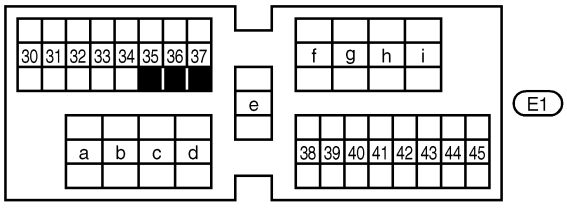
M1 , M4 , E72 , B1 -FUSE BLOCK-JUNCTION BOX (J/B)

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		

TEL766B

EL-POWER-03





REFER TO THE FOLLOWING.

M2, M4, M5, E72, E73, B1
-FUSE BLOCK-JUNCTION BOX (J/B)

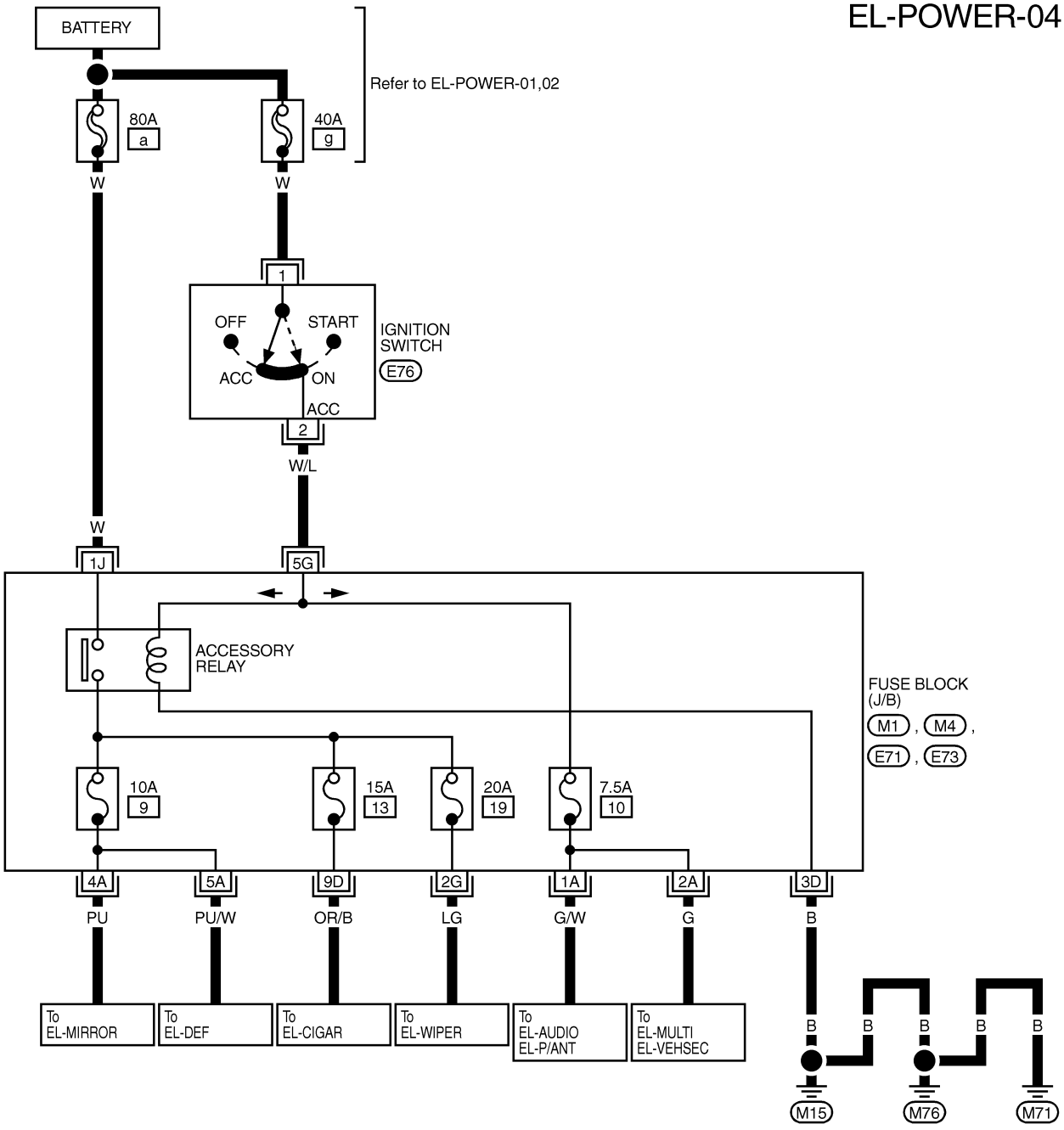
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

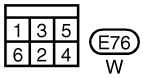
TEL832B

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

NCEL0006S02

EL-POWER-04





REFER TO THE FOLLOWING.

M1 , M4 , E71 , E73
-FUSE BLOCK-JUNCTION BOX (J/B)

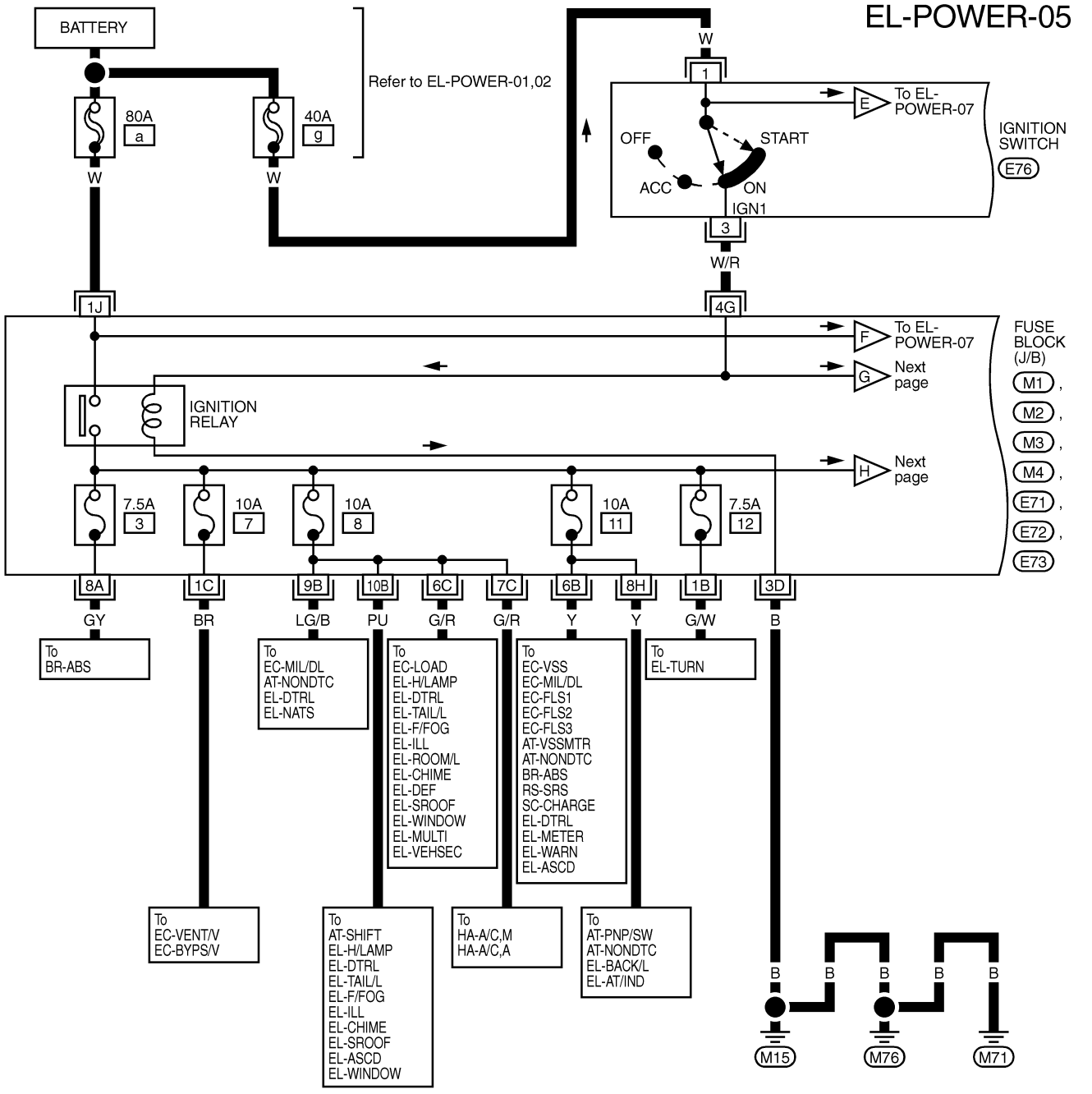
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

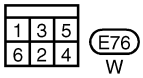
TEL768B

Wiring Diagram — POWER — (Cont'd)

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

NCEL0006S03





REFER TO THE FOLLOWING.

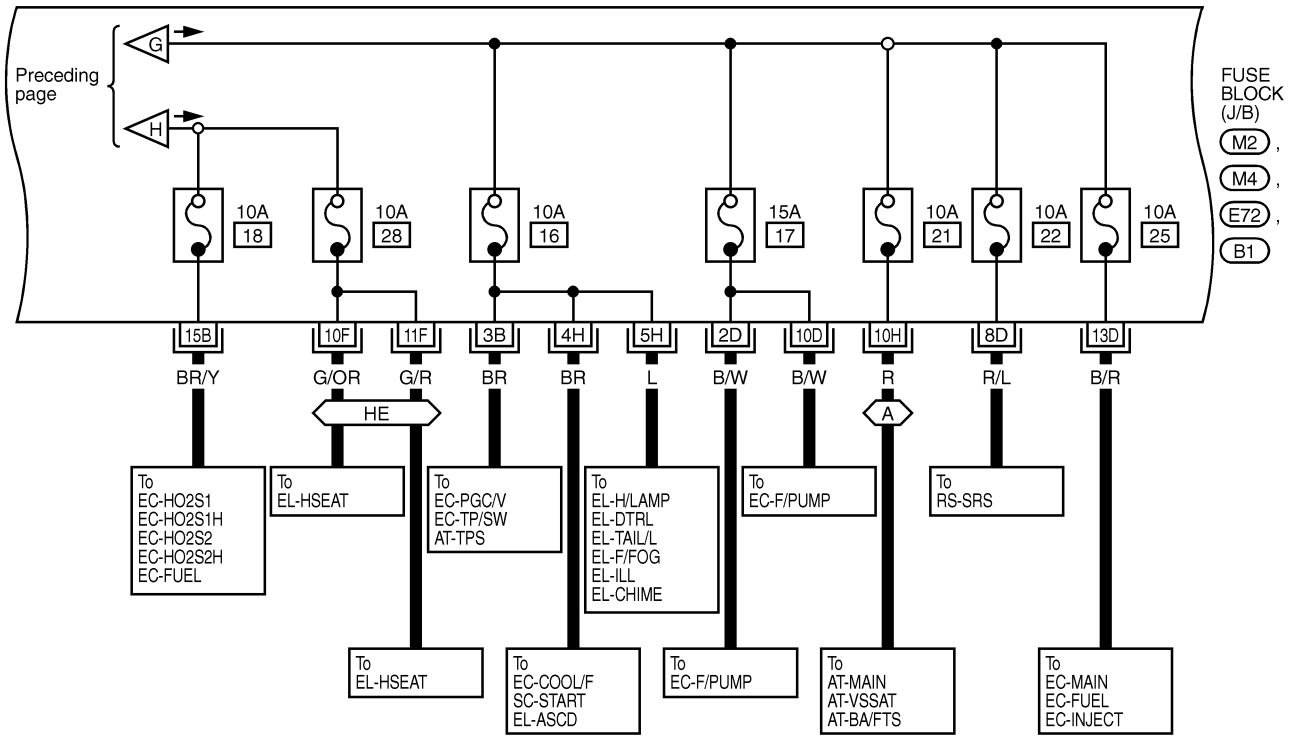
M1, M2, M3, M4
E71, E72, E73
-FUSE BLOCK-JUNCTION BOX (J/B)

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		

TEL865B

EL-POWER-06

A : With A/T
HE : With heated seat



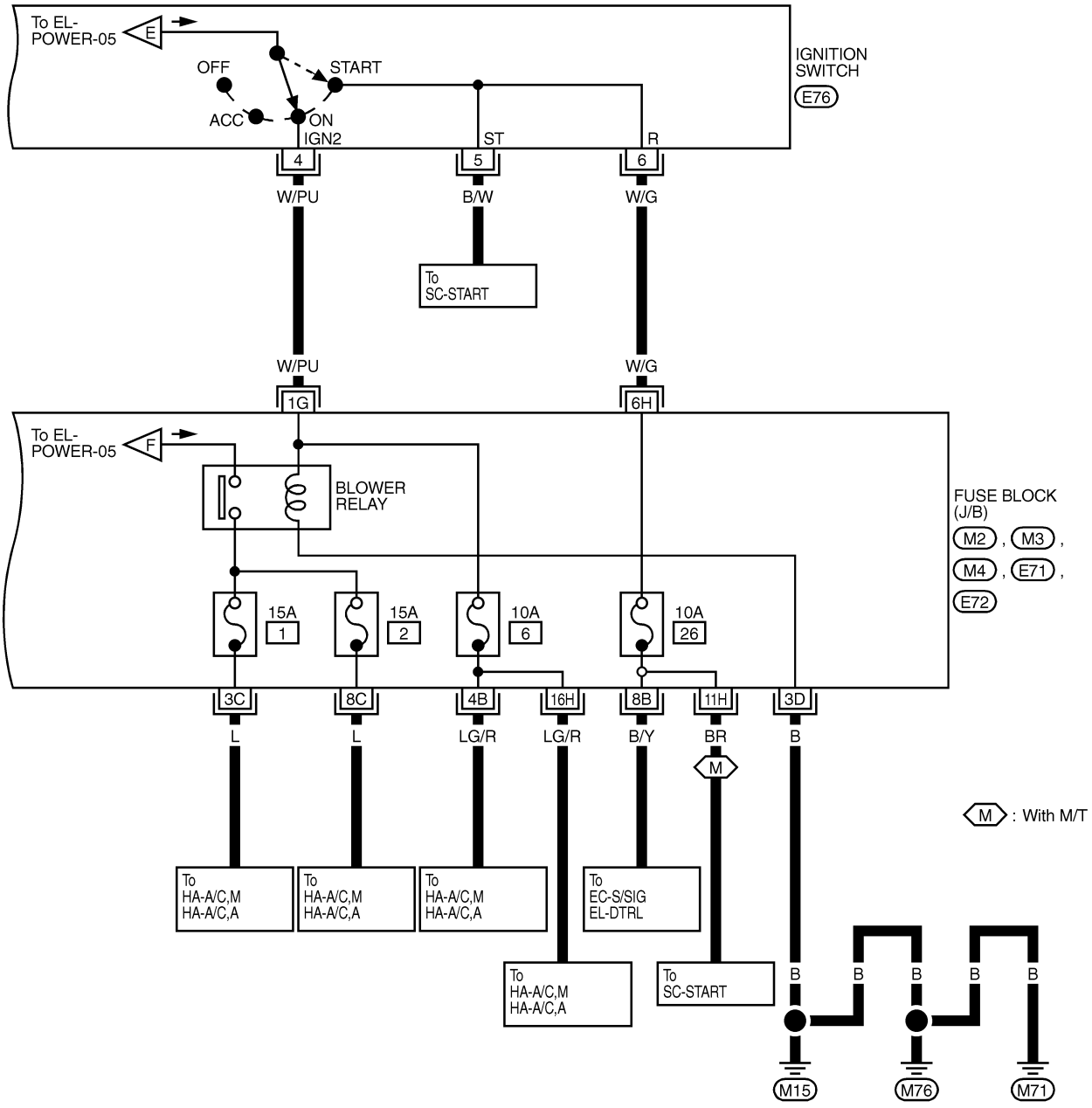
REFER TO THE FOLLOWING.

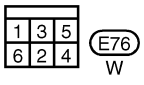
M2 , M4 , E72 , B1
-FUSE BLOCK-JUNCTION BOX (J/B)

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		

TEL770B

EL-POWER-07



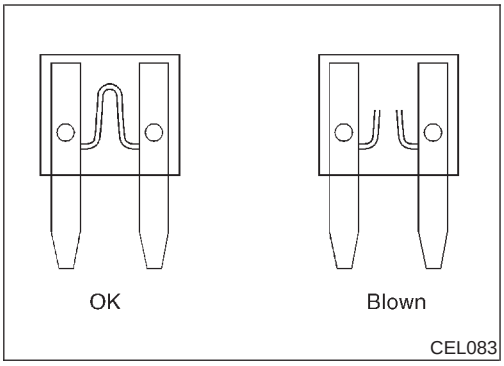


REFER TO THE FOLLOWING.

M2 , M3 , M4 , E71
E72 -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		

TEL473B



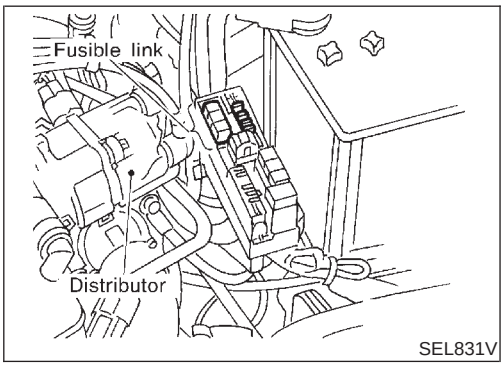
Inspection

NCEL0007

FUSE

NCEL0007S01

- **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.**



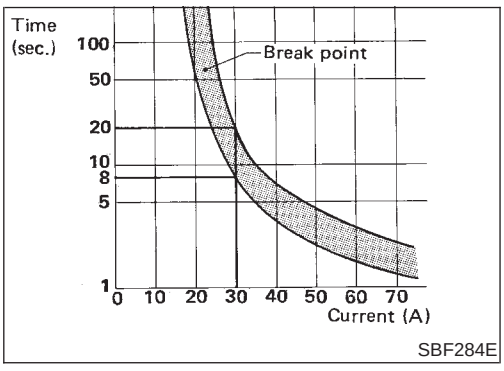
FUSIBLE LINK

NCEL0007S02

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

NCEL0007S03

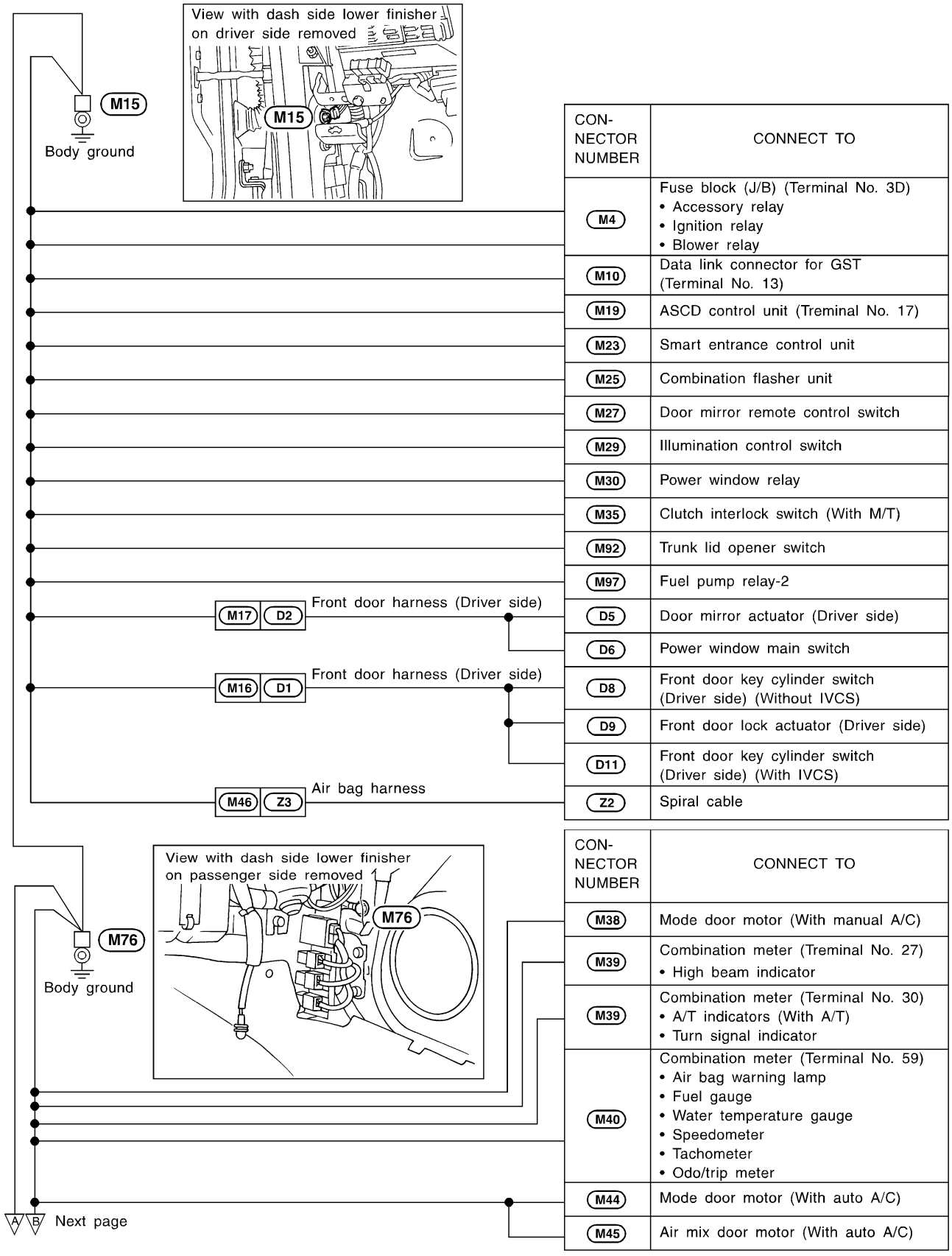
For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

Ground Distribution

NCEL0008

MAIN HARNESS

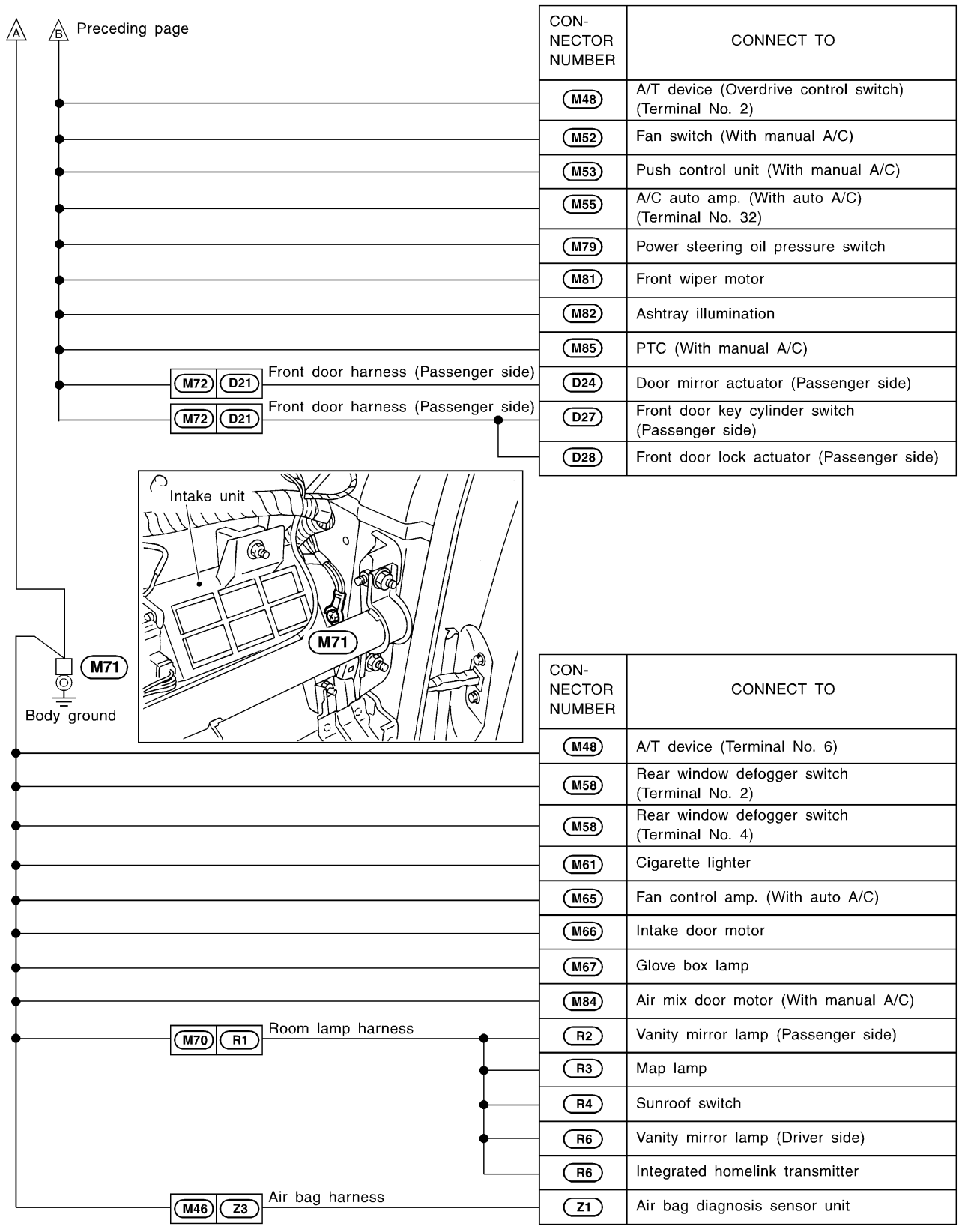
NCEL0008S01



CON-NECTOR NUMBER	CONNECT TO
M4	Fuse block (J/B) (Terminal No. 3D) • Accessory relay • Ignition relay • Blower relay
M10	Data link connector for GST (Terminal No. 13)
M19	ASCD control unit (Treminal No. 17)
M23	Smart entrance control unit
M25	Combination flasher unit
M27	Door mirror remote control switch
M29	Illumination control switch
M30	Power window relay
M35	Clutch interlock switch (With M/T)
M92	Trunk lid opener switch
M97	Fuel pump relay-2
D5	Door mirror actuator (Driver side)
D6	Power window main switch
D8	Front door key cylinder switch (Driver side) (Without IVCS)
D9	Front door lock actuator (Driver side)
D11	Front door key cylinder switch (Driver side) (With IVCS)
Z2	Spiral cable

CON-NECTOR NUMBER	CONNECT TO
M38	Mode door motor (With manual A/C)
M39	Combination meter (Treminal No. 27) • High beam indicator
M39	Combination meter (Terminal No. 30) • A/T indicators (With A/T) • Turn signal indicator
M40	Combination meter (Terminal No. 59) • Air bag warning lamp • Fuel gauge • Water temperature gauge • Speedometer • Tachometer • Odo/trip meter
M44	Mode door motor (With auto A/C)
M45	Air mix door motor (With auto A/C)

CEL342A



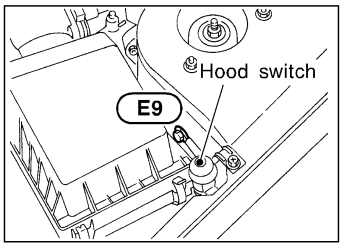
CONNECTOR NUMBER	CONNECT TO
M48	A/T device (Overdrive control switch) (Terminal No. 2)
M52	Fan switch (With manual A/C)
M53	Push control unit (With manual A/C)
M55	A/C auto amp. (With auto A/C) (Terminal No. 32)
M79	Power steering oil pressure switch
M81	Front wiper motor
M82	Ashtray illumination
M85	PTC (With manual A/C)
D24	Door mirror actuator (Passenger side)
D27	Front door key cylinder switch (Passenger side)
D28	Front door lock actuator (Passenger side)

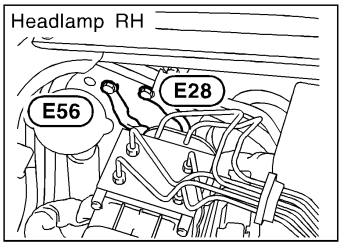
CONNECTOR NUMBER	CONNECT TO
M48	A/T device (Terminal No. 6)
M58	Rear window defogger switch (Terminal No. 2)
M58	Rear window defogger switch (Terminal No. 4)
M61	Cigarette lighter
M65	Fan control amp. (With auto A/C)
M66	Intake door motor
M67	Glove box lamp
M84	Air mix door motor (With manual A/C)
R2	Vanity mirror lamp (Passenger side)
R3	Map lamp
R4	Sunroof switch
R6	Vanity mirror lamp (Driver side)
R6	Integrated homelink transmitter
Z1	Air bag diagnosis sensor unit

CEL357A

ENGINE ROOM HARNESS

NCEL0008S02

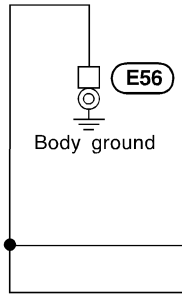




CONNECTOR NUMBER	CONNECT TO
M56	A/C auto amp. (For Canada) (Terminal No. 14)
E7	Hood switch
E13	Front side marker lamp LH
E14	Front fog lamp LH
E19	Cooling fan motor-1
E20	Cooling fan motor-2
E24	Headlamp RH
E31	Washer level switch
E43	Cooling fan relay-2
E79	Combination switch (Lighting switch) (Terminal No. 12)
E80	Combination switch (Front fog lamp switch) (Terminal No. 32)
E81	Combination switch (Front wiper switch) (Terminal No. 17)
E89	Headlamp battery saver control unit (Terminal No. 9)
E89	Headlamp battery saver control unit (Terminal No. 11)

CONNECTOR NUMBER	CONNECT TO
E4	Brake fluid lever switch
E10	Side turn signal lamp LH
E11	Front turn signal lamp LH
E16	Parking lamp LH
E17	Headlamp LH (For U.S.A.)
E25	Parking lamp RH
E26	Front fog lamp RH
E27	Front turn signal lamp RH
E29	Front side marker lamp RH
E32	Side turn signal lamp RH
E46	Cooling fan relay-3 (With A/T)
E83	Daytime light control unit (For Canada)
E88	Headlamp battery saver control unit (Terminal No. 3)
E88	Headlamp battery saver control unit (Terminal No. 4)
E119	Vehicle speed sensor
E120	Park/Neutral position switch (With M/T)
E125	Park/Neutral position switch (With A/T)

CEL343A

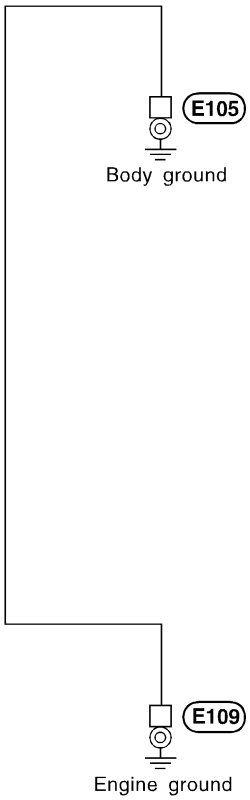


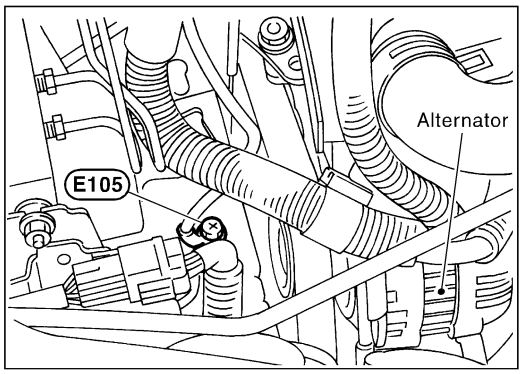
CONNECTOR NUMBER	CONNECT TO
E55	ABS actuator and electric unit (Terminal No. 16)
E55	ABS actuator and electric unit (Terminal No. 19)

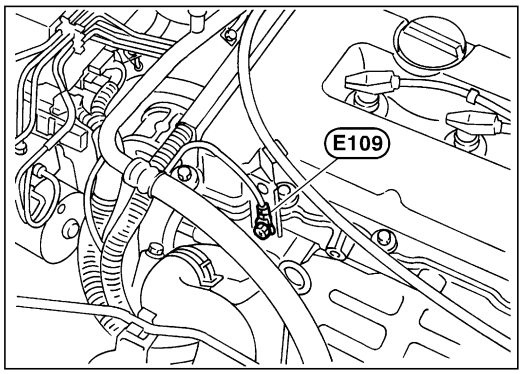
CEL265A

ENGINE HARNESS

NCEL0008S03



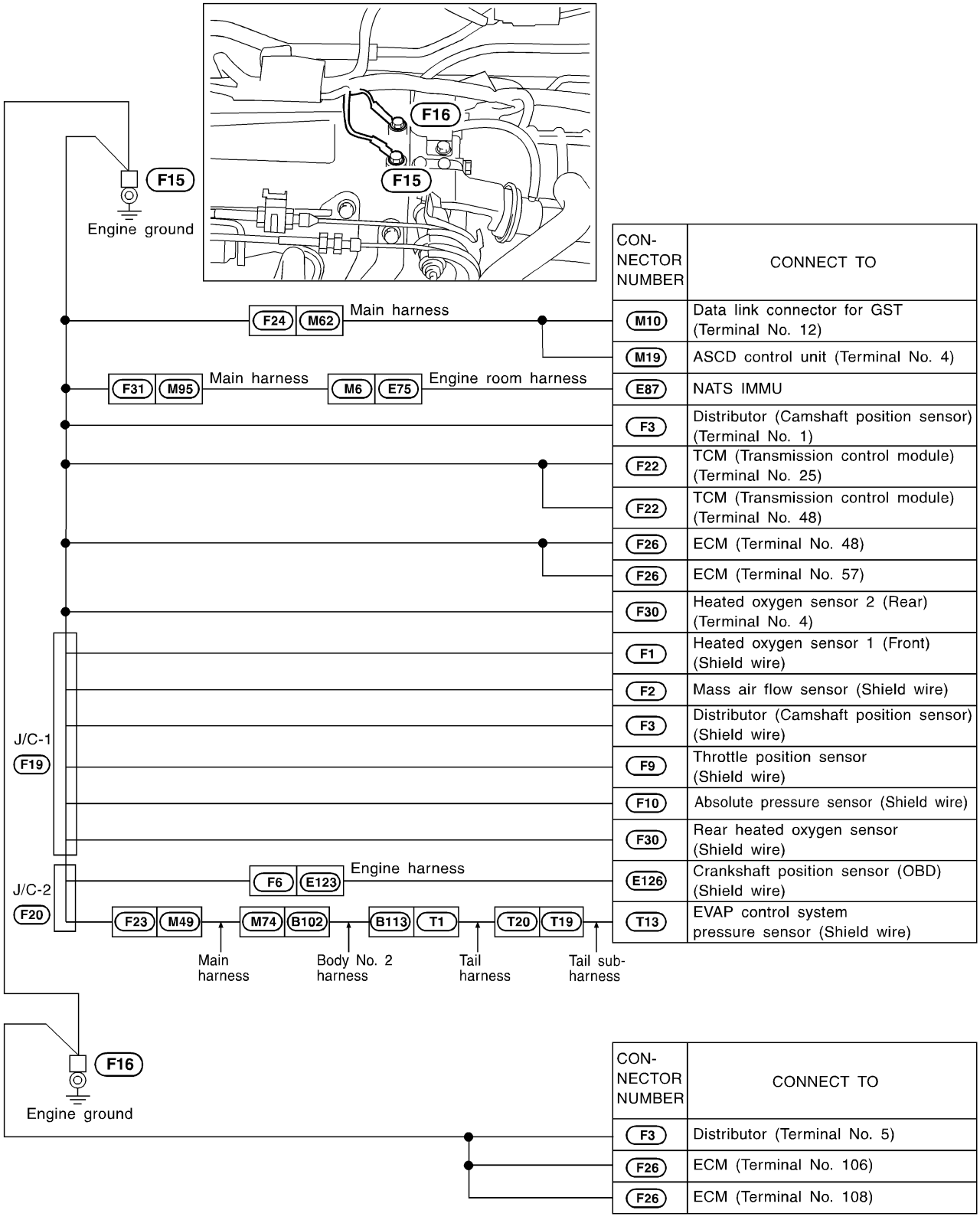




CEL164A

ENGINE CONTROL HARNESS

NCEL0008S04



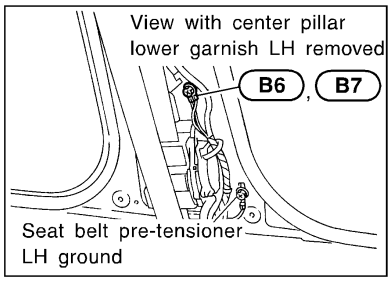
CONNECTOR NUMBER	CONNECT TO
M10	Data link connector for GST (Terminal No. 12)
M19	ASCD control unit (Terminal No. 4)
E87	NATS IMMU
F3	Distributor (Camshaft position sensor) (Terminal No. 1)
F22	TCM (Transmission control module) (Terminal No. 25)
F22	TCM (Transmission control module) (Terminal No. 48)
F26	ECM (Terminal No. 48)
F26	ECM (Terminal No. 57)
F30	Heated oxygen sensor 2 (Rear) (Terminal No. 4)
F1	Heated oxygen sensor 1 (Front) (Shield wire)
F2	Mass air flow sensor (Shield wire)
F3	Distributor (Camshaft position sensor) (Shield wire)
F9	Throttle position sensor (Shield wire)
F10	Absolute pressure sensor (Shield wire)
F30	Rear heated oxygen sensor (Shield wire)
E126	Crankshaft position sensor (OBD) (Shield wire)
T13	EVAP control system pressure sensor (Shield wire)

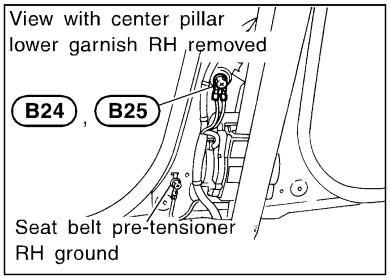
CONNECTOR NUMBER	CONNECT TO
F3	Distributor (Terminal No. 5)
F26	ECM (Terminal No. 106)
F26	ECM (Terminal No. 108)

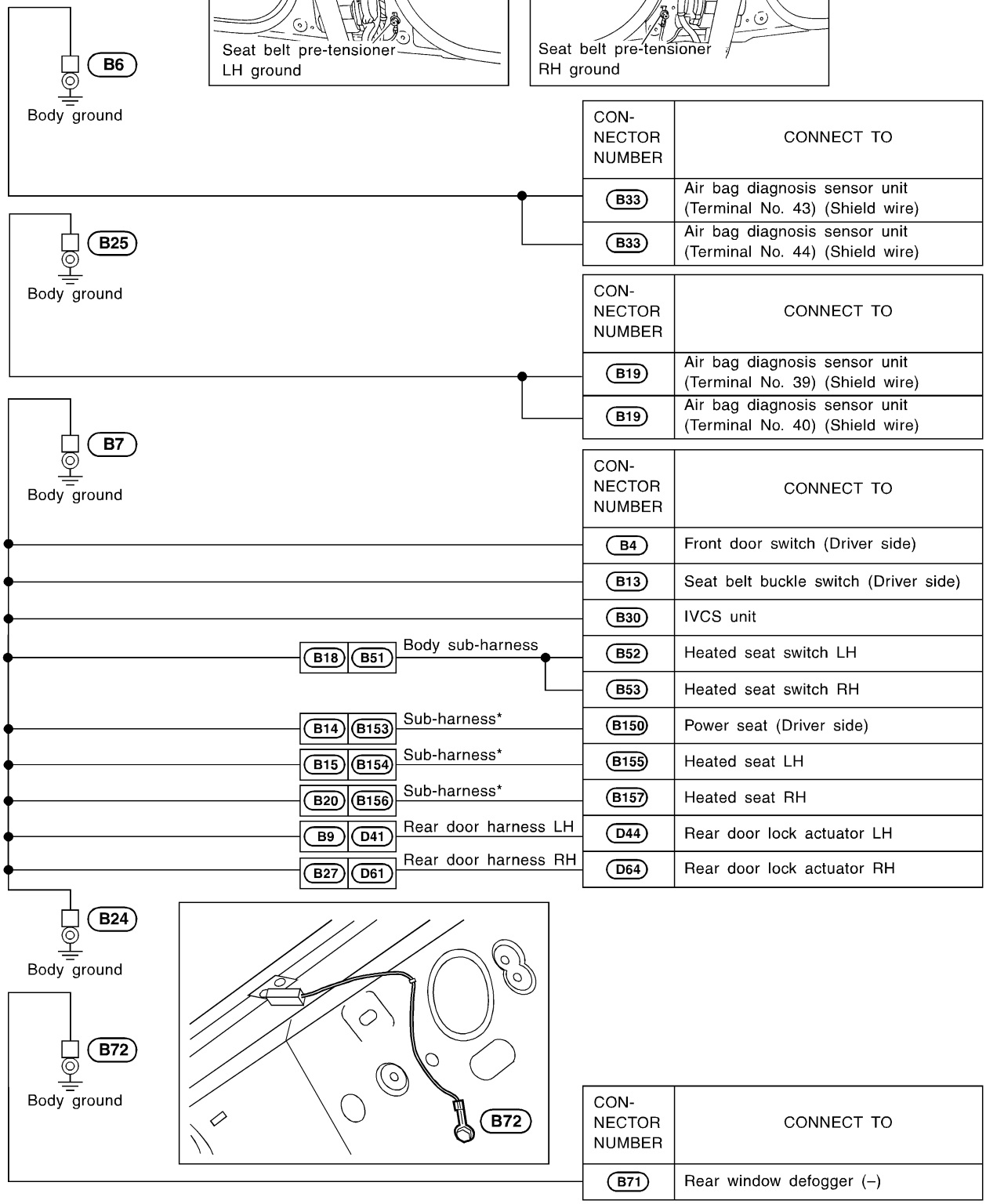
CEL268A

BODY HARNESS

NCEL0008S05







CONNECTOR NUMBER	CONNECT TO
B33	Air bag diagnosis sensor unit (Terminal No. 43) (Shield wire)
B33	Air bag diagnosis sensor unit (Terminal No. 44) (Shield wire)

CONNECTOR NUMBER	CONNECT TO
B19	Air bag diagnosis sensor unit (Terminal No. 39) (Shield wire)
B19	Air bag diagnosis sensor unit (Terminal No. 40) (Shield wire)

CONNECTOR NUMBER	CONNECT TO
B4	Front door switch (Driver side)
B13	Seat belt buckle switch (Driver side)
B30	IVCS unit
B52	Heated seat switch LH
B53	Heated seat switch RH
B150	Power seat (Driver side)
B155	Heated seat LH
B157	Heated seat RH
D44	Rear door lock actuator LH
D64	Rear door lock actuator RH

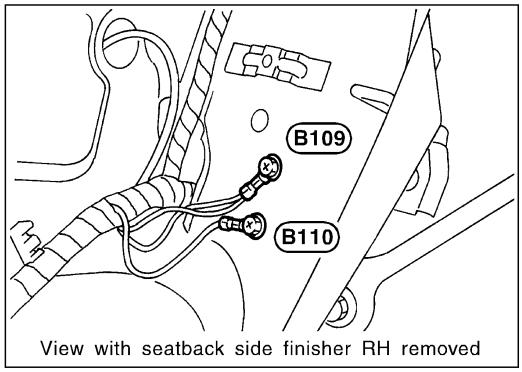
CONNECTOR NUMBER	CONNECT TO
B71	Rear window defogger (–)

* : This sub-harness is not shown in "HARNESS LAYOUT", EL section.

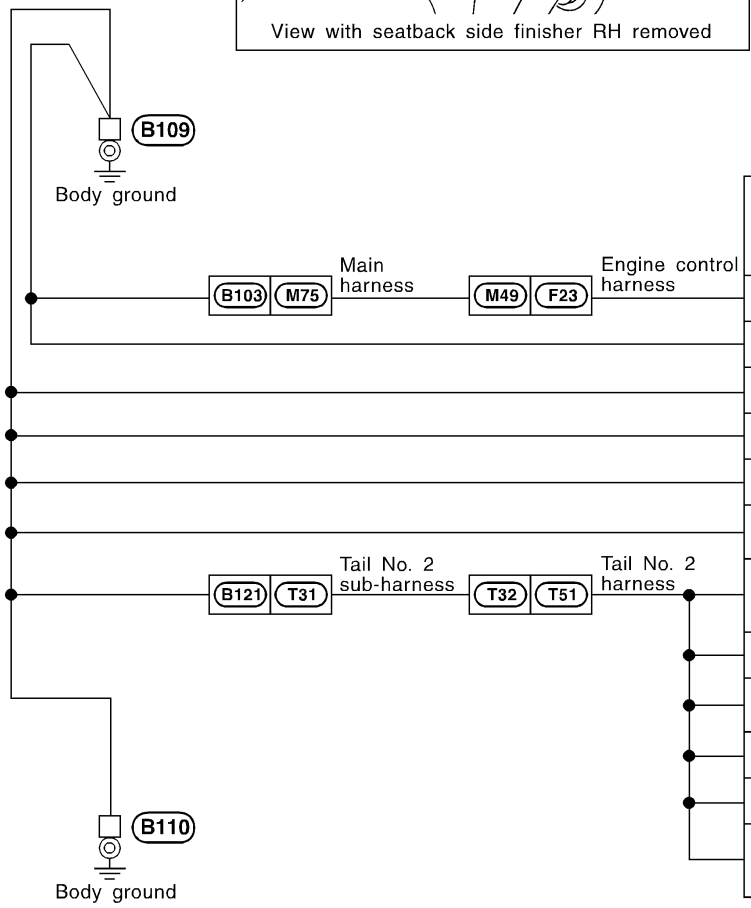
CEL344A

BODY NO. 2 HARNESS

NCEL0008S06



View with seatback side finisher RH removed

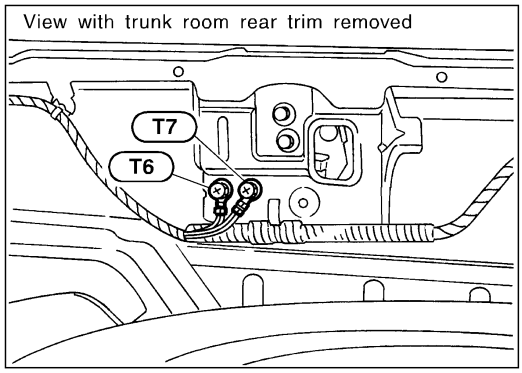


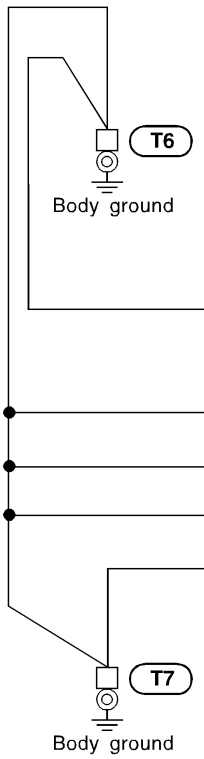
CONNECTOR NUMBER	CONNECT TO
F26	ECM (Terminal No. 90)
B107	Fuel level sensor unit
B106	Fuel pump
B112	Power antenna
B114	BOSE speaker amp.
B118	High-mounted stop lamp (Without rear spoiler)
T52	Rear combination lamp RH (Trunk lid) • Stop/Tail • Back-up
T53	Trunk lid key cylinder switch
T54	High-mounted stop lamp (With rear spoiler)
T55	Trunk room lamp switch
T56	License lamp
T57	Rear combination lamp LH (Trunk lid) • Stop/Tail • Back-up

CEL167A

TAIL HARNESS

NCEL0008S07



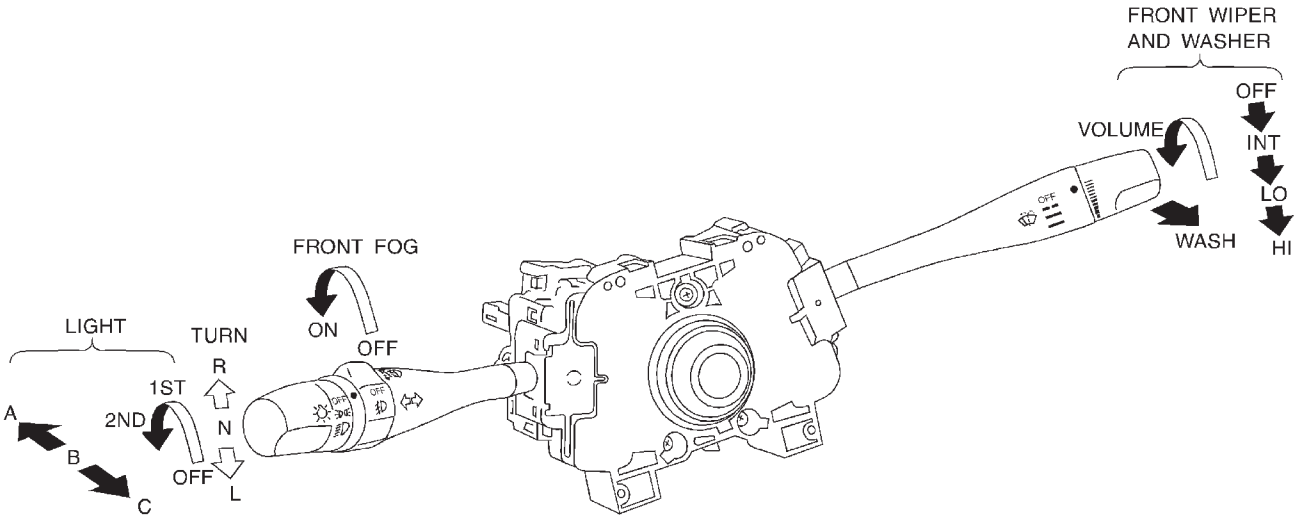


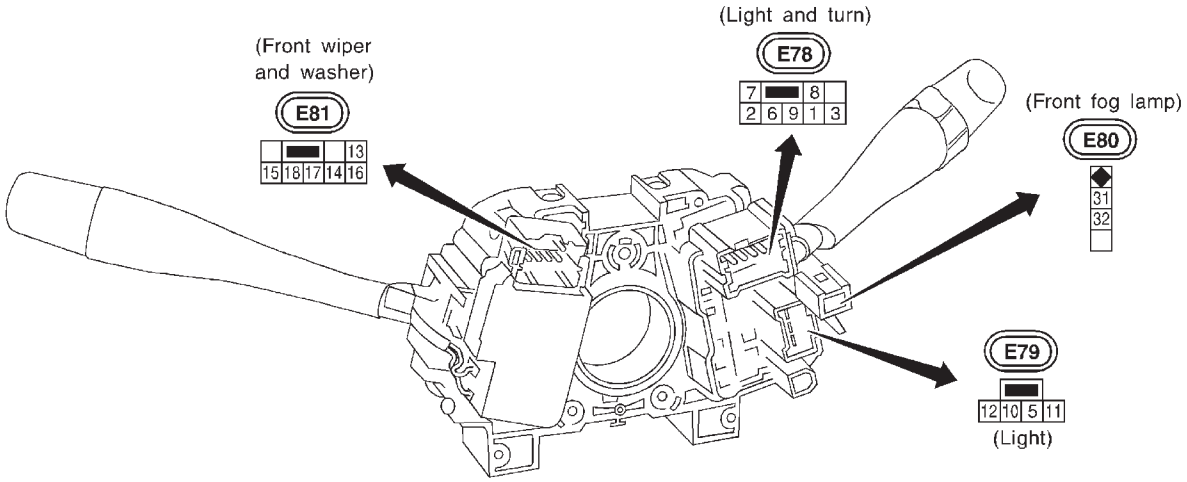
CON-NECTOR NUMBER	CONNECT TO
T3	Rear side marker lamp RH
T5	Rear combination lamp RH (Fender) (Stop/Tail)
T4	Rear combination lamp RH (Fender) (Turn signal)
T9	Rear combination lamp LH (Fender) (Turn signal)
T21	Trunk lid opener actuator
T8	Rear combination lamp LH (Fender) (Stop/Tail)
T10	Rear side marker lamp LH

CEL168A

Check

NCEL0009





FRONT WIPER AND WASHER SWITCH

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

VARIABLE INTERMITTENT WIPER VOLUME

WIPER AMP.

⑭ ⑮ ⑬ ⑯ ⑰ ⑱

LIGHTING SWITCH

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

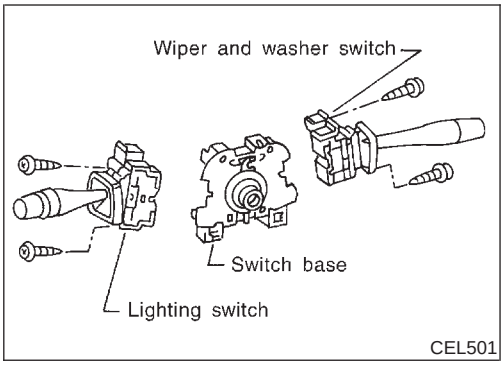
FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

TURN SIGNAL SWITCH

	L	N	R
1	○		○
2			○
3	○		

CEL940

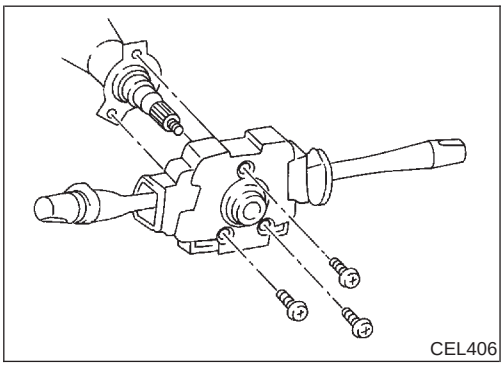


Replacement

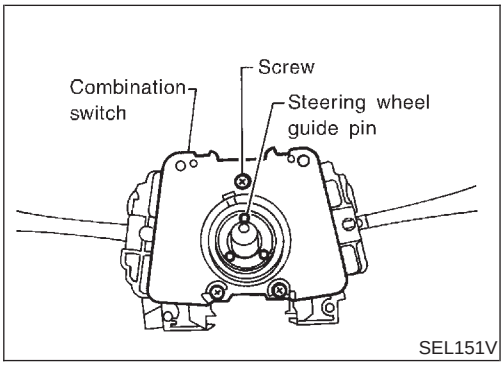
NCEL0010

For removal and installation of spiral cable, refer to RS-21 "Installation — Air Bag Module and Spiral Cable".

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



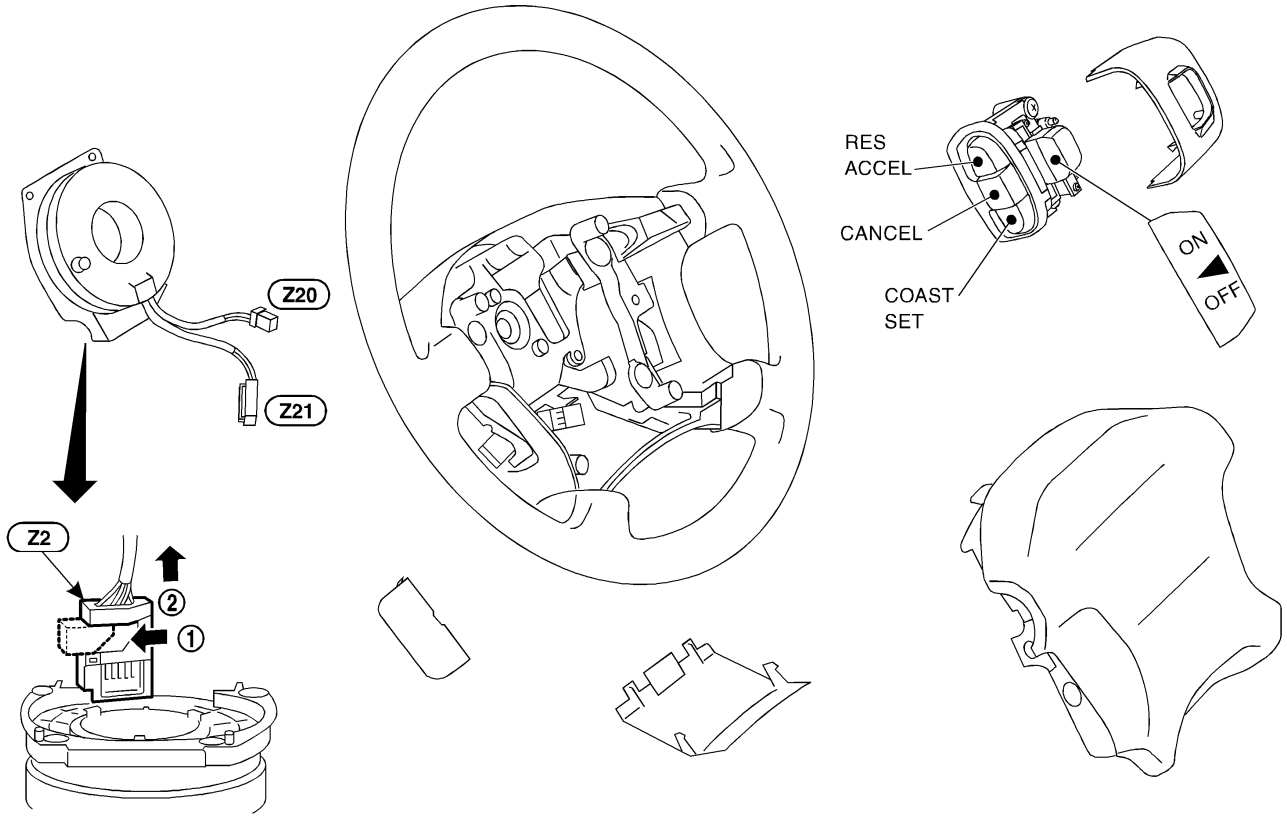
- To remove combination switch base, remove base attaching screw.

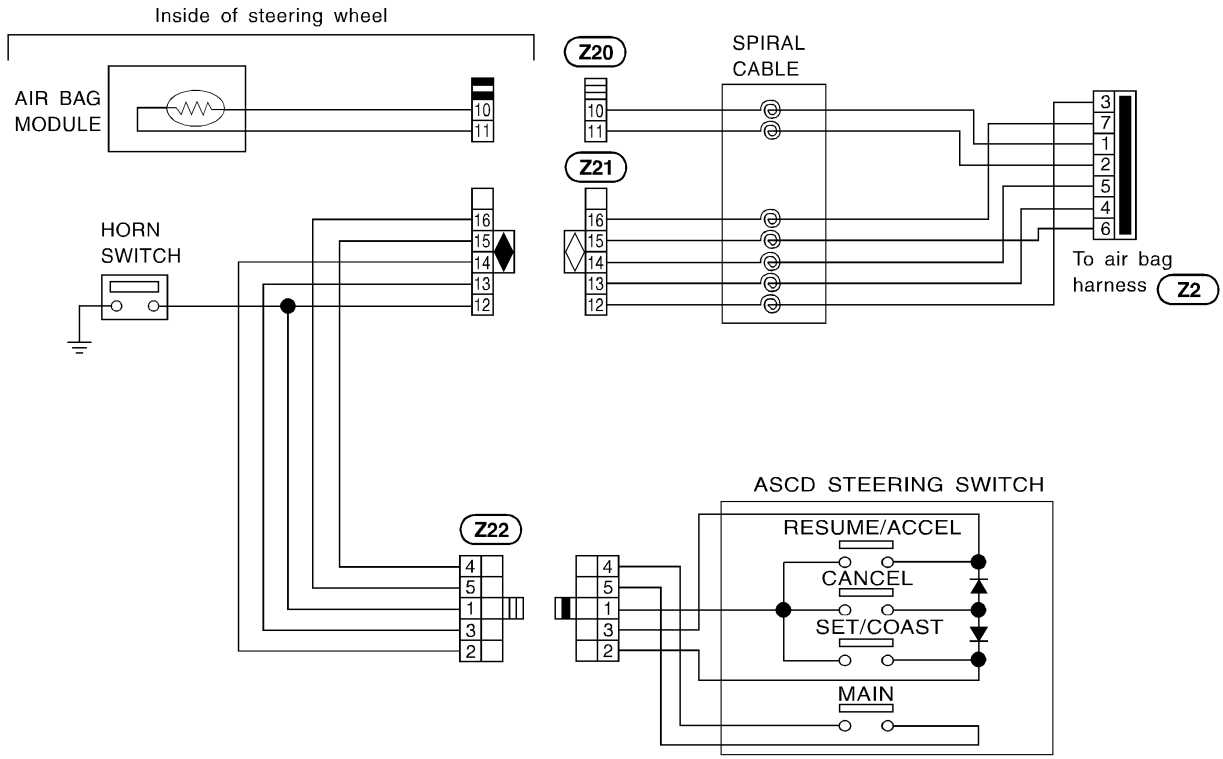


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NCEL0011

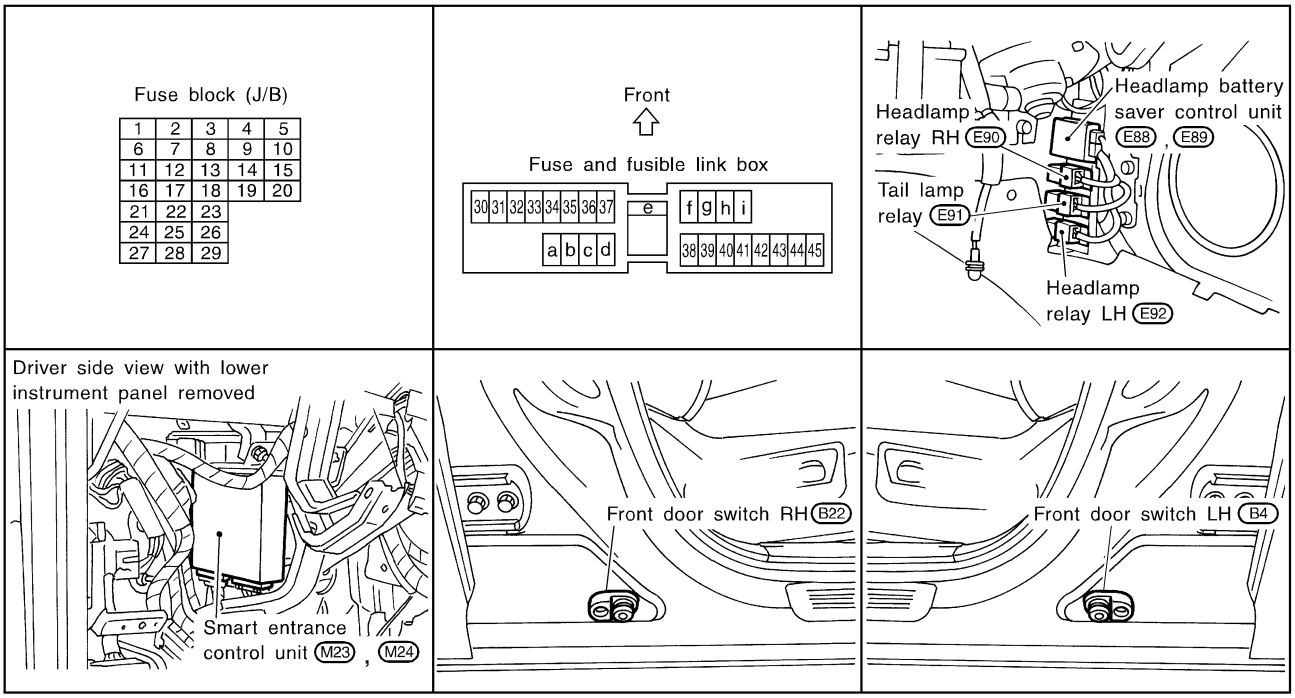




CEL170A

Component Parts and Harness Connector Location

NCEL0164



SEL665W

System Description

NCEL0012

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

OUTLINE

NCEL0012S04

Power is supplied at all times

- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 32, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 33, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 8, located in the fuse block (J/B)]

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

When Ignition Switch is in ON or START Position

NCEL0012S0401

Ground is supplied

- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- through body grounds E9 and E28, and
- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- through body grounds E9 and E28.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

NCEL0012S0402

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

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

And then, ground is also supplied to headlamp LH and RH relays terminal 2 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

LOW BEAM OPERATION

NCEL0012S01

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

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

Terminal 2 of each headlamp supplies ground through body grounds E9 and E28.
With power and ground supplied, the headlamp(s) will illuminate.

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NCEL0012S02

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

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

Ground is supplied to terminal 27 of the combination meter through body grounds M15, M71 and M76.
Terminal 2 of each headlamp supplies ground through body grounds E9 and E28.
With power and ground supplied, the high beams and the high beam indicator illuminate.

BATTERY SAVER CONTROL

NCEL0012S05

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

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 2 from headlamp battery saver control unit terminals 2 and 8
- through headlamp battery saver control unit terminals 3 and 9, and
- through body grounds E9 and E28.

Then headlamps illuminate again.

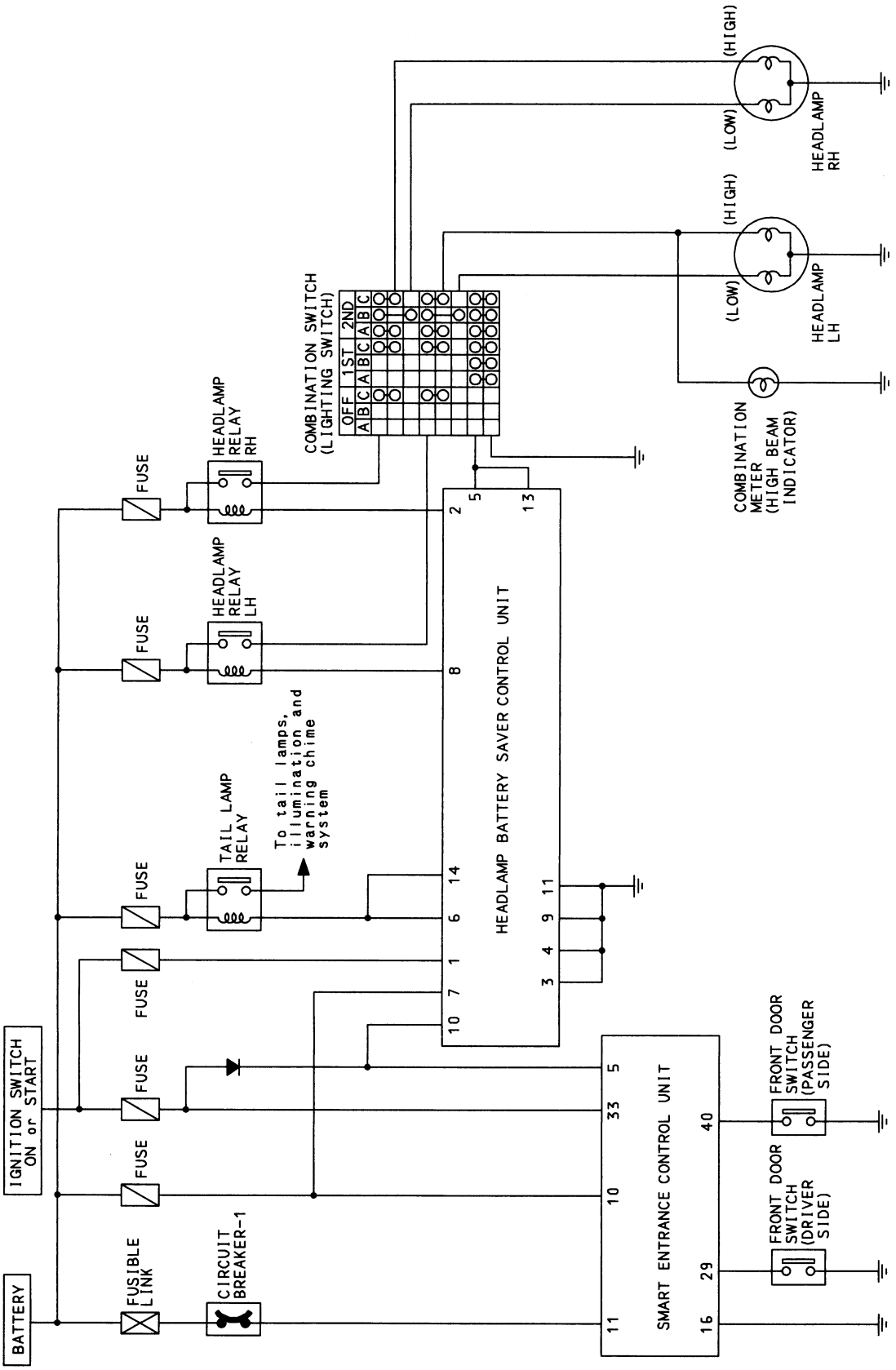
VEHICLE SECURITY SYSTEM

NCEL0012S03

The vehicle security system will flash the high beams if the system is triggered. Refer to "VEHICLE SECURITY (THEFT WARNING) SYSTEM" (EL-216).

Schematic

NCEL0165

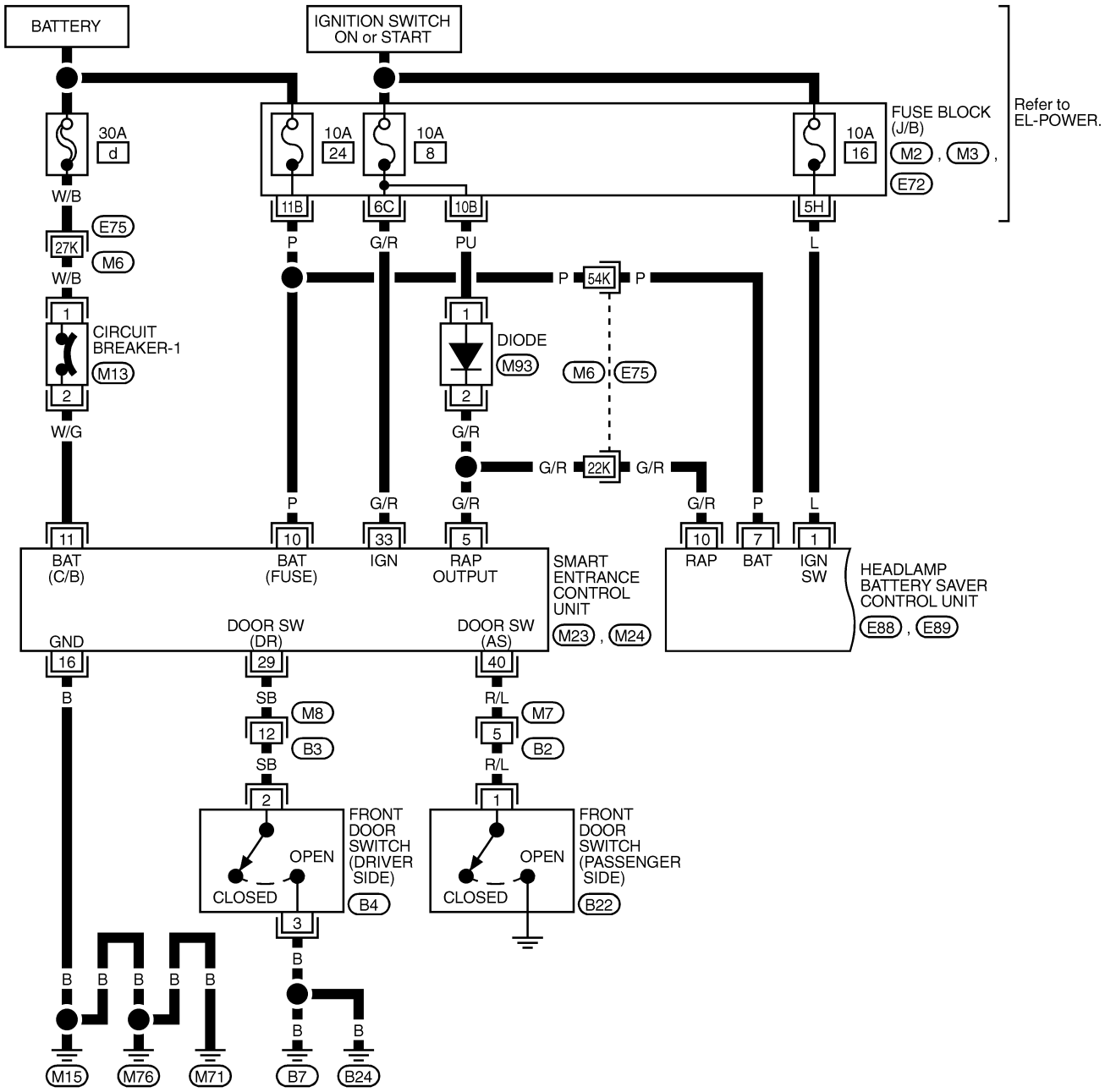


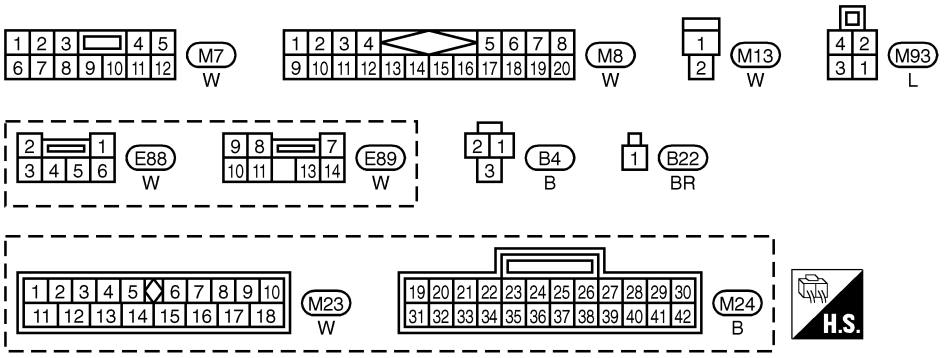
TEL474B

Wiring Diagram — H/LAMP —

NCEL0013

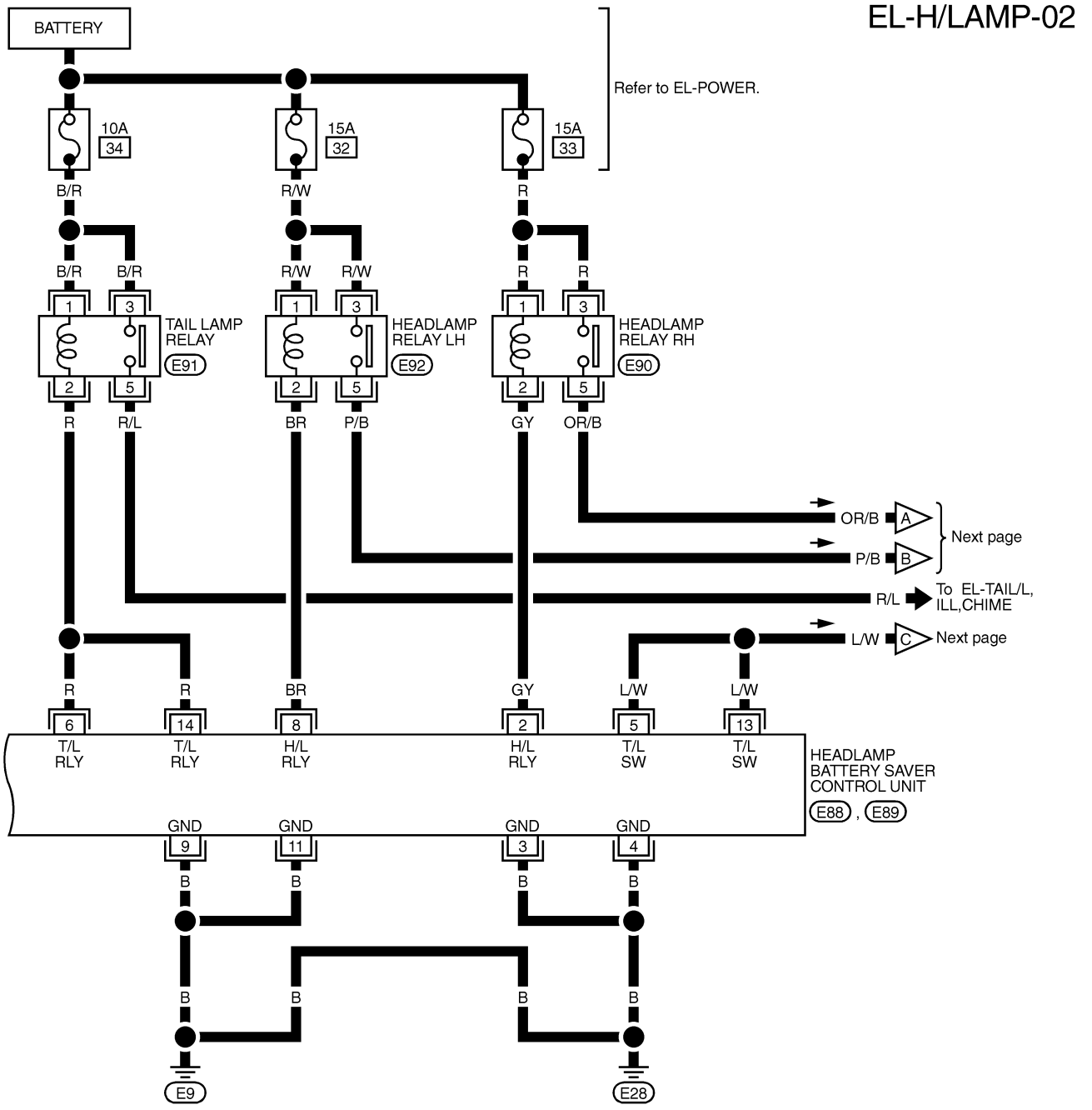
EL-H/LAMP-01

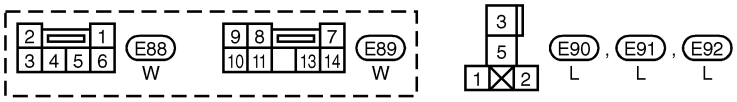




REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

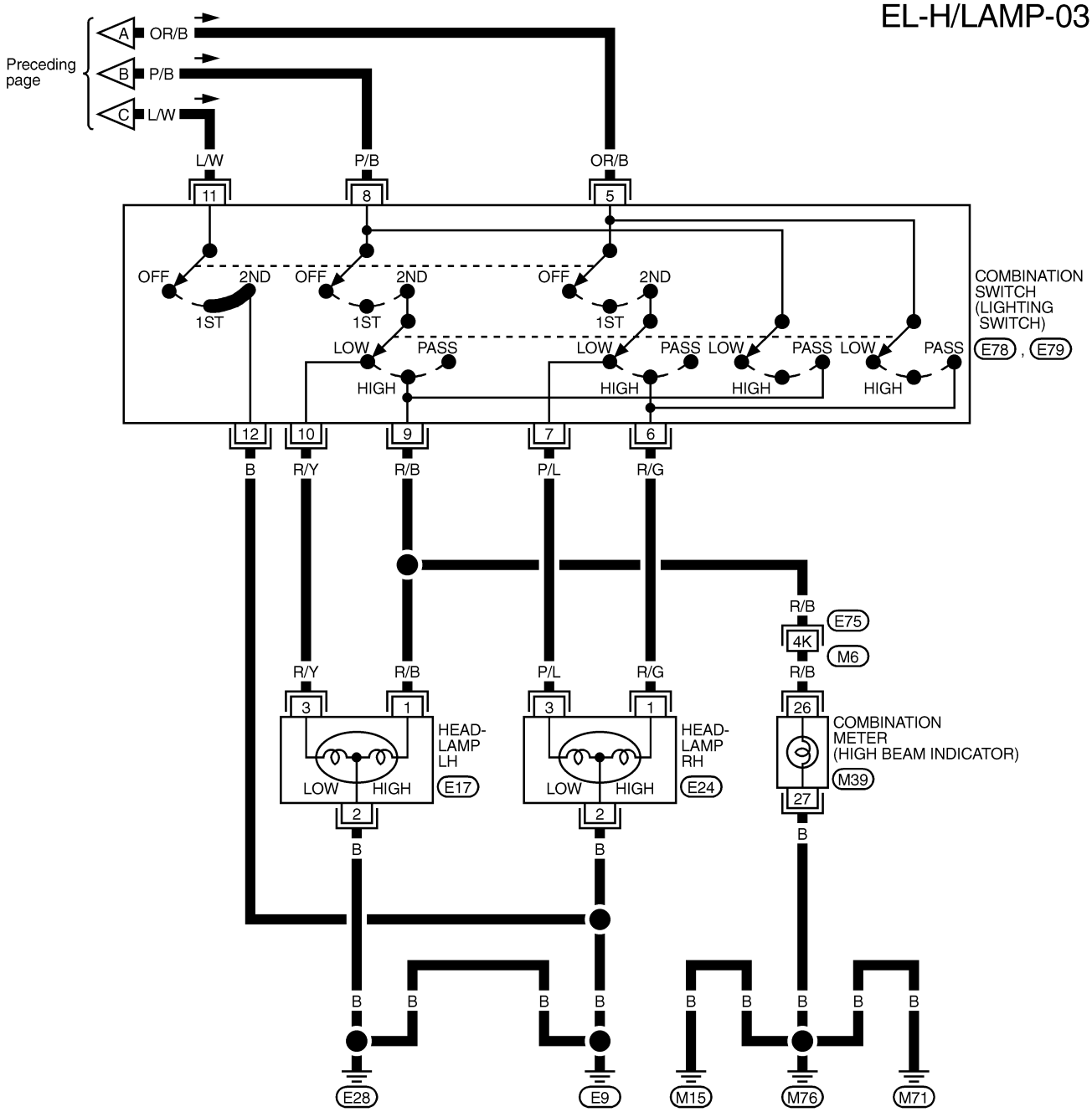
TEL833B

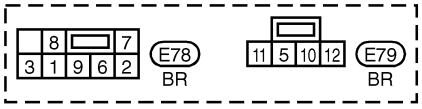

EL-H/LAMP-02
BATTERY
Refer to EL-POWER.
10A
34
15A
32
15A
33
B/R
R/W
R
TAIL LAMP
RELAY
E91
HEADLAMP
RELAY LH
E92
HEADLAMP
RELAY RH
E90
R
R/L
BR
P/B
GY
OR/B
OR/B
A
Next page
P/B
B
R/L
To EL-TAIL/L,
ILL,CHIME
L/W
C
Next page
T/L
RLY
T/L
RLY
H/L
RLY
H/L
RLY
T/L
SW
T/L
SW
HEADLAMP
BATTERY SAVER
CONTROL UNIT
E88 , E89
GND
B
E9
E28


E88
W
E89
W
E90 , E91 , E92
L
L
L

TEL476B

EL-H/LAMP-03





REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

TEL834B

Trouble Diagnoses

NCEL0014

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check Lighting switch. 3. Check headlamp battery saver control unit.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. Bulb 2. LH headlamp ground circuit 3. 15A fuse 4. Headlamp LH relay 5. Headlamp LH relay circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between LH headlamp and ground. 3. Check 15A fuse (No. 32, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp LH relay. 4. Check headlamp LH relay. 5. Check harness between headlamp LH relay and lighting switch. Check harness between headlamp LH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. Bulb 2. RH headlamp ground circuit 3. 15A fuse 4. Headlamp RH relay 5. Headlamp RH relay circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between RH headlamp and ground. 3. Check 15A fuse (No. 33, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp RH relay. 4. Check headlamp RH relay. 5. Check harness between headlamp RH relay and lighting switch. Check harness between headlamp RH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/B wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam does operate.	1. Bulb 2. Open in LH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam does operate.	1. Bulb 2. Open in RH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/G wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam does operate.	1. Bulb 2. Open in RH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check P/L wire between lighting switch and RH headlamp 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 R/B wire between lighting switch and combination meter for an open circuit.

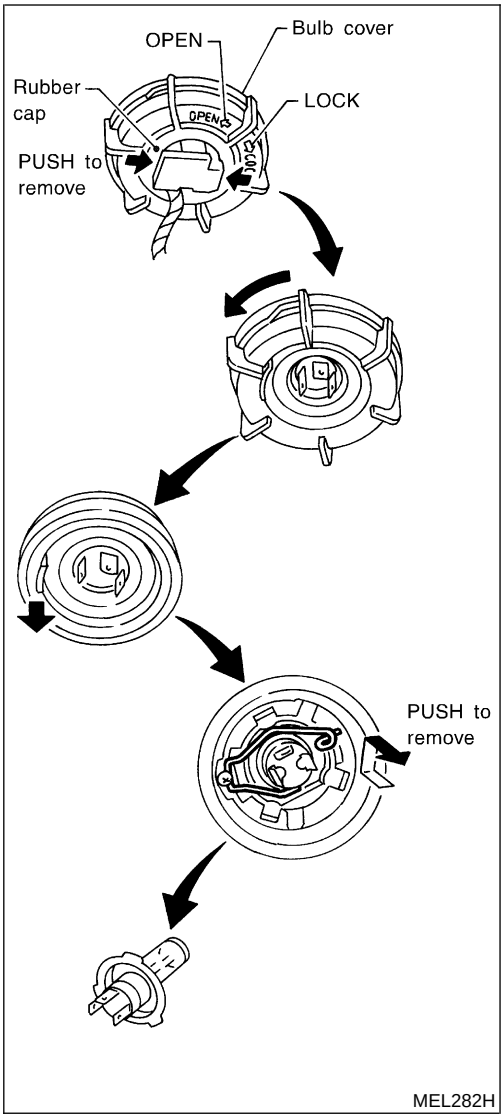
Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 12 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-246)

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NCEL0014S01

Terminal No.	Item	Condition			Voltage (Approximate value)
1	Ignition ON power supply	Ignition switch	OFF or ACC		Less than 1V
			ON or START		Battery voltage
2	Headlamp RH relay	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
				Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
			ON or START		Less than 1V
		Lighting switch (with ignition switch OFF)	OFF		Battery voltage
			1ST or 2ND		Less than 1V
3	Ground	—			—
4	Ground	—			—
5	Tail lamp switch	Lighting switch	OFF		Battery voltage
			1ST or 2ND		Less than 1V
6	Tail lamp relay	Ignition switch (with lighting switch 1ST or 2ND)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
				Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
			ON or START		Less than 1V
		Lighting switch (with ignition switch OFF)	OFF		Battery voltage
			1ST or 2ND		Less than 1V

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



Bulb Replacement

NCEL0015

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. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
3. Disconnect the harness connector from the back side of the bulb.
4. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. Install in the reverse order of removal.

CAUTION:

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

Aiming Adjustment

NCEL0016

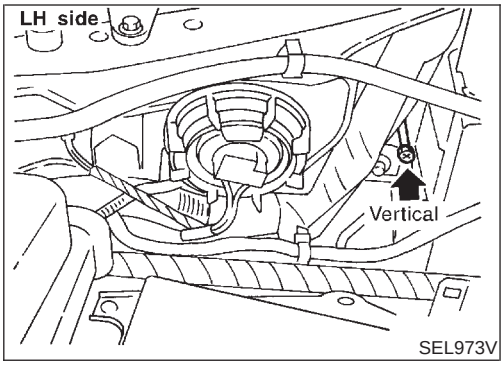
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.

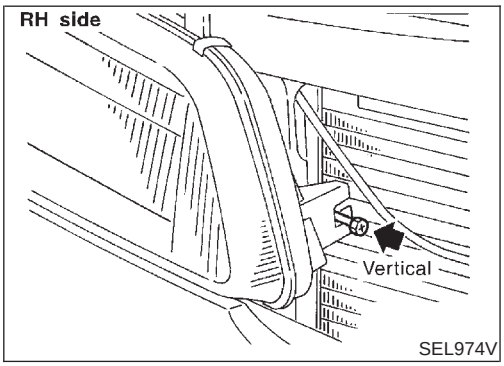
If any aimer is not available, aiming adjustment can be done as follows:

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

1) Keep all tires inflated to correct pressures.
2) Place vehicle and tester on one and same 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).

Aiming Adjustment (Cont'd)



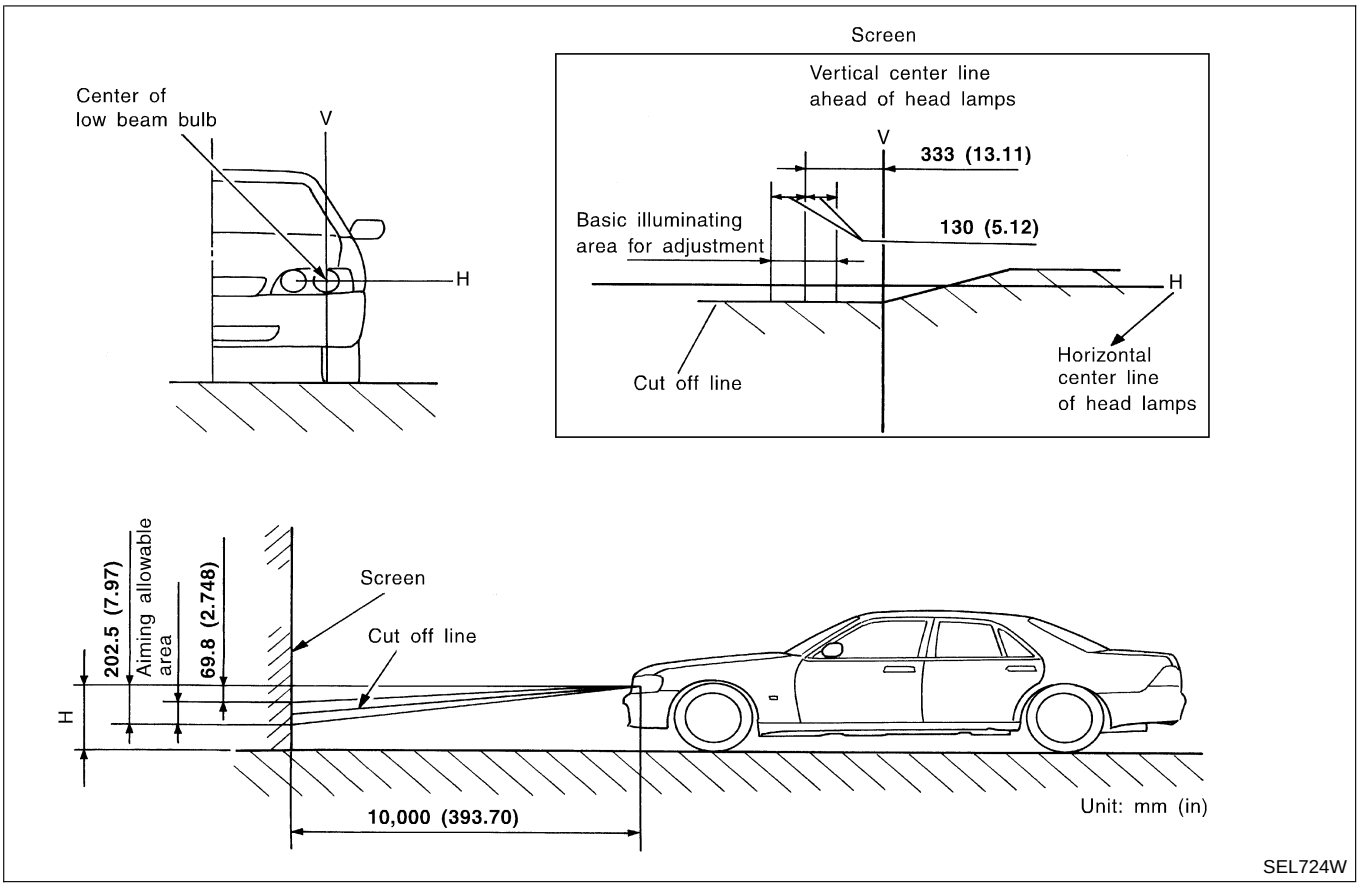


LOW BEAM

NCEL0016S02

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

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

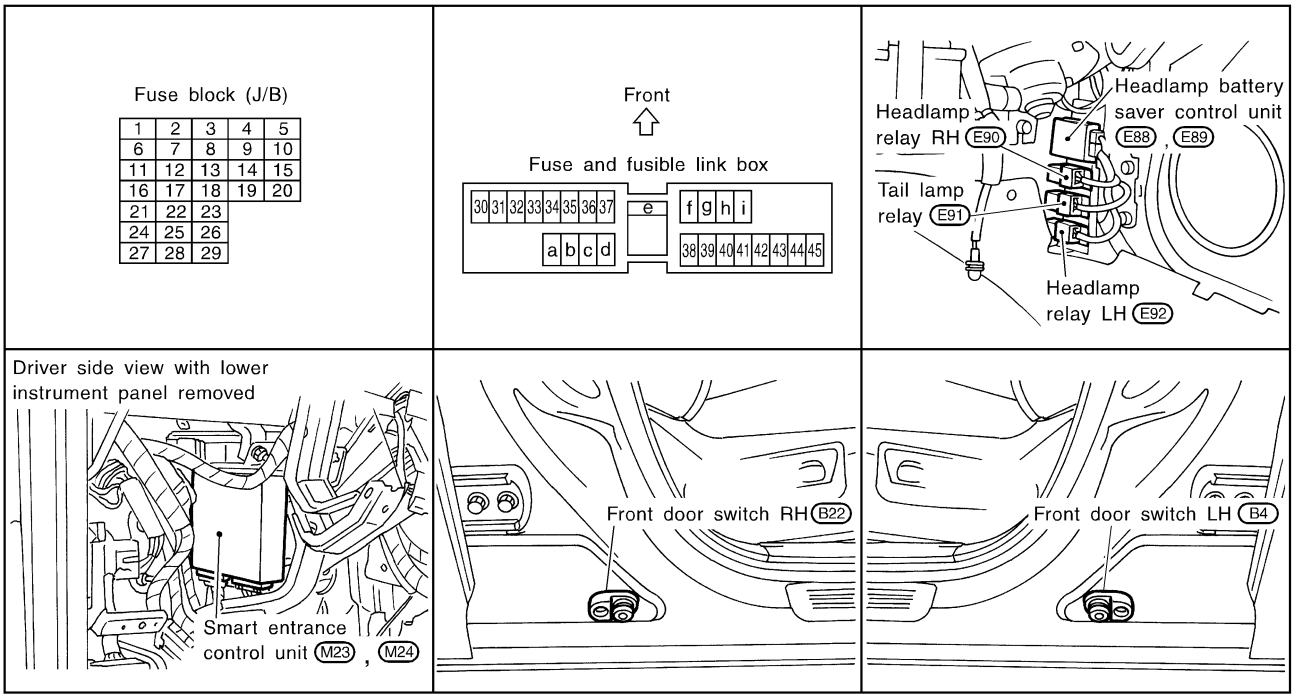


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- **Basic illuminating area for adjustment should be within the range shown at left. Adjust headlamps accordingly.**

Component Parts and Harness Connector Location

NCEL0166



SEL665W

System Description

NCEL0017

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

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

Power is supplied at all times

- to daytime light control unit terminal 3, and
- to headlamp LH relay terminals 1 and 3
- through 15A fuse (No. 32, located in the fuse and fusible link box), and
- to daytime light control unit terminal 2 and
- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 33, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 9 and
- to headlamp battery saver control unit terminals 4 and 11

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

- to daytime light control unit terminal 12,
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 8, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)].

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

- to daytime light control unit terminal 1
- through 10A fuse [No. 26, located in the fuse block (J/B)].

HEADLAMP OPERATION

NCEL0017S01

When Ignition Switch is in ON or START Position

NCEL0017S0103

Ground is supplied

- to headlamp LH relay terminal 2 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- through body grounds E9 and E28, and
- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- through body grounds E9 and E28.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

NCEL0017S0104

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

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

And then, ground is also supplied to headlamp LH and RH relays terminal 2 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

Low Beam Operation

NCEL0017S0101

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

- from lighting switch terminal 7
- to RH headlamp terminal 3
- to daytime light control unit terminal 4.

Ground is supplied to RH headlamp terminal 2 through body grounds E9 and E28.
Also, when the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied

- from lighting switch terminal 10
- to LH headlamp terminal 3.

Ground is supplied

- to LH headlamp terminal 2
- from daytime light control unit terminal 7
- through daytime light control unit terminal 9
- through body grounds E9 and E28.

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

High Beam Operation/Flash-to-pass Operation

NCEL0017S0102

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

- from lighting switch terminal 6
- to terminal 1 of RH headlamp.

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

- from lighting switch terminal 9
- to daytime light control terminal 5
- to combination meter terminal 26 for the high beam indicator, and
- through daytime light control terminal 6

- to terminal 1 of LH headlamp.

Ground is supplied in the same manner as low beam operation.
Ground is supplied to terminal 27 of the combination meter through body grounds M15, M71 and M76.
With power and ground supplied, the high beam headlamps and HI BEAM indicator illuminate.

BATTERY SAVER CONTROL

NCEL0017S04

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

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

Then headlamps illuminate again.

DAYTIME LIGHT OPERATION

NCEL0017S02

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

- through daytime light control unit terminal 6
- to terminal 1 of LH headlamp, and
- through terminal 2 of LH headlamp
- to daytime light control unit terminal 7, and
- through daytime light control unit terminal 8
- to terminal 1 of RH headlamp.

Ground is supplied to terminal 2 of RH headlamp through body grounds E9 and E28.
Because the high beam headlamps are now wired in series, they operate at half illumination.

OPERATION

NCEL0017S03

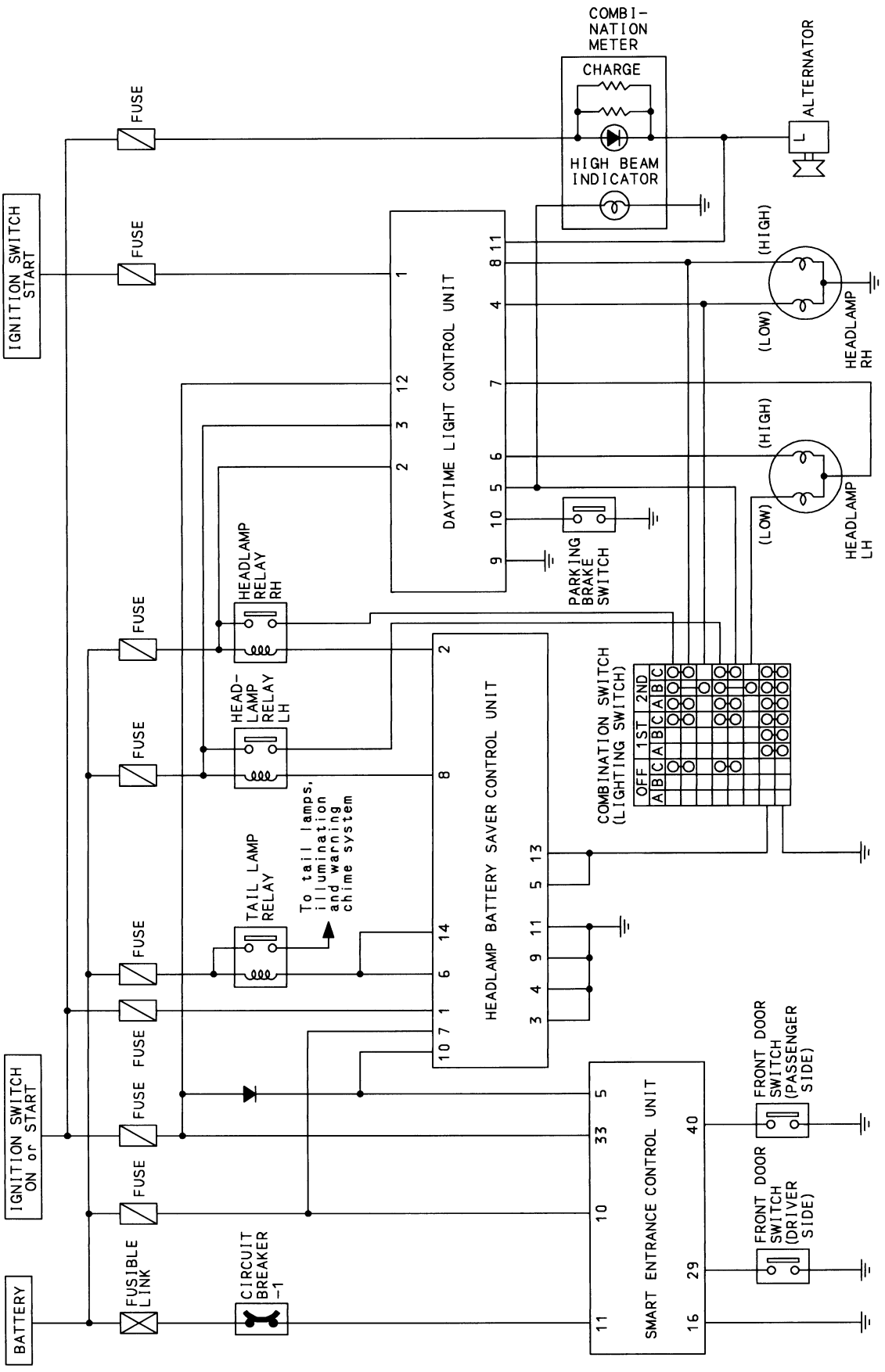
After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

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

Schematic

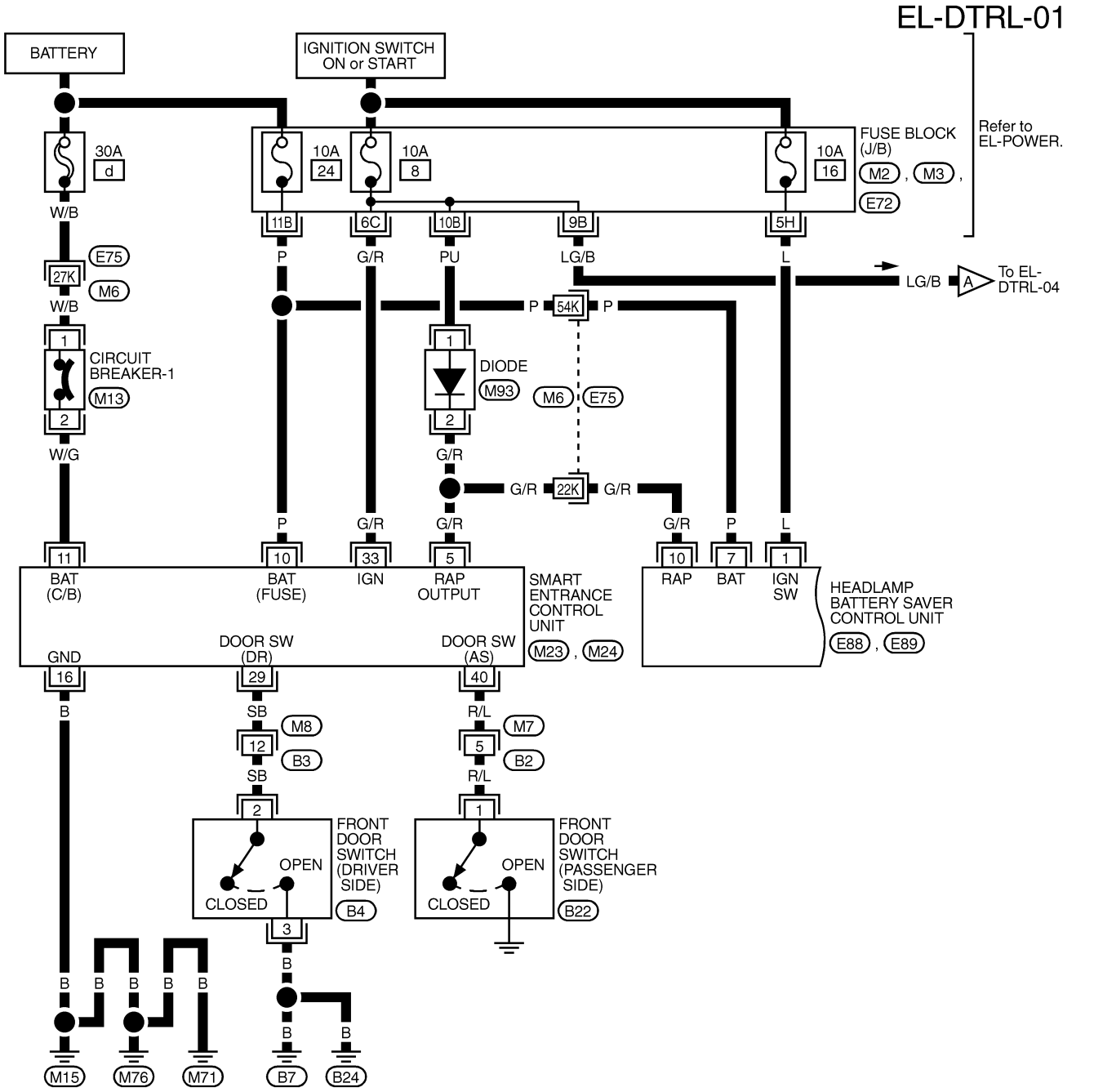
NCEL0167

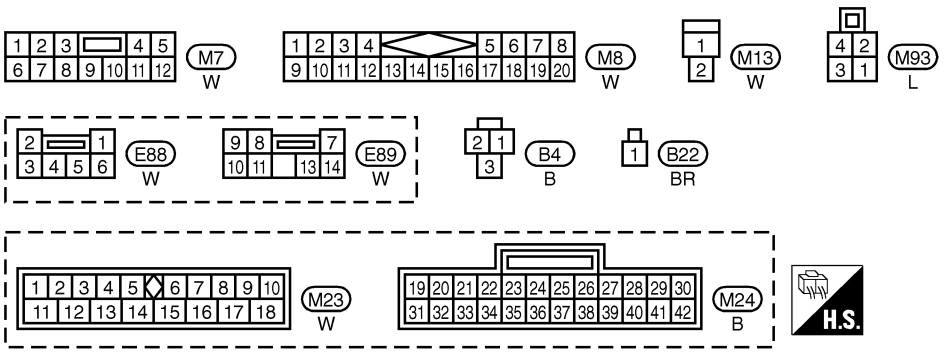


TEL864B

Wiring Diagram — DTRL —

NCEL0020

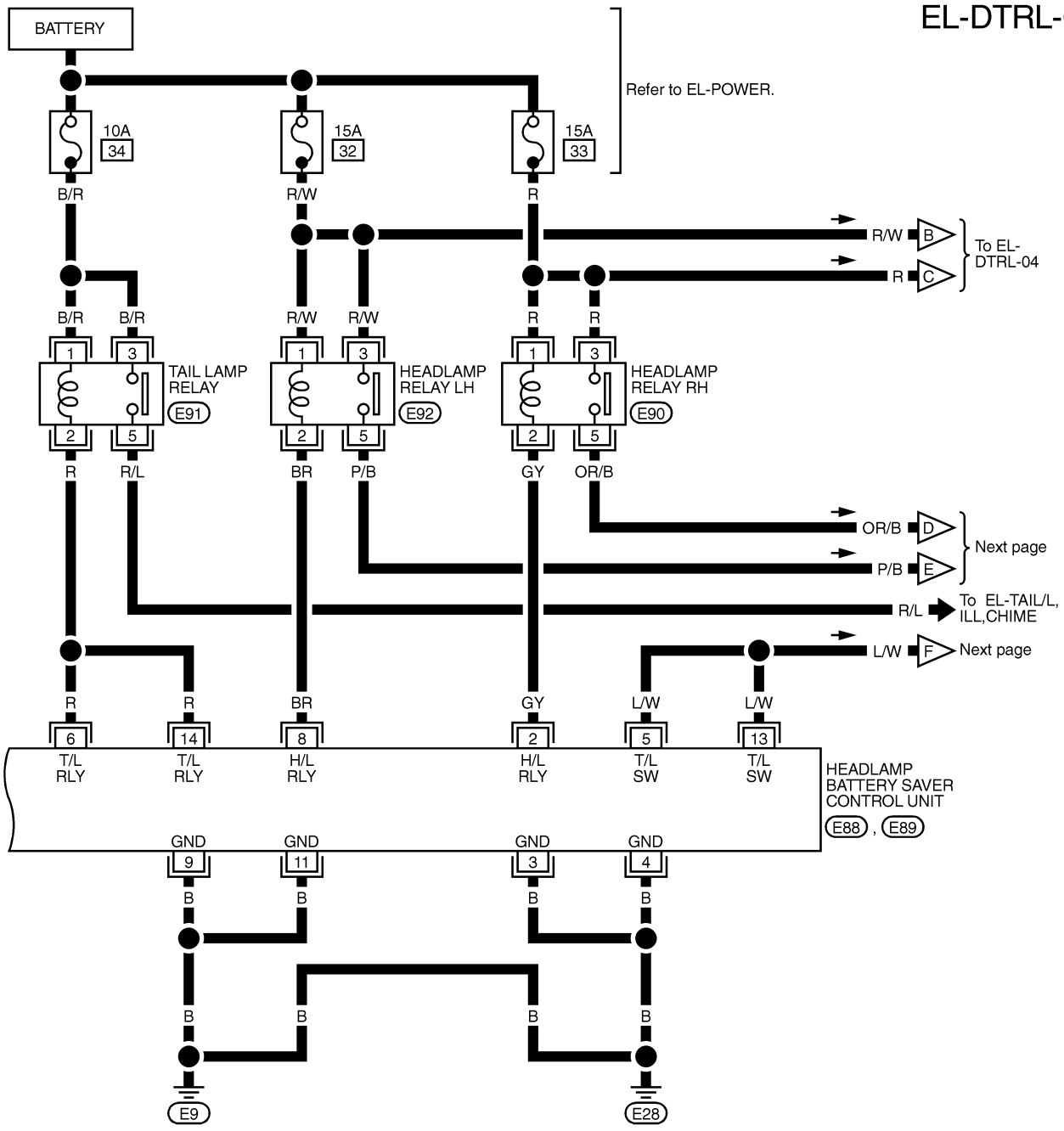


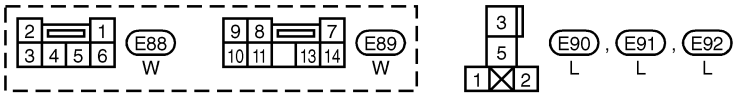


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL835B

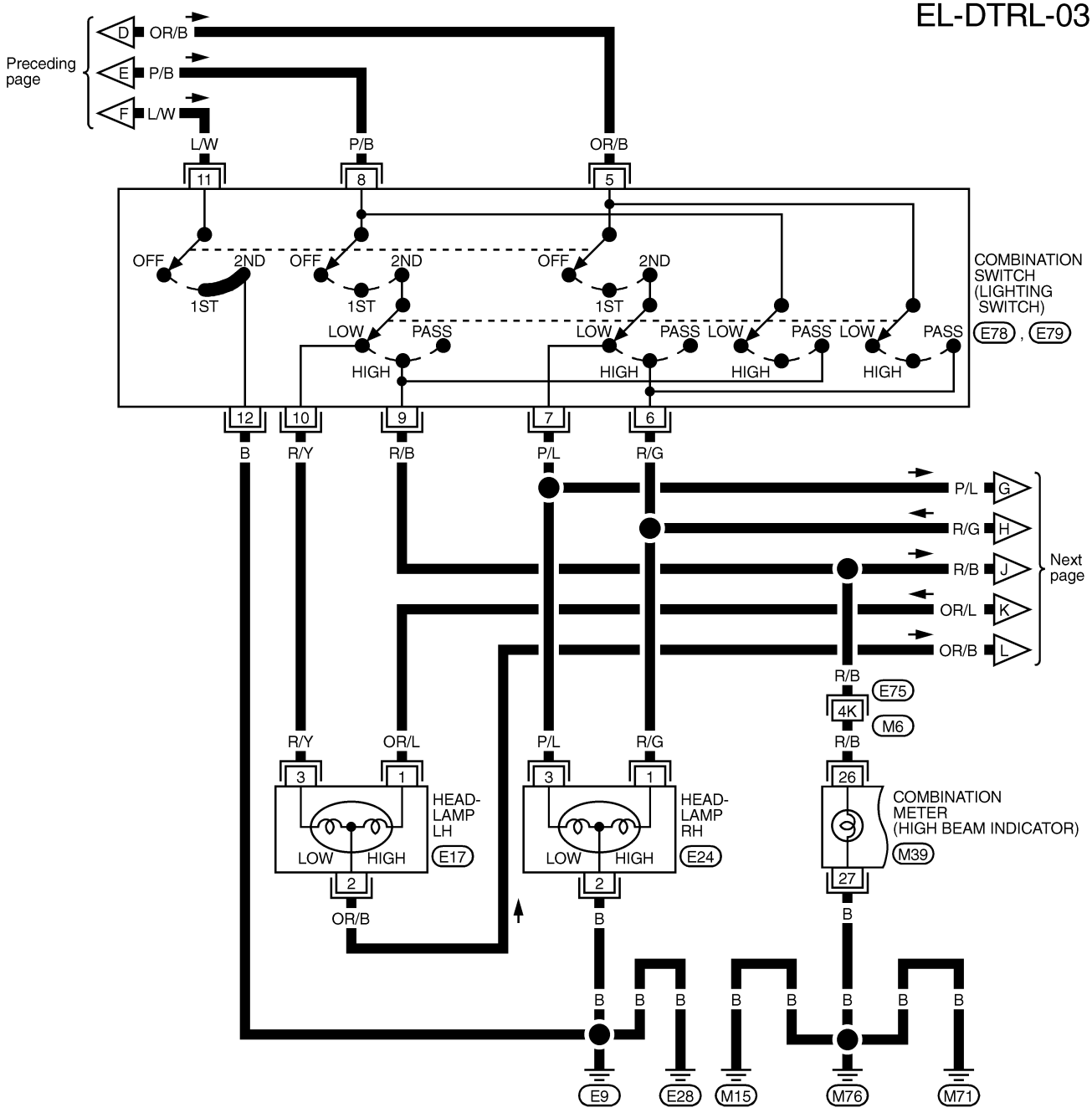
Wiring Diagram — DTRL — (Cont'd)

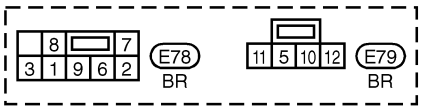




TEL480B

EL-DTRL-03



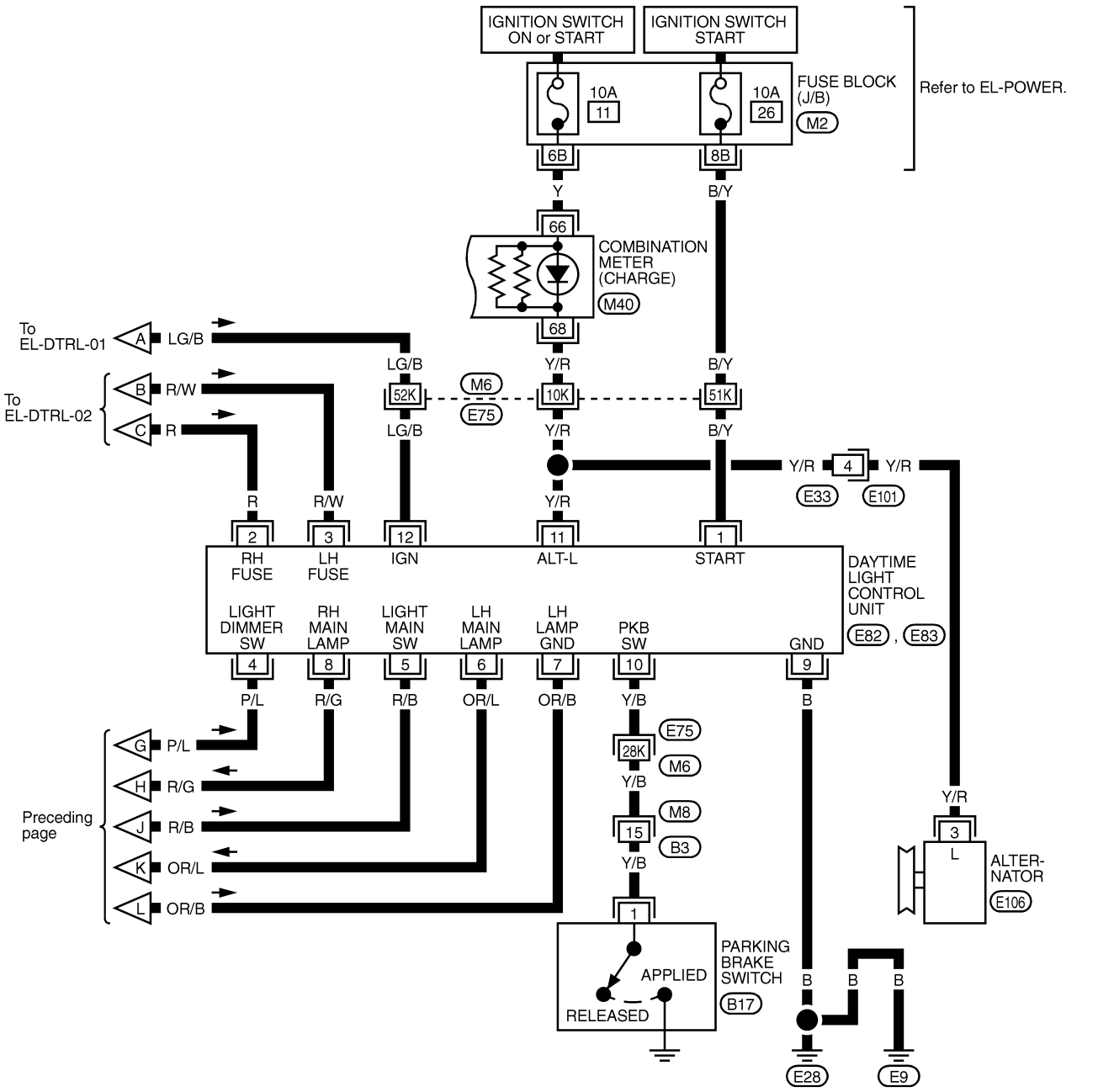


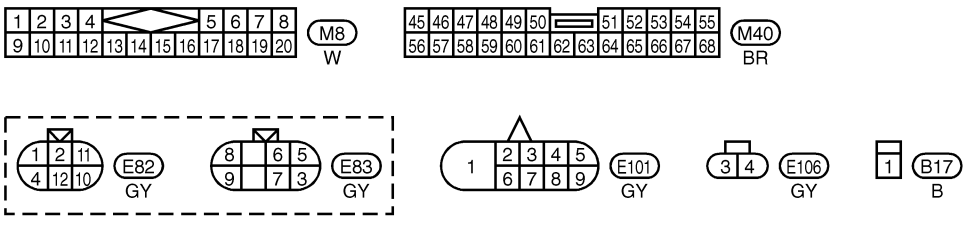
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

TEL836B

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-04





REFER TO THE FOLLOWING.

E75 -SUPER MULTIPLE JUNCTION (SMJ)

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

TEL837B

Trouble Diagnoses

NCEL0021

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check lighting switch. 3. Check headlamp battery saver control unit. (EL-37)
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp LH relay 3. Headlamp LH relay circuit 4. LH headlamp ground circuit 5. Lighting switch 6. Daytime light control unit 7. Headlamp battery saver control unit	1. Check 15A fuse (No. 32, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp LH relay. 2. Check headlamp LH relay. 3. Check the following. a. Headlamp LH relay and lighting switch. b. Headlamp LH relay and headlamp battery saver control unit. 4. Check harness between LH headlamp and daytime light control unit. 5. Check lighting switch. 6. Check daytime light control unit. (EL-50) 7. Check headlamp battery saver control unit. (EL-37)
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. 15A fuse 2. Headlamp RH relay 3. Headlamp RH relay circuit 4. RH headlamp ground circuit 5. Lighting switch 6. Headlamp battery saver control unit	1. Check 15A fuse (No. 33, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 1 and 3 of headlamp RH relay. 2. Check headlamp RH relay. 3. Check the following. a. Headlamp RH relay and lighting switch. b. Headlamp RH relay and headlamp battery saver control unit. 4. Check harness between RH headlamp and ground. 5. Check lighting switch. 6. Check headlamp battery saver control unit. (EL-37)
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check the following. a. Lighting switch and daytime light control unit. b. Daytime light control unit and LH headlamp. 3. Check lighting switch.
LH low beam does not operate, but LH high beam does operate.	1. Bulb 2. Open in LH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch and LH headlamp. 3. Check lighting switch.
RH high beam does not operate, but RH low beam does operate.	1. Bulb 2. Open in RH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch and RH headlamp. 3. Check lighting switch.
RH low beam does not operate, but RH high beam does operate.	1. Bulb 2. Open in RH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch and RH headlamp. 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 harness between lighting switch and combination meter.

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following. a. Smart entrance control unit and driver or passenger side door switch for open or short circuit. b. Driver or passenger side door switch ground circuit. c. Driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 12 and ground. 4. Check headlamp battery saver control unit. (EL-37) 5. Check smart entrance control unit. (EL-246)
Daytime light control does not operate properly.	1. Bulb 2. Fuse check 3. Parking brake switch 4. Parking brake switch circuit 5. Daytime light control unit	1. Check bulb. 2. Check the following. a. 10A fuse [No. 11, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 11 of daytime light control unit. b. 10A fuse [No. 26, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 1 of daytime light control unit. 3. Check parking brake switch. 4. Check harness between parking brake switch and daytime light control unit. 5. Check daytime light control unit. (EL-50)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NCEL0021S01

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
1	B/Y	Start signal		When turning ignition switch to "ST"	Battery voltage
				When turning ignition switch to "ON" from "ST"	Less than 1V
				When turning ignition switch to "OFF"	Less than 1V
2	R	Power source		When turning ignition switch to "ON"	Battery voltage
				When turning ignition switch to "OFF"	Battery voltage
3	R/W	Power source		When turning ignition switch to "ON"	Battery voltage
				When turning ignition switch to "OFF"	Battery voltage
4	P/L	Lighting switch (Low beam)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	Battery voltage
5	R/B	Lighting switch (High beam)		When turning lighting switch to "HIGH BEAM"	Battery voltage
				When turning lighting switch to "FLASH TO PASS"	Battery voltage

Terminal No.	Wire color	Item	Condition		Voltage (Approximate values)
6	OR/L	High beam LH		When turning lighting switch to "HIGH BEAM"	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
7	OR/B	Headlamp LH control (ground)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
8	R/G	High beam RH		When lighting switch is turned to the 2ND position with "HIGH BEAM" position	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
9	B	Ground		—	—
10	Y/B	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V
11	Y/R	Alternator		When turning ignition switch to "ON"	Less than 1V
				When engine is running	Battery voltage
				When turning ignition switch to "OFF"	Less than 1V
12	LG/B	Power source		When turning ignition switch to "ON"	Battery voltage
				When turning ignition switch to "ST"	Battery voltage
				When turning ignition switch to "OFF"	Less than 1V

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NCEL0021S02

Refer to "HEADLAMP (FOR USA)" (EL-37).

Bulb Replacement

NCEL0022

Refer to “HEADLAMP (FOR USA)” (EL-39).

Aiming Adjustment

NCEL0023

Refer to “HEADLAMP (FOR USA)” (EL-39).

System Description

NCEL0168

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 34, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 8, located in the fuse block (J/B)].

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

LIGHTING OPERATION BY LIGHTING SWITCH

NCEL0168S01

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

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through body grounds E9 and E28.

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

BATTERY SAVER CONTROL

NCEL0168S02

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

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

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

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

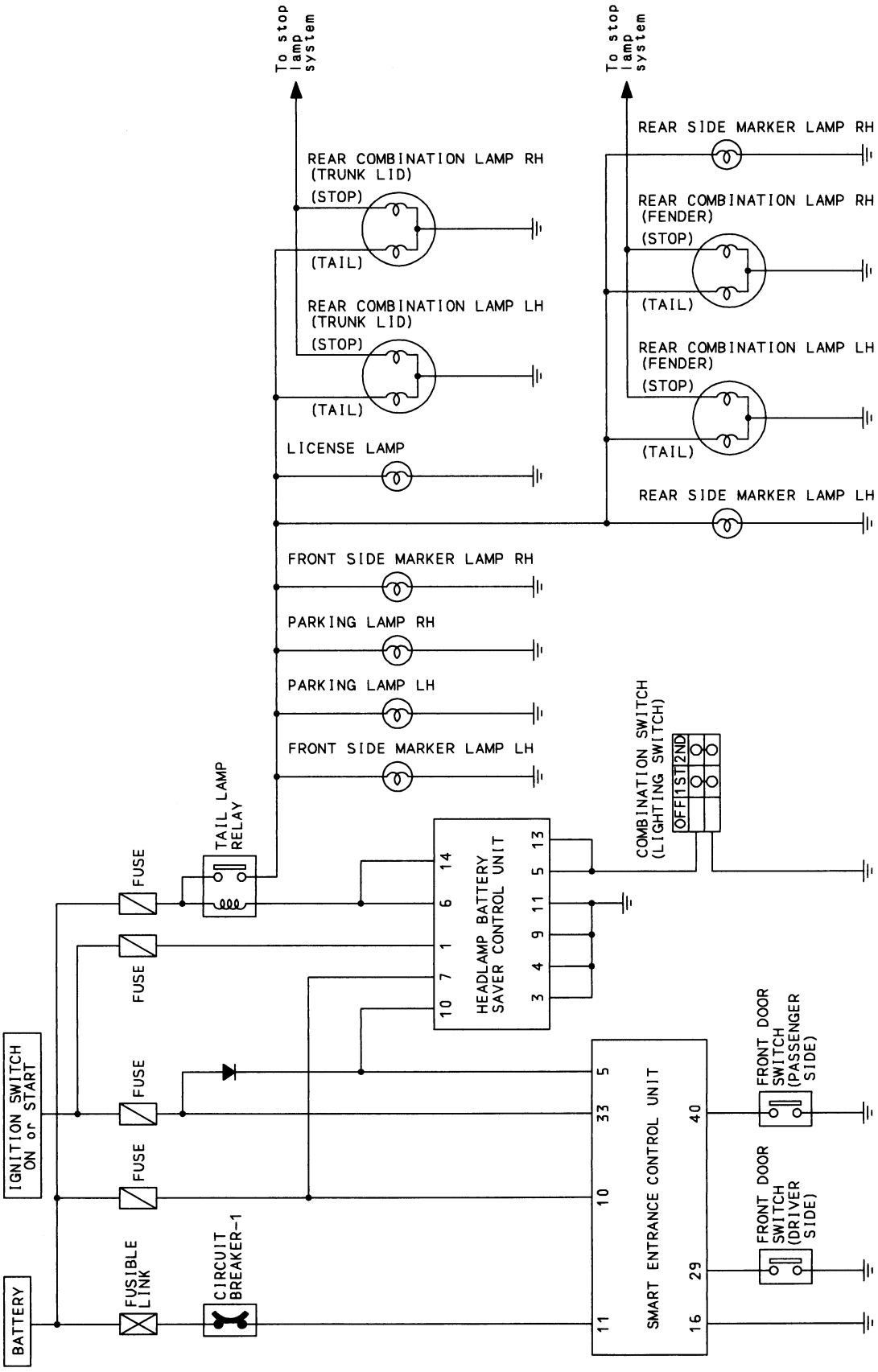
When the lighting switch is turned from OFF to 1ST (or 2ND) after the parking, license and tail lamps are turned off by the battery saver control, ground is supplied.

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

Then the parking, license and tail lamps illuminate again.

Schematic

NCEL0169

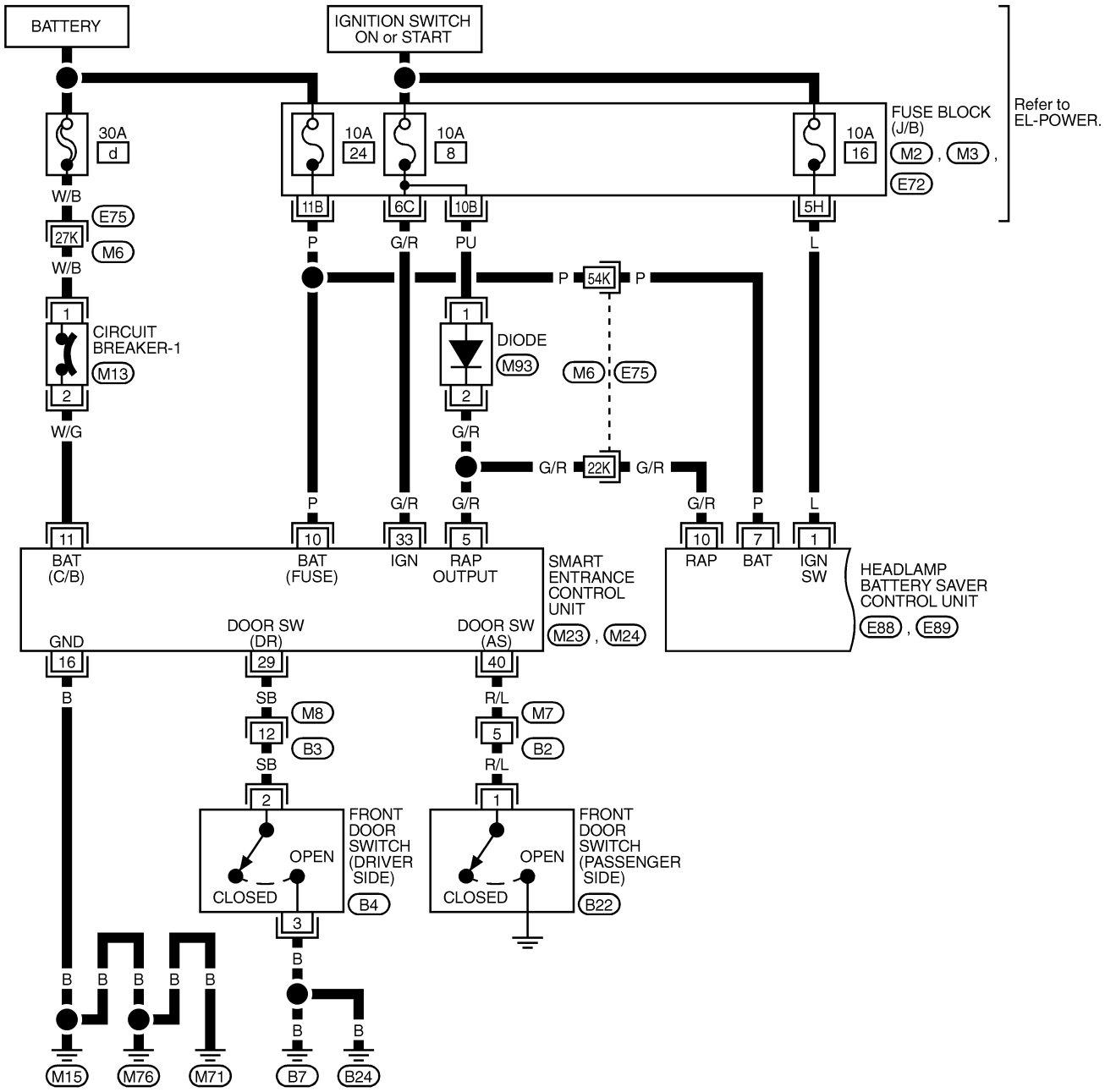


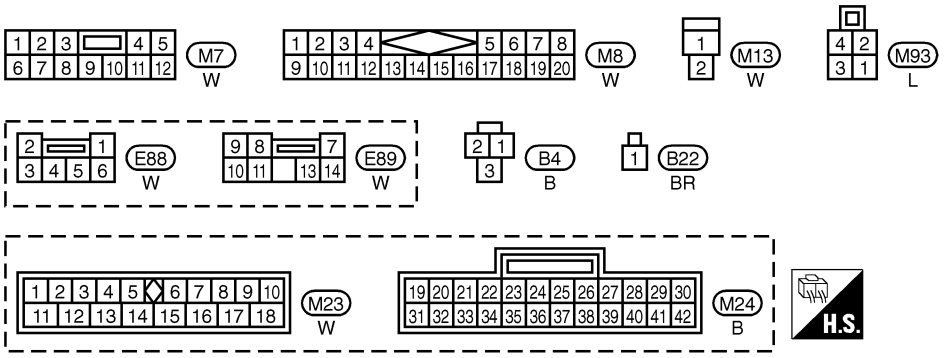
TEL483B

Wiring Diagram — TAIL/L —

NCEL0024

EL-TAIL/L-01

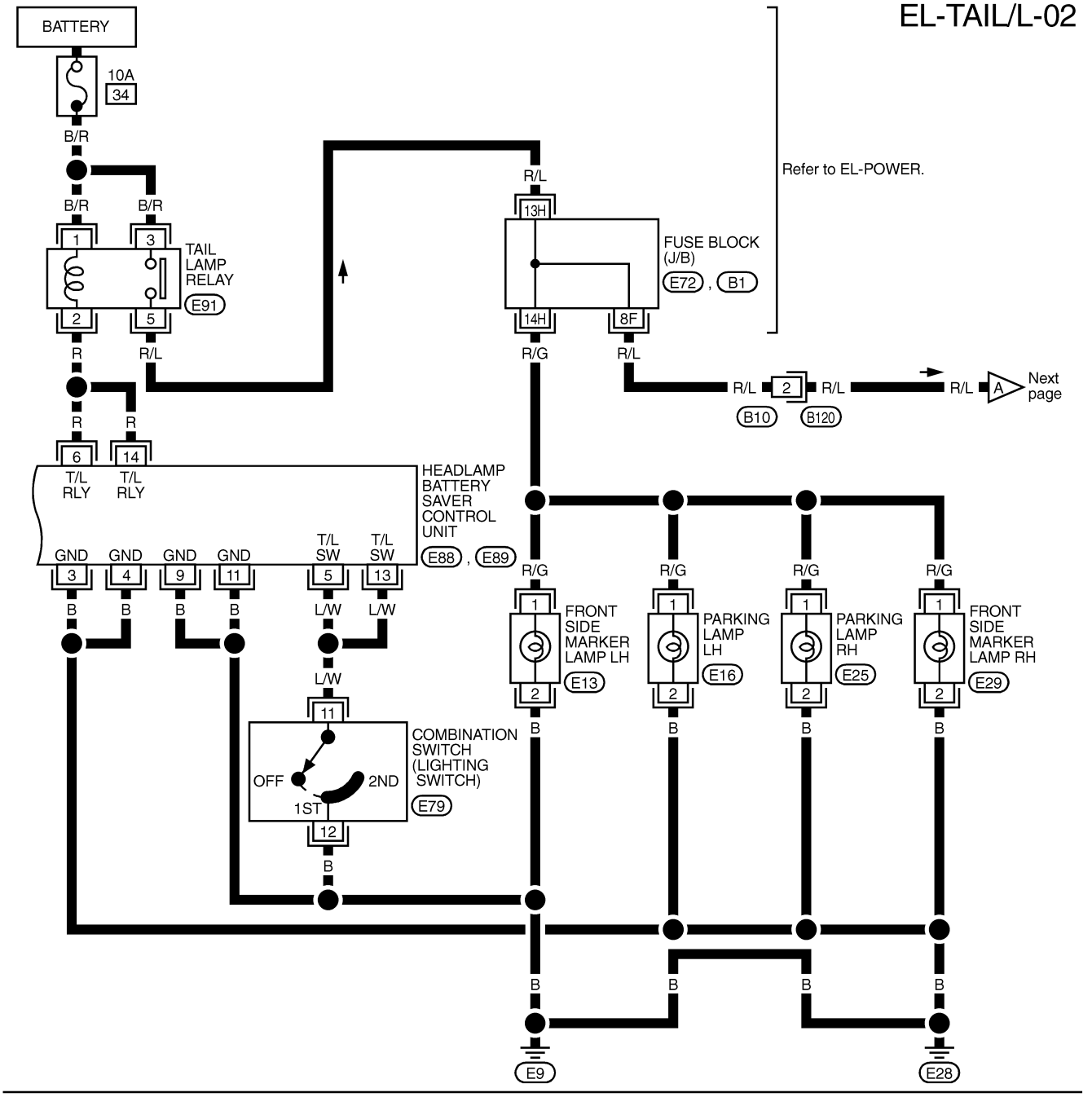


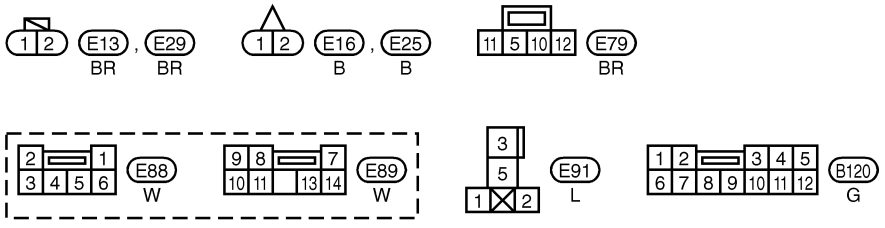


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL838B

Wiring Diagram — TAIL/L — (Cont'd)

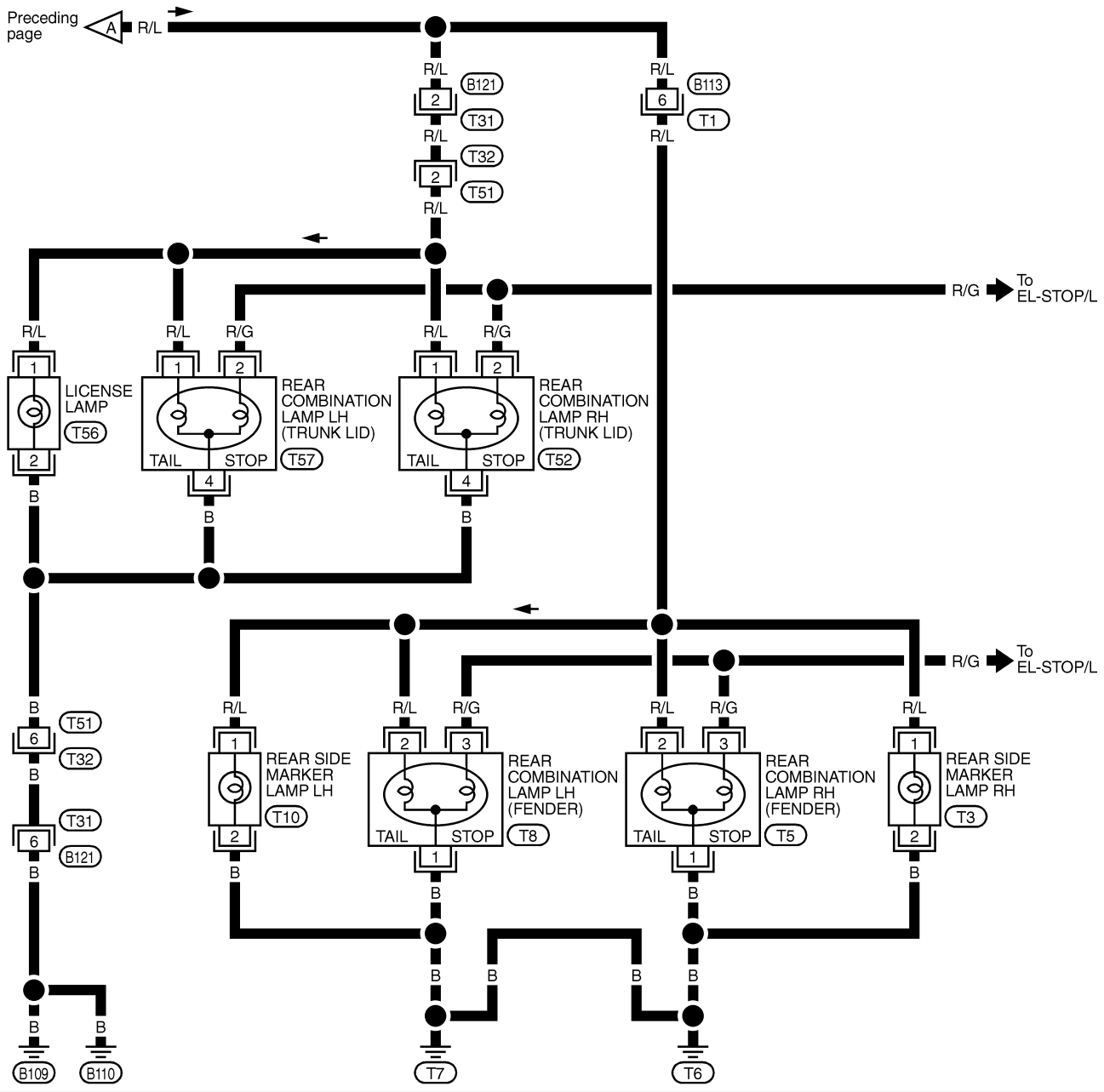


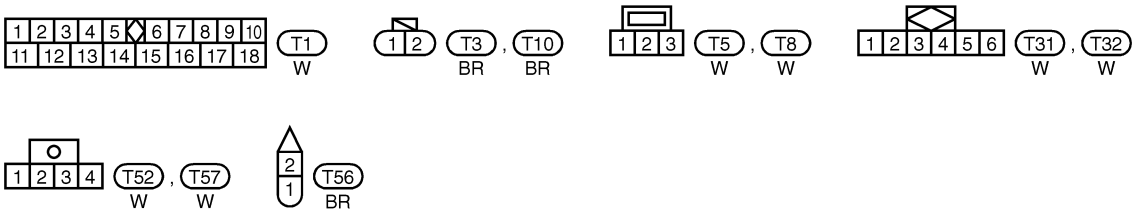


REFER TO THE FOLLOWING.
E72 , B1 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL839B

EL-TAIL/L-03





TEL486B

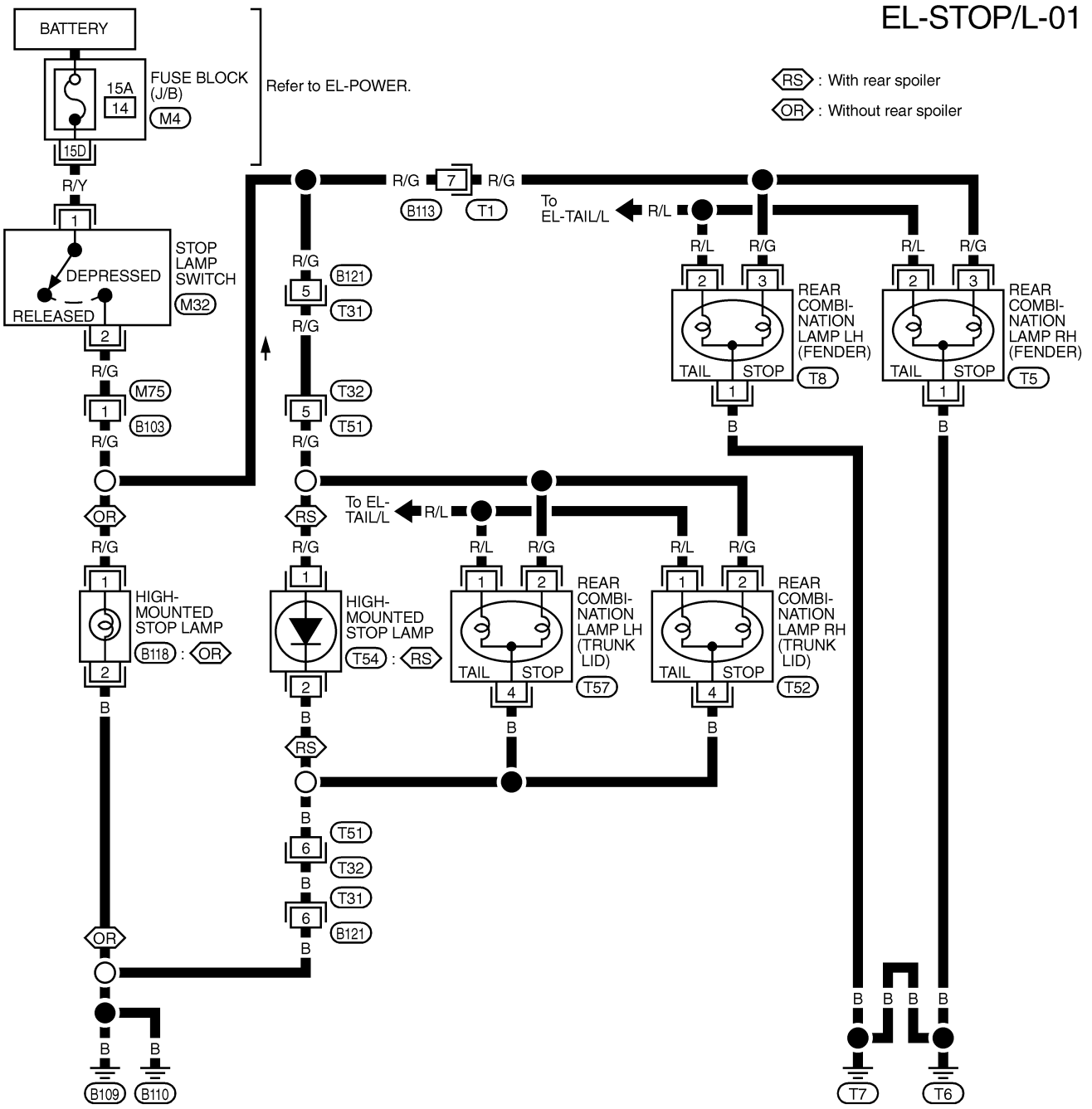
Trouble Diagnoses

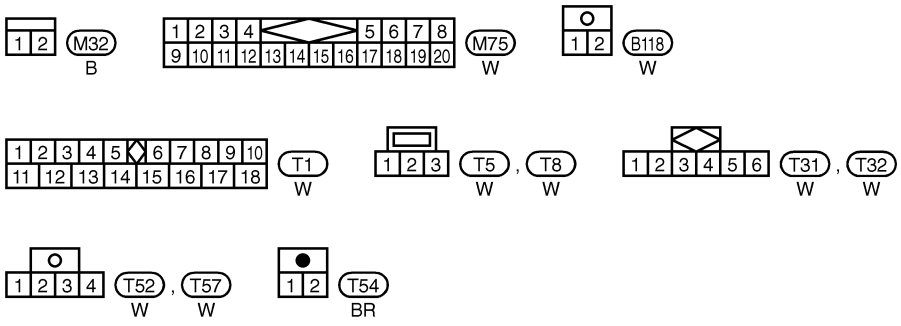
NCEL0170

Symptom	Possible cause	Repair order
No lamps operate (including headlamps).	1. 10A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 10A fuse [No. 24, lacated in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check lighting switch. 3. Check headlamp battery saver control unit. (EL-37)
No parking, license and tail lamps operate, but headlamps do operate.	1. 10A fuse 2. Tail lamp relay 3. Tail lamp relay circuit 4. Lighting switch 5. Lighting switch circuit 6. Headlamp battery saver control unit	1. Check 10A fuse (No. 34, located in fusible and fuse block). Verify battery positive voltage is present at terminals 1 and 3 of tail lamp relay. 2. Check tail lamp relay. 3. Check harness between headlamp battery saver control unit terminals 6 and 14 and tail lamp relay terminal 2. Check harness between tail lamp relay terminal 5 and fuse block. 4. Check lighting switch. 5. Check harness between lighting switch terminal 11 and headlamp battery saver control unit terminals 5 and 13. Check harness between lighting switch terminal 12 and ground. 6. Check headlamp battery saver control unit. (EL-37)
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 12 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. (EL-37) 5. Check smart entrance control unit. (EL-246)

Wiring Diagram — STOP/L —

NCEL0025



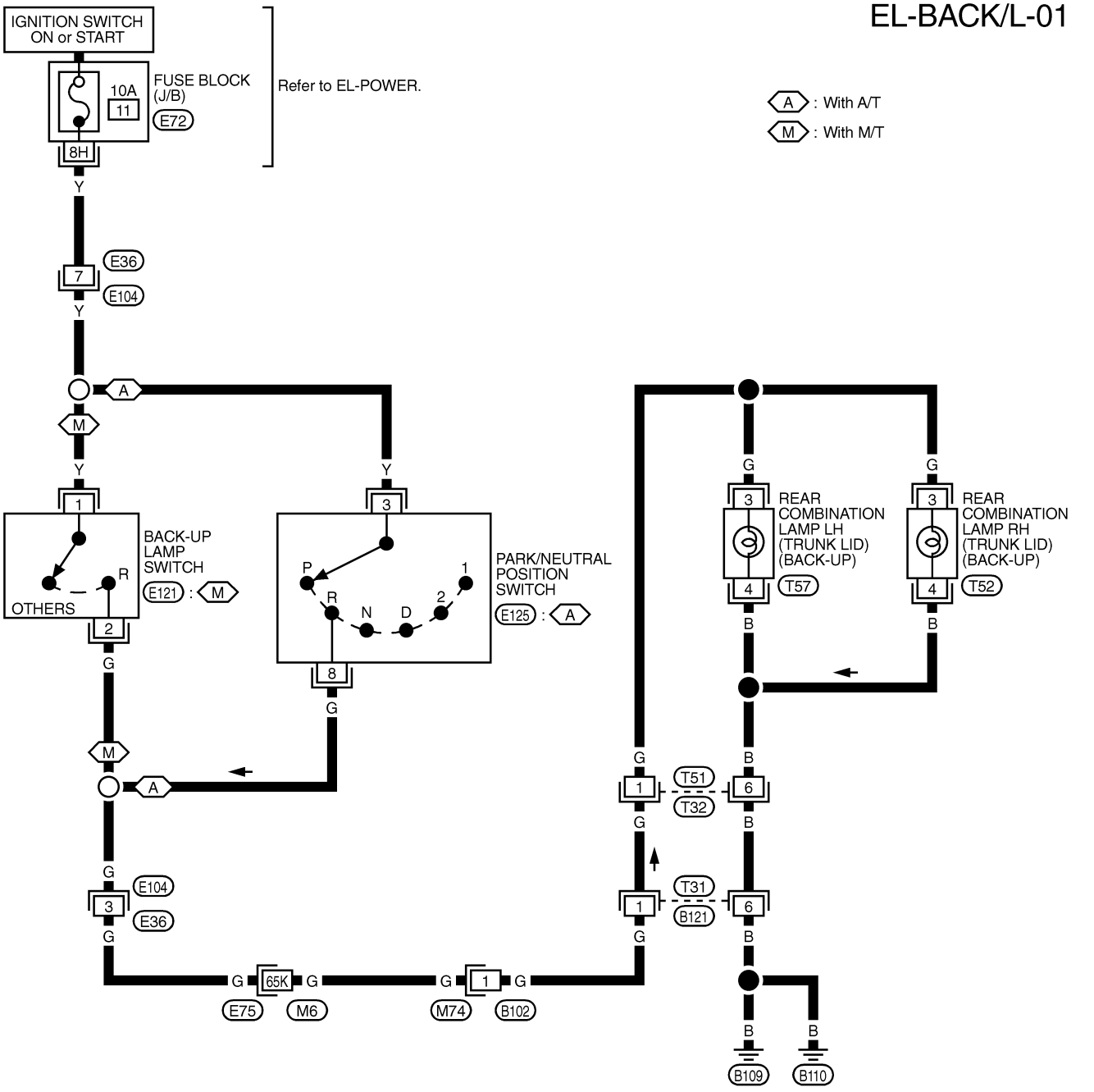


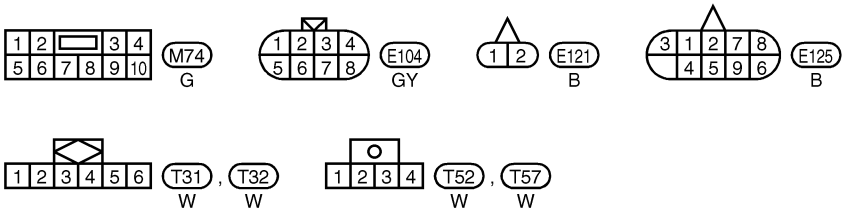
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL487B

Wiring Diagram — BACK/L —

NCEL0026





REFER TO THE FOLLOWING.

E75 -SUPER MULTIPLE JUNCTION (SMJ)

E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL488B

System Description

NCEL0027

OUTLINE

NCEL0027S02

Power is supplied at all times

- to headlamp RH relay terminals 1 and 3
- through 15A fuse (No. 33, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 24, located in the fuse block (J/B)], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 43, located in the fuse and fusible link box).

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 8, located in the fuse block (J/B)].

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

When Ignition Switch is in ON or START Position

NCEL0027S0201

Ground is supplied

- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 2.
- through headlamp battery saver control unit terminal 9, and
- through body grounds E9 and E28.

Headlamp RH relay is then energized.

When Ignition Switch is in OFF or ACC Position

NCEL0027S0202

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

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

And then, ground is also supplied to headlamp RH relay terminal 2 from the headlamp battery saver control unit. The headlamp RH relay is then energized.

FOG LAMP OPERATION

NCEL0027S01

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

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

- to fog lamp relay terminal 2
- through the fog lamp switch and body grounds E9 and E28.

The fog lamp relay is energized and power is supplied

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

Ground is supplied to terminal 2 of each fog lamp through body grounds E9 and E28.

With power and ground supplied, the fog lamps illuminate.

BATTERY SAVER CONTROL

NCEL0027S03

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

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of headlamp RH relay from headlamp battery saver control unit teminal 2 is terminated.

Then fog lamps are turned to off.

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

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

System Description (Cont'd)

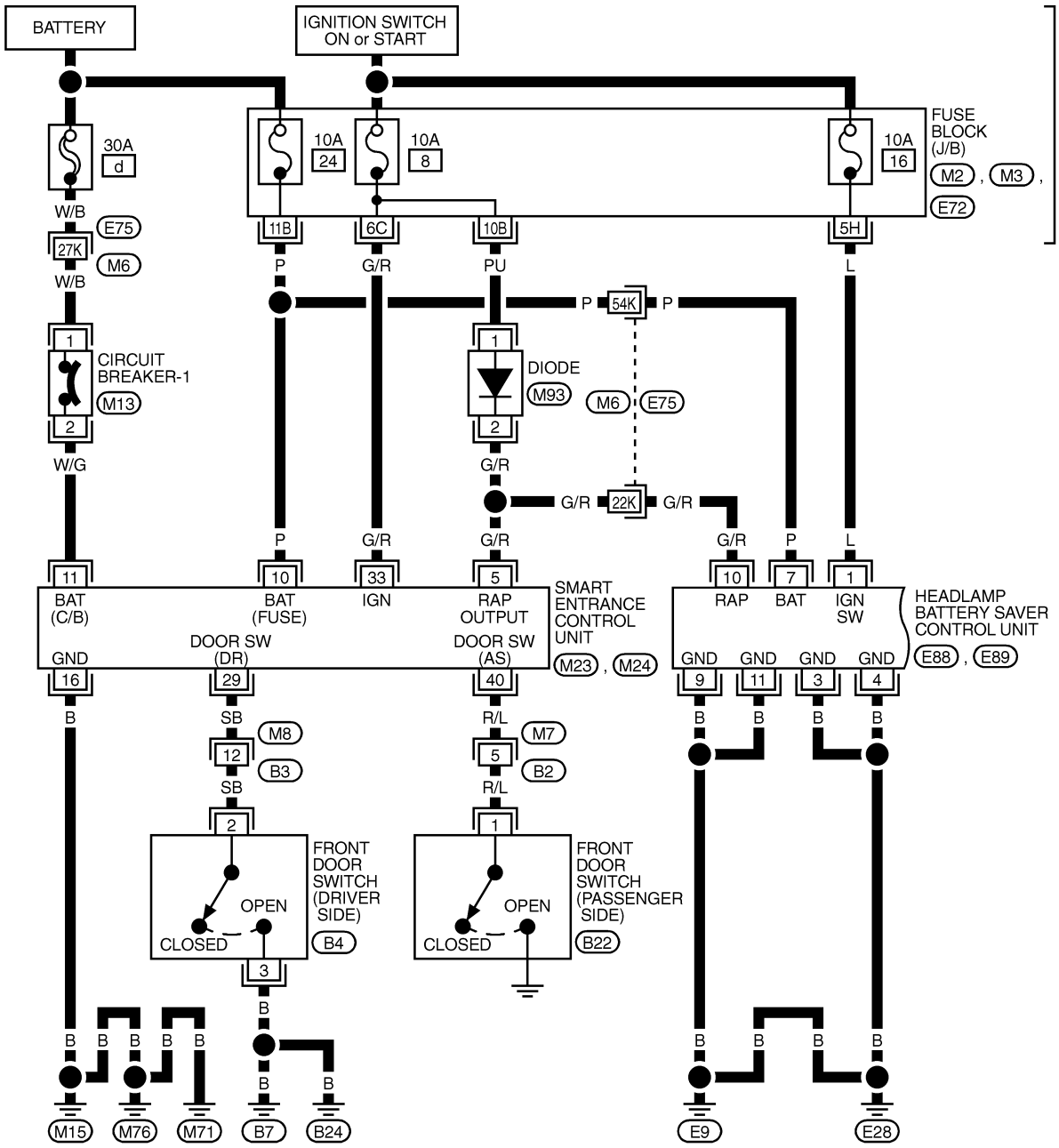
- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp RH relay terminal 2 from headlamp battery saver control unit terminal 2.

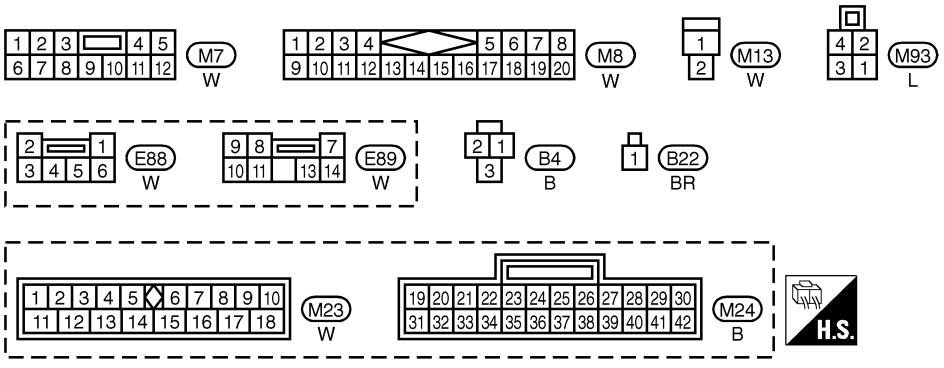
Then the fog lamps illuminate again.

Wiring Diagram — F/FOG —

NCEL0028

EL-F/FOG-01

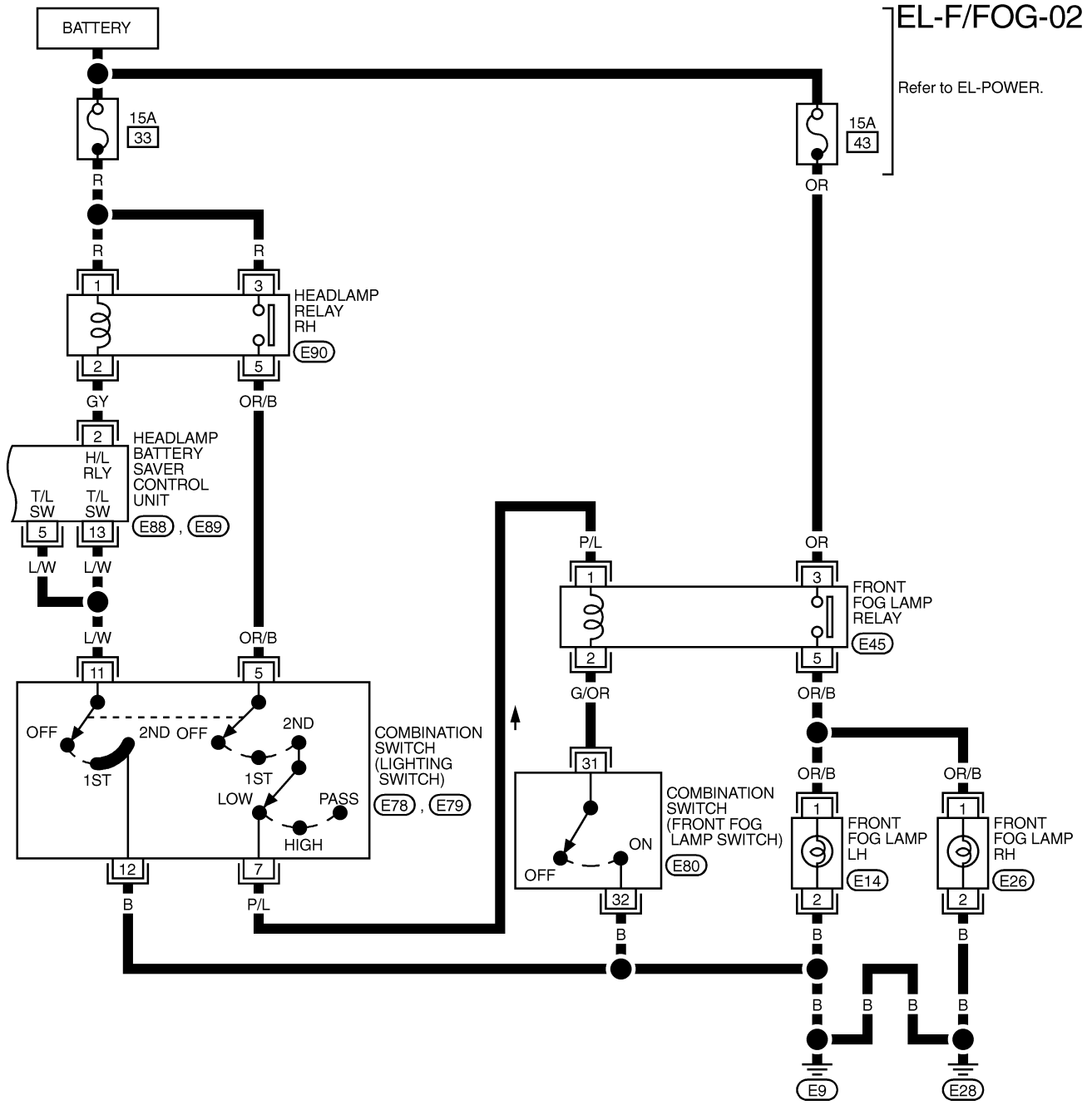


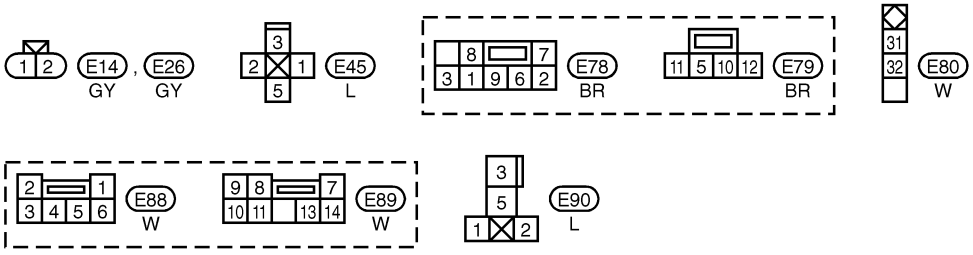


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

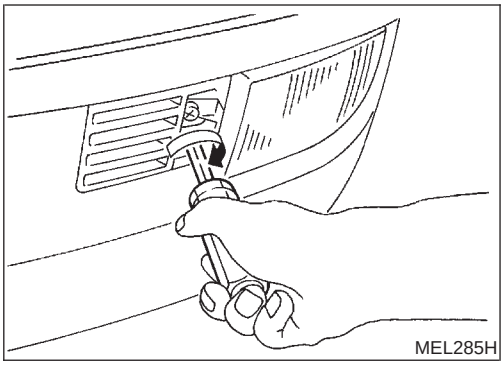
TEL840B

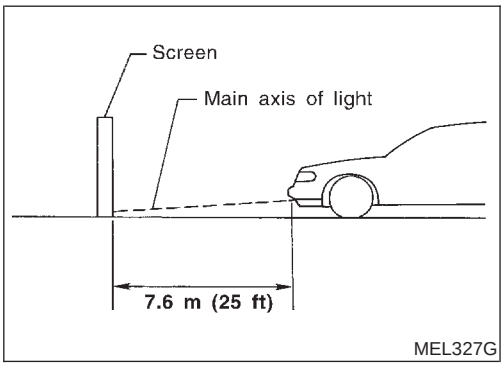
Wiring Diagram — F/FOG — (Cont'd)



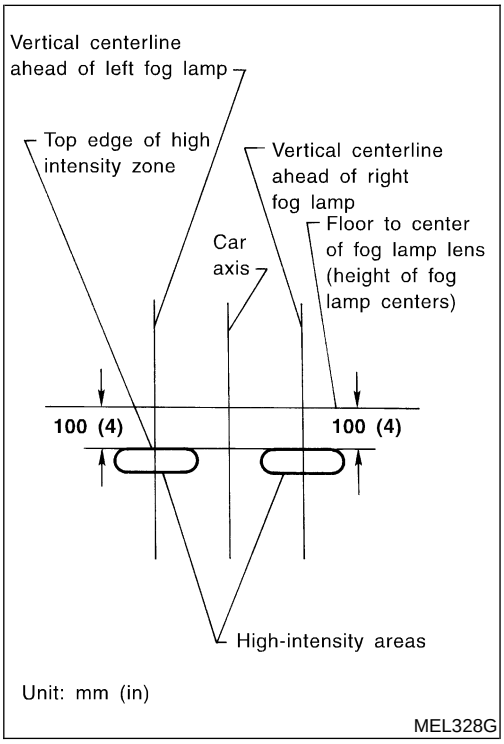


TEL490B


MEL285H



MEL327G



MEL328G

Aiming Adjustment

NCEL0029

Before performing aiming adjustment, make sure of the following.

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

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

1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Remove front fog lamp rim. For detail, refer to "BODY END" in BT section.
3. Turn front fog lamps ON.
4. Adjust front fog lamps so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.

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

System Description

NCEL0030

TURN SIGNAL OPERATION

NCEL0030S01

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

- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to hazard switch terminal 2
- through terminal 1 of the hazard switch
- to combination flasher unit terminal 1
- through terminal 3 of the combination flasher unit
- to turn signal switch terminal 1.

Ground is supplied to combination flasher unit terminal 2 through body grounds M15, M71 and M76.

LH Turn

NCEL0030S0101

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

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

Ground is supplied to the front turn signal lamp LH terminal 2 and the side turn signal lamp LH terminal 2 through body grounds E9 and E28.
Ground is supplied to the rear combination lamp LH terminal 2 through body grounds T6 and T7.
Ground is supplied to combination meter terminal 30 through body grounds M15, M71 and M76.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NCEL0030S0102

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

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

Ground is supplied to the front turn signal lamp RH terminal 2 and the side turn signal lamp terminal 2 through body grounds E9 and E28.
Ground is supplied to the rear combination lamp RH terminal 2 through body grounds T6 and T7.
Ground is supplied to combination meter terminal 30 through body grounds M15, M71 and M76.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NCEL0030S02

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

- 10A fuse [No. 20, located in the fuse block (J/B)].

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

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

Ground is supplied to combination flasher unit terminal 2 through body grounds M15, M71 and M76.
Power is supplied through terminal 5 of the hazard switch to

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

Power is supplied through terminal 6 of the hazard switch to

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

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

Ground is supplied to terminal 2 of each front turn signal lamp through body grounds E9 and E28.
Ground is supplied to terminal 2 of each side turn signal lamp through body grounds E9 and E28.
Ground is supplied to terminal 2 of each rear combination lamp through body grounds T6 and T7.
Ground is supplied to combination meter terminal 30 through body grounds M15, M71 and M76.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

MULTI-REMOTE CONTROL SYSTEM OPERATION

NCEL0030S03

Power is supplied at all times

- through 10A fuse [No. 20, located in the fuse block (J/B)]
- to multi-remote control relay terminals 1, 3 and 6.

Ground is supplied to multi-remote control relay terminal 2, when the multi-remote control system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM", EL-190.
The multi-remote control relay is energized.
Power is supplied through terminal 7 of the multi-remote control relay

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

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

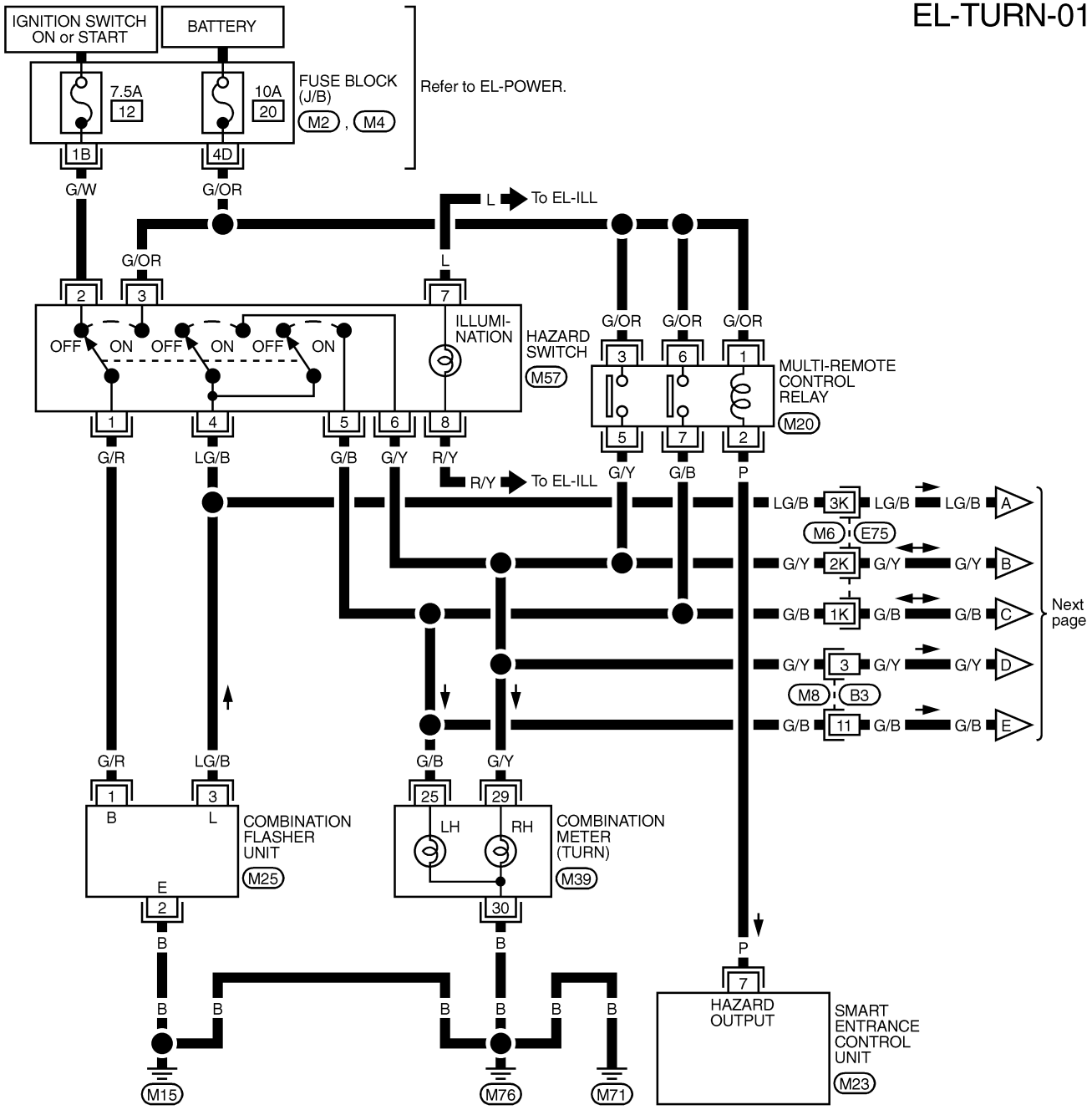
- to front turn signal lamp RH terminal 1
- side turn signal lamp RH terminal 1
- to combination meter terminal 29
- to rear combination lamp RH terminal 1.

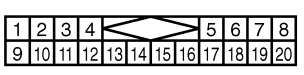
Ground is supplied to terminal 2 of each front turn signal lamp through body grounds E9 and E28.
Ground is supplied to terminal 2 of each side turn signal lamp through body grounds E9 and E28.
Ground is supplied to terminal 2 of each rear combination lamp through body grounds T6 and T7.
Ground is supplied to combination meter terminal 30 through body grounds M15, M71 and M76.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

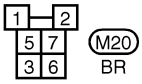
Wiring Diagram — TURN —

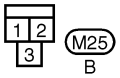
NCEL0032

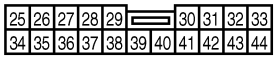
EL-TURN-01

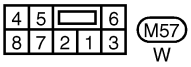


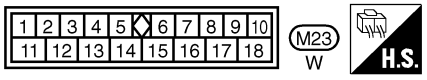








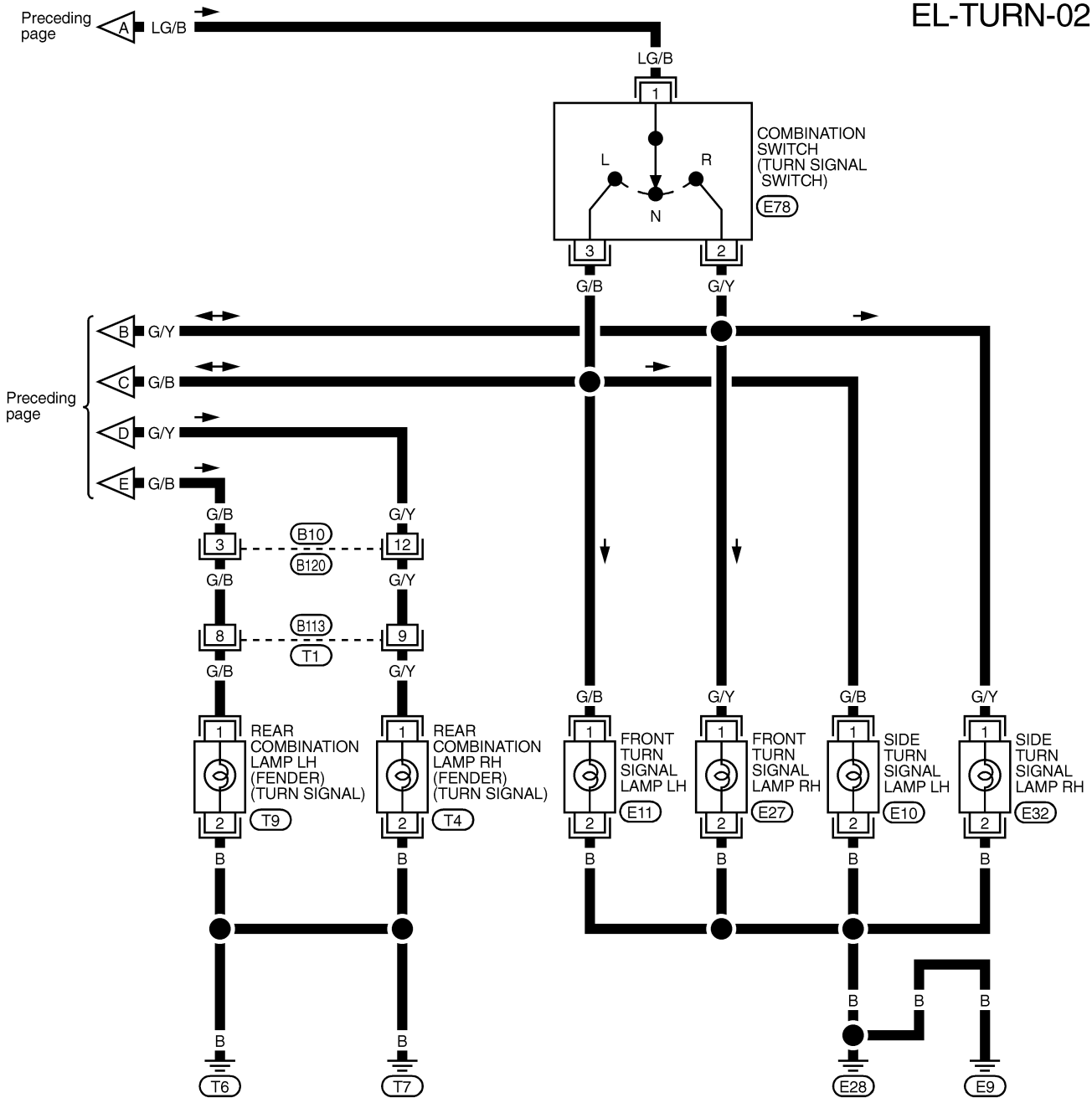


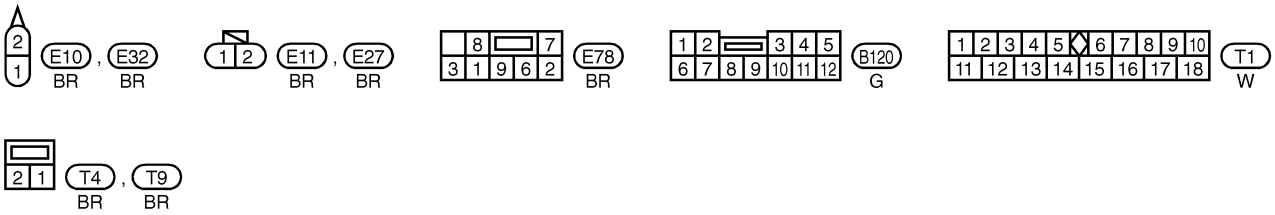


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL841B

EL-TURN-02



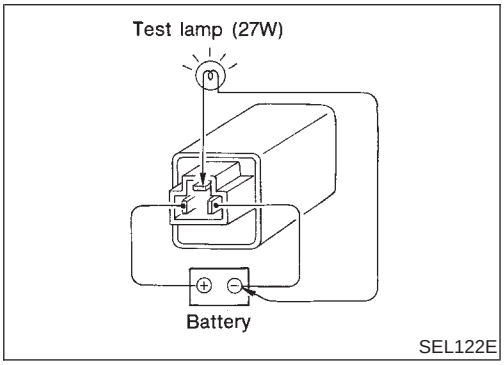


TEL690B

Trouble Diagnoses

NCEL0033

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch circuit 2. Combination flasher unit	1. Check the following. a. Hazard switch and combination flasher unit. b. Combination flasher unit and ground. 2. Refer to combination flasher unit check.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Turn signal switch circuit 3. Hazard switch 4. Turn signal switch	1. Check 7.5A fuse [No. 12, located in fuse block (J/B)]. Turn ignition switch ON and verify battery voltage is present at terminal 2 of hazard switch. 2. Check harness between combination flasher unit terminal 3 and turn signal switch terminal 1 for open circuit. 3. Check hazard switch. 4. Check turn signal switch.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch circuit 3. Hazard switch	1. Check 10A fuse [No. 20, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check harness between combination flasher unit terminal 3 and hazard switch terminal 4. 3. Check hazard switch.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Front turn signal lamp LH or RH circuit.	1. Check bulb. 2. Check the following. a. Turn signal switch and front turn signal lamp LH or RH. b. Front turn signal lamp LH or RH and ground.
Rear combination lamp LH or RH does not operate.	1. Bulb 2. Rear combination lamp LH or RH circuit.	1. Check bulb. 2. Check the following. a. Hazard switch and rear combination lamp LH or RH. b. Rear combination lamp LH or RH and ground.
Side turn signal lamp LH or RH does not operate.	1. Bulb 2. Side turn signal lamp LH or RH circuit.	1. Check bulb. 2. Check the following. a. Hazard switch and side turn signal lamp LH or RH. b. Side turn signal lamp LH or RH and ground.
LH and RH turn indicators do not operate.	1. LH and RH turn indicators ground circuit.	1. Check harness between combination meter and ground.
LH or RH turn indicator does not operate.	1. Bulb 2. Turn indicator circuit	1. Check bulb in combination meter. 2. Check harness between hazard switch and combination meter.



SEL122E

Electrical Components Inspection

NCEL0034

COMBINATION FLASHER UNIT CHECK

NCEL0034S01

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

System Description

NCEL0035

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

Power is supplied at all times

- to tail lamp relay terminals 1 and 3
- through 10A fuse (No. 34, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 10A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 10A fuse [No. 8, located in the fuse block (J/B)].

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

LIGHTING OPERATION BY LIGHTING SWITCH

NCEL0035S01

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

- to tail lamp relay terminal 2 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through body grounds E9 and E28.

Tail lamp relay is then energized and illumination lamps illuminate.

The lighting switch must be in the 1ST or 2ND position for illumination.

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

The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M29	1	3
Combination meter	M40	64, 66	65
A/T indicator	M48	3	4
Ashtray	M82	1	2
Grove box lamp	M67	1	2
IVCS switch	R9	2	12
Rear window defogger switch	M58	5	6
Power window main switch	D6, D10	17	12
Audio	M50	8	7
Hazard switch	M57	7	8
Push control unit	M53, M54	15	16
A/C auto amp.	M55	24	25

The ground for all of the components except for grove box lamp and ashtray are controlled through terminals 2 and 3 of the illumination control switch and body grounds M15, M71 and M76.

BATTERY SAVER CONTROL

NCEL0035S02

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

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 2 of the tail lamp relay from headlamp battery saver control unit

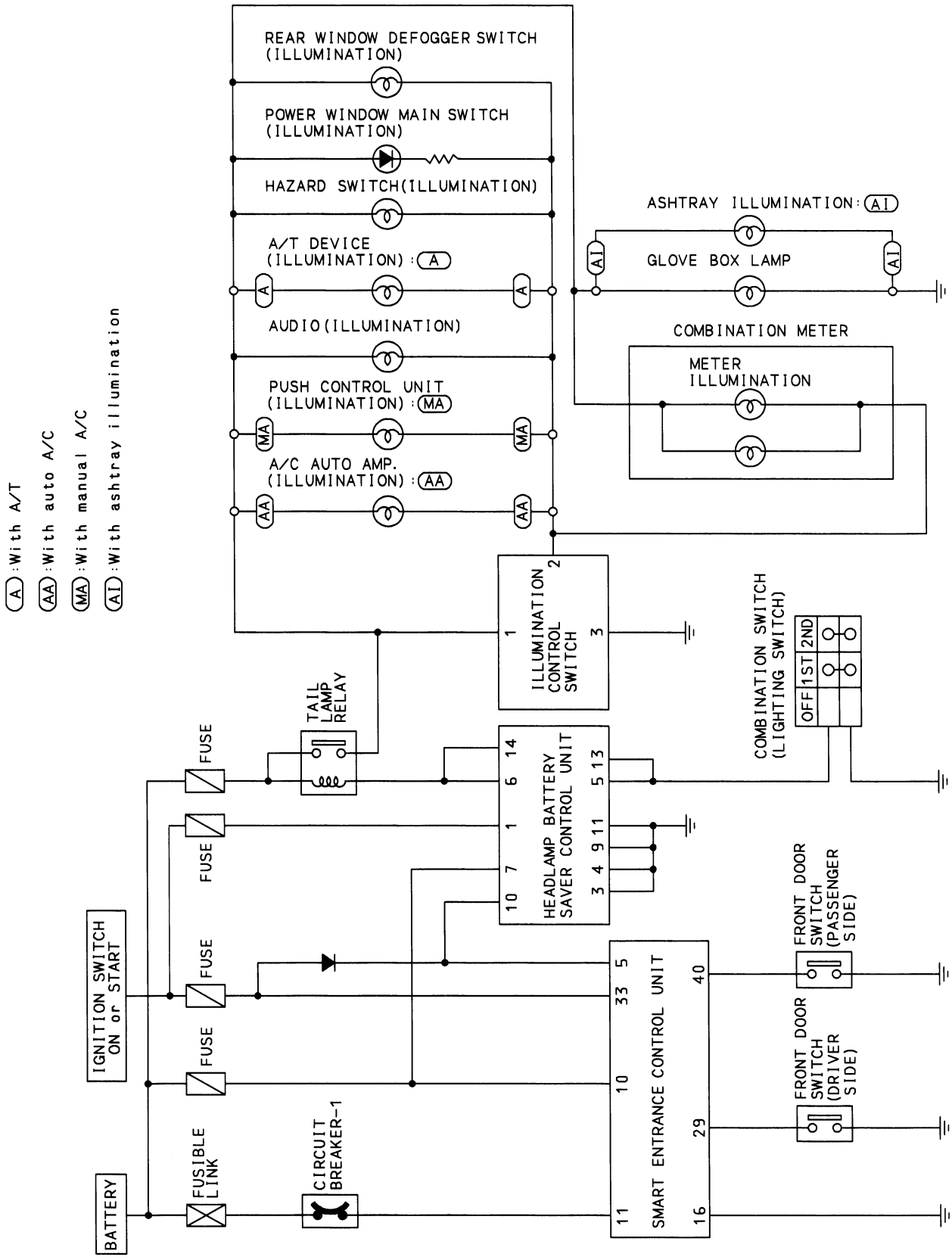
teminals 6 and 14 is terminated.
Then illumination lamps are turned off.
Illumination lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated.
When the lighting switch is turned from OFF to 1ST (or 2ND) after illumination lamps are turned off by the battery saver control, ground is supplied

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

Then illumination lamps illuminate again.

Schematic

NCEL0036

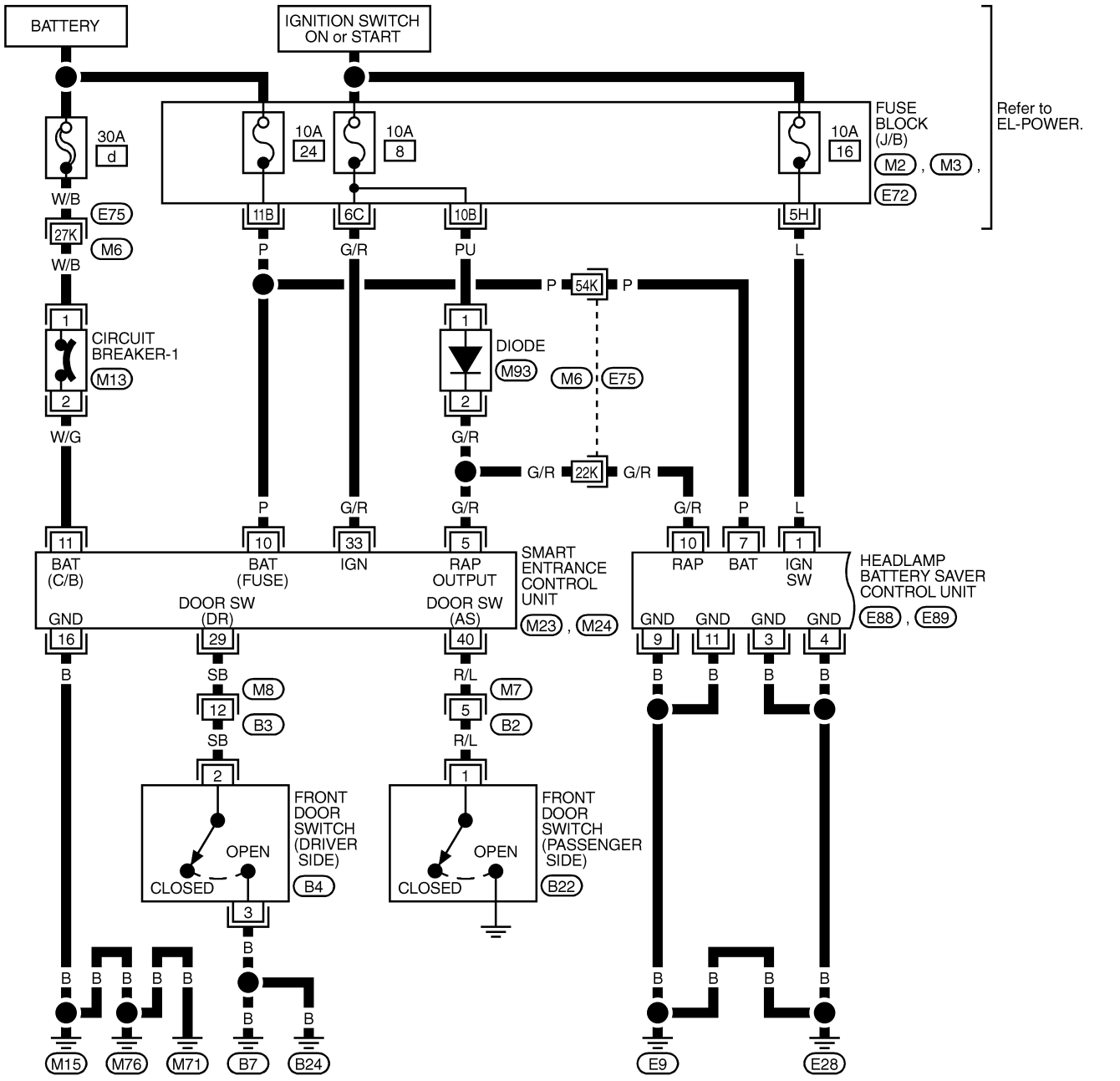


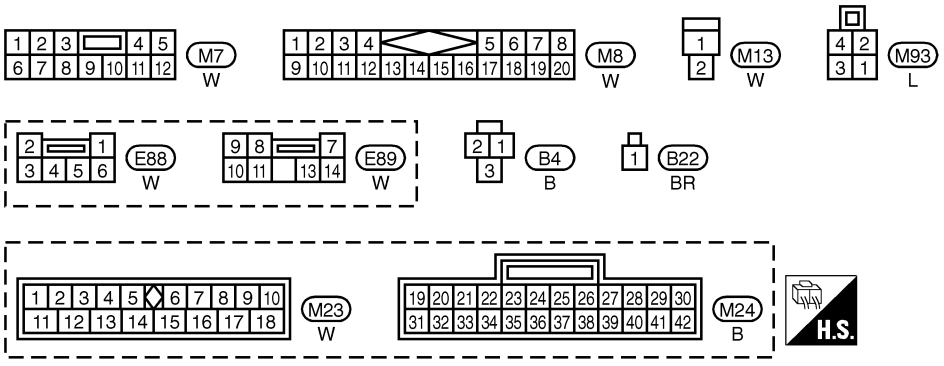
TEL863B

Wiring Diagram — ILL —

NCEL0037

EL-ILL-01

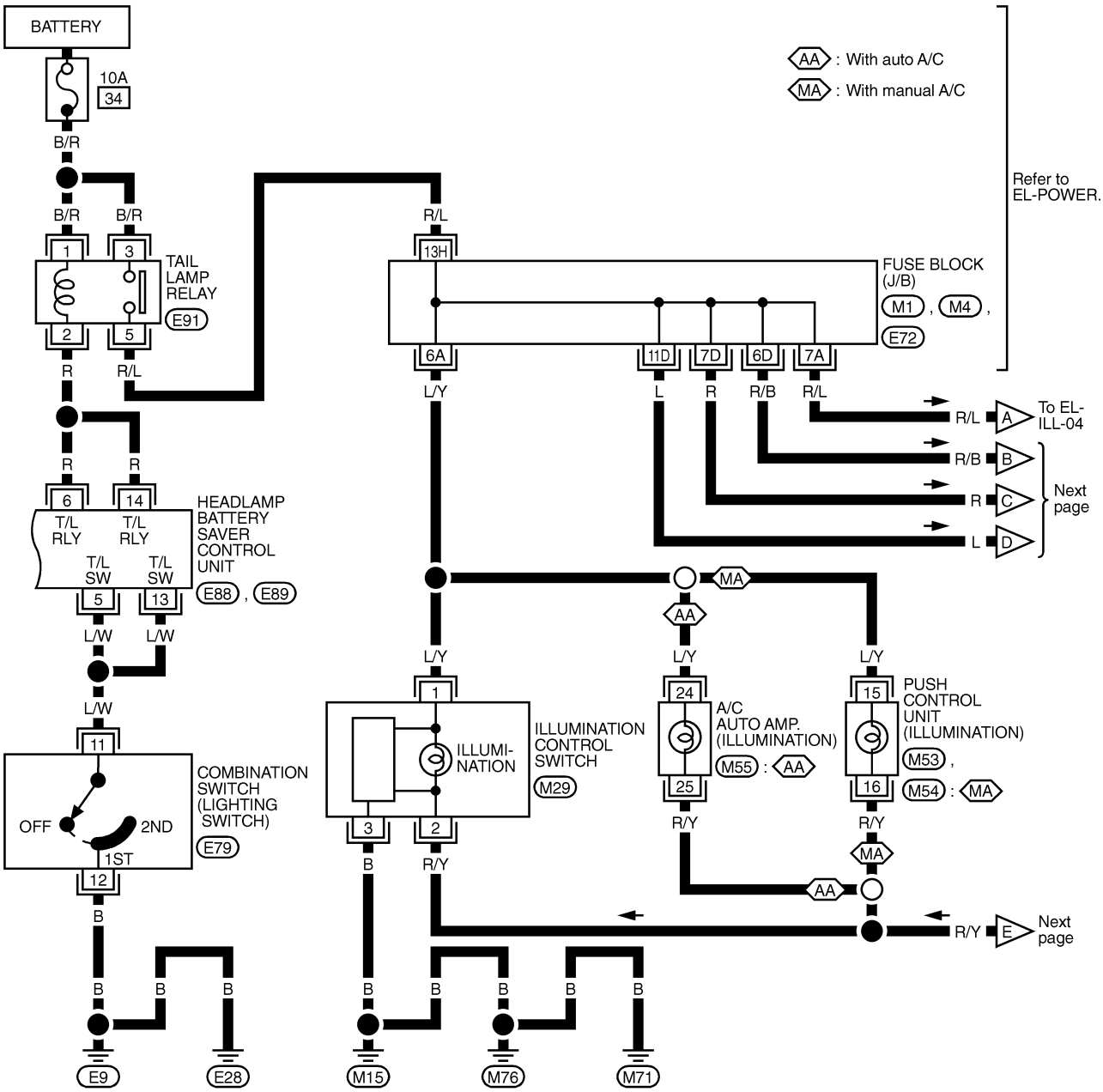


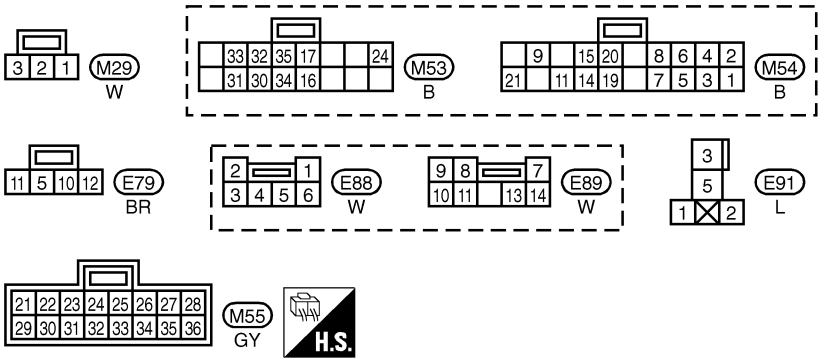


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL842B

EL-ILL-02

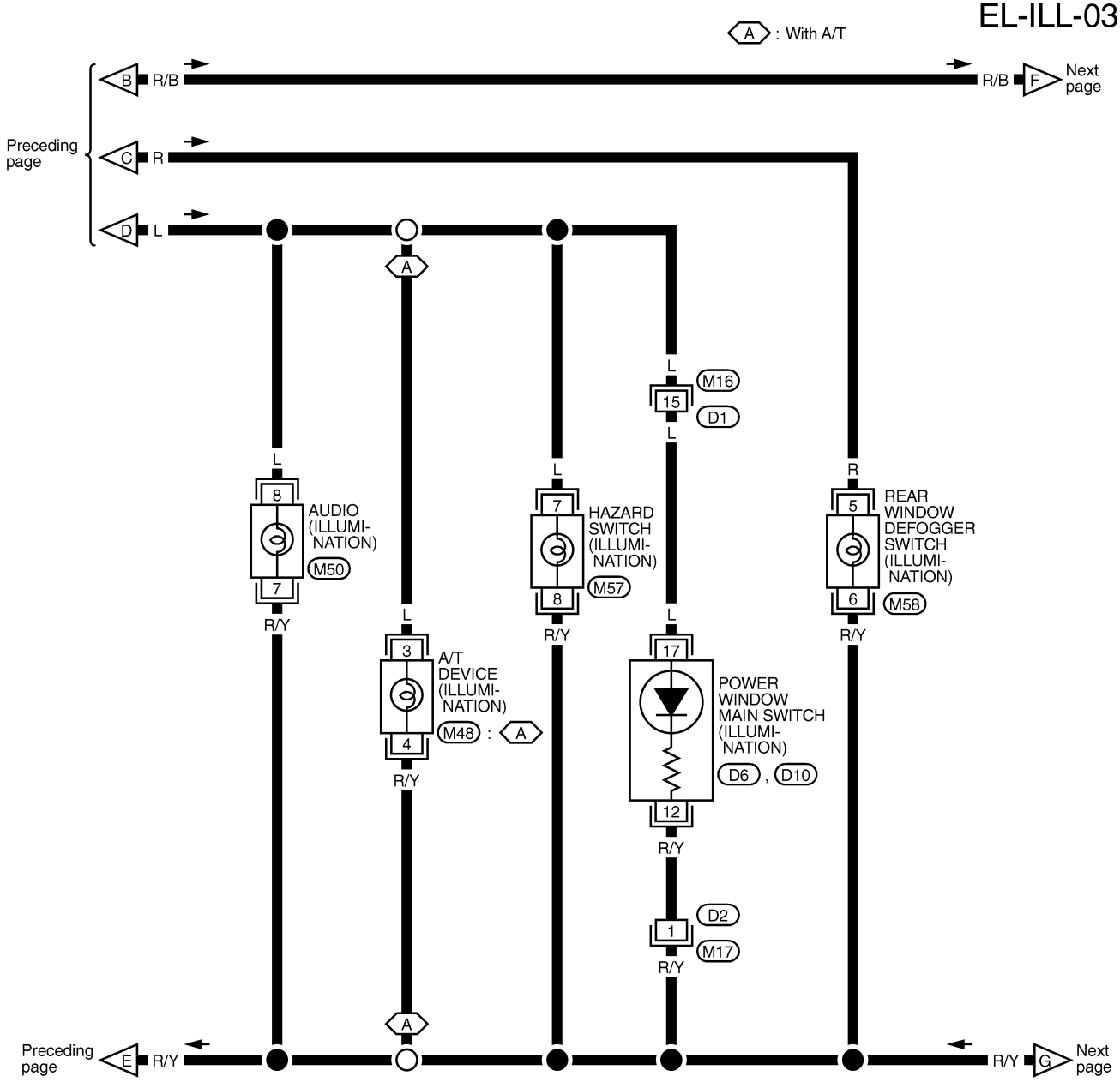


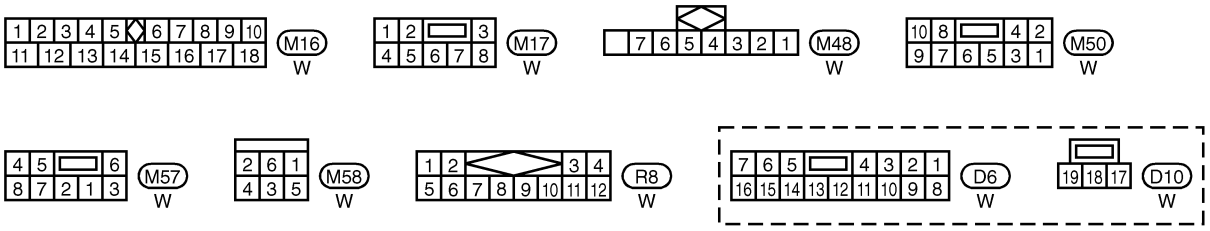


REFER TO THE FOLLOWING.
M1 , M4 , E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL495B

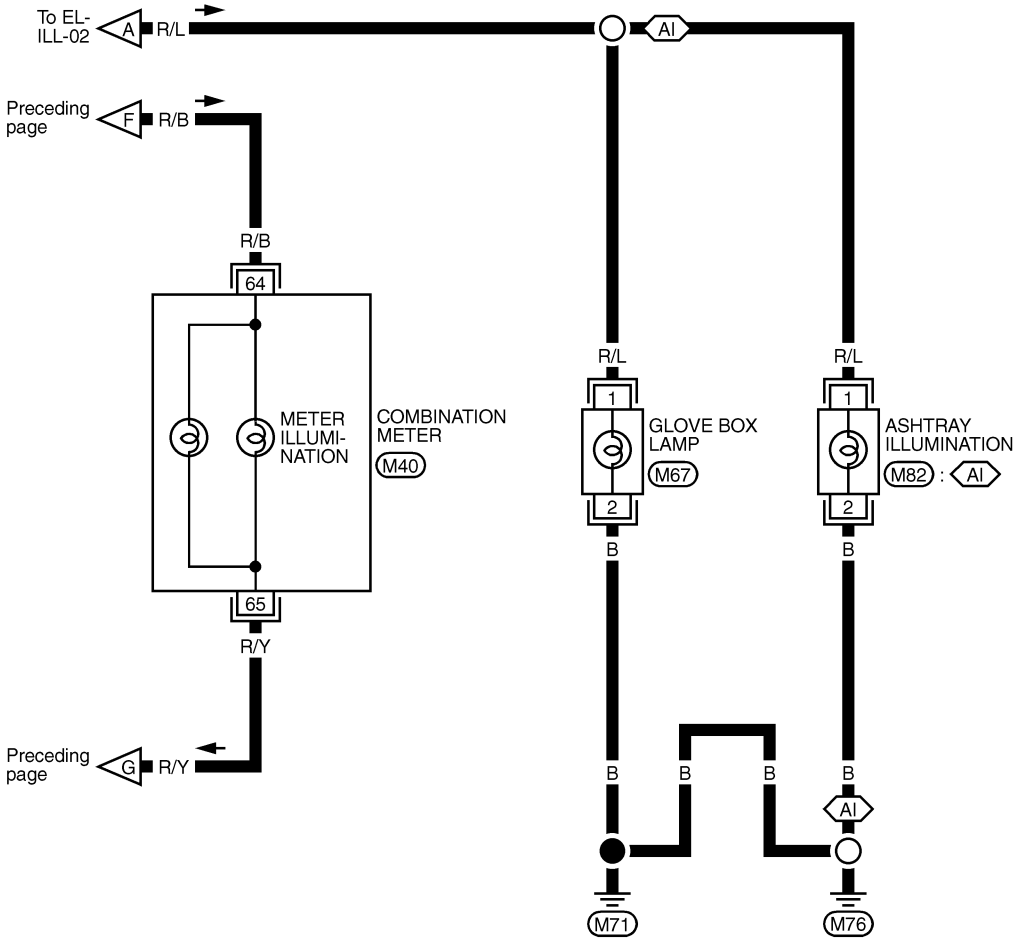
EL-ILL-03





TEL866B

AI : With ashtray illumination



TEL843B

System Description

NCEL0162

POWER SUPPLY AND GROUND

NCEL0162S01

Power is supplied at all times:

- through 30A fusible link (Letter **d**, located in the fuse and fusible link box)
- to circuit breaker-1 terminal 1
- through circuit breaker-1 terminal 2
- to smart entrance control unit terminal 11.

Power is supplied at all times:

- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to key switch terminal 1 and
- to smart entrance control unit terminal 10.

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

- through terminal key switch 2
- to smart entrance control unit terminal 32.

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied:

- to smart entrance control unit terminal 16
- through body grounds terminal M15, M71 and M76.

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

- through body grounds B7 and B24
- to front door switch (driver side) terminal 3
- from front door switch (driver side) terminal 2
- to smart entrance control unit terminal 29.

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

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

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

- through body grounds terminal M15, M71 and M76
- to front door lock actuator (driver side) (unlock sensor) terminal 2
- from front door lock actuator (driver side) (unlock sensor) terminal 4
- to smart entrance control unit terminal 36.

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

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

With power and ground supplied, the interior room lamp illuminates.

SWITCH OPERATION

NCEL0162S03

When the room lamp switch is ON, ground is supplied:

- through case grounds of interior room lamp
- from interior room lamp terminal 1
- to smart entrance control unit terminal 17.

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

- through body grounds M15, M71 and M76
- to map lamp terminal 2
- from map lamp terminal 1
- to smart entrance control unit terminal 17.

With power and ground supplied, the room lamp turns ON.

INTERIOR ROOM LAMP TIMER OPERATION

NCEL0162S04

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

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

When the interior lamp switch is in the "DOOR" position and the unlock signal is supplied from the multi-remote controller while the driver's door is locked and all doors are closed (even if key is inserted), the smart entrance control unit keeps the interior lamp illuminated for about 30 senconds.
The timer is canceled when:

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

ON-OFF CONTROL

NCEL0162S05

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

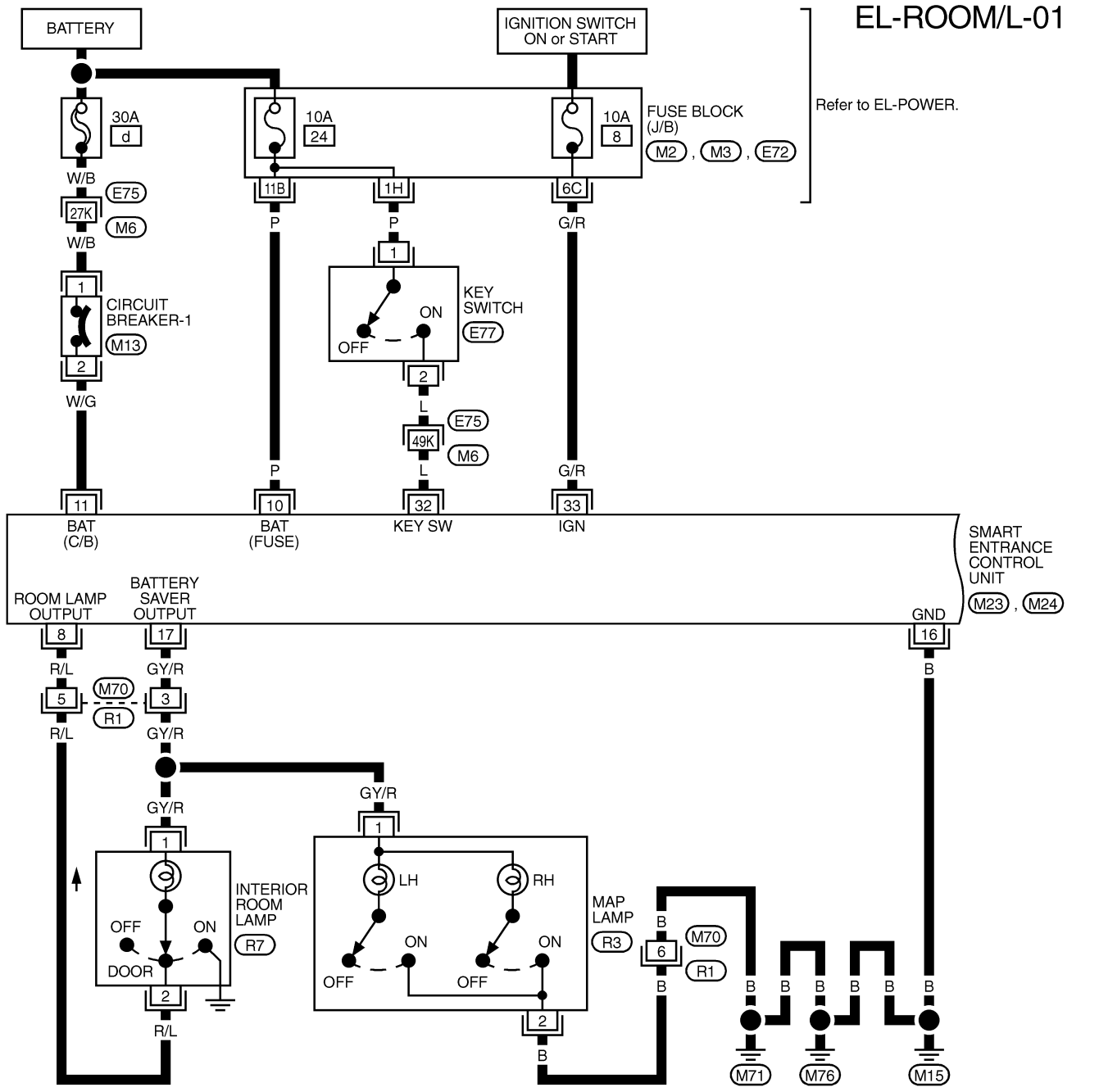
NCEL0162S06

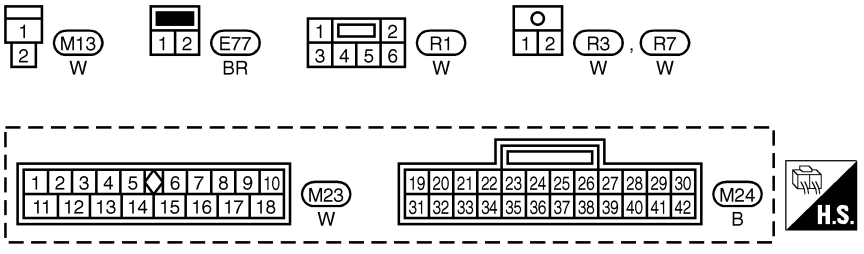
The lamp turns off automatically when interior lamp, and/or map lamp is illuminated with the ignition key is in OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in ON position for more than 10 minutes.
After lamps turn off by the battery saver system, the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

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

Wiring Diagram — ROOM/L —

NCEL0163

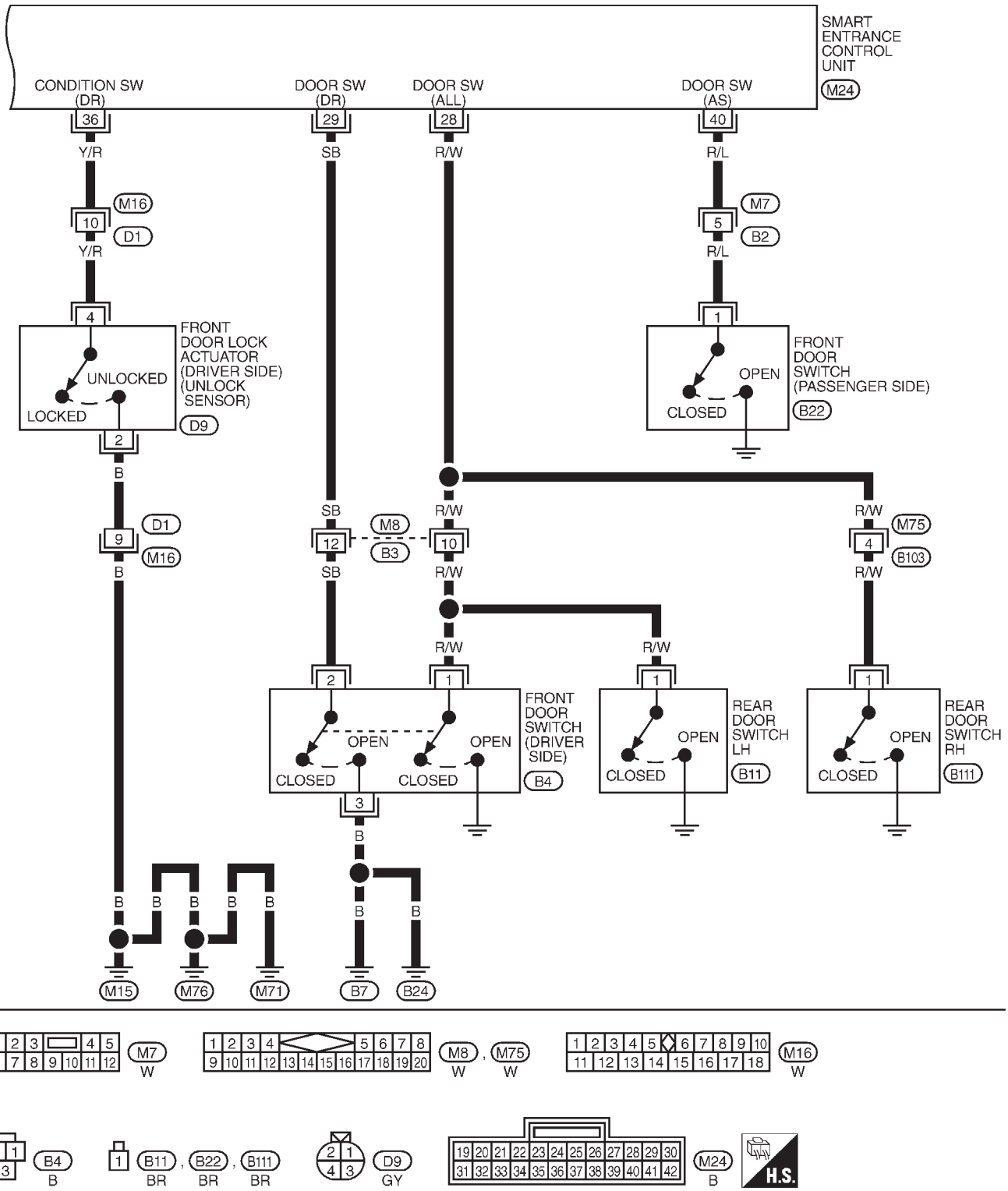




REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 , M3 , E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL844B

EL-ROOM/L-02



TEL898A

System Description

NCEL0038

TRUNK ROOM LAMP

NCEL0038S01

Power is supplied at all times

- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to trunk room lamp terminal 1,

With trunk room lamp switch ON, ground is supplied to turn trunk room lamp ON.
When trunk room lamp switch is opened, ground is supplied to trunk room lamp terminal 2 through body grounds B109 and B110.

VANITY MIRROR LAMP

NCEL0038S04

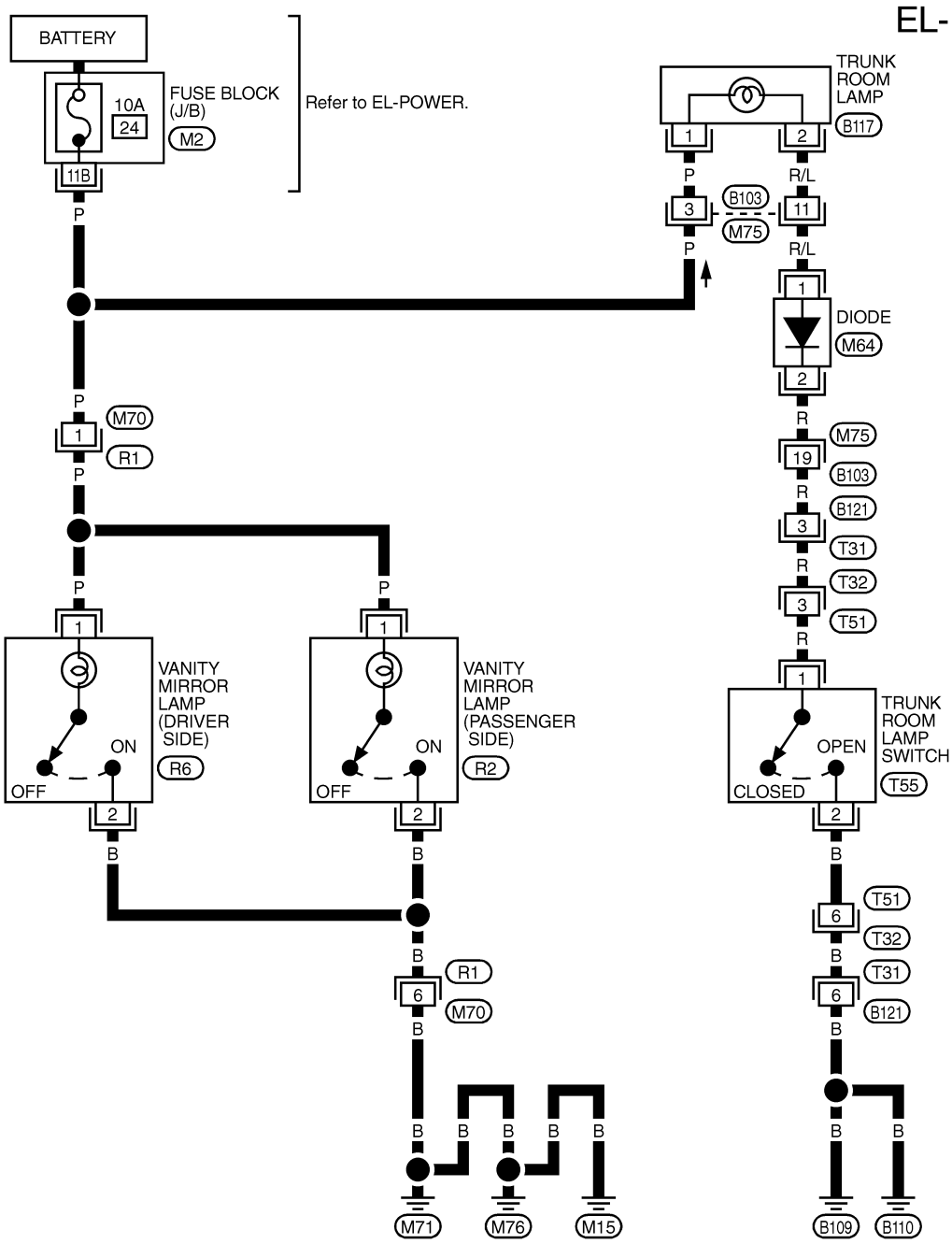
Power is supplied at all times

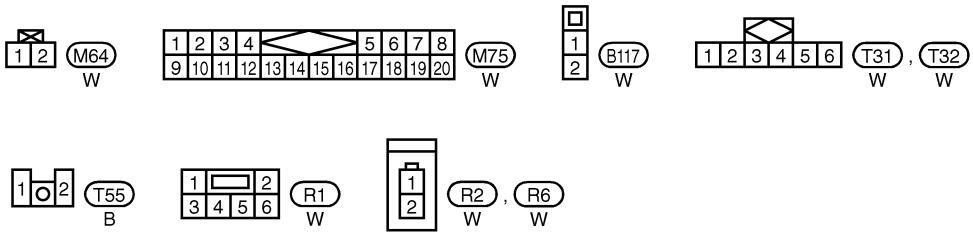
- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to each vanity mirror lamp terminal 1.

With the vanity mirror lamp switch in the ON position, the vanity mirror lamp turns ON.

Wiring Diagram — INT/L —

NCEL0040



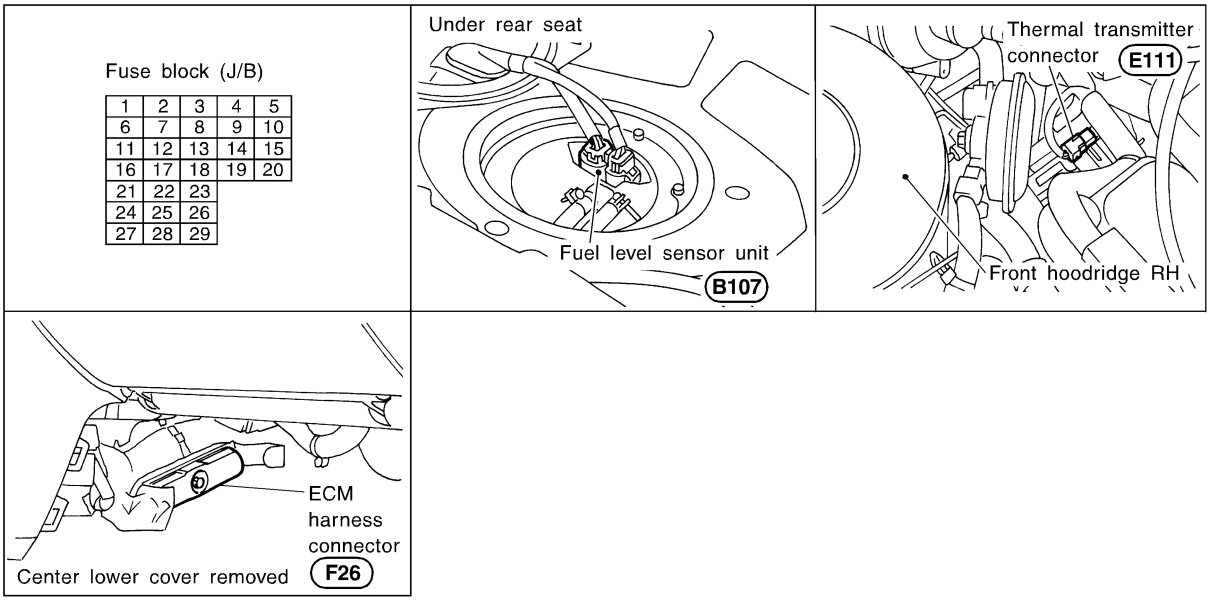


REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL499B

Component Parts and Harness Connector Location

NCEL0041



SEL832VA

System Description

NCEL0042

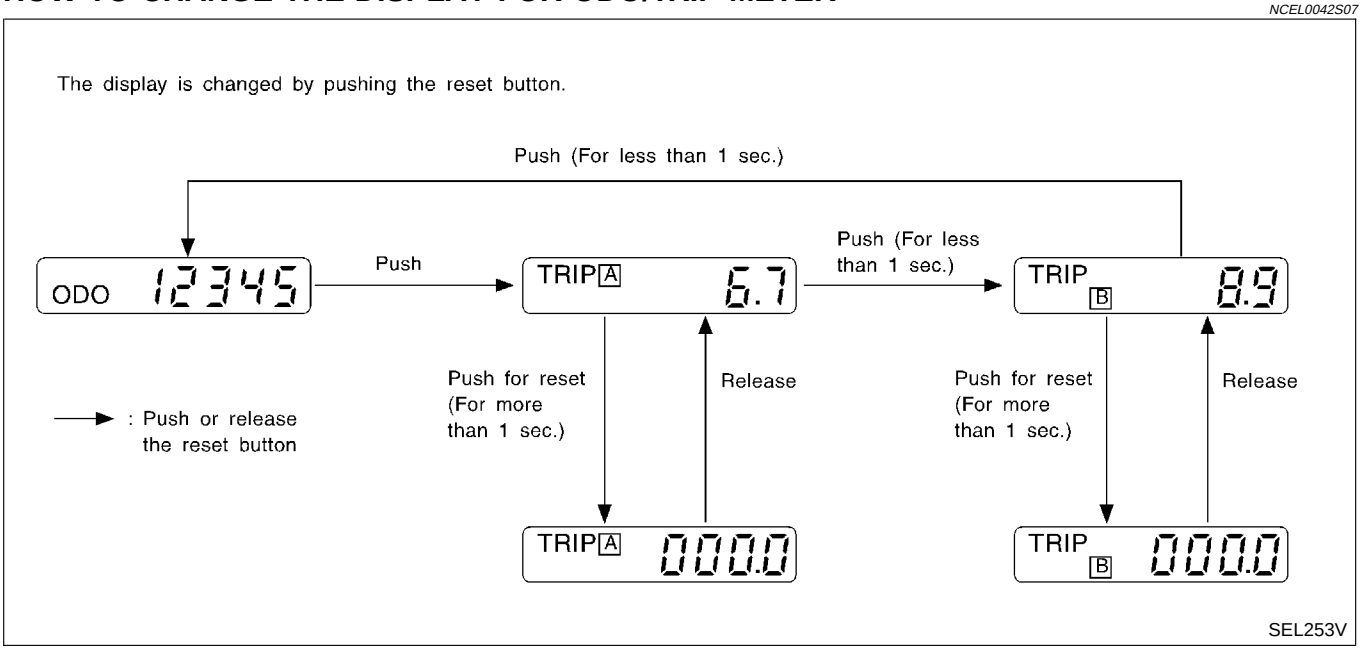
UNIFIED CONTROL METER

NCEL0042S06

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

NCEL0042S07



SEL253V

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

POWER SUPPLY AND GROUND CIRCUIT

NCEL0042S08

Power is supplied at all times

- through 7.5A fuse [No. 5, located in the fuse block (J/B)]
- to combination meter terminal 1.

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

- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminal 37.

Ground is supplied

- to combination meter terminal 3
- through body grounds M15, M71 and M76.

WATER TEMPERATURE GAUGE

NCEL0042S01

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

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal 5 of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

NCEL0042S02

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

The tachometer is regulated by a signal

- from terminal 32 of the ECM
- to combination meter terminal 16 for the tachometer.

FUEL GAUGE

NCEL0042S03

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

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 6 for the fuel gauge
- from terminal 4 of the fuel level sensor unit
- through terminal 1 of the fuel level sensor unit and
- through body grounds B109 and B110.

SPEEDOMETER

NCEL0042S04

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

The voltage is supplied

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

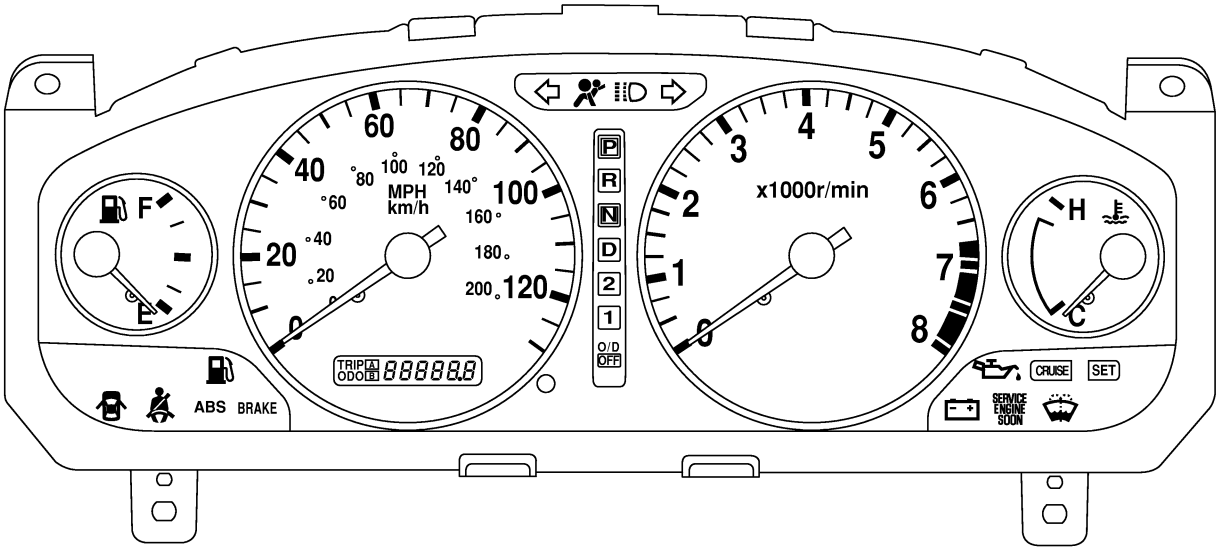
The speedometer converts the voltage into the vehicle speed displayed.

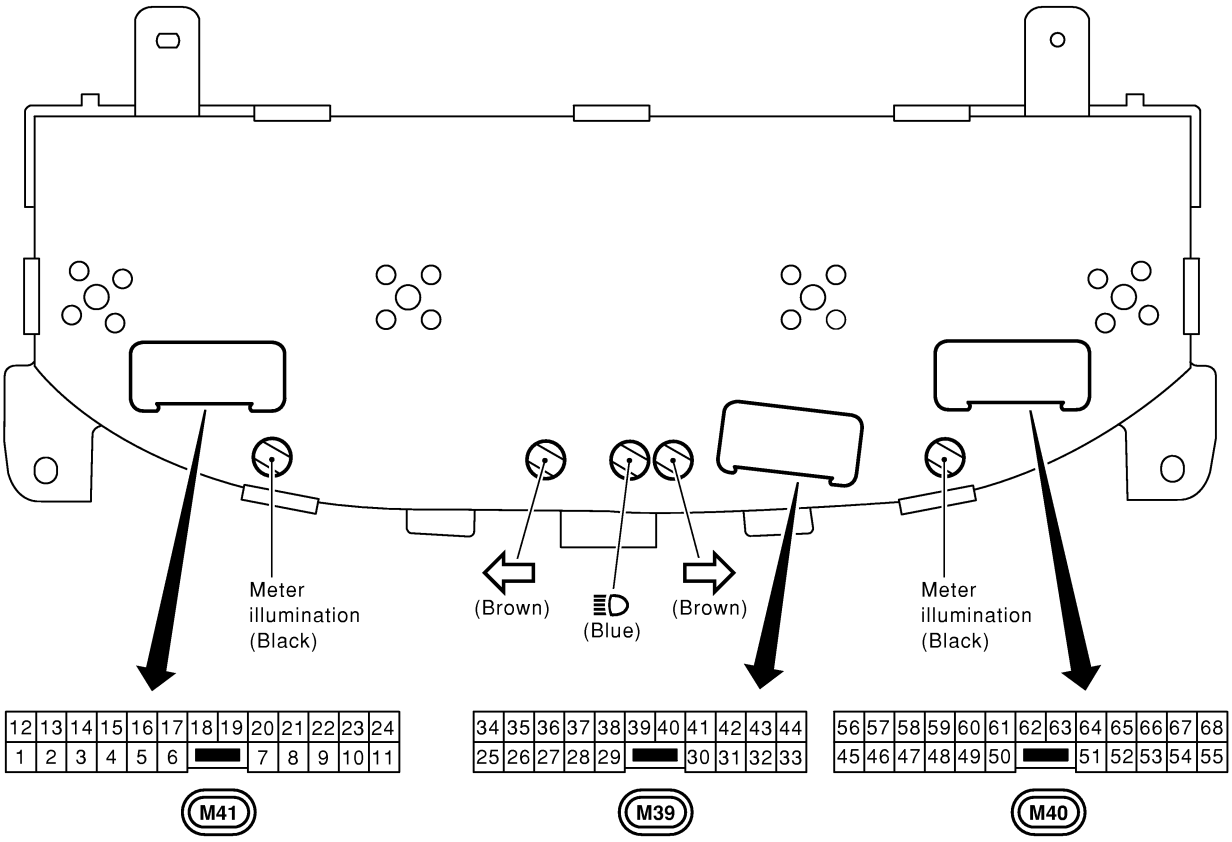
Combination Meter

NCEL0043

FOR U.S.A.

NCEL0043S01

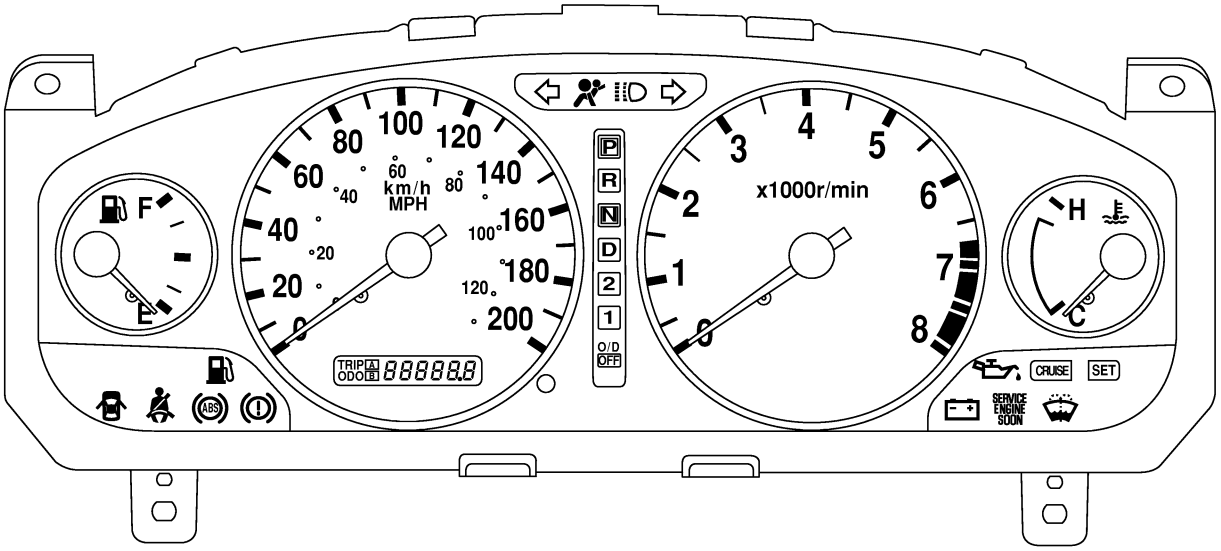


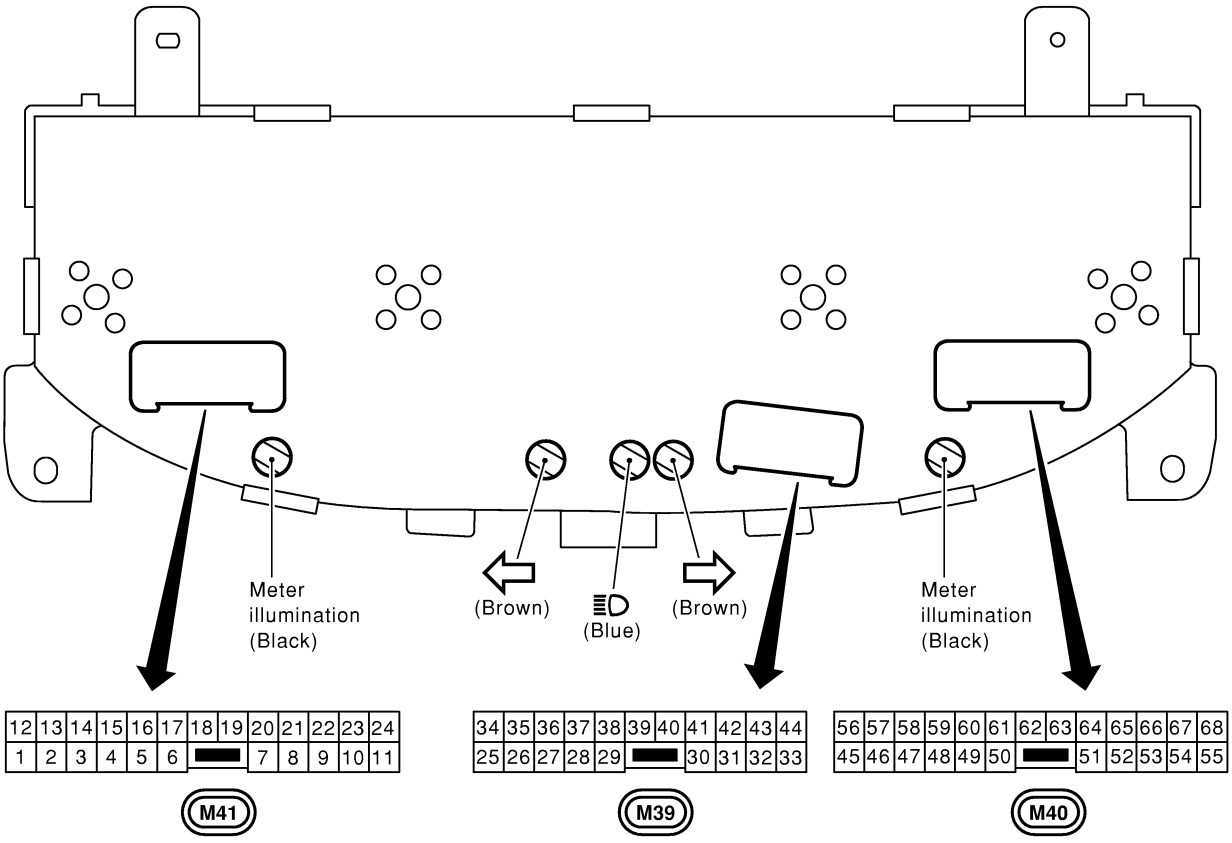


CEL345A

FOR CANADA

NCEL0043S02

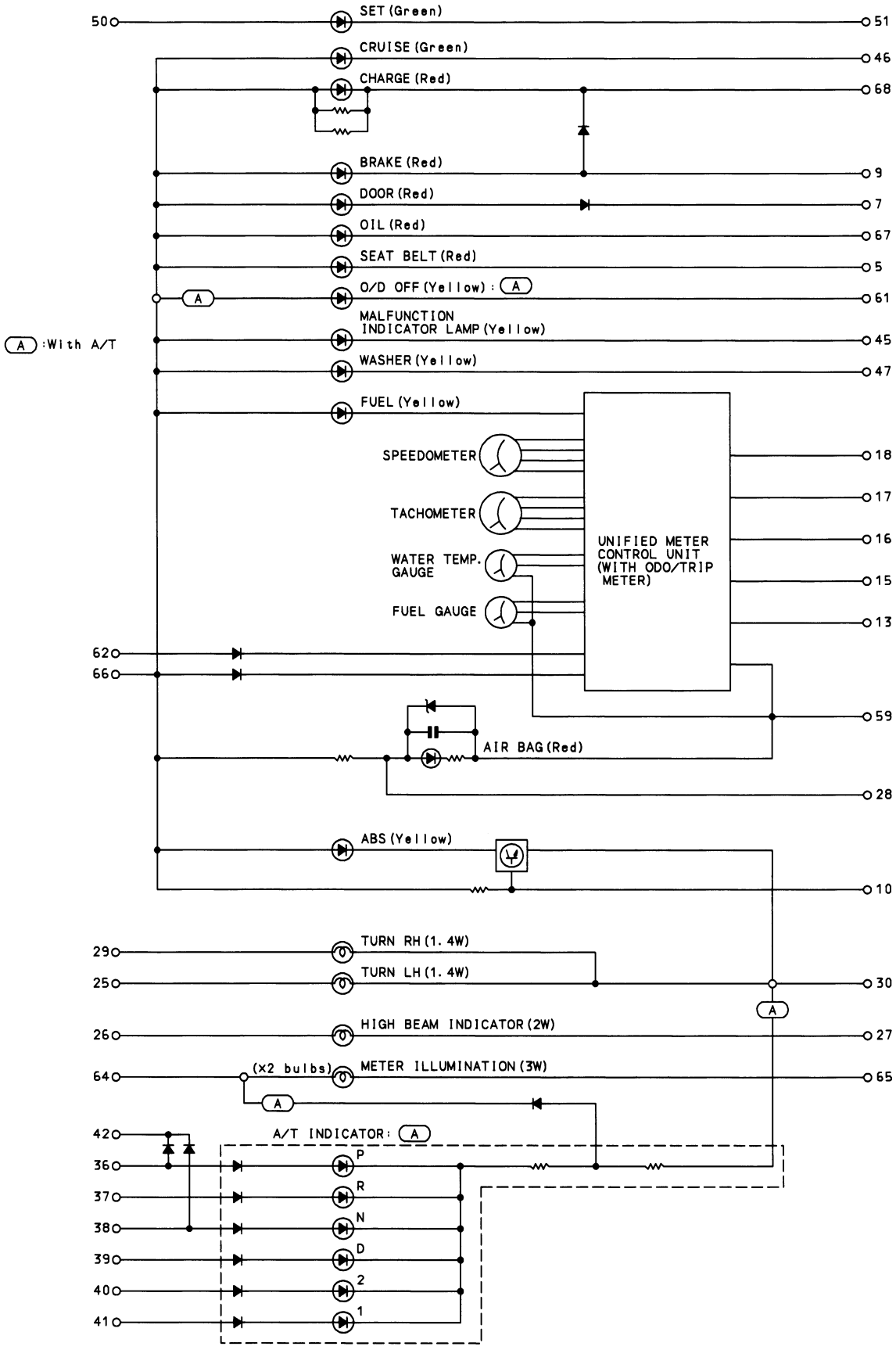




CEL346A

Schematic

NCEL0197

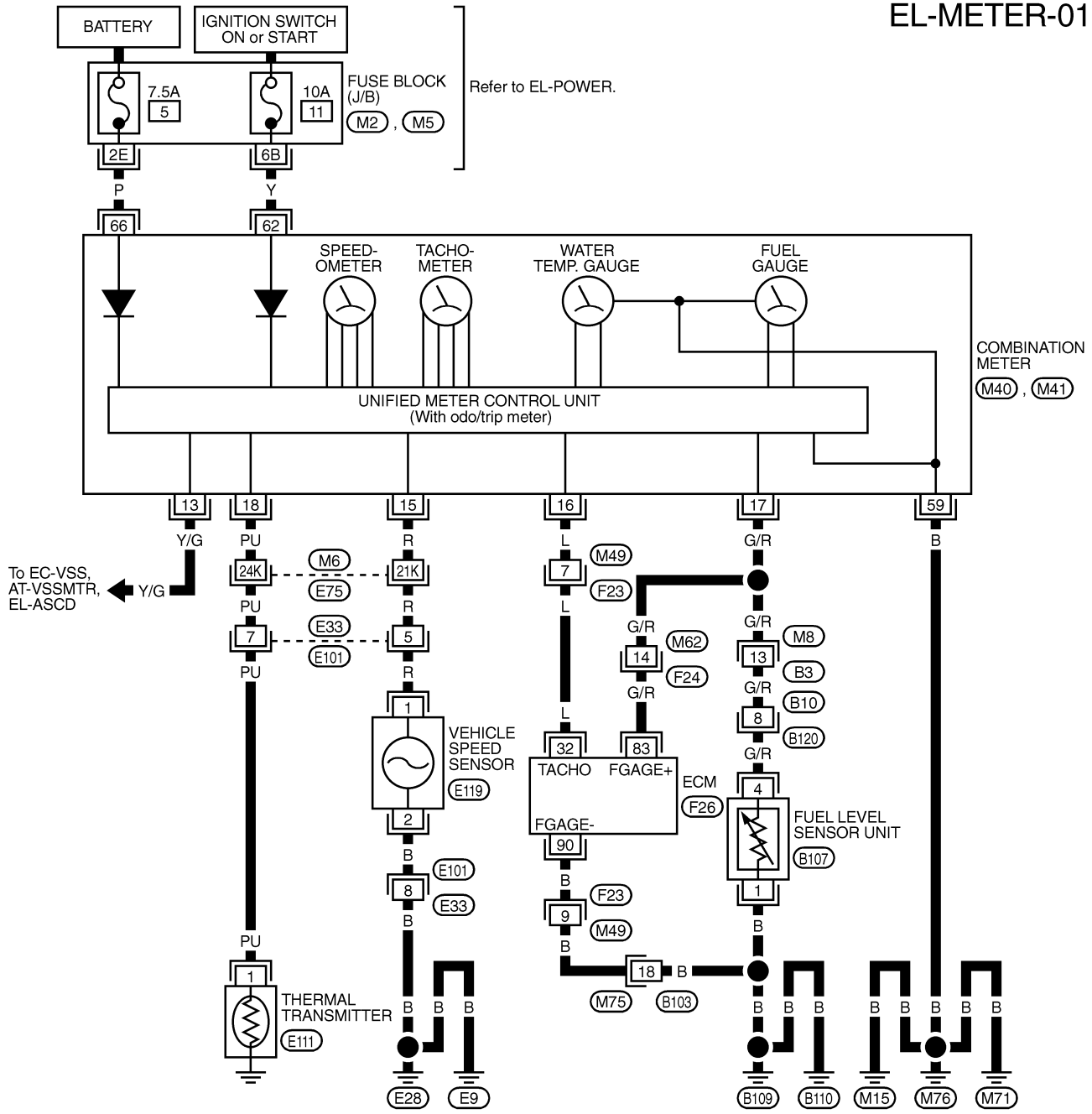


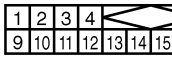
TEL862B

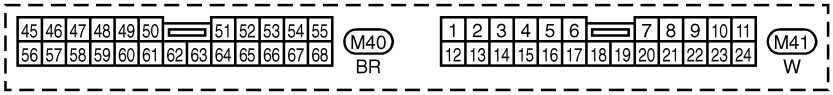
Wiring Diagram — METER —

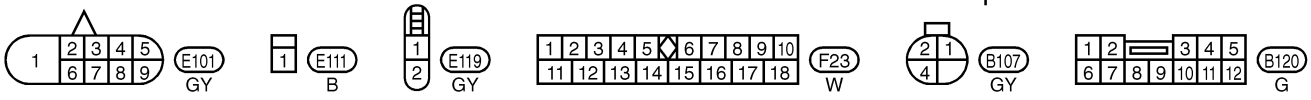
NCEL0045

EL-METER-01









REFER TO THE FOLLOWING.

E75 -SUPER MULTIPLE JUNCTION (SMJ)

M2, M5 -FUSE BLOCK-JUNCTION BOX (J/B)

F26 -ELECTRICAL UNITS

TEL845B

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

NCEL0151

DIAGNOSIS FUNCTION

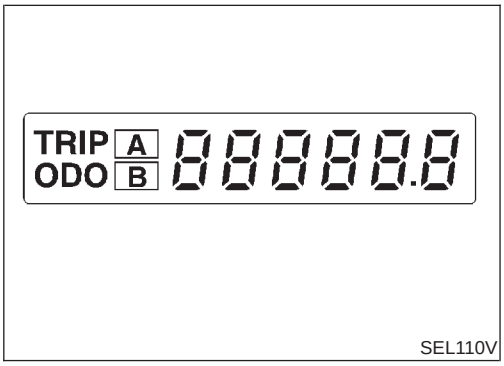
NCEL0151S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NCEL0151S02

1. Turn ignition switch to ON and change odo/trip meter to “TRIP A” or “TRIP B”.
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates “000.0”.
5. Push odo/trip meter switch more than three times within 5 seconds.

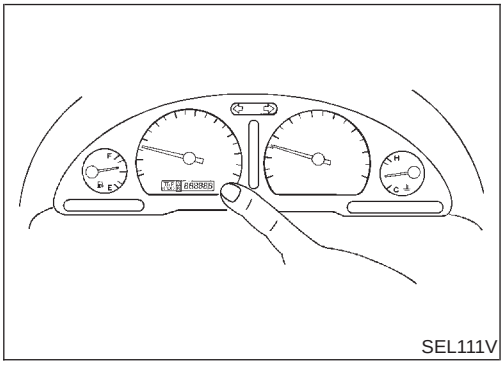


SEL110V

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

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

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


SEL111V

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

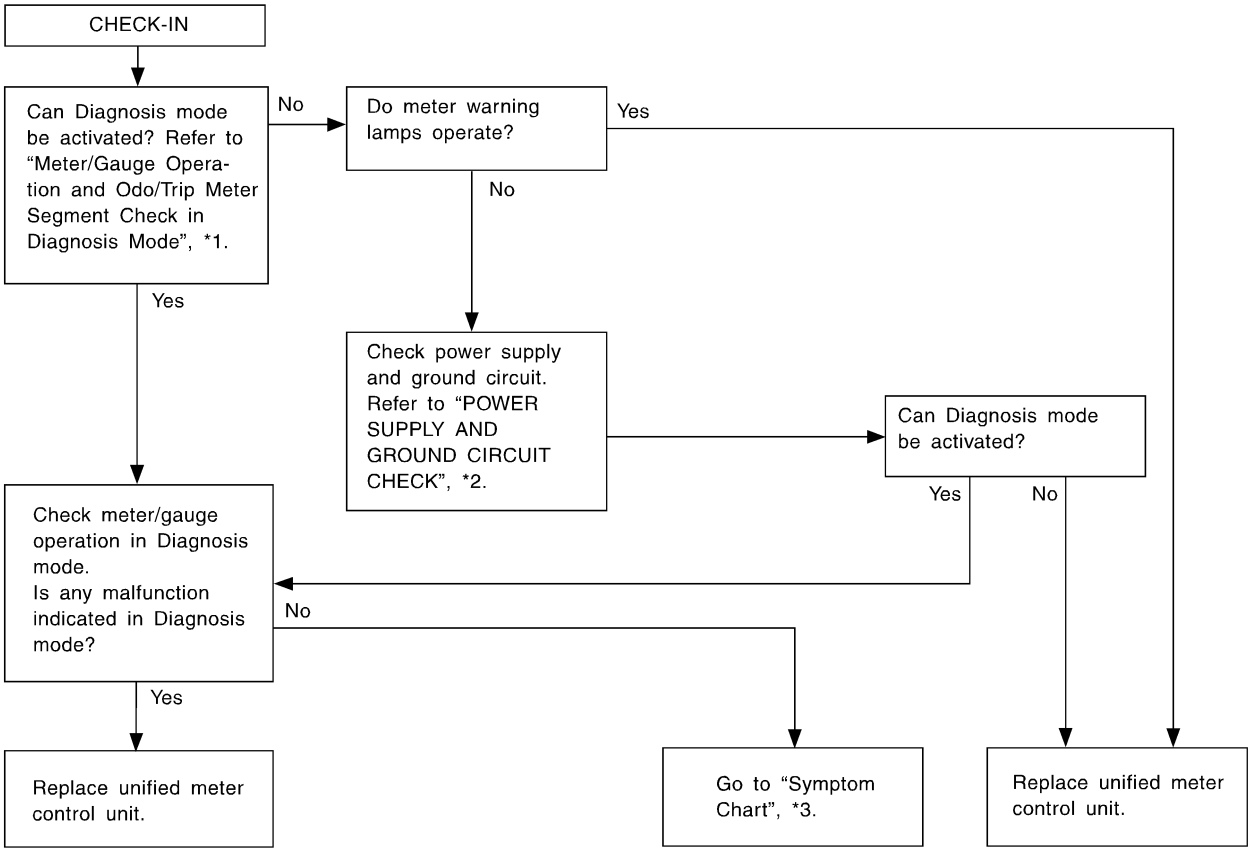
NOTE:
It takes about 1 minute for indication of fuel gauge to become stable.

Trouble Diagnoses

NCEL0198

PRELIMINARY CHECK

NCEL0198S01



SEL269Y

*1: Meter/Gauge Operation and Odo/ Trip Meter Segment Check in Diagnosis Mode (EL-90)

*2: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-92)

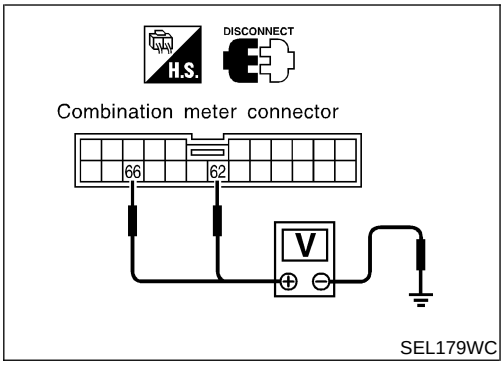
*3: SYMPTOM CHART (EL-91)

SYMPTOM CHART

NCEL0198S02

Symptom	Possible causes	Repair order
One of speedometer/ tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Engine revolution signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-93.) INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-94.) INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to EL-95.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-96.) 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-91.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NCEL0198S03

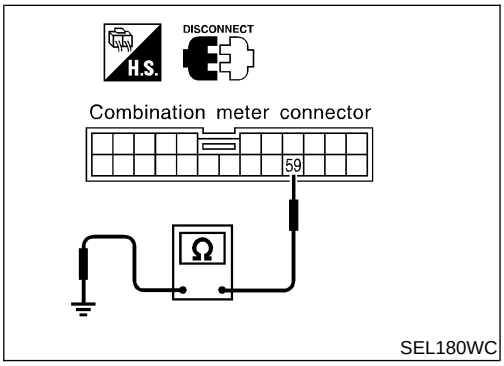
Power Supply Circuit Check

NCEL0198S0301

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (wire color)				
M40	66 (P)	Ground	Battery voltage	Battery voltage	Battery voltage
M40	62 (Y)	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 5, located in fuse block (J/B)]
- 10A fuse [No. 11, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground Circuit Check

NCEL0198S0302

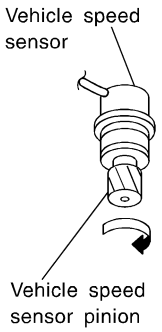
Terminals			Continuity
(+)		(−)	
Connector	Terminal (wire color)		
M40	59 (B)	Ground	Yes

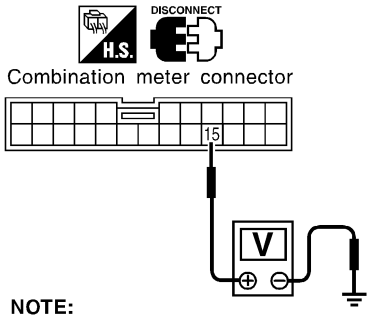
INSPECTION/VEHICLE SPEED SENSOR

=NCEL0198S04

1	CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter harness connector M41 terminal 15 (R) and ground while quickly turning speed sensor pinion.





Voltage: Approx. 0.5V

NOTE:
Vehicle speed sensor connector should remain connected.

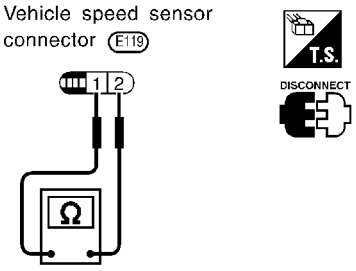
SEL273Y

OK or NG

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

2	CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



SEL776V

Resistance: Approx. 250Ω

OK or NG

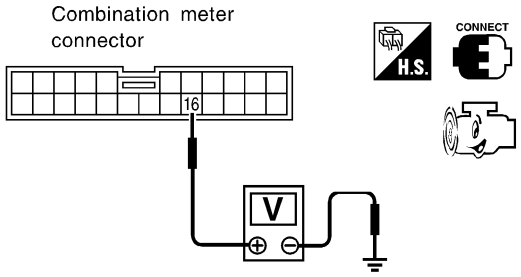
OK	▶	**Check the following.** ● Harness or connector between speedometer and vehicle speed sensor ● Harness between vehicle speed sensor and ground
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

=NCEL0198S05

1	CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter harness connector M41 terminals 16 (L) and ground at idle and 2,000 rpm.



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

SEL364WC

OK or NG

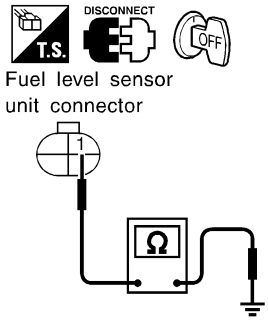
OK	▶	Engine revolution signal is OK.
NG	▶	Harness for open or short between ECM and combination meter

INSPECTION/FUEL LEVEL SENSOR UNIT

=NCEL0198S06

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

Check harness continuity between fuel level sensor unit harness connector B107 terminal 1 (B) and ground.



Continuity should exist.

SEL299XA

OK or NG

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

2	CHECK FUEL LEVEL SENSOR UNIT

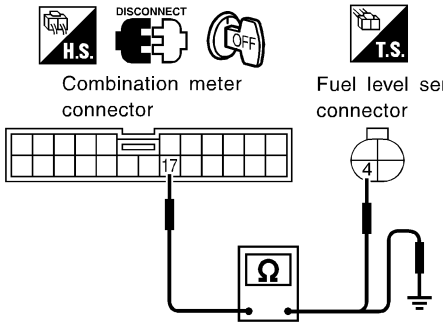
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-97).

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 M41 and fuel level sensor unit connector B107.
2. Check continuity between combination meter terminal 17 (G/R) and fuel level sensor unit terminal 4 (G/R).
3. Check continuity between combination meter terminal 17 (G/R) and ground.



Continuity:
Combination meter terminal 17 and fuel level sensor unit terminal 4
Yes
Combination meter terminal 17 and ground
No

SEL300XA

OK or NG

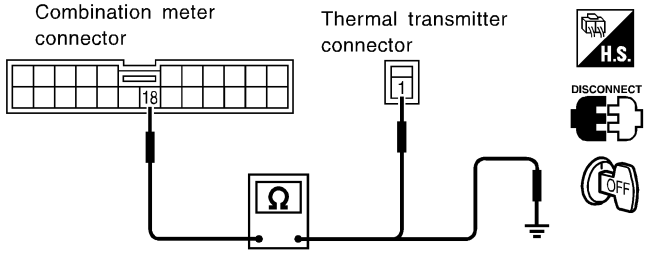
OK	▶	Fuel level sensor unit is OK.
NG	▶	Repair harness or connector.

INSPECTION/THERMAL TRANSMITTER

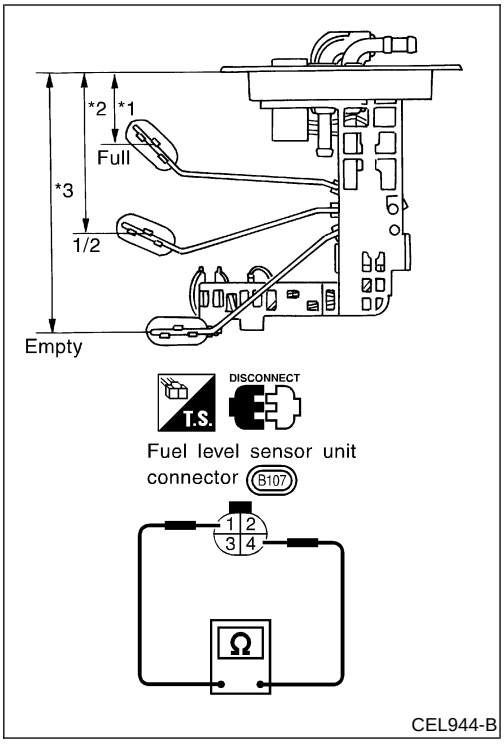
=NCEL0198S07

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK" (EL-97).		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace.

2	CHECK HARNESS FOR OPEN OR SHORT	
1. Disconnect combination meter connector M41 and thermal transmitter connector E111. 2. Check continuity between combination meter terminal 18 (PU) and thermal transmitter terminal 1 (PU). **Continuity should exist.** 3. Check continuity between combination meter terminal 18 (PU) and ground. **Continuity should not exist.**		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.



SEL184WB



CEL944-B

Electrical Components Inspection

=NCEL0047

FUEL LEVEL SENSOR UNIT CHECK

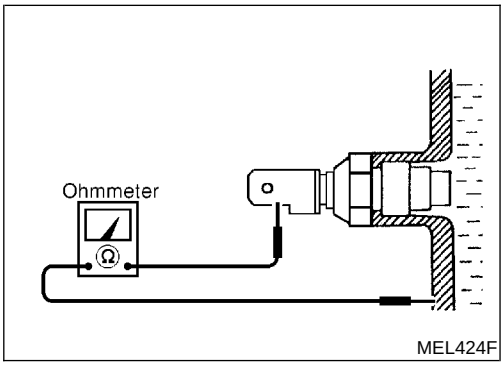
NCEL0047S01

- For removal, refer to FE section.

Check the resistance between terminals 4 and 1.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(−)				
4	1	*1	Full	45 (1.77)	Approx. 4 - 6
		*2	1/2	101 (3.98)	30 - 34
		*3	Empty	160 (6.30)	80 - 83

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



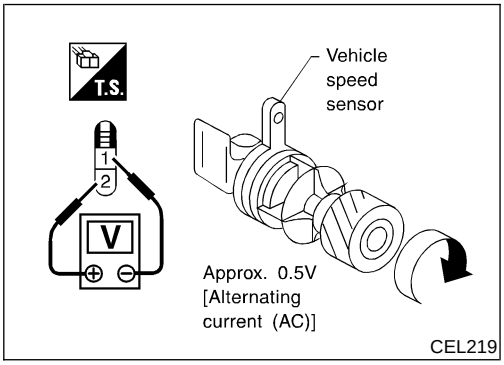
MEL424F

THERMAL TRANSMITTER CHECK

NCEL0047S02

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

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



CEL219

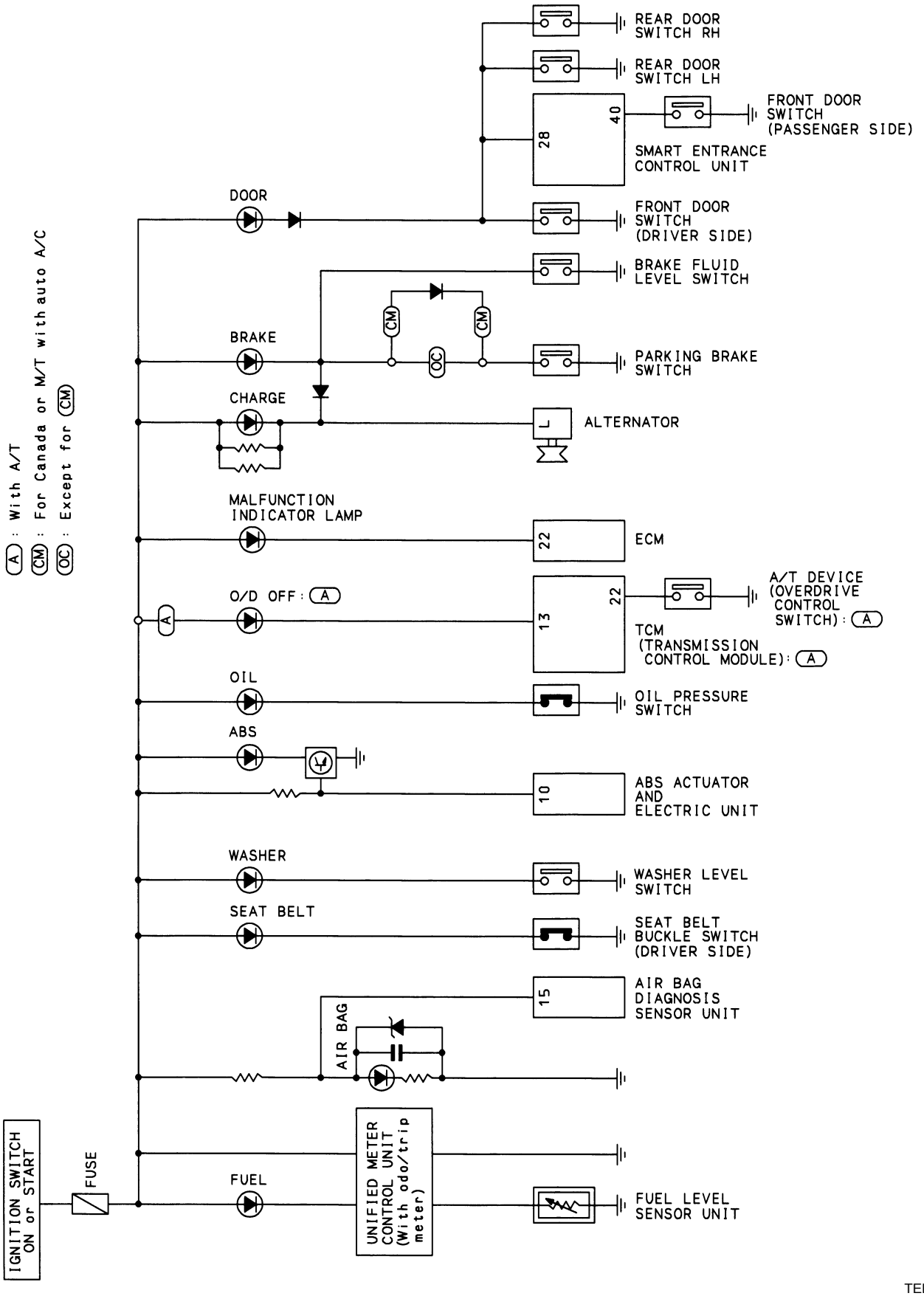
VEHICLE SPEED SENSOR SIGNAL CHECK

NCEL0047S03

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

Schematic

NCEL0049

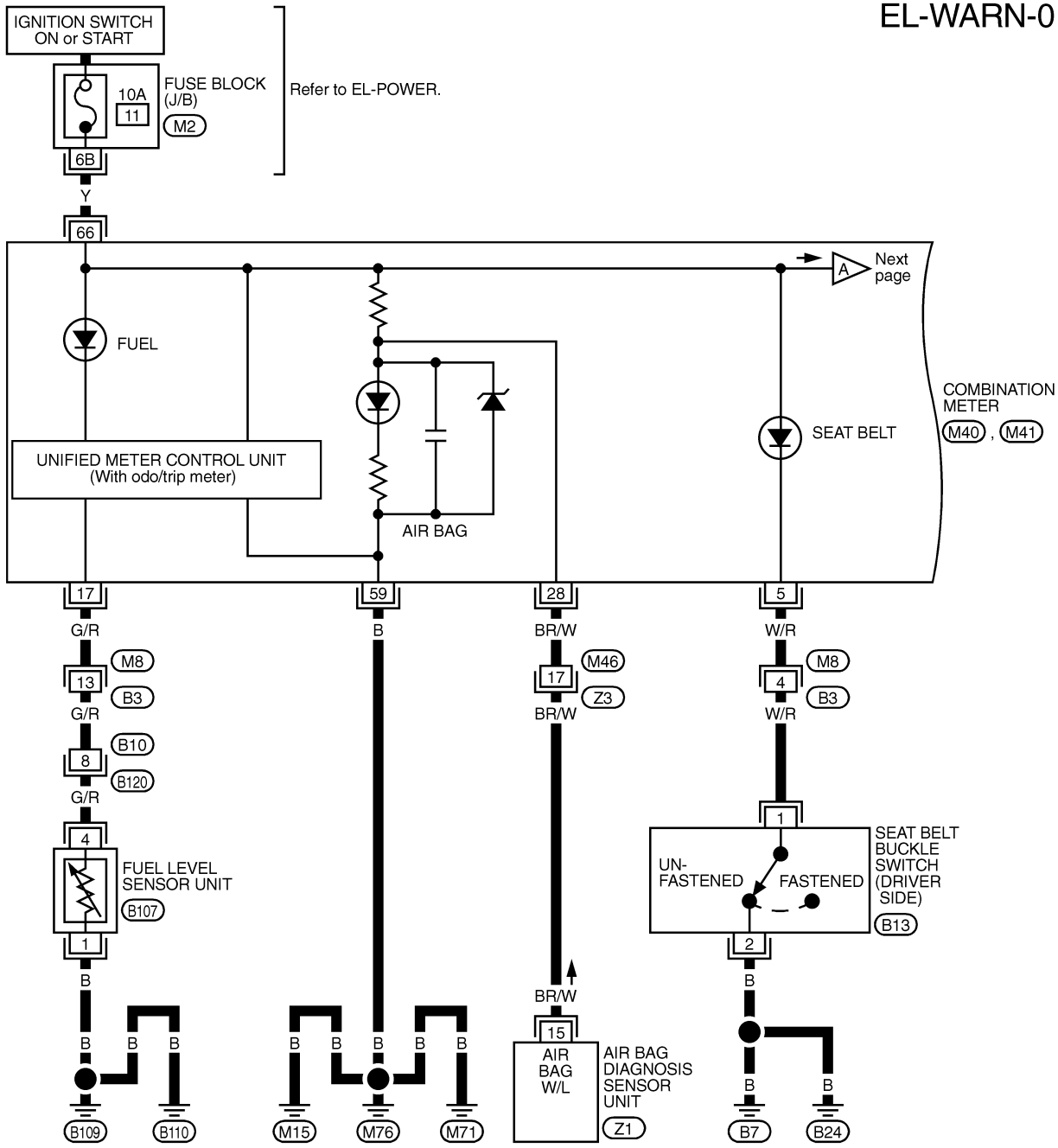


TEL846B

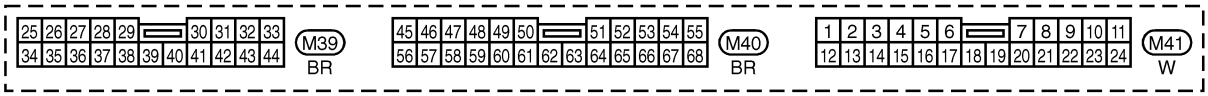
Wiring Diagram — WARN —

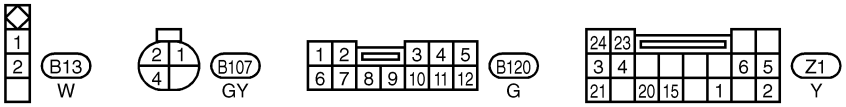
NCEL0050

EL-WARN-01



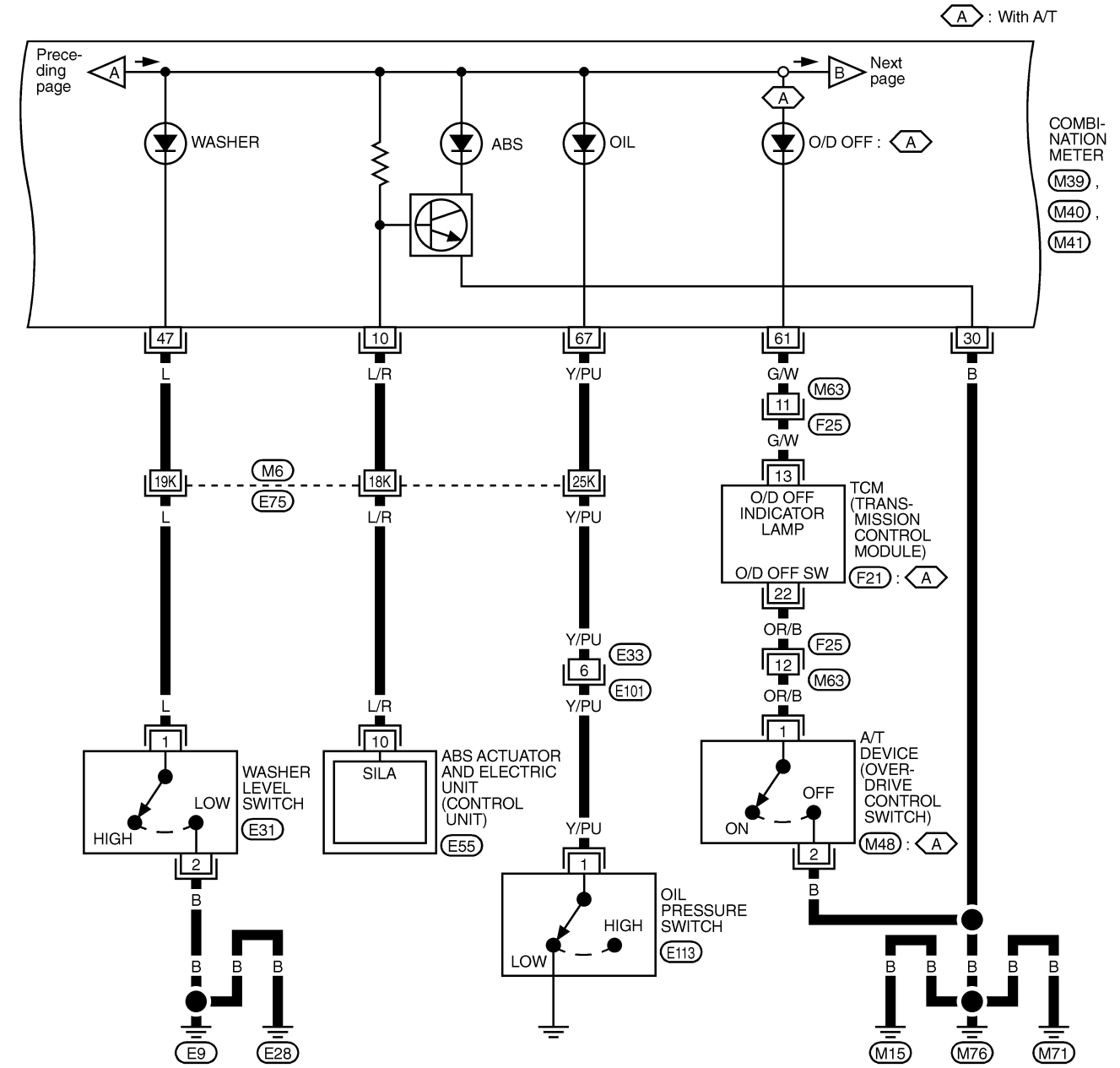
REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)



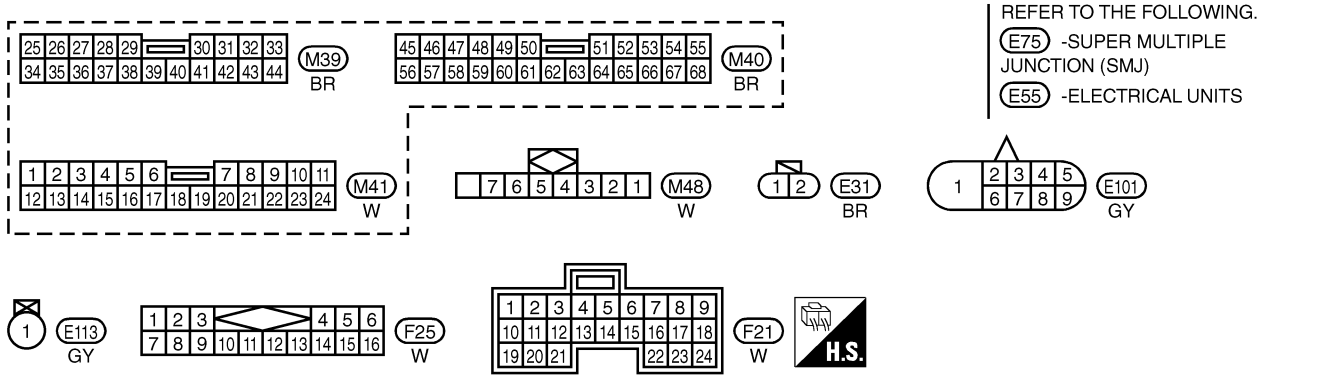


TEL847B

EL-WARN-02

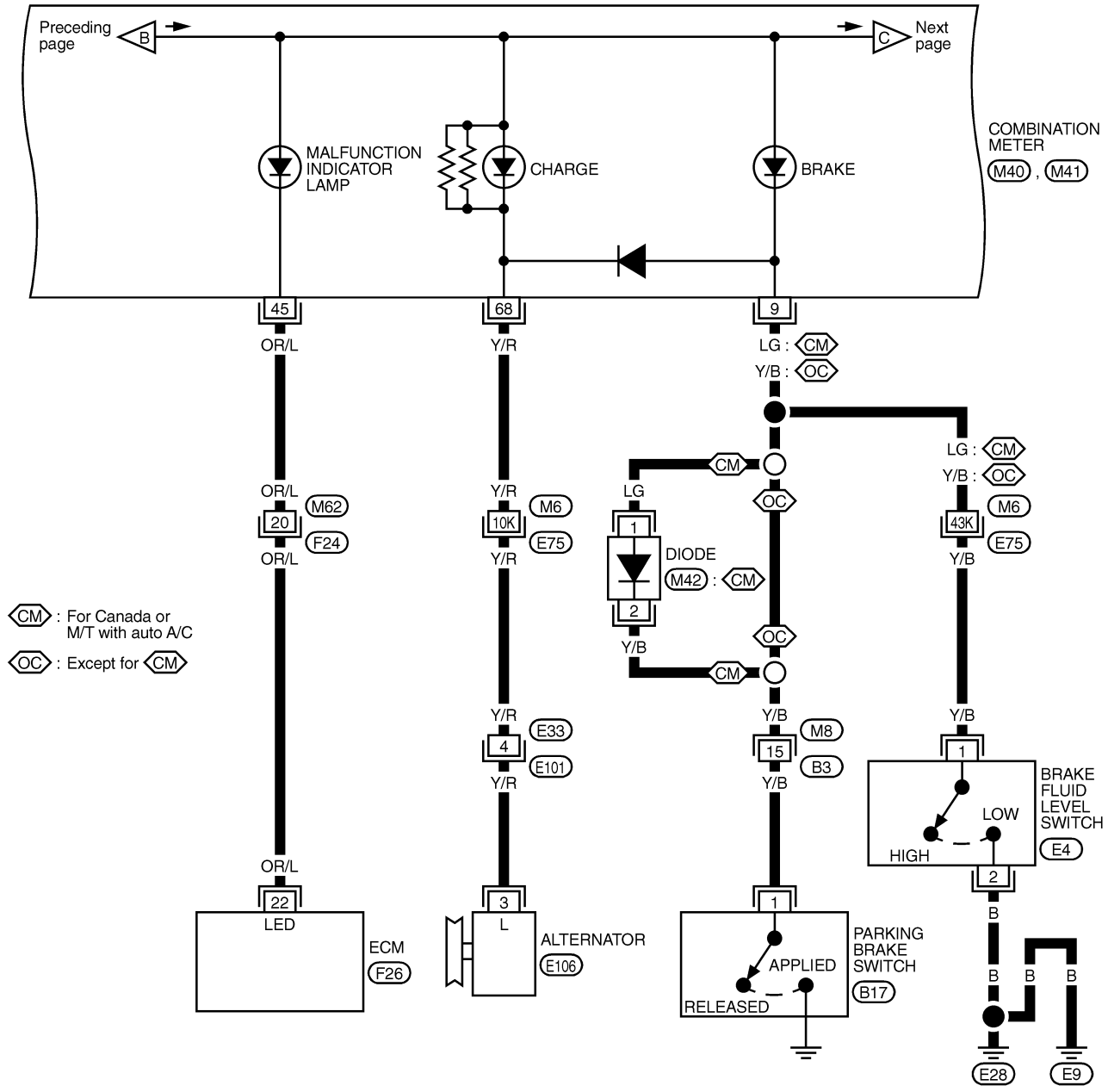


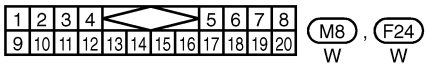
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
E55 -ELECTRICAL UNITS

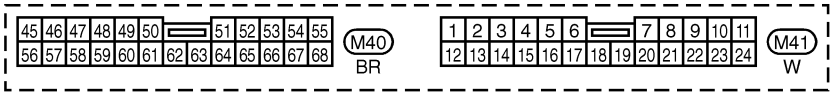


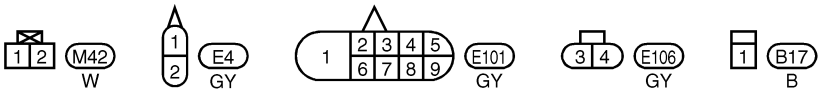
TEL848B

EL-WARN-03









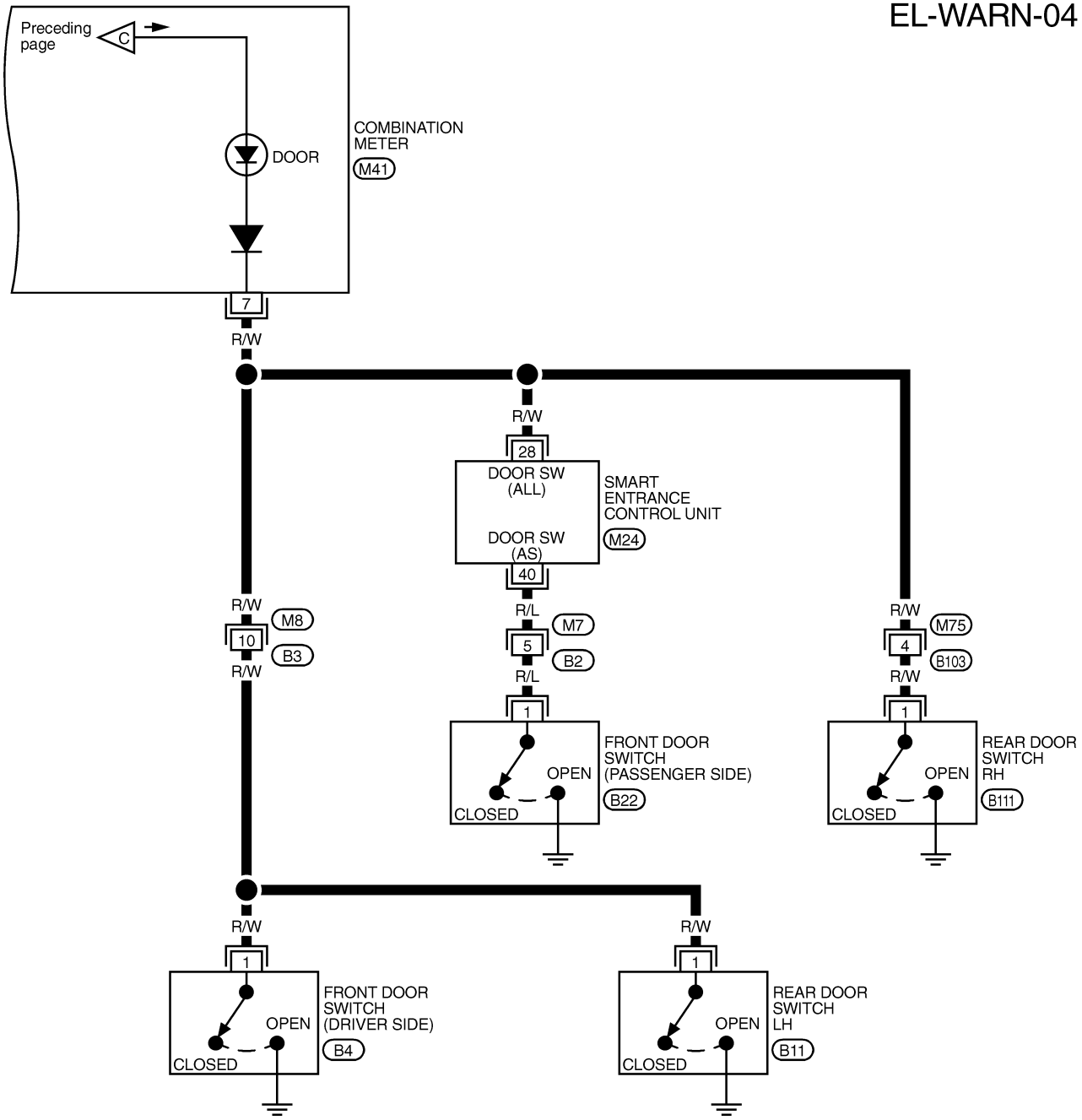
REFER TO THE FOLLOWING.

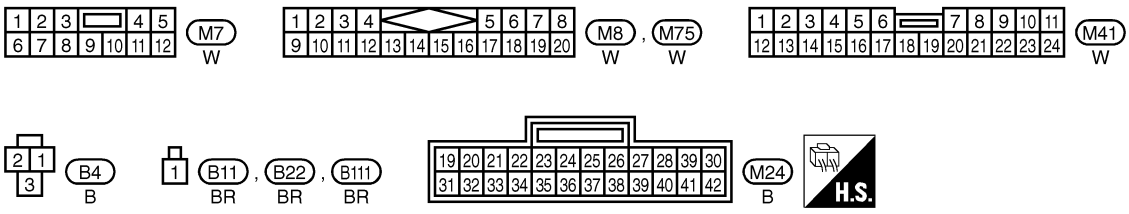
E75 -SUPER MULTIPLE JUNCTION (SMJ)

F26 -ELECTRICAL UNITS

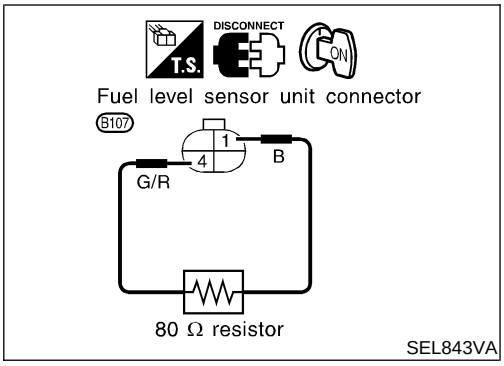
TEL849B

EL-WARN-04





TEL850B



Electrical Components Inspection

NCEL0051

FUEL WARNING LAMP OPERATION CHECK

NCEL0051S01

1. Turn ignition switch “OFF”.
2. Disconnect fuel level sensor unit harness connector B107.
3. Connect a resistor (80Ω) between fuel level sensor unit harness connector terminals 1 and 4.
4. Turn ignition switch “ON”.

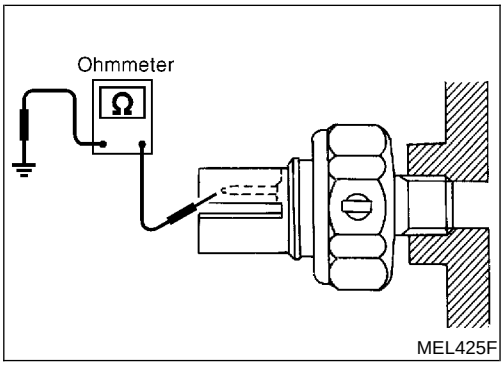
The fuel warning lamp should come on.

NOTE:

ECM might store the 1st trip DTC P0180 and P0464 during this inspection.

If the DTC is stored in ECM memory, erase the DTC after reconnecting fuel level sensor unit harness connector.

Refer to EC-79, “HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION”, “Emission-related Diagnostic Information” “ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION”.

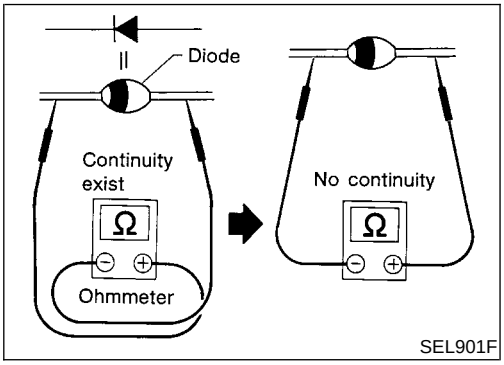


OIL PRESSURE SWITCH CHECK

NCEL0051S02

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

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



DIODE CHECK

NCEL0051S03

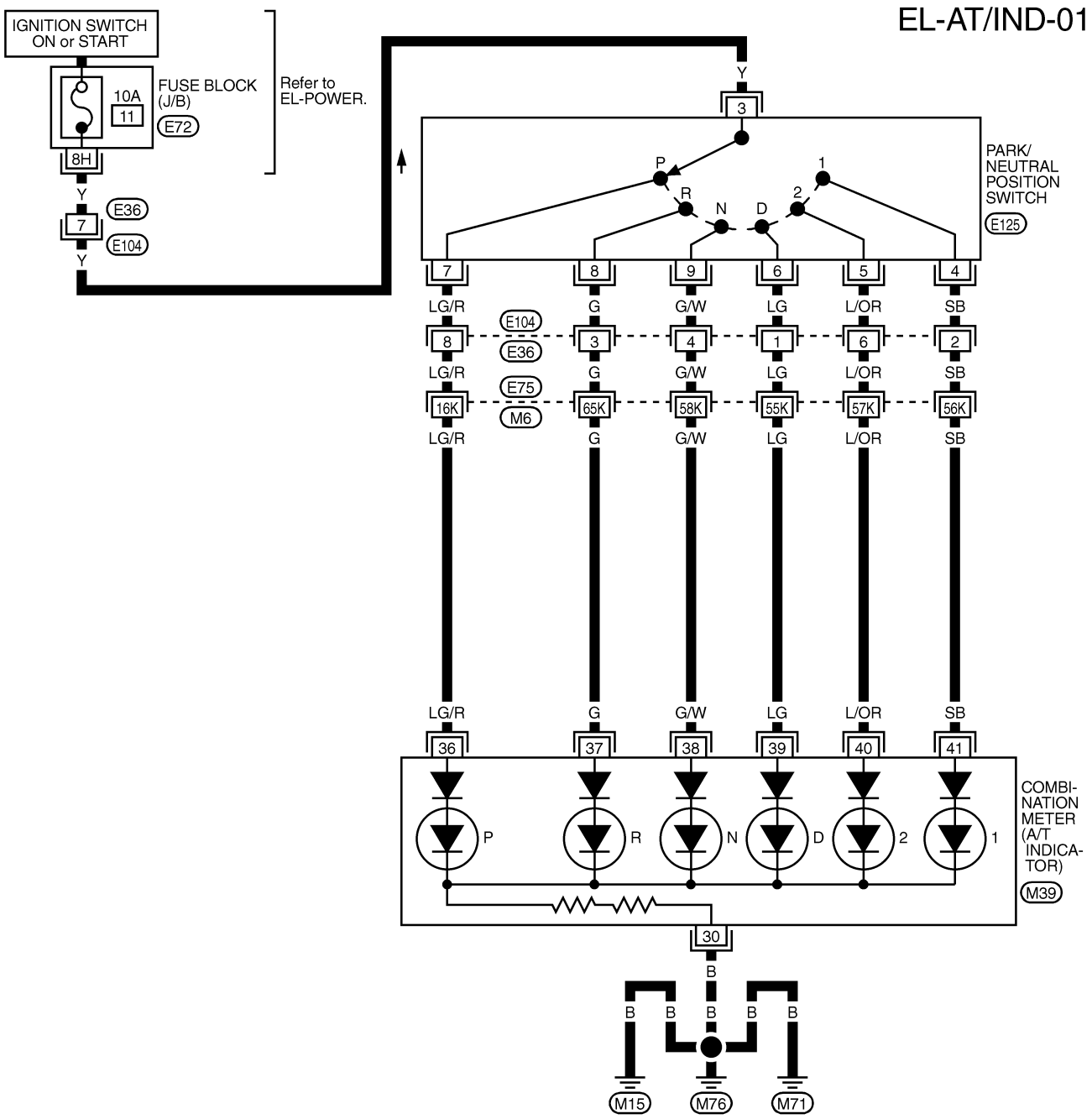
- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.
- Check diodes at the combination meter harness connector instead of on the combination meter assembly. Refer to EL-99, “Wiring Diagram — WARN —, “WARNING LAMPS”.

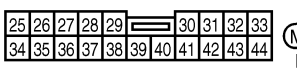
NOTE:

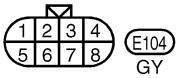
Specification may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for the tester to be used.

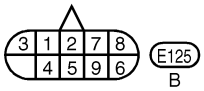
Wiring Diagram — AT/IND —

NCEL0159









REFER TO THE FOLLOWING.

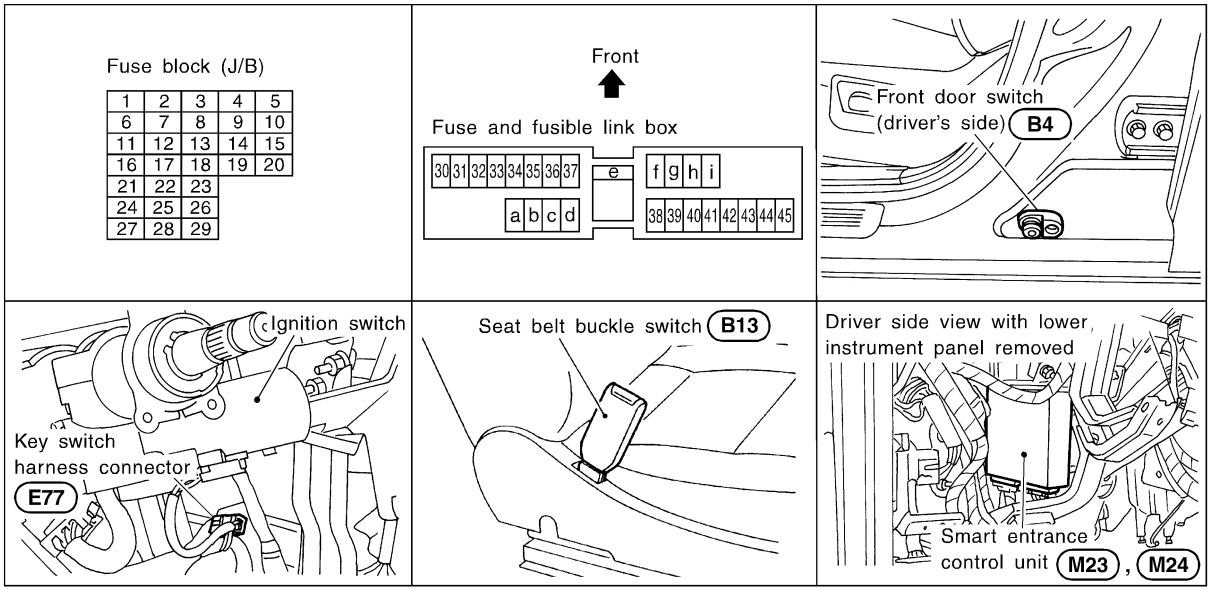
E75 -SUPER MULTIPLE JUNCTION (SMJ)

E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL851B

Component Parts and Harness Connector Location

NCEL0052



SEL834VA

System Description

NCEL0053

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

- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to key switch terminal 1.

Power is supplied at all times

- through 10A fuse [No. 34, located in the fuse block (J/B)]
- to tail lamp relay terminals 1 and 3.

Power is supplied at all times

- through 30A fusible link (letter **d**, located in the fuse and fusible link box).
- to smart entrance control unit terminal 11.

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied to smart entrance control unit terminal 16 through body grounds M15, M71 and M76.

IGNITION KEY WARNING CHIME

NCEL0053S01

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

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

Ground is supplied

- from front door switch LH terminal 2
- to smart entrance control unit terminal 29.

Front door switch LH terminal 3 is grounded through body grounds B7 and B24.

LIGHT WARNING CHIME

NCEL0053S02

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

- from tail lamp relay terminal 5

- to smart entrance control unit terminal 34.

Ground is supplied

- from front door switch LH terminal 2
- to smart entrance control unit terminal 29.

Front door switch LH terminal 3 is grounded through body grounds B7 and B24.

SEAT BELT WARNING CHIME

NCEL0053S03

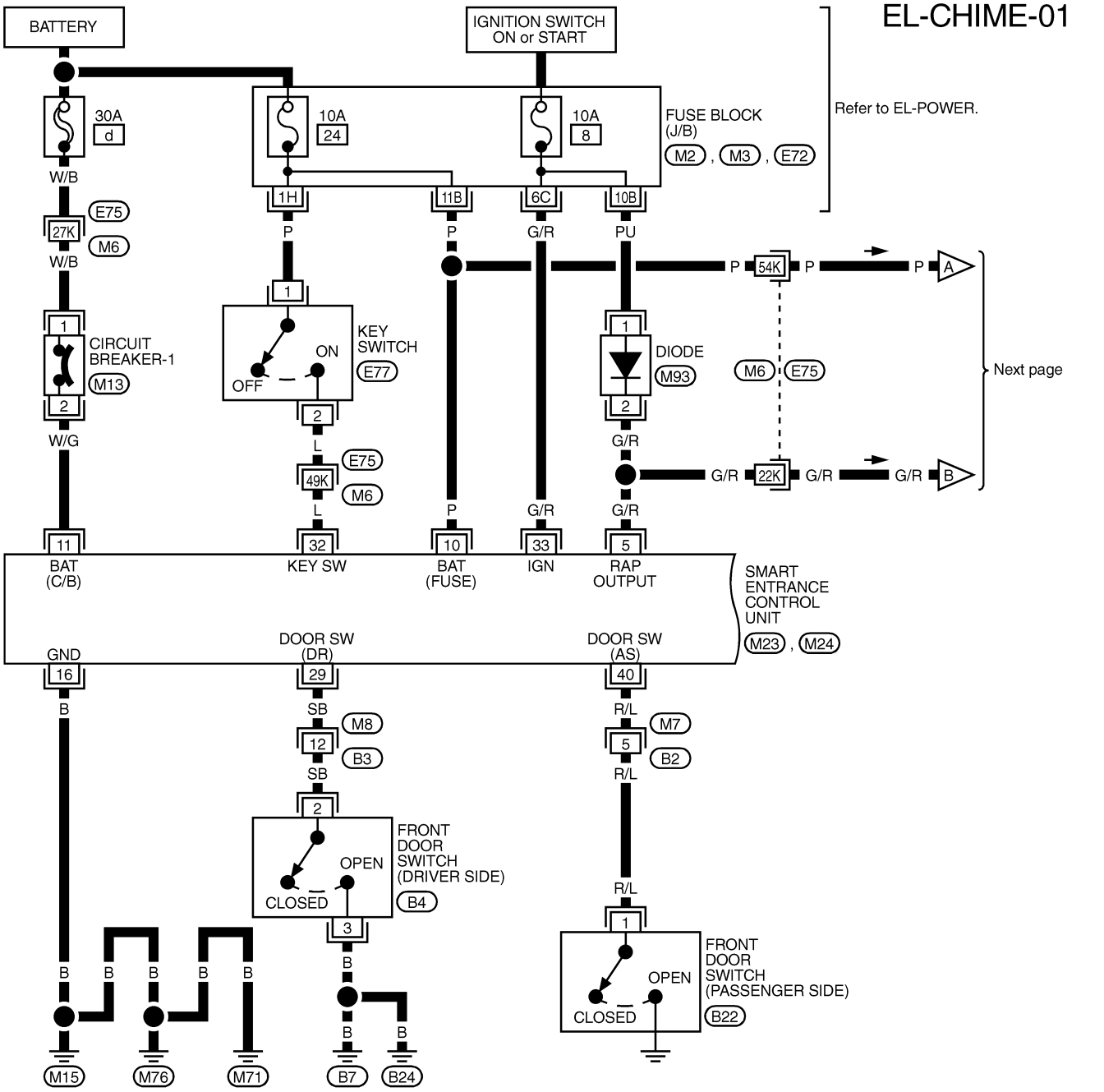
With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning chime will sound for approximately 6 seconds.
Ground is supplied

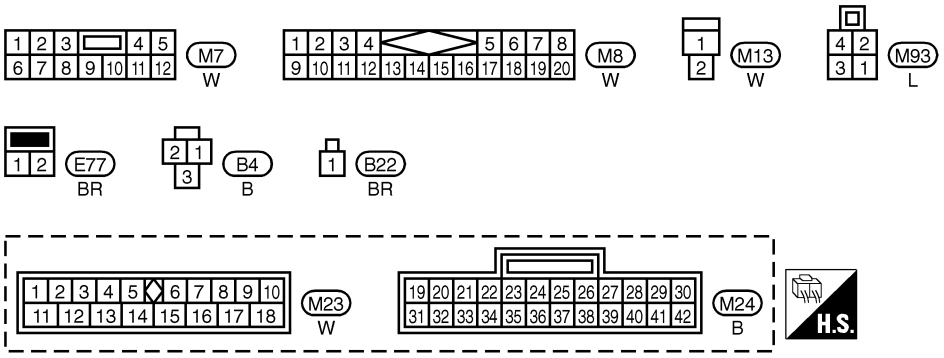
- from seat belt switch terminal 1
- to smart entrance control unit terminal 22.

Seat belt switch terminal 2 is grounded through body grounds B7 and B24.

Wiring Diagram — CHIME —

NCEL0054

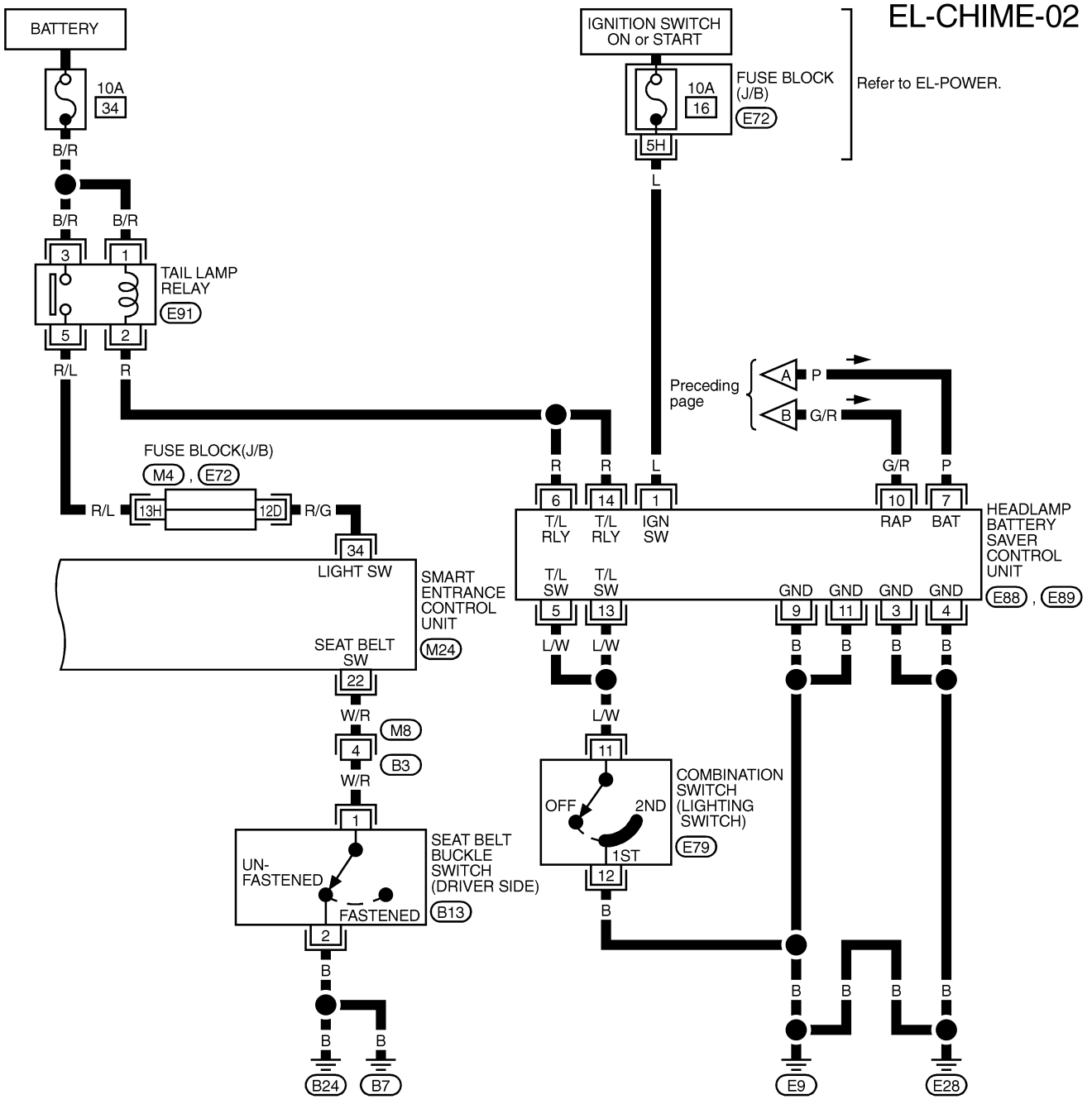


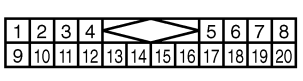


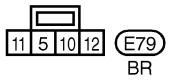
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 , M3 , E72 -FUSE BLOCK-JUNCTION BOX (J/B)

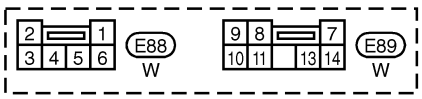
TEL852B

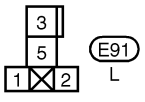
Wiring Diagram — CHIME — (Cont'd)

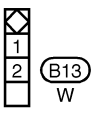


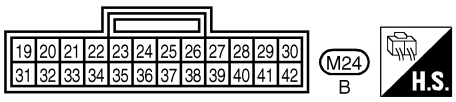












REFER TO THE FOLLOWING.
M4 , E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL507B

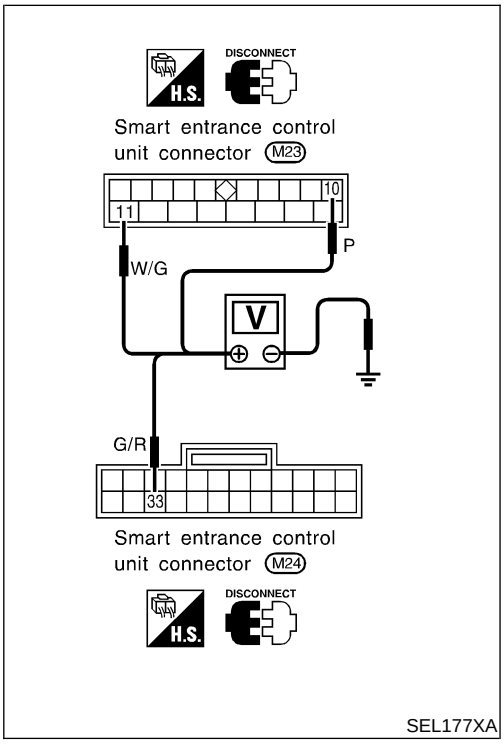
Trouble Diagnoses

NCEL0055

SYMPTOM CHART

NCEL0055S01

REFERENCE PAGE (EL-)	109	110	111	112	113
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	LIGHTING SWITCH INPUT SIGNAL CHECK	KEY SWITCH (INSERT) CHECK	SEAT BELT BUCKLE SWITCH CHECK	DRIVER SIDE DOOR SWITCH CHECK
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X		X
Seat belt warning chime does not activate.	X			X	
All warning chimes do not activate.	X				X



SEL177XA

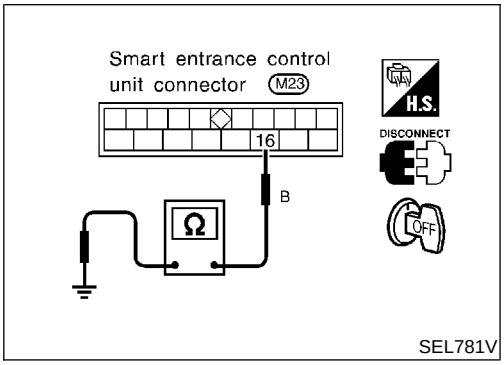
POWER SUPPLY AND GROUND CIRCUIT CHECK

NCEL0055S02

Power Supply Circuit Check

NCEL0055S0201

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
10	Ground	Battery voltage	Battery voltage	Battery voltage
11				
33	Ground	0V	0V	Battery voltage



SEL781V

Ground Circuit Check

NCEL0055S0202

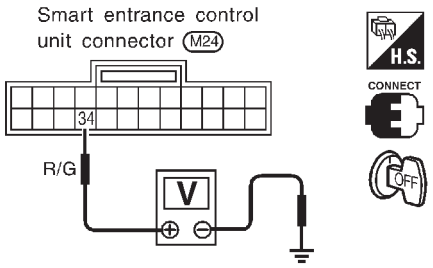
Terminals	Continuity
16 - Ground	Yes

LIGHTING SWITCH INPUT SIGNAL CHECK

=NCEL0055S03

1	CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between control unit terminal 34 and ground.



SEL782V

Voltage [V]:

Condition of lighting switch: 1ST or 2ND

Approx. 12

Condition of lighting switch: OFF

0

OK or NG

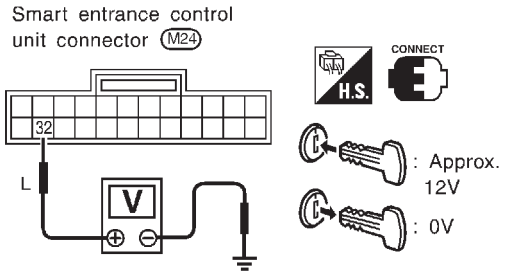
OK	▶	Lighting switch is OK.
NG	▶	**Check the following.** ● 10A fuse (No. 34, located in the fuse and fusible link box) ● Harness for open or short between control unit and lighting switch

KEY SWITCH (INSERT) CHECK

=NCEL0055S04

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 32 and ground.



SEL783V

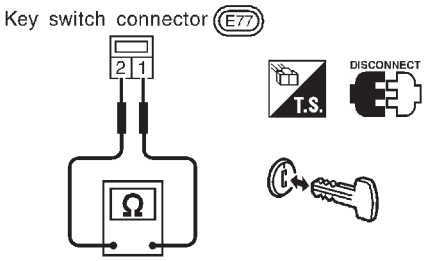
Voltage [V]:
Condition of key switch: Key is inserted.
Approx. 12
Condition of key switch: Key is withdrawn.
0

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



SEL784V

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

OK or NG

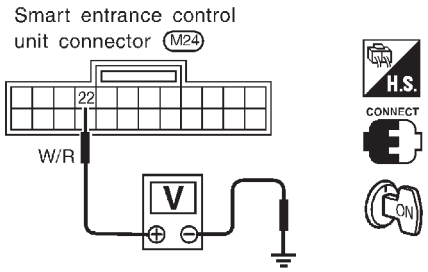
OK	▶	**Check the following.** • 10A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

SEAT BELT BUCKLE SWITCH CHECK

=NCEL0055S05

1	CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

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



SEL785V

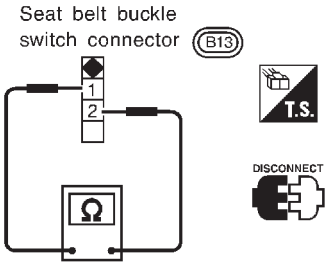
Voltage [V]:
Condition of seat belt buckle switch: Fastened
Approx. 12
Condition of seat belt buckle switch: Unfastened
0

OK or NG

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

2	CHECK SEAT BELT BUCKLE SWITCH

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



SEL298VB

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

OK or NG

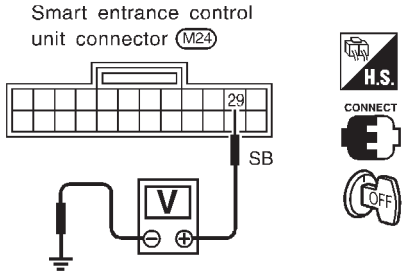
OK	▶	**Check the following.** • Seat belt buckle switch ground circuit • Harness for open or short between control unit and seat belt buckle switch
NG	▶	Replace seat belt buckle switch.

DRIVER SIDE DOOR SWITCH CHECK

NCEL0055S06

1	CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminal 29 and ground.



SEL786V

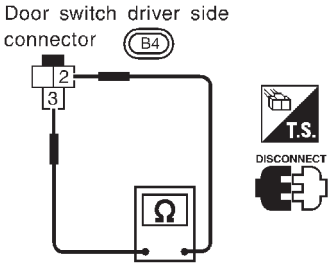
Voltage [V]:
Condition of driver's door: CLOSED
Approx. 12
Condition of driver's door: OPENED
0

OK or NG

OK	▶	Driver side door switch is OK.
NG	▶	GO TO 2.

2	CHECK DRIVER SIDE DOOR SWITCH

Check continuity between terminals 2 and 3, 3 and ground.



SEL844V

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

OK or NG

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

System Description

NCEL0057

WIPER OPERATION

NCEL0057S01

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

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 19, located in the fuse block (J/B)]
- to wiper motor terminal 6.

Low and High Speed Wiper Operation

NCEL0057S0101

Ground is supplied to wiper switch terminal 17 through body grounds E9 and E28.
When the wiper switch is placed in the LO position, ground is supplied

- through terminal 14 of the wiper switch
- to wiper motor terminal 2.

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

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

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

Auto Stop Operation

NCEL0057S0102

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

- from terminal 14 of the wiper switch
- to wiper motor terminal 2, in order to continue wiper motor operation at low speed.

Ground is also supplied

- through terminal 13 of the wiper switch
- to wiper motor terminal 5
- through terminal 4 of the wiper motor, and
- through body grounds M15, M71 and M76.

When wiper arms reach base of windshield, wiper motor terminals 5 and 6 are connected instead of terminals 4 and 5. Wiper motor will then stop wiper arms at the STOP position.

Intermittent Operation

NCEL0057S0103

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

- to wiper motor terminal 2
- from terminal 14 of wiper switch
- through wiper amplifier (OUTPUT).

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

WASHER OPERATION

NCEL0057S02

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

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

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

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

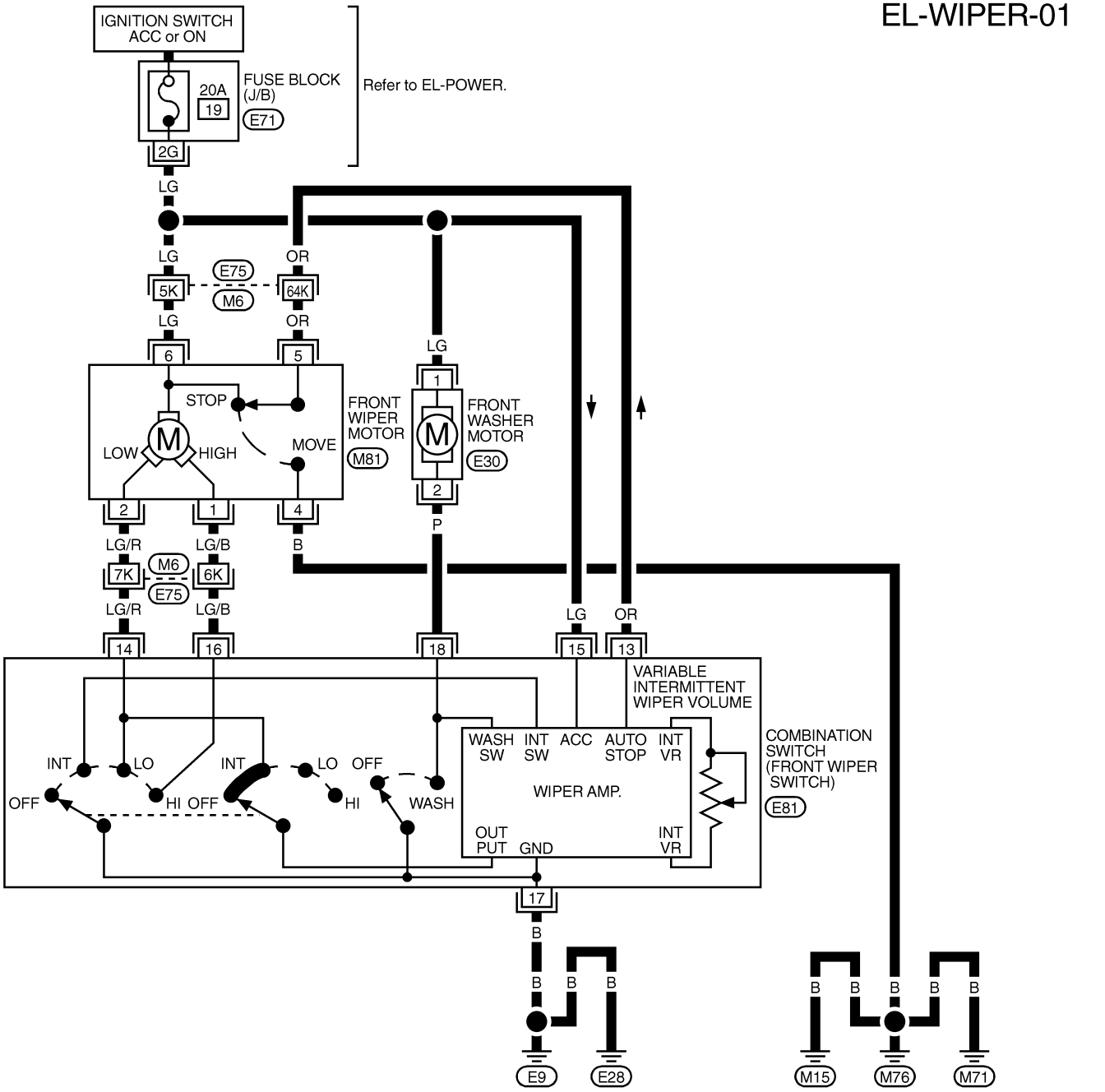
- through body grounds E9 and E28.

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 —

NCEL0058

EL-WIPER-01



M81 SB

E30 GY

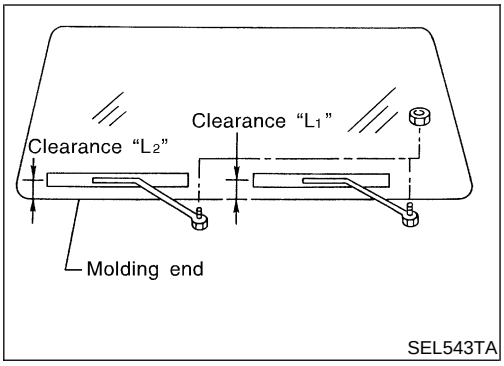
E81 GY

REFER TO THE FOLLOWING.

E75 -SUPER MULTIPLE JUNCTION (SMJ)

E71 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL853B



SEL543TA

Removal and Installation

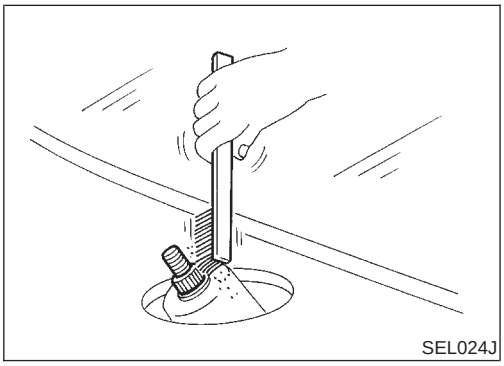
NCEL0060

WIPER ARMS

NCEL0060S01

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": 18.5 - 33.5 mm (0.728 - 1.319 in)
   Clearance "L_2": 19.5 - 34.5 mm (0.768 - 1.358 in)

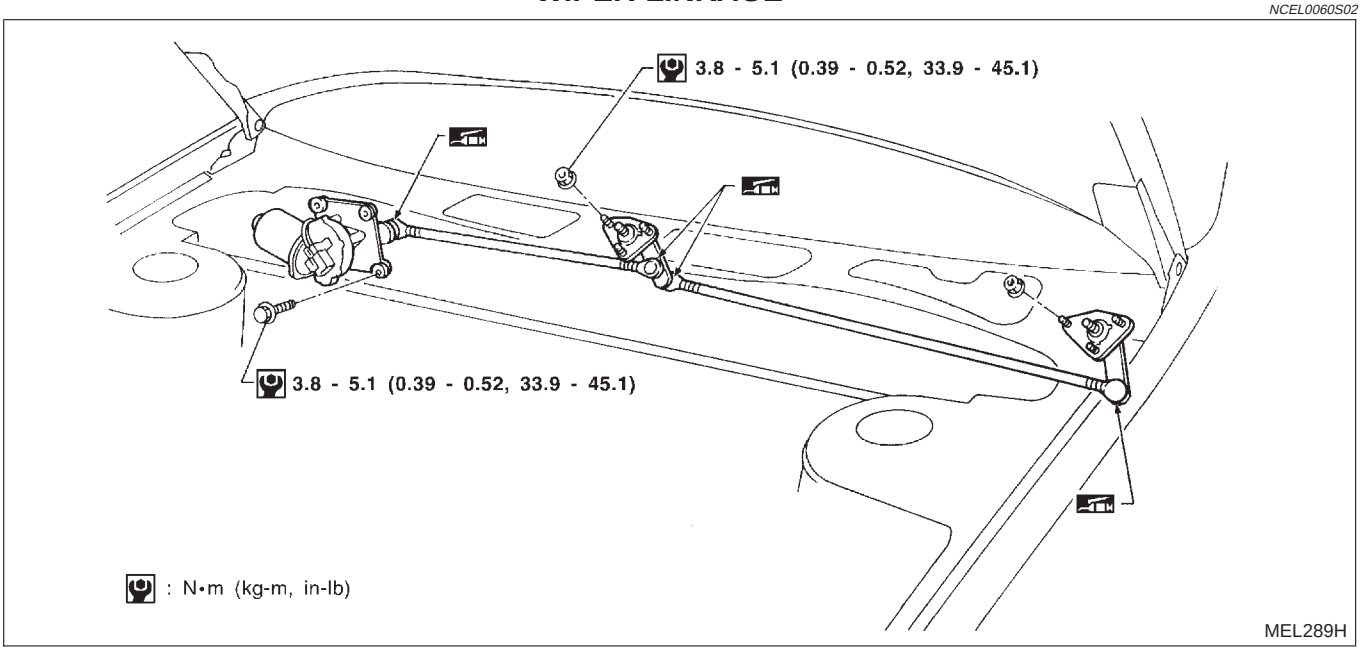
- Tighten wiper arm nuts to specified torque.
  Front wiper: 17 - 23 N·m (1.7 - 2.3 kg-m, 12 - 17 ft-lb)


SEL024J

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

WIPER LINKAGE

NCEL0060S02



MEL289H

Removal

NCEL0060S0201

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

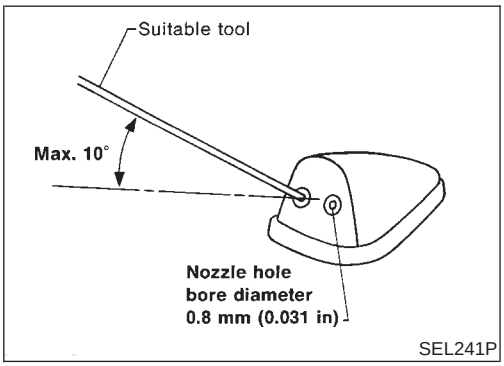
Be careful not to break ball joint rubber boot.

Installation

NCEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.



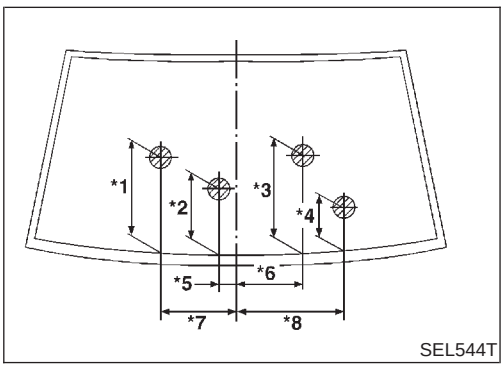
SEL241P

Washer Nozzle Adjustment

NCEL0061

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

Adjustable range: ±10°



SEL544T

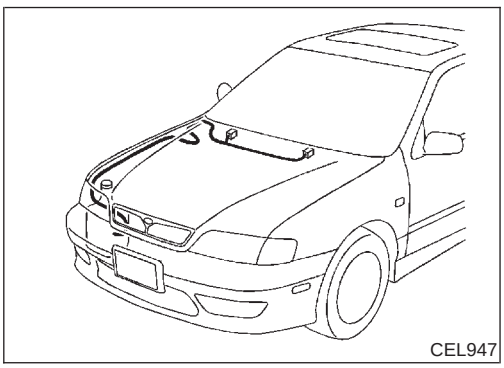
Unit: mm (in)

*1	330 (12.99)	*5	115 (4.53)
*2	185 (7.28)	*6	175 (6.89)
*3	320 (12.60)	*7	370 (14.57)
*4	175 (6.89)	*8	440 (17.32)

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

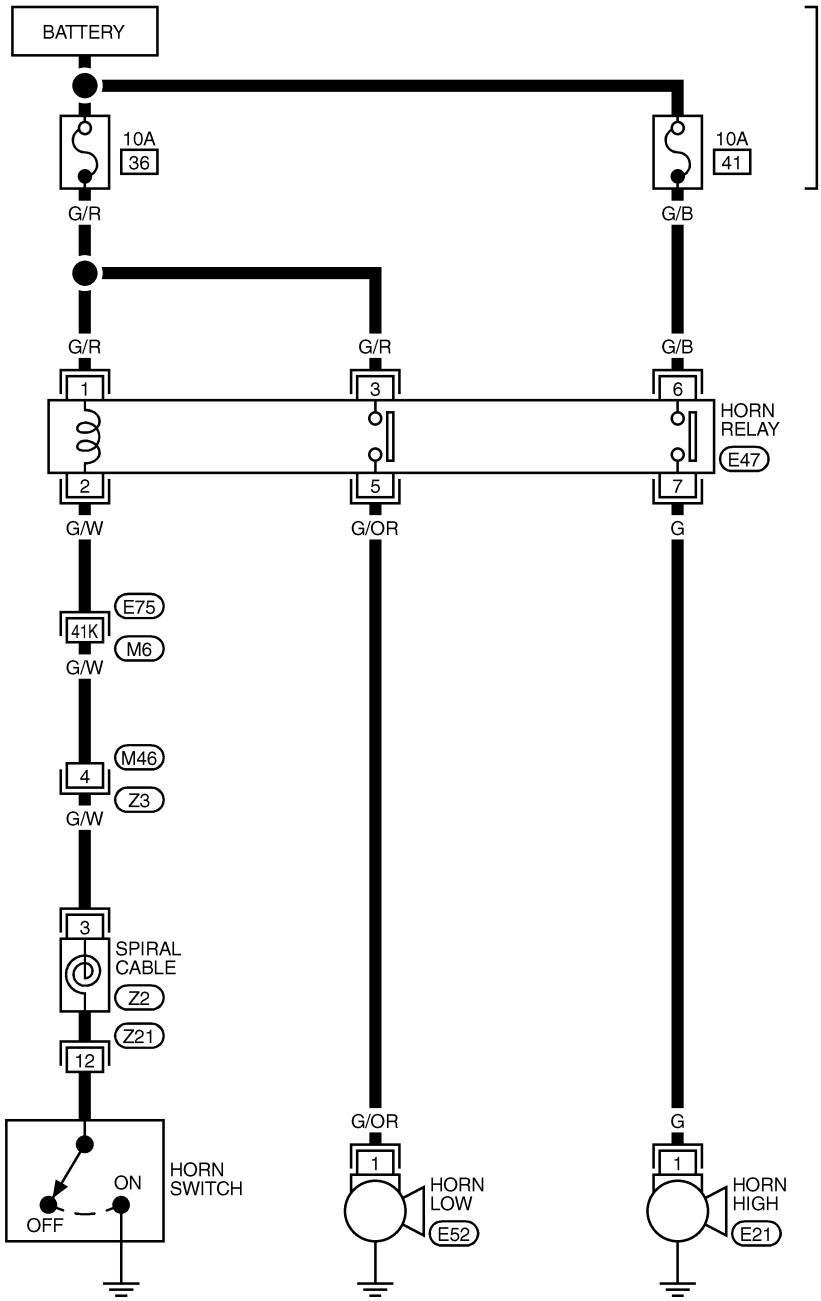
Washer Tube Layout

NCEL0062


CEL947

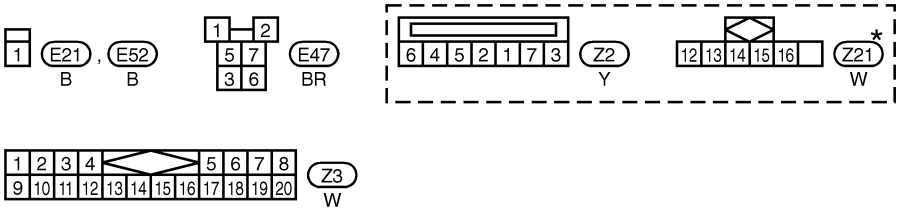
Wiring Diagram — HORN —

NCEL0071



EL-HORN-01

Refer to EL-POWER.



REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

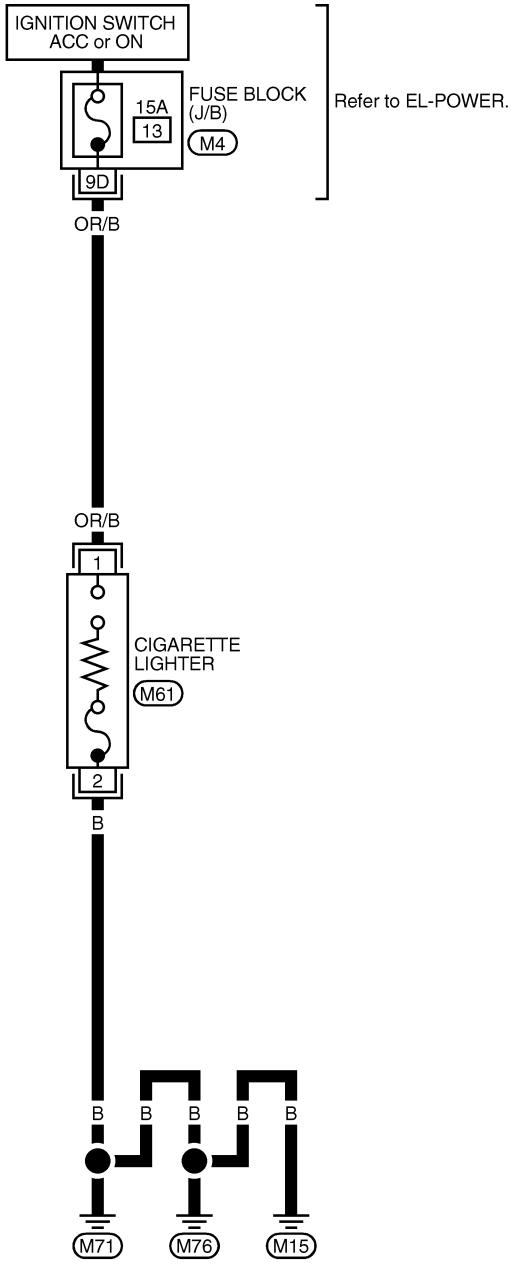
★: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL509B

Wiring Diagram — CIGAR —

NCEL0156

EL-CIGAR-01



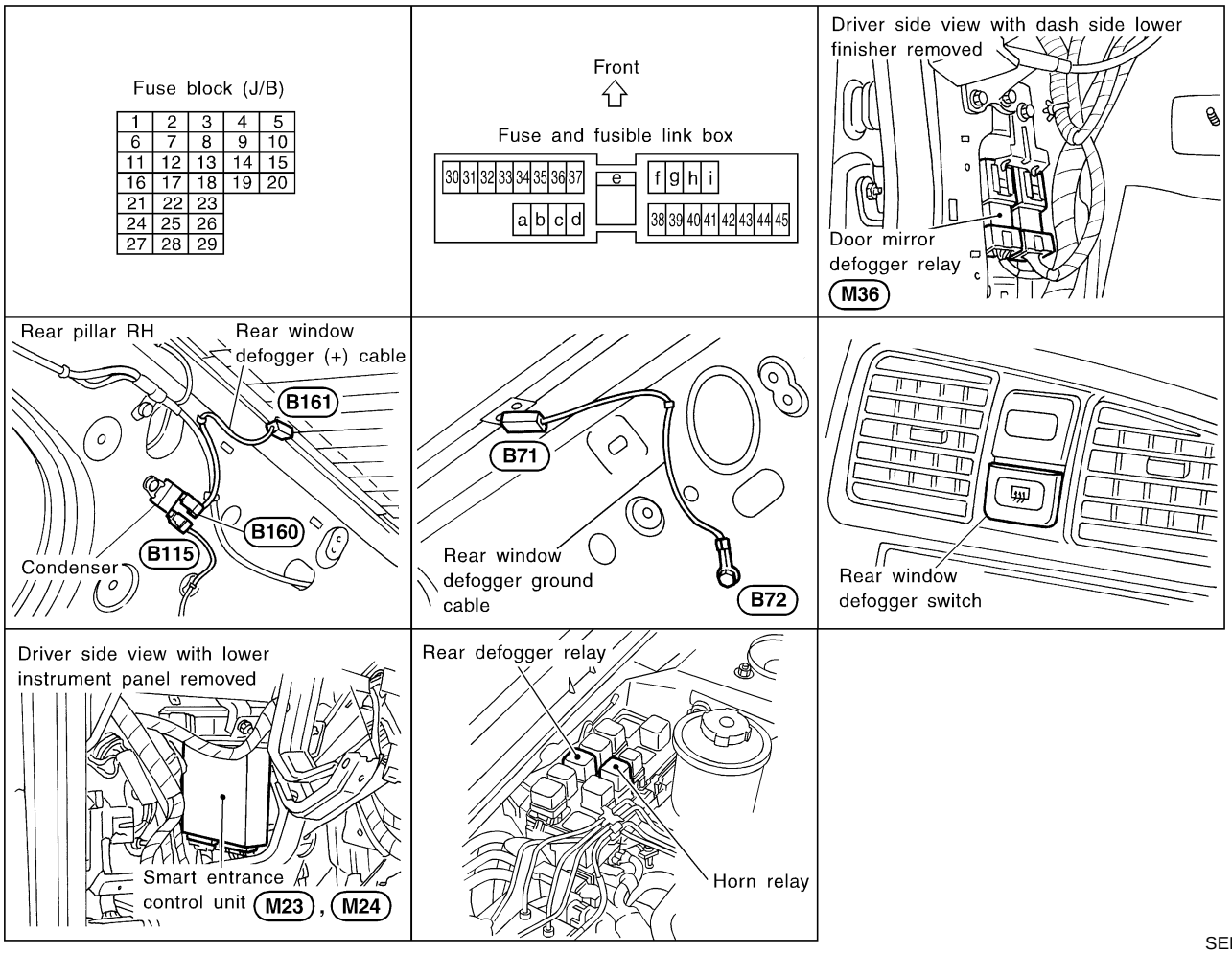
2
1
M61
B

REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL510B

Component Parts and Harness Connector Location

NCEL0072



SEL667W

System Description

NCEL0073

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

Power is supplied at all times

- to rear window defogger relay terminal 3
- through 20A fuse (No. 39, located in the fuse and fusible link box) and
- to rear window defogger relay terminal 6
- through 20A fuse (No. 40, located in the fuse and fusible link box).

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to the rear window defogger relay terminal 1 and
- to smart entrance control unit terminal 33.

Ground is supplied to terminal 2 of the rear window defogger switch through body grounds M15, M71 and M76.

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

- through terminal 1 of the rear window defogger switch
- to smart entrance control unit terminal 39.

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

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

Power is supplied

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

System Description (Cont'd)

- to the rear window defogger.

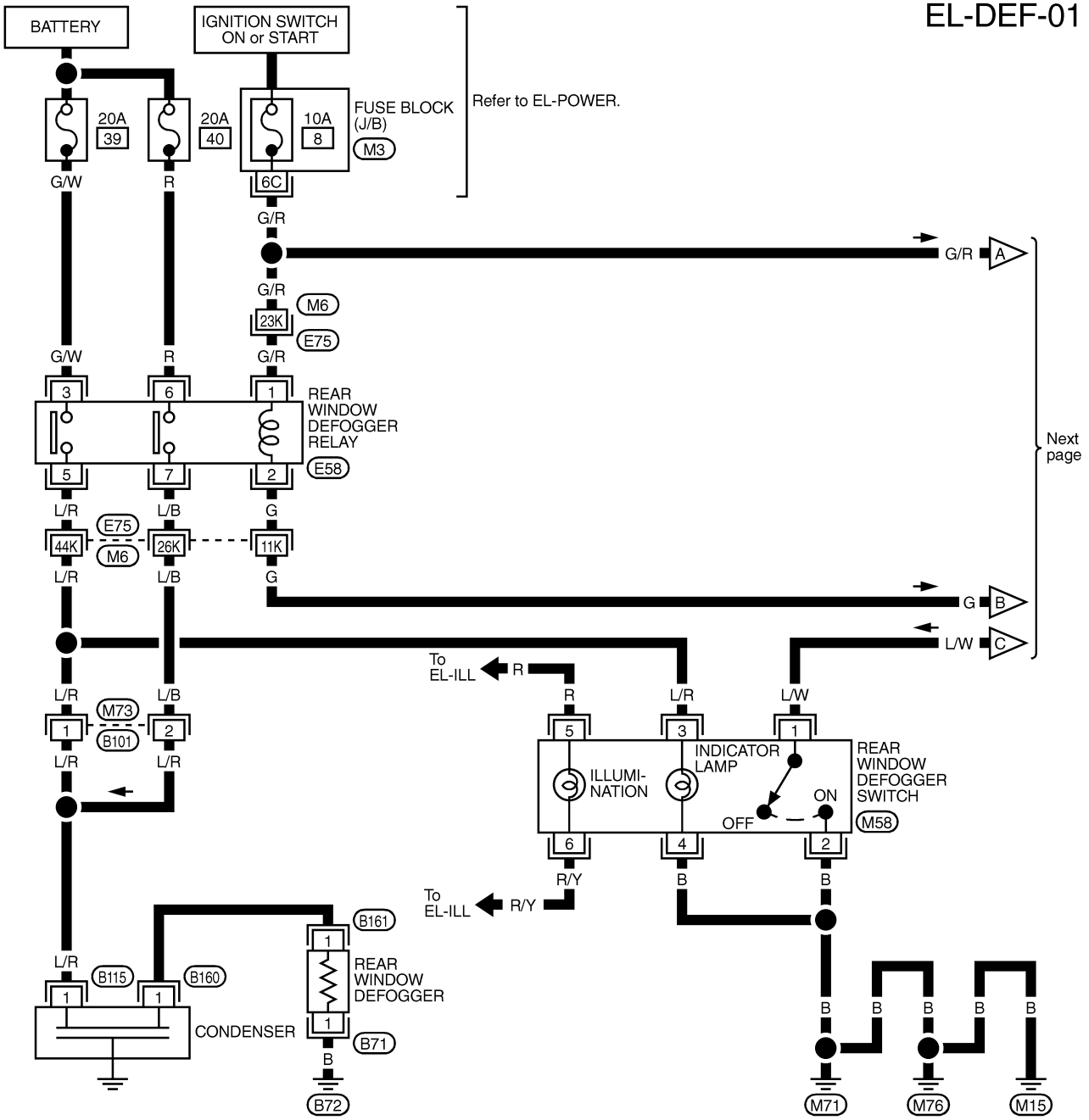
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.
Power is supplied

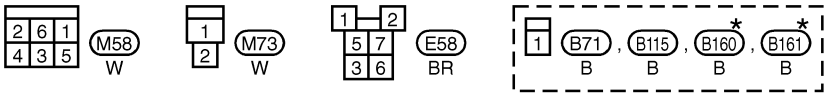
- to terminal 3 of the rear window defogger switch
- from terminal 5 of the rear window defogger relay.

Terminal 4 of the rear window defogger switch is grounded through body grounds M15, M71 and M76.

Wiring Diagram — DEF —

NCEL0074





REFER TO THE FOLLOWING.

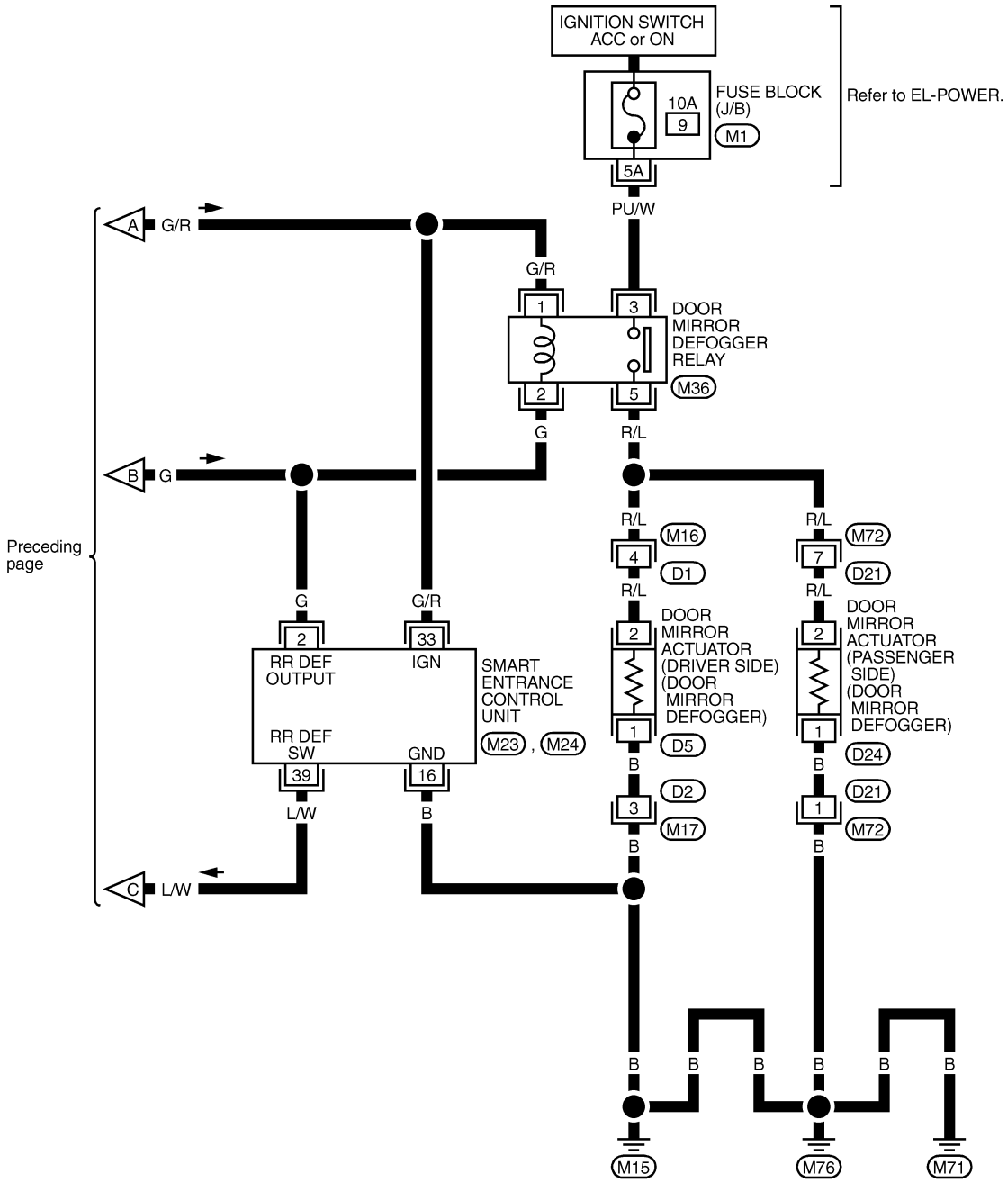
E75 -SUPER MULTIPLE JUNCTION (SMJ)

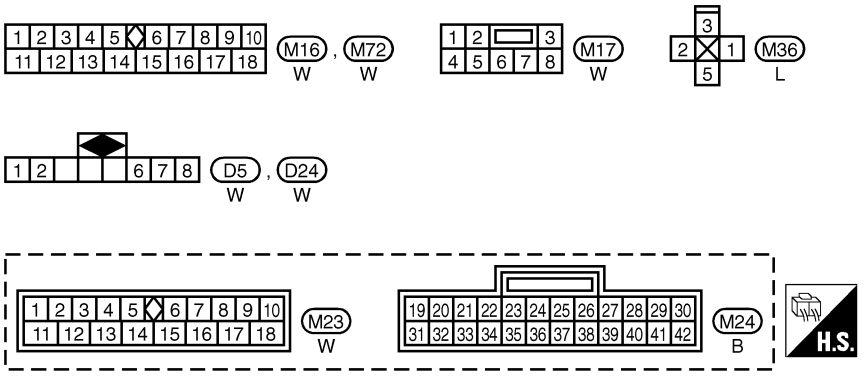
M3 -FUSE BLOCK-JUNCTION BOX (J/B)

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

TEL511B

EL-DEF-02





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

TEL867B

Trouble Diagnoses

NCEL0075

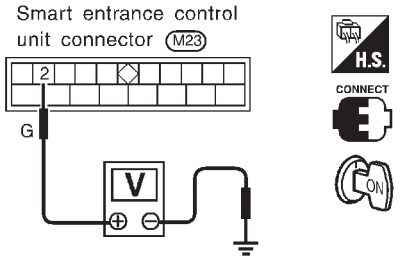
DIAGNOSTIC PROCEDURE

NCEL0075S01

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

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

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



SEL787V

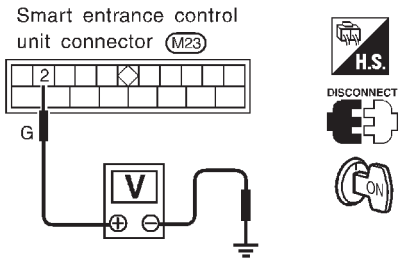
Voltage [V]:
Rear window defogger switch is “OFF”.
Approx. 12
Rear window defogger switch is “ON”.
0

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay (Refer to EL-127.) ● Rear window defogger circuit ● Rear window defogger filament (Refer to EL-127.)
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

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



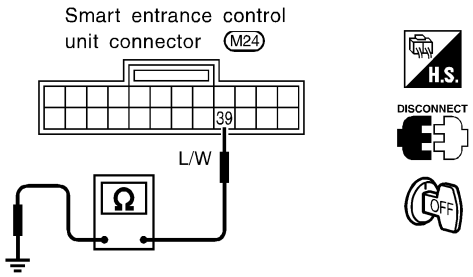
SEL788V

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 10A fuse [No. 8, located in the fuse block (J/B)] ● Rear window defogger relay ● Harness for open or short between rear window defogger relay and control unit

3	CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

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



SEL737W

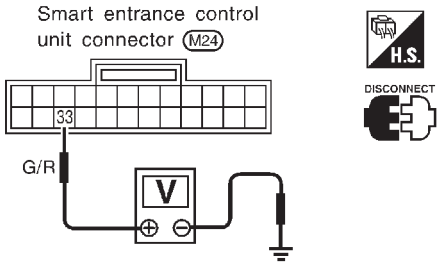
Continuity:
Rear window defogger switch is pushed.
Yes
Rear window defogger switch is released.
No

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Rear window defogger switch (Refer to EL-127.) ● Harness for open or short between control unit and rear window defogger switch ● Rear window defogger switch ground circuit

4	CHECK IGNITION INPUT SIGNAL

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



SEL790V

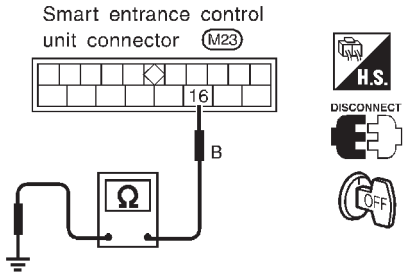
Voltage [V]:
Ignition switch is "ON".
Approx. 12
Ignition switch is "OFF".
0

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 10A fuse [No. 8, located in the fuse block (J/B)] ● Harness for open or short between control unit and fuse

5	CHECK CONTROL UNIT GROUND CIRCUIT

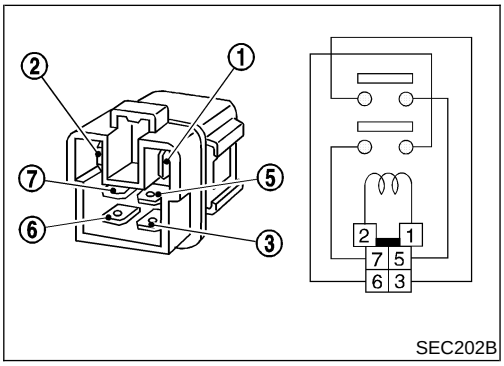
Check continuity between smart entrance control unit terminal 16 and ground.



SEL791V

Does continuity exist?

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



SEC202B

Electrical Components Inspection

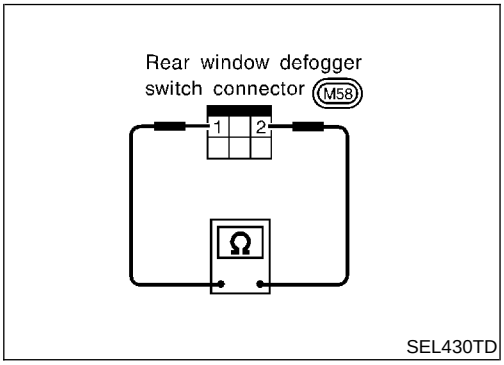
NCEL0076

REAR WINDOW DEFOGGER RELAY

NCEL0076S01

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



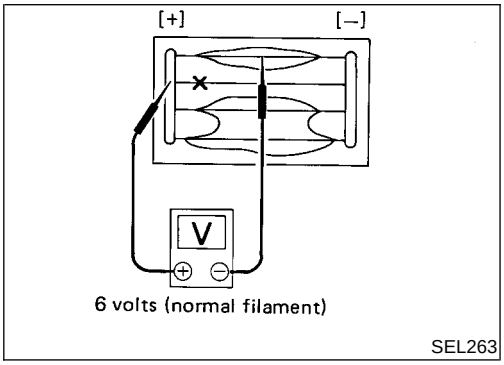
SEL430TD

REAR WINDOW DEFOGGER SWITCH

NCEL0076S02

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

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



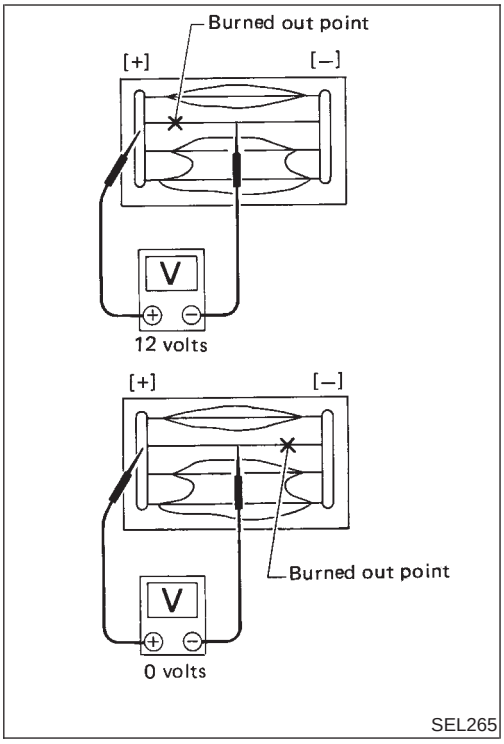
SEL263

Filament Check

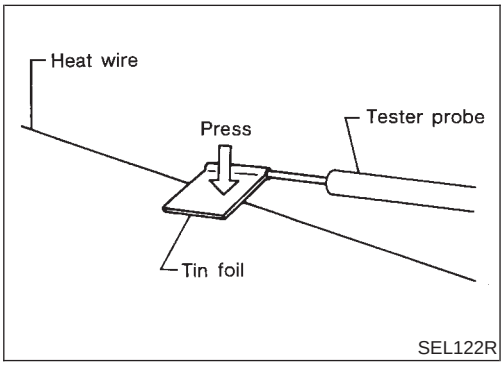
NCEL0077

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

Filament Check (Cont'd)



2. If a filament is burned out, circuit tester registers 0 or 12 volts.
3. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



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

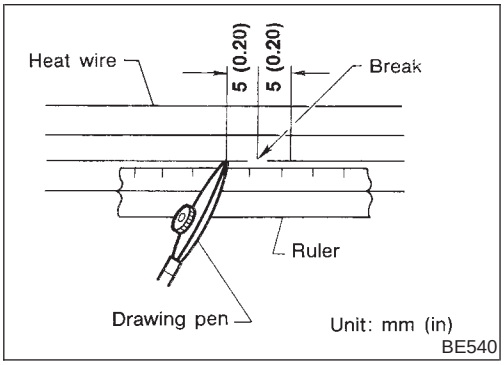
Filament Repair

NCEL0078

REPAIR EQUIPMENT

NCEL0078S01

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



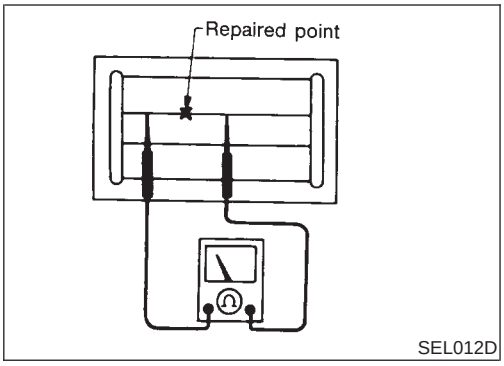
REPAIRING PROCEDURE

NCEL0078S02

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.

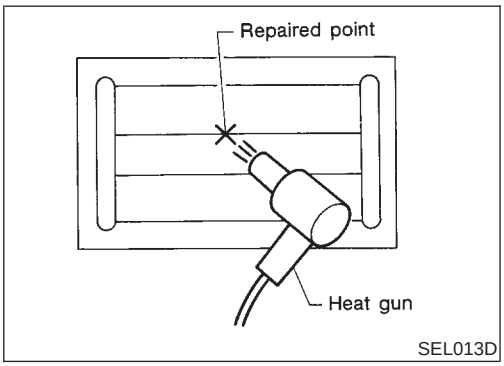
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



SEL012D

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.



SEL013D

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

NCEL0079

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

- through 15A fuse (No. 38, located in the fuse and fusible link box)
- to speaker amp. terminal 11, and
- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to audio terminal 6.

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

- through 7.5A fuse [No. 10, located in the fuse block (J/B)]
- to audio terminal 10.

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

- to speaker amp. terminal 23,
- through body grounds B109 and B110.

Audio signals are supplied

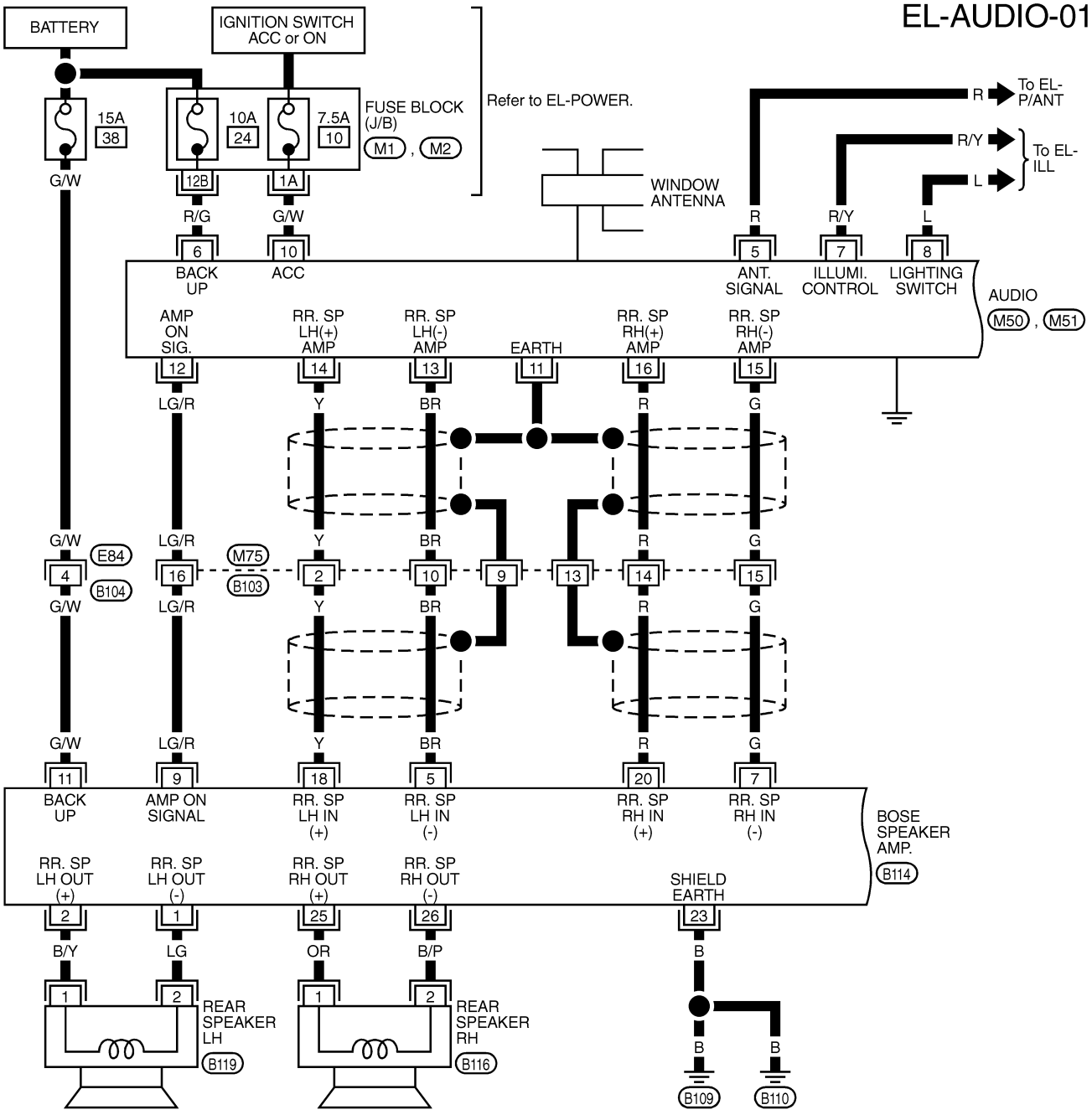
- through audio terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to speaker amp. terminals 4, 5, 6, 7, 17, 18, 19 and 20.

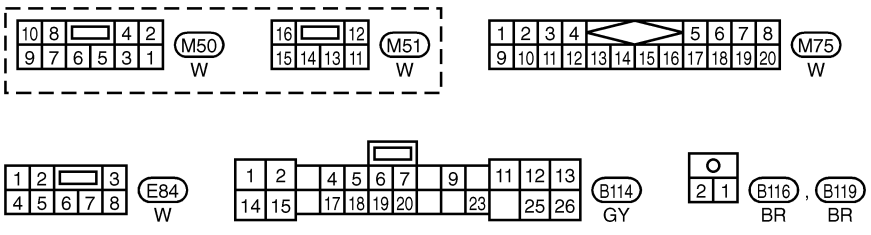
Audio signals are amplified by the speaker amp.
The amplified audio signals are supplied

- through speaker amp. terminals 1, 2, 12, 13, 14, 15, 25 and 26
- to terminals 1 and 2 of the front door speaker LH and RH
- to terminals 1 and 2 of the tweeter LH and RH
- to terminals 1 and 2 of the rear speaker LH and RH.

Wiring Diagram — AUDIO —

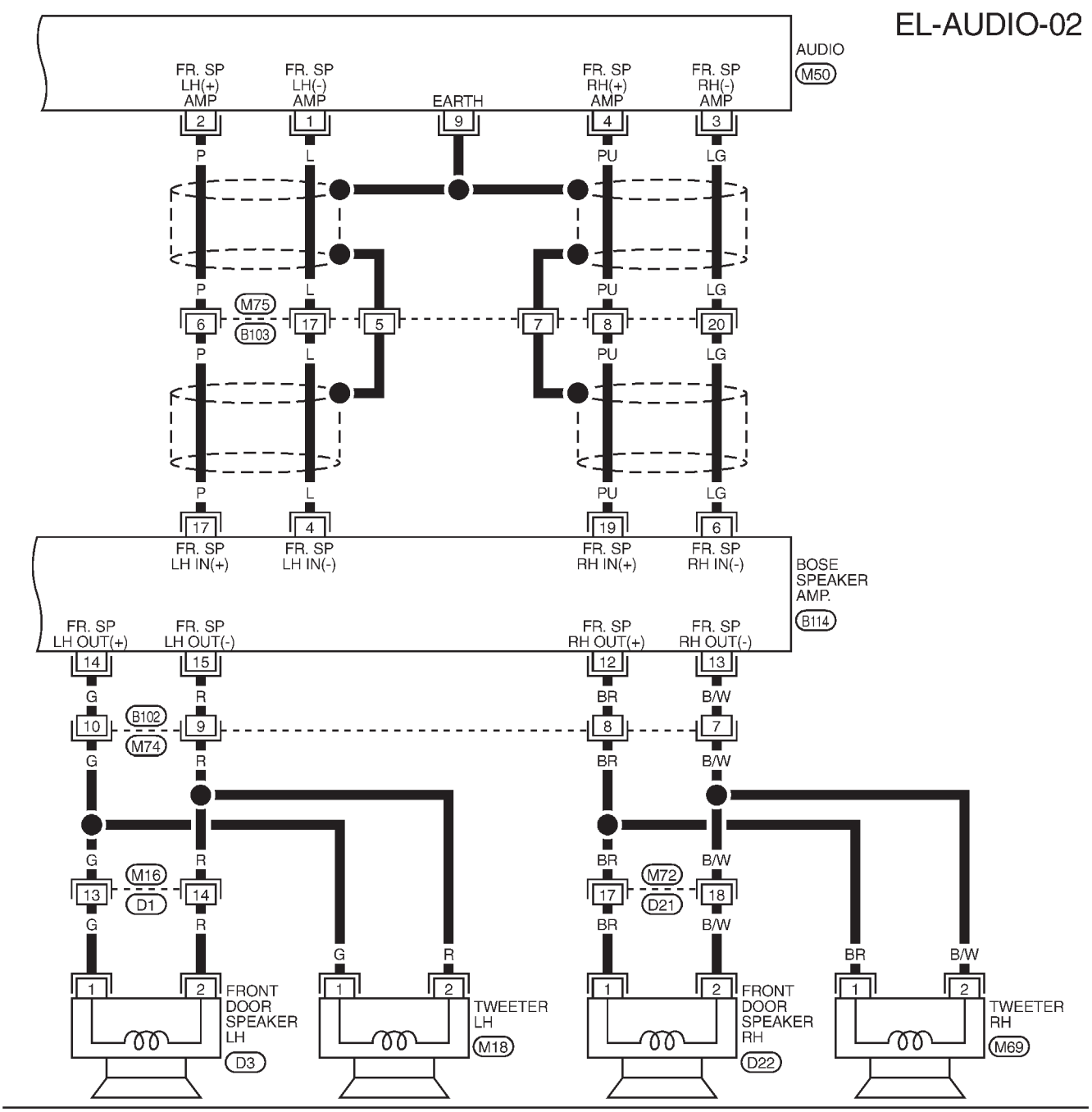
NCEL0081





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

TEL513B


EL-AUDIO-02
AUDIO
M50
FR. SP LH(+) AMP
FR. SP LH(-) AMP
EARTH
FR. SP RH(+) AMP
FR. SP RH(-) AMP
2
1
9
4
3
P
L
PU
LG
M75
B103
6
17
5
7
8
20
FR. SP LH IN(+)
FR. SP LH IN(-)
FR. SP RH IN(+)
FR. SP RH IN(-)
17
4
19
6
BOSE SPEAKER AMP.
B114
FR. SP LH OUT(+)
FR. SP LH OUT(-)
FR. SP RH OUT(+)
FR. SP RH OUT(-)
14
15
12
13
G
R
BR
B/W
B102
M74
10
9
8
7
M16
D1
13
14
M72
D21
17
18
1
2
FRONT DOOR SPEAKER LH
D3
TWEETER LH
M18
FRONT DOOR SPEAKER RH
D22
TWEETER RH
M69
M16 , M72
W W
M18 , M69 , D3 , D22
BR BR BR BR
M50
W
M74
G
M75
W
B114
GY

TEL913A

Trouble Diagnoses

NCEL0082

RADIO

NCEL0082S01

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 7.5A fuse 2. Poor radio case ground 3. Radio	1. Check 7.5A fuse [No. 10, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of radio. 2. Check radio case ground. 3. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 10A fuse 2. Radio	1. Check 10A fuse [No. 24, located in fuse block (J/B)] and verify that battery positive voltage is present at terminal 6 of radio. 2. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor radio ground 3. Radio	1. Check antenna. 2. Check radio ground. 3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Radio	1. Check window antenna. 2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Radio	1. Check radio ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check radio ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Radio output 3. Radio	1. Check 15A fuse (No. 38, located in fuse and fusible link box). Verify battery positive voltage is present at terminal 11 of speaker amp. 2. Check radio output voltage (Terminal 12). 3. Remove radio for repair.
All speakers are inoperative.	1. Speaker amp. ground 2. Amp. ON signal	1. Check speaker amp. 2. Check speaker amp. ground (Terminal 23). 3. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal 9 of speaker amp.
Individual rear speaker is noisy or inoperative.	1. Speaker 2. Speaker amp. output 3. Speaker circuit 4. Radio	1. Check speaker. 2. Check speaker amp. output. 3. Check wires for open or short between radio/amp. and speakers. 4. Remove radio for repair.

Inspection

=NCEL0083

RADIO AND AMP.

NCEL0083S01

All voltage inspections are made with:

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

ANTENNA

NCEL0083S02

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

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

System Description

NCEL0084

Power is supplied at all times

- through 10A fuse [No. 24, located in the fuse block (J/B)]
- to power antenna terminal 6.

Ground is supplied to the power antenna terminal 2 through body grounds B109 and B110.
When the audio is turned to the ON position, battery positive voltage is supplied

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

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

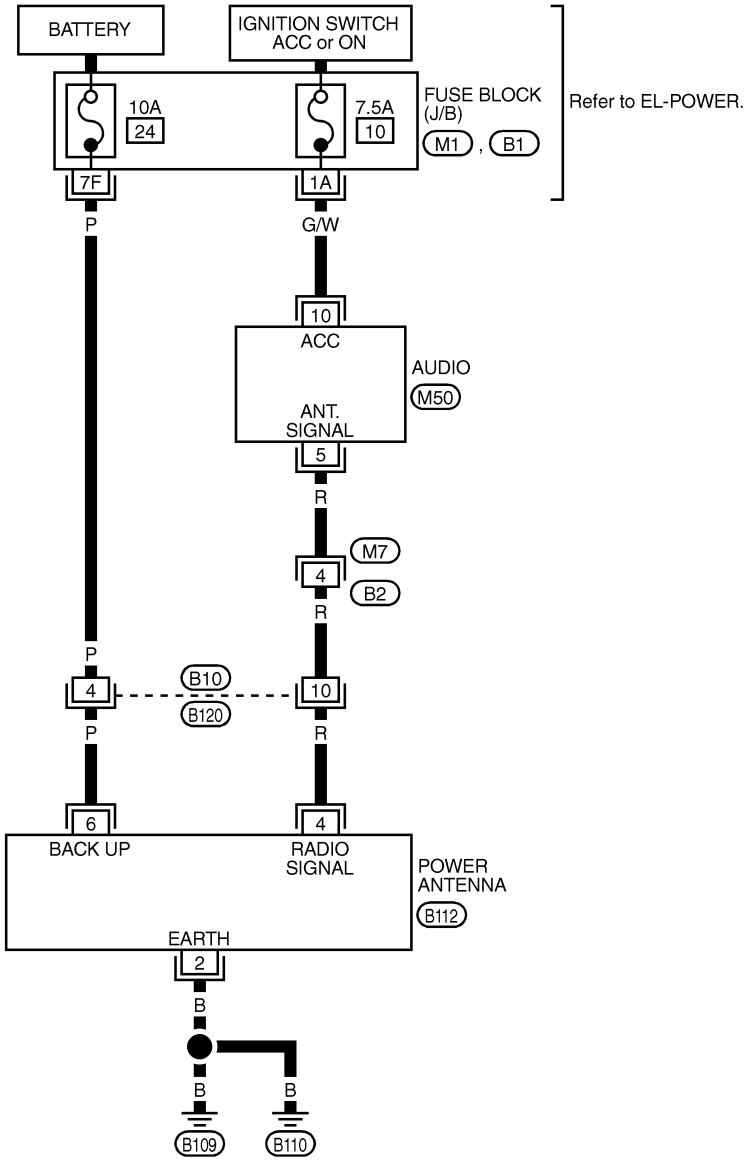
- from audio terminal 5
- to power antenna terminal 4.

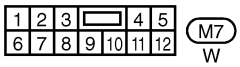
The antenna retracts.

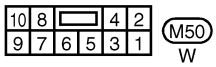
Wiring Diagram — P/ANT —

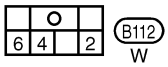
NCEL0085

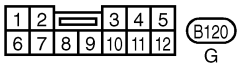
EL-P/ANT-01











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

TEL514B

Trouble Diagnoses

NCEL0086

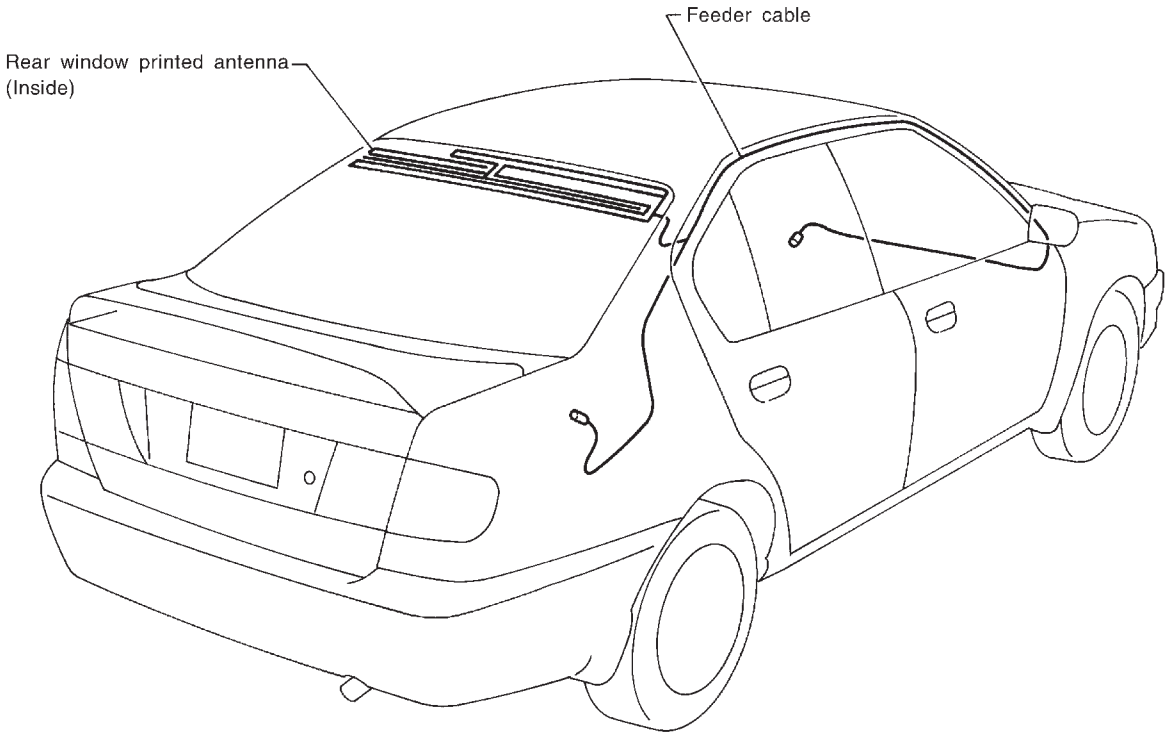
POWER ANTENNA

NCEL0086S01

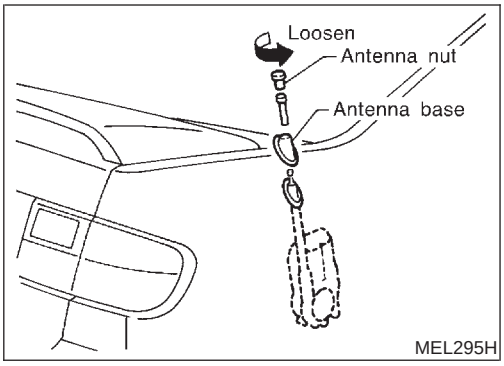
Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 10A fuse 2. Radio signal 3. Grounds B109 and B110	1. Check 10A fuse [No. 24, located in fuse block (J/B)]. Verify that battery positive voltage is present at terminal 6 of power antenna. 2. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal 4 of power antenna. 3. Check grounds B109 and B110.

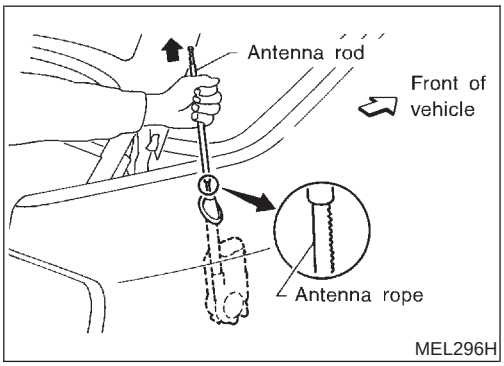
Location of Antenna

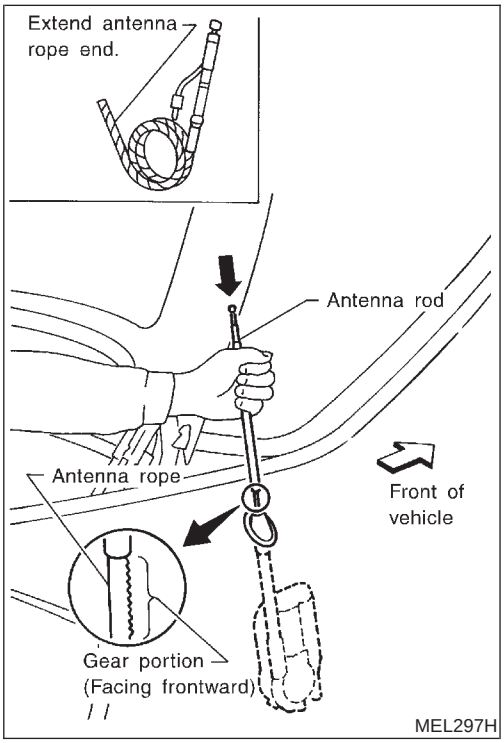
NCEL0087



MEL294H







Antenna Rod Replacement

=NCEL0088

REMOVAL

NCEL0088S01

1. Remove antenna nut and antenna base.
2. Withdraw antenna rod while raising it by operating antenna motor.

INSTALLATION

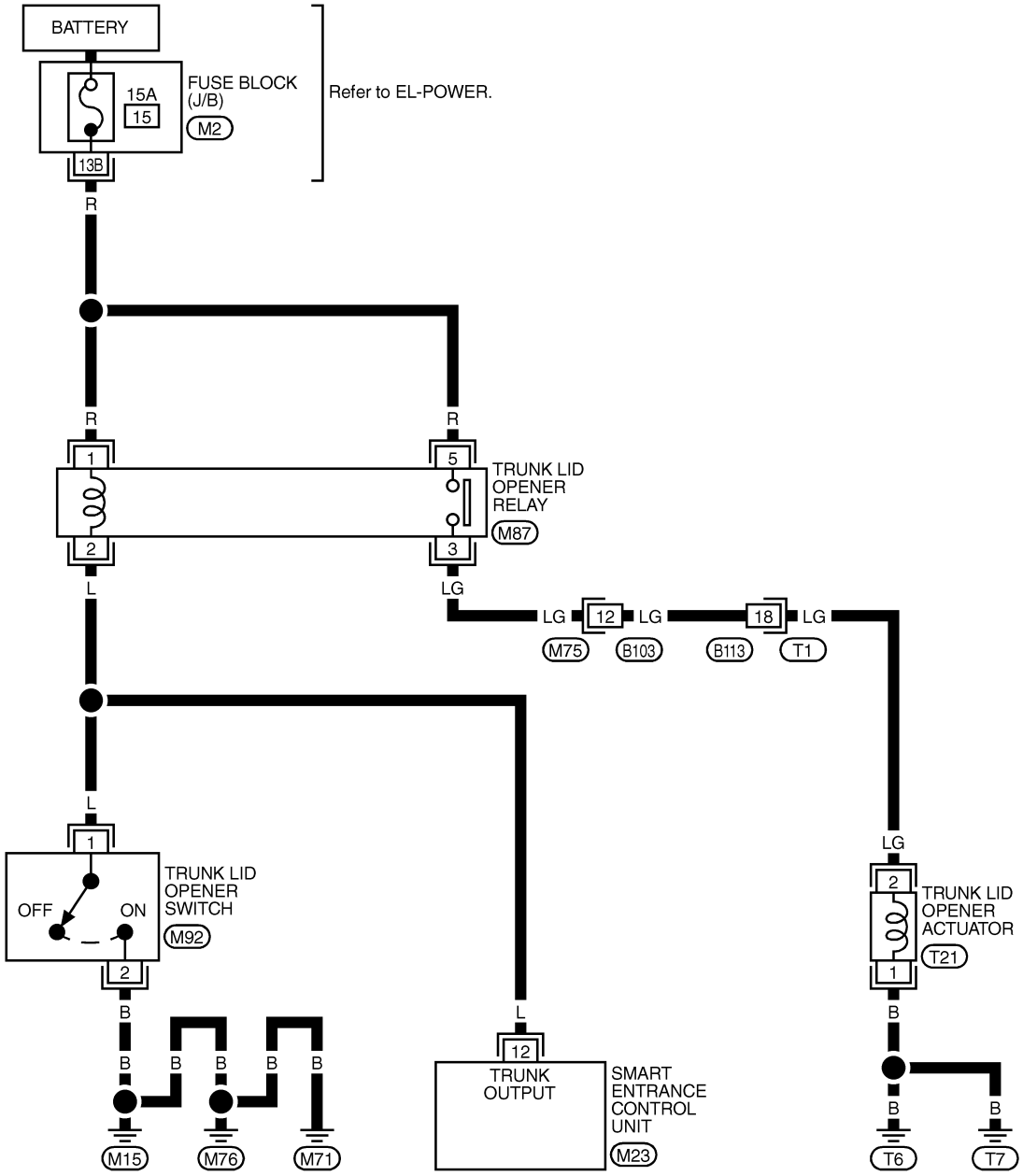
NCEL0088S02

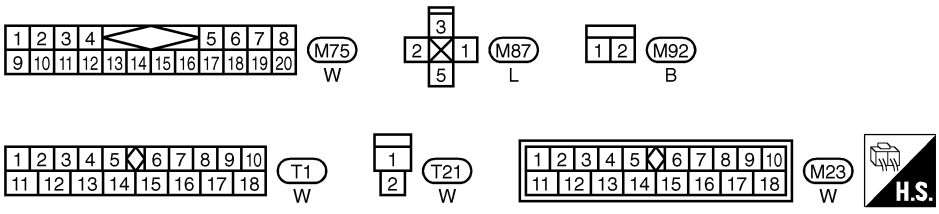
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by operating antenna motor.
5. Install antenna nut [Tightening torque: 2.0 - 3.9 N·m (0.2 - 0.4 kg-m, 17.4 - 34.7 in-lb)] and base.

Wiring Diagram — TLID —

NCEL0171

EL-TLID-01





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

TEL649B

System Description

NCEL0172

OUTLINE

NCEL0172S01

Electric sunroof system consists of

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

Smart entrance control unit controls retained power operation.

RETAINED POWER OPERATION

NCEL0172S02

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

- to power window relay terminal 1
- from smart entrance control unit terminal 5.

Ground is always supplied

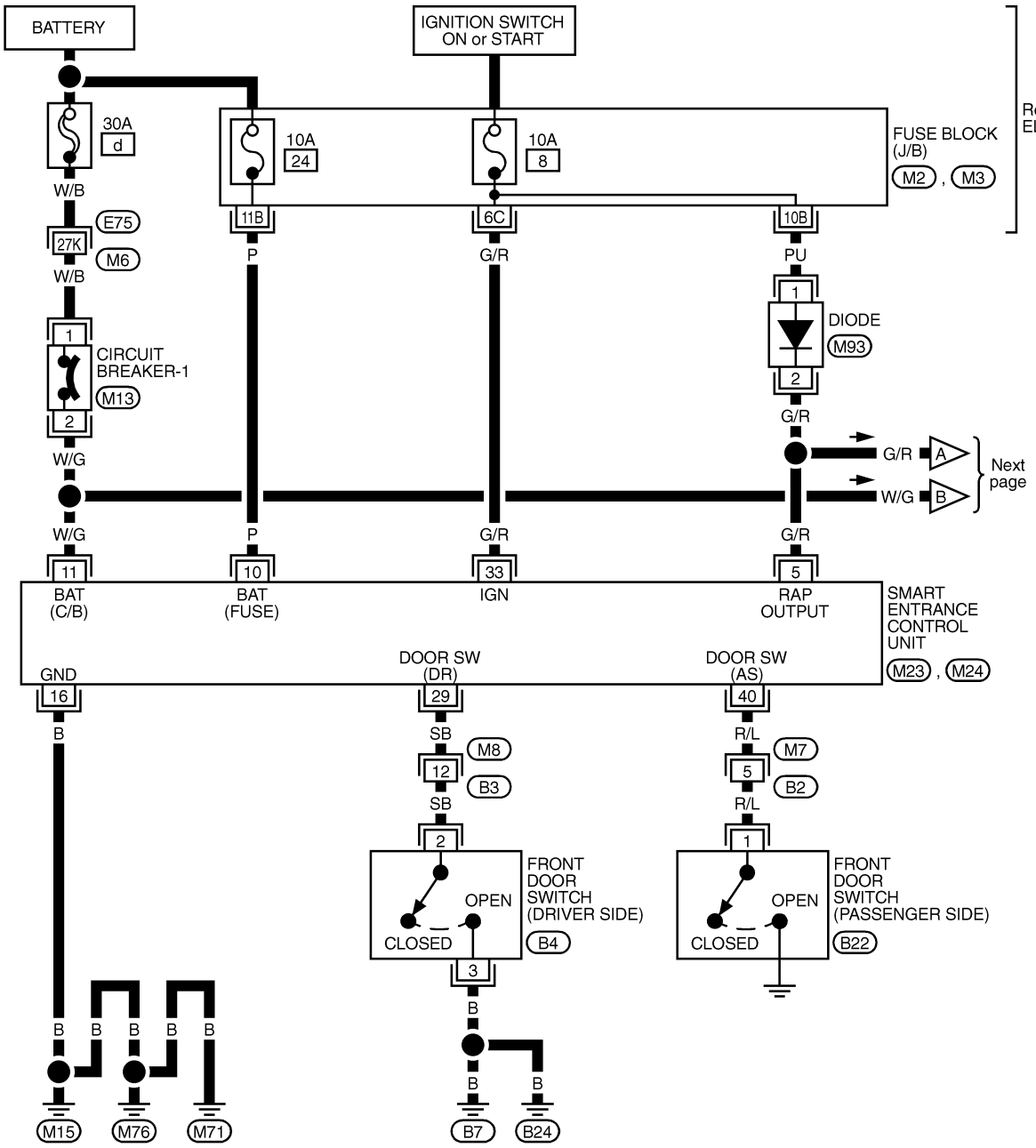
- to power window relay terminal 2
- through body grounds.

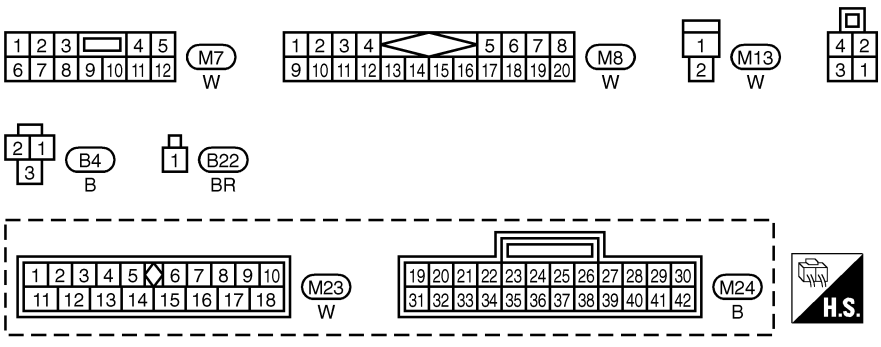
When power and ground is supplied, the power window relay continues to be energized, and the electrical sunroof can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.

Wiring Diagram — SROOF —

NCEL0089

EL-SROOF-01

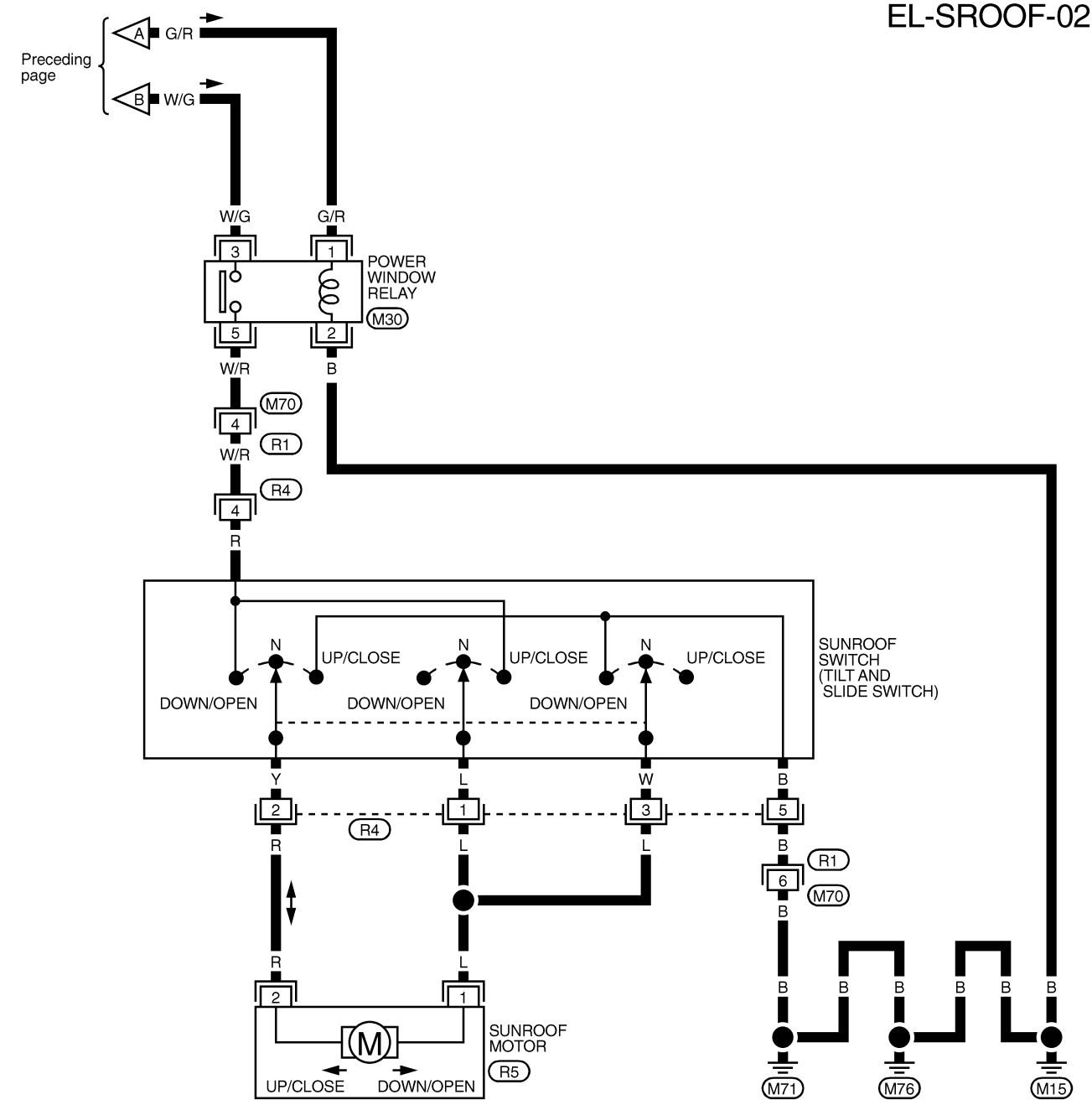




REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 , M3 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL854B

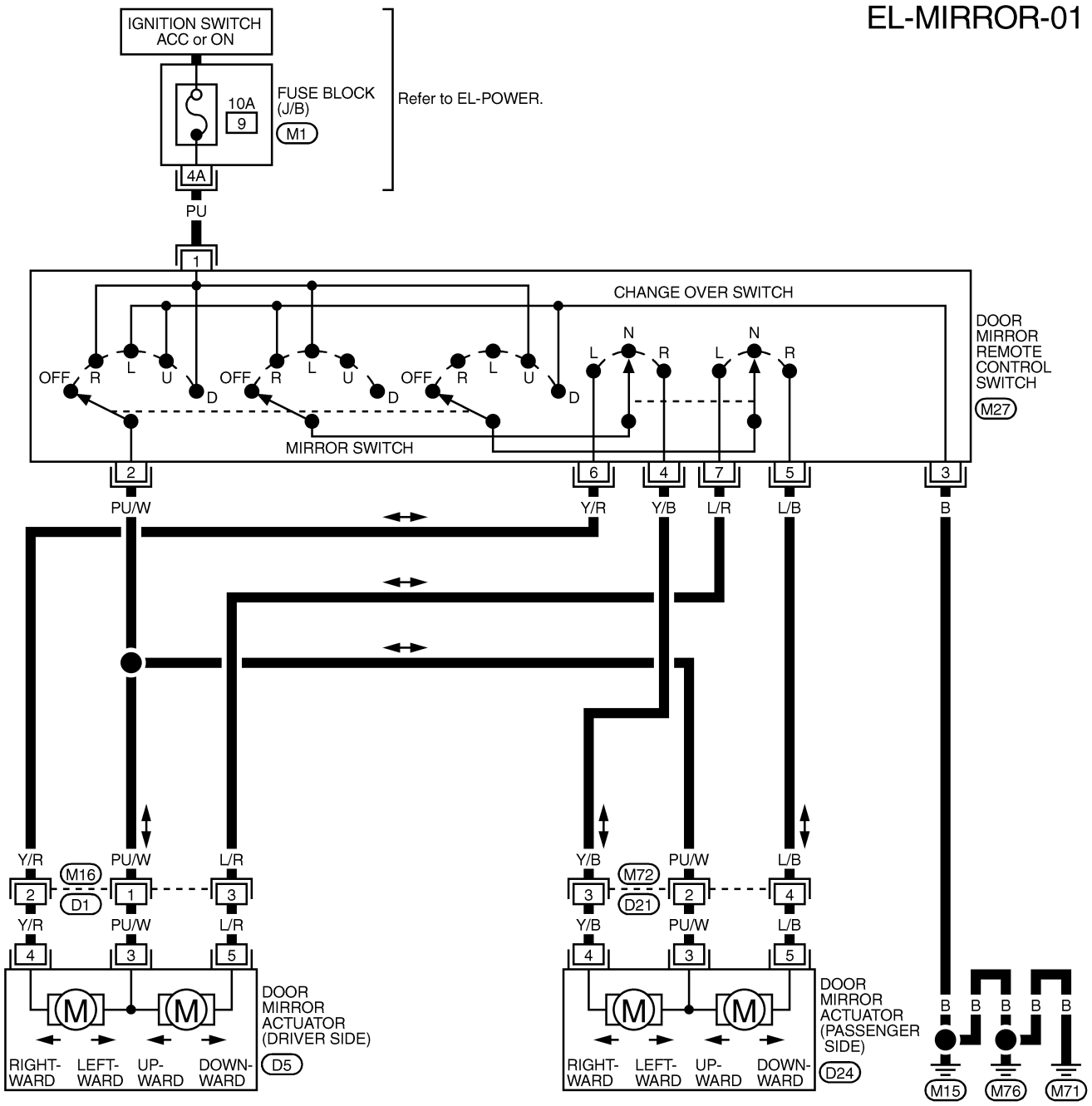
EL-SROOF-02

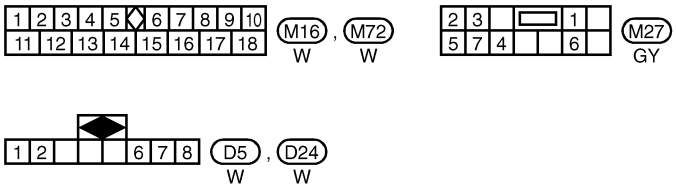


TEL516B

Wiring Diagram — MIRROR —

NCEL0090





REFER TO THE FOLLOWING.

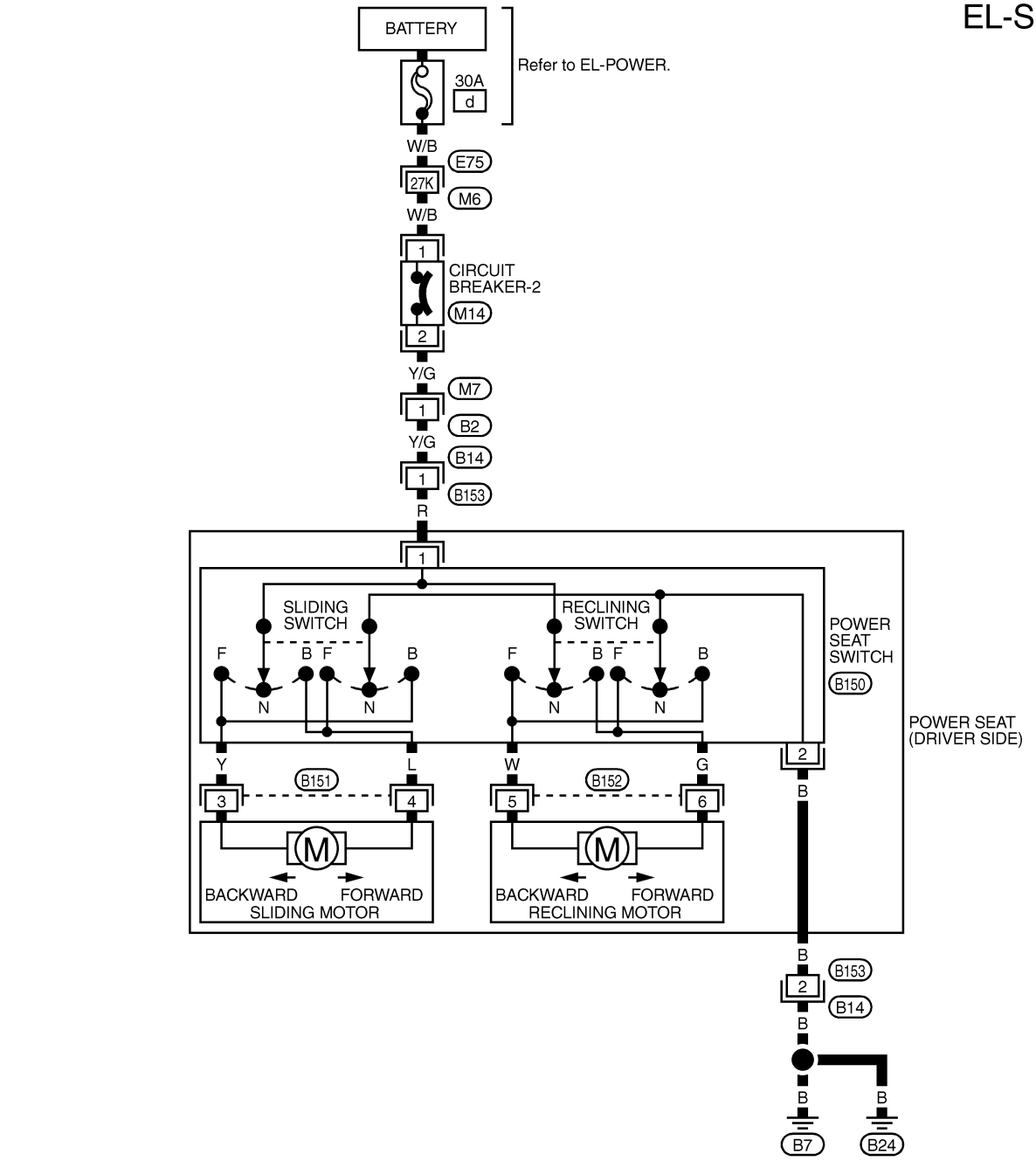
(M1) -FUSE BLOCK-JUNCTION BOX (J/B)

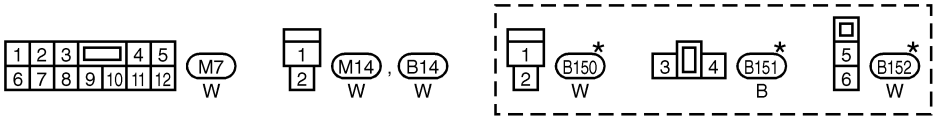
TEL868B

Wiring Diagram — SEAT —

NCEL0092

EL-SEAT-01





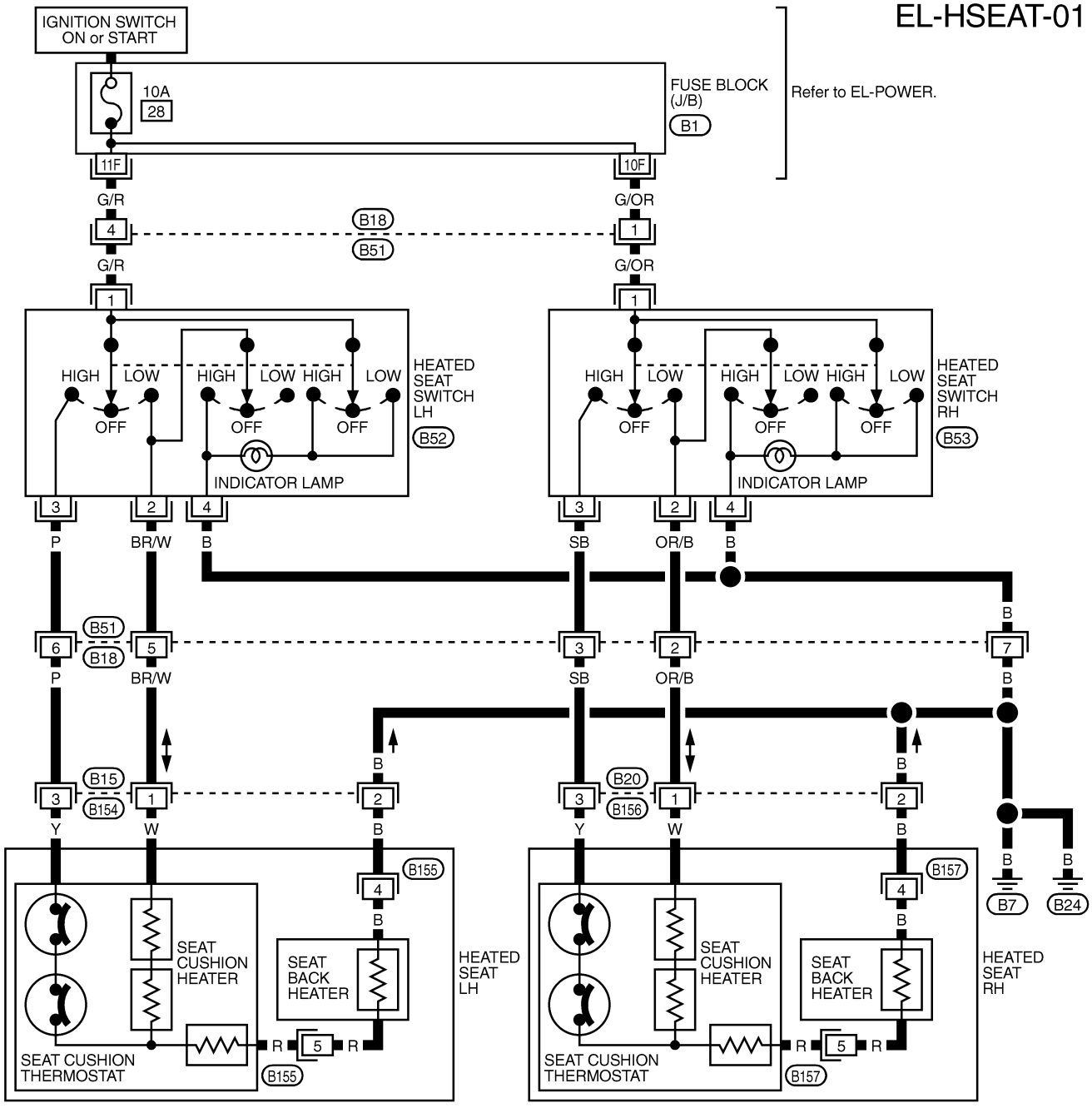
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

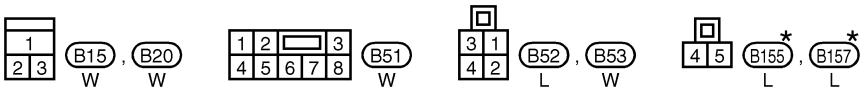
★: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL518B

Wiring Diagram — HSEAT —

NCEL0093





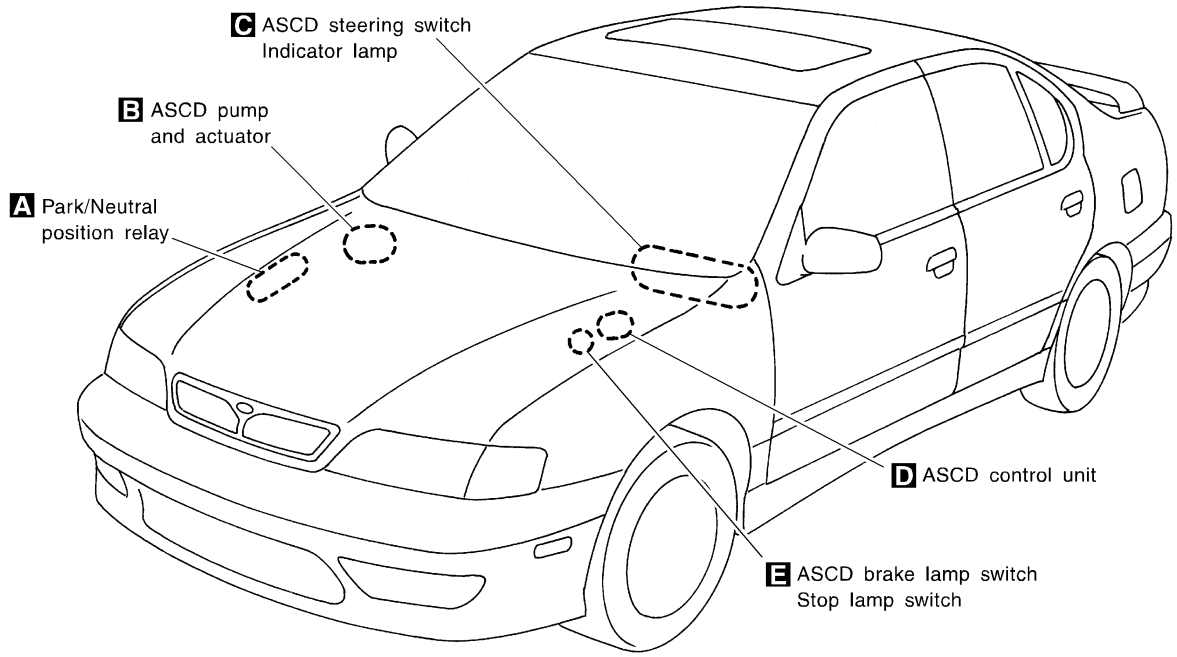
∗: This connector is not shown in "HARNESS LAYOUT", EL section.

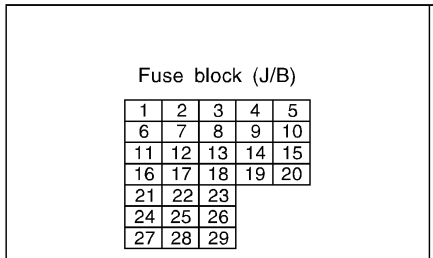
REFER TO THE FOLLOWING.
B1 -FUSE BLOCK-JUNCTION BOX (J/B)

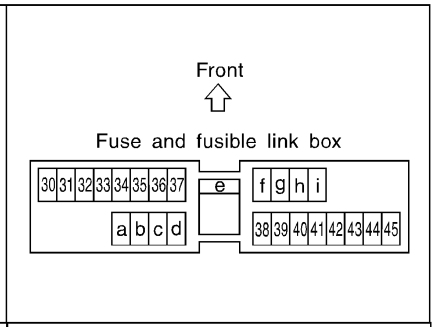
TEL519B

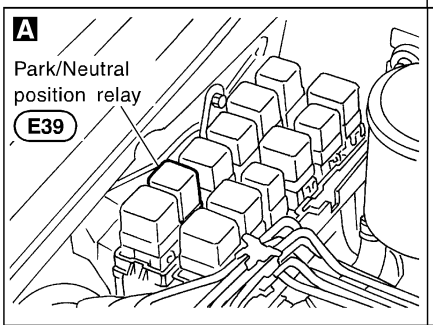
Component Parts and Harness Connector Location

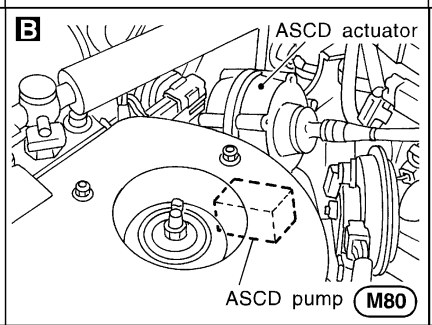
NCEL0094

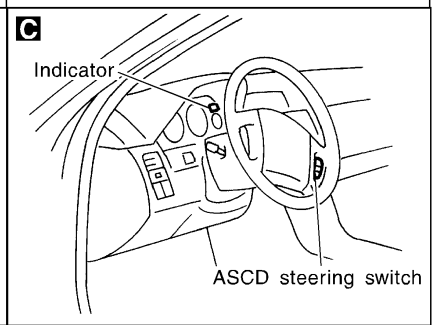


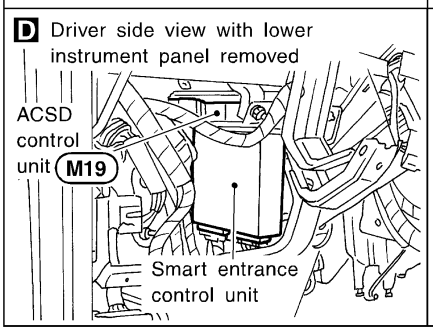


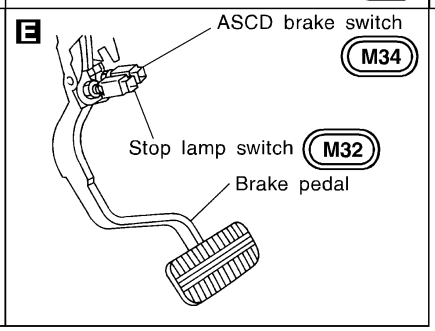












SEL668W

System Description

NCEL0095

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND

NCEL0095S03

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to ASCD clutch switch terminal 1 (M/T models),
- to ASCD brake switch terminal 1 (A/T models) and
- to ASCD control unit terminal 5
- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminal 66,
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to park/neutral position relay terminal 1 (A/T models),

Power is supplied at all times:

- through 15A fuse [No. 14, located in the fuse block (J/B)]
- to the stop lamp switch terminal 1, and
- through 10A fuse [No. 36, located in the fuse block (J/B)]
- to the horn relay terminal 1.

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

- to park/neutral position switch terminal 2
- through body grounds E9 and E28.

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

- to ASCD control unit terminal 9
- from ASCD steering switch terminal 4
- to ASCD steering switch terminal 5
- through body grounds M15, M71 and M76

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

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

OPERATION

NCEL0095S04

Set Operation

NCEL0095S0401

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

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

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

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

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

- to combination meter terminal 18 to illuminate SET indicator.

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

NCEL0095S0402

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

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

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

ASCD Shifting Control

NCEL0095S0407

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

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

Coast Operation

NCEL0095S0403

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

Accel Operation

NCEL0095S0404

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

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

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

Cancel Operation

NCEL0095S0405

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

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

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

Resume Operation

NCEL0095S0406

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

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

ASCD PUMP OPERATION

NCEL0095S05

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

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

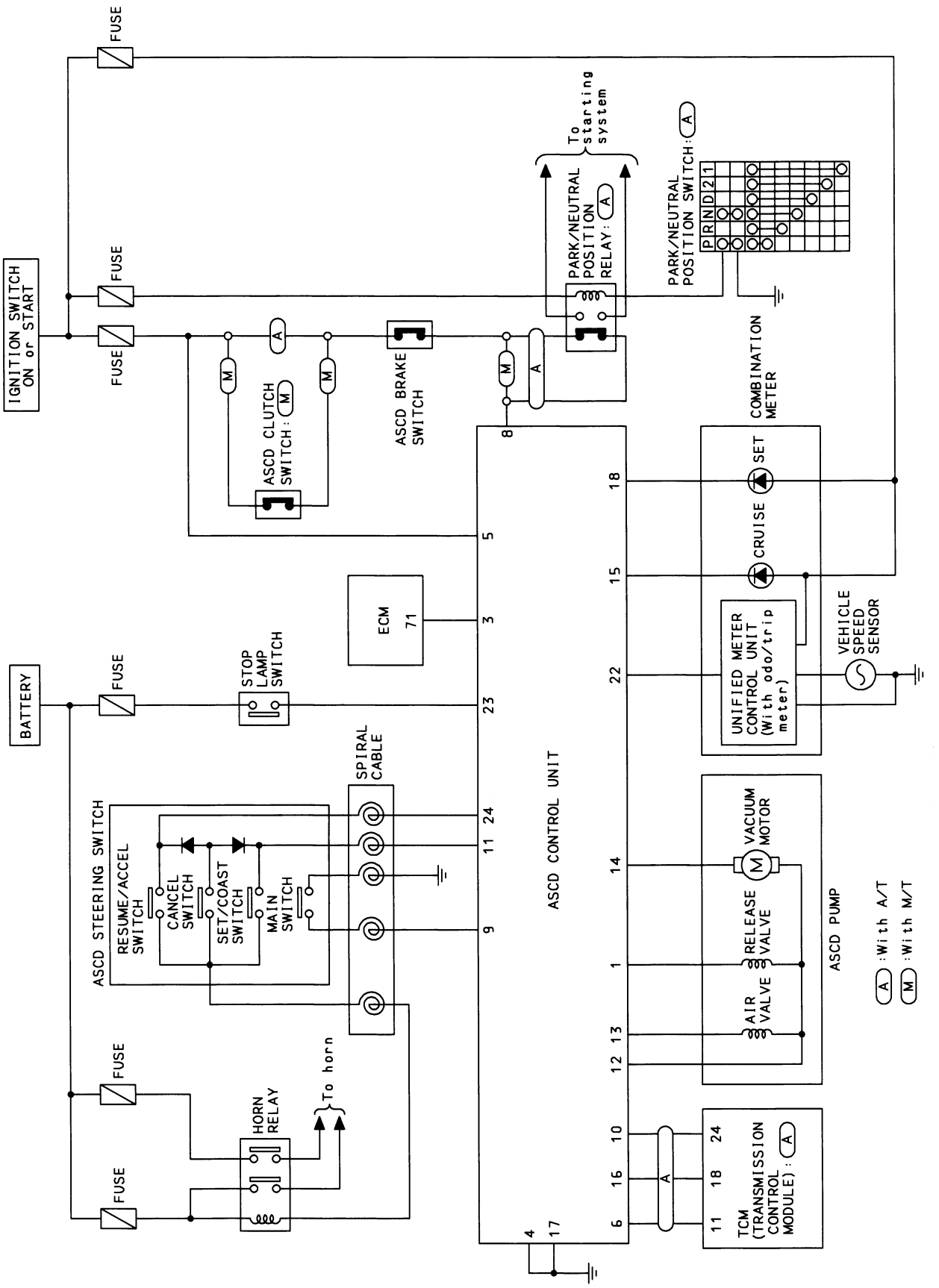
Ground is supplied to vacuum motor, air valve and release valve from ASCD control unit depending on the operated condition as shown in the below table.
The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control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

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

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

Schematic

NCEL0096



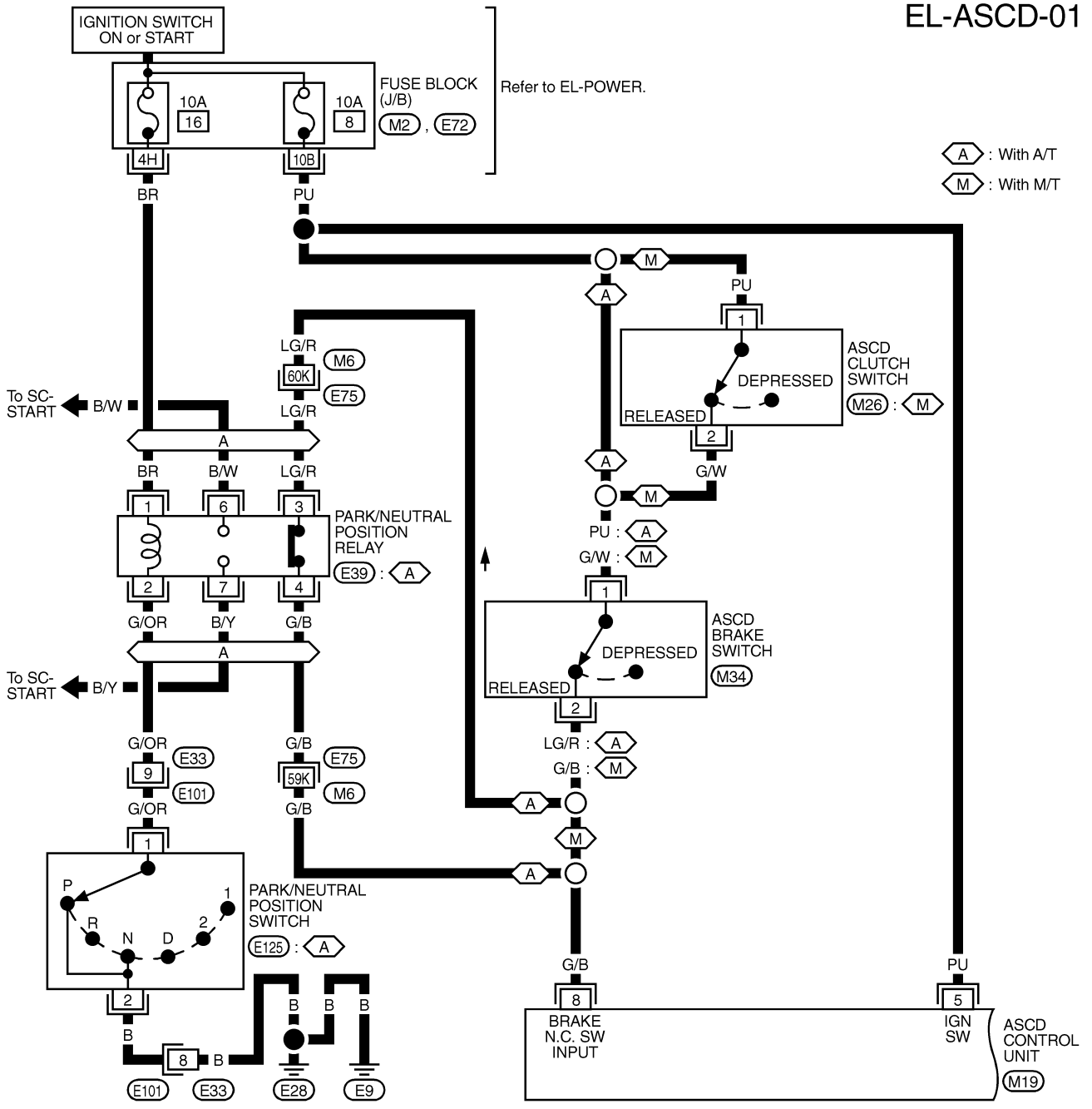
TEL855B

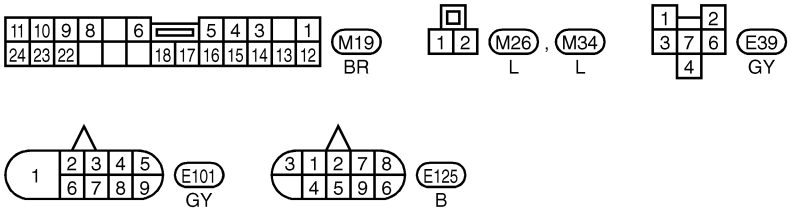
Wiring Diagram — ASCD —

NCEL0097

FIG. 1

NCEL0097S01



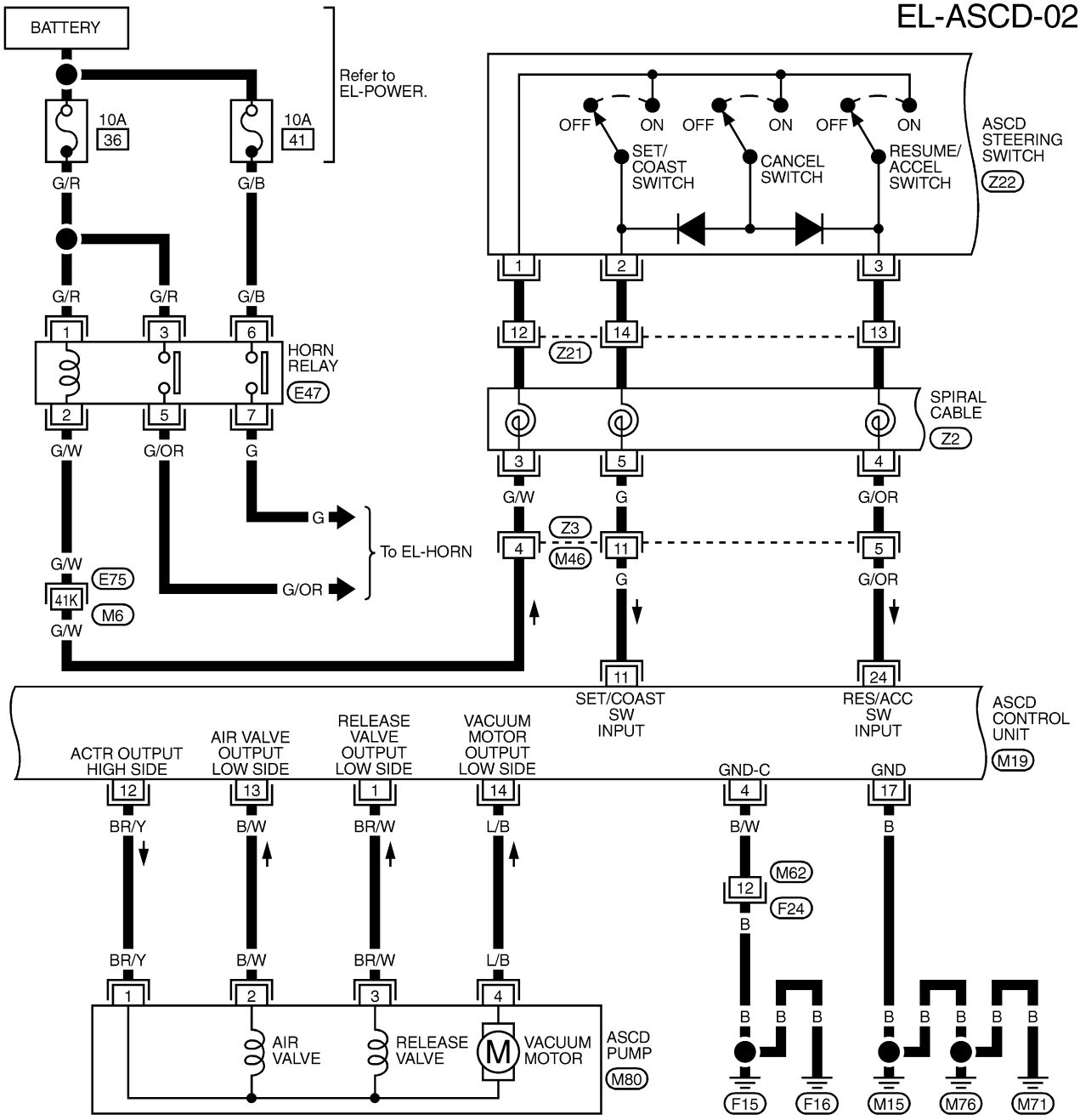


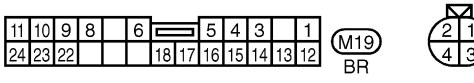
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 , E72 -FUSE BLOCK-JUNCTION BOX (J/B)

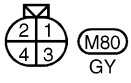
TEL521B

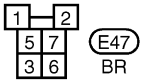
FIG. 2

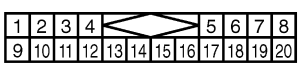
NCEL0097S02

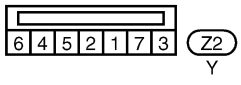


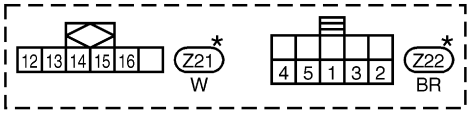












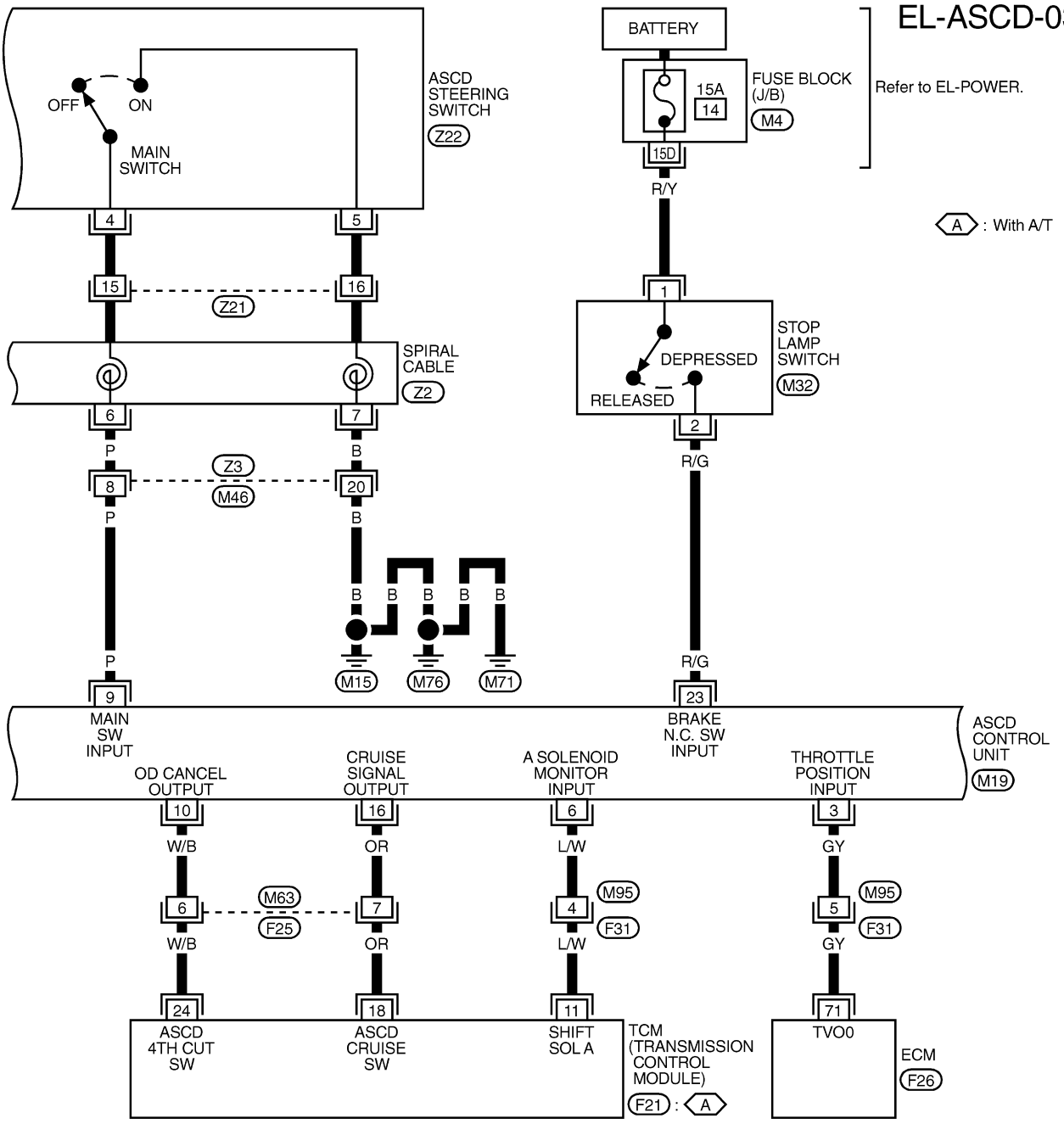
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

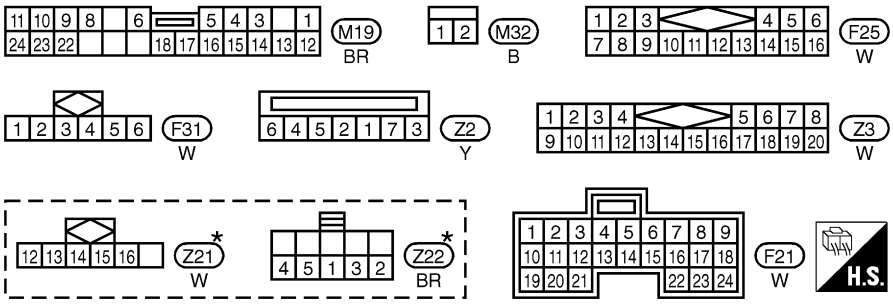
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL522B

FIG. 3

NCEL0097S03





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

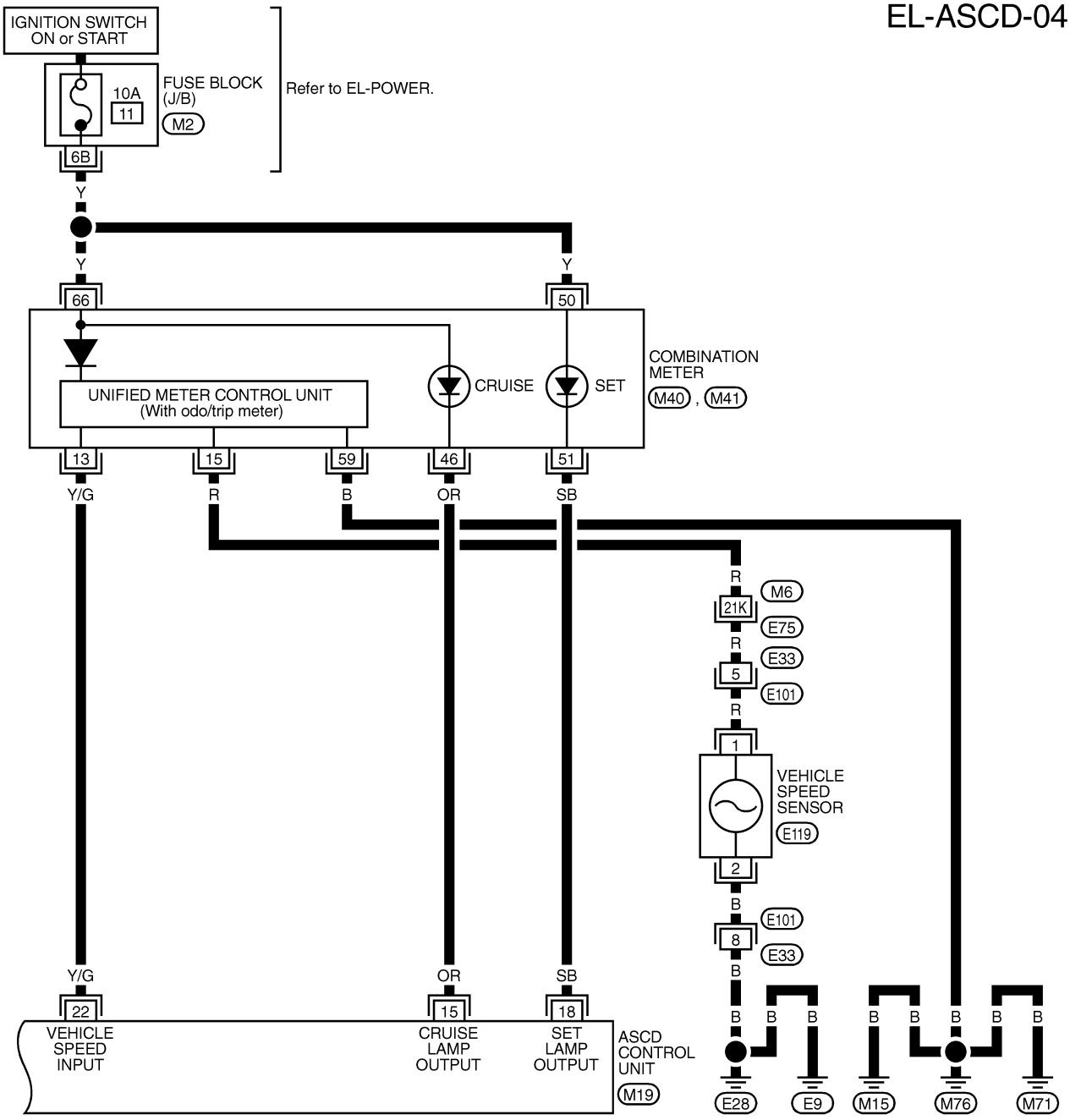
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
F26 -ELECTRICAL UNITS

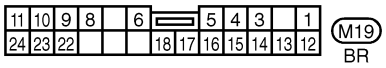
TEL523B

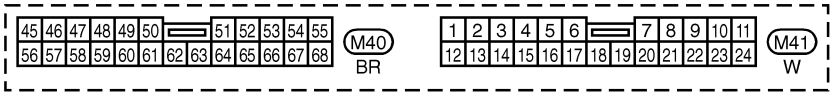
FIG. 4

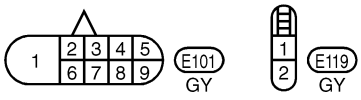
NCEL0097S04

EL-ASCD-04



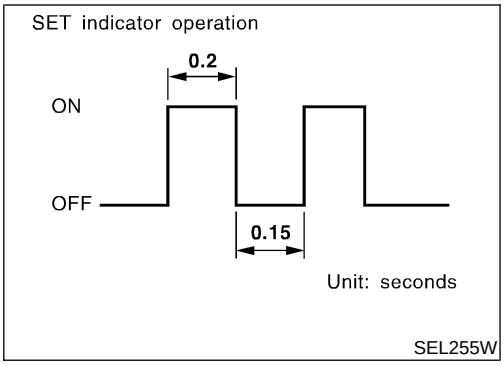






REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL856B



Fail-safe System

NCEL0098

DESCRIPTION

NCEL0098S01

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

MALFUNCTION DETECTION CONDITIONS

NCEL0098S02

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

Trouble Diagnoses

SYMPTOM CHART

NCEL0099

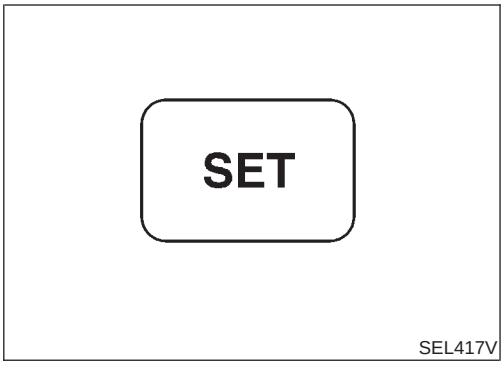
NCEL0099S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL-)	156	157	158	159	160	160	162
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD PUMP CIRCUIT CHECK	ASCD ACTUATOR/PUMP CHECK
ASCD cannot be set. (“CRUISE” indicator lamp does not ON.)		X		X★3			
ASCD cannot be set. (“SET” indicator lamp does not blink.)			X	X	X		
ASCD cannot be set. (“SET” indicator lamp blinks.★1)	X		X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.				X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2				X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.				X			X
System is not released after CANCEL switch (steering) has been pressed.				X			X
Large difference between set speed and actual vehicle speed.					X	X	X
Deceleration is greatest immediately after ASCD has been set.					X	X	X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform “FAIL-SAFE SYSTEM CHECK” (EL-156) to verify repairs.

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

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

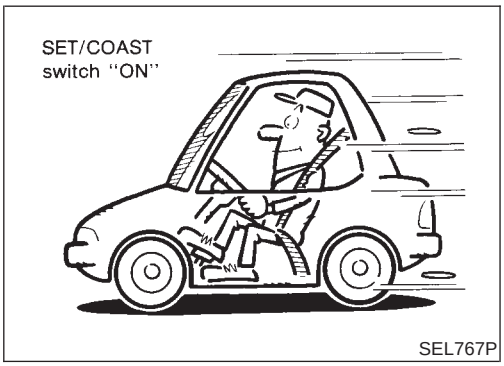


SEL417V

FAIL-SAFE SYSTEM CHECK

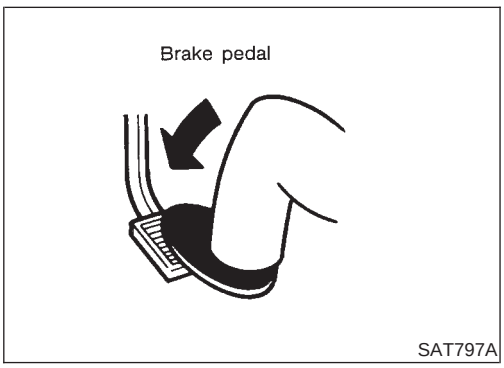
=NCEL0099S02

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "set indicator" blinks.
   If the indicator lamp blinks, check the following.
- ASCD steering switch. Refer to EL-159.



SEL767P

3. Drive the vehicle at more than 40 km/h (25 MPH) and push SET/COAST switch.
   If the indicator lamp blinks, check the following.
- Vehicle speed sensor. Refer to EL-160.
- ASCD pump circuit. Refer to EL-160.
- Replace control unit.



SAT797A

4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
   If the indicator lamp blinks, check the following.
- ASCD brake/stop lamp switch. Refer to EL-158.

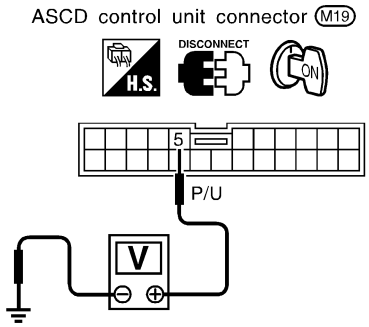
5. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NCEL0099S03

1	CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT

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



Does battery voltage exist?

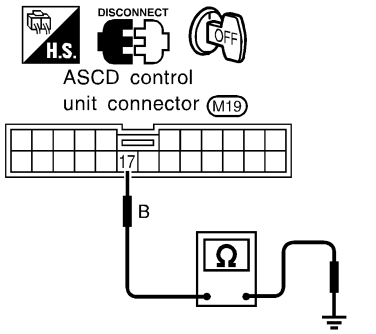
SEL256WA

Refer to wiring diagram in EL-150.

Yes	▶	GO TO 2.
No	▶	**Check the following.** ● 10A fuse (No. 8 located in the fuse block) ● Harness for open or short

2	CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

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



Does continuity exist?

SEL257WA

Refer to wiring diagram in EL-151.

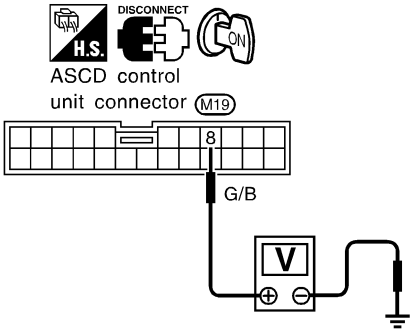
Yes	▶	Power supply and ground circuit is OK.
No	▶	Repair harness.

ASCD BRAKE/STOP LAMP SWITCH CHECK

=NCEL0099S06

1 CHECK ASCD BRAKE SWITCH CIRCUIT

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



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

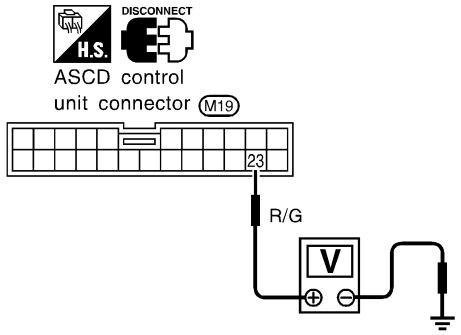
SEL258WB

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● ASCD brake switch Refer to "Electrical Component Inspection" (EL-164). ● Park/neutral position switch Refer to "Electrical Component Inspection" (EL-164). ● Park/neutral position relay ● ASCD clutch switch Refer to "Electrical Component Inspection" (EL-164). ● Harness for open or short

2 CHECK STOP LAMP SWITCH CIRCUIT

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



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

SEL259WA

Refer to wiring diagram in EL-152.

OK or NG

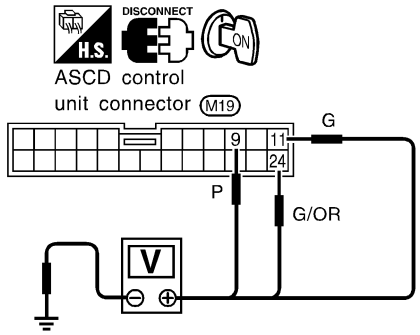
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following.** ● 15A fuse [No. 14, located in the fuse block (J/B)] ● Harness for open or short between ASCD control unit and stop lamp switch ● Harness for open or short between fuse and stop lamp switch ● Stop lamp switch Refer to "Electrical Component Inspection" (EL-164).

ASCD STEERING SWITCH CHECK

=NCEL0099S07

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

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



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

SEL260WA

Refer to wiring diagram in EL-151 and EL-152.

OK or NG

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

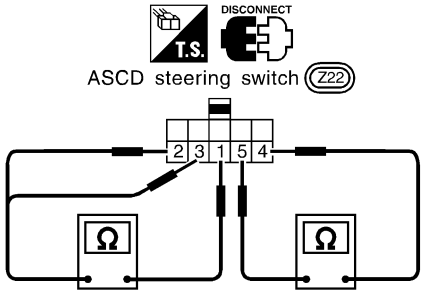
2 **CHECK POWER SUPPLY FOR ASCD STEERING SWITCH**

Does horn work?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 10A fuse (No. 36, located in the relay box) ● Horn relay ● Harness for open or short

3 **CHECK ASCD STEERING SWITCH**

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



Switch	Terminal				
	1	2	3	4	5
MAIN				○	○
RESUME/ACCEL	○		○		
SET/COAST	○	○			
CANCEL	○	▷	○		
	○	◁	○		

SEL178X

OK or NG

OK	▶	**Check the following.** ● Harness for open or short between ASCD steering switch and ASCD control unit ● Main switch ground circuit
NG	▶	Replace ASCD steering switch.

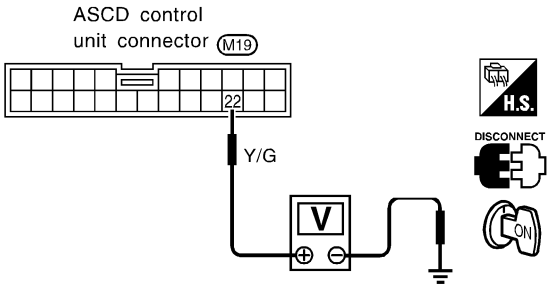
VEHICLE SPEED SENSOR CHECK

=NCEL0099S08

1	CHECK SPEEDOMETER OPERATION	
Does speedometer operate normally?		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-93.

2	CHECK VEHICLE SPEED INPUT	

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



Does voltage pointer deflect?

SEL263WA

Refer to wiring diagram in EL-153.

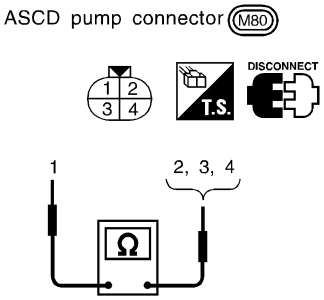
Yes	▶	Vehicle speed sensor is OK.
No	▶	Check harness for open or short between ASCD control unit terminal 22 and combination meter terminal 32.

ASCD PUMP CIRCUIT CHECK

NCEL0099S09

1	CHECK ASCD PUMP	

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



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

SEL262WA

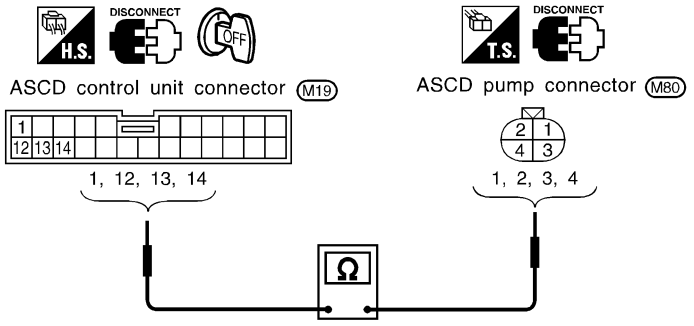
Refer to wiring diagram in EL-151.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace ASCD pump.

2	CHECK ASCD PUMP CIRCUIT

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



Circuit	Terminal	
	ASCD control unit	ASCD pump
ASCD pump power suply	12	1
Air valve	13	2
Release valve	1	3
Vacuum motor	14	4

Continuity should exist.

SEL269WA

OK or NG

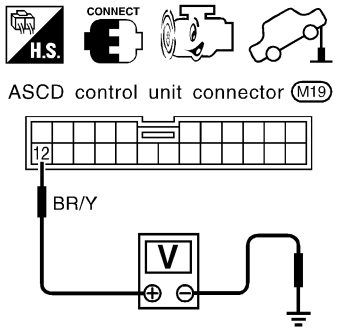
OK	▶	GO TO 3.
NG	▶	Repair harness.

3	CHECK ASCD PUMP POWER SUPPLY

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

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

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



Battery voltage should exist.

SEL381WA

OK or NG

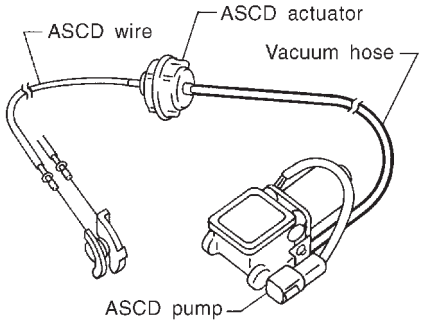
OK	▶	ASCD pump power supply is OK.
NG	▶	Replace ASCD control unit.

ASCD ACTUATOR/PUMP CHECK

=NCEL0099S10

1	CHECK VACUUM HOSE

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



MEL402G

OK or NG

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

2	CHECK ASCD WIRE

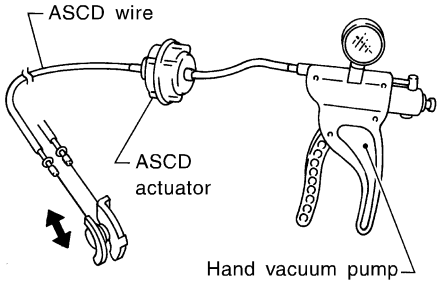
Check wire for improper installation, rust formation or breaks.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-165).

3	CHECK ASCD ACTUATOR

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



Apply –40 kPa (–0.41 kg/cm^2, –5.8 psi) vacuum to ASCD actuator with hand vacuum pump.
ASCD wire should move to pull throttle drum.
Wait 10 seconds and check for decrease in vacuum pressure.

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

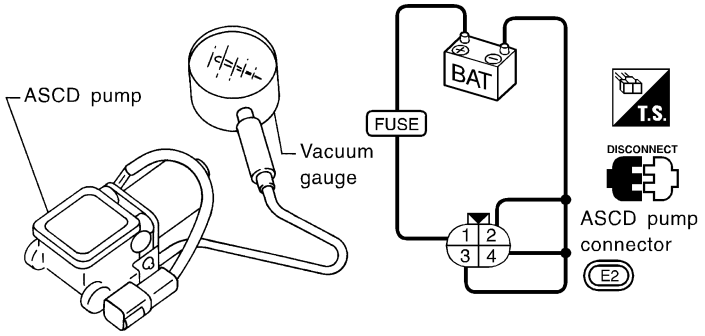
SEL264W

OK or NG

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

4	CHECK ASCD PUMP

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



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

A vacuum pressure of at least −40 kPa (−0.41 kg/cm², −5.8 psi) should be generated.

SEL265W

OK or NG

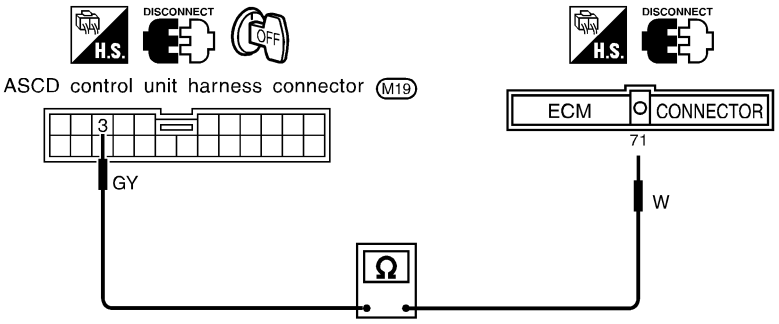
OK	▶	INSPECTION END
NG	▶	Replace ASCD pump.

THROTTLE POSITION SENSOR SIGNAL CHECK

NCEL0099S11

1	CHECK THROTTLE POSITION SENSOR SIGNAL CIRCUIT

1. Disconnect ECM harness connector and ASCD control unit harness connector.
2. Check continuity between ECM terminal 71 and ASCD control unit terminal 3.

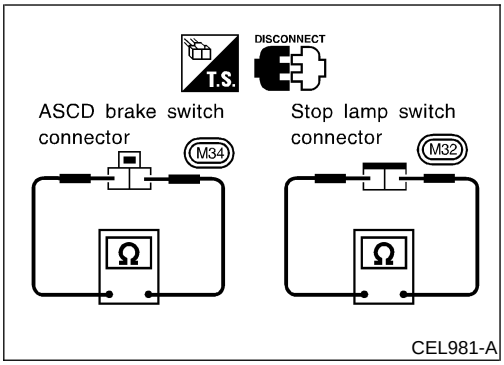


Continuity should exist.

SEL268WA

OK or NG

OK	▶	Refer to "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" in EC section. (EC-146)
NG	▶	Repair harness.



Electrical Component Inspection

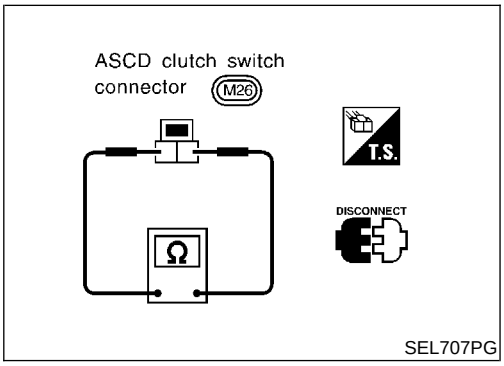
=NCEL0100

ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NCEL0100S02

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

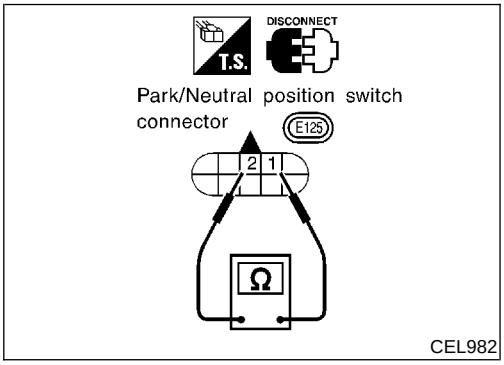
Check each switch after adjusting brake pedal — refer to BR-12, "BRAKE PEDAL AND BRACKET".



ASCD CLUTCH SWITCH (FOR M/T MODELS)

NCEL0100S04

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



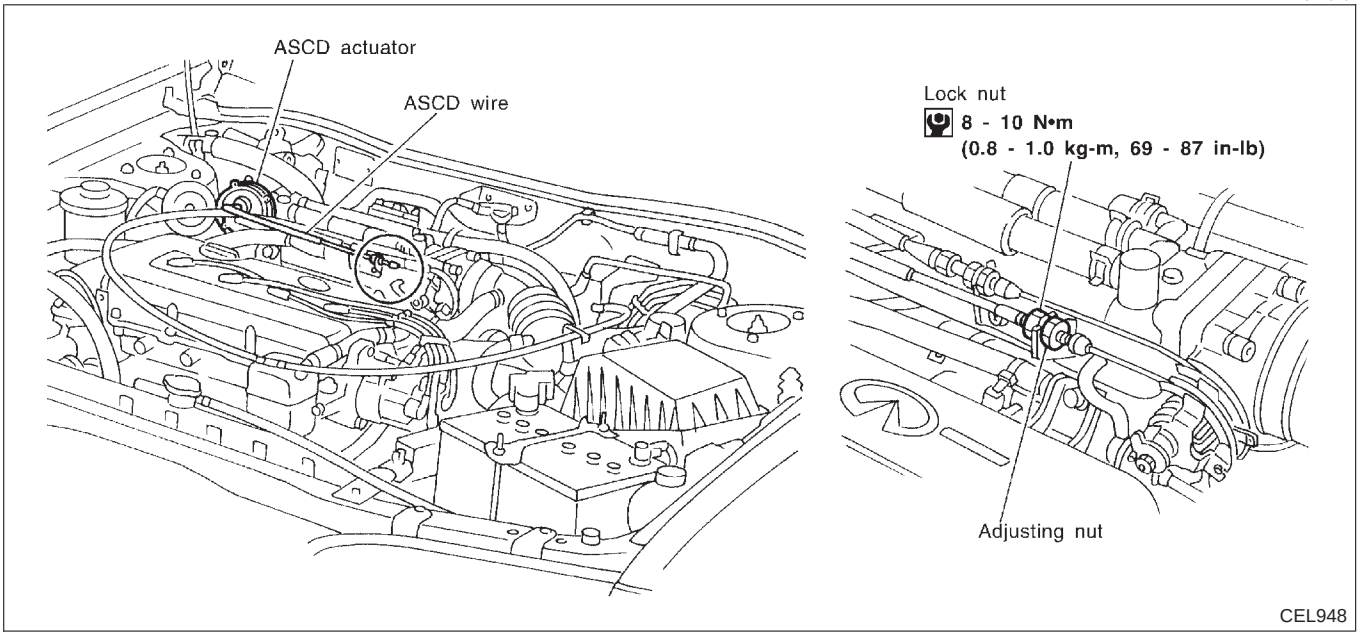
PARK/NEUTRAL POSITION SWITCH (FOR A/T MODELS)

NCEL0100S03

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

ASCD Wire Adjustment

=NCEL0101



CAUTION:

- **Be careful not to twist ASCD wire when removing it.**
- **Do not tense ASCD wire excessively during adjustment.**

Adjust the tension of ASCD wire in the following manner.

1. Loosen lock nut and adjusting nut.
2. Make sure that accelerator wire is properly adjusted. Refer to FE-3, “ACCELERATOR CONTROL SYSTEM”.
3. Tighten adjusting nut just until throttle drum starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

System Description

NCEL0102

Power is supplied at all times
- from 30A fusible link (letter **d**, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to power window relay terminal 3 and
- to power window main switch terminal 7.

With ignition switch in ON or START position, power is supplied
- through 10A fuse [No. 8, 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 M15, M71 and M76.

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

MANUAL OPERATION

NCEL0102S01

Front Door LH

NCEL0102S0101

Ground is supplied
- to power window main switch terminal 6
- through body grounds M15, M71 and M76.

WINDOW UP
When the front LH switch in the power window main switch is pulled in the up position, power is supplied
- to front power window regulator LH terminal 3
- through power window main switch terminal 2.

Ground is supplied
- to front power window regulator LH terminal 1
- through power window main switch terminal 3.

Then, the motor raises the window until the switch is released.
WINDOW DOWN
When the LH switch in the power window main switch is pressed in the down position, power is supplied
- to front power window regulator LH terminal 1
- through power window main switch terminal 3.

Ground is supplied
- to front power window regulator LH terminal 3
- through power window main switch terminal 2.

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

Front Door RH

NCEL0102S0102

Ground is supplied
- to power window main switch terminal 6
- through body grounds M15, M71and M76.

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

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

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

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

Ground is supplied

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

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

Rear Door

NCEL0102S0103

Rear door windows will raise and lower in the same manner as front door RH window.

AUTO OPERATION

NCEL0102S02

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

POWER WINDOW LOCK

NCEL0102S03

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

RETAINED POWER OPERATION

NCEL0102S04

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

- to power window relay terminal 1
- from smart entrance control unit terminal 5.

Ground is always supplied

- to power window relay terminal 2
- through body grounds.

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

INTERRUPTION DETECTION FUNCTION

NCEL0102S05

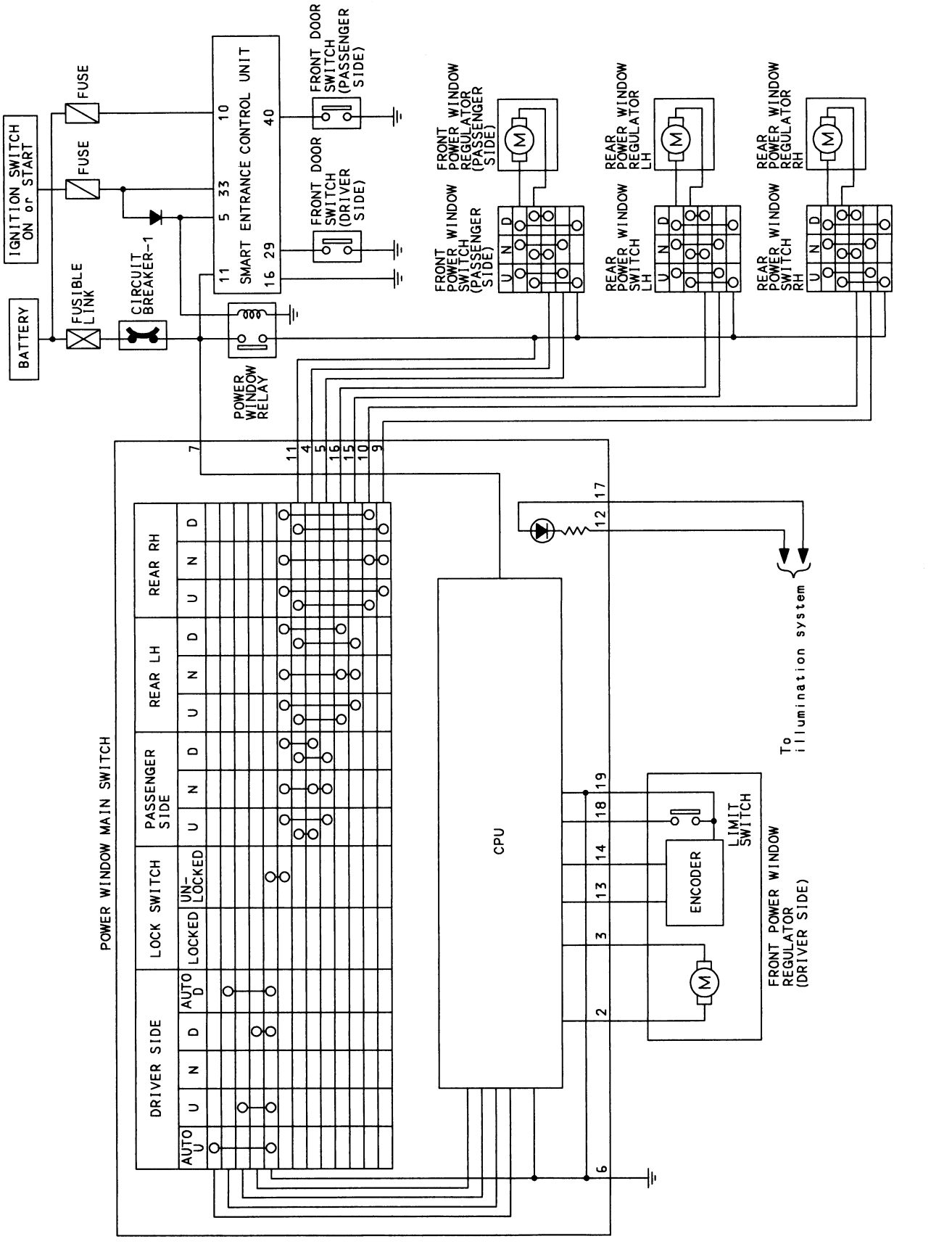
CPU (combined with power window main switch) monitors the power window regulator motor operation and the power window position (full closed or other) for driver's power window by the signals from encoder and limit switch in front power window regulator (driver's side).
When CPU (combined with power window main switch) detects interruption during the following close operation in the driver's side door,

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

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

Schematic

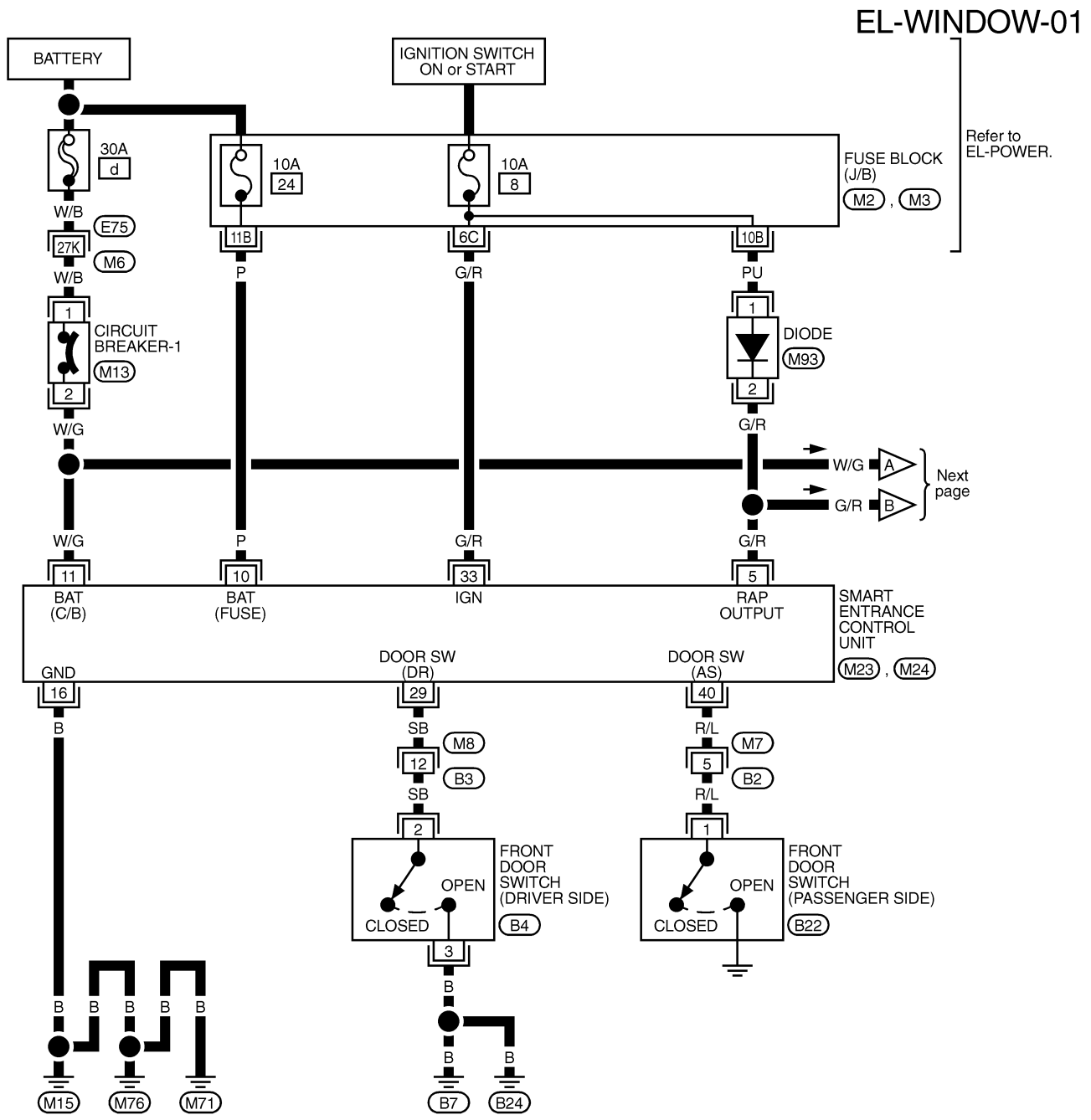
NCEL0103

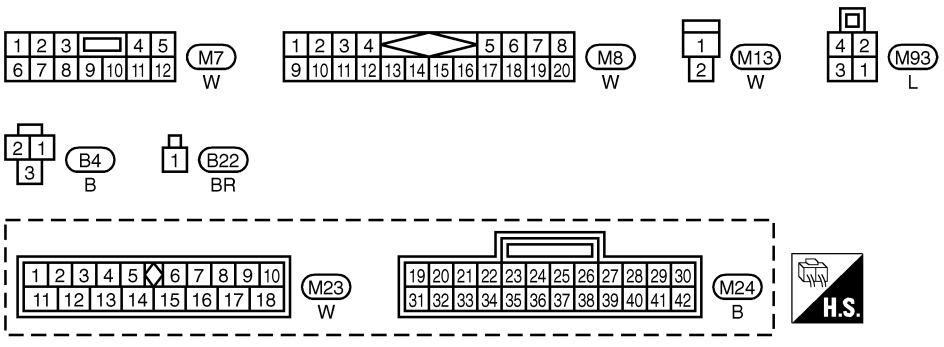


TEL525B

Wiring Diagram — WINDOW —

NCEL0104

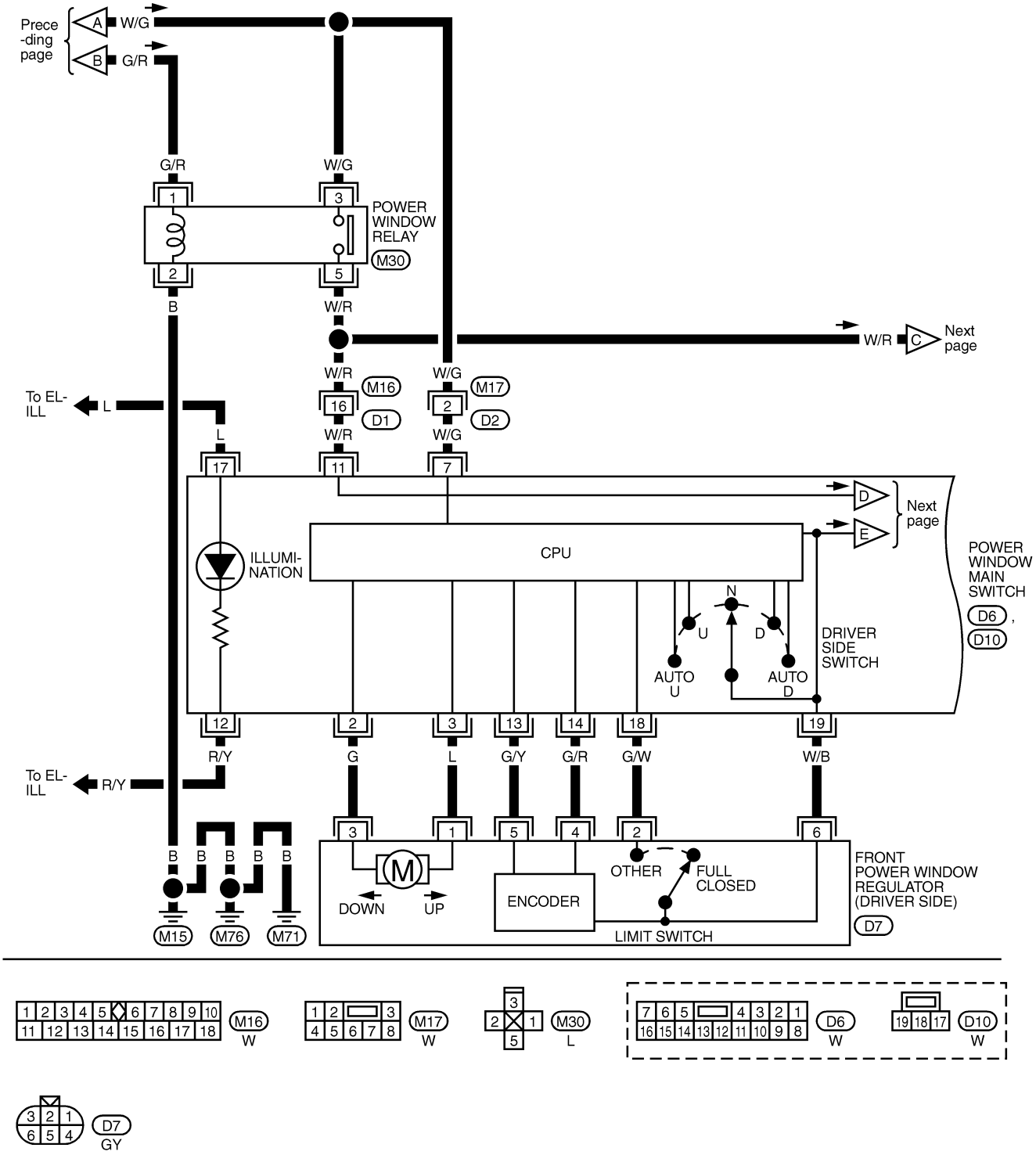




REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2 , M3 -FUSE BLOCK-JUNCTION BOX (J/B)

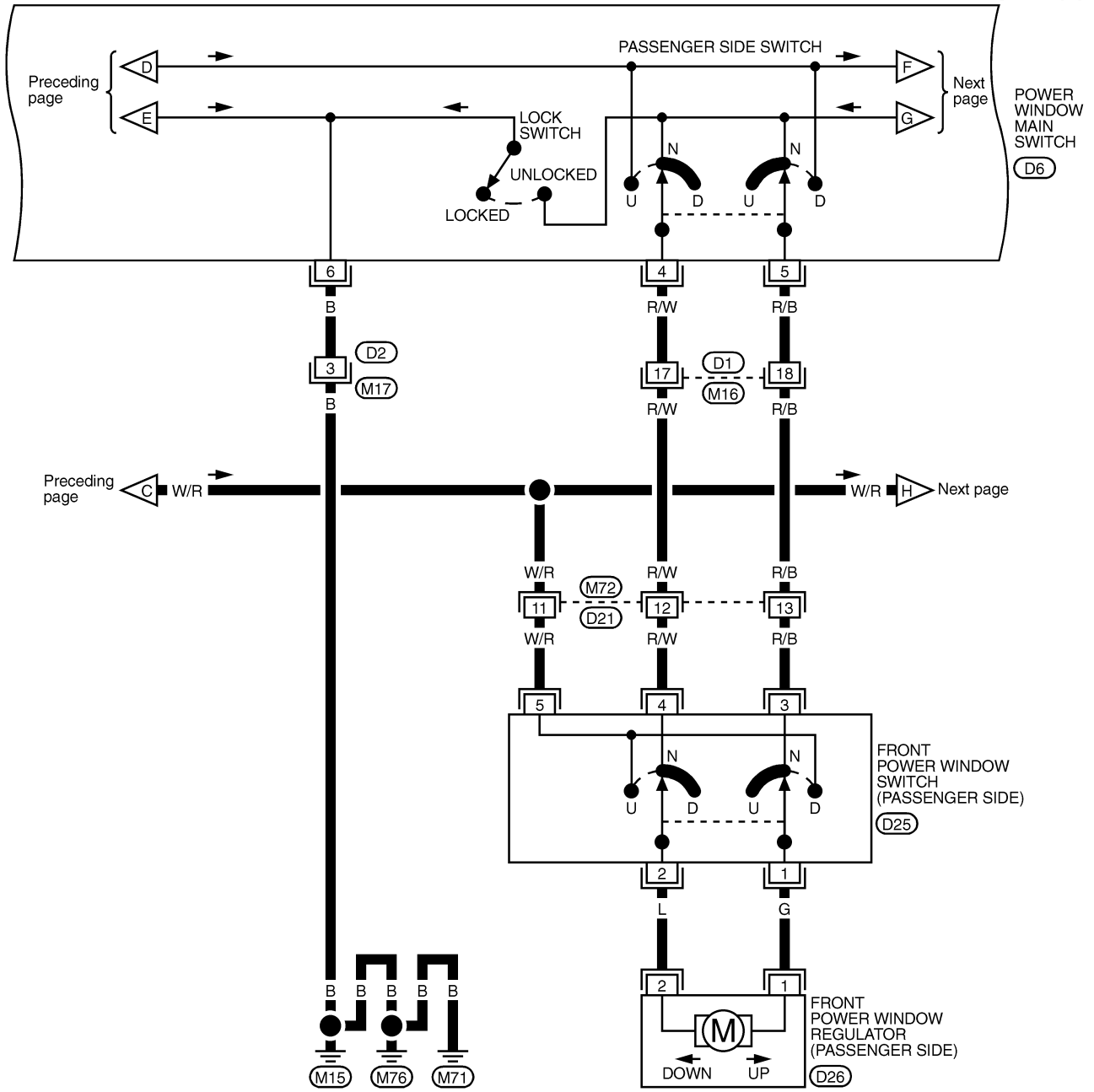
TEL857B

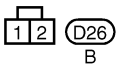
EL-WINDOW-02



TEL526B

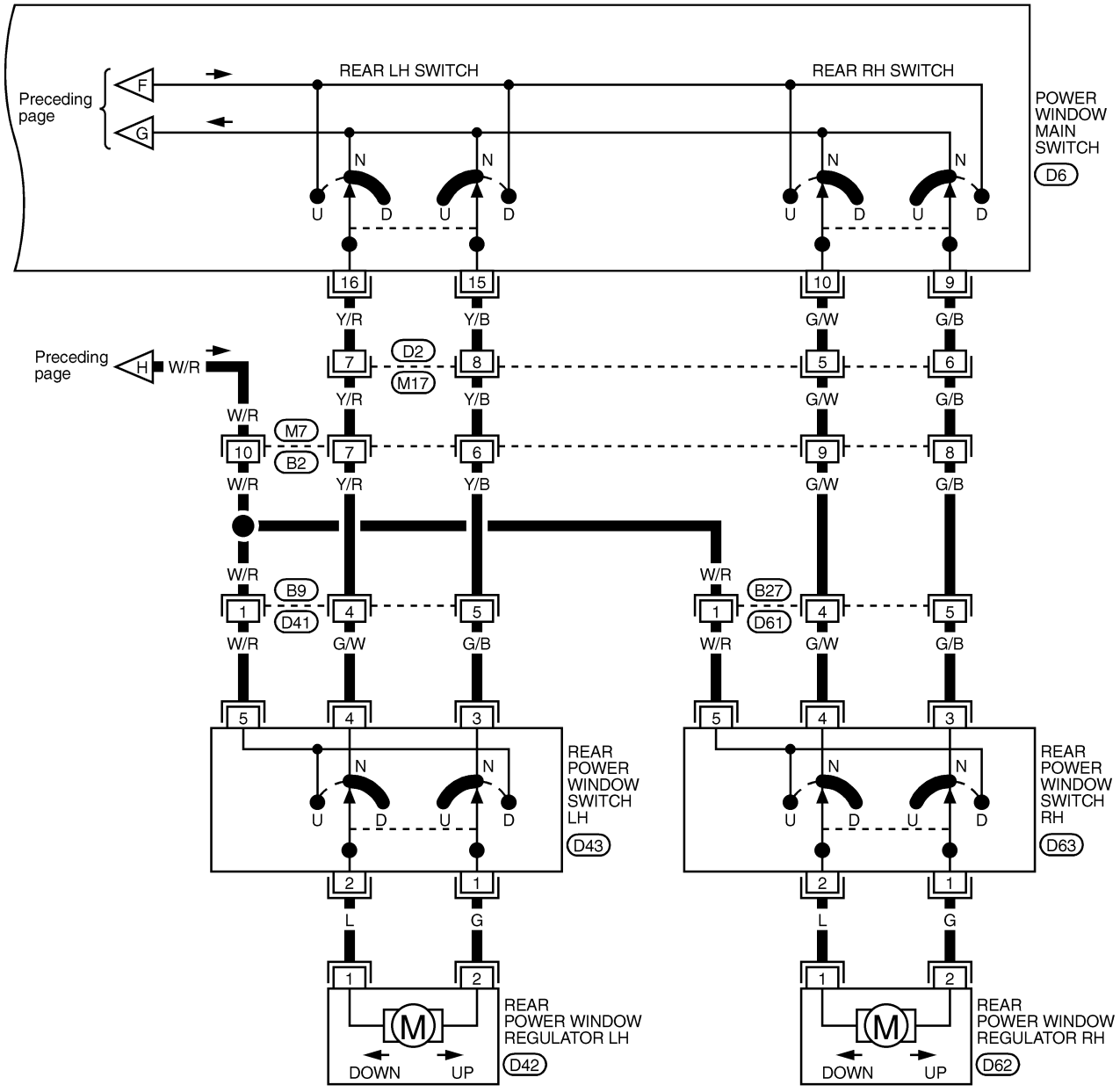
EL-WINDOW-03

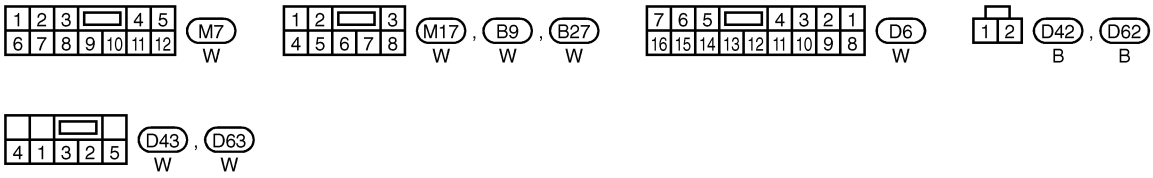




TEL527B

EL-WINDOW-04





TEL528B

Trouble Diagnoses

NCEL0105

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 10A fuse, 30A fusible link and M13 circuit breaker 2. Power window main switch ground circuit 3. Power window relay ground circuit 4. Power window relay 5. Open/short in power window main switch circuit 6. Power window main switch	1. Check 10A fuse [No. 8, located in fuse block (J/B)], 30A fusible link (letter **d**, located in fuse and fusible link box) and M13 circuit breaker. Turn ignition switch “ON” and verify battery positive voltage is present at terminals 1 and 3 of power window relay and terminal 7 of power window main switch. 2. Check power window main switch ground circuit. 3. Check power window relay ground circuit. 4. Check power window relay. 5. Check the wire between power window relay terminal 5 and power window main switch terminal 11 for open/short circuit. 6. 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 power window regulator for open or short circuit. 2. Check driver side power window regulator. 3. Check power window main switch.
Passenger power window cannot be operated.	1. Power window switches 2. Passenger side power window regulators 3. Power window main switch 4. Power window circuit	1. Check power window switch. 2. Check passenger side power window regulator. 3. Check power window main switch. 4. Check the following. a. Check harnesses between power window main switch and power window switch for open/short circuit. b. Check harnesses between power window switch and power window regulator for open/short circuit.
Passenger power window cannot be operated using power window main switch but can be operated by power window 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 2. Encoder and limit switch	1. Check power window main switch. 2. Check encoder and limit switch. (EL-174)
Retained power operation does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check harness between power window relay terminal 1 and smart entrance control unit terminal 5 for open or short circuit. 2. Check the following: a. Harness between smart entrance control unit and driver or passenger side door switch for open or short circuit b. Driver or passenger side door switch ground circuit c. Driver or passenger side door switch. 3. Check smart entrance control unit. (EL-246)

ENCODER AND LIMIT SWITCH CHECK

=NCEL0105S01

1	CHECK DOOR WINDOW SLIDE MECHANISM

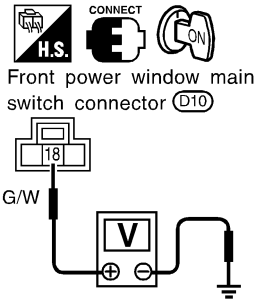
Check the following.
- Obstacles in window, glass molding, etc.
- Worn or deformed glass molding
- Door sash tilted too far inward or outward
- Door window regulator

OK or NG

OK	▶	GO TO 2.
NG	▶	Remove obstacles or repair door window slide mechanism.

2	CHECK POWER SUPPLY TO LIMIT SWITCH

1. Disconnect front power window regurator (driver side) connector.
2. Check voltage between power window main switch terminal 18 and ground.



Voltage: 5V

SEL179X

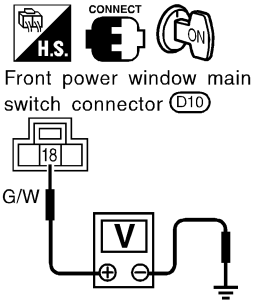
NOTE:
Check voltage when front power window regulator (driver side) harness connector is disconnected.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace power window main switch.

3	CHECK LIMIT SWITCH OPERATION

1. Connect front power window regurator (driver side) connector.
2. Check voltage between power window main switch terminal 18 and ground during power window closing operation.



Terminal No.	Condition	Voltage (DCV)
18	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

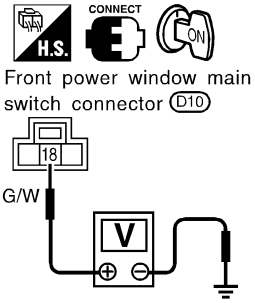
SEL181X

OK or NG

OK	▶	GO TO 5.
NG	▶	GO TO 4.

4	RESET LIMIT SWITCH

Reset limit switch. Refer to BT-20, "Front Door Glass Limit Switch Reset". Then check voltage between power window main switch terminal 18 and ground during power window closing operation at least ten times.



Terminal No.	Condition	Voltage (DCV)
18	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

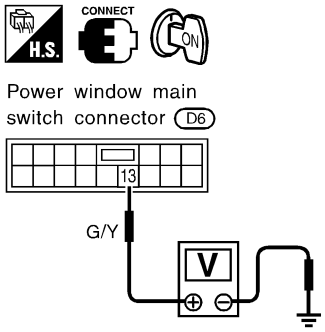
SEL181X

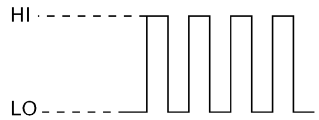
OK or NG

OK	▶	GO TO 5.
NG	▶	Replace power window regulator motor (front driver side).

5	CHECK ENCODER

Measure voltage between power window main switch terminal 13 and ground with oscilloscope when power window is in automatic closing operation.





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

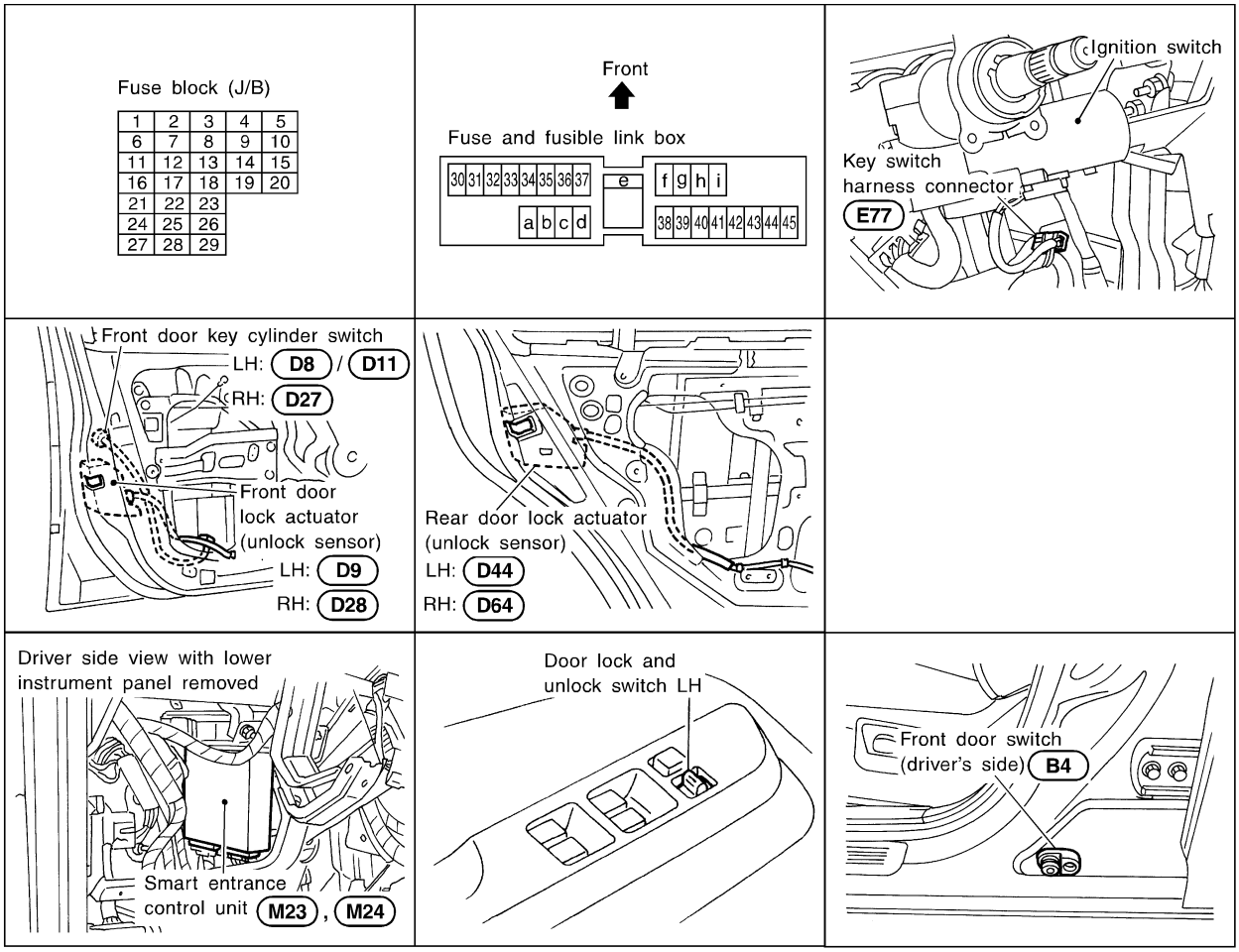
SEL182X

OK or NG

OK	▶	Replace power window main switch.
NG	▶	Replace power window regulator motor (front driver side).

Component Parts and Harness Connector Location

NCEL0106



SEL837VA

System Description

NCEL0107

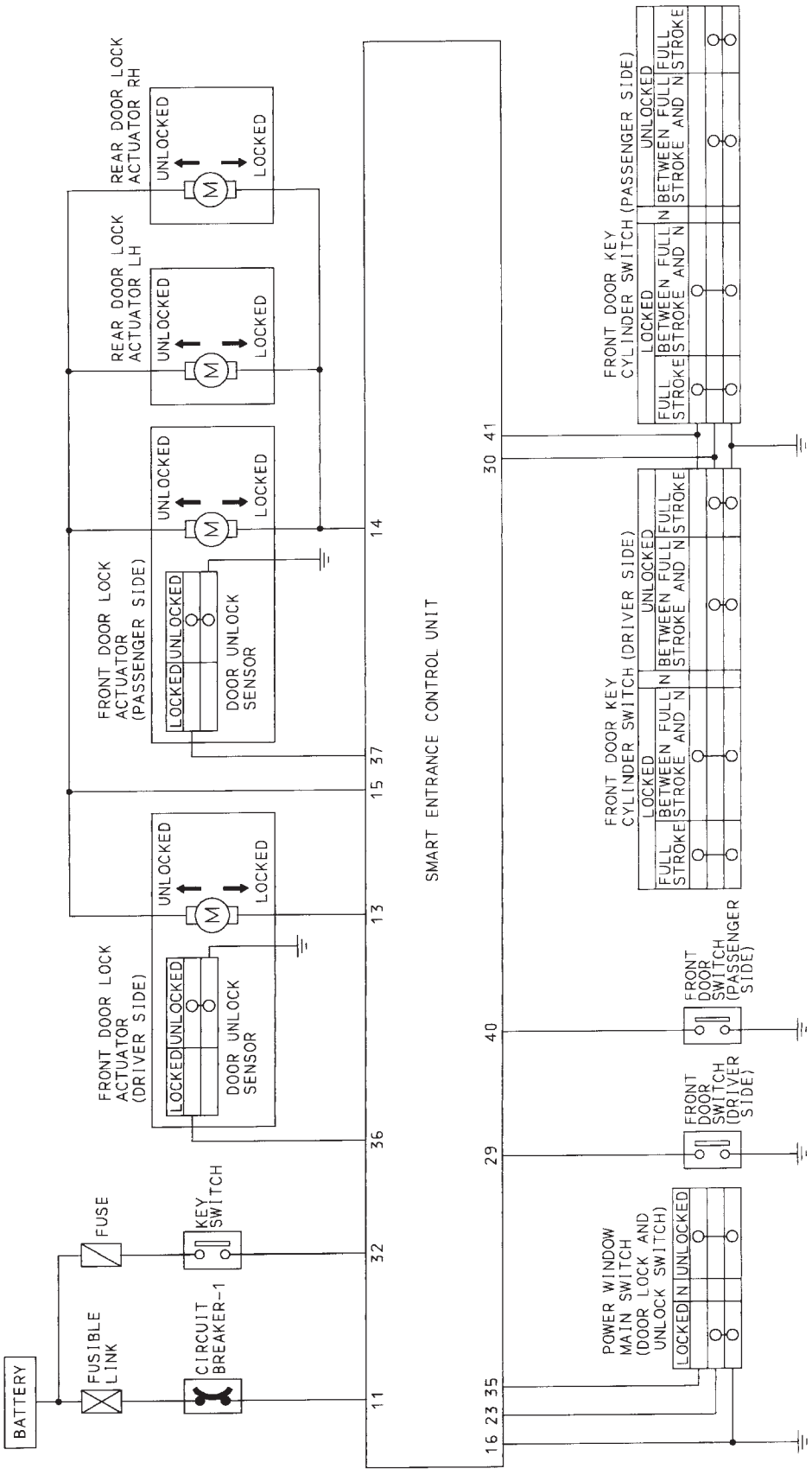
OPERATION

NCEL0107S04

- The lock/unlock switch on driver's door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to "LOCK", all doors are locked. (Signals from front door unlock sensor)
- With the door key inserted in the key cylinder on front LH or RH, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 5 seconds after the first unlock operation unlocks all of the other doors. (Signals from door key cylinder switch)
- If the ignition key is in the ignition key cylinder and one or more of front doors are open, setting the lock/unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlock them. (Combination signals from key switch, front LH or RH door switch and LH or RH door unlock sensor) - (KEY REMINDER DOOR SYSTEM)

Schematic

NCEL0108



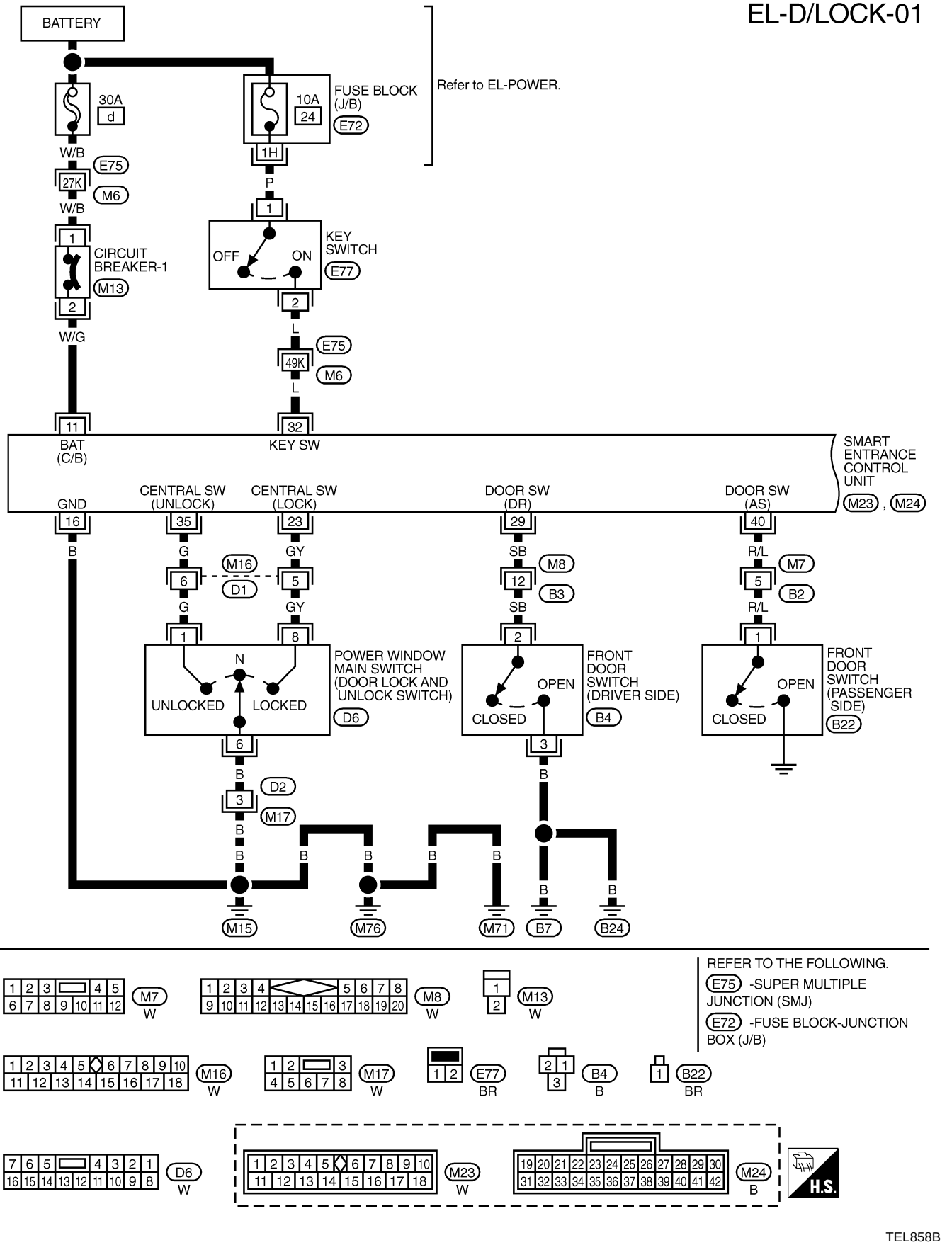
TEL930A

Wiring Diagram — D/LOCK —

NCEL0109

FIG. 1

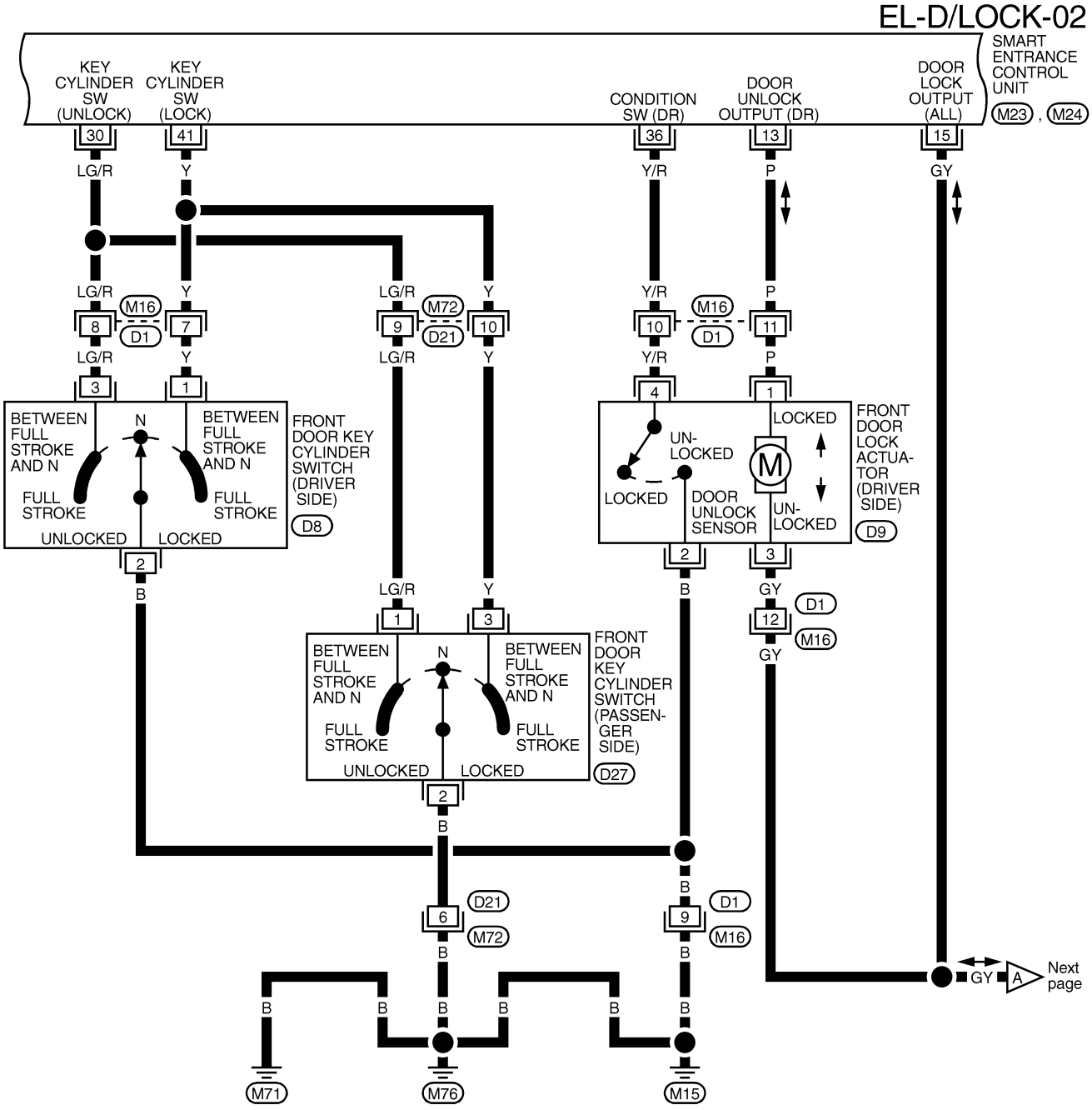
NCEL0109S01

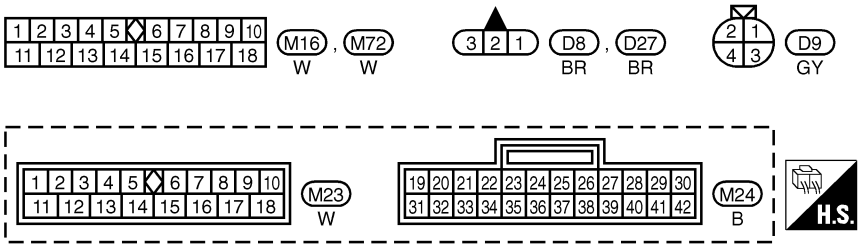


TEL858B

FIG. 2

NCEL0109S02



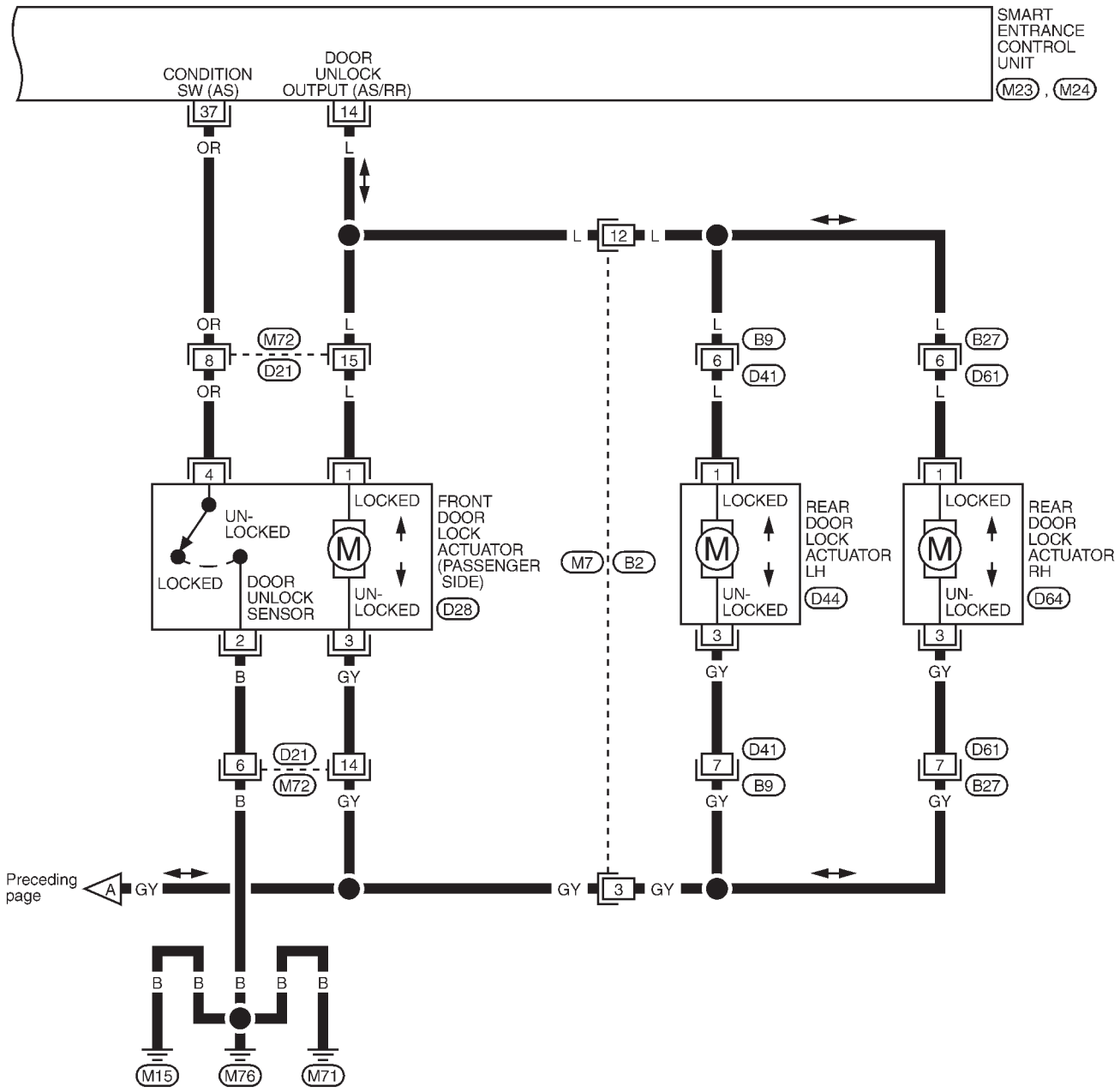


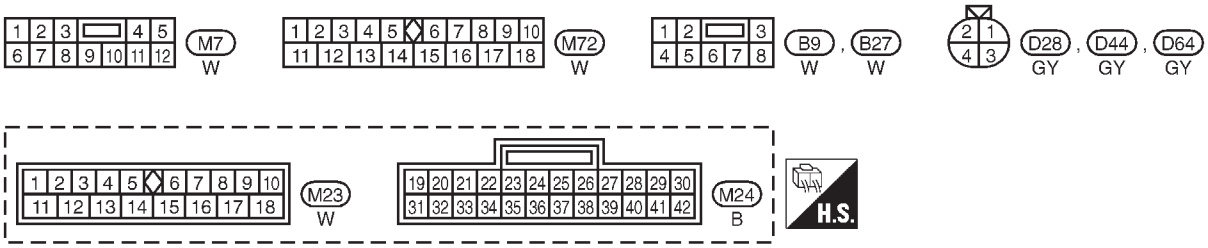
TEL869B

FIG. 3

NCEL0109S03

EL-D/LOCK-03





TEL933A

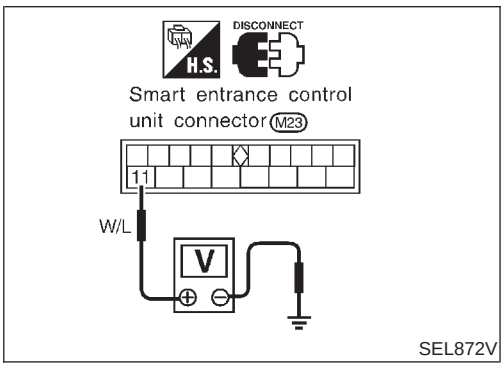
Trouble Diagnoses

SYMPTOM CHART

NCEL0110

NCEL0110S01

REFERENCE PAGE (EL-)	181	182	183	184	185	187	188
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	KEY SWITCH (INSERT) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	FRONT DOOR KEY CYLINDER SWITCH CHECK	FRONT DOOR UNLOCK SENSOR CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X	X			X	X
Specific door lock actuator does not operate.							X
Power door lock does not operate with door lock and unlock switch on power window main switch.	X			X			
Power door lock does not operate with front door key cylinder operation.	X				X		
Power door lock does not operate with front door lock knob switch.	X					X	



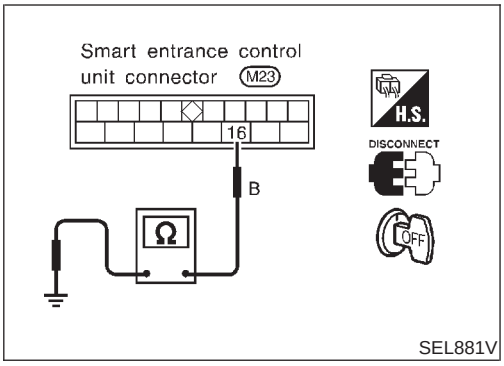
MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

NCEL0110S02

Main Power Supply Circuit Check

NCEL0110S0201

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
11	Ground	Battery voltage	Battery voltage	Battery voltage



Ground Circuit Check

NCEL0110S0202

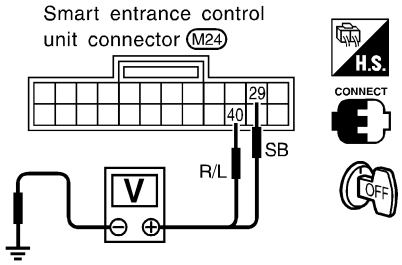
Terminals	Continuity
16 - Ground	Yes

DOOR SWITCH CHECK

NCEL0110S05

1 CHECK DOOR SWITCHES INPUT SIGNAL

Check voltage between control unit terminals 29 or 40 and ground.



	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door switch	29	Ground	Open	0
			Closed	Approx. 12
Front RH door switch	40	Ground	Open	0
			Closed	Approx. 12

SEL186X

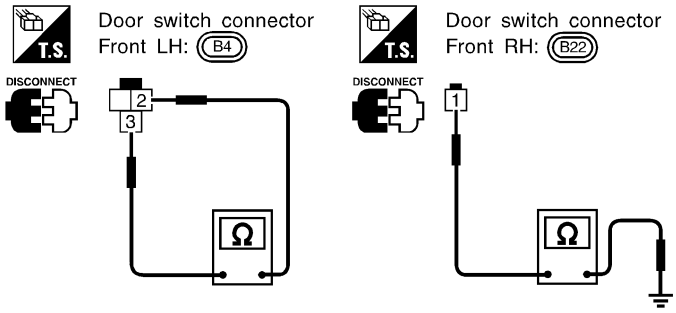
Refer to wiring diagram in EL-178.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCHES

Check continuity between door switch terminals.



	Terminals	Condition	Continuity
Front LH door switch	2 - 3	Closed	No
		Open	Yes
Front RH door switch	1 - ground	Closed	No
		Open	Yes

SEL187X

OK or NG

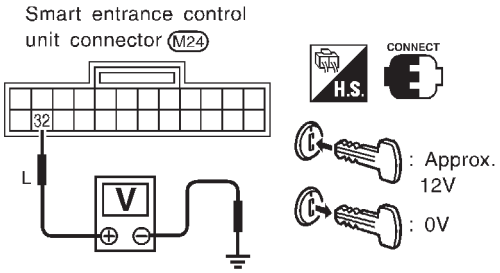
OK	▶	**Check the following.** ● Door switch ground circuit ● Harness for open or short between control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NCEL0110S06

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 32 and ground.



SEL873V

Refer to wiring diagram in EL-178.

Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is withdrawn.

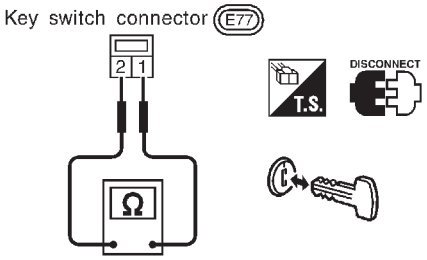
0

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



SEL784V

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. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

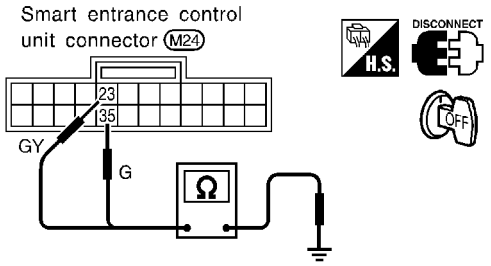
=NCEL0110S03

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.

Terminals	Door lock/unlock switch condition	Continuity
23 - ground	Lock	Yes
	N and Unlock	No
35 - ground	Unlock	Yes
	N and Lock	No

MTBL0659



SEL875V

Refer to wiring diagram in EL-178.

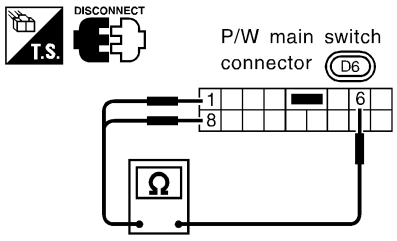
OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect door lock/unlock switch connector.
2. Check continuity between each door lock/unlock switch terminals.

- Power window main switch (Door lock/unlock switch)



Condition	Terminals		
	6	8	1
Unlock	○		○
N	No continuity		
Lock	○	○	

SEL670W

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 control unit connector
NG	▶	Replace door lock/unlock switch.

FRONT DOOR KEY CYLINDER SWITCH CHECK

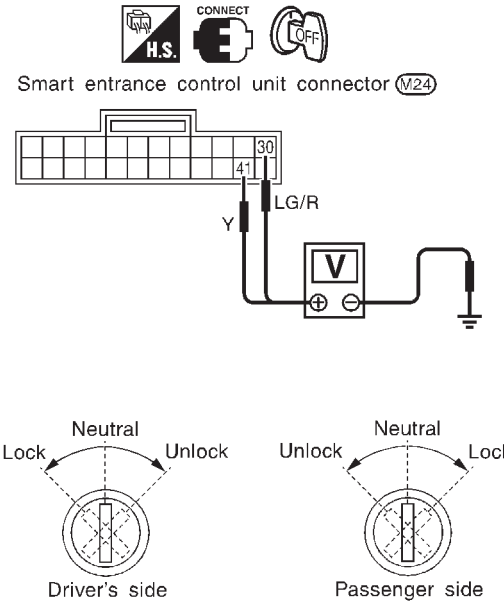
=NCEL0110S07

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

Check voltage between control unit terminals 30 or 41 and ground.

Terminals (+)	Terminals (−)	Key position	Voltage [V]
41	Ground	Neutral	Approx. 12
		Lock	0
30	Ground	Neutral	Approx. 12
		Unlock	0

MTBL0155



SEL878V

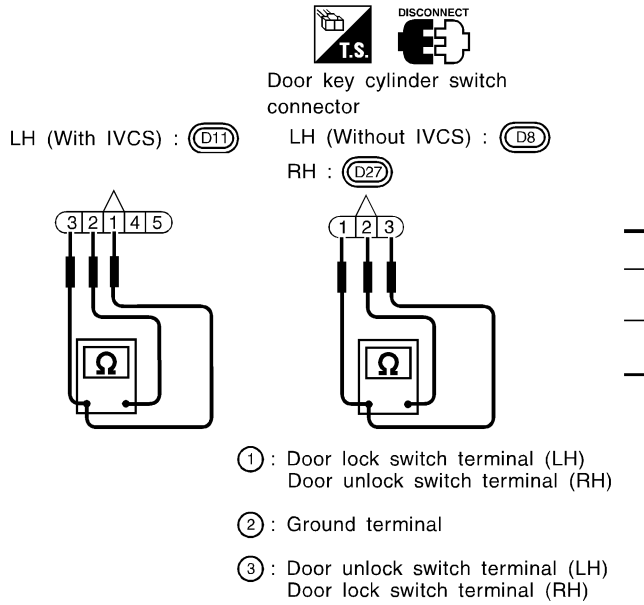
Refer to wiring diagram in EL-179.

OK or NG

OK	▶	Door key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR KEY CYLINDER SWITCH

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



Terminals	Key position	Continuity
LH: 3 - 2	Neutral	No
RH: 1 - 2	Unlock	Yes
LH: 1 - 2	Neutral	No
RH: 3 - 2	Lock	Yes

① : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

② : Ground terminal

③ : Door unlock switch terminal (LH)
Door lock switch terminal (RH)

SEL671W

OK or NG

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

FRONT DOOR UNLOCK SENSOR CHECK

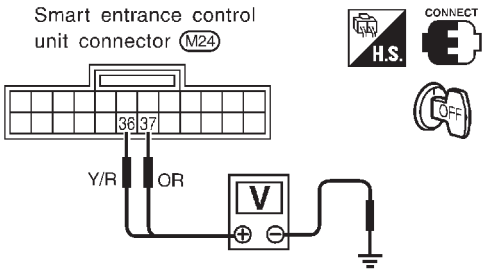
=NCEL0110S09

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between control unit terminals 36 or 37 and ground.

	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 12
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 12
			Unlocked	0

MTBL0157



SEL877V

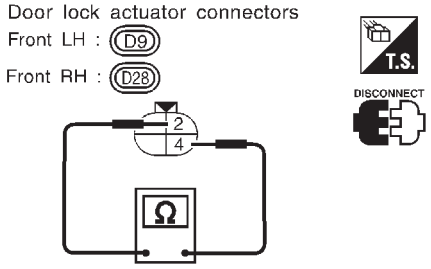
Refer to wiring diagram in EL-179, 180.

OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals 4 and 2.



SEL247VB

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

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

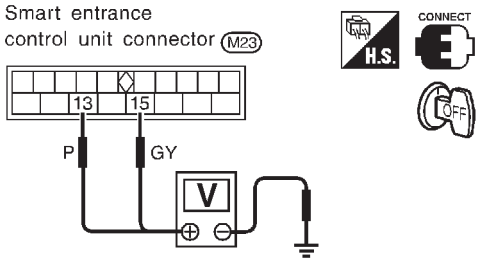
DOOR LOCK ACTUATOR CHECK

=NCEL0110S04

1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

- Door lock actuator front LH

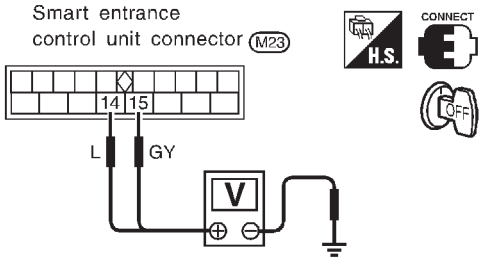


SEL879V

Door lock/unlock switch condition	Terminal No.		Voltage (V)
	(+)	(−)	
Lock	15	ground	Approx. 12
Unlock	13	ground	

MTBL0192

- Door lock actuator front RH and rear



SEL880V

Door lock/unlock switch condition	Terminal No.		Voltage (V)
	(+)	(−)	
Lock	15	ground	Approx. 12
Unlock	14	ground	

MTBL0193

Refer to wiring diagram in EL-179, 180.

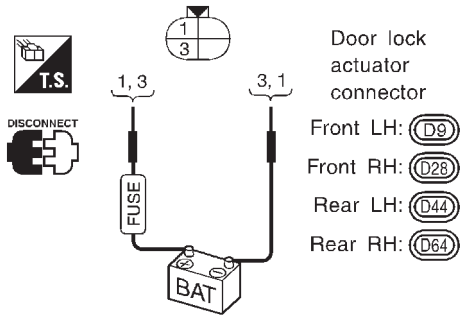
OK or NG

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

2	CHECK DOOR LOCK ACTUATOR

1. Disconnect door lock actuator connector.
2. Apply 12V direct current to door lock actuator and check operation.

- **Door lock actuator operation:**



SEL736UC

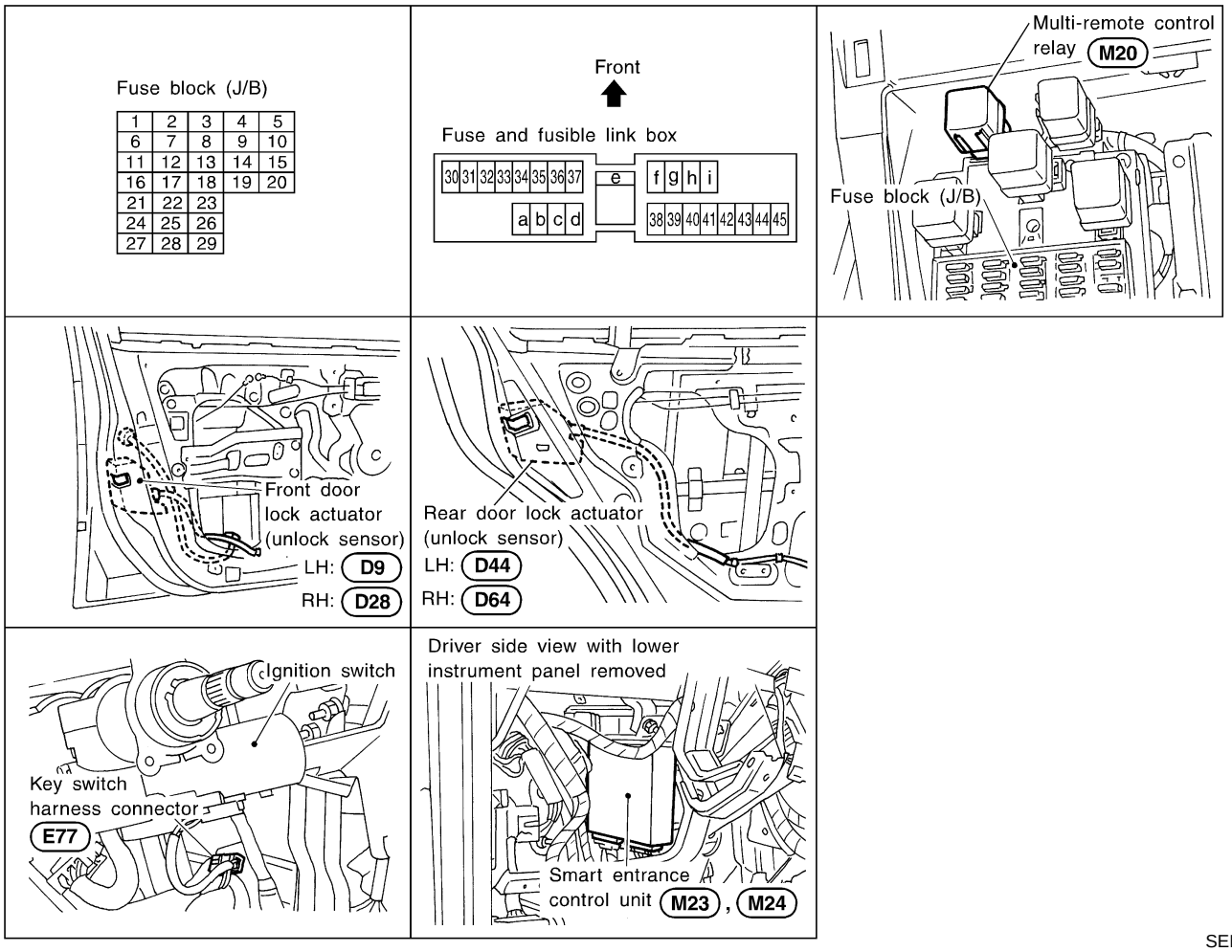
Terminals between (+): 3 and (−): 1
Unlocked → Locked
Terminals between (+): 1 and (−): 3
Locked → Unlocked

OK or NG

OK	▶	Check harness for open or short between control unit connector and door lock actuator.
NG	▶	Replace door lock actuator.

Component Parts and Harness Connector Location

NCEL0111



SEL188X

System Description

NCEL0112

INPUTS

NCEL0112S01

Power is supplied at all times

- to key switch terminal 1
- through 10A fuse [No. 24, 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 32.

When the front door switch (driver side) is OPEN, ground is supplied

- to smart entrance control unit terminal 29
- through front door switch (driver side) terminal 2
- to front door switch (driver side) terminal 3
- through body grounds B7 and B24.

When the front door switch (passenger side) is OPEN, ground is supplied

- to smart entrance control unit terminal 40
- through front door switch (passenger side) terminal 1
- through the front door switch RH case ground.

When the rear door switch is OPEN, ground is supplied

- to smart entrance control unit terminal 28
- through each door switch case ground.

When door lock and unlock switch is LOCKED, ground is supplied
- to smart entrance control unit terminal 23
- through door lock and unlock switch terminals 8 and 6
- through body grounds M15, M71 and M76.

When door lock and unlock switch is UNLOCKED, ground is supplied
- to smart entrance control unit terminal 35
- through door lock and unlock switch terminals 1 and 6
- through body grounds M15, M71 and M76.

When the front door lock actuator (driver side) (door unlock sensor) is UNLOCKED, ground is supplied
- to smart entrance control unit terminal 36
- through door lock actuator (driver side) (door unlock sensor) terminal 4
- to door lock actuator (driver side) (door unlock sensor) terminal 2
- through body grounds M15, M71 and M76.

Remote controller signal is inputted to smart entrance control unit (the antenna of the system is combined with smart entrance control unit).
Then smart entrance control unit supplies power and ground to each door lock actuator.
The multi-remote control system controls operation of the
- power door lock
- interior lamp
- panic alarm
- hazard and horn reminder

OPERATED PROCEDURE

NCEL0112S02

Power Door Lock Operation

NCEL0112S0201

Smart entrance control unit receives a LOCK signal from remote controller. Smart entrance control unit locks all doors with input of LOCK signal from remote controller.
When an UNLOCK signal is sent from remote controller once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from remote controller again within 5 seconds, all other door will be unlocked.

Hazard and Horn Reminder

NCEL0112S0204

Power is supplied at all times
- to multi-remote control relay terminals 1, 3 and 6
- through 10A fuse [No. 20, located in the fuse block (J/B)],
- to horn relay terminals 1 and 3
- through 10A fuse (No. 36, located in the fusible link and fuse box) and
- to horn relay terminal 6
- through 10A fuse (No. 41, located in the fusible link and fuse box).

When smart entrance control unit receives LOCK or UNLOCK signal from remote controller with all doors closed, ground is supplied
- to multi-remote control relay terminal 2
- through smart entrance control unit terminal 7, and
- to horn relay terminal 2
- through smart entrance control unit terminal 19

Multi-remote control relay and horn relay are now energized, and hazard warning lamp flashes and horn sounds as a reminder.
The hazard and horn reminder has a horn chirp mode and a non-horn chirp mode.

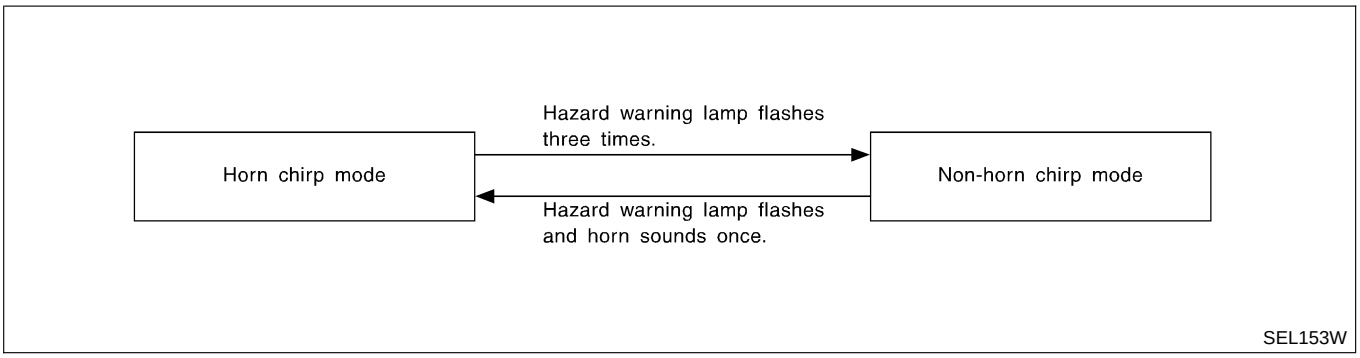
Operating function of hazard and horn reminder

	Horn chirp mode		Non-horn chirp mode	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
Lock	Twice	Once	Twice	—

	Horn chirp mode		Non-horn chirp mode	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
Unlock	Once	—	—	—

How to change hazard and horn reminder mode

When LOCK and UNLOCK signals are sent from the remote controller for more than 2 seconds at the same time, the hazard and horn reminder mode is changed and hazard warning lamp flashes and horn sounds as follows:



Trunk Lid Opener Operation

NCEL0112S0205

Power is supplied at all times

- through 15A fuse [No. 15, located in the fuse block (J/B)]
- to trunk lid opener relay terminals 1 and 5.

When a TRUNK OPEN signal is sent from multi-remote controller with key switch OFF, ground is supplied

- to trunk lid opener relay terminal 2
- through smart entrance control unit terminal 12.

Trunk opener relay is now energized and trunk lid opener actuator opens trunk lid.

Interior Lamp Operation

NCEL0112S0202

When the following input signals are both supplied:

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

multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller.
For detailed description, refer to "SMART ENTRANCE CONTROL UNIT" (EL-242).

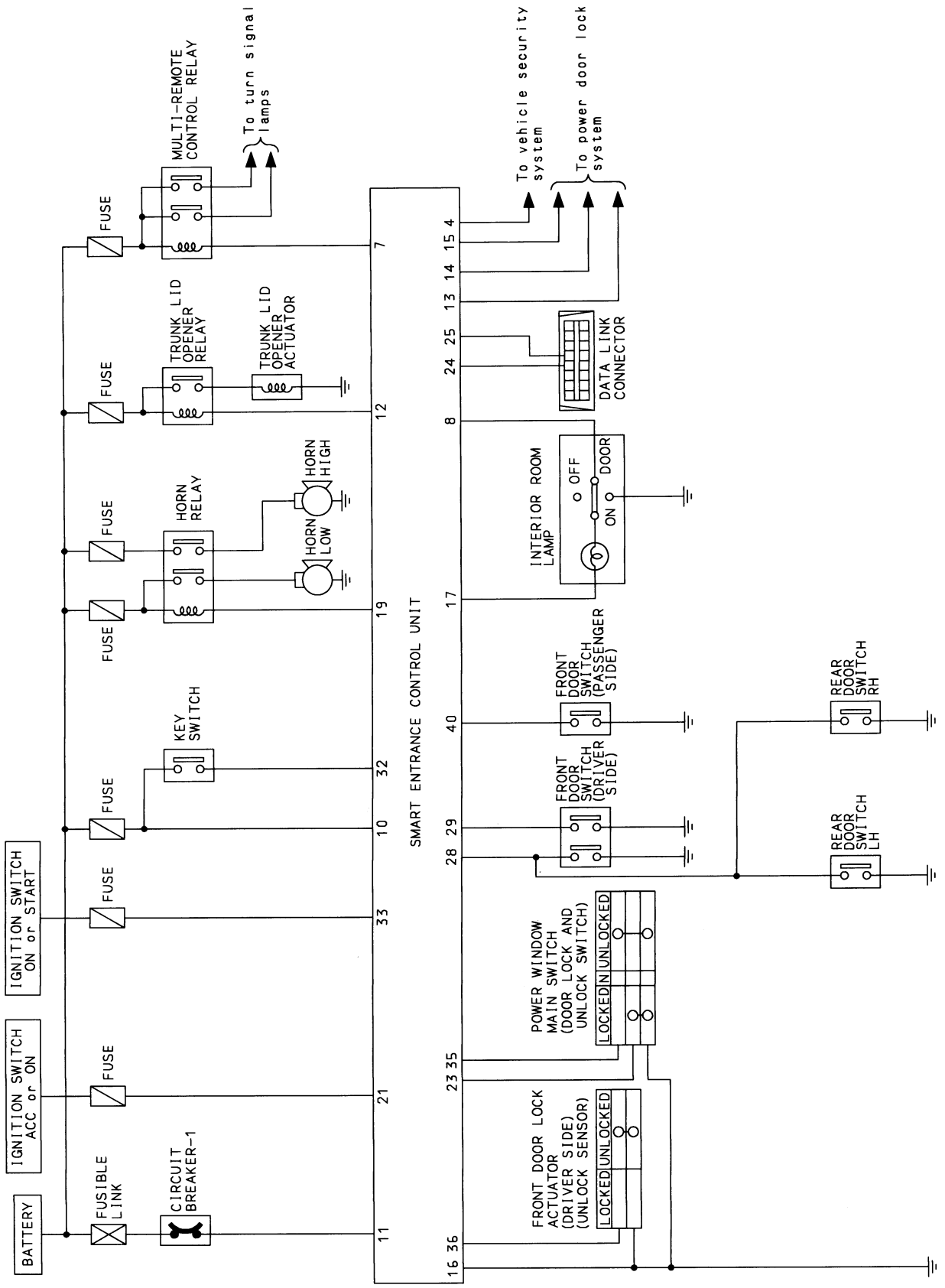
Panic Alarm Operation

NCEL0112S0203

When key switch is OFF (when ignition key is not inserted in key cylinder), multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.
For detailed description, refer to "VEHICLE SECURITY (THEFT WARNING) SYSTEM" (EL-215).

Schematic

NCEL0173



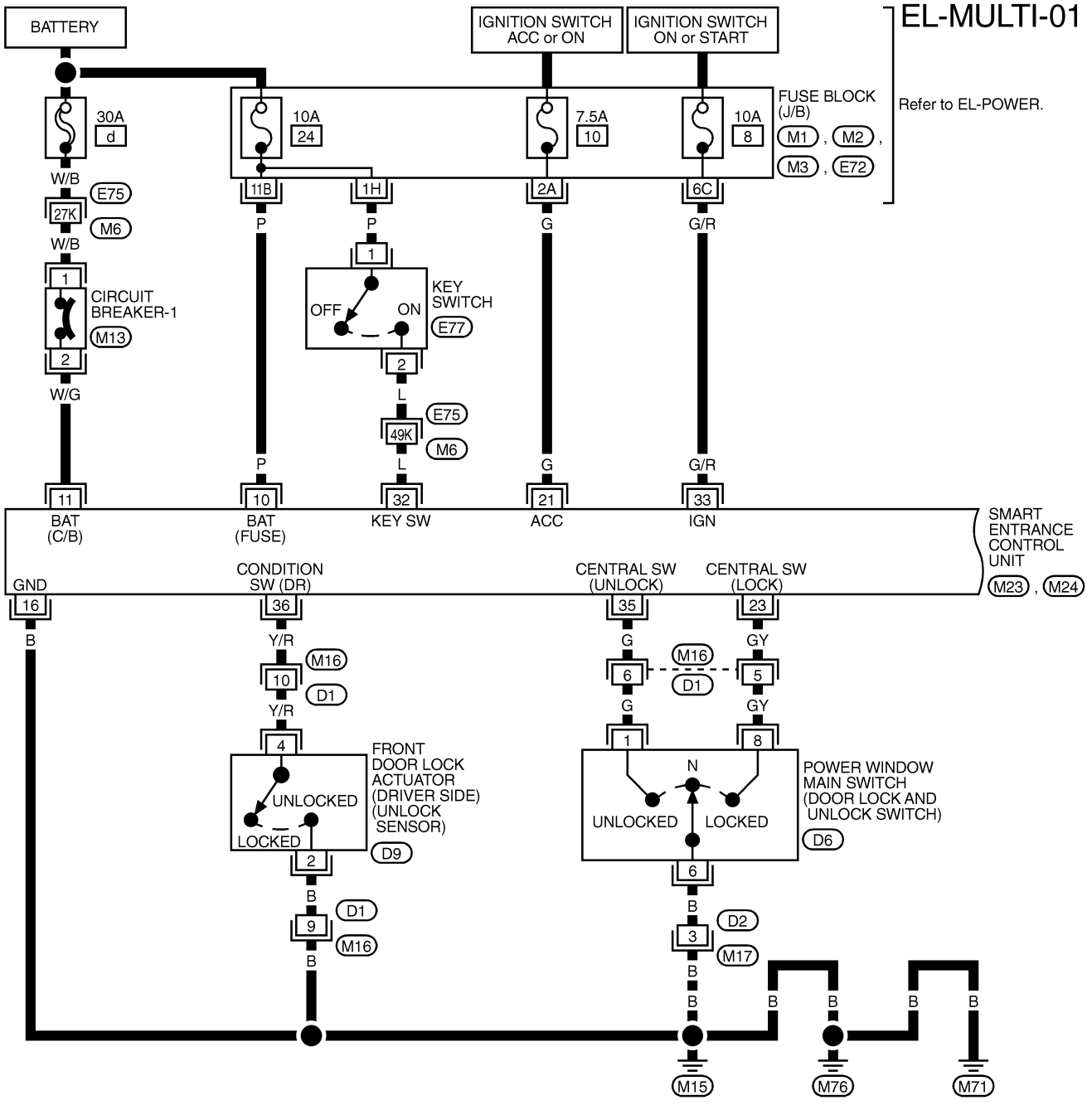
TEL771B

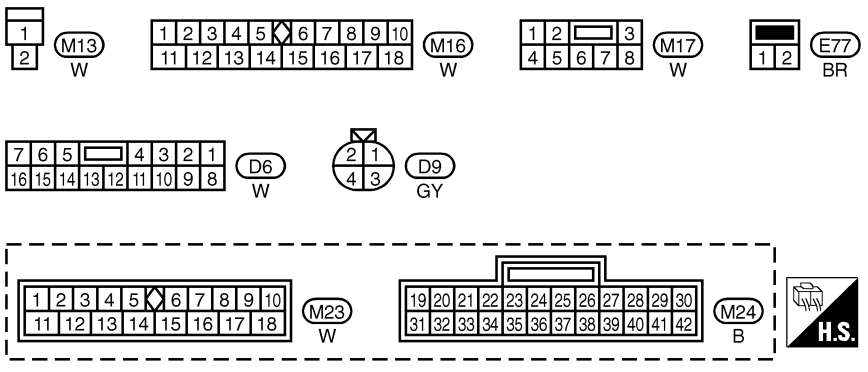
Wiring Diagram — MULTI —

NCEL0114

FIG. 1

NCEL0114S01



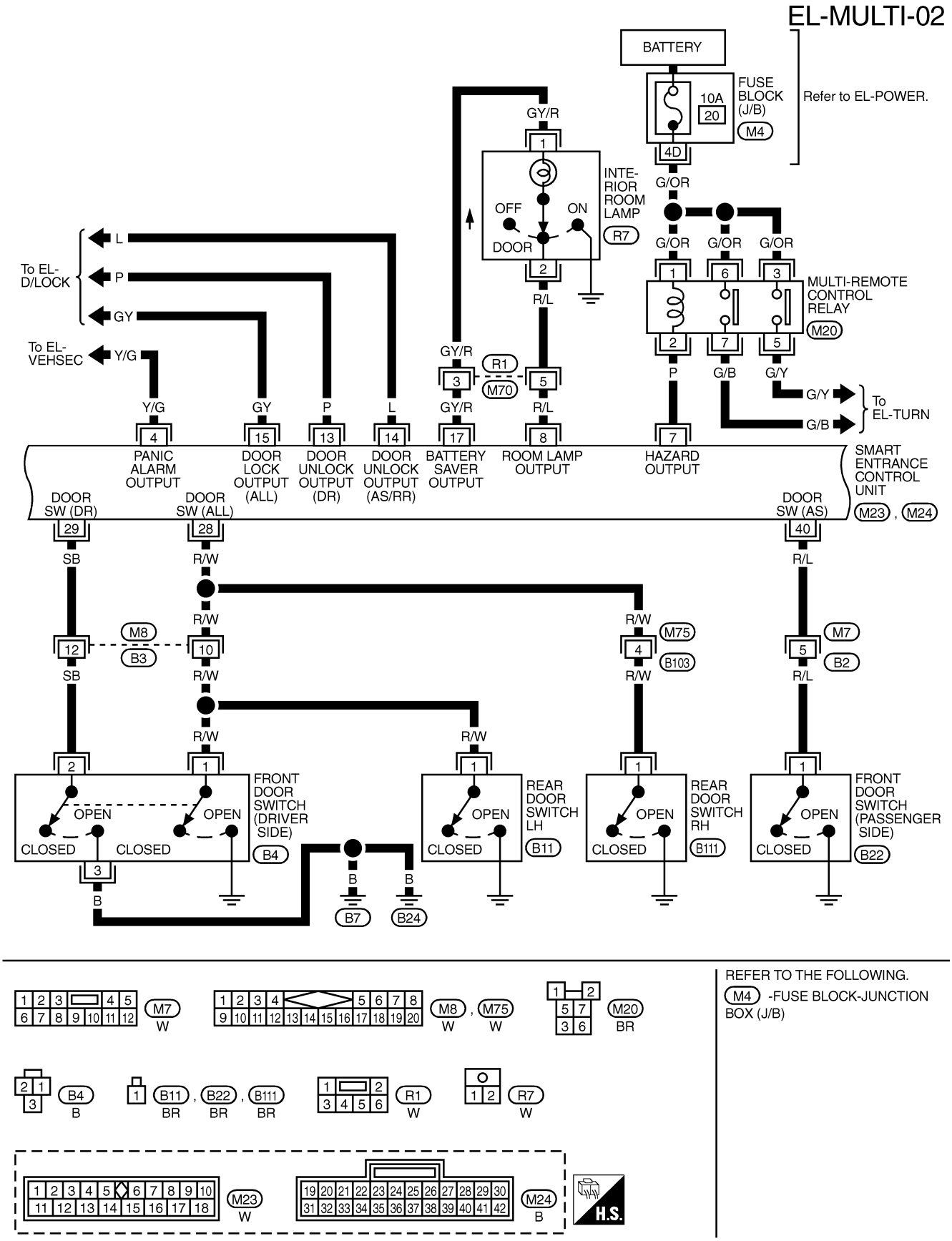


REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M1, M2, M3, E72 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL859B

FIG. 2

NCEL0114S02

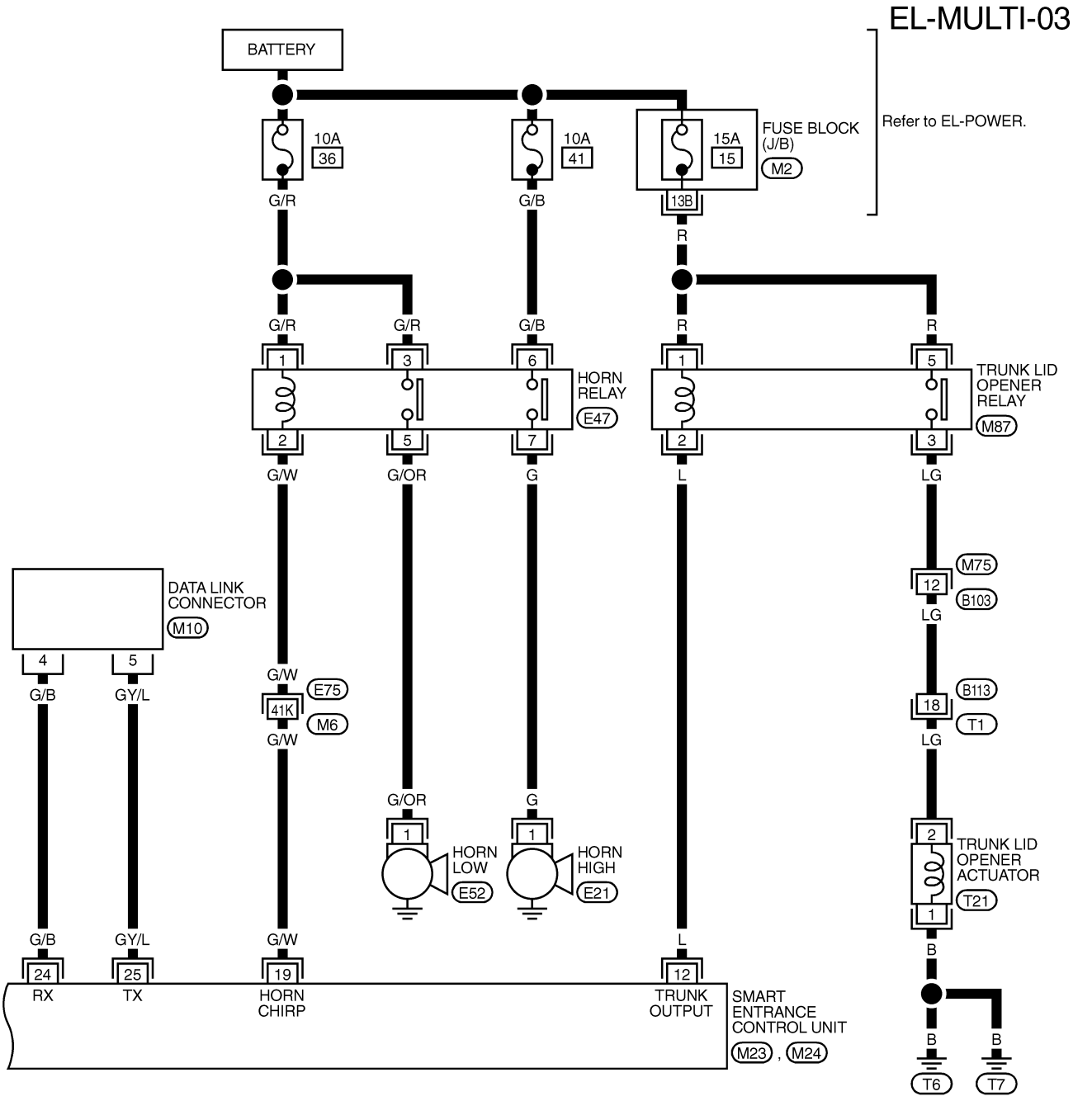


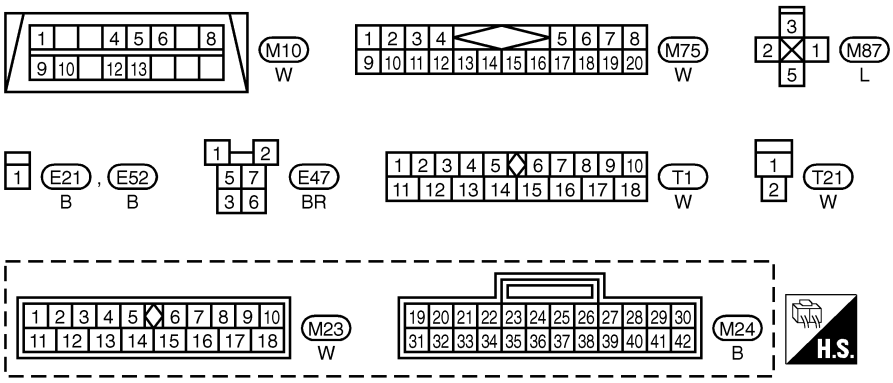
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL772B

FIG. 3

NCEL0114S05





REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)
E75 -SUPER MULTIPLE JUNCTION (SMJ)

TEL534B

Trouble Diagnoses

NCEL0115

SYMPTOM CHART

NCEL0115S01

NOTE:

- Always check remote controller battery before replacing remote controller.
- Trunk lid opener operation and panic alarm operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All function of multi-remote control system do not operate.	1. Remote controller battery check	198
	2. Power supply and ground circuit for control unit check	198
	3. Replace romote controller. Refer to ID Code Entry Procedure.	209
The new ID of remote controller cannot entered.	1. Remote controller battery check	198
	2. Key switch (insert) check	202
	3. Door switch check	200
	4. Door lock/unlock switch check	204
	5. Power supply and ground circuit for control unit check	198
	6. Replace romote controller. Refer to ID Code Entry Procedure.	209
Door lock or unlock does not function. (If the power door lock system does not operate manually, check power door lock system. Refer to EL-181.)	1. Replace remote controller. Refer to ID Code Entry Procedure.	209
Hazard and horn reminder do not activate properly when pressing lock or unlock button of remote controller.	1. Harzard reminder check	205
	2. Horn reminder check* *: Horn chirp can be activated or deactivated. First check the horn chirp setting. Refer to EL-191.	206
	3. Door switch check	200
	4. Replace remote controller. Refer to ID Code Entry Procedure.	209
Trunk lid does not open when trunk opener button is pressed.	1. Trunk lid opener operation check	207
	2. Key switch (insert) check	202
	3. Replace remote controller. Refer to ID Code Entry Procedure.	209
Interior lamp does not turn on for 30 seconds when pressing unlock button of remote controller.	1. Interior room lamp operation check	208
	2. Door switch check	200
	3. Door unlock sensor check	204
Panic alarm (horn and headlamp) does not activate when panic alarm button is continuously pressed more than 1.5 seconds.	1. Vehicle security operation check. Refer to “PRELIMINALY CHECK” in “VEHICLE SECURITY (THEFT WARNING) SYSTEM”.	223
	2. Key switch (insert) check	202
	3. Replace remote controller. Refer to ID Code Entry Procedure.	209

REMOTE CONTROLLER BATTERY CHECK

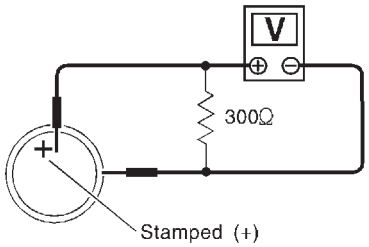
=NCEL0115S02

1	CHECK REMOTE CONTROLLER BATTERY

Remove battery (refer to EL-213) and measure voltage across battery positive and negative terminals, (+) and (−).

NOTE:

Remote controller does not function if battery is not set correctly.



SEL277V

Voltage [V]:
2.5 - 3.0

OK or NG

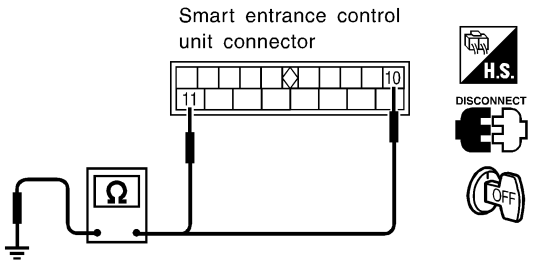
OK	▶	Check remote controller battery terminals for corrosion or damage.
NG	▶	Replace battery.

POWER SUPPLY AND GROUND CIRCUIT CHECK

NCEL0115S04

1	CHECK MAIN POWER SUPPLY CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M23 terminal 10 (P) or 11 (W/G) and ground.



SEL884VB

Refer to wiring diagram in EL-194.

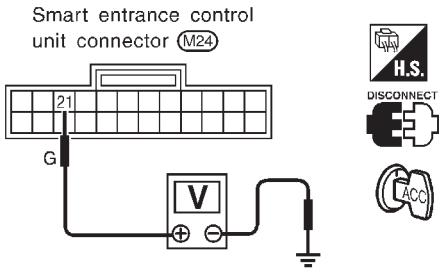
Battery voltage should exist.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 30A fusible link (letter **d**, located in fuse and fusible link box) ● 10A fuse [No. 24, located in fuse block (J/B)] ● M13 circuit breaker ● Harness for open or short between control unit and fuse

2	CHECK IGNITION SWITCH "ACC" CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between control unit terminal 21 and ground while ignition switch is "ACC".



SEL885V

Refer to wiring diagram in EL-194.

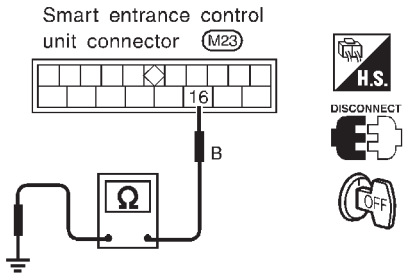
Battery voltage should exist.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 7.5A fuse [No. 10, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

3	CHECK GROUND CIRCUIT FOR CONTROL UNIT

Check continuity between control unit terminal 16 and ground.



SEL791V

Refer to wiring diagram in EL-194.

Continuity should exist.

OK or NG

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

DOOR SWITCH CHECK

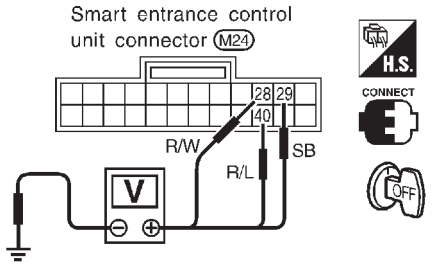
=NCEL0115S05

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminals 28, 29 or 40 and ground.

	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door switch	29	ground	Open	0
			Closed	Approx. 12
Front RH door switch	40	ground	Open	0
			Closed	Approx. 12
All door switches	28	ground	Open	0
			Closed	Approx. 12

MTBL0158



SEL886V

Refer to wiring diagram in EL-195.

OK or NG

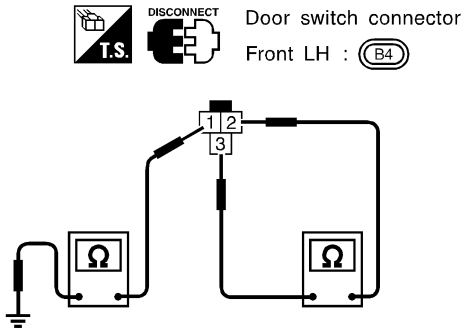
OK	▶	Door switch is OK.
NG	▶	GO TO 2.

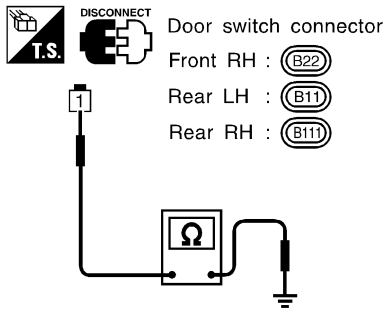
2 CHECK DOOR SWITCH

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

	Terminals	Condition	Continuity
Front LH door switch	2 - 3, 1 - ground	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

MTBL0384





SEL887VA

OK or NG

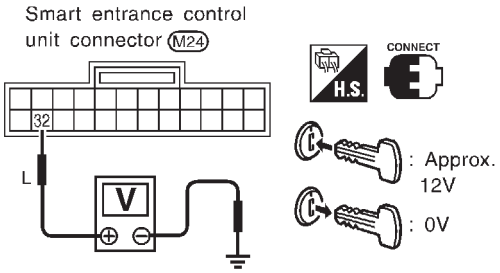
OK	▶	**Check the following.** ● Door switch ground circuit (Front) or door switch ground condition ● Harness for open or short between control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NCEL0115S07

1	CHECK KEY SWITCH INPUT SIGNAL

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



SEL888V

Refer to wiring diagram in EL-194.

Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is withdrawn.

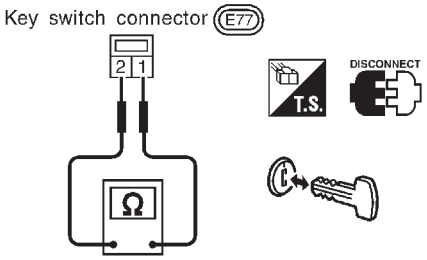
0

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



SEL784V

Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is withdrawn.

No

OK or NG

OK	▶	**Check the following.** • 10A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

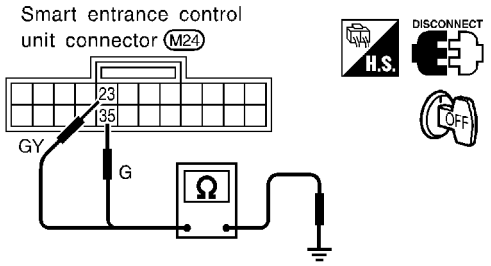
=NCEL0115S12

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.

Terminals	Door lock/unlock switch condition	Continuity
23 - ground	Lock	Yes
	N and Unlock	No
35 - ground	Unlock	Yes
	N and Lock	No

MTBL0659



SEL875V

Refer to wiring diagram in EL-194.

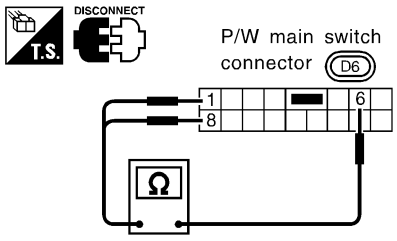
OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect door lock/unlock switch connector.
2. Check continuity between each door lock/unlock switch terminals.

- Power window main switch (Door lock/unlock switch)



Condition	Terminals		
	6	8	1
Unlock	○		○
N	No continuity		
Lock	○	○	

SEL670W

OK or NG

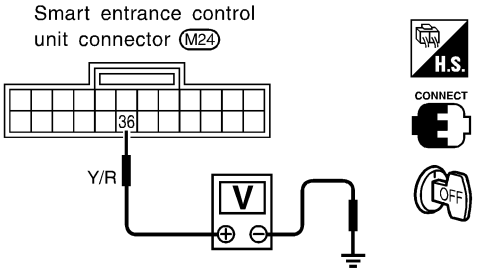
OK	▶	**Check the following.** • Ground circuit for door lock/unlock switch • Harness for open or short between door lock/unlock switch and smart entrance control unit connector
NG	▶	Replace door lock/unlock switch.

DOOR UNLOCK SENSOR CHECK

=NCEL0115S06

1	CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

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



	Terminals		Condition	Voltage [V]
	(+)	(–)		
Front LH door	36	Ground	Locked	Approx. 12
			Unlocked	0

SEL189X

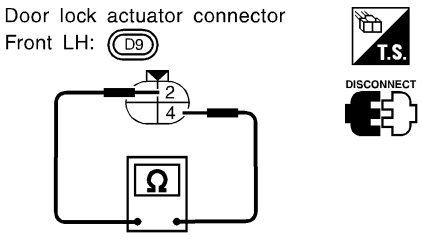
Refer to wiring diagram in EL-194.

OK or NG

OK	▶	Door unlock sensor (driver side) is OK.
NG	▶	GO TO 2.

2	CHECK DOOR UNLOCK SENSOR

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor (driver side) terminals.



SEL247VE

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

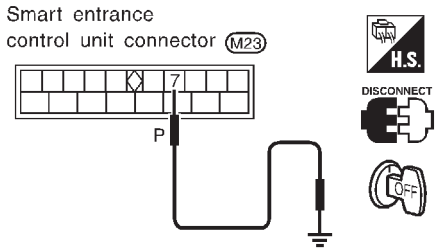
OK	▶	**Check the following.** ● Door unlock sensor ground circuit ● Harness for open or short between smart entrance control unit and door unlock sensor (driver side)
NG	▶	Replace door unlock sensor (driver side).

HAZARD REMINDER CHECK

=NCEL0115S08

1	CHECK HAZARD INDICATOR	
Check if hazard indicator flashes with hazard switch.		
Does hazard indicator operate?		
Yes	▶	GO TO 2.
No	▶	Check "hazard indicator" circuit.

2	CHECK HAZARD REMINDER OPERATION	
1. Disconnect smart entrance control unit connector. 2. Apply ground to control unit terminal 7.		



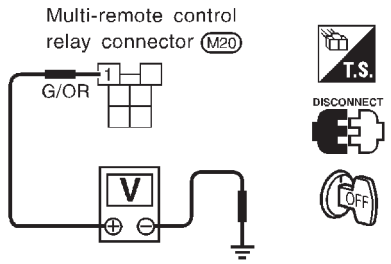
SEL890V

Refer to wiring diagram in EL-195.

Does hazard indicator illuminate?		
Yes	▶	Replace smart entrance control unit.
No	▶	GO TO 3.

3	CHECK MULTI-REMOTE CONTROL RELAY	
Check multi-remote control relay.		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Replace.

4	CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY	
1. Disconnect multi-remote control relay connector. 2. Check voltage between terminal 1 and ground.		



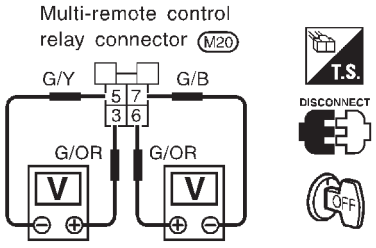
SEL244VB

Battery voltage should exist.

OK or NG		
OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 10A fuse [No. 20, located in fuse block (J/B)] ● Harness for open or short between multi-remote control relay and fuse

5	CHECK MULTI-REMOTE CONTROL RELAY CIRCUIT

1. Disconnect multi-remote control relay connector.
2. Check voltage between terminals 3 and 5.
   Battery voltage should exist.
3. Check voltage between terminals 6 and 7.
   Battery voltage should exist.



SEL245VB

OK or NG

OK	▶	Check harness for open or short between smart entrance control unit and multi-remote control relay.
NG	▶	**Check the following.** ● Harness for open or short between smart entrance multi-remote control relay and fuse ● Harness for open or short between multi-remote control relay and turn signal lamps

HORN REMINDER CHECK

NCEL0115S11

1	CHECK HORN

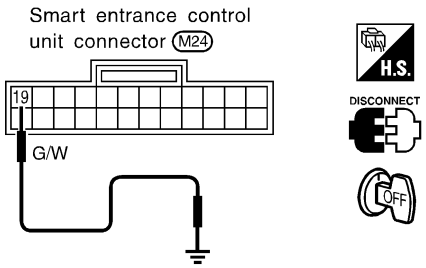
Check if horn sounds with horn switch.

Does horn operate?

Yes	▶	GO TO 2.
No	▶	Check horn circuit.

2	CHECK HORN REMINDER OPERATION

1. Disconnect smart entrance control unit connector.
2. Apply ground to smart entrance control unit terminal 19.



SEL075WA

Refer to wiring diagram in EL-196.

Does horn sound?

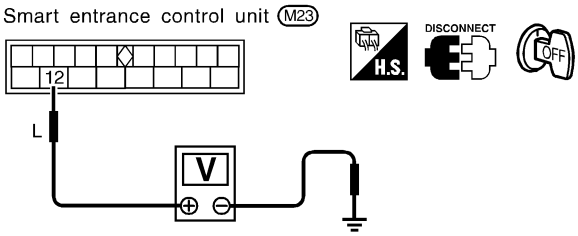
Yes	▶	Replace smart entrance control unit.
No	▶	Check harness for open or short between smart entrance control unit and horn relay.

TRUNK LID OPENER CHECK

=NCEL0115S10

1	CHECK TRUNK LID OPENER OPERATION	
Does trunk lid opener operate with trunk lid opener switch?		
Yes or No		
Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK TRUNK LID OPENER CIRCUIT	
1. Disconnect smart entrance control unit connector. 2. Check voltage between smart entrance control unit connector terminal 12 and ground.		

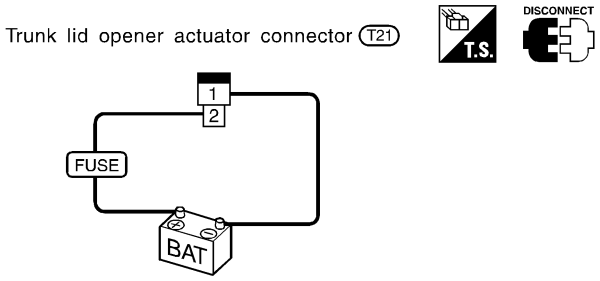


Battery voltage should exist.

SEL675W

OK or NG		
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness or open or short between trunk lid opener relay and smart entrance control unit.

3	CHECK TRUNK LID OPENER ACTUATOR	
1. Disconnect trunk lid opener actuator connector. 2. Check to see if trunk lid opens when 12V is applied between trunk lid opener actuator terminals 1 and 2.		



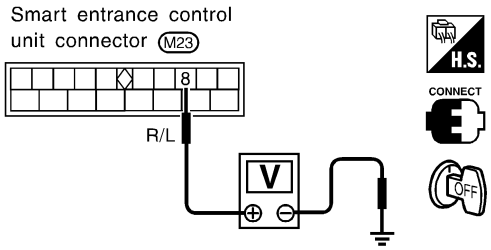
SEL676W

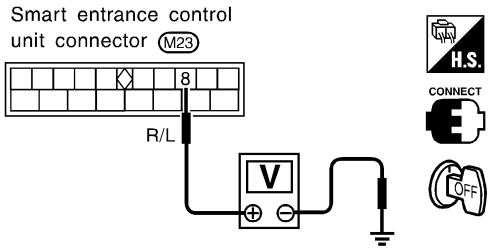
OK or NG		
OK	▶	**Check the following.** ● 15A fuse [No. 15, located in the fuse block (J/B)] ● Trunk lid opener relay ● Harness for open or short between trunk lid opener relay and fuse ● Harness for open or short between trunk lid opener relay and trunk lid opener actuator ● Trunk lid opener actuator ground circuit
NG	▶	Replace trunk lid opener actuator.

INTERIOR ROOM LAMP OPERATION CHECK

=NCEL0115S09

1	CHECK INTERIOR ROOM LAMP	
Check if the interior room lamp switch is in the "ON" position and the lamp illuminates. **Does interior room lamp illuminate?**		
Yes	▶	GO TO 2.
No	▶	**Check the following.** ● Harness for open or short between smart entrance control unit and interior room lamp ● Interior room lamp

2	CHECK INTERIOR ROOM LAMP CIRCUIT	
When interior room lamp switch is "DOOR" position, check voltage across smart entrance control unit terminal 8 and ground.  SEL891VB Refer to wiring diagram in EL-195. **Battery voltage should exist.** **OK or NG**		
OK	▶	GO TO 3.
NG	▶	Repair harness between smart entrance control unit and interior room lamp.

3	CHECK CONTROL UNIT OUTPUT	
Push unlock button of remote controller and check voltage across control unit terminal 8 and ground.  SEL891VB **Voltage (V):** **Unlock button is pushed.** **0 (For approx. 30 seconds.)** **Unlock button is not pushed.** **Battery voltage** **OK or NG**		
OK	▶	Check system again.
NG	▶	Replace smart entrance control unit.

ID Code Entry Procedure

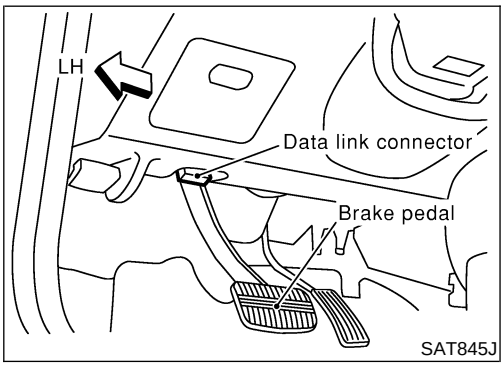
NCEL0117

REMOTE CONTROLLER ID SET UP WITH CONSULT-II

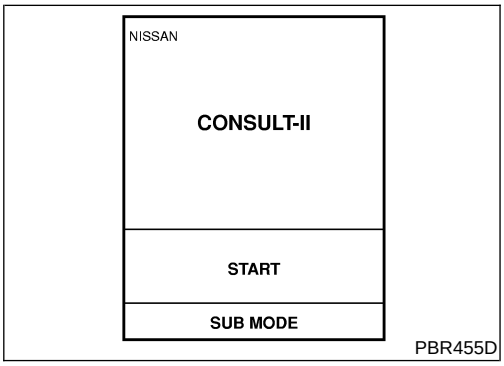
NCEL0117S01

NOTE:

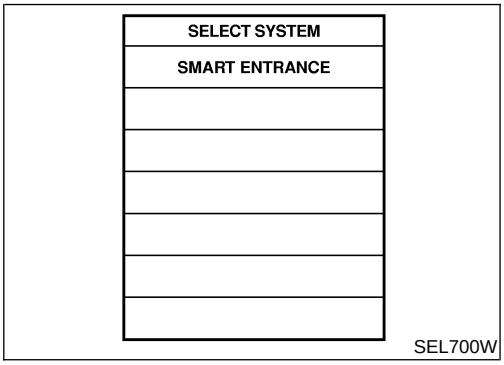
If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. When the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.



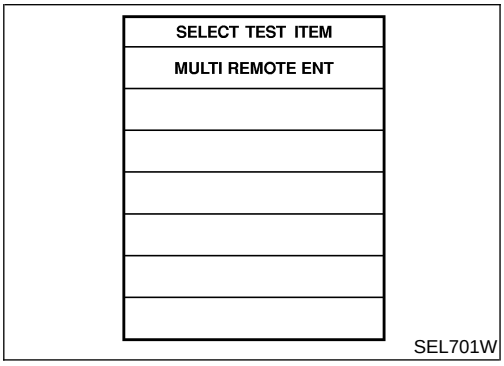
1. Turn ignition switch “OFF”.
2. Connect “CONSULT-II” to the data link connector.



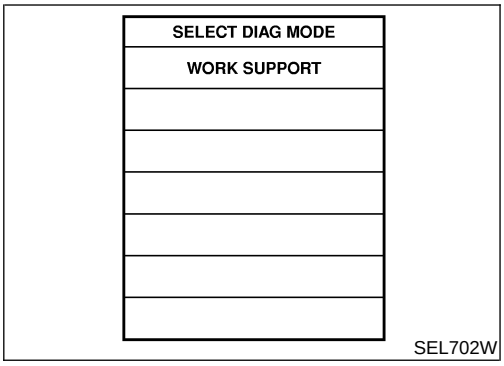
3. Turn ignition switch “ON”.
4. Touch “START”.



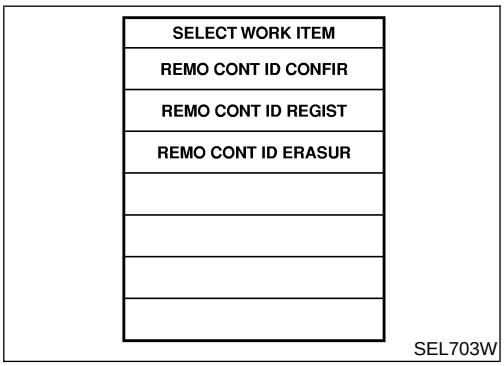
5. Touch “SMART ENTRANCE”.



6. Touch “MULTI REMOTE ENT”.



7. Touch "WORK SUPPORT".



8. The items are shown on the figure at left can be set up.

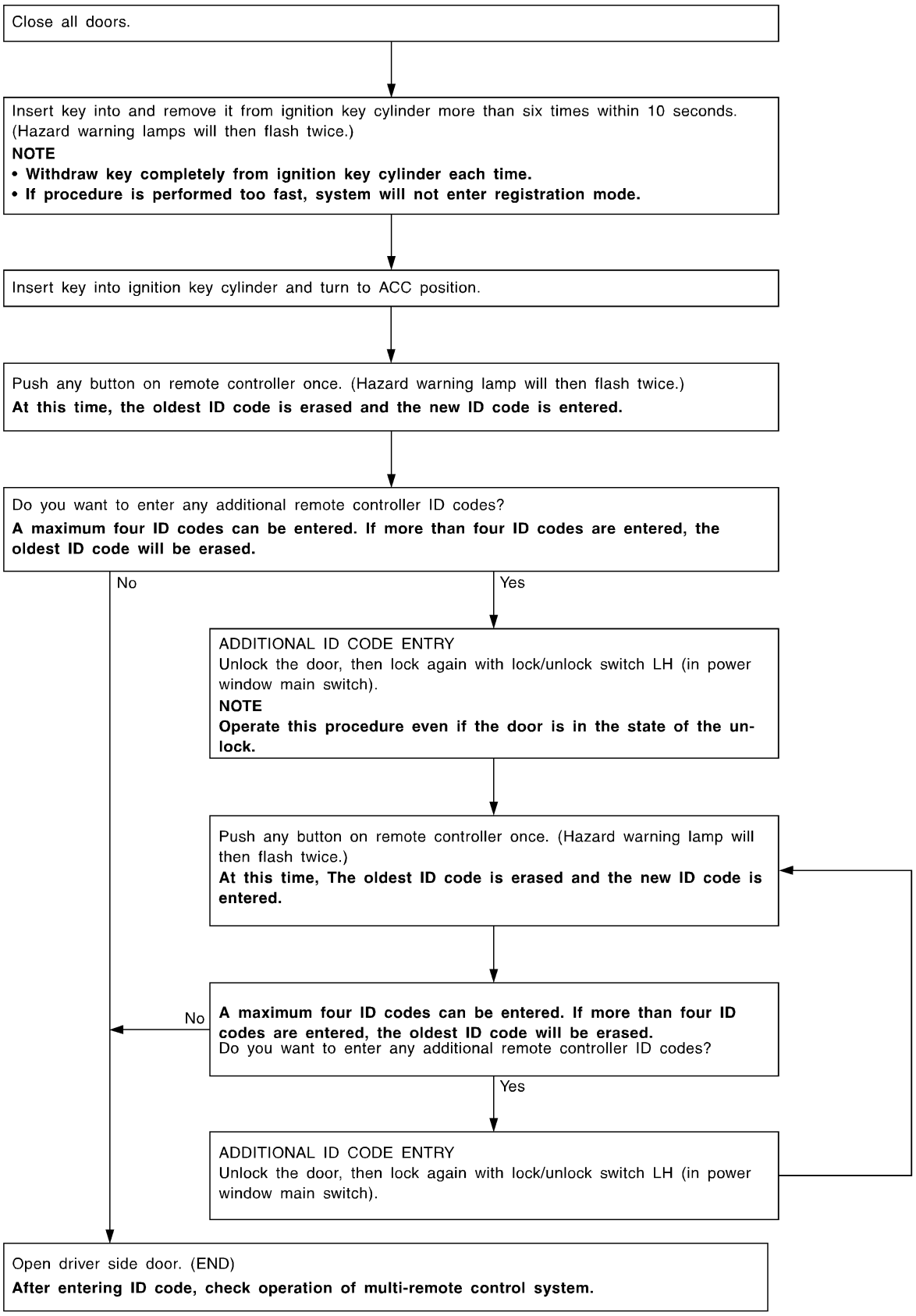
- "REMO CONT ID CONFIR"
  Use this mode to confirm if a remote controller ID code is registered or not.
- "REMO CONT ID REGIST"
  Use this mode to register a remote controller ID code.

NOTE:
Register the ID code when remote controller or smart entrance control unit is replaced, or when additional remote controller is required.

- "REMO CONT ID ERASUR"
  Use this mode to erase a remote controller ID code.

REMOTE CONTROLLER ID SET UP WITHOUT CONSULT-II

NCEL0117S02



SEL170Y

NOTE:

- If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. A specific ID code can be erased with CONSULT-II. However, when the ID code of a lost remote controller is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
  To erase all ID codes in memory, register one ID code (remote controller) four times. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.
- When registering an additional remote controller, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory, when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- Even if same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

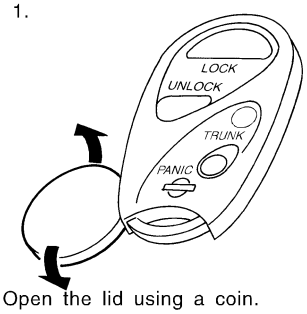
Remote Controller Battery Replacement

NCEL0118

NOTE:

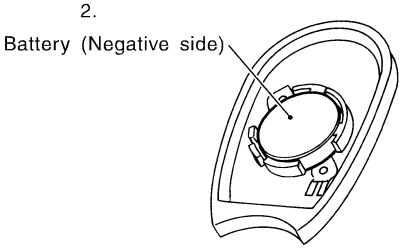
- Be careful not to touch the circuit board or battery terminal.
- The remote controller is water-resistant. However, if it does get wet, immediately wipe it dry.

1.



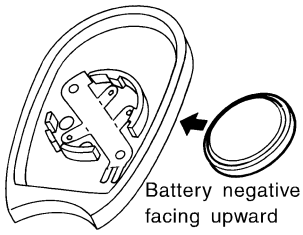
Open the lid using a coin.

2.



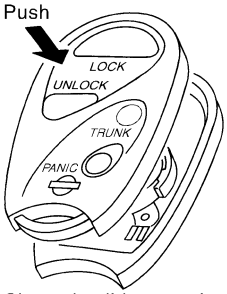
Remove the battery.

3.



Insert the new battery.

4.

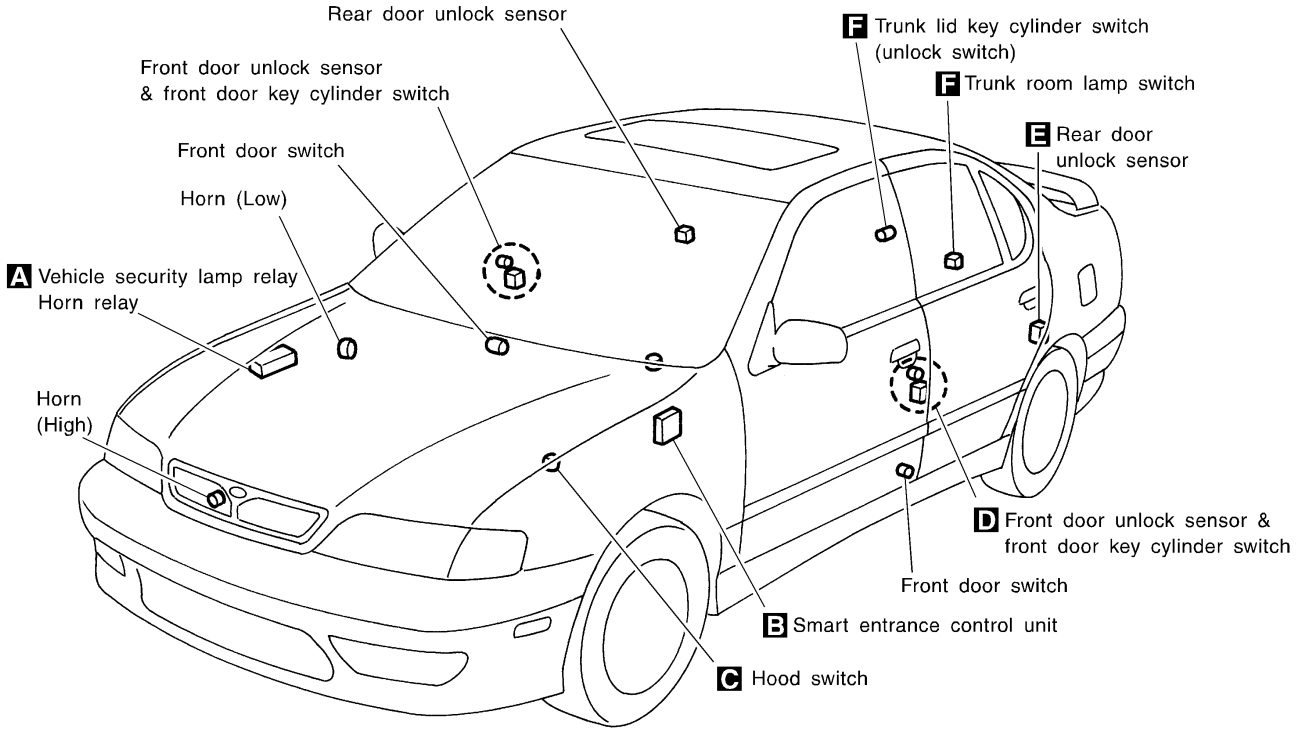


Close the lid securely.
Push the remote controller button two or three times to check its operation.

SEL366W

Component Parts and Harness Connector Location

NCEL0119



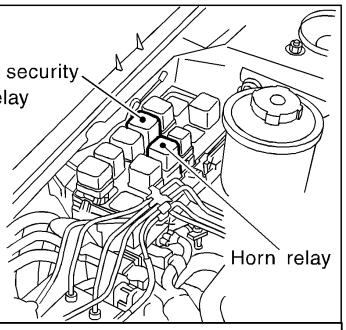
Fuse block (J/B)

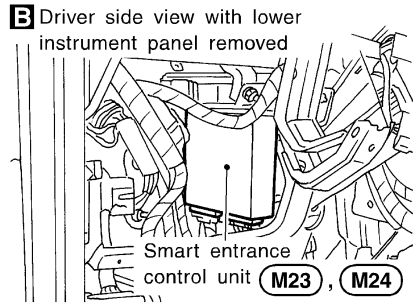
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23		
24	25	26		
27	28	29		

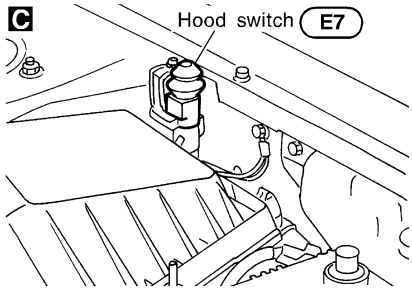
Front

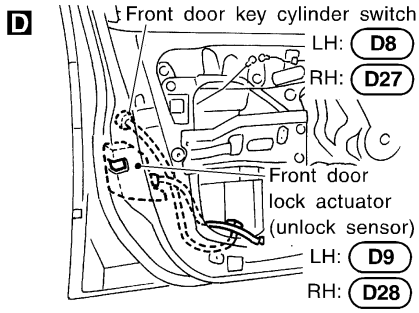
Fuse and fusible link box

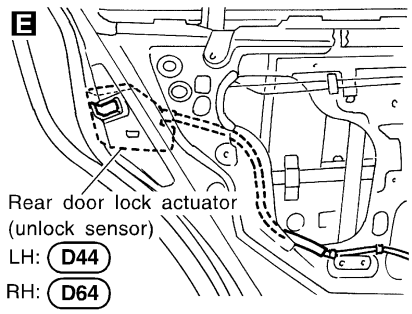
30	31	32	33	34	35	36	37	e		f	g	h	i										
									a	b	c	d		38	39	40	41	42	43	44	45		

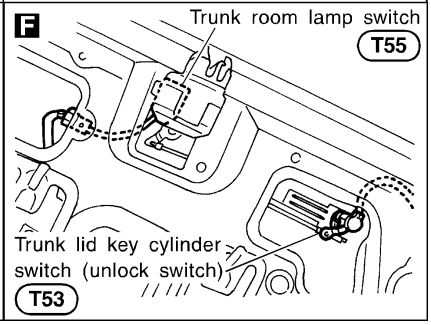












SEL955X

System Description

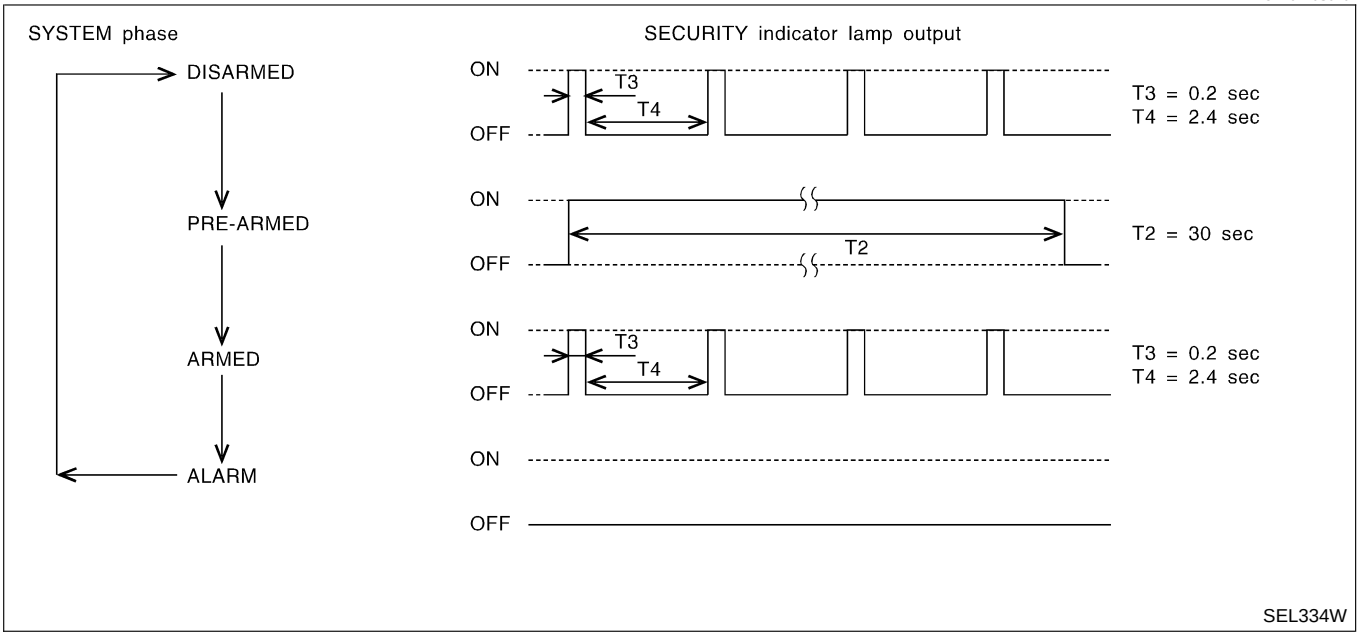
NCEL0120

DESCRIPTION

NCEL0120S01

1. Operation Flow

NCEL0120S0101



2. Setting The Vehicle Security System

NCEL0120S0102

Initial condition

1) Close all doors.
2) Close engine hood and trunk lid.

Disarmed phase

When the vehicle security system is in the disarmed phase, the security indicator lamp blinks every 2.6 seconds.

Pre-armed phase and armed phase

The vehicle security system turns into the “pre-armed” phase when engine hood, trunk lid and all doors are closed and the doors are locked by key or multi-remote controller. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the “armed” phase (the system is set). (The security indicator lamp blinks every 2.6 seconds.)

3. Canceling The Set Vehicle Security System

NCEL0120S0103

When the following 1) or 2) operation is performed, the armed phase is canceled.

1) Unlock the doors with the key or multi-remote controller.
2) Open the trunk lid with the key. When the trunk lid is closed after opening the trunk lid with the key, the system returns to the armed phase.

4. Activating The Alarm Operation of The Vehicle Security System

NCEL0120S0104

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When the following operation 1) or 2) is performed, the system sounds the horns and flashes the headlamps for about 50 seconds.

1) Engine hood, trunk lid or any door is opened before unlocking door with key or multi-remote controller.
2) Door is unlocked without using key or multi-remote controller.

POWER SUPPLY AND GROUND

NCEL0120S07

Power is supplied at all times

- through 7.5A fuse [No. 5, located in the fuse block (J/B)]
- to security indicator lamp terminal 1.

Power is supplied at all times

- through 30A fusible link (letter **d**, located in the fuse and fusible link box)
- to smart entrance control unit terminal 11.

With the ignition switch in the ACC or ON position, power is supplied
- through 7.5A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 21.

Ground is supplied
- to smart entrance control unit terminal 16
- through body grounds M15, M71 and M76.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NCEL0120S02

The operation of the vehicle security system is controlled by the doors, engine hood and trunk lid.
To activate the vehicle security system, the smart entrance control unit must receive signals indicating the doors, engine hood and trunk lid are closed and the doors are locked.
When a door is open, smart entrance control unit terminal 28, 29 or 40 receives a ground signal from each door switch.
When a door is unlocked, smart entrance control unit terminal 26, 36 or 37 receives a ground signal from terminal 4 of each door unlock sensor.
When the engine hood is open, smart entrance control unit terminal 27 receives a ground signal
- from terminal 1 of the hood switch
- through body grounds E9 and E28.

When the trunk lid is open, smart entrance control unit terminal 38 receives a ground signal
- from terminal 1 of the trunk room lamp switch
- through body grounds B109 and B110.

When the doors are locked with key or multi-remote controller and none of the described conditions exist, the vehicle security system will automatically shift to armed mode.

VEHICLE SECURITY SYSTEM ACTIVATION (WITH KEY OR REMOTE CONTROLLER USED TO LOCK DOORS)

NCEL0120S03

If the key is used to lock doors, terminal 41 receives a ground signal
- from terminal 1 of the key cylinder switch (driver side)
- from terminal 3 of the front door key cylinder switch (passenger side)
- through body grounds M15, M71 and M76

If this signal or lock signal from remote controller is received by the smart entrance control unit, the vehicle security system will activate automatically.
Once the vehicle security system has been activated, smart entrance control unit terminal 31 supplies ground to terminal 2 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the vehicle security system is in armed phase.

VEHICLE SECURITY SYSTEM ALARM OPERATION

NCEL0120S04

The vehicle security system is triggered by
- opening the door without using the key
- opening the engine hood or the trunk lid
- unlocking the door without using the key.

Once the vehicle security system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 26, 36, 37 (door unlock sensor), 28, 29, 40 (door switch), 38 (trunk room lamp switch) or 27 (hood switch), the vehicle security system will be triggered. The headlamps flash and the horn sounds intermittently.
Power is supplied at all times
- through 10A fuse (No. 36, located in fuse and fusible link box)
- to vehicle security lamp relay terminal 1 and
- to horn relay terminals 1 and 3
- through 10A fuse (No. 41, located in fuse and fusible link box)
- to horn relay terminal 6.

When the vehicle security system is triggered, ground is supplied intermittently
- from terminal 4 of the smart entrance control unit
- to vehicle security lamp relay terminal 2 and
- from terminal 19 of smart entrance control unit

- to horn relay terminal 2.

The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

VEHICLE SECURITY SYSTEM DEACTIVATION

NCEL0120S05

To deactivate the vehicle security system, the door or the trunk lid must be unlocked with the key or remote controller.
When the key is used to unlock the door, smart entrance control unit terminal 30 receives a ground signal

- from terminal 3 of the front door key cylinder switch (driver side)
- from terminal 1 of the front door key cylinder switch (passenger side)

When the key is used to open the trunk lid, smart entrance control unit terminal 42 receives a ground signal from terminal 1 of the trunk lid key cylinder switch.
When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the vehicle security system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NCEL0120S06

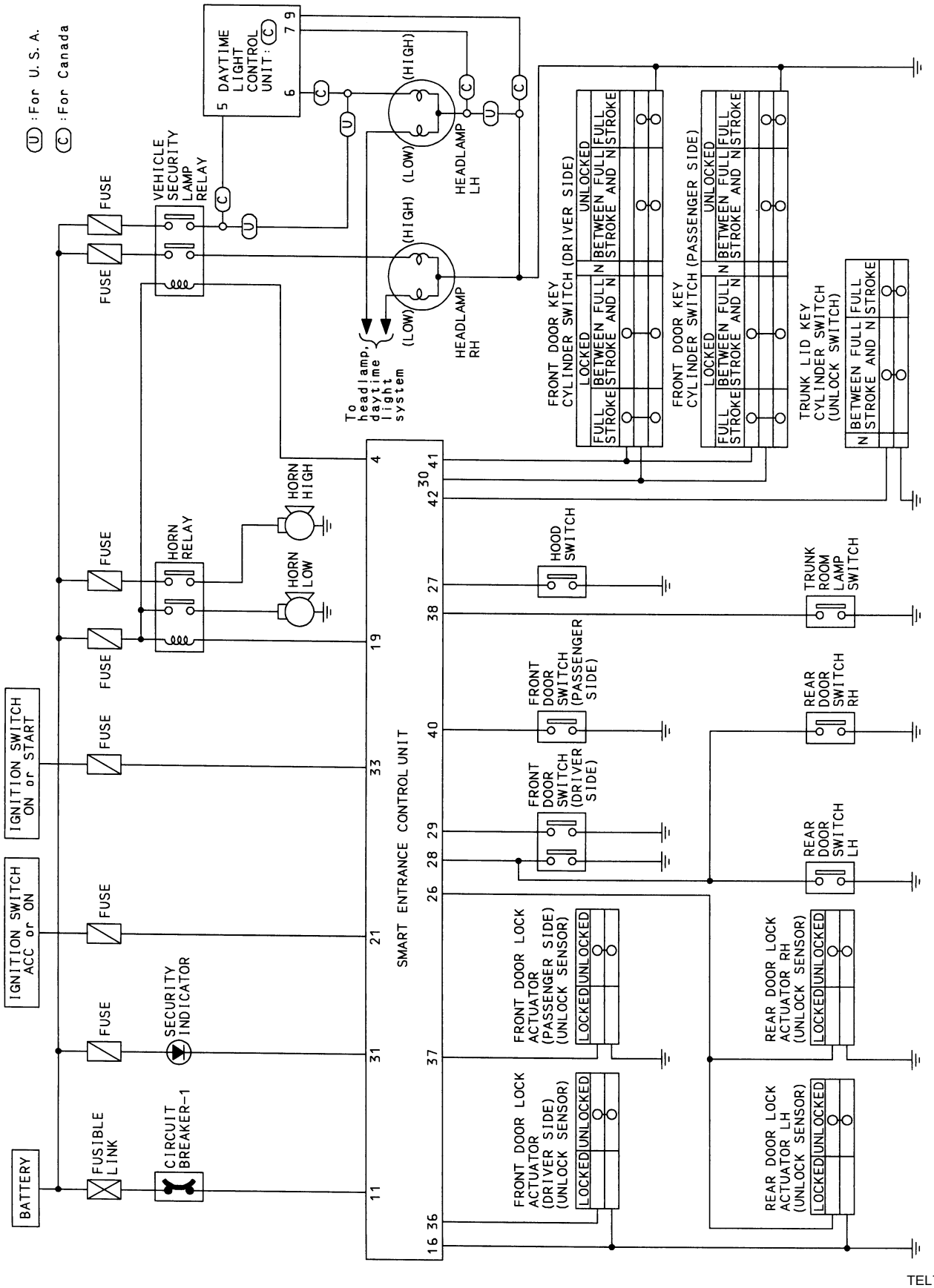
Multi-remote control system may or may not operate vehicle security system (horn and headlamps) as required.
When the multi-remote control system is triggered, ground is supplied intermittently.

- from smart entrance control unit terminal 4
- to vehicle security lamp relay terminal 2 and
- from smart entrance control unit terminal 19
- to terminal 2 of horn relay.

The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

Schematic

NCEL0121



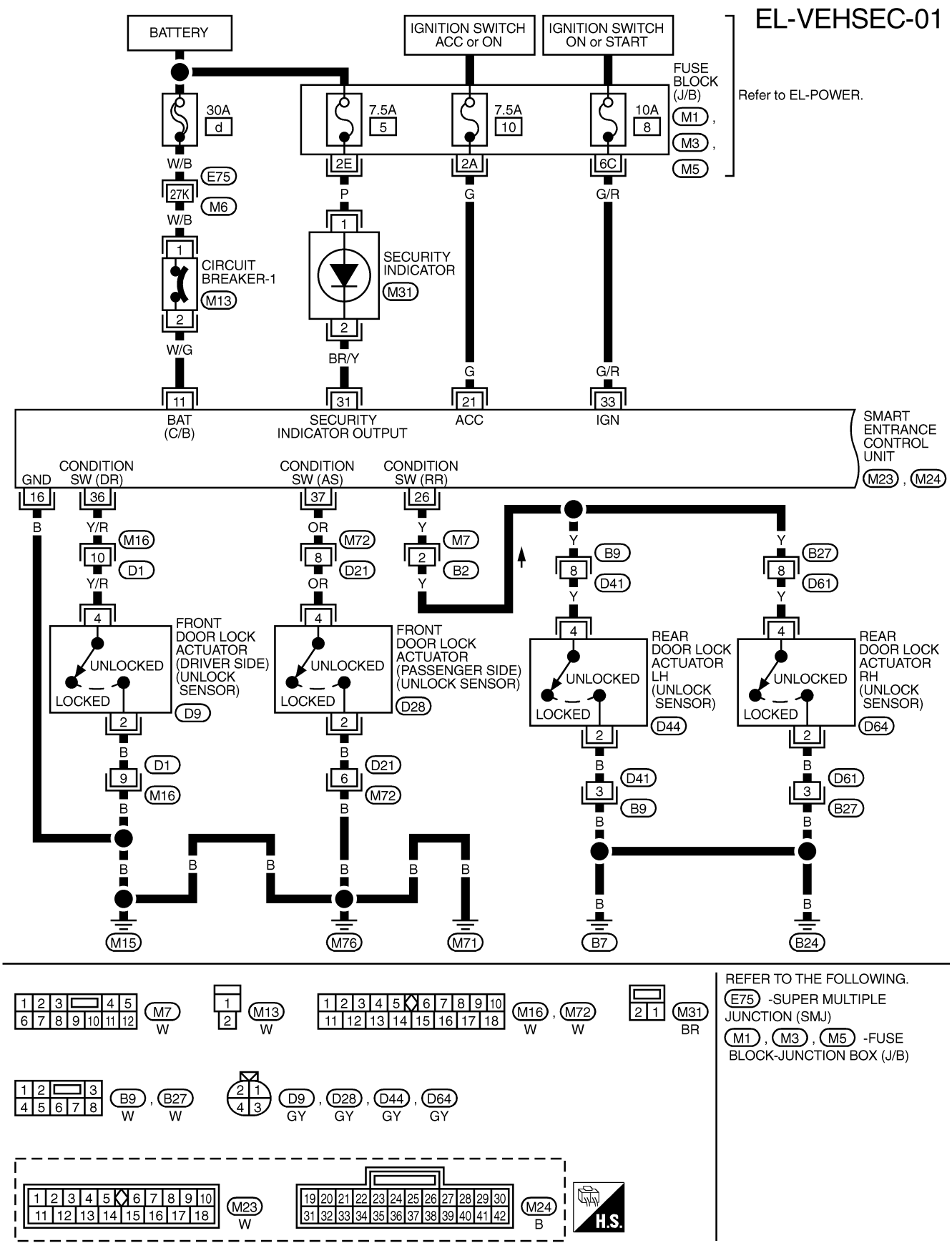
TEL773B

Wiring Diagram — VEHSEC —

NCEL0122

FIG. 1

NCEL0122S01

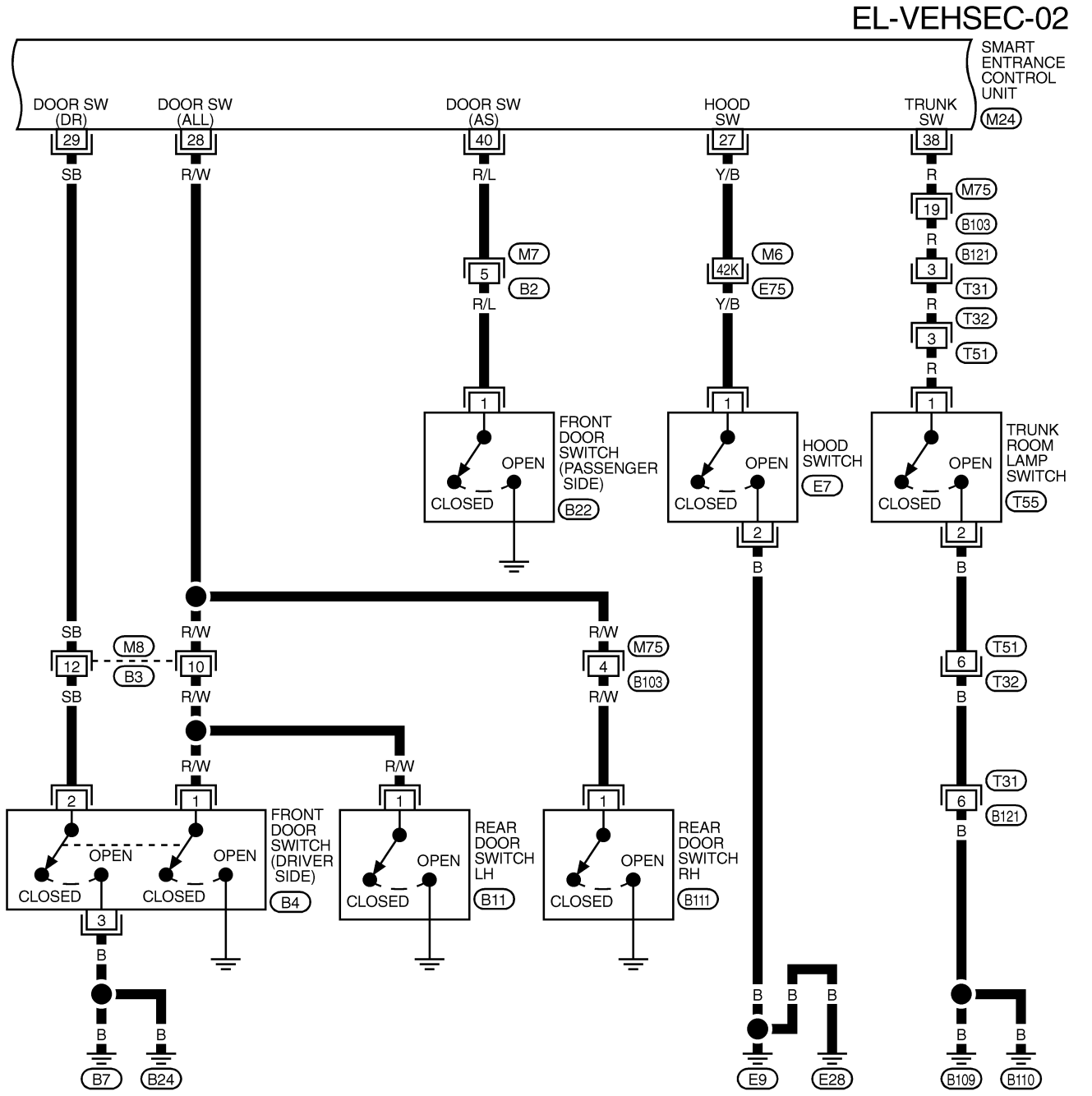


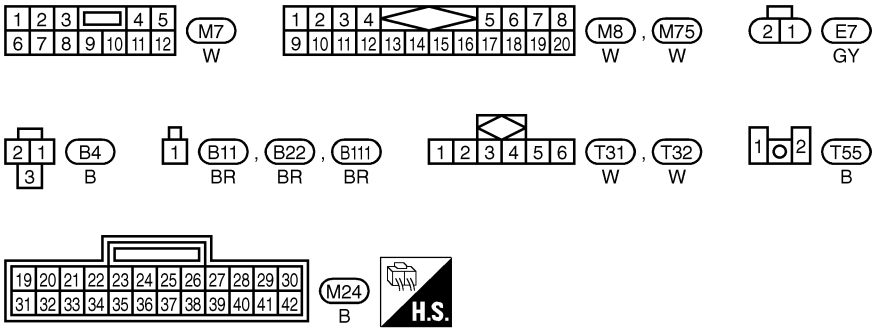
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , M3 , M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TEL860B

FIG. 2

NCEL0122S02





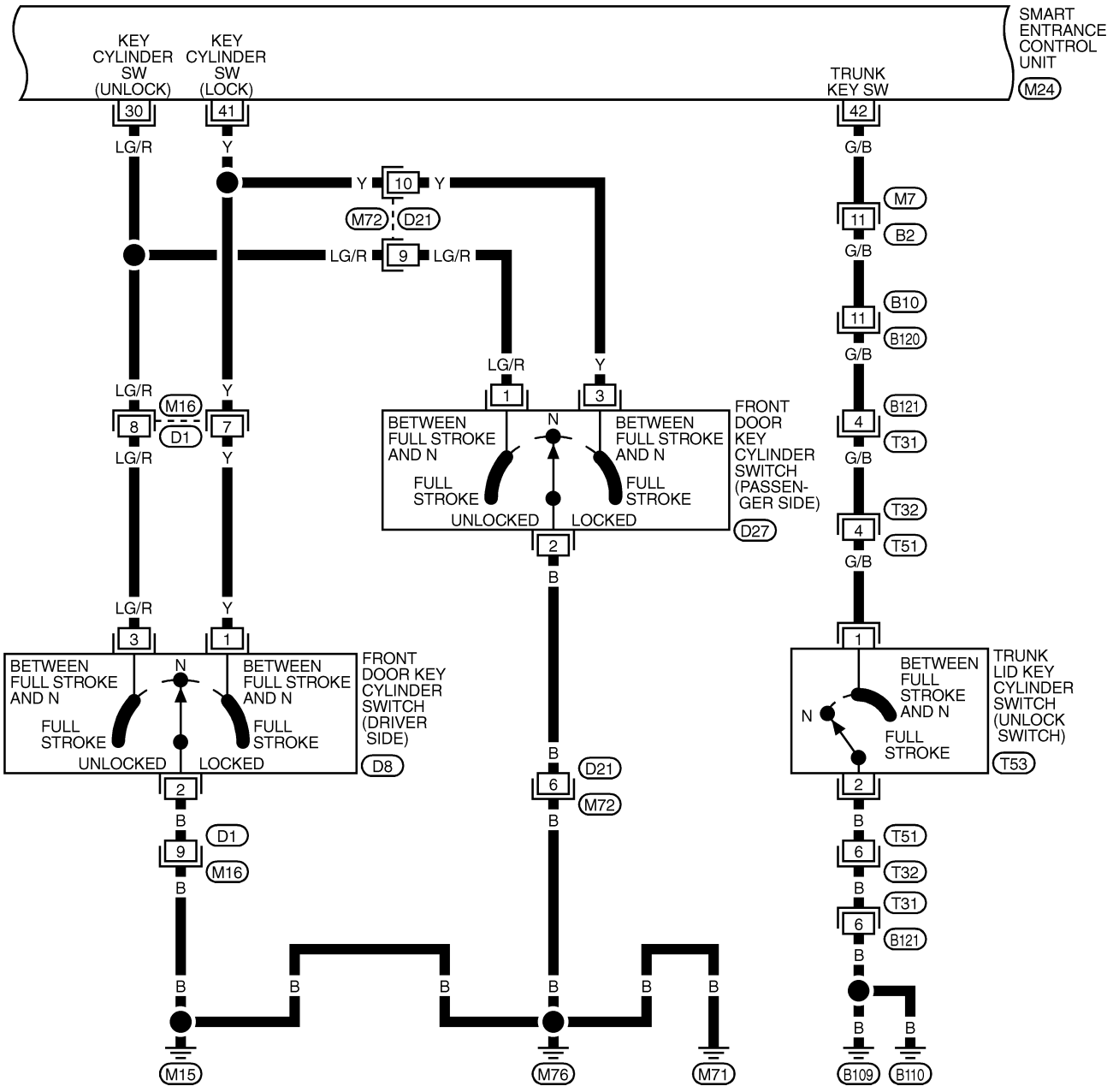
REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

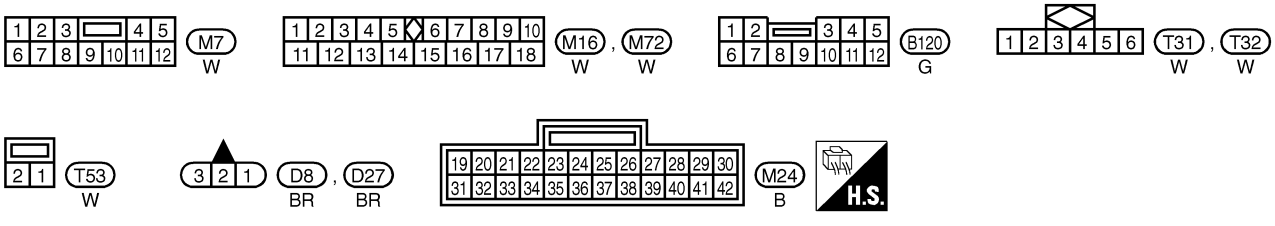
TEL775B

FIG. 3

NCEL0122S03

EL-VEHSEC-03

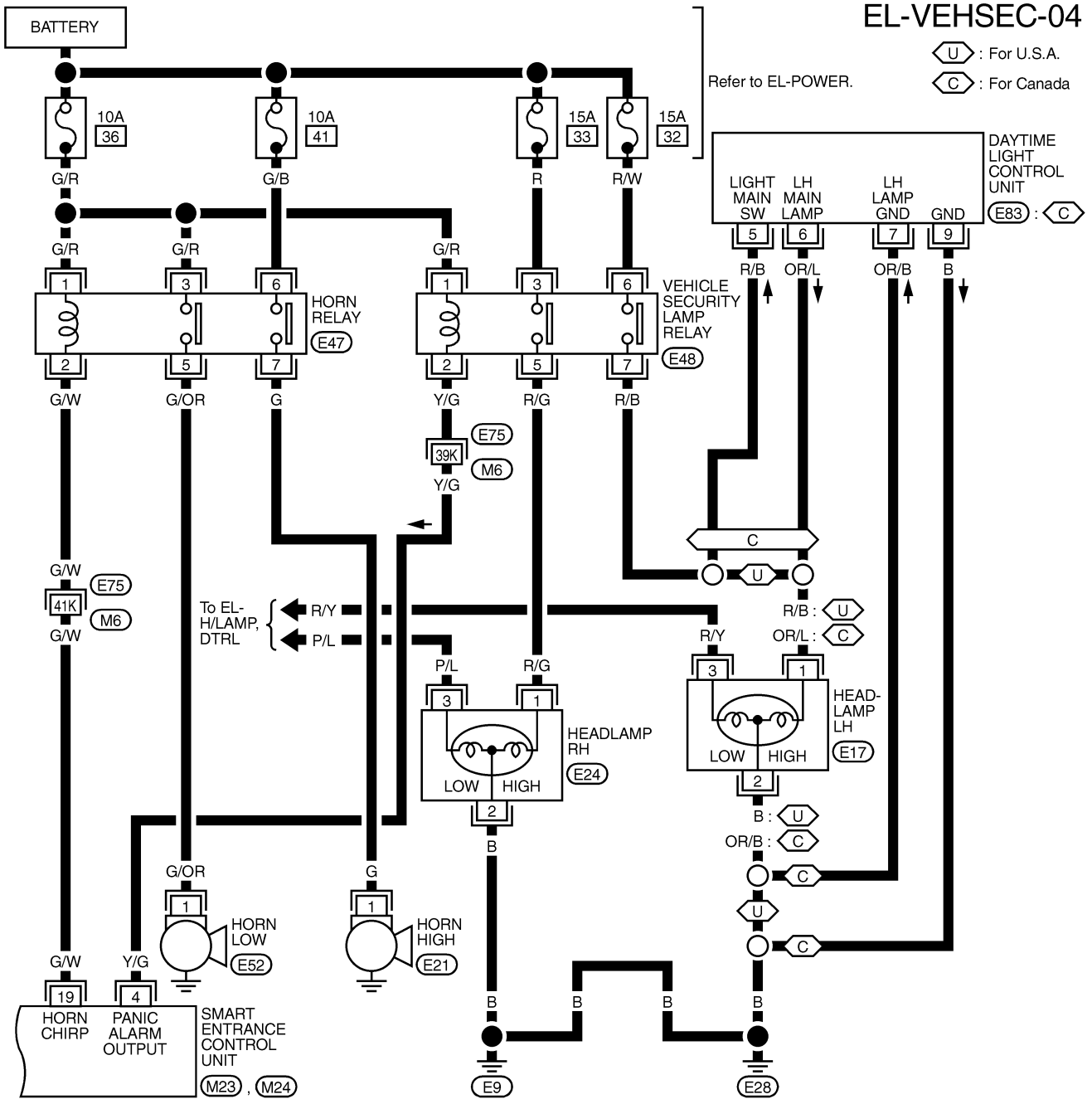


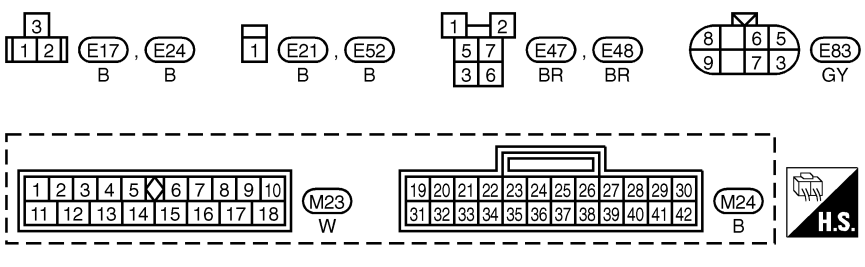


TEL871B

FIG. 4

NCEL0122S04





REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)

TEL777B

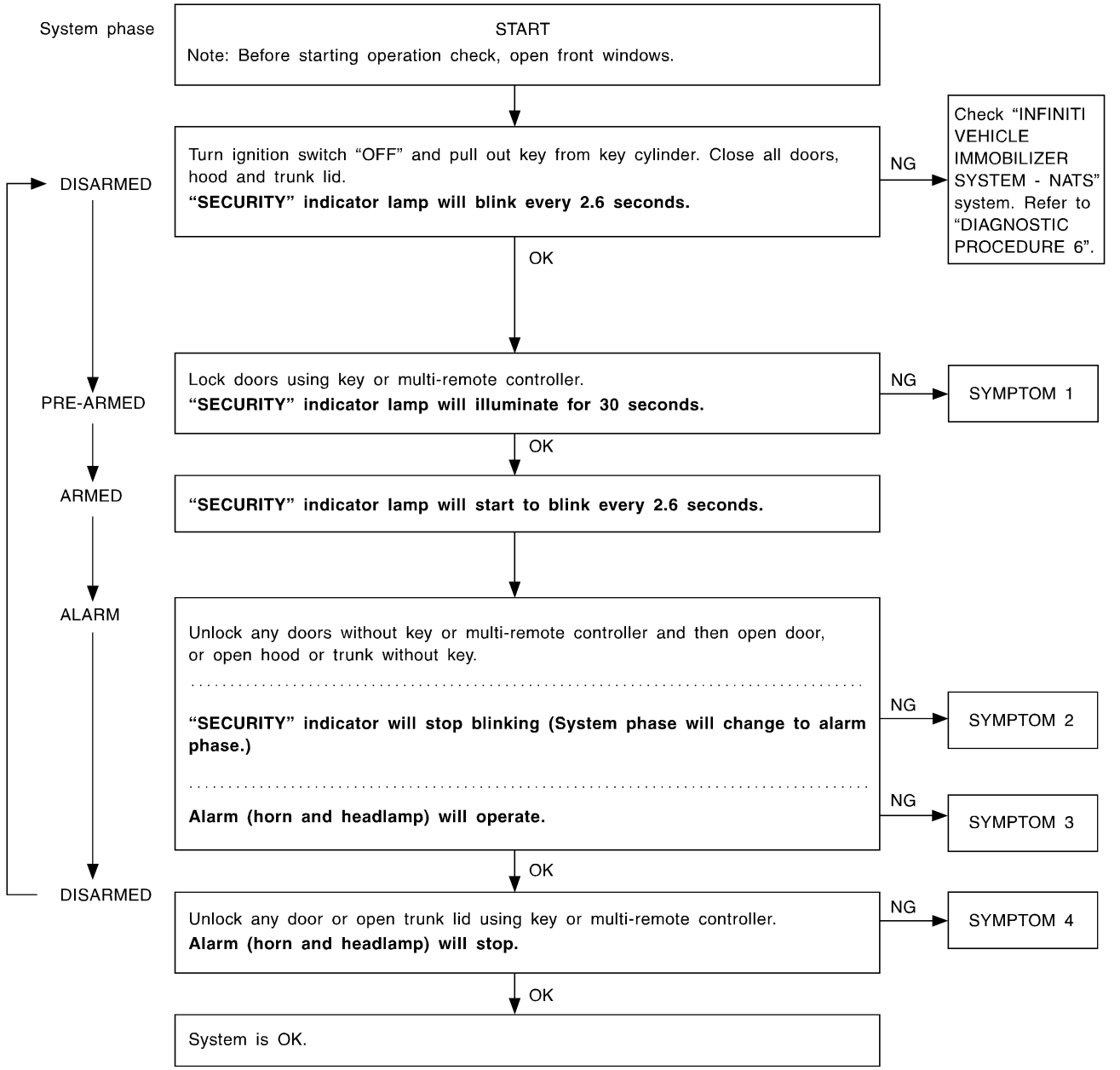
Trouble Diagnoses

NCEL0123

PRELIMINARY CHECK

NCEL0123S01

The system operation is canceled by turning ignition switch to "ACC" at any step between START and ARMED in the following flow chart.



SEL733WD

After performing preliminary check, go to symptom chart on next page.

SYMPTOM CHART

NCEL0123S02

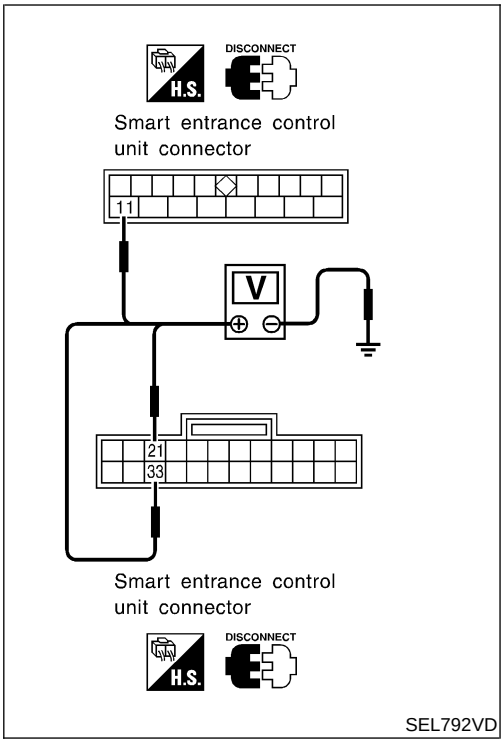
REFERENCE PAGE (EL-)			223	225	226	232	233	234	236	238	240	197
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR, HOOD AND TRUNK ROOM LAMP SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK	TRUNK LID KEY CYLINDER SWITCH CHECK	VEHICLE SECURITY HORN ALARM CHECK	VEHICLE SECURITY HEADLAMP ALARM CHECK	Check "MULTI-REMOTE CONTROL" system.
	Vehicle security indicator does not illuminate for 30 seconds.		X	X	X	X						
1	Vehicle security system cannot be set by	All items	X	X	X		X					
		Door outside key	X					X				
		Multi-remote control	X									X
2	*1 Vehicle security system does not alarm when ...	Any door is opened.	X		X							
		Any door is unlocked without using key or multi-remote controller	X				X					
3	Vehicle security alarm does not activate.	All function	X		X		X					
		Horn alarm	X							X		
		Headlamp alarm	X								X	
4	Vehicle security system cannot be canceled by	Door outside key	X					X				
		Trunk lid key	X						X			
		Multi-remote control	X									X

X : Applicable

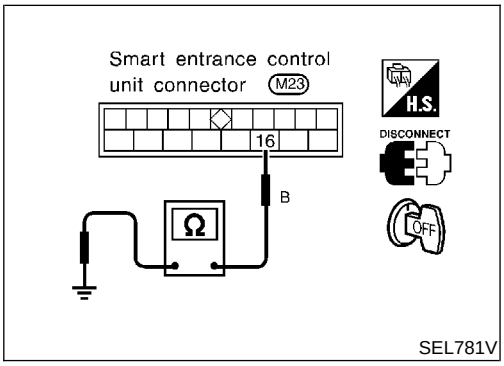
*1: Make sure the system is in the armed phase.

Before starting trouble diagnoses above, perform preliminary check, EL-223.

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



SEL792VD



SEL781V

POWER SUPPLY AND GROUND CIRCUIT CHECK

NCEL0123S03

Power Supply Circuit Check

NCEL0123S0301

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (wire color)				
M23	11 (W/G)	Ground	Battery voltage	Battery voltage	Battery voltage
M24	33 (G/R)	Ground	0V	0V	Battery voltage
M24	21 (G)	Ground	0V	Battery voltage	Battery voltage

Ground Circuit Check

NCEL0123S0302

Terminals	Continuity
16 - Ground	Yes

DOOR, HOOD AND TRUNK ROOM LAMP SWITCH CHECK

=NCEL0123S04

Door Switch Check

NCEL0123S0401

1	PRELIMINARY CHECK

1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, engine hood and trunk lid.
   "SECURITY" indicator lamp should turn off.
3. Open any passenger door or back door.
   "SECURITY" indicator lamp should blink every second.

OK or NG

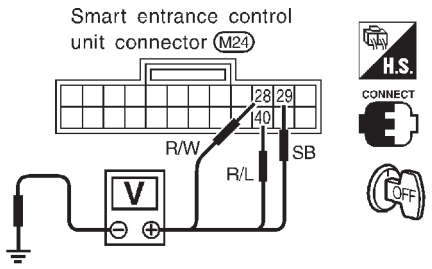
OK	▶	Door switch is OK. Next, go to "Hood Switch Check".
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminals 28, 29 or 40 and ground.

	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door switch	29	ground	Open	0
			Closed	Approx. 12
Front RH door switch	40	ground	Open	0
			Closed	Approx. 12
Front LH and rear door switches	28	ground	Open	0
			Closed	Approx. 12

MTBL0194



SEL930V

Refer to wiring diagram in EL-220.

OK or NG

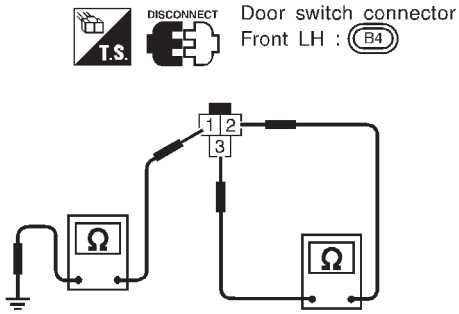
OK	▶	Door switch is OK. Next, go to "Hood Switch Check".
NG	▶	GO TO 3.

3 **CHECK DOOR SWITCH**

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

	Terminals	Condition	Continuity
Front LH door switch	2 - 3, 1 - ground	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

MTBL0195



SEL931V

OK or NG

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

Hood Switch Check

=NCEL0123S0402

1	PRELIMINARY CHECK

1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, engine hood and trunk lid.
   "SECURITY" indicator lamp should turn off.
3. Open hood.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Hood switch is OK. Next, go to "Trunk Room Lamp Switch Check".
NG	▶	GO TO 2.

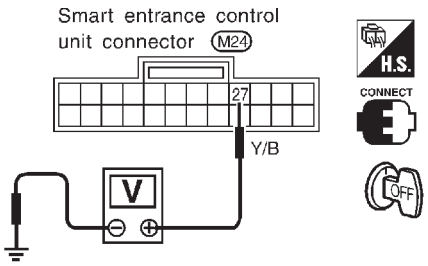
2	CHECK HOOD SWITCH FITTING CONDITION

OK or NG

OK	▶	GO TO 3.
NG	▶	Adjust installation of hood switch or hood.

3	CHECK HOOD SWITCH INPUT SIGNAL

Check voltage between control unit terminal 27 and ground.



SEL932V

Refer to wiring diagram in EL-220.

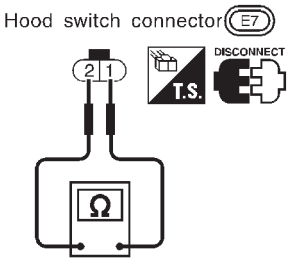
Voltage [V]:
Engine hood is open.
0
Engine hood is closed.
Approx. 12

OK or NG

OK	▶	Hood switch is OK. Next, go to "Trunk Room Lamp Switch Check".
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals 1 and 2.



SEL397TC

Continuity:
Condition: Pushed
No
Condition: Released
Yes

OK or NG

OK	▶	**Check the following.** ● Hood switch ground circuit ● Harness for open or short between control unit and hood switch
NG	▶	Replace hood switch.

Trunk Room Lamp Switch Check

=NCEL0123S0403

1	PRELIMINARY CHECK

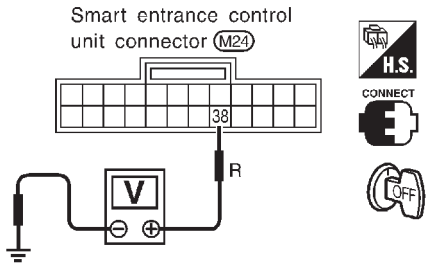
1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, engine hood and trunk lid.
   "SECURITY" indicator lamp should turn off.
3. Open trunk lid.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Trunk room lamp switch is OK.
NG	▶	GO TO 2.

2	CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL

Check voltage between control unit terminal 38 and ground.



SEL933V

Refer to wiring diagram in EL-220.

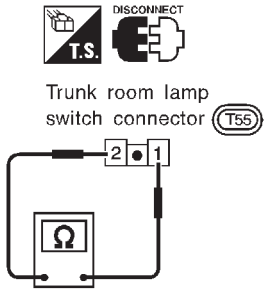
Voltage [V]:
Trunk lid is open.
Approx. 0
Trunk lid is closed.
Approx. 12

OK or NG

OK	▶	Trunk room lamp switch is OK.
NG	▶	GO TO 3.

3	CHECK TRUNK ROOM LAMP SWITCH

1. Disconnect trunk room lamp switch connector.
2. Check continuity between trunk room lamp switch terminals 1 and 2.



SEL934V

Continuity:
Condition: Closed
No
Condition: Open
Yes

OK or NG

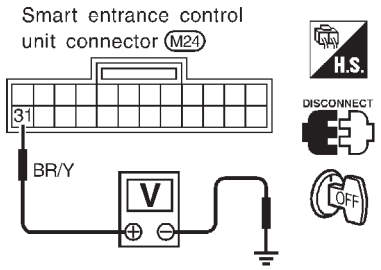
OK	▶	**Check the following.** ● Trunk room lamp switch ground circuit ● Harness for open or short between control unit and trunk room lamp switch
NG	▶	Replace trunk room lamp switch.

SECURITY INDICATOR LAMP CHECK

=NCEL0123S05

1	CHECK INDICATOR LAMP OUTPUT SIGNAL

1. Disconnect control unit connector.
2. Check voltage between control unit terminal 31 and ground.



SEL935V

Refer to wiring diagram in EL-219.
Battery voltage should exist.

OK or NG

OK	▶	Security indicator lamp is OK.
NG	▶	GO TO 2.

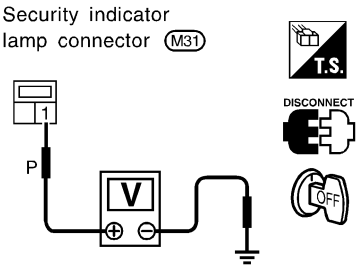
2	CHECK INDICATOR LAMP

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace indicator lamp.

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

1. Disconnect security lamp connector.
2. Check voltage between indicator lamp terminal 1 and ground.



Battery voltage should exist.

SEL192X

OK or NG

OK	▶	Check harness for open or short between security indicator lamp and control unit.
NG	▶	**Check the following.** ● 7.5A fuse [No. 5, located in fuse block (J/B)] ● Harness for open or short between security indicator lamp and fuse

DOOR UNLOCK SENSOR CHECK

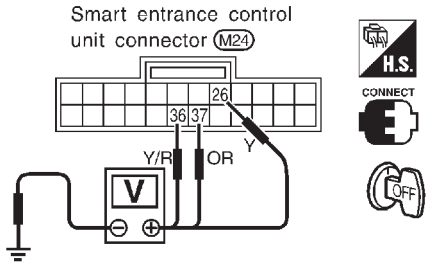
=NCEL0123S06

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between control unit terminals 26, 36 or 37 and ground.

	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door	36	Ground	Locked	Approx. 12
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 12
			Unlocked	0
Rear door	26	Ground	Locked	Approx. 12
			Unlocked	0

MTBL0163



SEL937V

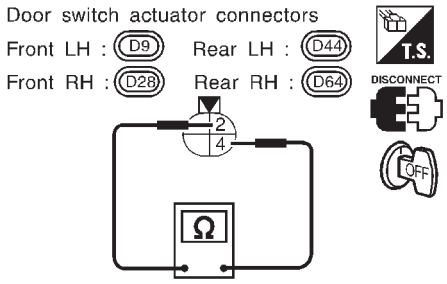
Refer to wiring diagram in EL-219.

OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

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



SEL938V

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

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

DOOR KEY CYLINDER SWITCH CHECK

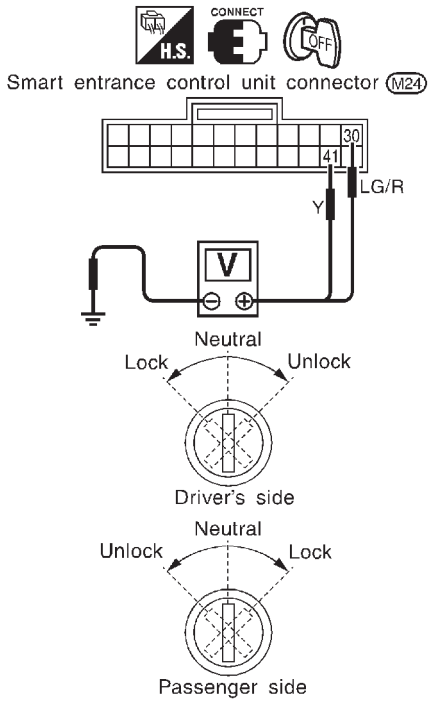
=NCEL0123S07

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

Check voltage between control unit terminals 30 or 41 and ground.

Terminals (+)	Terminals (−)	Key position	Voltage [V]
30	Ground	Neutral	Approx. 12
		Unlock	0
41	Ground	Neutral	Approx. 12
		Lock	0

MTBL0164



SEL939V

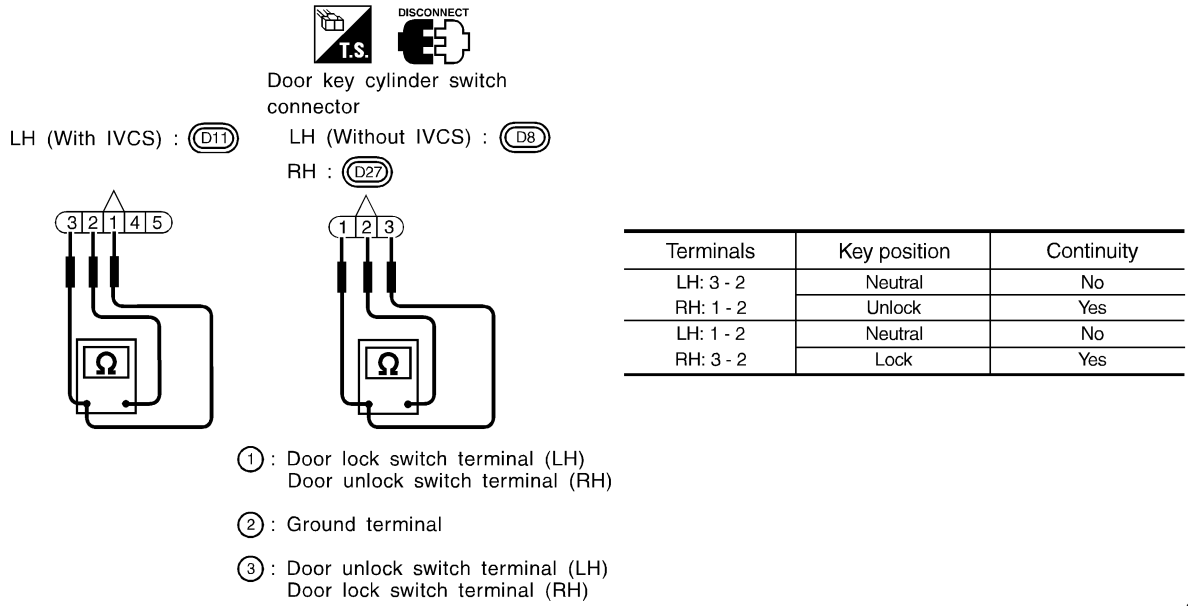
Refer to wiring diagram in EL-221.

OK or NG

OK	▶	Door key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR KEY CYLINDER SWITCH

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



Terminals	Key position	Continuity
LH: 3 - 2	Neutral	No
RH: 1 - 2	Unlock	Yes
LH: 1 - 2	Neutral	No
RH: 3 - 2	Lock	Yes

① : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

② : Ground terminal

③ : Door unlock switch terminal (LH)
Door lock switch terminal (RH)

SEL671W

OK or NG

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

TRUNK LID KEY CYLINDER SWITCH CHECK

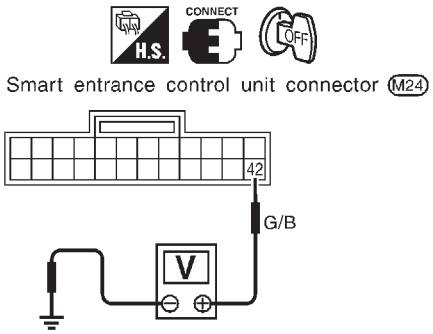
=NCEL0123S08

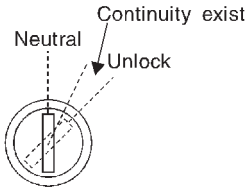
1 **CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL)**

Check voltage between control unit terminal 42 and ground.

Terminal (+)	Terminal (−)	Key position	Voltage [V]
42	Ground	Neutral	Approx. 12
		Unlock	0

MTBL0166





SEL941V

Refer to wiring diagram in EL-221.

OK or NG

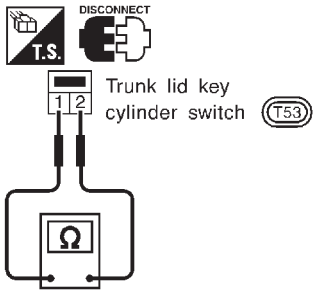
OK	▶	Trunk lid key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK TRUNK LID KEY CYLINDER SWITCH

1. Disconnect trunk lid key cylinder switch connector.
2. Check continuity between trunk lid key cylinder switch terminals.

Key position	Continuity
Neutral	No
Unlock	Yes

MTBL0167



SEL942V

OK or NG

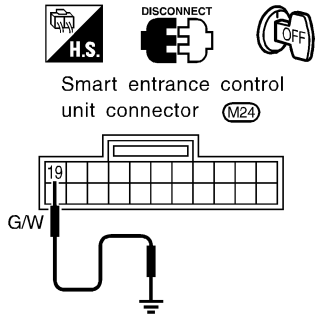
OK	▶	**Check the following.** ● Trunk lid key cylinder switch ground circuit ● Harness for open or short between control unit and trunk lid key cylinder switch
NG	▶	Replace trunk lid key cylinder switch.

VEHICLE SECURITY HORN ALARM CHECK

=NCEL0123S09

1	CHECK VEHICLE SECURITY HORN ALARM OPERATION

1. Disconnect control unit connector.
2. Apply ground to control unit terminal 19.



Does horn alarm activate?

SEL734W

Refer to wiring diagram in EL-222.

Yes	▶	Horn alarm is OK.
No	▶	GO TO 2.

2	CHECK HORN RELAY

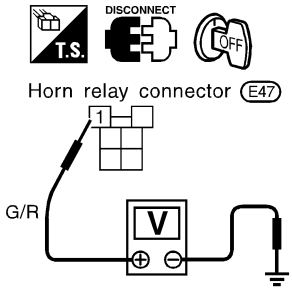
Check horn relay.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace.

3	CHECK POWER SUPPLY FOR HORN RELAY

1. Disconnect horn relay connector.
2. Check voltage between terminal 1 and ground.



Battery voltage should exist.

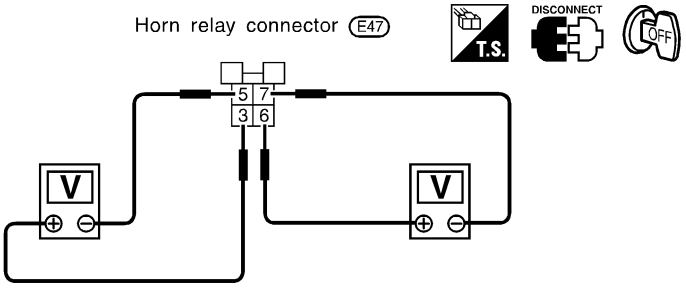
SEL673W

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● 10A fuse (No. 36, located in the fuse and fusible link box) ● Harness for open or short between vehicle security horn relay and fuse

4	CHECK HORN RELAY CIRCUIT

1. Disconnect horn relay connector.
2. Check voltage between terminals 3 and 5.
3. Check voltage between terminals 6 and 7.



Battery voltage should exist.

SEL674W

OK or NG

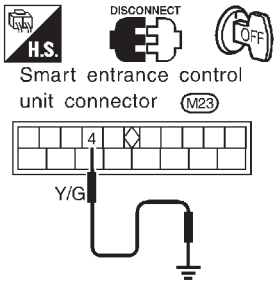
OK	▶	Check harness for open or short between vehicle security horn relay and control unit.
NG	▶	**Check the following.** ● 10A fuse (No. 41, located in the fuse and fusible link box) ● Harness for open or short between fuse and horn relay ● Harness for open or short between horn relay and horns

VEHICLE SECURITY HEADLAMP ALARM CHECK

=NCEL0123S10

1	CHECK VEHICLE SECURITY HEADLAMP ALARM OPERATION

1. Disconnect control unit connector.
2. Apply ground to control unit terminal 4.



SEL943V

Refer to wiring diagram in EL-222.

Does headlamp alarm activate?

Yes	▶	Headlamp alarm is OK.
No	▶	GO TO 2.

2	CHECK HEADLAMP OPERATION

Does headlamp come on when turning lighting switch "ON"?

Yes	▶	GO TO 3.
No	▶	Check headlamp system. Refer to "HEADLAMP".

3	CHECK VEHICLE SECURITY LAMP RELAY

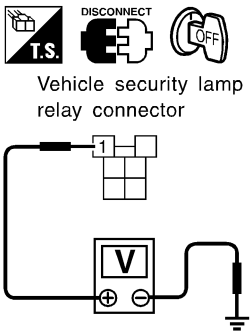
Check vehicle security lamp relay.

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace.

4	CHECK POWER SUPPLY FOR VEHICLE SECURITY LAMP RELAY

1. Disconnect vehicle security lamp relay connector.
2. Check voltage between vehicle security lamp relay connector E48 terminal 1 (G/R) and ground.



SEL956X

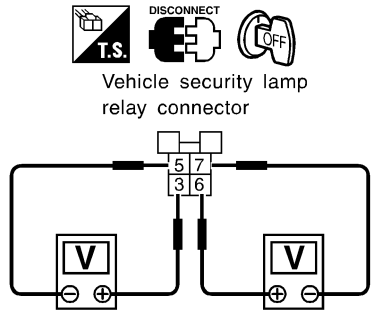
Refer to wiring diagram in EL-222.
Battery voltage should exist.

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** • 10A fuse (No. 36, located in the fuse and fusible link box) • Harness for open or short between vehicle security lamp relay and fuse

5	CHECK VEHICLE SECURITY LAMP RELAY CIRCUIT

1. Disconnect vehicle security lamp relay connector.
2. Check voltage between vehicle security lamp relay connector E48 terminals 3 (R) and 5 (R/G).
   Battery voltage should exist.
3. Check voltage between vehicle security lamp relay connector E48 terminals 6 (R/W) and 7 (R/B).
   Battery voltage should exist.



SEL957X

OK or NG

OK	▶	Check harness for open or short between vehicle security lamp relay and control unit.
NG	▶	**Check the following.** ● 15A fuse (No. 32 and 33, located in the fuse and fusible link box) ● Harness for open or short between fuse and vehicle security lamp relay ● Harness for open or short between vehicle security lamp relay and headlamps

Description

NCEL0124

The following systems are controlled by the smart entrance control unit.

- Warning chime
- Rear window defogger timer and door mirror defogger timer
- Power door lock
- Multi-remote control system
- Vehicle security system
- Interior room lamp timer
- Electric sunroof and power window timer
- Battery saver

For detailed description and wiring diagrams, refer to the relevant pages for the each system.
The smart entrance control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

INPUT/OUTPUT

NCEL0124S01

System	Input	Output
Power door lock	Door lock and unlock switch Key switch (Insert) Front door switch LH Front door switch RH Front door unlock sensor LH Front door unlock sensor RH Door key cylinder switches	Door lock actuator
Multi-remote control	Key switch (Insert) Ignition switch (ACC) Door switches Door lock and unlock switch Door unlock sensor (driver side) Antenna (remote controller signal)	Horn relay Vehicle security lamp relay Interior room lamp Multi-remote control relay Door lock actuator Trunk lid opener relay
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	Warning chime
Rear window defogger timer and door mirror defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Vehicle security	Ignition switch (ACC, ON) Door switches Hood switch Trunk room lamp switch Door key cylinder switches (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensors	Horn relay Vehicle security lamp relay Security indicator
Interior room lamp timer	Door switches Door lock and unlock switch Ignition switch (ON) Key switch (Insert)	Interior room lamp
Electric sunroof and power window timer	Ignition switch (ON) Front door switches	Power window relay
Headlamp battery saver timer	Ignition switch (ON) Front door switches	Headlamp battery saver control unit
Battery saver	Key switch (Insert) Door switches Door lock and unlock switch	Interior room lamp Map lamp

BATTERY SAVER

NCEL0124S02

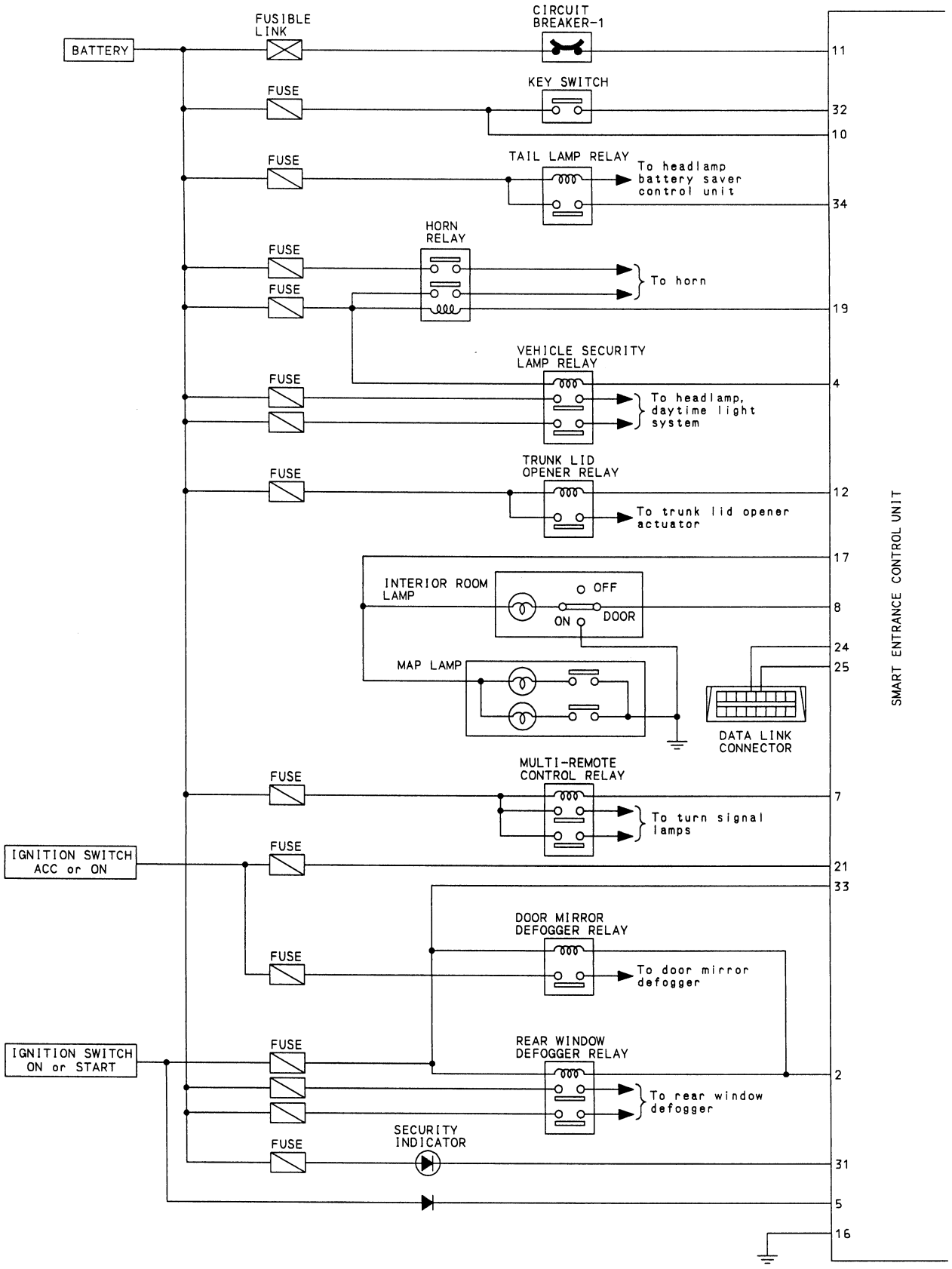
The lamp turns off automatically when the interior room lamp or/and map lamp is illuminated with the ignition key in the OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in the ON position for more than 10 minutes.

After the battery saver system turns off the lamps, the lamps illuminate again when:

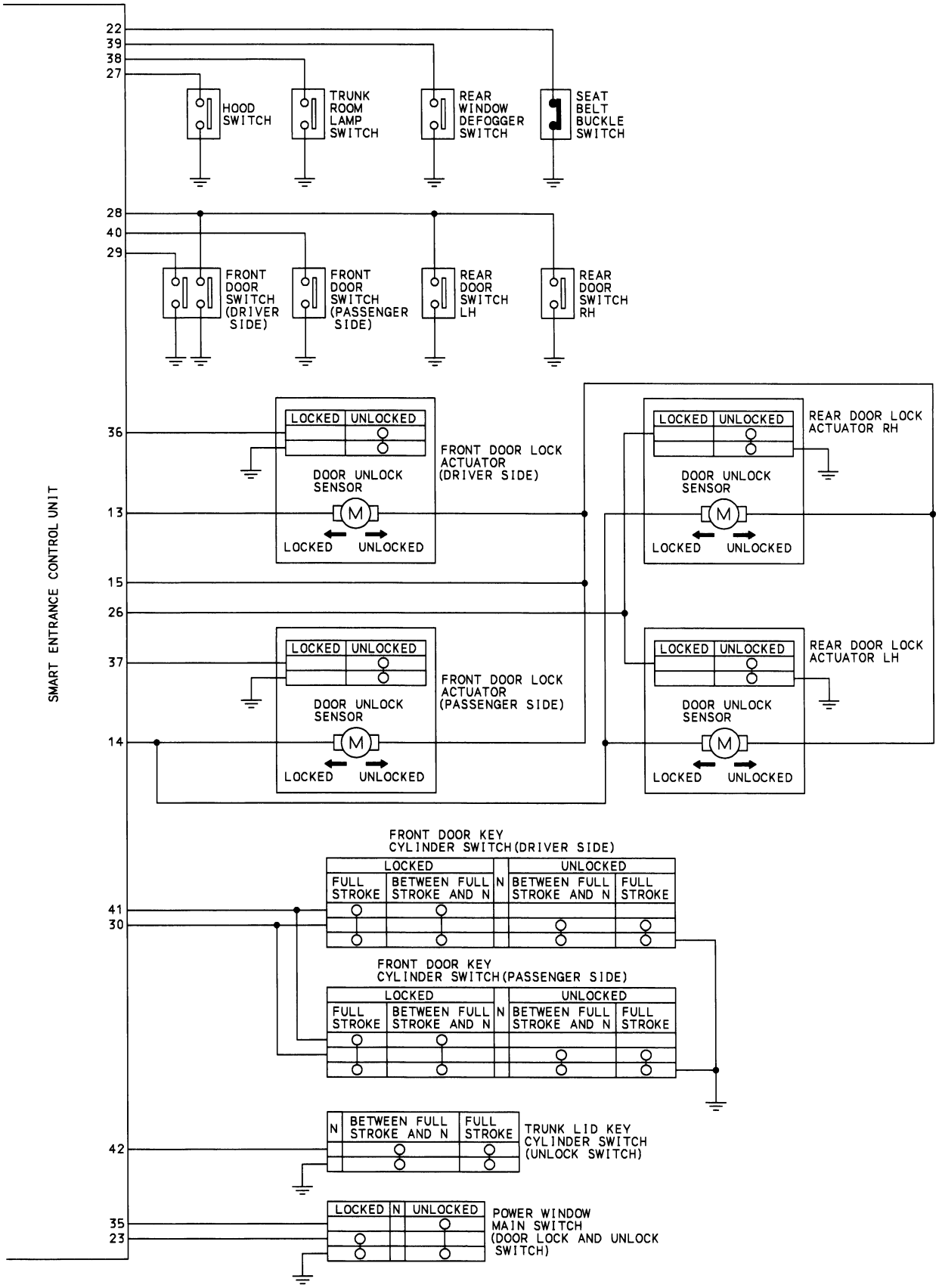
- driver's door is locked or unlocked,
- door is opened or closed,
- key is inserted in ignition key cylinder.

Schematic

NCEL0125



TEL778B


SMART ENTRANCE CONTROL UNIT
22
39
38
27
HOOD SWITCH
TRUNK ROOM LAMP SWITCH
REAR WINDOW DEFOGGER SWITCH
SEAT BELT BUCKLE SWITCH
28
40
29
FRONT DOOR SWITCH (DRIVER SIDE)
FRONT DOOR SWITCH (PASSENGER SIDE)
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
36
13
15
26
37
14
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
M
FRONT DOOR LOCK ACTUATOR (DRIVER SIDE)
REAR DOOR LOCK ACTUATOR RH
FRONT DOOR LOCK ACTUATOR (PASSENGER SIDE)
REAR DOOR LOCK ACTUATOR LH
FRONT DOOR KEY CYLINDER SWITCH (DRIVER SIDE)
FRONT DOOR KEY CYLINDER SWITCH (PASSENGER SIDE)
FULL STROKE
BETWEEN FULL STROKE AND N
N
41
30
42
TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH)
35
23
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)

TEL870B

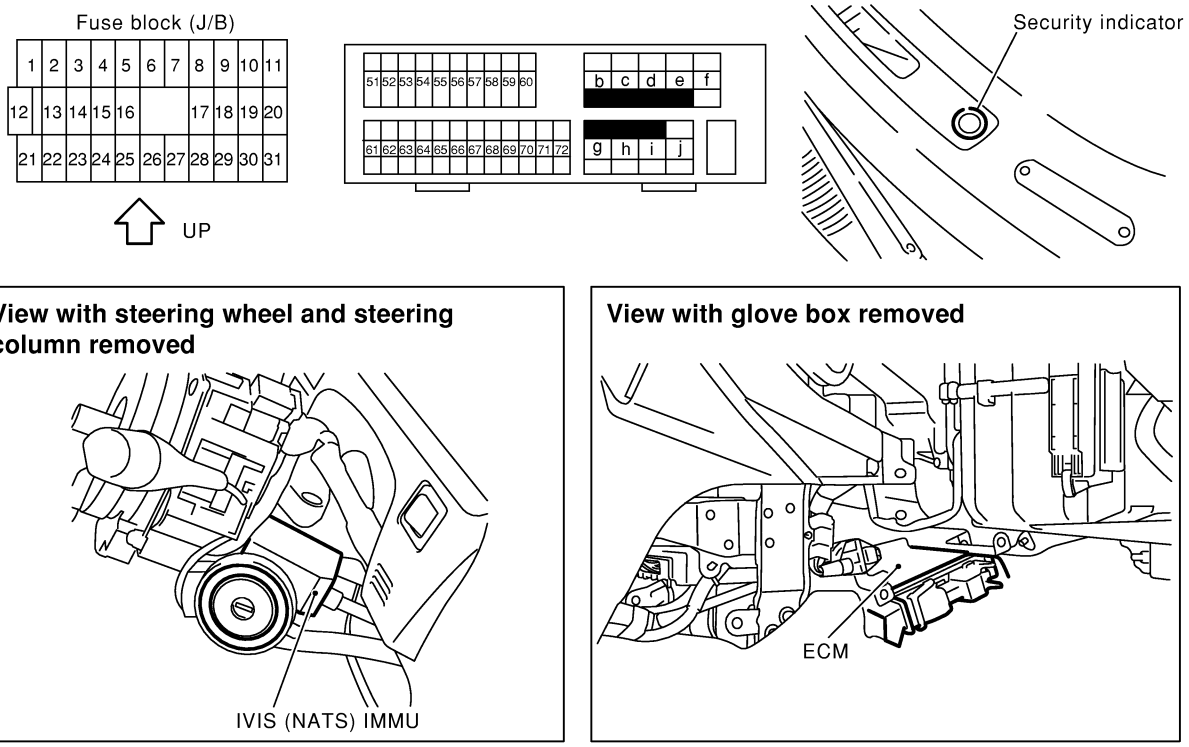
Smart Entrance Control Unit Inspection Table

NCEL0126

Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
2	G	Rear window defogger relay	OFF → ON (Ignition key is in “ON” position)		12V → 0V
4	Y/G	Vehicle security lamp relay	When panic alarm is operated using remote controller		12V → 0V
7	P	Multi-remote control relay	When doors are locked using remote controller		12V → 0V
8	R/L	Interior room lamp	When interior lamp is operated using remote controller (Lamp switch in “DOOR” position)		12V → 0V
10	P	Power source (Fuse)	—		12V
11	W/L	Power source (C/B)	—		12V
12	L	Trunk lid opener relay	When trunk lid is unlocked using remote controller		12V → 0V
13	P	Driver door lock actuator	Door lock & unlock switch	Free	0V
14	L	Passenger door lock actuator		Unlocked	12V
15	GY	Door lock actuators	Door lock & unlock switch	Free	0V
				Locked	12V
16	B	Ground	—		—
17	GY/R	Battery saver	Battery saver is not operate → Operate		12V → 0V
19	G/W	Horn relay	When doors are locked using remote controller with horn chirp mode		12V → 0V
21	G	Ignition switch (ACC)	“ACC” position		12V
22	W/R	Seat belt buckle switch	Unfasten → Fasten (Ignition key is in “ON” position)		0V → 12V
23	GY	Door lock & unlock switches	Neutral → Locks		12V → 0V
26	Y	Rear door unlock sensors	All doors are locked → One or more doors are unlocked		12V → 0V
27	Y/B	Hood open signal	ON (Open) → OFF (Closed)		0V → 12V
28	R/W	All door switches	OFF (Closed) → ON (Open)		12V → 0V
29	SB	Driver door switch	OFF (Closed) → ON (Open)		12V → 0V
30	LG/R	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
31	BR/Y	Security indicator	Goes off → Illuminates		12V → 0V
32	L	Ignition key switch (Insert)	key inserted → key removed from IGN key cylinder		12V → 0V
33	G/R	Ignition switch (ON)	Ignition key is in “ON” position		12V
34	R/G	Tail lamp relay	1ST, 2ND positions: ON → OFF		12V → 0V
35	G	Door lock & unlock switches	Neutral → Unlocks		12V → 0V
36	Y/R	Driver door unlock sensor	Driver door: Locked → Unlocked		12V → 0V
37	OR	Passenger door unlock sensor	Passenger door: Locked → Unlocked		12V → 0V
38	R	Trunk room lamp switch	ON (Open) → OFF (Closed)		0V → 12V
39	L/W	Rear window defogger switch	OFF → ON		12V → 0V
40	R/L	Passenger door switch	OFF (Closed) → ON (Open)		12V → 0V
41	Y	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)		12V → 0V
42	G/B	Trunk lid key unlock switch	OFF (Neutral) → ON (Unlock)		12V → 0V

Component Parts and Harness Connetor Location

NCEL0174



SEL663W

NOTE:
If customer reports a “No Start” condition, request ALL KEYS to be brought to an INFINITI dealer in case of an IVIS (NATS) malfunction.

System Description

=NCEL0175

IVIS (INFINITI Vehicle Immobilizer System—NATS) has the following immobilizer functions:

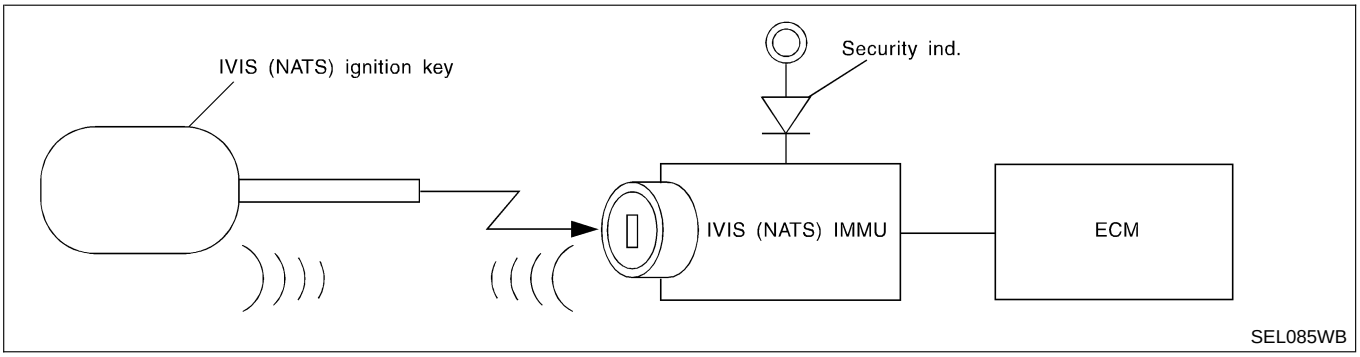
- Since only IVIS (NATS) ignition keys, whose ID nos. have been registered into the ECM and IMMU of IVIS (NATS), allow the engine to run, operation of a stolen vehicle without a IVIS (NATS) registered key is prevented by IVIS (NATS).
  That is to say, IVIS (NATS) will immobilize the engine if someone tries to start it without the registered key of IVIS (NATS).
- All of the originally supplied ignition key IDs (except for card plate key) have been IVIS (NATS) registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the IVIS (NATS) components.
- The security indicator blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, IVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.
- When IVIS (NATS) detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.
- IVIS (NATS) trouble diagnoses, system initialization and additional registration of other IVIS (NATS) ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II IVIS (NATS) software.
  Regarding the procedures of IVIS (NATS) initialization and IVIS (NATS) ignition key ID registration, refer to CONSULT-II operation manual, IVIS/NVIS.
- **When servicing a malfunction of the IVIS (indicated by lighting up of Security Indicator Lamp) or registering another IVIS ignition key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

System Composition

NCEL0176

The immobilizer function of the IVIS (NATS) consists of the following:

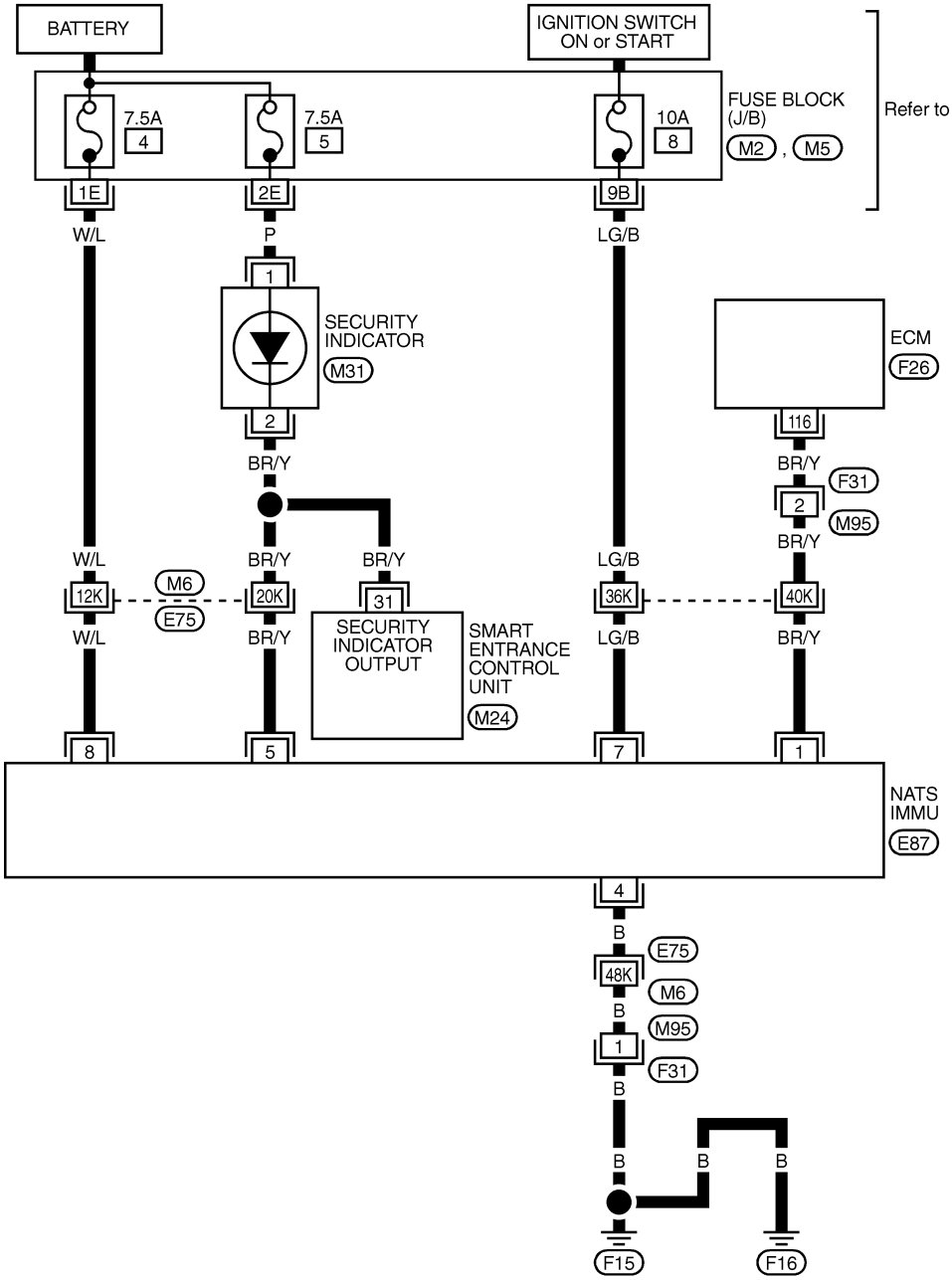
- IVIS (NATS) ignition key
- IVIS (NATS) immobilizer control unit (IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Security indicator

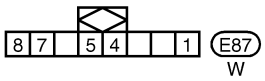


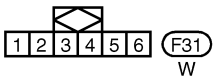
Wiring Diagram — NATS —

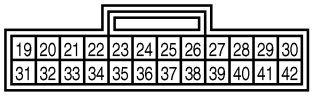
NCEL0177

EL-NATS-01



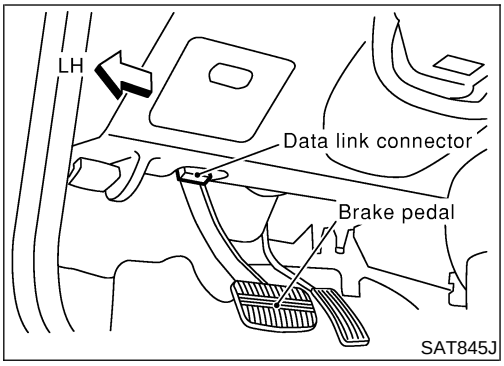






REFER TO THE FOLLOWING.
E75 -SUPER MULTIPLE JUNCTION (SMJ)
M2, M5 -FUSE BLOCK-JUNCTION BOX (J/B)
F26 -ELECTRICAL UNITS

TEL693B



SAT845J

CONSULT-II

NCEL0178

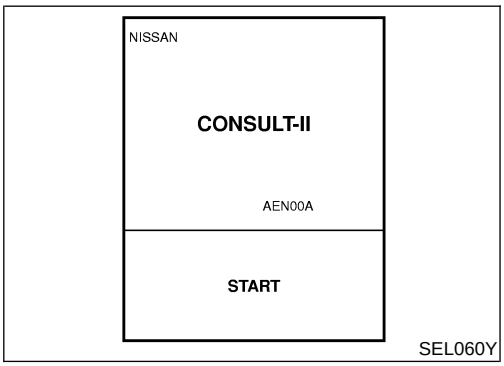
CONSULT-II INSPECTION PROCEDURE

NCEL0178S01

1. Turn ignition switch OFF.
2. Insert IVIS (NATS) program card into CONSULT-II.

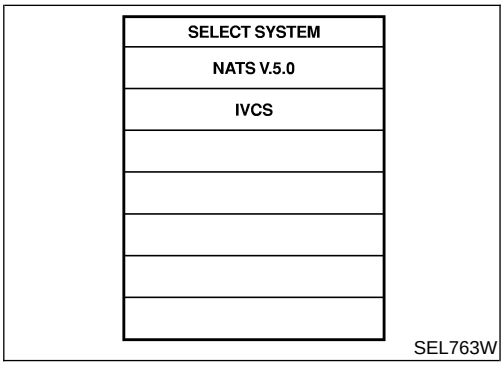
Program card
NATS (AEN00A)

3. Connect CONSULT-II to the data link connector.



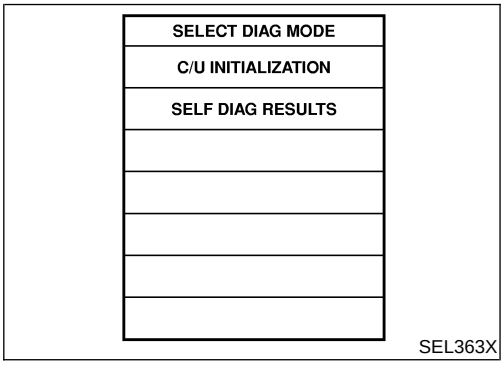
SEL060Y

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



SEL763W

6. Select “NATS V.5.0”.



SEL363X

7. Perform each diagnostic test mode according to each service procedure.
   For further information, see the CONSULT-II Operation Manual, IVIS/NVIS.

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

=NCEL0178S02

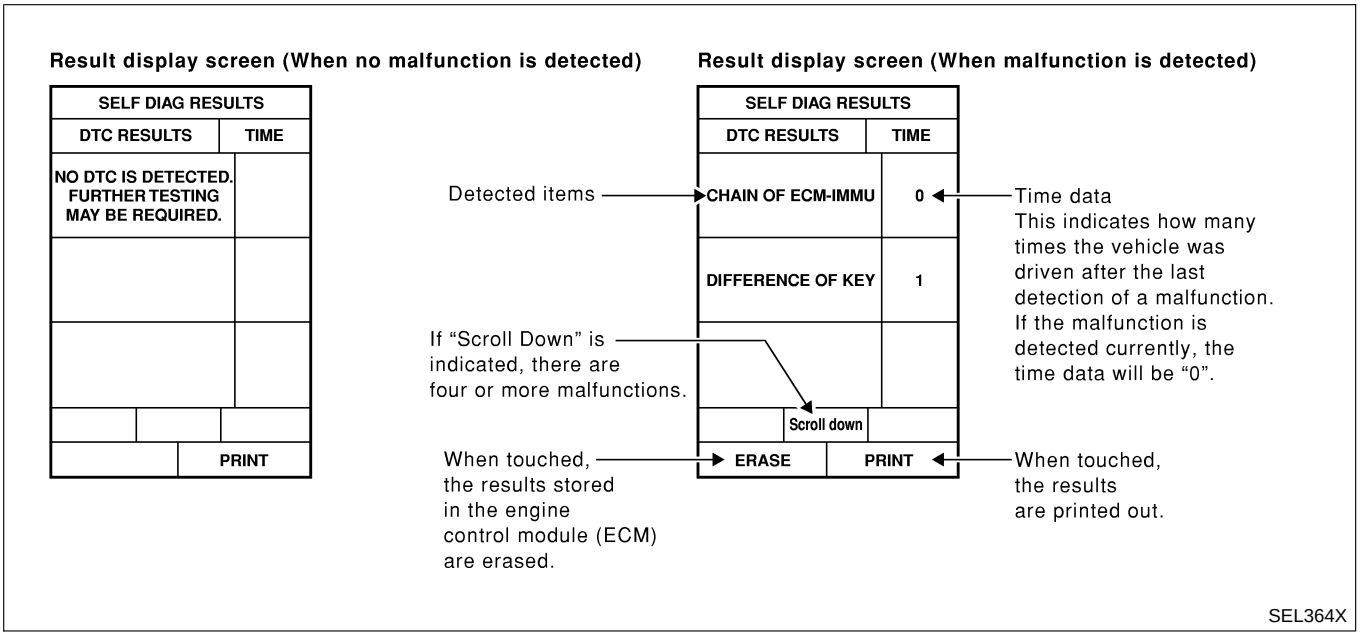
CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization and re-registration of all IVIS (NATS) ignition keys are necessary. [IVIS (NATS) ignition key/IMMU/ECM]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart EL-252.

NOTE:

- **When any initialization is performed, all IDs previously registered will be erased and all IVIS (NATS) ignition keys must be registered again.**
- The engine cannot be started with an unregistered key. In this case, the system will show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.
- "CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during the key registration procedure, even if the system is not malfunctioning.

HOW TO READ SELF-DIAGNOSTIC RESULTS

NCEL0178S03



SEL364X

CONSULT-II (Cont'd)

IVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART

=NCEL0178S04

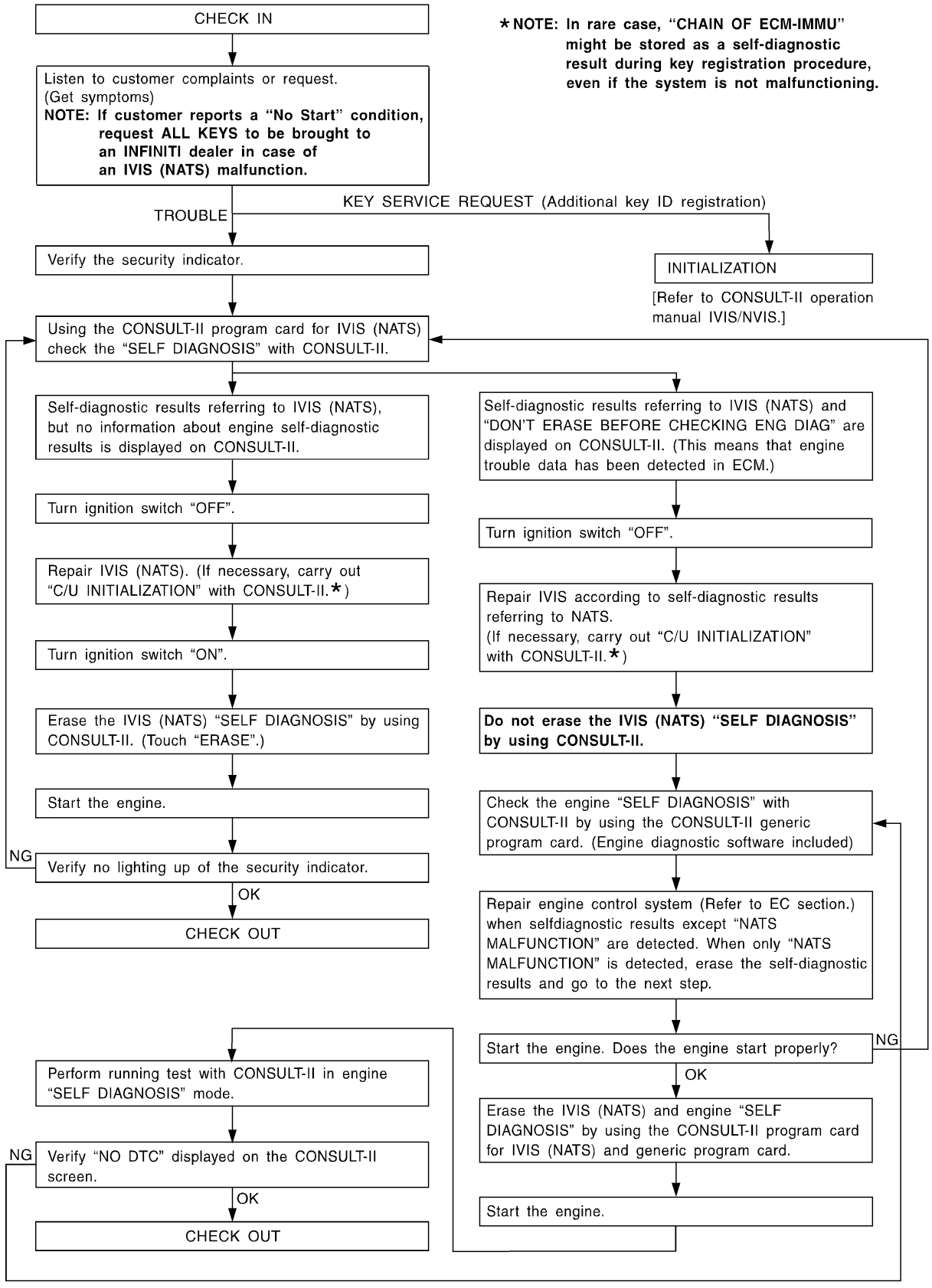
Detected items (NATS program card screen terms)	P No. Code (Self-diagnostic result of "ENGINE"	Malfunction is detected when	Reference page
ECM INT CIRC-IMMU	NATS MALFUNCTION P1613	The malfunction of ECM internal circuit of IMMU communication line is detected.	EL-255
CHAIN OF ECM-IMMU	NATS MALFUNCTION P1612	Communication impossible between ECM and IMMU ("CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during the key registration procedure, even if the system is not malfunctioning.)	EL-256
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-260
CHAIN OF IMMU-KEY	NATS MALFUNCTION P1614	IMMU cannot receive the key ID signal.	EL-261
ID DISCORD, IMM-ECM	NATS MALFUNCTION P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-262
LOCK MODE	NATS MALFUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, IVIS (NATS) will shift the mode to one which prevents the engine from being started. ● Unregistered ignition key is used. ● IMMU or ECM's malfunctioning.	EL-265
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except IVIS (NATS) trouble code has been detected in ECM.	EL-253

Trouble Diagnoses

NCEL0179

WORK FLOW

NCEL0179S01



SEL024X

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

NCEL0179S02

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine cannot be started.	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-255)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-256)	"CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during the 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-260)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-261)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-262)	System initialization has not yet been completed.	F
			ECM	F
	LOCK MODE	PROCEDURE 7 (EL-265)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-253)	Engine trouble data and IVIS (NATS) trouble data have been detected in ECM	—

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

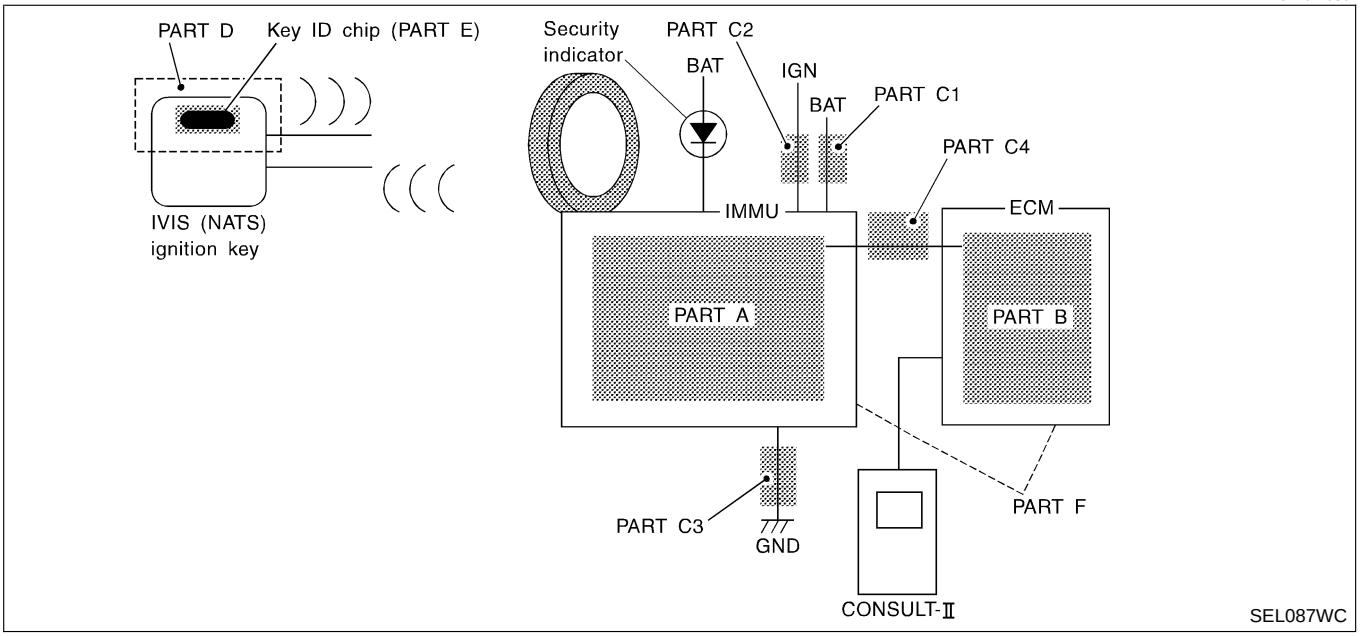
SYMPTOM MATRIX CHART 2
(Non self-diagnosis related item)

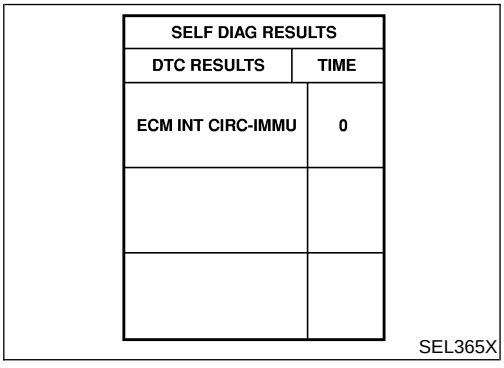
NCEL0179S03

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 6 (EL-263)	Security ind.
		Open circuit between Fuse and IMMU
		Continuation of initialization mode
		IMMU

DIAGNOSTIC SYSTEM DIAGRAM

NCEL0179S04





DIAGNOSTIC PROCEDURE 1

NCEL0179S05

Self-diagnostic results:
"ECM INT CIRC-IMMU" displayed on CONSULT-II screen

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

DIAGNOSTIC PROCEDURE 2

=NCEL0179S06

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:
"CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during the key registration procedure, even if the system is not malfunctioning.

SELF DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

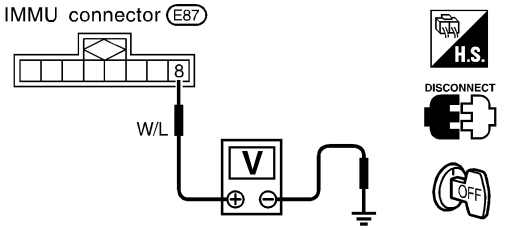
SEL366X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK POWER SUPPLY CIRCUIT FOR IMMU

1. Disconnect IMMU connector.
2. Check voltage between terminal 8 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

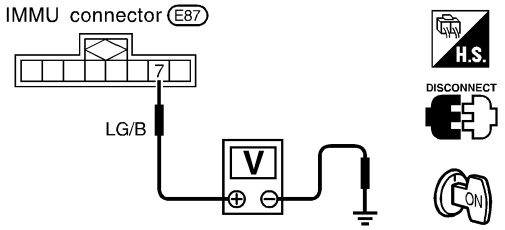
SEL302WA

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following** ● 7.5A fuse [No. 4, 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 terminal 7 of IMMU and ground with CONSULT-II or tester.



Battery voltage should exist.

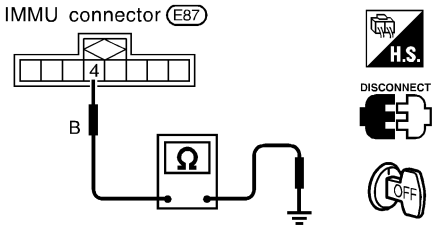
SEL303WB

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following** ● 10A fuse [No. 8, located in the fuse block (J/B)] ● Harness for open or short between fuse and IMMU connector **Ref. part No. C2**

4	CHECK GROUND CIRCUIT FOR IMMU

1. Turn ignition OFF.
2. Check harness continuity between IMMU terminal 4 and ground.



Continuity should exist.

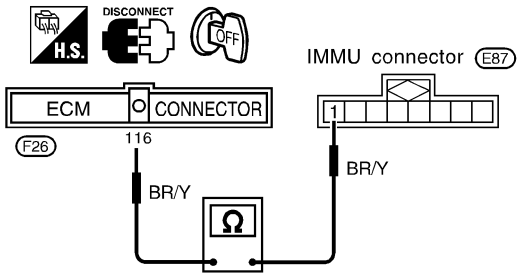
SEL304WA

OK or NG

OK	▶	GO TO 5.
NG	▶	Repair harness. **Ref. part No. C3**

5	CHECK COMMUNICATION LINE OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check harness continuity between ECM terminal 116 and IMMU terminal 1.



Continuity should exist.

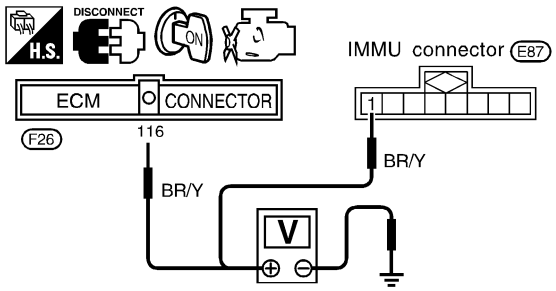
SEL305WA

OK or NG

OK	▶	GO TO 6.
NG	▶	Repair harness or connector. **Ref. part No. C4**

6	CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT

1. Turn ignition ON.
2. Check voltage between ECM terminal 116 or IMMU terminal 1 and ground.



Voltage: 0V

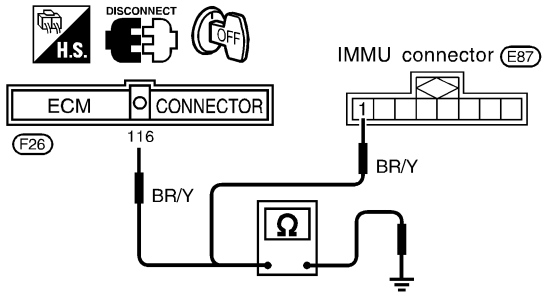
SEL306WA

OK or NG

OK	▶	GO TO 7.
NG	▶	Communication line is short-circuited with battery voltage line or ignition switch ON line. Repair harness or connectors. **Ref. part No. C4**

7	CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between ECM terminal 116 or IMMU terminal 1 and ground.



Continuity should not exist.

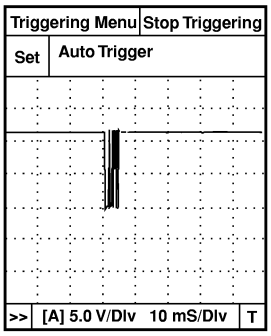
SEL307WA

OK or NG

OK	▶	GO TO 8.
NG	▶	Communication line is short-circuited with ground line. Repair harness or connectors. **Ref. part No. C4**

8	CHECK SIGNAL FROM ECM TO IMMU

1. Check the signal between ECM terminal 116 and ground with CONSULT-II or oscilloscope when ignition switch is turned "ON".
2. Make sure the signals which are shown in the figure below can be detected during 750 msec. just after ignition switch is turned "ON".



SEL730W

OK or NG

OK	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".
NG	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. B** Perform initialization with CONSULT-II. For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 3

=NCEL0179S07

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL367X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all IVIS (NATS) ignition key IDs.
For initialization and registration of IVIS (NATS) ignition key IDs, refer to "CONSULT-II operation manual IVIS/NVIS".

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows above message on the screen.

Can the system be initialized and can the engine be started with the re-registered IVIS (NATS) ignition key?

Yes	▶	Start engine. (END) (Ignition key ID was unregistered. **Ref. part No. D**)
No	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 4

=NCEL0179S08

Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

SEL368X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK IVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered IVIS (NATS) ignition key.

Does the engine start?

Yes	▶	Ignition key ID chip is malfunctioning. Replace the ignition key. **Ref. part No. E** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".
No	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 5

=NCEL0179S09

Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM" displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL369X

NOTE:
"ID DISCORD IMMU-ECM":
Registered ID of IMMU is in discord with that of ECM.

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II. Re-register all IVIS (NATS) ignition key IDs.
For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows above message on the screen.

Can the system be initialized?

Yes	▶	Start engine. (END) (System initialization had not been completed. **Ref. part No. F**)
No	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. F** Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

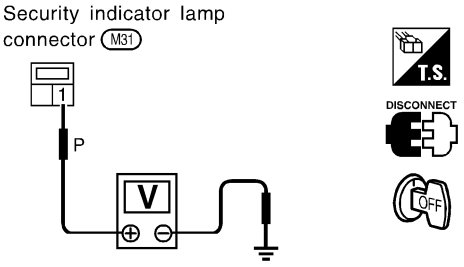
DIAGNOSTIC PROCEDURE 6

=NCEL0179S10

"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

1	CHECK FUSE	
Check 7.5A fuse [No. 5, located in the fuse block (J/B)]. **Is fuse OK?**		
Yes	▶	GO TO 2.
No	▶	Replace fuse.

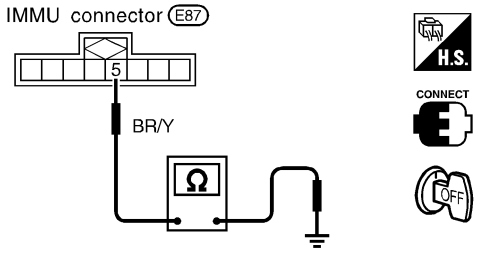
2	CHECK SECURITY INDICATOR LAMP	
1. Install 7.5A fuse. 2. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS". 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting. **Security indicator lamp should be light up.** **OK or NG**		
OK	▶	INSPECTION END
NG	▶	GO TO 3.

3	CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT	
1. Disconnect security indicator lamp connector. 2. Check voltage between security indicator lamp connector terminal 1 and ground.  **Battery voltage should exist.** SEL664W **OK or NG**		
OK	▶	GO TO 4.
NG	▶	Check harness for open or short between fuse and security indicator lamp.

4	CHECK SECURITY INDICATOR LAMP	
Check security Indicator Lamp. **Is security indicator lamp OK?**		
Yes	▶	GO TO 5.
No	▶	Replace security indicator lamp.

5	CHECK IMMU FUNCTION

1. Connect IMMU connector.
2. Disconnect security indicator lamp connector.
3. Check continuity between IMMU terminal 5 and ground.



Cotinuity should exist intermittently.

SEL300WA

OK or NG

OK	▶	Check harness for open or short between security indicator lamp and IMMU.
NG	▶	IMMU is malfunctioning. Replace IMMU. Perform initialization with CONSULT-II. For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

DIAGNOSTIC PROCEDURE 7

=NCEL0179S11

Self-diagnostic results:
"LOCK MODE" displayed on CONSULT-II screen

1	CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT-II screen.

SELF DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL371X

Is CONSULT-II screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	ESCAPE FROM LOCK MODE

1. Turn ignition switch OFF.
2. Turn ignition switch ON with registered key. (Do not start engine.) Wait 5 seconds.
3. Return the key to OFF position.
4. Repeat steps 2 and 3 twice (total of three cycles).
5. Start the engine.

Does engine start?

Yes	▶	System is OK. (Now system is escaped from "LOCK MODE".)
No	▶	GO TO 3.

3	CHECK IMMU ILLUSTRATION

Check IMMU installation. Refer to "How to Replace IMMU" in EL-266.

OK or NG

OK	▶	GO TO 4.
NG	▶	Reinstall IMMU correctly.

4	PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II.
For initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

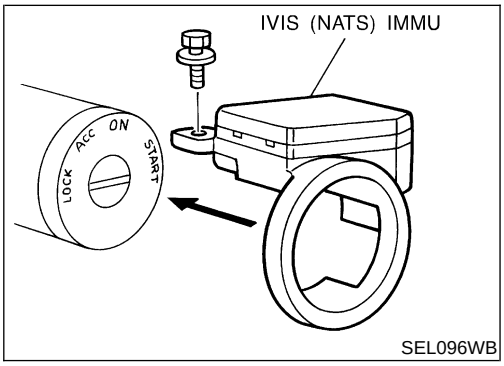
IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL297W

NOTE:
If the initialization is not completed or fails, CONSULT-II shows the above message on the screen.

Can the system be initialized?

Yes	▶	System is OK.
No	▶	GO TO DIAGNOSTIC PROCEDURE 5 to check "CHAIN OF IMMU-KEY", refer to EL-261.



SEL096WB

How to Replace IVIS (NATS) IMMU

NCEL0180

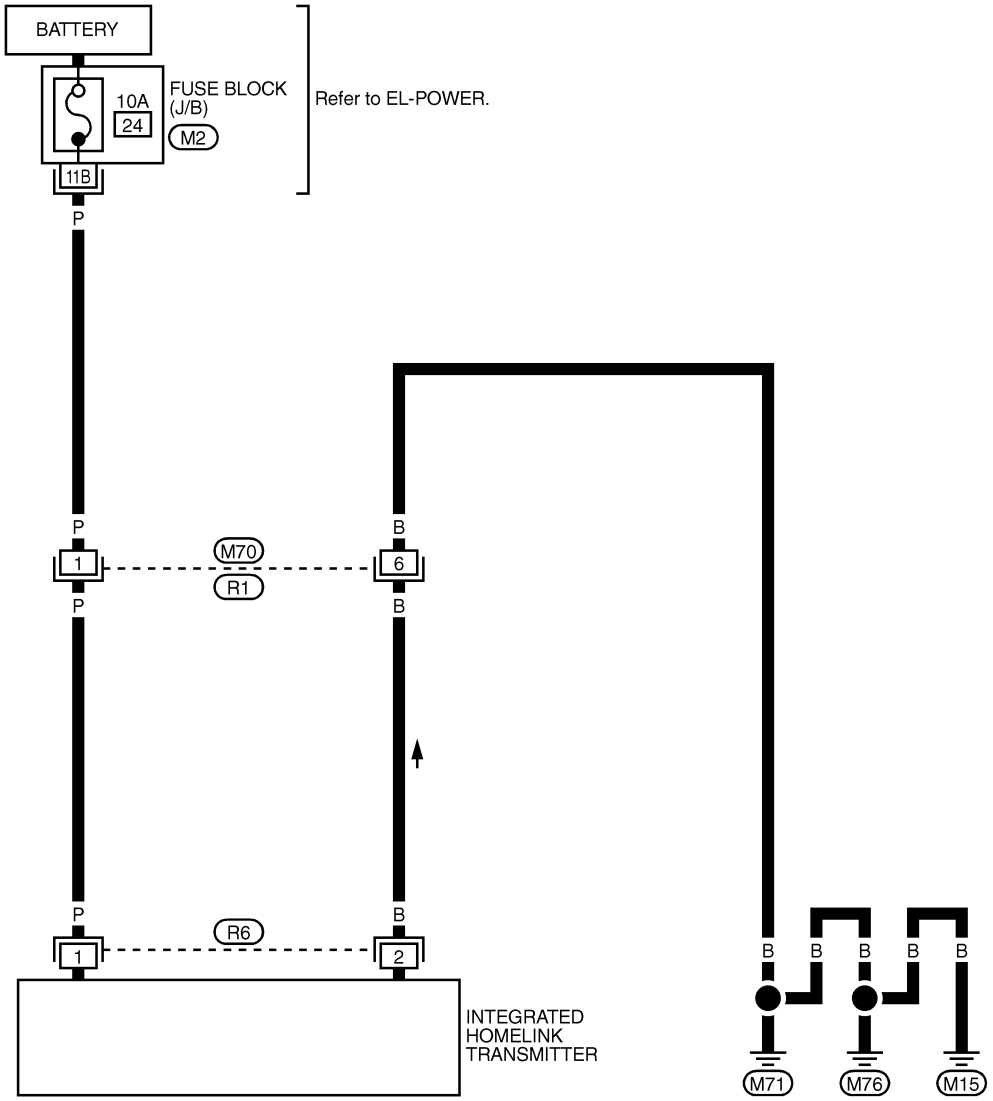
NOTE:

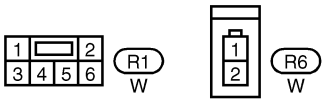
- **If IVIS (NATS) IMMU is not installed correctly, IVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE".**

Wiring Diagram — TRNSMT —

NCEL0127

EL-TRNSMT-01





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

TEL543B

Trouble Diagnoses

NCEL0128

DIAGNOSTIC PROCEDURE

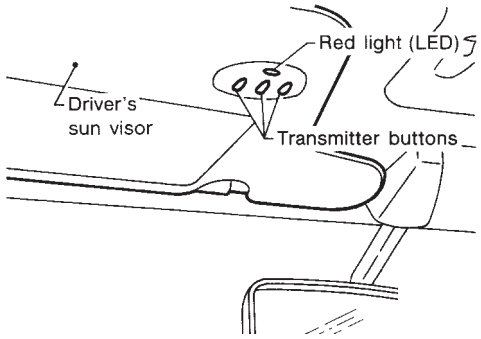
NCEL0128S01

SYMPTOM: Transmitter does not activate receiver.

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

1	PRELIMINARY CHECK

1. Turn ignition switch “OFF”.
2. Does red light (LED) of transmitter illuminate when any button is pressed?



SEL442U

Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK TRANSMITTER FUNCTION

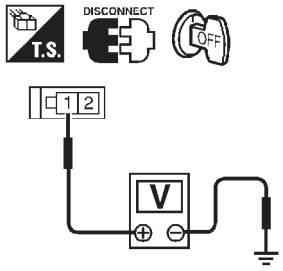
Check transmitter with Tool.
For details, refer to Technical Service Bulletin.

OK or NG

OK	▶	Receiver or handheld transmitter fault, not vehicle related.
NG	▶	Replace transmitter with sun visor assembly.

3	CHECK POWER SUPPLY

1. Disconnect transmitter connector.
2. Turn ignition switch “OFF”.
3. Check voltage between terminal 1 and body ground.



SEL635U

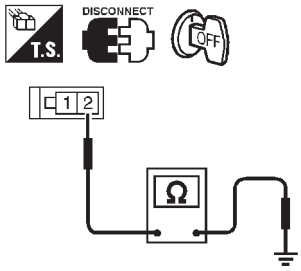
Battery voltage should exist.

OK or NG

OK	▶	GO TO 4.
NG	▶	Check fuse (10A) and repair harness.

4	CHECK GROUND CIRCUIT

Check continuity between terminal 2 and ground.



SEL636U

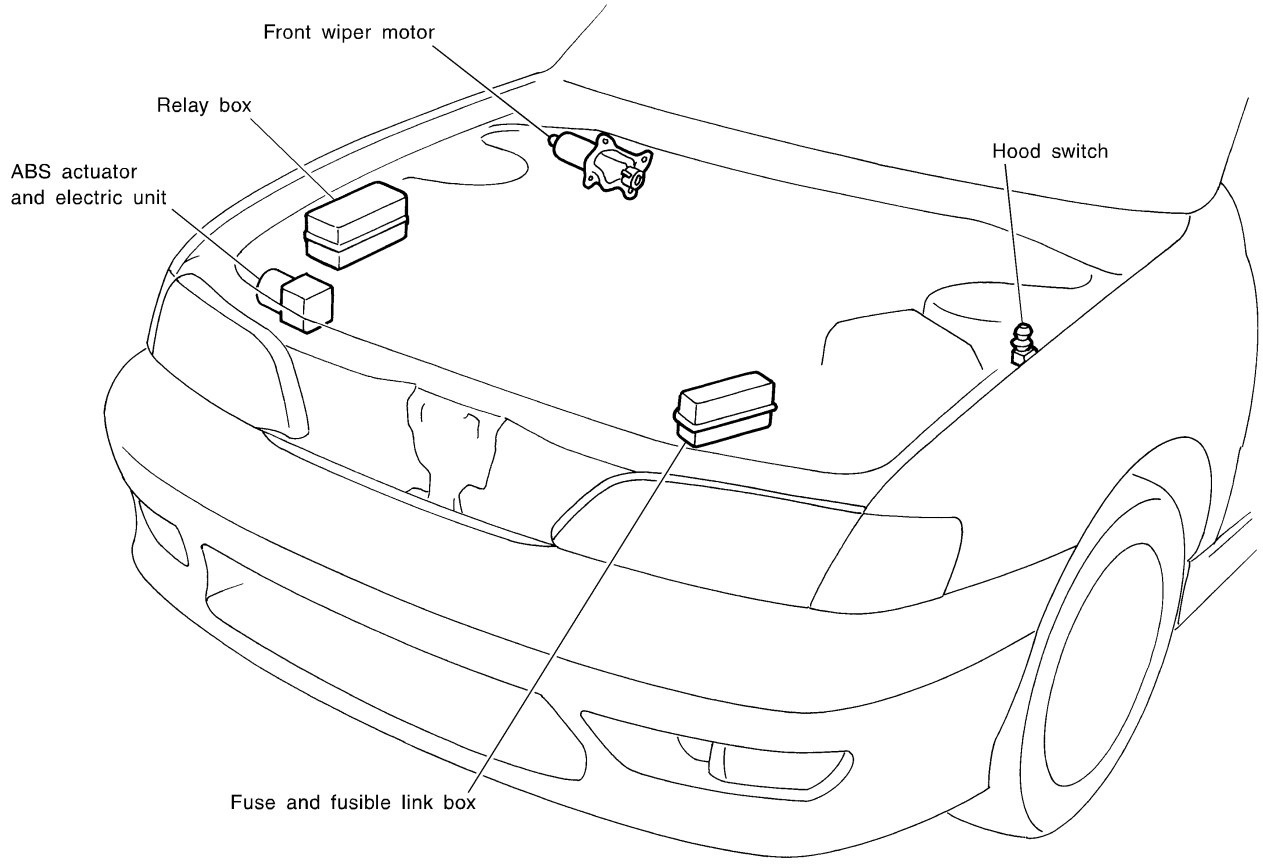
Continuity should exist.

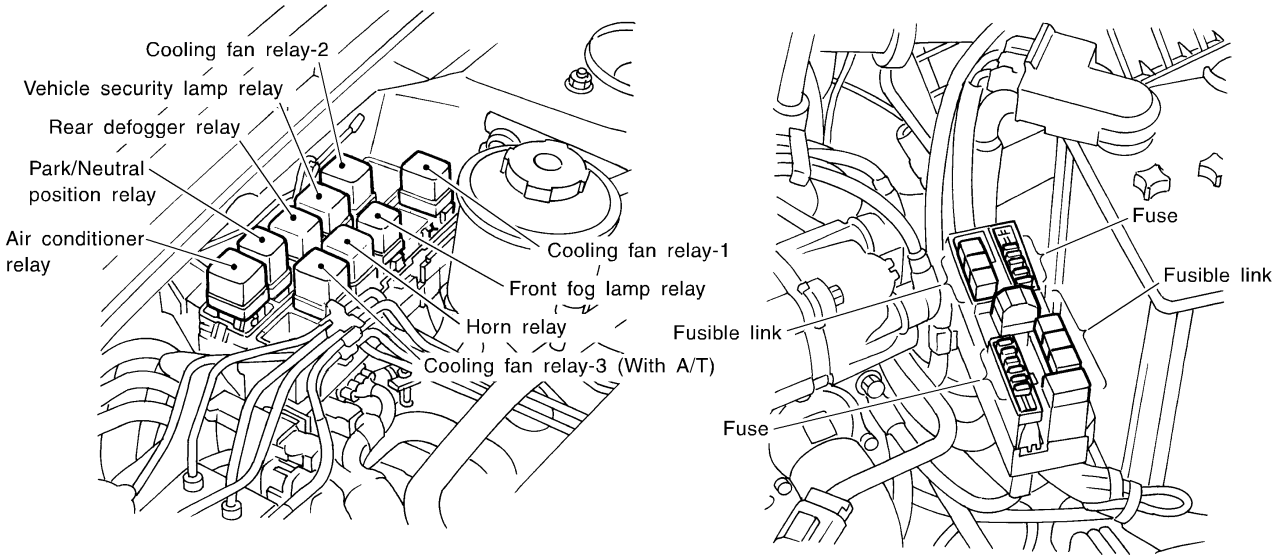
OK or NG

OK	▶	Replace transmitter with sun visor assembly.
NG	▶	Repair harness.

Engine Compartment

NCEL0129



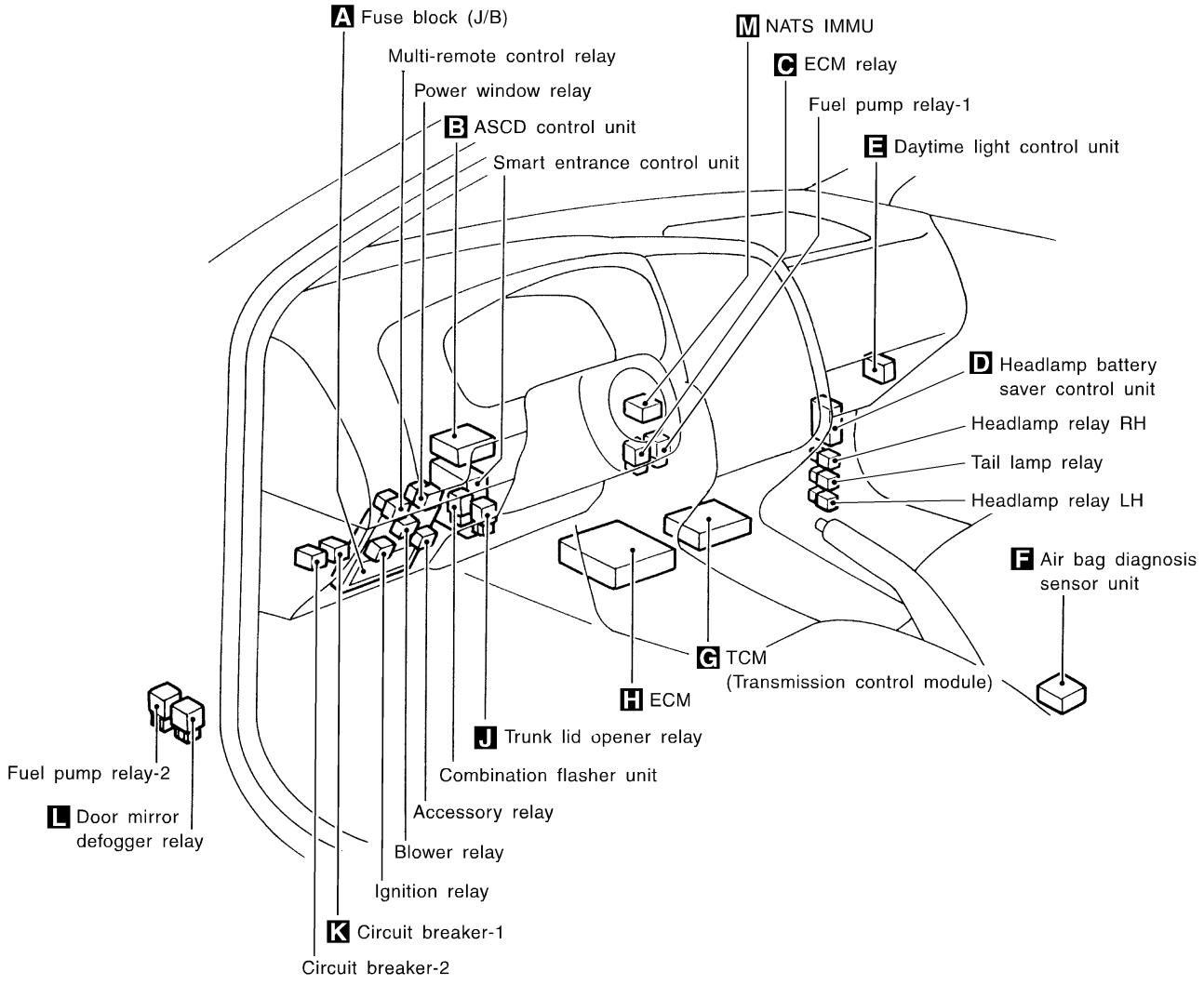


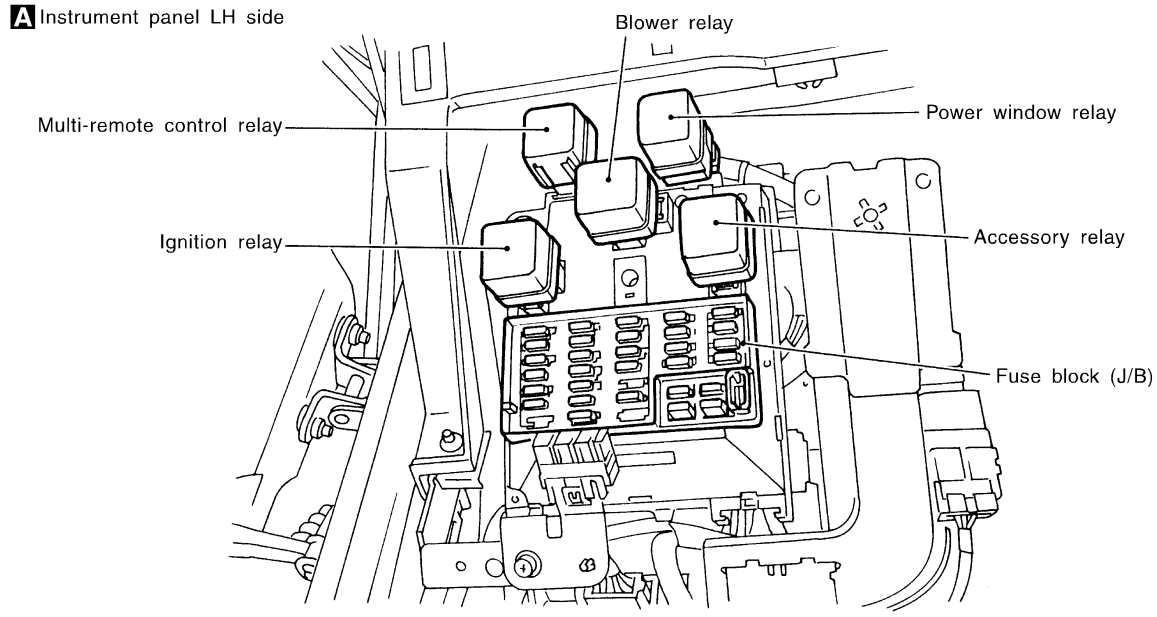
CEL347A

NOTE:

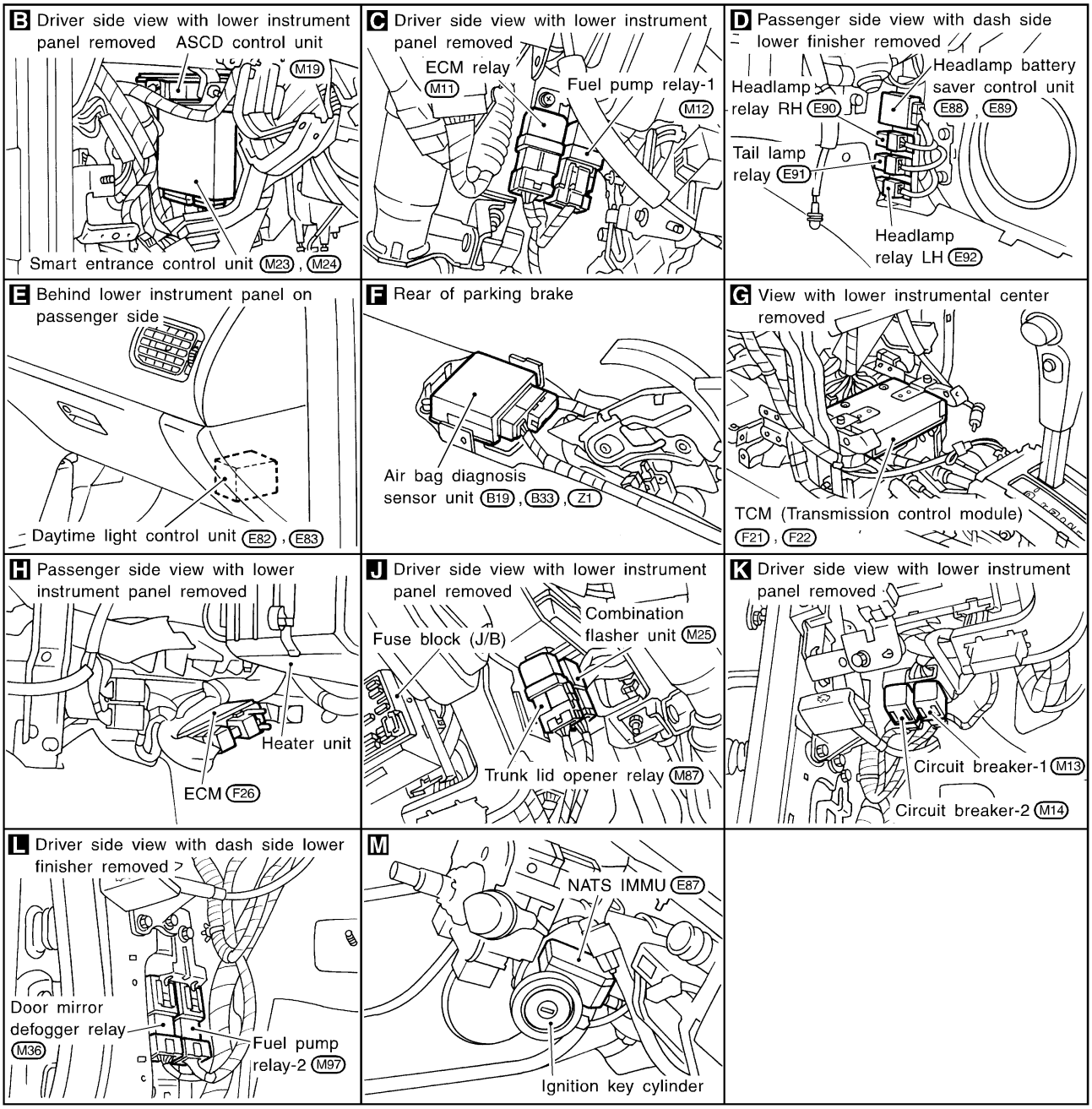
Passenger Compartment

NCEL0130





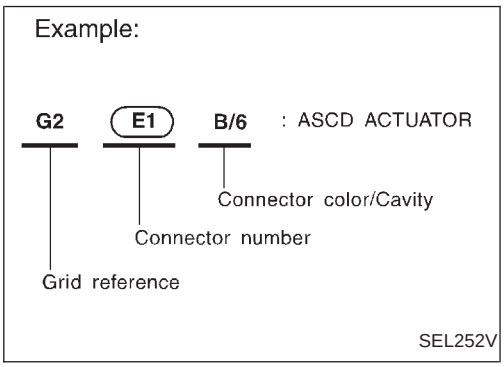
CEL175A


B Driver side view with lower instrument panel removed
ASCD control unit
M19
Smart entrance control unit M23, M24
C Driver side view with lower instrument panel removed
ECM relay
M11
Fuel pump relay-1
M12
D Passenger side view with dash side lower finisher removed
Headlamp relay RH E90
Headlamp battery saver control unit
E88, E89
Tail lamp relay E91
Headlamp relay LH E92
E Behind lower instrument panel on passenger side
Daytime light control unit E82, E83
F Rear of parking brake
Air bag diagnosis sensor unit B19, B33, Z1
G View with lower instrumental center removed
TCM (Transmission control module)
F21, F22
H Passenger side view with lower instrument panel removed
Heater unit
ECM F26
J Driver side view with lower instrument panel removed
Fuse block (J/B)
Combination flasher unit M25
Trunk lid opener relay M87
K Driver side view with lower instrument panel removed
Circuit breaker-1 M13
Circuit breaker-2 M14
L Driver side view with dash side lower finisher removed
Door mirror defogger relay M36
Fuel pump relay-2 M97
M
NATS IMMU E87
Ignition key cylinder

CEL348A

How to Read Harness Layout

NCEL0131



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)

TO USE THE GRID REFERENCE

NCEL0131S01

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

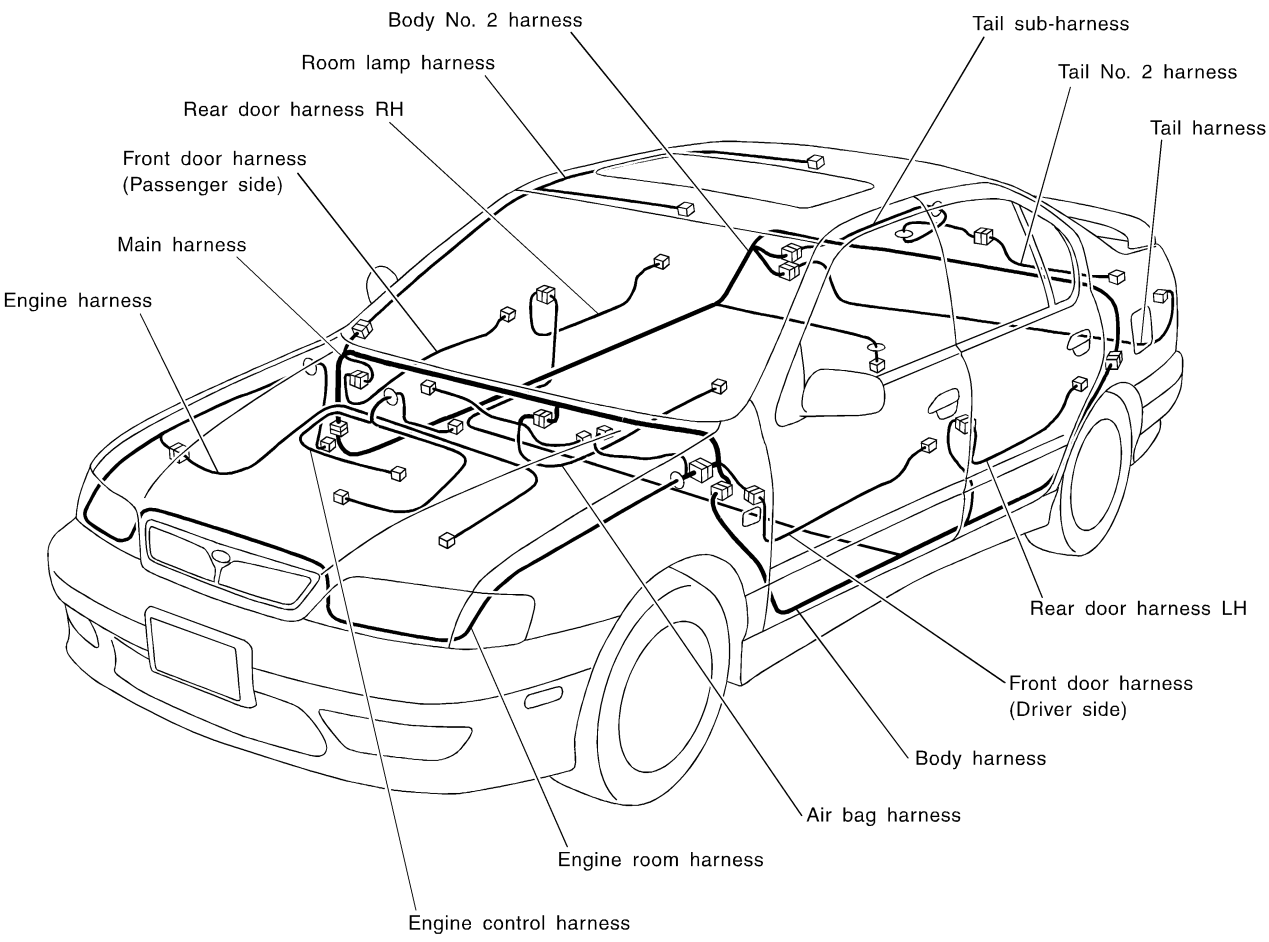
NCEL0131S02

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

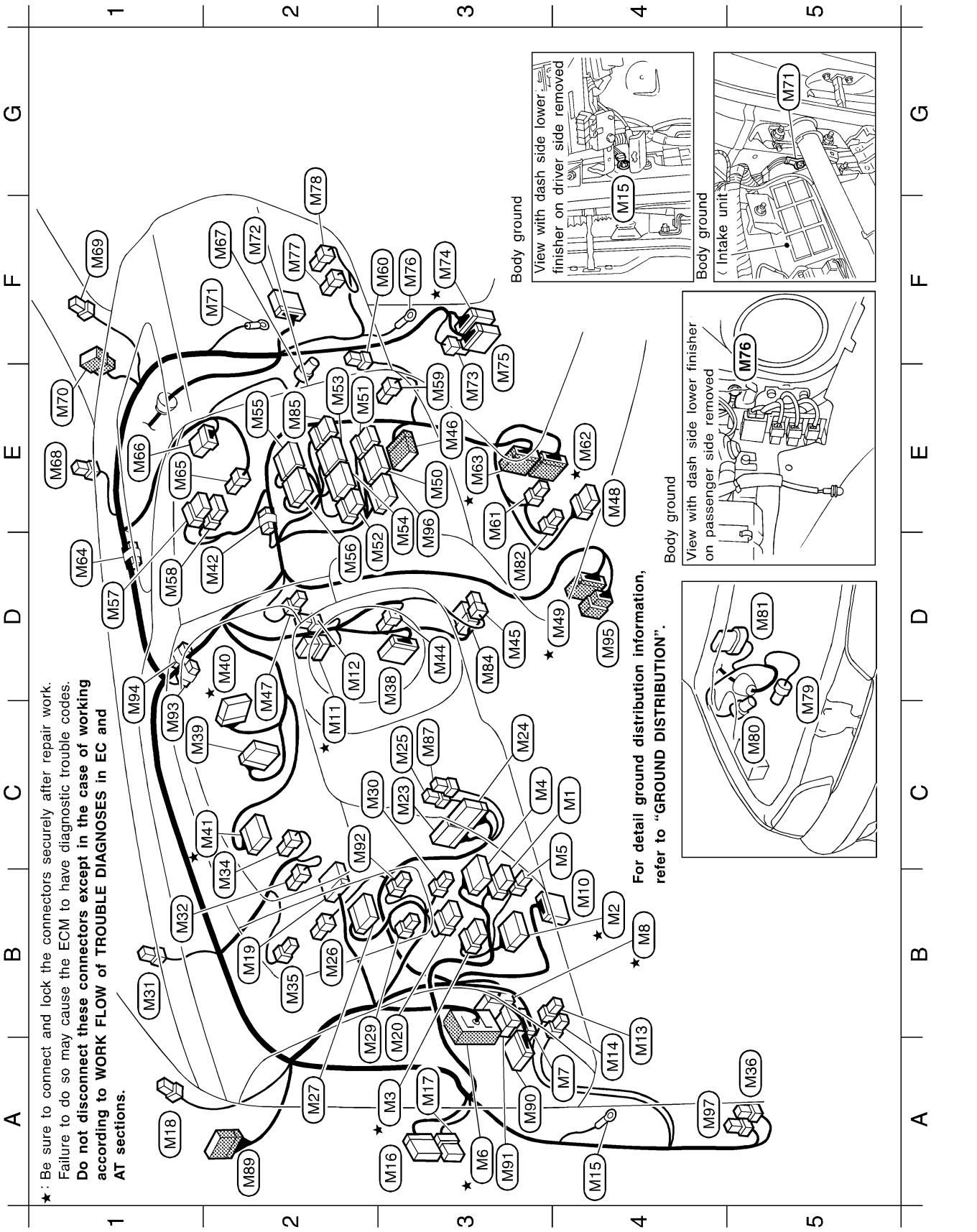
NCEL0132



NOTE:
For detailed ground distribution information, refer to “Ground Distribution”, “GROUND”, EL-18.

Main Harness

NCEL0133



CEL349A

C4 (M1) GY/8 : Fuse block (J/B)
B4 ★(M2) BR/16 : Fuse block (J/B)
A3 ★(M3) W/8 : Fuse block (J/B)
C3 (M4) GY/16 : Fuse block (J/B)
C4 (M5) B/2 : Fuse block (J/B)
A3 ★(M6) SMJ : To (E75)
A4 (M7) W/12 : To (B2)
B4 (M8) W/20 : To (B3)
B4 (M10) W/16 : Data link connector
C2 ★(M11) BR/6 : ECM relay
D2 (M12) L/4 : Fuel pump relay-1
B4 (M13) W/2 : Circuit breaker-1
A4 (M14) GY/2 : Circuit breaker-2
A4 (M15) – : Body ground
A3 (M16) W/18 : To (D1)
A3 (M17) W/8 : To (D2)
A1 (M18) BR/2 : Tweeter LH
B2 (M19) BR/24 : ASCD control unit
B3 (M20) BR/6 : Multi-remote control relay
C3 (M23) W/18 : Smart entrance control unit
C3 (M24) B/24 : Smart entrance control unit
C3 (M25) B/3 : Combination flasher unit
B2 (M26) L/2 : ASCD clutch switch (With M/T)
A2 (M27) GY/12 : Door mirror remote control switch
B2 (M29) W/3 : Illumination control switch
C2 (M30) L/4 : Power window relay
B1 (M31) BR/2 : Security indicator lamp
B1 (M32) B/2 : Stop lamp switch
C2 (M34) L/2 : ASCD brake switch
B2 (M35) L/2 : Clutch interlock switch (With M/T)
A5 (M36) L/4 : Door mirror defogger relay
D3 (M38) BR/10 : Mode door motor (With manual A/C)
C1 (M39) BR/20 : Combination meter
D2 ★(M40) BR/24 : Combination meter
C1 ★(M41) W/24 : Combination meter
D2 (M42) W/2 : Diode
D3 (M44) W/3 : Mode door motor (With auto A/C)
D3 (M45) W/3 : Air mix door motor (With auto A/C)
E3 (M46) W/20 : To (Z3)
D2 (M47) W/2 : In-vehicle sensor (With auto A/C)
E4 (M48) W/8 : A/T device (With A/T)

D4 ★(M49) W/18 : To (F23)
E3 (M50) W/10 : Audio
E2 (M51) W/6 : Audio
D2 (M52) W/6 : Fan switch (With manual A/C)
E3 (M53) B/16 : Push control unit (With manual A/C)
E3 (M54) B/20 : Push control unit (With manual A/C)
E2 (M55) GY/16 : A/C auto amp. (With auto A/C)
D2 (M56) GY/20 : A/C auto amp. (With auto A/C)
D1 (M57) W/8 : Hazard switch
D1 (M58) W/6 : Rear window defogger switch
E3 (M59) W/2 : Intake sensor (With auto A/C)
F2 (M60) W/3 : Thermo control amp.
E3 (M61) B/2 : Cigarette lighter
E4 ★(M62) W/20 : To (F24)
E3 ★(M63) W/16 : To (F25)
D1 (M64) W/2 : Diode
E1 (M65) W/4 : Fan control amp. (With auto A/C)
E1 (M66) W/8 : Intake door motor
F2 (M67) B/2 : Glove box lamp
E1 (M68) B/2 : Sunload sensor (With auto A/C)
F1 (M69) BR/2 : Tweeter RH
E1 (M70) W/6 : To (R1)
F2 (M71) – : Body ground
F2 (M72) W/18 : To (D21)
E3 (M73) W/2 : To (B101)
F3 ★(M74) G/10 : To (B102)
F3 (M75) W/20 : To (B103)
F3 (M76) – : Body ground
F2 (M77) BR/4 : Fan resistor (With manual A/C)
G2 (M78) W/2 : Blower motor
C5 (M79) GY/2 : Power steering oil pressure switch
C5 (M80) GY/4 : ASCD pump
D5 (M81) SB/6 : Front wiper motor
D3 (M82) W/2 : Ashtray illumination
D3 (M84) B/6 : Air mix door motor (With manual A/C)
E2 (M85) BR/6 : PTC
C3 (M87) L/4 : Trunk lid opener relay
A2 (M89) W/12 : To (R8)

A3 (M90) W/12 : To (B28)
A3 (M91) W/8 : To (B29)
C2 (M92) B/2 : Trunk lid opener switch
C1 (M93) L/4 : Diode
D1 (M94) W/6 : Joint connector-4 (Diode)
D4 (M95) W/6 : To (F31)
E3 (M96) W/16 : AUDIO
A4 (M97) L/4 : Fuel pump relay-2

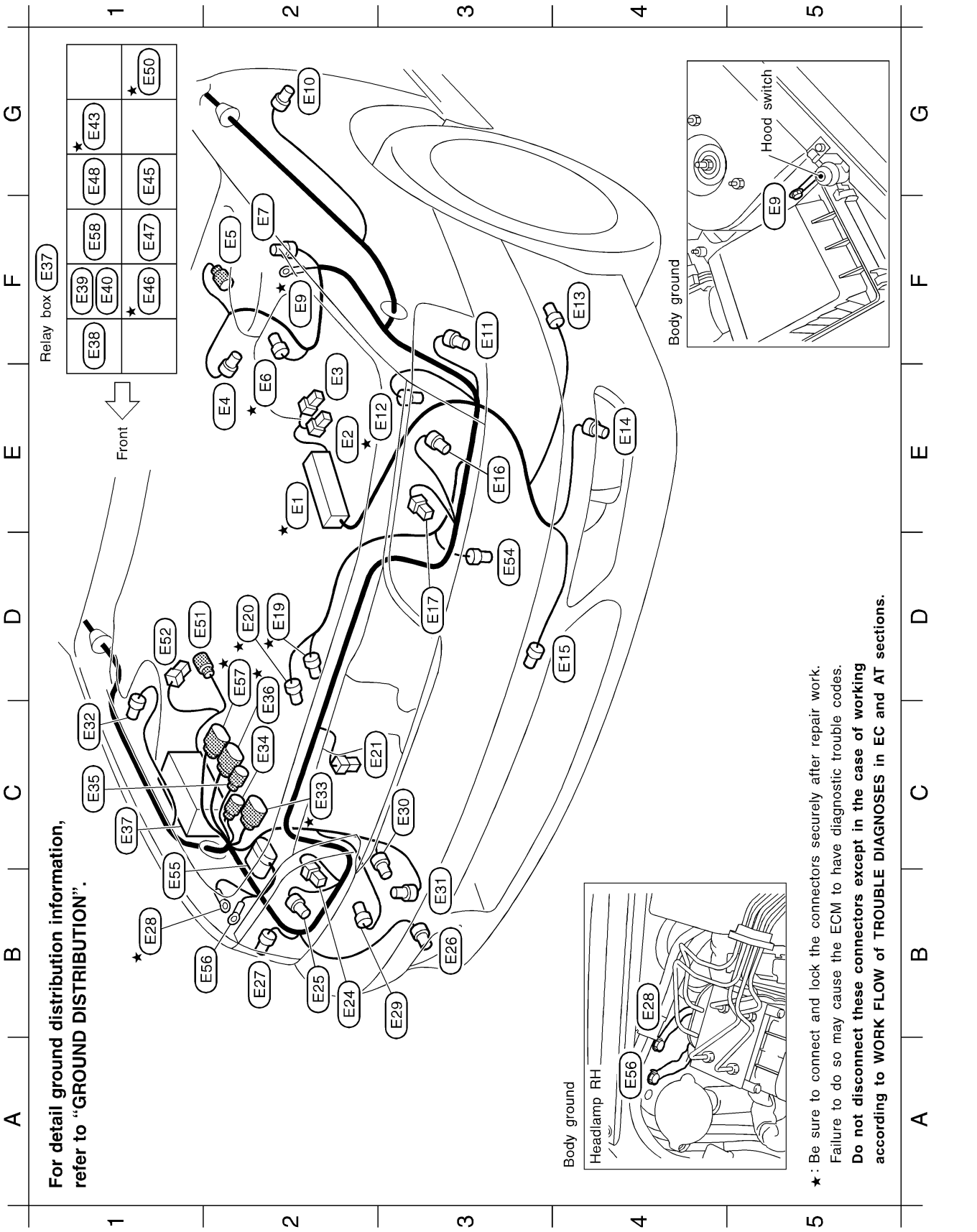
Diode (M42)
Combination meter (Brake) — Parking brake switch
Diode (M64)
Trunk room lamp — Trunk room lamp switch
Diode (M93) /Joint connector-4 (Diode) (M94)
Diode (M94)
Combination switch (Lighting switch) — ECM
Combination switch (Lighting switch) — ECM
Diode (M93)
Rear window defogger relay — ECM
Fuse block (J/B) — Headlamp battery saver control unit
Power window main switch
Power window relay
Smart entrance control unit

★: Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

CEL350A

Engine Room Harness

NCEL0134



For detail ground distribution information, refer to "GROUND DISTRIBUTION".

★: 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.**

CEL179A

E2★ E1 – : Fuse and Fusible link box
E2 E2 B/1 : Battery (+)
E2 E3 B/1 : Battery (+)
E2 E4 GY/2 : Brake fluid level switch
F2 E5 BR/2 : Front wheel sensor LH
E2★ E6 GY/2 : Dropping resistor (With A/T)
F2 E7 GY/2 : Hood switch
F2★ E9 – : Body ground
G2 E10 BR/2 : Side turn signal lamp LH
F3 E11 BR/2 : Front turn signal lamp LH
E3★ E12 GY/2 : Intake air temperature sensor
F4 E13 BR/2 : Front side marker lamp LH
E4 E14 GY/2 : Front fog lamp LH
D4 E15 B/2 : Ambient sensor (With auto A/C)
E3 E16 B/2 : Parking lamp LH
D3 E17 B/3 : Headlamp LH
D2★ E19 GY/4 : Cooling fan motor-1
D2★ E20 *1 : Cooling fan motor-2
C2 E21 B/1 : Horn high
B2 E24 B/3 : Headlamp RH
B2 E25 B/2 : Parking lamp RH
B3 E26 GY/2 : Front fog lamp RH

*1 SB/4: With A/T
SB/2: With M/T

B2 E27 BR/2 : Front turn signal lamp RH
B1★ E28 – : Body ground
B3 E29 BR/2 : Front side marker lamp RH
C3 E30 GY/2 : Front washer motor
B3 E31 BR/2 : Washer level switch
C1 E32 BR/2 : Side turn signal lamp RH
C2★ E33 GY/9 : To E101
C2 E34 GY/1 : To E102
C1 E35 GY/1 : To E103
C2★ E36 GY/8 : To E104
C1, F1 E37 – : Relay box
F1 E38 L/4 : Air conditioner relay
F1 E39 GY/6 : Park/Neutral position relay (With A/T)
F1 E40 L/4 : Park/Neutral position relay (With M/T)
G1★ E43 BR/6 : Cooling fan relay-2
G1 E45 L/4 : Front fog lamp relay
F1★ E46 BR/6 : Cooling fan relay-3
F1 E47 BR/6 : Horn relay
G1 E48 BR/6 : Vehicle security lamp relay
G1★ E50 BR/6 : Cooling fan relay-1
D1 E51 GY/2 : Front wheel sensor RH
D1 E52 B/1 : Horn low
D3 E54 B/3 : Refrigerant pressure sensor
B1 E55 SMJ : ABS actuator and electric unit
B2 E56 – : Body ground
D2★ E57 GY/6 : To E130
F1 E58 BR/6 : Rear defogger relay

★ : 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.

CEL351A

For detail ground distribution information, refer to "GROUND DISTRIBUTION".

E71 W/4 : Fuse block (J/B)
★ E72 W/16 : Fuse block (J/B)
E73 B/2 : Fuse block (J/B)
★ E75 SMJ : To M6
E76 W/6 : Ignition switch
E77 BR/2 : Key switch
E78 BR/8 : Combination switch (Lighting switch)
E79 BR/4 : Combination switch (Lighting switch)
E80 W/3 : Combination switch (Front fog lamp switch)
E81 GY/8 : Combination switch (Front wiper switch)
E82 GY/6 : Daytime light control unit (For Canada)
E83 GY/8 : Daytime light control unit (For Canada)
E84 W/8 : To B104
E87 W/8 : NATS IMMU
E88 W/6 : Headlamp battery saver conterol unit
E89 W/8 : Headlamp battery saver control unit
E90 L/4 : Headlamp relay RH
E91 L/4 : Tail lamp relay
E92 L/4 : Headlamp relay LH

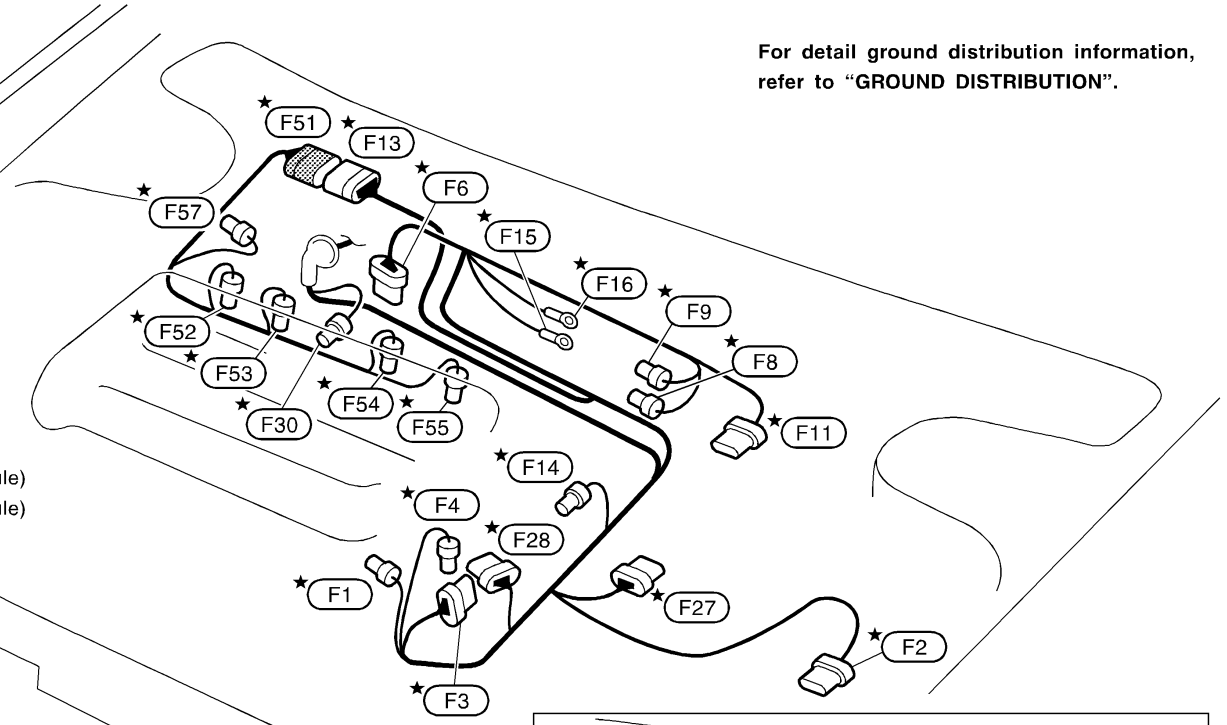
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

CEL181A

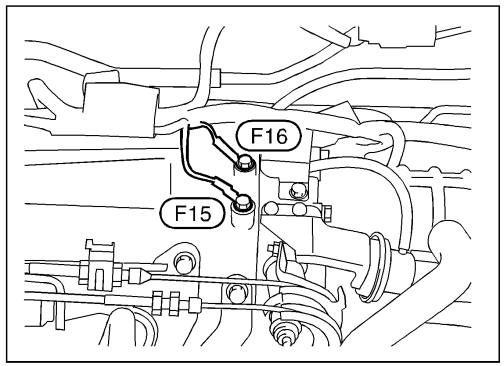
Engine control harness

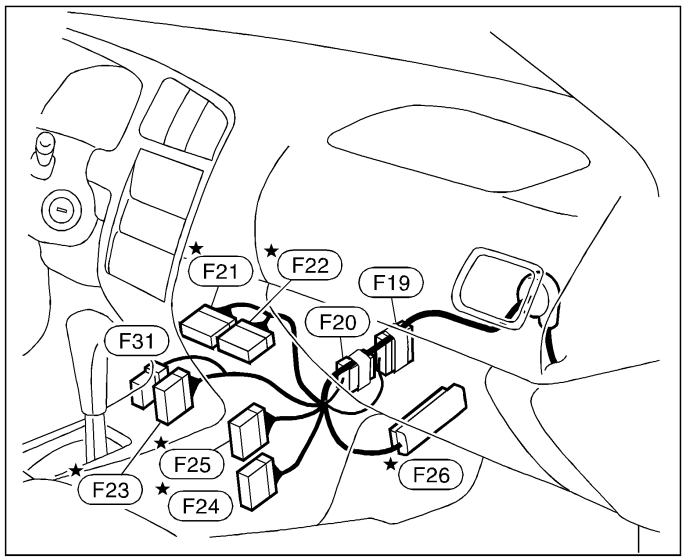
★ F1	GY/3	:	Front heated oxygen sensor
★ F2	GY/5	:	Mass air flow sensor
★ F3	GY/6	:	Distributor
★ F4	GY/2	:	Distributor
★ F6	G/8	:	To E123
★ F8	GY/3	:	Throttle position switch
★ F9	BR/3	:	Throttle position sensor
★ F11	GY/6	:	IACV-AAC valve
★ F13	GY/10	:	To F51
★ F14	LGY/2	:	EGR temperature sensor
★ F15	–	:	Engine ground
★ F16	–	:	Engine ground
F19	L/12	:	Joint connector-1
F20	GY/6	:	Joint connector-2
★ F21	W/24	:	TCM (Transmission control module)
★ F22	GY/24	:	TCM (Transmission control module)
★ F23	W/18	:	To M49
★ F24	W/20	:	To M62
★ F25	W/16	:	To M63
★ F26	SMJ	:	ECM
★ F27	L/8	:	To E128
★ F28	G/6	:	EGR volume control valve
★ F30	GY/4	:	Rear heated oxygen sensor
F31	W/6	:	To M95

For detail ground distribution information, refer to "GROUND DISTRIBUTION".



Engine ground





Engine control sub-harness

★ F51	GY/10	:	To F13
★ F52	GY/2	:	Injector No. 1
★ F53	GY/2	:	Injector No. 2
★ F54	GY/2	:	Injector No. 3
★ F55	GY/2	:	Injector No. 4
★ F57	L/2	:	EVAP canister purge volume control solenoid valve

★: 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.**

CEL352A

NCEL0135

Body Harness

NCEL0136

Body harness

B1	W/12	: Fuse block (J/B)
B2	W/12	: To M7
★ B3	W/20	: To M8
B4	B/3	: Front door switch (Driver side)
B5	OR/2	: Satellite sensor LH
B6	–	: Body ground
B7	–	: Body ground
B8	W/4	: Seat belt pre-tensioner LH
B9	W/8	: To D41
★ B10	G/12	: To B120
B11	BR/1	: Rear door switch LH
B12	Y/2	: Side air bag module LH
B13	W/3	: Seat belt buckle switch (Driver side)
B14	W/2	: Power seat switch (Driver side) Via sub-harness
B15	GY/3	: Heated seat (Driver side) Via sub-harness
B17	B/1	: Parking brake switch
B18	W/8	: To B51
B19	Y/12	: Air bag diagnosis sensor unit
B20	GY/3	: Heated seat (Passenger side) Via sub-harness
B21	Y/2	: Side air bag module RH
B22	BR/1	: Front door switch (Passenger side)
★ B23	Y/2	: Satellite sensor RH
B24	–	: Body ground
B25	–	: Body ground
B26	W/4	: Seat belt pre-tensioner RH
B27	W/8	: To D61
B28	W/12	: To M90
B29	W/8	: To M91
B30	W/22	: IVCS unit
B31	W/16	: IVCS unit
B32	W/12	: Handset
B33	Y/12	: Air bag diaghosis sensor unit

Body sub-harness-1

B51	W/8	: To B18
B52	L/4	: Heated seat switch LH
B53	W/4	: Heated seat switch RH

Body sub-harness-2

B71	B/1	: Rear window defogger (–)
B72	–	: 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.

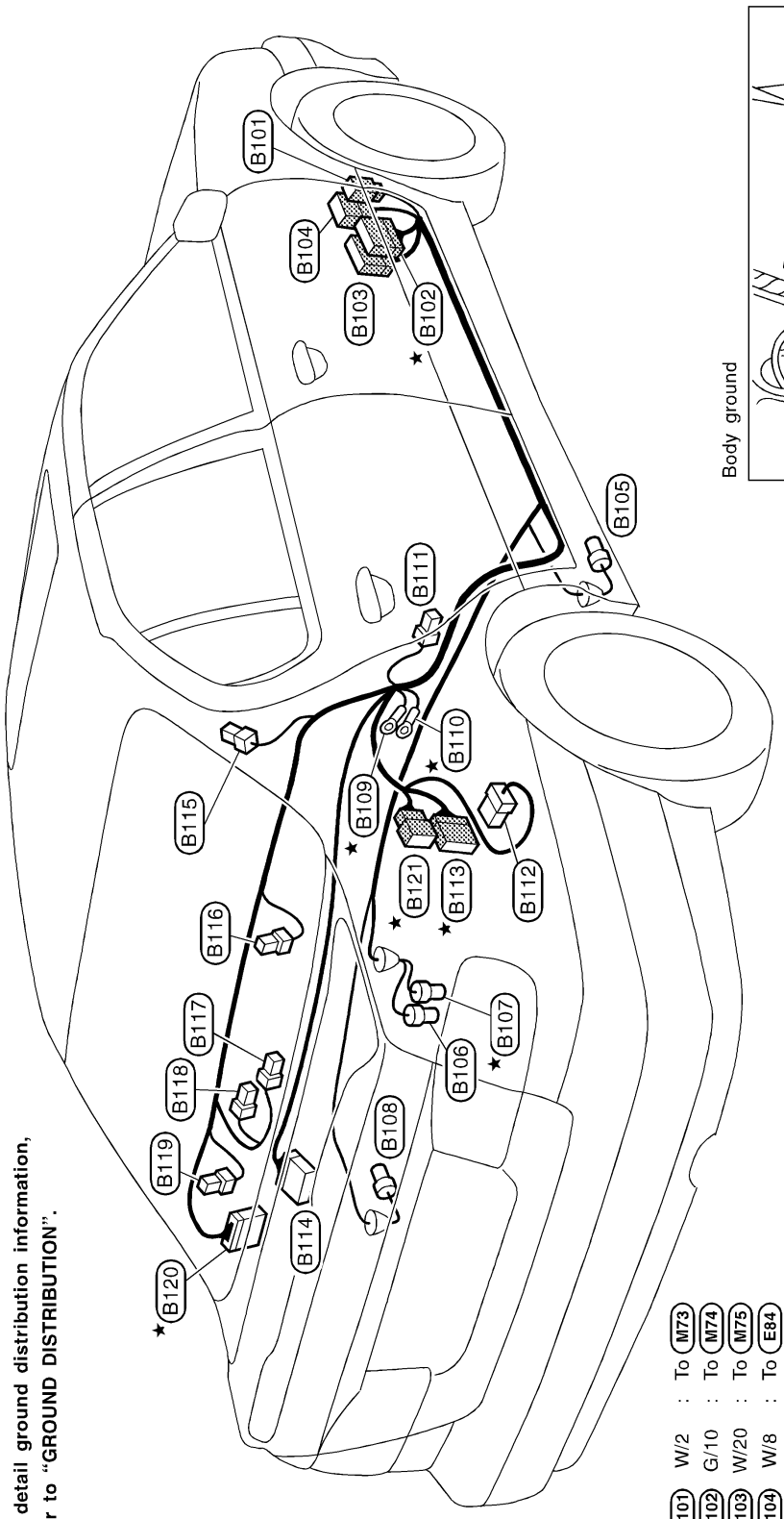
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

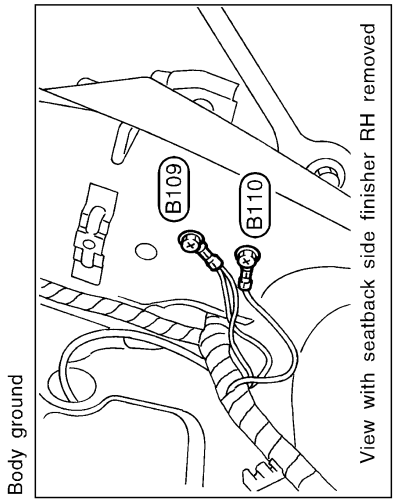
For detail ground distribution information, refer to "GROUND DISTRIBUTION".

CEL353A

Body No. 2 Harness

NCEL0137





B101	W/2	: To M73		B119	BR/2	: Rear speaker LH	
★ B102	G/10	: To M74		★ B120	G/12	: To B10	
B103	W/20	: To M75		B121	W/6	: To T31	
B104	W/8	: To E84					
B105	GY/2	: Rear wheel sensor RH					
B106	GY/2	: Fuel pump					
★ B107	GY/4	: Fuel level sensor unit					
B108	BR/2	: Rear wheel sensor LH					
★ B109	–	: Body ground					
★ B110	–	: Body ground					
B111	BR/1	: Rear door switch RH					
B112	W/6	: Power antenna					
★ B113	W/18	: To T1					
B114	GY/26	: BOSE speaker amp.					
B115	B/1	: Rear window defogger (+)					
B116	BR/2	: Rear speaker RH					
B117	W/2	: Trunk room lamp					
B118	W/2	: High-mounted stop lamp (Without rear spoiler)					

★: 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.

For detail ground distribution information, refer to "GROUND DISTRIBUTION".

CEL184A

Tail & Tail No. 2 Harness

NCEL0138

Tail harness

★ T1	W/18	: To B113	
T3	BR/2	: Rear side marker lamp RH	
T4	BR/2	: Rear combination lamp RH (Fender)	
T5	W/3	: Rear combination lamp RH (Fender)	
T6	–	: Body ground	
T7	–	: Body ground	
T8	W/3	: Rear combination lamp LH (Fender)	
T9	BR/2	: Rear combination lamp LH (Fender)	
T10	BR/2	: Rear side marker lamp LH	
★ T20	GY/8	: To T19	
T21	W/2	: Trunk lid opener actuator	

Tail sub-harness

★ T11	B/2	: EVAP canister vent control valve
★ T12	G/2	: Vacuum cut valve bypass valve
★ T13	GY/3	: EVAP control system pressure sensor
★ T19	GY/8	: To T20

Tail No. 2 sub-harness

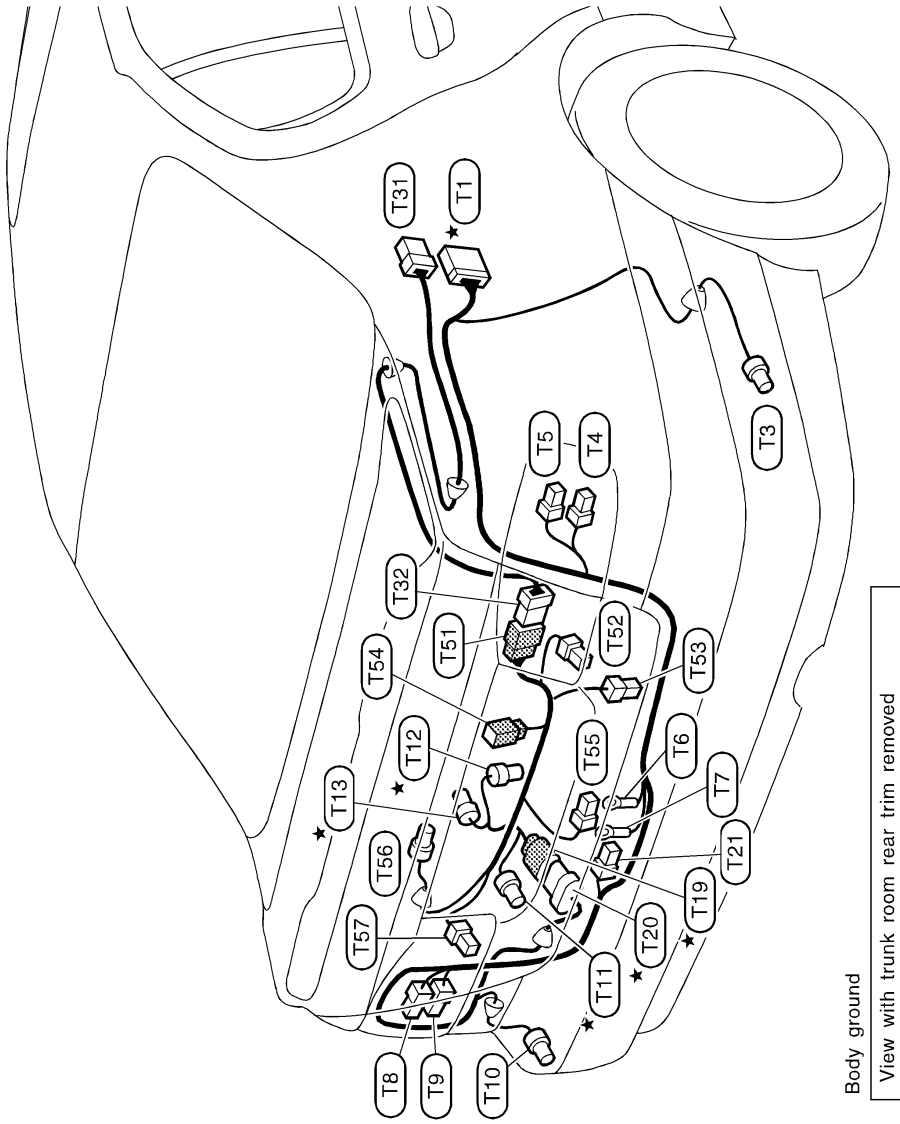
T31	W/6	: To B121
T32	W/6	: To T51

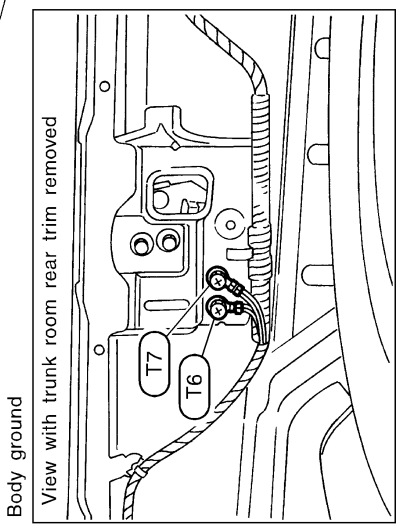
Tail No. 2 harness

T51	W/6	: To T32
T52	W/4	: Rear combination lamp RH (Trunk lid)
T53	W/2	: Trunk lid key cylinder switch (Unlock switch)
T54	BR/2	: High-mounted stop lamp (With rear spoiler)
T55	B/2	: Trunk room lamp switch
T56	BR/2	: License lamp
T57	W/4	: Rear combination lamp LH (Trunk lid)

For detail ground distribution information, refer to "GROUND DISTRIBUTION".

★: 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.**





CEL185A

Engine Harness

NCEL0139

★ E101	GY/9	: To E33	
E102	GY/1	: To E34	
E103	GY/1	: To E35	
★ E104	GY/8	: To E36	
E105	–	: Body ground	
E106	GY/2	: Alternator	
E107	–	: Alternator	
E108	B/1	: Compressor	
E109	–	: Engine ground	
E111	B/1	: Thermal transmitter	
★ E112	GY/2	: Engine coolant temperature sensor	
E113	GY/1	: Oil pressure switch	
E117	–	: Starter motor	
E118	GY/1	: Starter motor	
★ E119	GY/2	: Vehicle speed sensor	
★ E120	B/2	: Park/Neutral position switch (With M/T)	
E121	B/2	: Back-up lamp switch (With M/T)	
★ E123	G/8	: To F6	
★ E124	B/8	: A/T solenoid valve	
★ E125	B/10	: Park/Neutral position switch (With A/T)	
★ E126	GY/2	: Crankshaft position sensor (OBD) (With A/T)	
E127	–	: Battery (+)	
★ E128	L/8	: To F27	
★ E129	BR/3	: Revolution sensor (With A/T)	
★ E130	GY/6	: To E57	
★ E131	B/2	: Knock sensor	

★1: With A/T
★2: With M/T

For detail ground distribution information, refer to "GROUND DISTRIBUTION".

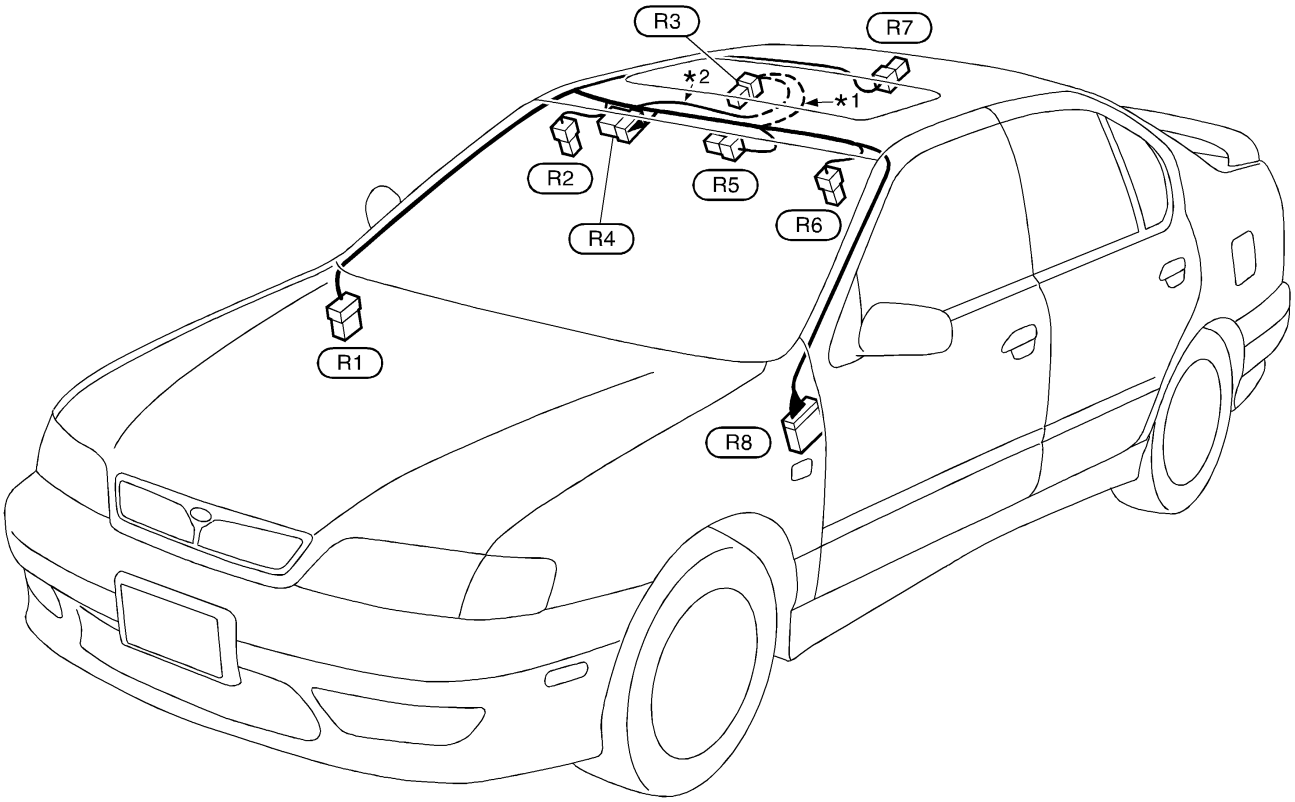
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

CEL358A

Room Lamp Harness

NCEL0140



R1	W/6	:	To M70
R2	W/2	:	Vanity mirror lamp (Passenger side)
R3	W/2	:	Map lamp
R4	L/6	:	Sunroof switch (With sunroof)
R5	W/2	:	Sunroof motor (With sunroof)
R6	W/2	:	Vanity mirror lamp (Driver side)
R7	W/2	:	Interior room lamp
R8	W/12	:	To M89

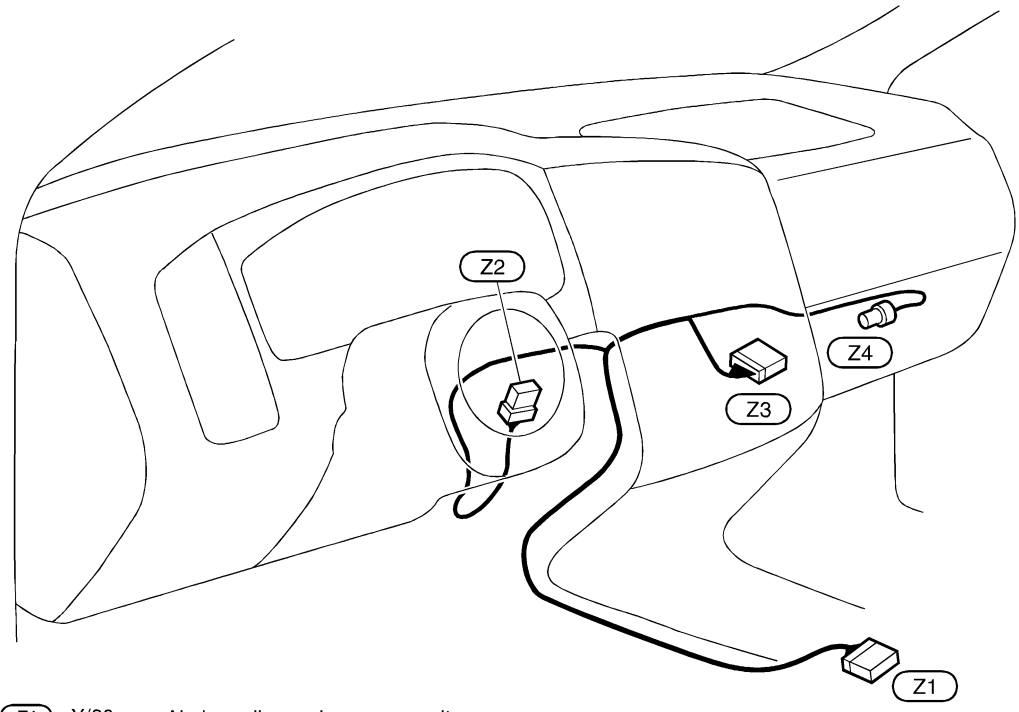
*1 : With sunroof

*2 : Without sunroof

CEL359A

Air Bag Harness

NCEL0141



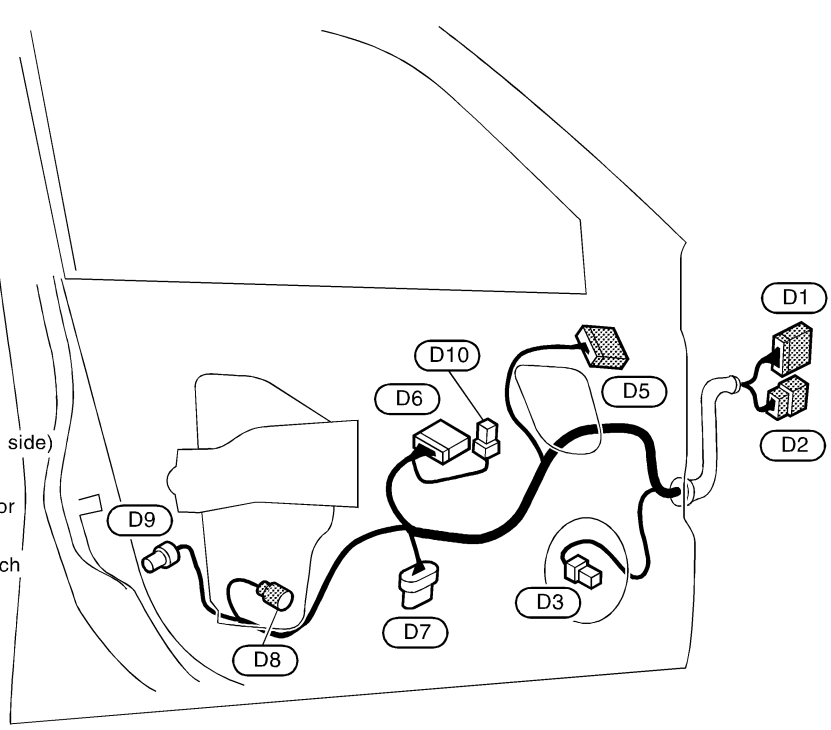
Z1 Y/20 : Air bag diagnosis sensor unit
Z2 Y/7 : Spiral cable
Z3 W/20 : To M46
Z4 W/2 : Air bag module (Passenger side)

CEL354A

Front Door Harness

NCEL0142

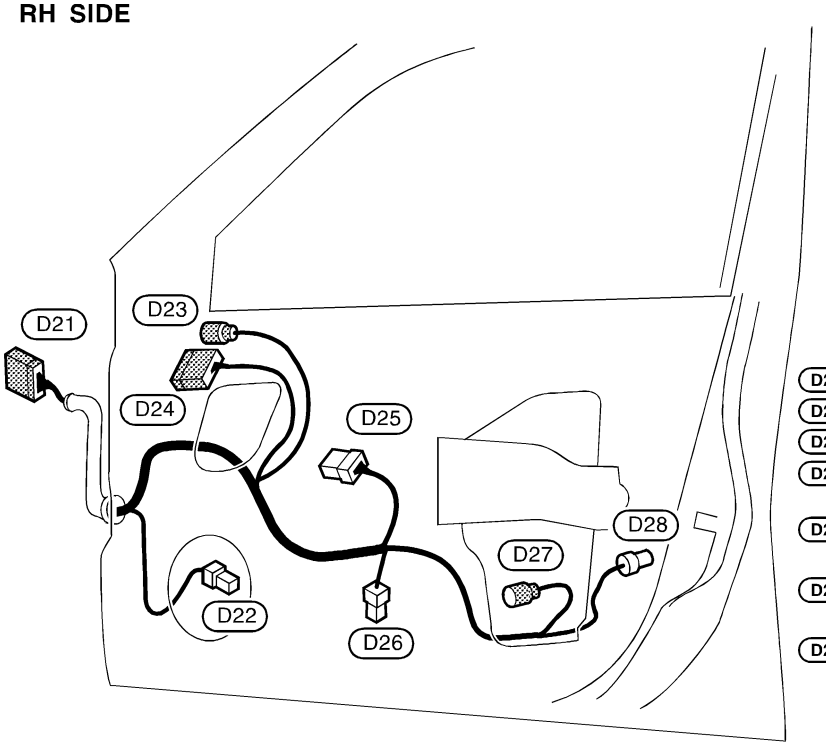
LH SIDE



D1	W/18	:	To M16
D2	W/8	:	To M17
D3	BR/2	:	Front door speaker LH
D5	W/8	:	Door mirror actuator (Driver side)
D6	W/16	:	Power window main switch
D7	GY/6	:	Front power window regulator (Driver side)
D8	BR/3	:	Front door key cylinder switch (Driver side)
D9	GY/4	:	Front door lock actuator (Driver side)
D10	W/3	:	Power window main switch

CEL360A

RH SIDE



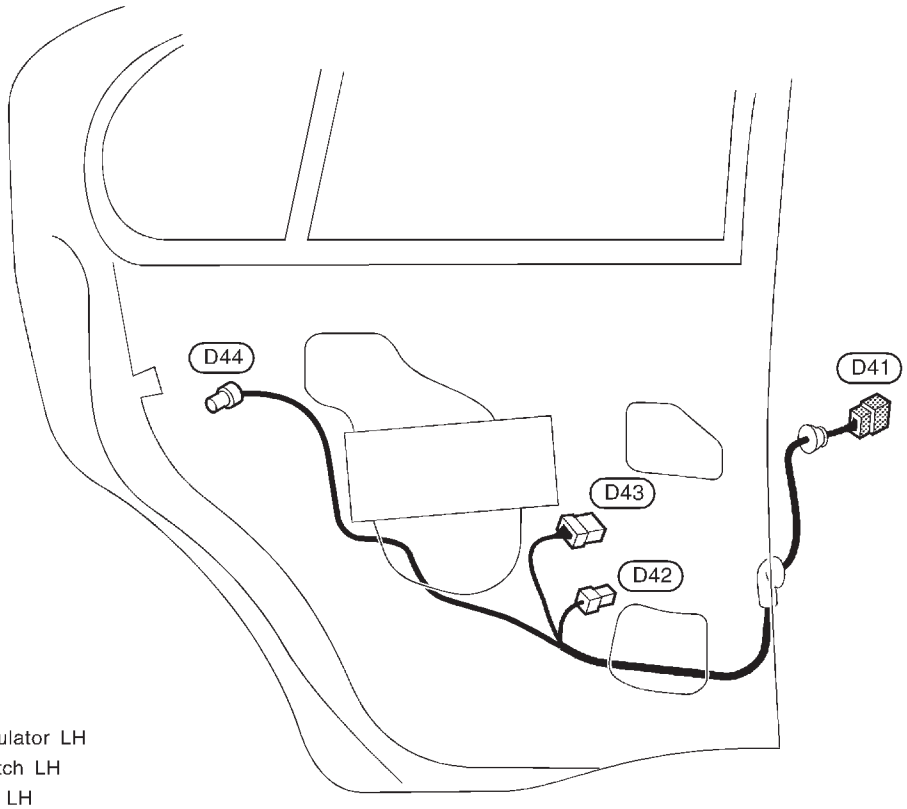
D21	W/18	:	To M72
D22	BR/2	:	Front door speaker RH
D24	W/8	:	Door mirror actuator (Passenger side)
D25	W/8	:	Front power window switch (Passenger side)
D26	B/2	:	Front power window regulator (Passenger side)
D27	BR/3	:	Front door key cylinder switch (Passenger side)
D28	GY/4	:	Front door lock actuator (Passenger side)

CEL361A

Rear Door Harness

NCEL0143

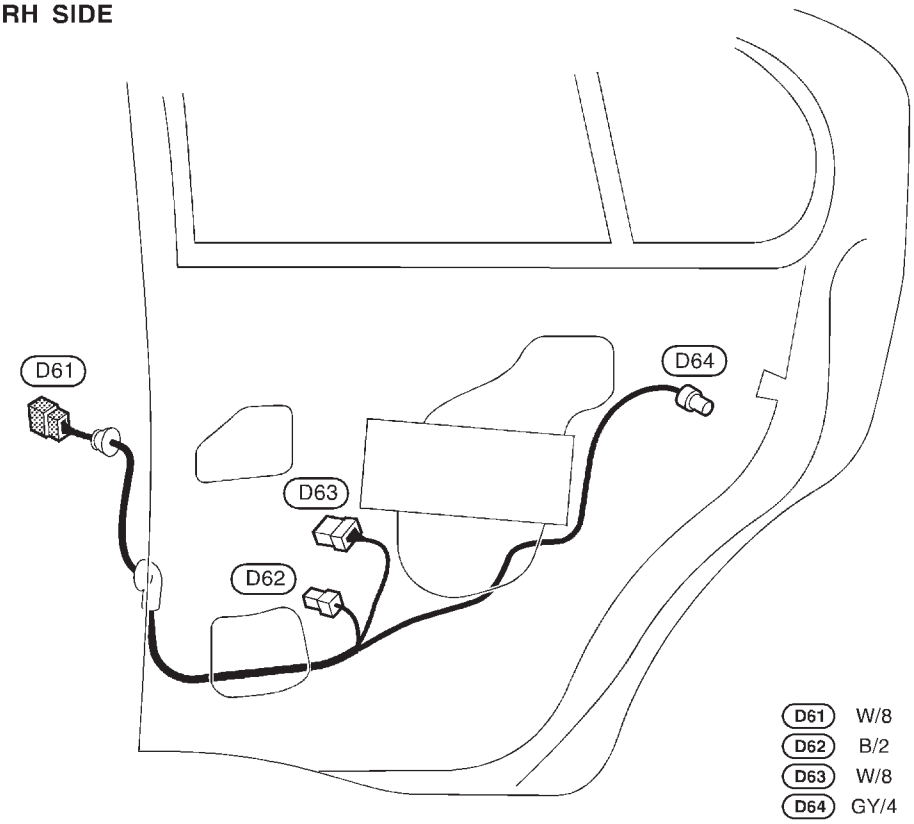
LH SIDE



D41	W/8	:	To B9
D42	B/2	:	Rear power window regulator LH
D43	W/8	:	Rear power window switch LH
D44	GY/4	:	Rear door lock actuator LH

CEL967

RH SIDE



D61	W/8	:	To B27
D62	B/2	:	Rear power window regulator RH
D63	W/8	:	Rear power window switch RH
D64	GY/4	:	Rear door lock actuator RH

CEL968

BULB SPECIFICATIONS

Headlamp

Headlamp

NCEL0144S03

Item	Wattage (W)
High/Low	60/55 (HB2)

Exterior Lamp

NCEL0144S01

Item		Wattage (W)
Front fog lamp		35 (H3)
Front turn signal lamp		21
Side turn signal lamp		5
Parking lamp		5
Front side marker lamp		3.8
Rear combination lamp	Turn signal	21
	Stop/Tail	21/5
	Back-up	13
Rear side marker lamp		3.8
License lamp		5
High-mounted stop lamp (without rear spoiler)		21

Interior Lamp

NCEL0144S02

Item		Wattage (W)
Interior room lamp		8
Map lamp	With sunroof	5
	Without sunroof	8
Vanity mirror lamp		8
Trunk room lamp		3.4

WIRING DIAGRAM CODES (CELL CODES)

Use the chart below to find out what each wiring diagram code stands for.
Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device
AT/C	EC	A/T Control
AT/IND	EL	A/T Indicator Lamp
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor (OBD)
CMPS	EC	Camshaft Position Sensor
COOL/F	EC	Cooling Fan Control
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp — With Daytime Light System —
ECTS	EC	Engine Coolant Temperature Sensor
EGR/TS	EC	EGR Temperature Sensor
EGRC1	EC	EGR Function
EGVC/V	EC	EGR Volume Control Valve
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
F/PUMP	EC	Fuel Pump
FLS1	EC	Fuel Level Sensor Function
FLS2	EC	Fuel Level Sensor Circuit
FLS3	EC	Fuel Level Sensor Circuit (Ground Signal)
HO2S1H	EC	Heated Oxygen Sensor 1 Heater
HO2S1	EC	Heated Oxygen Sensor 1
FTS	AT	A/T Fluid Temperature Sensor
FUEL	EC	Fuel Injection System Function
H/LAMP	EL	Headlamp
HORN	EL	Horn
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Vanity Mirror and Trunk Room Lamps
KS	EC	Knock Sensor
LOAD	EC	Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	Nissan Anti-Theft System
NONDTC	AT	Non-detectable Items
OVRCSV	AT	Overrun Clutch Solenoid Valve
P/ANT	EL	Power Antenna
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PNP/SW	AT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing

Code	Section	Wiring Diagram Name
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
ROOM/L	EL	Interior Room Lamp
RP/SEN	EC	Refrigerant Pressure Sensor
HO2S2H	EC	Heated Oxygen Sensor 2 Heater
HO2S2	EC	Heated Oxygen Sensor 2
S/SIG	EC	Start Signal
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop lamp
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock up)
TCV	AT	Torque Converter Clutch Solenoid Valve
TFTS	EC	Tank Fuel Temperature Sensor
VEHSEC	EL	Vehicle security System
TLID	EL	Trunk Lid Opener
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRNSMT	EL	Integrated HOMELINK™ Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
VSSAT	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer