ELECTRICAL SYSTEM

SECTION EL

When you read wiring diagrams:
- **Read GI section, "HOW TO READ WIRING DIAGRAMS".**

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES" and "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT".
- **Check for any service bulletins before servicing the vehicle.**

CONTENTS

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

The Supplemental Restraint System “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a seat belt, help to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.

In addition to the supplemental air bag modules for a frontal collision, the supplemental side air bag used along with the seat belt helps to reduce the risk or severity of injury to the driver and front passenger in a side collision. The supplemental side air bag consists of air bag modules (located in the outer side of front seats), satellite sensor, diagnosis sensor unit (which is one of components of supplemental air bags for a frontal collision), wiring harness, warning lamp (which is one of components of supplemental 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.**
- **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 with yellow harness connector (and with yellow harness protector or yellow insulation tape before the harness connectors).**

Description

HARNESS CONNECTOR (TAB-LOCKING TYPE)

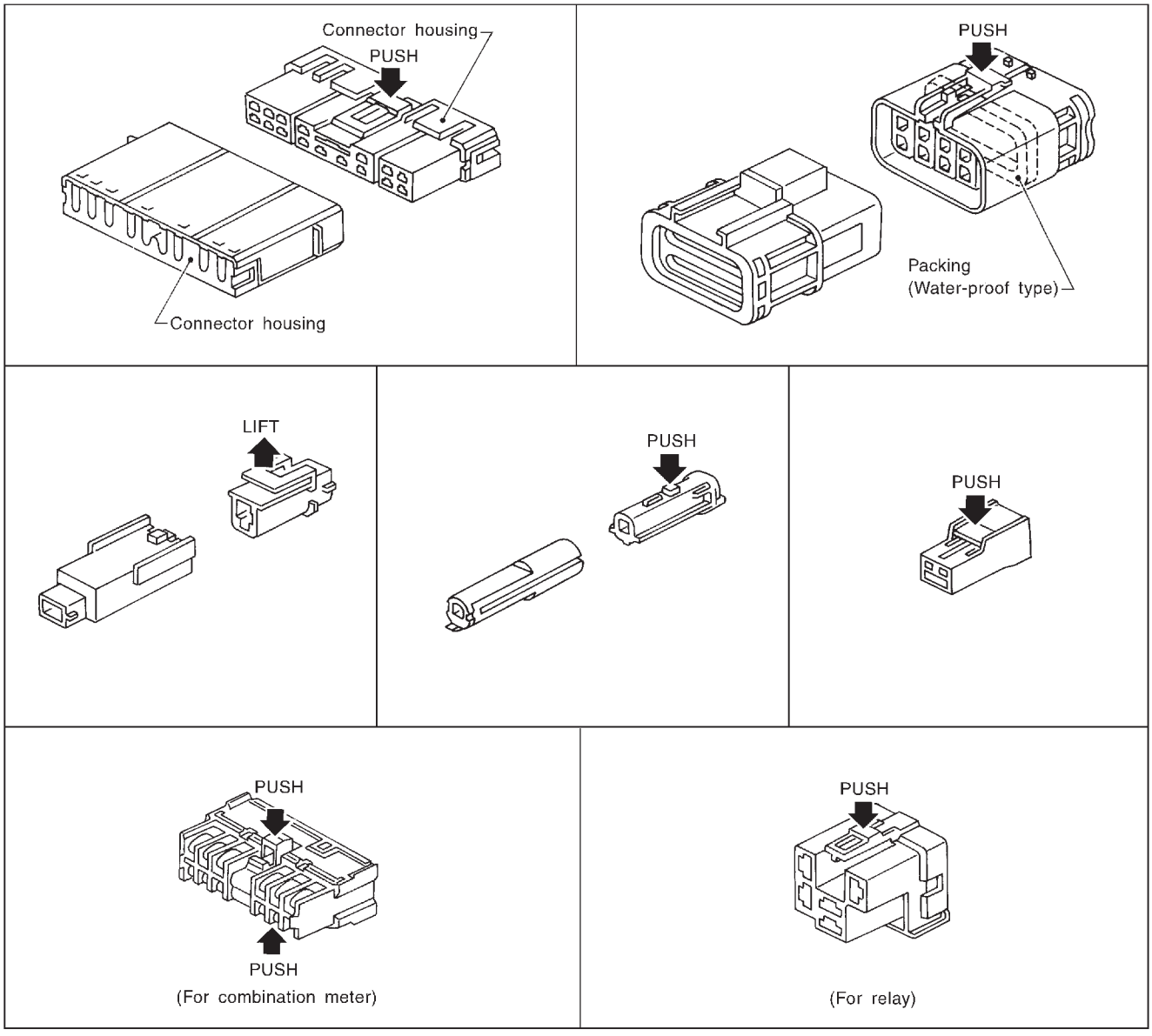
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

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)

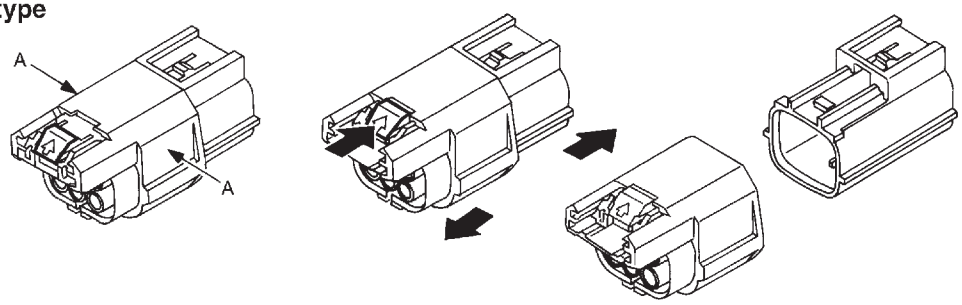
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

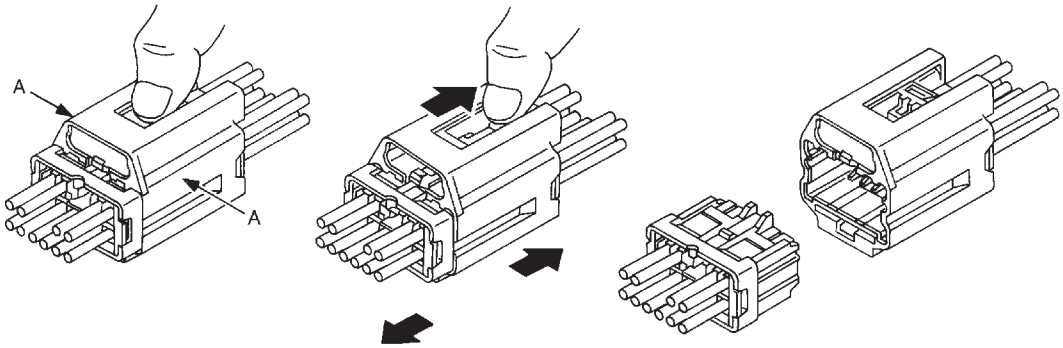


① Firmly grasp shell of connector housing at A.

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.

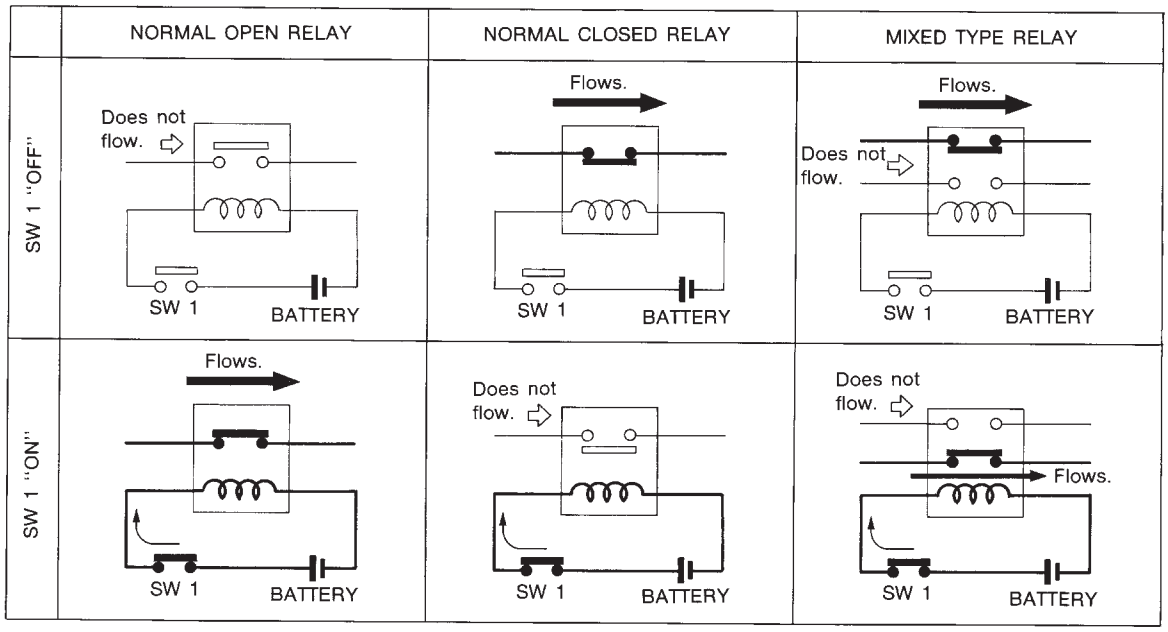
③ Disconnect harness connector.

SEL769V

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

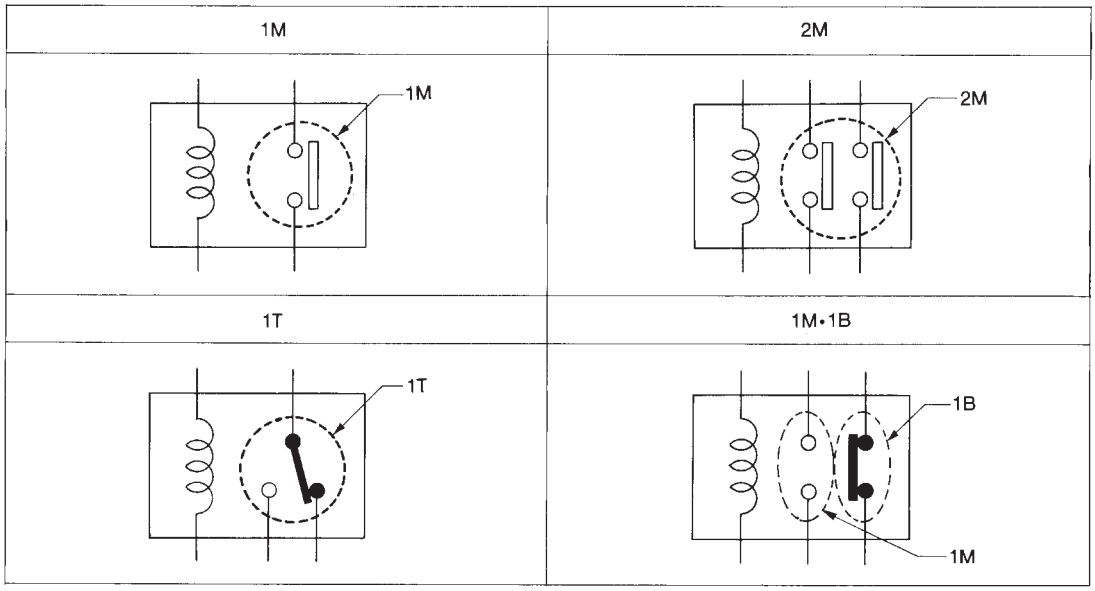
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



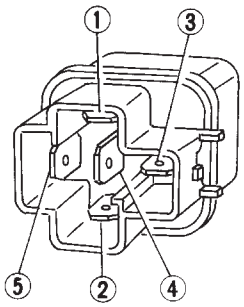
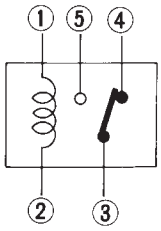
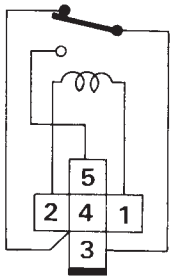
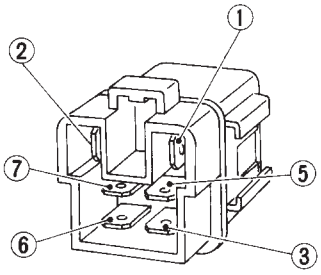
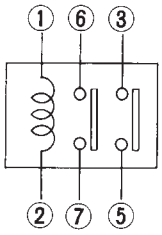
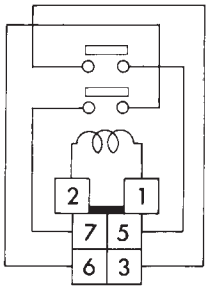
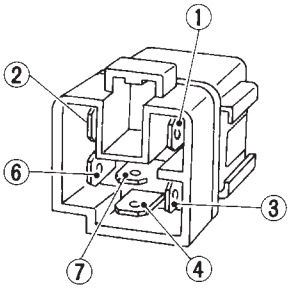
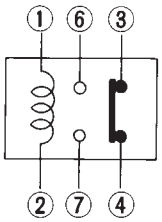
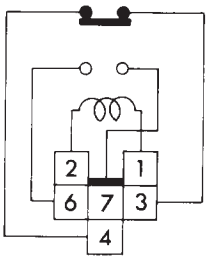
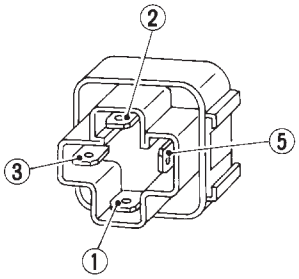
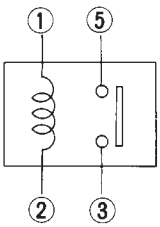
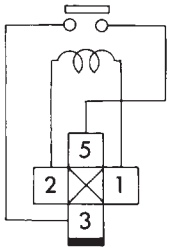
SEL881H

TYPE OF STANDARDIZED RELAYS

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



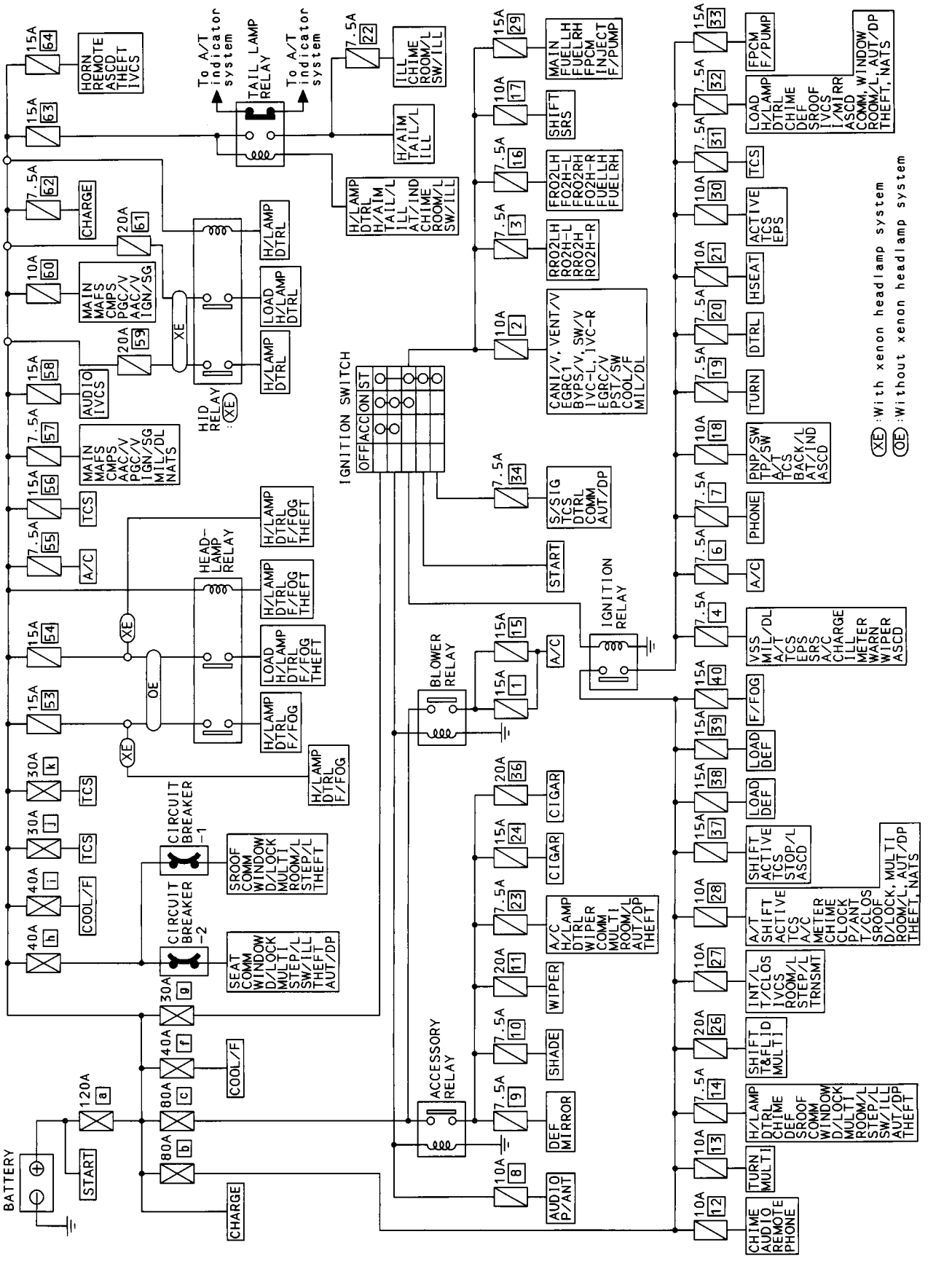
SEL882H

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.

SEL661TA

Schematic

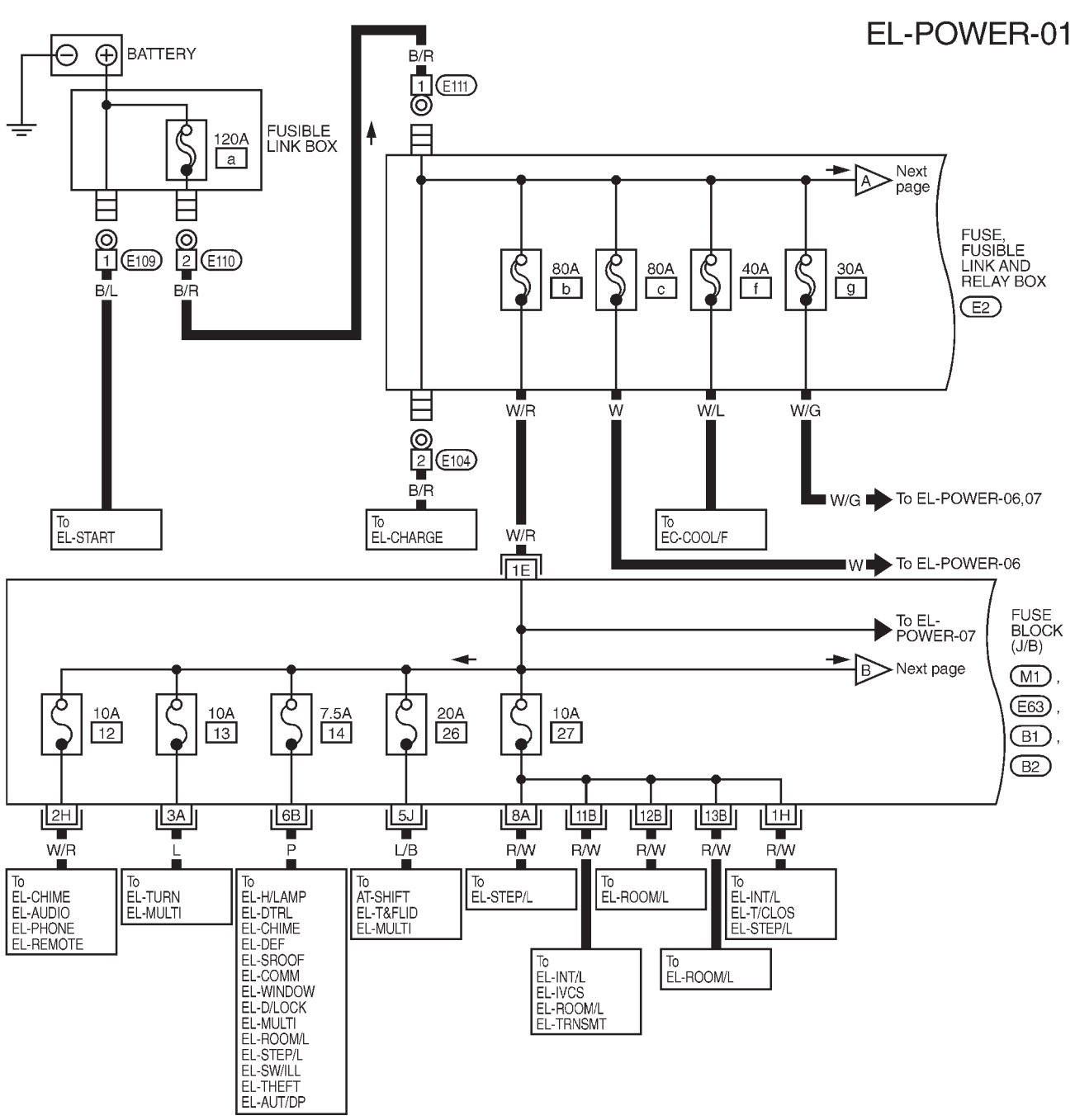


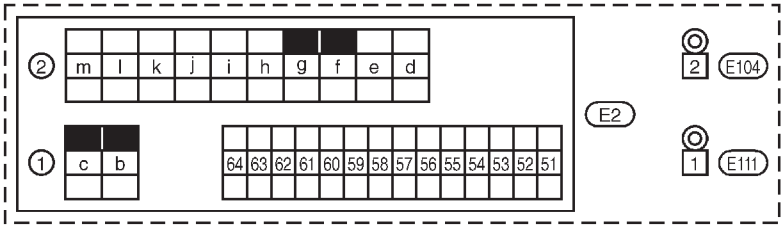
TEL448B

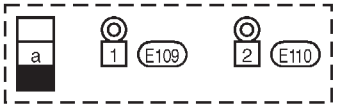
Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

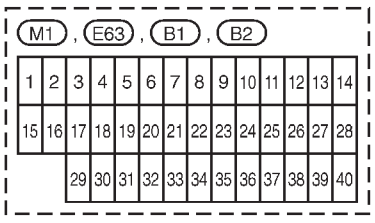
NOTE: For detailed ground distribution information, refer to “GROUND DISTRIBUTION”, EL-21.







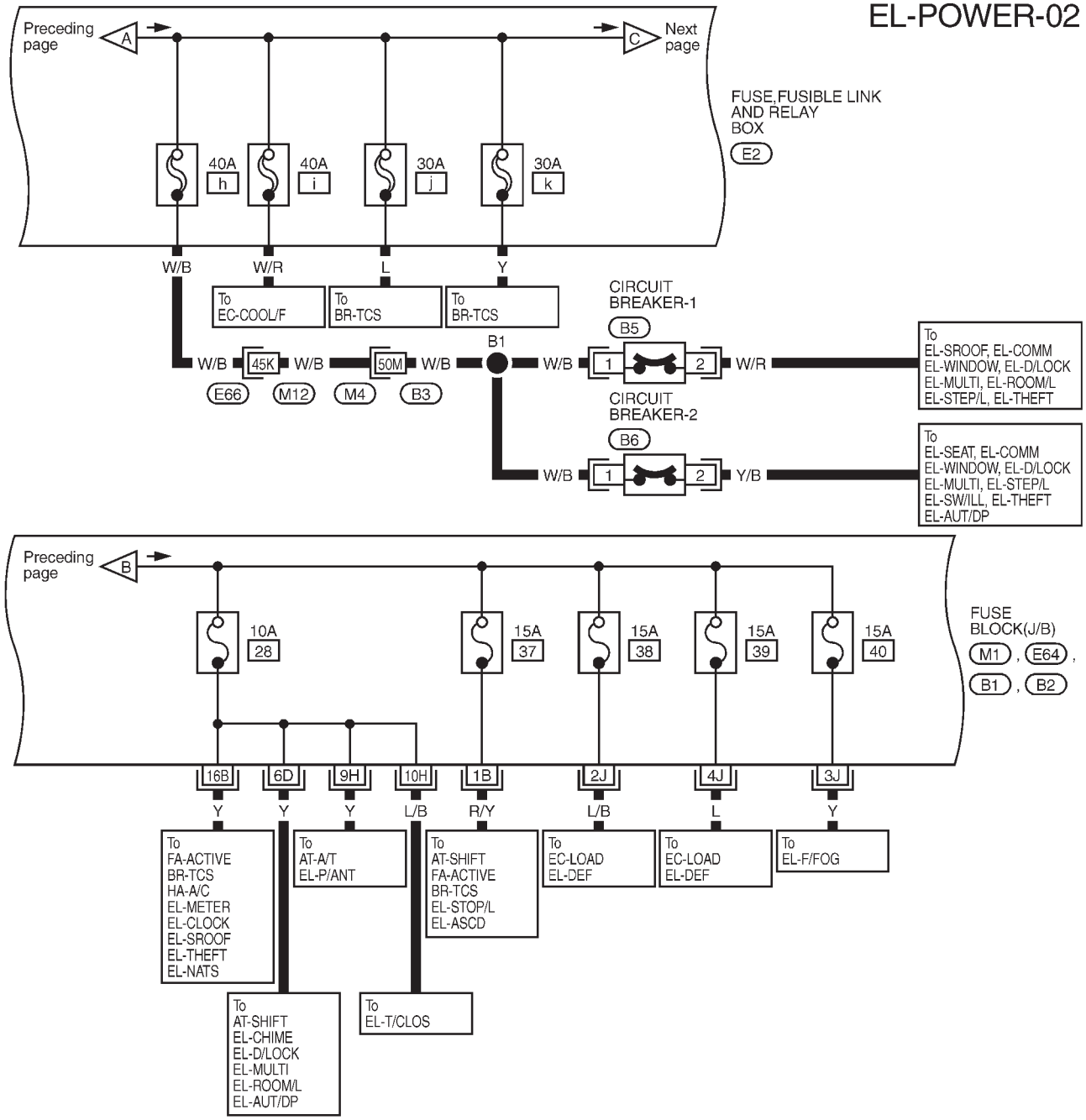
Refer to last page (Foldout page).

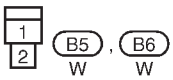


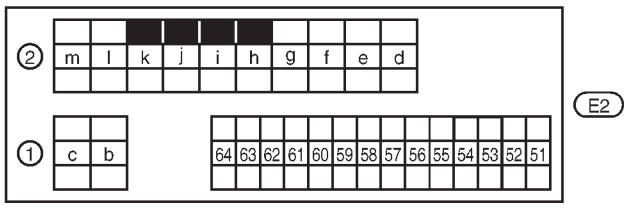
TEL954A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02







Refer to last page (Foldout page).

M4 , B3

M12 , E66

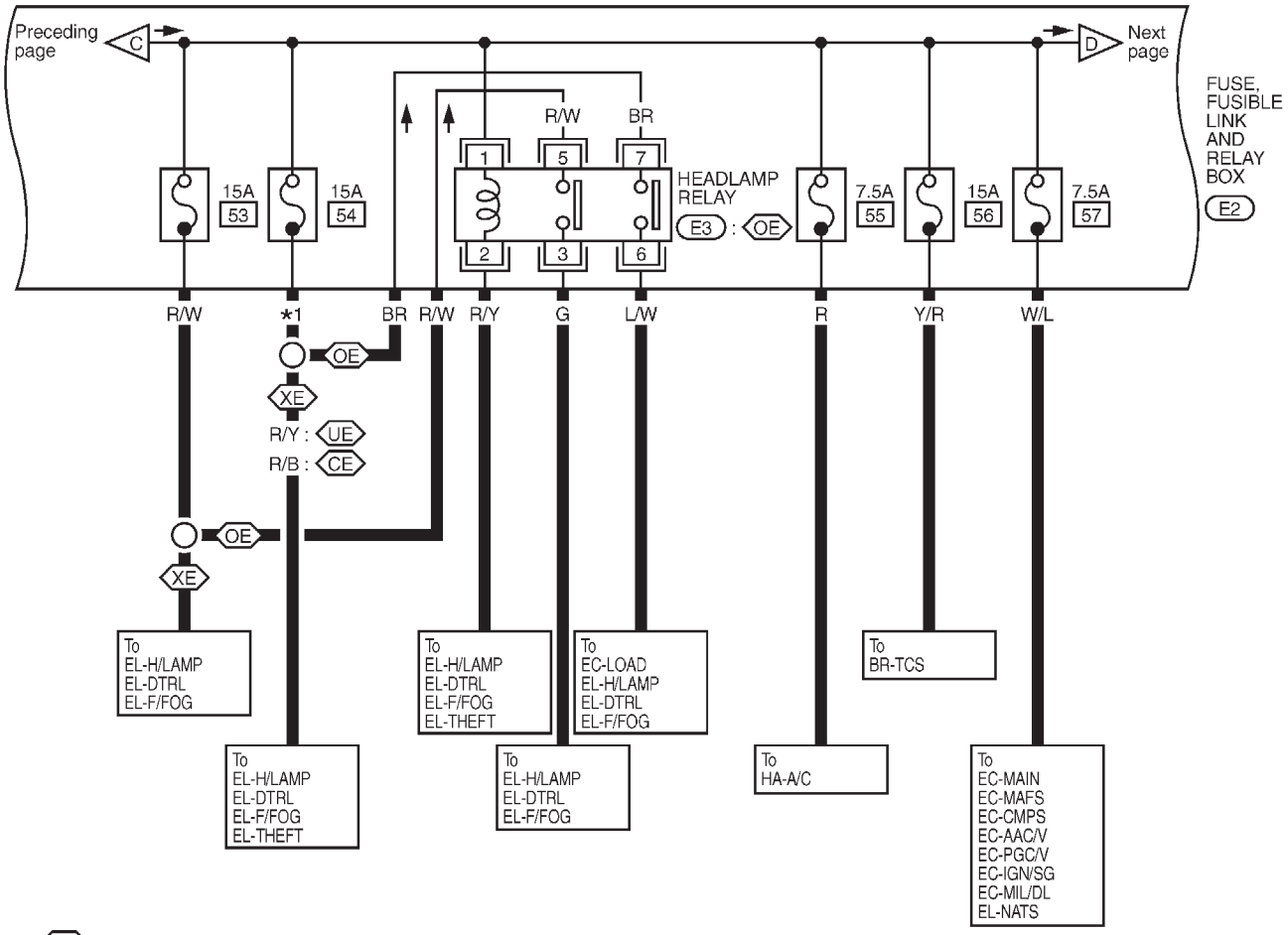
M1 , E64 , B1 , B2

1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

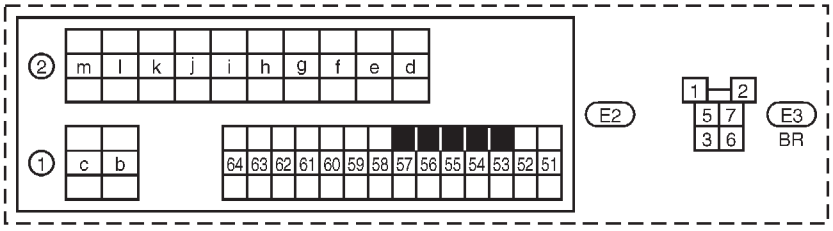
TEL955A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



UE : For U.S.A. with xenon headlamp system
CE : For Canada with xenon headlamp system
XE : With xenon headlamp system
OE : Without xenon headlamp system
*1 R/Y : UE
R/B : CE
BR : OE

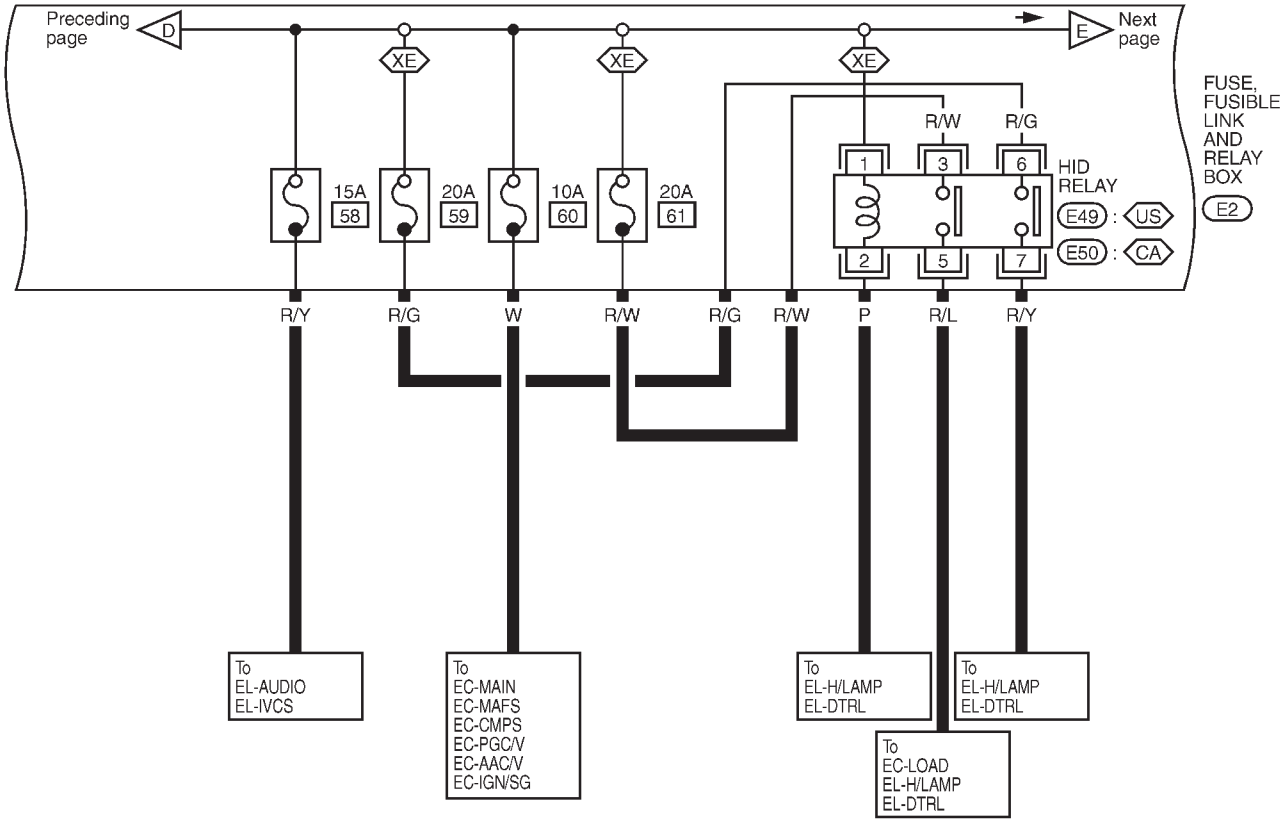


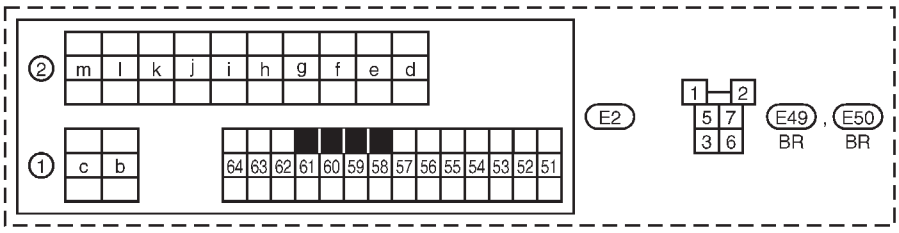
TEL956A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-04

US : For U.S.A.
CA : For Canada
XE : With xenon headlamp system

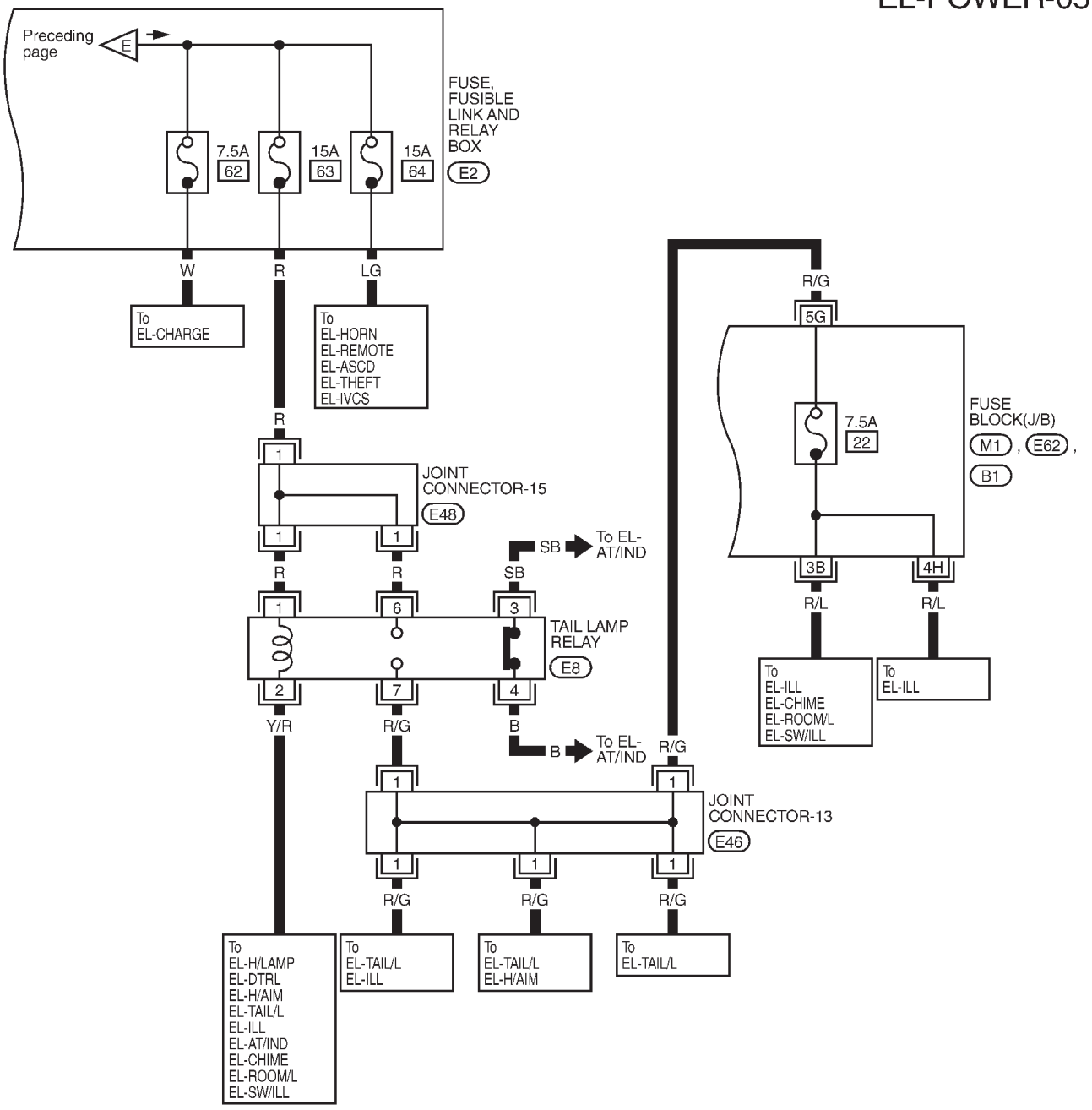


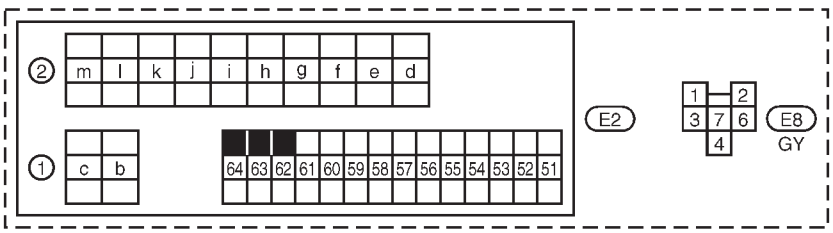


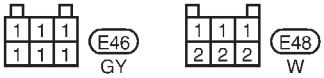
TEL957A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-05







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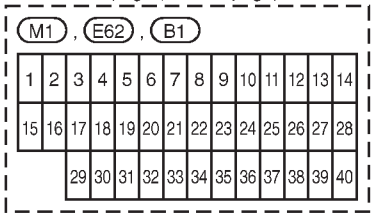


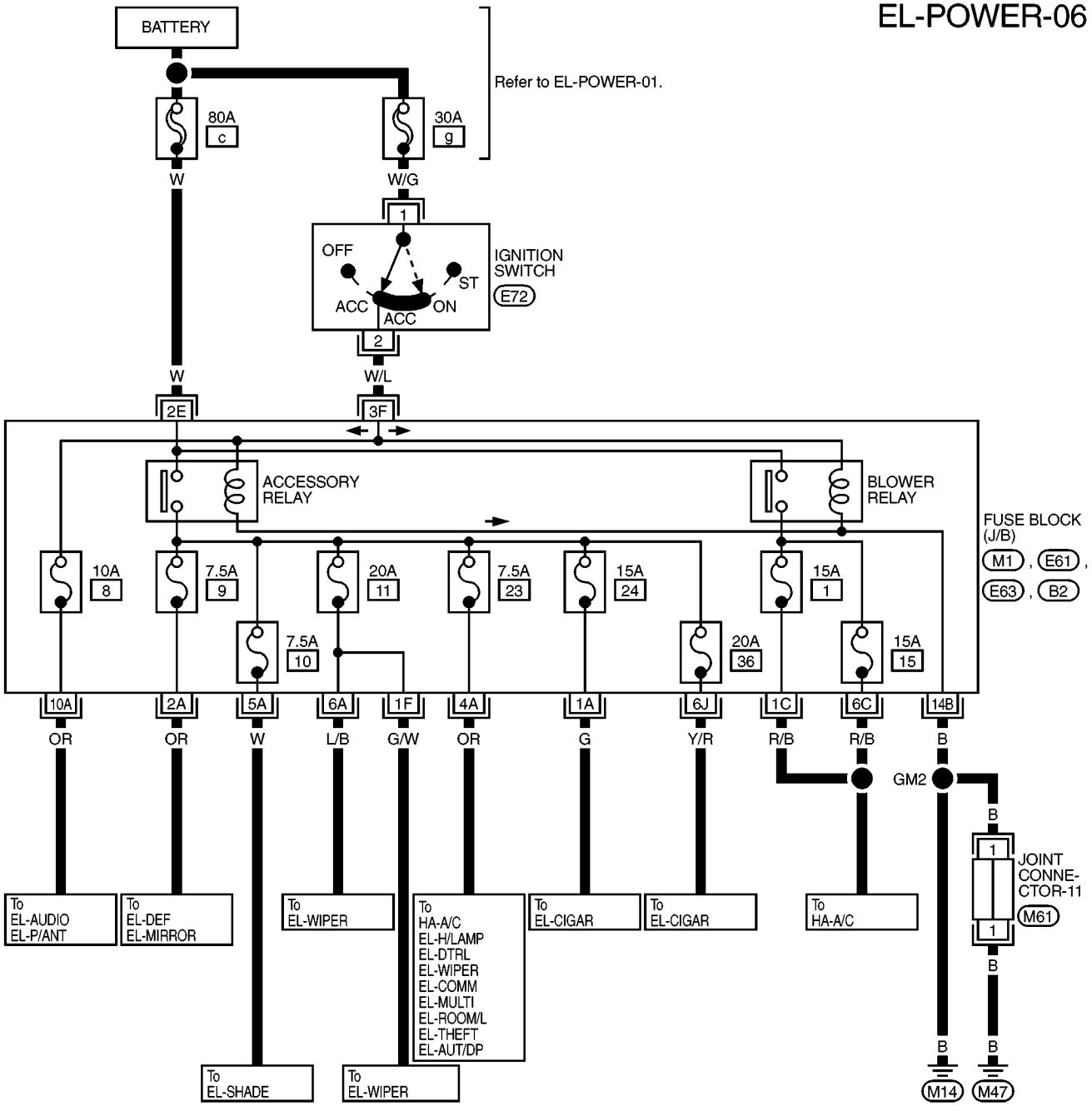
TEL043B

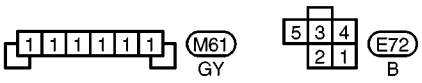
Wiring Diagram — POWER — (Cont'd)

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

NOTE: For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-21.

EL-POWER-06





Refer to last page (Foldout page).

M1, E61, E63, B2

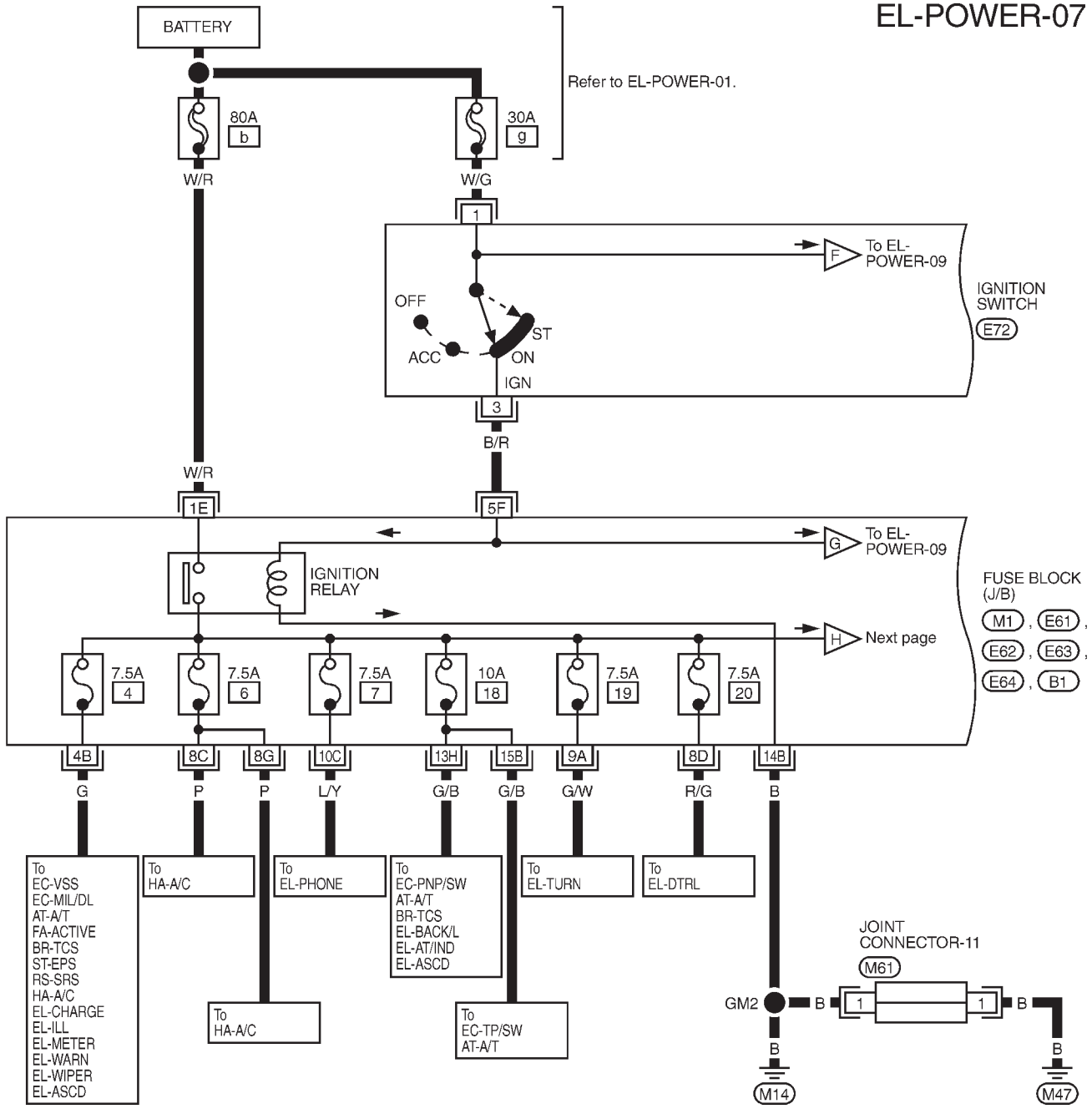
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

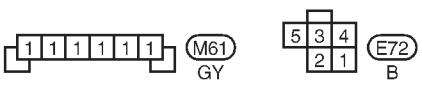
TEL597B

Wiring Diagram — POWER — (Cont'd)

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

NOTE: For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-21.





Refer to last page (Foldout page).

M1, E61, E62, E63, E64
B1

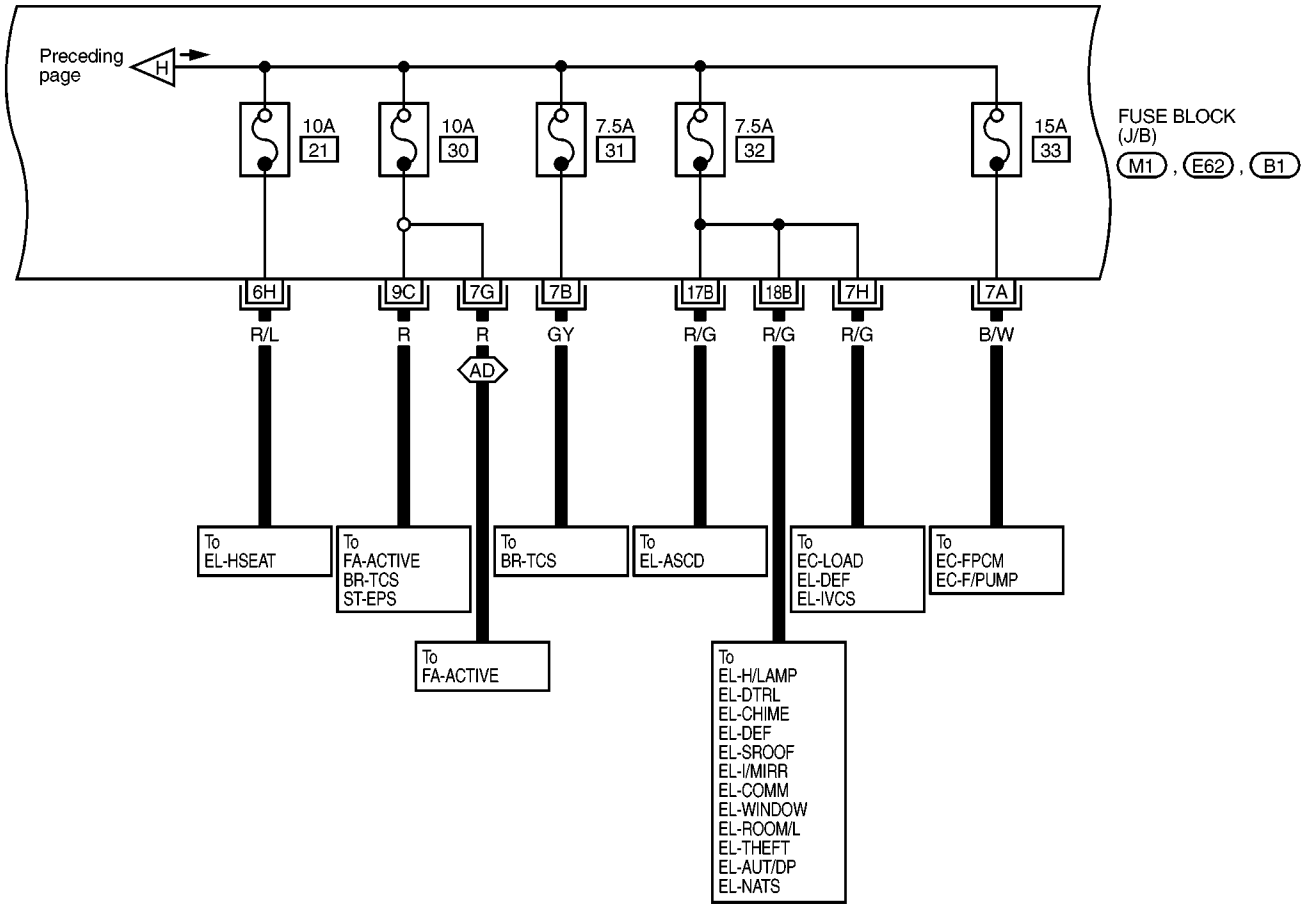
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL959A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-08

AD : With active damper suspension



Refer to last page (Foldout page).

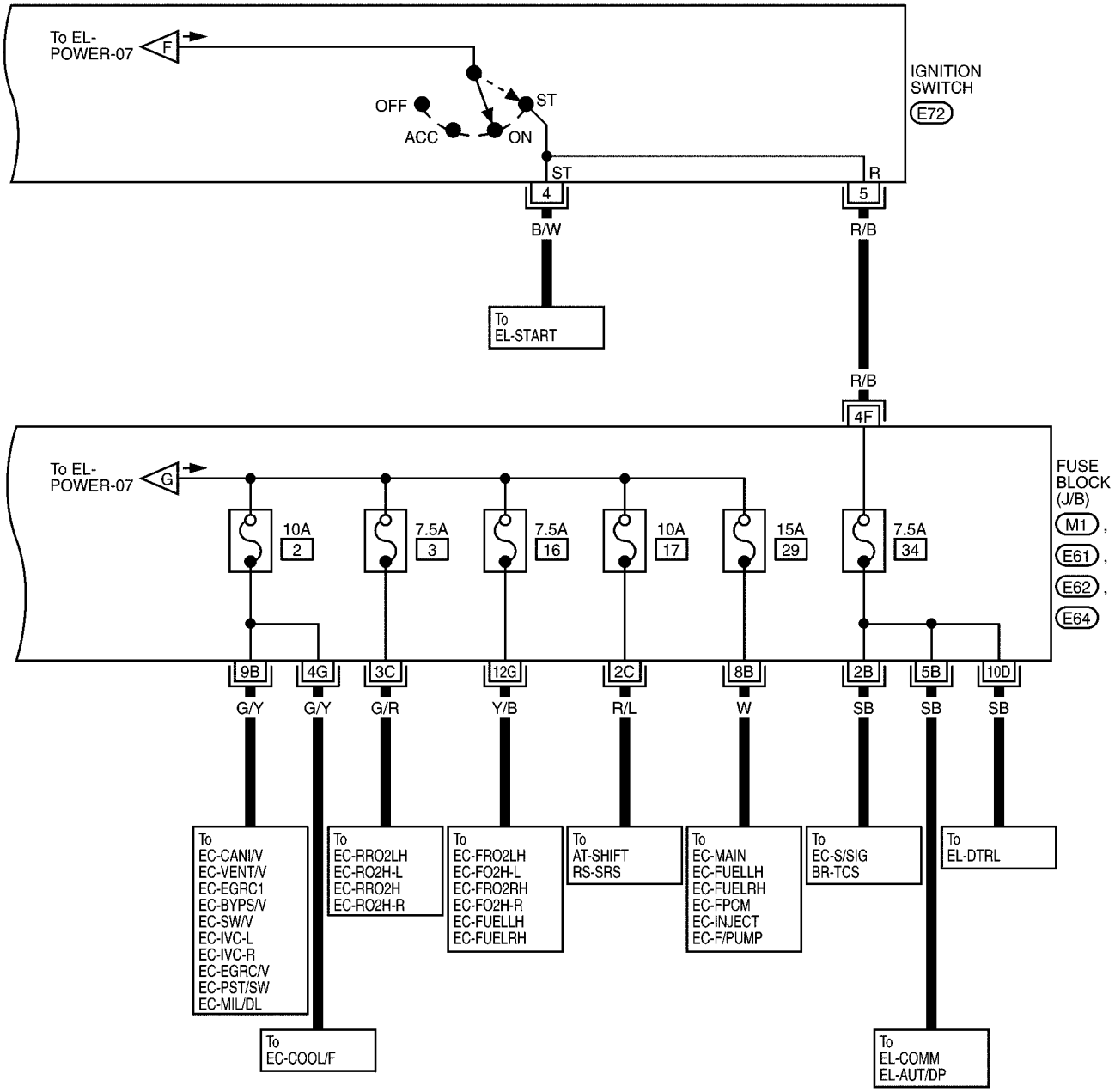
M1 , E62 , B1

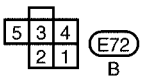
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL449B

Wiring Diagram — POWER — (Cont'd)

EL-POWER-09



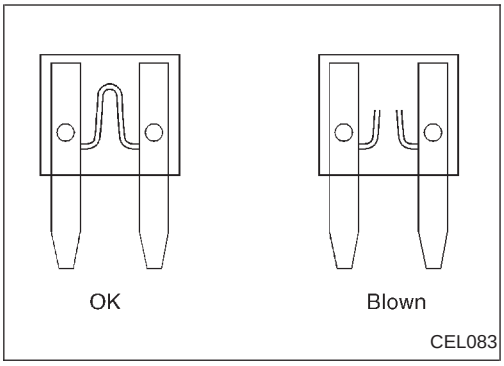


Refer to last page (Foldout page).

M1, E61, E62, E64

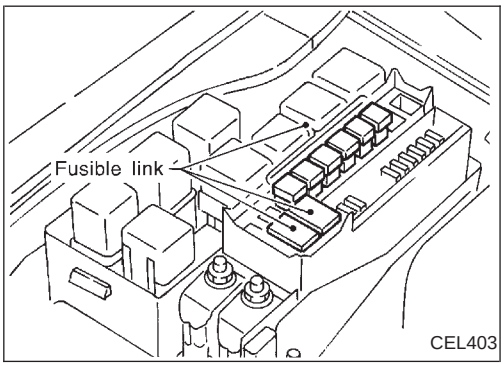
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL450B



Fuse

a. If fuse is blown, be sure to eliminate cause of problem before installing new fuse.
b. Use fuse of specified rating. Never use fuse of more than specified rating.
c. Do not partially install fuse; always insert it into fuse holder properly.
d. Remove fuse for "ELECTRICAL PARTS (BAT)" if vehicle is not used for a long period of time.

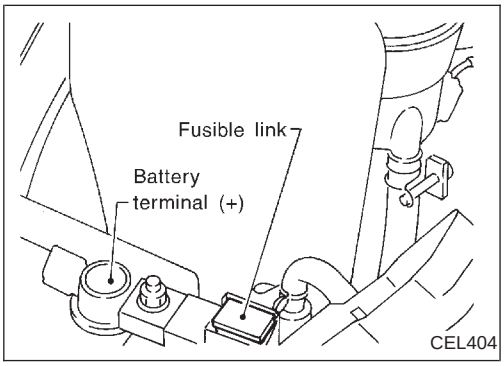


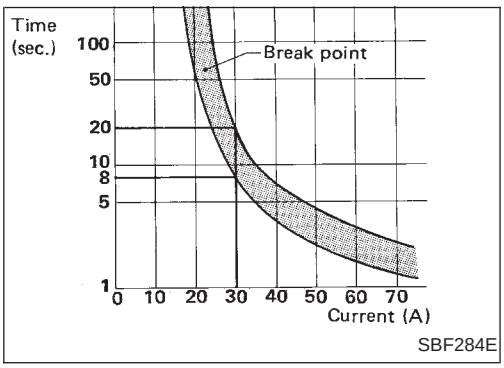
Fusible Link

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:

a. 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.
b. Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.

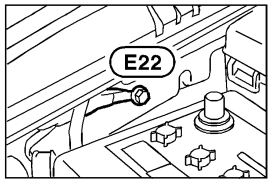


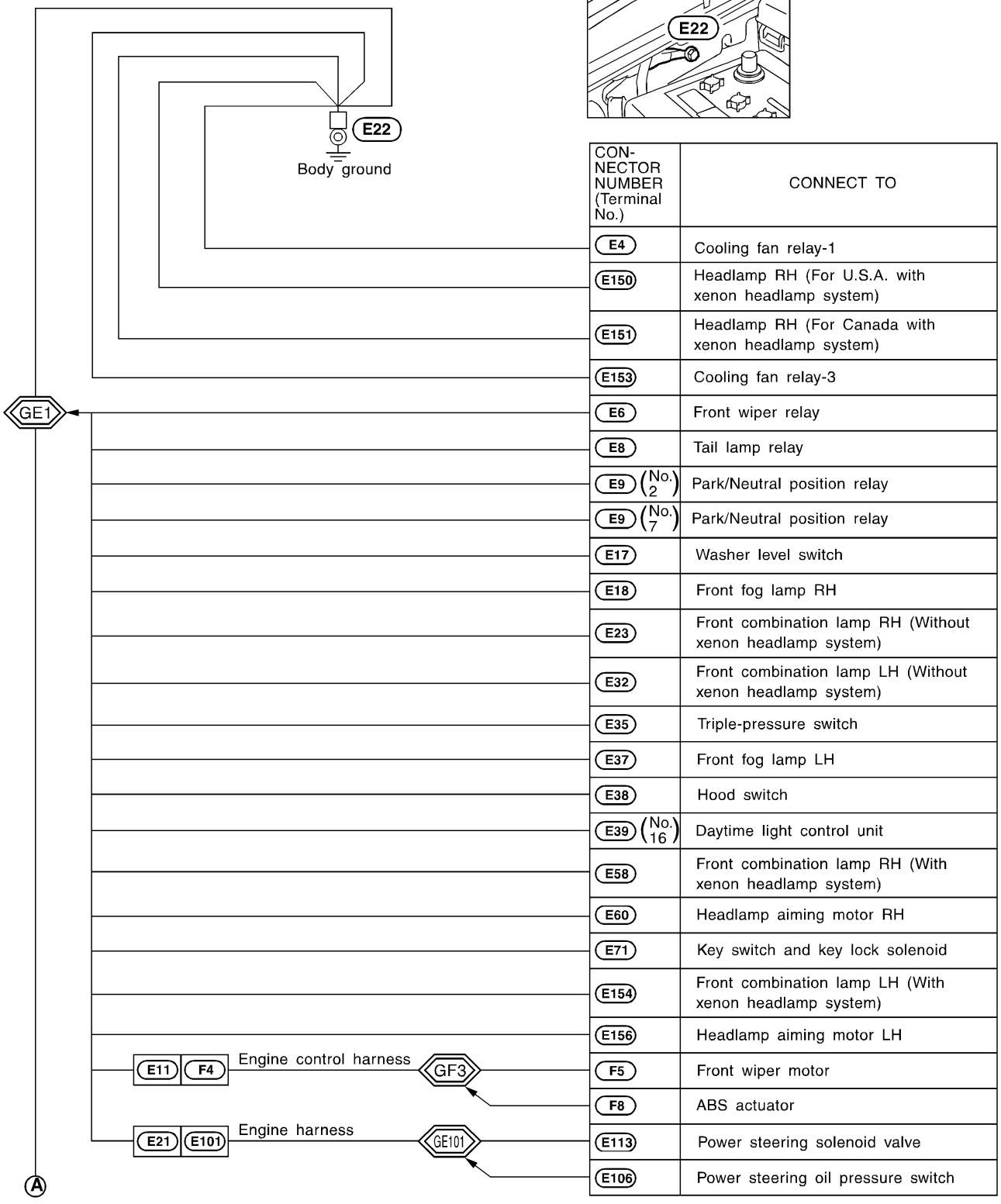


Circuit Breaker Inspection

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

Engine Room Harness

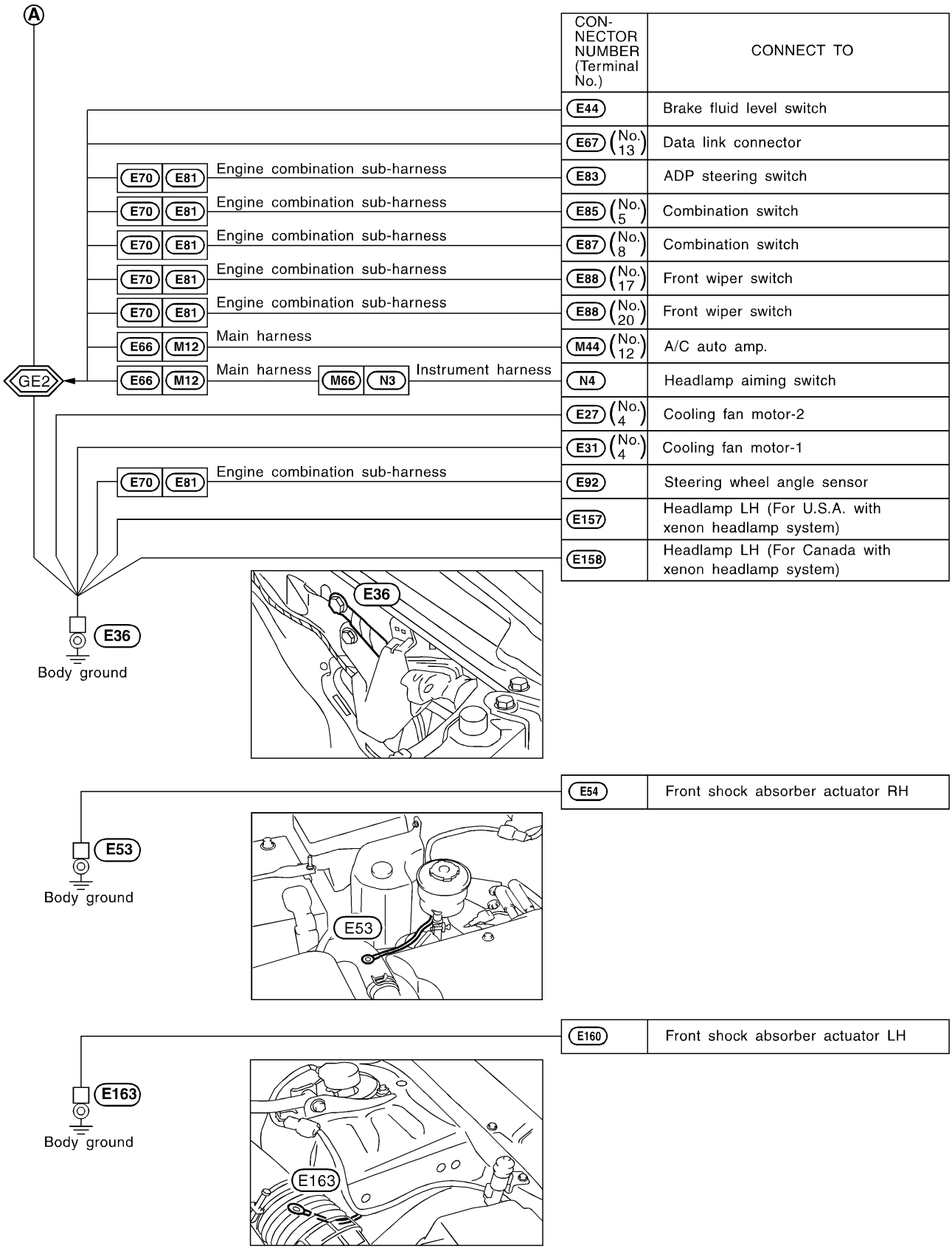




CONNECTOR NUMBER (Terminal No.)	CONNECT TO
E4	Cooling fan relay-1
E150	Headlamp RH (For U.S.A. with xenon headlamp system)
E151	Headlamp RH (For Canada with xenon headlamp system)
E153	Cooling fan relay-3
E6	Front wiper relay
E8	Tail lamp relay
E9 (No. 2)	Park/Neutral position relay
E9 (No. 7)	Park/Neutral position relay
E17	Washer level switch
E18	Front fog lamp RH
E23	Front combination lamp RH (Without xenon headlamp system)
E32	Front combination lamp LH (Without xenon headlamp system)
E35	Triple-pressure switch
E37	Front fog lamp LH
E38	Hood switch
E39 (No. 16)	Daytime light control unit
E58	Front combination lamp RH (With xenon headlamp system)
E60	Headlamp aiming motor RH
E71	Key switch and key lock solenoid
E154	Front combination lamp LH (With xenon headlamp system)
E156	Headlamp aiming motor LH
F5	Front wiper motor
F8	ABS actuator
E113	Power steering solenoid valve
E106	Power steering oil pressure switch

CEL983

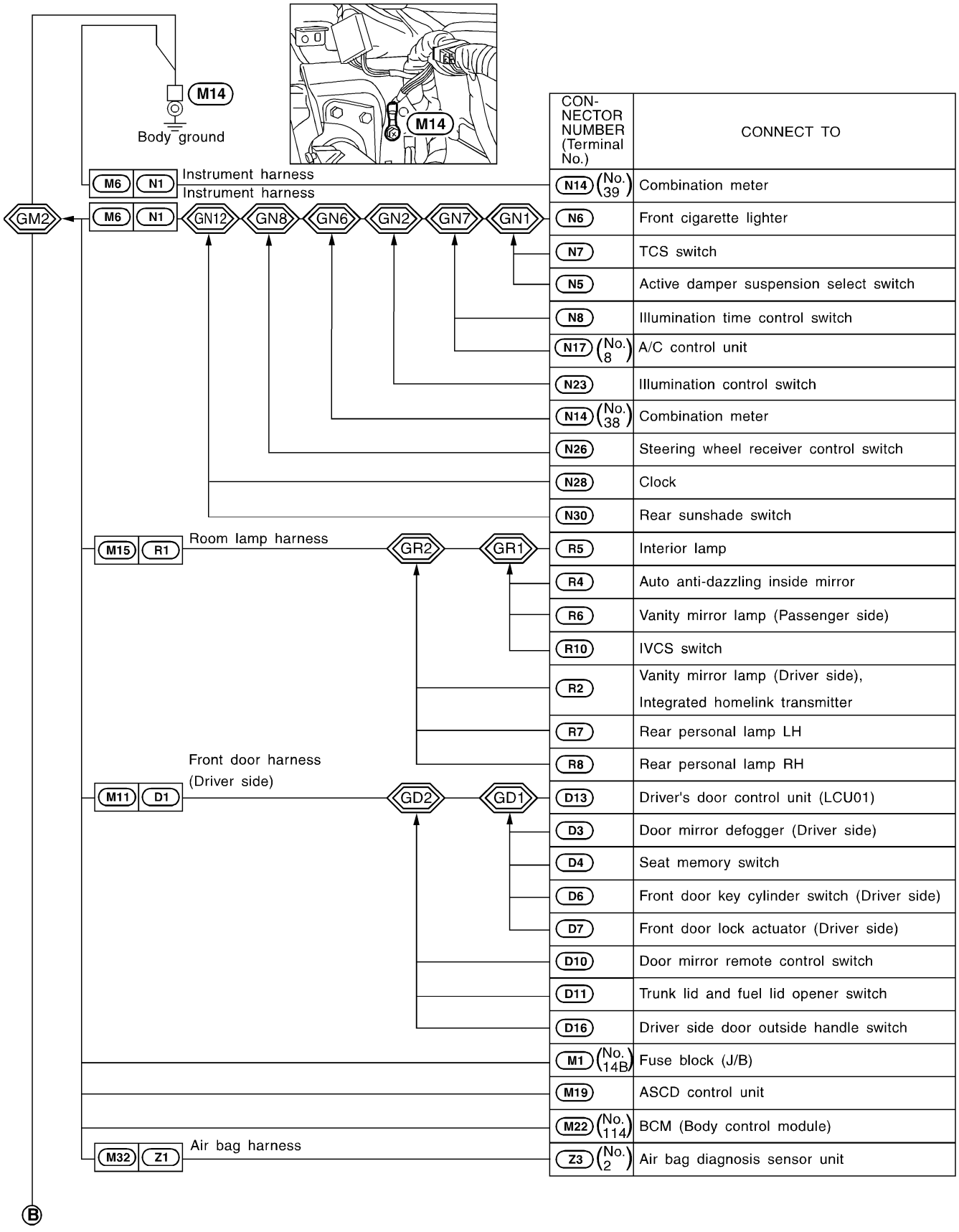
Engine Room Harness (Cont'd)



CONNECTOR NUMBER (Terminal No.)	CONNECT TO
E44	Brake fluid level switch
E67 (No. 13)	Data link connector
E83	ADP steering switch
E85 (No. 5)	Combination switch
E87 (No. 8)	Combination switch
E88 (No. 17)	Front wiper switch
E88 (No. 20)	Front wiper switch
M44 (No. 12)	A/C auto amp.
N4	Headlamp aiming switch
E27 (No. 4)	Cooling fan motor-2
E31 (No. 4)	Cooling fan motor-1
E92	Steering wheel angle sensor
E157	Headlamp LH (For U.S.A. with xenon headlamp system)
E158	Headlamp LH (For Canada with xenon headlamp system)
E54	Front shock absorber actuator RH
E160	Front shock absorber actuator LH

CEL001M

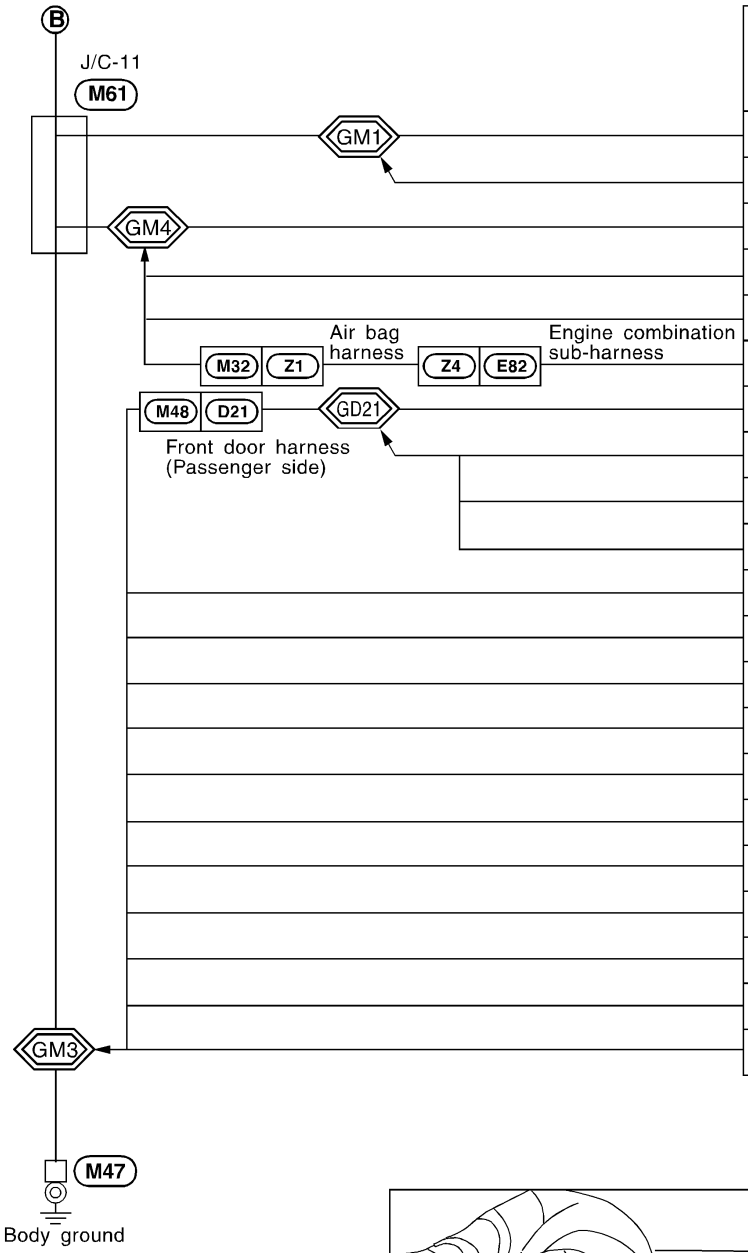
Main Harness



CONNECTOR NUMBER (Terminal No.)	CONNECT TO
N14 (No. 39)	Combination meter
N6	Front cigarette lighter
N7	TCS switch
N5	Active damper suspension select switch
N8	Illumination time control switch
N17 (No. 8)	A/C control unit
N23	Illumination control switch
N14 (No. 38)	Combination meter
N26	Steering wheel receiver control switch
N28	Clock
N30	Rear sunshade switch
R5	Interior lamp
R4	Auto anti-dazzling inside mirror
R6	Vanity mirror lamp (Passenger side)
R10	IVCS switch
R2	Vanity mirror lamp (Driver side), Integrated homelink transmitter
R7	Rear personal lamp LH
R8	Rear personal lamp RH
D13	Driver's door control unit (LCU01)
D3	Door mirror defogger (Driver side)
D4	Seat memory switch
D6	Front door key cylinder switch (Driver side)
D7	Front door lock actuator (Driver side)
D10	Door mirror remote control switch
D11	Trunk lid and fuel lid opener switch
D16	Driver side door outside handle switch
M1 (No. 14B)	Fuse block (J/B)
M19	ASCD control unit
M22 (No. 114)	BCM (Body control module)
Z3 (No. 2)	Air bag diagnosis sensor unit

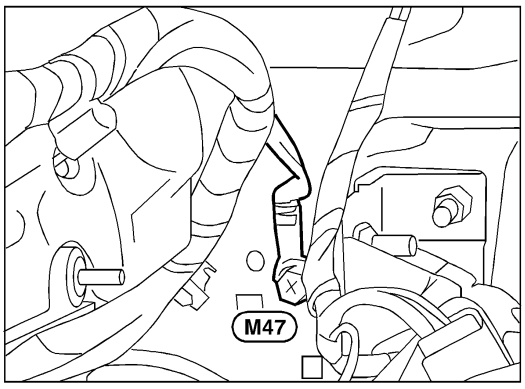
CEL985

Main Harness (Cont'd)



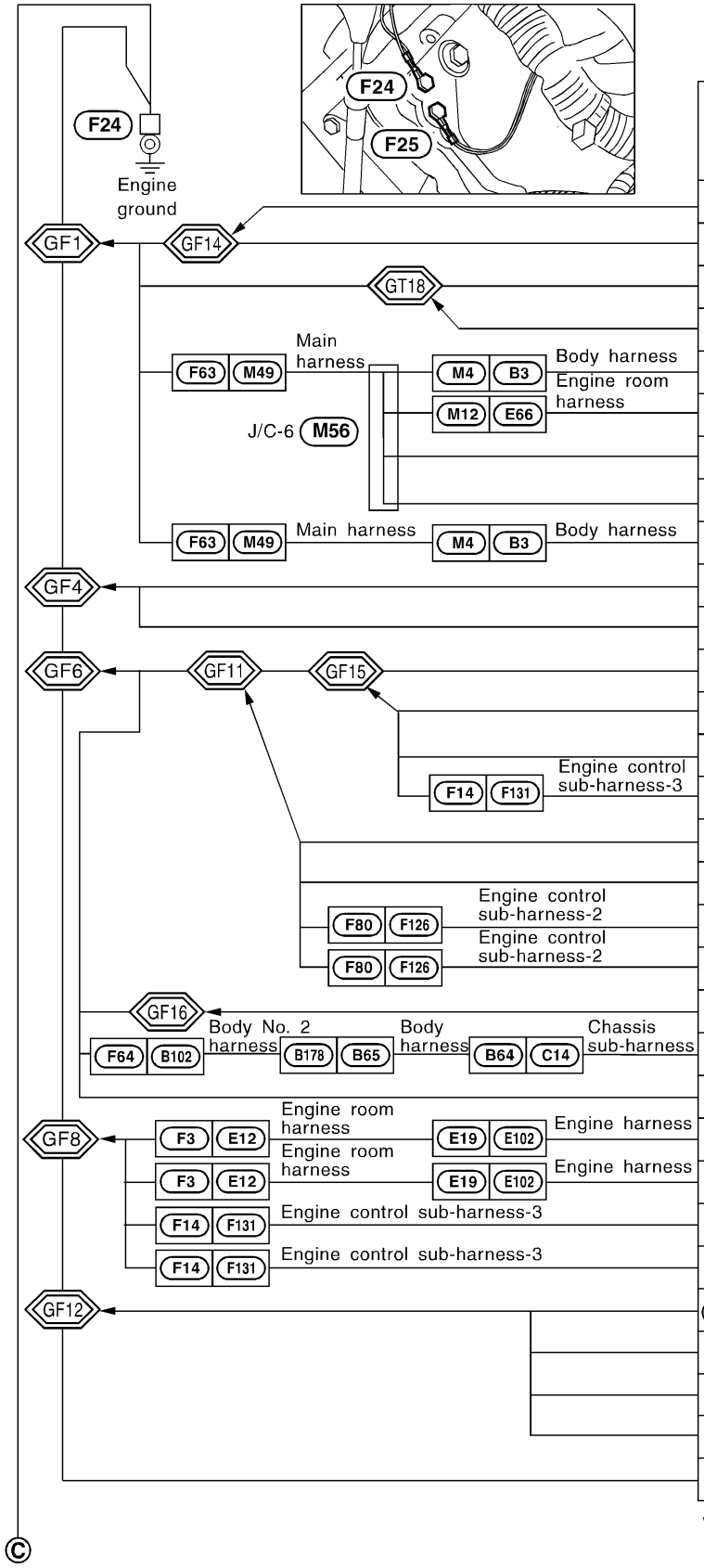
CONNECTOR NUMBER (Terminal No.)	CONNECT TO
M18	Shift lock control unit
M36	A/T device
M23	ASCD hold unit
M69 (No. 5)	Theft warning lamp relay
M69 (No. 7)	Theft warning lamp relay
E84	Spiral cable
D29	Passenger door control unit (LCU02)
D23	Door mirror defogger (Passenger side)
D25	Front door key cylinder switch (Passenger side)
D26	Front door lock actuator (Passenger side)
M22 (No. 56)	BCM (Body control module)
M22 (No. 113)	BCM (Body control module)
M25	Glove box lamp switch
M29	Fan control amp.
M30	Intake door motor
M31	Bi-level door motor
M33	Power steering control unit
M35	Mode door motor
M39	Combination flasher unit
M43	Air mix door motor
M45 (No. 32)	A/C auto amp.

J/C: Joint connector



CEL986

Engine Control Harness

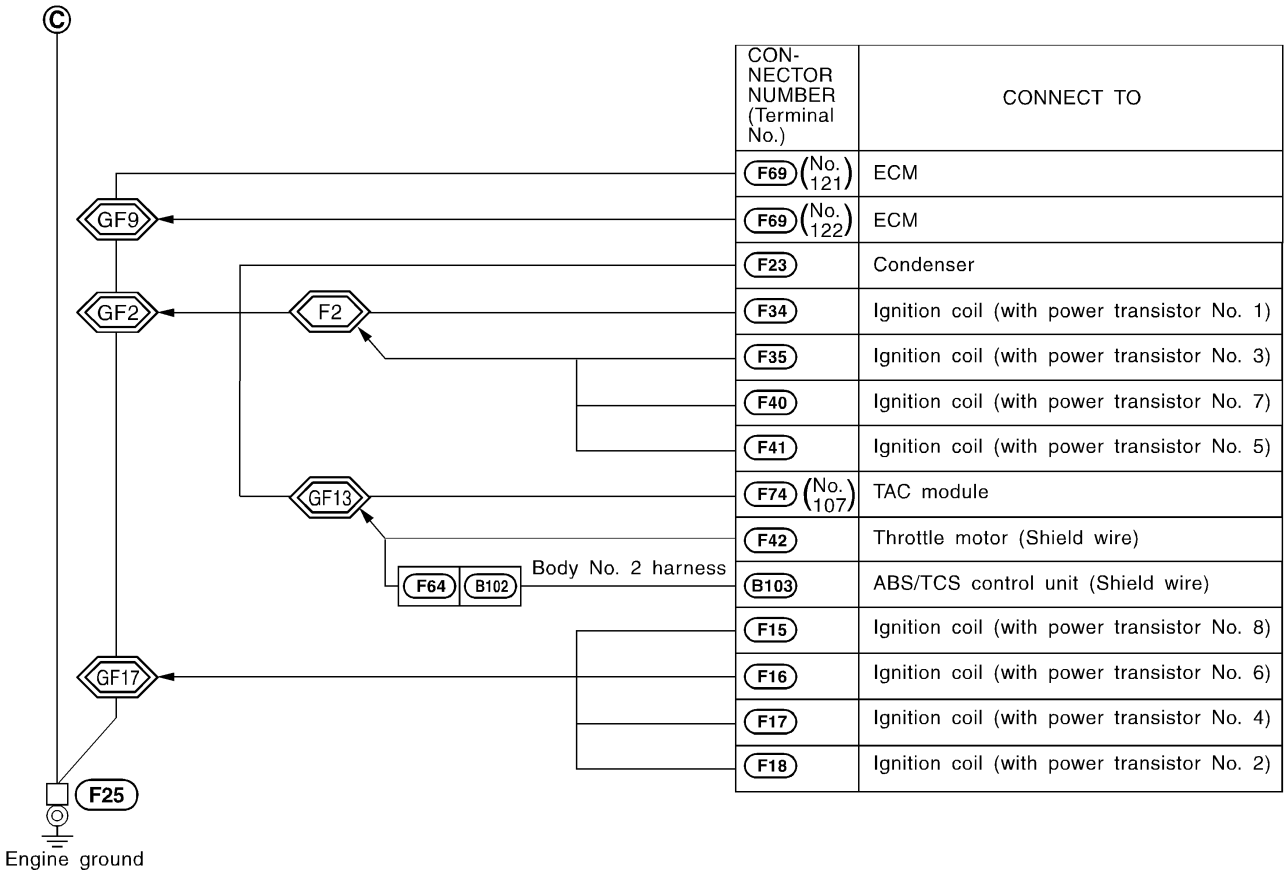


CONNECTOR NUMBER (Terminal No.)	CONNECT TO
F75 (No. 20)	TAC module
F37	Secondary throttle position sensor (Shield wire)
F69 (No. 125)	ECM
F69 (No. 126)	ECM
B9 (No. 15)	TCM (Transmission control module)
E67 (No. 12)	Data link connector
M38 (No. 8)	IVIS (NATS) IMMU
M38 (No. 9)	IVIS (NATS) IMMU
B9 (No. 48)	TCM (Transmission control module)
F13 (No. 2)	Intake valve timing control position sensor RH
F44 (No. 2)	Intake valve timing control position sensor LH
F69 (No. 128)	ECM
F12	Front heated oxygen sensor RH (Shield wire)
F45	Front heated oxygen sensor LH (Shield wire)
F132	Crankshaft position sensor (OBD) (Shield wire)
F13 (No. 1)	Intake valve timing control position sensor RH (Shield wire)
F44 (No. 1)	Intake valve timing control position sensor LH (Shield wire)
F122	Knock sensor LH (Shield wire)
F123	Knock sensor RH (Shield wire)
F79	Absolute pressure sensor (Shield wire)
C11	EVAP control system pressure sensor (Shield wire)
F75 (No. 10)	TAC module
E119 (No. 3)	Rear heated oxygen sensor LH
E119	Rear heated oxygen sensor LH (Shield wire)
F133	Rear heated oxygen sensor RH
F133	Rear heated oxygen sensor RH (Shield wire)
F31	Camshaft position sensor (Shield wire)
F31 (No. 1)	Camshaft position sensor
F32	Mass air flow sensor (Shield wire)
F39	Throttle position sensor (Shield wire)
F69 (No. 127)	ECM

J/C: Joint connector

CEL002M

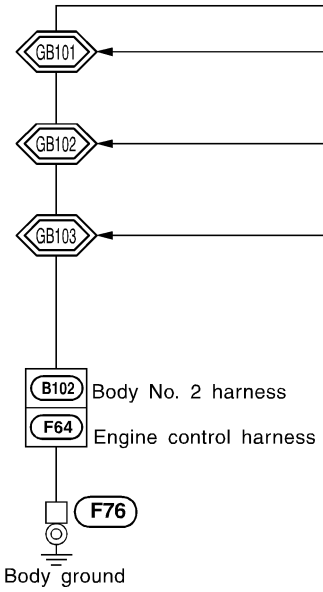
Engine Control Harness (Cont'd)



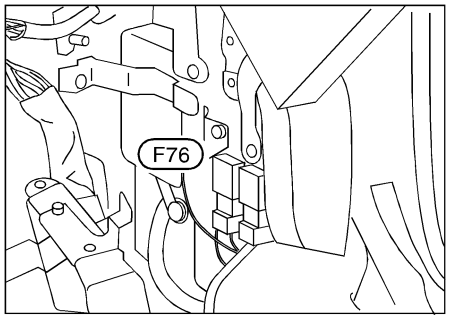
CONNECTOR NUMBER (Terminal No.)	CONNECT TO
F69 (No. 121)	ECM
F69 (No. 122)	ECM
F23	Condenser
F34	Ignition coil (with power transistor No. 1)
F35	Ignition coil (with power transistor No. 3)
F40	Ignition coil (with power transistor No. 7)
F41	Ignition coil (with power transistor No. 5)
F74 (No. 107)	TAC module
F42	Throttle motor (Shield wire)
B103	ABS/TCS control unit (Shield wire)
F15	Ignition coil (with power transistor No. 8)
F16	Ignition coil (with power transistor No. 6)
F17	Ignition coil (with power transistor No. 4)
F18	Ignition coil (with power transistor No. 2)

CEL008M

Engine Control Harness (Cont'd)

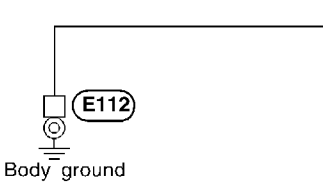


CONNECTOR NUMBER (Terminal No.)	CONNECT TO
B103 (No. 109)	ABS/TCS control unit
B103 (No. 110)	ABS/TCS control unit
B103 (No. 111)	ABS/TCS control unit
B103 (No. 113)	ABS/TCS control unit
B103 (No. 114)	ABS/TCS control unit
B103 (No. 115)	ABS/TCS control unit
B103 (No. 116)	ABS/TCS control unit

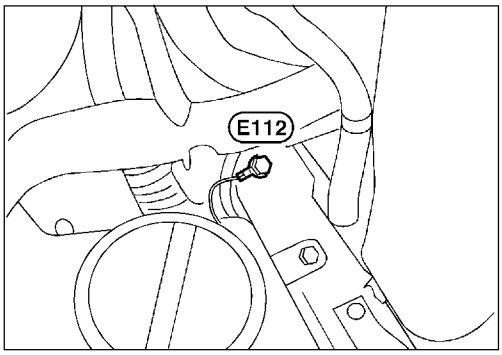


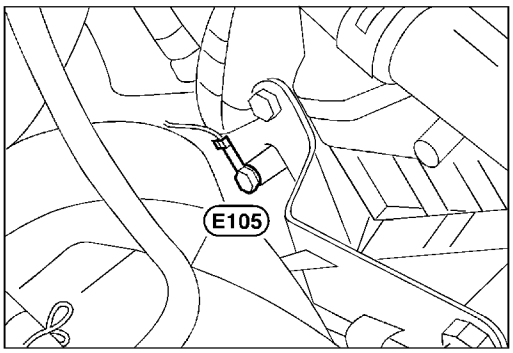
CEL989

Engine Harness



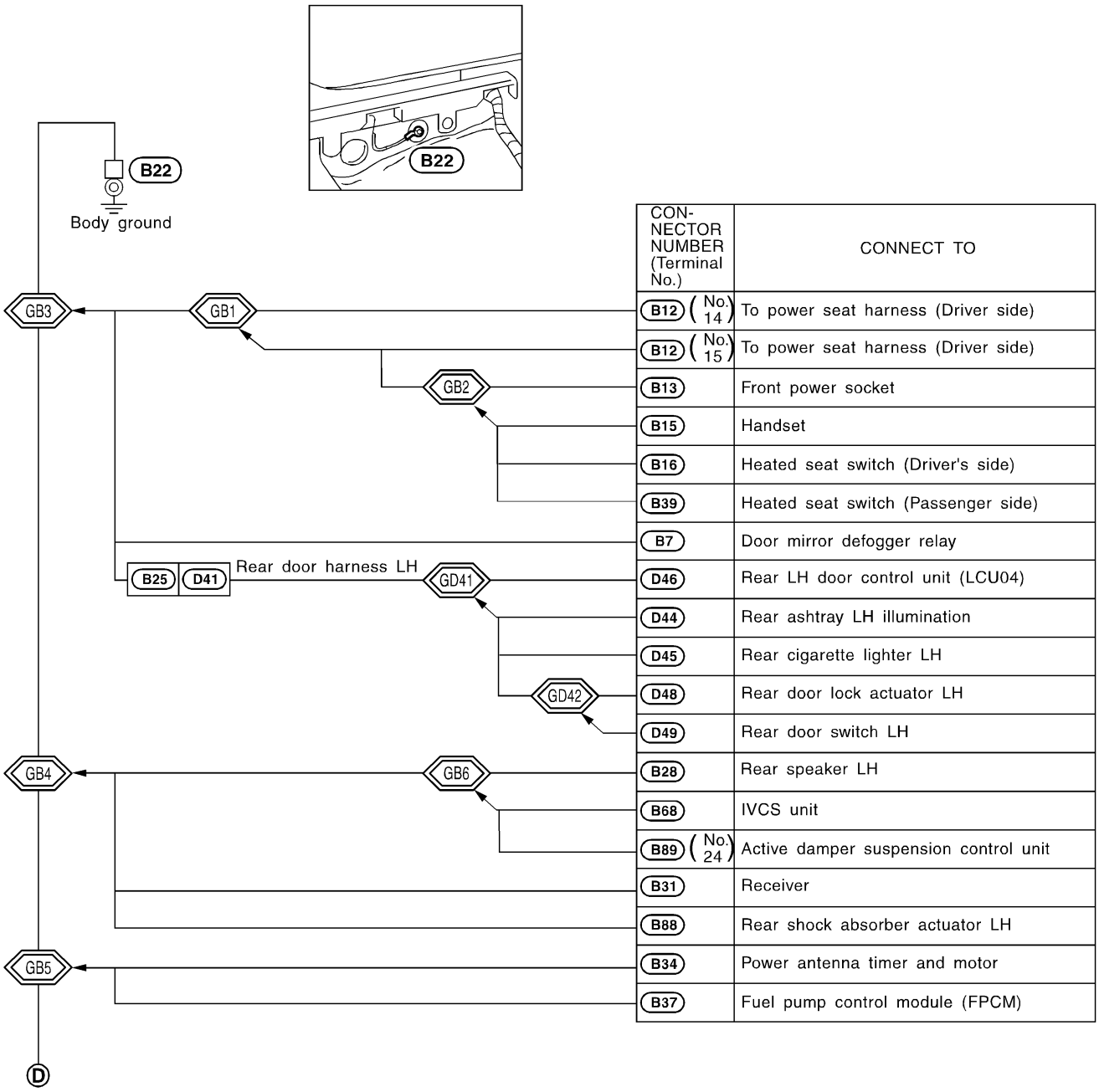
E105	Engine ground





CEL990

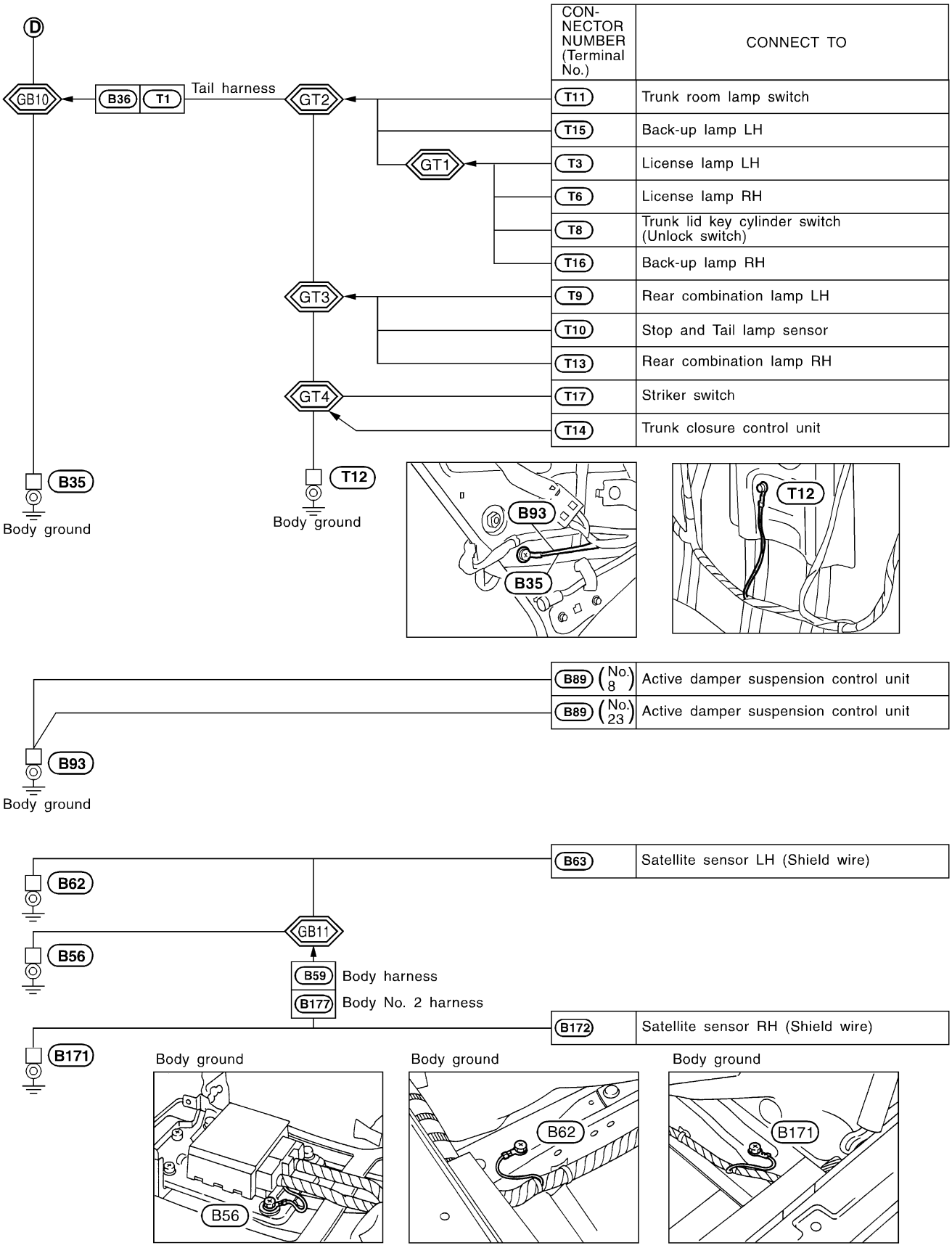
Body Harness



CONNECTOR NUMBER (Terminal No.)	CONNECT TO
B12 (No. 14)	To power seat harness (Driver side)
B12 (No. 15)	To power seat harness (Driver side)
B13	Front power socket
B15	Handset
B16	Heated seat switch (Driver's side)
B39	Heated seat switch (Passenger side)
B7	Door mirror defogger relay
D46	Rear LH door control unit (LCU04)
D44	Rear ashtray LH illumination
D45	Rear cigarette lighter LH
D48	Rear door lock actuator LH
D49	Rear door switch LH
B28	Rear speaker LH
B68	IVCS unit
B89 (No. 24)	Active damper suspension control unit
B31	Receiver
B88	Rear shock absorber actuator LH
B34	Power antenna timer and motor
B37	Fuel pump control module (FPCM)

CEL156A

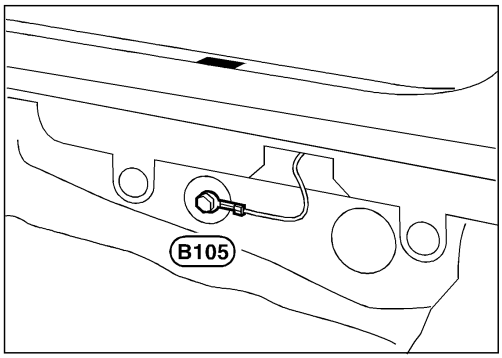
Body Harness (Cont'd)

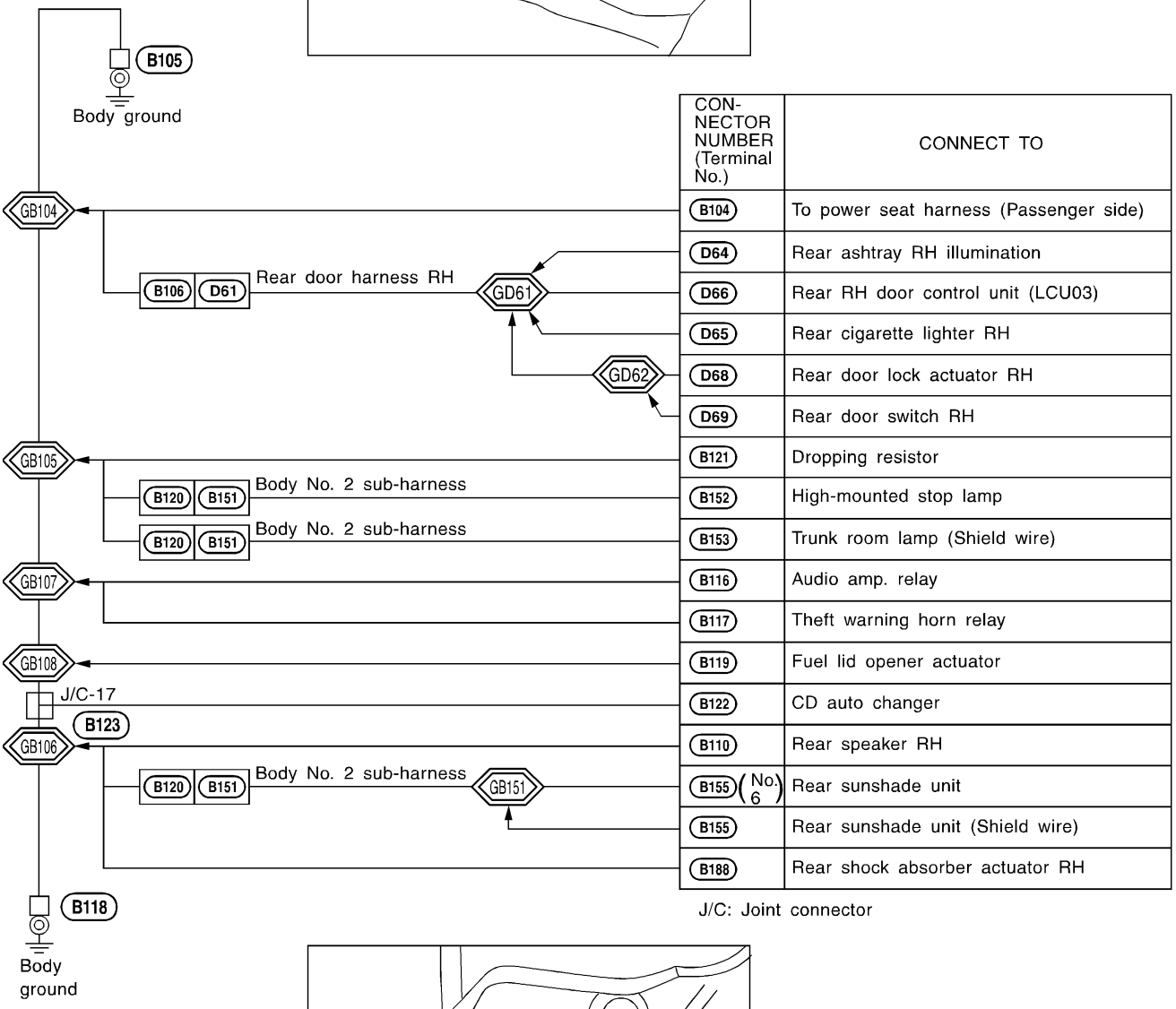


CONNECTOR NUMBER (Terminal No.)	CONNECT TO
T11	Trunk room lamp switch
T15	Back-up lamp LH
T3	License lamp LH
T6	License lamp RH
T8	Trunk lid key cylinder switch (Unlock switch)
T16	Back-up lamp RH
T9	Rear combination lamp LH
T10	Stop and Tail lamp sensor
T13	Rear combination lamp RH
T17	Striker switch
T14	Trunk closure control unit
B89 (No. 8)	Active damper suspension control unit
B89 (No. 23)	Active damper suspension control unit
B63	Satellite sensor LH (Shield wire)
B172	Satellite sensor RH (Shield wire)

CEL157A

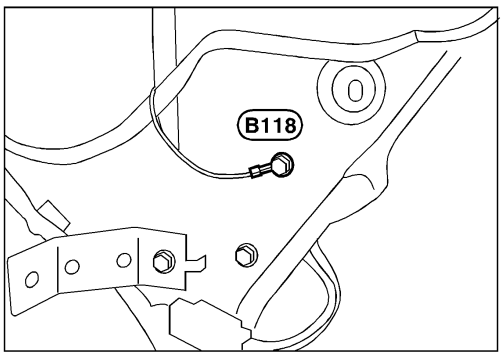
Body No. 2 Harness





CONNECTOR NUMBER (Terminal No.)	CONNECT TO
B104	To power seat harness (Passenger side)
D64	Rear ashtray RH illumination
D66	Rear RH door control unit (LCU03)
D65	Rear cigarette lighter RH
D68	Rear door lock actuator RH
D69	Rear door switch RH
B121	Dropping resistor
B152	High-mounted stop lamp
B153	Trunk room lamp (Shield wire)
B116	Audio amp. relay
B117	Theft warning horn relay
B119	Fuel lid opener actuator
B122	CD auto changer
B110	Rear speaker RH
B155 (No. 6)	Rear sunshade unit
B155	Rear sunshade unit (Shield wire)
B188	Rear shock absorber actuator RH

J/C: Joint connector



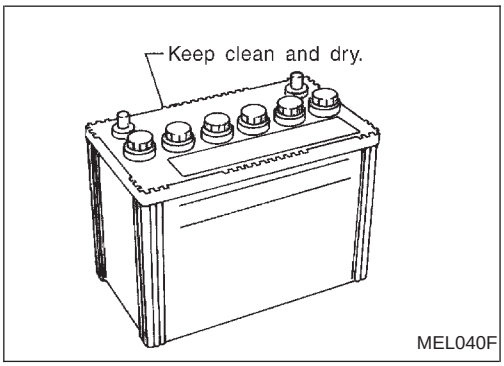
CEL993

CAUTION:

a. If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.

b. After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.

c. Never add distilled water through the hole used to check specific gravity.

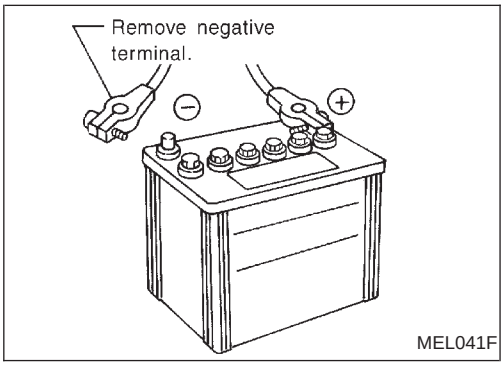


How to Handle Battery

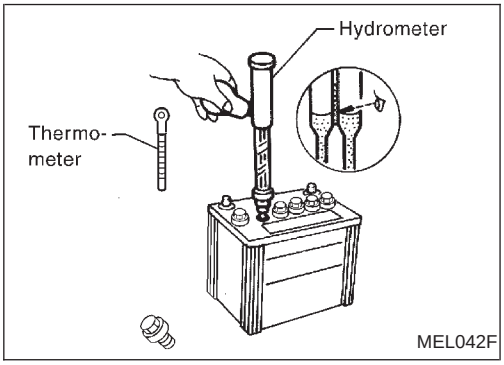
METHODS OF PREVENTING OVER-DISCHARGE

The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level. This also applies to batteries designated as “low maintenance” and “maintenance-free”.



- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal. (If the vehicle has an extended storage switch, turn it off.)



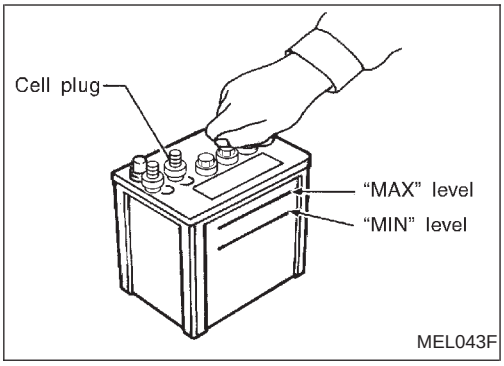
- Check the charge condition of the battery. Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

CHECKING ELECTROLYTE LEVEL

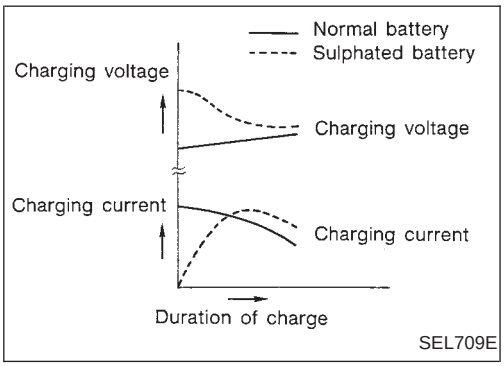
WARNING:

Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If acid contacts eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.

How to Handle Battery (Cont'd)



- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.

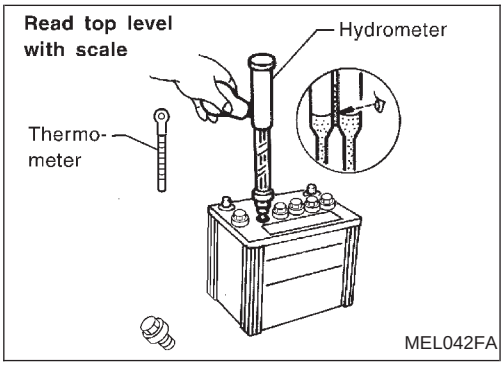


SULPHATION

A battery will be completely discharged if it is left unattended for a long time and the specific gravity will become less than 1.100. This may result in sulphation on the cell plates.

To determine if a battery has been "sulphated", note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulphated batteries.

A sulphated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.
2. Use the chart below to correct your hydrometer reading according to electrolyte temperature.

Hydrometer temperature correction

Battery electrolyte temperature °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (130)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	−0.004
16 (60)	−0.008
10 (50)	−0.012
4 (40)	−0.016
−1 (30)	−0.020
−7 (20)	−0.024
−12 (10)	−0.028
−18 (0)	−0.032

How to Handle Battery (Cont'd)

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged
1.110 - 1.130	Completely discharged

CHARGING THE BATTERY

CAUTION:

- **Do not "quick charge" a fully discharged battery.**
- **Keep the battery away from open flame while it is being charged.**
- **When connecting the charger, connect the leads first, then turn on the charger. Do not turn on the charger first, as this may cause a spark.**
- **If battery electrolyte temperature rises above 60°C (140°F), stop charging. Always charge battery at a temperature below 60°C (140°F).**

Charging rates:

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

Do not charge at more than 50 ampere rate.

Note: The ammeter reading on your battery charger will automatically decrease as the battery charges. This indicates that the voltage of the battery is increasing normally as the state of charge improves. The charging amps indicated above refer to initial charge rate.

- If, after charging, the specific gravity of any two cells varies more than .050, the battery should be replaced.

Service Data and Specifications (SDS)

Type		80D26R
Capacity	V-AH	12-55
Cold cranking current (For reference value)	A	582

System Description

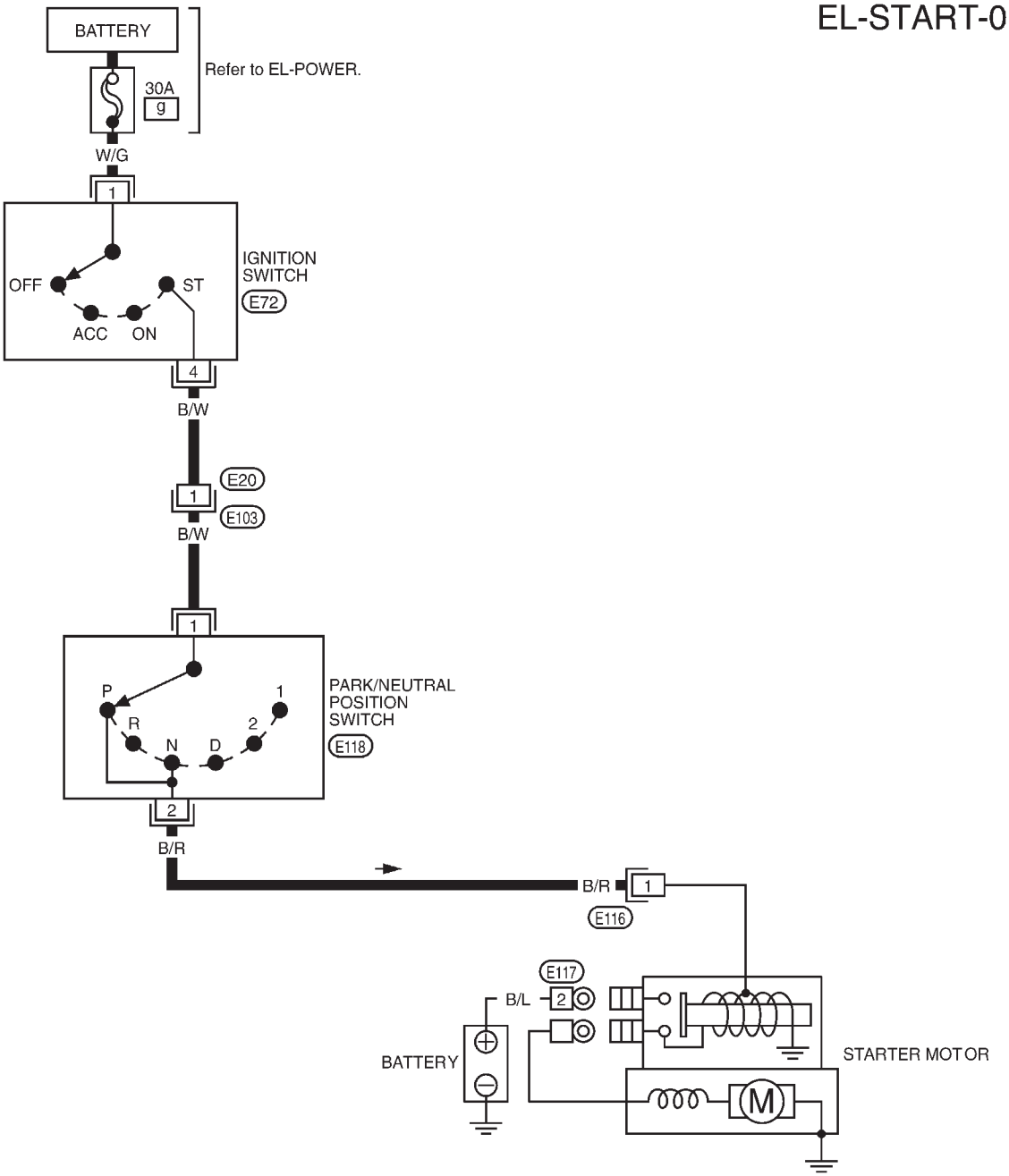
Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter g , located in the fuse, fusible link and relay box).

With the ignition switch in the START position, power is supplied
- from ignition switch terminal ④
- to park/neutral position switch terminal ①
- through park/neutral position switch terminal ② , with the selector lever in the P or N position
- to terminal ① of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and starter motor. The starter motor is grounded to the engine block. With power and ground supplied, cranking occurs and the engine starts.

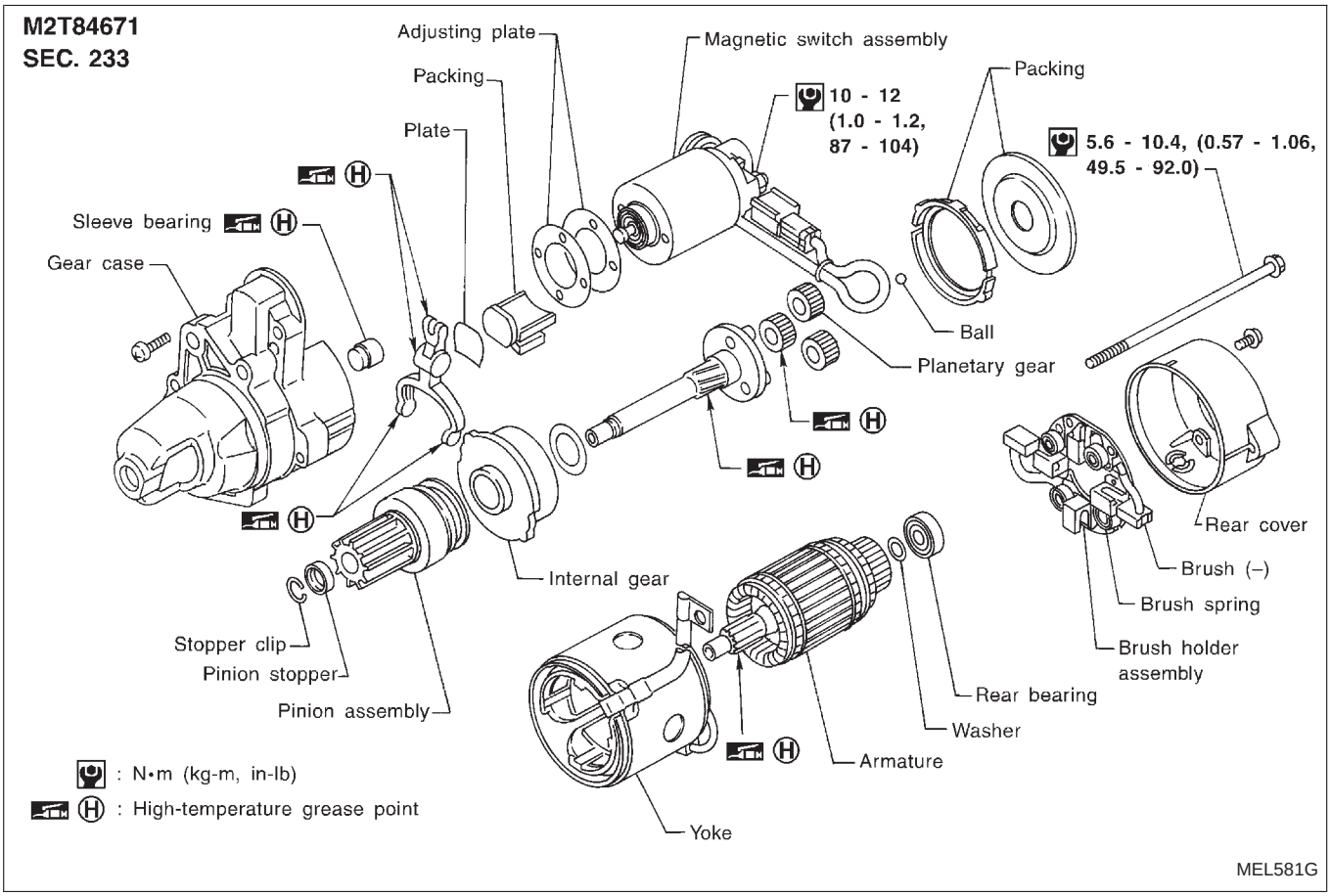
Wiring Diagram — START —

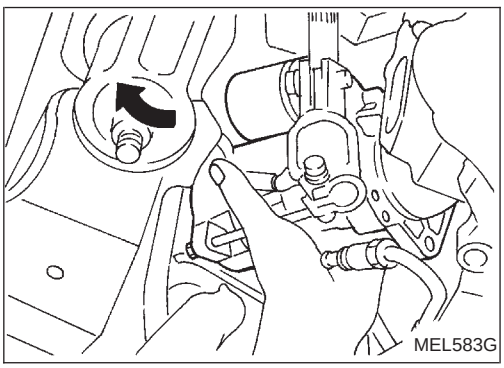
EL-START-01

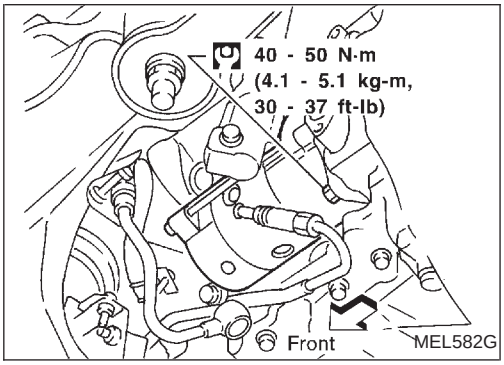


TEL962A

Construction







Removal and Installation

REMOVAL

1. Remove steering gear and linkage assembly. (Refer to “ST section”.)
2. Remove harness connector.
3. Remove starter by moving it in the direction of the arrow.

INSTALLATION

To install, reverse the removal procedure.

Pinion/Clutch Check

1. Inspect pinion teeth.
- Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Inspect reduction gear teeth.
- Replace reduction gear if teeth are worn or damaged. (Also check condition of armature shaft gear teeth.)
3. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
- If it locks or rotates in both directions, or unusual resistance is evident, replace.

Service Data and Specifications (SDS)

STARTER

Type		M2T84671 MITSUBISHI make Reduction gear type
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 145
Revolution	rpm	More than 3,300
Minimum diameter of commutator	mm (in)	31.4 (1.236)
Minimum length of brush	mm (in)	11.0 (0.433)
Brush spring tension	N (kg, lb)	30.9 - 37.7 (3.15 - 3.85, 6.95 - 8.47)
Clearance between pinion front edge and pinion stopper	mm (in)	0.5 - 2.0 (0.020 - 0.079)

System Description

The alternator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. The voltage output is controlled by the IC regulator.
Power is supplied at all times to alternator terminal Ⓢ through:

- 120A fusible link (letter [a], located in the fuse, fusible link and relay box), and
- 7.5A fuse (No. [62], located in the fuse, fusible link and relay box).

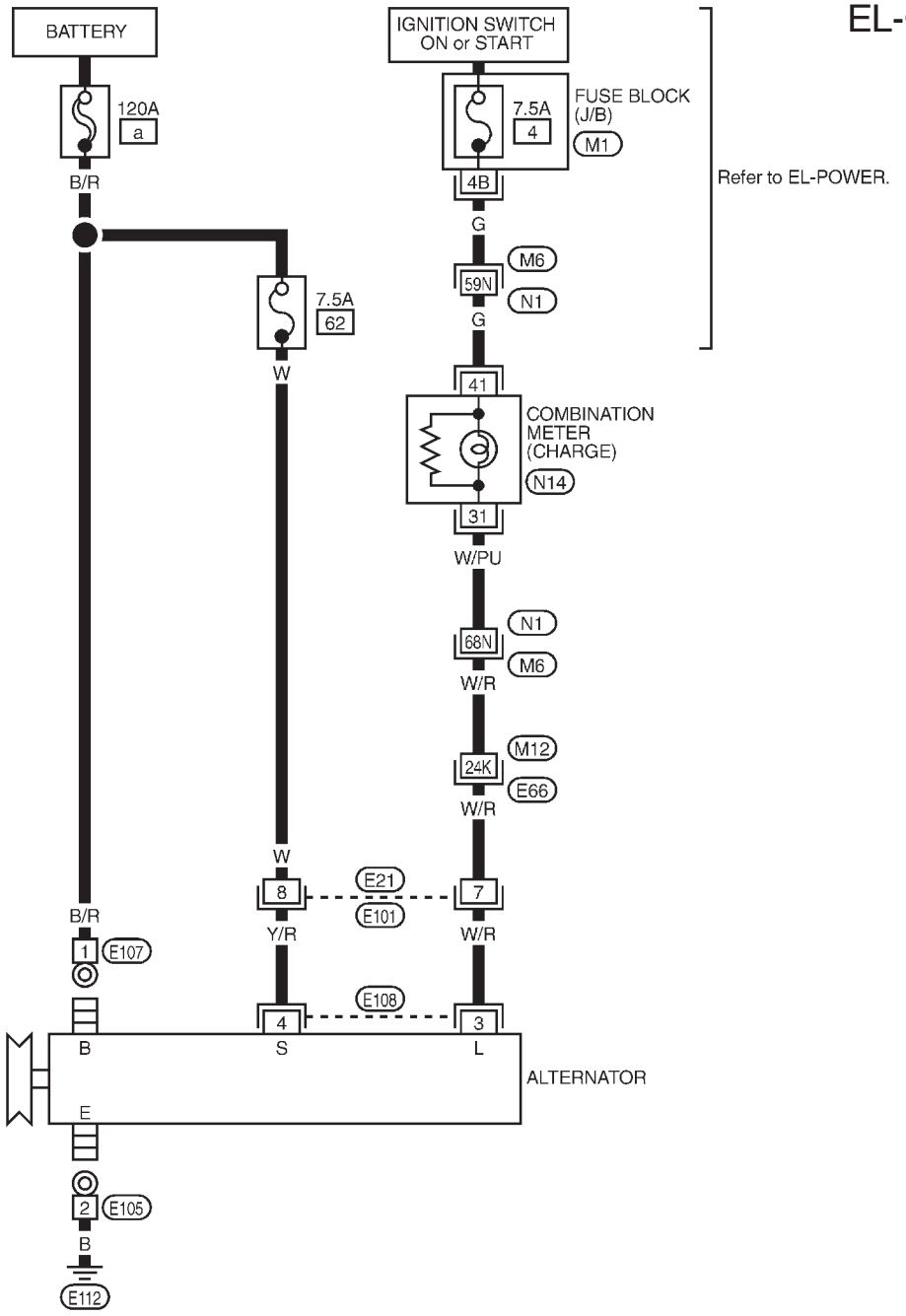
Terminal Ⓑ supplies power to charge the battery and operate the vehicle's electrical system. Output voltage is controlled by the IC regulator at terminal Ⓢ detecting the input voltage. The charging circuit is protected by the 120A fusible link.
Terminal Ⓔ of the alternator supplies ground through body ground (E112).
With the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. [4], located in the fuse block (J/B)]
- to combination meter terminal (41) for the charge warning lamp.

Ground is supplied to terminal (25) of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning lamp will illuminate. When the alternator is providing sufficient voltage with the engine running, the ground is opened and the charge warning lamp will go off.
If the charge warning lamp illuminates with the engine running, a fault is indicated.

Wiring Diagram — CHARGE —

EL-CHARGE-01



Refer to last page (Foldout page).

M6 , N1

M12 , E66

M1

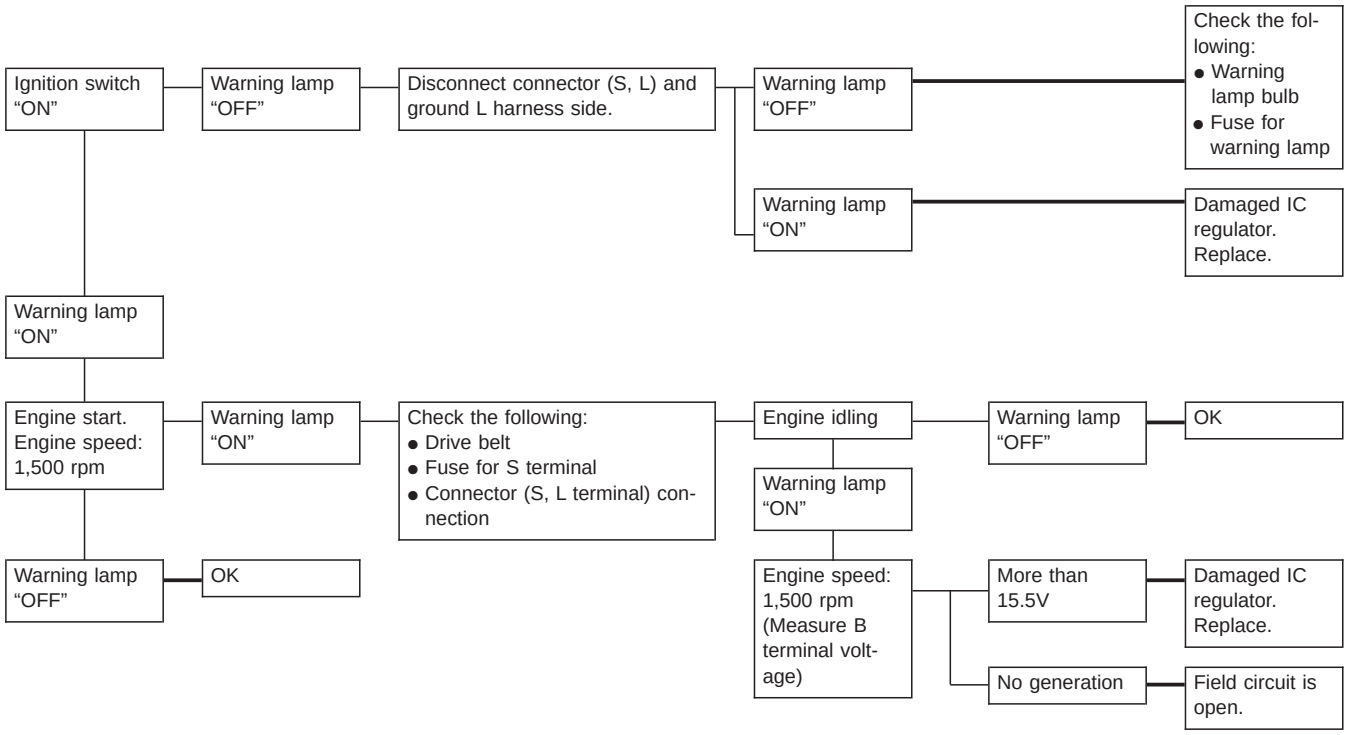
TEL963A

Trouble Diagnoses

Before conducting an alternator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. The alternator can be checked easily by referring to the Inspection Table.

- **Before starting, inspect the fusible link.**
- **Use fully charged battery.**

WITH IC REGULATOR



Warning lamp: "CHARGE" warning lamp in combination meter

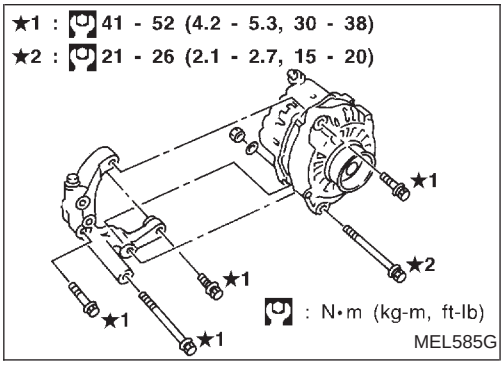
Note:

- **If the inspection result is OK even though the charging system is malfunctioning, check the B terminal connection. (Check the tightening torque.)**
- **When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.**

MALFUNCTION INDICATOR

The IC regulator warning function activates to illuminate "CHARGE" warning lamp, if any of the following symptoms occur while alternator is operating:

- Excessive voltage is produced.
- No voltage is produced.



Removal and Installation

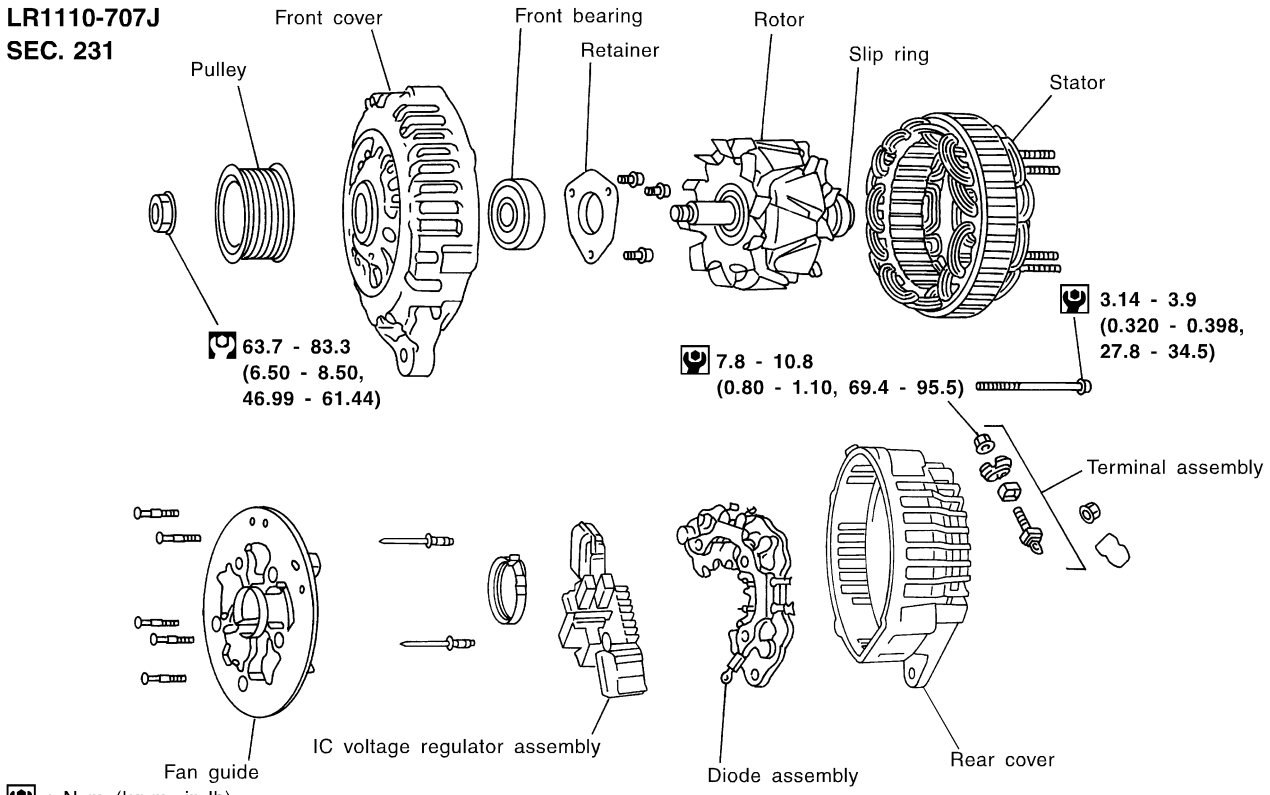
REMOVAL

1. Remove engine upper cover.
2. Remove drive belt from alternator.
3. Disconnect harness connector.
4. Remove alternator.

INSTALLATION

To install, reverse the removal procedure.

Construction

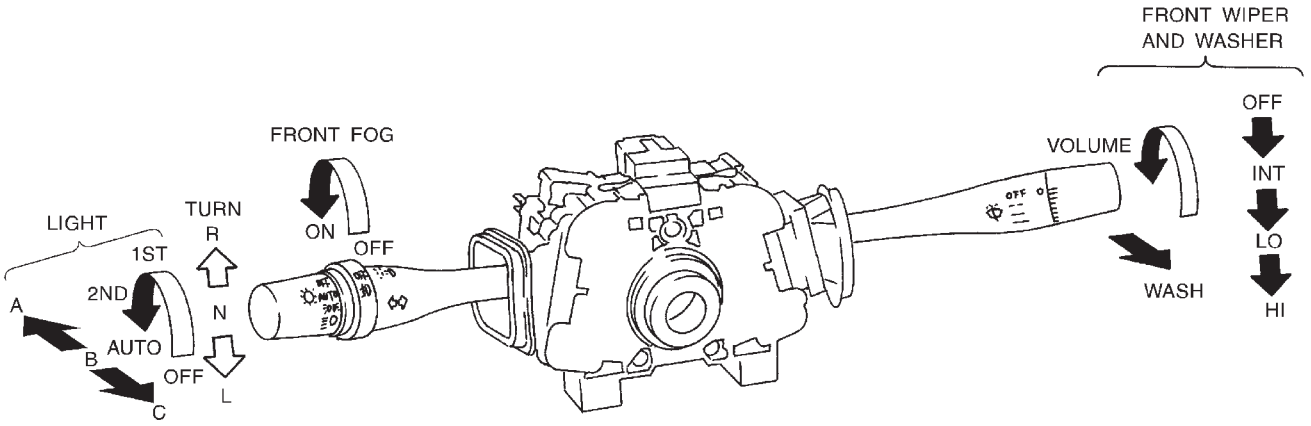


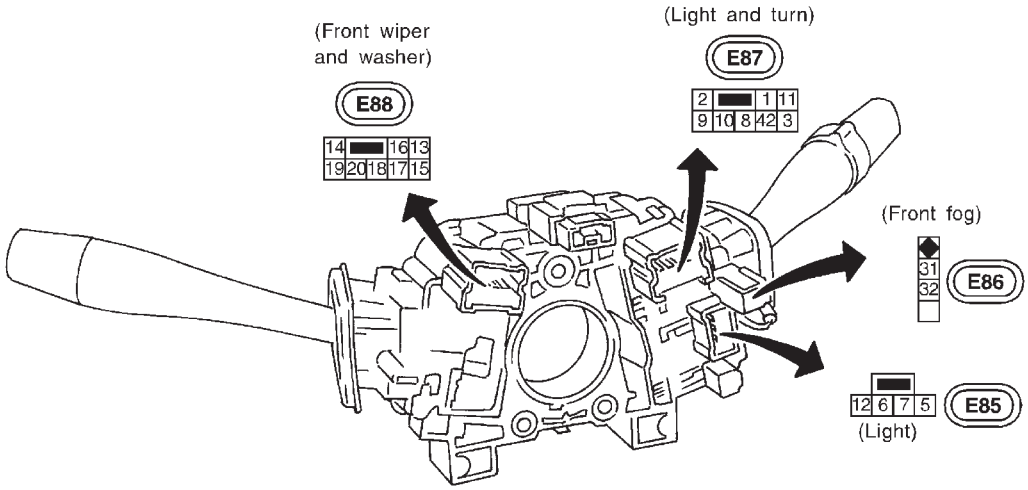
Service Data and Specifications (SDS)

ALTERNATOR

Type		LR1110-707J
		HITACHI make
Nominal rating	V-A	12-110
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 950
Hot output current (When 13.5 volts is applied)	A/rpm	More than 34/1,300 More than 82/2,500 More than 105/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum outer diameter	mm (in)	26.0 (1.024)
Rotor (Field coil) resistance	Ω	2.31

Check

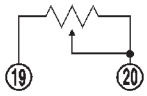




FRONT WIPER SWITCH

	OFF	INT	LO	HI	WASH
13	○	○			
14	○	○	○		
15		○			
16				○	
17		○	○	○	○
18					○

VARIABLE
INTERMITTENT
WIPER VOLUME



FRONT FOG
LAMP SWITCH

	ON	OFF
31		○
32		○

TURN SIGNAL SWITCH

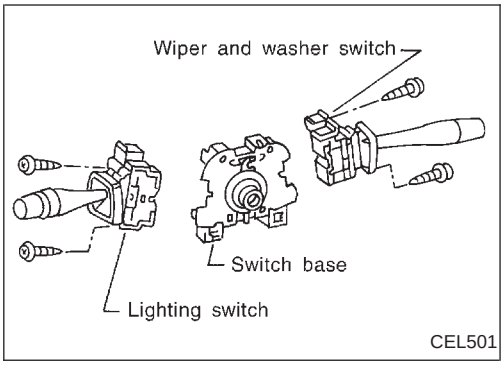
	L	N	R
1	○		○
2			○
3	○		

LIGHTING SWITCH

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

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

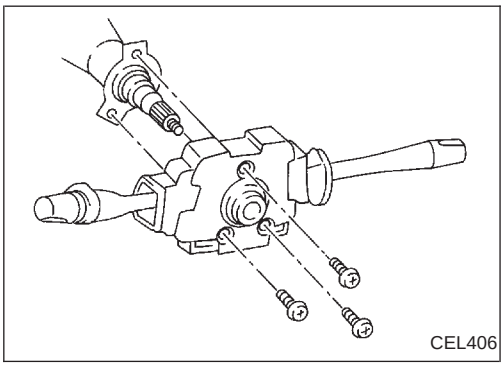
CEL994



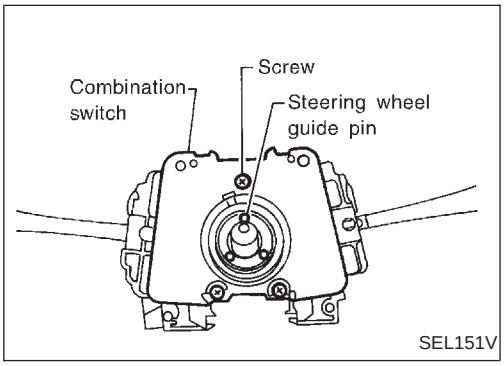
Replacement

For removal and installation of spiral cable, refer to RS section [“SUPPLEMENTAL RESTRAINT SYSTEM (SRS)”, “Installation — Air Bag Module and Spiral Cable”].

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



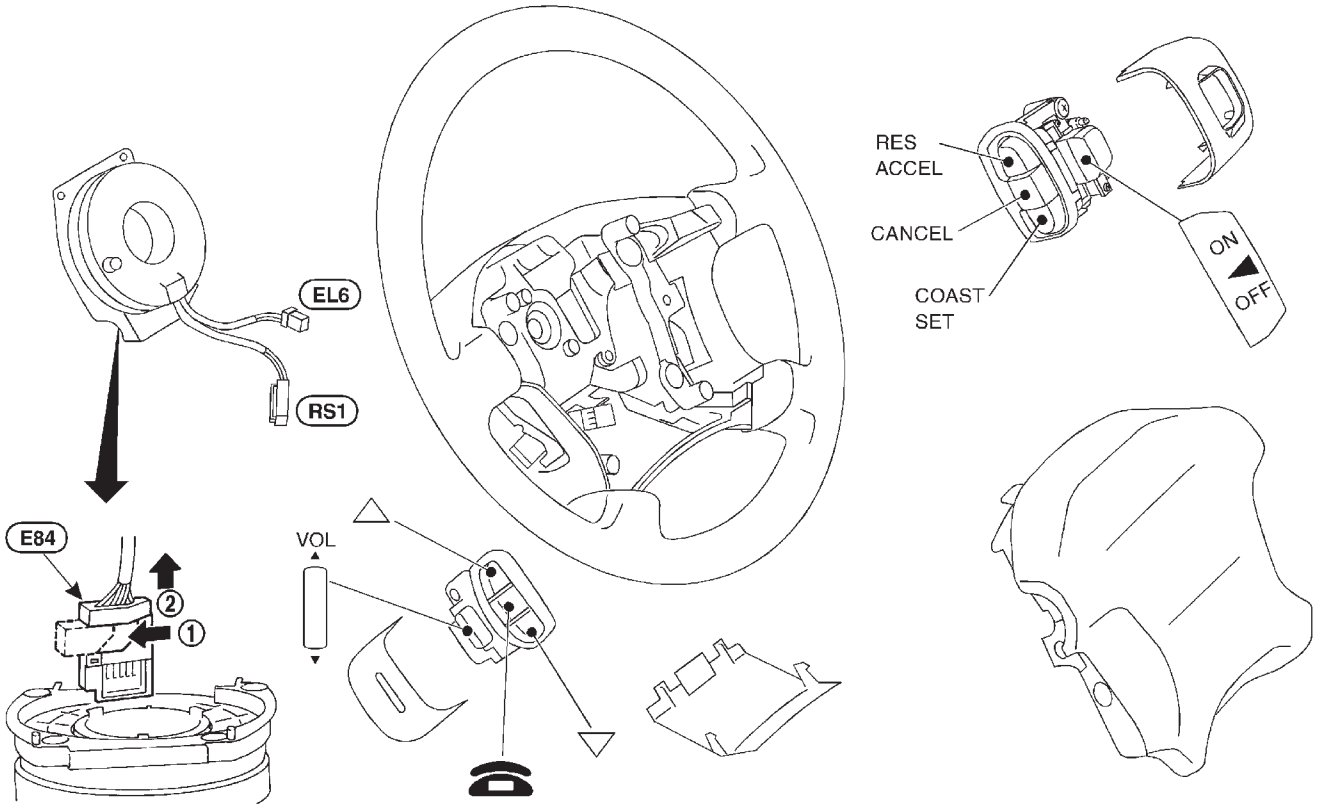
- To remove combination switch base, remove base attaching screw.

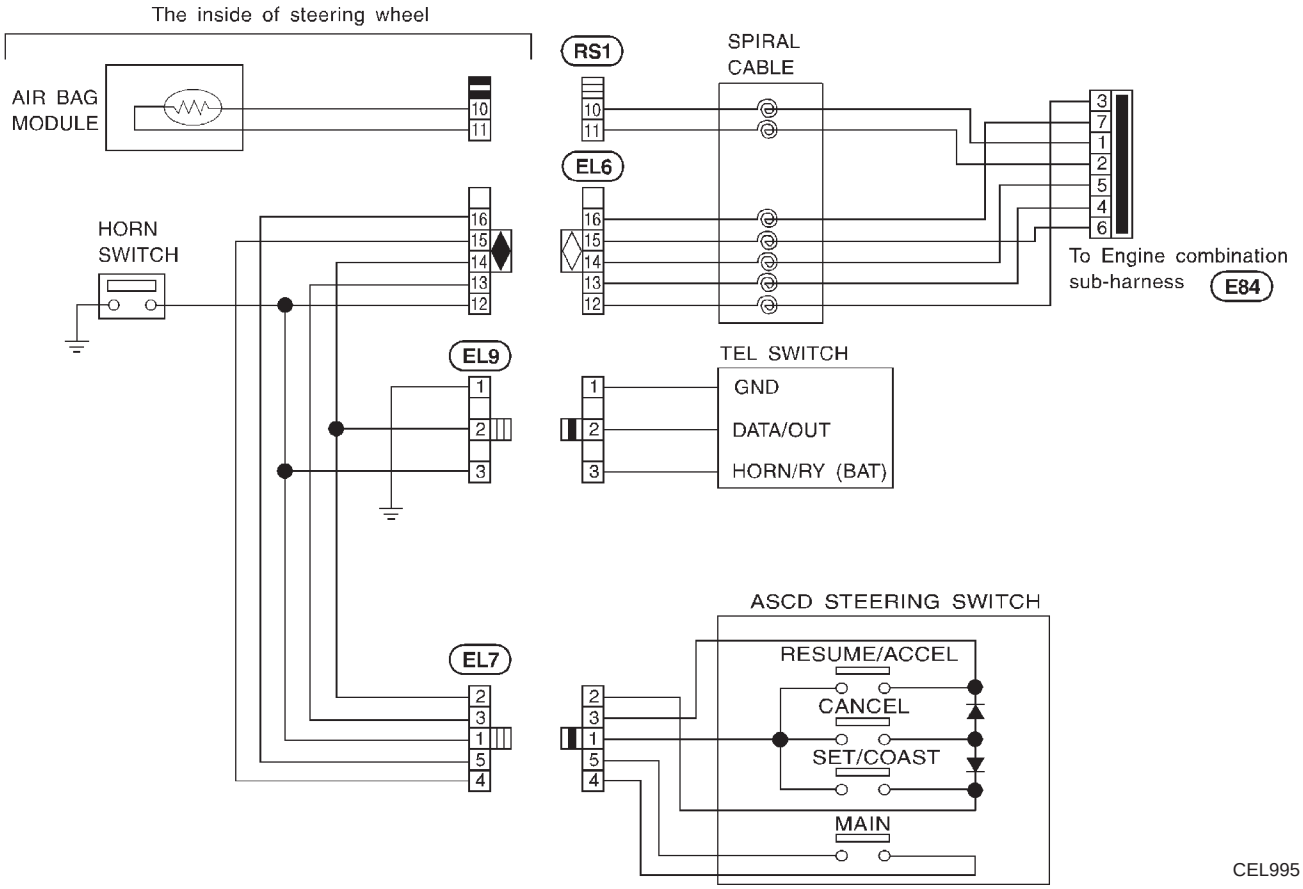


- Before installing steering wheel, align the steering wheel guide pins with the screws which secure the combination switch, as shown in the left figure.

Check

WITH INFINITI COMMUNICATOR (IVCS)

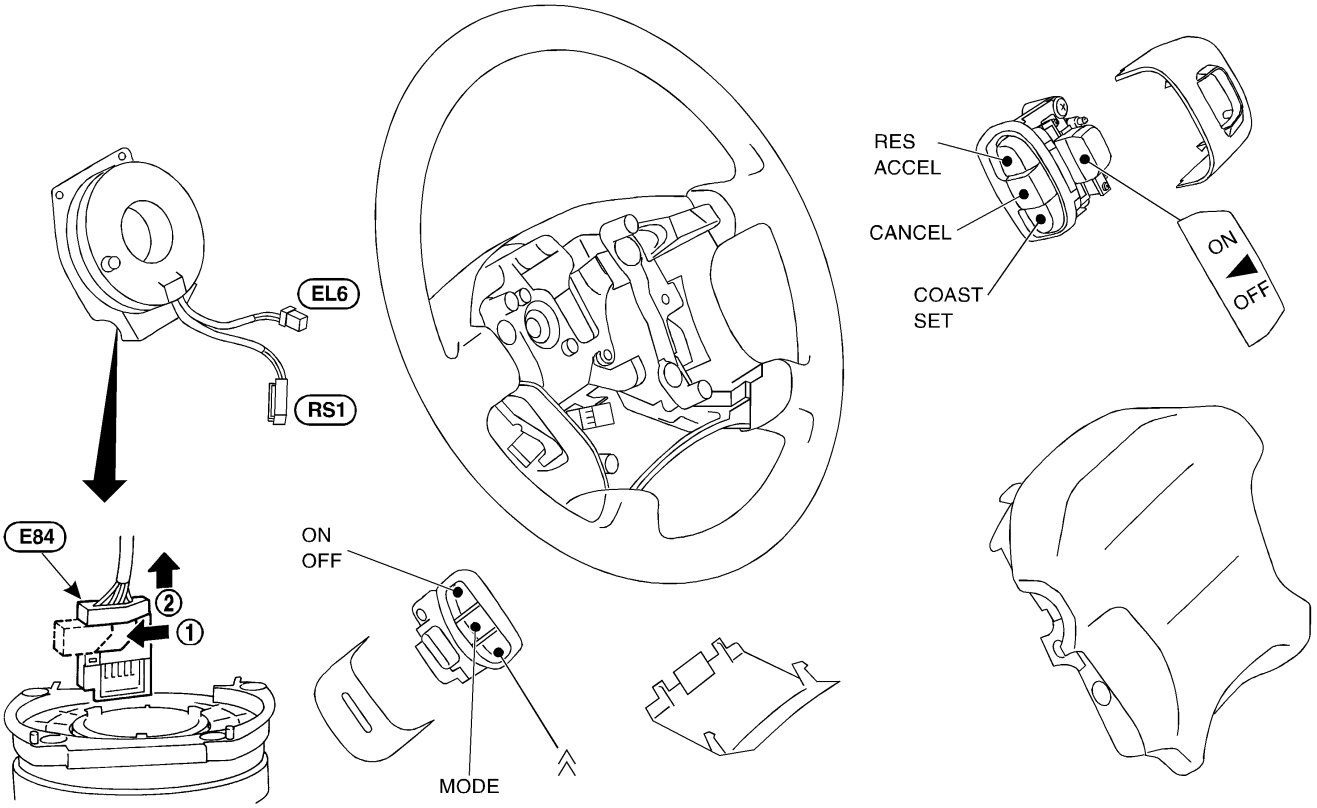


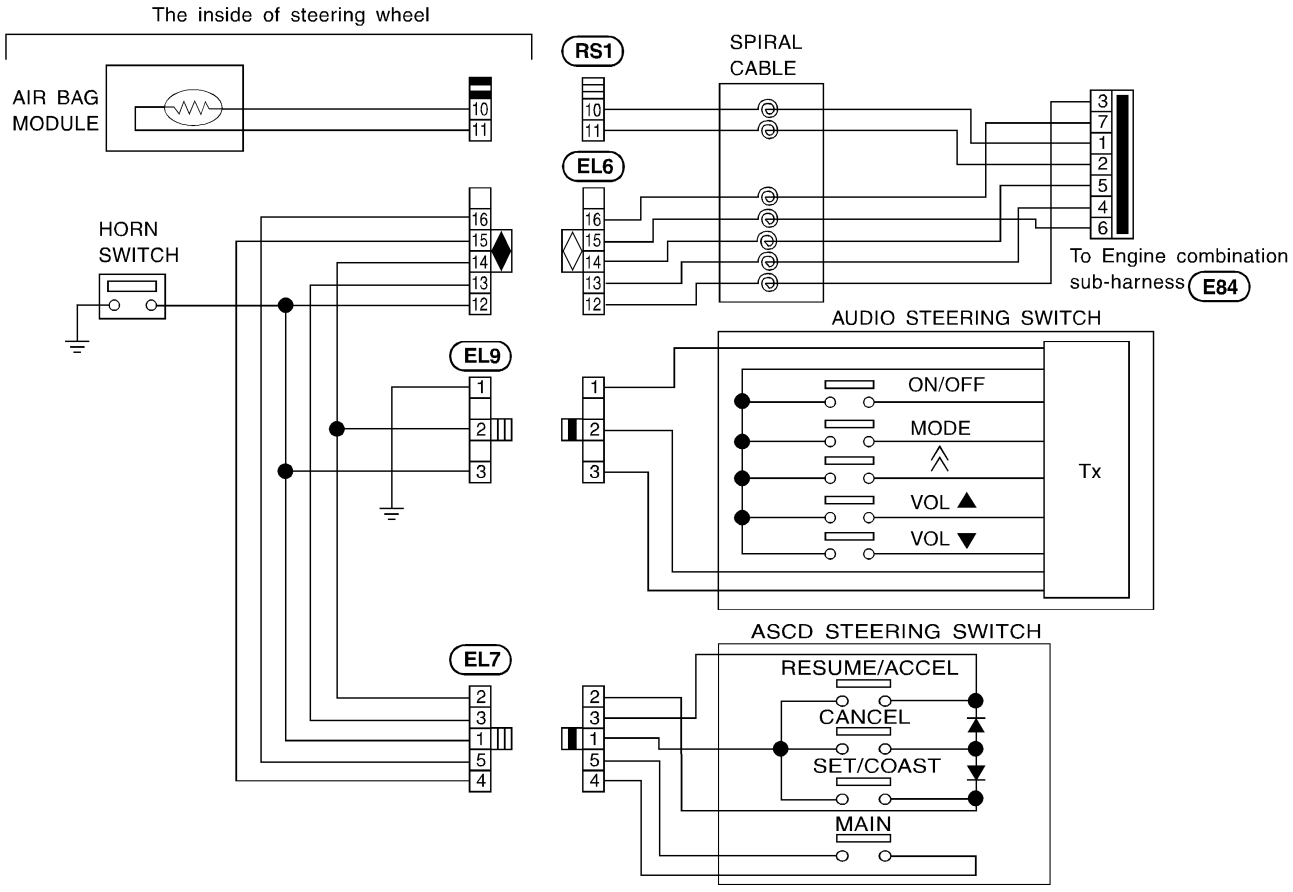


CEL995

Check (Cont'd)

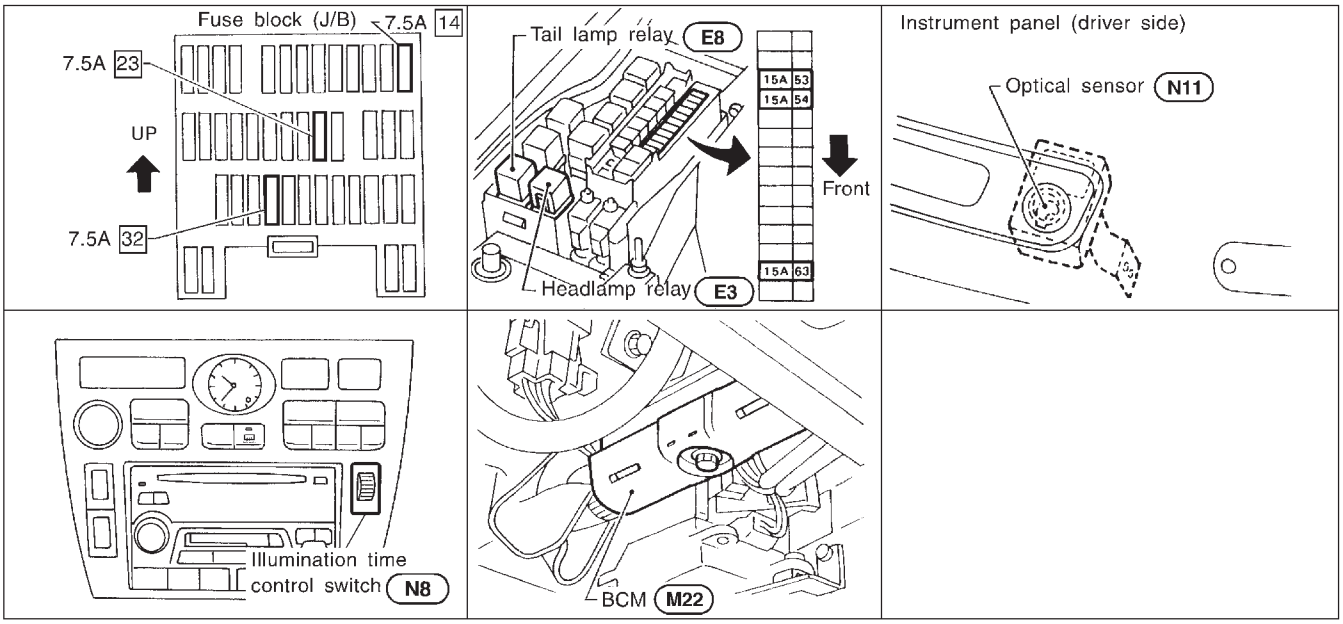
WITHOUT INFINITI COMMUNICATOR (IVCS)





CEL846

Component Parts and Harness Connector Location



SEL802V

System Description

Power is supplied at all times
- to headlamp relay terminal ①, and
- through 15A fuse [No. 53, located in the fuse, fusible link and relay box]
- to headlamp relay terminal ⑤, and
- through 15A fuse [No. 54, located in the fuse, fusible link and relay box]
- to headlamp relay terminal ⑦, and
- through 7.5A fuse [No. 14, located in the fuse block (J/B)].
- to BCM terminal 105.

When the ignition switch is in the ON or START position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal 68.

Ground is supplied
- to BCM terminals 56 and 113
- to illumination time control switch terminal ③
- through body grounds M14 and M47, and
- to the lighting switch terminals ⑧ and ⑤
- through body grounds E22 and E36.

HEADLAMP SWITCH OPERATION

Low beam operation

When the lighting switch is turned to 2ND and LOW (“B”) positions, ground is supplied
- to headlamp relay terminal ②
- from the lighting switch terminal 12.

Headlamp relay is then energized, and power is supplied
- from the headlamp relay terminal ⑥
- to terminal ② of the LH headlamp, and
- from the headlamp relay terminal ③
- to terminal ② of the RH headlamp.

Ground is supplied
- to terminal ① of the LH headlamp
- from the lighting switch terminal ⑦, and
- to terminal ① of the RH headlamp

System Description (Cont'd)

- from the lighting switch terminal ⑩.

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

High beam operation/flash-to-pass operation

When the lighting switch is turned to 2ND and HIGH ("A") or PASS ("C") positions, ground is supplied
- to headlamp relay terminal ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied
- from the headlamp relay terminal ⑥
- to terminal ② of the LH headlamp, and
- to combination meter terminal ㉒ for the HIGH BEAM indicator
- from headlamp relay terminal ③
- to terminal ② of the RH headlamp.

Ground is supplied
- to terminal ③ of the LH headlamp, and
- to combination meter terminal ㉓
- from the lighting switch terminal ⑥
- to terminal ③ of the RH headlamp
- from the lighting switch terminal ⑨.

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

AUTO LIGHT OPERATION

BCM is connected to the optical sensor. The optical sensor sends a signal to BCM according to outside brightness.

When the lighting switch is turned to AUTO position, ground is supplied
- to BCM terminal ⑭
- from the lighting switch terminal ㊷.

When ignition switch is set to ON or START and outside is darker than the prescribed level, ground is supplied
- to headlamp relay terminal ②
- from the BCM terminal ⑤.

Headlamp relay is then energized, and headlamps (Low or High) illuminate according to switch position

Auto light operation allows headlamps to turn off when outside is brighter than the prescribed level.

Or the ignition switch is turned to OFF position. (When shut off delay function is canceled.)

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

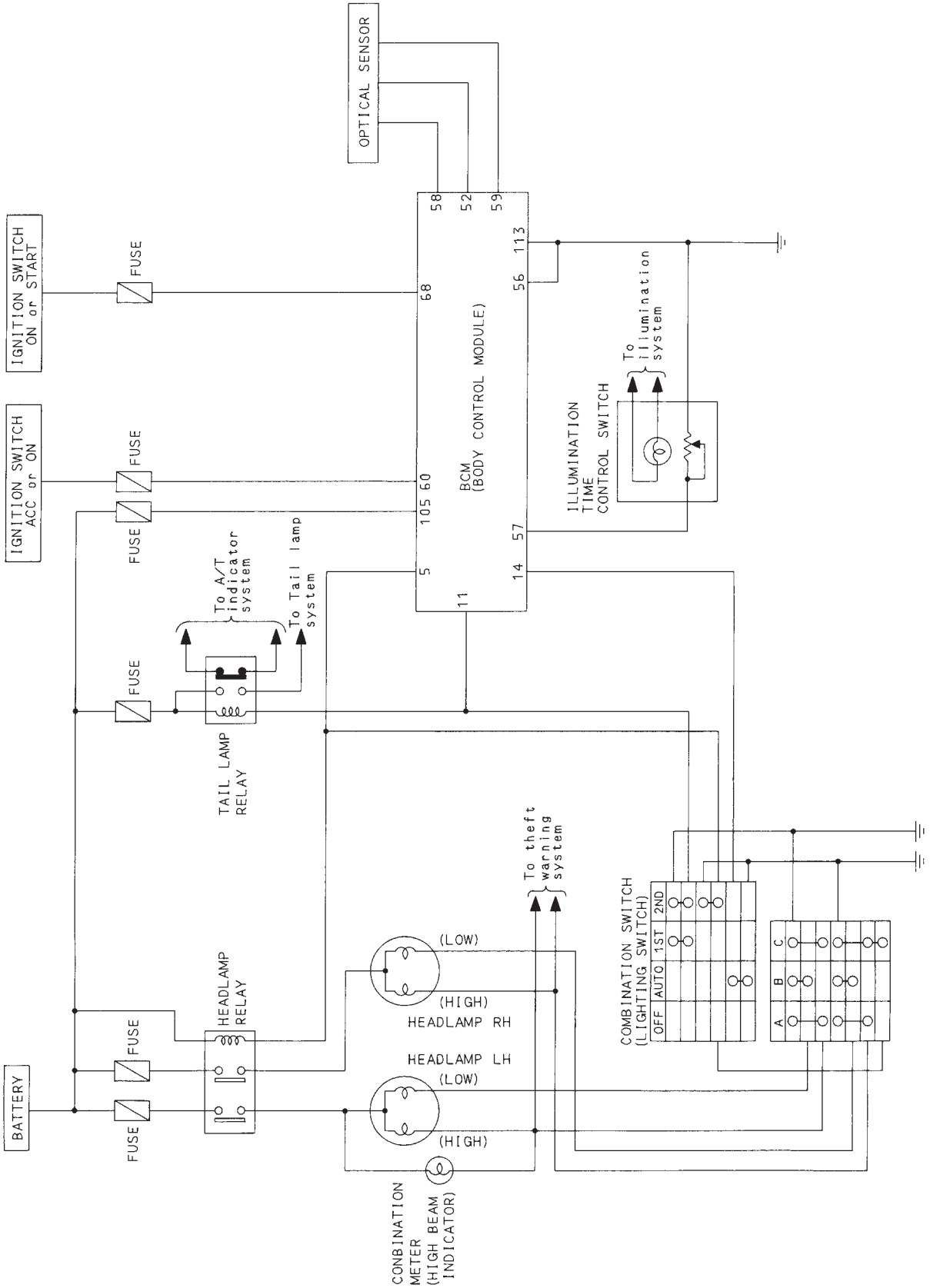
SHUT OFF DELAY

While the headlamps are lit in the auto-light operation mode, the ignition switch is turned from the "ON" to the "OFF" position. The BCM no longer receives a voltage signal at terminal ㊽. This starts the auto light shut off delay timer. The timer is set based on the resistance value at BCM terminal ㊼. With the timer running, the headlamps remain lit. When the timer reaches the end of its cycle, the headlamps turn off. Headlamp lighting time can be adjusted from about 0 to 3 minutes. (This function is not applicable to the tail lamps.)

THEFT WARNING SYSTEM

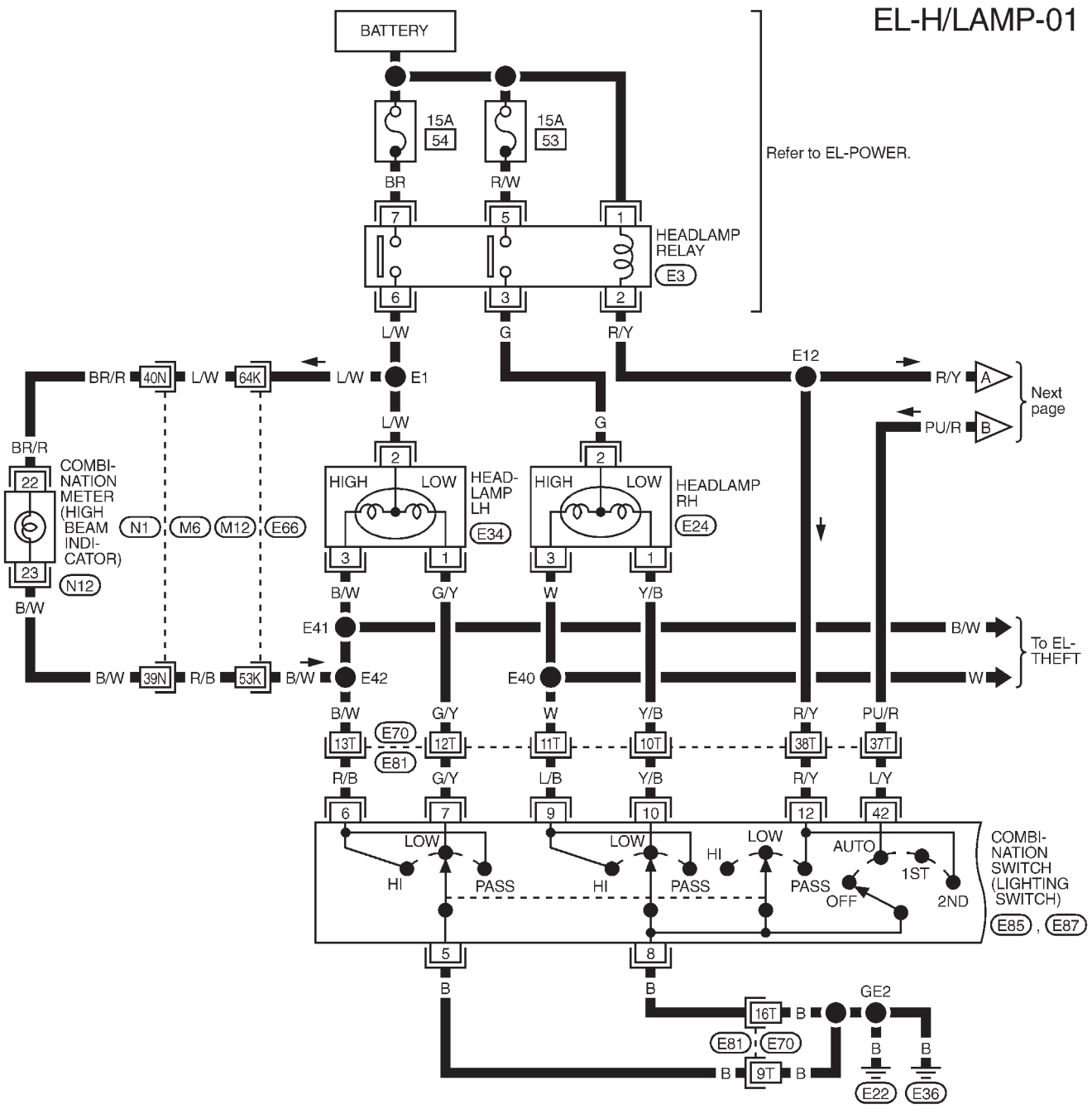
The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS", EL-390.

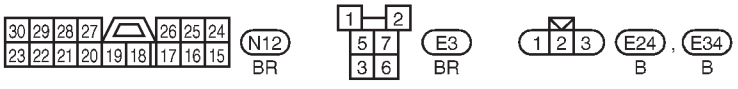
Schematic

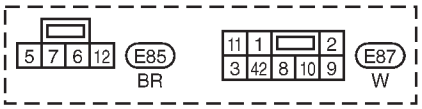


TEL732

Wiring Diagram — H/LAMP —





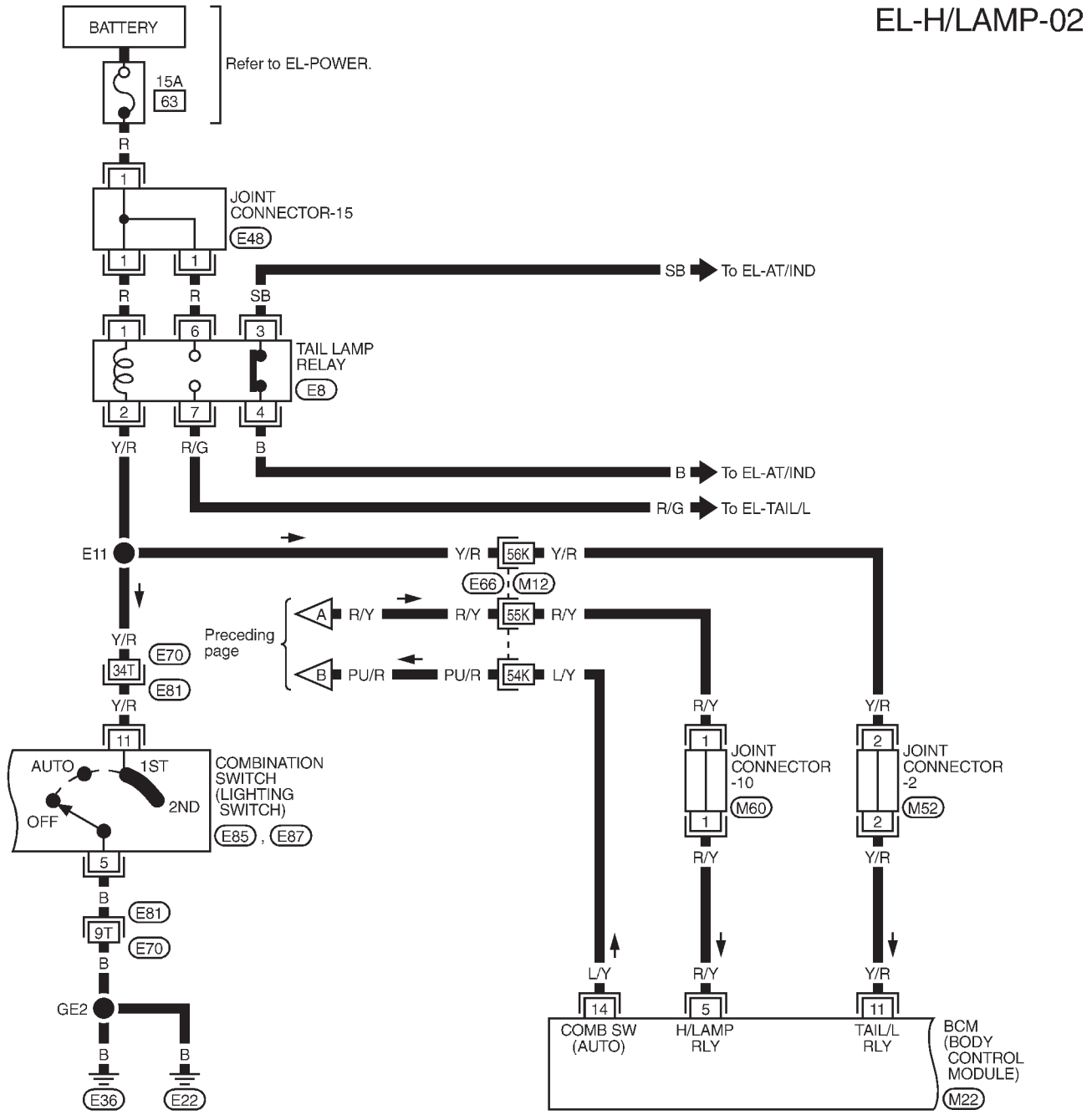


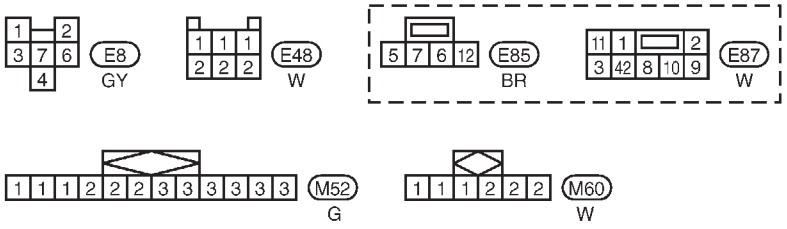
Refer to last page (Foldout page).
M6, N1
E66, M12
E70, E81

TEL964A

Wiring Diagram — H/LAMP — (Cont'd)

EL-H/LAMP-02





Refer to last page (Foldout page).

E66 , M12

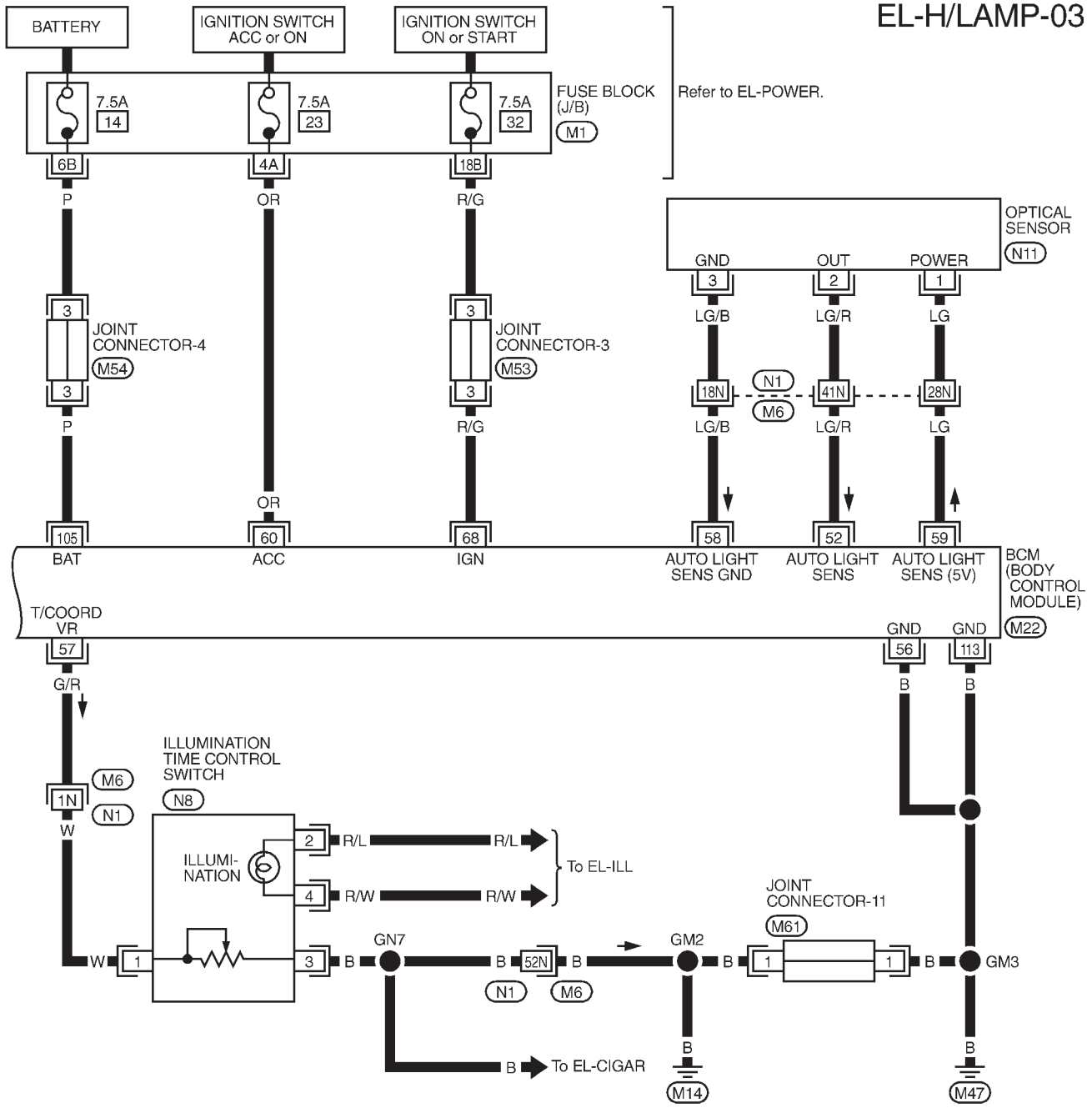
E70 , E81

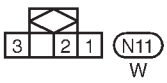
M22

TEL734

Wiring Diagram — H/LAMP — (Cont'd)

EL-H/LAMP-03





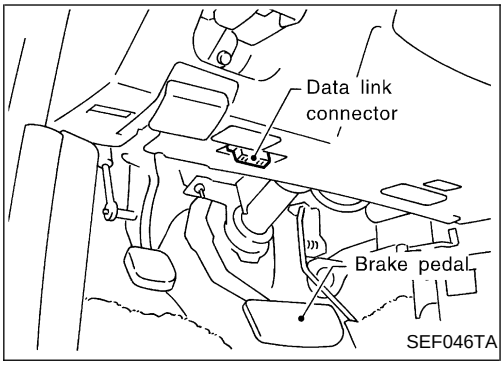
Refer to last page (Foldout page).

M6 , N1

M1

M22

TEL965A

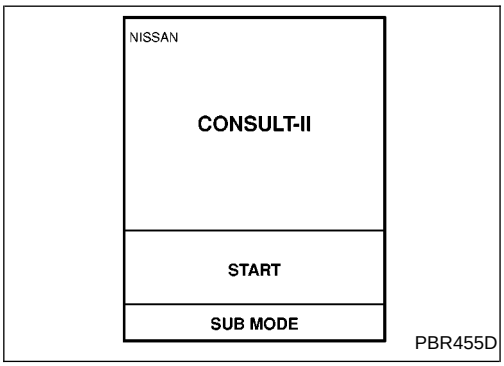


SEF046TA

CONSULT-II (For auto light operation)

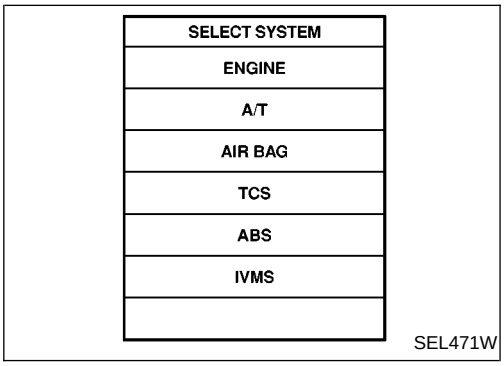
CONSULT-II INSPECTION PROCEDURE

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



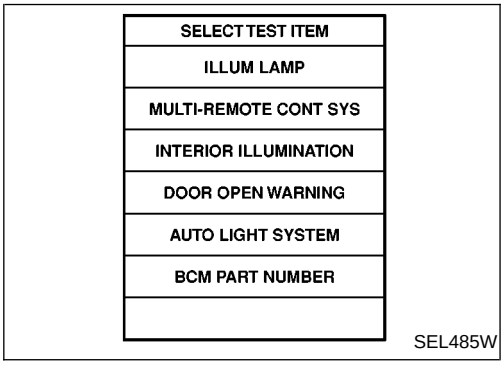
PBR455D

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



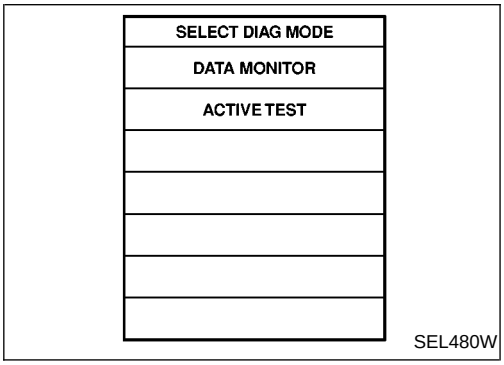
SEL471W

5. Touch “IVMS”.



SEL485W

6. Touch “AUTO LIGHT SYSTEM”.

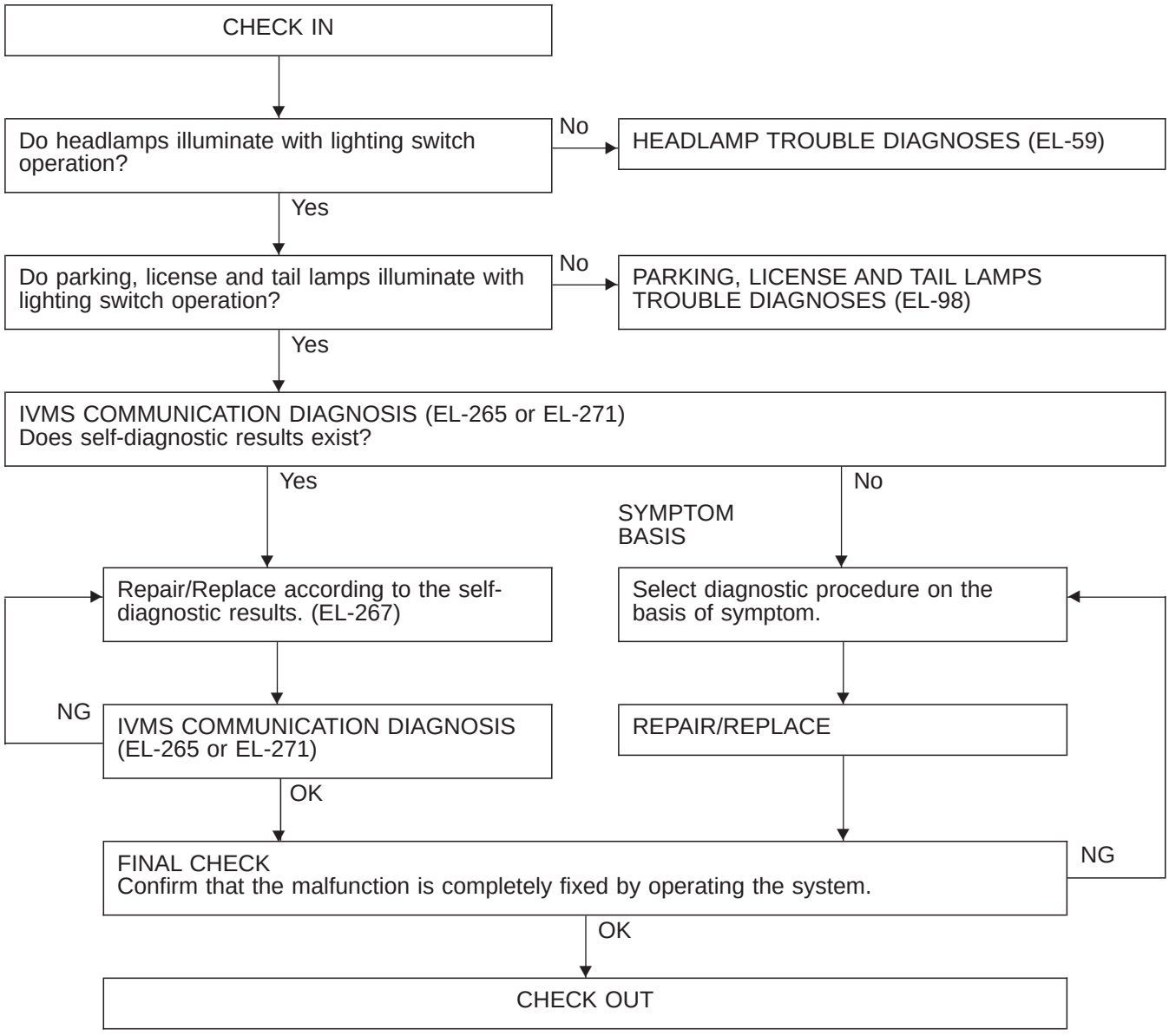


SEL480W

- DATA MONITOR and ACTIVE TEST are available for the auto light.

Trouble Diagnoses/Auto Light Operation

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses/Auto Light Operation (Cont'd)

SYMPTOM CHART

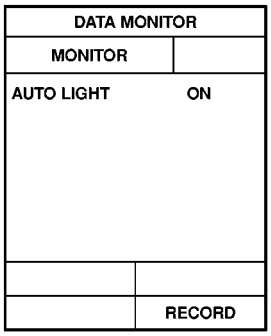
PROCEDURE	DIAGNOSTIC PROCEDURE				
REFERENCE PAGE	EL-55	EL-55	EL-56	EL-57	EL-58
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Lighting switch "AUTO" check)	DIAGNOSTIC PROCEDURE 2 (Auto light output check)	DIAGNOSTIC PROCEDURE 3 (Optical sensor check)	DIAGNOSTIC PROCEDURE 4 (ACC and IGN input signal check)	DIAGNOSTIC PROCEDURE 5 (Illumination time control switch check)
When outside is dark, neither tail lamps nor headlamps turn on by auto light operation.	X		X	X	
When outside is dark, tail lamps turn on but headlamps do not turn on by auto light operation.		X			
When outside is dark, headlamps turn on but tail lamps do not turn on by auto light operation.		X			
Light does not turn off when ignition key switch is turned to "OFF". (when shut off delay is canceled.)				X	
When outside is bright, neither tail lamps nor headlamps turn off by auto light operation.			X		
Shut off delay does not work properly.				X	X

Trouble Diagnoses/Auto Light Operation (Cont'd)

DIAGNOSTIC PROCEDURE 1

[Lighting switch (AUTO) check]

A



SEL571W

CHECK LIGHTING SWITCH (AUTO) INPUT SIGNAL.

A CONSULT-II

See "AUTO LIGHT SW" in DATA MONITOR mode.
When lighting switch is in AUTO:
AUTO LIGHT SW ON
When lighting switch is OFF:
AUTO LIGHT SW OFF

NG → Check the following.
- Lighting switch
- Harness for open or short between BCM and lighting switch
- Ground circuit for lighting switch

OR

ON BOARD

Perform On board diagnosis — Mode II (Switch monitor) for light switch. Refer to EL-273.

Refer to wiring diagram in EL-49.

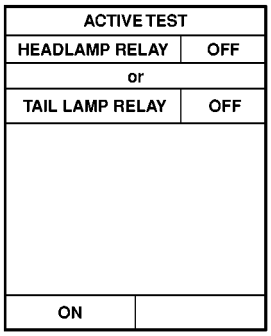
OK ↓

Lighting switch (AUTO) is OK.

DIAGNOSTIC PROCEDURE 2

(Auto light output check)

A



SEL574W

CHECK AUTO LIGHT OUTPUT SIGNAL/ CIRCUIT.

A CONSULT-II

See "HEADLAMP RELAY" and "TAIL LAMP RELAY" in ACTIVE TEST mode, and turn lighting switch to AUTO position.
Headlamp and tail lamp should turn on.

NG → Check harness for open or short between BCM and headlamp relay or tail lamp relay.

OR

B TESTER

1. Turn the ignition switch to ON position or lighting switch to AUTO position.
2. Check voltage between BCM terminal ⑤ or ⑪ and ground.

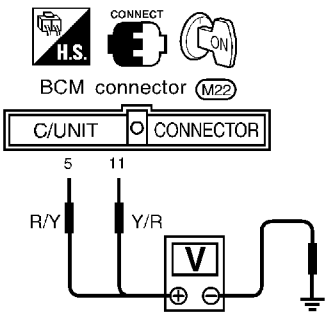
Output condition	Voltage V
Sensor not struck by light (Determined to be "dark" by sensor)	0
Sensor struck by light	Approx. 12

Refer to wiring diagram in EL-50.

OK ↓

Auto light output is OK.

B



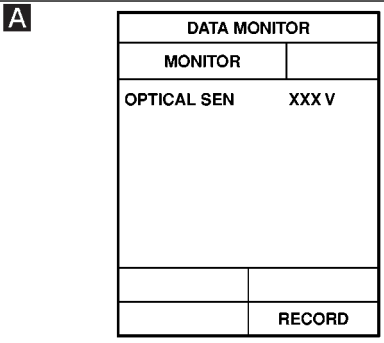
SEL098V

Trouble Diagnoses/Auto Light Operation (Cont'd)

DIAGNOSTIC PROCEDURE 3

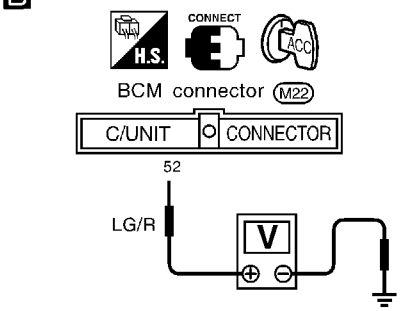
(Optical sensor check)

A



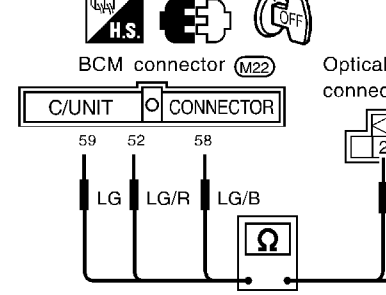
SEL572W

B



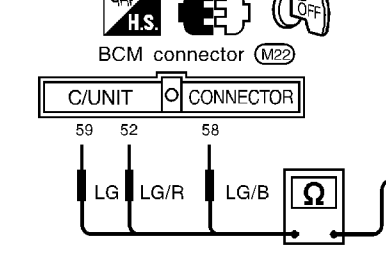
SEL559UA

C



SEL016V

D



SEL017V

CHECK OPTICAL SENSOR INPUT SIGNAL.

A CONSULT-II

See "OPTICAL SEN" in DATA MONITOR mode.
When optical sensor is struck by light:
More than 3V
When optical sensor is not struck by light:
Approx. 0.5V

OR

B TESTER

1. Turn the ignition switch to ACC position.
2. Check voltage between BCM terminal ⑫ and ground.

Condition of optical sensor	Voltage V
Sensor struck by light	More than 3
Sensor not struck by light	Approx. 0.5

Refer to wiring diagram in EL-51.

OK → Optical sensor is OK.

NG ↓

C

CHECK OPTICAL SENSOR OPEN CIRCUIT.

1. Disconnect BCM connector and optical sensor connector.
2. Check harness continuity between BCM connector and optical sensor connector.

Terminals		Continuity
BCM	Optical sensor	
⑱	③	Yes
⑫	②	
⑲	①	

NG → Repair harness.

OK ↓

D

CHECK OPTICAL SENSOR SHORT CIRCUIT.

Check harness continuity between BCM connector and body ground.

Terminals	Continuity
⑱ - ground	No
⑫ - ground	
⑲ - ground	

NG → Repair harness.

OK ↓

Replace optical sensor.

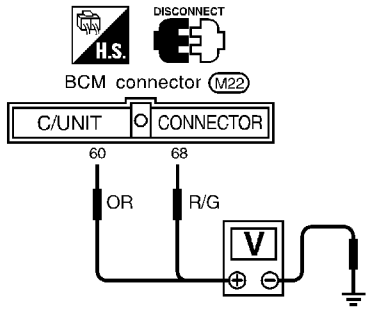
Trouble Diagnoses/Auto Light Operation (Cont'd)

A

DATA MONITOR	
MONITOR	
IGN ON SW	ON
IGN ACC SW	ON
	RECORD

SEL533W

B



SEL642UA

DIAGNOSTIC PROCEDURE 4

(ACC and IGN input signal check)

CHECK ACC AND IGN INPUT SIGNAL.

A CONSULT-II

See "IGN ON SW" and "IGN ACC SW" in DATA MONITOR mode.

When ignition switch is ON:
IGN ON SW ON
IGN ACC SW ON

When ignition switch is ACC:
IGN ON SW OFF
IGN ACC SW ON

When ignition switch is OFF:
IGN ON SW OFF
IGN ACC SW OFF

NG → Check the following.
- 7.5A fuse [No. 23, located in the fuse block (J/B)]
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OR

B TESTER

Check voltage between BCM terminal 60 or 68 and ground.

Terminals	Ignition switch position			
	OFF	ACC	ON	START
60 - Ground	Approx. 0V	Battery voltage		Approx. 0V
68 - Ground	Approx. 0V		Battery voltage	

Refer to wiring diagram in EL-51.

OK ↓

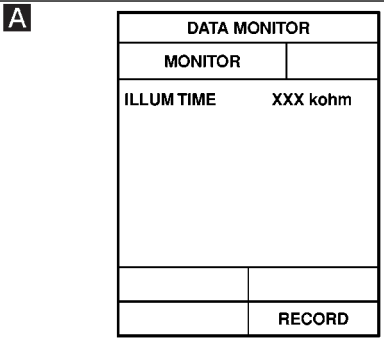
ACC and IGN input signal is OK.

Trouble Diagnoses/Auto Light Operation (Cont'd)

DIAGNOSTIC PROCEDURE 5

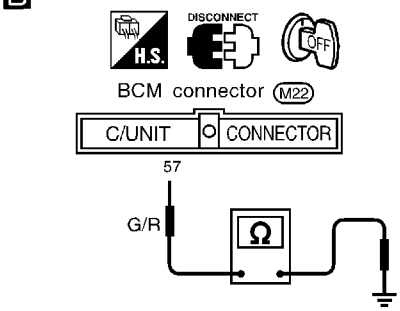
(Illumination time control switch check)

A



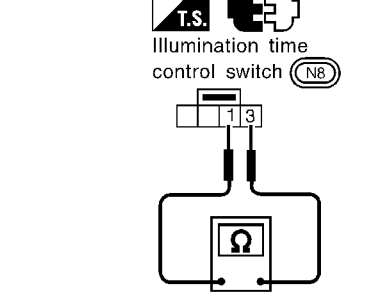
SEL573W

B



SEL019V

C



SEL020V

CHECK ILLUMINATION TIME CONTROL SWITCH INPUT SIGNAL.

A CONSULT-II

See "ILLUM TIME" in DATA MONITOR mode.
When time control switch is fully turned to short time
Approx. 0 kΩ
When time control switch is fully turned to long time
Approx. 1 kΩ

OK → Illumination time control switch is OK.

OR

B TESTER

1. Disconnect BCM connector.
2. Check resistance between BCM terminal ⑤⑦ and ground.

Time control switch condition	Resistance kΩ
Fully short	Approx. 0
Fully long	Approx. 1

Refer to wiring diagram in EL-51.

NG ↓

C

CHECK ILLUMINATION TIME CONTROL SWITCH.

1. Disconnect illumination time control switch.
2. Check resistance between illumination time control switch terminals ① and ③.

Time control switch condition	Resistance kΩ
Fully short	Approx. 0
Fully long	Approx. 1

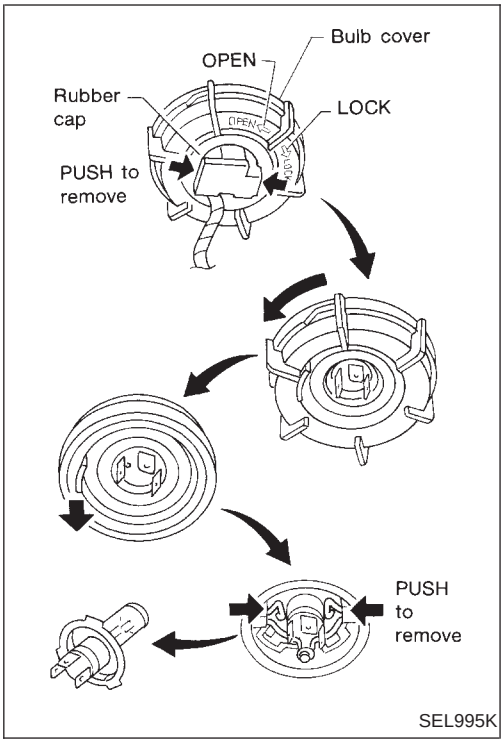
NG → Replace illumination time control switch.

OK ↓

Check the following:
- Illumination time control switch ground circuit
- Harness for open or short between BCM and illumination time control switch

Trouble Diagnoses/Headlamp (Conventional Type)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. 15A fuse 3. Lighting switch 4. Headlamp relay	1. Check bulb. 2. Check 15A fuse (No. 54, located in fusible link). 3. Check lighting switch. 4. Check headlamp relay.
RH headlamps do not operate.	1. Bulb 2. 15A fuse 3. Lighting switch 4. Headlamp relay	1. Check bulb. 2. Check 15A fuse (No. 53, located in fusible link). 3. Check lighting switch. 4. Check headlamp relay.
Neither headlamp illuminates.	1. Headlamp relay 2. Lighting switch 3. Lighting switch ground circuit 4. Open in headlamp relay circuit	1. Check headlamp relay. 2. Check lighting switch. 3. Check lighting switch ground circuit. 4. Check harness between headlamp relay terminal ② and lighting switch terminal ⑫ for an open circuit.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑥ and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑦ and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in RH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑨ and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑩ and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Open in high beam circuit	1. Check bulb in combination meter. 2-1. Check harness between lighting switch and combination meter for an open circuit. 2-2. Verify battery positive voltage is present at terminal ㉒ of combination meter, when high beam illuminates.



Bulb Replacement/Conventional Type

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.**

Bulb Specifications/Conventional Type

Item	Wattage W
Semi-sealed beam High/Low	60/55

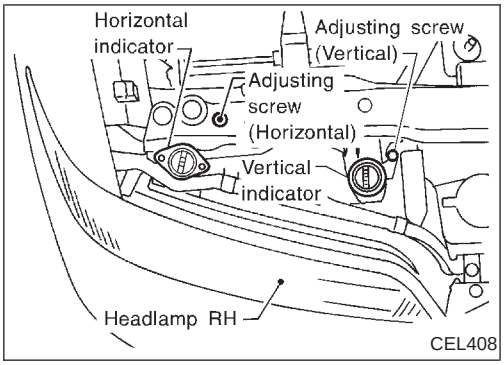
Aiming Adjustment/Conventional Type

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.

a. Keep all tires inflated to correct pressures.
b. Place vehicle and tester on one and same flat surface.
c. 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).

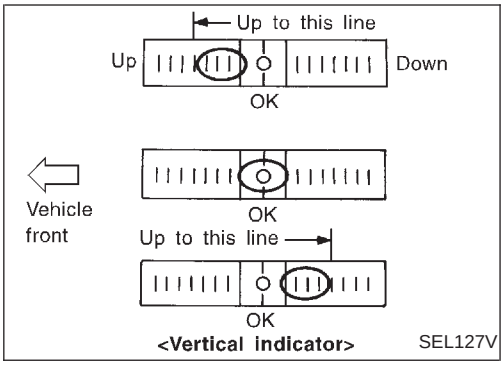


Before performing aiming adjustment, make sure of the following.

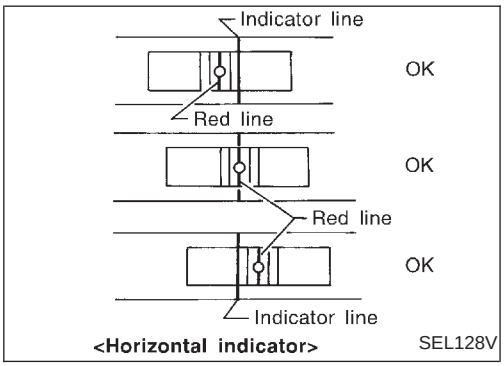
a. Keep all tires inflated to correct pressure.
b. Place vehicle on level ground.
c. See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.

Aiming Adjustment/Conventional Type (Cont'd)

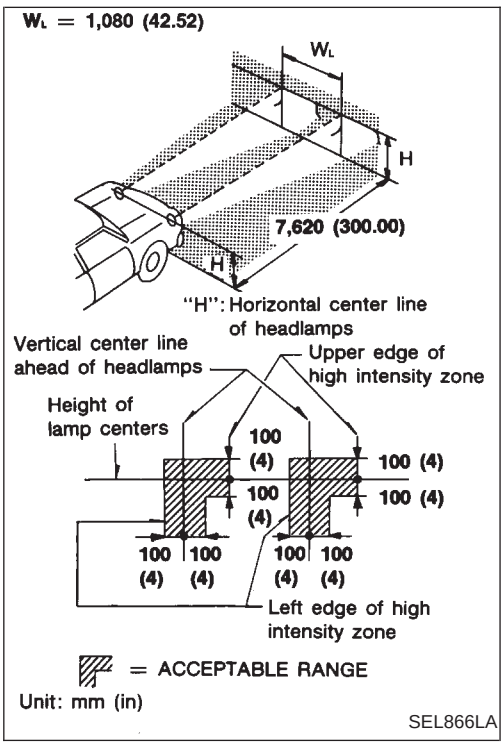
LOW BEAM



1. Open the hood.
2. Adjust the vertical indicator by turning the adjusting screw (vertical direction).
   The bubble in the gauge should be centered on the "O" mark as shown in the figure.



3. Adjust the horizontal indicator by turning the adjusting screw. (horizontal direction)
   The inner red line should align with the indicator line.

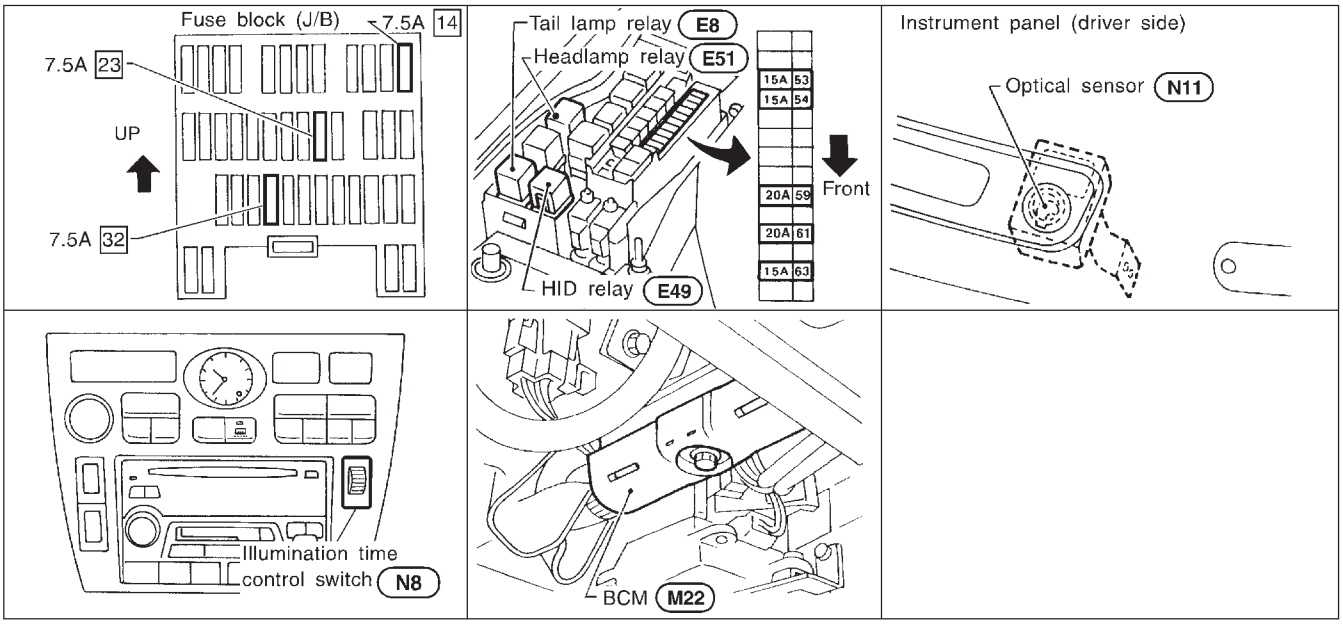


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- **Upper edge and left edge of high intensity zone should be within the range shown at left. Adjust headlamps accordingly.**
- **Dotted lines in illustration show center of headlamp.**

"H": Horizontal center line of headlamps
"W_L": Distance between each headlamp center

Component Parts and Harness Connector Location



SEL807V

System Description

Power is supplied at all times
- through 15A fuse [No. 54, located in the fuse, fusible link and relay box]
- to headlamp relay terminal ① and
- to headlamp relay terminal ⑦ , and
- through 15A fuse [No. 53, located in the fuse, fusible link and relay box]
- to headlamp relay terminal ⑤ , and
- through 7.5A fuse [No. 14, located in the fuse block (J/B)].
- to BCM terminal (105).

Power is also supplied at all times
- to HID relay terminal ① , and
- through 20A fuse (No. 61, located in the fuse and fusible link box)
- to HID relay terminal ③ , and
- through 20A fuse (No. 59, located in the fuse and fusible link box)
- to HID relay terminal ⑥ , and

When the ignition switch is in the ACC or ON position, power is supplied
- through 7.5A fuse [No. 23, located in the fuse block (J/B)]
- to BCM terminal ⑥⓪ .

When the ignition switch is in the ON or START position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal ⑥⑧ .

Ground is supplied
- to BCM terminals ⑤⑥ and (113)
- to illumination time control switch terminal ③
- through body grounds (M14) and (M47), and
- to the lighting switch terminals ⑧ and ⑤
- through body grounds (E22) and (E36).

HEADLAMP SWITCH OPERATION

Low beam operation

When the lighting switch is turned to 2ND (LOW or HI) or PASS (“C”) position, ground is supplied
- to HID relay terminal ②
- from the lighting switch terminal ⑫ .

System Description (Cont'd)

HID relay is then energized, and power is supplied.
- from the HID relay terminal ⑤
- to terminal ② LH headlamp

Power is also supplied
- from the HID relay terminal ⑦
- to terminal ② RH headlamp

Ground is supplied at all times.
- to LH headlamp terminal ④ and RH headlamp terminal ④
- through body ground E22 and E36.

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

High beam operation/flash-to-pass operation

When the lighting switch is turned to 2ND and HIGH ("A") or PASS ("C") position, ground is supplied
- to headlamp relay terminal ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied
- from the headlamp relay terminal ⑥
- to terminal ① of the LH headlamp, and
- to combination meter terminal ㉒ for the HIGH BEAM indicator
- from headlamp relay terminal ③
- to terminal ① of the RH headlamp.

Ground is supplied
- to terminal ③ of the LH headlamp, and
- to combination meter terminal ㉓
- from the lighting switch terminal ⑥
- to terminal ③ of the RH headlamp
- from the lighting switch terminal ⑨.

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

AUTO LIGHT OPERATION

BCM is connected to the optical sensor. The optical sensor sends a signal to BCM according to outside brightness.
When the lighting switch is turned to AUTO position, ground is supplied
- to BCM terminal ⑭
- from the lighting switch terminal ㊷.

When ignition switch is set to ON or START and outside is darker than the prescribed level, ground is supplied
- to HID relay terminal ② and headlamp relay terminal ②
- from the BCM terminal ⑤.

HID relay and headlamp relay are energized.
Then the low beam headlamps illuminate.
And the high beam headlamps illuminate when the lighting switch is turned to HIGH ("A") or PASS ("C") positions.
Auto light operation allows headlamps to turn off when outside is brighter than the prescribed level.
Or the ignition switch is turned to OFF position.
For parking, license and tail lamp auto operation, refer to "EXTERIOR LAMP".

SHUT OFF DELAY

For shut off delay, refer to EL-47.

THEFT WARNING SYSTEM

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS".

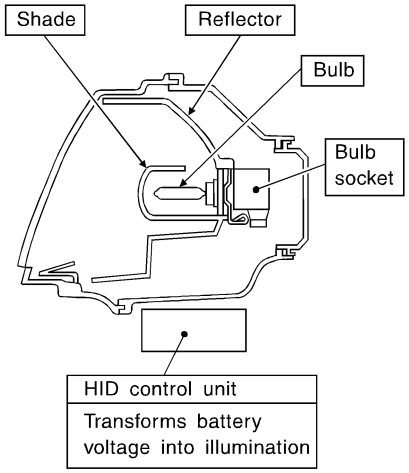
System Description (Cont'd)

XENON HEADLAMP

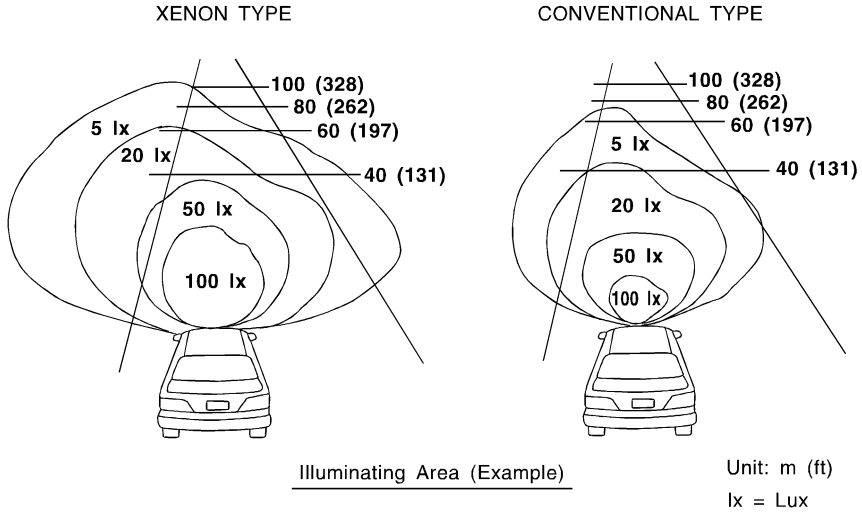
Xenon type headlamp is adopted to the low beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power,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

Following are some of the many advantage of the xenon type headlamp.

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

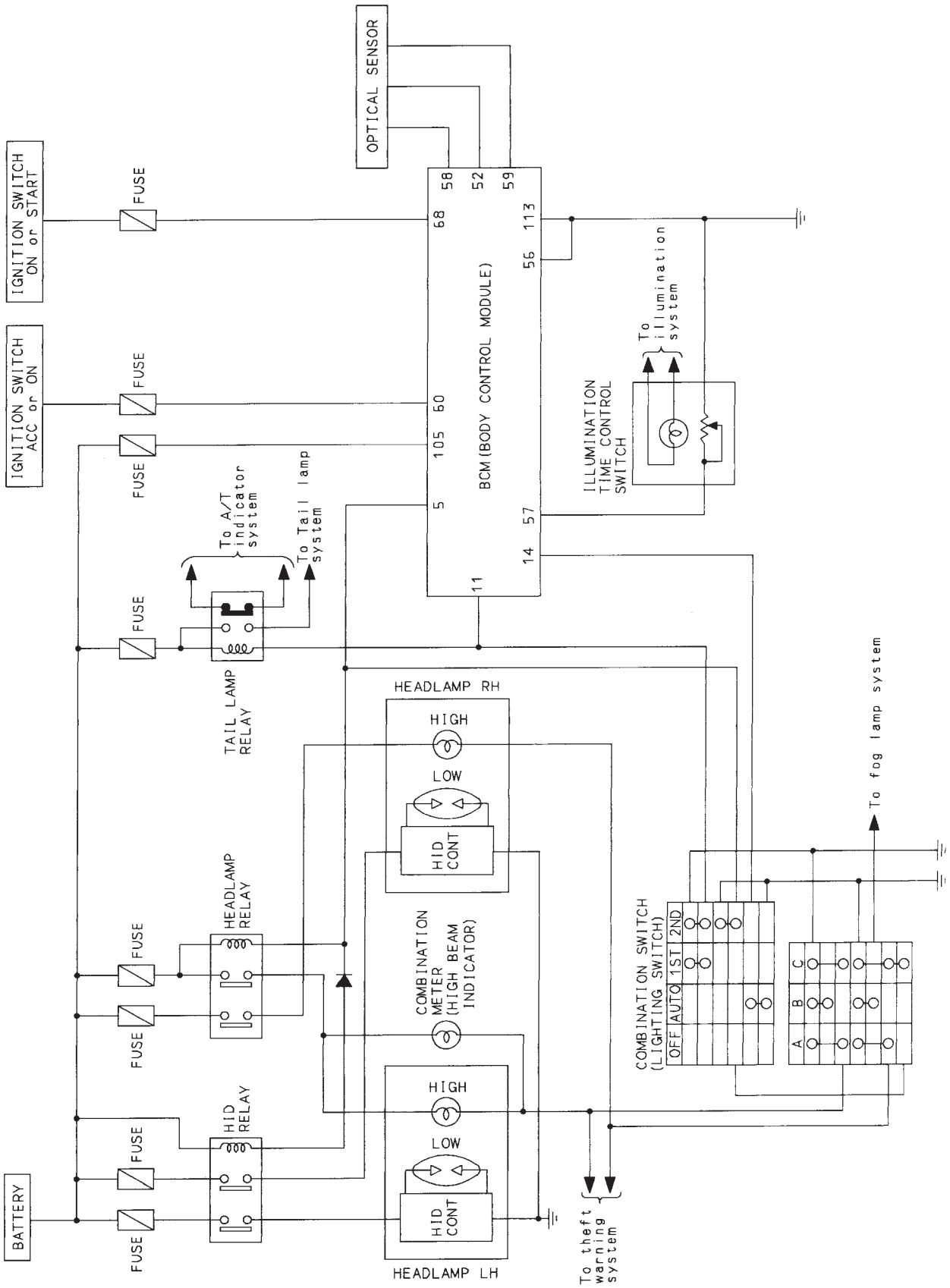


Structure of the new xenon headlamp
HID: High Intensity Discharge



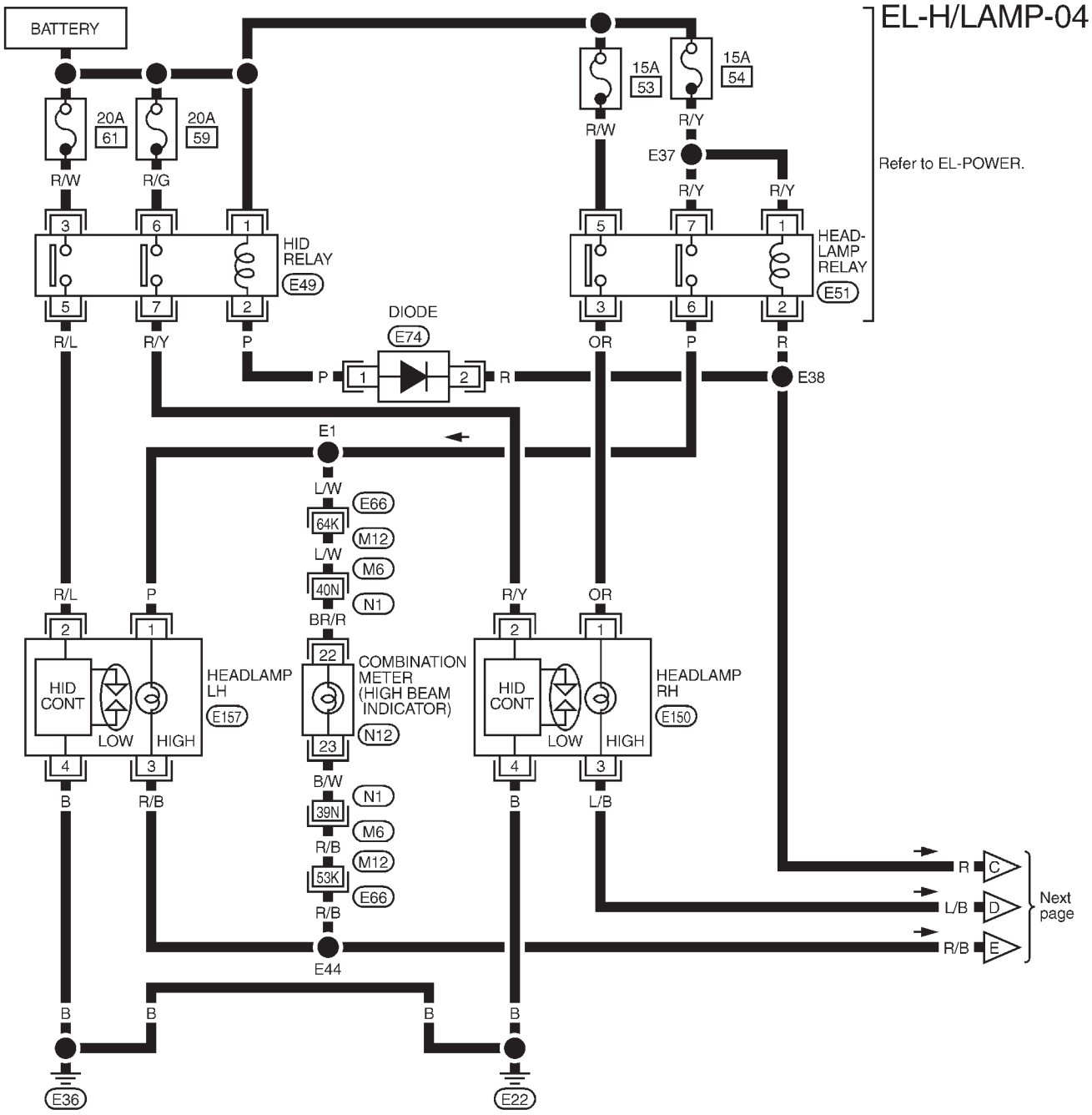
SEL956V

Schematic



TEL966A

Wiring Diagram — H/LAMP —



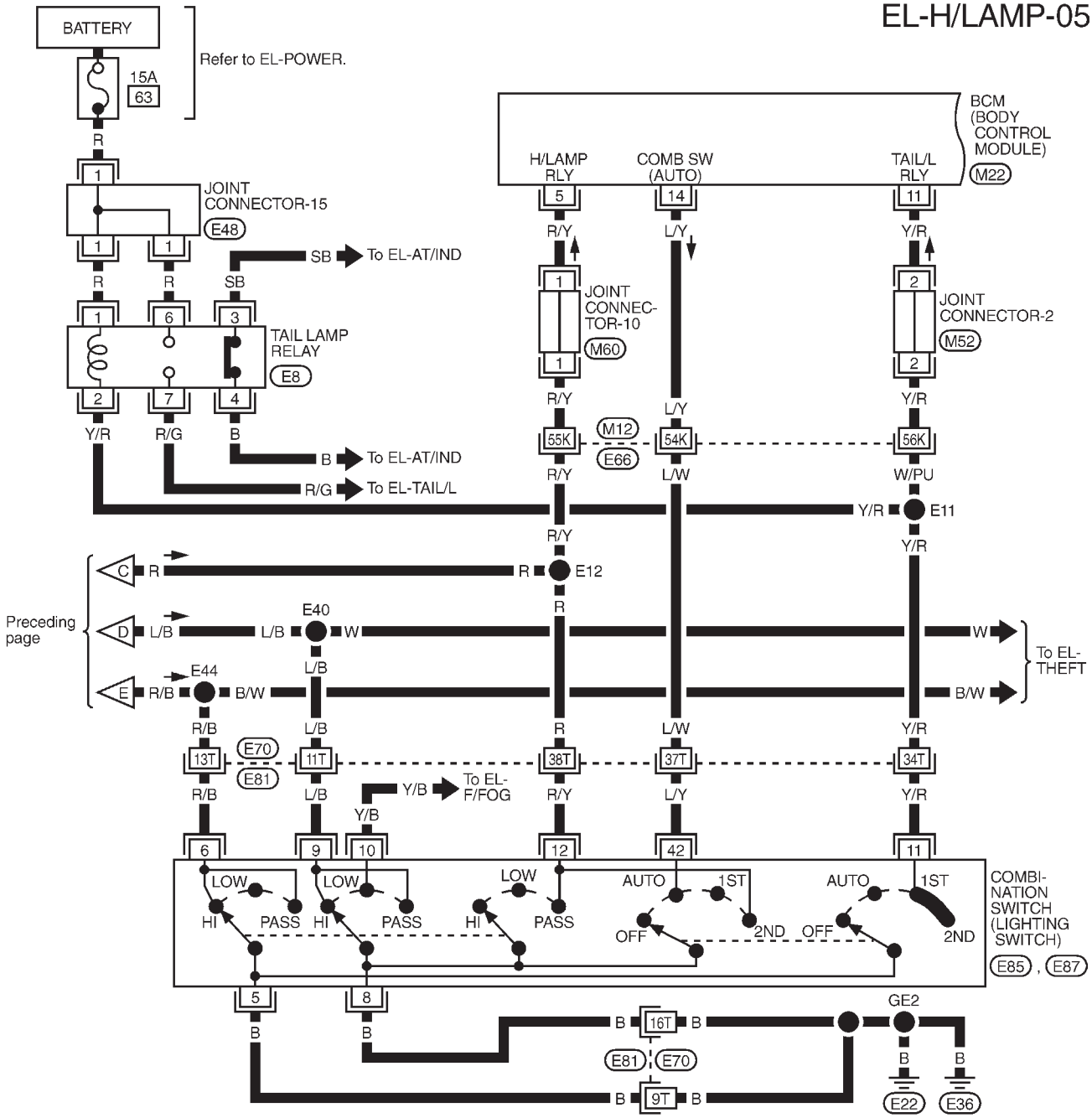
N12 BR | E49 BR, E51 BR | E74 W | E150 GY, E157 GY

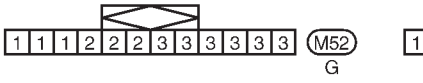
Refer to last page (Foldout page).
M6, N1
M12, E66

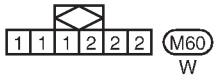
TEL967A

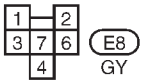
Wiring Diagram — H/LAMP — (Cont'd)

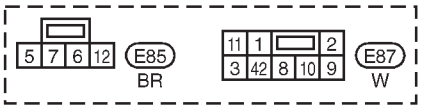
EL-H/LAMP-05







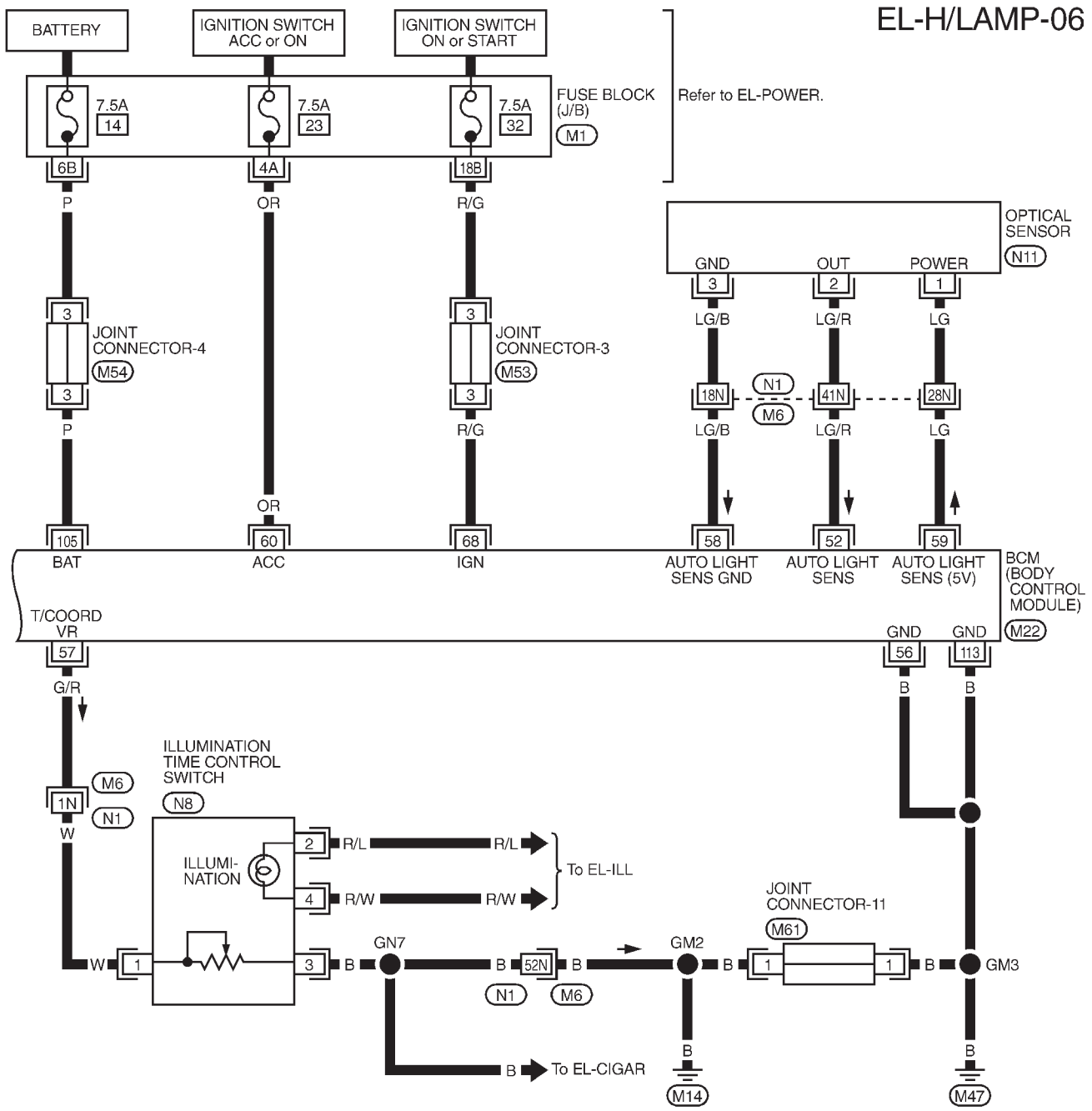


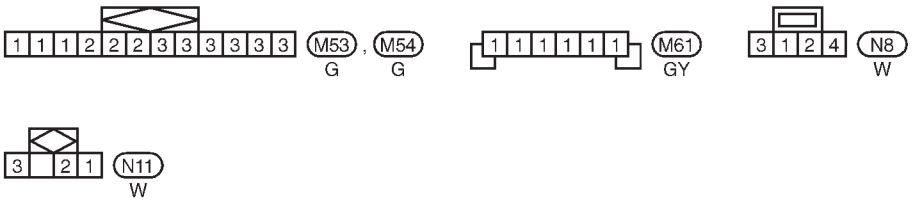


Refer to last page (Foldout page).
M12 , E66
E70 , E81
M22

TEL968A

Wiring Diagram — H/LAMP — (Cont'd)





Refer to last page (Foldout page).

M6 , N1

M1

M22

WARNING:

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

CAUTION:

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

Trouble Diagnoses/Headlamp (Xenon Type)

Symptom	Possible cause	Repair order
Any beam does not illuminate.	1. Lighting switch	1. Check lighting switch.
	2. Lighting switch ground circuit	2. Check lighting switch ground circuit.
	3. Open in the HID relay and headlamp relay circuits	3. Check harness between HID relay terminal ② /headlamp relay terminal ② and lighting switch terminal ⑫/BCM terminal ⑤ .
Neither high beam illuminates, but low beam operates.	1. Headlamp relay	1. Check headlamp relay.
	2. Open in the headlamp relay circuit	2. Check harness between headlamp relay terminal ② and lighting switch terminal ⑫/BCM terminal ⑤ .
Neither low beam illuminates, but high beam operates.	1. HID relay	1. Check HID relay.
	2. Open in the HID relay circuit	2. Check harness between HID relay terminal ② and lighting switch terminal ⑫/BCM terminal ⑤ .
LH high beam does not operate, but LH low beam operates.	1. 15A fuse	1. Check 15A fuse. (No. 54, located in fusible link.)
	2. Bulb	2. Check bulb.
	3. Headlamp relay	3. Check headlamp relay.
	4. Open in LH high beam circuit	4-1. Check harness between headlamp relay terminal ⑥ and LH headlamp for open or short circuit. 4-2. Check harness between lighting switch terminal ⑥ and LH headlamp for open or short circuit.
	5. Lighting switch	5. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. 20A fuse	1. Check 20A fuse. (No. 61, located in fusible link.)
	2. HID relay	2. Check HID relay.
	3. Open in LH low beam circuit	3. Check harness between HID relay terminal ⑤ and LH headlamp and harness between LH headlamp and ground for open or short circuit. (Before inspecting headlamp terminal, disconnect headlamp connector with ignition switch “OFF” position.)
	4. Xenon bulb	4. Replace the xenon bulb with the other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.)
	5. HID control unit	5. Replace the HID control unit with the other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.)
	6. Booster	6. Replace booster as a headlamp assembly.

Trouble Diagnoses/Headlamp (Xenon Type) (Cont'd)

Symptom	Possible cause	Repair order
RH high beam does not operate, but RH low beam operates.	1. 15A fuse	1. Check 15A fuse. (No. 53, located in the fusible link.)
	2. Bulb	2. Check bulb.
	3. Headlamp relay	3. Check headlamp relay.
	4. Open in RH high beam circuit	4-1. Check harness between headlamp relay terminal ③ and RH headlamp for open or short circuit. 4-2. Check harness between lighting switch terminal ⑨ and RH headlamp for open or short circuit.
	5. Lighting switch	5. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. 20A fuse	1. Check 20A fuse. (No. 59, located in the fusible link.)
	2. HID relay	2. Check HID relay.
	3. Open in RH low beam circuit	3. Check harness between HID relay terminal ⑦ and RH headlamp and harness between RH headlamp and ground for an open circuit. (Before inspecting headlamp terminal, disconnect headlamp connector with ignition switch in "OFF" position.)
	4. Xenon bulb	4. Replace the xenon bulb with the other side bulb or new one. (If headlamps illuminate correctly, replace the bulb.)
	5. HID control unit	5. Replace the HID control unit with the other side control unit or new one. (If headlamps illuminate correctly, replace the control unit.)
	6. Booster	6. Replace booster as a headlamp assembly.
High beam indicator does not work.	1. Bulb	1. Check bulb in combination meter.
	2. Open in high beam circuit	2-1. Check harness between lighting switch and combination meter for an open circuit. 2-2. Verify battery positive voltage is present at terminal ㉒ of combination meter, when high beam illuminates.

HID: High Intensity Discharge

Bulb Replacement/Xenon Type

CAUTION:

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

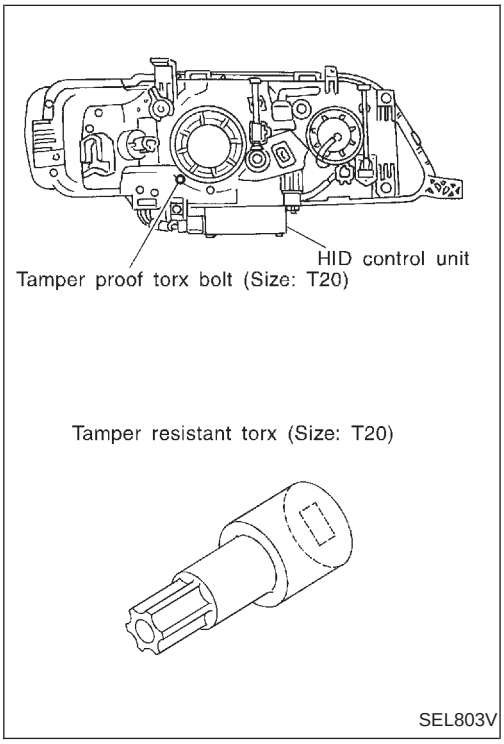
1. Disconnect negative battery cable.
2. Disconnect headlamp connector.
3. Remove headlamp assembly.

WARNING:

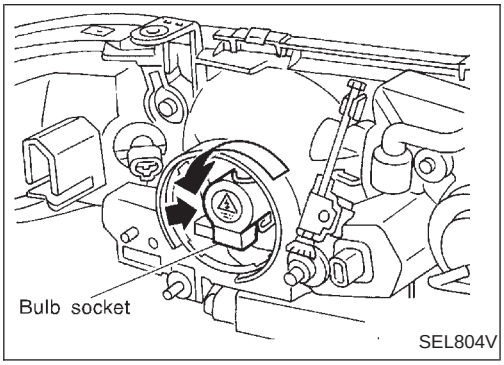
Never service a xenon headlamp with wet hands.

XENON BULB (LOW BEAM)

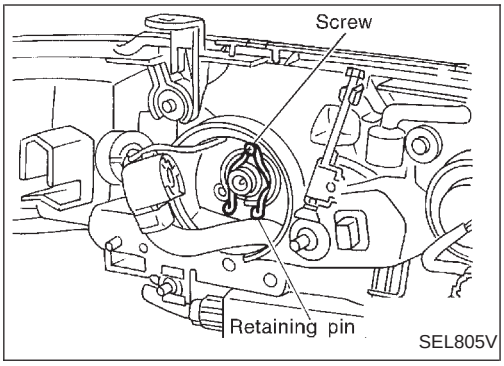
1. Remove tamper proof torx bolt (size: T20), then remove headlamp seal cover.



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



Bulb Replacement/Xenon Type (Cont'd)

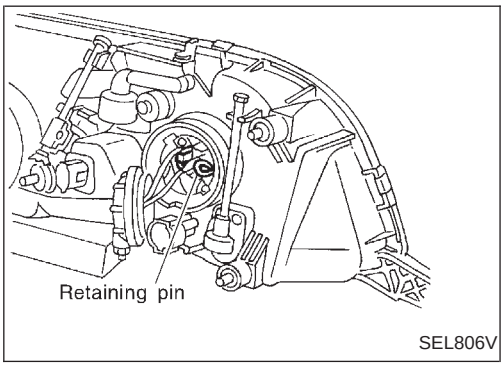


3. Release retaining pin.
4. Remove the xenon bulb.
5. Install in the reverse order of removal.

CAUTION:

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

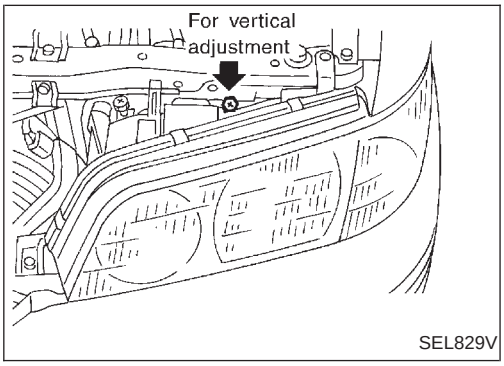
HIGH BEAM



1. Remove headlamp seal cover by turning it counterclockwise.
2. Disconnect bulb connector.
3. Release retaining pin.
4. Remove the bulb.
5. Install in the reverse order of removal.

Aiming Adjustment/Xenon Type

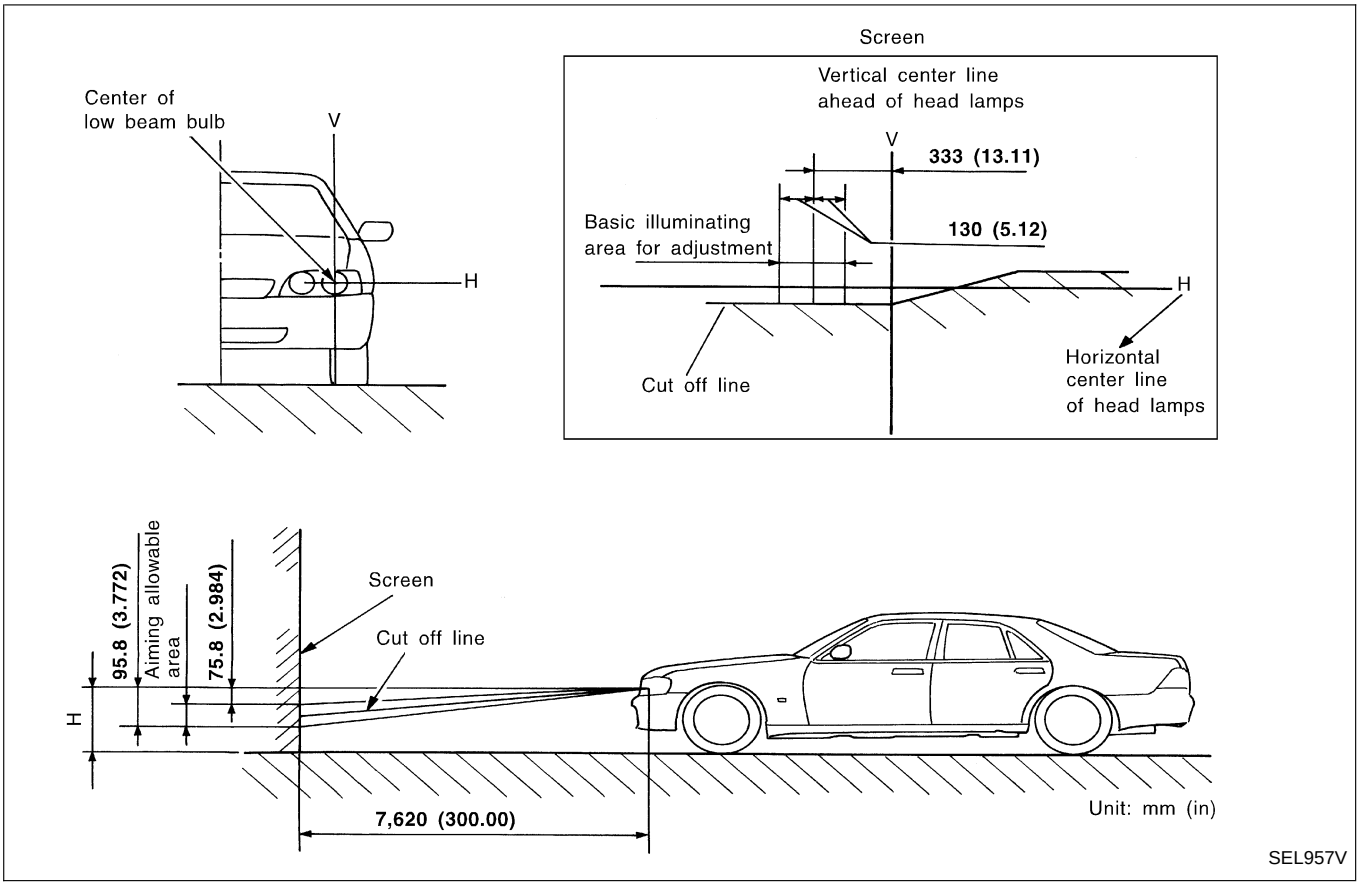
LOW BEAM

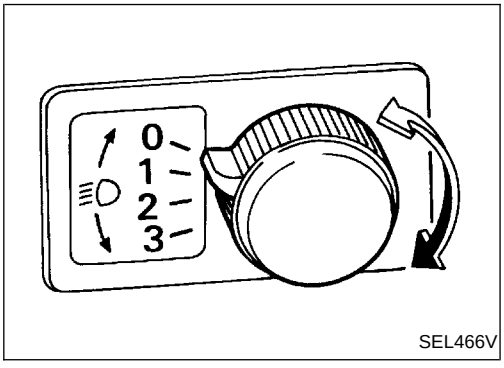


1. Turn headlamp low beam on.
2. Use adjusting screw to perform aiming adjustment.

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

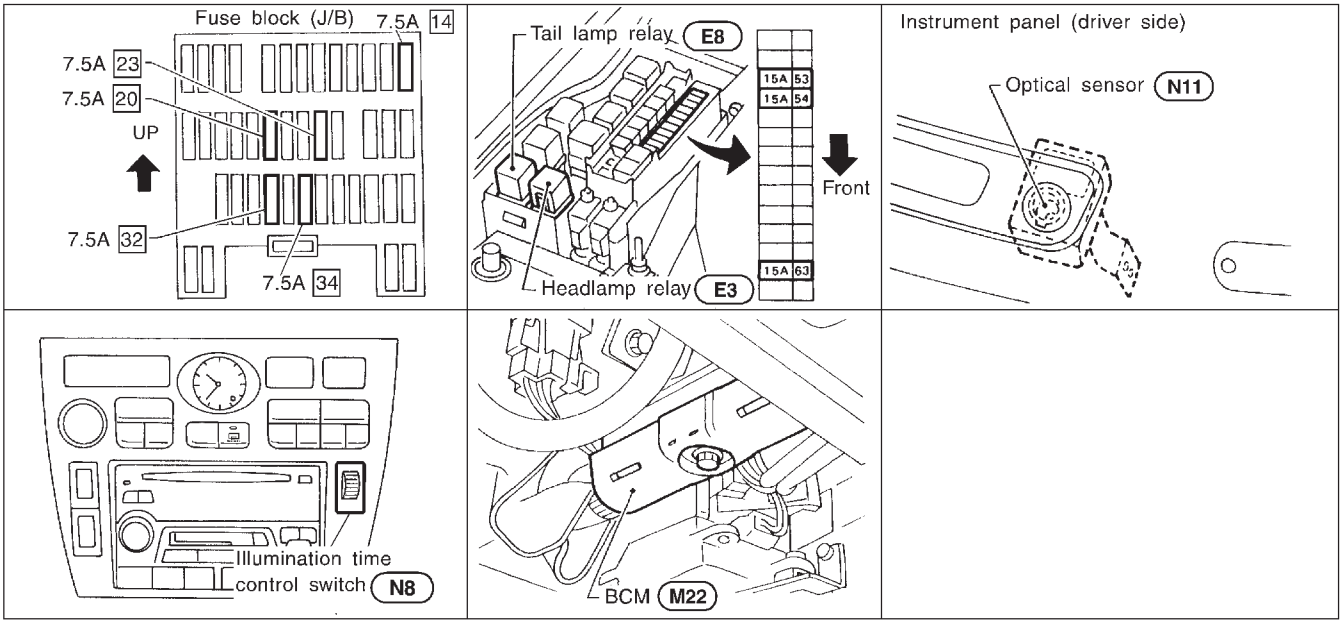
Aiming Adjustment/Xenon Type (Cont'd)





CAUTION:
Be sure aiming switch is set to "0" when performing aiming adjustment.

Component Parts and Harness Connector Location



SEL808V

Daytime Light System/System Description

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.

Power is supplied at all times

- to headlamp relay terminal ①, and
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to headlamp relay terminal ⑤, and
- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to headlamp relay terminal ⑦.

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

- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to daytime light control unit terminal ③.

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

- through 7.5A fuse [No. 34, located in the fuse block (J/B)]
- to daytime light control unit terminal ②.

Ground is supplied to daytime light control unit terminal ⑯ through body grounds E22 and E36.

HEADLAMP SWITCH OPERATION

When the lighting switch is turned to 2ND or PASS (“C”) positions, ground is supplied

- to headlamp relay terminal ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied

- from the headlamp relay terminal ⑥
- to combination meter terminal ㉒ for the HIGH BEAM indicator and
- through daytime light control unit terminals ⑤ and ⑥
- to terminal ② of the LH headlamp.

Power is also supplied

- from the headlamp relay terminal ③
- through daytime light control unit terminals ④ and ⑦
- to terminal ② of the RH headlamp.

Daytime Light System/System Description (Cont'd)

Low beam operation

When the lighting switch is turned to 2ND and LOW ("B") positions, ground is supplied
- to terminal ① of the LH headlamp
- through daytime light control unit terminals ⑪ and ⑫
- through lighting switch terminals ⑩ and ⑧
- through body grounds E22 and E36.

Ground is also supplied
- to terminal ① of the RH headlamp
- through daytime light control unit terminals ⑧ and ⑮
- through lighting switch terminals ⑦ and ⑤
- through body grounds E22 and E36.

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

High beam operation/flash-to-pass operation

When the lighting switch is turned to 2ND and HIGH ("A") or PASS ("C") positions, ground is supplied
- to terminal ③ of LH headlamp and combination meter terminal ㉓ for the HIGH BEAM indicator
- through daytime light control unit terminals ⑩ and ⑬
- through lighting switch terminals ⑨ and ⑧
- through body grounds E22 and E36.

Ground is also supplied
- to terminal ③ of RH headlamp
- through daytime light control unit terminals ⑨ and ⑭
- through lighting switch terminals ⑥ and ⑤
- through body grounds E22 and E36.

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

AUTO LIGHT OPERATION

For auto light operation, refer to EL-47.

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied
- through daytime light control unit terminal ⑦
- to terminal ② of RH headlamp
- through terminal ③ of RH headlamp
- to daytime light control unit terminal ⑨
- through daytime light control unit terminal ⑥
- to terminal ② of LH headlamp.

Ground is supplied to terminal ③ of LH headlamp.
- through daytime light control unit terminals ⑩ and ⑯
- through body grounds E22 and E36.

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

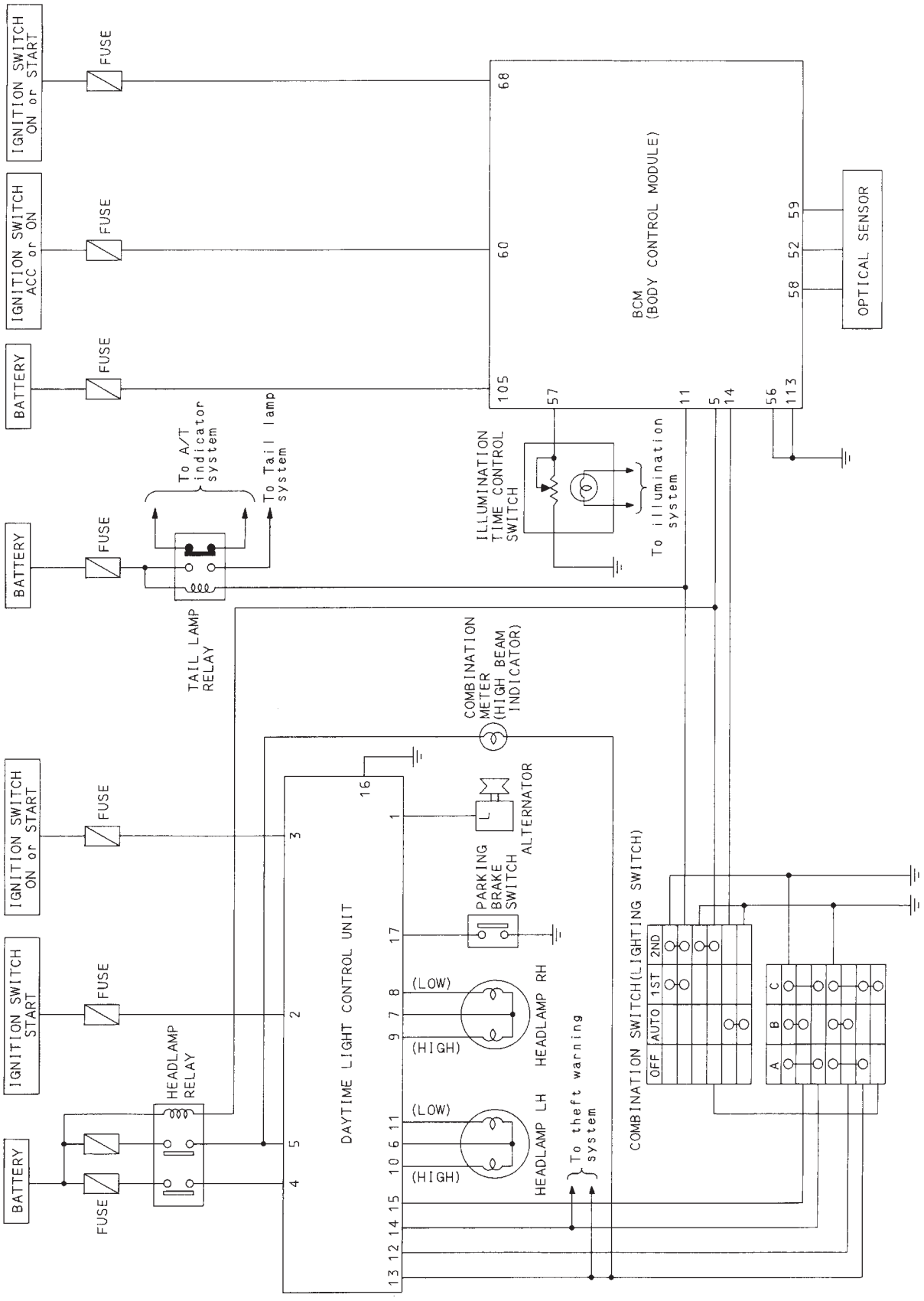
Operation (Daytime light system with conventional headlamp)

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	◯	X	X	◯	◯	X	◯	△*	△*	◯	△*	△*	◯	◯	X	◯
	Low beam	X	X	X	X	X	X	X	◯	X	X	X	X	X	X	X	X	◯	X
Parking and tail lamp		X	X	X	◯	◯	◯	◯	◯	◯	X	X	X	◯	◯	◯	◯	◯	◯
License and instrument illumination lamp		X	X	X	◯	◯	◯	◯	◯	◯	X	X	X	◯	◯	◯	◯	◯	◯

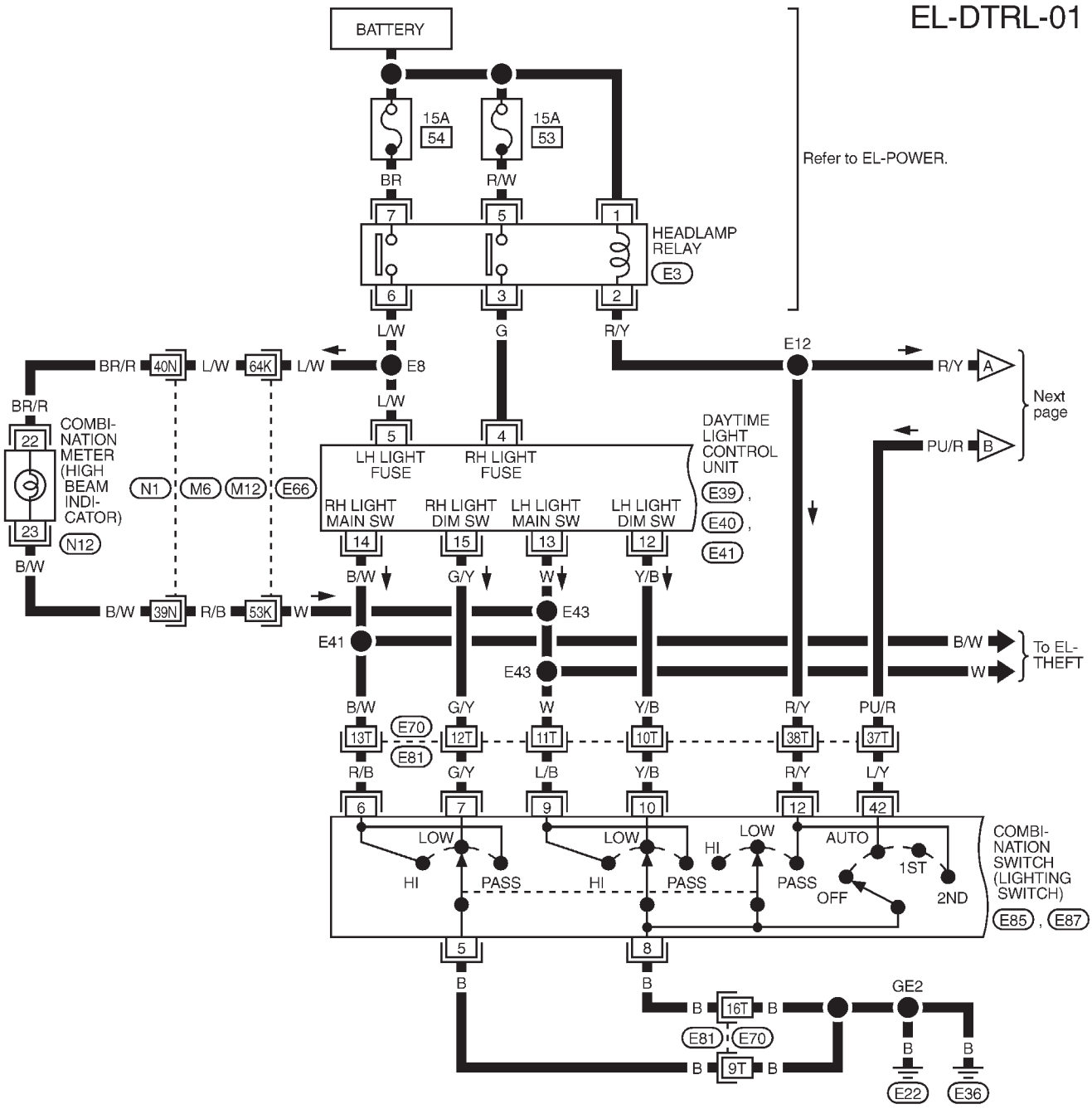
◯ : Lamp “ON”
X : Lamp “OFF”
△ : Lamp dims.
□ : Added functions
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won’t come ON.

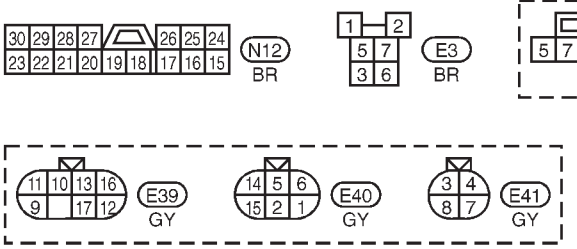
Schematic



TEL736

Wiring Diagram — DTRL —





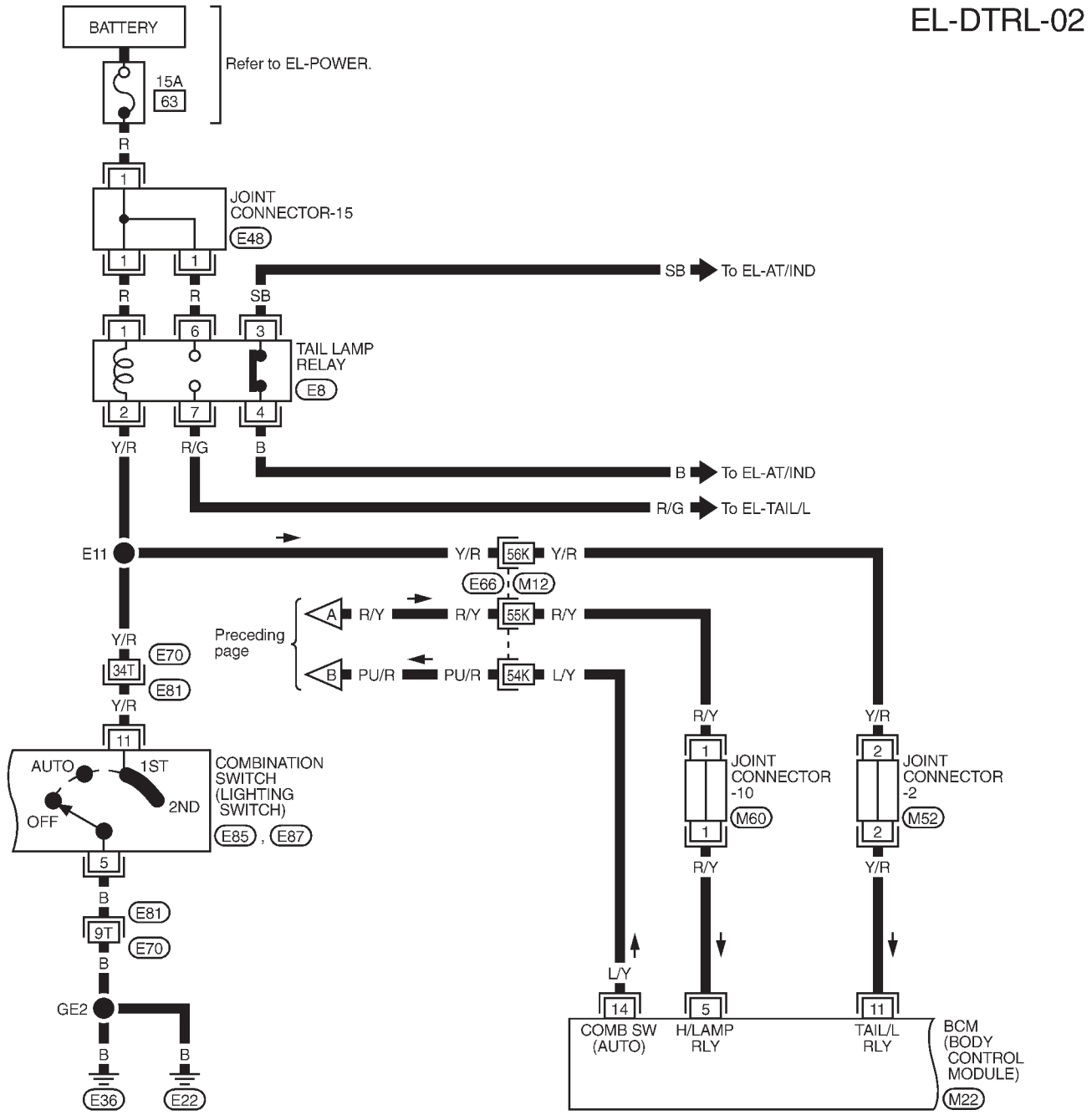
Refer to last page (Foldout page).

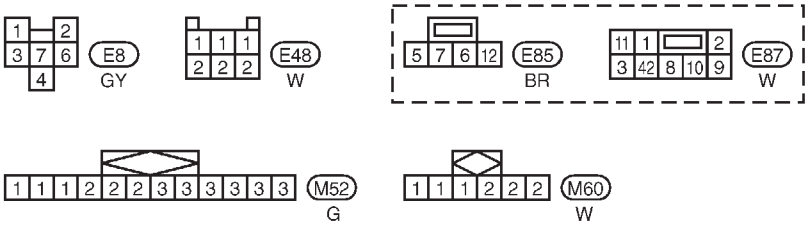
M6 , N1
M12 , E66
E70 , E81

TEL970A

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-02





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E66 , M12

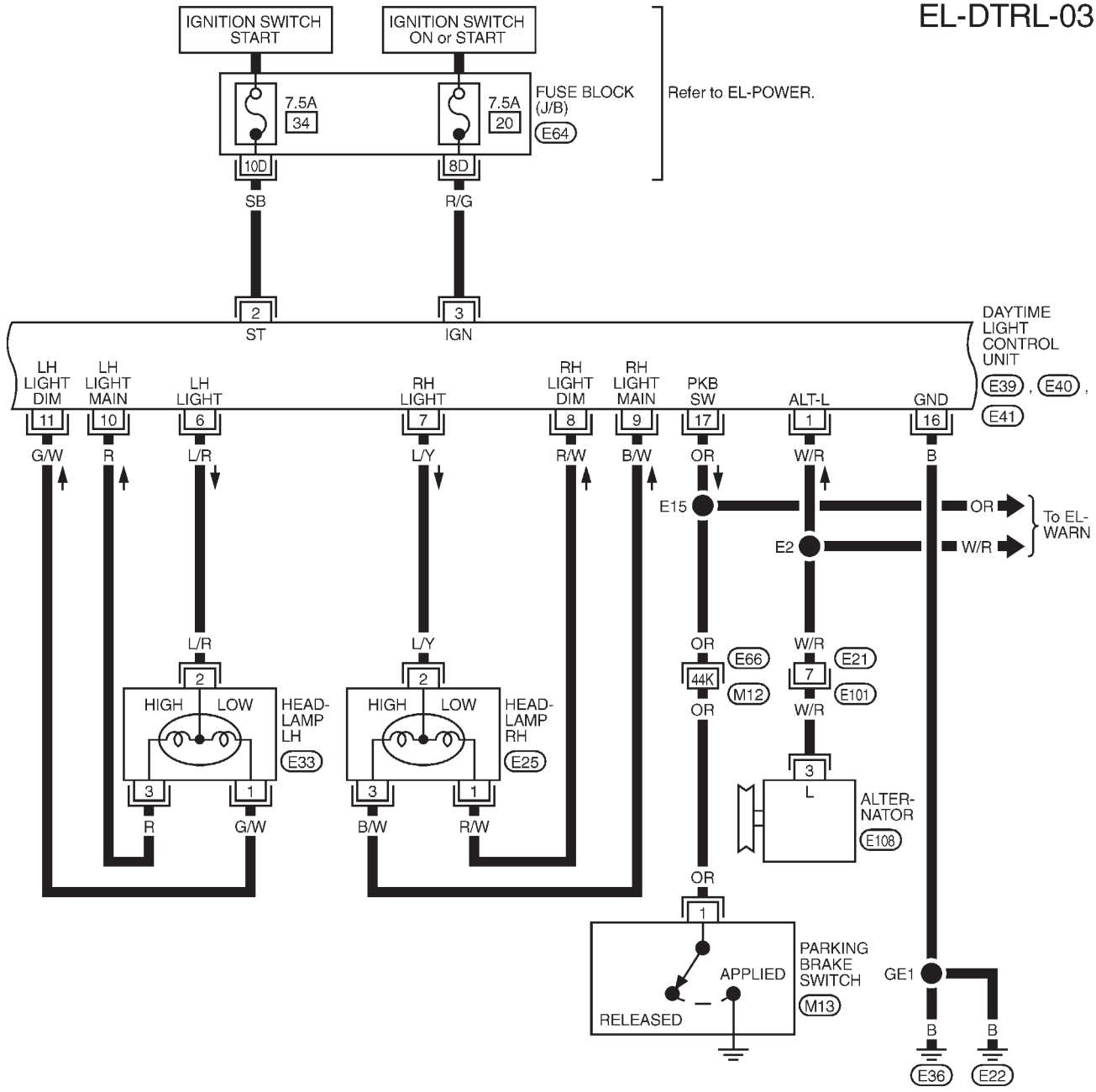
E70 , E81

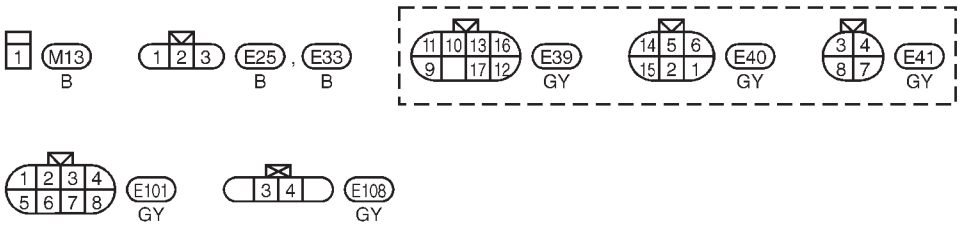
M22

TEL738

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03

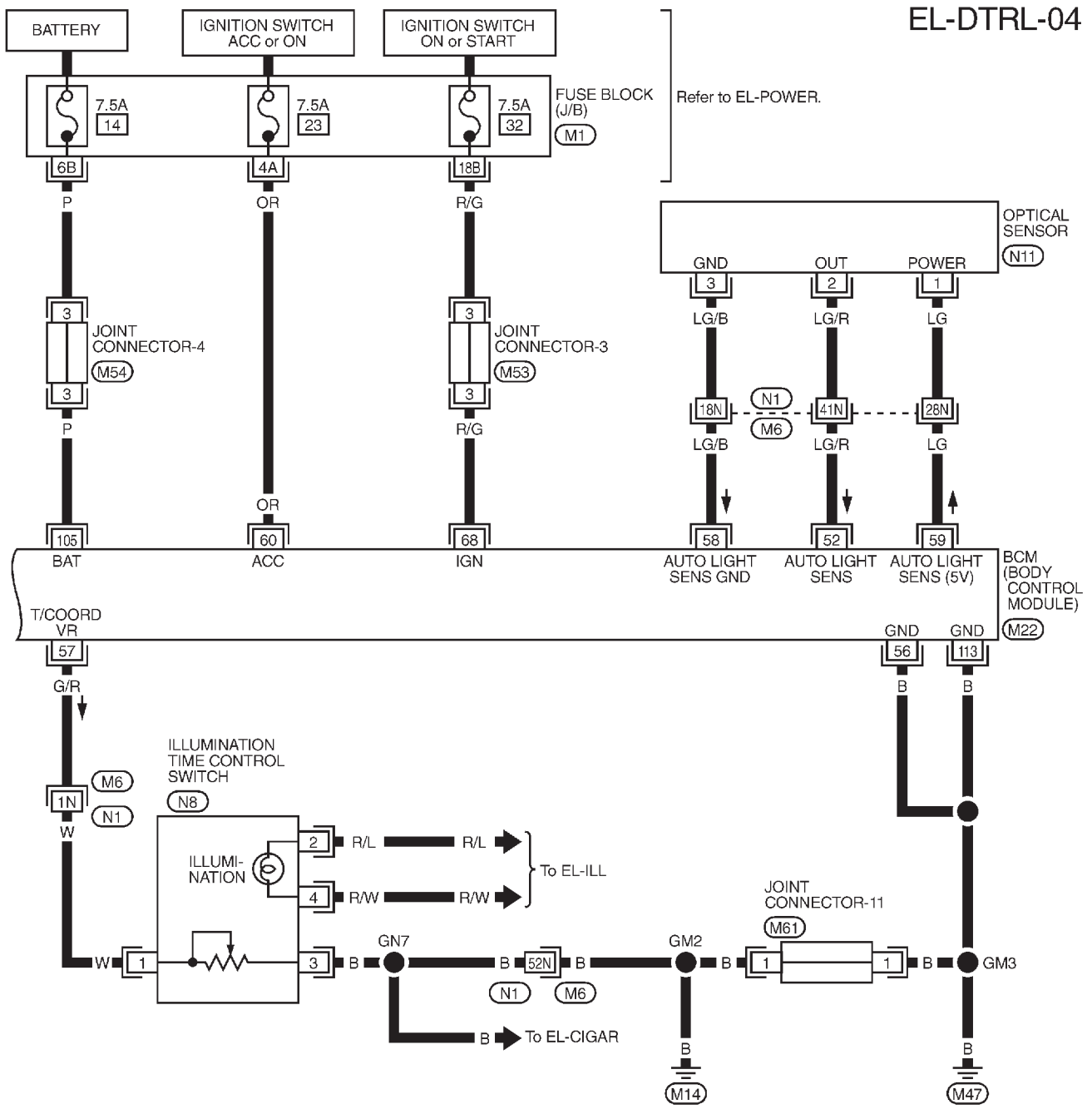


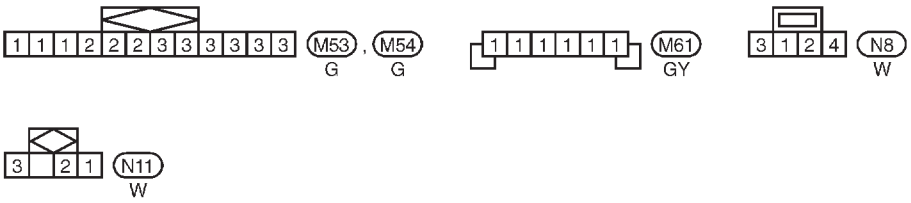


Refer to last page (Foldout page).
M12, E66
E64

TEL971A

Wiring Diagram — DTRL — (Cont'd)





Refer to last page (Foldout page).

M6 , N1

M1

M22

TEL775A

Trouble Diagnoses

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Wire color	Item	Condition		Judgement standard
1	W/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
2	SB	Start signal		When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “ON” from “ST”	Less than 1V
				When turning ignition switch to “OFF”	Less than 1V
3	R/G	Power source		When turning ignition switch to “ON”	Battery voltage
				When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “OFF”	Less than 1V
4	G	Power source		When lighting switch is turned to “2ND” or PASS (“C”) position	Battery voltage
				Except the above	1V or less
5	L/W	Power source		When lighting switch is turned to “2ND” or PASS (“C”) position	Battery voltage
				Except the above	Less than 1V
6	L/R	LH head-lamp control		When lighting switch is turned to “2ND” or PASS (“C”) 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
				Except the above	Less than 1V
7	L/Y	RH head-lamp control		When lighting switch is turned to “2ND” or PASS (“C”) 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.**	Battery voltage
				Except the above	Less than 1V

Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition		Judgement standard
8	R/W	RH low beam (Ground)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
9	B/W	RH high beam (Ground)		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
10	R	LH high beam (Ground)		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Less than 1V
11	G/W	LH low beam (Ground)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
12	Y/B	Lighting switch (LH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
13	W	Lighting switch (LH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
14	B/W	Lighting switch (RH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
15	G/Y	Lighting switch (RH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
16	B	Ground		—	—
17	OR	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V

Bulb Replacement/Conventional Type

For bulb replacement, refer to EL-60.

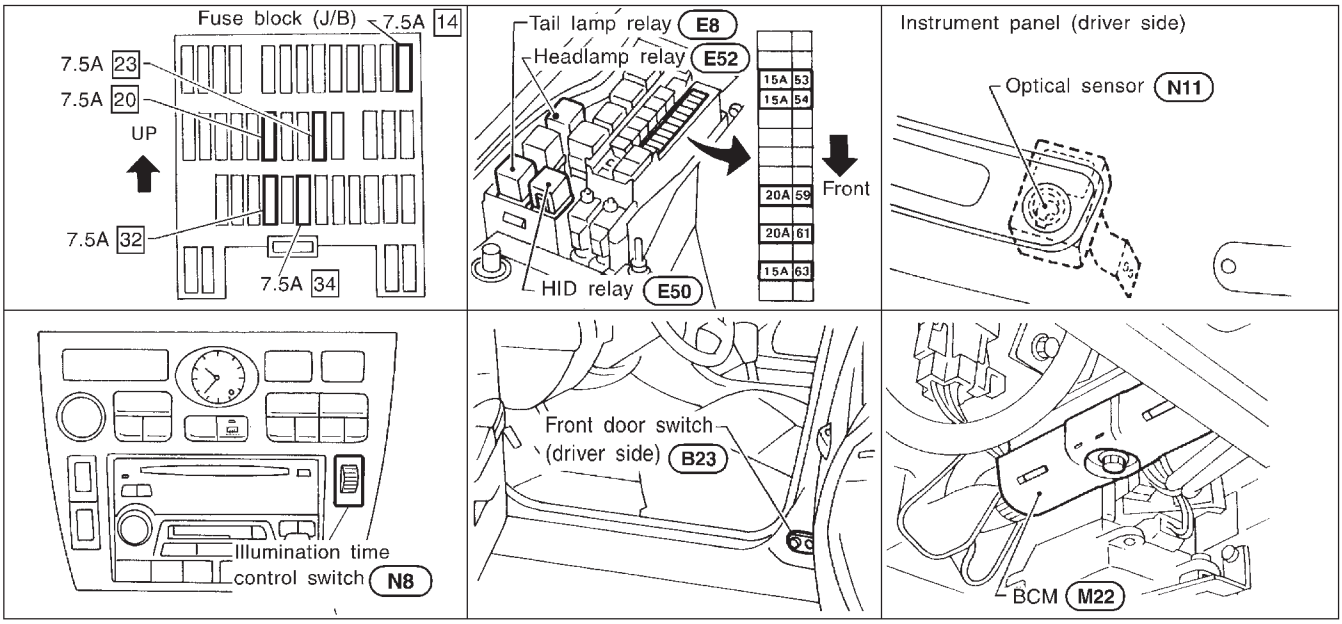
Bulb Specifications/Conventional Type

For bulb specifications, refer to EL-60.

Aiming Adjustment/Conventional Type

For aiming adjustment, refer to EL-60.

Component Parts and Harness Connector Location



SEL809V

Daytime Light System/System Description

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.

Power is supplied at all times
- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to headlamp relay terminal ①, and
- to headlamp relay terminal ⑦, and
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to headlamp relay terminal ⑤.

Power is also supplied at all times
- to HID relay terminal ①, and
- through 20A fuse (No. 61, located in the fuse and fusible link box)
- to HID relay terminal ③, and
- through 20A fuse (No. 59, located in the fuse and fusible link box)
- to HID relay terminal ⑥, and

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to daytime light control unit terminal ③.

With the ignition switch in the START position, power is supplied
- through 7.5A fuse [No. 34, located in the fuse block (J/B)]
- to daytime light control unit terminal ②.

Ground is supplied to daytime light control unit terminal ⑯ through body grounds E22 and E36.

HEADLAMP SWITCH OPERATION

When the lighting switch is turned to 2ND or PASS (“C”) positions, ground is supplied
- to headlamp relay terminal ② and HID relay terminal ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied
- from the headlamp relay terminal ⑥
- to combination meter terminal ㉒ for the HIGH BEAM indicator and
- through daytime light control unit terminals ⑤ and ⑥

Daytime Light System/System Description (Cont'd)

- to terminal ① of the LH headlamp.

Power is also supplied

- from the headlamp relay terminal ③
- through daytime light control unit terminals ④ and ⑦
- to terminal ① of the RH headlamp.

HID relay is also energized, and power is supplied.

- from the HID relay terminal ⑤
- to terminal ② LH headlamp

Power is also supplied

- from the HID relay terminal ⑦
- to terminal ② RH headlamp

Ground is supplied at all times.

- to LH head lamp terminal ④ and RH head lamp terminal ④
- through body ground E22 and E36.

Low beam operation

When the lighting switch is turned to 2ND (LOW or HI) or PASS ("C") position, the low beam headlamps illuminate.

High beam operation/flash-to-pass operation

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

- to terminal ③ of LH headlamp and combination meter terminal ㉓ for the HIGH BEAM indicator
- through daytime light control unit terminals ⑩ and ⑬
- through lighting switch terminals ⑨ and ⑧
- through body grounds E22 and E36.

Ground is also supplied

- to terminal ③ of RH headlamp
- through daytime light control unit terminals ⑨ and ⑭
- through lighting switch terminals ⑥ and ⑤
- through body grounds E22 and E36.

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

XENON HEADLAMP

For description regarding xenon headlamp, refer to EL-64.

AUTO LIGHT OPERATION

For auto light operation, refer to EL-63.

DAYTIME LIGHT OPERATION

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

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

Ground is supplied to terminal ③ of LH headlamp.

- through daytime light control unit terminals ⑩ and ⑯
- through body grounds E22 and E36.

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

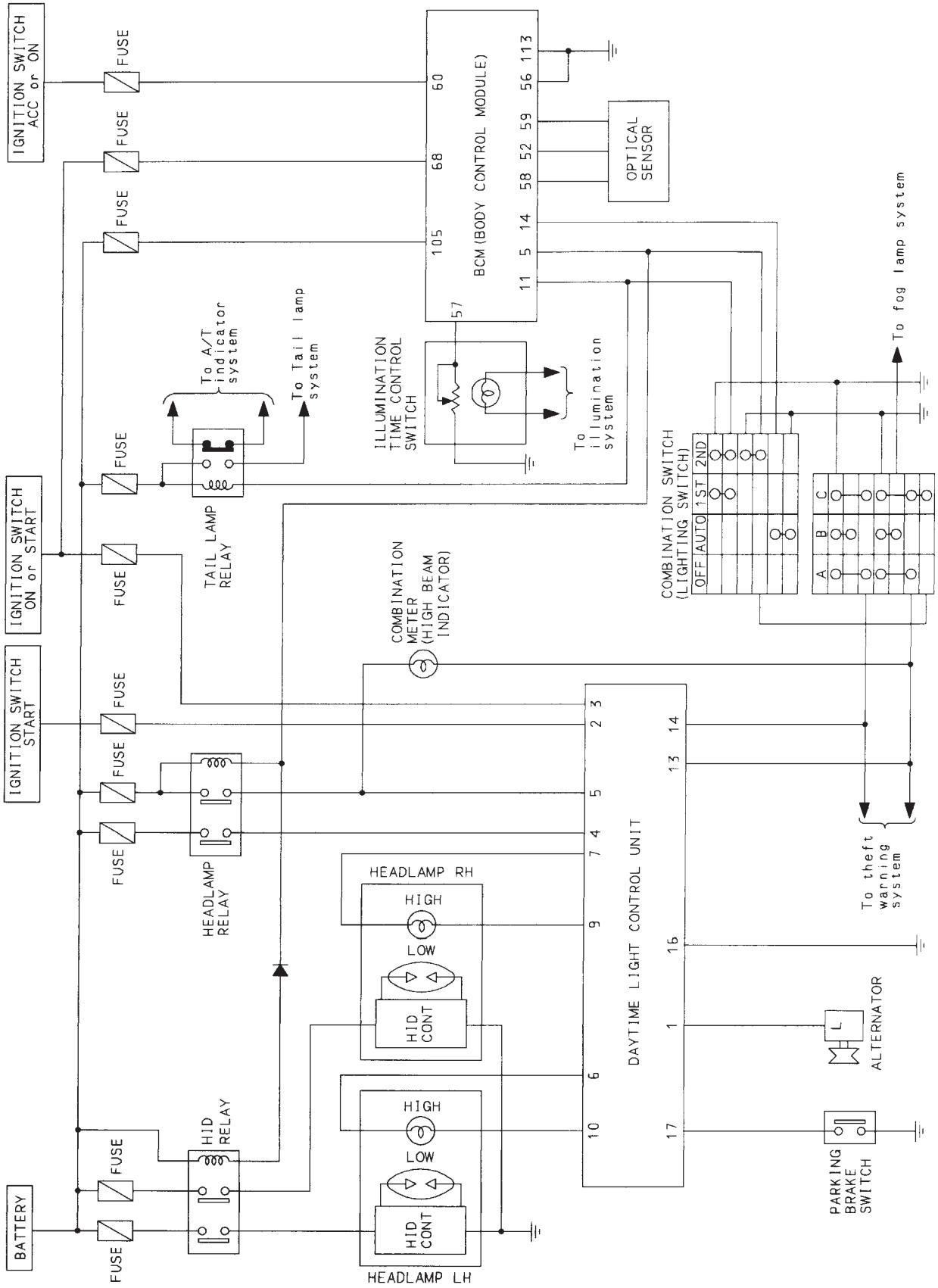
Operation (Daytime light system with xenon headlamp)

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	○	X	X	○	○	X	○	△*	△*	○	△*	△*	○	○	X	○
	Low beam	X	X	X	X	X	X	○	○	○	X	X	X	X	X	X	○	○	○
Parking and tail lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○
License and instrument illumination lamp		X	X	X	○	○	○	○	○	○	X	X	X	○	○	○	○	○	○

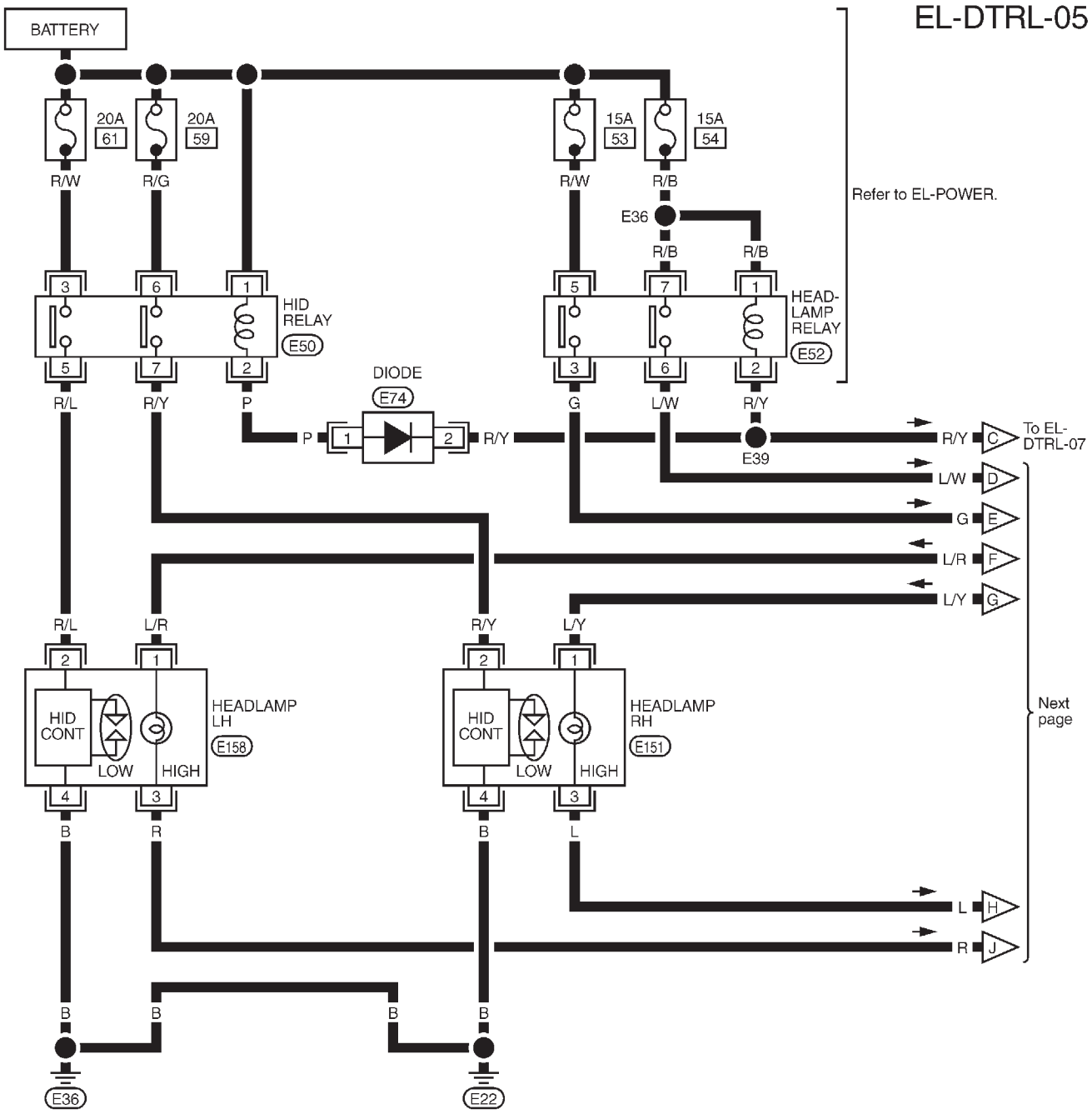
○ : Lamp “ON”
X : Lamp “OFF”
△ : Lamp dims.
□ : Added functions
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won’t come ON.

Schematic



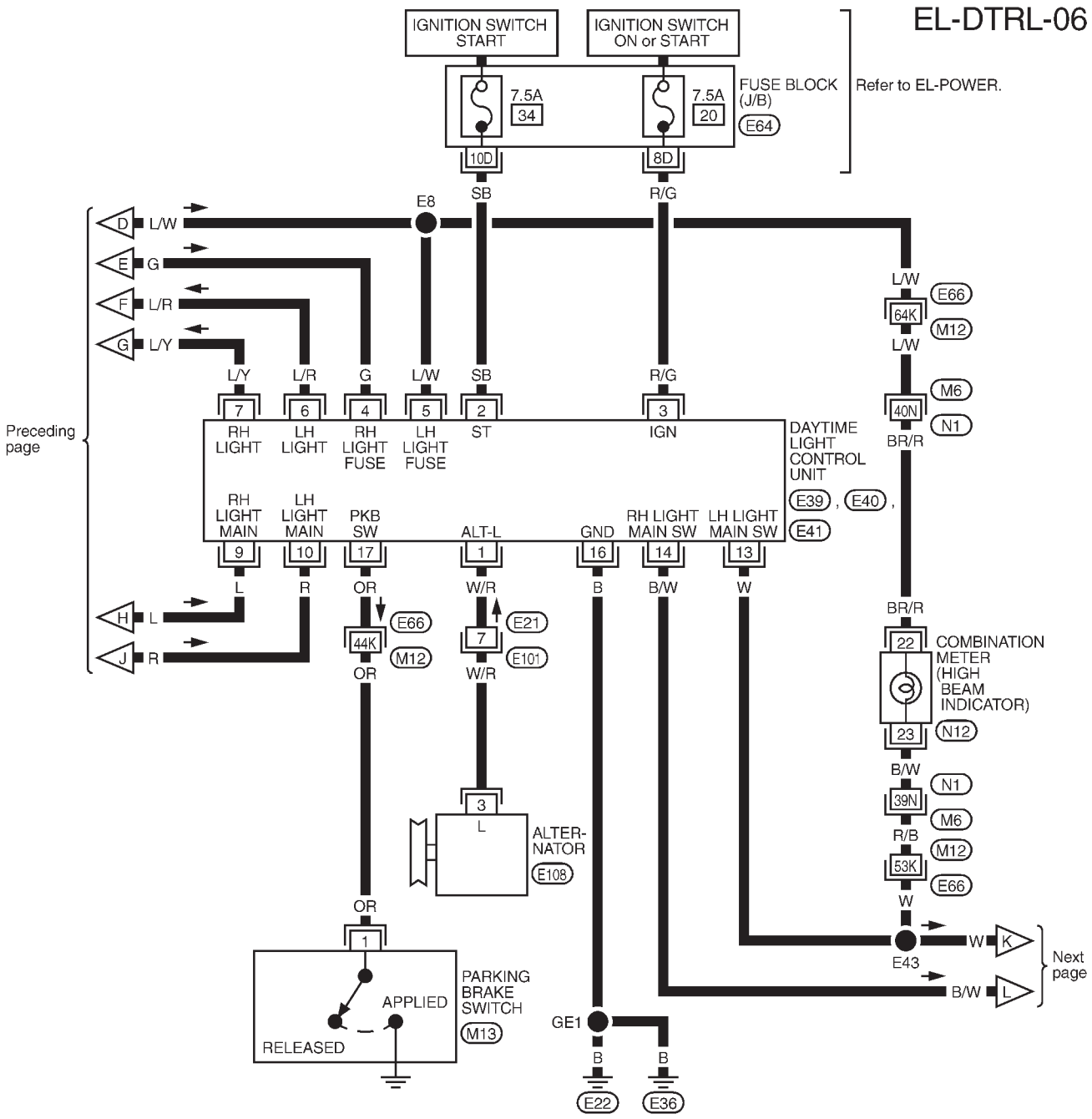
TEL972A

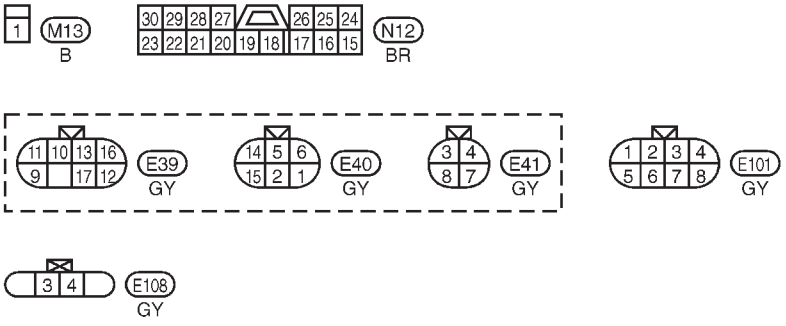
Wiring Diagram — DTRL —



TEL973A

Wiring Diagram — DTRL — (Cont'd)



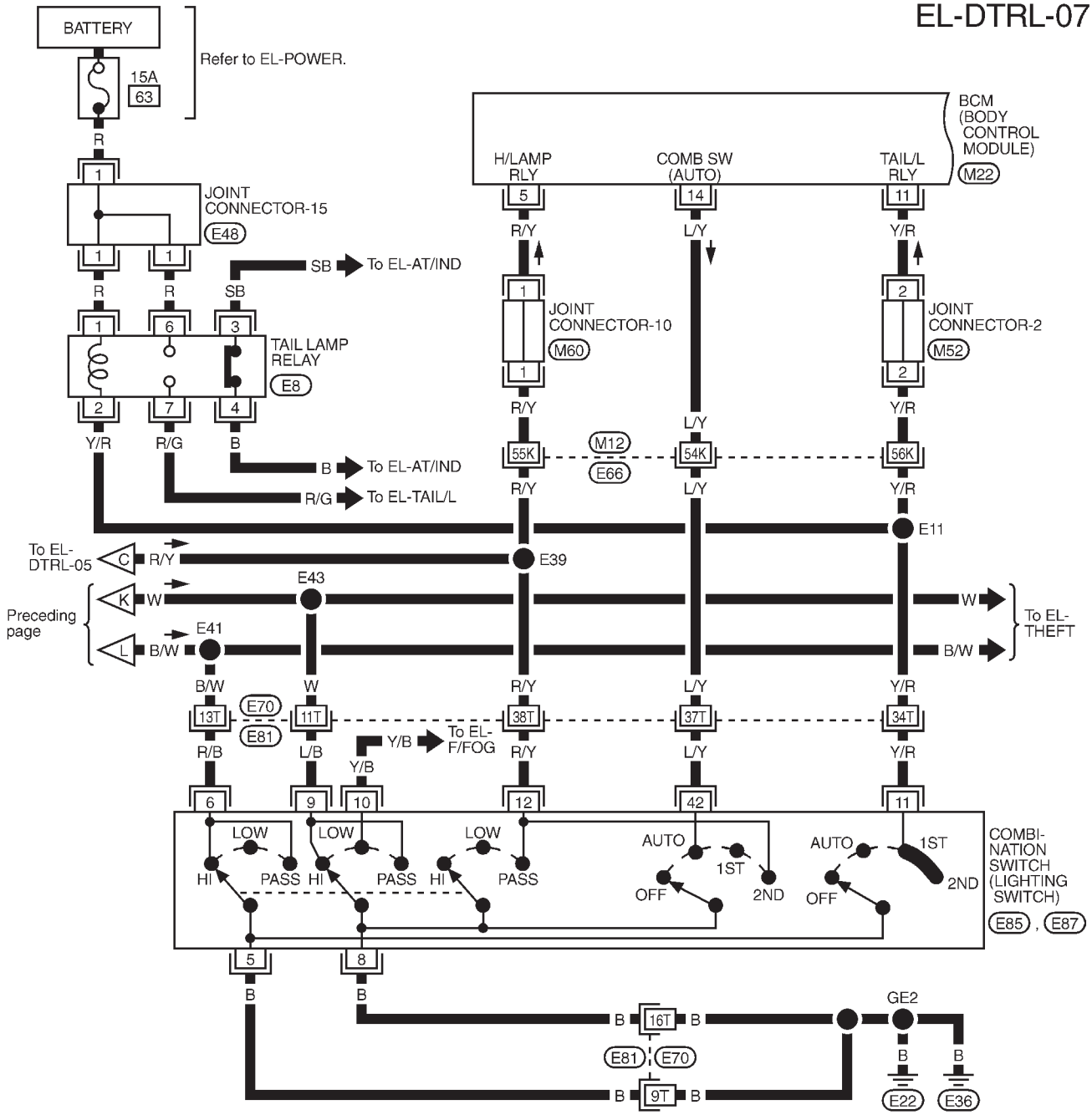


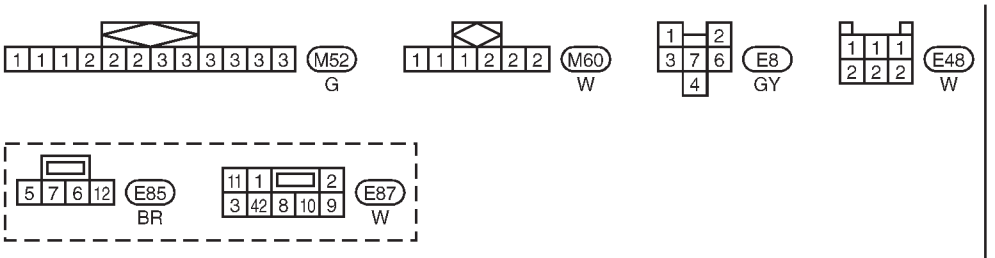
Refer to last page (Foldout page).
M6, N1
M12, E66
E64

TEL974A

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-07



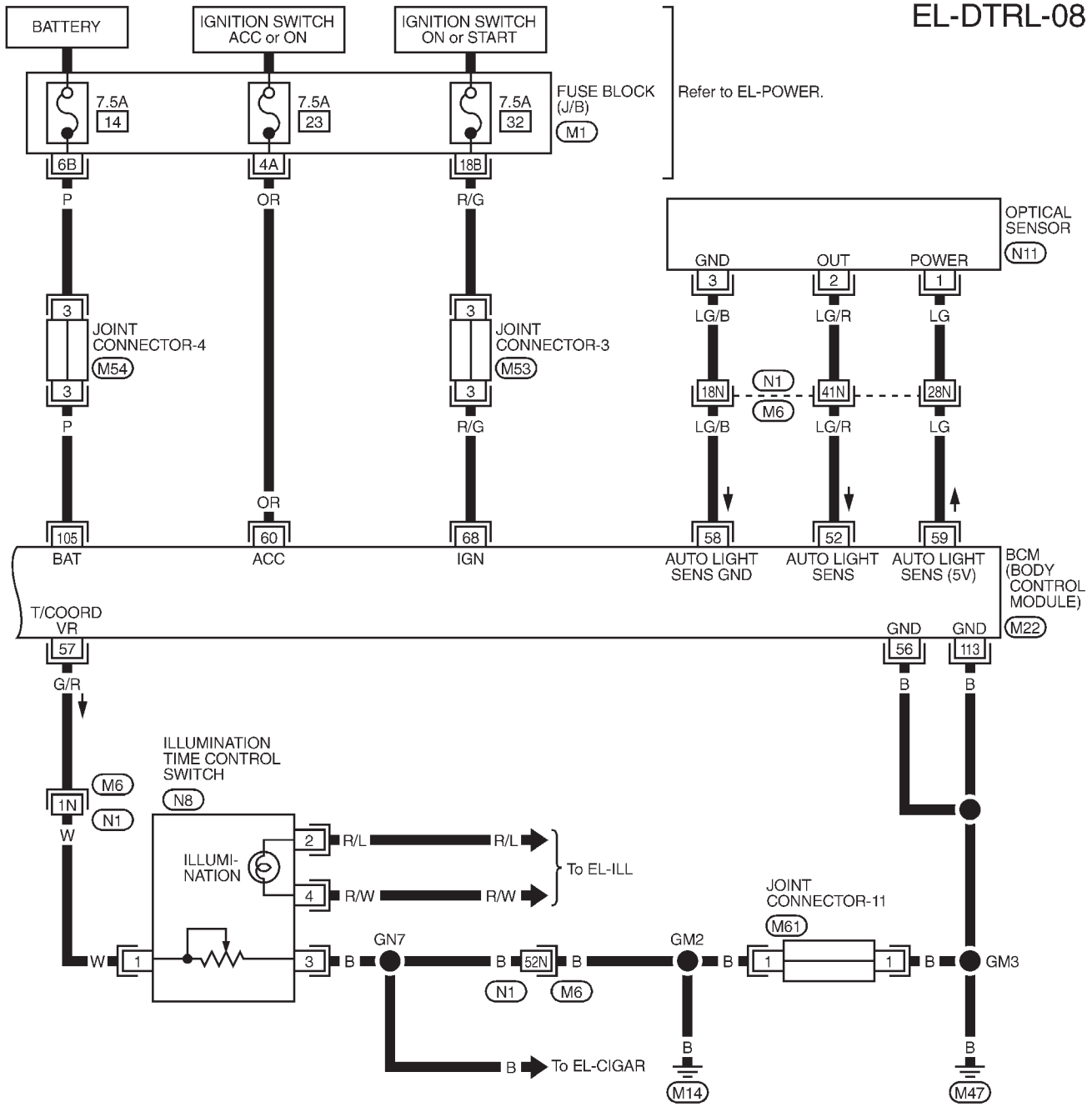


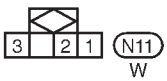
Refer to last page (Foldout page).
(M12) , (E66)
(E70) , (E81)
(M22)

TEL975A

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-08





Refer to last page (Foldout page).

M6 , N1

M1

M22

TEL040B

Trouble Diagnoses

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Wire color	Item	Condition		Judgement standard
1	W/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
2	SB	Start signal		When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “ON” from “ST”	Less than 1V
				When turning ignition switch to “OFF”	Less than 1V
3	R/G	Power source		When turning ignition switch to “ON”	Battery voltage
				When turning ignition switch to “ST”	Battery voltage
				When turning ignition switch to “OFF”	Less than 1V
4	G	Power source		When lighting switch is turned to “2ND” or PASS (“C”) position	Battery voltage
				Except the above	1V or less
5	L/W	Power source		When lighting switch is turned to “2ND” or PASS (“C”) position	Battery voltage
				Except the above	Less than 1V
6	L/R	LH head-lamp control		When lighting switch is turned to “2ND” or PASS (“C”) 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
				Except the above	Less than 1V
7	L/Y	RH head-lamp control		When lighting switch is turned to “2ND” or PASS (“C”) 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.**	Battery voltage
				Except the above	Less than 1V

Trouble Diagnoses (Cont'd)

Terminal No.	Wire color	Item	Condition		Judgement standard
9	L	RH high beam (Ground)		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
10	R	LH high beam (Ground)		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Less than 1V
13	W	Lighting switch (LH high beam)		When turning lighting switch HIGH ("A") or PASS ("C") position	Less than 1V
14	B/W	Lighting switch (RH high beam)		When turning lighting switch HIGH ("A") or PASS ("C") position	Less than 1V
16	B	Ground		—	—
17	OR	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V

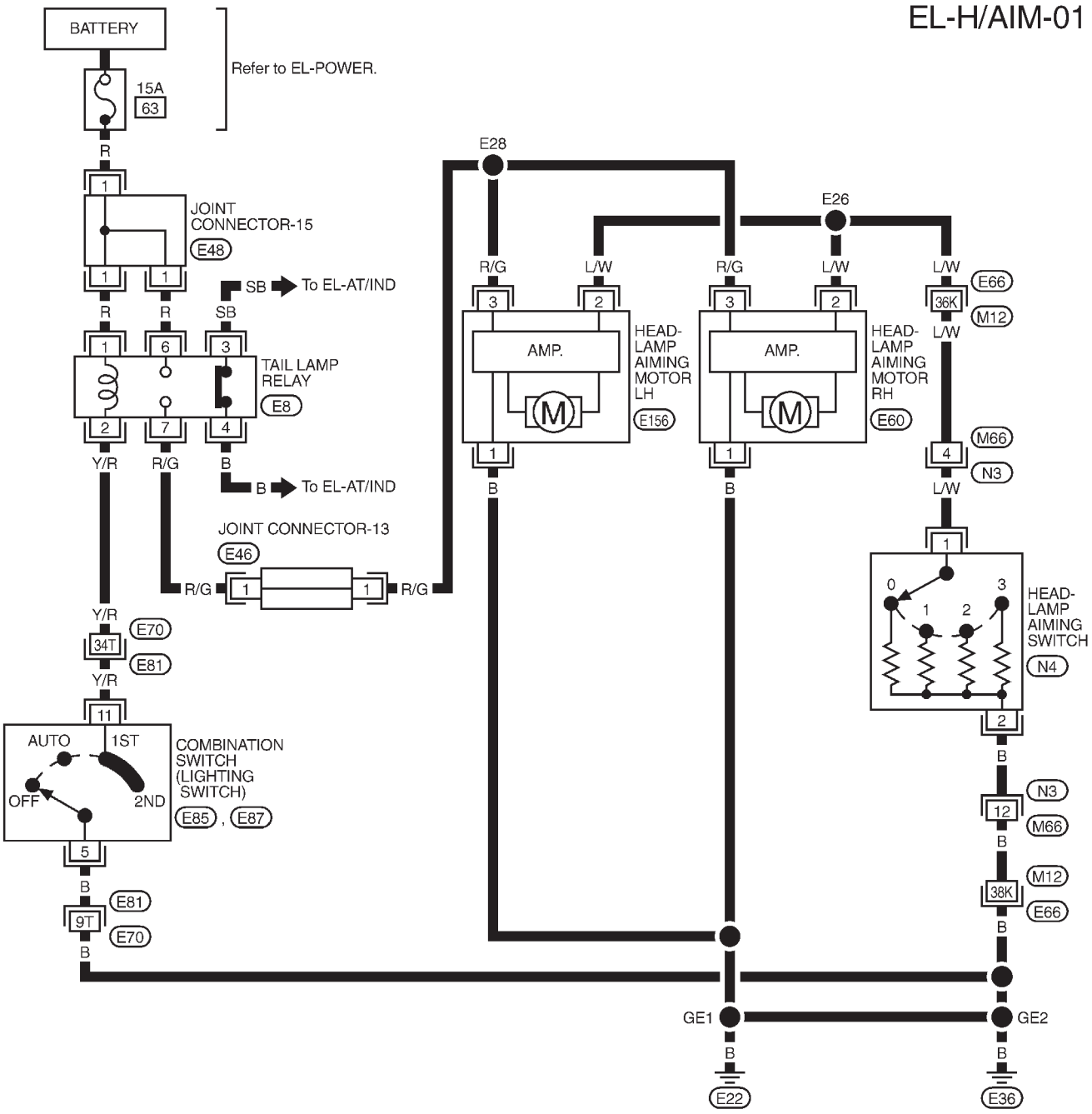
Bulb Replacement/Xenon Type

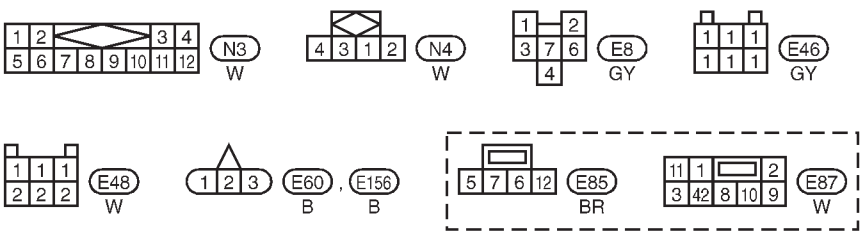
For bulb replacement, refer to EL-71.

Aiming Adjustment/Xenon Type

For aiming adjustment, refer to EL-73.

Wiring Diagram — H/AIM —





Refer to last page (Foldout page).
(M12) , (E66)
(E70) , (E81)

TEL977A

System Description

Power is supplied at all times
- to tail lamp relay terminals ① and ⑥
- through 15A fuse [No. 63, located in the fuse, fusible link and relay box].

Ground is supplied
- to the lighting switch terminals ⑤ and ⑧
- through body grounds E22 and E36.

SWITCH OPERATION

When the lighting switch is turned to 1ST or 2ND position, ground is supplied
- to tail lamp relay terminal ②
- from the lighting switch terminal ⑪.

Tail lamp relay is then energized, and power is supplied
- from tail lamp relay terminal ⑦
- to power terminals of parking, license and tail lamps through stop and tail lamp sensor terminal ⑧.

With power supplied, parking, license and tail lamps illuminate.

AUTO LIGHT OPERATION

BCM is connected to the optical sensor. The optical sensor sends a signal to BCM according to outside brightness.
When the lighting switch is turned to AUTO position, ground is supplied
- to BCM terminal ⑭
- from the lighting switch terminal ㊷.

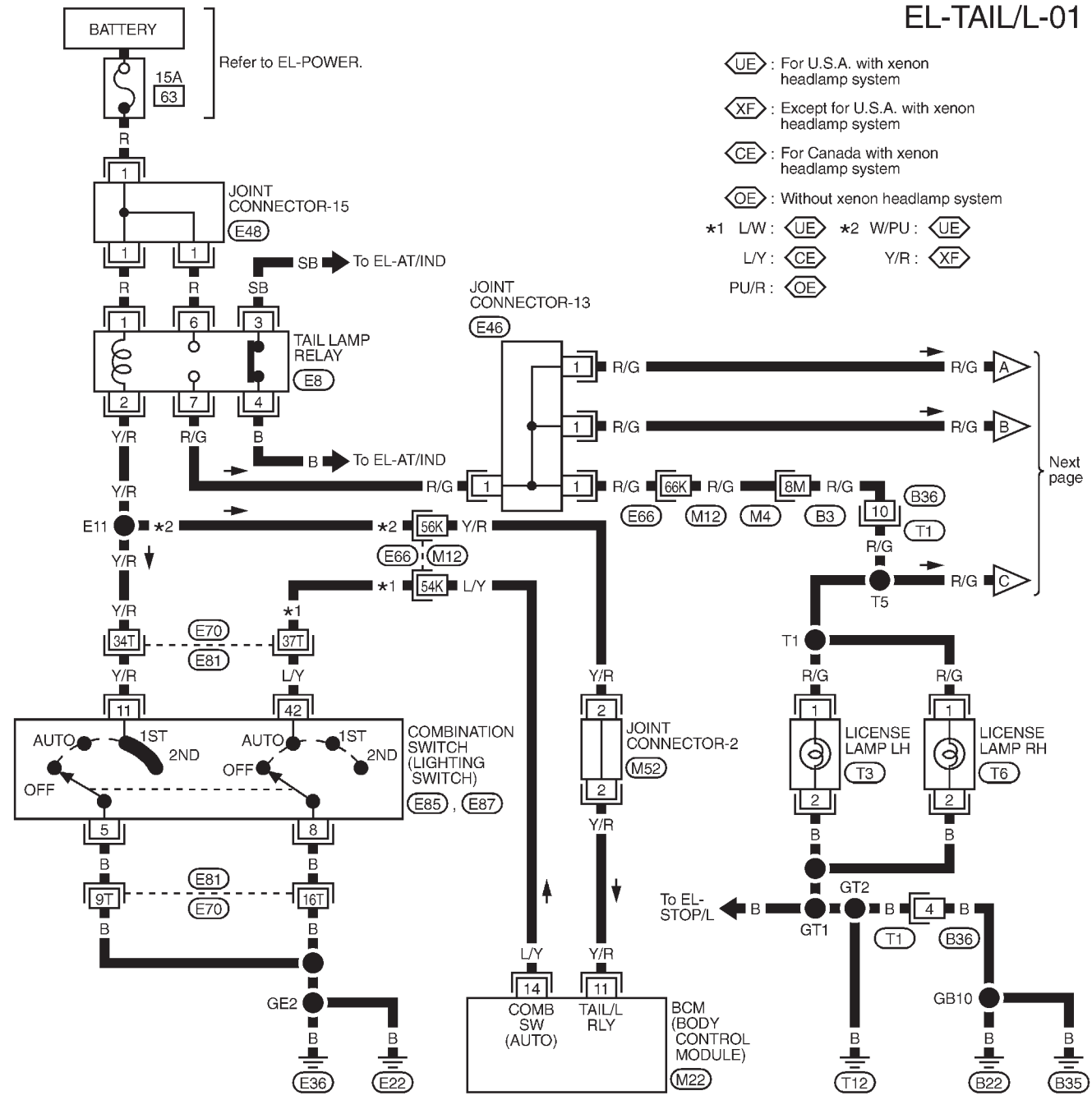
When ignition switch is set to ON or START and outside is darker than the prescribed level, ground is supplied
- to tail lamp relay terminal ②
- from the BCM terminal ⑪.

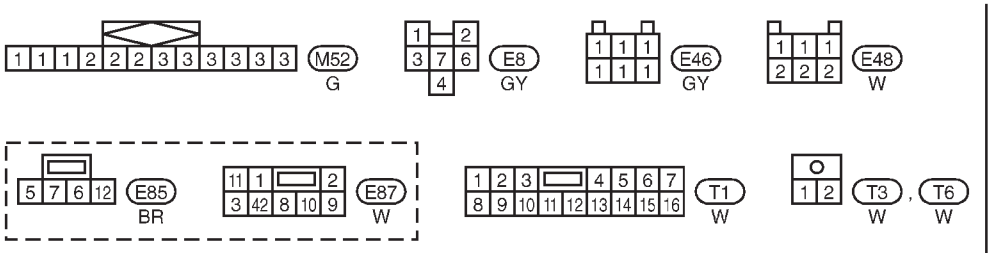
Tail lamp relay is then energized, and parking, license and tail lamps illuminate.
Auto light operation allows these lamps to turn off when outside is brighter than the prescribed level.
Or the ignition switch is turned to the OFF position.
For detailed wiring diagram of auto light, refer to “HEADLAMP”.

TAIL AND STOP WARNING LAMP

When one of the stop lamp bulbs is burned out with the stop lamp switch depressed, or one of the tail bulbs is burned out with the lighting switch in the 1ST or 2ND position, the tail and stop warning lamp illuminate. For details, refer to “WARNING LAMPS” (EL-135).

Wiring Diagram — TAIL/L —



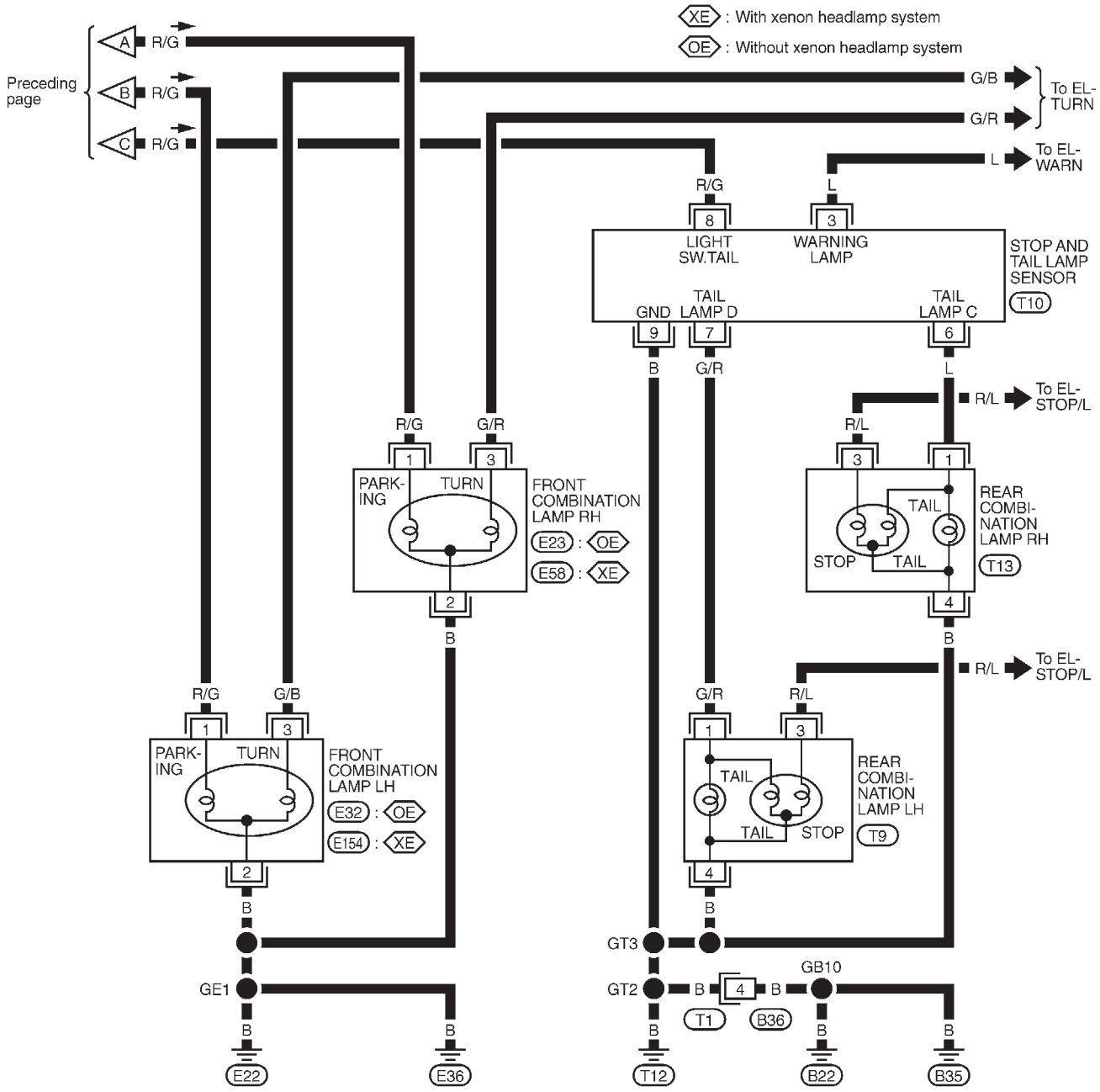


Refer to last page (Foldout page).
(M4) , (B3)
(M12) , (E66)
(E70) , (E81)
(M22)

TEL978A

Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02



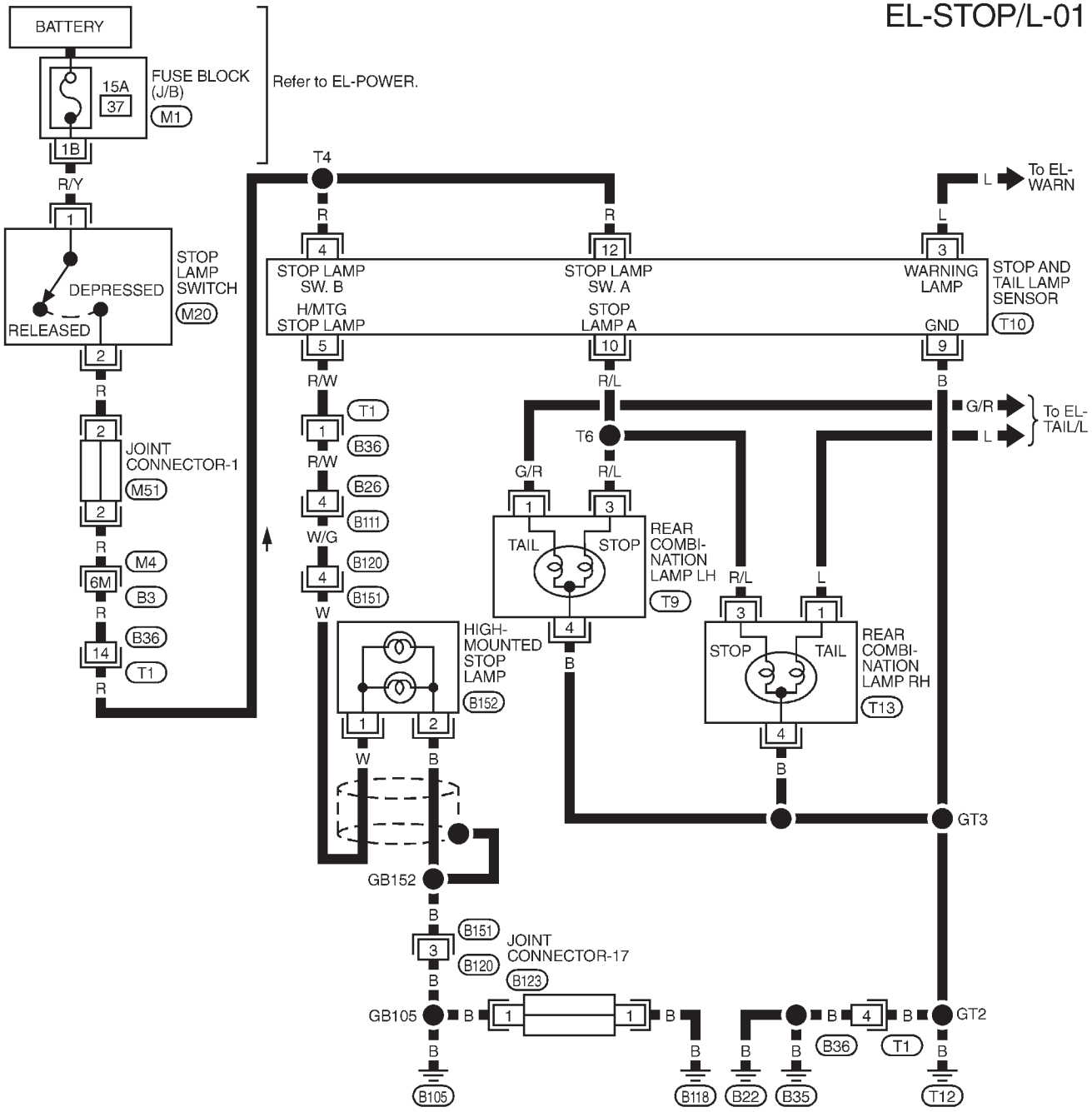
TEL979A

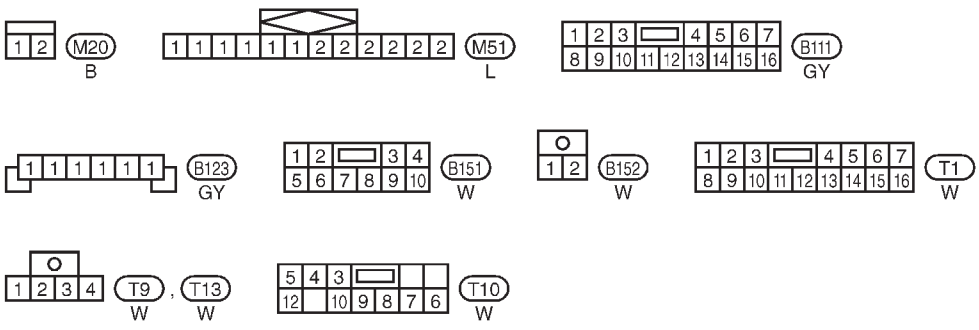
Trouble Diagnoses

Symptom	Possible cause	Repair order
Parking, license and tail lamps do not operate.	1. 15A fuse 2. Tail lamp relay 3. Lighting switch 4. Open in tail lamp relay circuit 5. Lighting switch ground circuit	1. Check 15A fuse (No. 63, located in the fuse, fusible link and relay box). 2. Check tail lamp relay. 3. Check lighting switch. 4. Check harness between tail lamp relay terminal ② and lighting switch terminal ⑪ for an open circuit. 5. Check lighting switch ground circuit.
Individual parking or license lamps do not operate.	1. Bulb 2. Lamp ground 3. Open circuit	1. Check bulb. 2. Check lamp ground circuit. 3. Check harness between power supply terminal of lamp and tail lamp relay terminal ⑦ for an open circuit.
Tail lamps do not operate. (See note.)	1. Bulb 2. Lamp ground 3. Stop and tail lamp sensor - related circuit	1. Check bulb. 2. Check lamp ground circuit. 3. Check stop and tail lamp sensor. (Refer to EL-240.)
Auto light malfunctioning.	—	Refer to trouble diagnoses in “HEADLAMP” (EL-53).

Note: If one of the tail lamp bulbs is burned out or if one of the circuits between the tail lamps and stop and tail lamp sensor is open, tail and stop warning lamp in the combination meter will illuminate with the lighting switch in the 1ST or 2ND position.

Wiring Diagram — STOP/L —



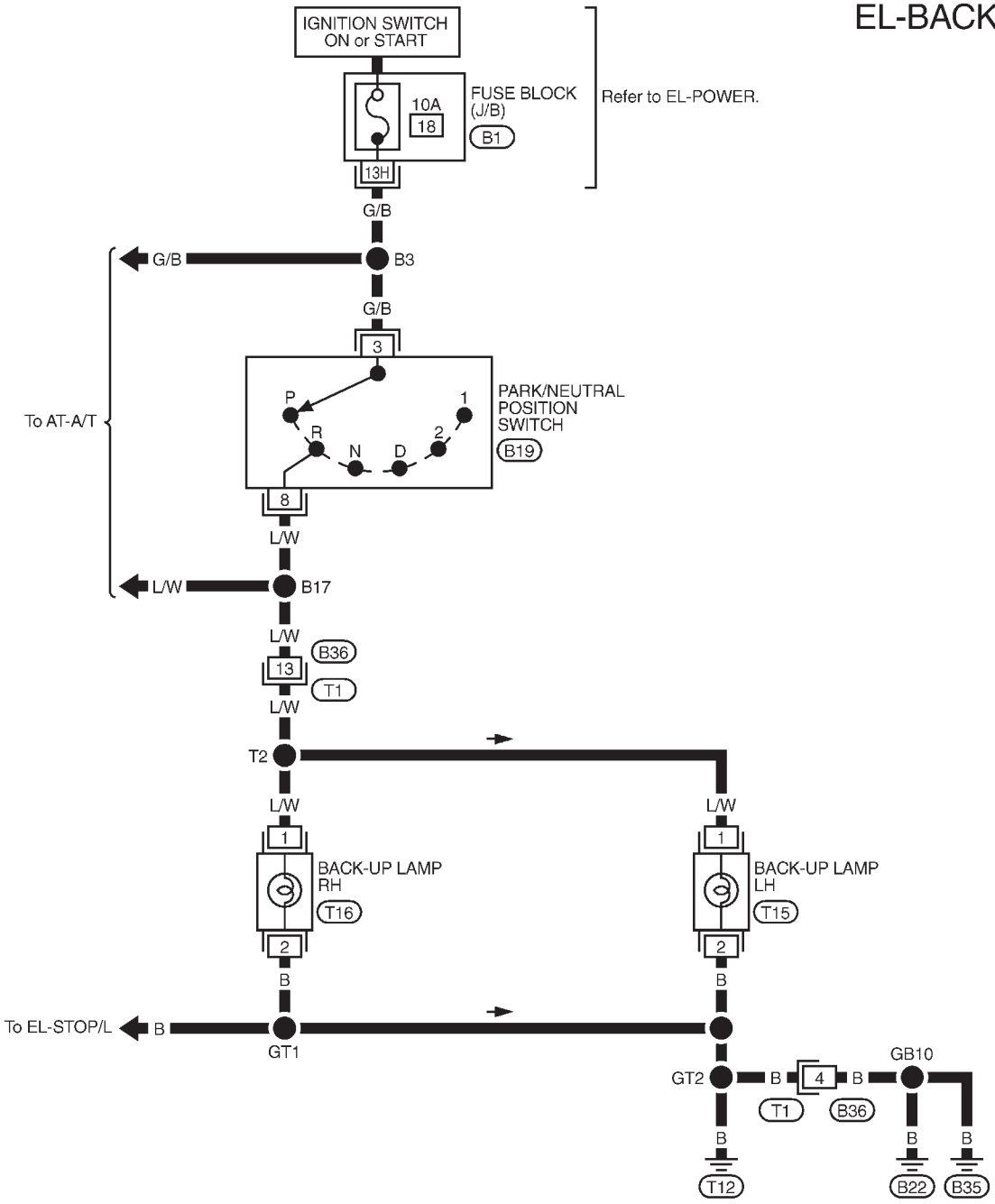


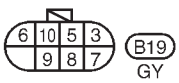
Refer to last page (Foldout page).
M4 , B3
M1

TEL980A

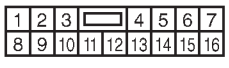
Wiring Diagram — BACK/L —

EL-BACK/L-01





B19
GY



T1
W

T15 , T16
W W

Refer to last page (Foldout page).

B1

TEL981A

System Description

Power is supplied at all times
- to fog lamp relay terminal ③
- through 15A fuse [No. 40, located in the fuse block (J/B)],
- to headlamp relay terminal ⑤
- through 15A fuse (No. 53, located in the fuse, fusible link and relay box) and
- to headlamp relay terminal ① .

When the lighting switch in the 2ND position, ground is supplied
- to headlamp relay terminal ②
- through lighting switch terminal ⑫
- to lighting switch terminal ⑧
- through body grounds E22 and E36.

The headlamp relay is energized and power is supplied
- to fog lamp relay terminal ②
- from headlamp relay terminal ③ .

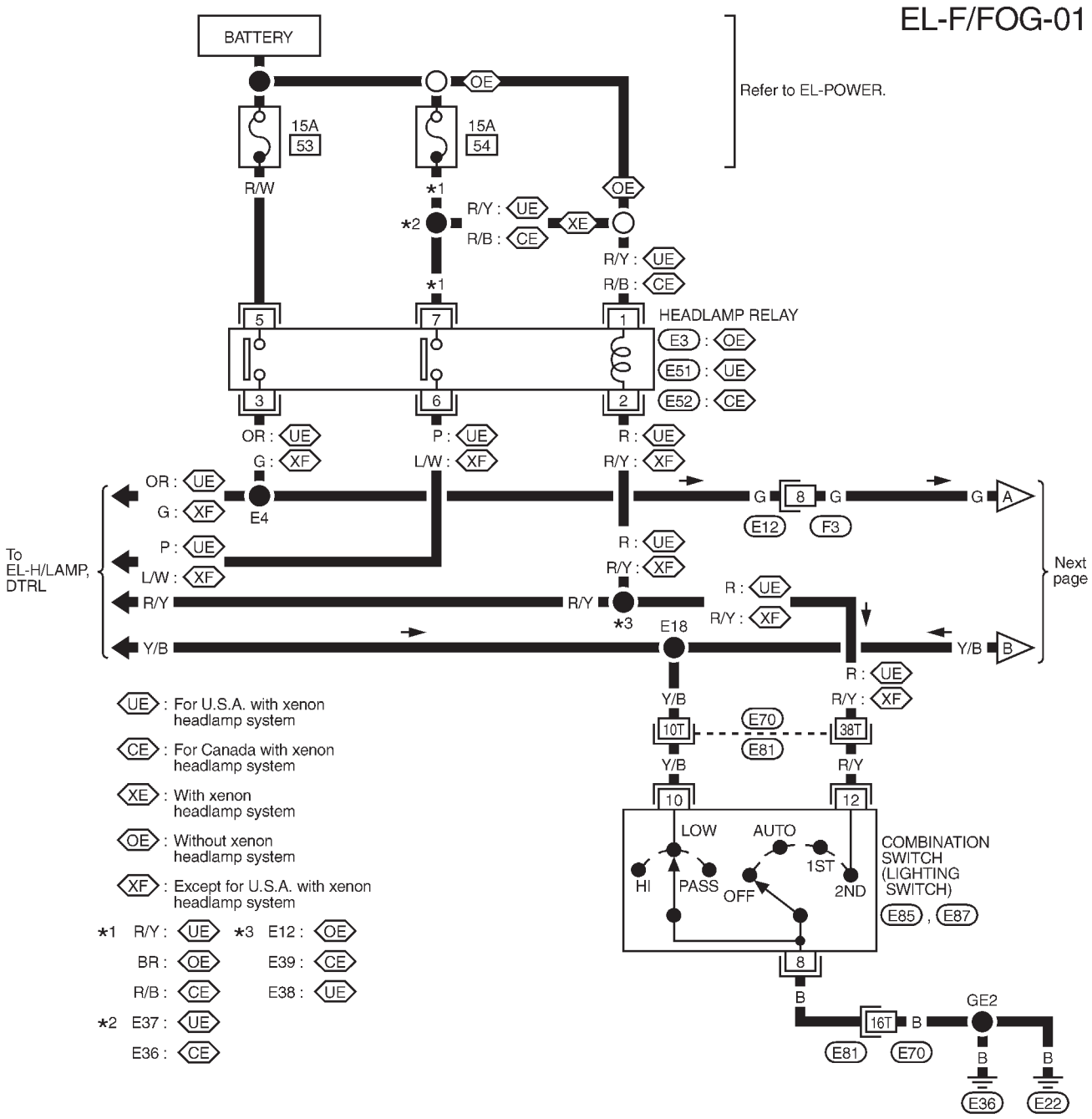
FOG LAMP OPERATION

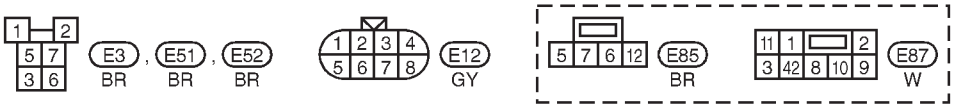
The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW (“B”) position for fog lamp operation. With the fog lamp switch in the ON position, ground is supplied
- to fog lamp relay terminal ①
- through front fog lamp switch terminal ㉛
- to front fog lamp switch terminal ㉜
- through lighting switch terminal ⑩
- to lighting switch terminal ⑧
- through body grounds E22 and E36.

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 E22 and E36. With power and ground supplied, the fog lamps illuminate.

Wiring Diagram — F/FOG —



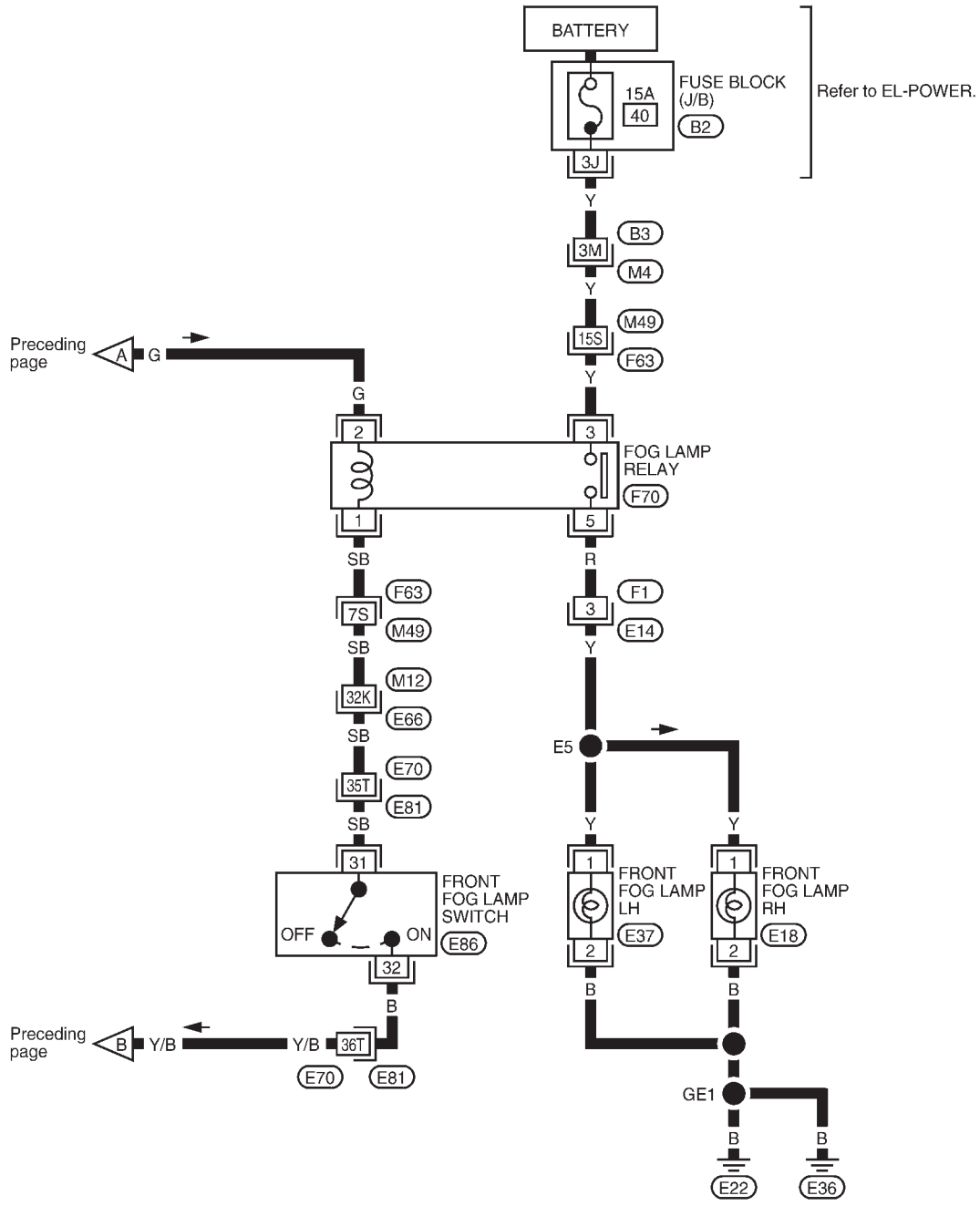


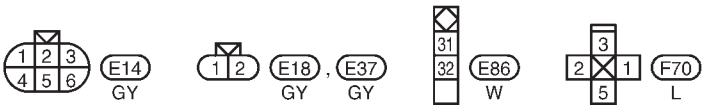
Refer to last page (Foldout page).
E70 , E81

TEL982A

Wiring Diagram — F/FOG — (Cont'd)

EL-F/FOG-02

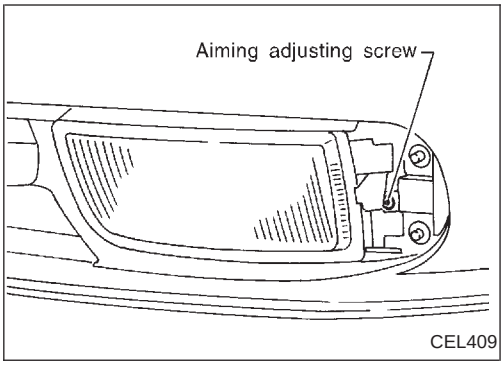




Refer to last page (Foldout page).

M4, B3
M12, E66
M49, F63
E70, E81
B2

TEL045B

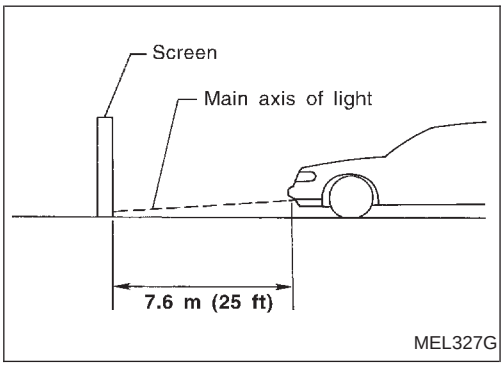


Aiming Adjustment

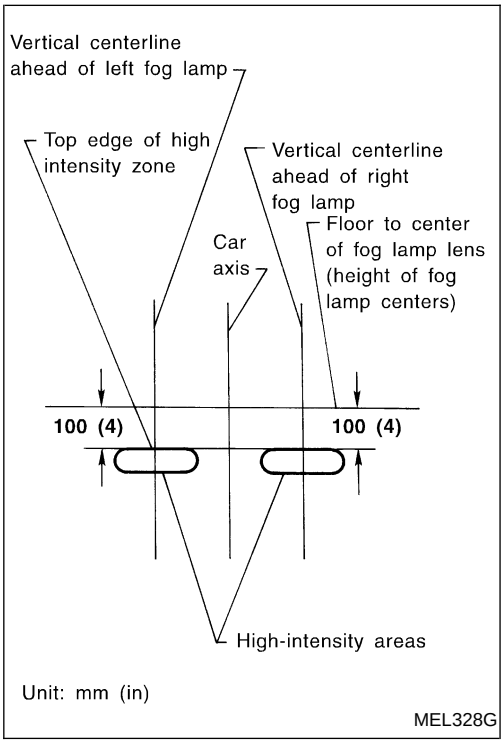
Before performing aiming adjustment, make sure of the following.

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

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



1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.



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

Bulb Specifications

Item	Wattage W
Front fog lamp	55

System Description

TURN SIGNAL OPERATION

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. 19, 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 M14 and M47.

LH turn

When the turn signal switch is moved to the LH position, power is supplied from turn signal switch terminal ③ to
- front combination lamp LH terminal ③
- rear combination lamp LH terminal ②
- combination meter terminal ㉑.

Ground is supplied to the front combination lamp LH terminal ② through body grounds E22 and E36.
Ground is supplied to the rear combination lamp LH terminal ④ through body grounds T12, B22 and B35.
Ground is supplied to combination meter terminal ㊳ through body grounds M14 and M47.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH turn

When the turn signal switch is moved to the RH position, power is supplied from turn signal switch terminal ② to
- front combination lamp RH terminal ③
- rear combination lamp RH terminal ②
- combination meter terminal ㉚.

Ground is supplied to the front combination lamp RH terminal ② through body grounds E22 and E36.
Ground is supplied to the rear combination lamp RH terminal ④ through body grounds T12, B22 and B35.
Ground is supplied to combination meter terminal ㊳ through body grounds M14 and M47.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times to hazard switch terminal ③ through:
- 10A fuse [No. 13, 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 M14 and M47.
Power is supplied through terminal ⑤ of the hazard switch to
- front combination lamp LH terminal ③
- rear combination lamp LH terminal ②
- combination meter terminal ㉑.

Power is supplied through terminal ⑥ of the hazard switch to
- front combination lamp RH terminal ③
- rear combination lamp RH terminal ②
- combination meter terminal ㉚.

Ground is supplied to terminal ② of each front combination lamp through body grounds E22 and E36.
Ground is supplied to terminal ④ of each rear combination lamp through body grounds T12, B22 and B35.
Ground is supplied to combination meter terminal ㊳ through body grounds M14 and M47.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

WITH MULTI-REMOTE CONTROL SYSTEM

Power is supplied at all times
- through 10A fuse [No. 13, located in the fuse block (J/B)]

System Description (Cont'd)

- 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 BCM (Body Control Module).
Refer to "MULTI-REMOTE CONTROL SYSTEM" (EL-329).
The multi-remote control relay is energized.
Power is supplied through terminal ⑤ of the multi-remote control relay

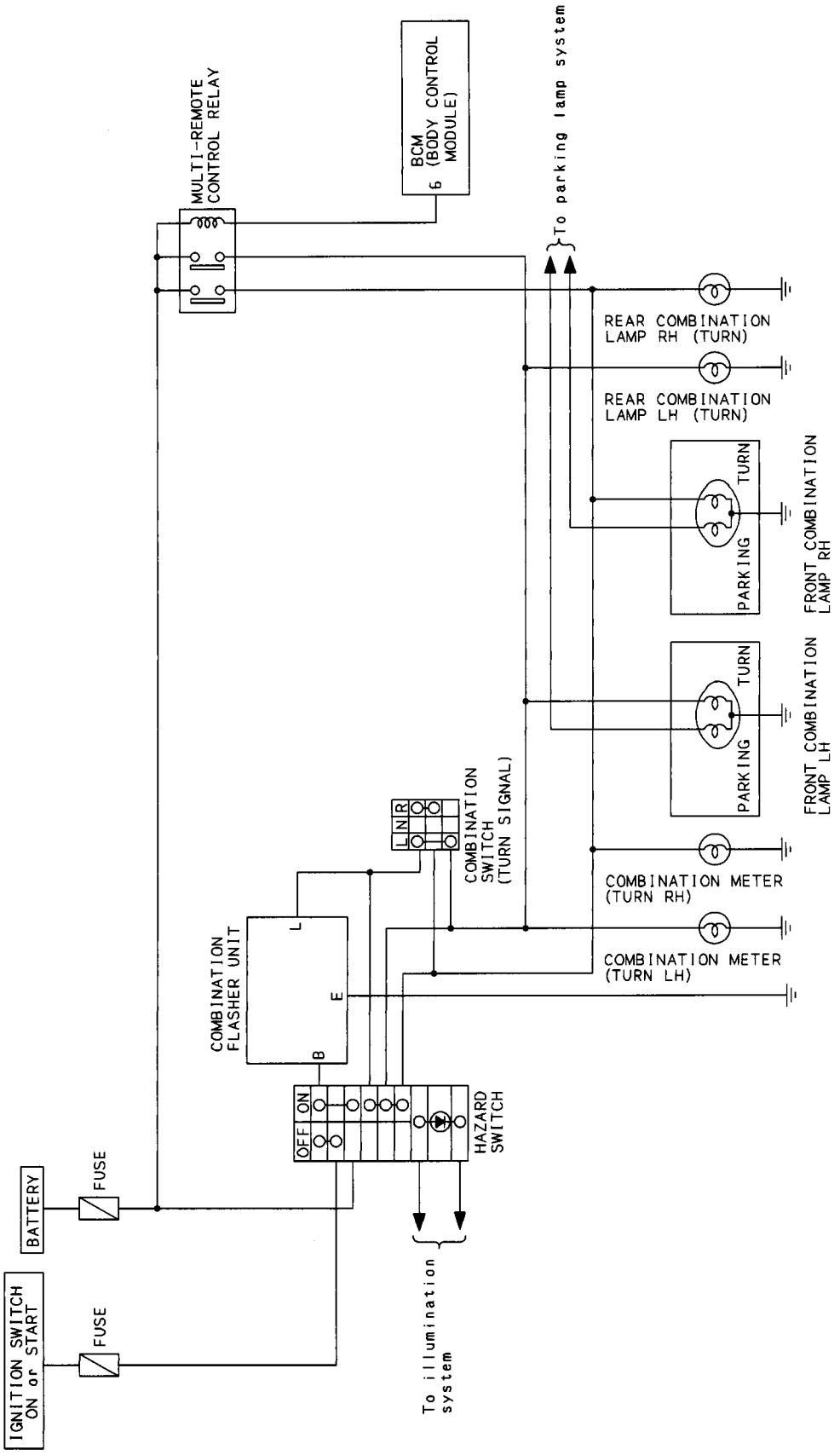
- to front combination lamp LH terminal ③,
- to rear combination lamp LH terminal ② and
- to combination meter terminal ㉑.

Power is supplied through terminal ⑦ of the multi-remote control relay

- to front combination lamp RH terminal ③,
- to rear combination lamp RH terminal ② and
- to combination meter terminal ㉚.

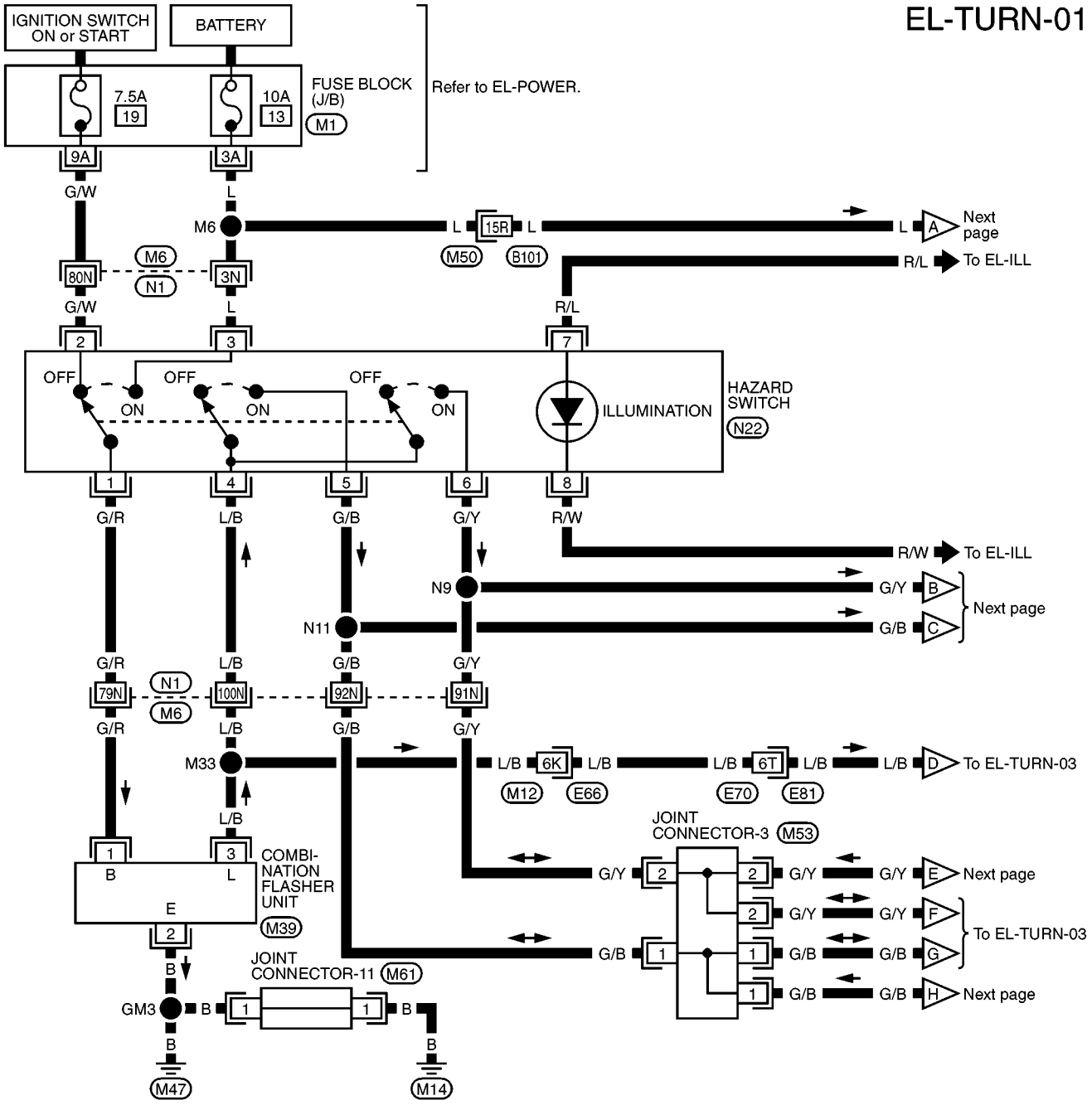
Ground is supplied to terminal ② of each front combination lamp through body grounds E22 and E36.
Ground is supplied to terminal ④ of each rear combination lamp through body grounds T12, B22 and B35.
Ground is supplied to combination meter terminal ㊳ through body grounds M14 and M47.
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

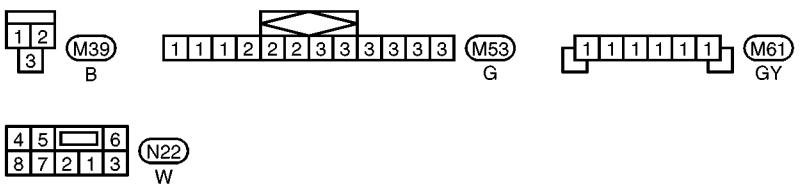
Schematic



TEL451B

Wiring Diagram — TURN —





Refer to last page (Foldout page).

M6 , N1

M50 , B101

E66 , M12

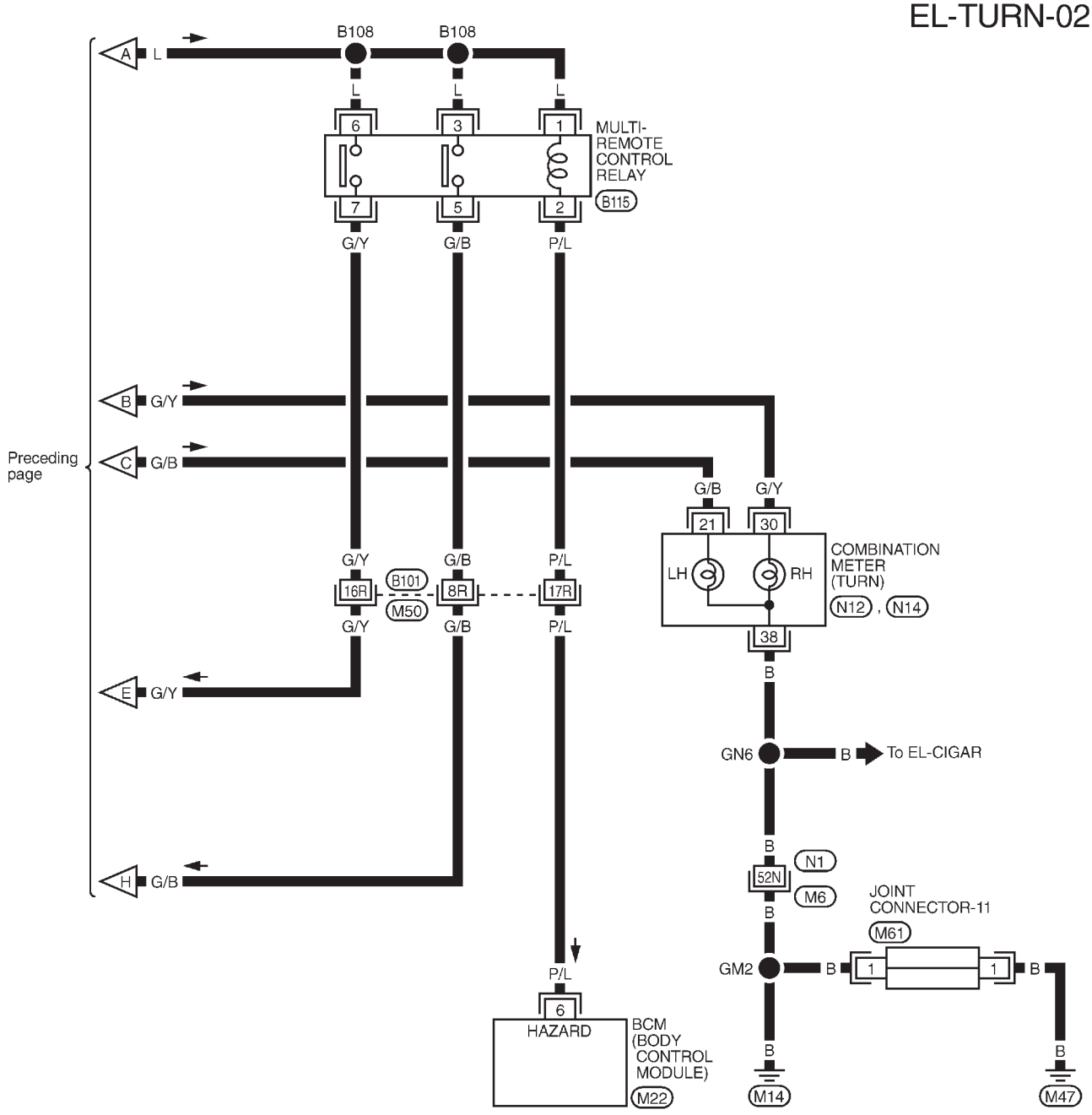
E70 , E81

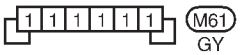
M1

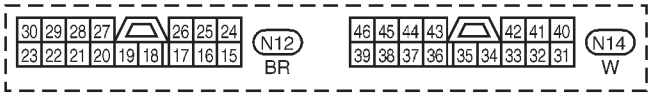
TEL452B

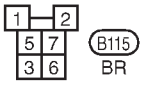
Wiring Diagram — TURN — (Cont'd)

EL-TURN-02









Refer to last page (Foldout page).

M6 , N1

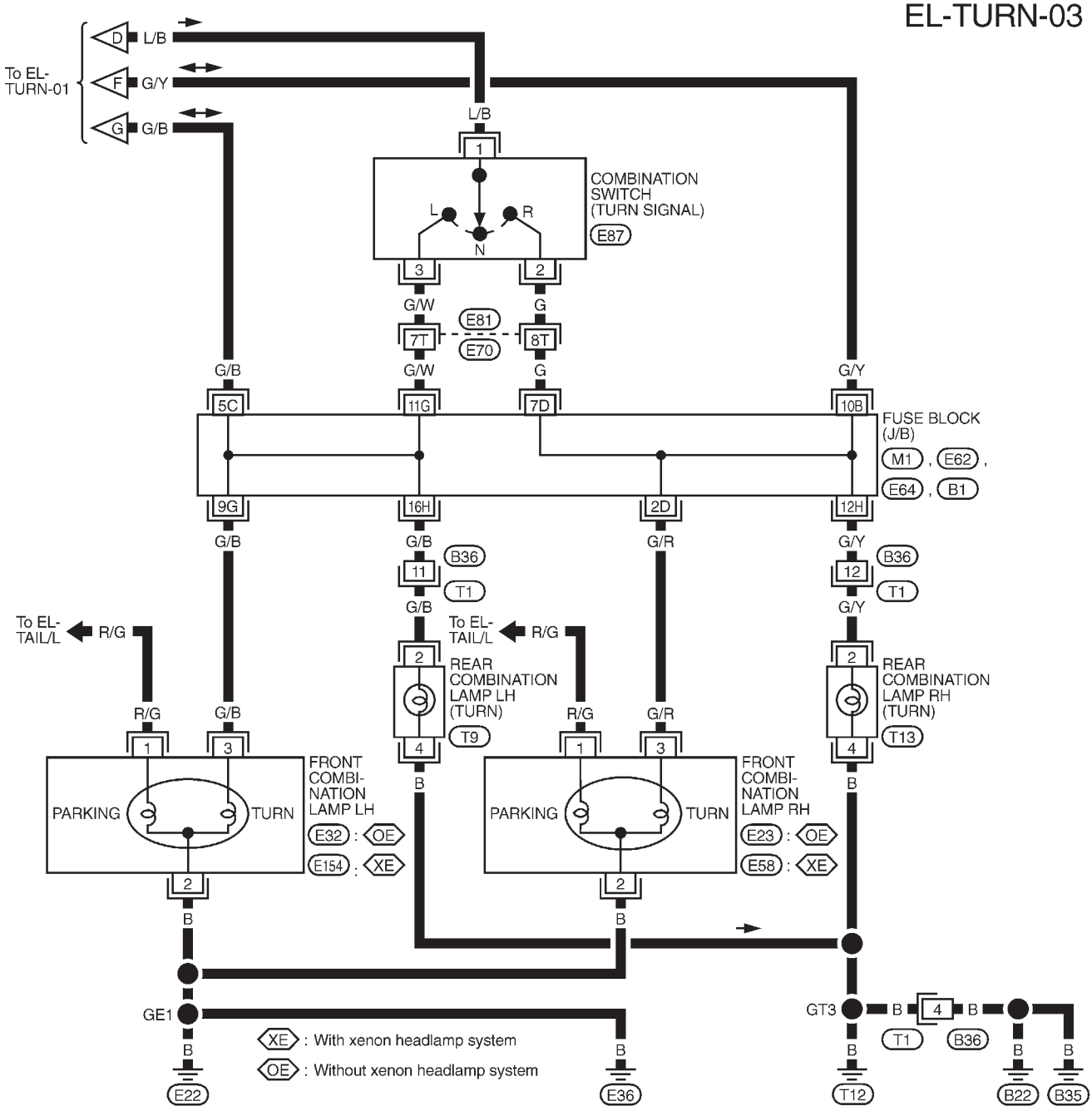
M50 , B101

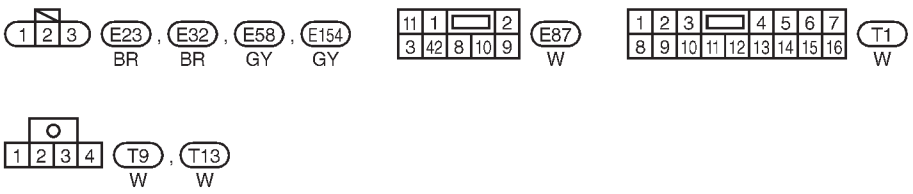
M22

TEL776A

Wiring Diagram — TURN — (Cont'd)

EL-TURN-03





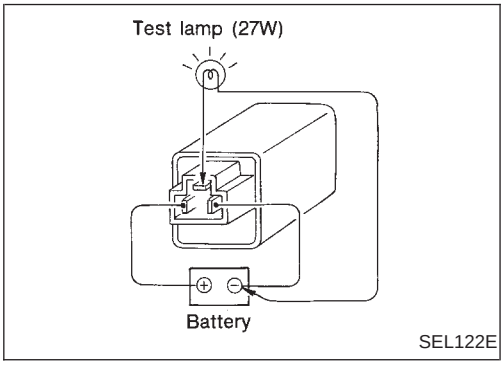
Refer to last page (Foldout page).

E70 , E81
M1
E62
E64
B1

TEL983A

Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. (EL-111) 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 7.5A fuse [No. 19, located in the fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check L/B wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse [No. 13, located in the fuse block (J/B)]. Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check L/B wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds E22 and E36 3. Open in front turn signal lamp LH or RH circuit	1. Check bulb. 2. Check grounds E22 and E36. 3. Check wire between fuse block and front turn signal lamp LH or RH.
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds T12, B22 and B35 3. Open in rear turn signal lamp LH or RH circuit	1. Check bulb. 2. Check grounds T12, B22 and B35. 3. Check wire between fuse block and rear turn signal lamp LH or RH.
LH and RH turn indicators do not operate.	1. Grounds M14 and M47	1. Check grounds M14 and M47.
LH or RH turn indicator does not operate.	1. Bulb 2. Open in turn indicator circuit	1. Check bulb in combination meter. 2. Check wire between hazard switch and combination meter (turn indicator).



Electrical Components Inspection

COMBINATION FLASHER UNIT CHECK

- 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

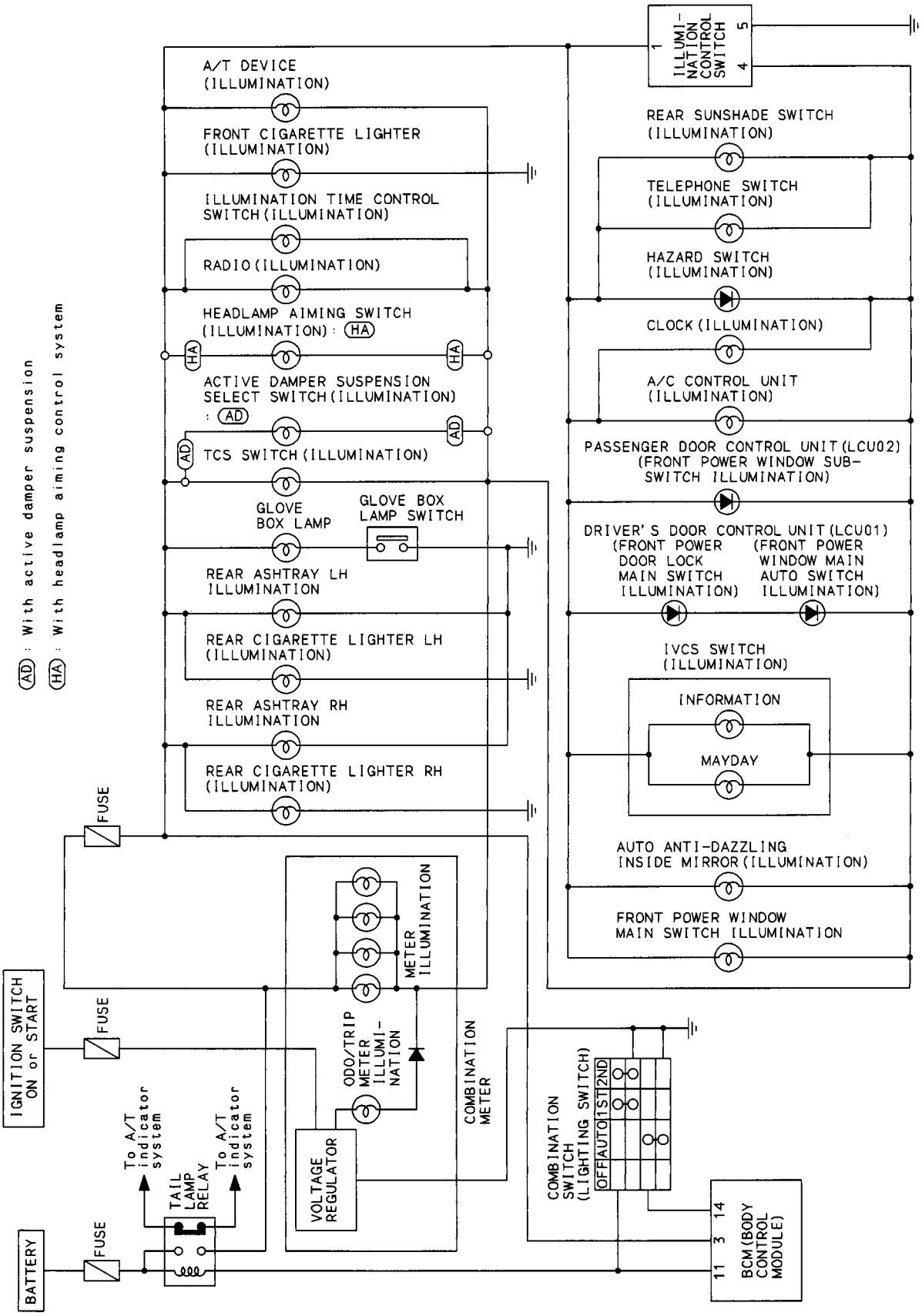
Power is supplied at all times
- through 15A fuse (No. 63, located in the fuse, fusible link and relay box)
- to tail lamp relay terminals ① and ⑥.

Ground is supplied to tail lamp relay terminal ②, when the lighting switch is moved to the 1ST or 2ND position. The tail lamp relay is energized.
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
Combination meter	N12, N14	⑯, ㊶	⑰, ㊳
Rear cigarette lighter	D45, D65	③	— (Unit ground)
Rear ashtray	D44, D64	①	②
Glove box lamp	M26	①	②
TCS switch	N7	⑤	⑥
Active damper suspension select switch	N5	⑦	⑧
Headlamp aiming switch	N4	③	④
Radio	N20	⑧	⑦
Illumination time control switch	N8	②	④
Front cigarette lighter	N6	②	— (Unit ground)
A/T device	M36	③	④
Front power window main switch	D12	②	①
Auto anti-dazzling inside mirror	R4	③	④
IVCS switch	R10	②	⑫
Driver's door control unit	D13	②	⑩
Passenger door control unit	D29	②	⑩
A/C control unit	N17	①	④
Clock	N28	③	②
Hazard switch	N22	⑦	⑧
Telephone switch	N25	㉔	㉓
Rear sunshade switch	N30	④	⑤
Illumination control switch	N23	①	⑤

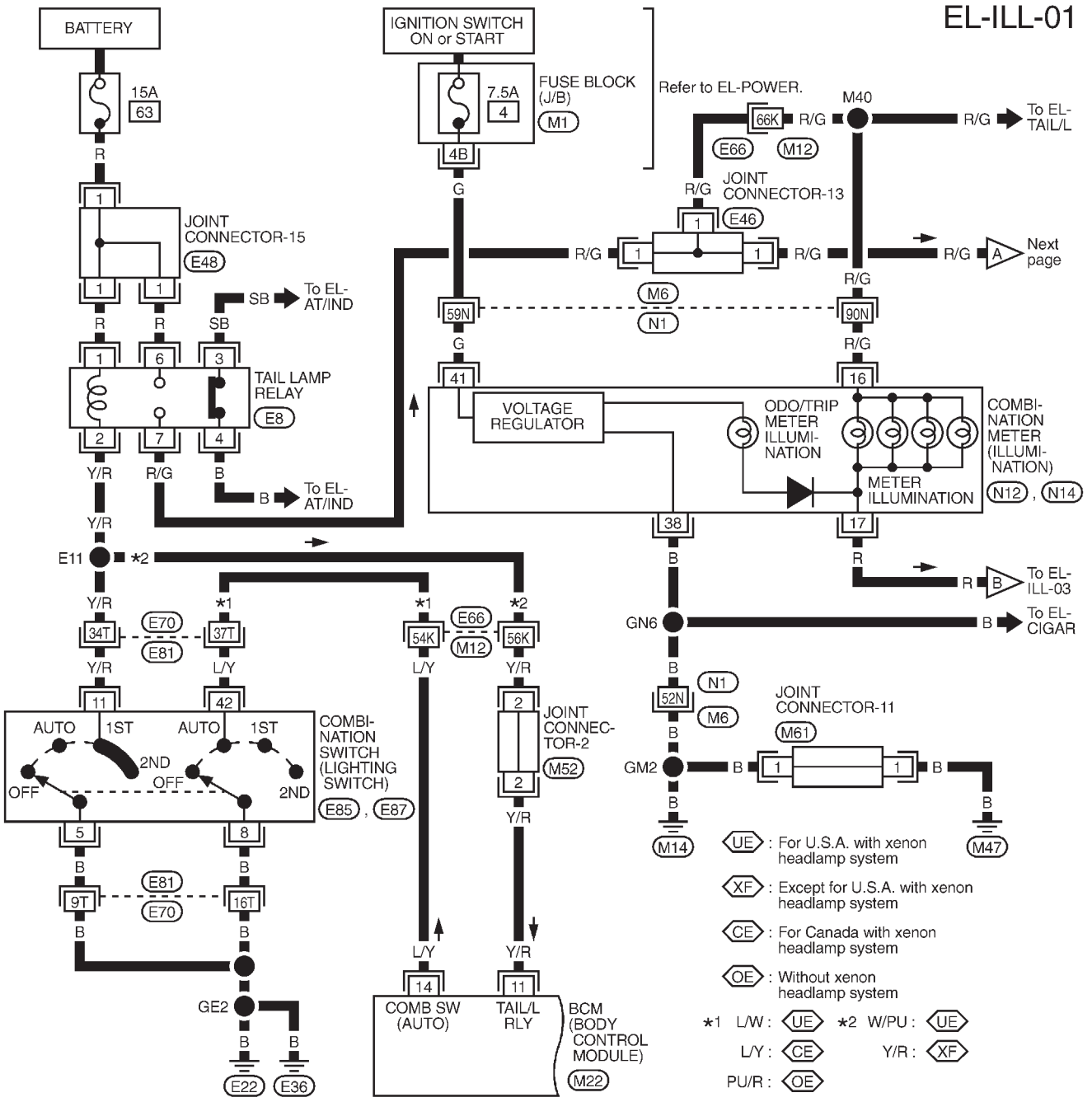
The ground for all of the components except for rear ashtray, and rear cigarette lighter, glove box lamp and front cigarette lighter are controlled through terminals ④ and ⑤ of the illumination control switch and body grounds M14 and M47.

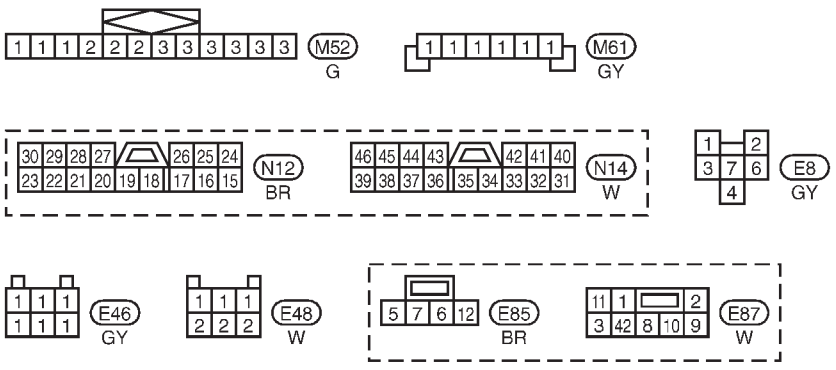
Schematic



TEL453B

Wiring Diagram — ILL —



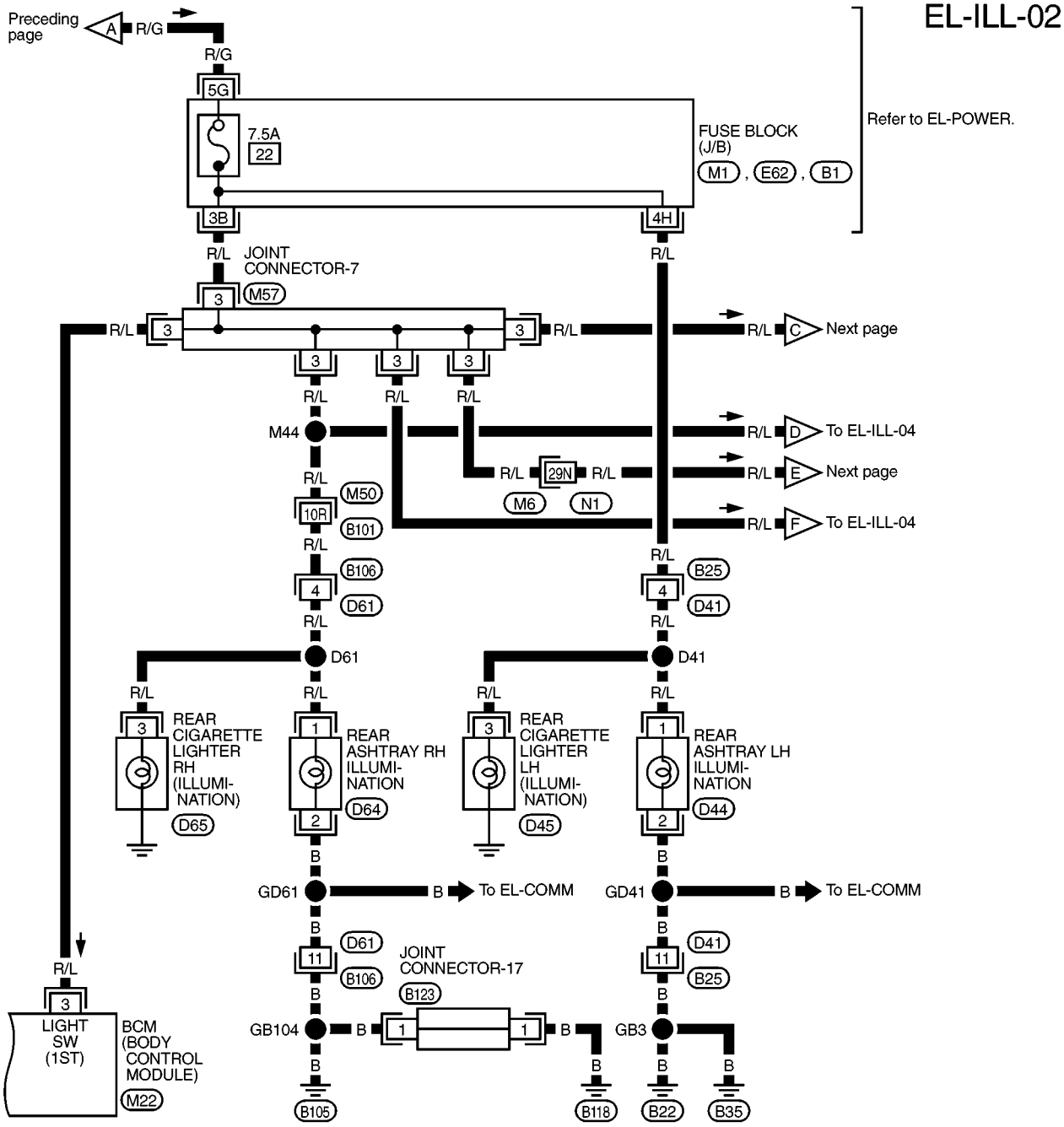


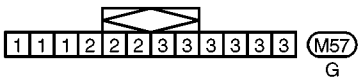
Refer to last page (Foldout page).

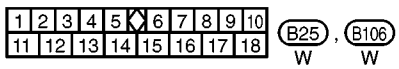
M6 , N1
M12 , E66
E70 , E81
M1
M22

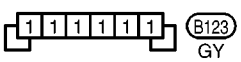
TEL985A

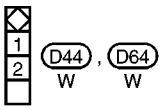
Wiring Diagram — ILL — (Cont'd)

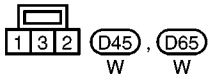












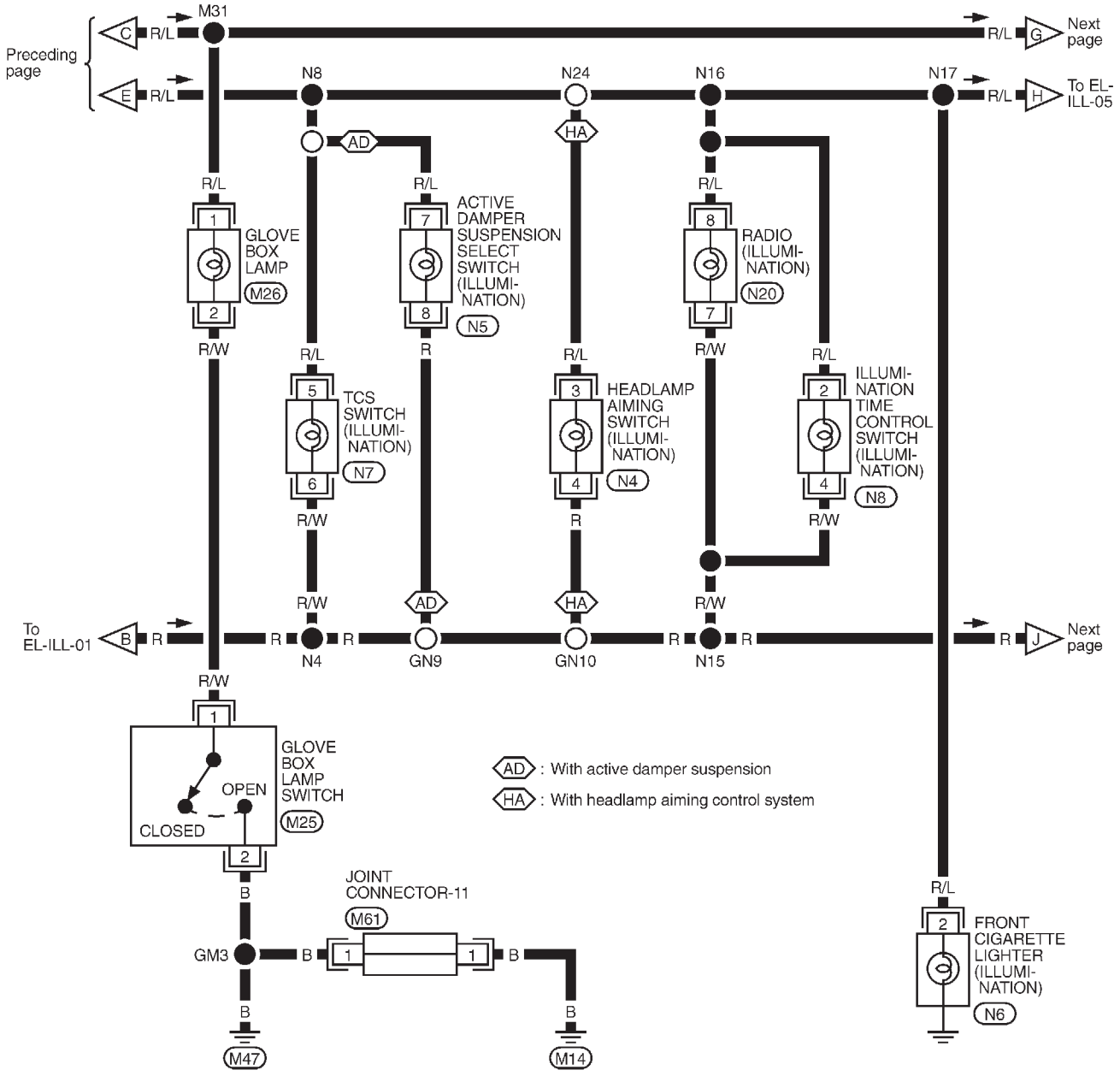
Refer to last page (Foldout page).

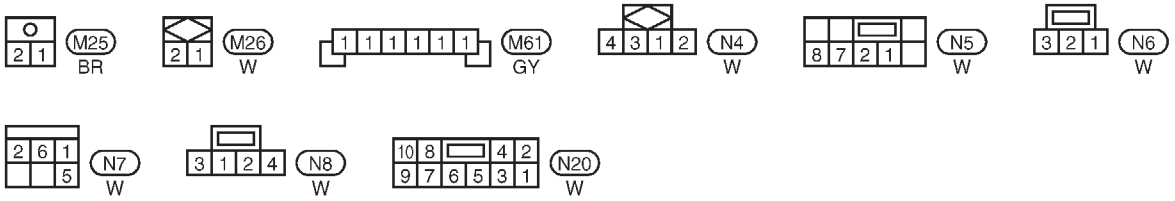
M6 , N1
M50 , B101
M1
M22
E62
B1

TEL458B

Wiring Diagram — ILL — (Cont'd)

EL-ILL-03

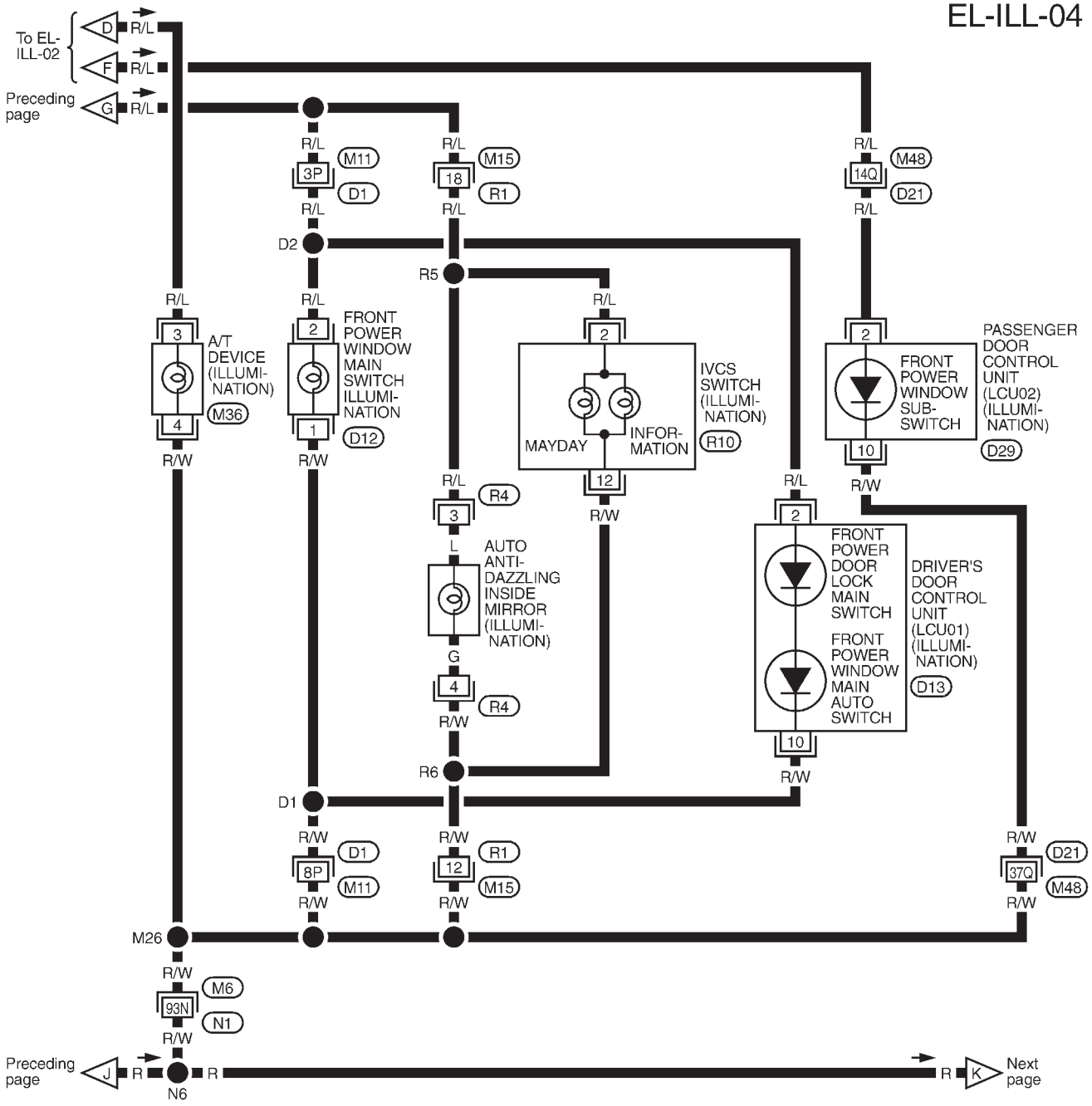


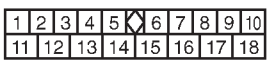


TEL987A

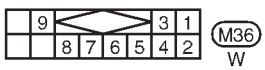
Wiring Diagram — ILL — (Cont'd)

EL-ILL-04





M15 W , D13 W , D29 W



M36 W

R4 W

R10 W

D12 W

Refer to last page (Foldout page).

M6 , N1

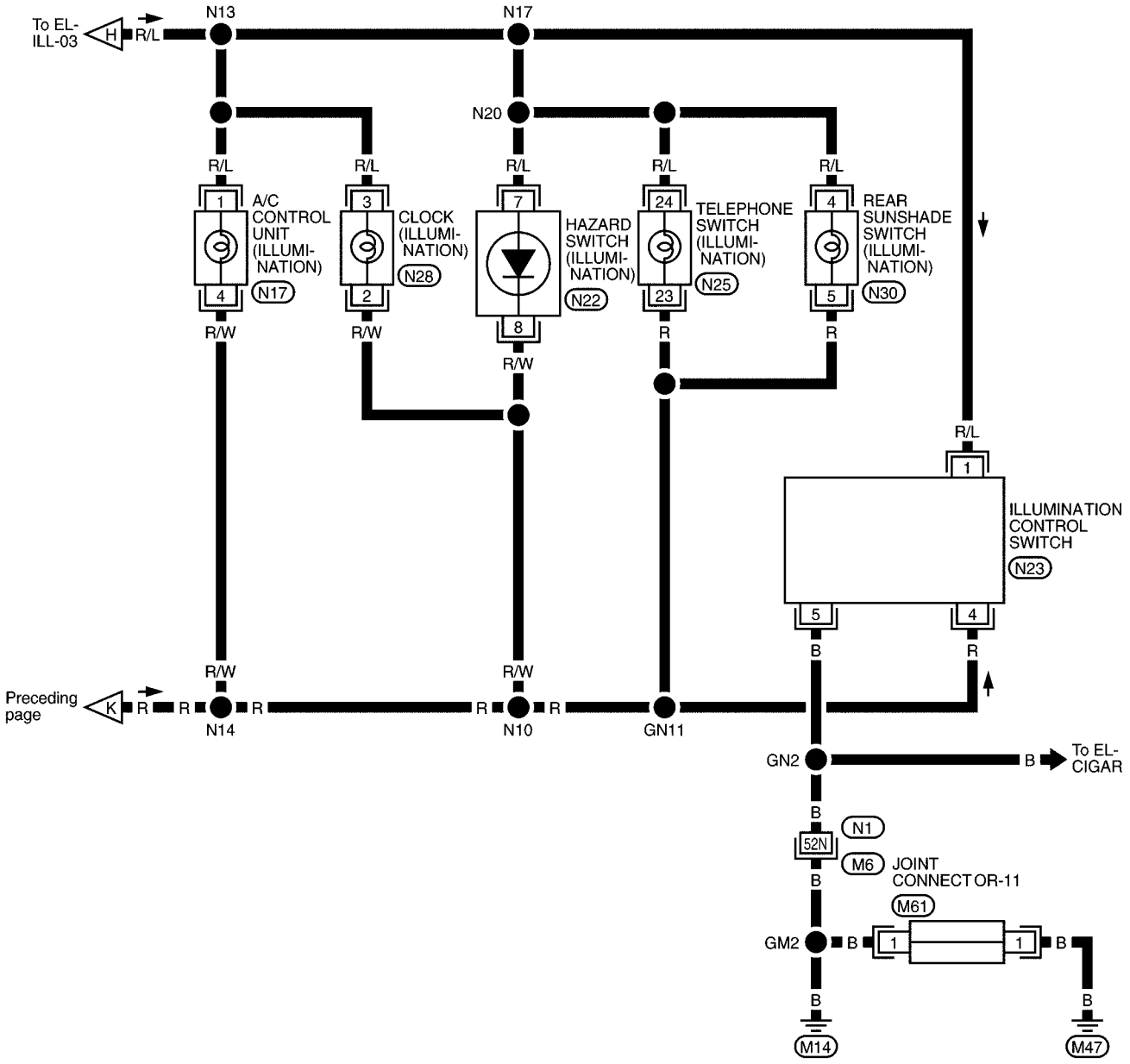
M11 , D1

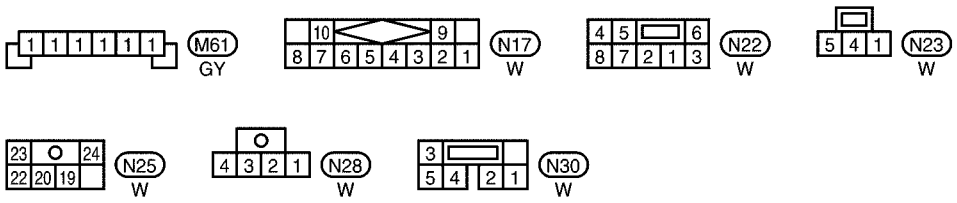
M48 , D21

TEL988A

Wiring Diagram — ILL — (Cont'd)

EL-ILL-05

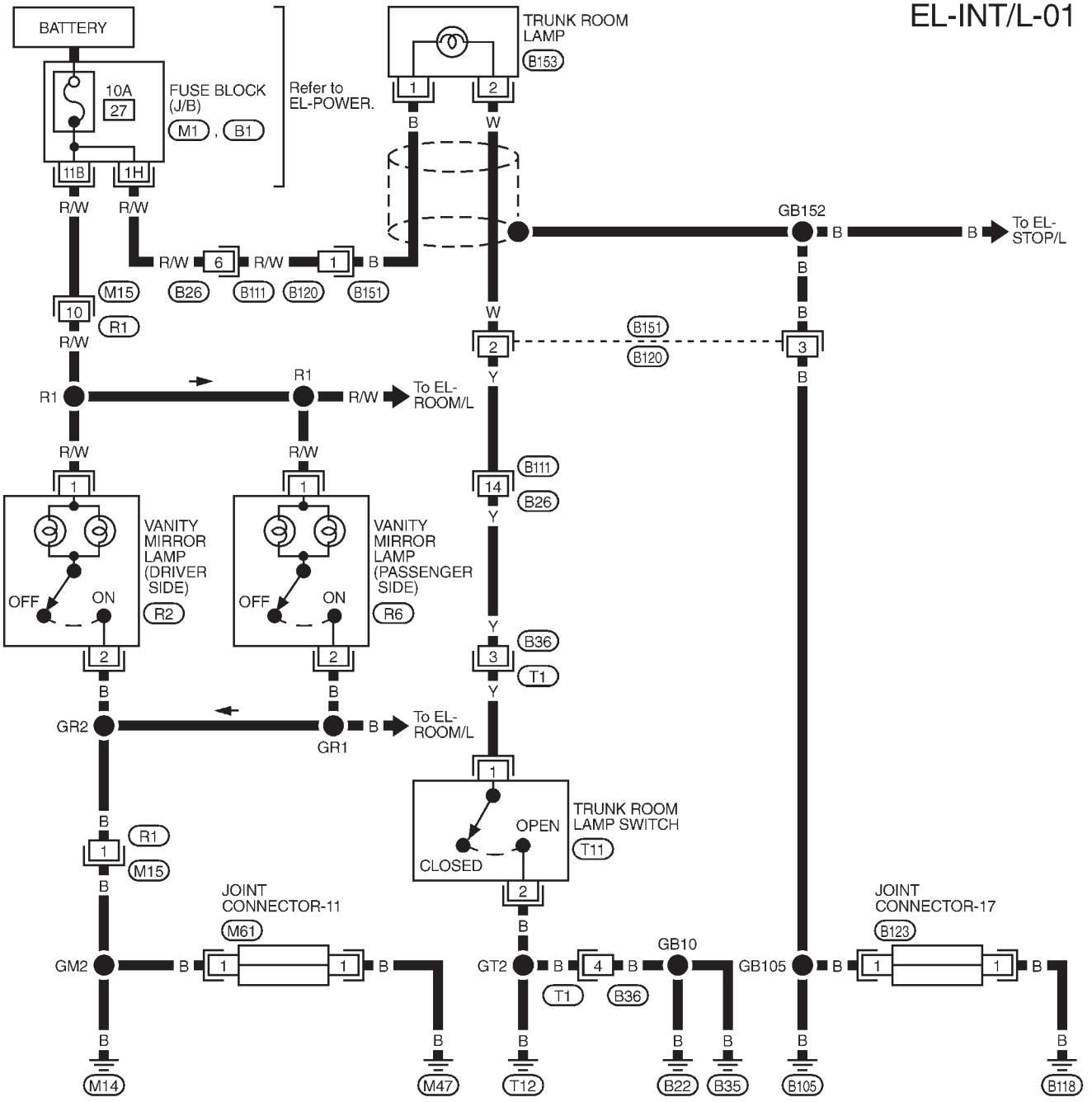


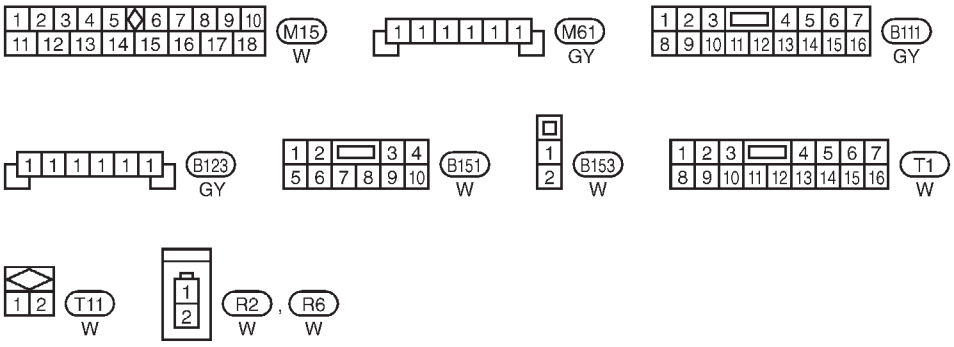


Refer to last page (Foldout page).
M6 , N1

TEL454B

Wiring Diagram — INT/L —



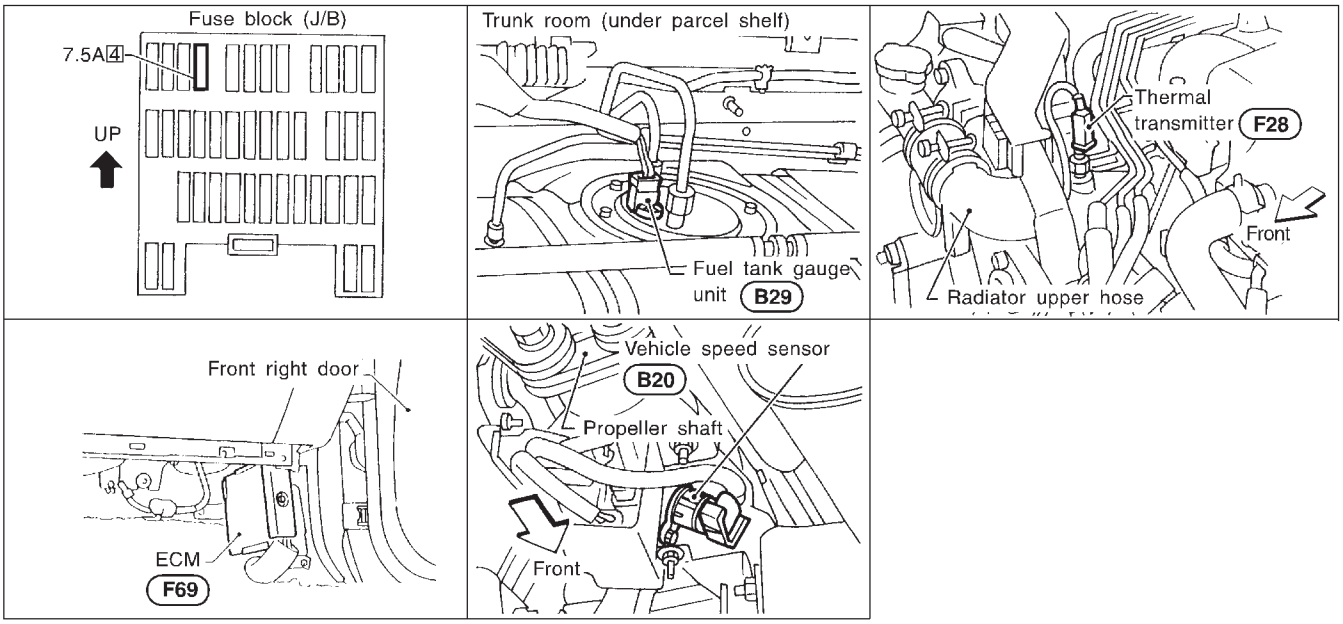


Refer to last page (Foldout page).

M1

B1

Component Parts and Harness Connector Location



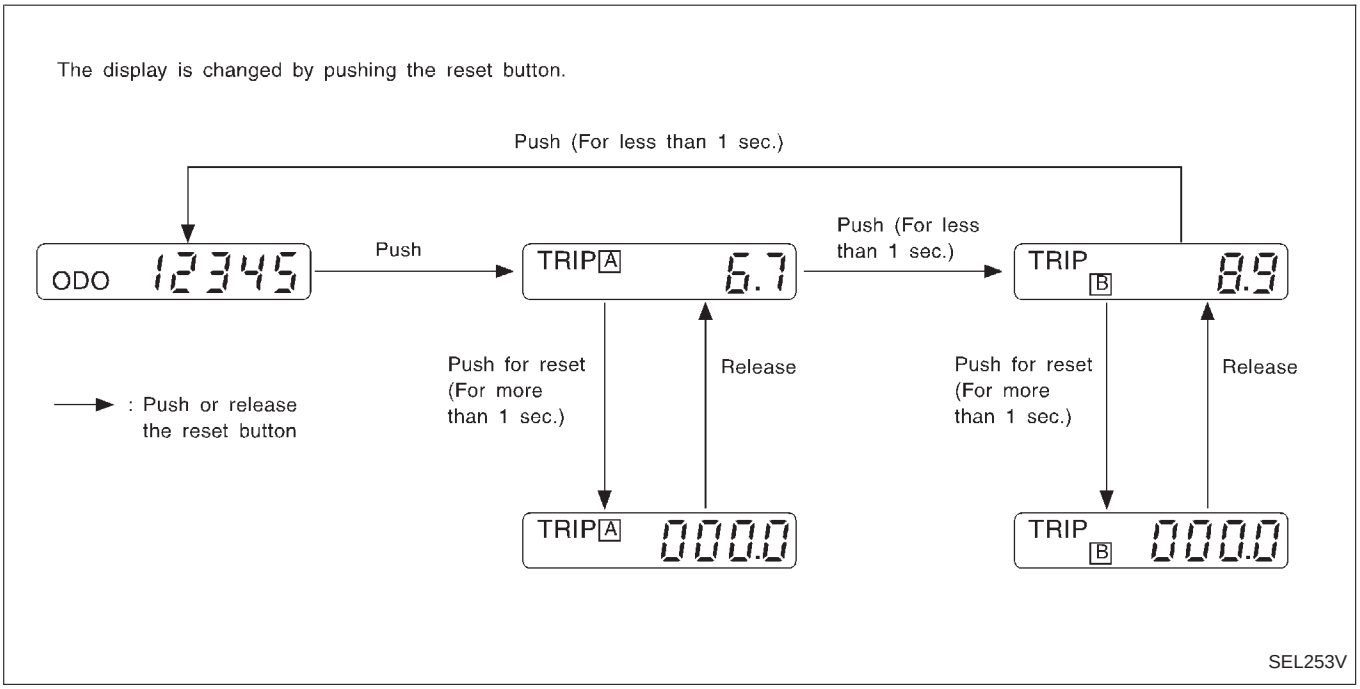
SEL935UA

System Description

UNIFIED CONTROL METER

- 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



SEL253V

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

System Description (Cont'd)

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 4 , located in the fuse block (J/B)]
- to combination meter terminal ㊶.

Ground is supplied
- to combination meter terminal ㊴
- through body grounds (M14) and (M47).

FUEL GAUGE

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 ⑧ for the fuel gauge
- from terminal ⑤ of the fuel tank gauge unit
- through terminal ④ of the fuel tank gauge unit and
- through ECM terminal (129).

WATER TEMPERATURE GAUGE

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 ⑦ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

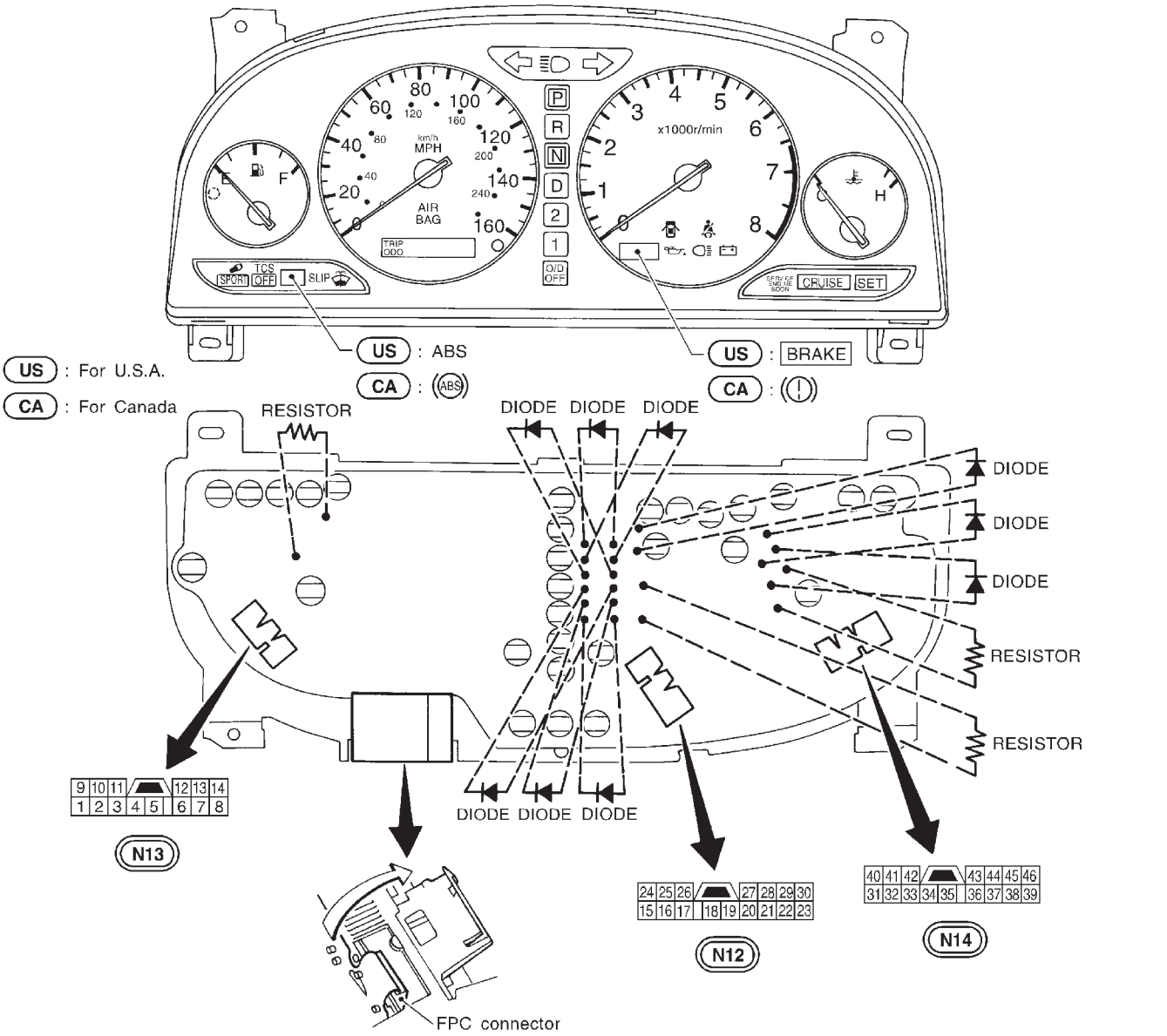
The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal
- from terminal ㊷ of the ECM
- to combination meter terminal ⑬ for the tachometer.

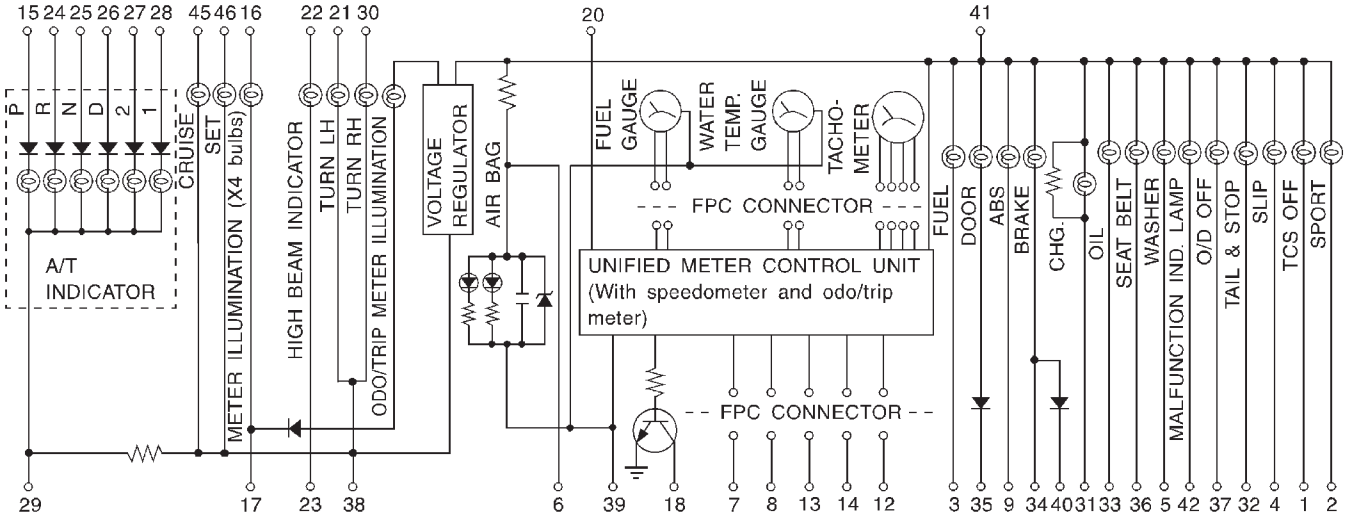
SPEEDOMETER

The vehicle speed sensor sends a voltage signal to the combination meter for the speedometer.
The voltage signal is sent
- to combination meter terminals ⑫ and ⑭ for the speedometer
- from terminals ① and ② of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

Combination Meter

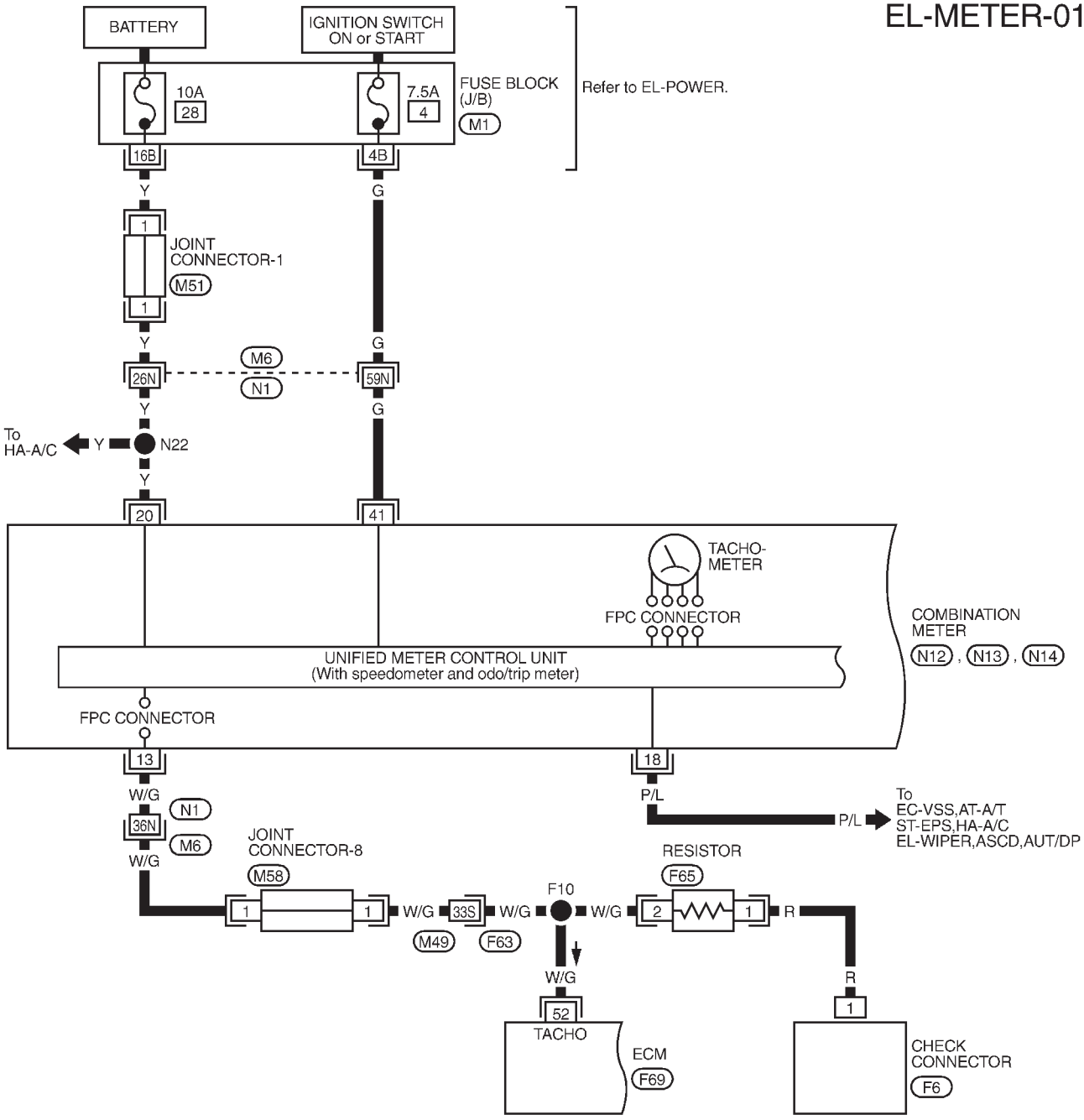


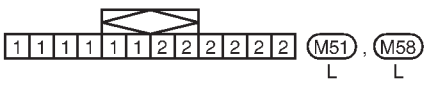


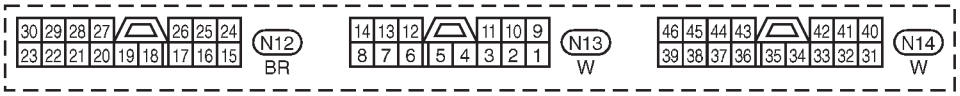
CEL996

Wiring Diagram — METER —

EL-METER-01







Refer to last page (Foldout page).

M6 , N1

M49 , F63

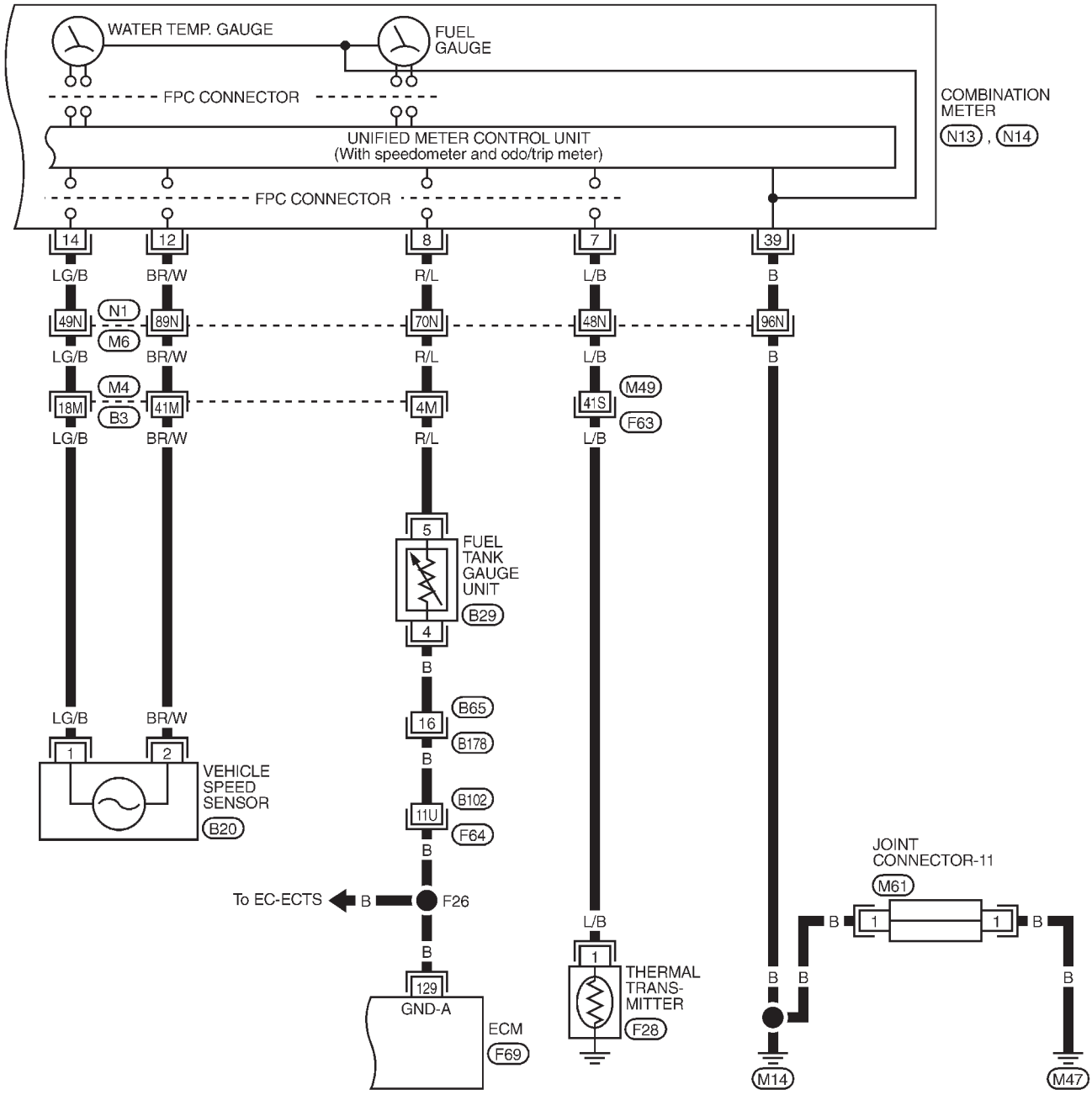
M1

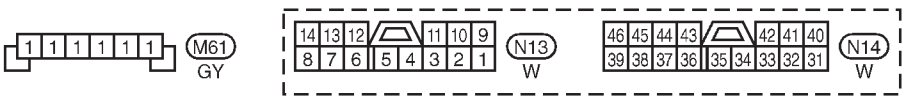
F69

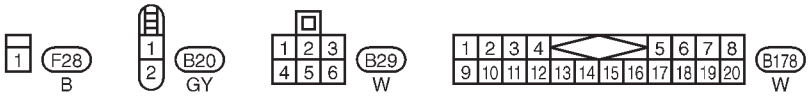
TEL041B

Wiring Diagram — METER — (Cont'd)

EL-METER-02







Refer to last page (Foldout page).

M4 , B3
M6 , N1
M49 , F63
F64 , B102
F69

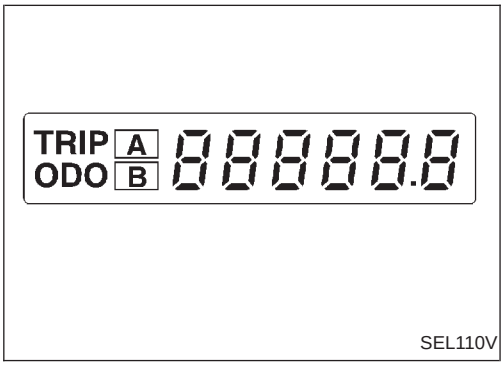
Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

DIAGNOSIS FUNCTION

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

HOW TO ALTERNATE DIAGNOSIS MODE

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.

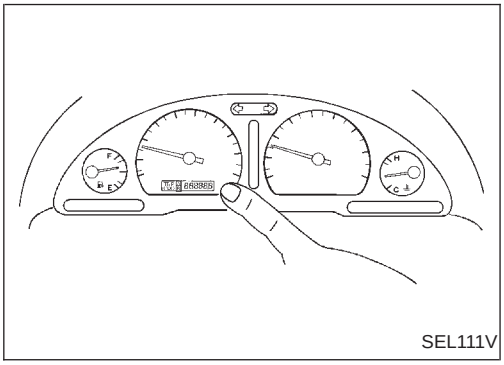


SEL110V

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.

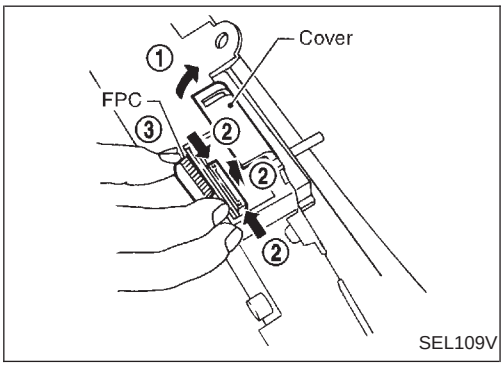

SEL111V

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.

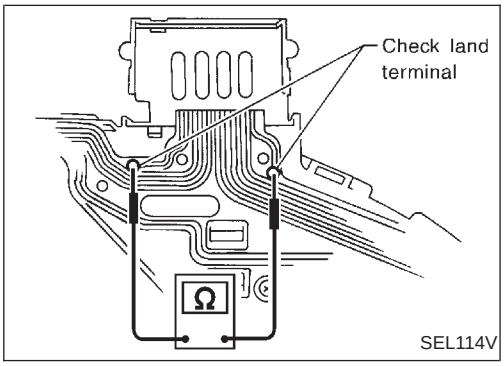
Flexible Print Circuit (FPC)

Tachometer, fuel gauge and water temperature gauge are connected with unified meter control unit (speedometer) by Flexible Print Circuit (FPC) connector. When replace or remove and install unified control unit (speedometer), disconnect and connect FPC connector according to the following steps.



DISCONNECT

1. Open connector cover.
2. Release connector lock by holding both ends of it and pulling it up.
3. Disconnect FPC by pulling it up.

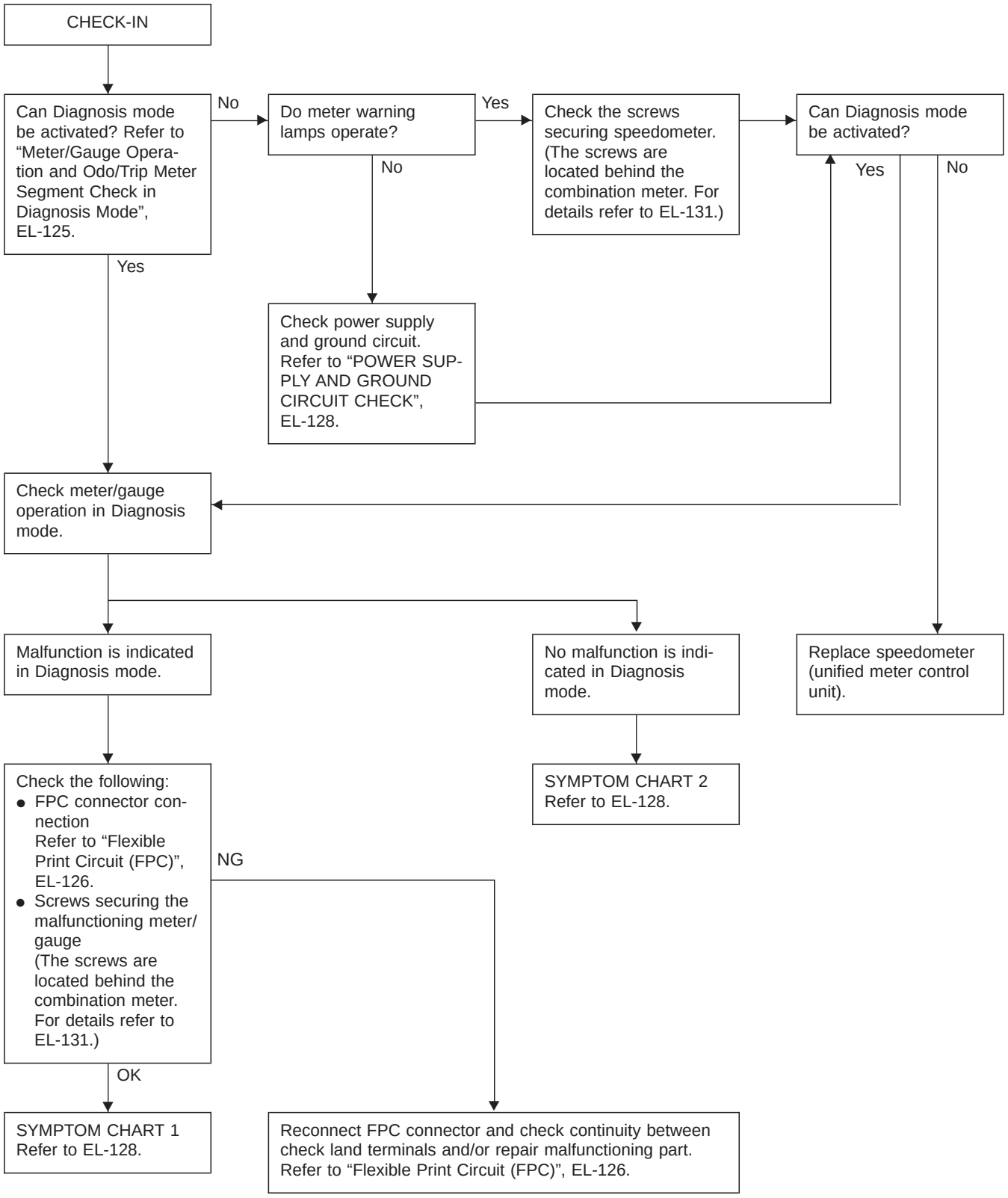


CONNECT

1. Insert FPC into connector and lock connector pushing FPC downward.
2. Check secure connection of FPC.
3. Check continuity of check land terminal for secure connection of FPC.
   Resistance: 0Ω
4. Close connector cover.

Trouble Diagnoses

PRELIMINARY CHECK



Trouble Diagnoses (Cont'd)

SYMPTOM CHART

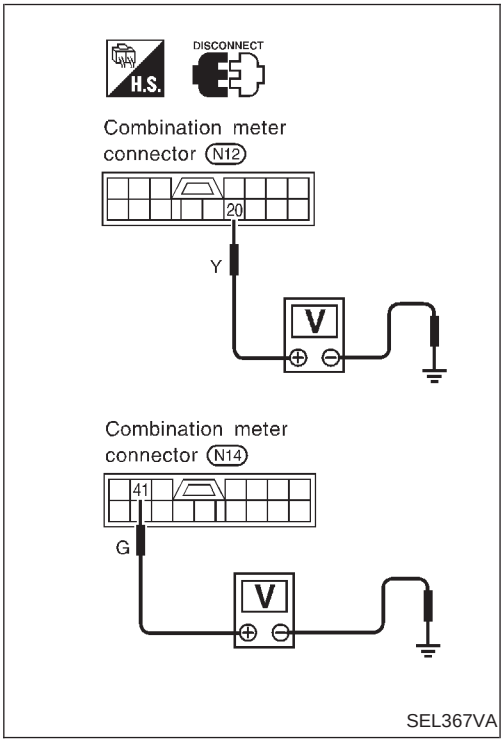
Symptom chart 1 (Malfunction is indicated in Diagnosis mode)

Symptom	Possible causes	Repair order
Speedometer and/or odo/trip meter indicate(s) malfunction in Diagnosis mode.	• Speedometer (Unified meter control unit)	• Replace speedometer (unified meter control unit).
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of tachometer/fuel gauge/ water temp. gauge indicates malfunction in Diagnosis mode.	• Meter/Gauge • Speedometer (Unified meter control unit)	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-131. 2. If the resistance is OK, replace speedometer (unified meter control unit).

Symptom chart 2 (No malfunction is indicated in Diagnosis mode)

Symptom	Possible causes	Repair order
Speedometer and odo/trip meter are malfunctioning.	1. Sensor - Speedometer, Odo/Trip meter 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check vehicle speed sensor. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-129.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-126. 3. Replace speedometer (unified meter control unit).
Multiple meter/gauge are malfunctioning. (except speedometer, odo/trip meter)	1. FPC connector 2. Speedometer (Unified meter control unit)	1. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-126. 2. Replace speedometer (unified meter control unit).
One of tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor/Engine revolution signal - Tachometer - Fuel gauge - Water temp. gauge 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-130.) INSPECTION/FUEL TANK GAUGE (Refer to EL-130.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-131.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-126. 3. Replace speedometer (unified meter control unit).

Before starting trouble diagnoses above, perform PRELIMINARY CHECK, EL-127.



POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

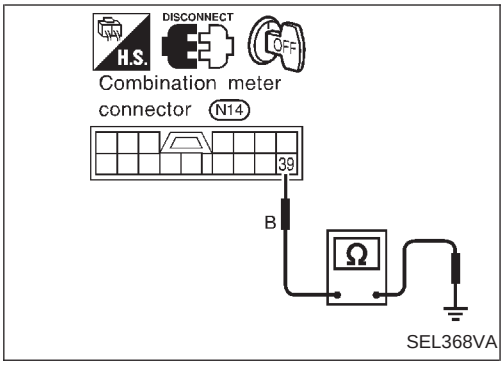
Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
⑳	Ground	Battery voltage	Battery voltage	Battery voltage
㊶	Ground	0V	0V	Battery voltage

If NG, check the following.

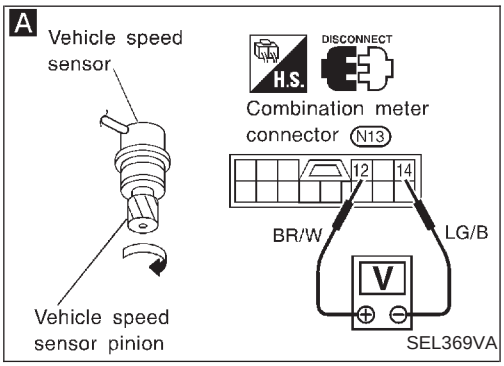
- 7.5A fuse [No. 4, located in fuse block (J/B)]
- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

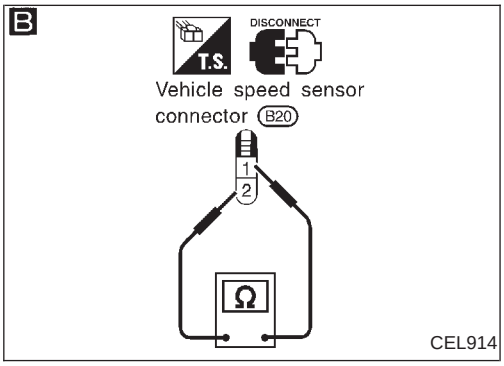
Trouble Diagnoses (Cont'd)

Ground circuit check



Terminals	Continuity
㊴ - Ground	Yes





INSPECTION/VEHICLE SPEED SENSOR

A

CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals ⑫ and ⑭ while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

B

CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor terminals ① and ② .
Resistance: Approx. 250Ω

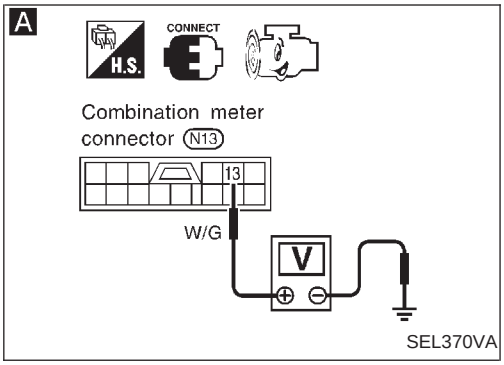
NG → Replace vehicle speed sensor.

OK ↓

Check harness for open or short between speedometer and vehicle speed sensor.

Trouble Diagnoses (Cont'd)

INSPECTION/ENGINE REVOLUTION SIGNAL



A

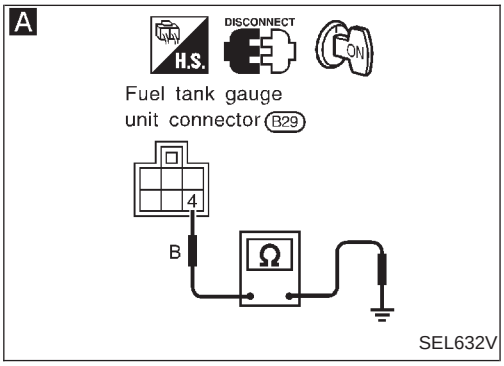
CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminal ⑬ and ground at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

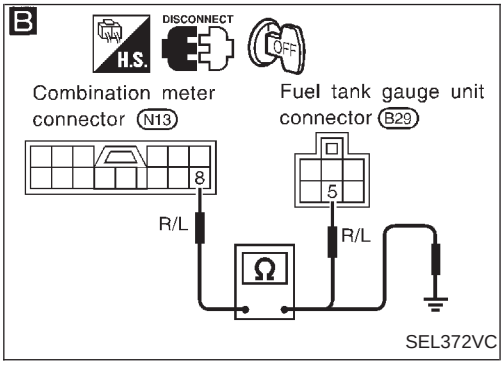
OK → Engine revolution signal is OK.

NG →

Check the following.
- Harness for open or short between ECM and combination meter

INSPECTION/FUEL TANK GAUGE





A

CHECK GROUND CIRCUIT FOR FUEL TANK GAUGE UNIT.
Check harness continuity between fuel tank gauge unit terminal ④ and ground.
Continuity should exist.

NG →
- Repair harness or connector. (except for California)
- Check harness for open or short between ECM and fuel tank gauge unit. (for California)

OK ↓

CHECK GAUGE UNITS.
Refer to "FUEL TANK GAUGE UNIT CHECK" (EL-132).

NG → Repair or replace.
Refer to FE section.

OK ↓

B

CHECK HARNESS FOR OPEN OR SHORT.
1. Disconnect combination meter connector and fuel tank gauge unit connector.
2. Check continuity between combination meter terminal ⑧ and fuel tank gauge unit terminal ⑤ .

Continuity should exist.

3. Check continuity between combination meter terminal ⑧ and ground.

Continuity should not exist.

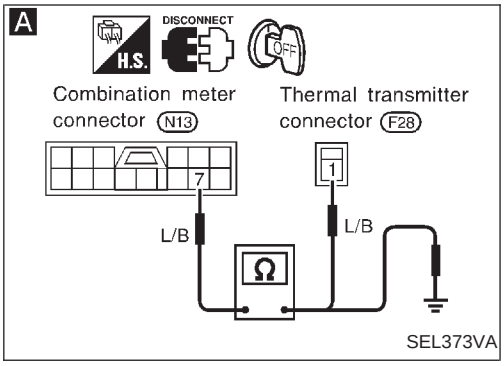
NG → Repair harness or connector.

OK ↓

Fuel tank gauge is OK.

Trouble Diagnoses (Cont'd)

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to "THERMAL TRANSMITTER CHECK" (EL-132).

NG → Repair or replace.

OK ↓

A

CHECK HARNESS FOR OPEN OR SHORT.

1. Disconnect combination meter connector and thermal transmitter connector.
2. Check continuity between combination meter terminal ⑦ and thermal transmitter terminal ① .

Continuity should exist.

3. Check continuity between combination meter terminal ⑦ and ground.

Continuity should not exist.

NG → Repair harness or connector.

OK ↓

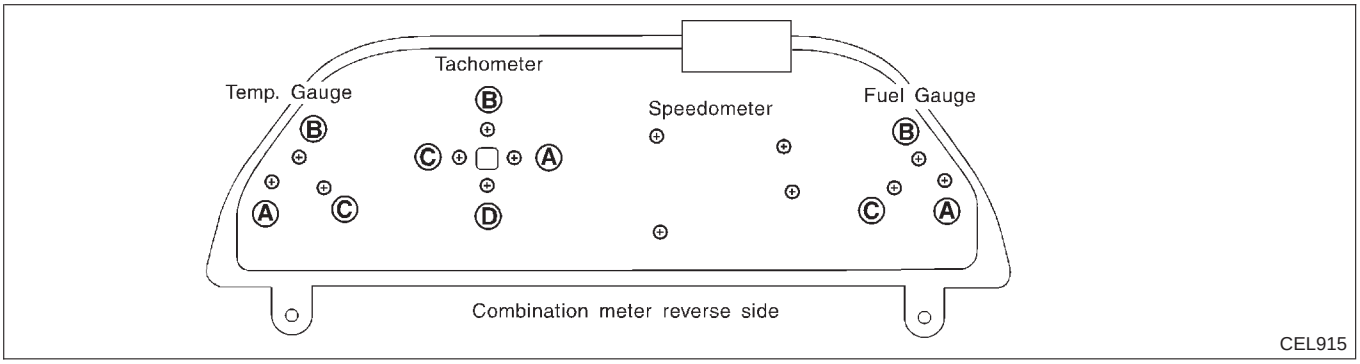
Thermal transmitter is OK.

Electrical Components Inspection

METER/GAUGE RESISTANCE CHECK

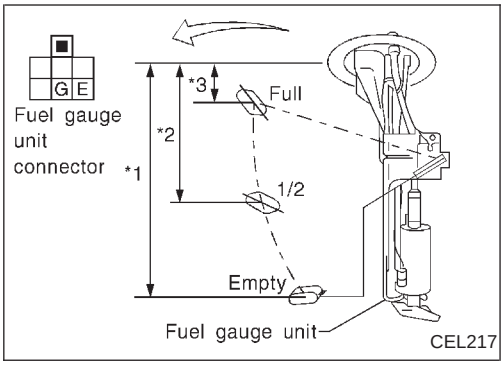
1. Disconnect FPC connector. Refer to "Flexible Print Circuit (FPC)" (EL-126).
2. Check resistance between installation screws of meter/gauge after removing meter/gauge.

Screws		Resistance
Tachometer	Fuel/Temp. gauge	Ω
A - C	A - C	Approx. 70 - Approx. 140
B - D	B - C	Approx. 90 - Approx. 170



Electrical Components Inspection (Cont'd)

FUEL TANK GAUGE UNIT CHECK



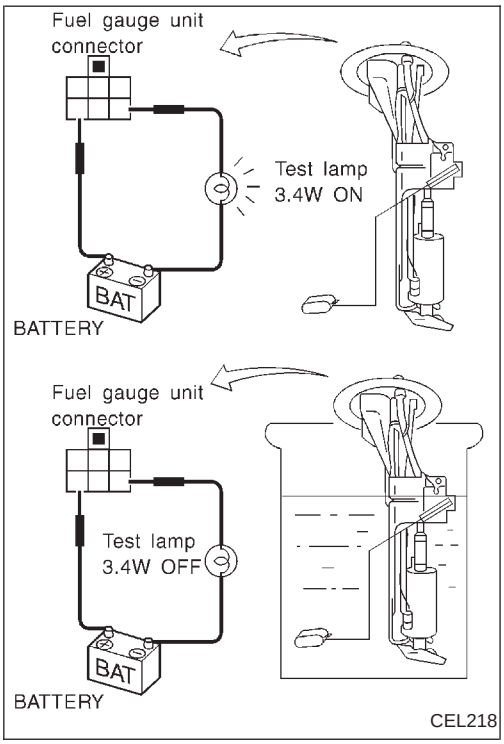
- For removal, refer to FE section "FUEL SYSTEM".

Check the resistance between terminals Ⓖ and Ⓔ.

Ohmmeter (+)	Ohmmeter (−)		Float position mm (in)		Resistance value Ω
G	E	*3	Full	70 (2.76)	Approx. 4 - 6
		*2	1/2	189 (7.44)	31 - 34
		*1	Empty	308 (12.13)	80 - 83

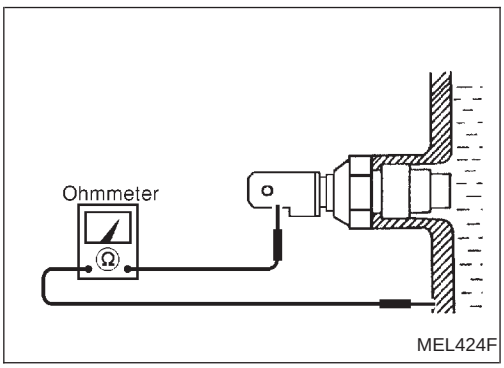
*1 and *3: When float rod is in contact with stopper.

FUEL WARNING LAMP SENSOR CHECK



- It will take a short time for the bulb to light.

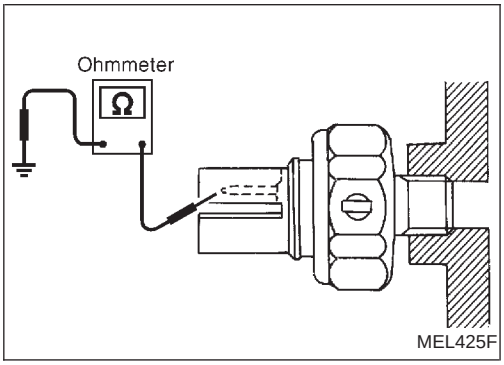
THERMAL TRANSMITTER CHECK



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

OIL PRESSURE SWITCH CHECK

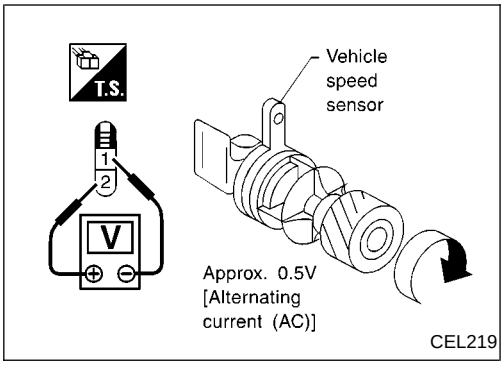


	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine start	More than 20 - 29 (0.2 - 0.3, 3 - 4)	NO
Engine stop	Less than 20 - 29 (0.2 - 0.3, 3 - 4)	YES

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

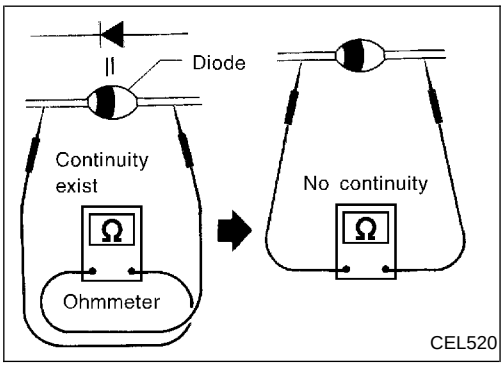
Electrical Components Inspection (Cont'd)

VEHICLE SPEED SENSOR SIGNAL CHECK



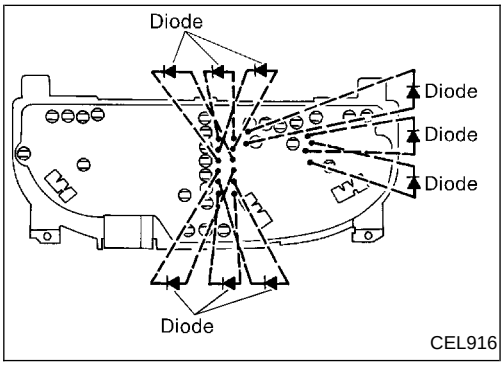
1. Remove vehicle speed sensor from transmission.
2. Turn vehicle speed sensor pinion quickly with fingers and measure voltage across ② and ① .

DIODE CHECK



- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

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.



- Diodes for warning lamps are built into the combination meter printed circuit.

System Description

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 4 , located in the fuse block (J/B)]
- to combination meter terminal ㊶ .

Ground is supplied
- to combination meter terminal ㊴ and
- A/T device (OD control switch) terminal ②
- through body grounds (M14) and (M47).

Ground is supplied
- to fuel tank gauge unit terminal ④
- through ECM terminal (129).

Ground is supplied
- seat belt buckle switch terminal ⑭
- through body grounds (B22) and (B35).

Ground is supplied
- to brake fluid level switch terminal ② and
- washer level switch terminal ②
- through body grounds (E22) and (E36).

AIR BAG WARNING LAMP

During prove out or when an air bag malfunction occurs, the ground path is interrupted
- from the air bag diagnosis sensor unit terminal ⑮
- to combination meter terminal ⑥ .

Ground is supplied
- through combination meter terminal ㊴ .

With power and ground supplied, the air bag warning lamp (LEDs) illuminate.
For further information, refer to RS section (“TROUBLE DIAGNOSES”).

DOOR WARNING LAMP

Door warning lamp is controlled by BCM.
When one of the passenger door is opened, ground is supplied to the BCM terminals ㉘ , ㉜ , ㉝ or ㊲ .
And then ground is supplied
- to combination meter terminal ㉟
- from BCM terminal (111).

With power and ground supplied, the door warning lamp illuminates.

ACTIVE DAMPER INDICATOR LAMP (SPORT)

When an active damper suspension system malfunction occurs, or “SPORT” mode is selected by active damper suspension select switch, ground is supplied
- to combination meter terminal ②
- from active damper suspension control unit terminal ⑯ .

With power and ground supplied, the active damper indicator lamp (SPORT) blinks or illuminates.
For further information, refer to FA section (“TROUBLE DIAGNOSES FOR ACTIVE DAMPER SUSPENSION”).

LOW OIL PRESSURE WARNING LAMP

Low oil pressure causes oil pressure switch terminal ① to provide ground to combination meter terminal ㉝ .
With power and ground supplied, the low oil pressure warning lamp illuminates.

CHARGE WARNING LAMP

During prove out or when a alternator malfunction occurs, ground is supplied
- to combination meter terminals ㉛ and ㊵
- from alternator terminal ③ .

With power and ground supplied, the charge warning lamp and brake lamp illuminate.

System Description (Cont'd)

LOW WASHER LEVEL WARNING LAMP

When the washer fluid level is low, ground is supplied
- to combination meter terminal ⑤
- from washer fluid level switch terminal ① .

With power and ground supplied, the low washer level warning lamp illuminates.

OD OFF WARNING LAMP

When an A/T system malfunction occurs, or OD control switch is in OFF position, ground is supplied
- to combination meter terminal ㊲
- from TCM (transmission control module) terminal ③ .

With power and ground supplied, the OD warning lamp blinks or illuminates.
For further information, refer to AT section ("TROUBLE DIAGNOSES").

LOW FUEL LEVEL WARNING LAMP

The amount of fuel in the fuel tank is determined by the fuel level sensor in the fuel tank. A signal is sent from fuel tank gauge unit terminal ⑥ to combination meter terminal ③ . The fuel level sensor will illuminate the low fuel level warning lamp when the fuel level is low.
With power and ground supplied, the low fuel level warning lamp illuminates.

ABS WARNING LAMP

When an ABS malfunction occurs, ground is supplied
- to combination meter terminal ⑨
- from ABS/TCS control unit terminal ㉒ .

With power and ground supplied, the ABS warning lamp illuminates.
For further information, refer to BR section ("TROUBLE DIAGNOSES").

TCS OFF WARNING LAMP

When TCS off switch is in OFF position, or an ABS/TCS malfunction occurs, ground is supplied
- to combination meter terminal ①
- from ABS/TCS control unit terminal ⑪ .

With power and ground supplied, the TCS off warning lamp illuminates.
For further information, refer to BR section ("TROUBLE DIAGNOSES").

SLIP WARNING LAMP

When TCS is in operation, or a TCS malfunction occurs, ground is supplied
- to combination meter terminal ④
- from ABS/TCS control unit terminal ⑩ .

With power and ground supplied, the slip warning lamp illuminates.
For further information, refer to BR section ("TROUBLE DIAGNOSES").

SEAT BELT WARNING LAMP

When the driver's seat belt is unfastened, ground is supplied
- to air bag diagnoses sensor unit terminal ㉒
- from seat belt buckle switch terminal ㊶ .

And then ground is supplied
- to combination meter terminal ㊱
- from air bag diagnoses sensor unit terminal ⑯ .

With power and ground supplied, the seat belt warning lamp illuminates.

BRAKE WARNING LAMP

When the parking brake is applied, or the brake fluid level is low, ground is supplied
- to combination meter terminal ㉞
- from parking brake switch terminal ① , or
- brake fluid level switch terminal ① .

With power and ground supplied, the brake warning lamp illuminates.

TAIL AND STOP WARNING LAMP

When one of the stop lamp bulbs is burned out with the stop lamp switch depressed, or one of the tail lamp bulbs is burned out with the lighting switch in the 1ST or 2ND position, ground is supplied.
- to combination meter terminal ㉜
- from stop and tail lamp sensor terminal ③ .

With power and ground is supplied, the tail and stop lamp warning lamp illuminates.

System Description (Cont'd)

MALFUNCTION INDICATOR LAMP

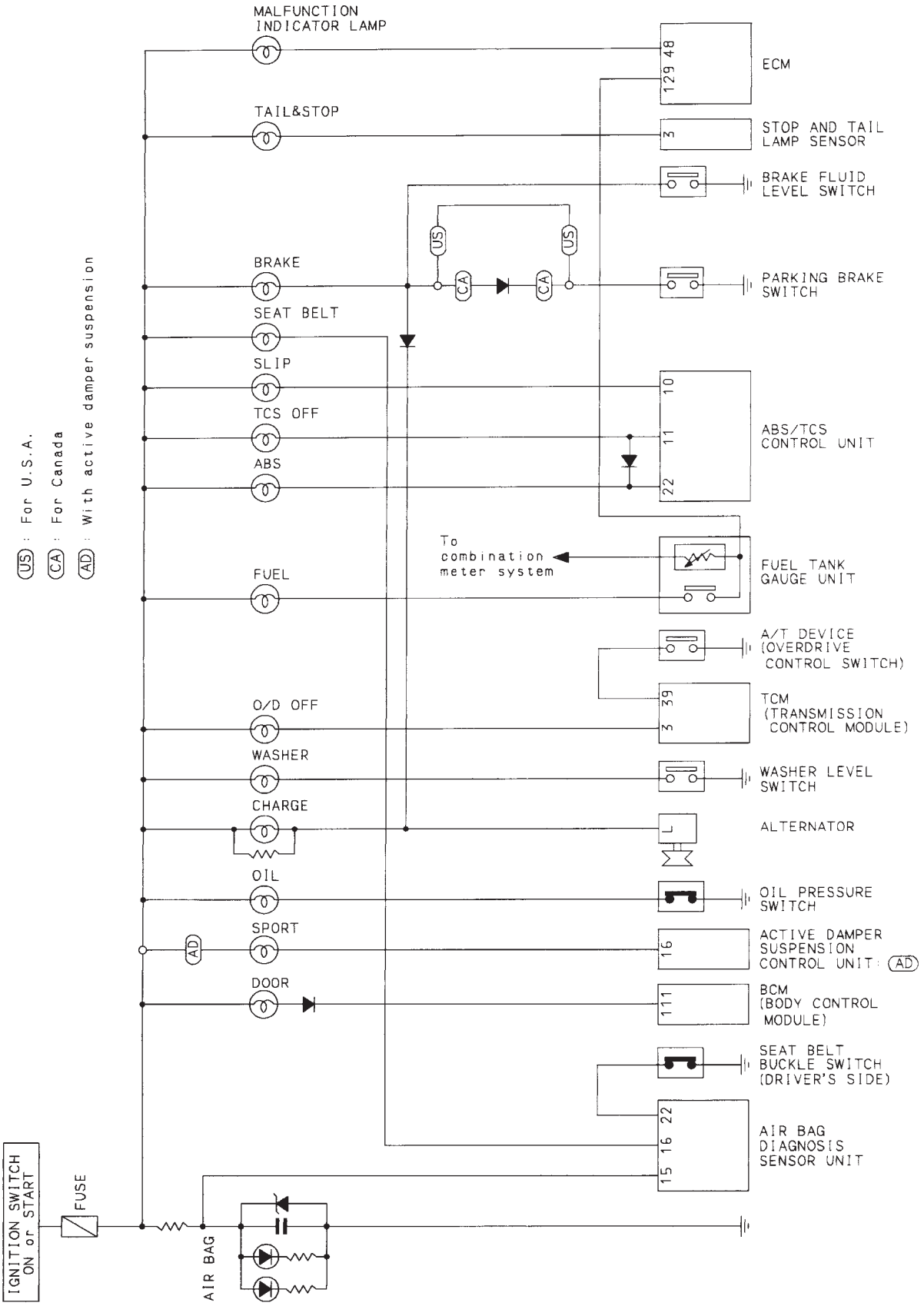
During prove out or when an engine control malfunction occurs, ground is supplied

- to combination meter terminal ㊷
- from ECM terminal ㊽.

With power and ground supplied, the malfunction indicator lamp illuminates.

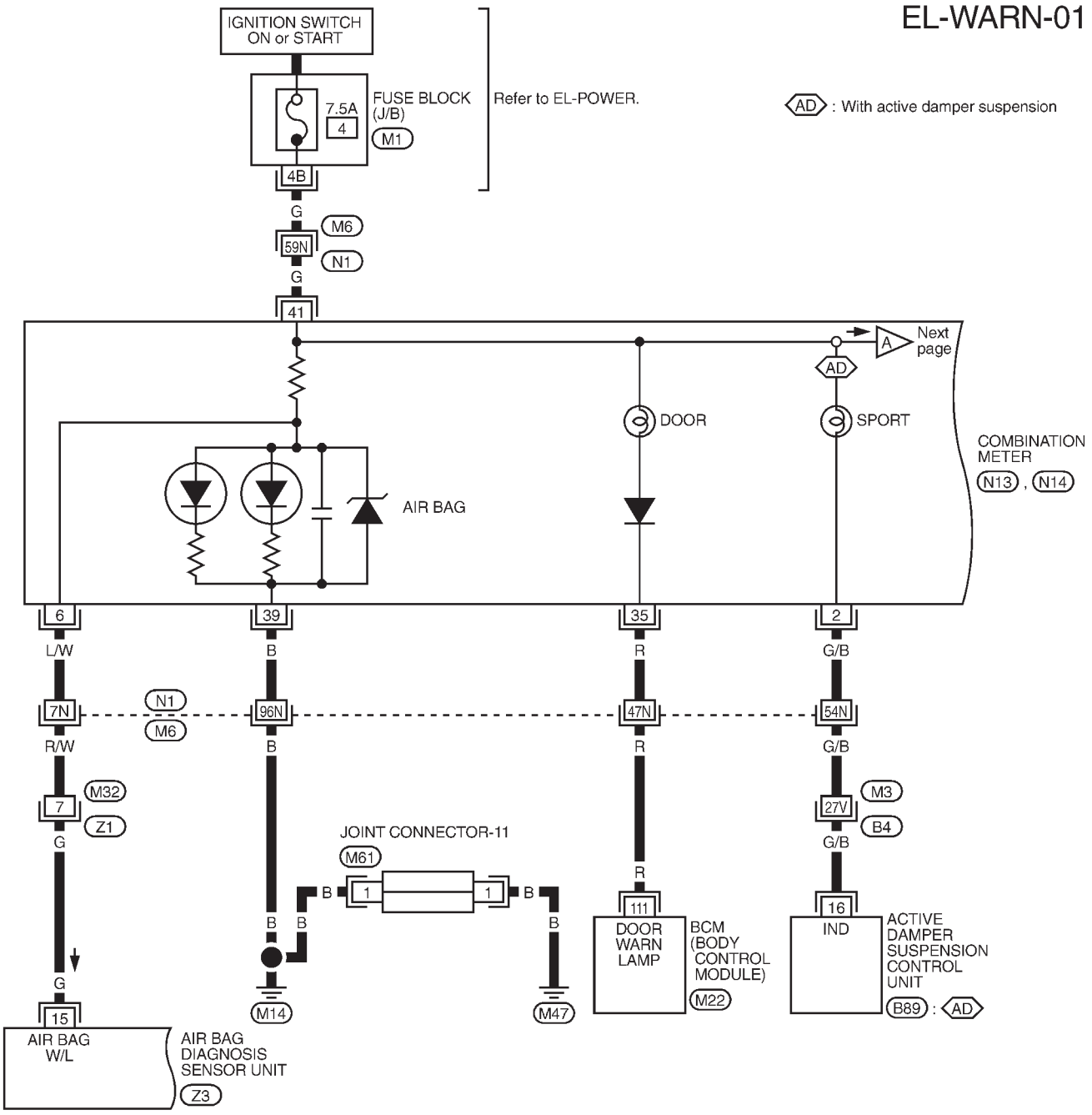
For further information, refer to EC section ["Malfunction Indicator Lamp (MIL)", "ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION"].

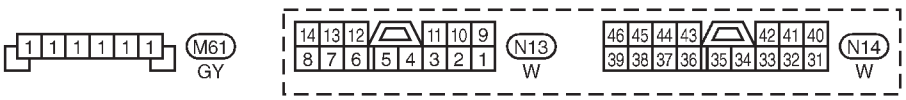
Schematic

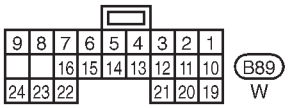


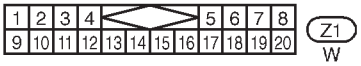
TEL991A

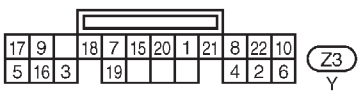
Wiring Diagram — WARN —











Refer to last page (Foldout page).

M3 , B4

M6 , N1

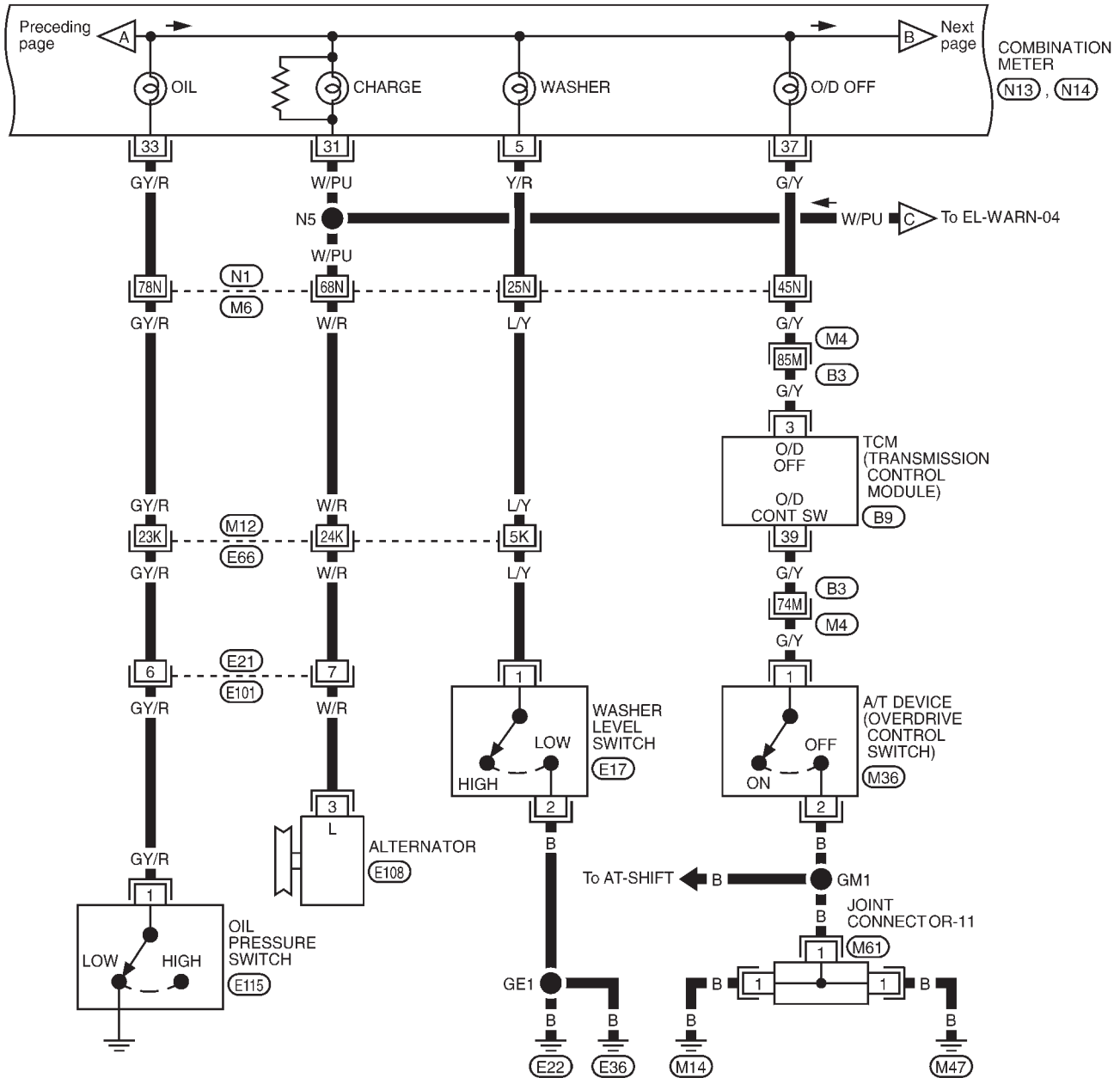
M1

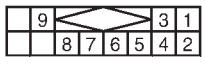
M22

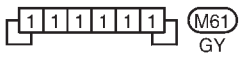
TEL992A

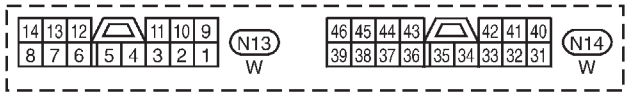
Wiring Diagram — WARN — (Cont'd)

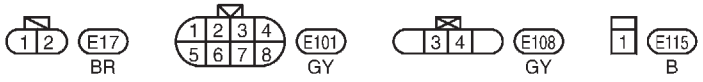
EL-WARN-02











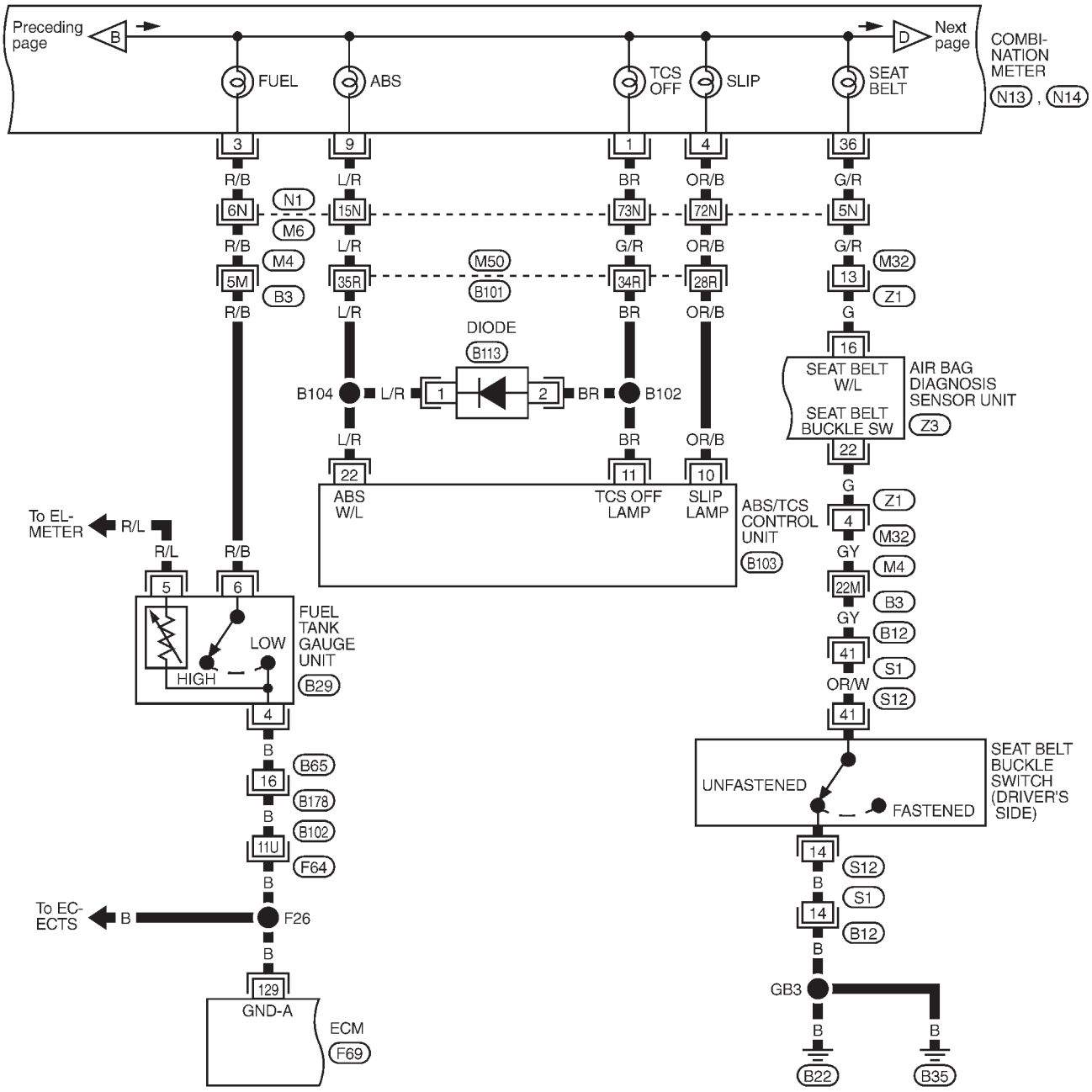
Refer to last page (Foldout page).

M4 , B3
M6 , N1
M12 , E66
B9

TEL993A

Wiring Diagram — WARN — (Cont'd)

EL-WARN-03

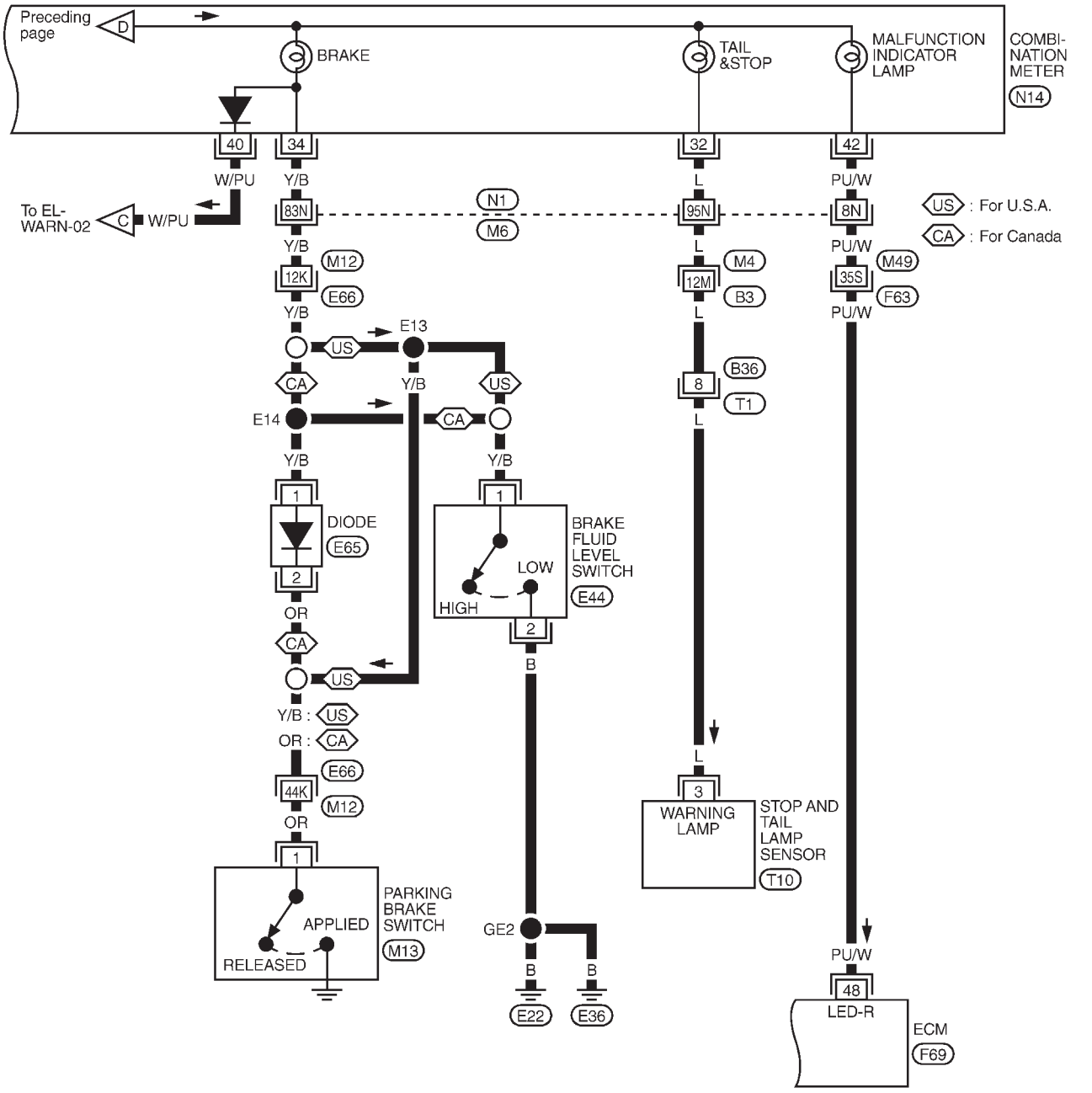


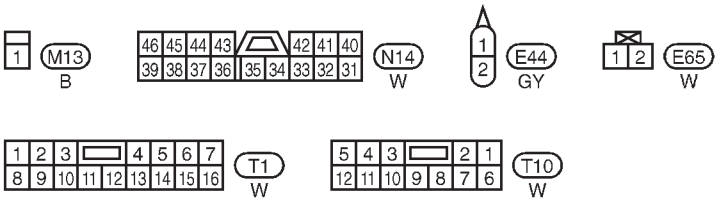
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL994A

Wiring Diagram — WARN — (Cont'd)

EL-WARN-04

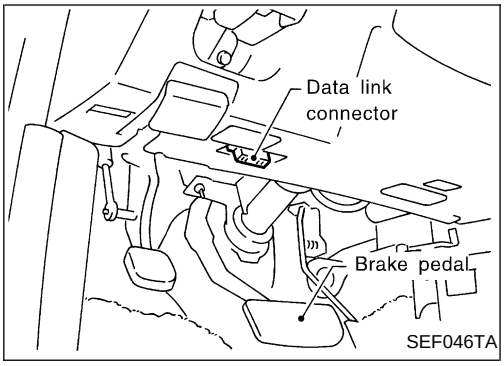




Refer to last page (Foldout page).

M4 , B3
M6 , N1
M12 , E66
M49 , F63
F69

TEL995A

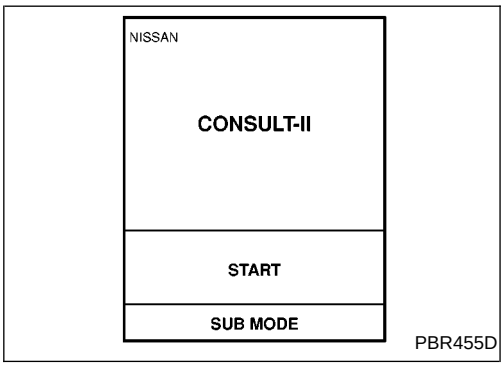


SEF046TA

CONSULT-II (For door warning lamp)

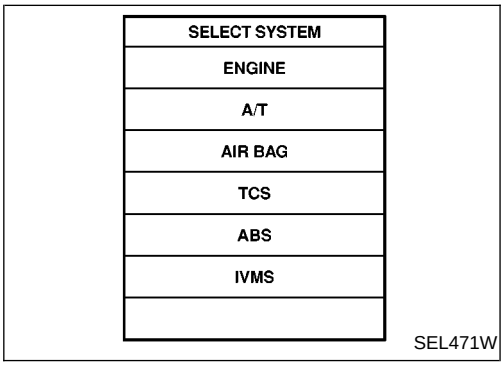
CONSULT-II INSPECTION PROCEDURE

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



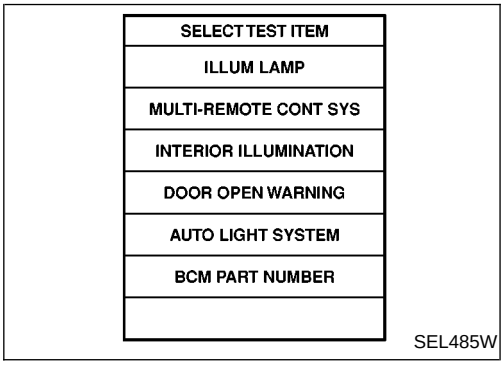
PBR455D

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



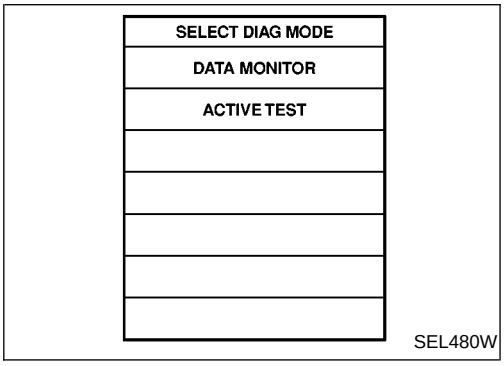
SEL471W

5. Touch “IVMS”.



SEL485W

6. Touch “DOOR OPEN WARNING”.

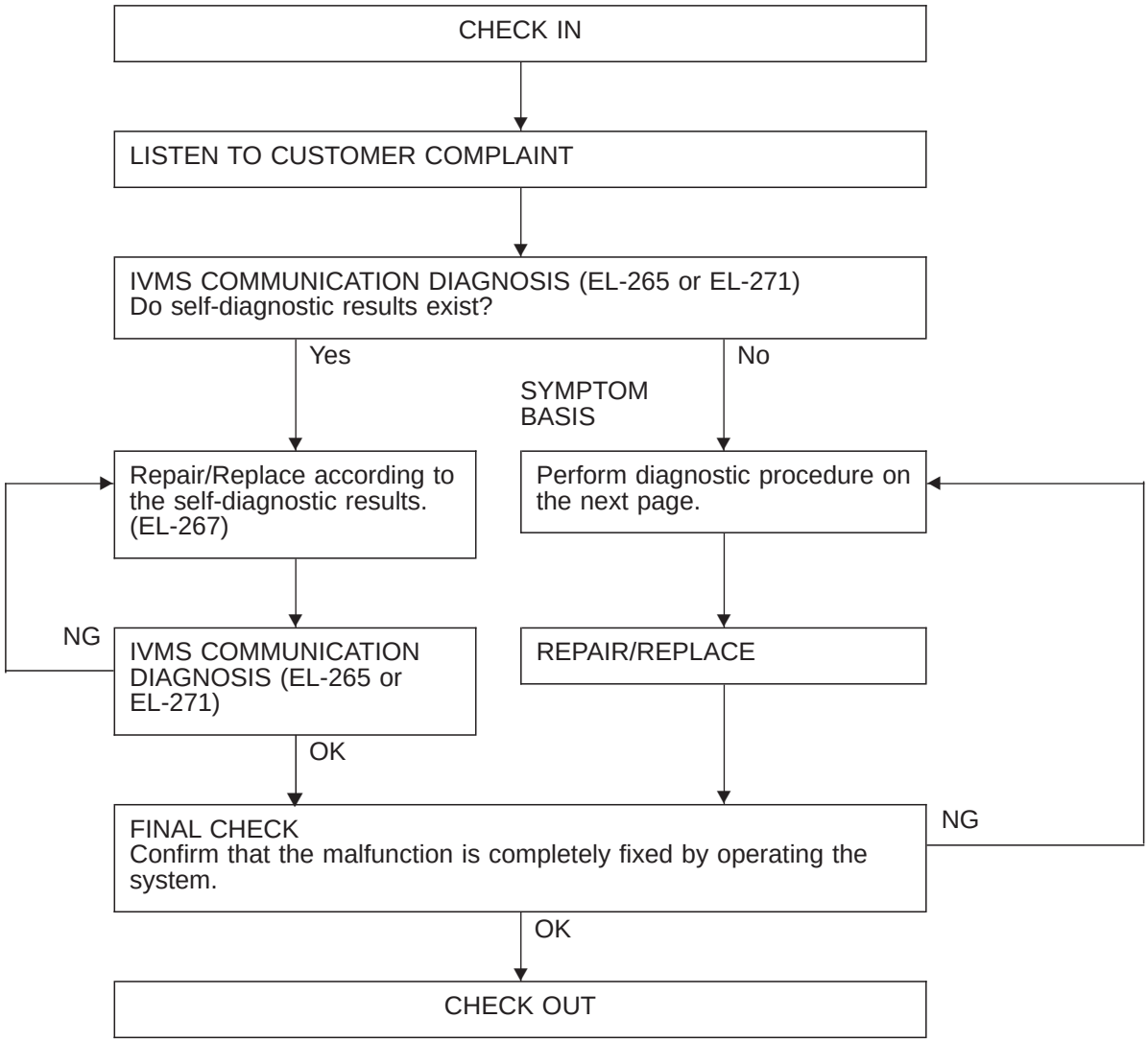


SEL480W

- DATA MONITOR and ACTIVE TEST are available for door open warning lamp.

Trouble Diagnoses/Door Warning Lamp

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses/Door Warning Lamp (Cont'd)

DIAGNOSTIC PROCEDURE

SYMPTOM: Door warning lamp is not operating correctly.

CHECK WARNING LAMP OPERATION.

A CONSULT-II

Perform "DR OPN WARN LAMP" in "Active Test" mode.
Check warning lamp operation.
Warning lamp should illuminate.

OR

B

1. Disconnect BCM connector.
2. Turn ignition switch to "ON" position.
3. Apply ground to BCM terminal (111).

Warning lamp should illuminate.

NG → Check the following.
- Bulb
- Power supply circuit for warning lamp
- Harness for open or short between BCM and warning lamp

OK ↓

CHECK DOOR SWITCH INPUT SIGNAL.

C CONSULT-II

See "DOOR SW" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OR

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

NG → Check the following.
- Door switch
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between door switch and BCM

OK ↓

CHECK IGNITION SWITCH ON SIGNAL.

D CONSULT-II

See "IGN ON SW" in DATA MONITOR mode.
When ignition switch is ON:
IGN ON SW ON
When ignition switch is ACC or OFF:
IGN ON SW OFF

OR

E ON BOARD

Check voltage between BCM terminal (68) and ground.

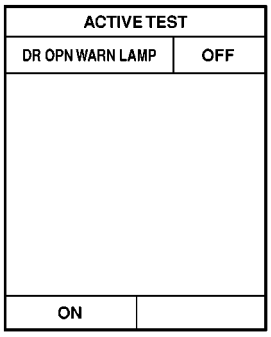
Condition of ignition switch	Voltage V
ON	Approx. 12
ACC or OFF	0

NG → Check the following.
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OK ↓

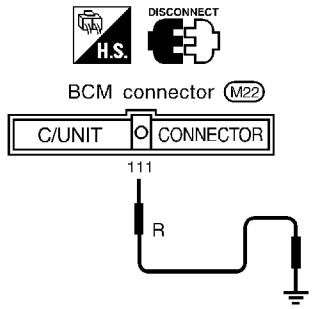
Replace BCM.

A



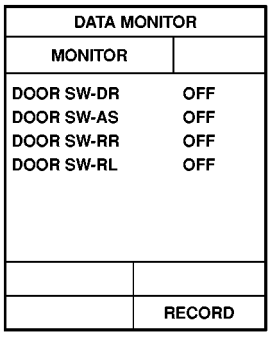
SEL497W

B



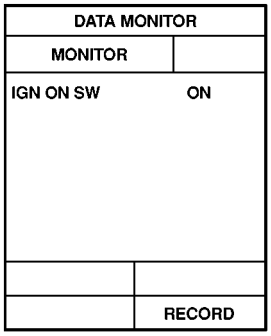
SEL677UA

C



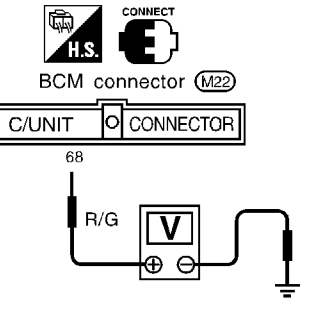
SEL498W

D



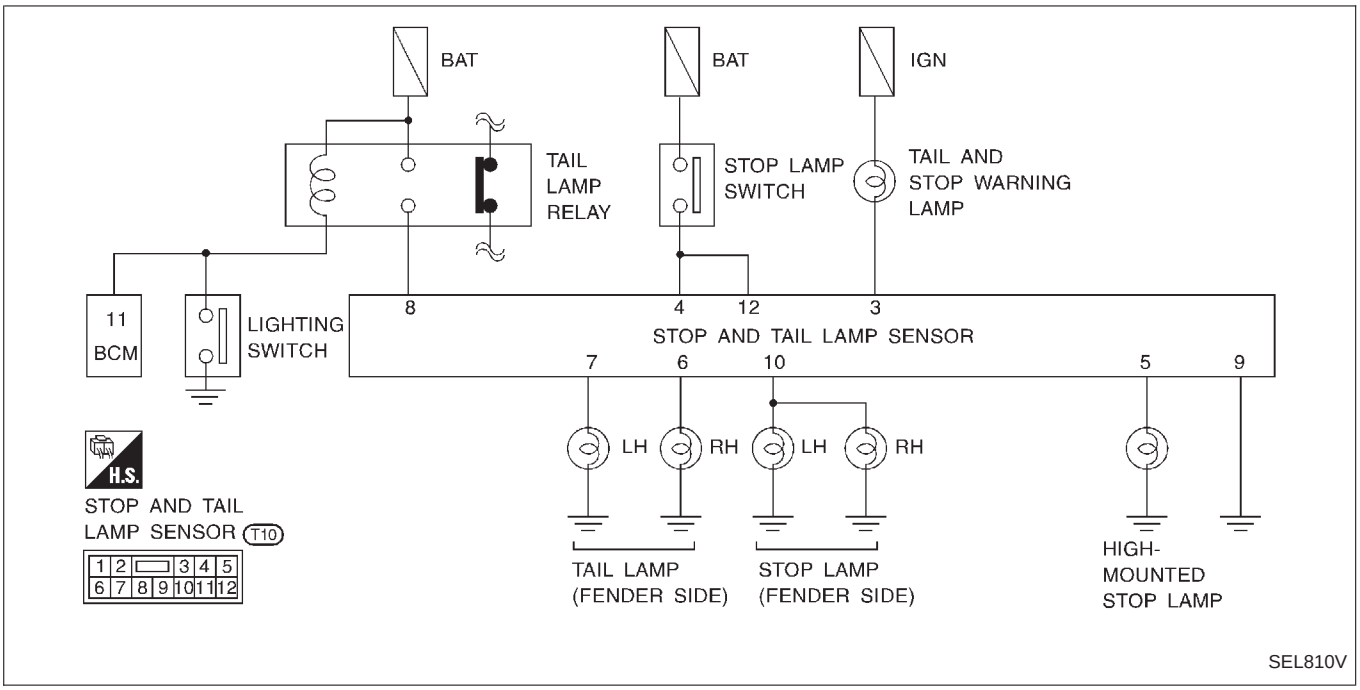
SEL499W

E



SEL556UB

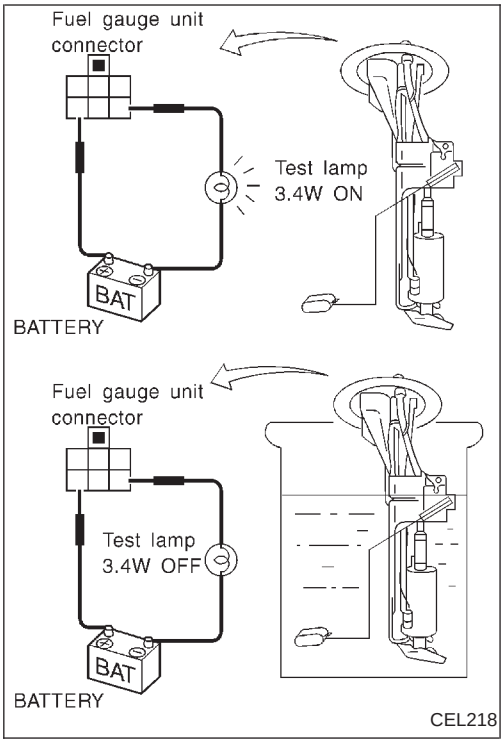
Trouble Diagnoses/Stop and Tail Lamp Sensor



STOP AND TAIL LAMP SENSOR INSPECTION TABLE

Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
3	L	Stop and tail warning lamp		When sensing one of the bulbs burned out (See note.)	Less than 1.5V
				Other than above condition	12V
4	R	Stop lamp switch	Depressed		12V
			Released		0V
5	R/W	High-mounted stop lamp	Stop lamp switch	Depressed	11V
				Released	0V
6	L	Tail lamp RH (Fender side)	Lighting switch or auto lamp	Turned ON	11V
7	G/R	Tail lamp LH (Fender side)		Turned OFF	0V
8	R/G	Tail lamp relay	Lighting switch or auto lamp	Turned ON	11V
				Turned OFF	0V
9	B	Ground	—		—
10	R/L	Stop lamp LH and RH (Fender side)	Stop lamp switch	Depressed	11V
				Released	0V
12	R	Stop lamp switch	Depressed		12V
			Released		0V

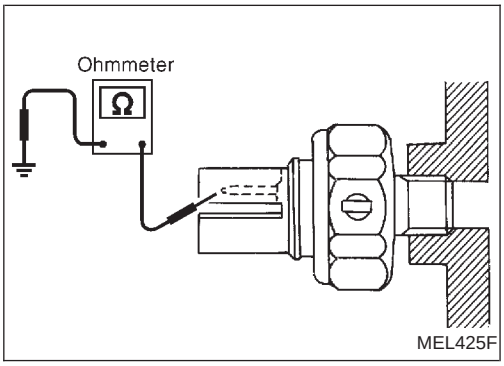
Note: The system senses bulb burnout only when the stop lamp switch is depressed for stop lamps or tail lamp relay is energized for tail lamps.



Electrical Components Inspection

FUEL WARNING LAMP SENSOR CHECK

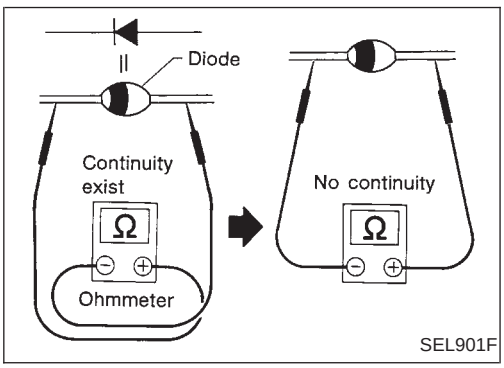
- It will take a short time for the bulb to light.



OIL PRESSURE SWITCH CHECK

	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine start	More than 20 - 29 (0.2 - 0.3, 3 - 4)	NO
Engine stop	Less than 20 - 29 (0.2 - 0.3, 3 - 4)	YES

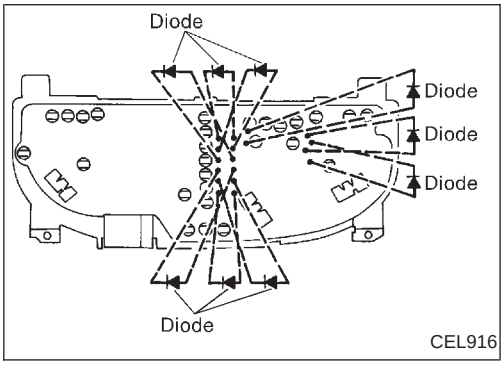
Check the continuity between the terminals of oil pressure switch and body ground.



DIODE CHECK

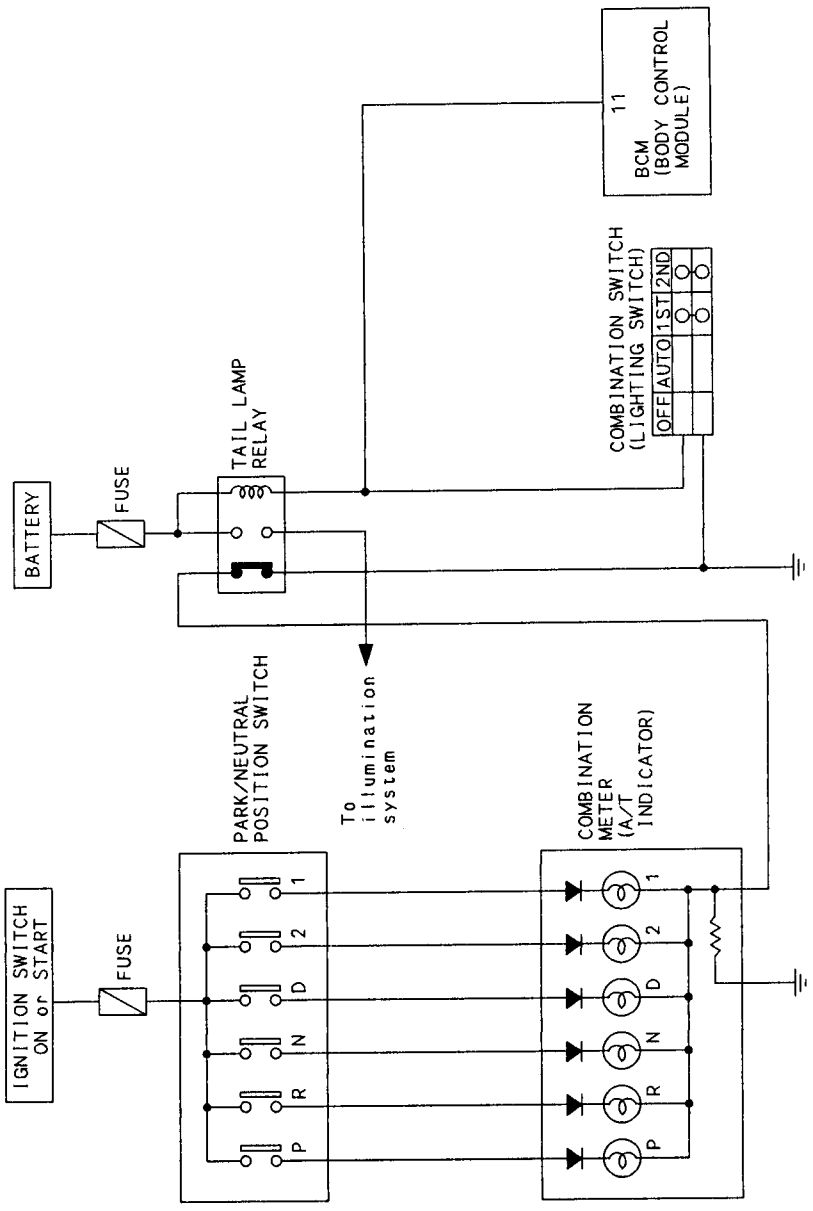
- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

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.



- Diodes for warning lamps are built into the combination meter printed circuit.

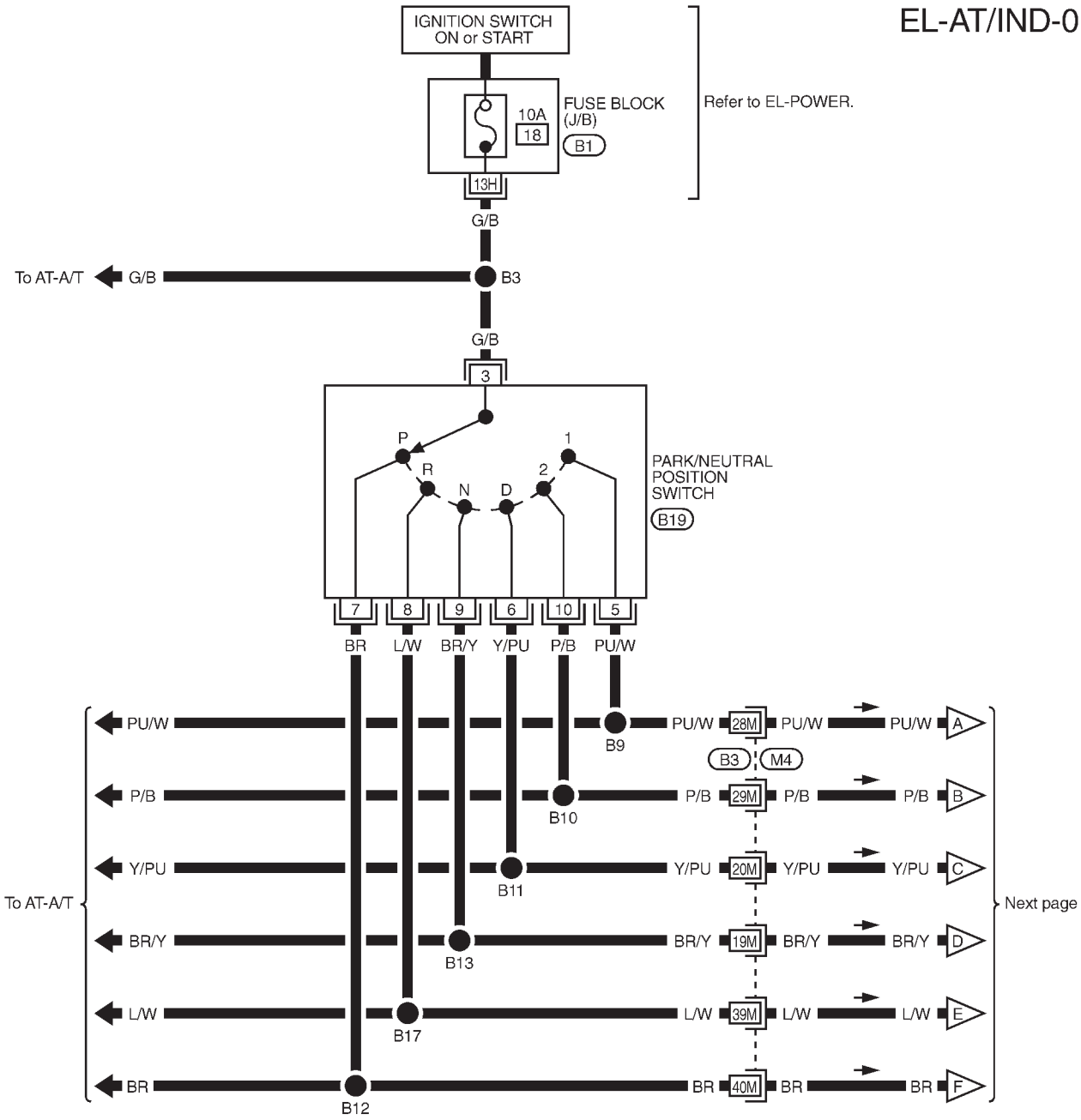
Schematic

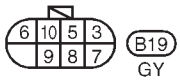


TEL382B

Wiring Diagram — AT/IND —

EL-AT/IND-01



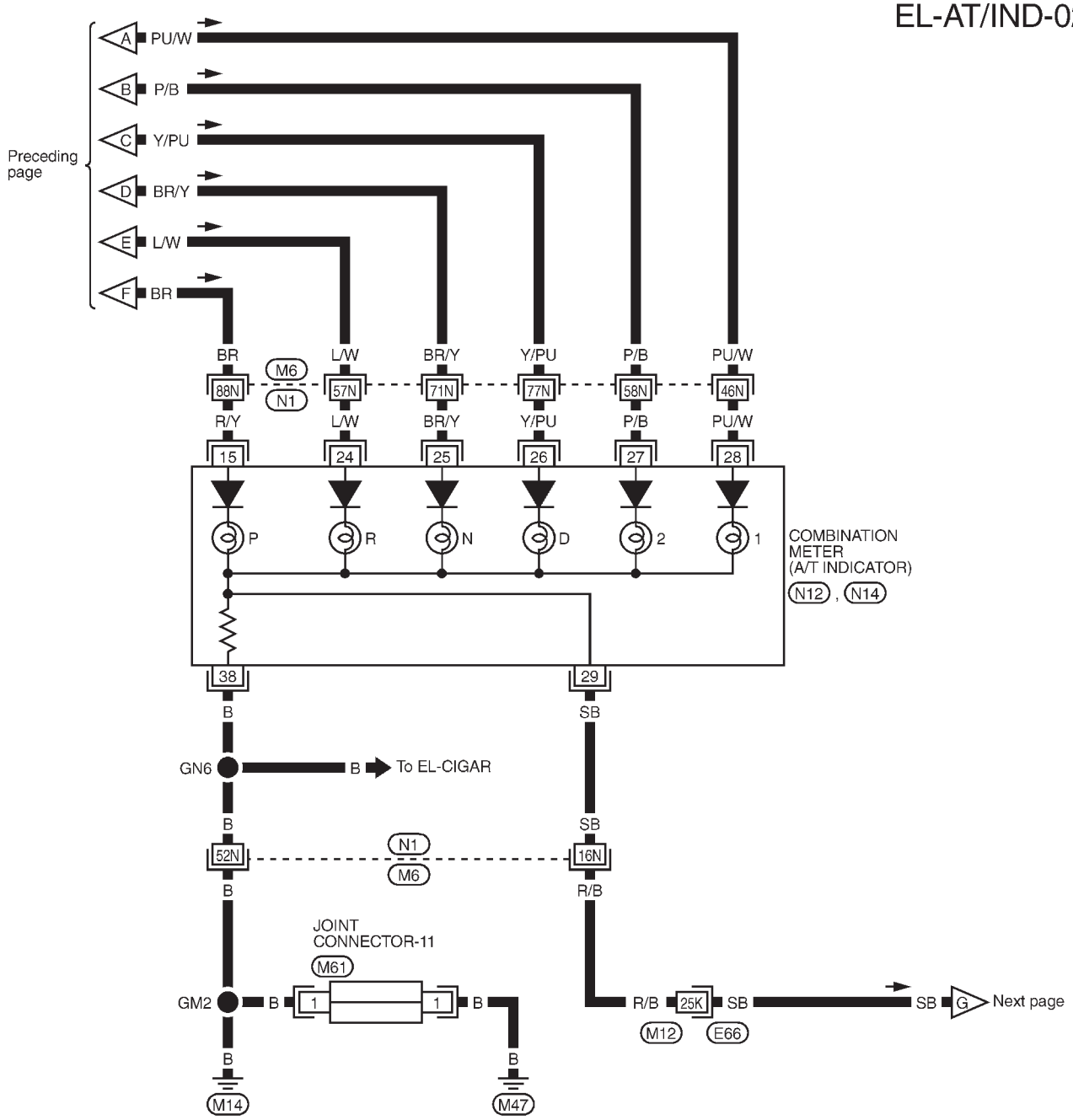


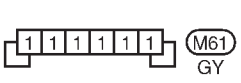
Refer to last page (Foldout page).
M4 , B3
B1

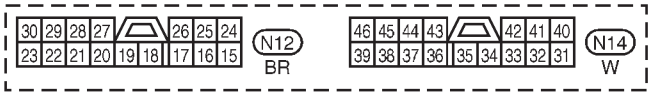
TEL383B

Wiring Diagram — AT/IND — (Cont'd)

EL-AT/IND-02







Refer to last page (Foldout page).

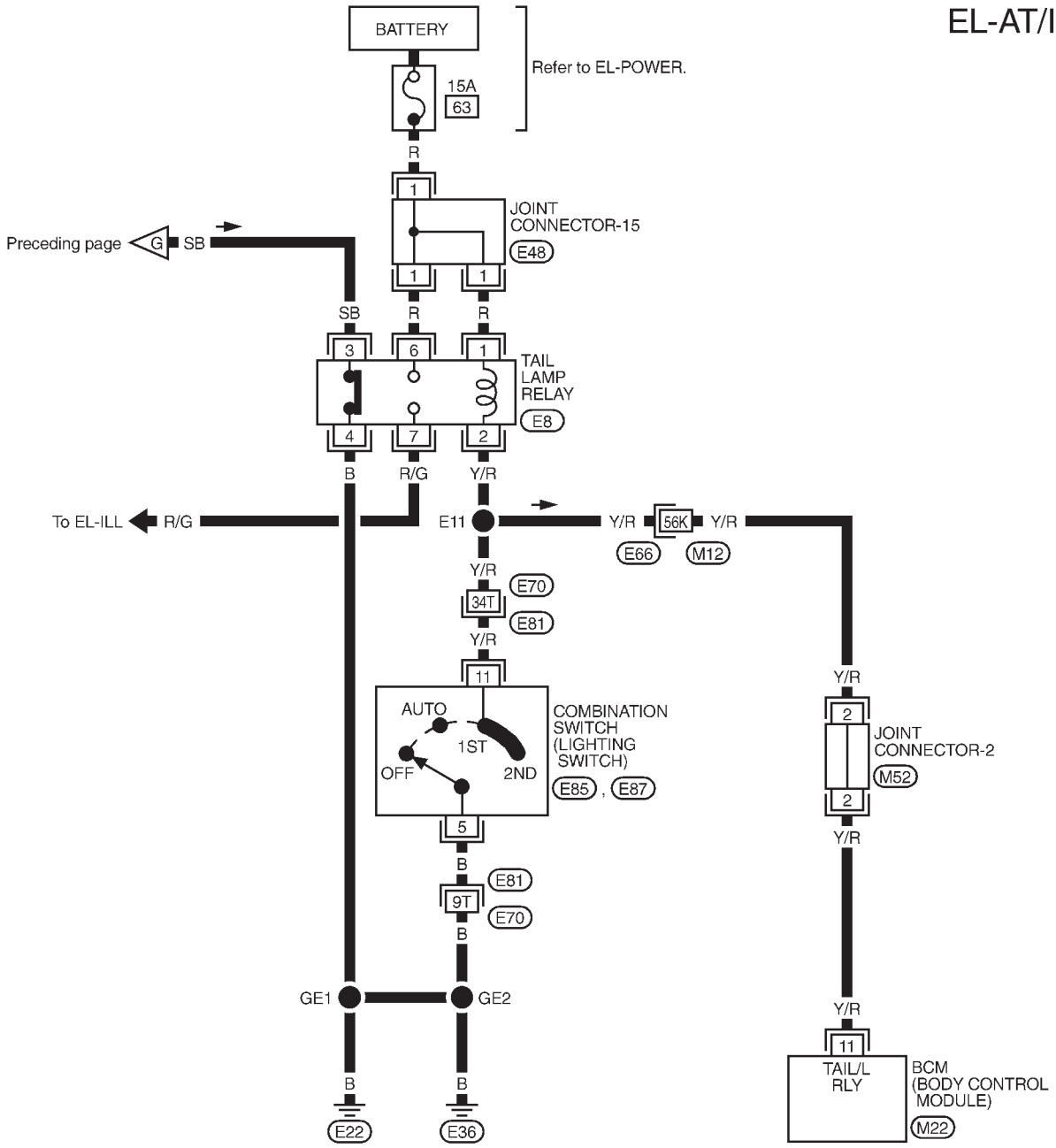
M6 , N1

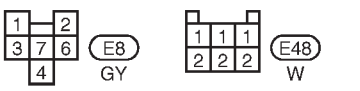
E66 , M12

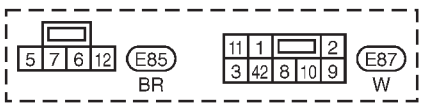
TEL794A

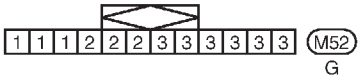
Wiring Diagram — AT/IND — (Cont'd)

EL-AT/IND-03









Refer to last page (Foldout page).

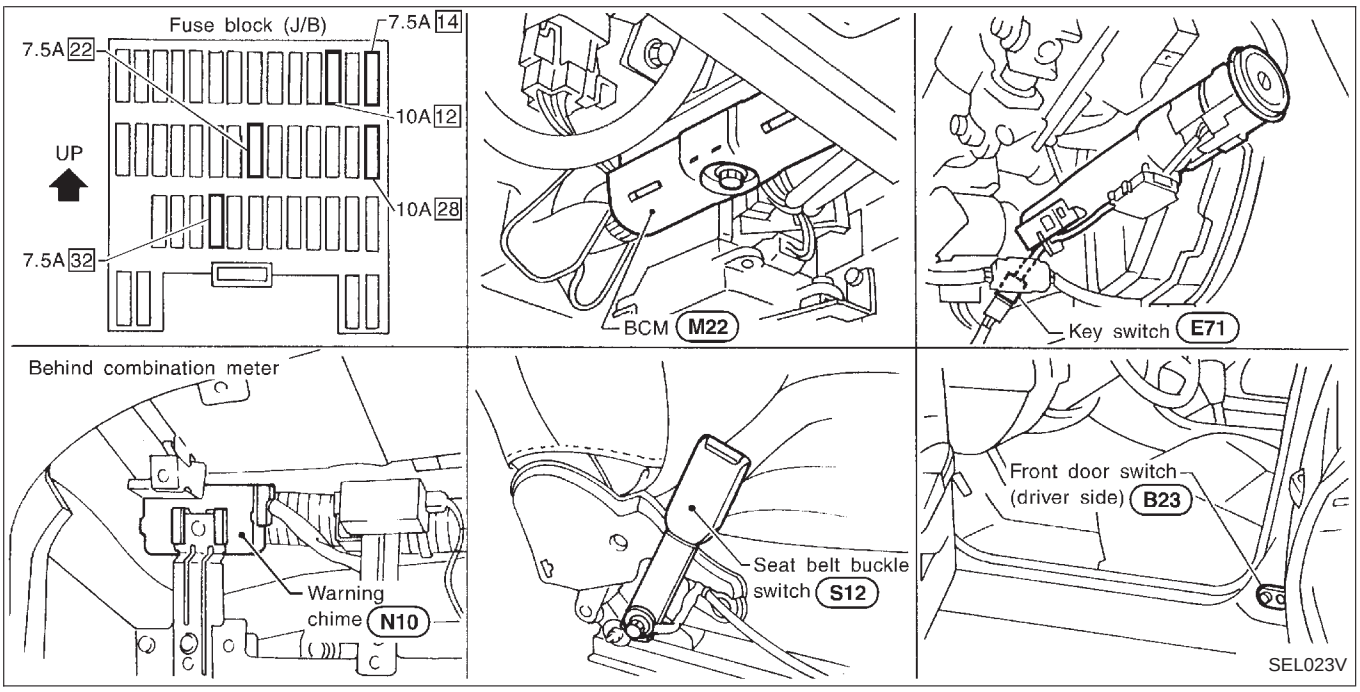
E66 , M12

E70 , E81

M22

TEL774

Component Parts and Harness Connector Location



System Description

FUNCTION

- The following warning chime functions are controlled by BCM.

Item	Details of control
Ignition key warning chime	Sounds warning chime when driver's door is opened with key in ignition key cylinder and ignition switch "OFF" or "ACC" position.
Light warning chime	Sounds warning chime when driver's door is opened with light switch in the 1st or 2nd position and ignition switch "OFF" or "ACC" position.
Seat belt warning chime	Sounds warning chime for about 6 seconds if ignition switch is turned "ON" when driver's seat belt is unfastened

IGNITION KEY WARNING CHIME

Power is supplied at all times

- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal ③.
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to warning chime terminal ①.

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

- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal ㊽.

Ground is supplied to BCM terminal ㉜ through driver side door switch terminal ① when driver side switch is in OPEN position.

With the key in the ignition key cylinder, the ignition switch in the ACC or OFF position, and the driver's door open, ground is supplied to warning chime terminal ③ from BCM terminal ⑫. The warning chime will then sound.

LIGHT WARNING CHIME

Power is supplied at all times

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to warning chime terminal ①.
- Through 15A fuse [No. 63, located in the fuse, fusible link and relay box]
- to tail lamp relay terminals ① and ⑥.

System Description (Cont'd)

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal 68.

When the lighting switch is in the 1ST or 2ND position, ground is supplied
- to tail lamp relay terminal 2
- from body grounds E22 and E36
- through lighting switch terminals 11 and 5.

Tail lamp relay is then energized, and power is supplied
- to BCM terminal 3
- from tail lamp relay terminal 7
- through 7.5A fuse [No. 22, located in the fuse block (J/B)].

With the lighting switch in the 1ST, 2ND position, the ignition switch in ACC or OFF position and the driver's door OPEN, the warning chime will sound in the same manner as ignition key warning chime.

SEAT BELT WARNING CHIME

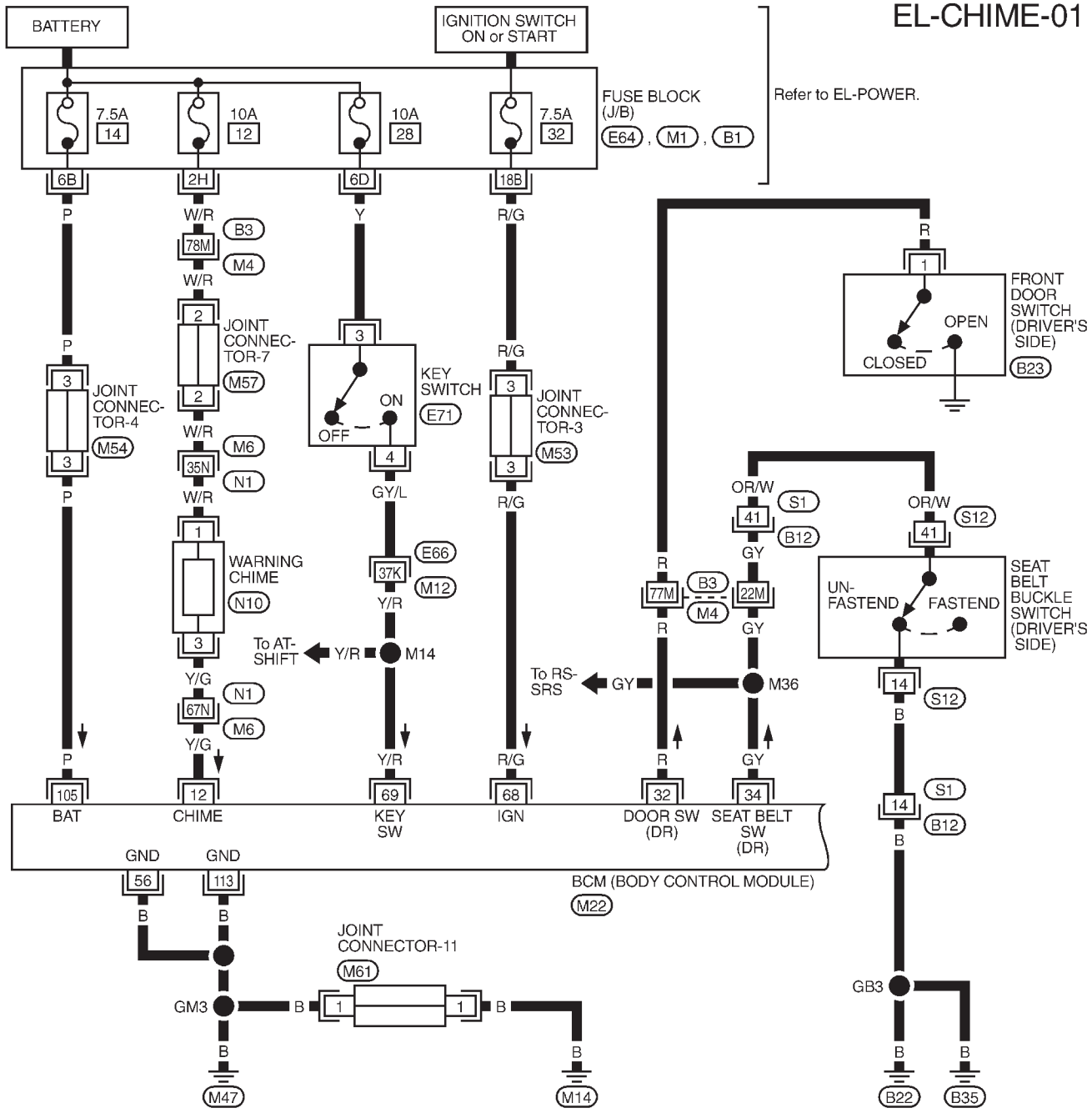
Power is supplied at all times
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to warning chime terminal 1.

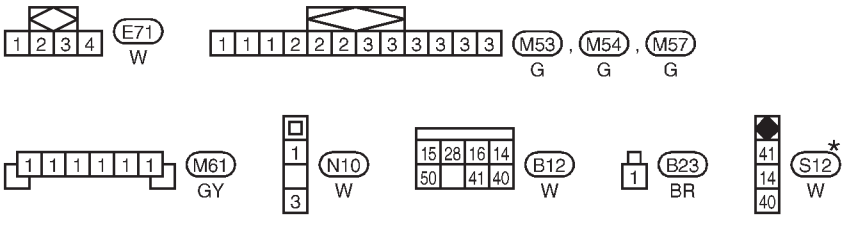
With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal 68.

Ground is supplied to BCM terminal 34 through seat belt buckle switch terminals 41 and 14, when seat belt buckle switch is in UNFASTENED position, and body grounds B22 and B35.

The warning chime sounds for about 6 seconds, when ignition switch is turned from OFF to ON and seat belt is unfastened.

Wiring Diagram — CHIME —





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

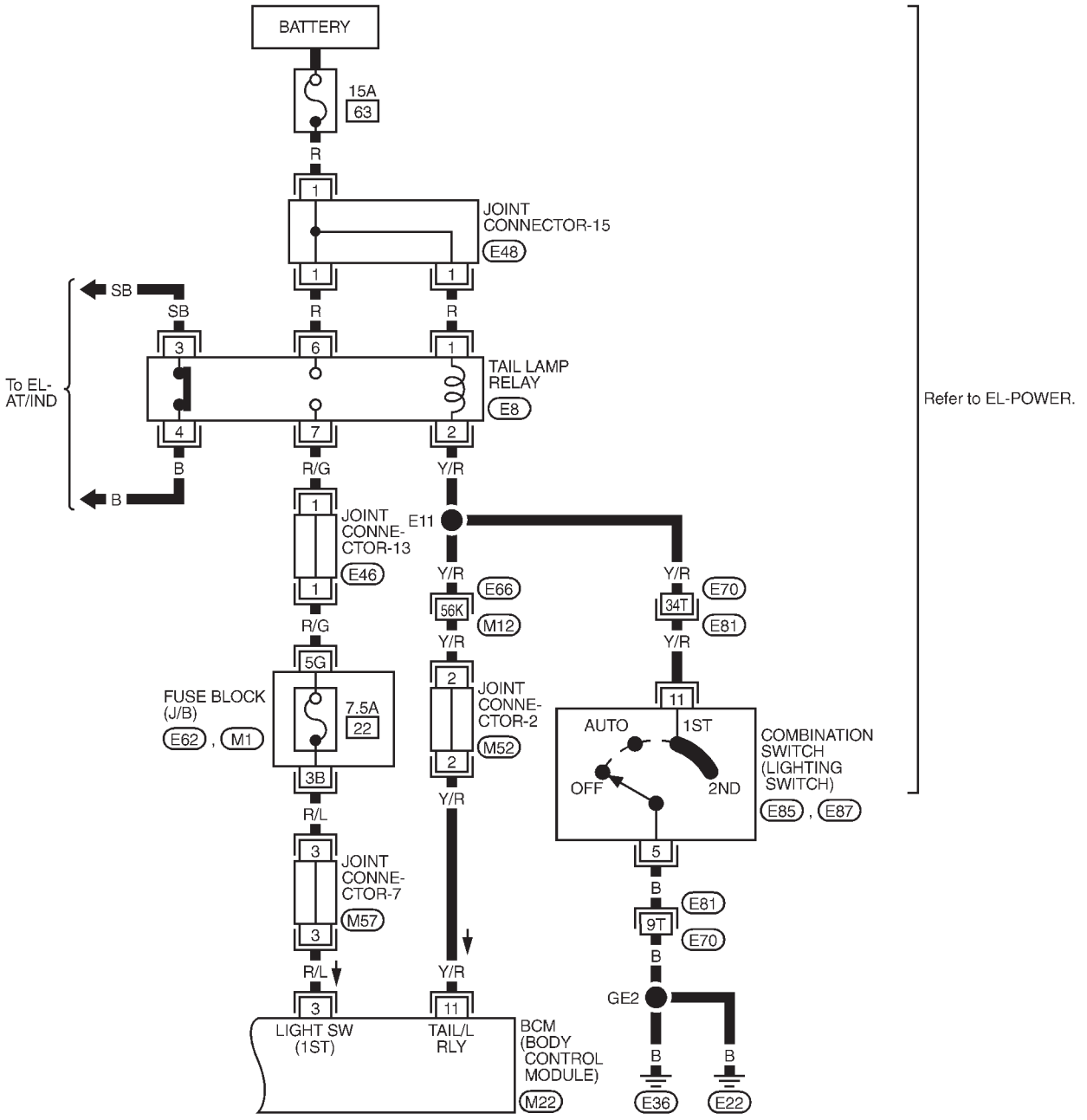
Refer to last page (Foldout page).

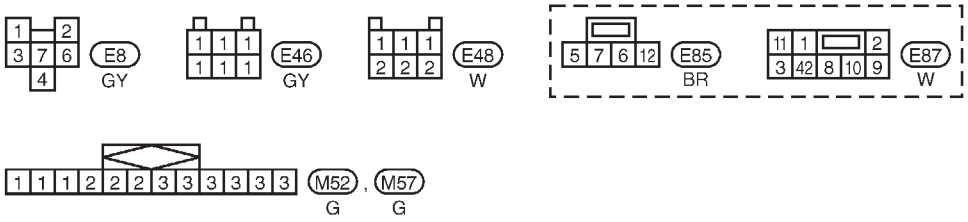
E66, M12
M4, B3
M6, N1
E64
M1
M22
B1

TEL203A

Wiring Diagram — CHIME — (Cont'd)

EL-CHIME-02

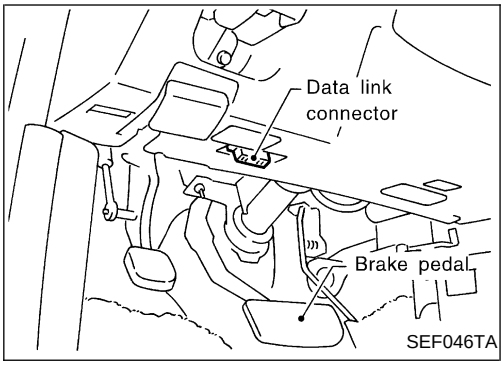




Refer to last page (Foldout page).

E66 , M12
E70 , E81
E62
M1
M22

TEL776

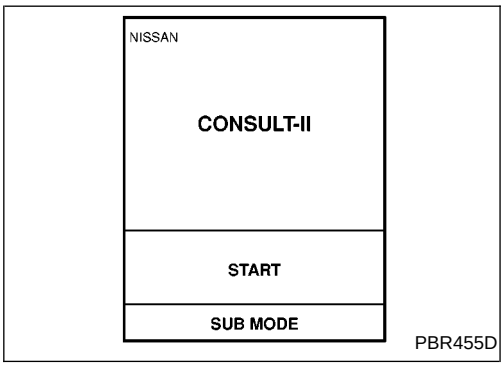


SEF046TA

CONSULT-II

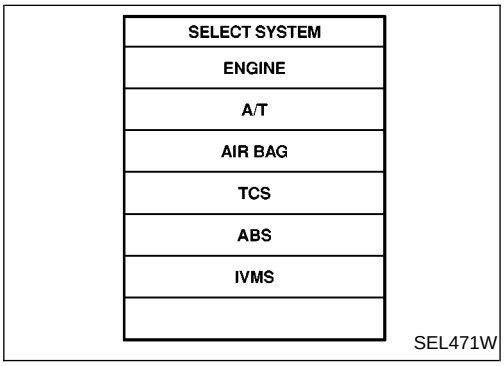
CONSULT-II INSPECTION PROCEDURE

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



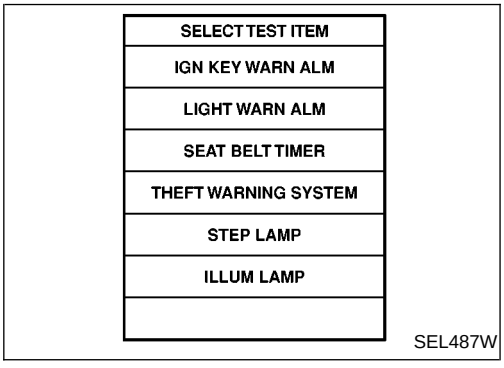
PBR455D

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



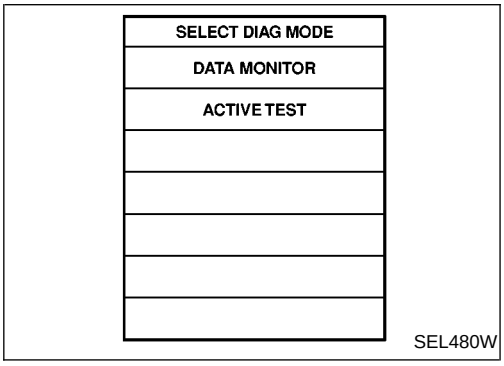
SEL471W

5. Touch “IVMS”.



SEL487W

6. Touch “IGN KEY WARN ALM”, “LIGHT WARN ALM” or “SEAT BELT TIMER”.

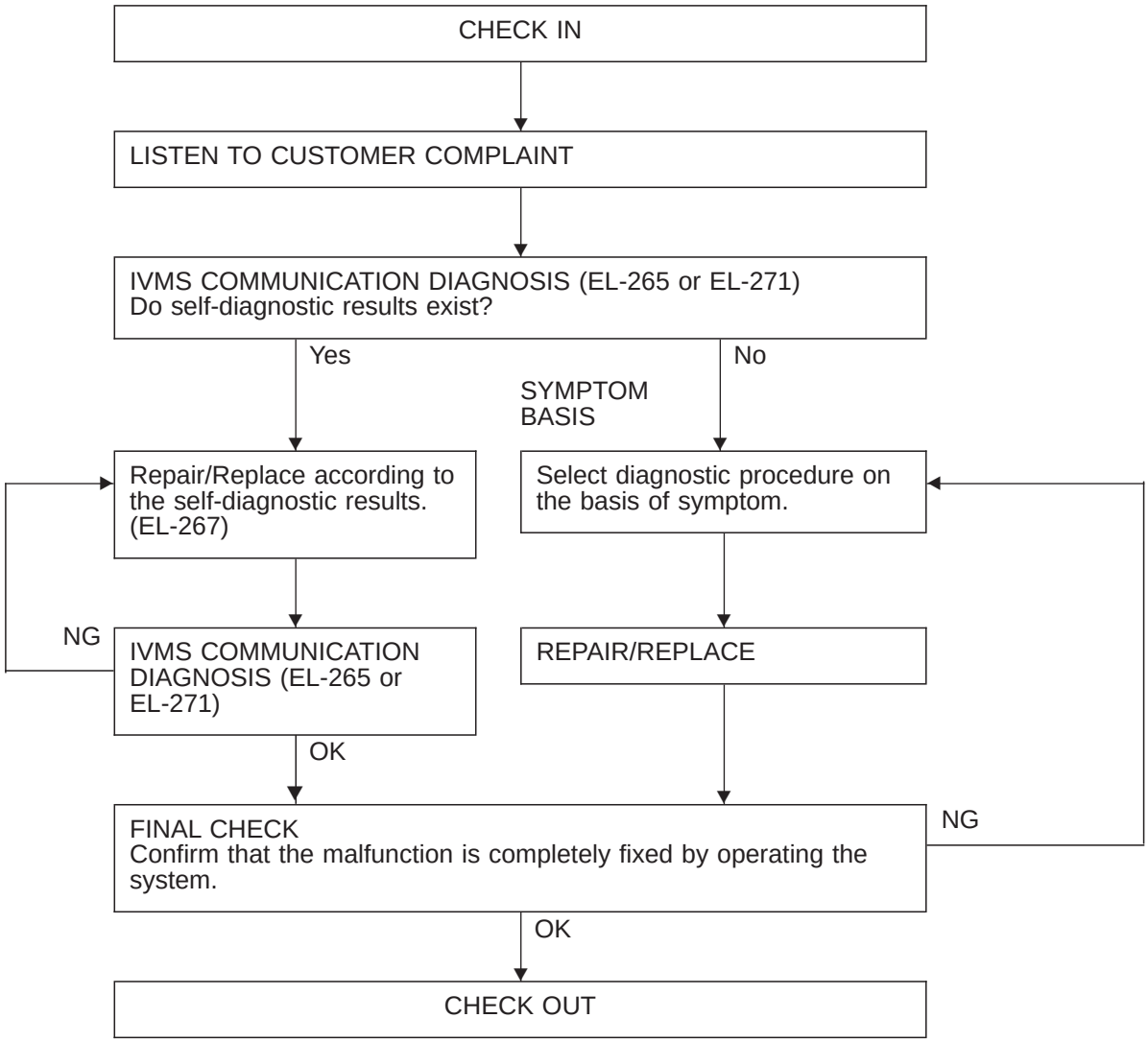


SEL480W

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

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

REFERENCE PAGE	EL-157	EL-158	EL-158	EL-159
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Lighting switch input signal check)	DIAGNOSTIC PROCEDURE 2 (Key switch input signal check)	DIAGNOSTIC PROCEDURE 3 (Seat belt buckle switch input signal check)	DIAGNOSTIC PROCEDURE 4
Light warning buzzer does not activate.	X			X
Ignition key warning buzzer does not activate.		X		X
Seat belt warning buzzer does not activate.			X	X
All warning buzzers do not activate.				X

A

DATA MONITOR	
MONITOR	
HD/LMP 1ST SW	ON
	RECORD

SEL500W

DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)

CHECK LIGHTING SWITCH INPUT SIGNAL.

A CONSULT-II

See "HD/LMP 1ST SW" in DATA MONITOR mode.
When lighting switch is in 1ST or 2ND:
HD/LMP 1ST SW ON
When lighting switch is OFF:
HD/LMP 1ST SW OFF

NG → Check the following.
- 7.5A fuse [No. 22, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OR

ON BOARD

Check lighting switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

OK ↓

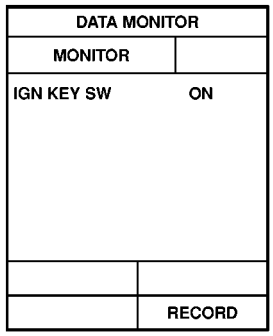
Go to Procedure 4.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

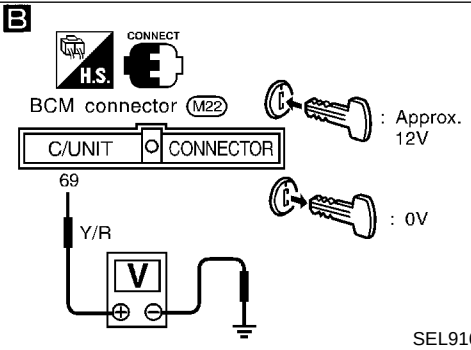
(Key switch input signal check)

A



SEL532W

B



SEL916V

CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT-II

See "IGN KEY SW" in DATA MONITOR mode.
When key is inserted in ignition key cylinder:
IGN KEY SW ON
When key is removed from ignition key cylinder:
IGN KEY SW OFF

OR

B TESTER

Check voltage between BCM terminal 69 and ground.

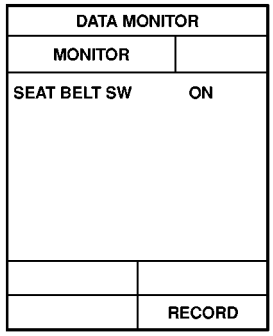
Condition of key switch	Voltage V
Key is inserted	Approx. 12
Key is removed	0

NG → Check the following.
- Key switch
  Refer to "Electrical Components Inspection" (EL-160).
- 10A fuse [No. 28, located in the fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

OK ↓

Go to Procedure 4.

A



SEL501W

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)

CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.

A CONSULT-II

See "SEAT BELT SW" in DATA MONITOR mode.
When driver's seat belt is not fastened:
SEAT BELT SW ON
When driver's seat belt is fastened:
SEAT BELT SW OFF

OR

ON BOARD

Check seat belt buckle switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

NG → Check the following.
- Seat belt buckle switch
  Refer to "Electrical Components Inspection" (EL-160).
- Seat belt buckle switch ground circuit
- Harness for open or short between BCM and seat belt buckle switch

OK ↓

Go to procedure 4.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

A

DATA MONITOR	
MONITOR	
DOOR SW-DR	OFF
	RECORD

SEL502W

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SW-DR" in DATA MONITOR mode.
When driver's door is open:
DOOR SW-DR ON
When driver's door is closed:
DOOR SW-DR OFF

OR

ON BOARD

Check driver side door switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

NG → Check the following.
- Driver door switch
  Refer to "Electrical Components Inspection" (EL-160).
- Driver door switch ground condition
- Harness for open or short between driver door switch and BCM

OK ↓

B

DATA MONITOR	
MONITOR	
IGN ON SW	ON
	RECORD

SEL499W

CHECK IGNITION SWITCH ON SIGNAL.

B CONSULT-II

See "IGN ON SW" in DATA MONITOR mode.
When ignition switch is ON:
IGN ON SW ON
When ignition switch is ACC or OFF:
IGN ON SW OFF

OR

C TESTER

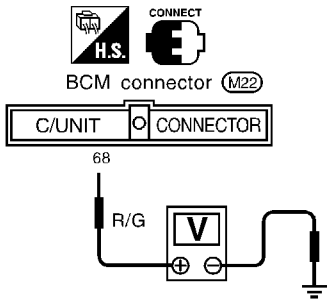
Check voltage between BCM terminal (68) and ground.

Condition of ignition switch	Voltage V
ON	Approx. 12
ACC or OFF	0

NG → Check the following.
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OK ↓

C



SEL556UB

D

ACTIVE TEST	
IGN KEY WARN ALM	OFF
or	
LIGHT WARN ALM	OFF
or	
SEAT BELT WRN	OFF
ON	

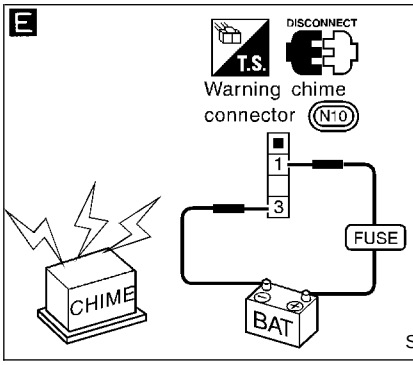
SEL495W

Perform "WARN ALM" in ACTIVE TEST mode.
Check chime operation.
If CONSULT-II is not available, skip this procedure and go to the next procedure below.

OK → System is OK.

NG ↓

E



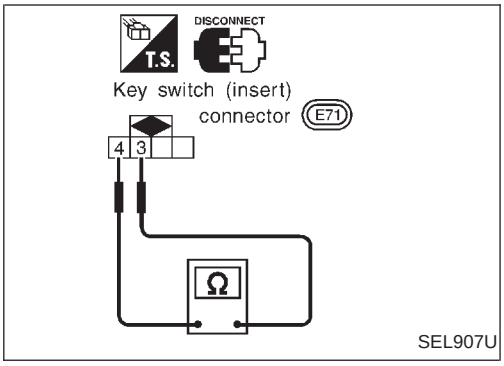
SEL564UB

CHECK WARNING CHIME.
1. Disconnect warning chime connector.
2. Apply 12V direct current to warning chime and check operation.

NG → Replace chime.

OK ↓

Check the following.
- 10A fuse [No. 12 located in the fuse block (J/B)]
- Harness for open or short between fuse and chime
- Harness for open or short between chime and BCM

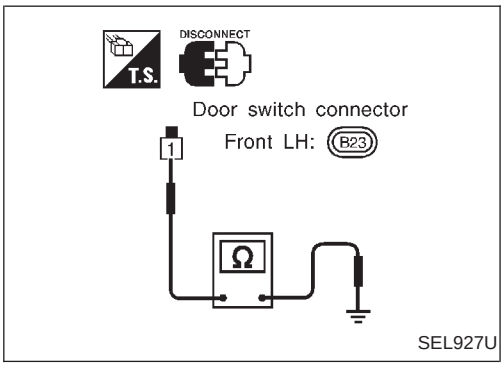


Electrical Components Inspection

KEY SWITCH (Insert)

Check continuity between terminals when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

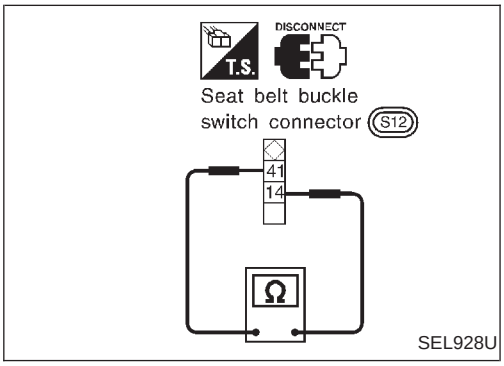
Terminal No.	Condition	Continuity
③ - ④	Key is inserted	Yes
	Key is removed	No



DRIVER SIDE DOOR SWITCH

Check continuity between terminal and switch body ground when door switch is pushed and released.

Terminal No.	Condition	Continuity
① - ground	Door switch is pushed.	No
	Door switch is released.	Yes

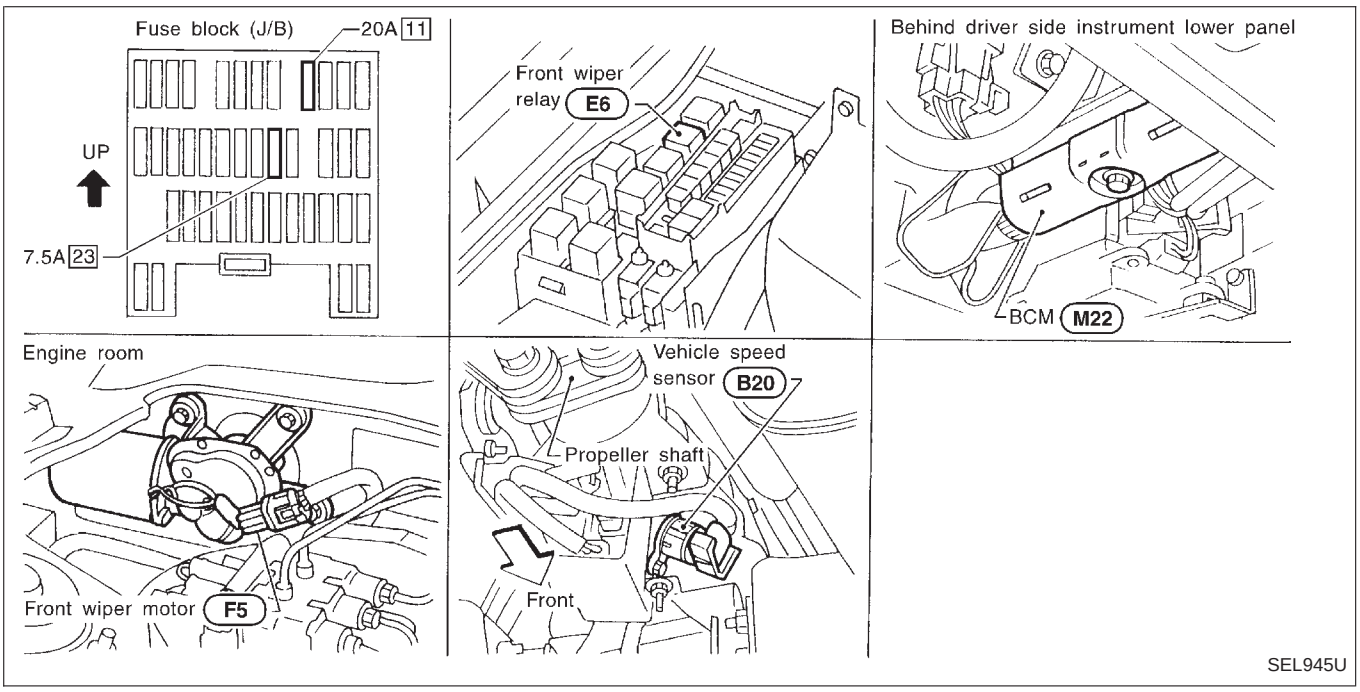


SEAT BELT BUCKLE SWITCH

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

Terminal No.	Condition	Continuity
⑭ - ㊶	Seat belt is fastened.	No
	Seat belt is unfastened.	Yes

Component Parts and Harness Connector Location



System Description

WIPER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse [No. 11, located in the fuse block (J/B)]
- to front wiper motor terminal ③ .

Ground is supplied to front wiper switch terminals ⑰ and ⑳ through body grounds E22 and E36.

Low and high speed wiper operation

When the front wiper switch is placed in the LO position, ground is supplied
- through terminal ⑭ of the front wiper switch
- to front wiper motor terminal ⑤ .

With power and ground supplied, the front wiper motor operates at low speed.
When the front wiper switch is placed in the HI position, ground is supplied
- through terminal ⑯ of the front wiper switch
- to front wiper motor terminal ④ .

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

Auto stop operation

When the front wiper switch is placed in the OFF position, the front wiper motor will continue to operate until the wiper arms reach the base of the windshield (Auto stop).
When the front wiper switch is placed in the OFF position, ground is supplied
- from terminal ⑭ of the front wiper switch
- to front wiper motor terminal ⑤ , in order to continue front wiper motor operation at low speed.

Ground is also supplied until the wiper arms reaches the base of the windshield
- through terminal ⑬ of the front wiper switch
- to wiper relay terminal ③
- through terminal ④ of the wiper relay
- to front wiper motor terminal ②
- through terminal ① of the front wiper motor, and
- through body grounds E22 and E36.

When the wiper arms reach the base of the windshield, the switch in the front wiper motor moves to the “STOP” position. The ground path is interrupted and the front wiper motor stops.

Intermittent operation

Intermittent operation is controlled by the BCM.
When the front wiper switch is placed in the INT position, ground is supplied

System Description (Cont'd)

- to BCM terminal ⑨
- from front wiper switch terminal ⑮
- through body grounds E22 and E36.

The desired interval time is input
- to BCM terminal ㊽
- from front wiper switch terminal ⑲ and
- to BCM terminal ㊾
- from combination meter terminal ⑱ (vehicle speed pulse).

Based on these three inputs, an intermittent ground is supplied
- to front wiper relay terminal ②
- from BCM terminal ⑦ .

With power and ground supplied, the front wiper relay is activated.
When activated, an intermittent ground is supplied
- to front wiper motor terminal ⑤
- through the front wiper switch terminal ⑭
- to front wiper switch terminal ⑬
- through front wiper relay terminal ③
- to front wiper relay terminal ⑤
- through body grounds E22 and E36.

Front wiper motor operates at desired interval with BCM terminal ⑨ grounded.
Intermittent operation can be adjusted from:
Approx. 4 - 19 sec.: (when vehicle is stopped)
Approx. 0.4 - 12 sec.: (when vehicle is moving)
Judgement on vehicle stopped or moving:
Stopped → Moving: More than 4 km/h (2 MPH)
Moving → Stopped: Less than 2 km/h (1 MPH)

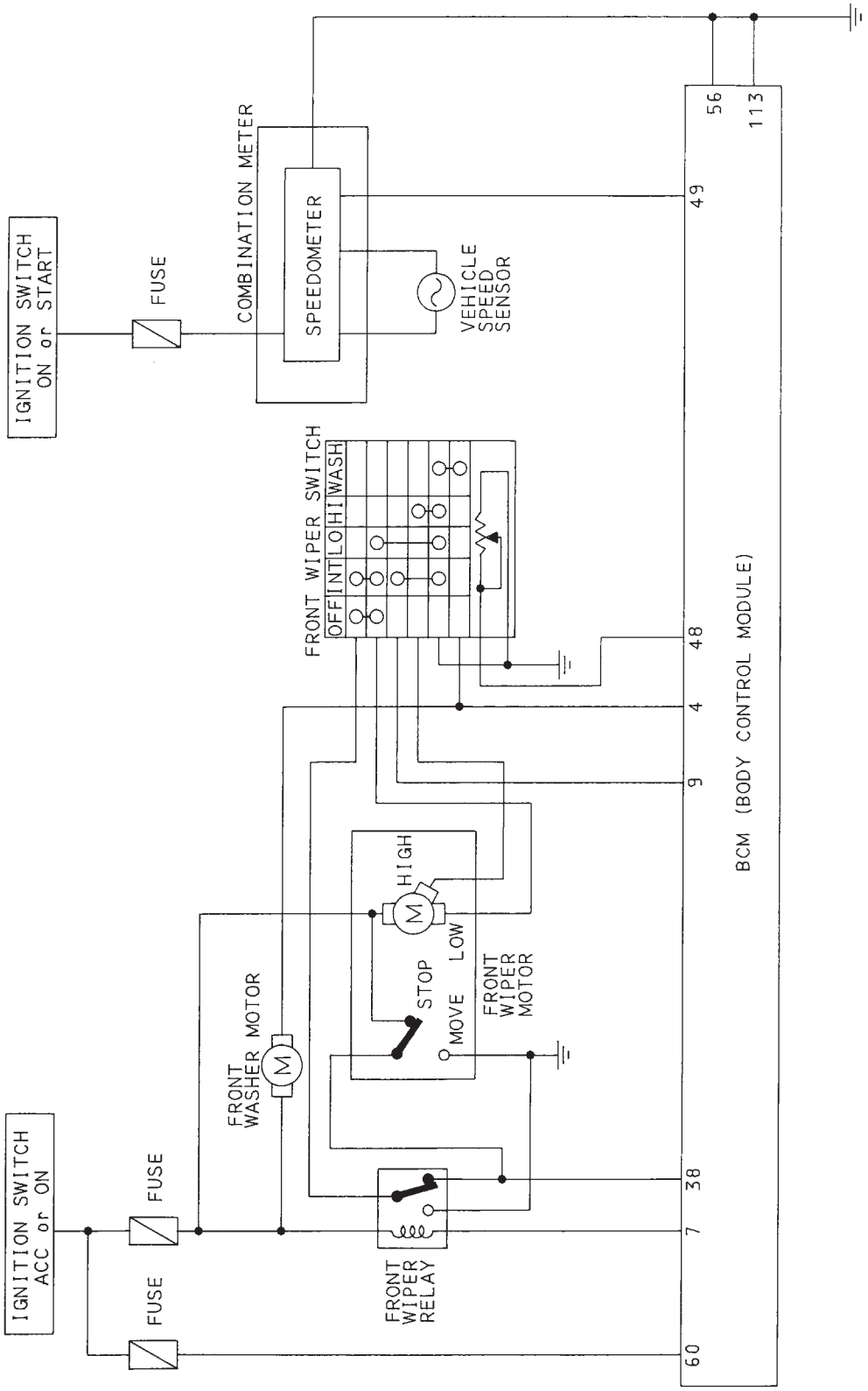
WASHER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse [No. 11, located in the fuse block (J/B)]
- to front washer motor terminal ② .

When the lever is pulled to the WASH position, ground is supplied
- to washer motor terminal ① , and
- to BCM terminal ④
- from terminal ⑱ of the front wiper switch
- through terminal ⑰ of the front wiper switch, and
- through body grounds E22 and E36.

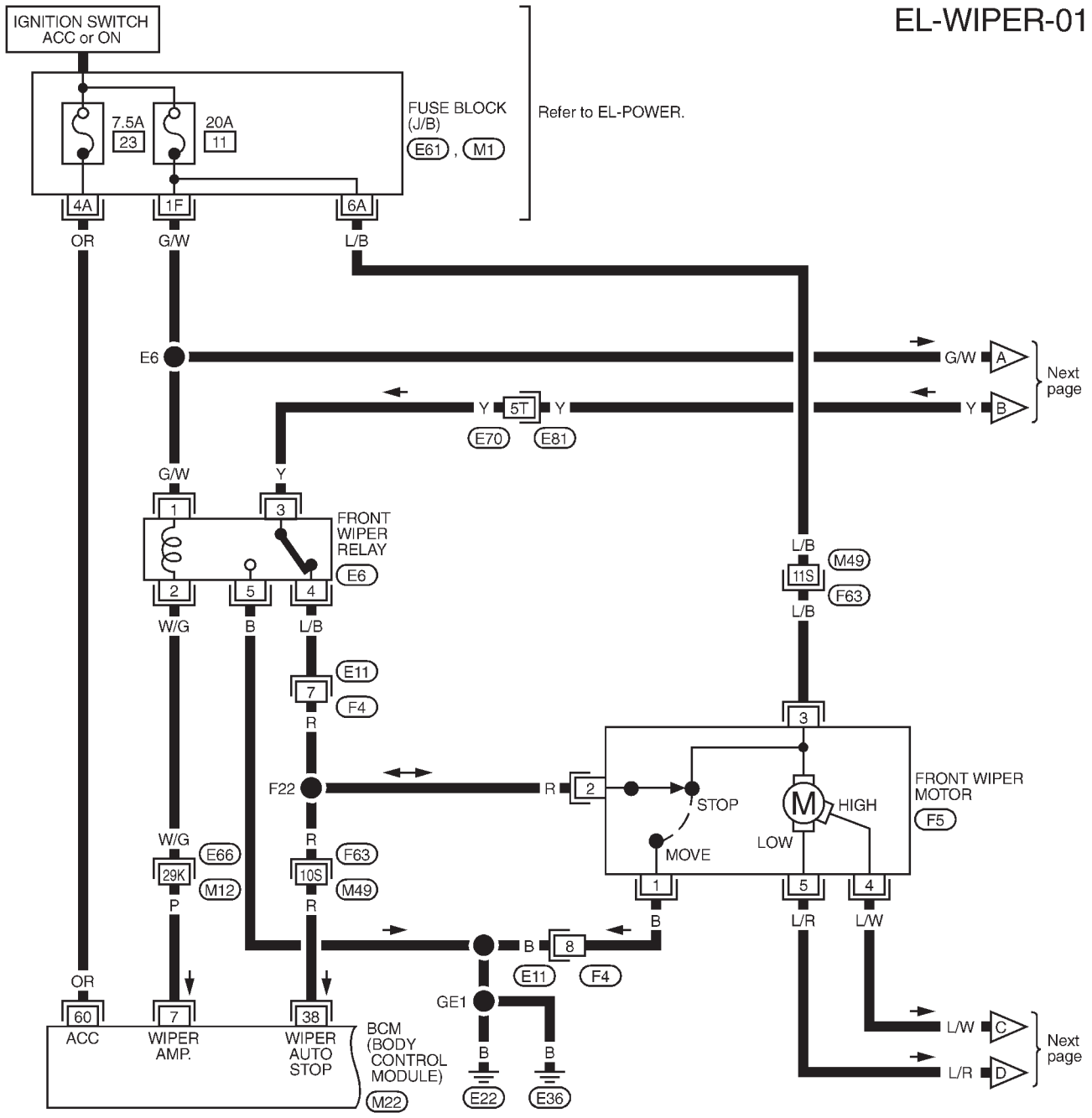
With power and ground supplied, the washer motor operates.
The front wiper motor operates at low speed for about 3 seconds. This feature is controlled by the BCM in the same manner as the intermittent operation.

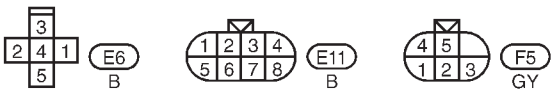
Schematic



TEL777

Wiring Diagram — WIPER —





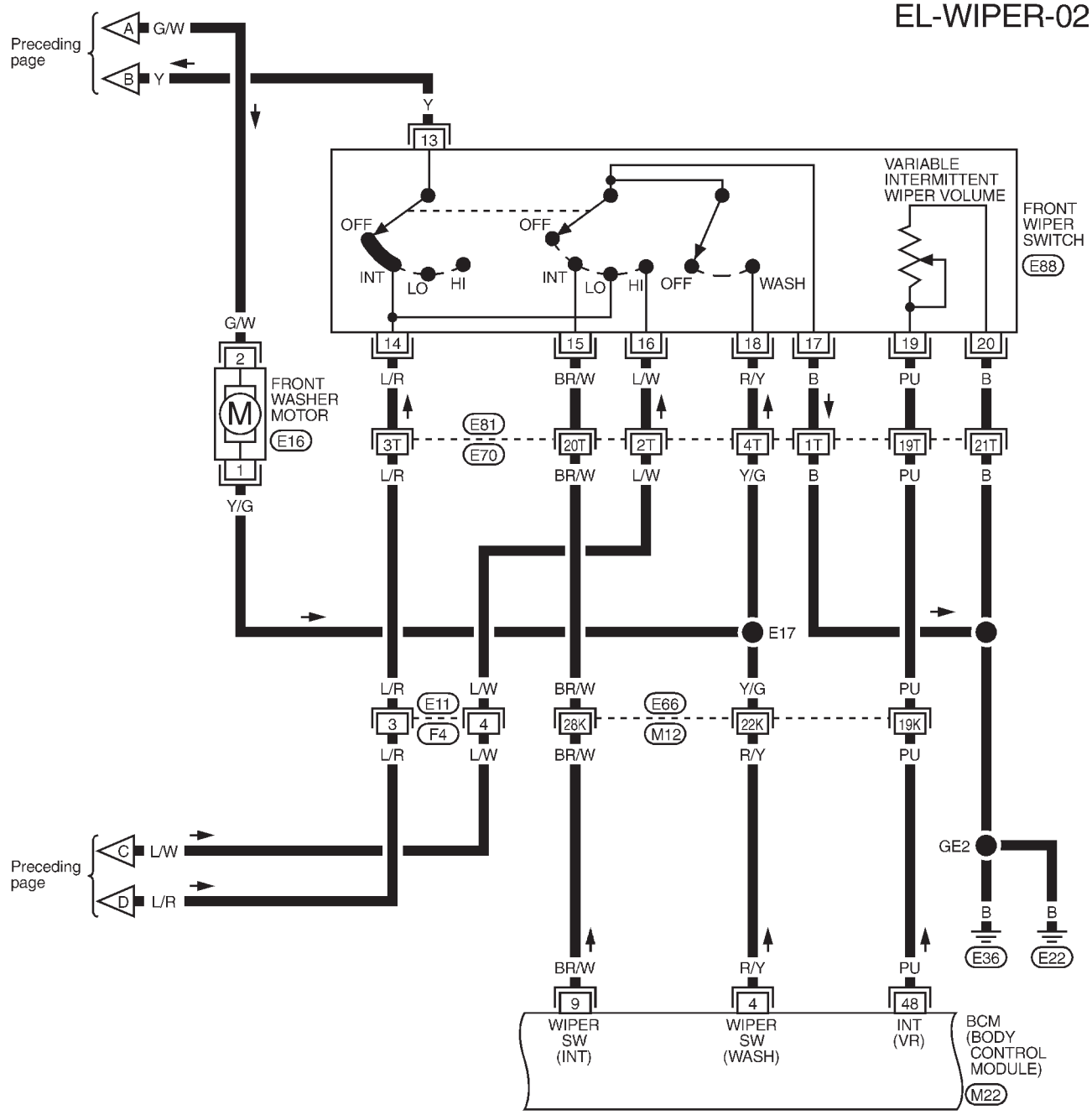
Refer to last page (Foldout page).

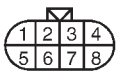
E66 , M12
E70 , E81
M49 , F63
E61
M1
M22

TEL778

Wiring Diagram — WIPER — (Cont'd)

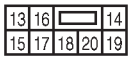
EL-WIPER-02





E11
B

E16
GY



E88
GY

Refer to last page (Foldout page).

E66, M12

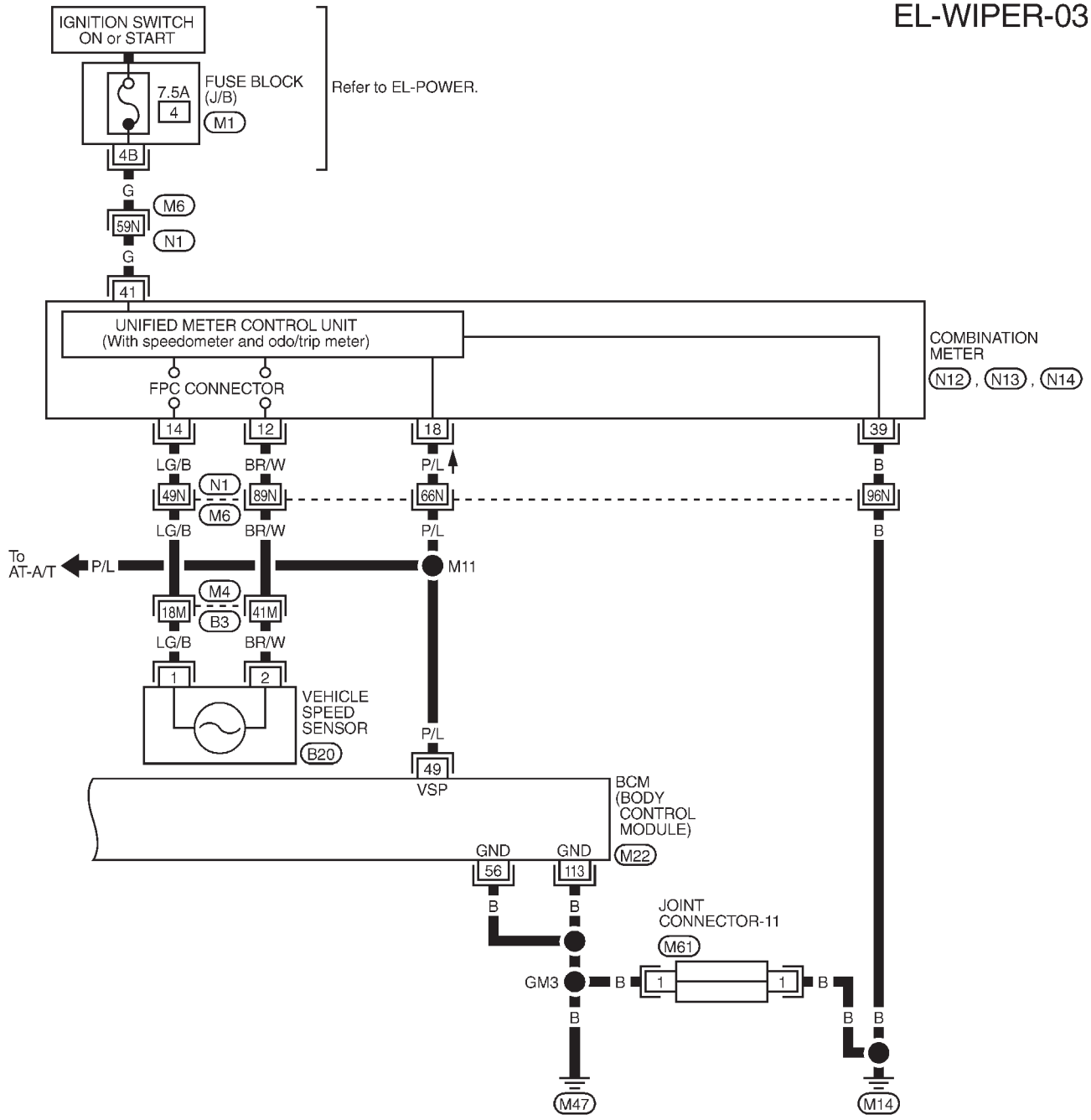
E70, E81

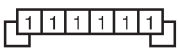
M22

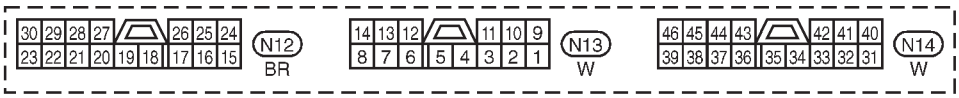
TEL246A

Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-03







Refer to last page (Foldout page).

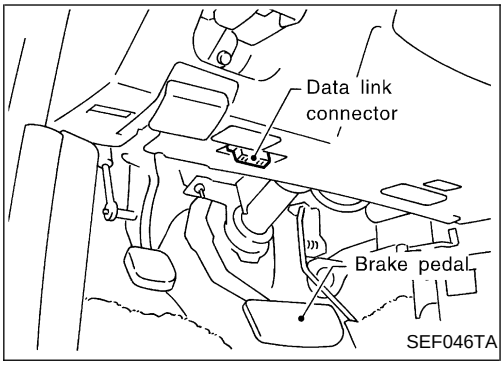
M4 , B3

M6 , N1

M1

M22

TEL799A

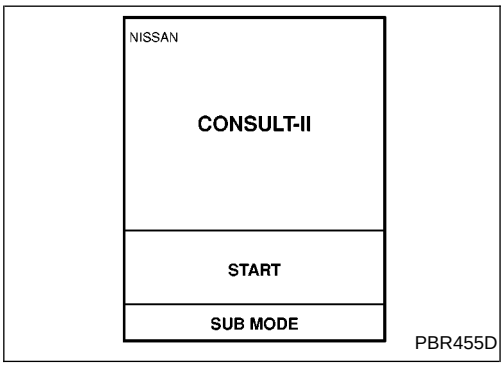


SEF046TA

CONSULT-II

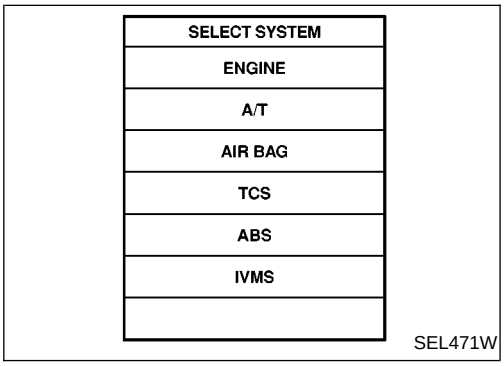
CONSULT-II INSPECTION PROCEDURE

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



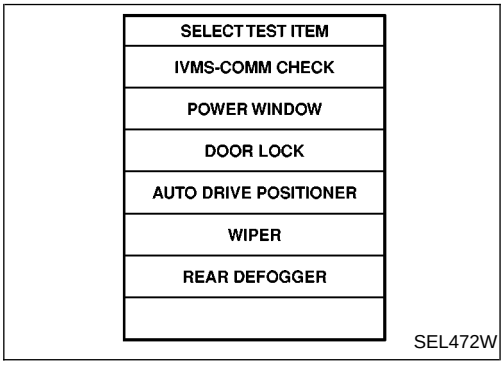
PBR455D

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



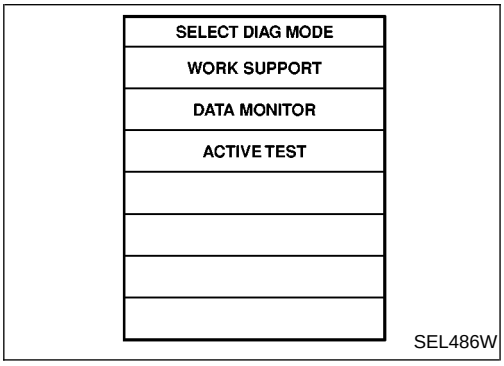
SEL471W

5. Touch “IVMS”.



SEL472W

6. Touch “WIPER”.

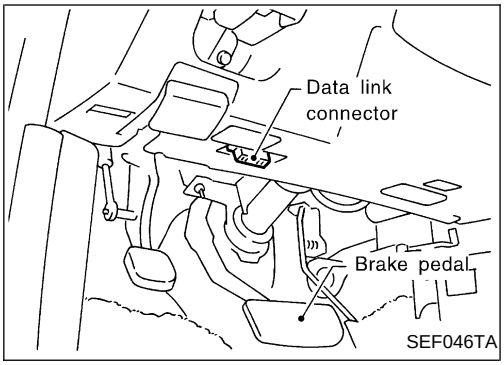


SEL486W

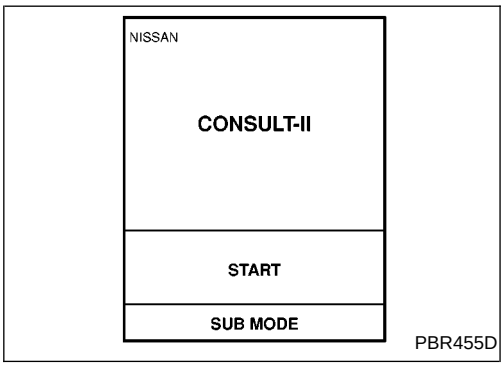
- WORK SUPPORT, DATA MONITOR and ACTIVE TEST are available for the wiper and washer.

CONSULT-II (Cont'd)

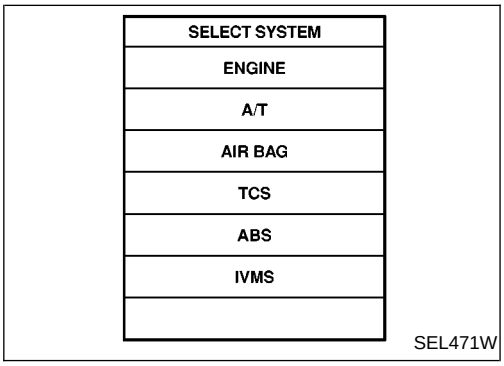
CONSULT-II CUSTOMIZING PROCEDURE



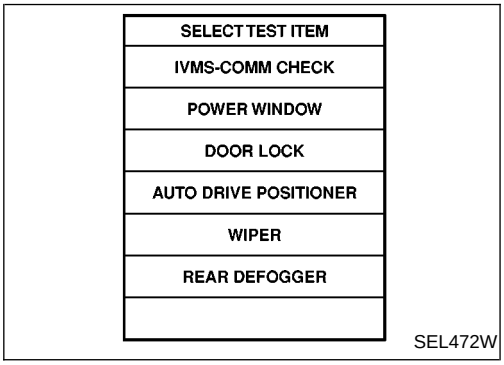
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



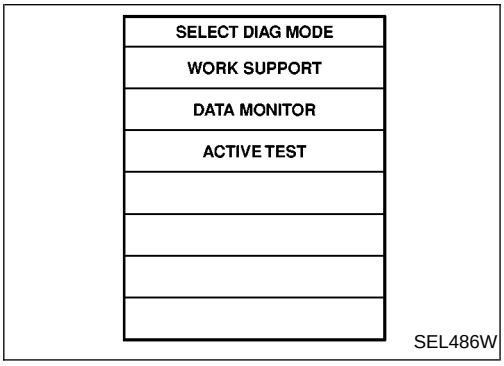
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

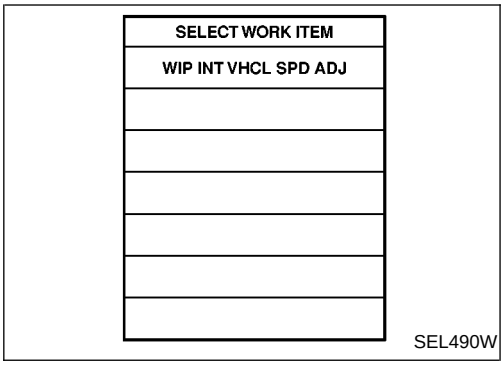


6. Touch "WIPER".

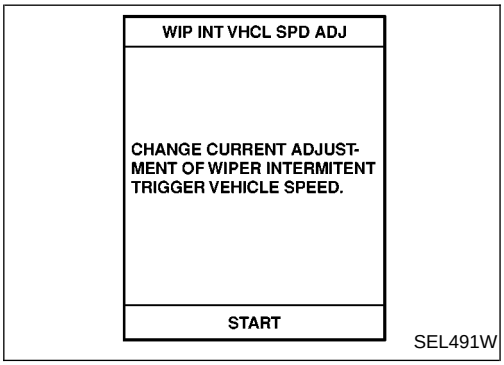


7. Touch "WORK SUPPORT".

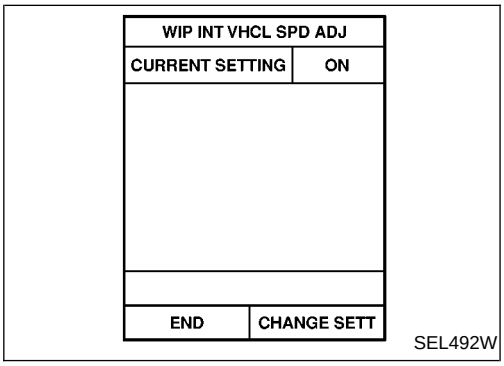
CONSULT-II (Cont'd)



8. Touch "WIP INT VHCL SPD ADJ".

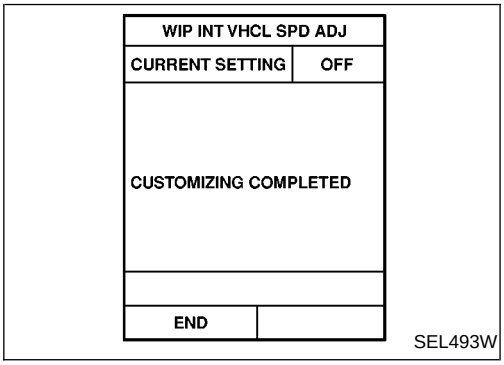


9. Touch "START".
- Wiper intermittent speed control by vehicle speed can be canceled or resumed.



10. Touch "CHANGE SETT" for changing "CURRENT SETTING". For no changing "CURRENT SETTING", touch "END".

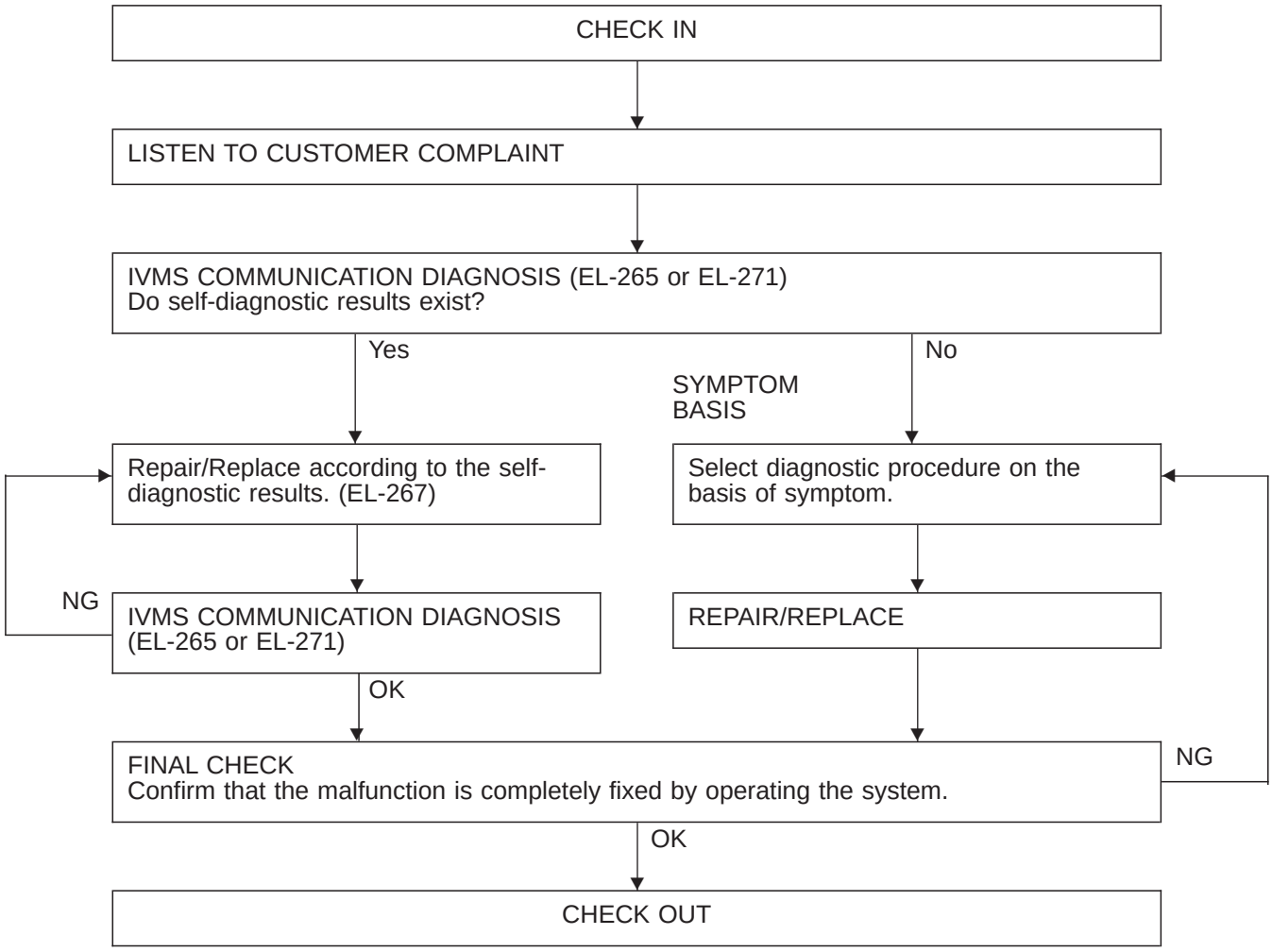
"CURRENT SETTING"	Wiper intermittent speed control
"ON"	Activated
"OFF"	Disactivated



11. Touch "END" after customizing is completed.

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A

DATA MONITOR	
MONITOR	
INT SW	OFF
	RECORD

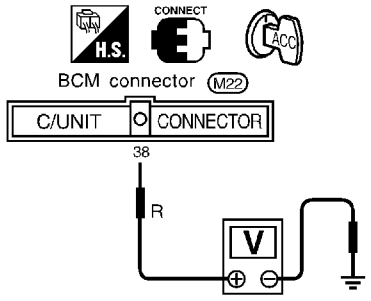
SEL503W

B

DATA MONITOR	
MONITOR	
WIPR AUTO STP	ACC
	RECORD

SEL504W

C



SEL648UB

CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL.

A CONSULT-II

See "INT SW" in DATA MONITOR mode.
When wiper switch is in INT position:
INT SW ON
When wiper switch is in OFF position:
INT SW OFF

OR

ON BOARD

Check wiper switch (INT) in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-165.

NG → Check the following.
- Front wiper switch
- Harness for open or short between BCM and wiper switch

Note: When "Data monitor" is operating, intermittent wiper do not operate.

OK ↓

CHECK WIPER AUTO STOP SIGNAL.

B CONSULT-II

See "WIP AUTO STOP" in DATA MONITOR mode, and turn wiper switch to LO or HI position.
When wiper switch is in INT or OFF:
WIP AUTO STOP ACC
When wiper switch is in LO or HI:
WIP AUTO STOP GND

OR

C TESTER

1. Turn ignition switch to ACC.
2. Turn wiper switch to LO or HI position.
3. Check voltage between BCM connector terminal ㊳ and ground.

Wiper condition	Voltage V
Moving	0
Stop	Approx. 12

Refer to wiring diagram in EL-164.

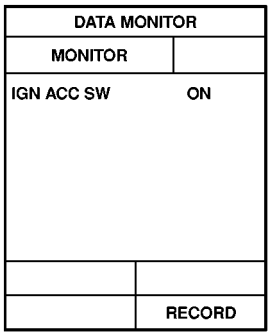
NG → Check the following.
- Wiper motor
- Wiper ground circuit
- Harness for open or short between BCM and wiper motor

OK ↓

Ⓐ

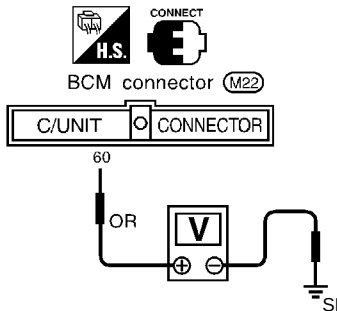
Trouble Diagnoses (Cont'd)

D



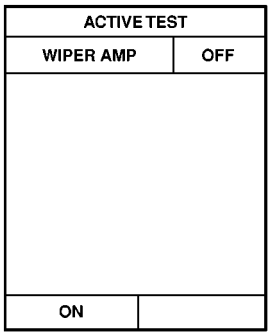
SEL505W

E



SEL682UA

F



SEL494W

Ⓐ

CHECK IGNITION SWITCH ACC SIGNAL.

D CONSULT-II

See "IGN ACC SW" in DATA MONITOR mode.
When ignition switch is ACC or ON
IGN ACC SW ON
When ignition switch is OFF
IGN ACC SW OFF

NG → Check the following.
- 7.5A fuse [No. 23, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OR

E TESTER

Check voltage between BCM terminal ⑥⓪ and ground.

Condition of ignition switch	Voltage V
ACC or ON	Approx. 12
OFF	0

Refer to wiring diagram in EL-164.

OK ↓

F

CHECK WIPER OPERATION.

CONSULT-II

See "WIPER AMP" in ACTIVE TEST mode.
Perform operation shown on display.
Wiper motor should operate.
Note:
If CONSULT-II is not available, skip this procedure and go to procedure 5.

OK → Replace BCM.

NG ↓

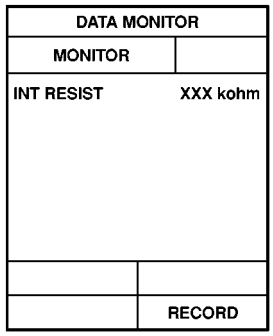
Go to procedure 5.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

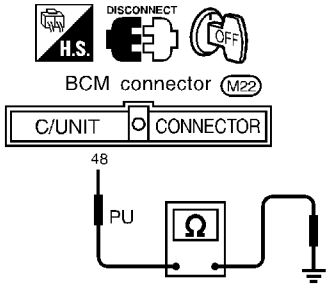
SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



SEL506W

B



SEL566UA

CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL.

A CONSULT-II

See "INT RESIST" in DATA MONITOR mode while turning intermittent wiper volume.

Position of wiper knob	Resistance kΩ
Short interval	Approx. 0
Long interval	Approx. 1

OR

B TESTER

Measure resistance between BCM terminal 48 and ground while turning intermittent wiper volume.

Position of wiper knob	Resistance kΩ
Short interval	Approx. 0
Long interval	Approx. 1

Refer to wiring diagram in EL-165.

OK → Replace BCM.

NG ↓

Check front wiper switch.

NG → Replace intermittent wiper volume.

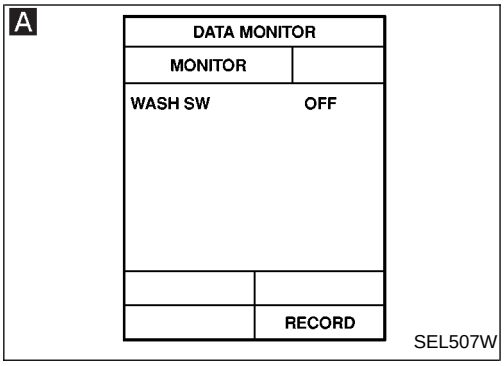
OK ↓

Check the following.
- Harness for open or short between BCM and intermittent wiper volume
- Intermittent wiper volume ground circuit

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Wiper and washer activate individually but not in combination.



CHECK WASHER SWITCH INPUT SIGNAL.

A CONSULT-II

See "WASH SW" in DATA MONITOR mode.
When washer switch is ON:
WASH SW ON
When washer switch is OFF:
WASH SW OFF

NG → Check the following.
- Front wiper switch
- Harness for open or short between BCM and wiper switch

OR

ON BOARD

Check wiper switch (WASH) in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273).

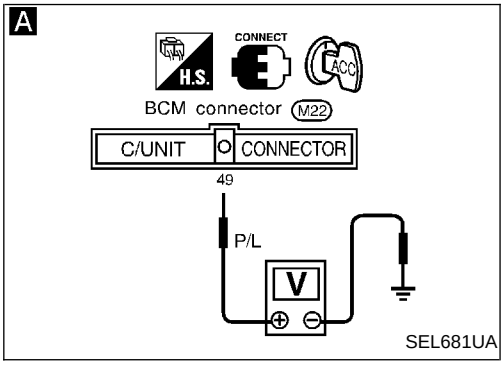
Refer to wiring diagram in EL-165.

OK ↓

Replace BCM.

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Intermittent wiper operates, but there is no change in intermittent time between when vehicle is stopped and moving.



Does speedometer operate normally?

No → Check vehicle speed sensor circuit. Refer to EL-129.

Yes ↓

A

CHECK VEHICLE SPEED SENSOR PULL UP VOLTAGE.
1. Turn ignition switch to ACC.
2. Check voltage between BCM terminal ㊾ and ground.
   Approx. 5V should exist.

Refer to wiring diagram in EL-166.

NG → Replace BCM.

OK ↓

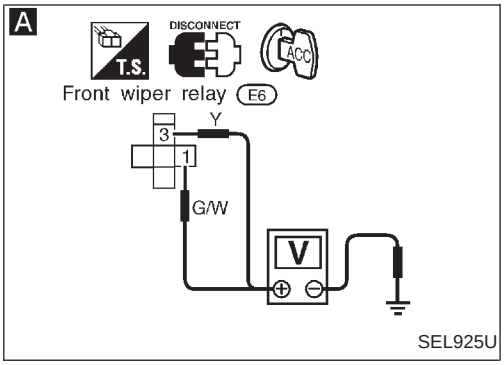
Check harness for open or short between BCM terminal ㊾ and combination meter terminal ⑯.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

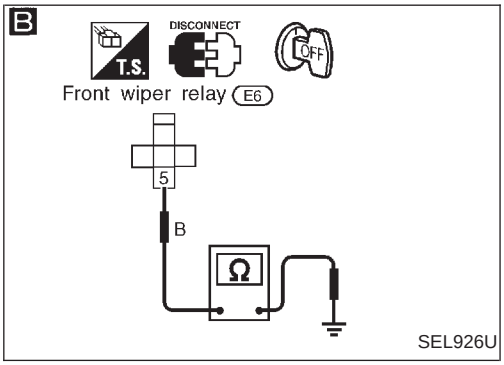
SYMPTOM: Wiper and washer activate individually but intermittent wiper and washer combination does not operate.

A



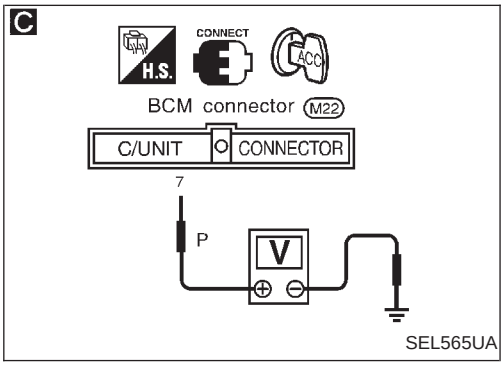
SEL925U

B



SEL926U

C



SEL565UA

A

CHECK POWER SUPPLY CIRCUIT FOR FRONT WIPER RELAY.
1. Disconnect front wiper relay.
2. Turn wiper switch to OFF or INT position.
3. Turn ignition switch to ACC position.
4. Check voltage between front wiper relay connector terminal ① or ③ and ground.
   Battery voltage should exist.

Refer to wiring diagram in EL-164.

NG → Check the following.
- 20A fuse [No. 11, located in the fuse block (J/B)]
- Harness for open or short

OK ↓

B

CHECK GROUND CIRCUIT FOR FRONT WIPER RELAY.
Check continuity between front wiper connector terminal ⑤ and ground.
Continuity should exist.

NG → Repair harness.

OK ↓

Check front wiper relay.

NG → Replace relay.

OK ↓

C

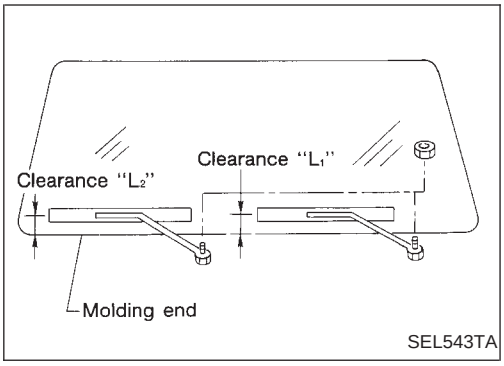
CHECK BCM OUTPUT SIGNAL.
1. Connect front wiper relay.
2. Turn ignition switch to ACC.
3. Check voltage between BCM connector terminal ⑦ and ground.

Wiper switch condition	Voltage V
Wash	0 (for 0.7 sec.)
OFF	Approx. 12

OK → Check harness for open or short between front wiper relay and BCM.

NG ↓

Replace BCM.

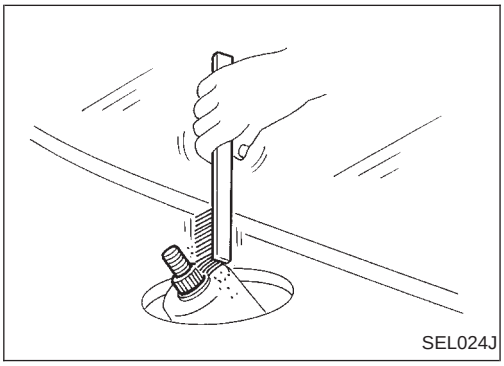


Removal and Installation

WIPER ARMS

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L_1" & "L_2" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L_1" & "L_2".
   Clearance "L_1": 20 - 34 mm (0.79 - 1.34 in)
   Clearance "L_2": 23 - 37 mm (0.91 - 1.46 in)

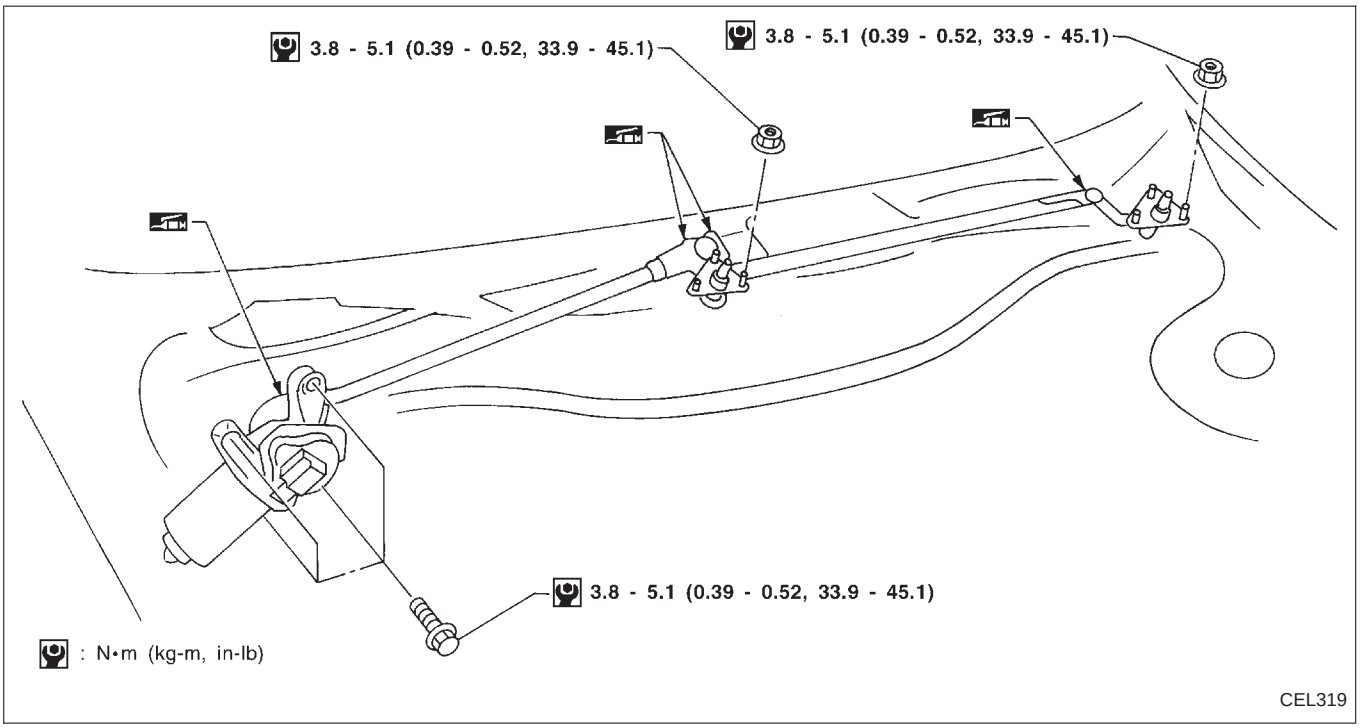
- Tighten wiper arm nuts to specified torque.
  Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)



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

Removal and Installation (Cont'd)

WIPER LINKAGE



Removal

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

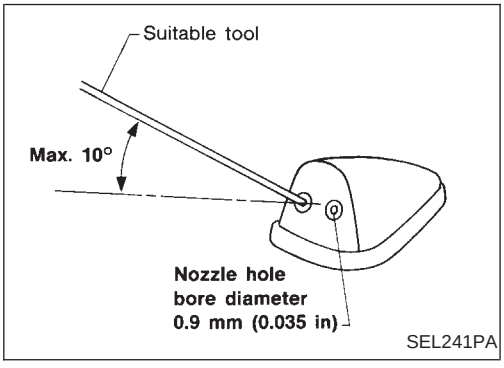
- Grease ball joint portion before installation.

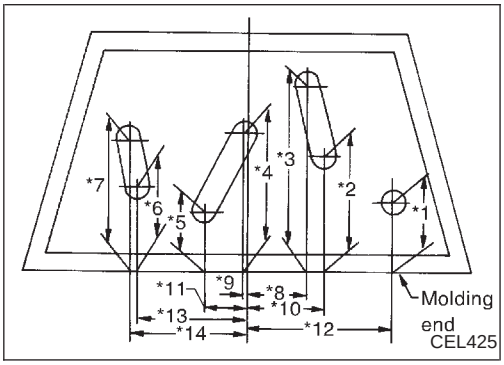
1. Installation is the reverse order of removal.

Washer Nozzle Adjustment

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

  Adjustable range: ±10°

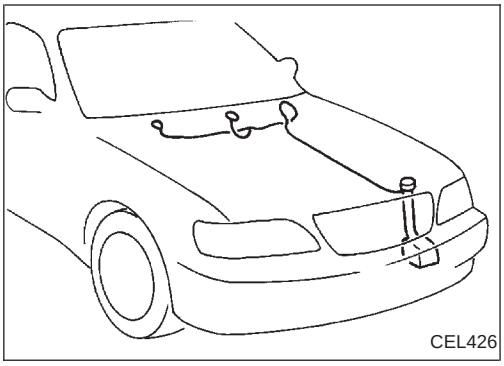




Unit: mm (in)

*1	240 (9.45)	*8	136 (5.35)
*2	337 (13.27)	*9	8 (0.31)
*3	606 (23.86)	*10	216 (8.50)
*4	422 (16.61)	*11	149 (5.87)
*5	198 (7.80)	*12	540 (21.26)
*6	286 (11.26)	*13	376 (14.80)
*7	436 (17.17)	*14	385 (15.16)

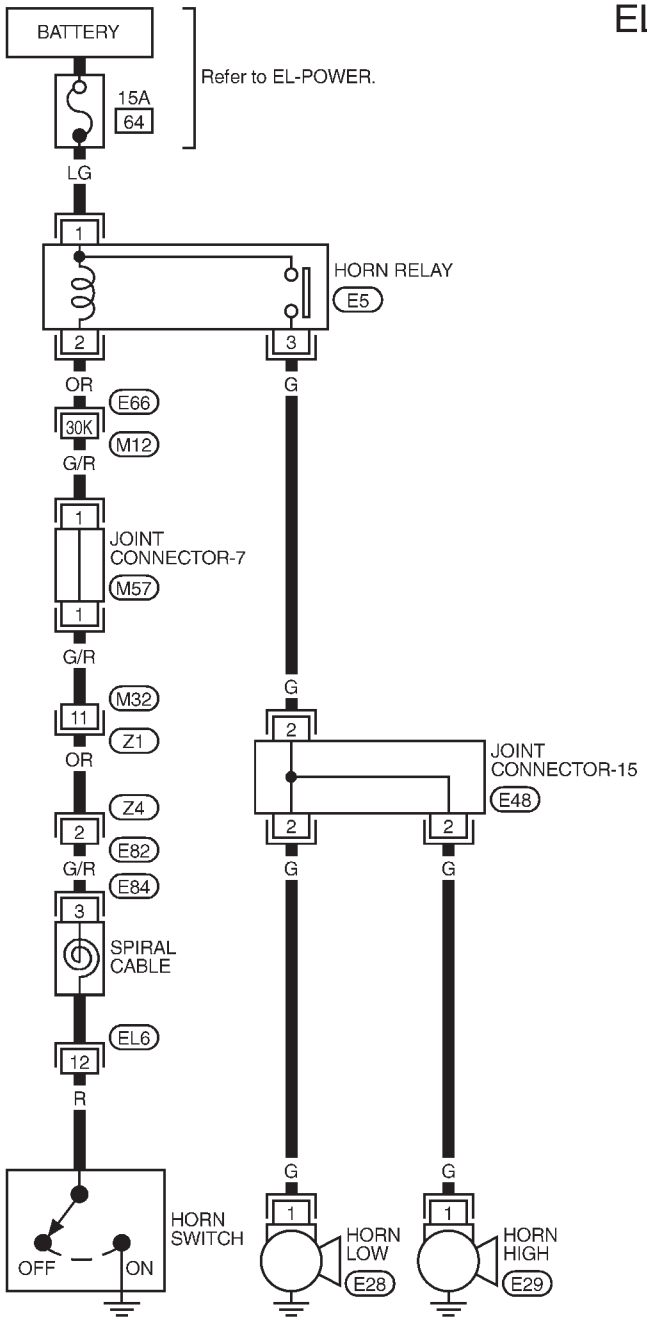
*1: The diameter of a circle is less than 80 mm (3.15 in).
*2 - 7: The radius of the arc across the end of these areas is less than 40 mm (1.57 in).

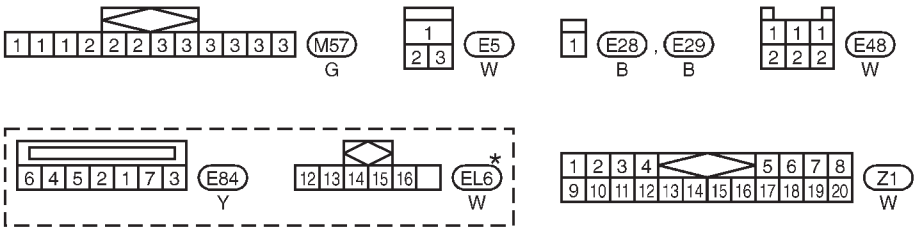


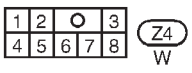
Washer Tube Layout

Wiring Diagram — HORN —

EL-HORN-01





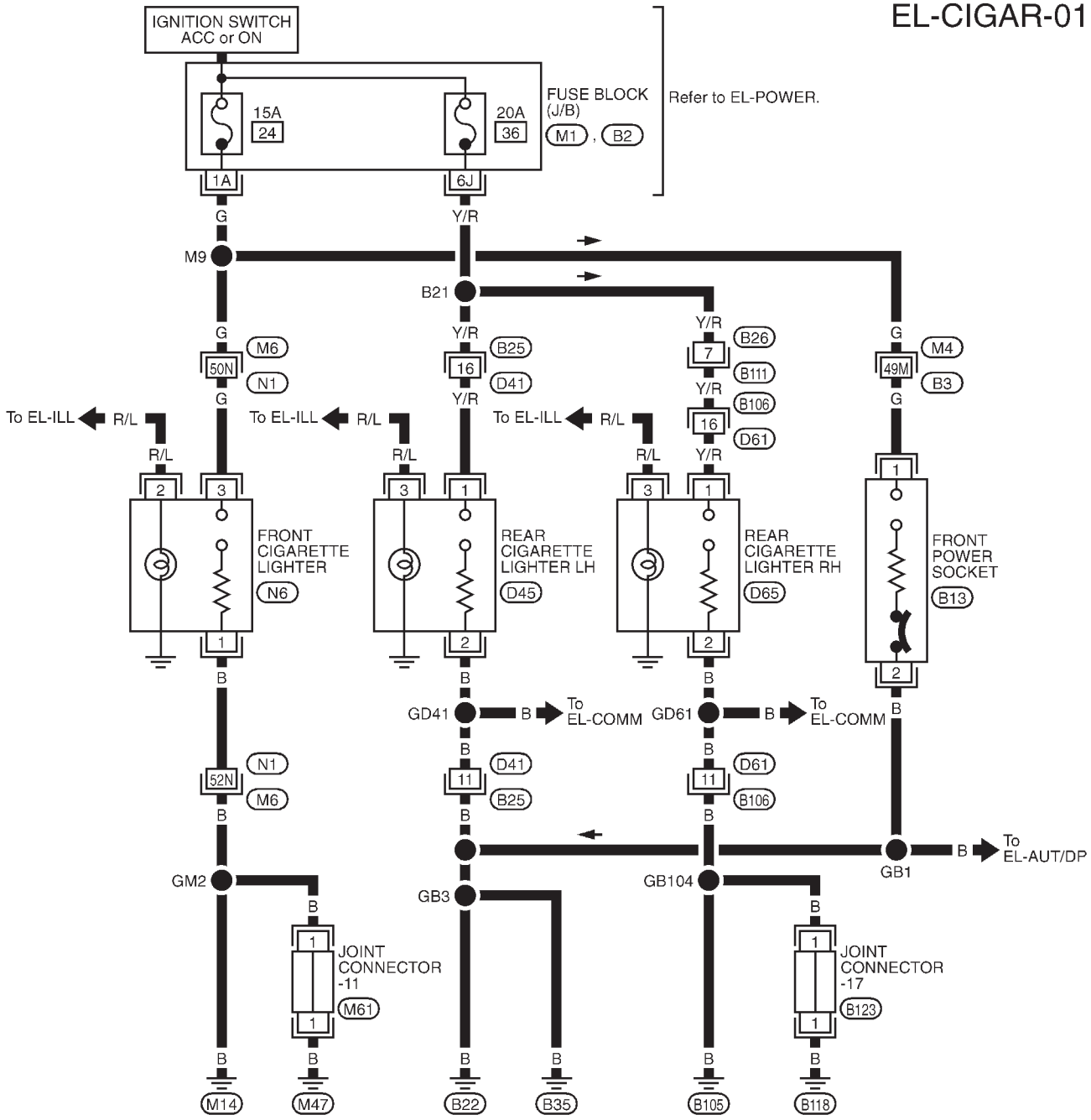


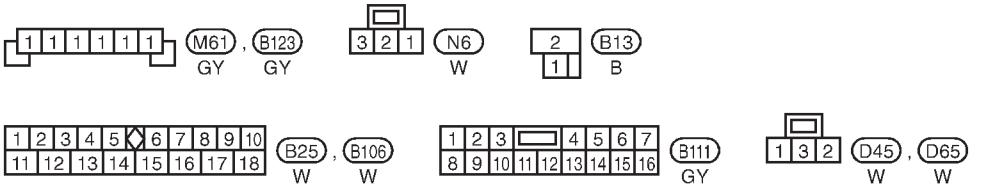
Refer to last page (Foldout page).
E66 , M12

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

TEL800A

Wiring Diagram — CIGAR —





Refer to last page (Foldout page).

M4, B3

M6, N1

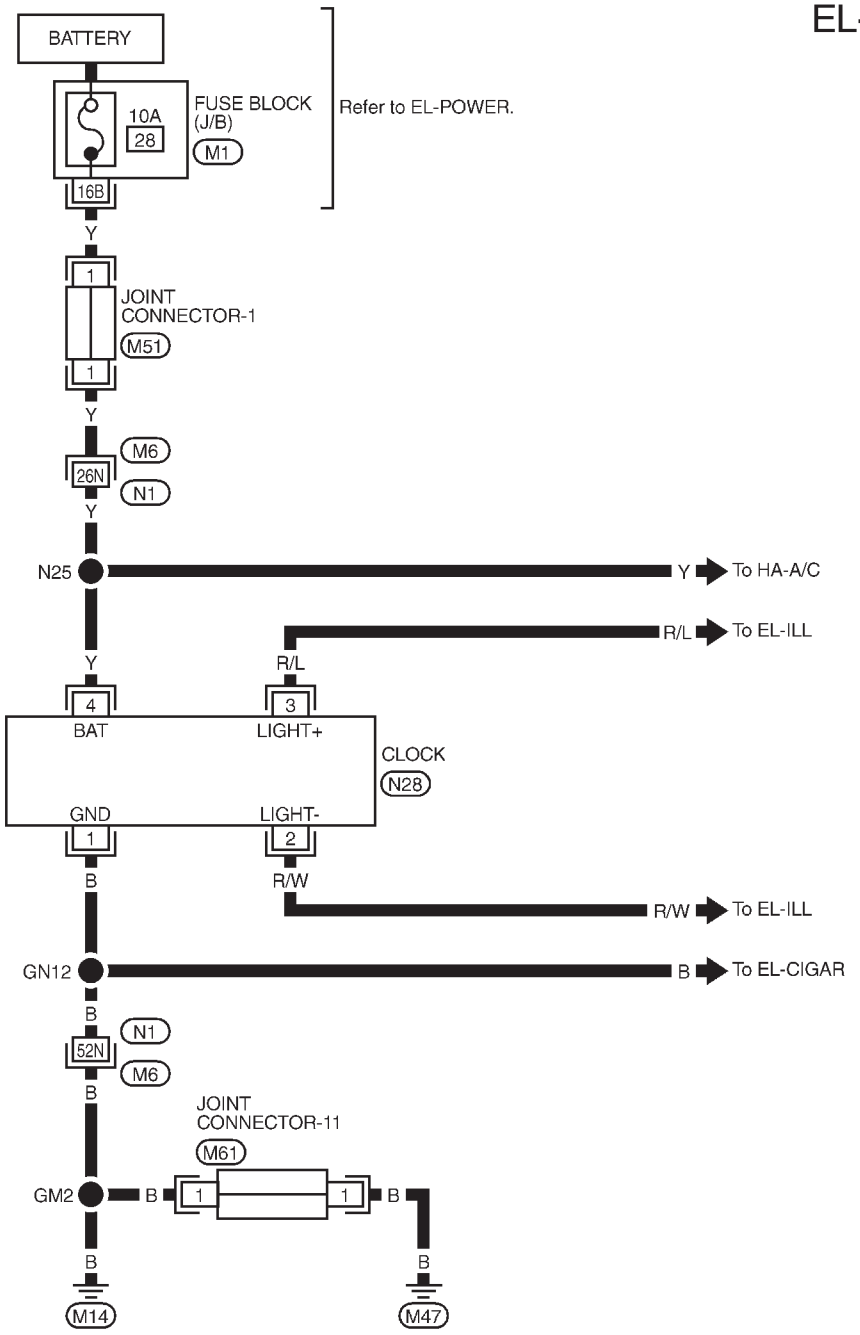
M1

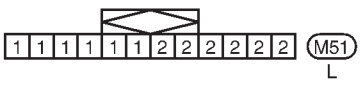
B2

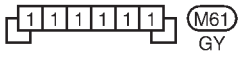
TEL240A

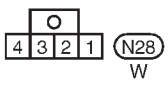
Wiring Diagram — CLOCK —

EL-CLOCK-01





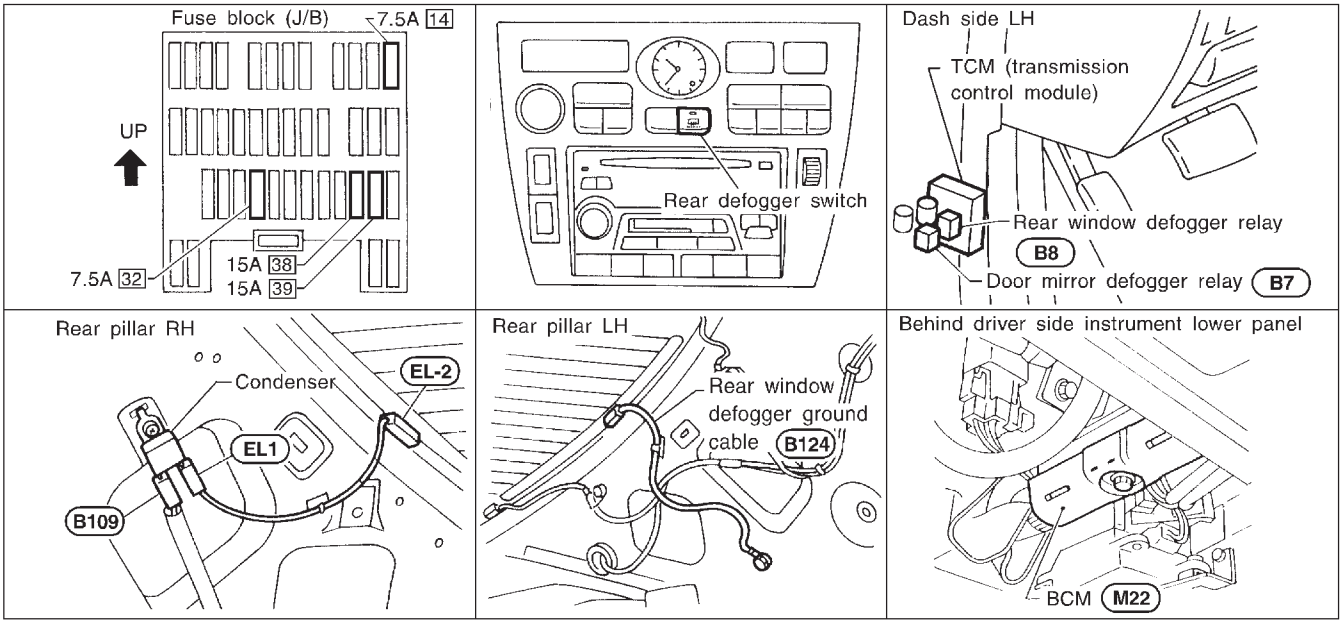




Refer to last page (Foldout page).
M6 , N1
M1

TEL996A

Component Parts and Harness Connector Location



SEL811V

System Description

FUNCTION

- The following time control function is controlled by BCM.

Item	Details of control
Rear window defogger timer	Turn off rear window defogger about 15 minutes after the rear window defogger switch is turned “ON”.

REAR WINDOW DEFOGGER TIMER

The rear window defogger system is controlled by the BCM.
Power is supplied at all times

- through 15A fuse [No. 38, located in the fuse block (J/B)]
- to the rear window defogger relay terminal ⑥ , and
- through 15A fuse [No. 39, located in the fuse block (J/B)]
- to the rear window defogger relay terminal ③ .

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

- to the rear window defogger relay terminal ① and,
- to BCM terminal ㊽
- through 7.5A fuse [No. 32, located in the fuse block (J/B)].

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

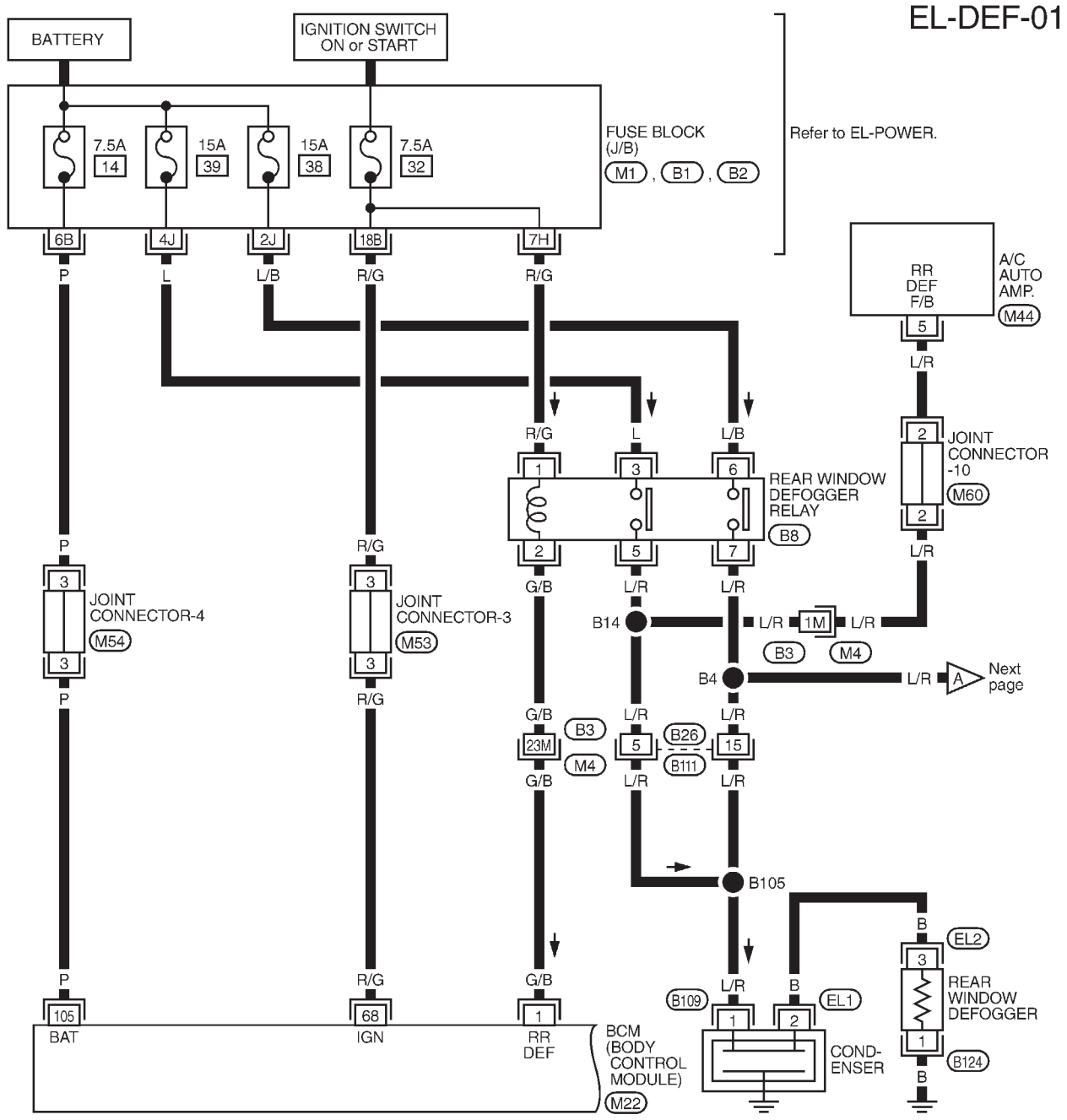
- through terminal ② of the rear window defogger switch (A/C control unit)
- to BCM terminal ⑩ .

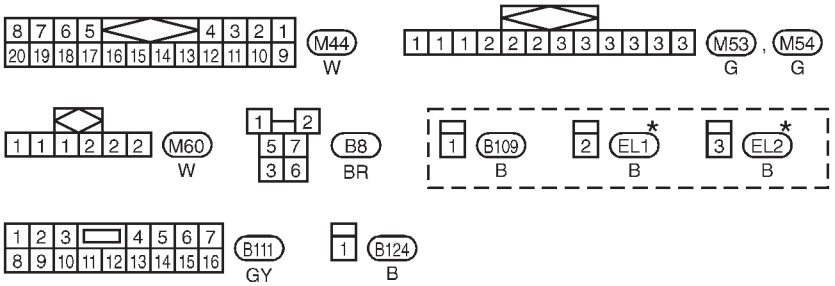
Terminal ① of the BCM then supplies ground to the rear window defogger relay terminal ② .
With power and ground supplied, the rear window defogger relay is energized to operate rear window defogger for about 15 minutes.
When the system is activated, the rear window defogger indicator in the rear window defogger switch illuminates.
Power is supplied

- from rear window defogger relay terminal ⑤
- to A/C auto amp. terminal ⑤ .

Then A/C auto amp. sends an indicator signal to A/C control unit combined with rear window defogger switch.

Wiring Diagram — DEF —



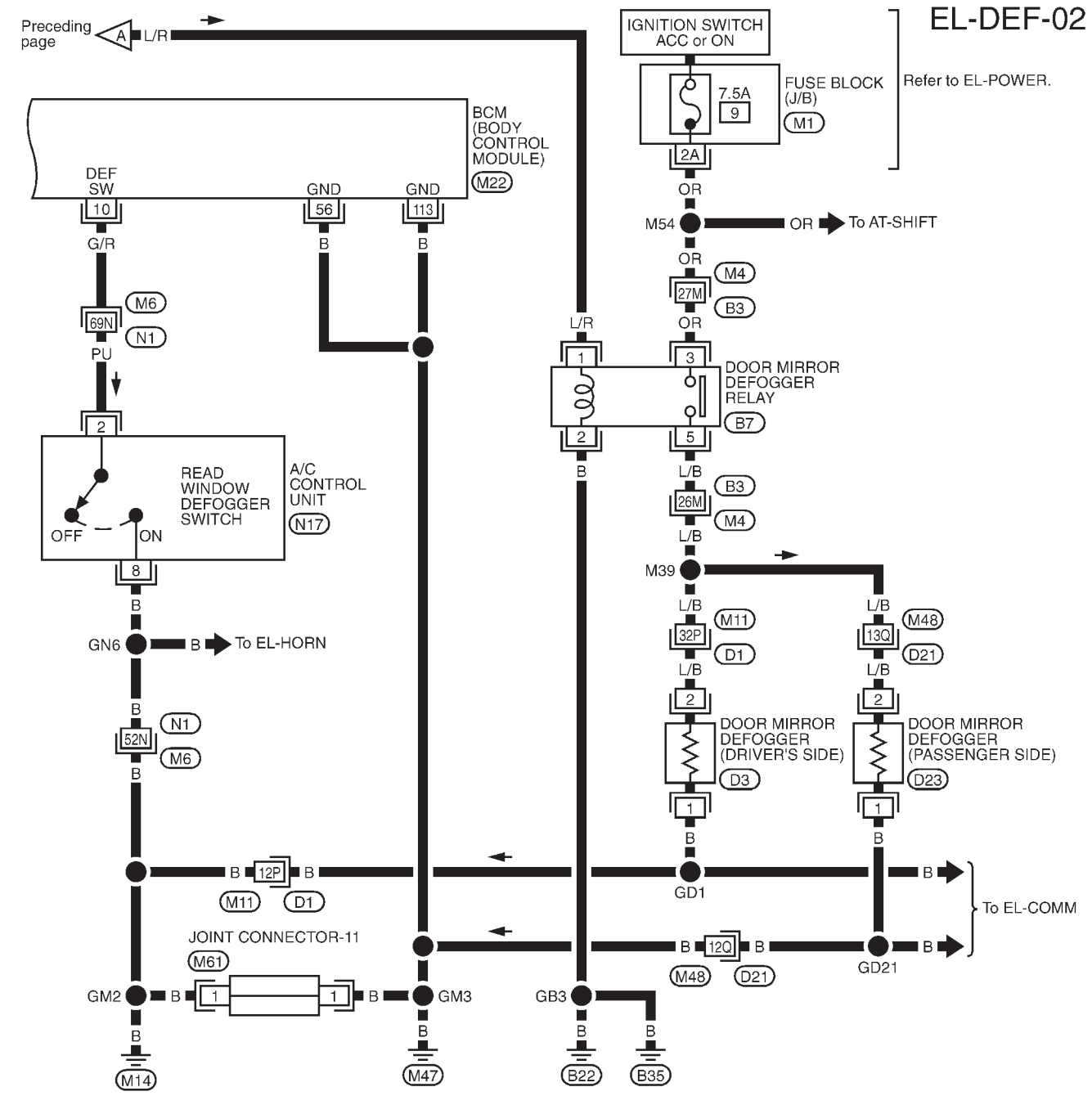


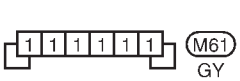
∗: This connector is not shown in "HARNESS LAYOUT", EL section.

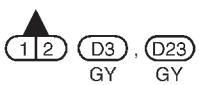
Refer to last page (Foldout page).
M4, B3
M1
M22
B1
B2

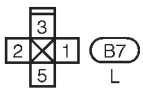
TEL206A

Wiring Diagram — DEF — (Cont'd)





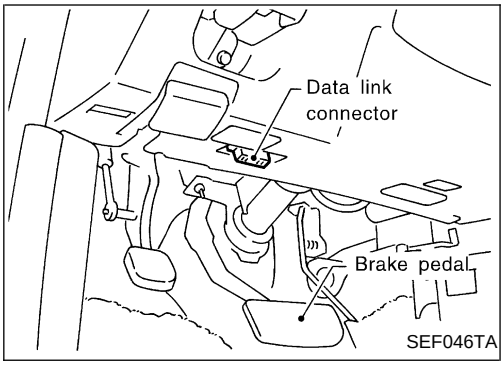




Refer to last page (Foldout page).

- M4, B3
- M6, N1
- M11, D1
- M48, D21
- M1
- M22

TEL394B

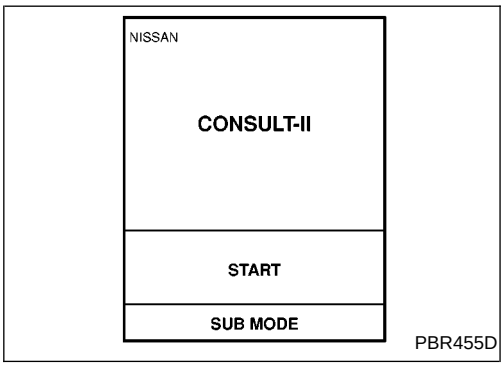


SEF046TA

CONSULT-II

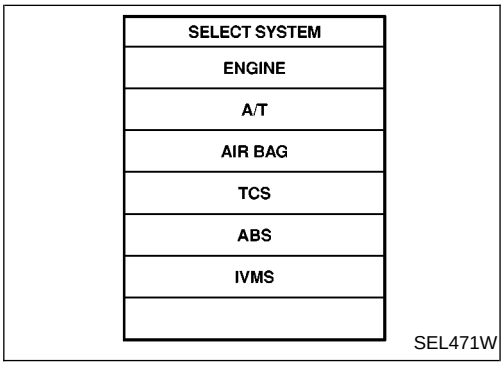
CONSULT-II INSPECTION PROCEDURE

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



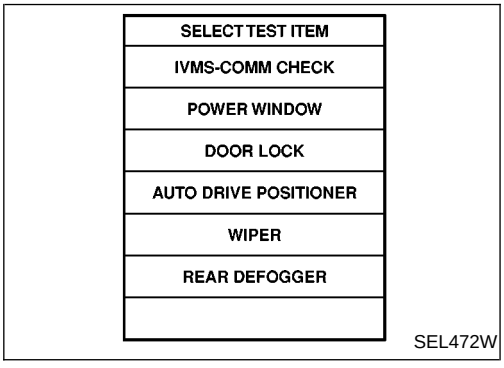
PBR455D

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



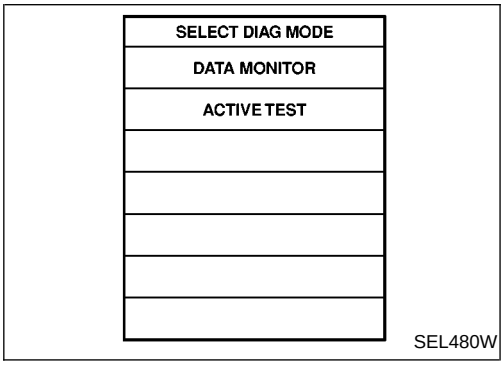
SEL471W

5. Touch “IVMS”.



SEL472W

6. Touch “REAR DEFOGGER”.

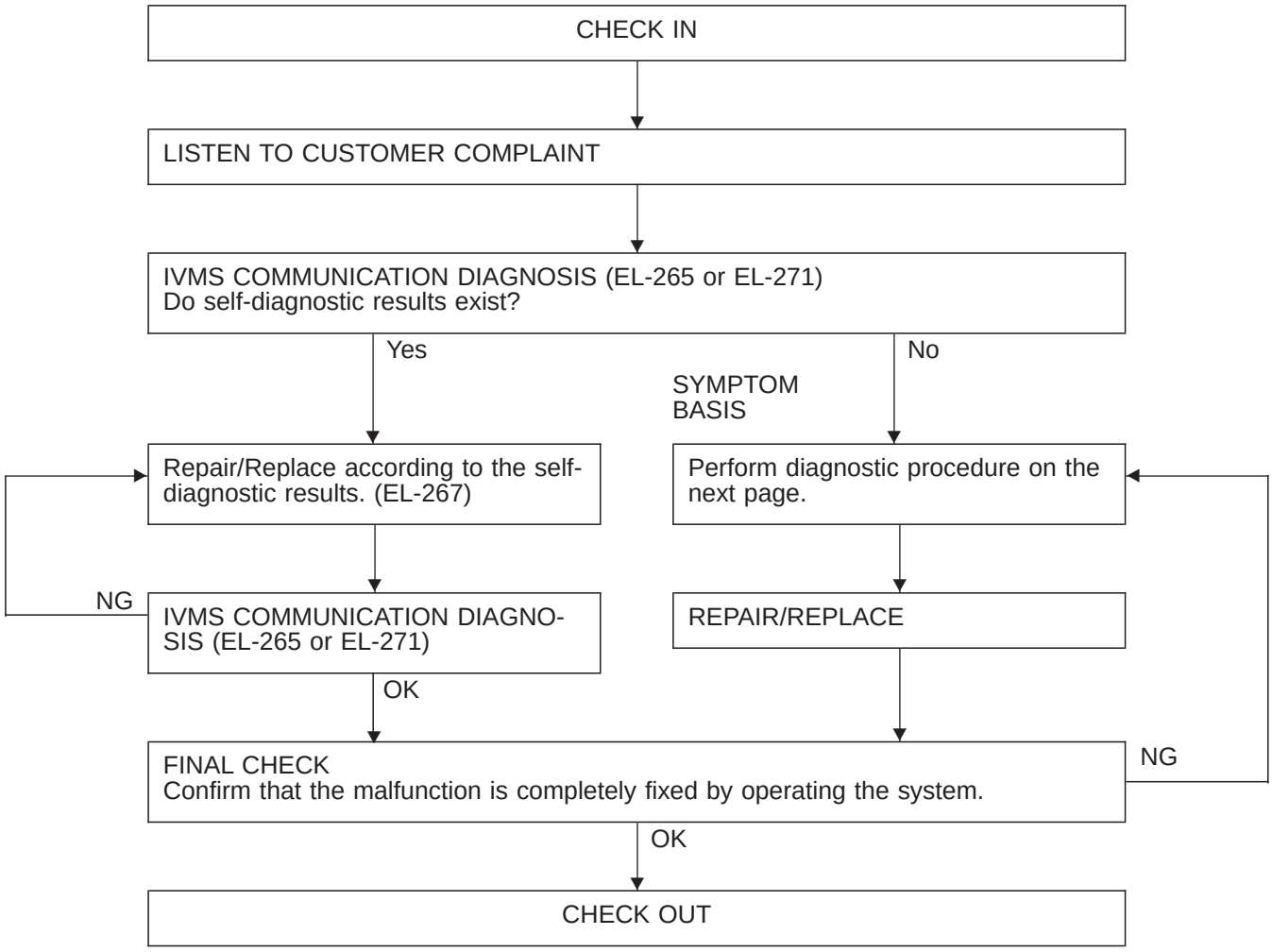


SEL480W

- DATA MONITOR and ACTIVE TEST are available for the rear window defogger.

Trouble Diagnoses

WORK FLOW



NOTICE:

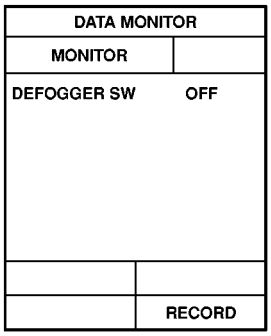
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

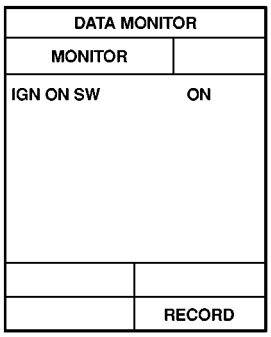
SYMPTOM: Rear window defogger does not activate or does not turn off after activating.

A



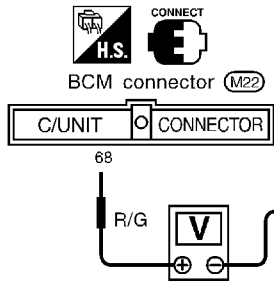
SEL508W

B



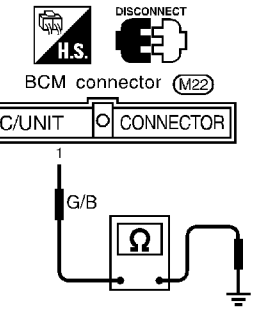
SEL499W

C



SEL556UA

D



SEL655UA

CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL.

A CONSULT-II

See "DEFOGGER SW" in DATA MONITOR mode.
When defogger switch is pushed (turned ON):
DEFOGGER SW ON
When defogger switch is pushed again (turned OFF):
DEFOGGER SW OFF

OR

ON BOARD

Check rear window defogger switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

NG → Check harness for open or short between BCM and rear window defogger switch.
- OK → Replace rear window defogger switch (combined with A/C control unit).
- NG → Repair harness.

OK ↓

CHECK IGNITION SWITCH ON SIGNAL.

B CONSULT-II

See "IGN ON SW" in DATA MONITOR mode.
When ignition switch is ON:
IGN ON SW ON
When ignition switch is ACC or OFF:
IGN ON SW OFF

OR

C TESTER

Check voltage between BCM terminal ⑱ and ground.

Condition of ignition switch	Voltage V
ON	Approx. 12
ACC or OFF	0

NG → Check the following.
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OK ↓

D

CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL.

1. Disconnect BCM connector.
2. Check voltage between BCM terminal ① and ground.

Condition of ignition switch	Voltage V
ON	Approx. 12
OFF	0

NG → Check rear window defogger relay.
- OK → Check the following.
  - 7.5A fuse [No. 32, located in the fuse block (J/B)]
  - Harness for open or short between fuse and rear window defogger relay
  - Harness for open or short between rear window defogger relay and BCM
- NG → Replace relay.

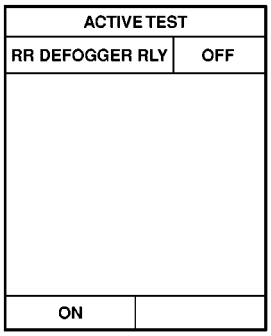
OK ↓

Connect BCM connector.

Ⓐ

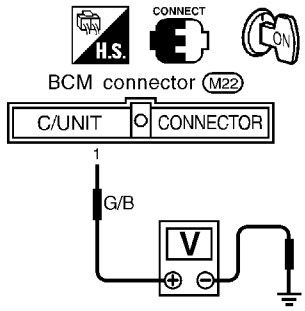
Trouble Diagnoses (Cont'd)

E



SEL489W

F



SEL924U

Ⓐ

REAR WINDOW DEFOGGER ACTIVE TEST.

E CONSULT-II

Perform "RR DEFOGGER RLY" in ACTIVE TEST mode. Check rear defogger relay operation.

NG → Replace BCM.

OR

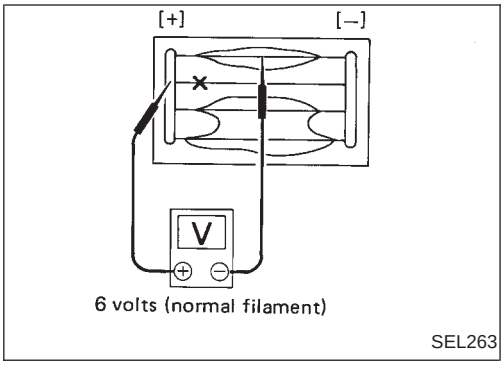
F TESTER

1. Turn ignition switch to ON.
2. Check voltage between BCM terminal ① and ground.

Condition of rear defogger switch	Voltage V
ON	0
OFF	Approx. 12

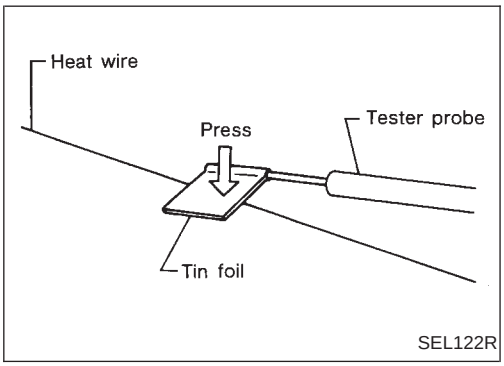
OK

Check rear window defogger circuit.

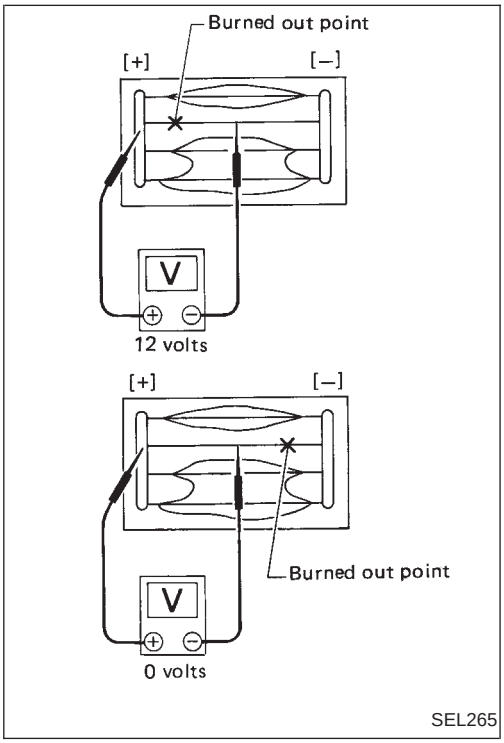


Filament Check

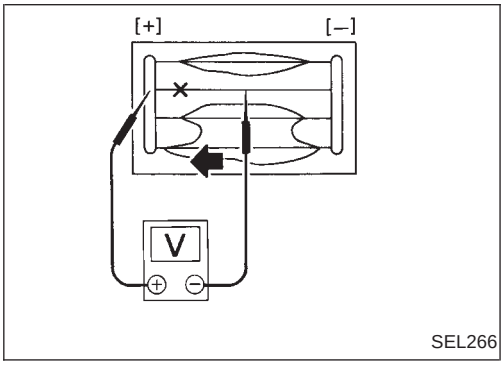
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



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



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

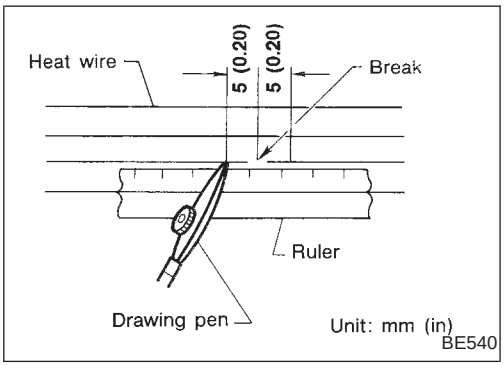


3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

Filament Repair

REPAIR EQUIPMENT

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



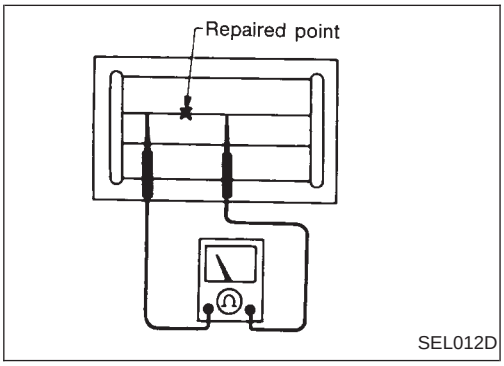
REPAIRING PROCEDURE

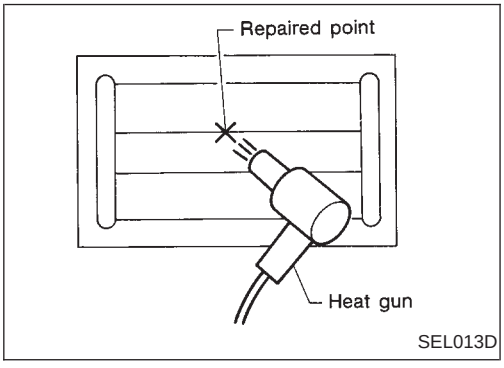
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

Shake silver composition container before use.

3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.





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

System Description

BOSE SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times
- through 15A fuse (No. 58, located in the fuse, fusible link and relay box)
- to radio terminal ⑥.
- to BOSE speaker amp. terminal ㉗ and
- to audio amp. relay terminal ③.
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to CD auto changer terminal ㊷.

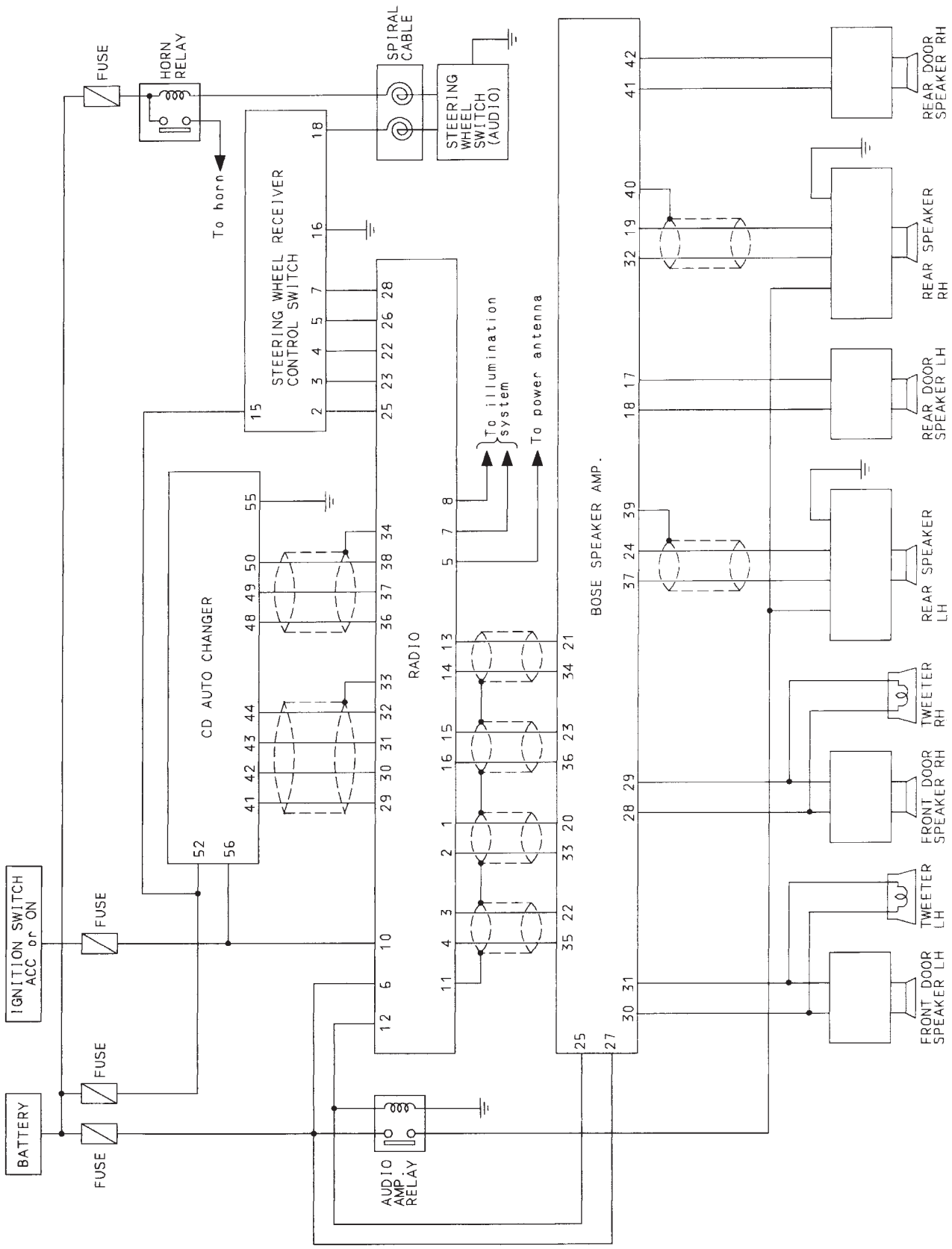
With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to radio terminal ⑩ and
- to CD auto changer terminal ㊻.

Ground is supplied through the case of the radio and BOSE speaker amp.
Ground is also supplied to CD auto changer terminal ㊺ through body grounds B105 and B118.
When the radio is turned to the ON position, power is supplied
- through radio terminal ⑫
- to BOSE speaker amp. terminal ㉕, and
- to audio amp. relay terminal ①.

The audio amp. relay is energized, power is supplied
- through audio amp. relay terminal ⑤
- to LH and RH rear speaker terminal ③.

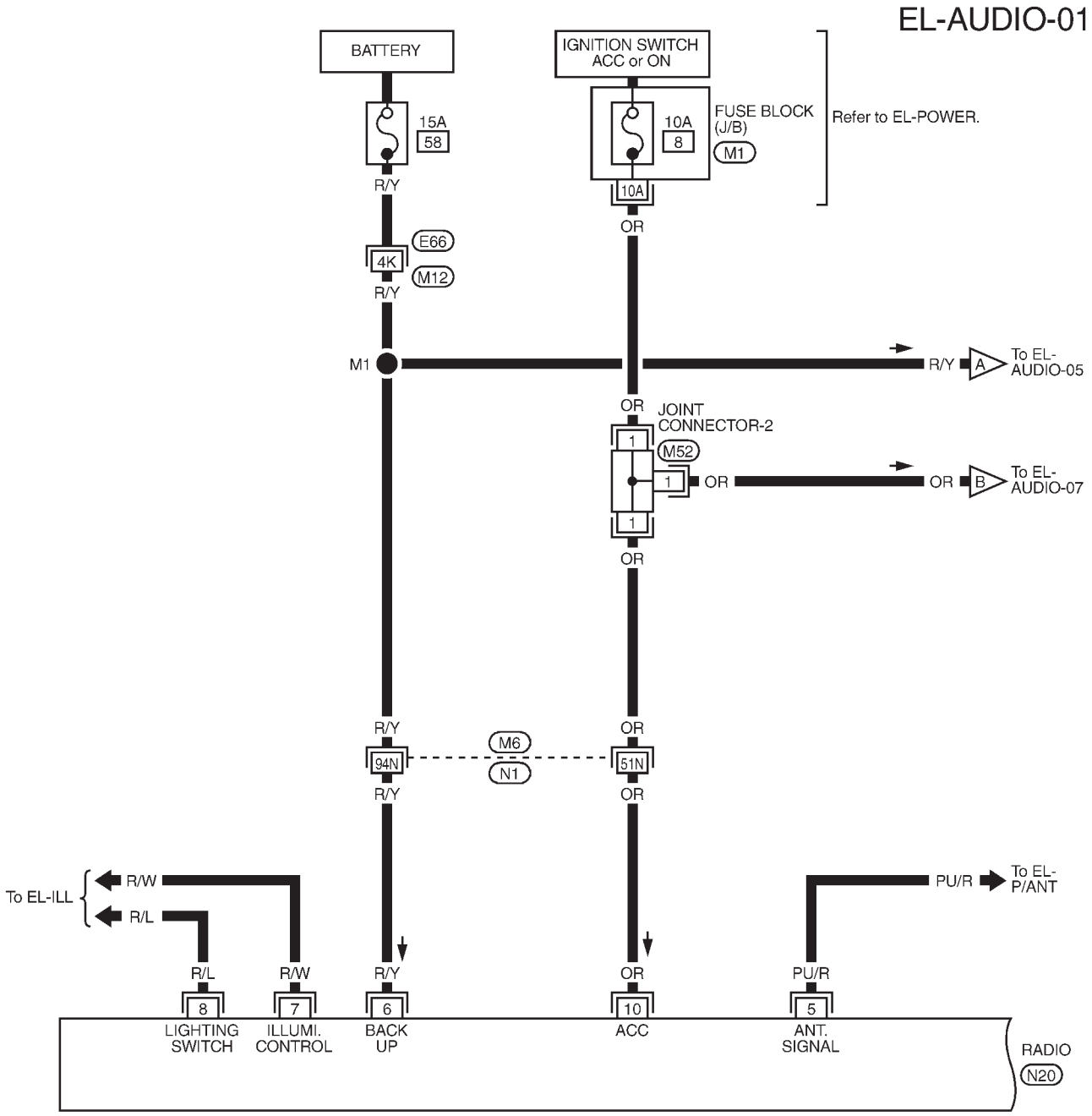
When the radio is turned to the ON position, audio signals are supplied
- through terminals ⑬, ⑭, ⑮, ⑯, ①, ②, ③ and ④ of radio
- to terminals ㉑, ㉞, ㉓, ㊱, ⑳, ㉝, ㉒ and ㉟ of the BOSE speaker amp.
- through terminals ㉚, ㉛, ㉘, ㉙, ㊲, ㉔, ⑱, ⑰, ㉜, ⑲, ㊶ and ㊷ of the BOSE speaker amp.
- to tweeters and the front and rear door speakers and rear speakers terminals ① and ②.

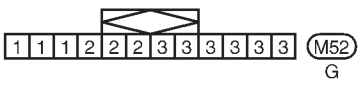
Schematic

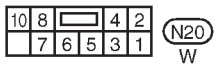


TEL997A

Wiring Diagram — AUDIO —







Refer to last page (Foldout page).

M6, N1

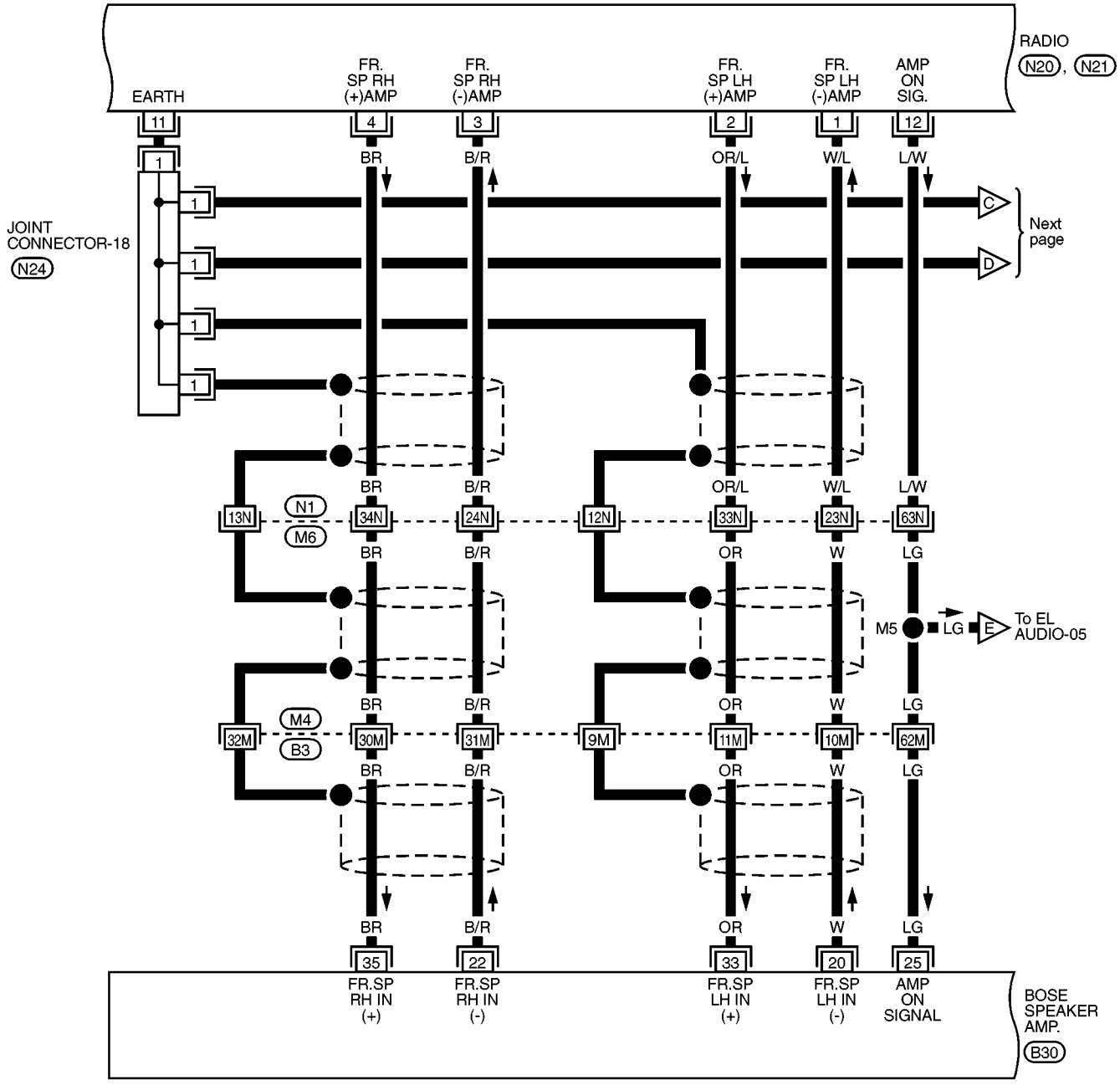
M12, E66

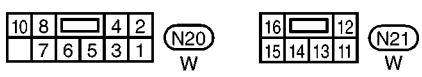
M1

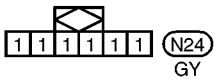
TEL998A

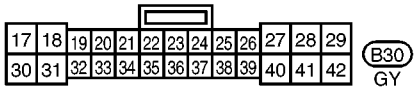
Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-02









Refer to last page (Foldout page).

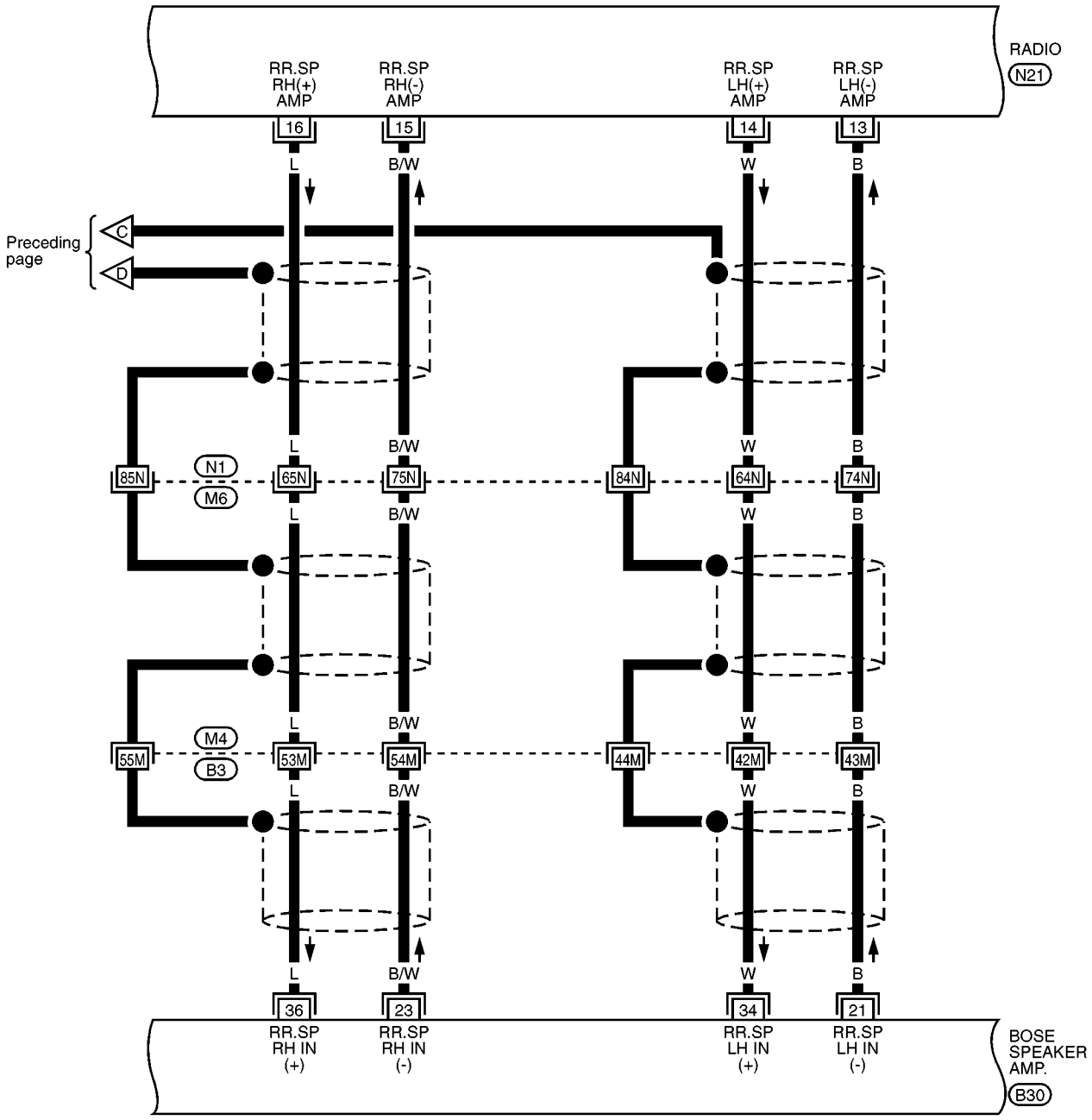
M4, B3

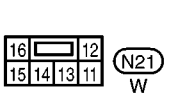
M6, N1

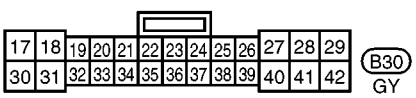
TEL650B

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03







Refer to last page (Foldout page).

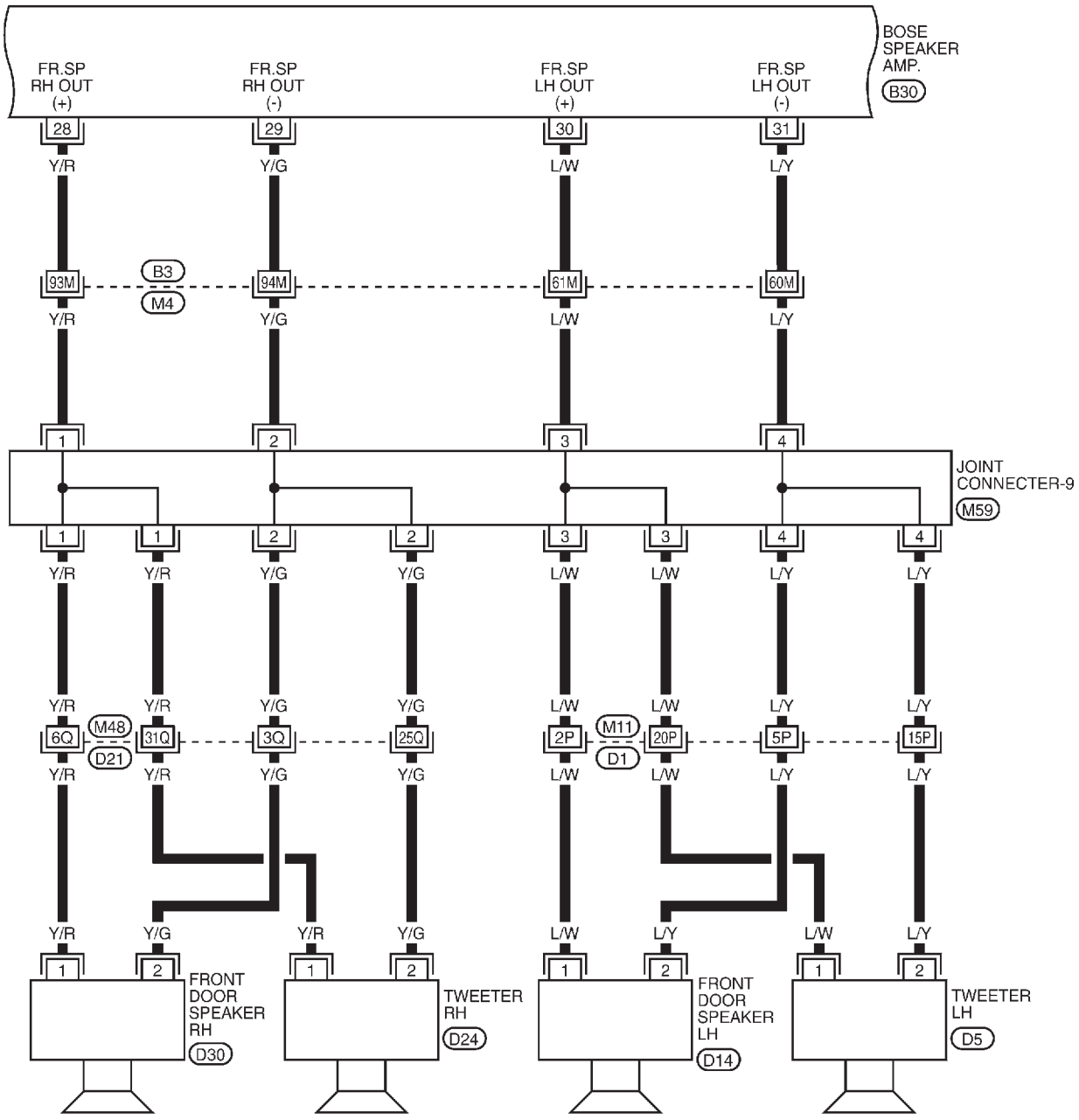
M4 , B3

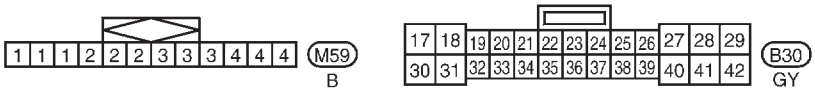
M6 , N1

TEL651B

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04





D5 , D24 BR BR

D14 , D30 BR BR

Refer to last page (Foldout page).

M4 , B3

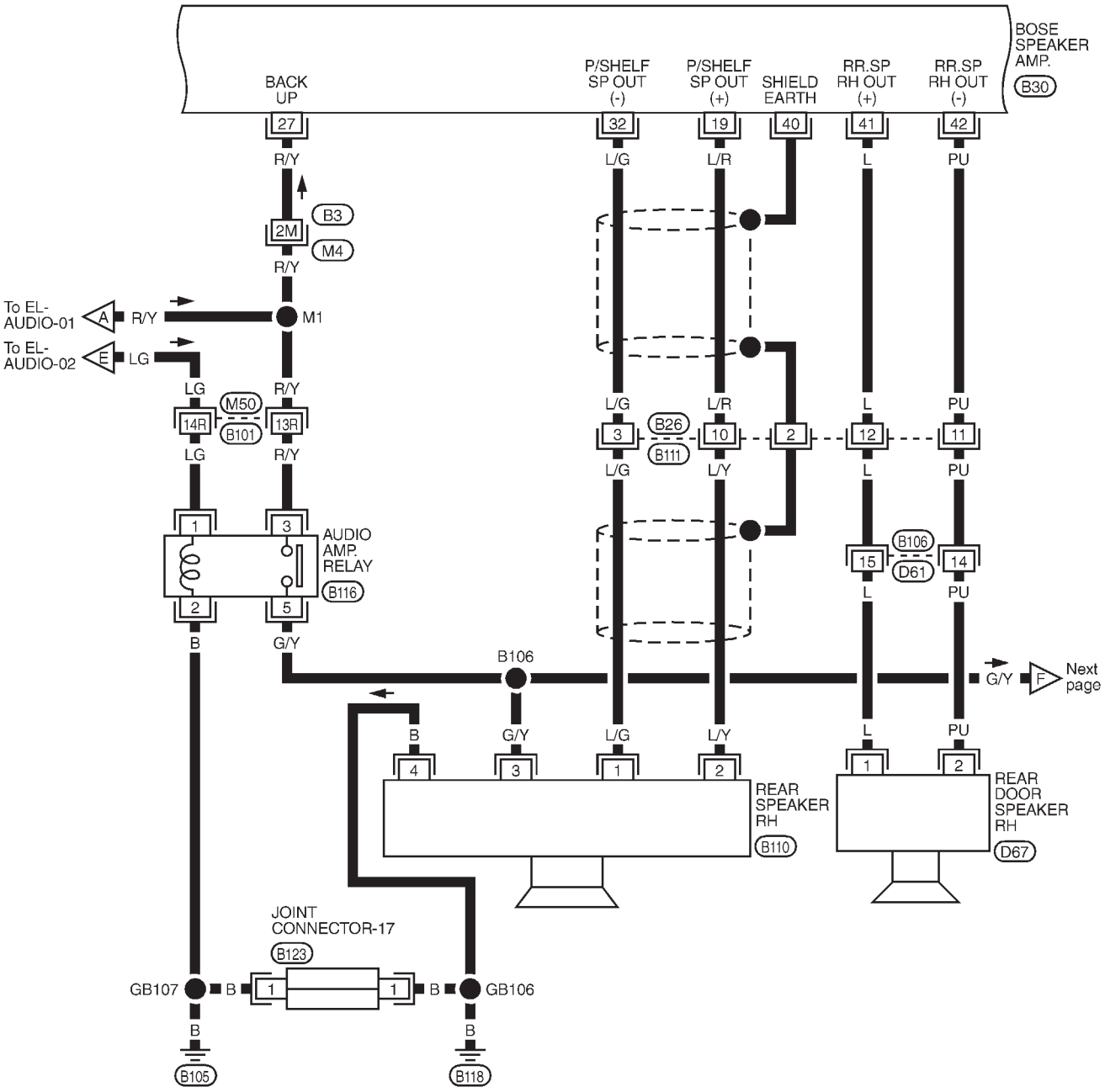
M11 , D1

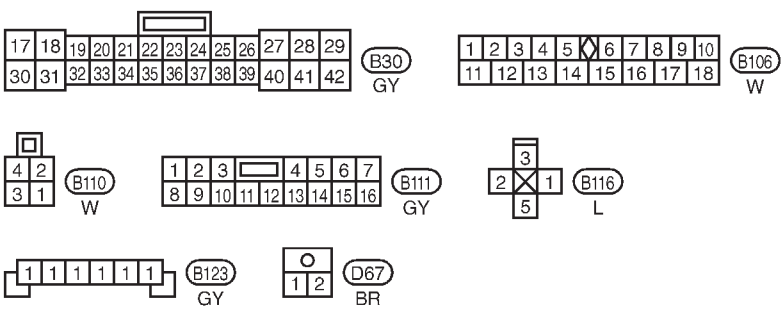
M48 , D21

TEL791

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-05





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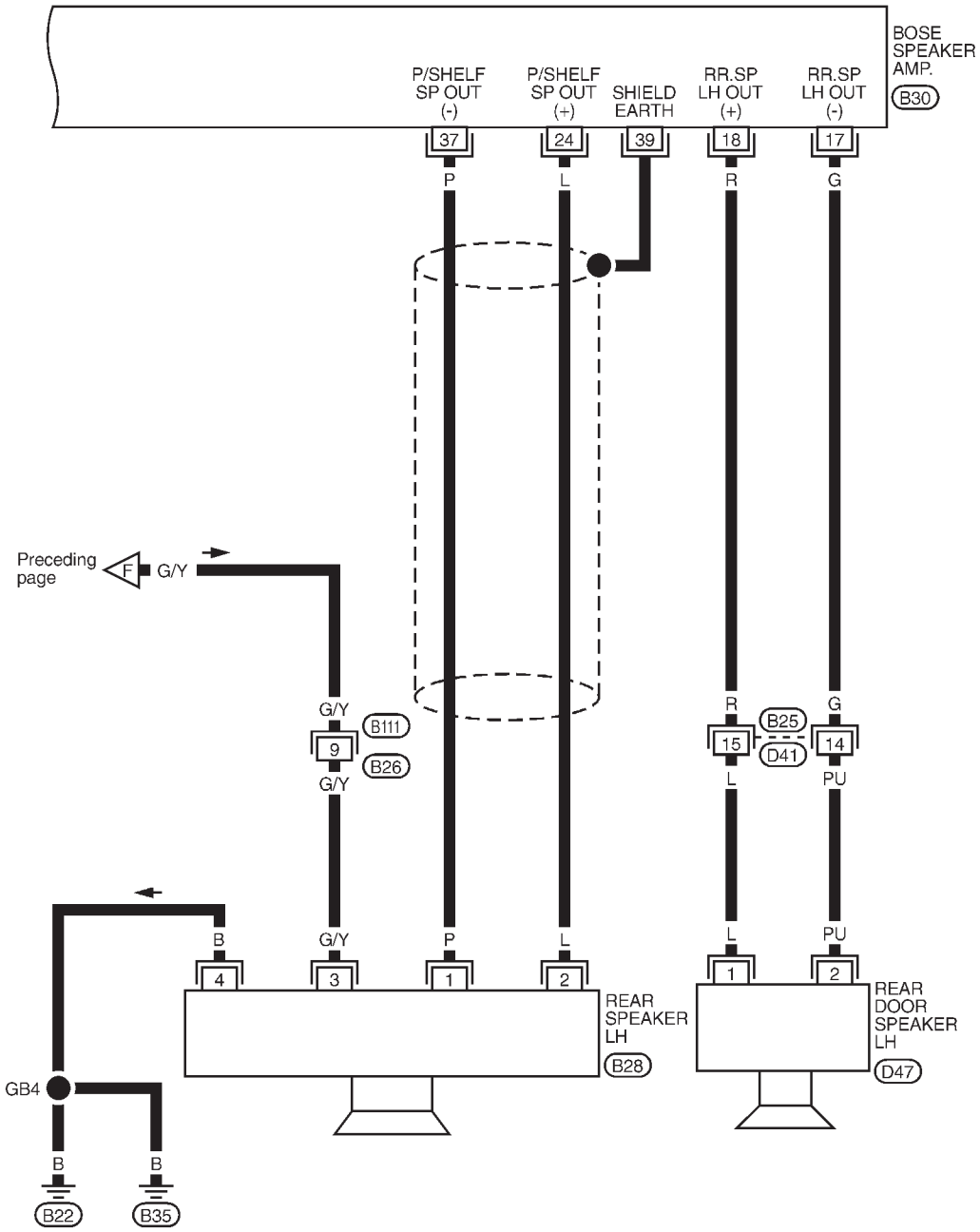
M4 , B3

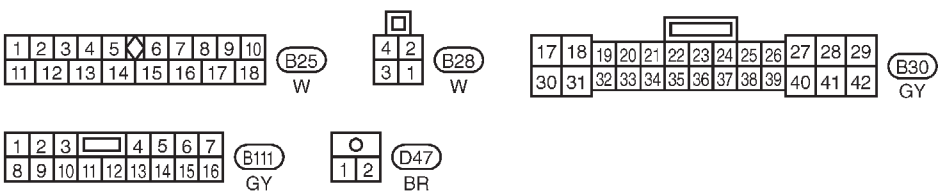
M50 , B101

TEL208A

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-06

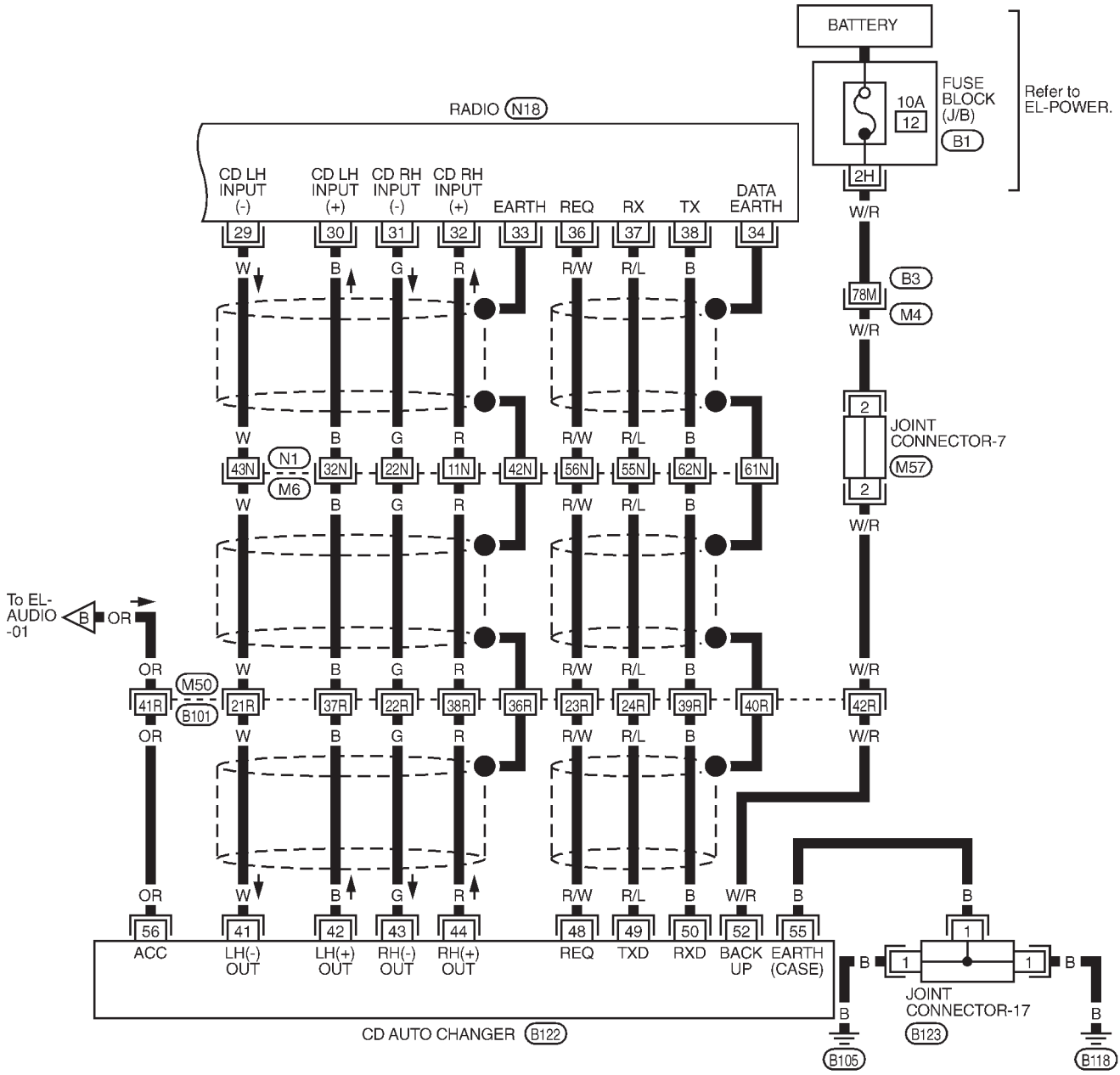


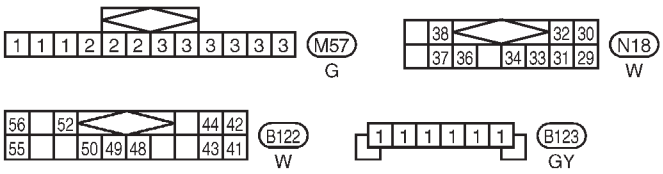


TEL209A

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-07





Refer to last page (Foldout page).

M4 , B3
M6 , N1
M50 , B101
B1

TEL794

Trouble Diagnoses

RADIO (BOSE SYSTEM)

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor radio case ground 3. Radio	1. Check 10A fuse [No. 8 , located in the fuse block (J/B)]. Turn ignition switch ACC or 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 controls are operational, but no sound is heard from any speaker.	1. AMP ON signal 2. Audio amp. relay 3. Audio amp. relay ground 4. Poor speaker amp. case ground 5. Speaker amp. output 6. Speaker amp.	1. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present from radio terminal ⑫ to BOSE speaker amp. terminal ㉕ and audio amp. relay terminal ①. 2. Check audio amp. relay. 3. Check audio amp. relay ground (Terminal ②). 4. Check speaker amp. case ground. 5. Check speaker amp. output voltage. 6. Remove speaker amp. for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 15A fuse 2. Radio	1. Check 15A fuse [No. 58, located in the fuse, fusible link and relay box] and verify that battery positive voltage is present at terminal ⑥ of radio. 2. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. Speaker ground 3. Power supply 4. Radio/speaker amp. output 5. Speaker circuit 6. Radio/speaker amp. 7. Speaker	1. Check speaker. 2. Check speaker ground (Terminal ④ : RR LH, ④ : RR RH). 3. Check power supply for speaker (Terminal ③ : RR LH, ③ : RR RH). 4. Check radio/speaker amp. output voltage. 5. Check wires for open or short between radio, amp. and speaker. 6. Remove radio or speaker amp. for repair. 7. Replace speaker.
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.

Trouble Diagnoses (Cont'd)

CD AUTOCHANGER

Symptom	Possible causes	Repair order
No play of the CD after CD play button is pushed.		
There is no error code shown on the radio.	1. Radio (The radio is not working.) 2. Harness connection (Magazine does not eject.) 3. Changer	1. Remove the radio for repair. 2. Check harness connection. 3. Remove the changer for repair.
Error code [CD Err] is shown on the radio.	1. Discs 2. Magazine does not eject or a disc remains in CD player. 3. Changer	1. Inspect discs. (Refer to testing magazines and discs.) 2. Reset the changer. (Disconnect harness connector at the changer and reconnect after 30 sec.) 3. Remove the changer for repair.
CD skipping.	1. Rough road driving 2. Discs 3. Bracket 4. Changer	1. System is not malfunctioning. 2. Inspect discs. (Refer to testing magazines and discs.) 3. Check and repair bracket and installation of changer. 4. Remove the changer for repair.
Error code [CD no disk] is shown on the radio after CD play button is pressed.	1. Magazine setting 2. Magazine 3. Changer	1. Confirm the magazine is pushed completely. 2. Inspect magazine. (Refer to testing magazines and discs.) 3. Remove the changer for repair.
Error code [CD HHHH] is shown on the radio after CD play button is pressed.	1. Overheat 2. Reset the Error code 3. Radio or changer	1. Turn the radio off. Open the trunk lid to lower the trunk room and changer temperature. 2. Reset the radio or changer. (Disconnect harness connector at the radio or changer and reconnect.) 3. Remove the radio or changer for repair.

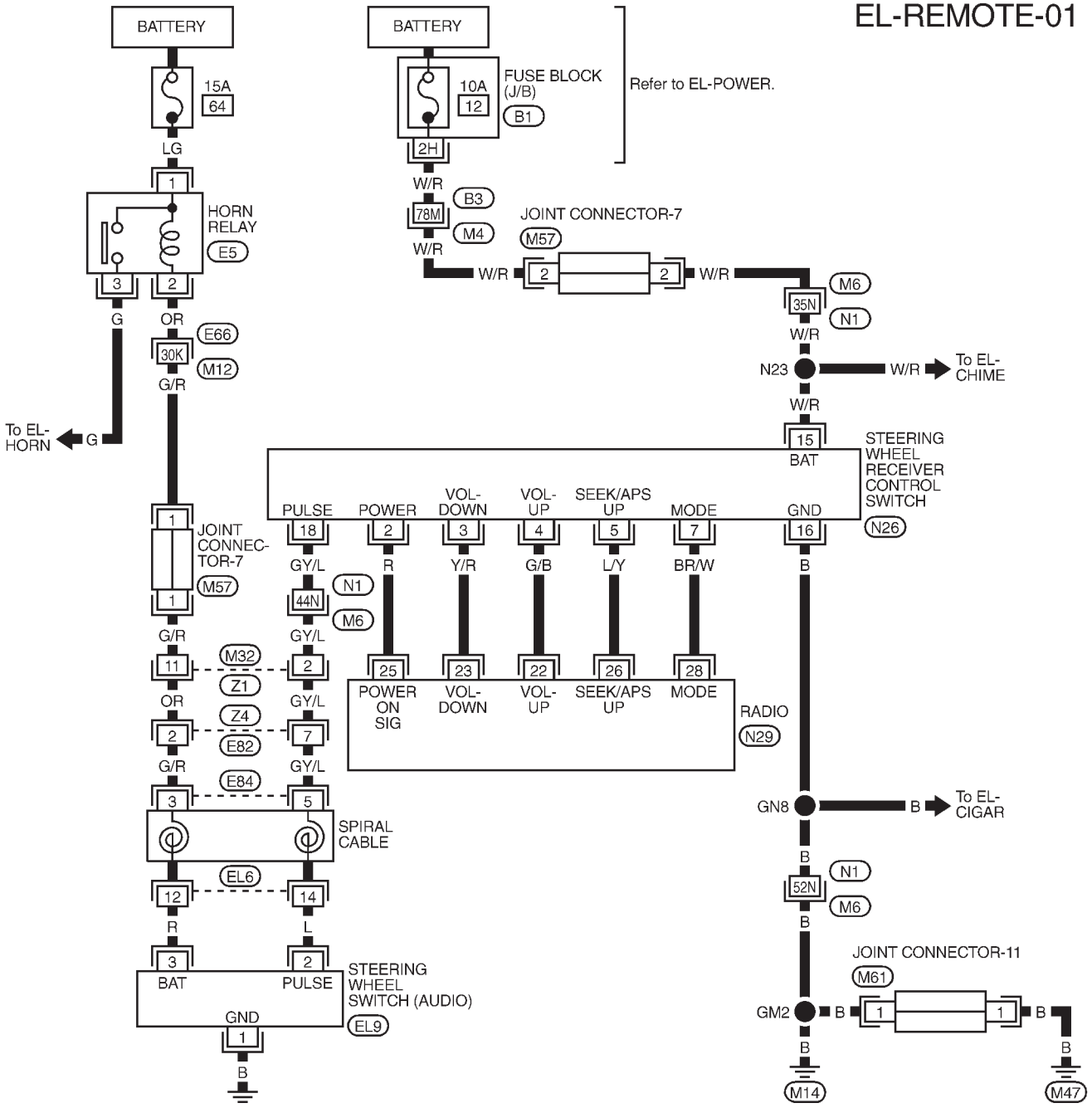
Testing magazines and discs

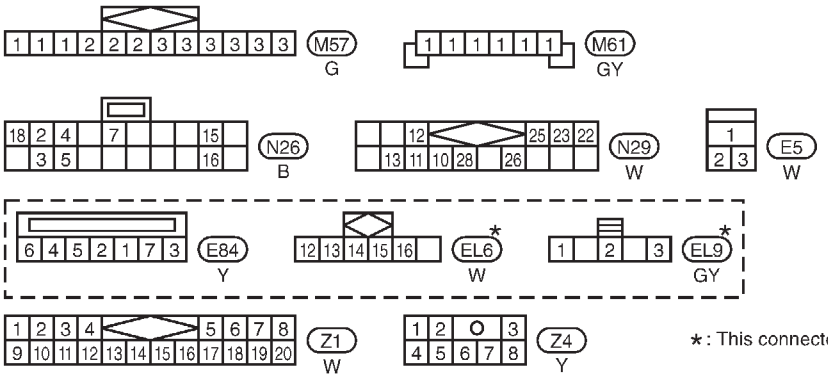
1. Confirm discs are installed correctly into the magazine (not upside down).
2. Visually inspect/compare the customer's discs with each other and other discs.
   Identify any of the following conditions:
   - Discs with a large outside diameter. [Normal size is 120 mm (4.72 in).]
   - Discs with rough or lipped edges.
   - Discs with excessive thickness [Normal size is 1.2 mm (0.047 in).]
   - Discs with scratches, abrasions, or pits on the surface.
   - Discs with grease/oil, fingerprints, foreign material.
   - Discs are warped due to excessive heat exposure.
3. Slide/place the discs in and out of the various magazine positions.
   Identify any discs and/or positions that require additional force for placement/ejection. If interference (sticking, excessive tensions) is found, replace the magazine or the discs.

Note

- **Discs which are marginally out of specification (ex. dirty, scratched and so on) may play correctly on a home stereo.**
  However, when used in the automotive environment skipping may occur due to the added vehicle movement and/or vibration due to road conditions. Autochangers should not be replaced when discs are at fault.
- **Use a soft damp cloth to wipe the discs starting from the center outward in radial direction. Never use chemical cleaning solutions to clean the discs.**

Wiring Diagram — REMOTE —





Refer to last page (Foldout page).

M4 , B3

M6 , N1

M12 , E66

B1

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

TEL999A

System Description

Power is supplied at all times
- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to power antenna timer and motor terminal ⑥ .

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to radio terminal ⑩ .

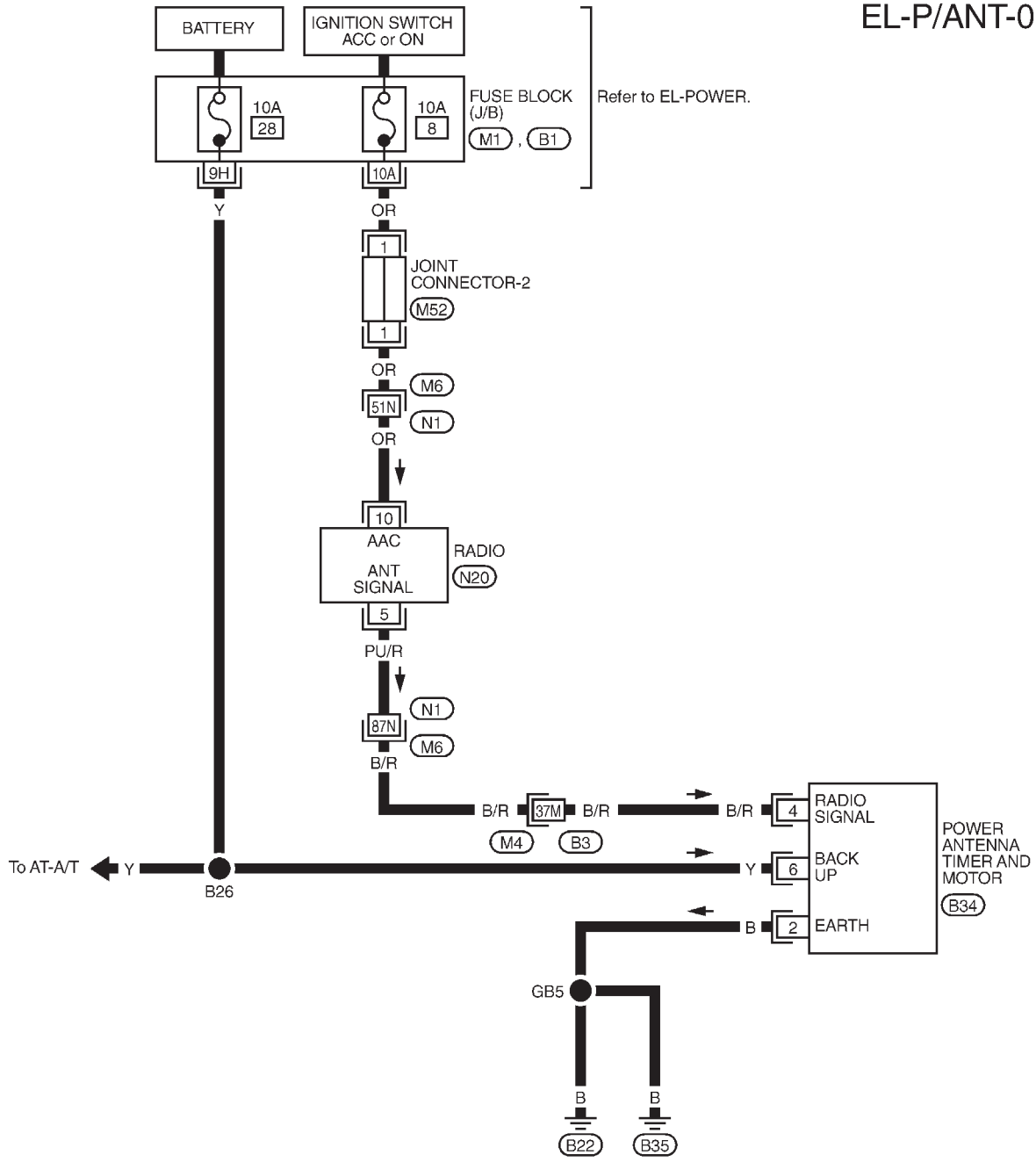
Ground is supplied to the power antenna timer and motor terminal ② through body grounds B22 and B35.
When the radio is turned to the ON position, battery positive voltage is supplied
- through radio terminal ⑤
- to power antenna timer and motor terminal ④ .

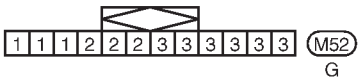
The antenna raises and is held in the extended position.
When the radio is turned to the OFF position, battery positive voltage is interrupted
- from radio terminal ⑤
- to power antenna timer and motor terminal ④ .

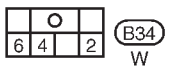
The antenna retracts.

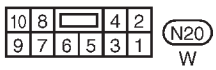
Wiring Diagram — P/ANT —

EL-P/ANT-01









Refer to last page (Foldout page).

M4 , B3

M6 , N1

M1

B1

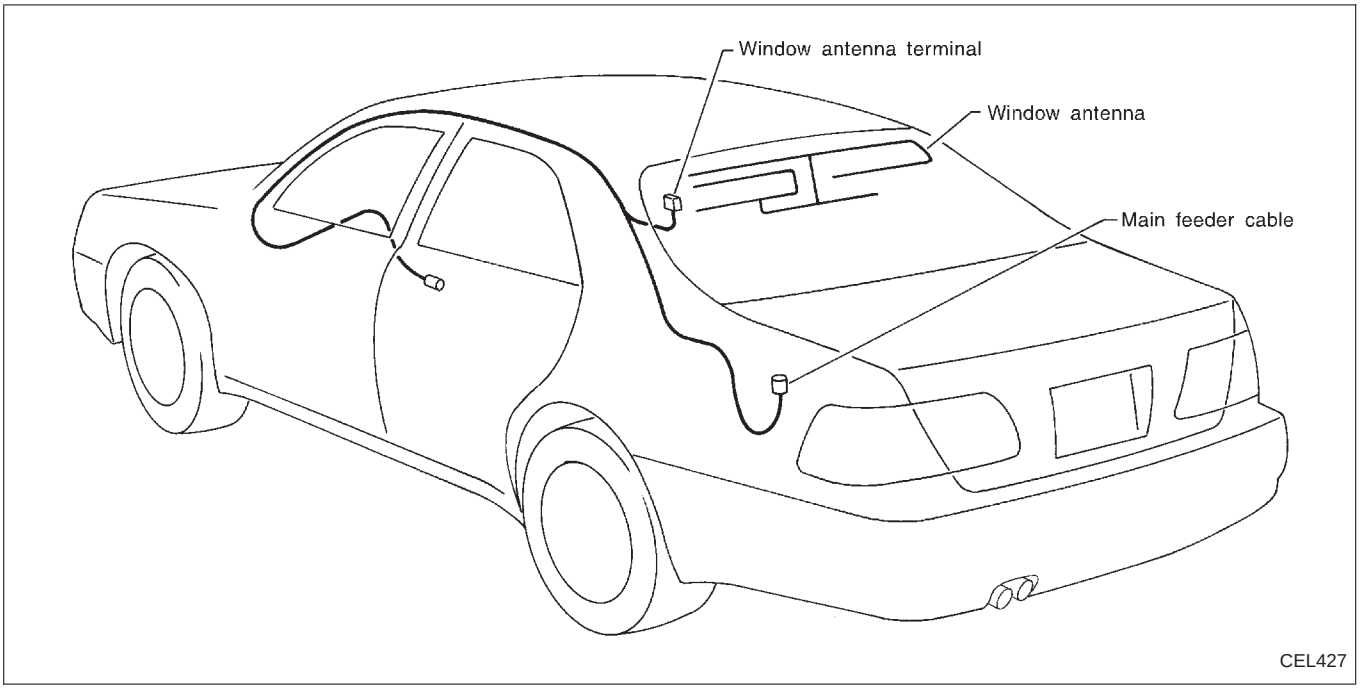
TEL210A

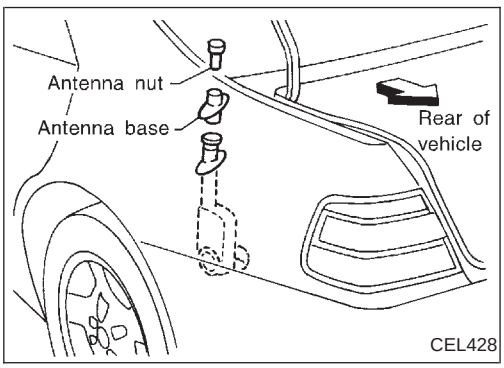
Trouble Diagnoses

POWER ANTENNA

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 10A fuse	1. Check 10A fuse [No. 28, located in the fuse block (J/B)]. Verify that battery positive voltage is present at terminal ⑥ of power antenna timer and motor.
	2. Radio signal	2. Turn ignition switch to ACC or ON and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna timer and motor.
	3. Grounds (B22) and (B35)	3. Check grounds (B22) and (B35).
	4. Power antenna timer and motor	4. Check power antenna timer and motor.

Location of Antenna

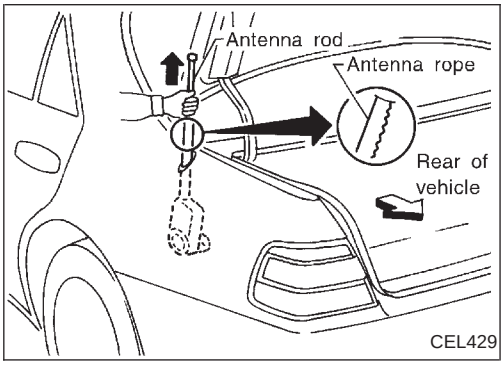




Antenna Rod Replacement

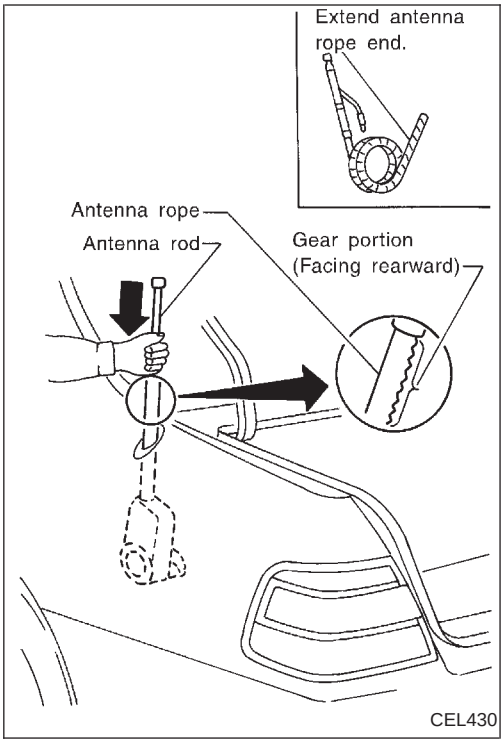
REMOVAL

1. Remove antenna nut and antenna base.



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

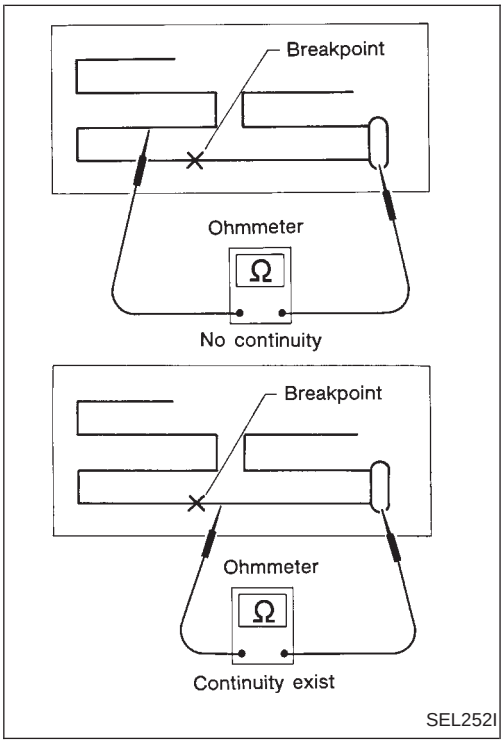
Antenna Rod Replacement (Cont'd)



INSTALLATION

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

Window Antenna Repair



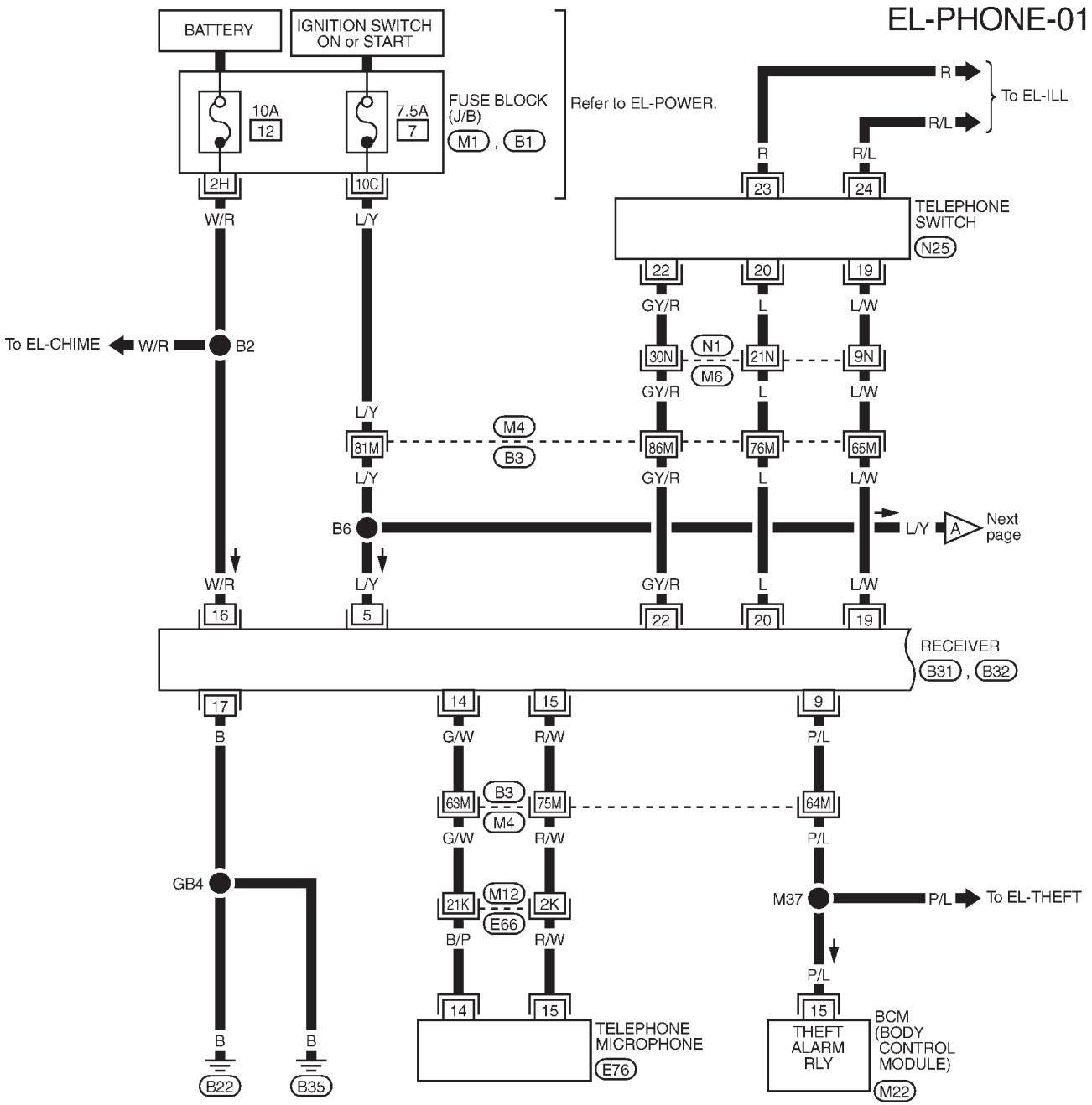
ELEMENT CHECK

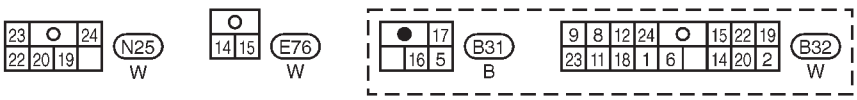
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.
2. If an element is broken, no continuity will exist.
3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-190).

Wiring Diagram — PHONE —





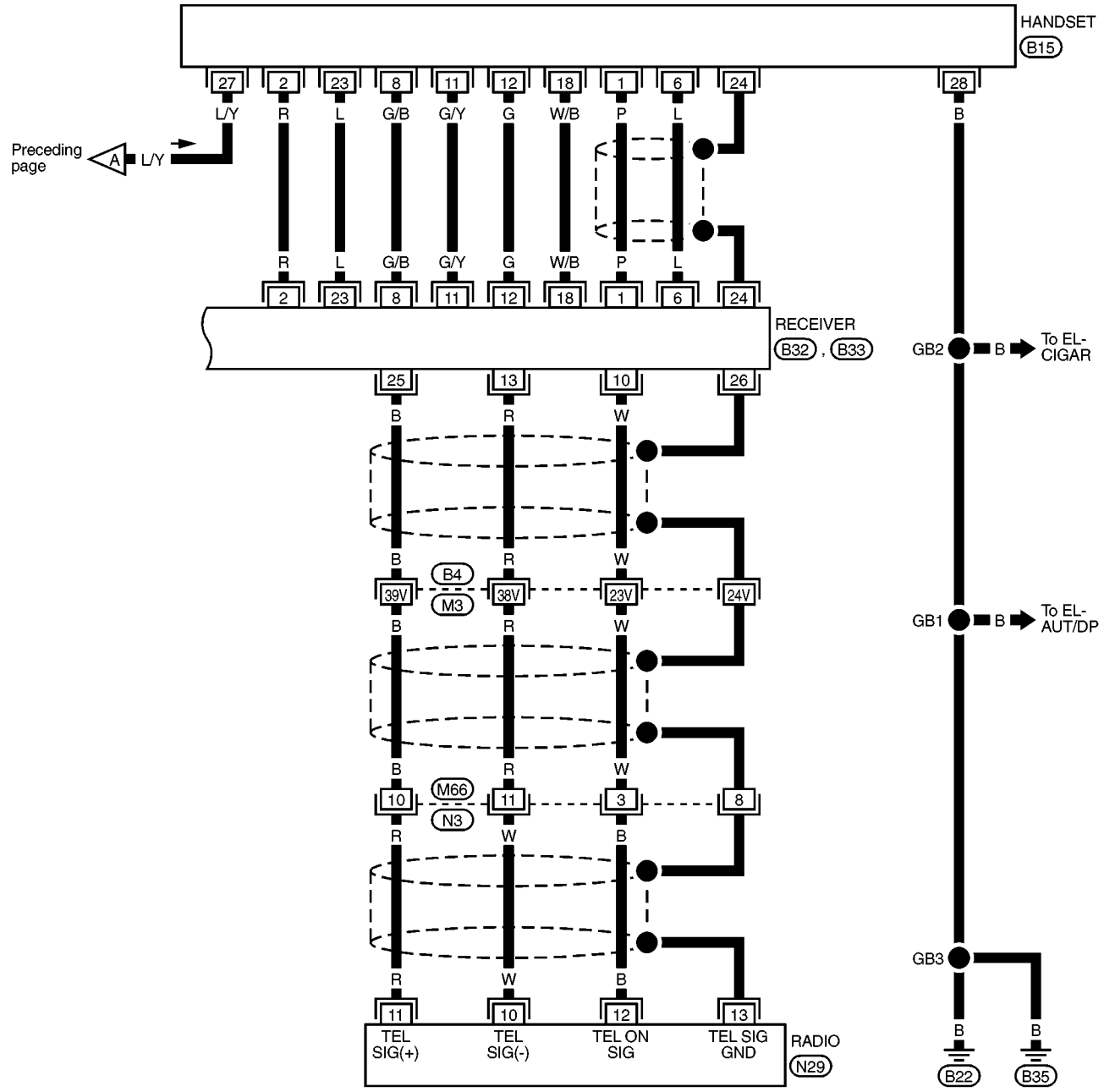
Refer to last page (Foldout page).

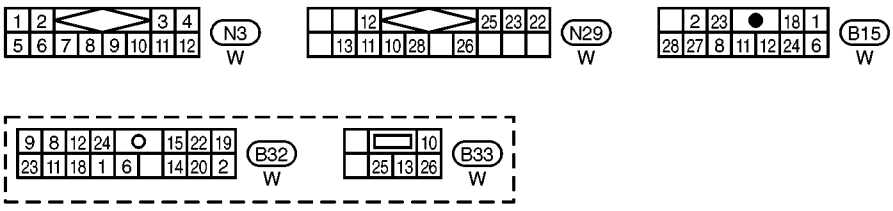
M4 , B3
M6 , N1
M12 , E66
M1
M22
B1

TEL340B

Wiring Diagram — PHONE — (Cont'd)

EL-PHONE-02



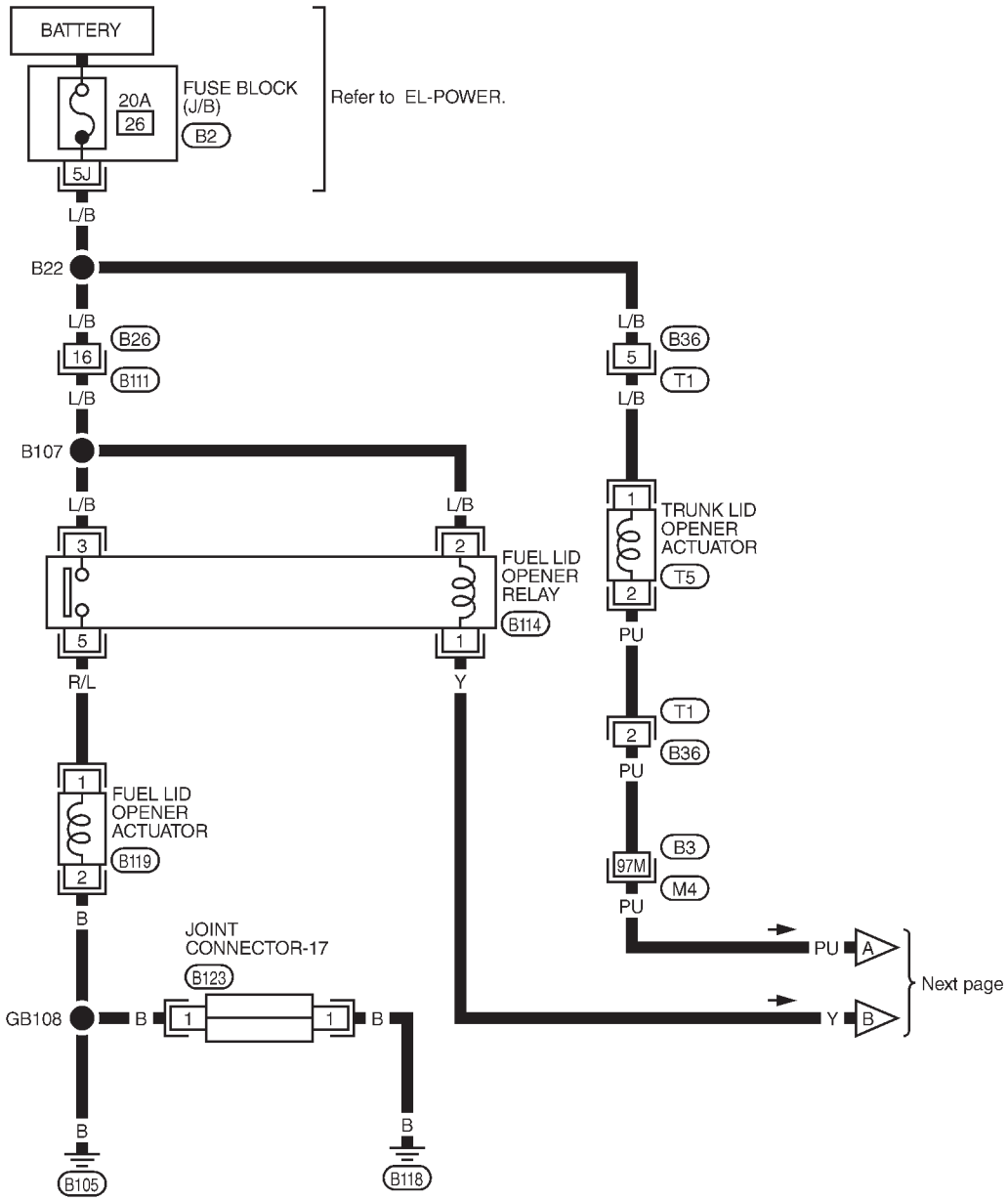


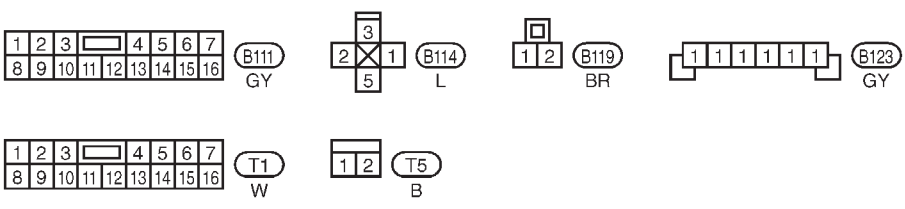
Refer to last page (Foldout page).
M3 , B4

TEL001B

Wiring Diagram — T&FLID —

EL-T&FLID-01



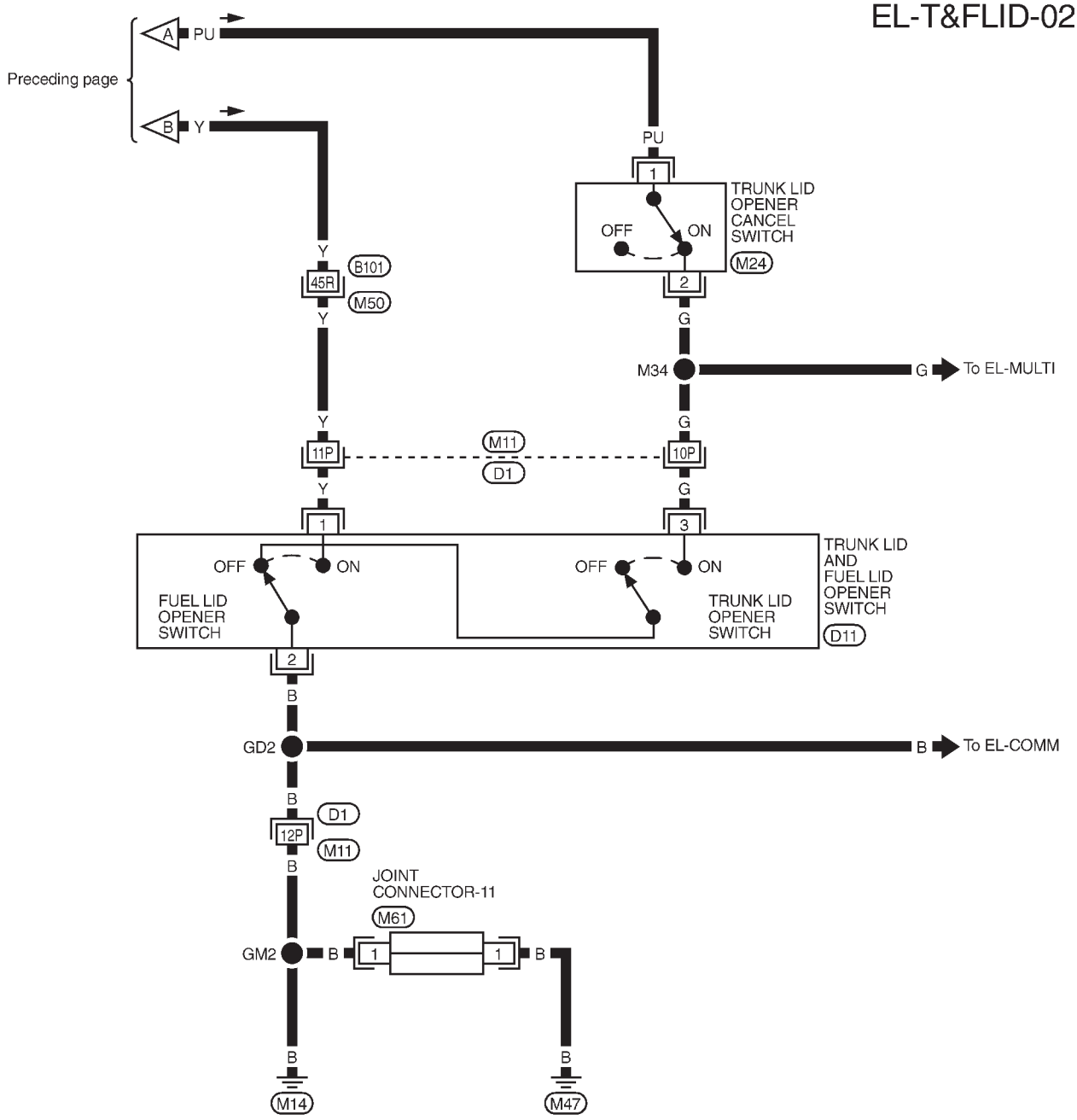


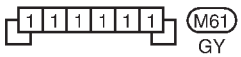
Refer to last page (Foldout page).
M4 , B3
B2

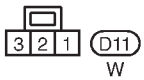
TEL391B

Wiring Diagram — T&FLID — (Cont'd)

EL-T&FLID-02







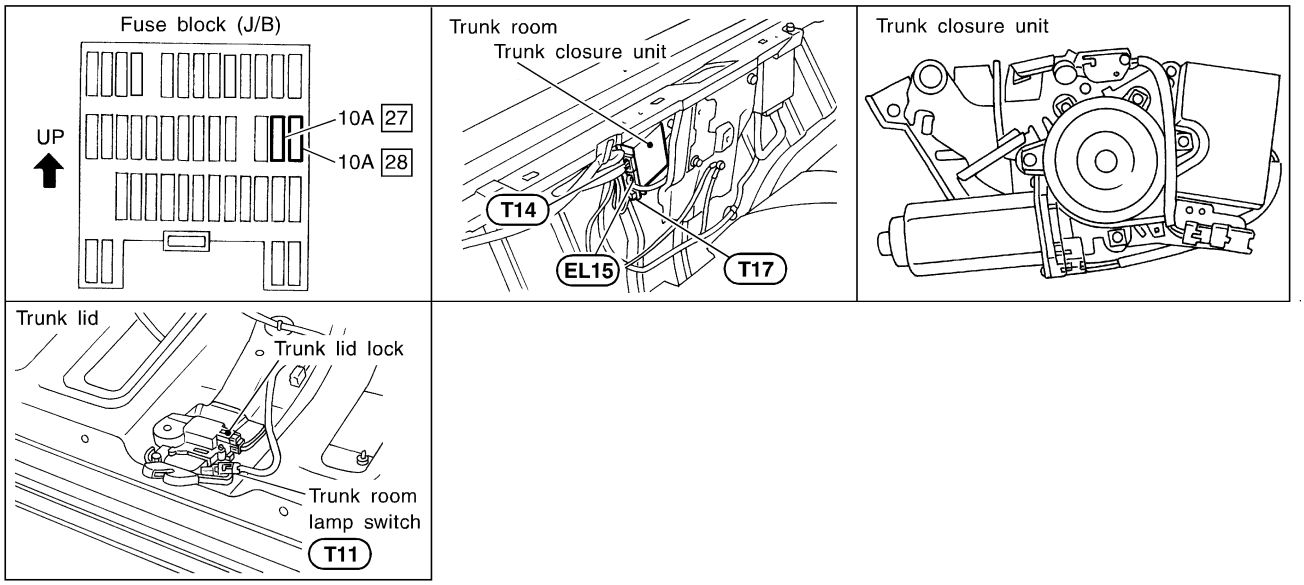
Refer to last page (Foldout page).

M11 , D1

M50 , B101

TEL250A

Component Parts and Harness Connector Location



SEL819VA

System Description

Power is supplied at all times
- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to trunk closure control unit terminal ② .

Ground is supplied at all times
- to trunk closure control unit terminal ④
- through body ground T12.

Power is supplied at all times
- through 10A fuse [No. 27, located in the fuse block (J/B)] and trunk room lamp
- to trunk room lamp switch (lock switch).

OPERATION

When trunk is closed

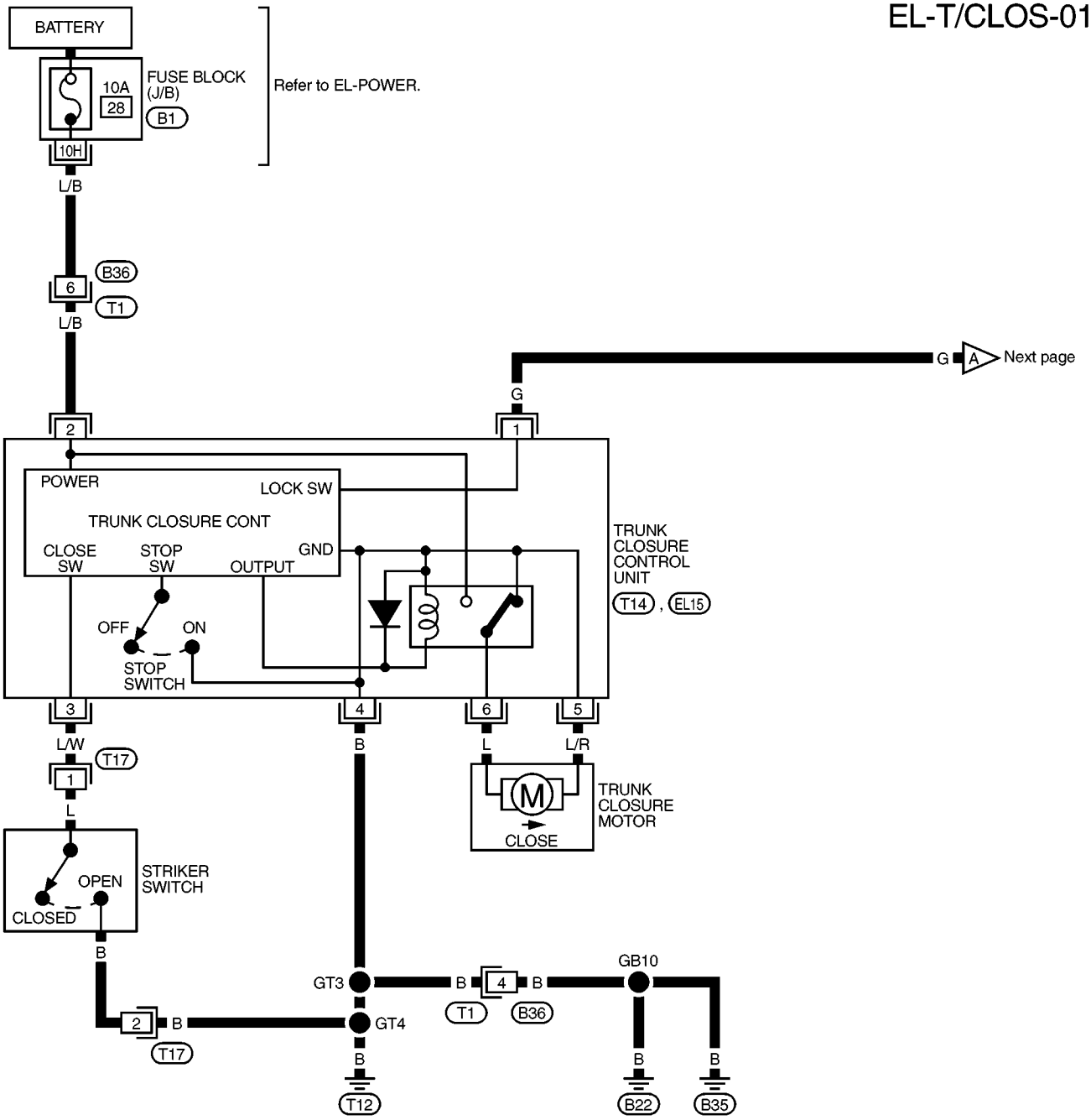
1. CLOSED (LOCK) signal is supplied from trunk room lamp switch (lock switch) to trunk closure control unit terminal ① (Battery voltage is supplied to trunk closure control unit terminal ① when trunk room lamp switch is turned to CLOSED (LOCK)).
2. When trunk closure control unit receive CLOSED (LOCK) signal from trunk room lamp switch, power is supplied to trunk closure motor from trunk closure control unit within 40 msec.
3. When stop switch in trunk closure control unit is turned to OFF during closing operation, trunk closure motor stops within 40 msec.

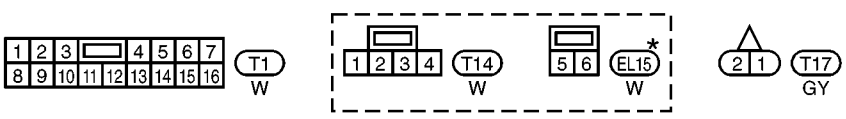
When trunk is opened

1. OPEN (UNLOCK) signal is supplied from trunk room lamp switch (lock switch) to trunk closure control unit terminal ① (Battery voltage to trunk closure control unit terminal ① is cut off when trunk room lamp switch is turned to OPEN (UNLOCK)).
2. OPEN signal is supplied to trunk closure control unit terminal ③ from striker switch.
3. When trunk closure control unit receives OPEN signal from striker switch, power is supplied to trunk closure motor from trunk closure control unit within 40 msec.
4. When stop switch in trunk closure control unit is turned to ON during opening operation, trunk closure motor stops within 40 msec.

Wiring Diagram — T/CLOS —

EL-T/CLOS-01





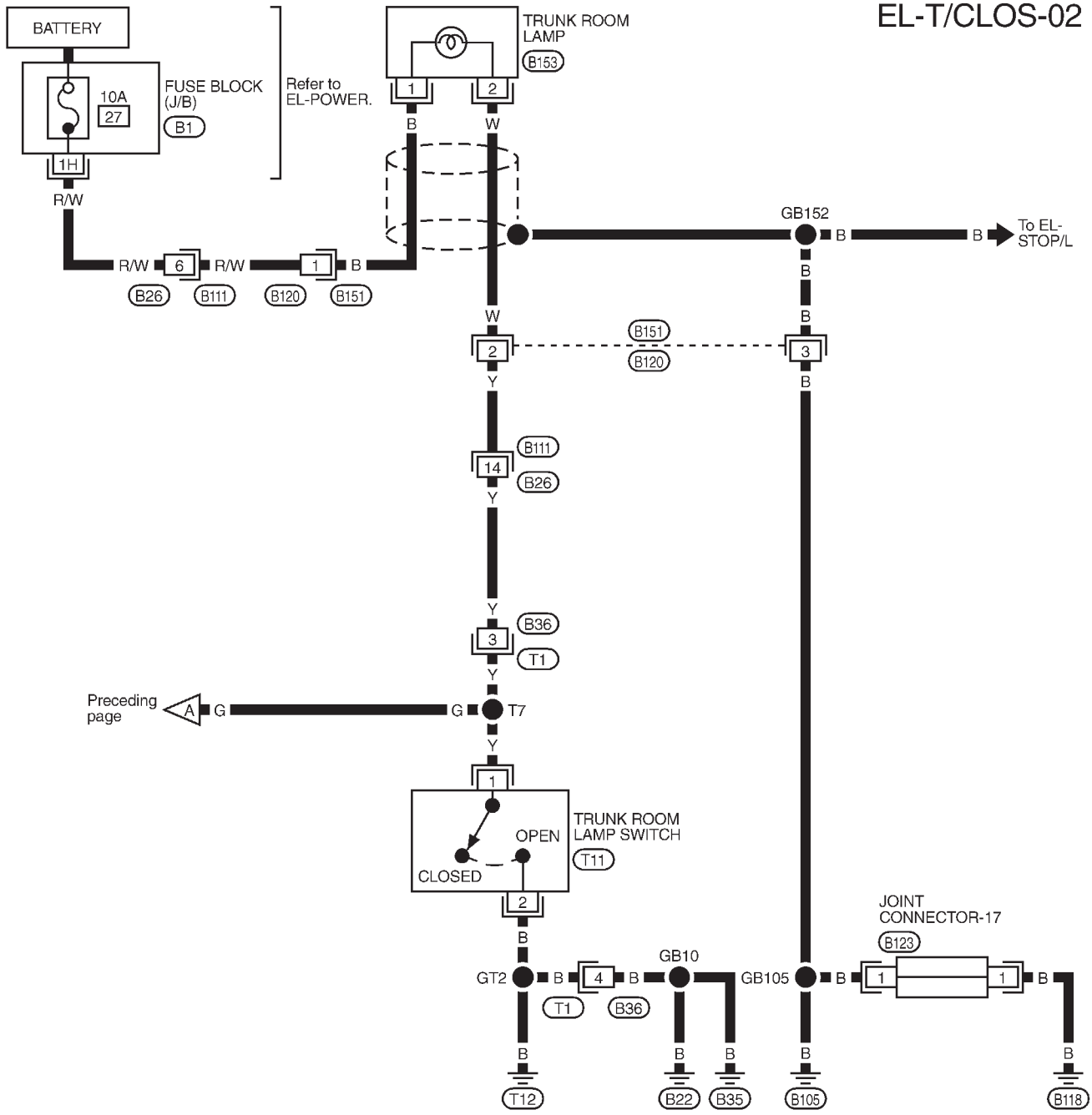
★: This connector is not shown in "HARNESS LAYOUT", EL section.

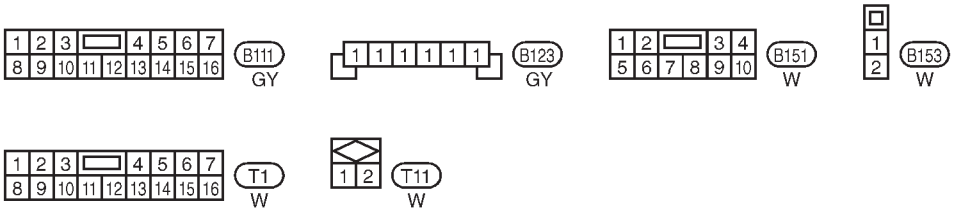
Refer to last page (Foldout page).
B1

TEL035B

Wiring Diagram — T/CLOS — (Cont'd)

EL-T/CLOS-02





Refer to last page (Foldout page).

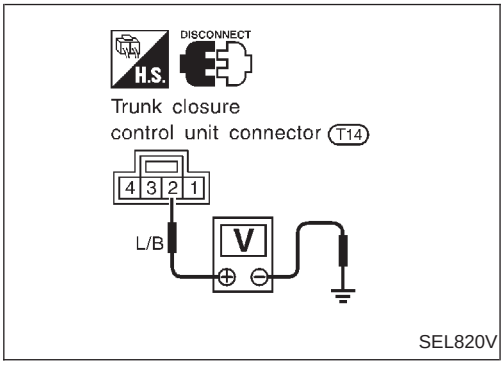
B1

TEL384B

Trouble Diagnosis

SYMPTOM CHART

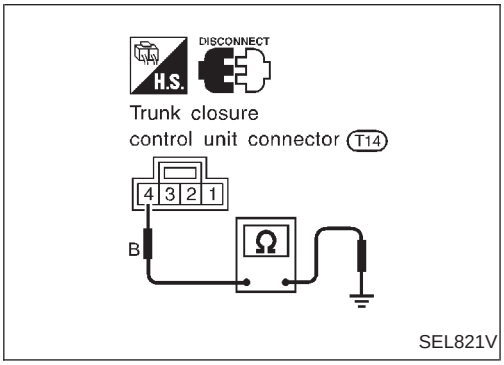
REFERENCE PAGE	EL-214	EL-215	—
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1	Replace Trunk Closure Unit
Trunk closure does not operate for closing and opening trunk lid.	X	X	
Trunk closure operation does not stop.			X
Trunk closure operation stops in an unstable trunk lid position.			X



POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

Terminal		Ignition switch		
⊕	⊖	OFF	ACC	ON
②	Ground	Battery voltage	Battery voltage	Battery voltage

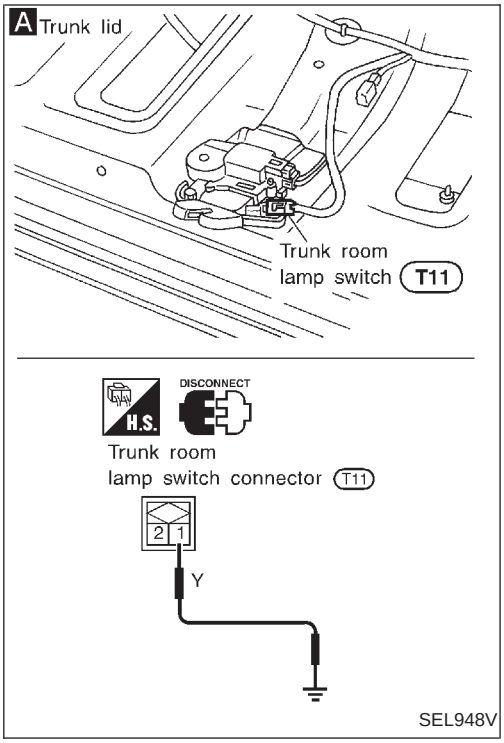


Ground circuit check

Terminals	Continuity
④ - Ground	Yes

Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 1



A

CHECK TRUNK CLOSURE MOTOR OPERATION.

1. Open trunk lid and remove the trunk room trim.
2. Disconnect trunk room lamp switch connector and check the operation of trunk closure motor.
3. Apply ground to trunk room lamp switch harness connector terminal ① .
4. Check the operation of trunk closure motor.
   Does trunk closure motor operate when trunk room lamp switch connector is disconnected or ground is applied to trunk room lamp switch harness connector terminal ① ?
   Trunk closure motor should operate.

OK → Ⓐ

NG ↓

B

CHECK GROUND CIRCUIT FOR STRIKER SWITCH.

1. Disconnect striker switch harness connector.
2. Check harness continuity between striker switch harness connector terminal ② and ground.
   Continuity should exist.

NG → Check harness for open or short between striker switch and ground.

OK ↓

C

CHECK POWER SUPPLY TO TRUNK ROOM LAMP SWITCH.

1. Disconnect trunk room lamp switch harness connector and trunk closure control unit connector (T14).
2. Check voltage between trunk closure control unit and trunk room lamp switch harness connectors terminal ① and ground respectively.
   Battery voltage should exist.

OK or NG

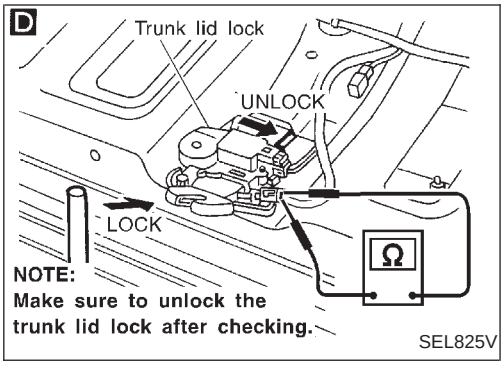
NG → Check power supply circuit to trunk closure control unit harness connector terminal ① and trunk room lamp switch harness connector terminal ① for open or short.

OK ↓

Replace trunk closure units.

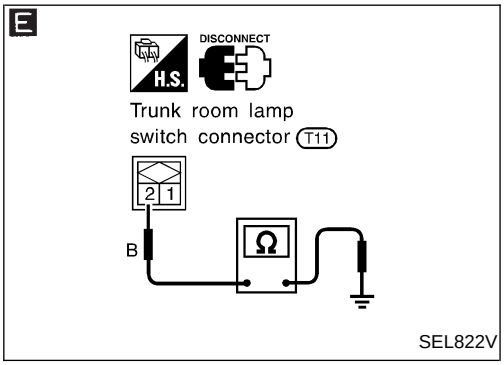
Trouble Diagnosis (Cont'd)

D



SEL825V

E



SEL822V

Ⓐ

D

CHECK TRUNK ROOM LAMP SWITCH.
Disconnect trunk room lamp switch harness connector.
Check continuity between the trunk room lamp switch harness connector terminal ① and ② .
When lock the trunk room lid lock
Continuity should not exist.
When unlock the trunk room lid lock
Continuity should exist.
OK or NG

NG → Replace trunk lid lock which has trunk room lamp switch.

OK ↓

E

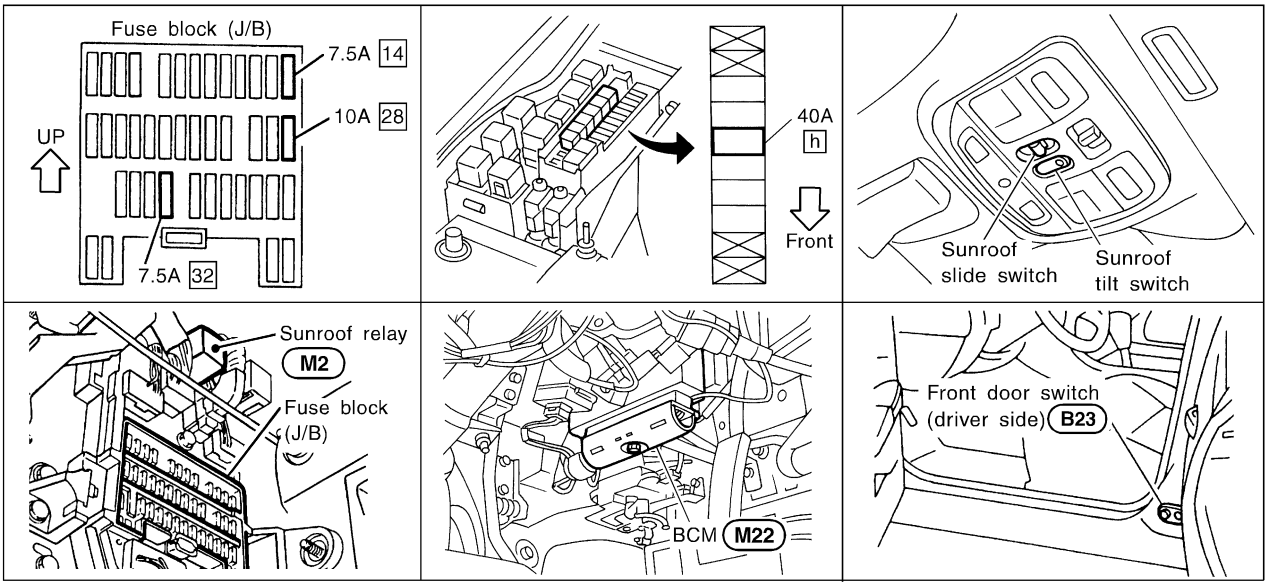
CHECK GROUND CIRCUIT.
1. Disconnect trunk room lamp switch harness connector.
2. Check the harness continuity between trunk room lamp switch harness connector and ground.
   Continuity should exist.
   OK or NG

NG → Check harness for open or short between trunk room lamp switch and ground.

OK ↓

Trunk closure electric system is OK.
Check mechanical malfunction.

Component Parts and Harness Connector Location



SEL943W

System Description

OUTLINE

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor assembly
- Sunroof relay
- BCM (Body Control Module)

BCM controls the operation of sunroof relay. Power is supplied to sunroof motor assembly through sunroof relay. Sunroof will be operated depending on sunroof switch condition.

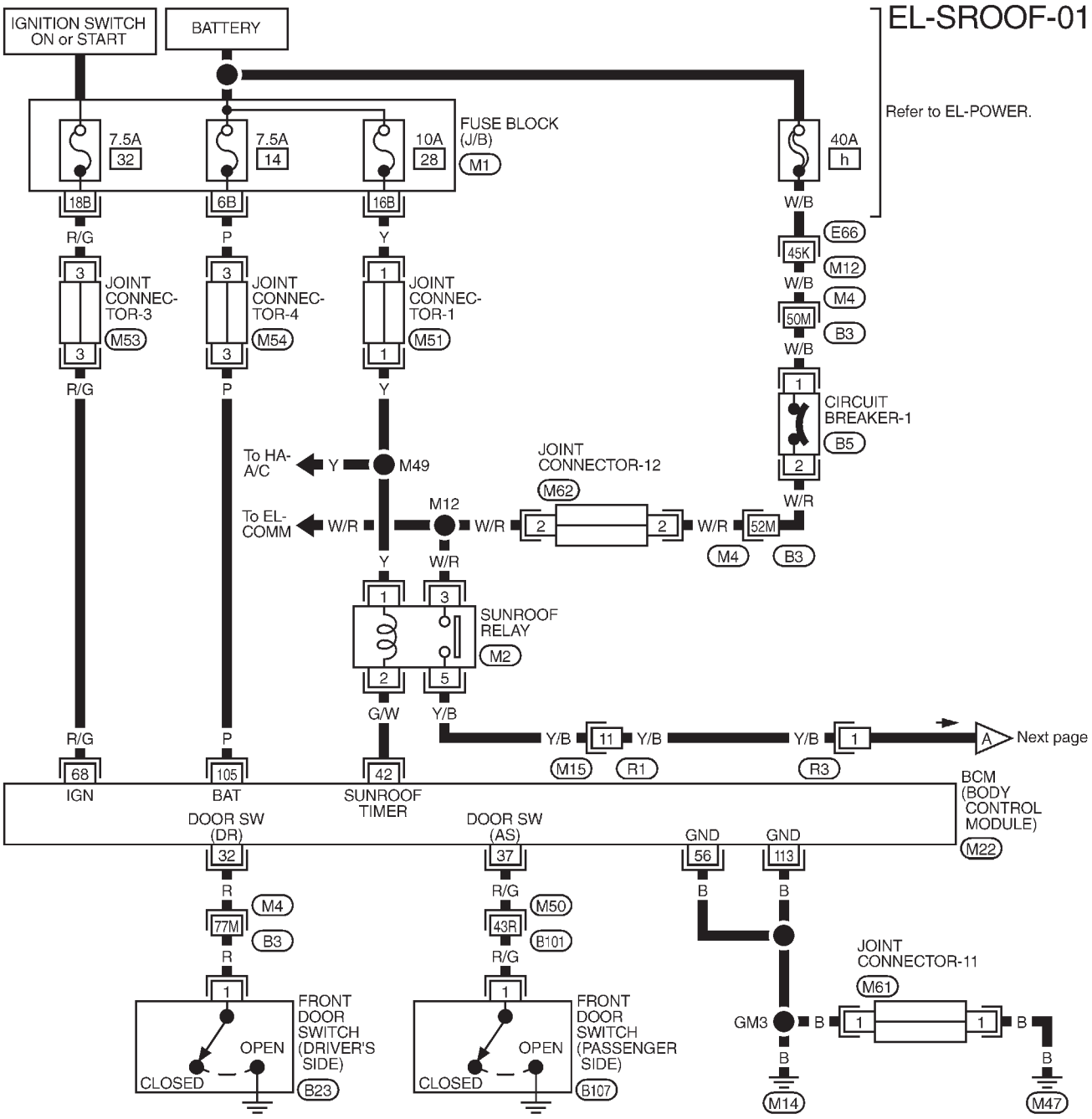
OPERATION

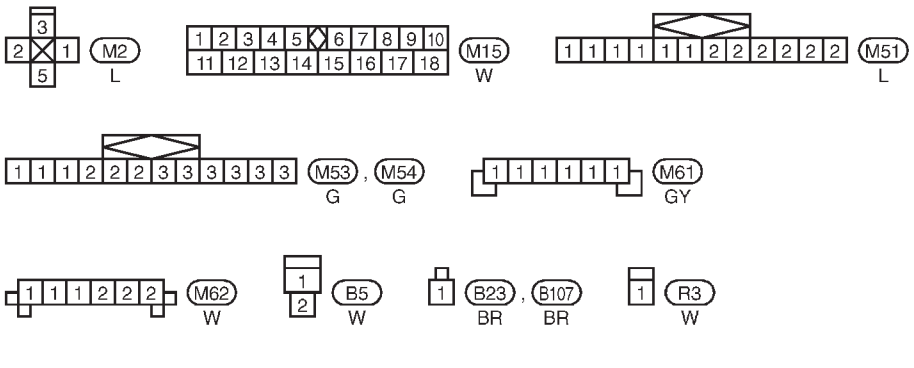
- Sunroof can be opened or closed and tilted up or down with sunroof switch.
- When sunroof is fully closed or tilted up, ground to up/close relay is interrupted and power to motor is terminated by limit switch-1.
- When sunroof is fully opened or tilted down, ground to down/open relay is interrupted and power to motor is terminated by limit switch-2.
- To fully open the sunroof, press down completely on the slide switch on the sunroof switch and release it; it needs not to be held. The sunroof will automatically open all the way. To stop the sunroof, pull up slide switch then release the switch.

Delayed power operation

When the ignition switch is turned to the “OFF” position, the sunroof will still operate for up to approximately 45 seconds unless driver’s side or passenger side door is opened.

Wiring Diagram — SROOF —





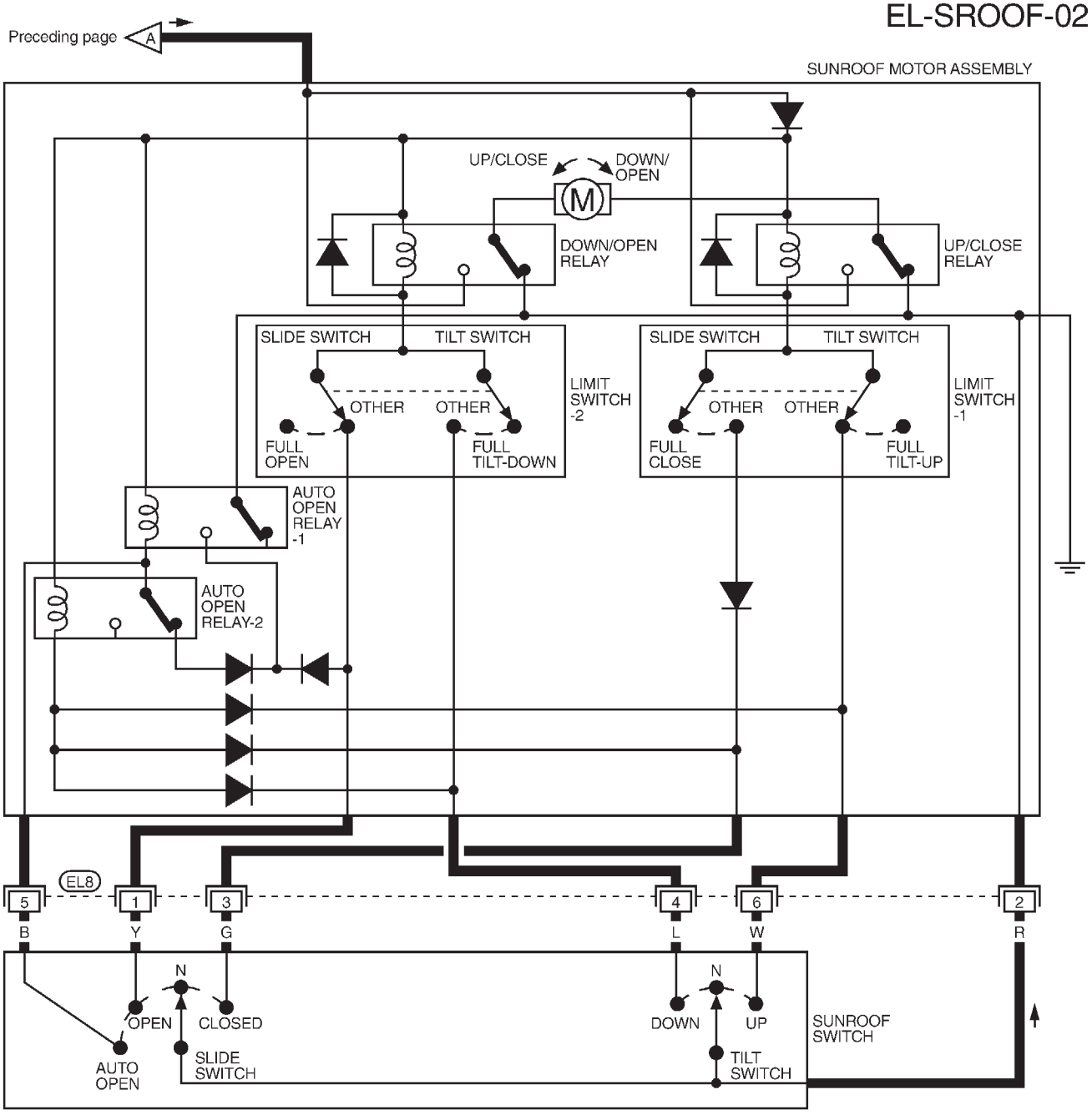
Refer to last page (Foldout page).

(M4) , (B3)
(M12) , (E66)
(M50) , (B101)
(M1)
(M22)

TEL002B

Wiring Diagram — SROOF — (Cont'd)

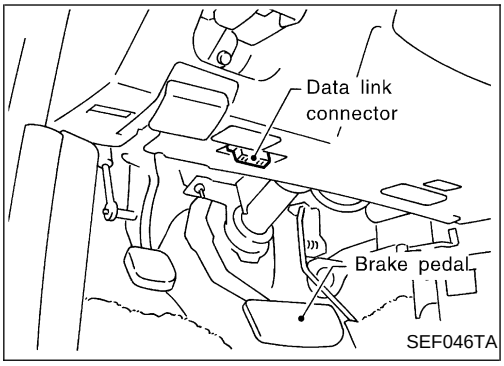
EL-SROOF-02



5 4 1
2 6 3
EL8 *
BR

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

TEL108B

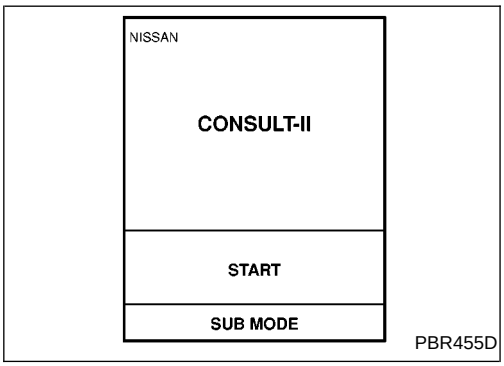


SEF046TA

CONSULT-II

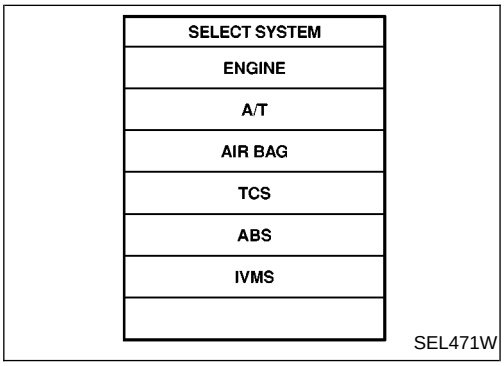
CONSULT-II INSPECTION PROCEDURE

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



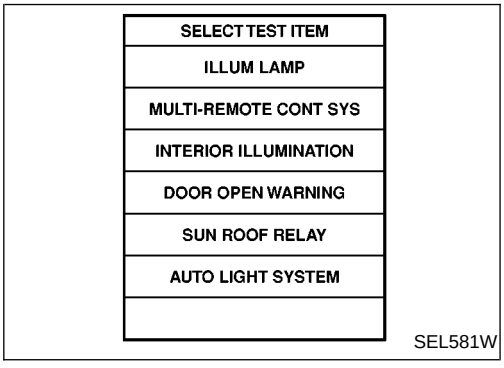
PBR455D

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



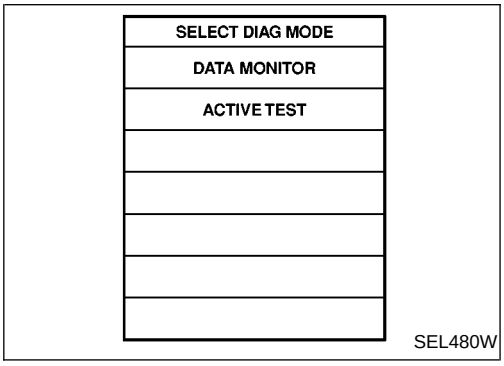
SEL471W

5. Touch “IVMS”.



SEL581W

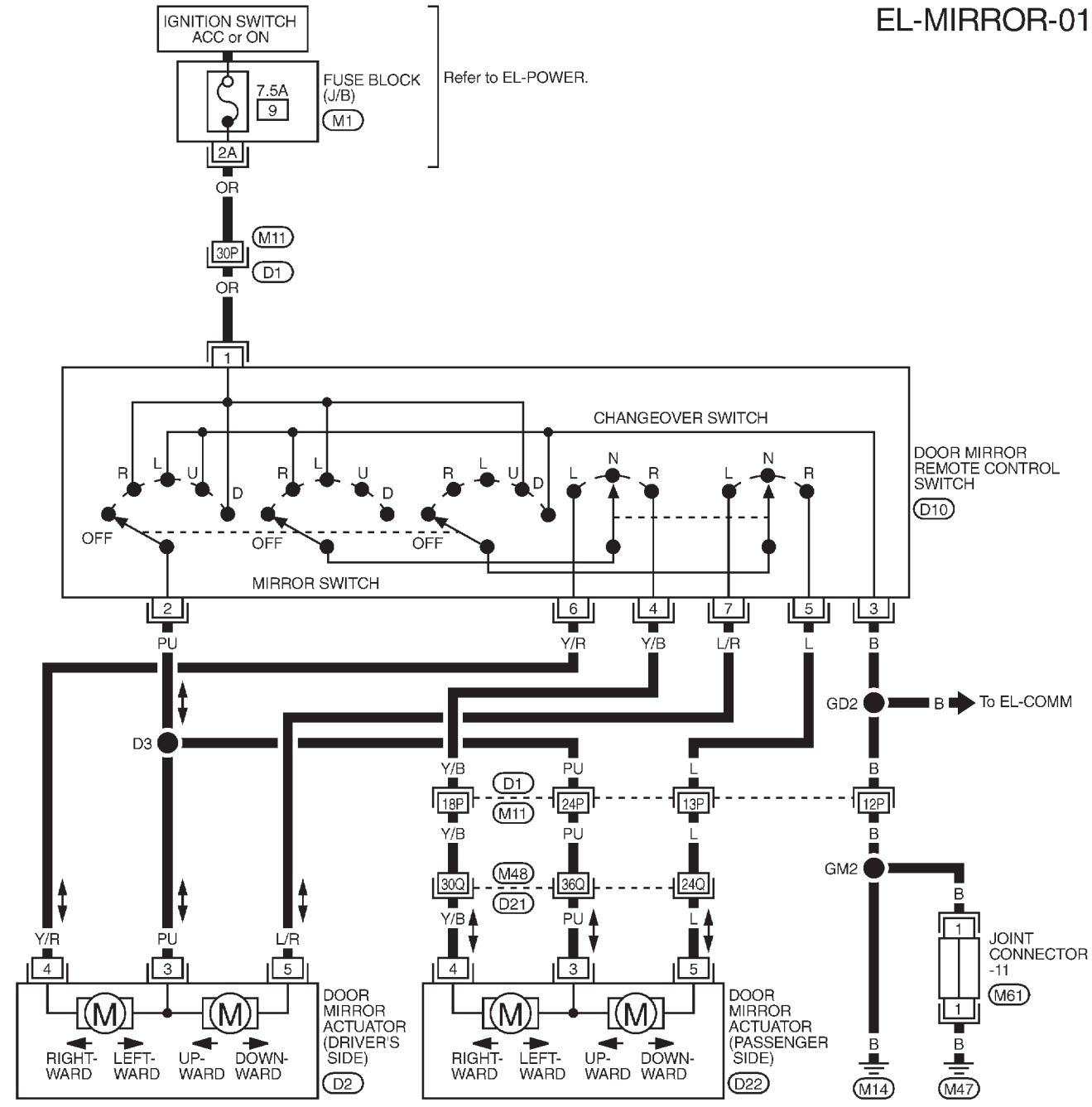
6. Touch “SUN ROOF RELAY”.



SEL480W

- DATA MONITOR and ACTIVE TEST are available for the sunroof relay.

Wiring Diagram — MIRROR —



M61 GY

D2 BR , D22 BR

D10 W

Refer to last page (Foldout page).

M11 , D1

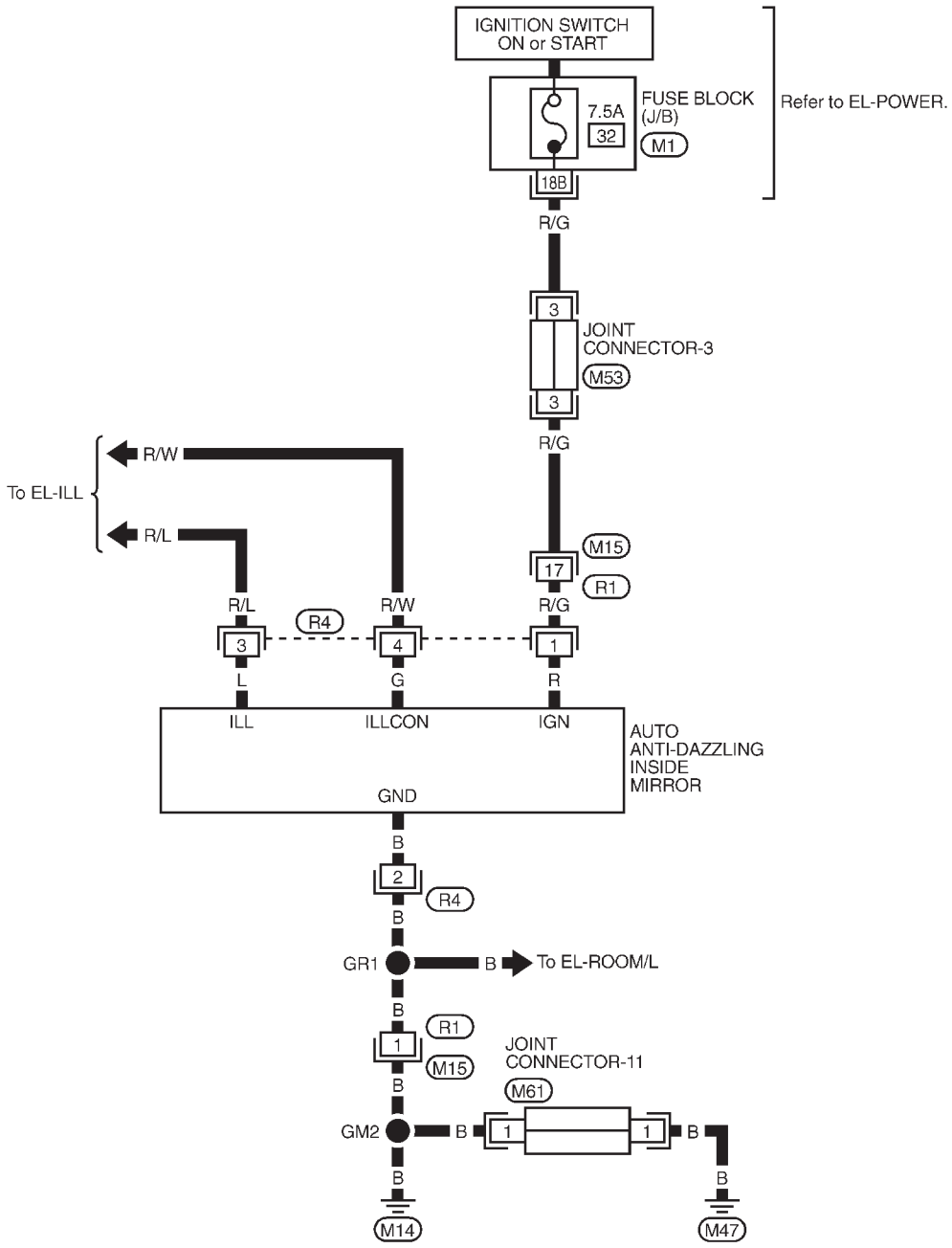
M48 , D21

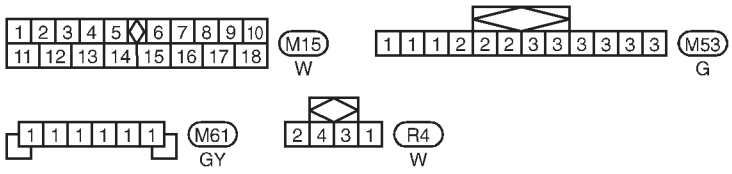
M1

TEL805

Wiring Diagram — I/MIRR —

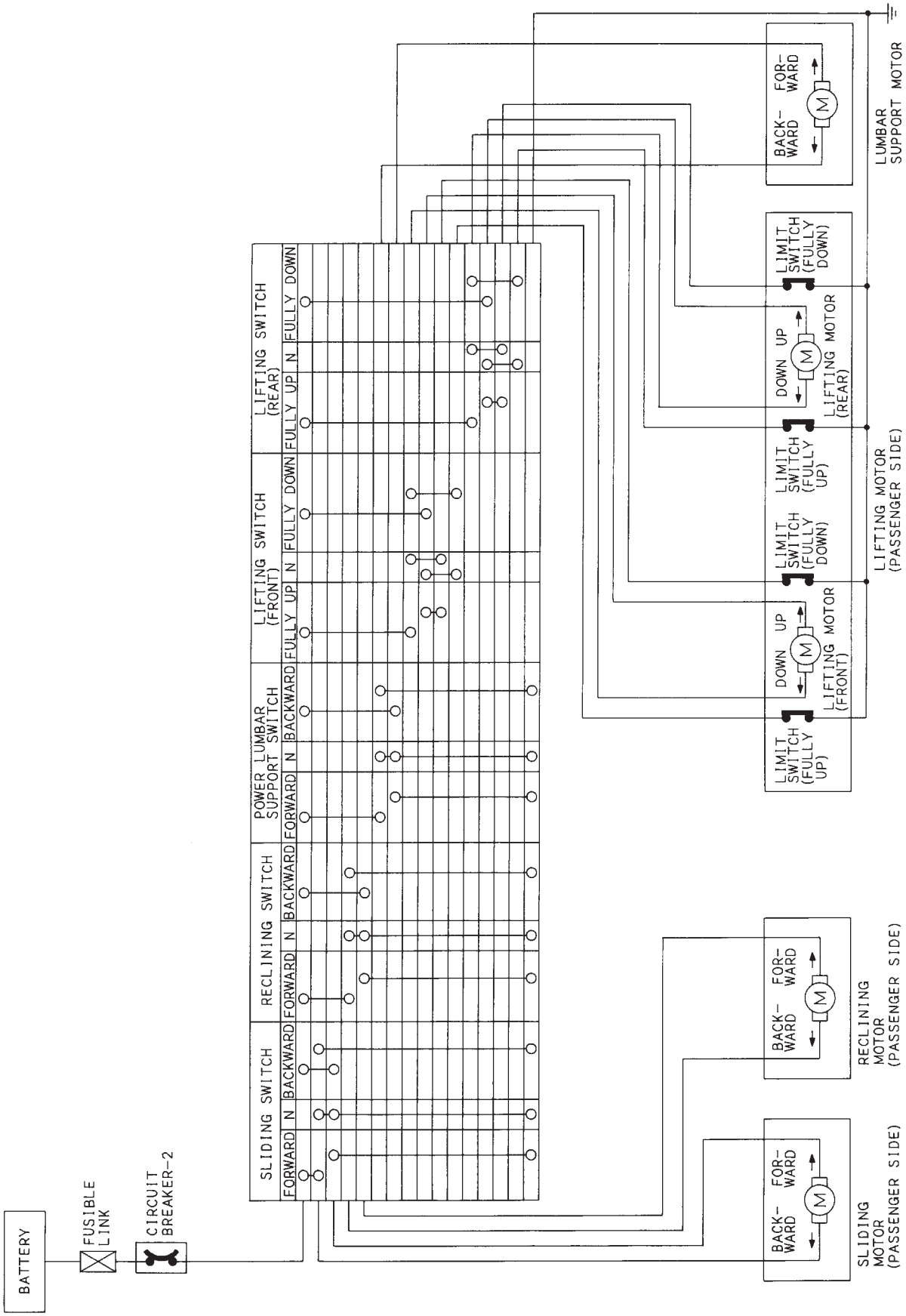
EL-I/MIRR-01





Refer to last page (Foldout page).
M1

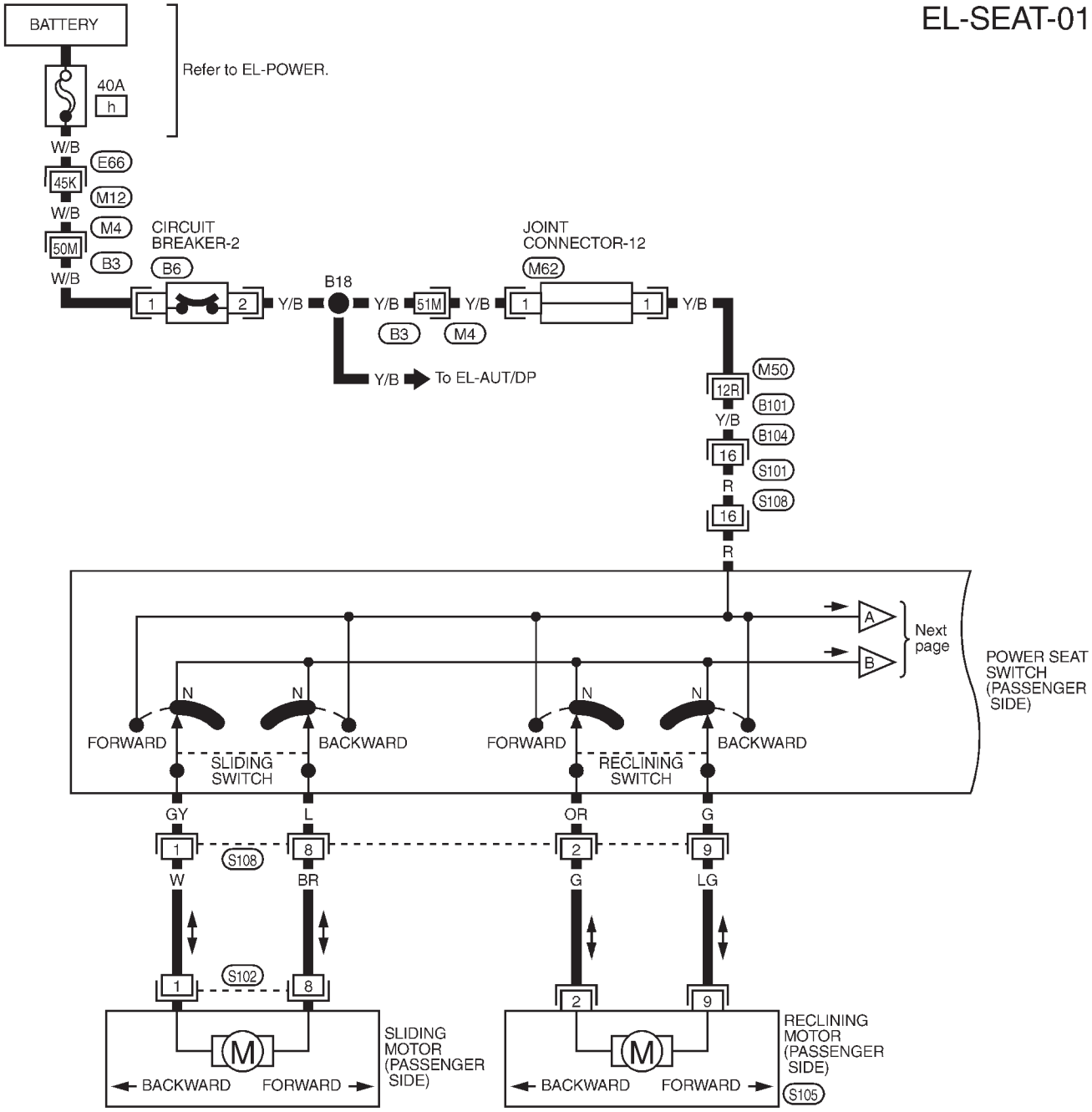
Schematic

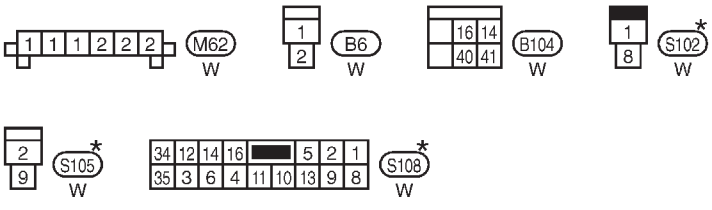


TEL809

Wiring Diagram — SEAT —

EL-SEAT-01





Refer to last page (Foldout page).

E66 , M12

M4 , B3

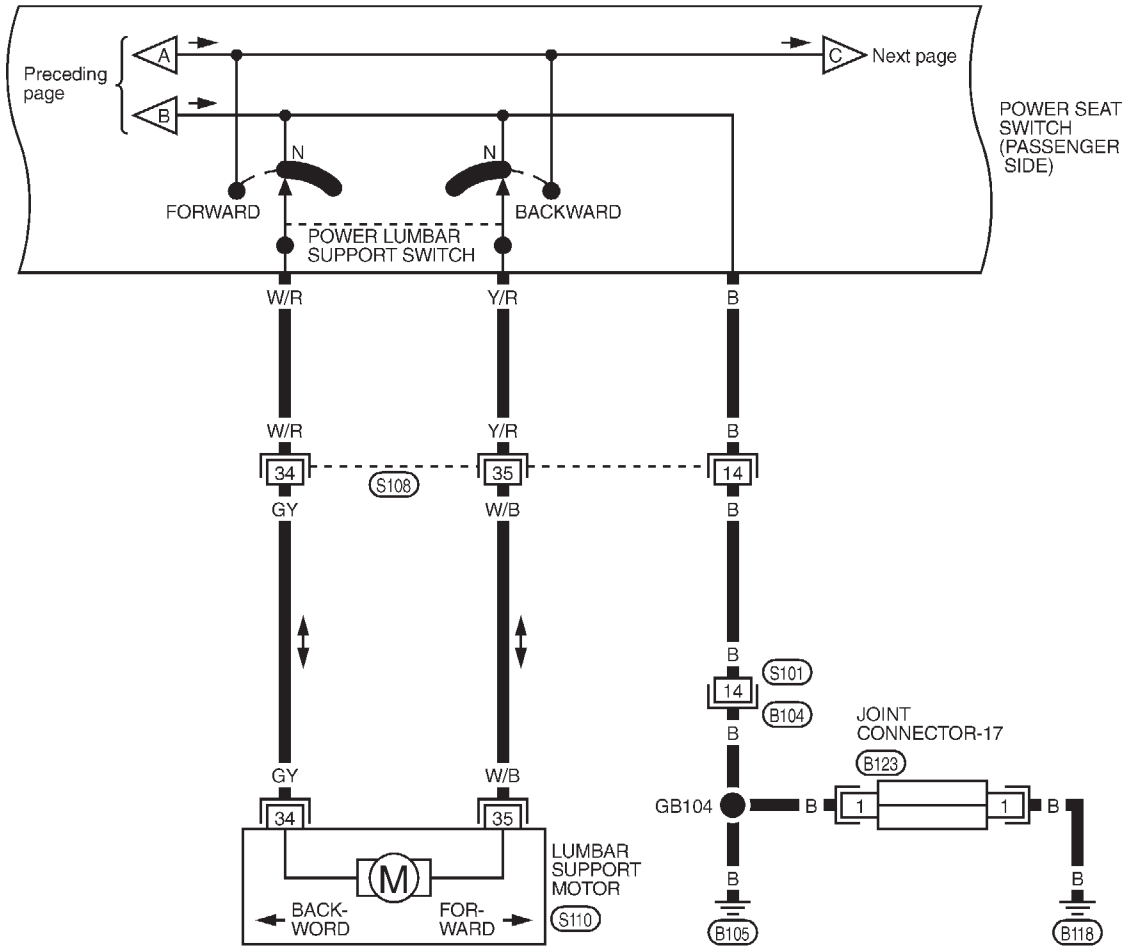
M50 , B101

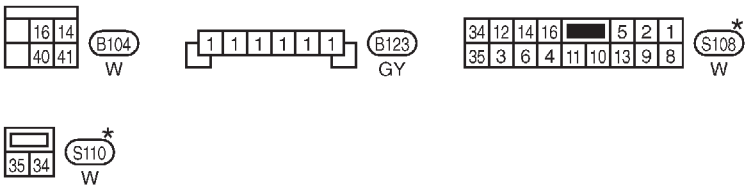
★ : This connector is not shown in "HARNESS LAYOUT", EL section.

TEL810

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02



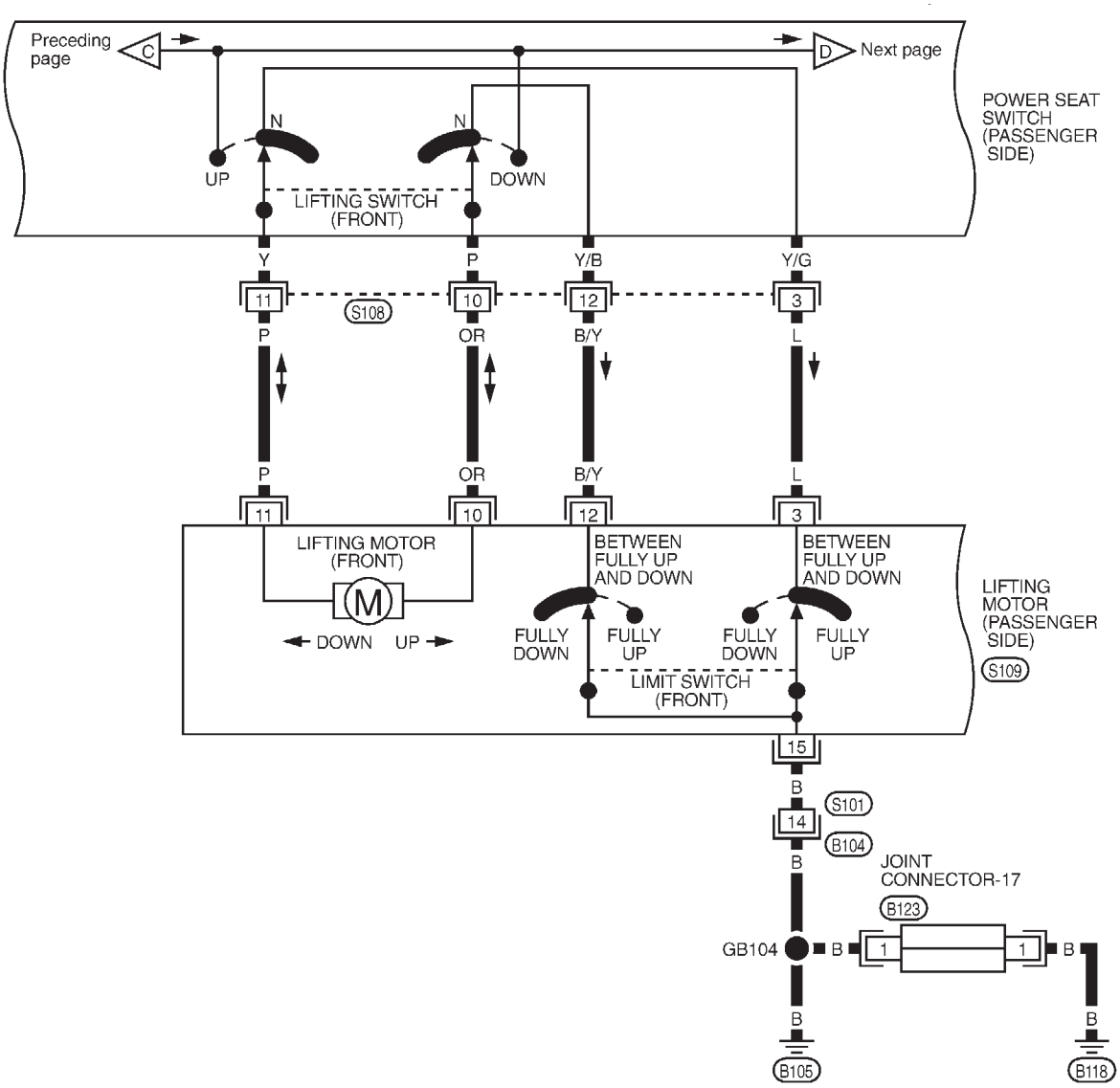


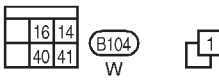
* : This connector is not shown in "HARNESS LAYOUT", EL section.

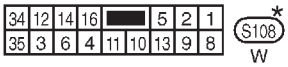
TEL811

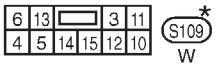
Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-03







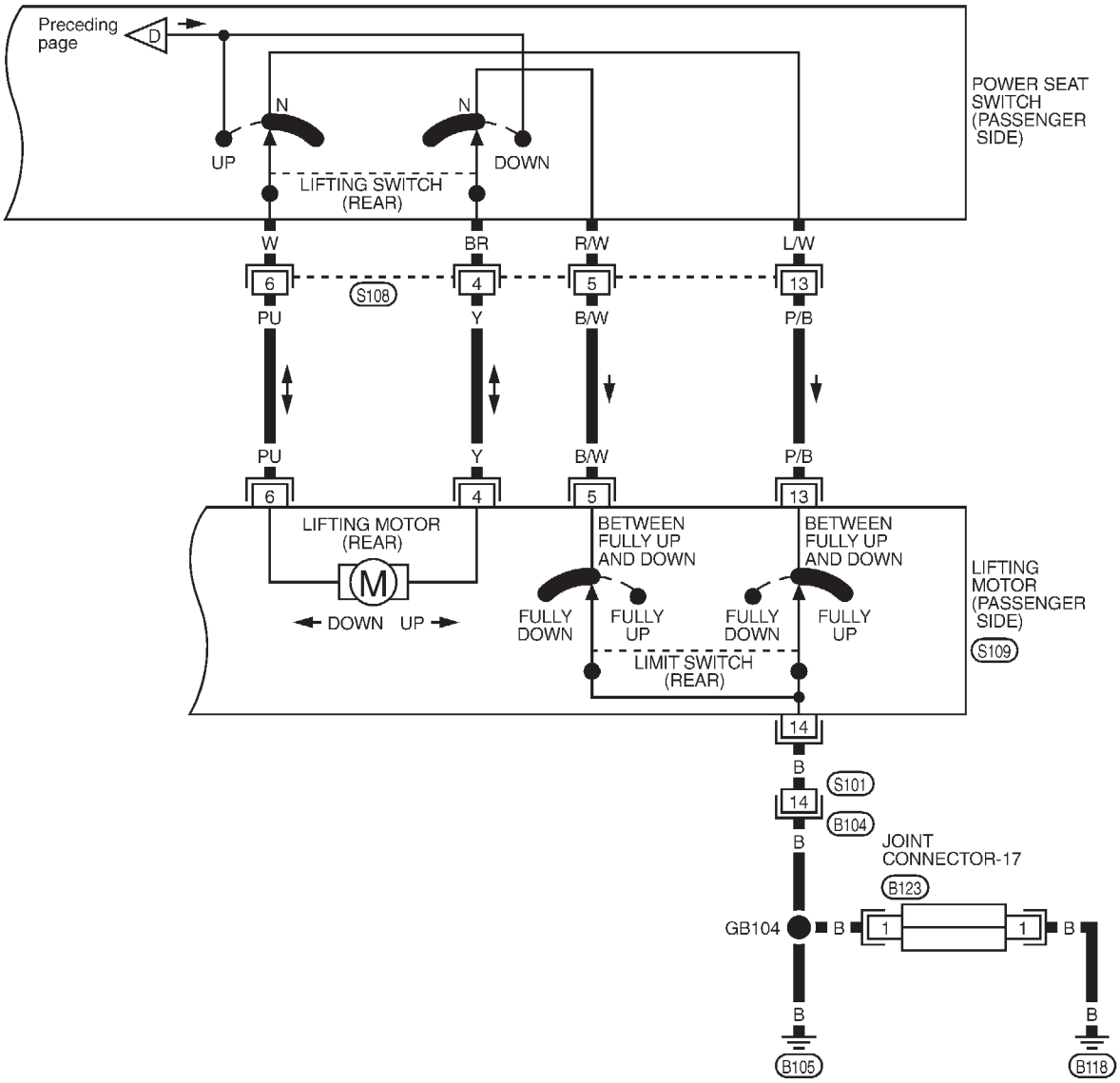


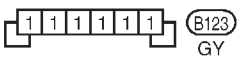
∗ : This connector is not shown in "HARNESS LAYOUT", EL section.

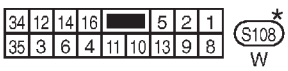
TEL812

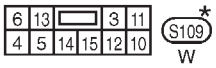
Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-04





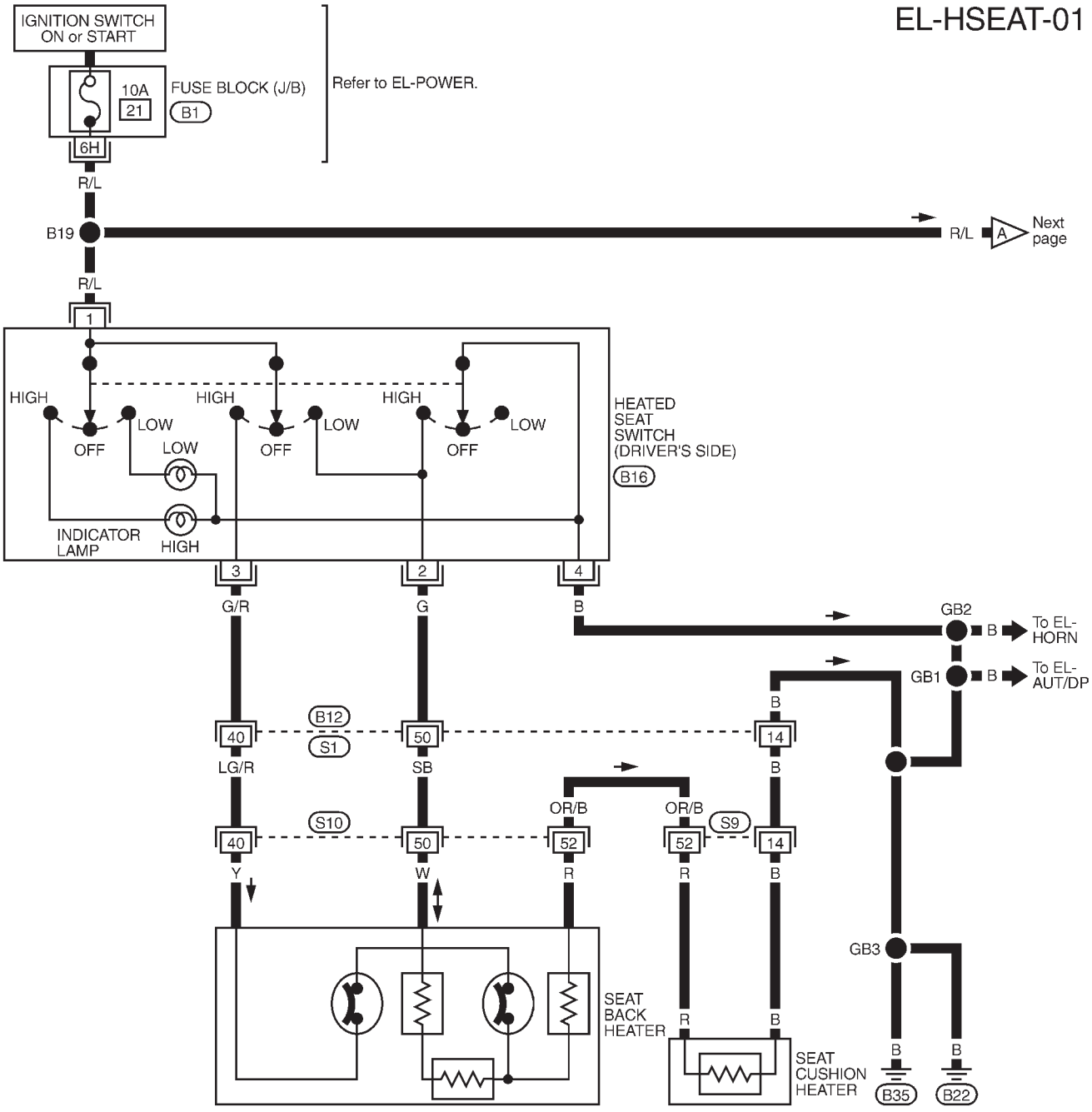


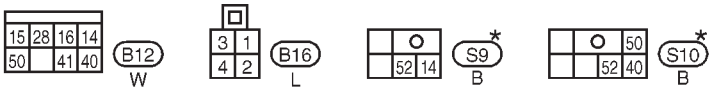


∗: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL213A

Wiring Diagram — HSEAT —





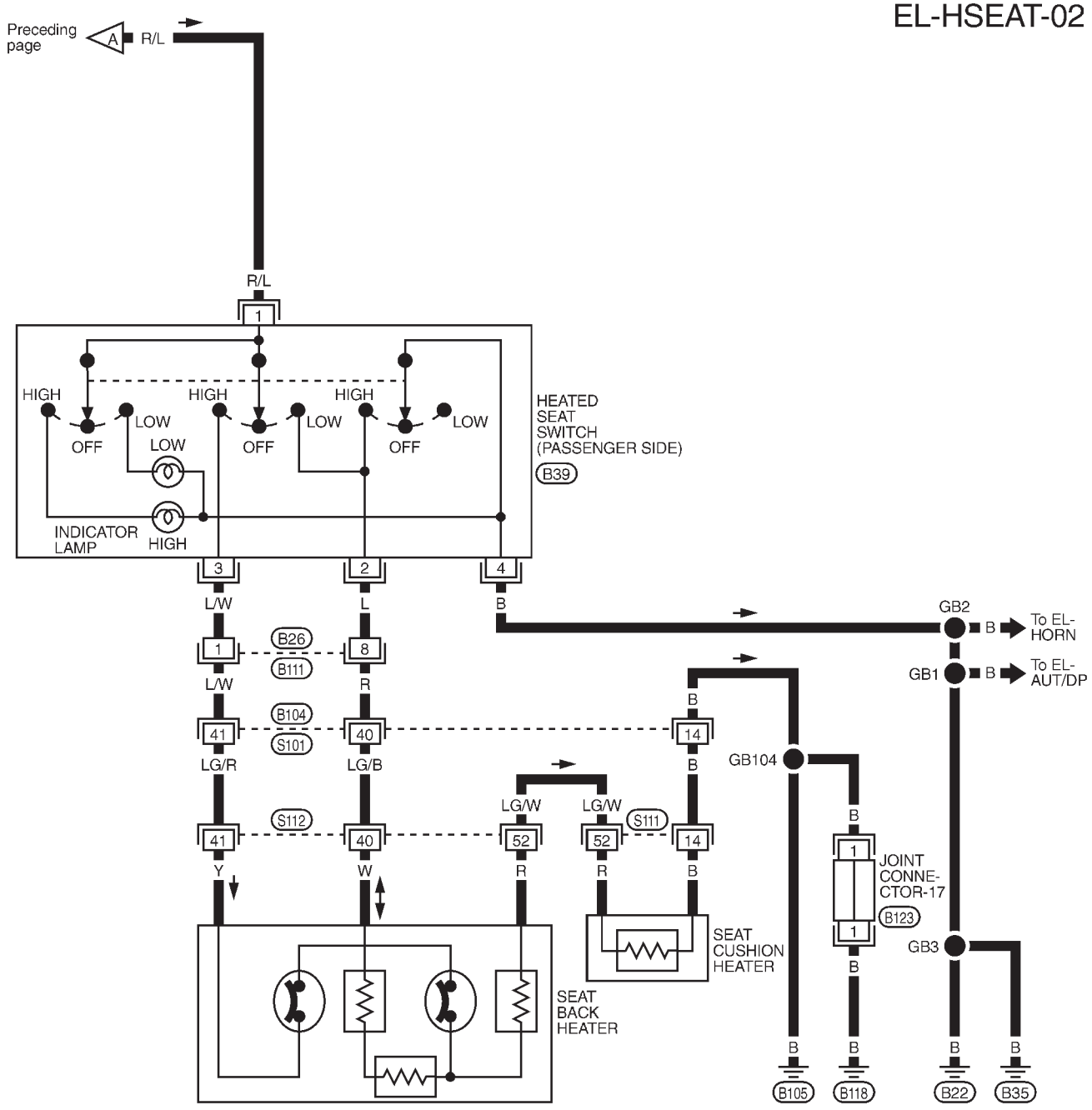
★ : This connector is not shown in "HARNESS LAYOUT", EL section.

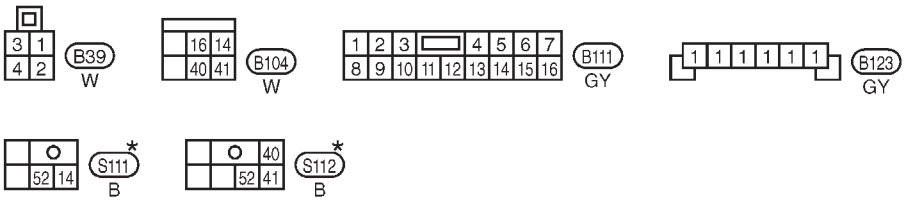
Refer to last page (Foldout page).
B1

TEL814

Wiring Diagram — HSEAT — (Cont'd)

EL-HSEAT-02

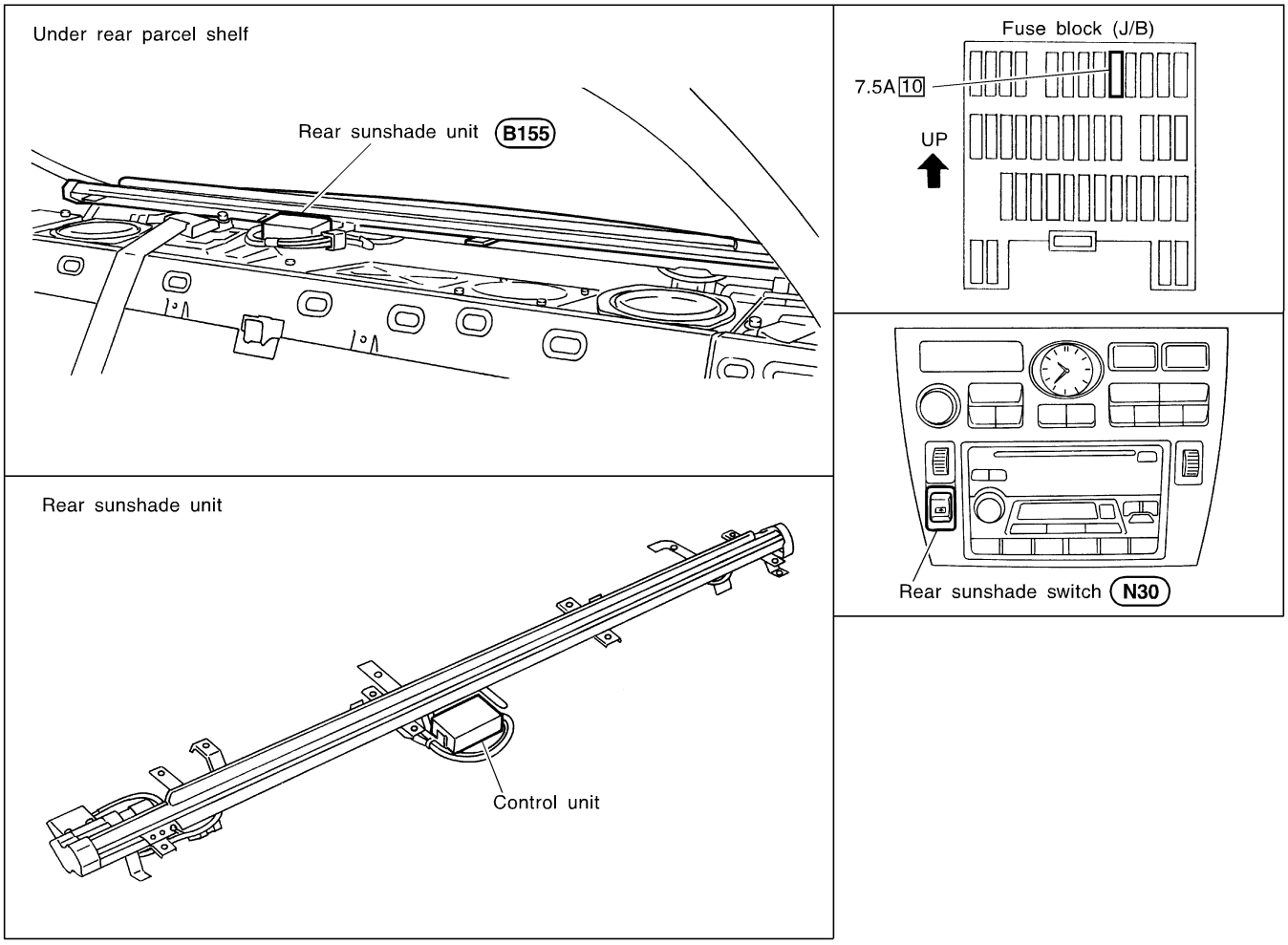




★: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL815

Component Parts and Harness Connector Location



SEL947V

System Description

Power is supplied at all times.
- through 7.5A fuse [No. 10, located in the fuse block (J/B)]
- to rear sunshade unit terminal ⑤ .

Ground is supplied at all times
- to rear sunshade unit terminal ⑥
- through body ground B105 and B118.

OPEN OPERATION

When rear sunshade switch is turned to “OPEN”, the ground is supplied to rear sunshade unit terminal ① . Based on the ground signal to control unit terminal ⑥ through rear sunshade unit terminal ① , power is supplied
- to motor terminal ②
- from control unit terminal ⑨

and ground is supplied
- to motor terminal ①
- from control unit terminal ⑧ .

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

CLOSE OPERATION

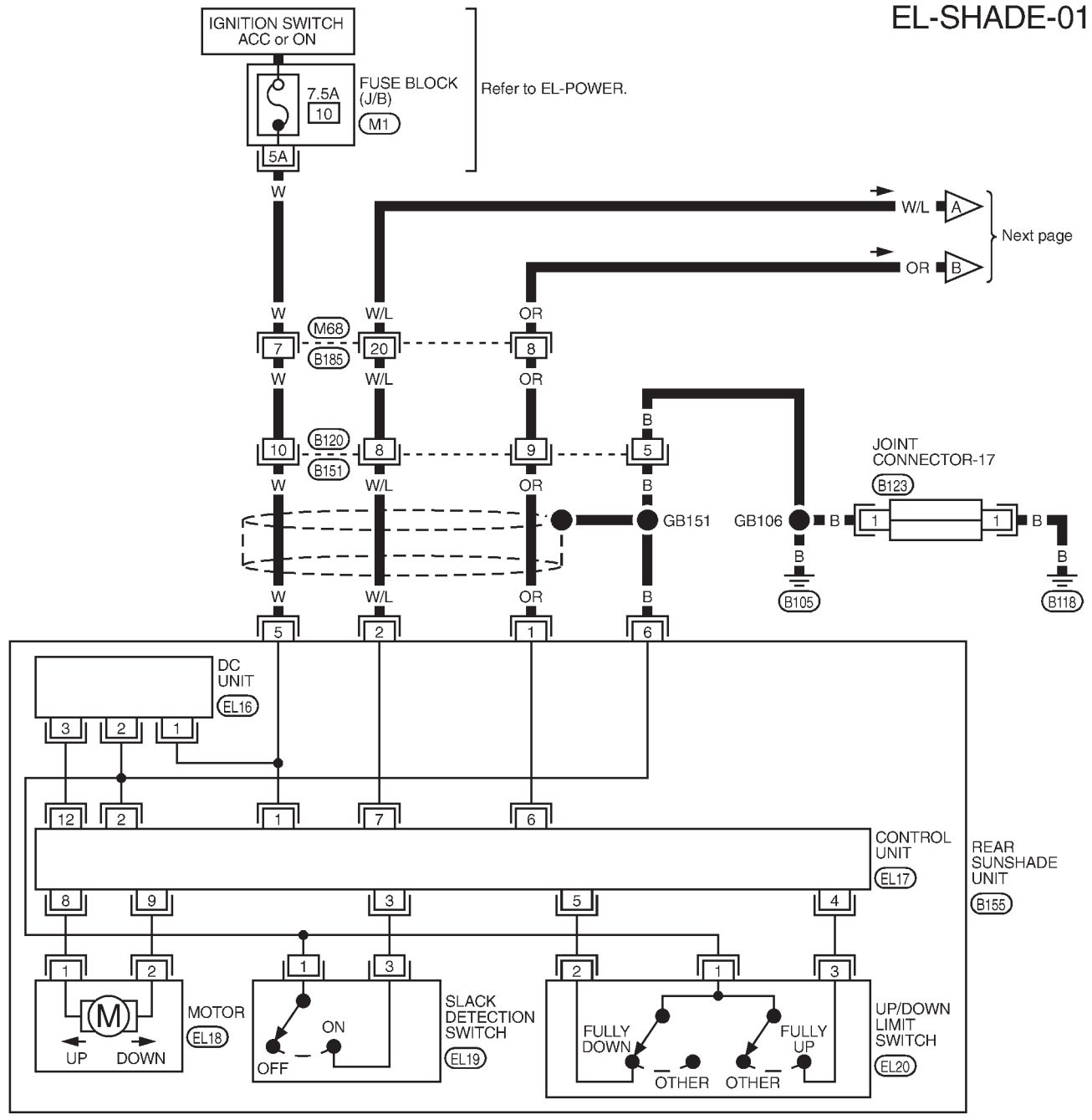
When rear sunshade switch is turned to “CLOSE”, ground is supplied to rear sunshade unit terminal ② . Based on the ground signal to control unit terminal ⑦ through rear sunshade unit terminal ② , power is supplied
- to motor terminal ①
- from control unit terminal ⑧

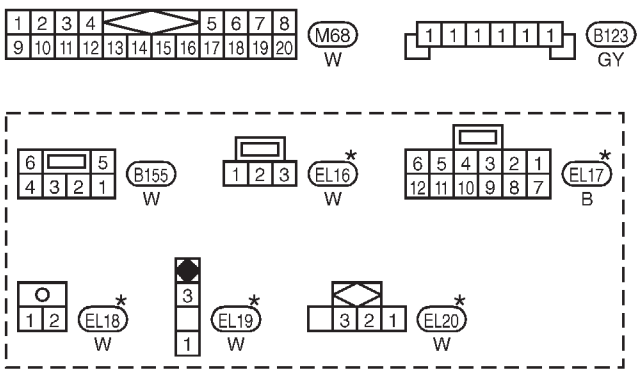
and ground is supplied
- to motor terminal ②
- from control unit terminal ⑨ .

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

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

Wiring Diagram — SHADE —





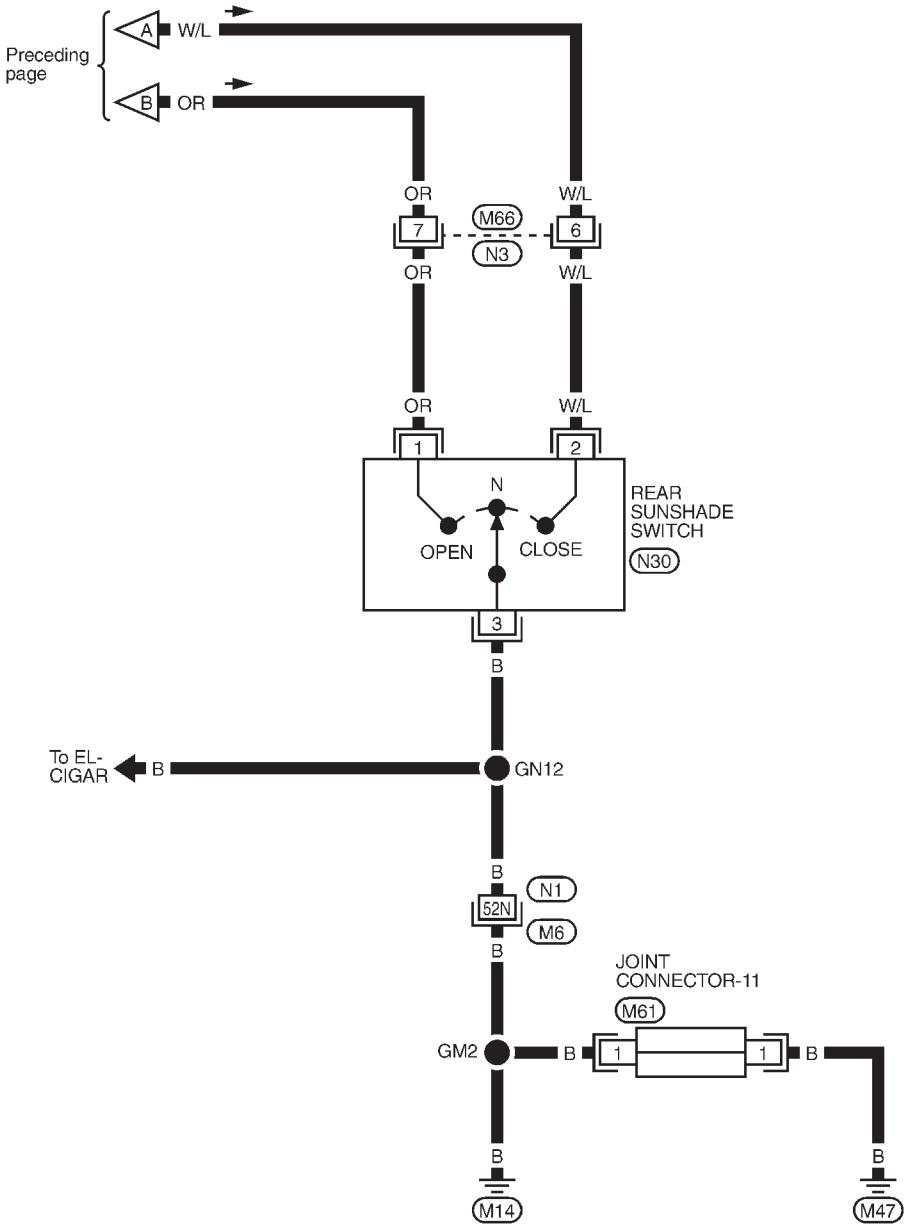
Refer to last page (Foldout page).
M1

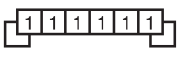
*: This connector is not shown in "HARNESS LAYOUT", EL section.

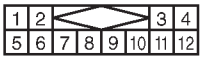
TEL034B

Wiring Diagram — SHADE — (Cont'd)

EL-SHADE-02

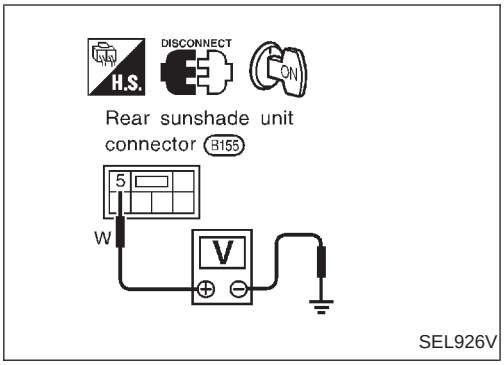






Refer to last page (Foldout page).
M6 , N1

TEL385B



Trouble Diagnoses

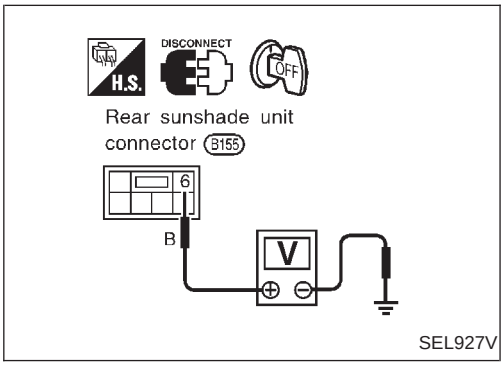
POWER SUPPLY CIRCUIT CHECK

Check voltage between rear sunshade unit terminal ⑤ and ground.

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

If NG, check the following.

- 7.5A fuse [No. 10, located in fuse block (J/B)]
- Harness for open or short between 7.5A fuse [No. 10, located in fuse block (J/B)] and rear sunshade unit.

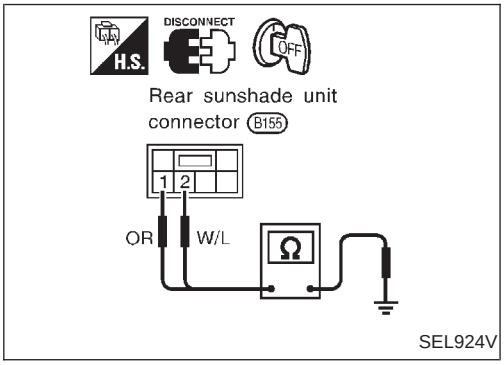


GROUND CIRCUIT CHECK

Check continuity between rear sunshade unit terminal ⑥ and ground.

Terminals	Continuity
⑥ - Ground	Yes

If NG, check harness for open between rear sunshade unit terminal ⑥ and body ground B105 and B118.



REAR SUNSHADE SIGNAL CIRCUIT CHECK

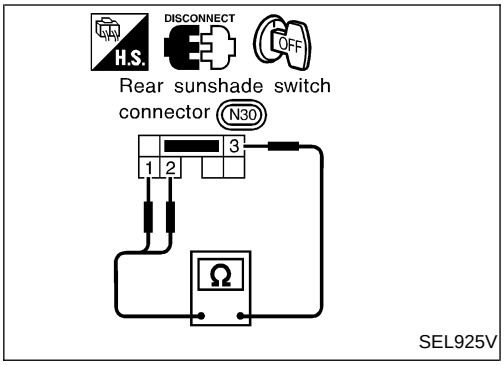
1. Disconnect rear sunshade unit connector.
2. Check the following continuity.

Terminals	Switch position	Continuity
① - Ground	Open	Yes
	Neutral	No
	Close	No
② - Ground	Open	No
	Neutral	No
	Close	Yes

If NG, check the following.

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

Trouble Diagnoses (Cont'd)



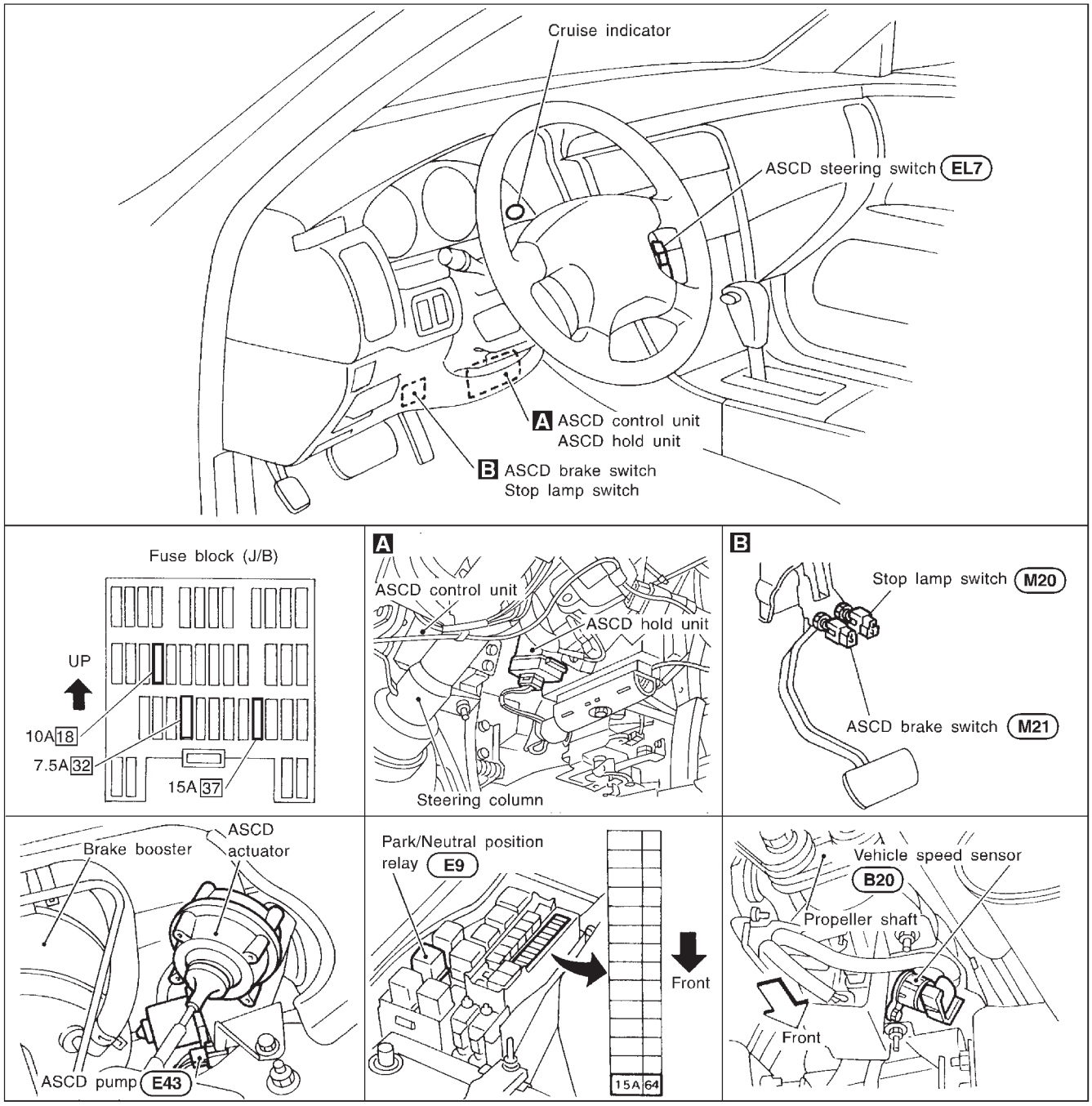
REAR SUNSHADE SWITCH CHECK

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

Terminals	Switch position	Continuity
① - ③	Open	Yes
	Neutral	No
	Close	No
② - ③	Open	No
	Neutral	No
	Close	Yes

If NG, replace rear sunshade switch.

Component Parts and Harness Connector Location



SEL812V

System Description

POWER SUPPLY AND GROUND

When ignition switch is in the ON or START position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to ASCD hold unit terminal ① .

When MAIN switch is depressed, ground is supplied
- to ASCD hold unit terminal ②
- through ASCD steering switch terminal ④ .

If those two signals are input, ASCD hold unit supplies power
- to ASCD control unit terminal ④ ,
- to ASCD control unit terminal ⑤ (through ASCD brake switch and park/neutral position relay) and
- to combination meter terminal ㊺ to illuminate CRUISE indicator.

ASCD hold unit keeps power supply until any of following condition exists.
- Ignition switch is returned to the ACC or OFF position.
- MAIN switch is depressed again.

Ground is supplied
- to ASCD hold unit terminal ④ and
- to ASCD control unit terminal ③
- through body grounds (M14) and (M47).

OPERATION

Set operation

To activate the ASCD, all of following conditions must exist.
- Power supply to ASCD control unit terminal ④
- Power supply to ASCD control unit terminal ⑤ (Brake pedal is released and A/T selector lever is in other than P and N position.)
- Vehicle speed is greater than 48 km/h (30 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 ② .

And then ASCD pump is activated to control throttle wire and ASCD control unit supply power
- to combination meter terminal ㊻ to illuminate SET indicator.

A/T overdrive control during cruise control driving

When the vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent
- from ASCD control unit terminal ⑫
- to TCM (transmission control module) terminal ㊵ .

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.

Coast operation

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

When the RESUME/ACCEL switch is depressed, power is supplied
- from ASCD steering switch terminal ③
- to ASCD control unit terminal ① .

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

When any of following condition exists, cruise operation will be canceled. (CRUISE indicator will continue to illuminate.)
- CANCEL switch is depressed. (Power supply to ASCD control unit terminals ① and ②)
- Brake pedal is depressed. (Power supply to ASCD control unit terminal ⑪ from stop lamp switch)
- Brake pedal is depressed or A/T selector lever is shifted to P or N position. (Power supply to ASCD control unit terminal ⑤ is interrupted.)

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

System Description (Cont'd)

Resume operation

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

- Brake pedal is released.
- A/T selector lever is in other than P and N position.
- Vehicle speed is greater than 48 km/h (30 MPH).

ASCD PUMP OPERATION

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

- from terminal ⑧ of ASCD control unit
- to ASCD pump terminal ① .

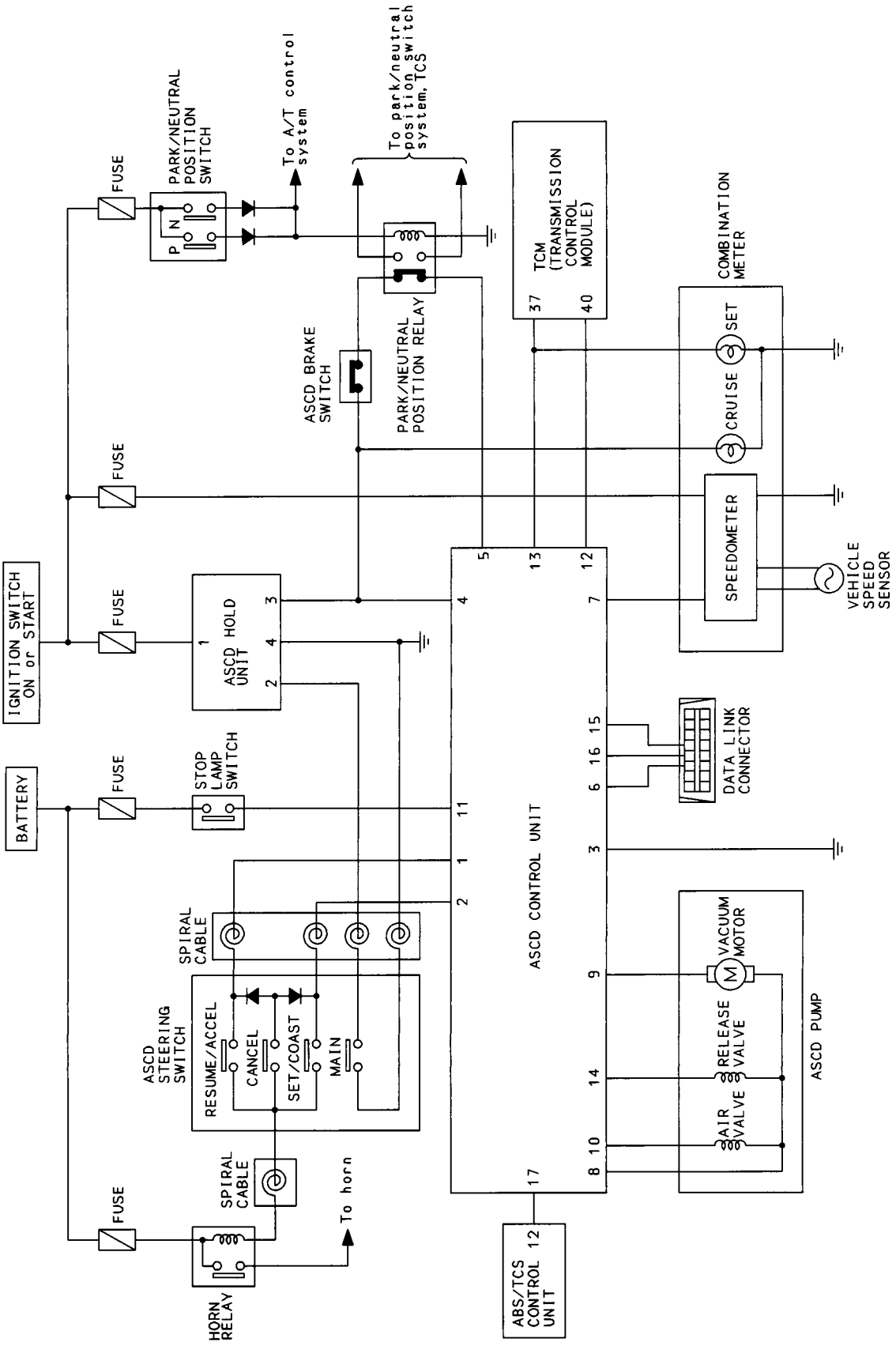
Ground is supplied to vacuum motor, air valve and release valve from ASCD control unit depending on the operated condition as shown in the below table.

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

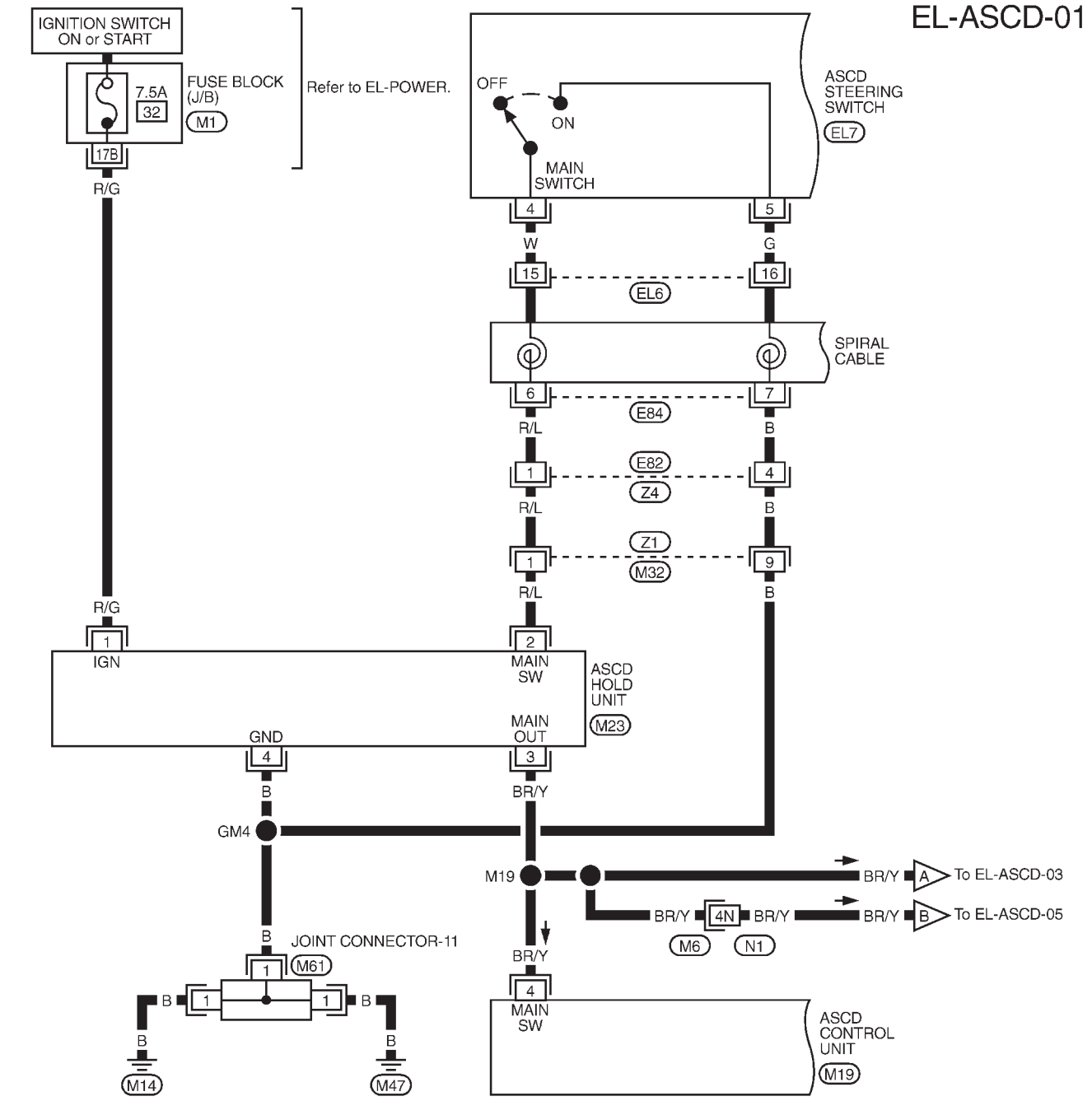
*: When power and ground is supplied, valve is closed.

Schematic



TEL028M

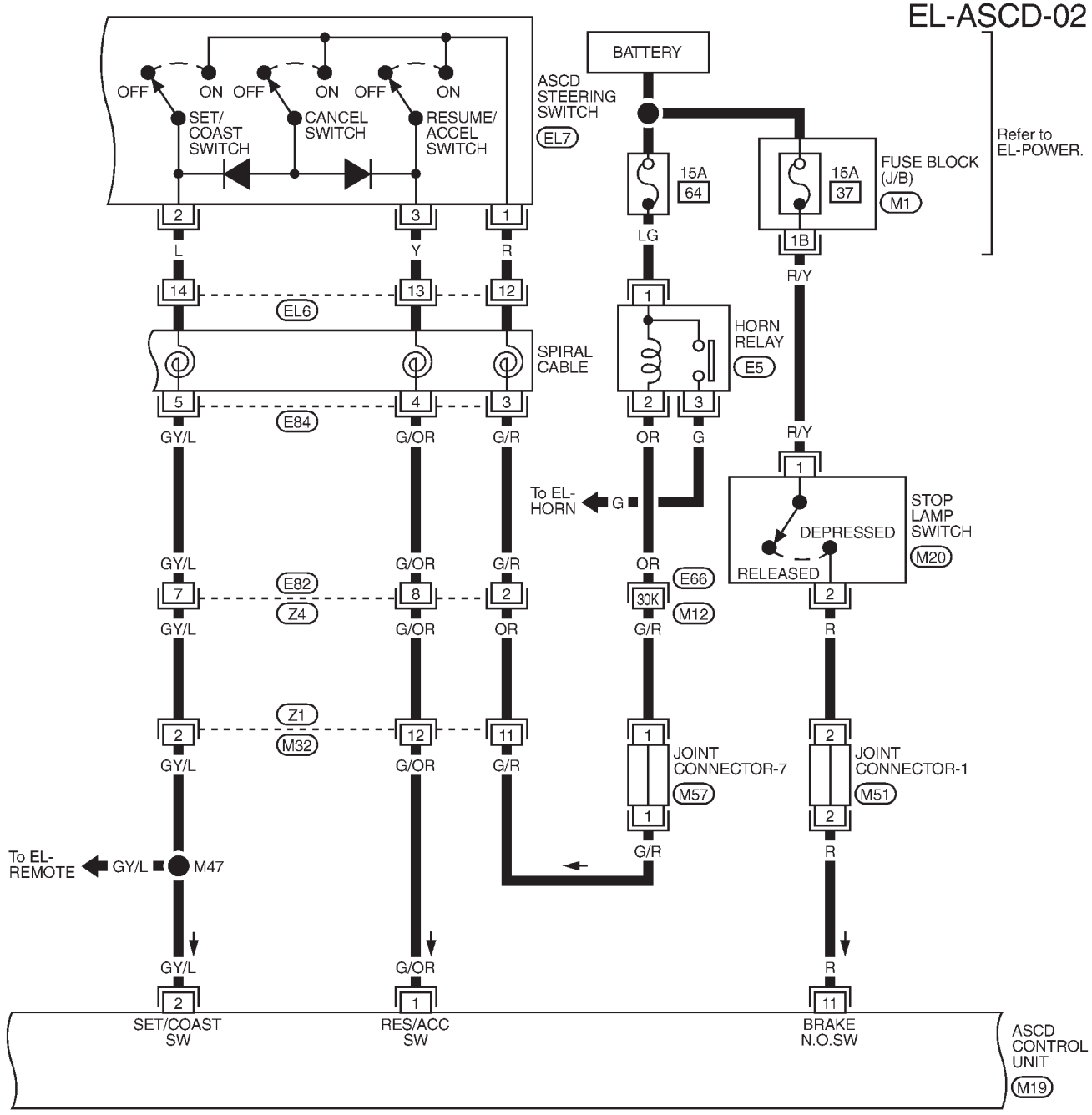
Wiring Diagram — ASCD —

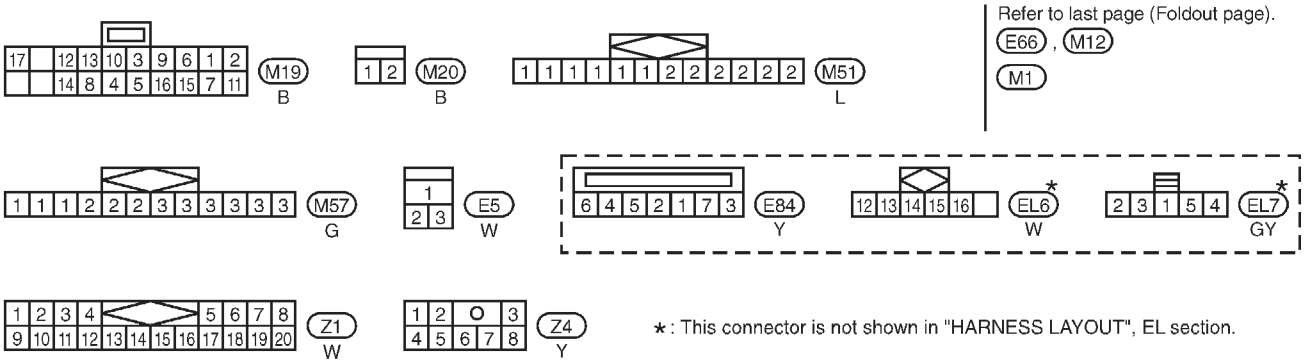


TEL005B

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-02





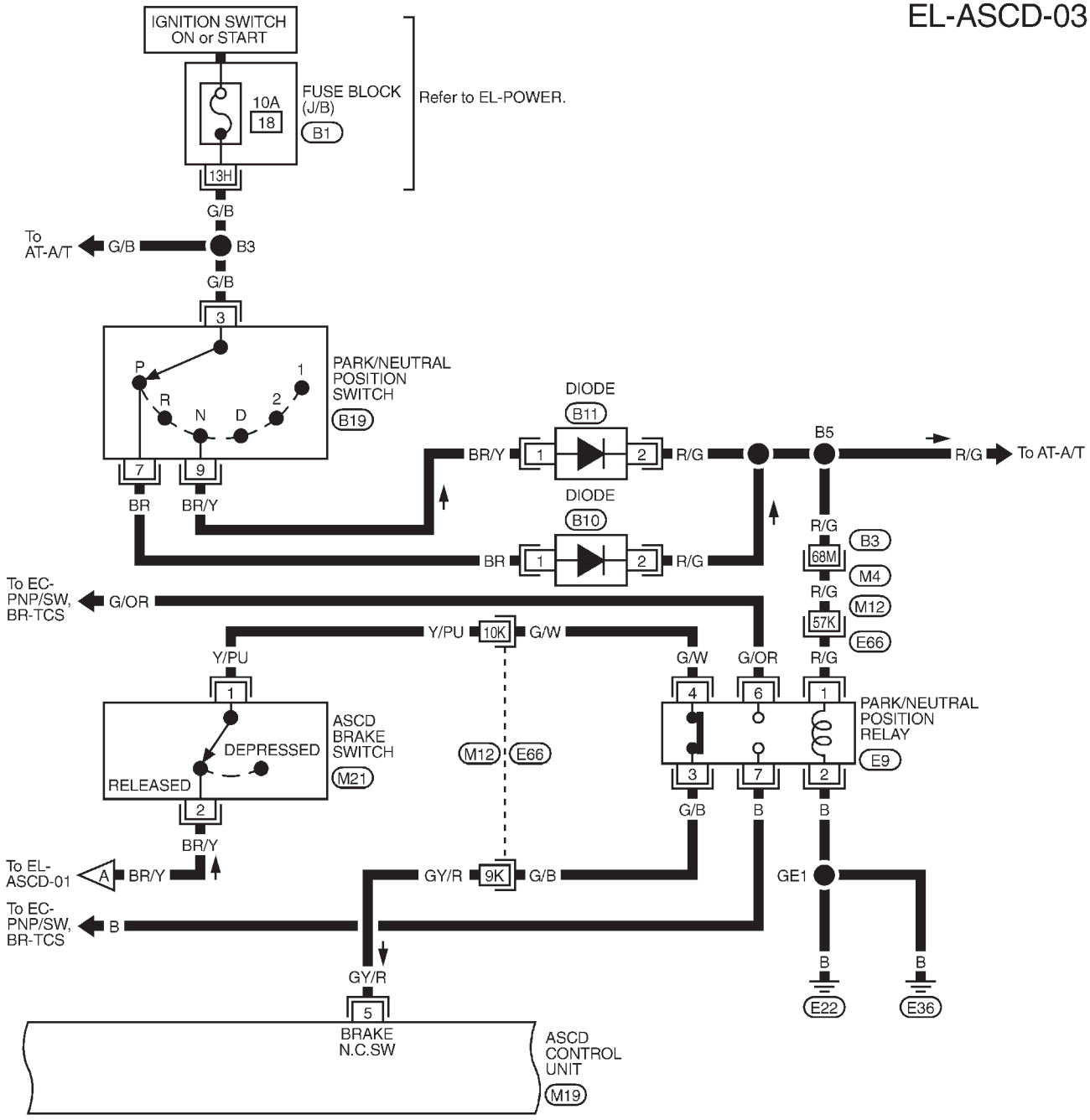
Refer to last page (Foldout page).
E66 , M12
M1

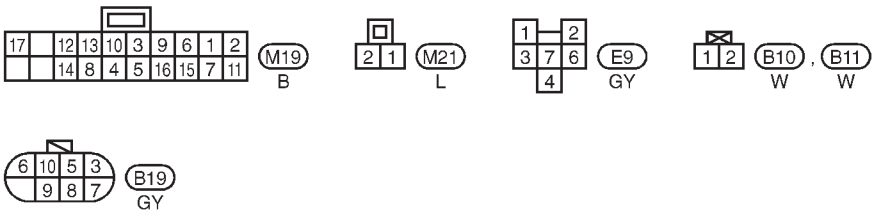
∗: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL006B

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03





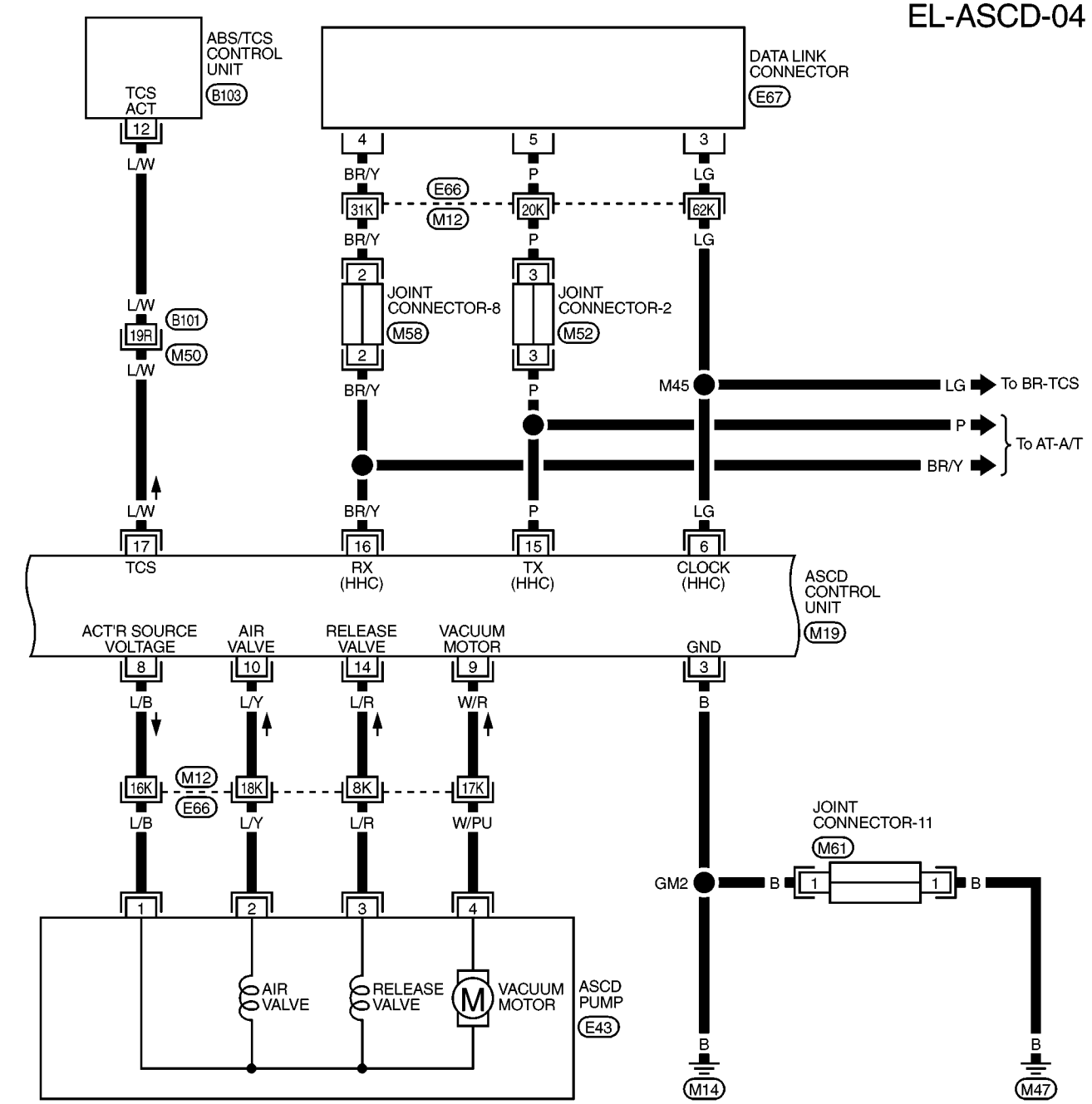
Refer to last page (Foldout page).

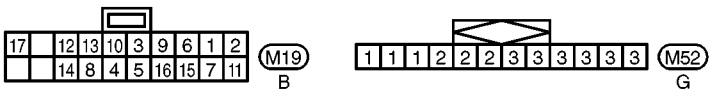
M4, B3
E66, M12
B1

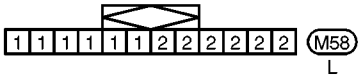
TEL007B

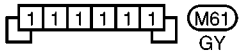
Wiring Diagram — ASCD — (Cont'd)

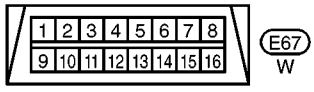
EL-ASCD-04











Refer to last page (Foldout page).

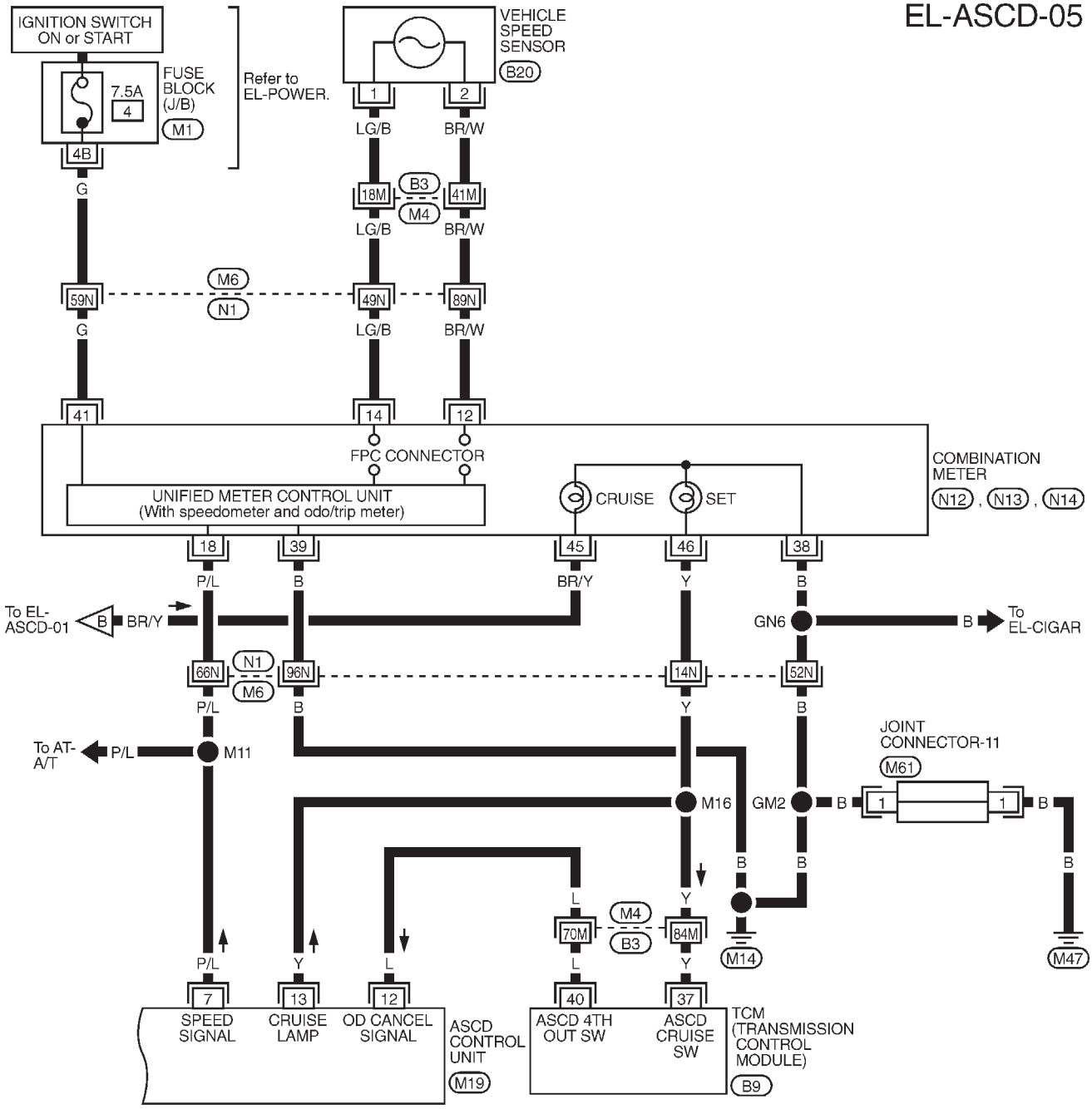
M12 , E66

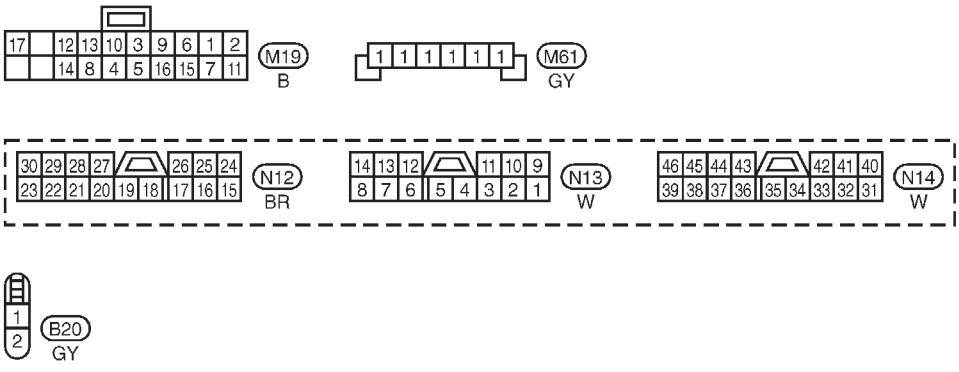
M50 , B101

B103

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05





Refer to last page (Foldout page).

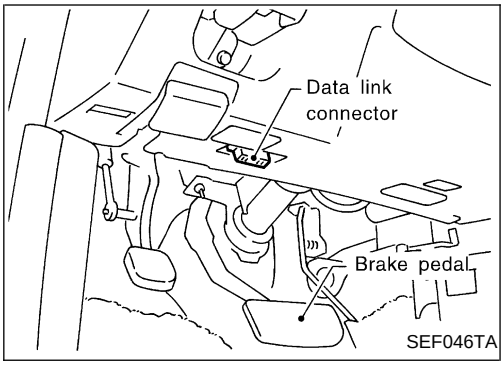
M4, B3

M6, N1

M1

B9

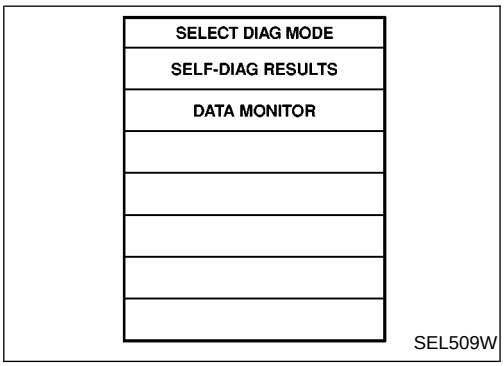
TEL806A



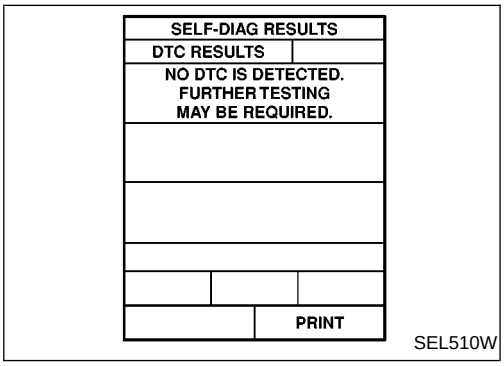
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

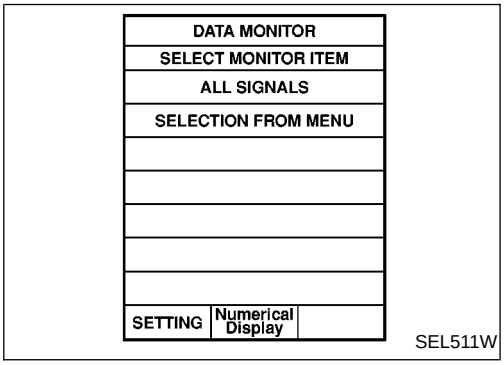
1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector.



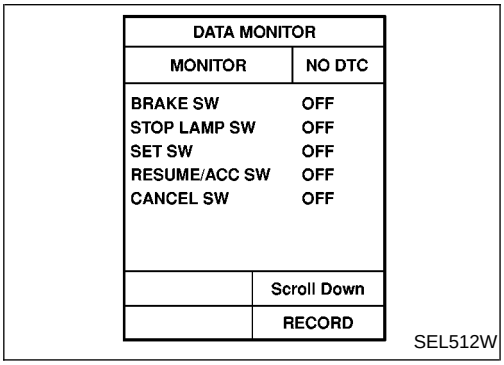
3. Turn ignition switch ON.
4. Turn ASCD main switch ON.
5. Touch START (on CONSULT-II display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- Self-diagnostic results are shown on display. Refer to table on the next page.



8. Touch DATA MONITOR.
   The items on the next page are available as data monitor items.



- Touch START.
- Data monitor results are shown on display. Refer to table on the next page.

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

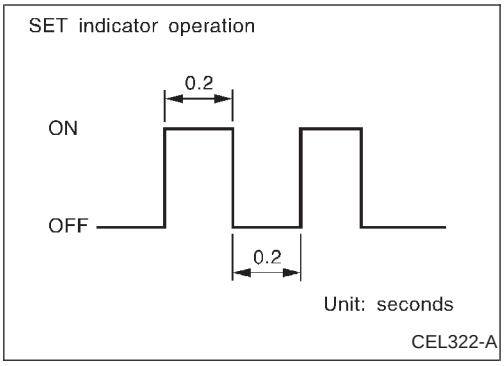
CONSULT-II (Cont'd)

SELF-DIAGNOSTIC RESULTS

Diagnostic item	Description	Repair/Check order
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	• Even if no self diagnostic code is indicated, further testing may be required as far as the customer complains.	—
POWER SUPPLY-VALVE	• The power supply circuit for the ASCD pump is open. (An abnormally high voltage is entered.)	Diagnostic procedure 6 (EL-255)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 6 (EL-255)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 6 (EL-255)
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 6 (EL-255)
VHCL SP·S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.	Diagnostic procedure 5 (EL-254)
CONTROL UNIT	• The ASCD control unit is malfunctioning.	Replace ASCD control unit.
BRAKE SW/STOP/L SW	• The brake switch or stop lamp switch is malfunctioning.	Diagnostic procedure 3 (EL-252)

DATA MONITOR

Monitored item	Description
BRAKE SW	• Indicates [ON/OFF] condition of the brake switch circuit.
STOP LAMP SW	• Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	• Indicates [ON/OFF] condition of the set switch circuit.
RESUME/ACC SW	• Indicates [ON/OFF] condition of the resume/accelerate switch circuit.
CANCEL SW	• Indicates [ON/OFF] condition of the cancel circuit.
VHCL SPEED SE	• The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	• The preset vehicle speed is displayed.
VACUUM PUMP	• The operation time of the vacuum pump is displayed.
AIR VALVE	• The operation time of the air valve is displayed.
PW SUP-VALVE	• Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	• Indicates [ON/OFF] condition of the cruise lamp circuit.
A/T·OD CANCEL	• Indicates [ON/OFF] condition of the OD cancel circuit.
AT OD MONITOR	• Indicates [ON/OFF] condition of over drive.
FAIL SAFE·LOW	• The fail-safe (LOW) circuit function is displayed.
FAIL SAFE·SPD	• The fail-safe (SPEED) circuit function is displayed.
TCS MONITOR	• Indicates [ON/OFF] condition of traction control system.

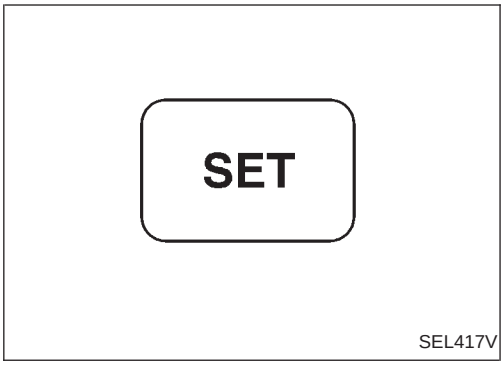


Fail-safe System Description

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

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.



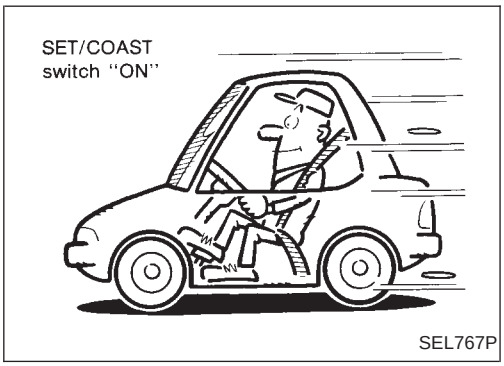
SEL417V

Fail-safe System Check

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 “DIAGNOSTIC PROCEDURE 4” (EL-253).

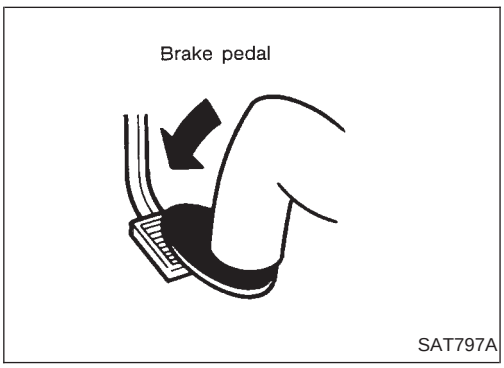


SEL767P

3. Drive the vehicle at more than 48 km/h (30 MPH) and push SET/COAST switch.

If the indicator lamp blinks, check the following.

- Vehicle speed sensor. Refer to “DIAGNOSTIC PROCEDURE 5” (EL-254).
- ASCD pump circuit. Refer to “DIAGNOSTIC PROCEDURE 6” (EL-255).
- 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 “DIAGNOSTIC PROCEDURE 3” (EL-252).

5. END. (System is OK.)

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	—		Diagnostic procedure						
REFERENCE PAGE	EL-245	EL-248	EL-250	EL-251	EL-252	EL-253	EL-254	EL-255	EL-256
SYMPTOM	Self-diagnosis in CONSULT-II	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD HOLD UNIT CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (VEHICLE SPEED SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 6 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. (“SET” indicator lamp does not blink.)	X		X	X		X	X		
ASCD cannot be set. (“SET” indicator lamp blinks.★1)	X	X			X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.	X					X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2	X					X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.	X					X			X
System is not released after CANCEL switch (steering) has been pressed.	X					X			X
Large difference between set speed and actual vehicle speed.	X						X	X	X
Deceleration is greatest immediately after ASCD has been set.	X						X	X	X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform “Fail-safe System Check” (EL-248) to verify repairs.

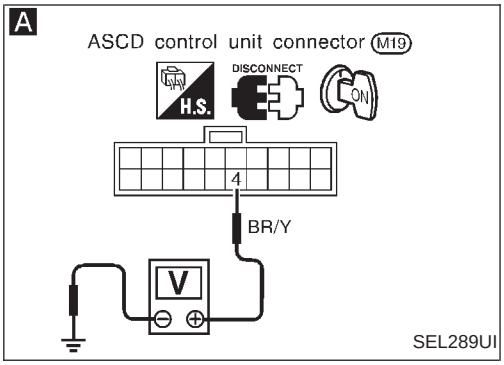
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to “OFF”, vehicle speed will not return to the set speed since the memory is canceled.

Trouble Diagnoses (Cont'd)

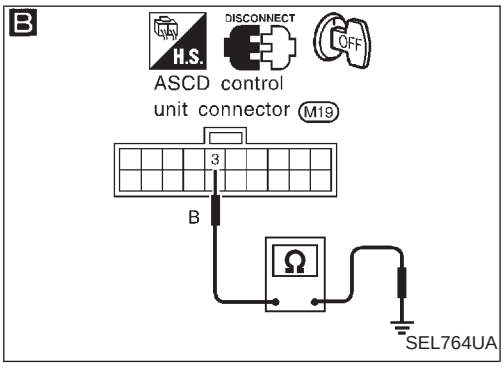
DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)

A



B



1. Turn ignition switch ON.
2. Turn ASCD main switch "ON".
   Does "CRUISE" indicator illuminate?

No → Check the following.
- ASCD hold unit
  Go to DIAGNOSTIC PROCEDURE 2 (ASCD HOLD UNIT CHECK).
- Harness for open or short between ASCD hold unit and combination meter
- "CRUISE" indicator ground circuit

Yes ↓

A

CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch "ON".
4. Check voltage between control unit connector terminal ④ and ground.
   Does battery voltage exist?

   Refer to wiring diagram in EL-240.

No → Check harness for open or short between control unit and ASCD hold unit.

Yes ↓

B

CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.

Check continuity between ASCD control unit harness terminal ③ and ground.
Does continuity exist?

Refer to wiring diagram in EL-243.

No → Repair harness.

Yes ↓

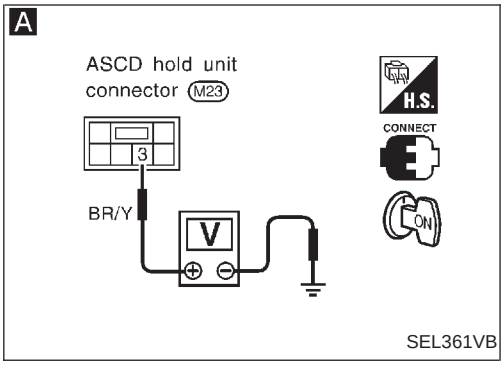
Power supply and ground circuit is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(ASCD HOLD UNIT CHECK)

A



CHECK HOLD UNIT OUTPUT.
1. Turn ignition switch ON.
2. Depress ASCD main switch.
3. Check voltage between hold unit terminal ③ and ground.

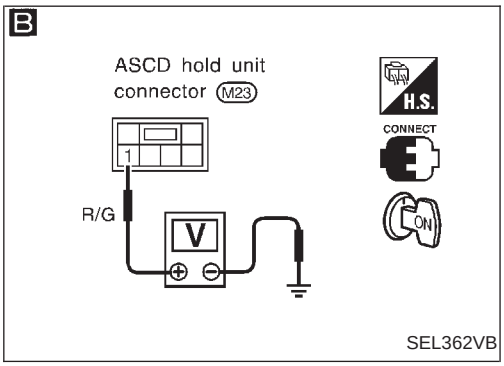
Does battery voltage exist?

Refer to wiring diagram in EL-240.

Yes → ASCD hold unit is OK.

No ↓

B



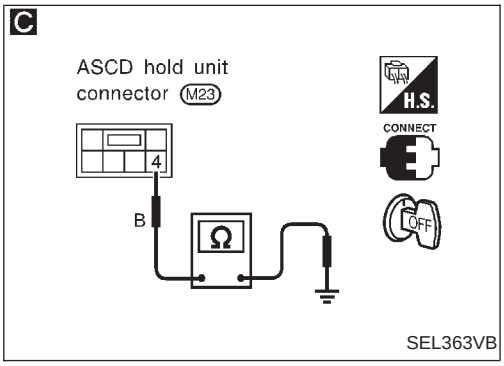
CHECK POWER SUPPLY CIRCUIT FOR HOLD UNIT.
1. Turn ignition switch ON.
2. Check voltage between hold unit terminal ① and ground.

Does battery voltage exist?

No → Check the following.
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and hold unit

Yes ↓

C



CHECK GROUND CIRCUIT FOR HOLD UNIT.

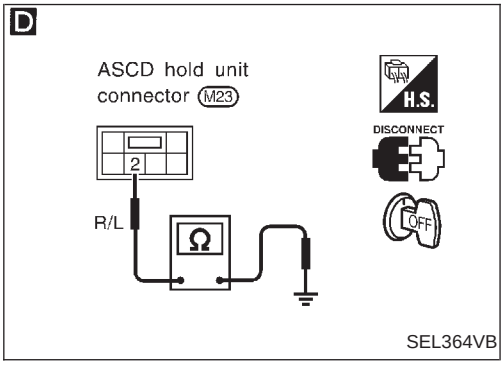
Check continuity between hold unit terminal ④ and ground.

Does continuity exist?

No → Repair harness.

Yes ↓

D



CHECK MAIN SWITCH INPUT.
1. Disconnect hold unit connector.
2. Check continuity between hold unit terminal ② and ground.

Condition of main switch	Continuity
Pressed	Yes
Released	No

NG → Check the following.
- ASCD steering switch Refer to "Electrical Components Inspection" (EL-257).
- Harness for open or short between ASCD hold unit and ASCD steering switch
- ASCD steering switch ground circuit

OK ↓

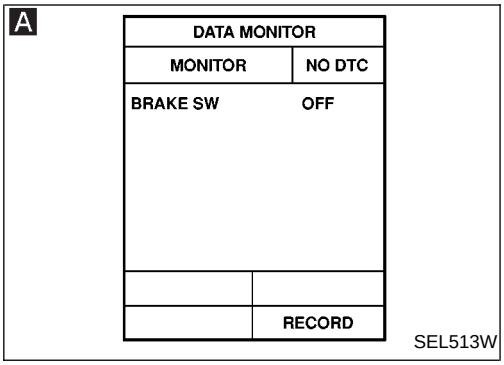
Replace ASCD hold unit.

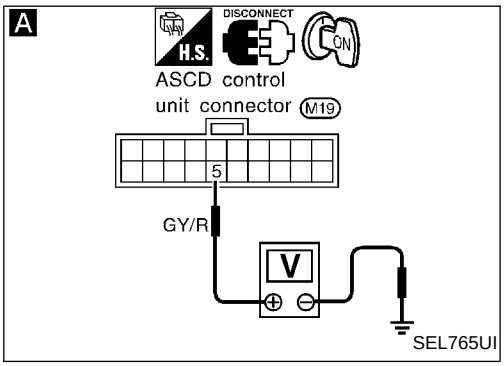
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD BRAKE/STOP LAMP SWITCH CHECK)

A





CHECK ASCD BRAKE SWITCH INPUT.

See "BRAKE SW" in "Data monitor" mode.

When brake pedal is depressed or A/T selector lever is in "N" or "P" range:

BRAKE SW OFF

When brake pedal is released and A/T selector lever is not in "N" or "P" range:

BRAKE SW ON

OR

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

When brake pedal is depressed or A/T selector lever is in "N" or "P" range:

Approx. 0V

When brake pedal is released and A/T selector lever is not in "N" or "P" range:

Battery voltage should exist.

Refer to wiring diagram in EL-242.

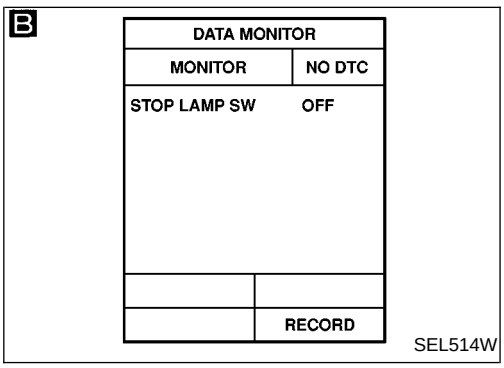
NG →

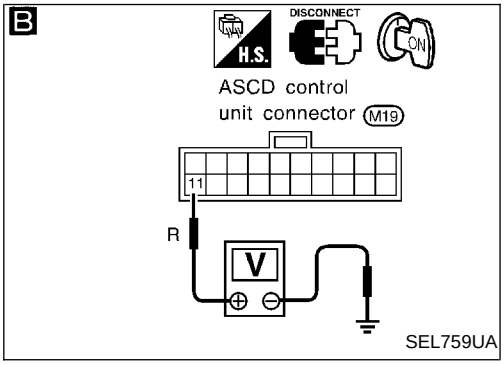
Check the following.

- ASCD brake switch
  Refer to "Electrical Components Inspection" (EL-257).
- Park/Neutral position switch
  Refer to "Electrical Components Inspection" (EL-257).
- Park/Neutral position relay
- Diode
  Refer to "Electrical Components Inspection" (EL-257).
- Harness for open or short

OK ↓

B





CHECK STOP LAMP SWITCH INPUT.

See "STOP LAMP SW" in "Data monitor" mode.

When brake pedal is released:

STOP LAMP SW OFF

When brake pedal is depressed:

STOP LAMP SW ON

OR

1. Disconnect control unit connector.
2. Check voltage between control unit terminal ⑪ and ground.

Condition		Voltage V
Stop lamp switch	Depressed	Approx. 12
	Released	0

Refer to wiring diagram in EL-241.

NG →

Check the following.

- 15A fuse [No. 37, located in the fuse block (J/B)]
- Harness for open or short between fuse and stop lamp switch
- Harness for open or short between ASCD control unit and stop lamp switch
- Stop lamp switch
  Refer to "Electrical Components Inspection" (EL-257).

OK ↓

ASCD brake/stop lamp switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

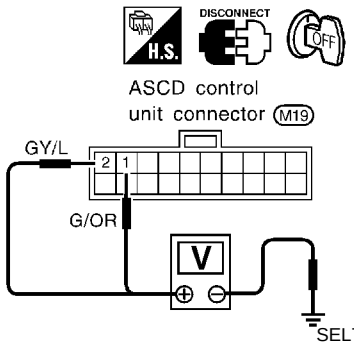
(ASCD STEERING SWITCH CHECK)

A

DATA MONITOR	
MONITOR	NO DTC
SET SW	OFF
RESUME/ACC SW	OFF
CANCEL SW	OFF
	RECORD

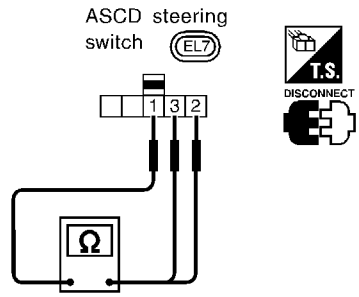
SEL515W

A



SEL760UA

B



SEL365V

A

CHECK ASCD STEERING SWITCH INPUT.

See "SET SW", "RESUME/ACC SW" and "CANCEL SW" in "Data monitor" mode.
SET SW, RESUME/ACC SW and CANCEL SW
When switch is pressed: ON
When switch is released: OFF

OR

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

	Terminal No.		Switch condition	
	⊕	⊖	Pressed	Released
SET/ COAST SW	②	Ground	12V	0V
RESUME/ ACC SW	①	Ground	12V	0V
CANCEL SW	②	Ground	12V	0V
	①	Ground	12V	0V

Refer to wiring diagram in EL-241.

OK → ASCD steering switch is OK.

NG

CHECK POWER SUPPLY FOR ASCD STEERING SWITCH.
Does horn work?

NG → Check the following.
- 15A fuse (No. 64, located in the fuse, fusible link and relay box)
- Horn relay
- Harness for open or short between horn relay and fuse

OK

B

CHECK ASCD STEERING SWITCH.
Check continuity between terminals by pushing each switch.

Switch	Terminal		
	①	③	②
SET/ COAST	○		○
RESUME/ ACCEL	○	○	
CANCEL	○	○	
	○		○

NG → Replace ASCD steering switch.

OK

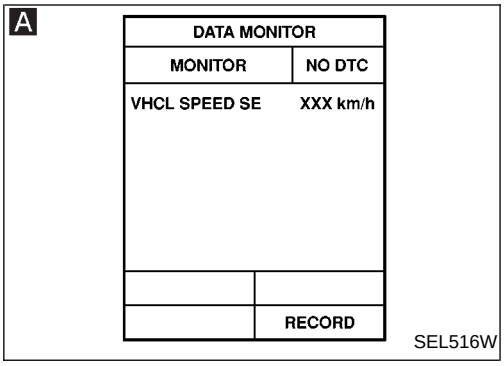
Check harness for open or short between ASCD steering switch and ASCD control unit.

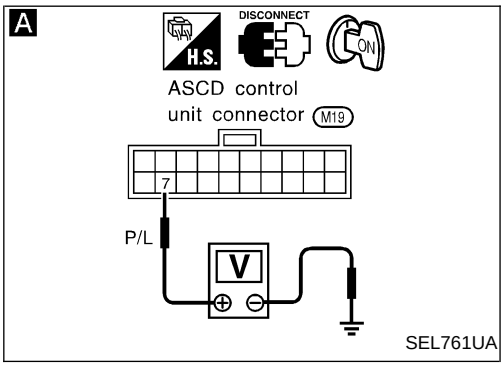
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(VEHICLE SPEED SIGNAL CHECK)

A





CHECK VEHICLE SPEED SIGNAL.

See "VHCL SPEED SE" in "Data monitor" mode while driving.

OK → Vehicle speed sensor is OK.

OR

1. Apply wheel chocks and jack up drive wheel.
2. Disconnect control unit connector.
3. Connect voltmeter between control unit terminal ⑦ and ground.
4. Slowly turn drive wheel.
5. Check deflection of voltmeter pointer.

Refer to wiring diagram in EL-244.

NG

CHECK SPEEDOMETER OPERATION.
Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-127.

Yes

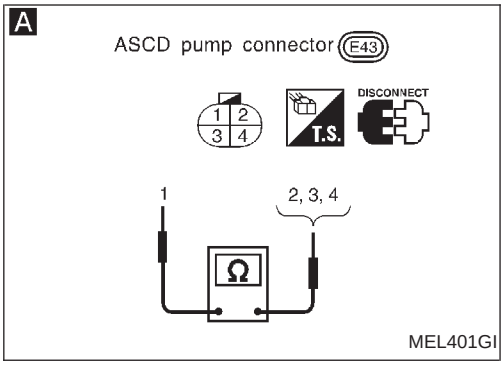
Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ⑱.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(ASCD PUMP CIRCUIT CHECK)

A



A

CHECK ASCD PUMP.

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

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

Refer to wiring diagram in EL-243.

NG → Replace ASCD pump.

OK ↓

Check harness for open or short between ASCD pump and ASCD control unit.

If a self-diagnostic result has already been accomplished, check using the following table.

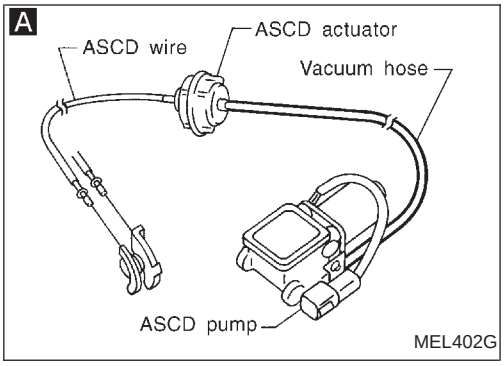
CONSULT-II self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑭	③

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(ASCD ACTUATOR/PUMP CHECK)

A



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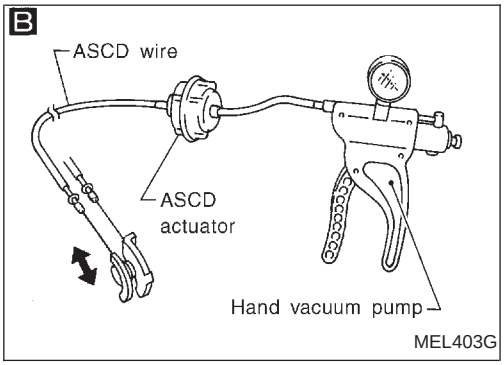

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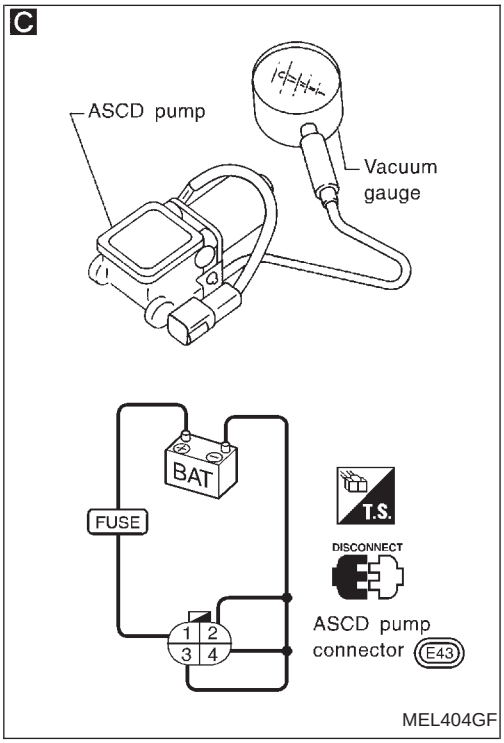


A

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

NG → Repair or replace hose.

OK ↓

CHECK ASCD WIRE.
Check wire for improper installation, rust formation or breaks.

NG → Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-258).

OK ↓

B

CHECK ASCD ACTUATOR.
1. Disconnect vacuum hose from ASCD actuator.
2. 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.

3. 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)

NG → Replace ASCD actuator.

OK ↓

C

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.

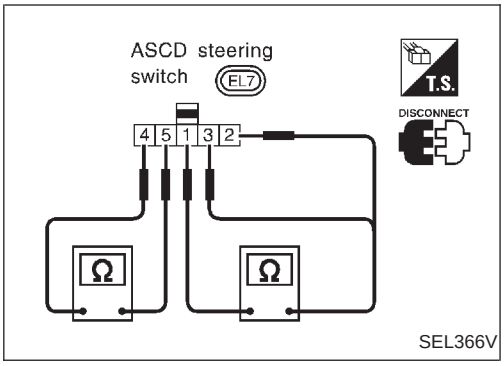
	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

A vacuum pressure of at least −35 kPa (−0.36 kg/cm^2, −5.1 psi) should be generated.

NG → Replace ASCD pump.

OK ↓

ASCD actuator/pump is OK.

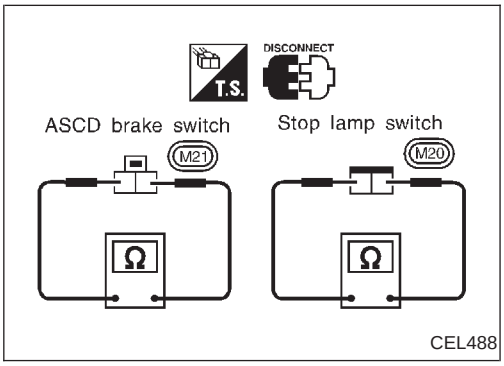


Electrical Components Inspection

ASCD STEERING SWITCH

Check continuity between terminals by pushing each button.

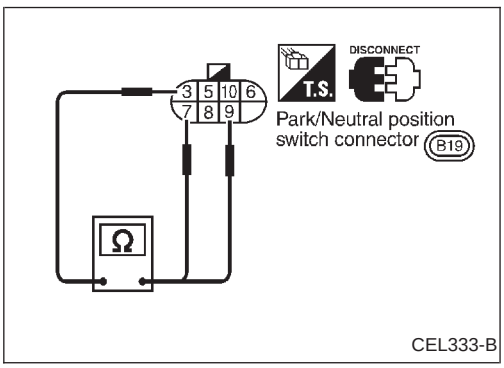
Button	Terminal				
	①	③	②	④	⑤
SET/COAST	○		○		
RESUME/ACCEL	○	○			
CANCEL	○	▶|○			
	○	▶|	○		
MAIN				○	○



ASCD BRAKE SWITCH AND STOP LAMP SWITCH

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

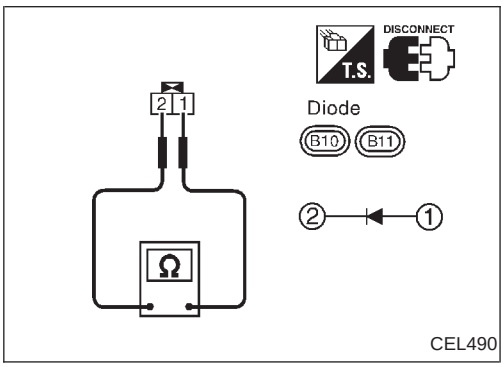
Check each switch after adjusting brake pedal — refer to BR section.



PARK/NEUTRAL POSITION SWITCH

Check continuity between terminals by setting selector lever to each position.

Selector lever position	Terminal		
	③	⑦	⑨
"N"	○		○
"P"	○	○	
Others			



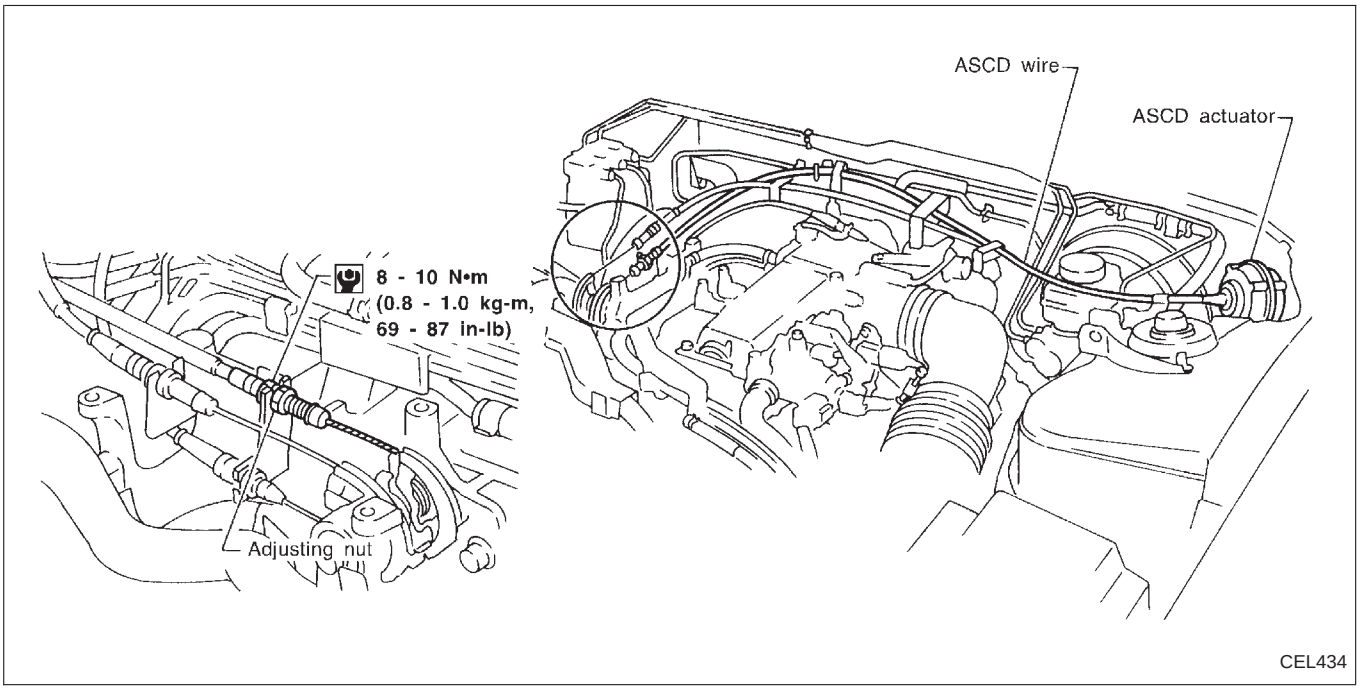
DIODE

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

NOTE: Specifications may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for your tester.

Terminals		Continuity
①	②	Yes

ASCD Wire Adjustment



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 section, “ACCELERATOR CONTROL SYSTEM”.)
3. Tighten adjusting nut until throttle drum just starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

Overall Description

OUTLINE

The In-Vehicle Multiplexing System, IVMS (LAN system), consists of a BCM (Body Control Module) and five LCUs (Local Control Units). Some switches and electrical loads are connected to each LCU. Some electrical systems are directly connected to the BCM. Control of each LCU, (which is provided by a switch and electrical load), is accomplished by the BCM, via multiplex data lines (A-1, A-2 or A-3) connected between them.

BCM (Body Control Module)

The BCM, which is a master unit of the IVMS (LAN), consists of microprocessor, memory and communication LSI sections and has communication and control functions. It receives data signals from the LCUs and sends electrical load data signals to them.

LCU (Local Control Unit)

The LCUs, which are slave units of the BCM, have only a communication function and consist of communication LSI and input-output interface circuits. They receive data signals from the BCM, control the ON/OFF operations of electrical loads and the sleep operation, as well as send switch signals to the BCM.

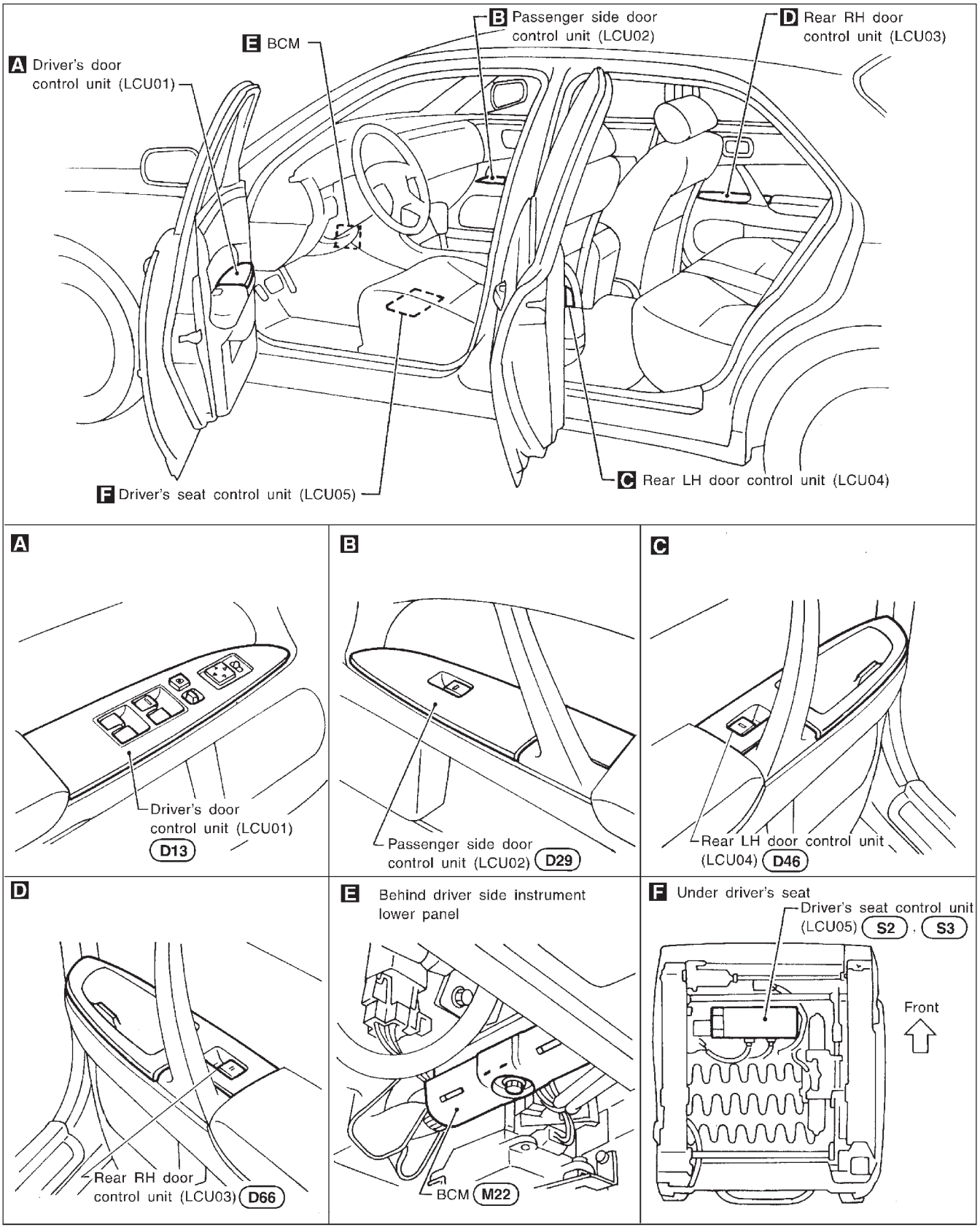
CONTROLLED SYSTEMS

The IVMS controls several body-electrical systems. The systems included in the IVMS are as follows:

- Power window
- Power door lock
- Multi-remote control system
- Theft warning system
- Interior illumination control system
- Step lamp
- Illumination (Power window switch illumination)
- Auto drive positioner
- Auto light (Refer to “HEADLAMP”, EL-47.)
- Door open warning (Refer to “WARNING LAMPS”, EL-134.)
- Ignition key warning (Refer to “WARNING CHIME”, EL-151.)
- Light warning (Refer to “WARNING CHIME”, EL-151.)
- Seat belt warning (Refer to “WARNING CHIME”, EL-152.)
- Wiper amp. (Refer to “WIPER AND WASHER”, EL-161.)
- Rear window defogger timer (Refer to “REAR WINDOW DEFOGGER”, EL-182.)
- Trouble-diagnosing system
  — with CONSULT-II
  — ON BOARD

Also, IVMS has the “sleep/wake-up control” function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to “Sleep/Wake-up Control”.

Component Parts Location

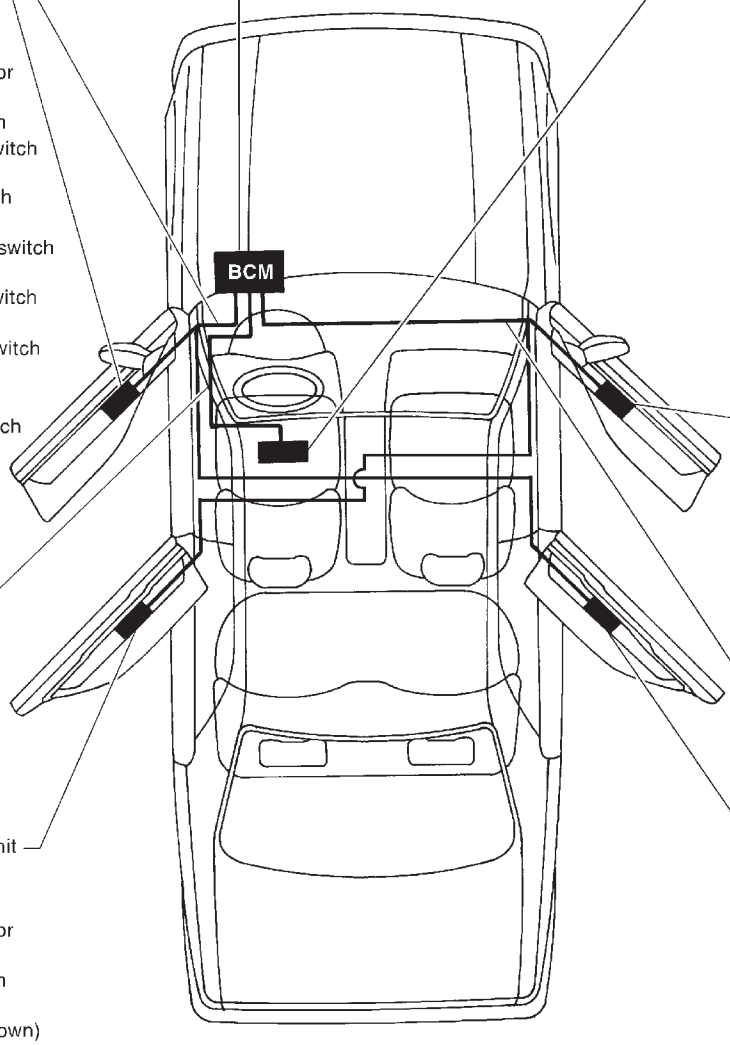


SEL934U

System Diagram

● : Output
○ : Input

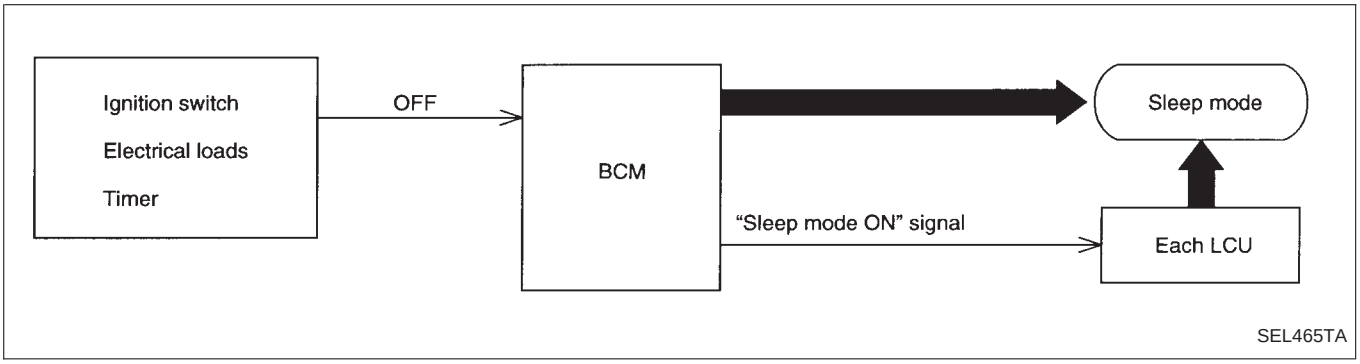
- ● Telescopic motor
- ● Tilt motor
- ● Seat memory indicator-1
- ● Seat memory indicator-2
- ● Trunk lid opener actuator
- ● Ignition key hole illumination
- ● Door warning lamp
- ● Rear window defogger relay
- ● Console lamp
- ● Map lamp LH
- ● Map lamp RH
- ● Footwell lamp
- ● Rear personal lamp LH
- ● Rear personal lamp RH
- ● Front wiper relay
- ● Headlamp relay
- ● Tail lamp relay
- ● Multi-remote control relay
- ● Security indicator
- ● Theft warning horn relay
- ● Theft warning lamp relay
- ● Warning chime
- ○ Trunk room lamp switch
- ○ Hood switch
- ○ Trunk lid key cylinder switch (Unlock)
- ○ Seat belt buckle switch (Driver side)
- ○ Front door key cylinder switch (Driver side)(Unlock)
- ○ Door key cylinder switch (Passenger side)(Unlock)
- ○ Illumination time control switch
- ○ Telescopic switch (Forward)
- ○ Telescopic switch (Backward)
- ○ Tilt switch (Up)
- ○ Tilt switch (Down)
- ○ ADP cancel switch
- ○ Tilt sensor
- ○ Telescopic sensor
- ○ Seat memory switch-1
- ○ Seat memory switch-2
- ○ Seat set switch
- ○ Driver side door switch
- ○ Passenger side door switch
- ○ Rear door switch LH
- ○ Rear door switch RH
- ○ Ignition switch (START)
- ○ Ignition switch (ON)
- ○ Ignition switch (ACC)
- ○ Key switch (Insert)
- ○ Interior lamp switch (ON)
- ○ Interior lamp switch (OFF)
- ○ Rear personal lamp switch (Full)
- ○ Lighting switch (1st)
- ○ Lighting switch (Auto)
- ○ Front wiper switch (INT)
- ○ Front wiper switch (WASH)
- ○ Front wiper volume switch
- ○ Front wiper relay (Auto stop)
- ○ Vehicle speed sensor
- ○ Rear window defogger switch
- ○ Antenna for multi-remote control



SEL354V

Sleep/Wake-up Control

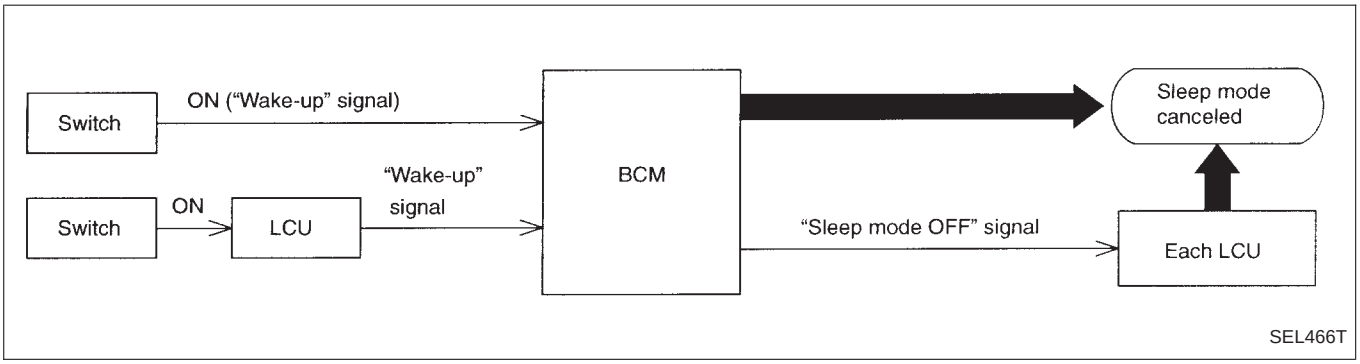
SLEEP CONTROL



"Sleep" control prevents unnecessary power consumption. After the following conditions are met, the BCM suspends the communication between itself and all LCU's. The whole IVMS is set in the "sleep" mode.

- Ignition switch "OFF"
- All electrical loads (in the IVMS) "OFF"
- Timer "OFF"

WAKE-UP CONTROL



As shown above, when the BCM detects a "wake-up" signal, it wakes up the whole system and starts communicating again. The "sleep" mode of all LCUs is now canceled, and the BCM returns to the normal control mode. When any one of the following switches are turned ON, the "sleep" mode is canceled:

- Ignition key switch (Insert)*
- Ignition switch "ACC" or "ON"
- Lighting switch (1st)
- Door switches (all doors)
- Multi-remote controller
- Trunk room lamp switch
- Hood switch
- Driver's side door key cylinder switch (Unlock)
- Passenger side door key cylinder switch (Unlock)
- Trunk lid key cylinder switch (Unlock)
- Steering tilt switch
- Steering telescopic switch
- All switches combined or connected with LCU

* Also, when key is pulled out of ignition (ignition key switch is turned from ON to OFF), the "sleep" mode is canceled.

Fail-safe System

Fail-safe system operates when the signal from LCU is judged to be malfunctioning by BCM. If LCU sends no signal or an abnormal signal to BCM a certain number of times in succession, the IVMS is set in a fail-safe condition. In the fail-safe condition, the electrical loads controlled by the switch on the questionable LCU will be operated at fail-safe side.

CONSULT-II

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	MODE					
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	SELF-DIAGNOSTIC RESULTS	DATA MONITOR	ACTIVE TEST	WORK SUPPORT
IVMS-COMM CHECK	IVMS communication and wake-up function	X	X				
POWER WINDOW	Power window				X	X	
DOOR LOCK	Power door lock			X	X	X	
MULTI-REMOTE CONT SYS	Multi-remote control				X	X	X
THEFT WARNING SYSTEM	Theft warning system				X	X	
INTERIOR ILLUMINATION	Interior illumination control system				X	X	
STEP LAMP	Step lamps				X	X	
ILLUM LAMP	Illumination				X	X	
AUTO DRIVE POSITIONER	Automatic drive positioner			X	X	X	
AUTO LIGHT SYSTEM	Headlamp				X	X	
DOOR OPEN WARNING	Warning lamps				X	X	
IGN KEY WARN ALM	Warning chime				X	X	
LIGHT WARN ALM	Warning chime				X	X	
SEAT BELT TIMER	Warning chime				X	X	
WIPER	Wiper and washer				X	X	X
REAR DEFOGGER	Rear window defogger				X	X	
SUNROOF RELAY	Sunroof				X	X	

X: Applicable
For diagnostic item in each control system, read the CONSULT-II Operation Manual.

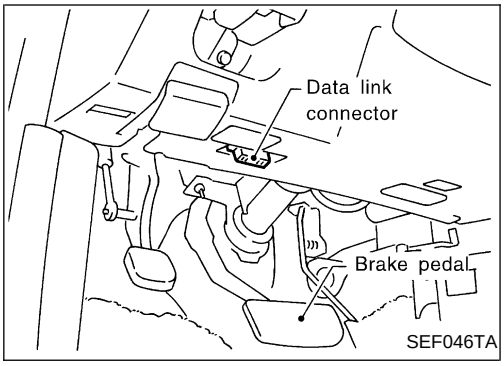
DIAGNOSTIC ITEMS DESCRIPTION

MODE	Description
IVMS COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the communication interface between the body control module and the local control units, accomplished by transmitting a signal from the body control module to the local control units.
WAKE-UP DIAGNOSIS	Diagnosis of the “wake-up” function of local control units by having a technician input the switch data into the local control unit that is in the temporary “sleep” condition.
SELF-DIAGNOSTIC RESULTS	—
DATA MONITOR	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
ACTIVE TEST	Turns on/off actuators, relay and lamps according to the commands transmitted by the CONSULT-II unit.
WORK SUPPORT for WIPER	Wiper intermittent speed control by vehicle speed can be cancelled or resumed.
WORK SUPPORT for MULTI-REMOTE CONT SYS	ID code of multi-remote controller can be registered and erased.

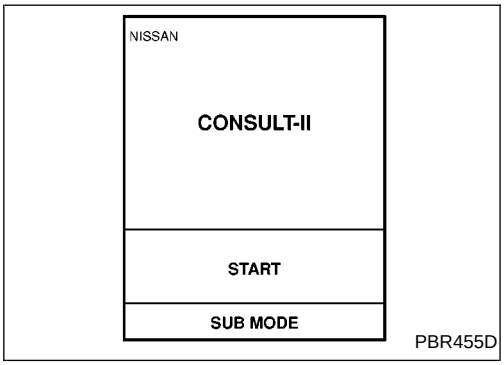
NOTE: When CONSULT-II diagnosis is operating, some systems under IVMS control do not operate.

CONSULT-II (Cont'd)

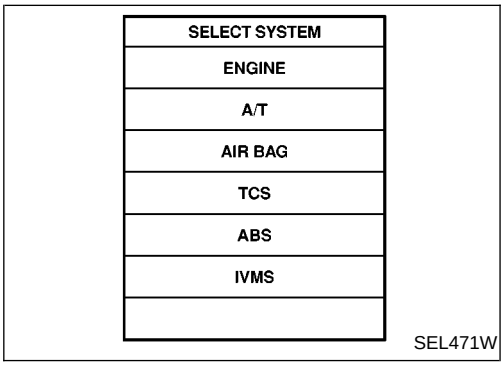
CONSULT-II INSPECTION PROCEDURE



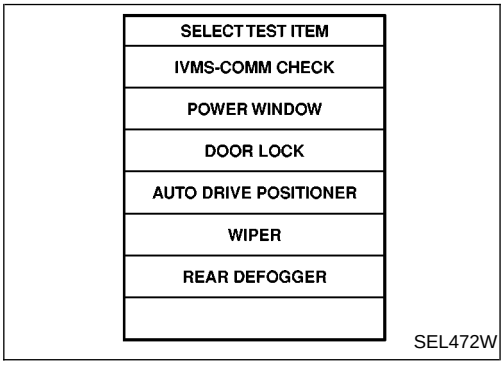
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



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



5. Touch "IVMS".

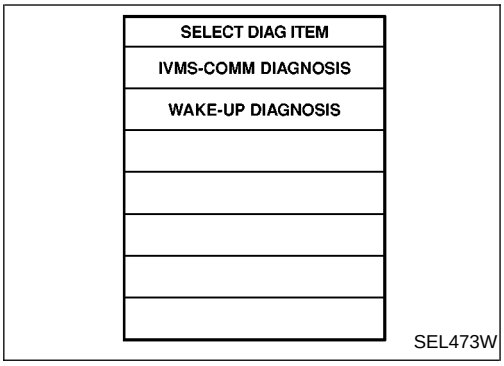


6. Perform each diagnostic item according to the item application chart as follows:

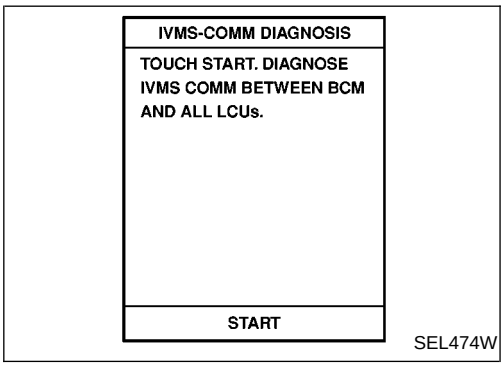
For further information, read the CONSULT-II Operation Manual.

CONSULT-II (Cont'd)

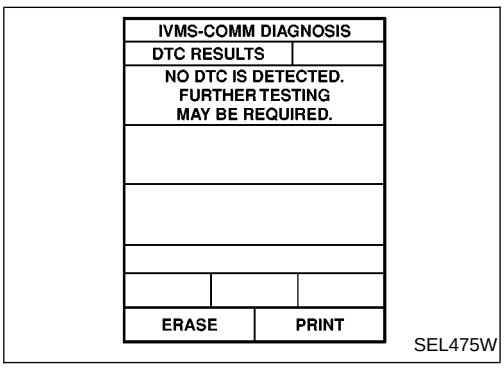
IVMS COMMUNICATION DIAGNOSIS



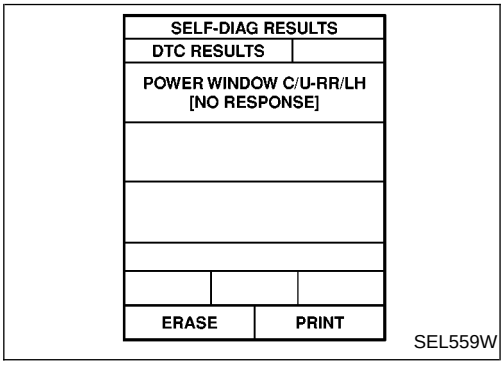
1. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".



2. Touch "START".



3. If no DTC is detected, inspection is end.

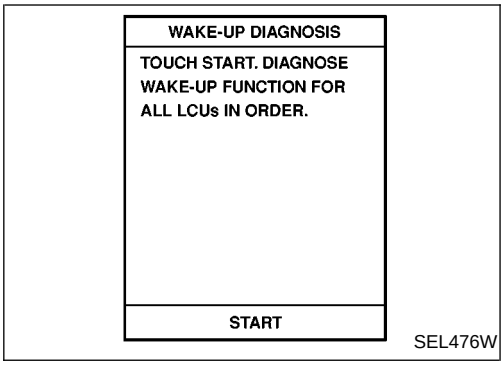


If any problem code is displayed, repair/replace the system according to the IVMS communication diagnosis results. (Refer to EL-267.)

4. Erase the diagnostic results memory.
a. Turn ignition switch "ON".
b. Touch "IVMS".
c. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".
d. Touch "START" for "IVMS COMM DIAGNOSIS".
e. Touch "ERASE".

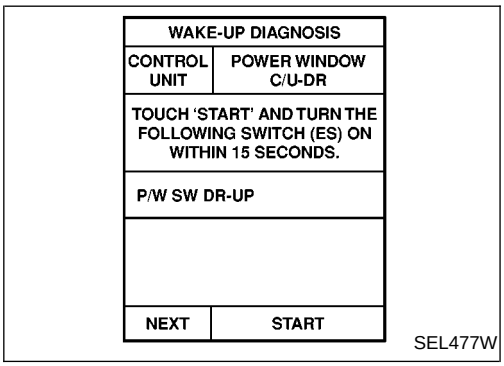
CONSULT-II (Cont'd)

WAKE-UP DIAGNOSIS



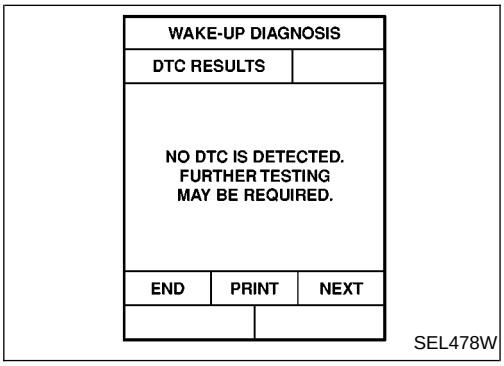
SEL476W

1. Touch "WAKE-UP DIAGNOSIS" in "IVMS-COMM CHECK".
2. Touch "START" for "WAKE-UP DIAGNOSIS".



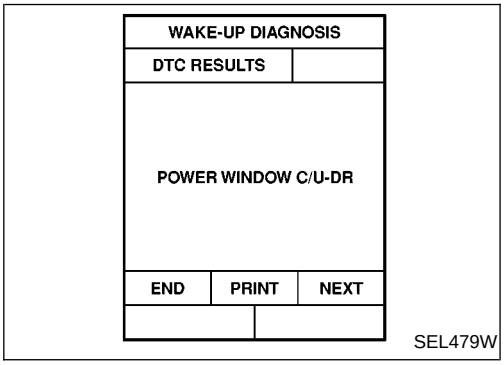
SEL477W

3. After touching "START", turn ON switch designated on CONSULT-II display within 15 seconds.



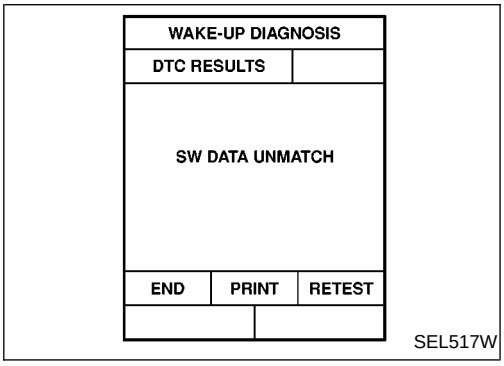
SEL478W

4. If no DTC is detected, touch "NEXT" and perform wake-up diagnosis for next LCU or touch "END". (INSPECTION END)



SEL479W

If any problem is displayed, replace the LCU.



SEL517W

If "SW DATA UNMATCH" is displayed, touch "RETEST" and perform wake-up diagnosis again.

CONSULT-II (Cont'd)

IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 1

Diagnostic item	Number of malfunctioning LCU	CONSULT-II diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure
IVMS system is in good order	—	NO FAILURE	11	—	—
Communication malfunctioning	One	POWER WINDOW C/U-DR [COMM FAIL]	24	1. Malfunctioning LCU	1. Replace LCU.*
		POWER WINDOW C/U-AS [COMM FAIL]	34		
		POWER WINDOW C/U-RR [COMM FAIL]	41		
		POWER WINDOW C/U-RL [COMM FAIL]	44		
		POWER SEAT C/U-DR [COMM FAIL]	47		
	Two or more	Combination of POWER WINDOW C/U-DR [COMM FAIL] POWER WINDOW C/U-AS [COMM FAIL] POWER WINDOW C/U-RR [COMM FAIL] POWER WINDOW C/U-RL [COMM FAIL] POWER SEAT C/U-DR [COMM FAIL]	Combination of 24 34 41 44 47	1. Malfunctioning LCU	1. Replace LCU.*
	All	BCM [COMM FAIL]	24, 34, 41, 44 and 47	1. Malfunctioning BCM 2. Malfunctioning all LCUs	1. Replace BCM.* 2. Replace all LCUs.*
		BCM [COMM FAIL 2]			

*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again. If the diagnoses result is still NG, replace BCM/LCU.

NOTE: When CONSULT-II indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.
To erase the memory, perform the procedure below.
Erase the memory by CONSULT-II or turn the ignition to "OFF" position and remove 7.5A fuse [No. 14, located in the fuse block (J/B)].

CONSULT-II (Cont'd)

IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 2

Diagnostic item	Number of malfunctioning LCU	CONSULT-II diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure (Reference page)
Communication via data line not responded	One	POWER WINDOW C/U-DR [NO RESPONSE]	25	1. Power supply circuit for LCU 2. Poor connection at LCU connector 3. Ground circuit of the LCU 4. Open circuit in the data line 5. Malfunctioning LCU	1. Check power supply circuit of the LCU in question. (EL-282) 2. Check connector connection of LCU in question. 3. Check ground circuit of the LCU in question. (EL-281) 4. Check open circuit in the data line between BCM and LCU in question. (EL-283) 5. Replace LCU.*
		POWER WINDOW C/U-AS [NO RESPONSE]	35		
		POWER WINDOW C/U-RR [NO RESPONSE]	42		
		POWER WINDOW C/U-RL [NO RESPONSE]	45		
		POWER SEAT C/U-DR [NO RESPONSE]	48		
	Two or more	Combination of POWER WINDOW C/U-DR [NO RESPONSE] POWER WINDOW C/U-AS [NO RESPONSE] POWER WINDOW C/U-RR [NO RESPONSE] POWER WINDOW C/U-RL [NO RESPONSE] POWER SEAT C/U-DR [NO RESPONSE]	Combination of 25 35 42 45 48	Combination of causes below 1. Power supply circuit for LCU 2. Poor connection at LCU connector 3. Open circuit in the data line	1. Check power supply circuit of the LCU in question. (EL-282) 2. Check connector connection of LCU in question. 3. Check open circuit in the data line between BCM and LCU in question. (EL-283)
	All	BCM/HARNESS [COMM LINE]	25, 35, 42, 45, 48 and 62	1. Short circuit in the data line 2. Poor connection at BCM connector 3. Open circuit in the data line between BCM and all LCUs. 4. Malfunctioning BCM 5. Short circuit in the data line of LCU internal circuit	1. Short circuit in the data line between BCM and any LCU. (EL-283) 2. Check connector connection of BCM. 3. Check open circuit in the data line between BCM and all LCUs. (EL-283) 4. Replace BCM.* 5. Disconnect each LCUs one by one to check whether the other LCUs operate properly.

*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again. If the diagnoses result is still NG, replace BCM/LCU.

NOTE: When CONSULT-II indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.
To erase the memory, perform the procedure below.
Erase the memory by CONSULT-II or turn the ignition to "OFF" position and remove 7.5A fuse [No. 14, located in the fuse block (J/B)].

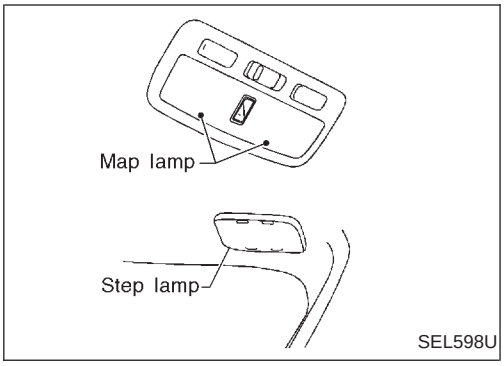
CONSULT-II (Cont'd)

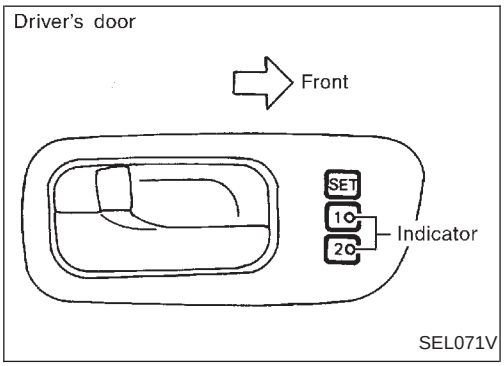
IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 3

Diagnostic item	Number of malfunctioning LCU	CONSULT-II diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure
Sleep control of LCU is malfunctioning	One	POWER WINDOW C/U-DR [SLEEP] POWER WINDOW C/U-AS [SLEEP] POWER WINDOW C/U-RR [SLEEP] POWER WINDOW C/U-RL [SLEEP] POWER SEAT C/U-DR [SLEEP]	—	1. Malfunctioning LCU	1. Replace LCU.*
	Two or more	Combination of above results	—	1. Malfunctioning LCU	1. Replace LCU.*
		All of above results	—	1. Malfunctioning BCM 2. Malfunctioning all LCUs	1. Replace BCM.* 2. Replace all LCUs.*

*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again. If the diagnoses result is still NG, replace BCM/LCU.

NOTE: When CONSULT-II indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.
To erase the memory, perform the procedure below.
Erase the memory by CONSULT-II or turn the ignition to "OFF" position and remove 7.5A fuse [No. 14, located in the fuse block (J/B)].





On board Diagnosis

ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

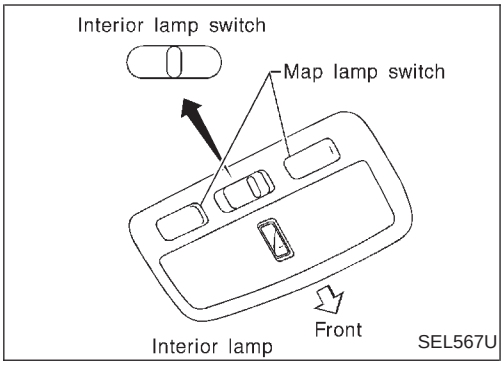
Front map lamps and step lamps (all seats) act as the indicators for the on board diagnosis Mode I, II, III and IV. Seat memory indicator-1 and 2 act as the indicators for the on board diagnosis Mode V. These lamps blink simultaneously in response to diagnostic results.

ON BOARD DIAGNOSTIC FUNCTION

Mode	Function		Self-diagnostic results indicator lamp			Reference page
			Interior lamp	Step lamps (all seats)	Automatic drive positioner indicator lamps	
Mode I	IVMS communication diagnosis	Diagnosing any abnormality or inability of communication between BCM and LCUs (DATA LINES A-1, A-2 and A-3).	X	X	—	EL-271
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	X	X	—	EL-273
Mode III	Power door lock self-diagnosis	—	X	X	—	EL-317
Mode IV	Power window operation	Automatically operating driver side window	X	X	—	EL-298
Mode V	Automatic drive positioner self-diagnosis	—	—	—	X	EL-432

X: Applicable
—: Not applicable

NOTE:
- When on board diagnosis Mode I, II, III or IV is operating, all systems under IVMS control do not operate.
- When on board diagnosis Mode V is operating, automatic drive positioner does not operate.
- The step lamp of malfunctioning LCU does not blink.



On board Diagnosis — Mode I (IVMS communication diagnosis)

HOW TO PERFORM MODE I

Condition
- Ignition switch: OFF
- **Lighting switch: OFF**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp switch: AUTO
- Driver side map lamp switch: OFF
- Passenger side map lamp switch: OFF
- Selector lever: “P” range

↓

Turn ignition switch “ON”.

↓

Return ignition switch to “ACC” and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Rear window defogger switch holds OFF.

↓

Turn ignition switch “ON” within 5 seconds after the indicator lamps turn on.

↓

Indicator lamp turn off.

↓ After a second

Mode I is performed.

↓

Turn ignition switch “OFF”.
or
Drive the vehicle more than 7 km/h (4 MPH).

↓

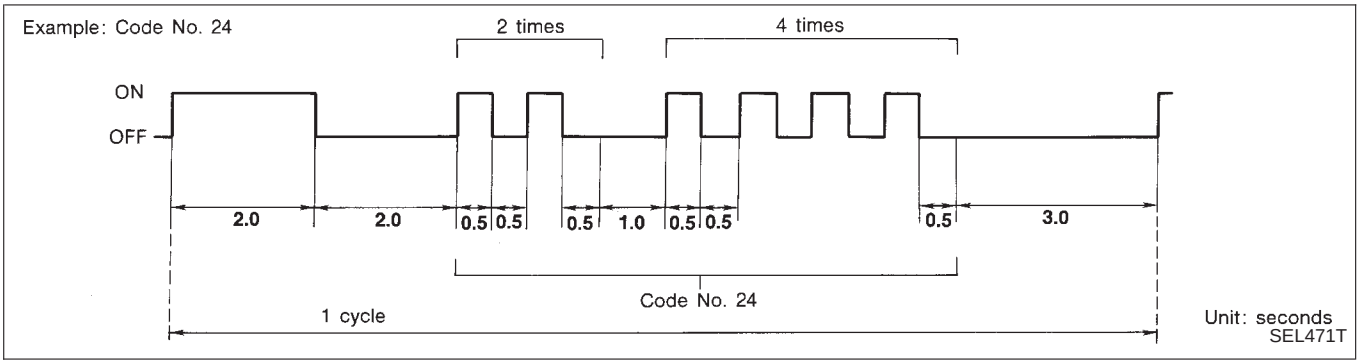
DIAGNOSIS END*

*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On board Diagnosis — Mode I (IVMS communication diagnosis) (Cont'd)

DESCRIPTION

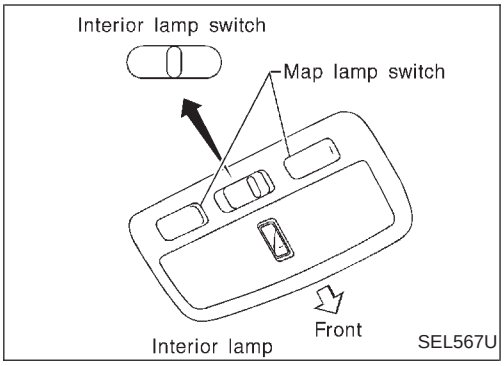
In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the first digit. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the second digit.
For example, the indicator lamp goes on and off for 0.5 seconds twice and after 1.0 seconds, it goes on and off for 0.5 seconds four times. This indicates malfunction code "24".

MALFUNCTION CODE TABLE

Code No.	Malfunctioning LCU	Detected items	Diagnostic procedure
24	Driver door control unit (LCU01)	Malfunctioning communication	Refer to CONSULT-II DIAGNOSTIC CHART, "COMM FAIL" (EL-267).
25		No response from data line A-1	Refer to CONSULT-II DIAGNOSTIC CHART, "NO RESPONSE" (EL-268).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT-II DIAGNOSTIC CHART, "COMM FAIL" (EL-267).
35		No response from data line A-2	Refer to CONSULT-II DIAGNOSTIC CHART, "NO RESPONSE" (EL-268).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT-II DIAGNOSTIC CHART, "COMM FAIL" (EL-267).
42		No response from data line A-1	Refer to CONSULT-II DIAGNOSTIC CHART, "NO RESPONSE" (EL-268).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT-II DIAGNOSTIC CHART, "COMM FAIL" (EL-267).
45		No response from data line A-2	Refer to CONSULT-II DIAGNOSTIC CHART, "NO RESPONSE" (EL-268).
47	Driver's seat control unit (LCU05)	Malfunctioning communication	Refer to CONSULT-II DIAGNOSTIC CHART, "COMM FAIL" (EL-267).
48		No response from data line A-3	Refer to CONSULT-II DIAGNOSTIC CHART, "NO RESPONSE" (EL-268).
11	No malfunction		—



On board Diagnosis — Mode II (Switch monitor)

HOW TO PERFORM MODE II

Condition
- Ignition switch: OFF
- **Lighting switch: OFF**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp switch: AUTO
- Driver side map lamp switch: OFF
- Passenger side map lamp switch: OFF
- Selector lever: “P” range

↓

Turn ignition switch “ON”.

↓

Return ignition switch to “ACC” and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Keep rear window defogger switch pressed, and turn ignition switch “ON” within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn ON.

↓

Mode II can be performed.

↓

Turn each switch ON and OFF. Note that the indicator lamp and/or buzzer goes on or off in response to switch position.

↓

Turn ignition switch “OFF”.
or
Drive the vehicle more than 7 km/h (4 MPH).

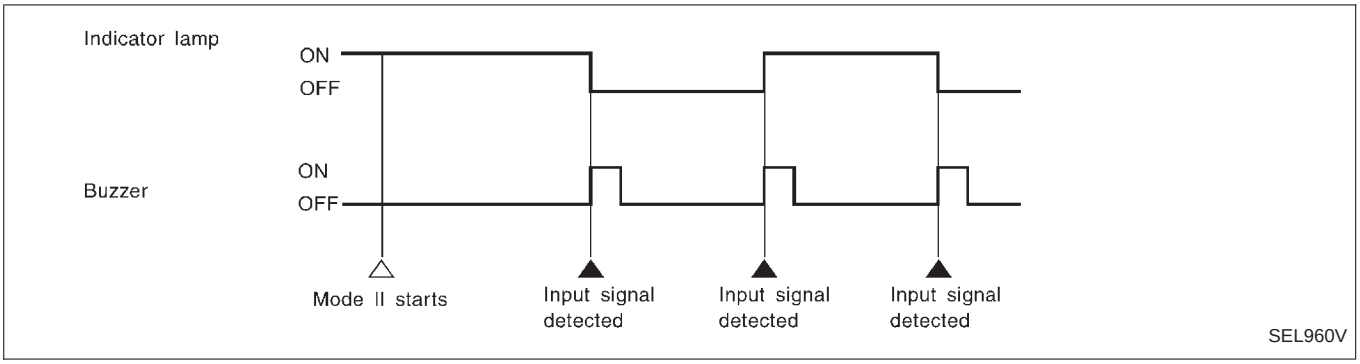
↓

DIAGNOSIS END

On board Diagnosis — Mode II (Switch monitor) (Cont'd)

DESCRIPTION

In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the front map lamp and front step lamps with buzzer.



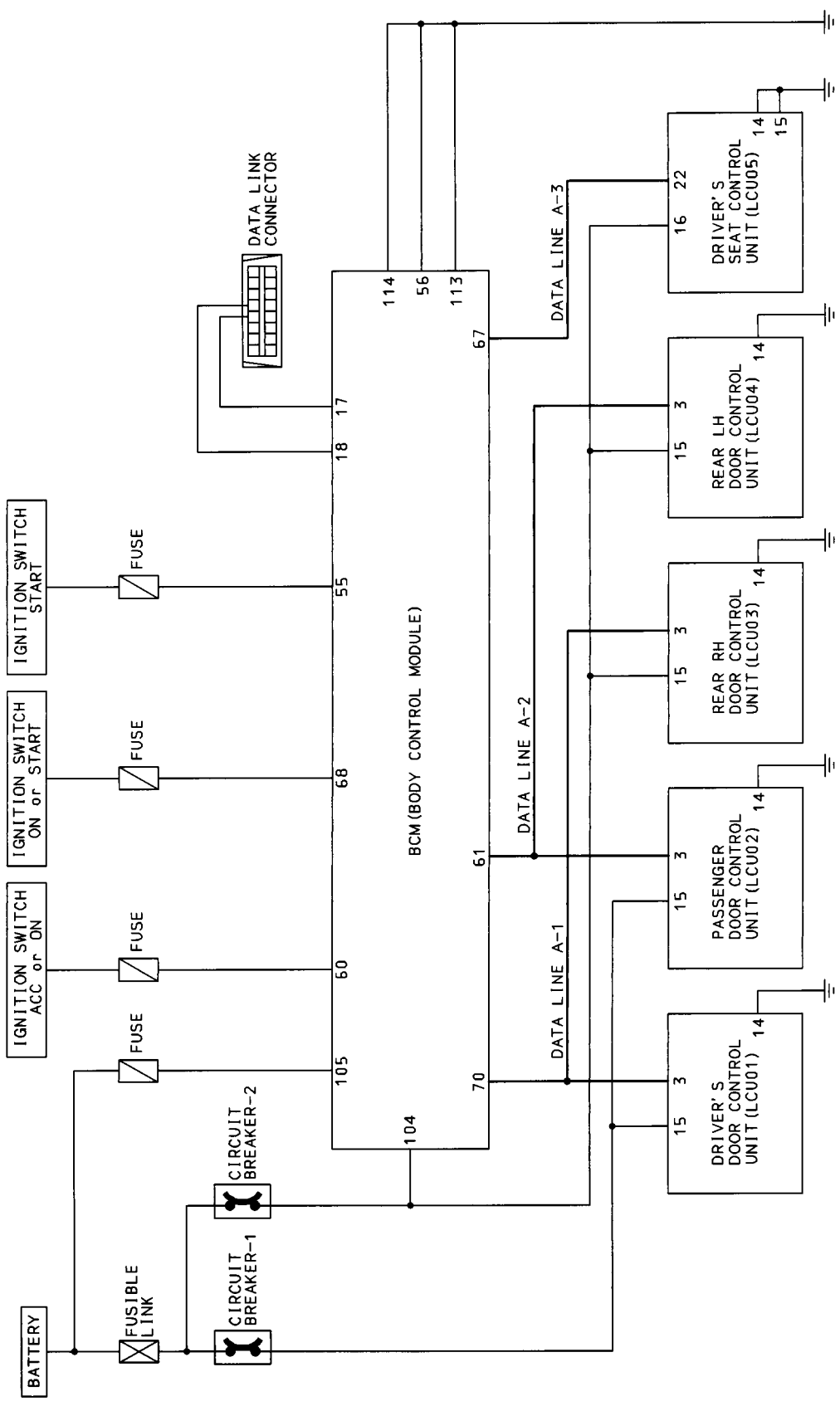
SWITCH MONITOR ITEM

BCM	• Lighting switch (1st) • Lighting switch (AUTO) • Wiper switch (INT) • Wiper switch (WASH) • Door switch (driver's side) • Door switch (passenger side) • Door switch (Rear LH) • Door switch (Rear RH) • Rear window defogger switch • Detention switch • Driver's side seat belt buckle switch • Trunk room lamp switch • Hood switch • Trunk lid key cylinder switch (UNLOCK) • Steering tilt switch (UP/DOWN) • Steering telescopic switch (FORWARD/BACKWARD) • Auto drive positioner cancel switch • Seat memory switch-1 • Seat memory switch-2 • Seat set switch • Multi remote controller switch
LCU 01	• Power window lock switch • Power window main switches (UP/DOWN) • Power window automatic switch • Door lock & unlock switch (LOCK/UNLOCK) • Door unlock sensor

LCU 02	• Door unlock sensor • Passenger power window sub-switch (UP/DOWN)	
LCU 03	• Door unlock sensor • Power window sub-switch (Rear RH) (UP/DOWN)	
LCU 04	• Door unlock sensor • Power window sub-switch (Rear LH) (UP/DOWN)	
LCU 05	Power seat switch (Driver's side)	• Slide switch (FR/RR) • Reclining switch (FR/RR) • Front lifter switch (UP/DOWN) • Rear lifter switch (UP/DOWN)

Schematic

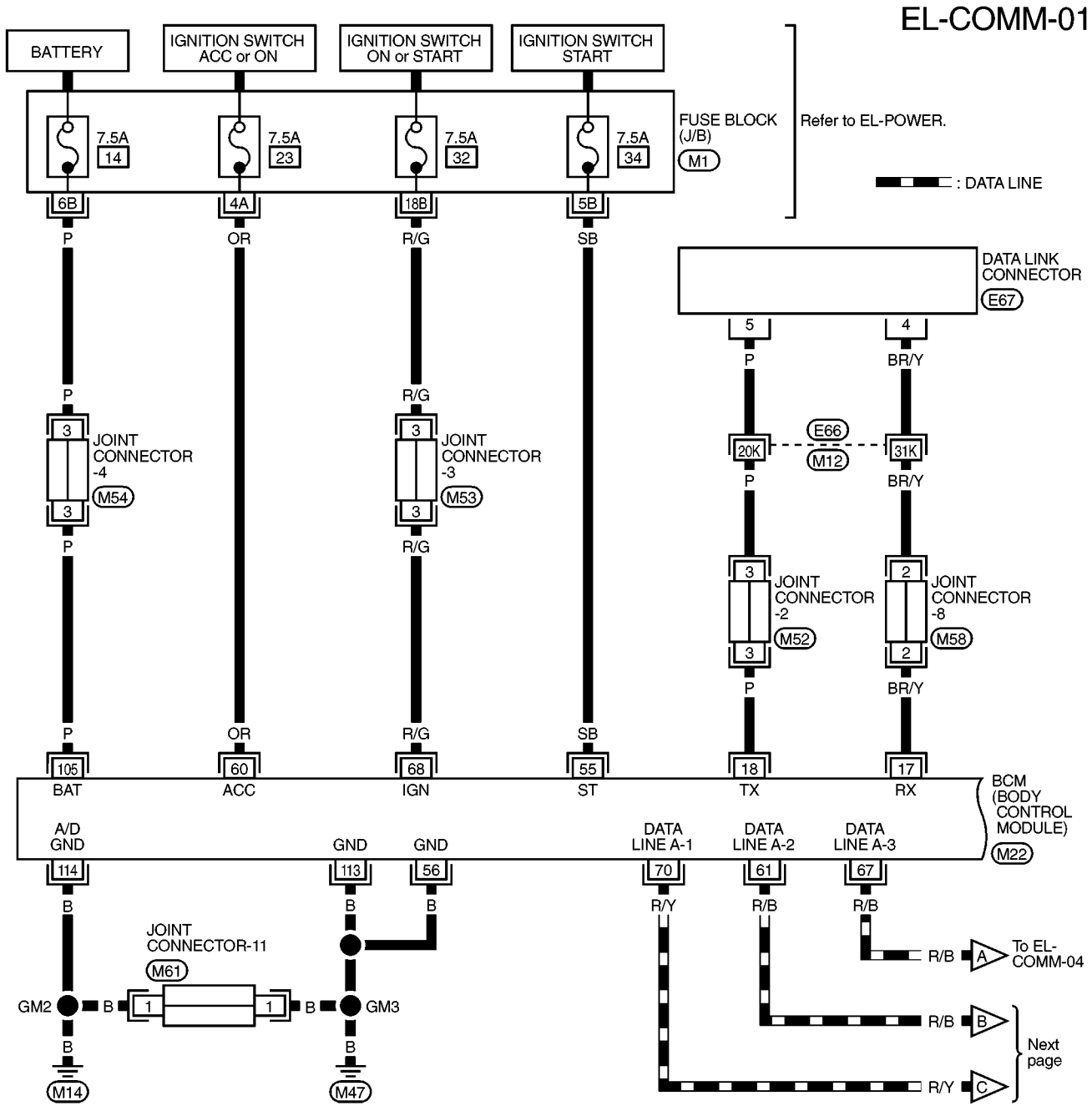
POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS

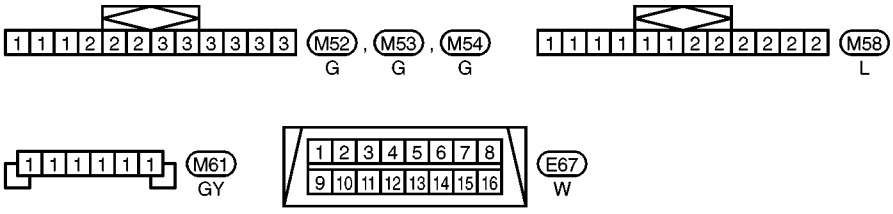


TEL030M

Wiring Diagram — COMM —

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS

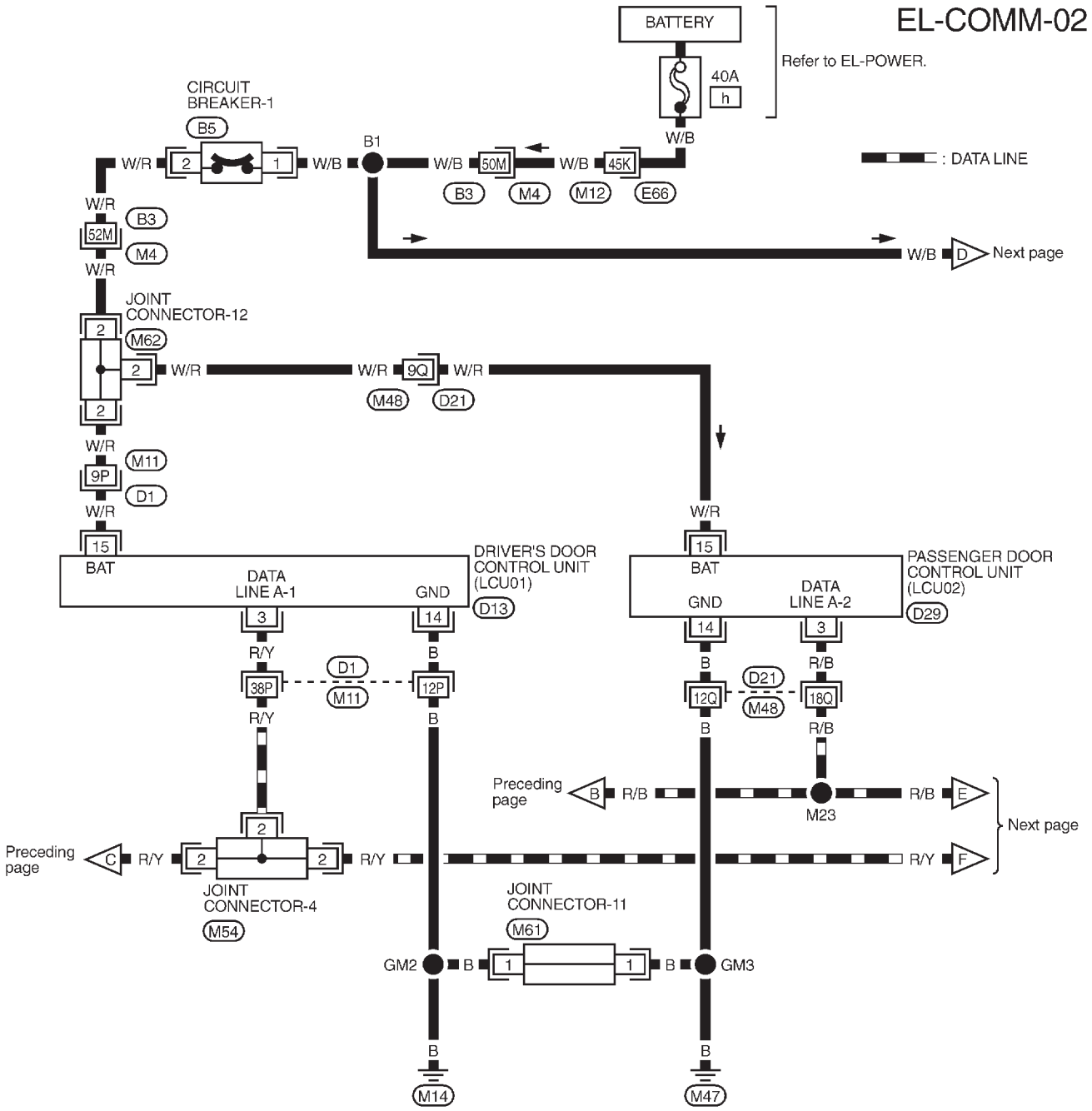


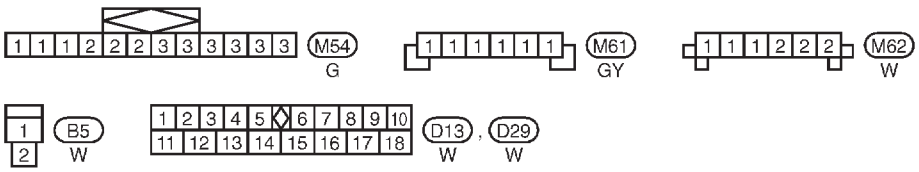


Refer to last page (Foldout page).
M12 , E66
M1
M22

TEL031M

Wiring Diagram — COMM — (Cont'd)





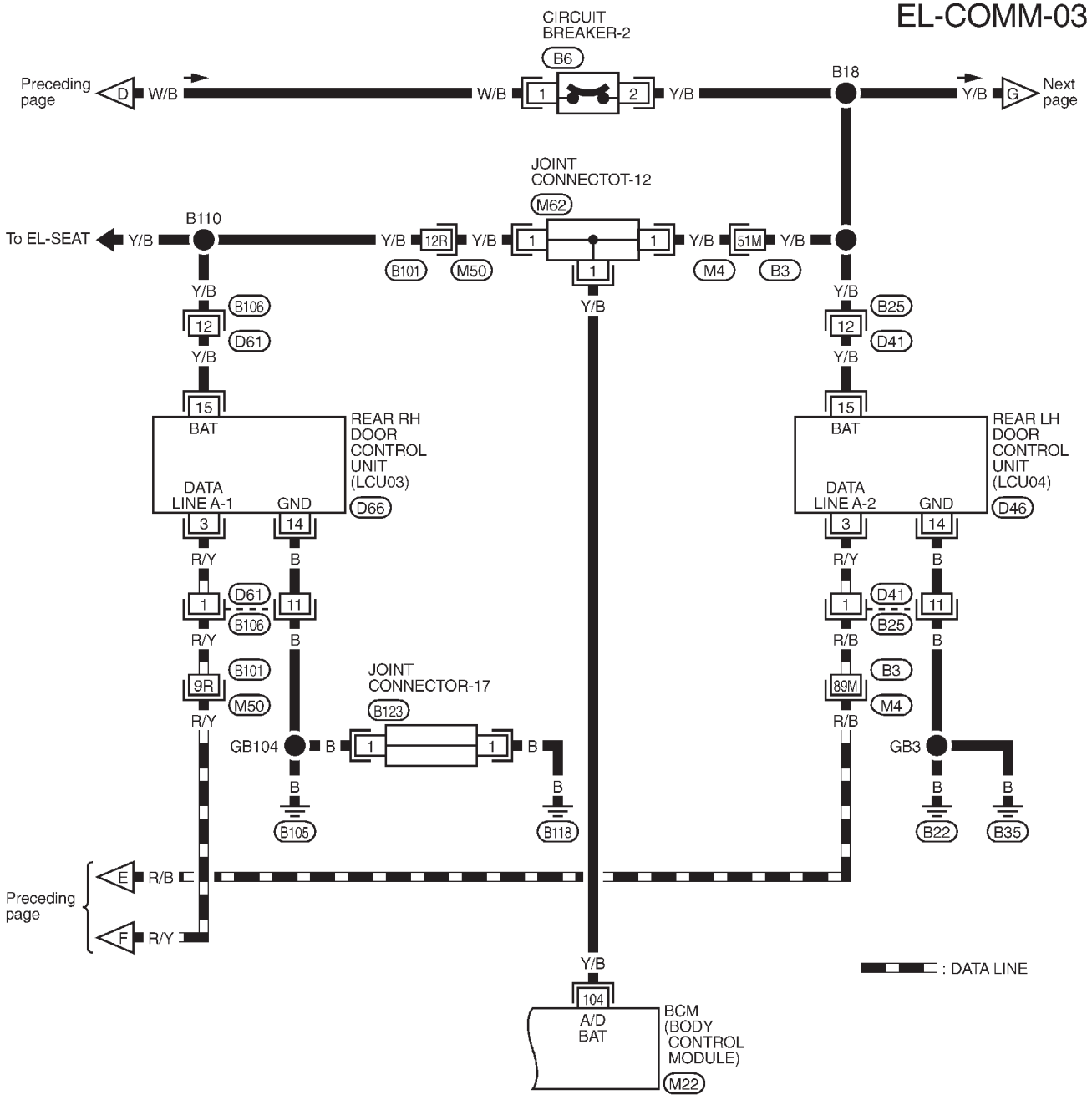
Refer to last page (Foldout page).

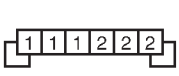
E66, M12
M4, B3
M11, D1
M48, D21

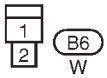
TEL247A

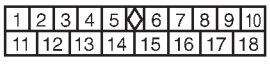
Wiring Diagram — COMM — (Cont'd)

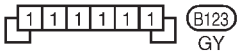
EL-COMM-03









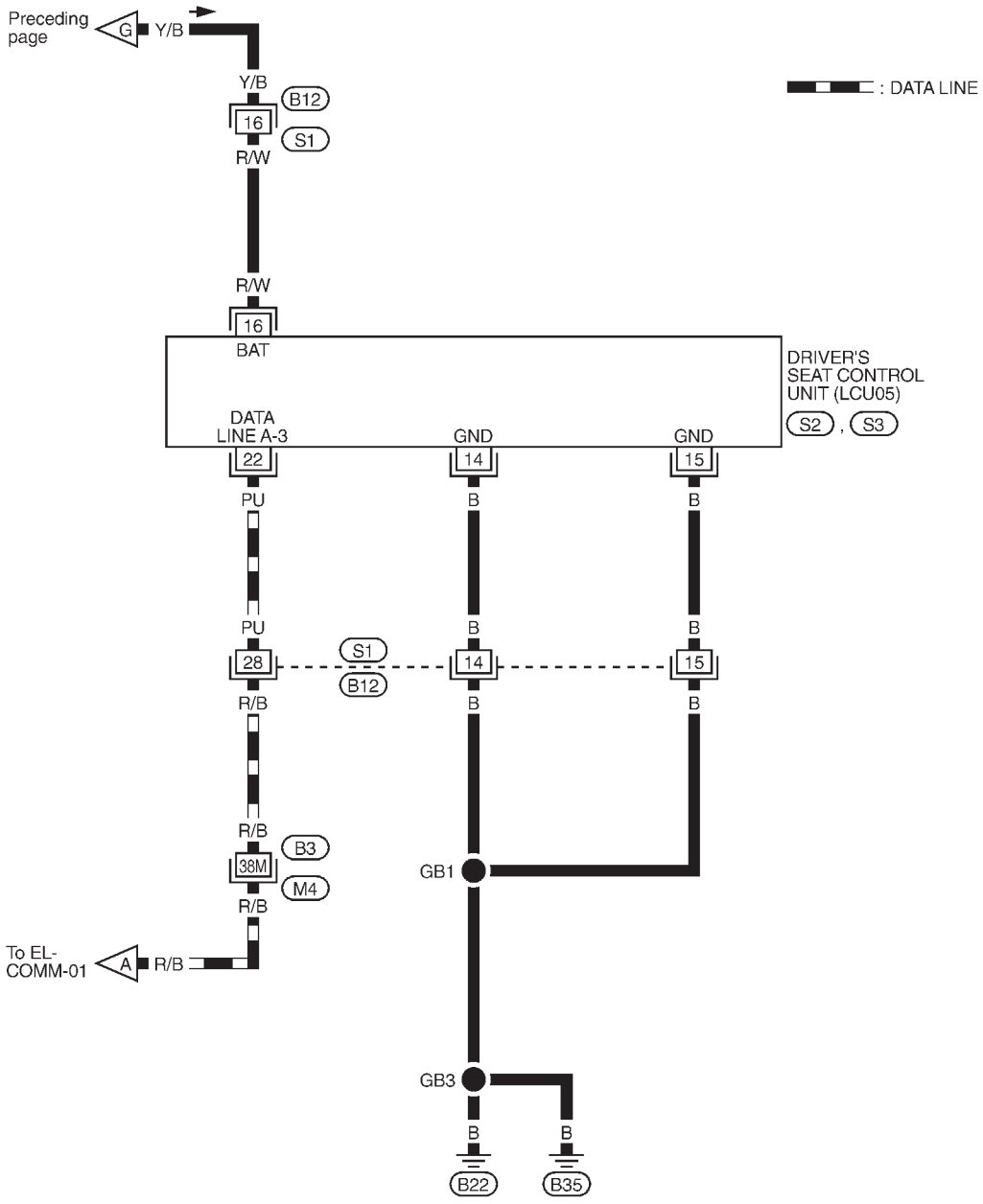


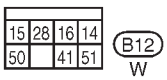
Refer to last page (Foldout page).
M4, B3
M50, B101
M22

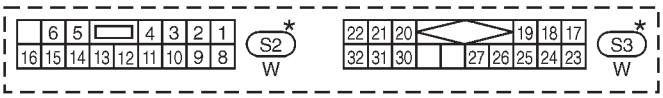
TEL037B

Wiring Diagram — COMM — (Cont'd)

EL-COMM-04







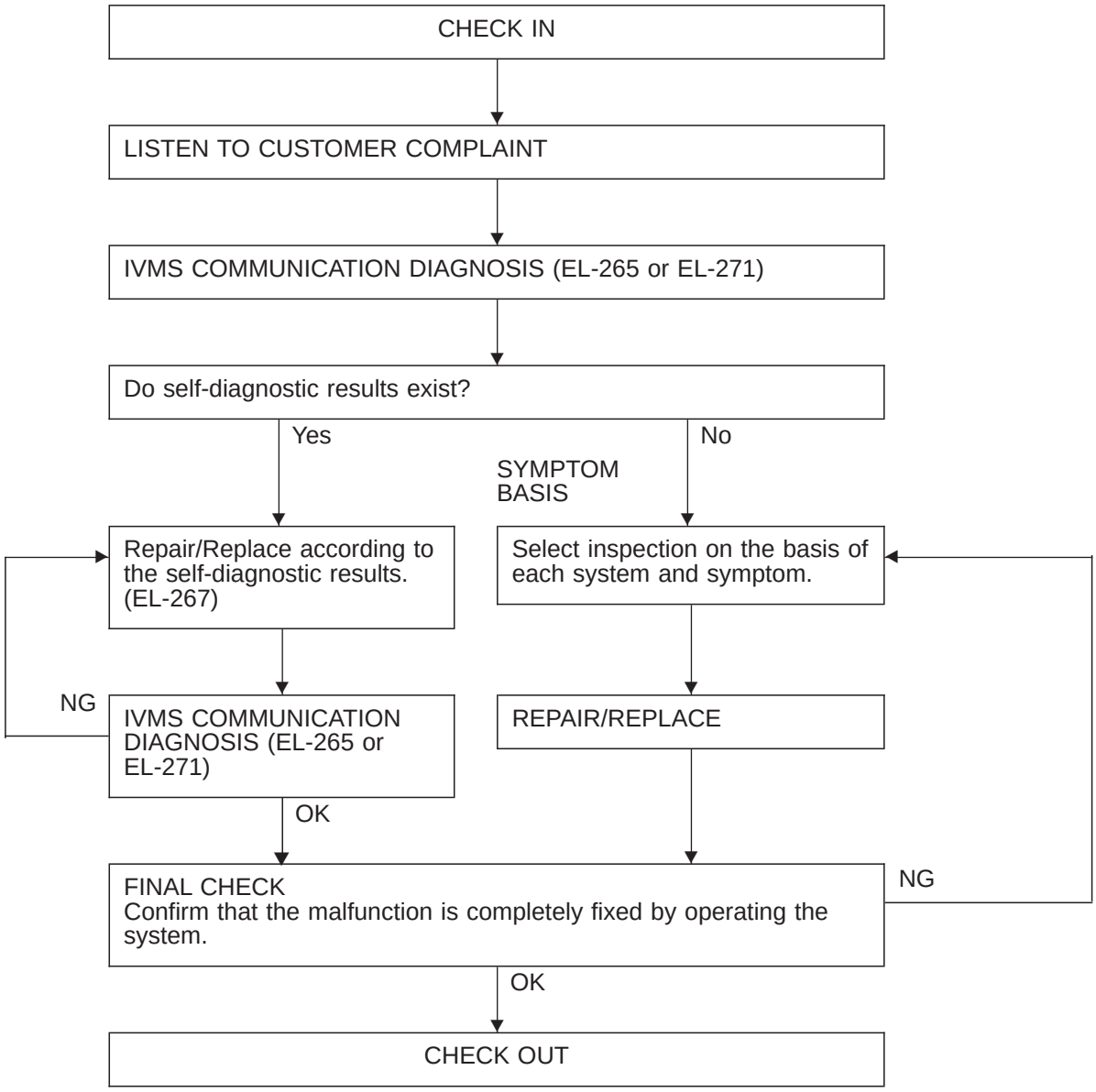
∗: This connector is not shown in "HARNESS LAYOUT", EL section.

Refer to last page (Foldout page).
M4 , B3

TEL038B

Trouble Diagnoses

WORK FLOW

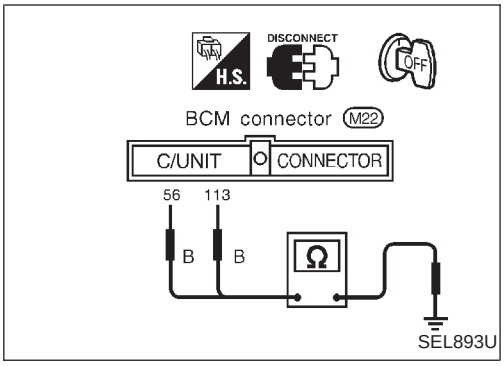


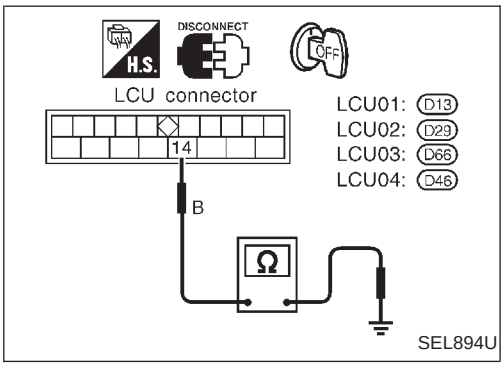
NOTICE:

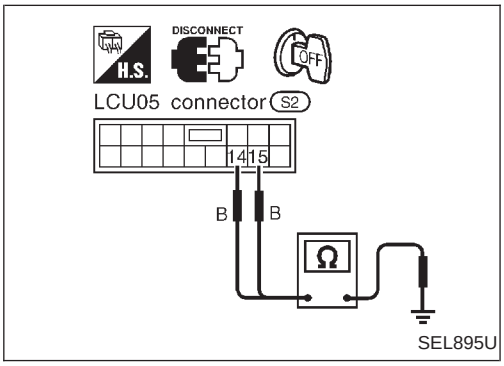
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

GROUND CIRCUIT CHECK



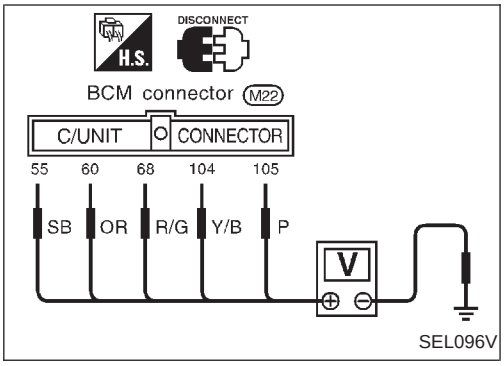


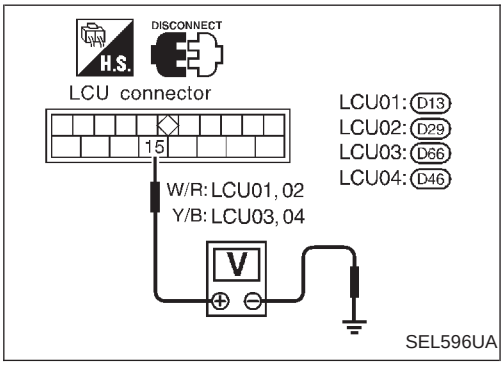


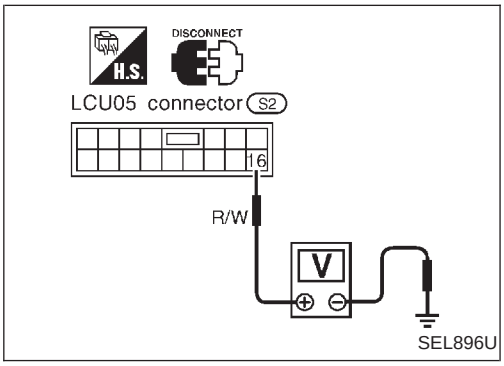
Control unit	Terminals	Continuity
BCM	56 - Ground	Yes
	113 - Ground	
LCU01, LCU02, LCU03 and LCU04	14 - Ground	
LCU05	14 - Ground	
	15 - Ground	

Trouble Diagnoses (Cont'd)

POWER SUPPLY CIRCUIT CHECK







Control unit	Terminals	Ignition switch position			
		OFF	ACC	ON	START
BCM	104 - Ground	Battery voltage			
	105 - Ground				
	60 - Ground	Approx. 0V	Battery voltage		Approx. 0V
	68 - Ground	Approx. 0V		Battery voltage	
	55 - Ground	Approx. 0V			Battery voltage
LCU01, LCU02, LCU03 and LCU04	15 - Ground	Battery voltage			
LCU05	16 - Ground	Battery voltage			

Note:
CONSULT-II (data monitor) may be used to check for the ignition switch input (ACC, ON, START).

Trouble Diagnoses (Cont'd)

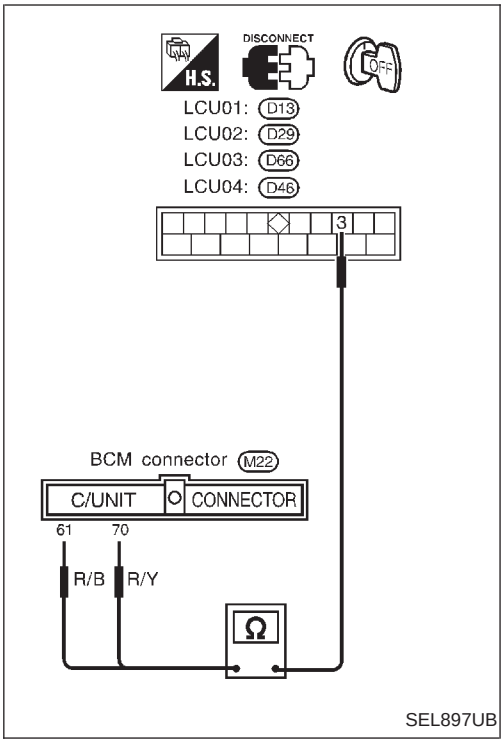
DATA LINES CIRCUIT CHECK

Data lines open circuit check

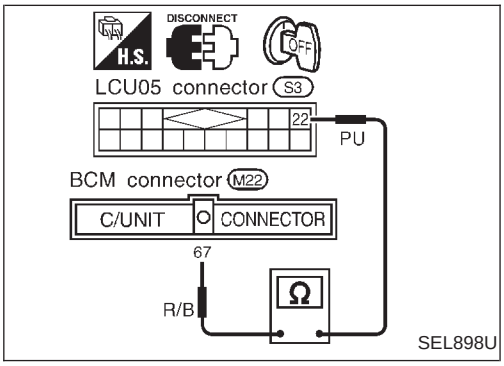
NOTE: When checking data line circuit, disconnect BCM and all LCU connectors.

1. Disconnect BCM and LCU connectors.
2. Check continuity between BCM and LCU terminals.

Control unit	Terminals		Continuity
	LCU	BCM	
LCU01	③	⑦⓪	Yes
LCU02	③	⑥①	
LCU03	③	⑦⓪	
LCU04	③	⑥①	
LCU05	㉒	⑥⑦	



SEL897UB

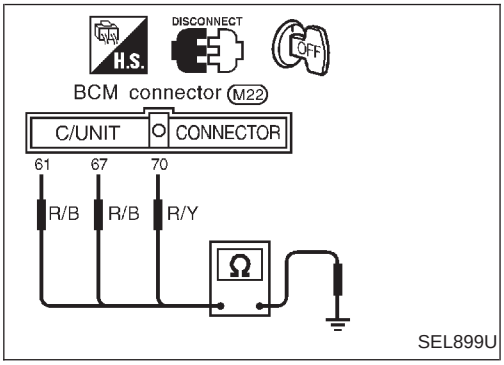


SEL898U

Data lines short circuit check

1. Disconnect BCM and all LCU connectors.
2. Check continuity between BCM terminal and body ground.

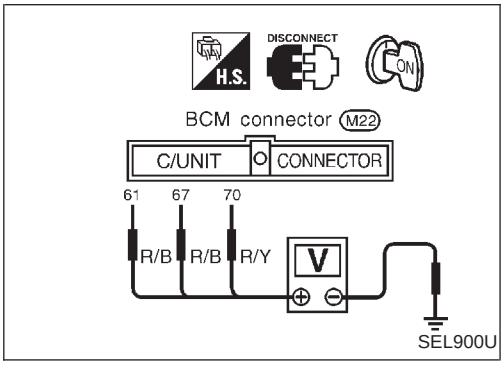
Terminals	Continuity
⑥① - Ground	No
⑥⑦ - Ground	
⑦⓪ - Ground	



SEL899U

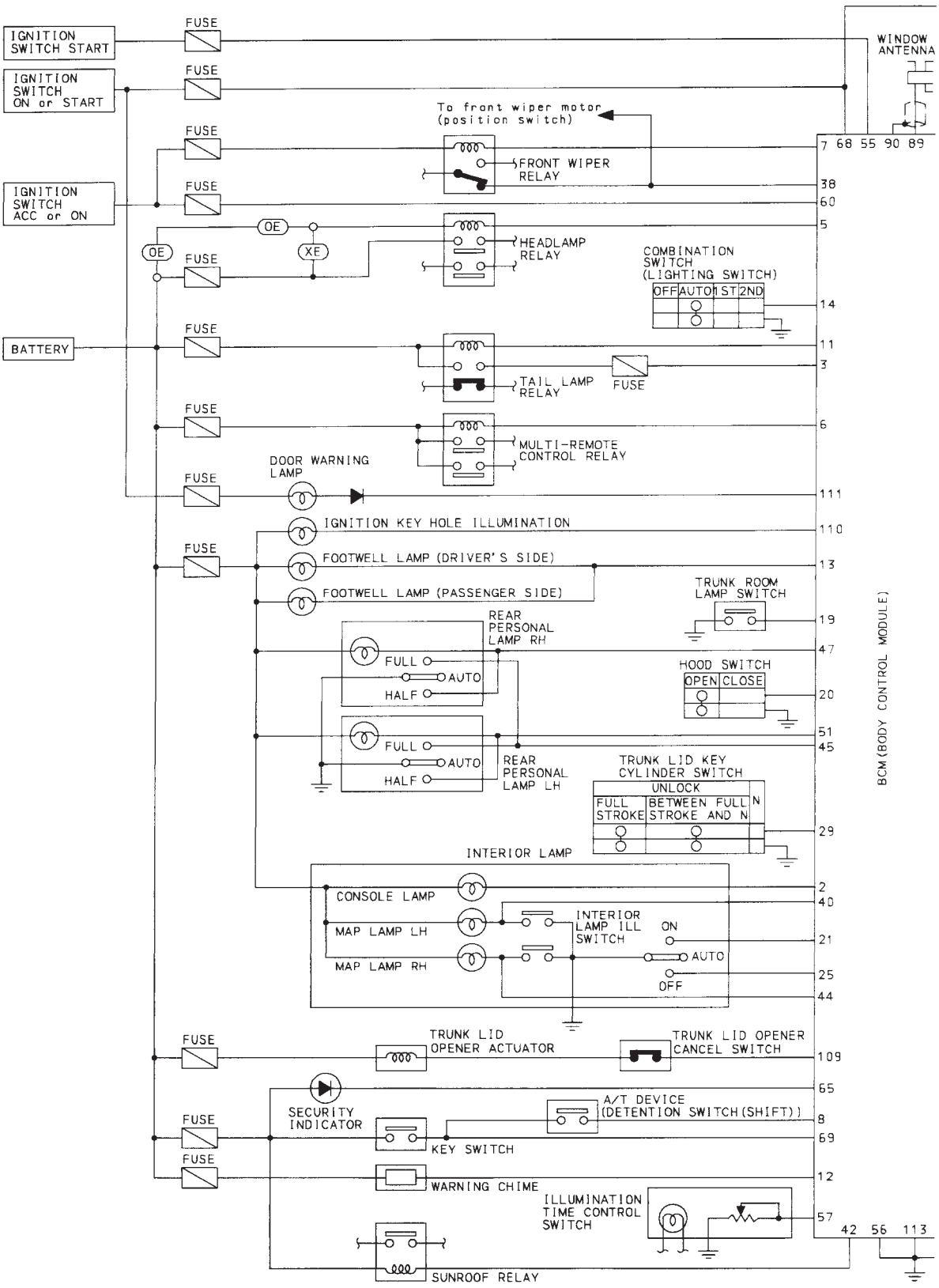
3. Check voltage between BCM terminal and body ground.

Terminals	Voltage [V]
⑥① - Ground	0
⑥⑦ - Ground	
⑦⓪ - Ground	

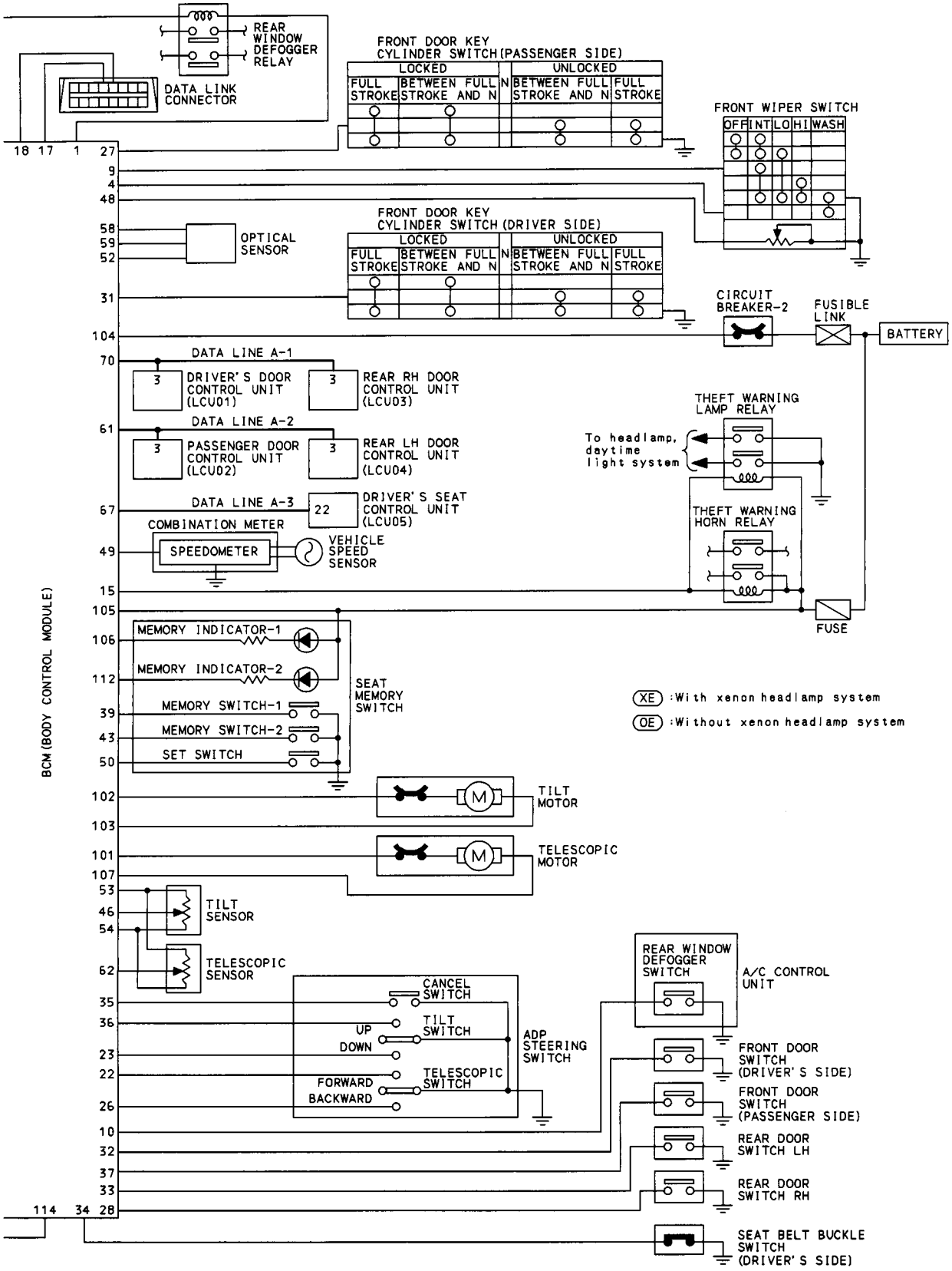


SEL900U

Schematic



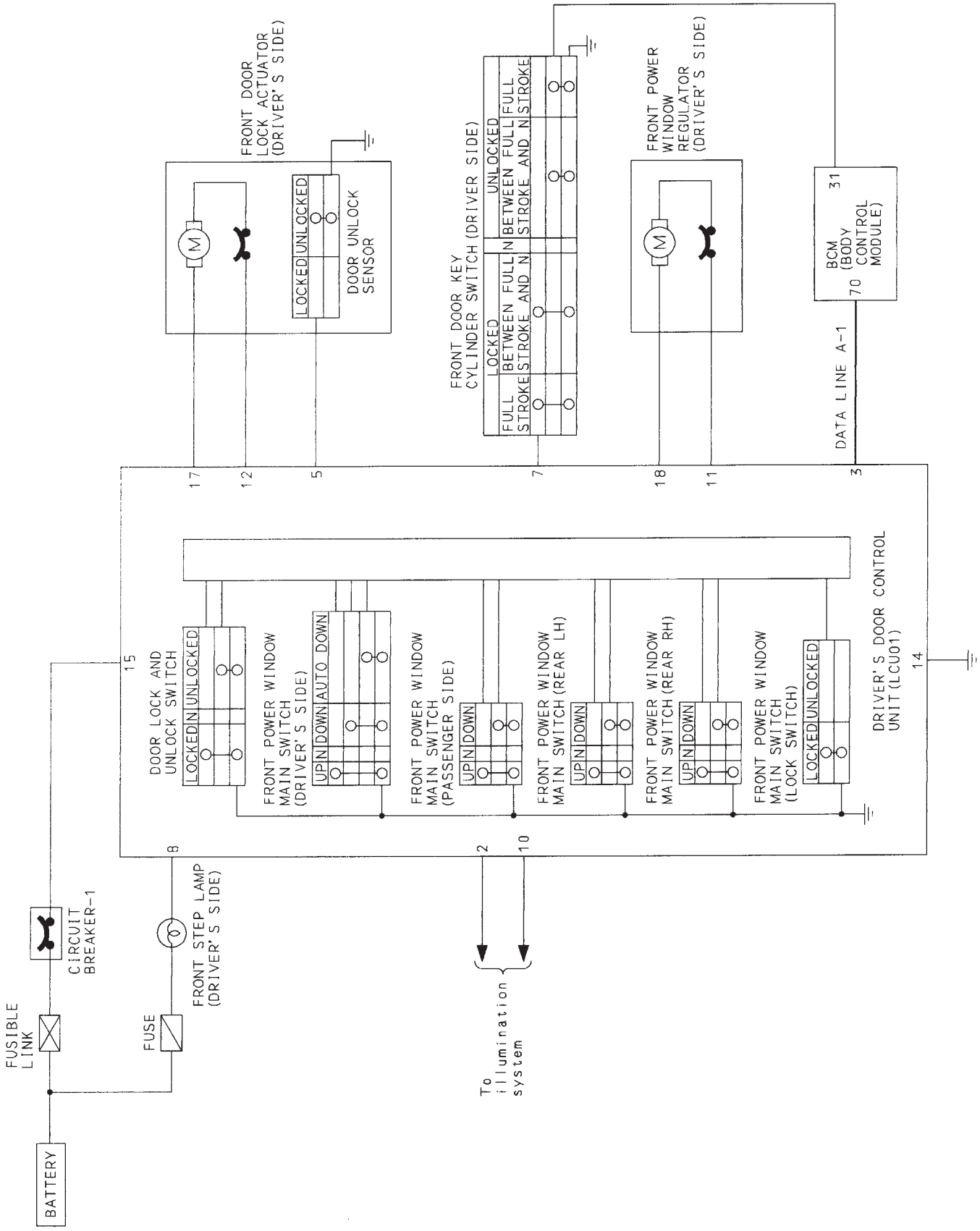
TEL008B


REAR WINDOW DEFOGGER RELAY
DATA LINK CONNECTOR
FRONT DOOR KEY CYLINDER SWITCH (PASSENGER SIDE)
LOCKED
UNLOCKED
FULL STROKE
BETWEEN FULL STROKE AND N
FRONT WIPER SWITCH
OFF INT LO HI WASH
OPTICAL SENSOR
FRONT DOOR KEY CYLINDER SWITCH (DRIVER SIDE)
CIRCUIT BREAKER-2
FUSIBLE LINK
BATTERY
DATA LINE A-1
DRIVER'S DOOR CONTROL UNIT (LCU01)
REAR RH DOOR CONTROL UNIT (LCU03)
DATA LINE A-2
PASSENGER DOOR CONTROL UNIT (LCU02)
REAR LH DOOR CONTROL UNIT (LCU04)
DATA LINE A-3
DRIVER'S SEAT CONTROL UNIT (LCU05)
THEFT WARNING LAMP RELAY
To headlamp, daytime light system
THEFT WARNING HORN RELAY
COMBINATION METER
SPEEDOMETER
VEHICLE SPEED SENSOR
FUSE
BCM (BODY CONTROL MODULE)
MEMORY INDICATOR-1
MEMORY INDICATOR-2
MEMORY SWITCH-1
MEMORY SWITCH-2
SET SWITCH
SEAT MEMORY SWITCH
(XE) :With xenon headlamp system
(OE) :Without xenon headlamp system
TILT MOTOR
TELESCOPIC MOTOR
TILT SENSOR
TELESCOPIC SENSOR
CANCEL SWITCH
TILT SWITCH
UP
DOWN
TELESCOPIC SWITCH
FORWARD
BACKWARD
ADP STEERING SWITCH
REAR WINDOW DEFOGGER SWITCH
A/C CONTROL UNIT
FRONT DOOR SWITCH (DRIVER'S SIDE)
FRONT DOOR SWITCH (PASSENGER SIDE)
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
SEAT BELT BUCKLE SWITCH (DRIVER'S SIDE)

TEL032M

Schematic

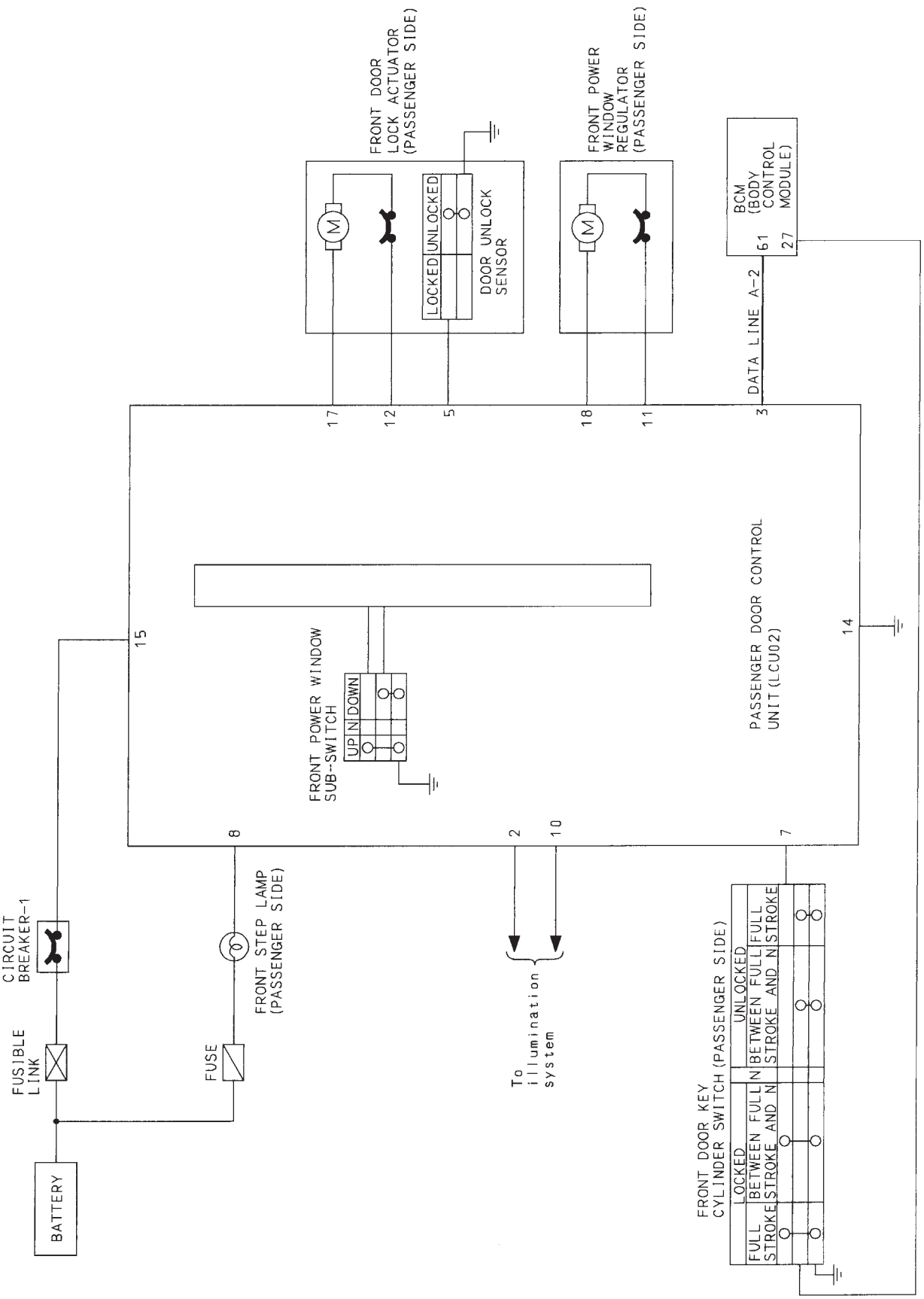
DRIVER'S DOOR CONTROL UNIT (LCU01)



TEL353B

Schematic (Cont'd)

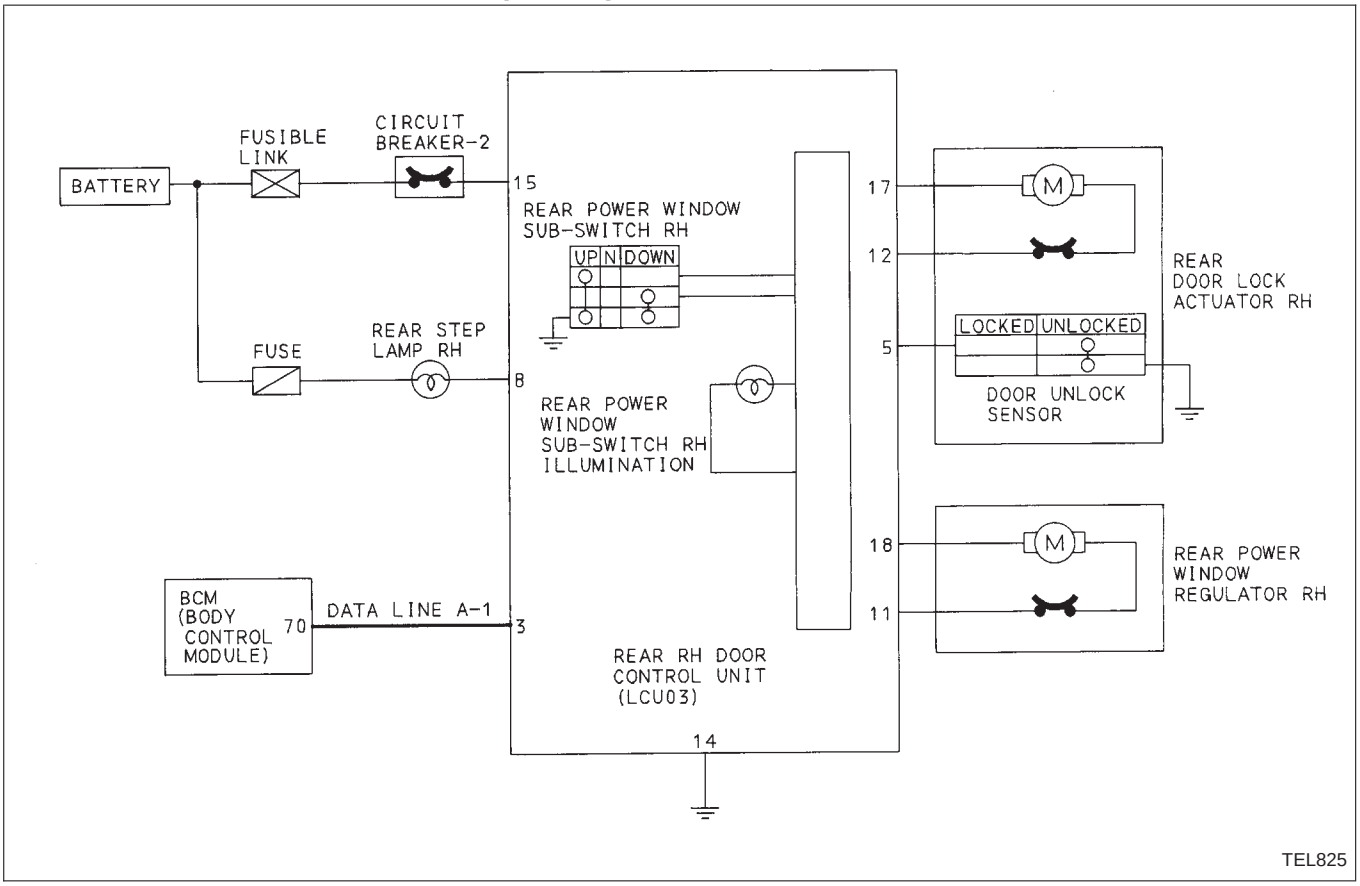
PASSENGER DOOR CONTROL UNIT (LCU02)



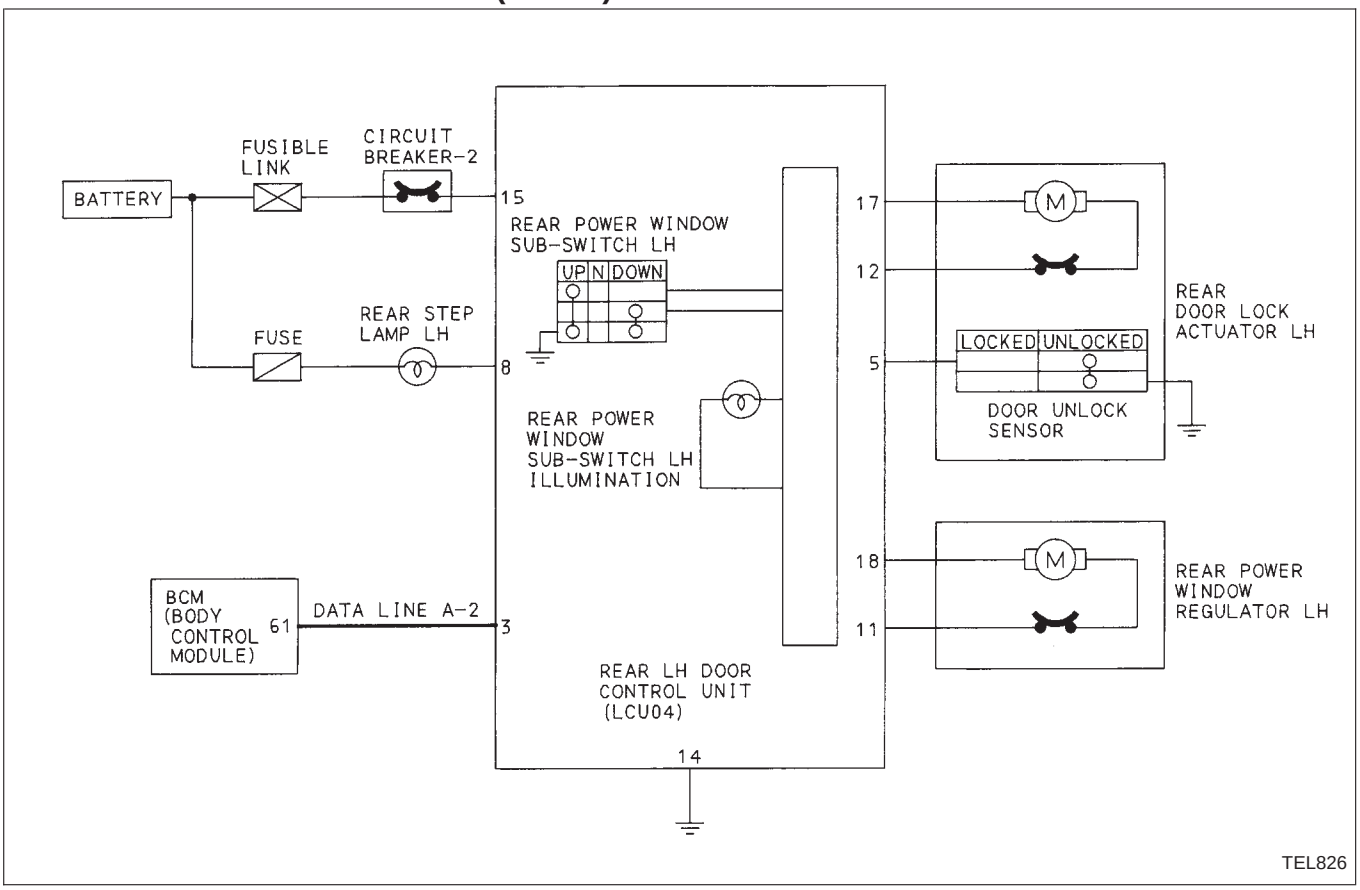
TEL354B

Schematic (Cont'd)

REAR RH DOOR CONTROL UNIT (LCU03)

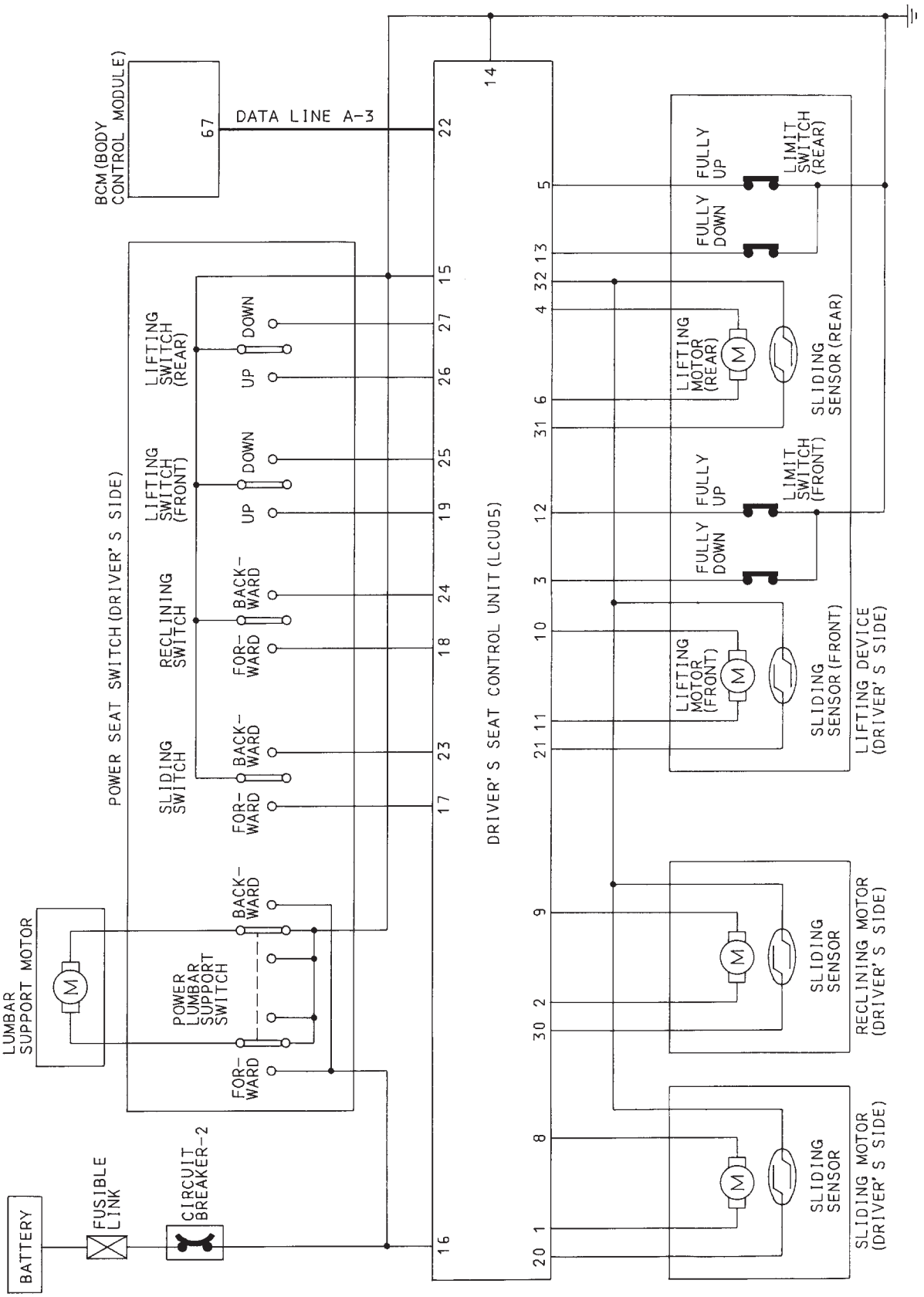


REAR LH DOOR CONTROL UNIT (LCU04)



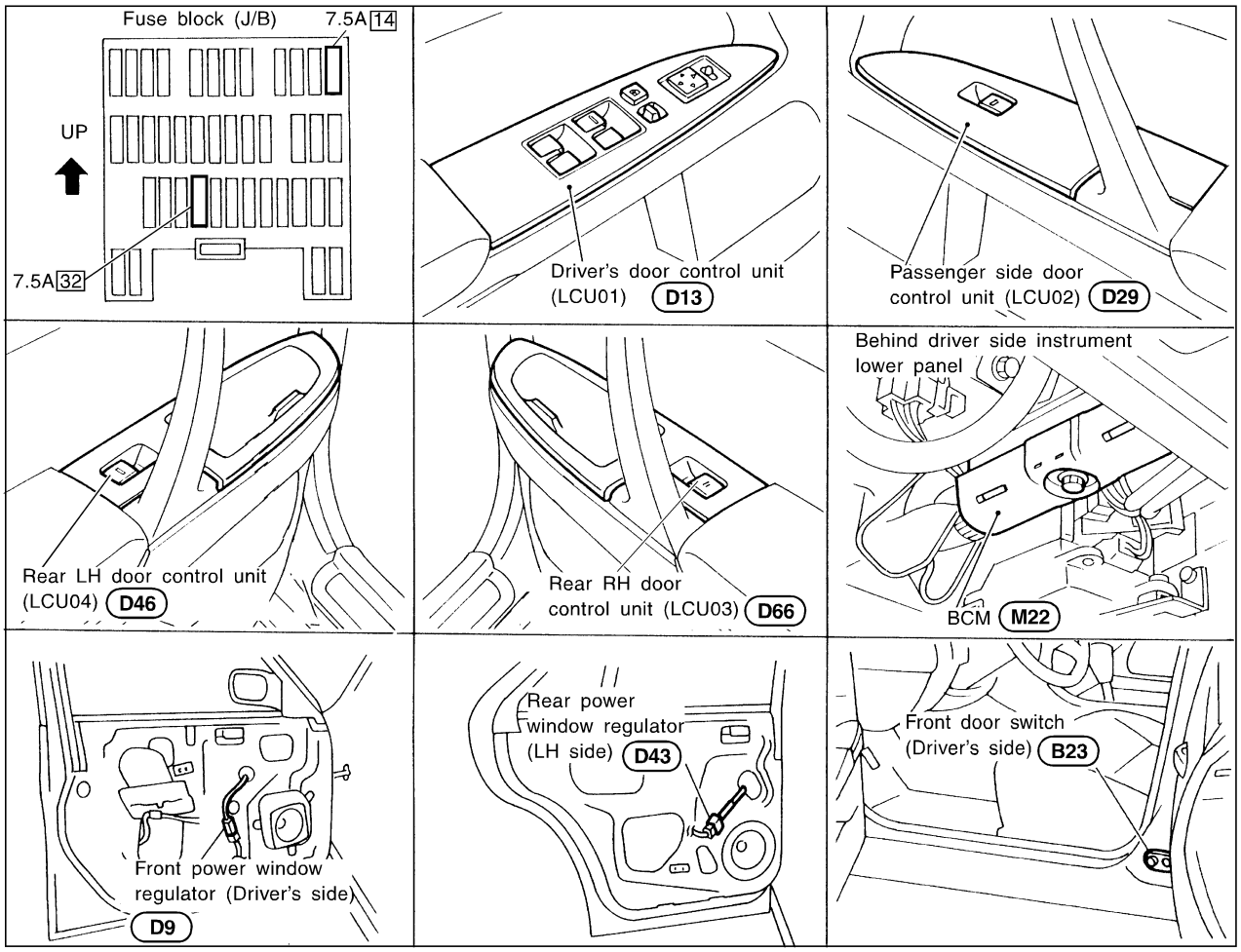
Schematic (Cont'd)

DRIVER'S SEAT CONTROL UNIT (LCU05)



TEL827

Component Parts and Harness Connector Location



SEL958V

System Description

OUTLINE

Power window system consists of

- a BCM (Body Control Module)
- four LCUs (Local Control Module)
- four power window regulators

BCM is connected to each LCU via DATA LINE A-1 or A-2 and LCUs supply power and ground to each power window regulator.

When ignition switch is in the “ON” position, power window will be operated depending on power window sub/main switch (which is combined with each LCU) condition.

OPERATIVE CONDITION

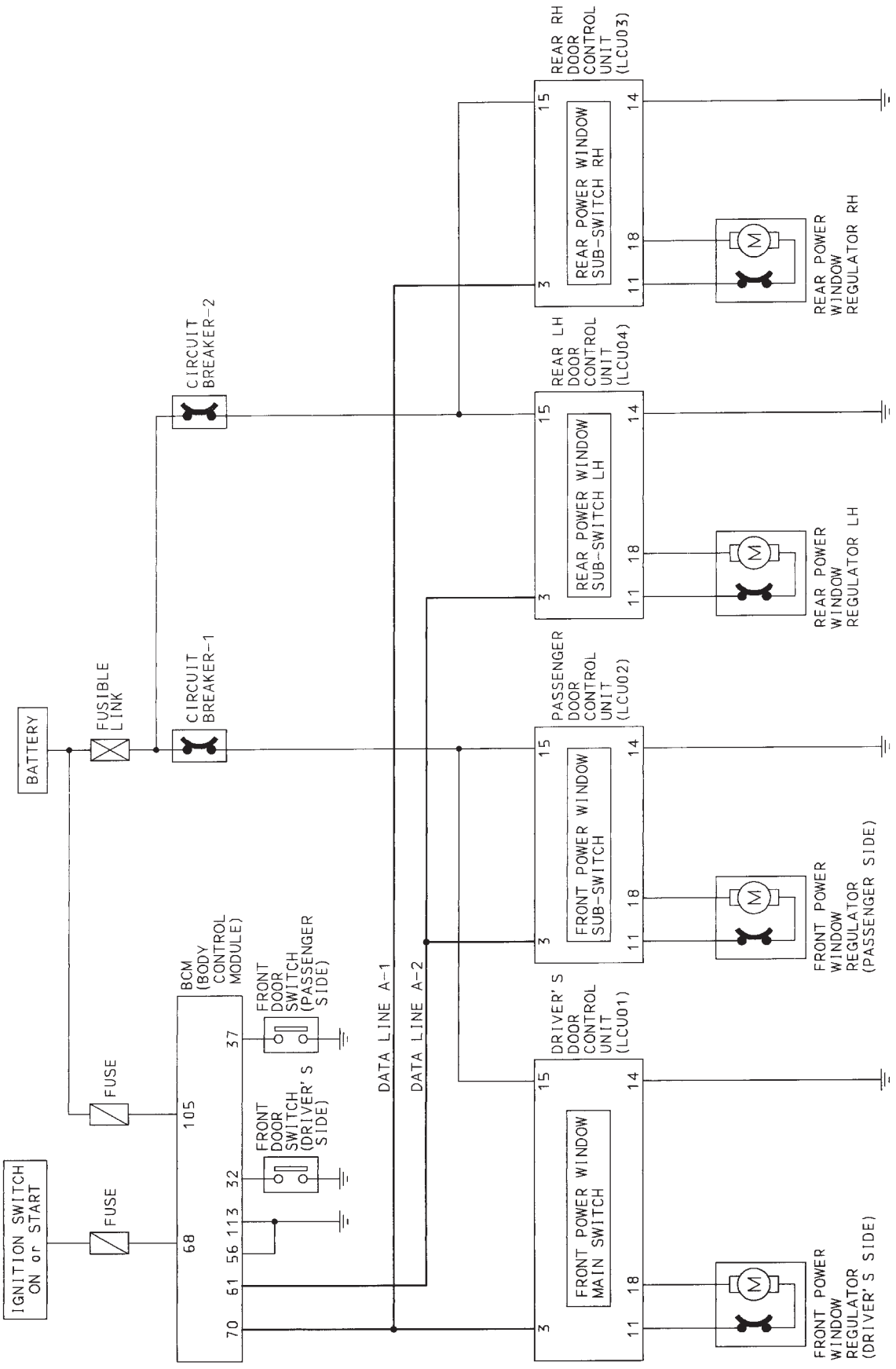
- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the driver’s door trim when ignition key is in the “ON” position and power window lock switch on the driver’s door trim is unlocked.
- When power window lock switch is locked, no windows can be raised or lowered except for driver side window.
- When ignition key is in the “ON” position, to fully open the driver side window, press down completely on the automatic switch (main switch) and release it; it needs not be held. The window will automatically open/close all the way. To stop the window, pull up/press down then release the switch.

System Description (Cont'd)

Delayed power operation

When the ignition switch is turned to the "OFF" position, the power window will still operate for up to approximately 45 seconds unless the driver side or passenger side door is opened.
(Power window timer)

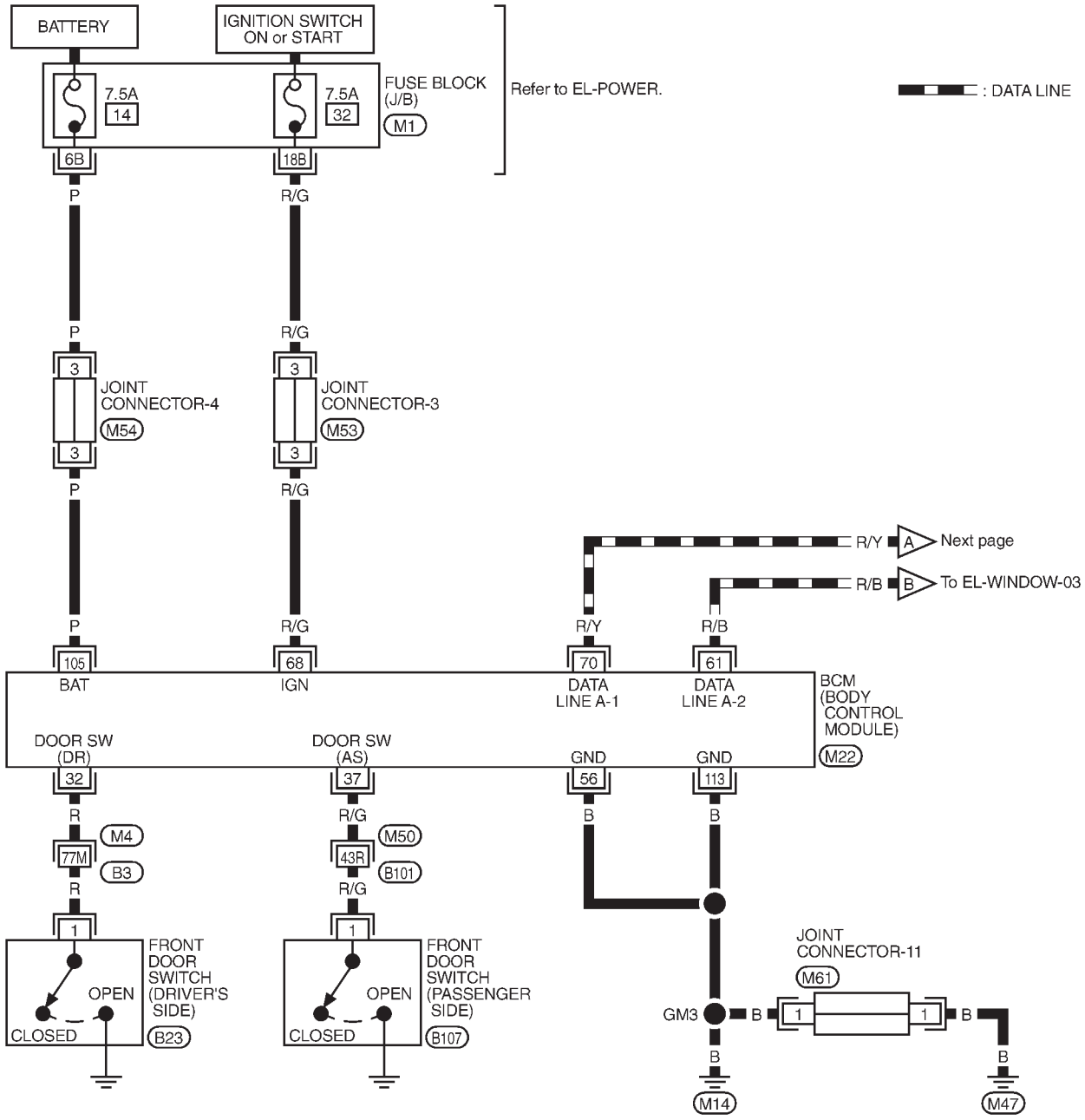
Schematic



TEL046B

Wiring Diagram — WINDOW —

EL-WINDOW-01



Refer to last page (Foldout page).

M4 , B3

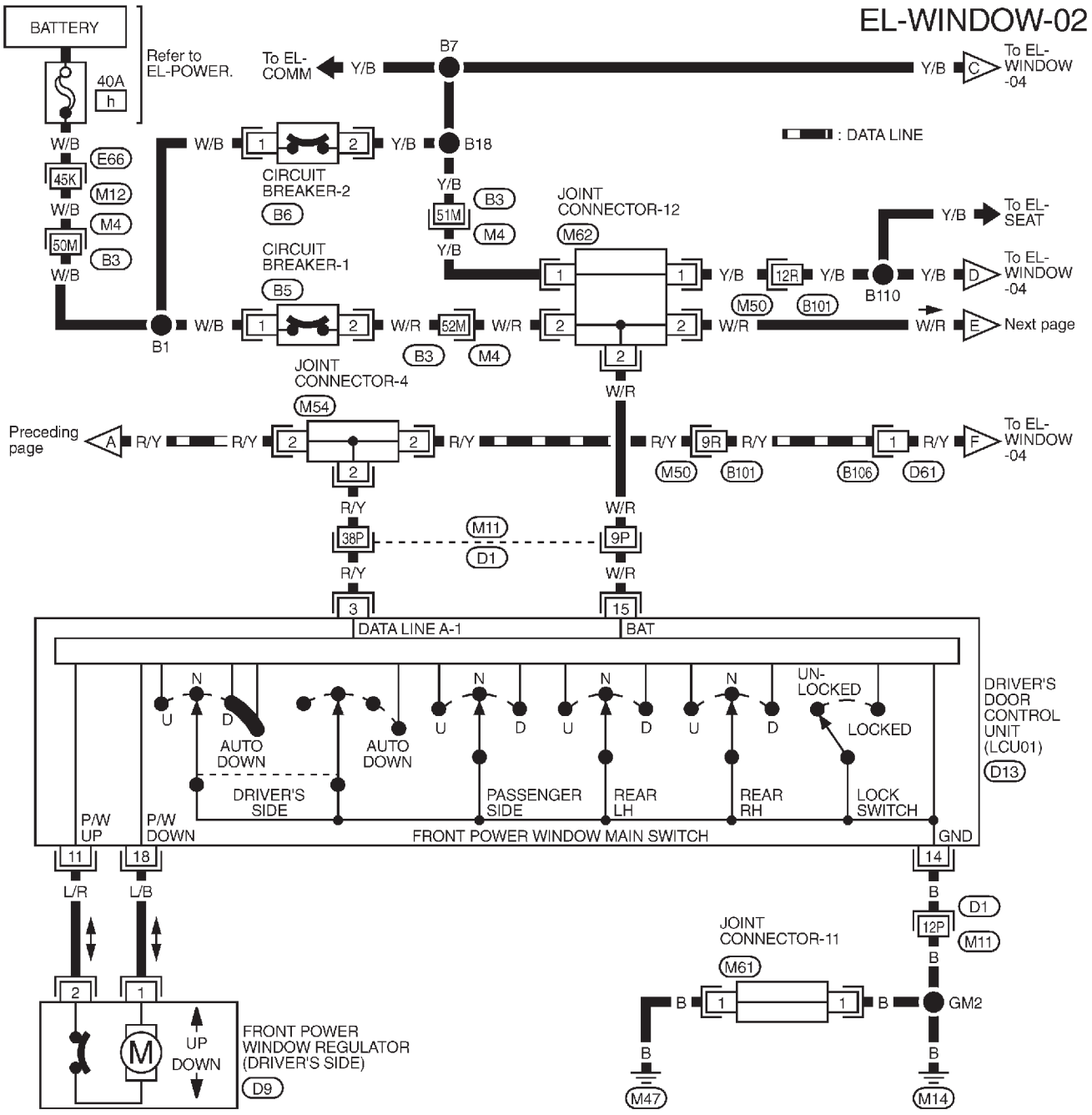
M50 , B101

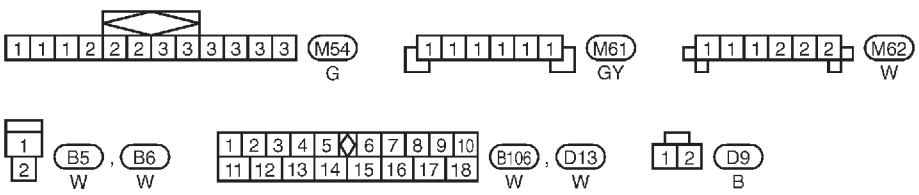
M1

M22

TEL047B

Wiring Diagram — WINDOW — (Cont'd)





Refer to last page (Foldout page).

E66 , M12

M4 , B3

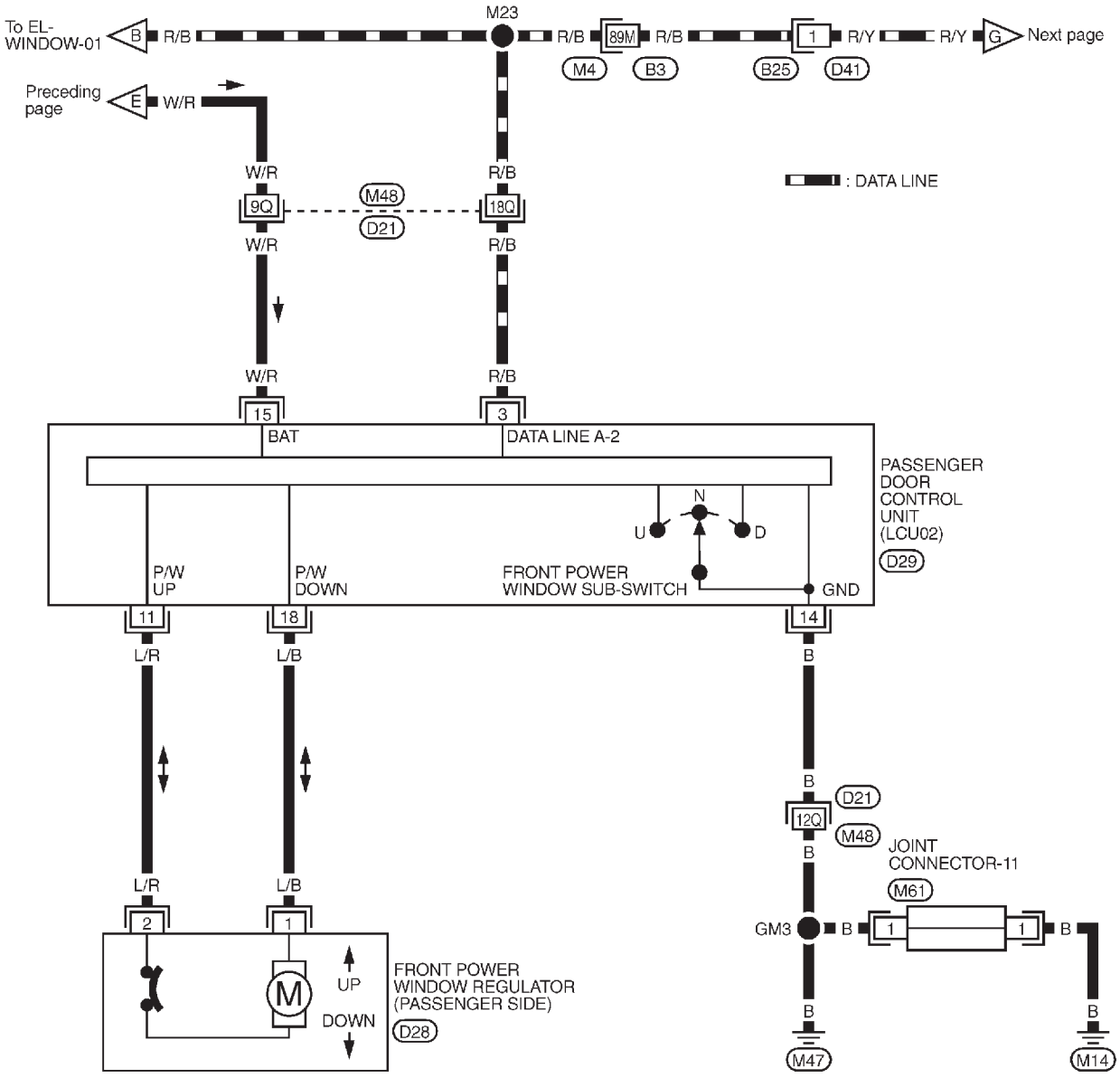
M11 , D1

M50 , B101

TEL835

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03



M61 GY

B25 W, D29 W

D28 B

Refer to last page (Foldout page).

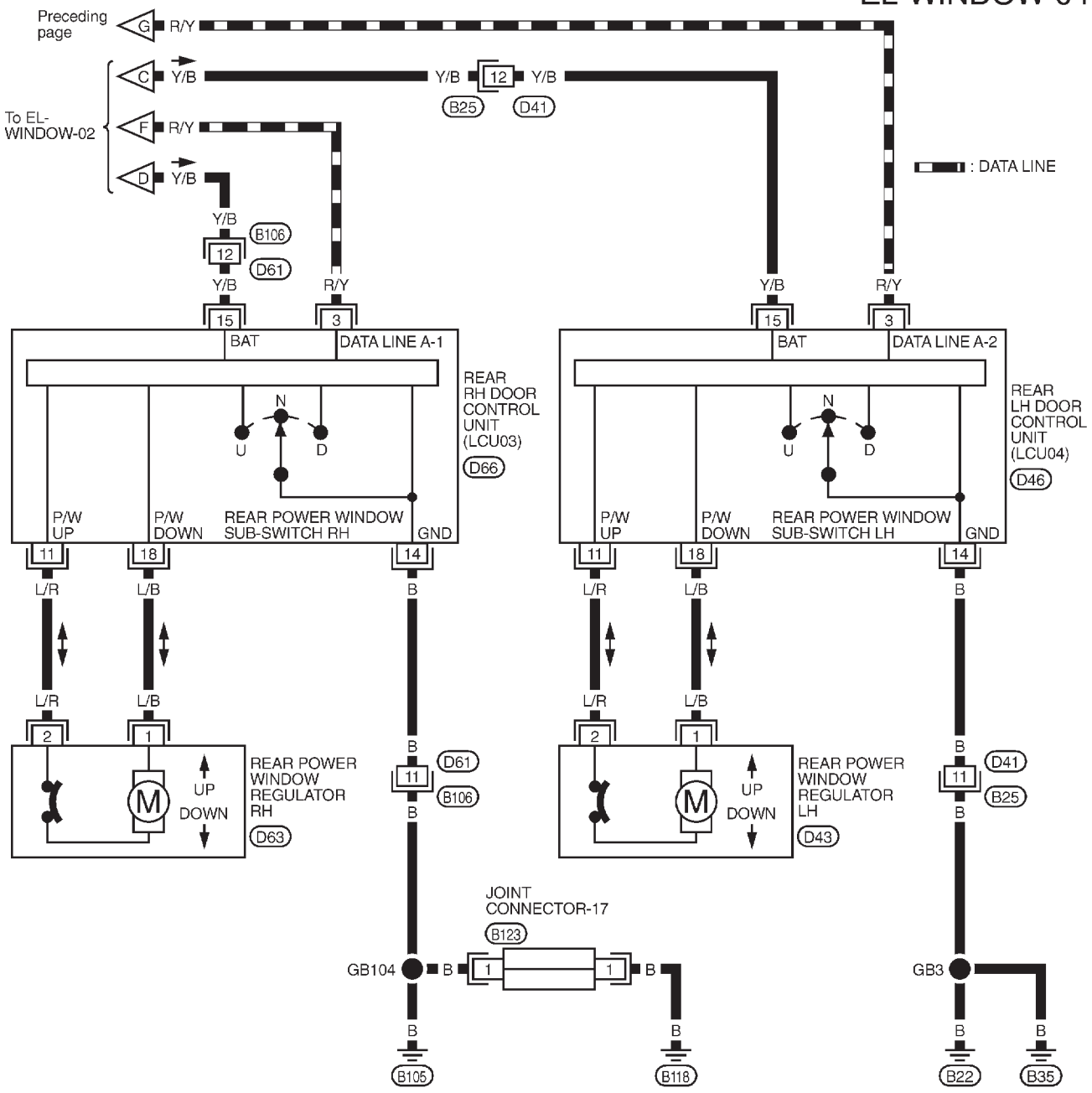
M4, B3

M48, D21

TEL836

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-04



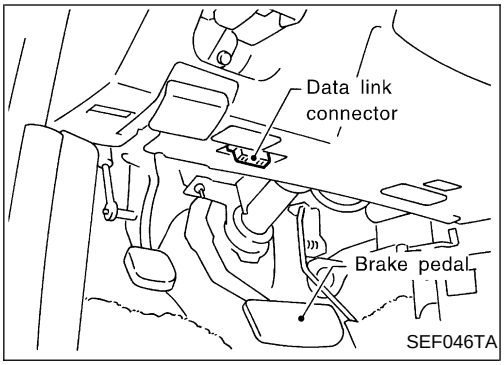
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18

B25, B106, D46, D66 — W

1 1 1 1 1 1 — B123 — GY

1 2 — D43, D63 — B

TEL837

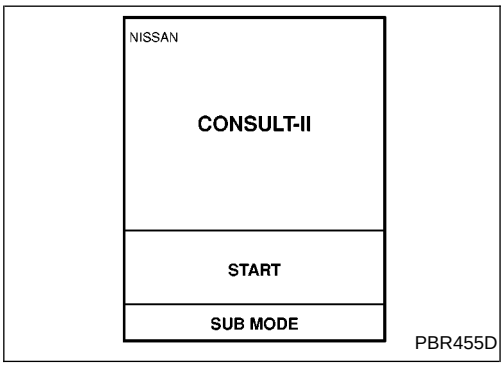


SEF046TA

CONSULT-II

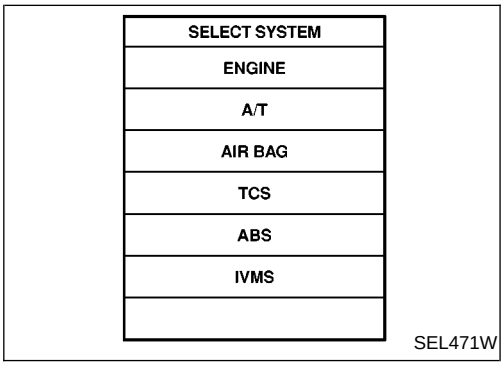
CONSULT-II INSPECTION PROCEDURE

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



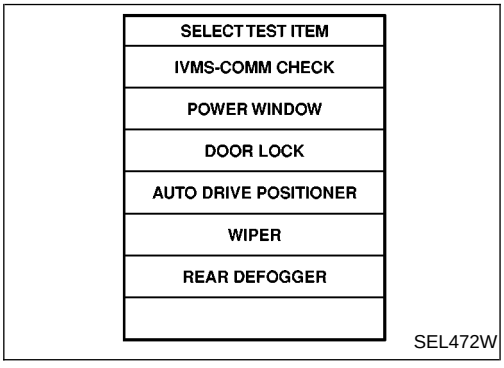
PBR455D

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



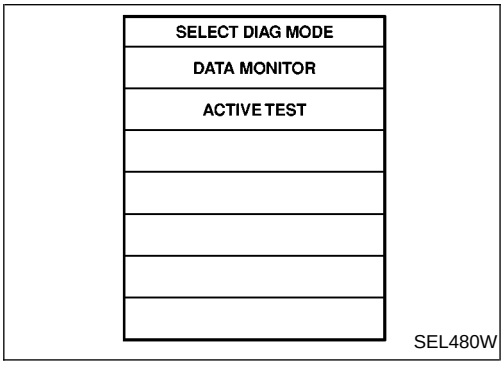
SEL471W

5. Touch “IVMS”.



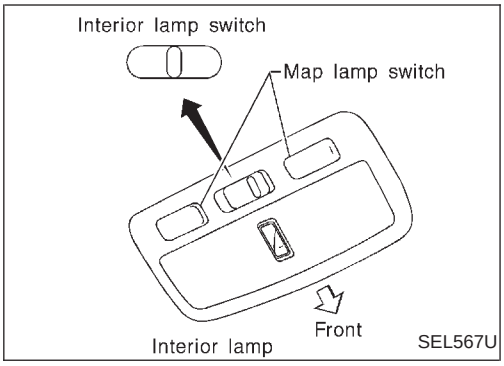
SEL472W

6. Touch “POWER WINDOW”.



SEL480W

- DATA MONITOR and ACTIVE TEST are available for the power window.



On board Diagnosis — Mode IV (Driver power window automatic operation)

HOW TO PERFORM MODE IV

Condition
- Ignition switch: OFF
- **Lighting switch: 1st**
- Rear window defogger switch: OFF
- Front LH window: Closed
- Doors: Closed
- Interior lamp switch: AUTO
- Driver side map lamp switch: OFF
- Passenger side map lamp switch: OFF
- Selector lever: “P” range

↓

Turn ignition switch “ON”.

↓

Return ignition switch to “ACC” and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Keep rear window defogger switch pressed, and turn ignition switch “ON” within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode IV is performed.

↓

Turn ignition switch “OFF”.
or
Drive the vehicle more than 7 km/h (4 MPH).

↓

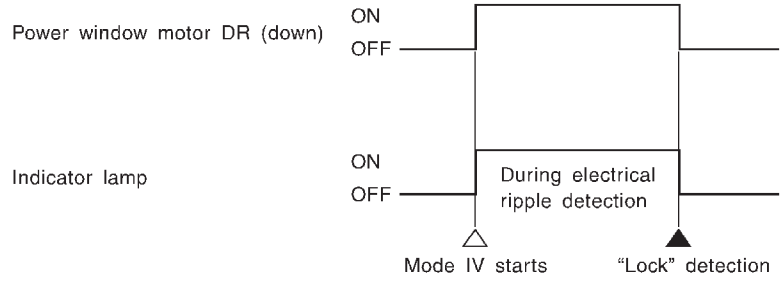
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On board Diagnosis — Mode IV (Driver power window automatic operation) (Cont'd)

DESCRIPTION

In mode IV, driver window is automatically operated. In conjunction with power window motor (DOWN) "ON", indicator lamps (Front map lamps and front step lamps) turn on. When power window "lock" is detected, power window motor will stop and the indicator lamps will turn off.



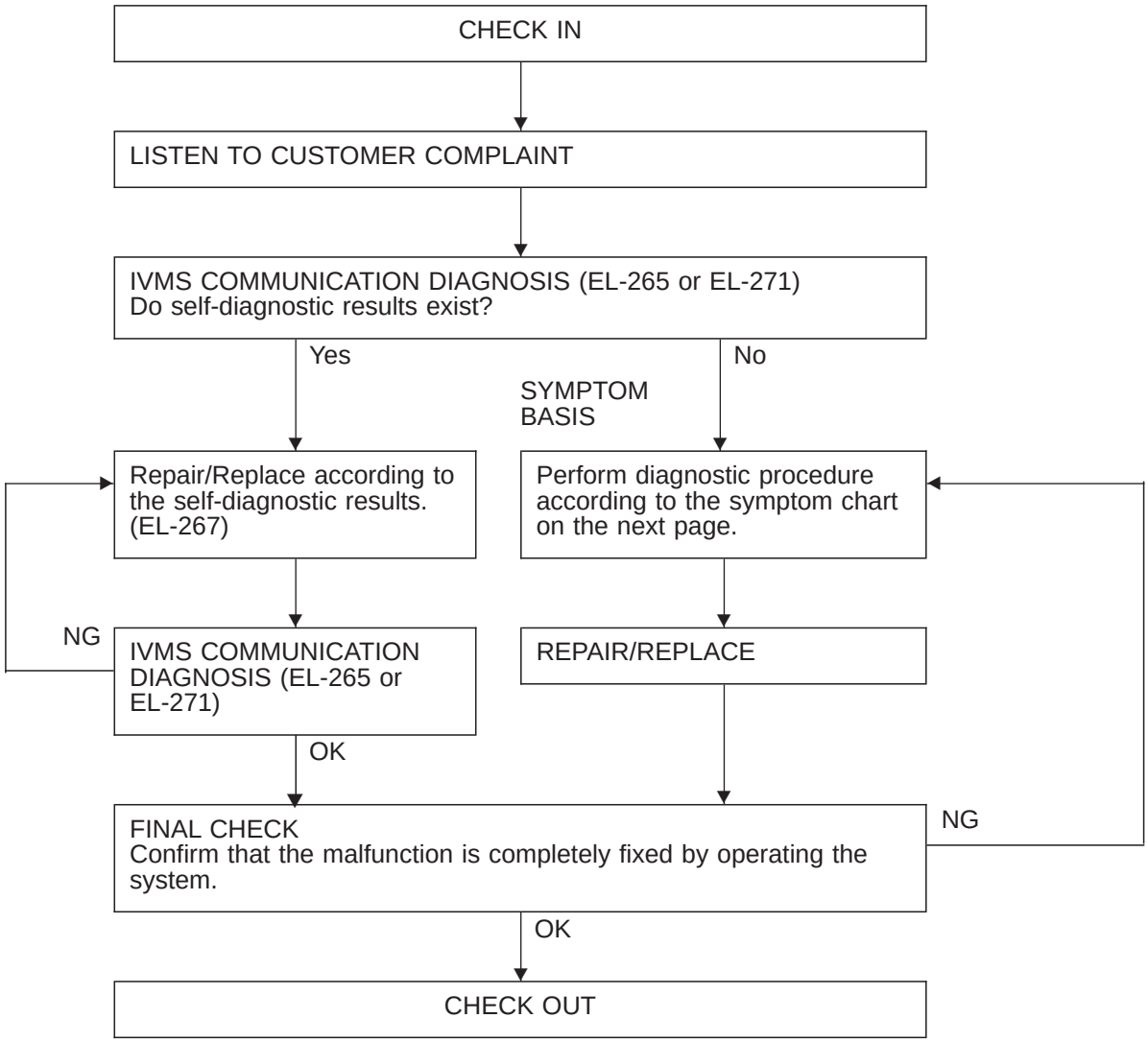
SEL961V

NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor stops and diagnosis ends.

* While power window motor is being operated, electrical ripple occurs.

Trouble Diagnoses

WORK FLOW

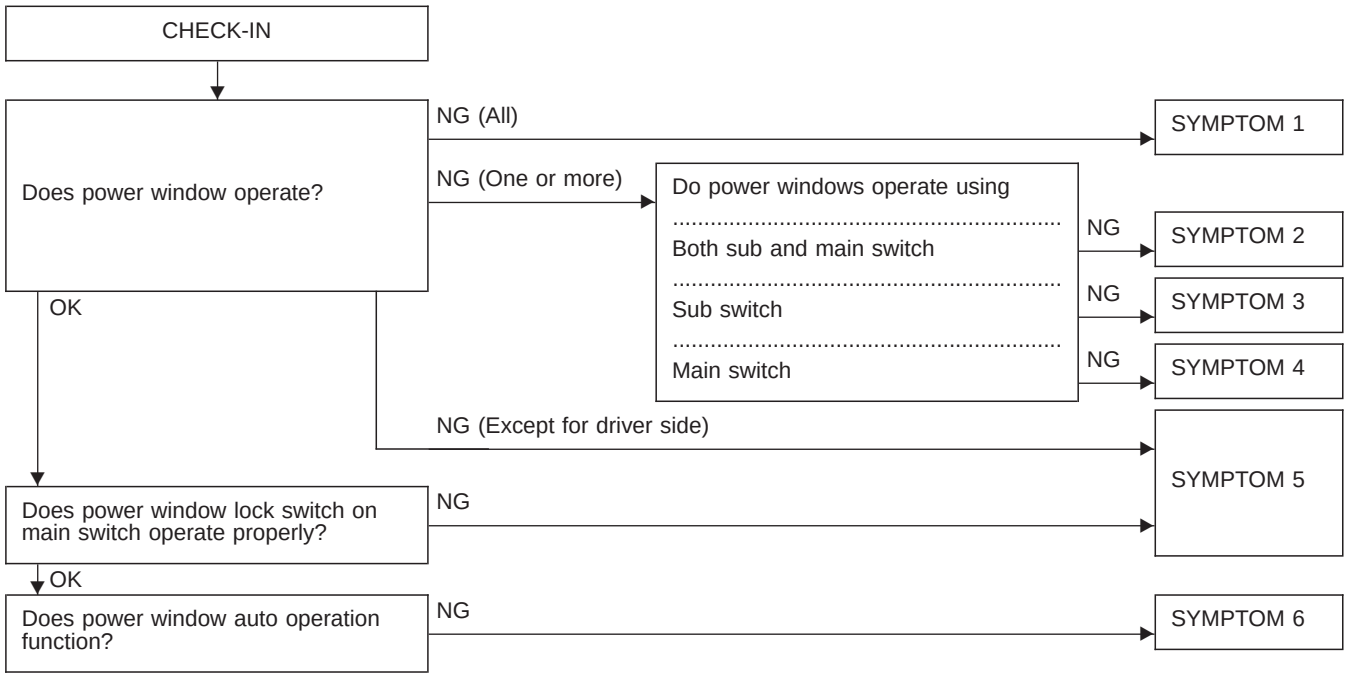


NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK



SYMPTOM CHART

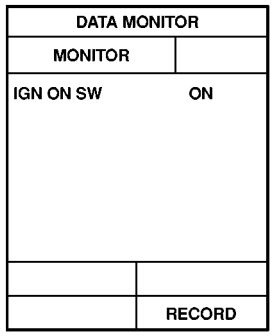
PROCEDURE		Diagnostic procedure						
REFERENCE PAGE		EL-302	EL-302	EL-303	EL-303	EL-304	EL-305	EL-306
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 5 (Power window regulator check)	Procedure 6 (Power window automatic switch check)	Procedure 7 (Front door switch check)
1	All power window do not operate.	X						
2	One or more of the power windows do not operate by turning either sub or main switch.					X		
3	One or more of the sub-switches do not function.				X			
4	One or more of the main switches on driver's door trim do not function.			X				
5	Power window lock switch on main switch does not operate properly.		X					
6	Driver power window automatic operation does not function.						X	
—	Delayed power timer does not operate properly.	X						X

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

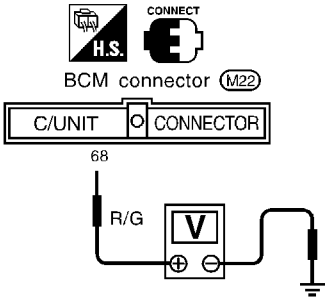
(Ignition switch ON signal check)

A



SEL499W

B



SEL556UB

CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT-II

See "IGN ON SW" in DATA MONITOR mode.
When ignition switch is ON:
IGN ON SW ON
When ignition switch is ACC or OFF:
IGN ON SW OFF

NG → Check the following.
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OR

B TESTER

Check voltage between BCM terminal 68 and ground.

Condition of ignition switch	Voltage V
ON	Approx. 12
ACC or OFF	0

Refer to wiring diagram in EL-293.

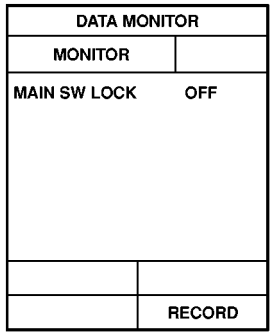
OK ↓

Ignition switch ON signal is OK.

DIAGNOSTIC PROCEDURE 2

(Power window lock switch check)

A



SEL518W

CHECK POWER WINDOW LOCK SWITCH INPUT SIGNAL.

A CONSULT-II

See "MAIN SW LOCK" in DATA MONITOR mode.
"MAIN SW LOCK" should change from "OFF" to "ON" when pushing power window lock switch.

NG → Replace LCU01.

OR

ON BOARD

Check power window lock switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

OK ↓

Power window lock switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

[Power window main switch (Driver side, Passenger side, Rear LH, RH) check]

A

DATA MONITOR	
MONITOR	
MAIN SW AS-UP	OFF
MAIN/S AS-DWN	OFF
MAIN SW RR-UP	OFF
MAIN/S RR-DWN	OFF
MAIN SW RL-UP	OFF
MAIN/S RL-DWN	OFF
P/W SW DR-UP	OFF
P/W SW DR-DWN	OFF
P/W SW DR-AUT	OFF
	Scroll Down
	RECORD

SEL519W

CHECK DRIVER'S DOOR TRIM POWER WINDOW MAIN SWITCH INPUT SIGNAL.

A CONSULT-II

See "MAIN SW UP or DOWN" in DATA MONITOR mode.

"MAIN SW UP or DOWN" should change from "OFF" to "ON" when pushing power window main switches.

NG → Replace LCU01.

OR

ON BOARD

Check power window main switch operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

OK ↓

Power window main switch is OK.

DIAGNOSTIC PROCEDURE 4

[Power window sub-switch (Passenger side, Rear LH, RH) check]

A

DATA MONITOR	
MONITOR	
P/W SW AS-UP	OFF
P/W SW AS-DWN	OFF
PW SW RR-UP	OFF
P/W SW RR-DWN	OFF
P/W SW RL-UP	OFF
P/W SW RL-DWN	OFF
	Scroll Down
	RECORD

SEL520W

CHECK POWER WINDOW SUB-SWITCH INPUT SIGNAL.

A CONSULT-II

See "P/W SW UP or DOWN" in DATA MONITOR mode.

"P/W SW UP or DOWN" should change from "OFF" to "ON" when each sub-switch is turned ON.

NG → Replace LCU for malfunctioning portion.

- Passenger: LCU02
- Rear LH: LCU04
- Rear RH: LCU03

OR

ON BOARD

Check power window sub-switch operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

OK ↓

Power window sub-switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

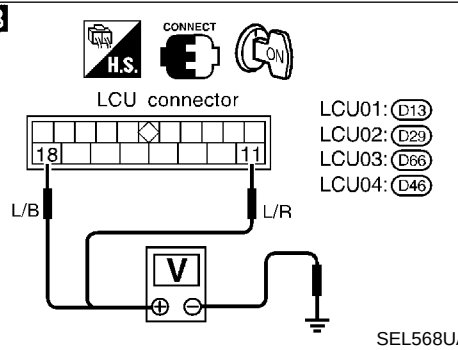
(Power window regulator check)

A

ACTIVE TEST	
P/W MOTOR-DRIVER	OFF
OR	
P/W MOTOR-ASSIST	OFF
P/W MOTOR-RR-RH	OFF
P/W MOTOR-RR-LH	OFF
UP	DOWN

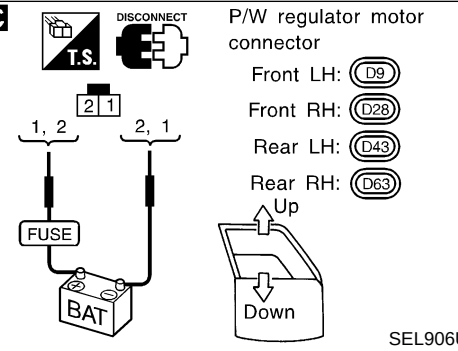
SEL521W

B



SEL568UA

C



SEL906U

A

POWER WINDOW REGULATOR ACTIVE TEST.

CONSULT-II

See "P/W MOTOR" in ACTIVE TEST mode.

Perform operation shown on display.

Power window motor should operate.

NOTE: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Power window regulator is OK.

NG ↓

B

CHECK LCU OUTPUT SIGNAL TO POWER WINDOW REGULATOR.

Check voltage between LCU connector terminals ⑪ or ⑱ and ground.

Operation	Terminals		Voltage
	⊕	⊖	
Up	⑪	Ground	Battery voltage
Down	⑱	Ground	

Refer to wiring diagram in EL-294, 295 or 296.

NG → Replace LCU for malfunctioning portion.

OK ↓

C

CHECK POWER WINDOW REGULATOR MOTOR.

1. Disconnect power window regulator motor connector.
2. Apply 12V DC direct current to motor and check operation.

Terminals		Operation
⊕	⊖	
①	②	Downward
②	①	Upward

NG → Replace power window regulator motor.

OK ↓

Check harness for open or short between power window switch, and power window regulator motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Power window automatic switch check)

A

DATA MONITOR	
MONITOR	
P/W SW DR-AUT	OFF
	RECORD

SEL522W

B

DATA MONITOR	
MONITOR	
P/W LOCK SIG	ON
	RECORD

SEL523W

CHECK POWER WINDOW AUTO SWITCH INPUT SIGNAL.

A CONSULT-II

See "P/W SW DR AUT" in DATA MONITOR mode.

"P/W SW DR AUT" should change from "ON" to "OFF" when completely pushing in or pulling out driver power window switch.

NG → Replace LCU01.

OR

ON BOARD

Check power window switch driver auto operation in switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

OK ↓

CHECK POWER WINDOW LOCK SIGNAL.

B CONSULT-II

See "P/W LOCK SIG" in DATA MONITOR mode.

"P/W LOCK SIG" should change from "ON" to "OFF" when the window is moving.

NG → Replace LCU01.

OR

ON BOARD

Perform On board diagnosis Mode IV.
(Refer to EL-298.)
Electrical ripple should occur, when the window is moving.

OK ↓

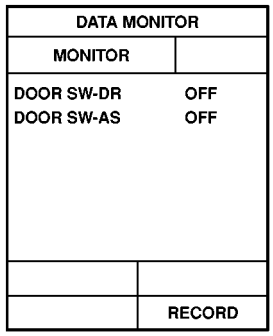
Check the system again.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

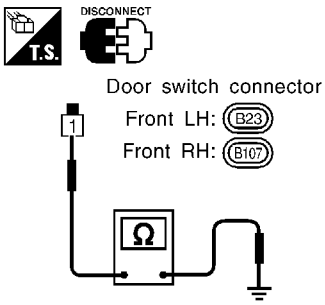
(Front door switch check)

A



SEL524W

B



SEL914U

CHECK FRONT DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SWITCH" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OR

ON BOARD

Check front door switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-293.

OK → Door switch is OK.

NG ↓

B

CHECK DOOR SWITCH.

1. Disconnect door switch connector.
2. Check continuity between terminal and switch body ground.

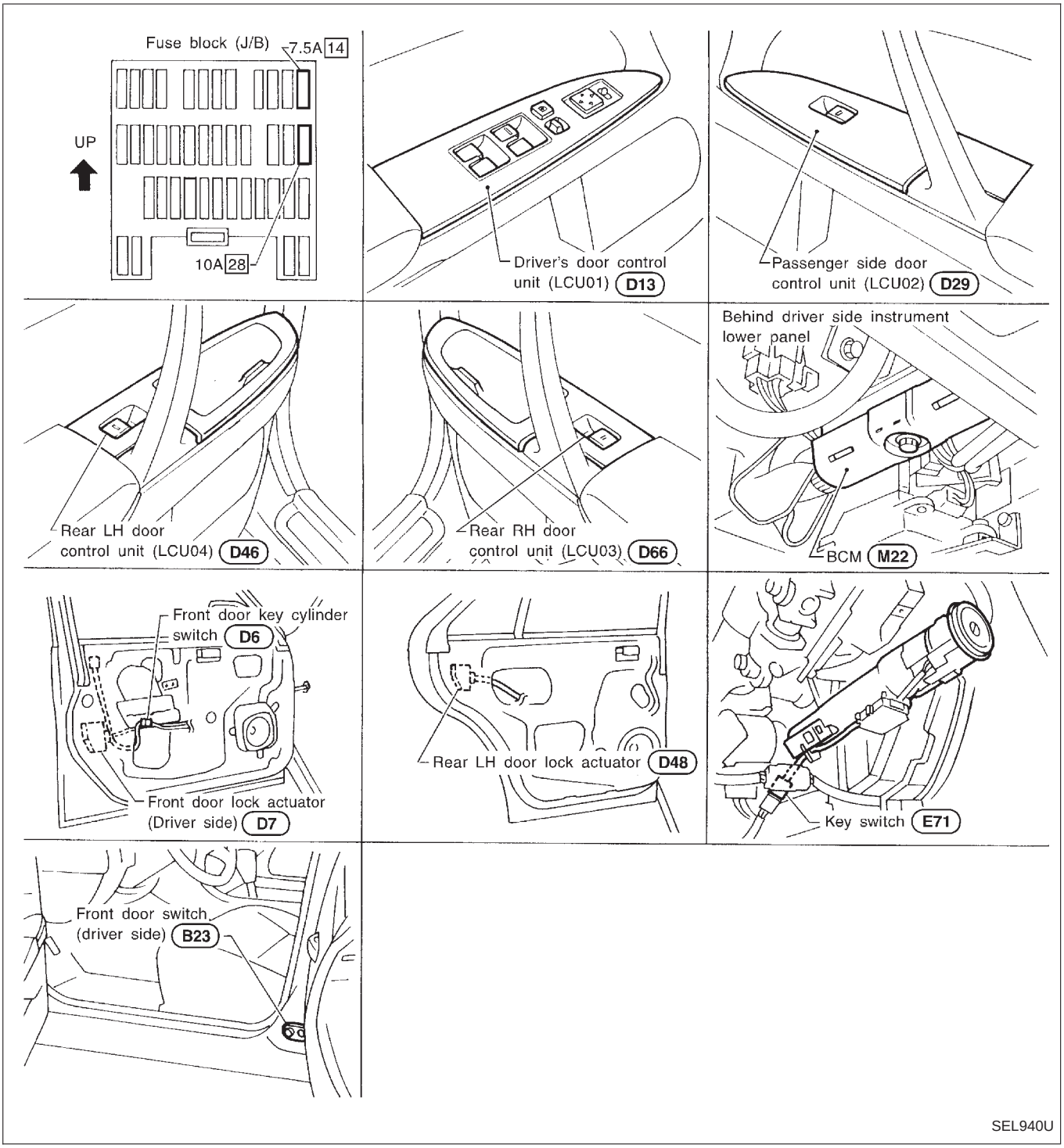
	Terminals	Condition	Continuity
Front door switch	① - Ground	Pressed	No
		Released	Yes

NG → Replace door switch.

OK ↓

Check the following.
- Door switch ground condition
- Harness for open or short between door switch and BCM

Component Parts and Harness Connector Location



System Description

POWER SUPPLY AND GROUND

Power is supplied at all times
- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal ③ .

Power is supplied to BCM terminal ㊾ through key switch terminal ④ when key switch is in ON position (key is inserted in the ignition key cylinder).
BCM is connected to LCU01, LCU02, LCU03 and LCU04 as DATA LINE A-1 or A-2.
When door switch is in OPEN position, ground is supplied
- to BCM terminal ㉜ or ㊲
- through front LH or RH door switch terminal ① .

When door is unlocked, ground is supplied
- to each door LCU terminal ⑤
- from terminal ② of each door unlock sensor.

When the door is locked with the key, ground is supplied
- to LCU01 or LCU02 terminal ⑦
- from terminal ③ of the key cylinder switch LH or
- from terminal ① of the key cylinder switch RH
- through body grounds M14 and M47.

When the door is unlocked with the key, ground is supplied
- to BCM terminal ㉛ or ㉗
- from terminal ① of the key cylinder switch LH or
- from terminal ③ of the key cylinder switch RH
- through body grounds M14 and M47.

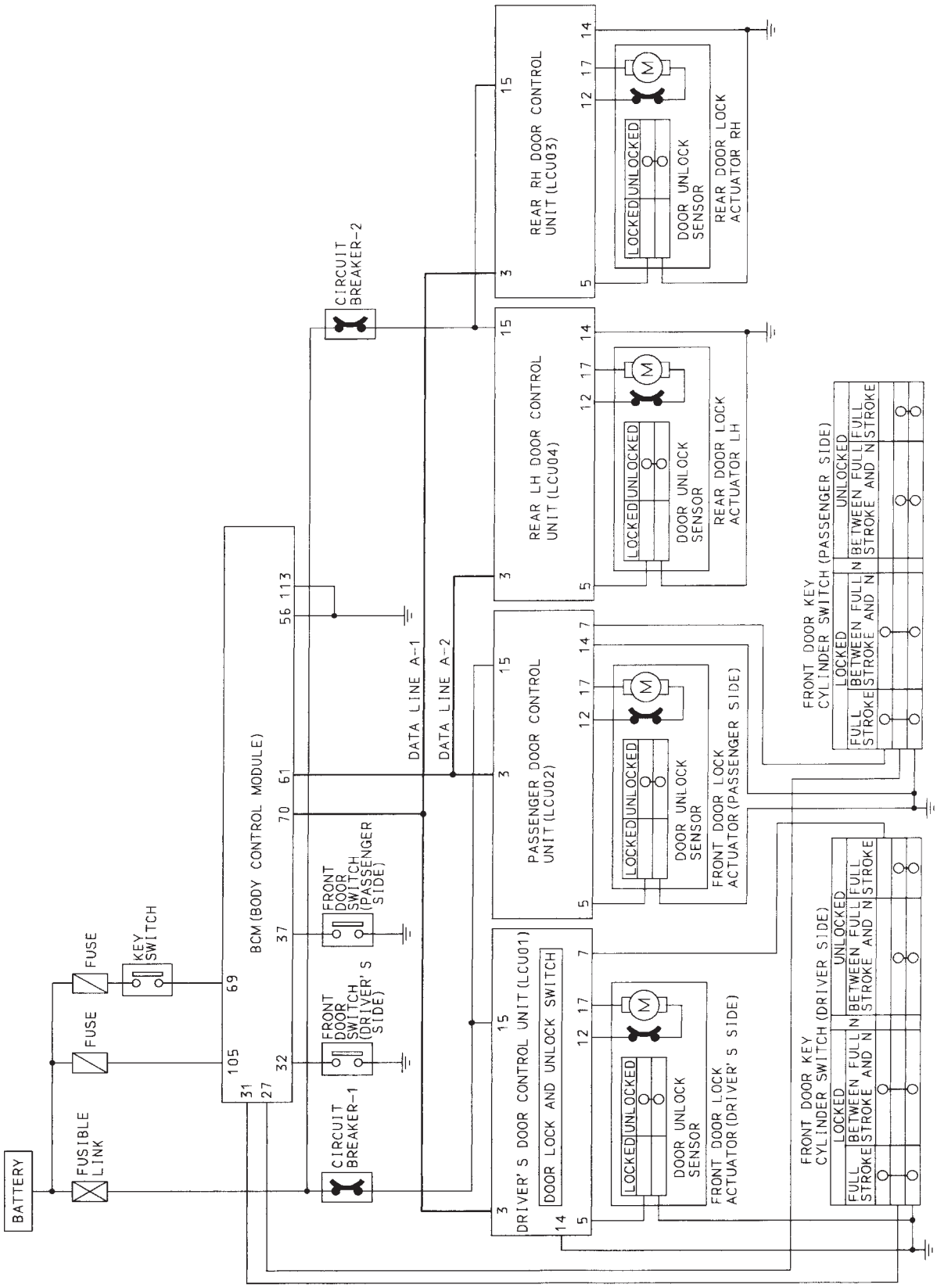
When lock/unlock signal is sent to BCM or LCU, BCM sends a lock/unlock signal to LCUs via DATA LINE A-1 or A-2. LCUs then supply power and ground to each door lock actuator.

OPERATION

- The lock & unlock switch (SW) 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 door, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 5 seconds after the first unlock operation unlocks all of the other doors. (Signals from front door key cylinder switch)

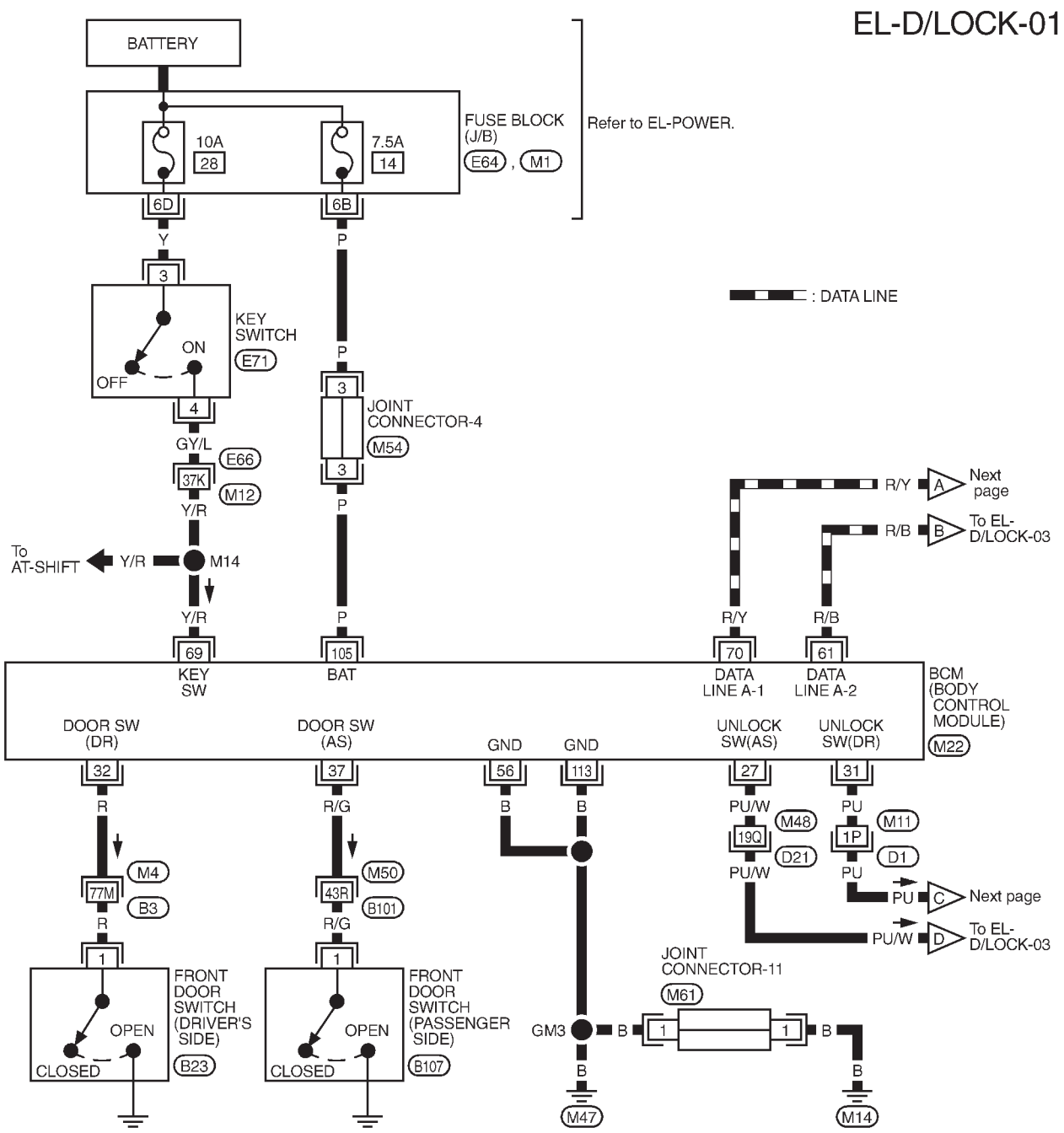
However, if the ignition key is in the ignition key cylinder and one or more of the front doors are open, setting the lock & unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlocks them. (Combination signals from key switch, front LH or RH door switch and front LH or RH door unlock sensor) — (KEY REMINDER DOOR SYSTEM)

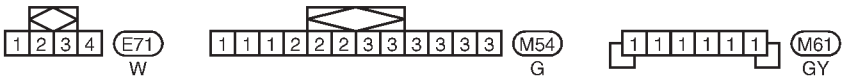
Schematic

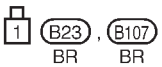


TEL337B

Wiring Diagram — D/LOCK —





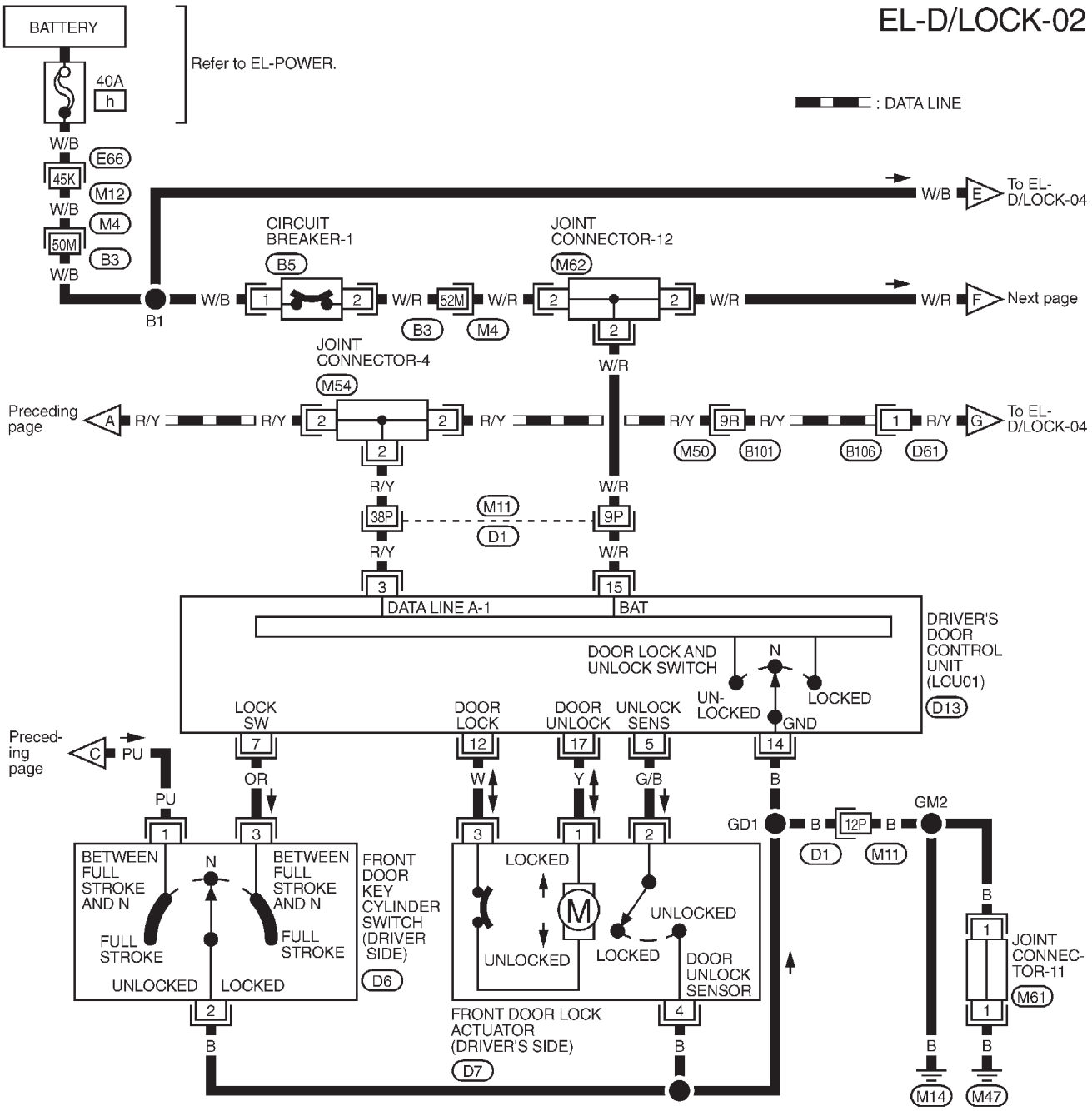


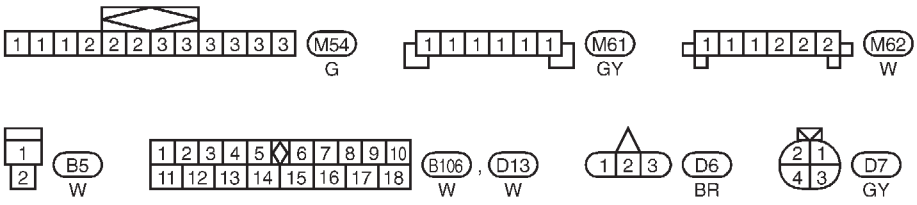
Refer to last page (Foldout page).

- E66, M12
- M4, B3
- M11, D1
- M48, D21
- M50, B101
- E64
- M1
- M22

TEL218A

Wiring Diagram — D/LOCK — (Cont'd)





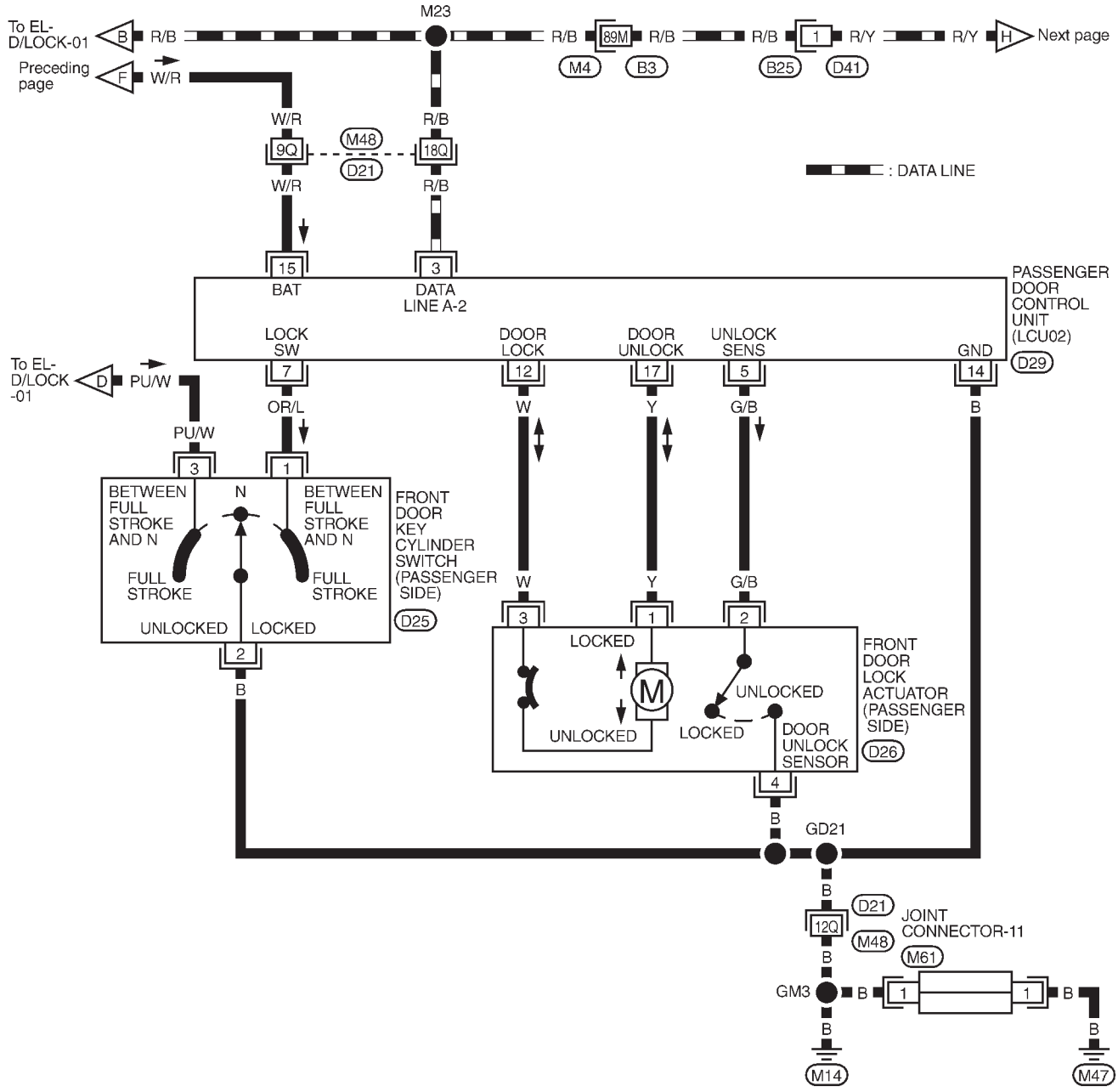
Refer to last page (Foldout page).

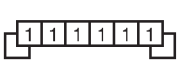
(M4) , (B3)
(M11) , (D1)
(M12) , (E66)
(M50) , (B101)

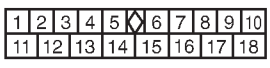
TEL338B

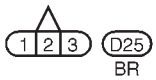
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-03









Refer to last page (Foldout page).

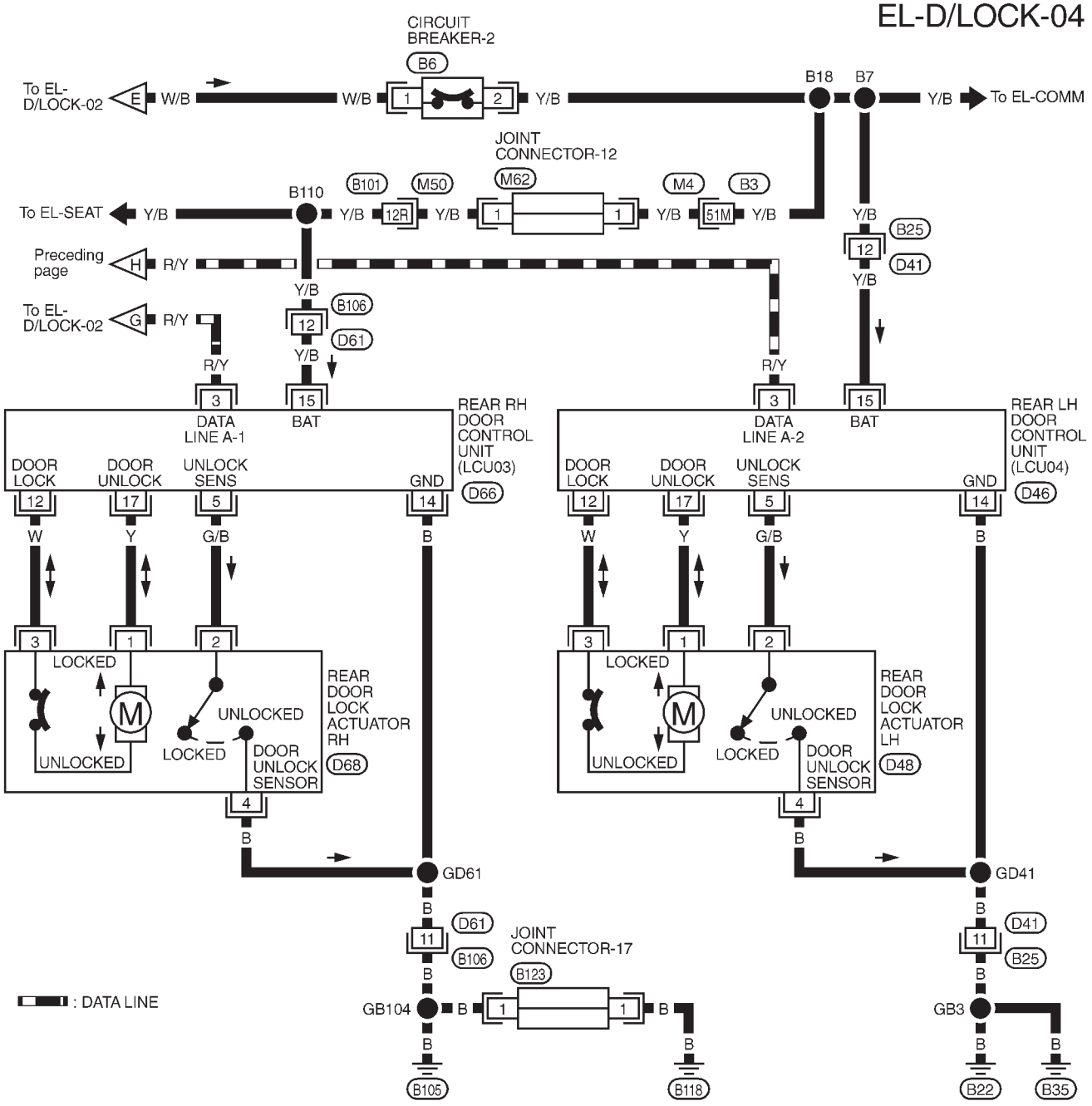
M4 , B3

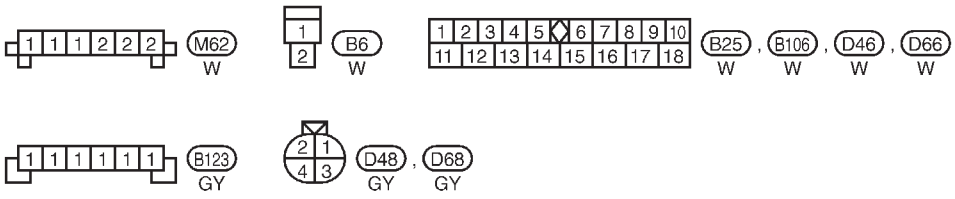
M48 , D21

TEL339B

Wiring Diagram — D/LOCK — (Cont'd)

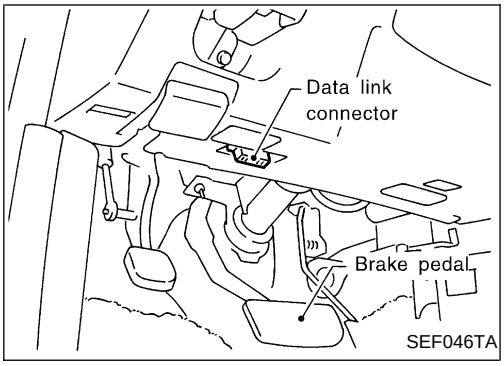
EL-D/LOCK-04





Refer to last page (Foldout page).
M4, B3
M50, B101

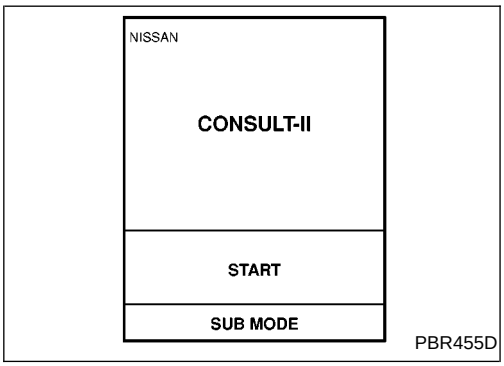
TEL842



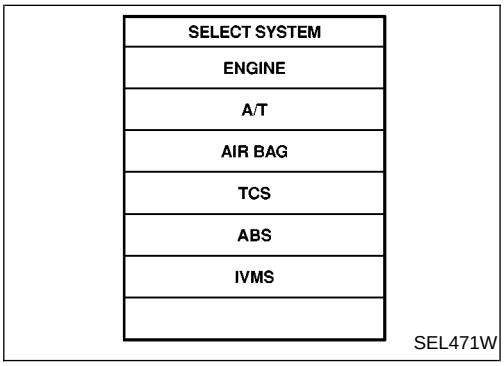
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

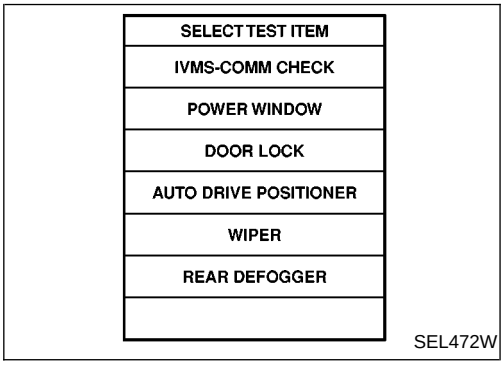
1. Turn ignition switch “OFF”.
2. Connect CONSULT-II to the data link connector.



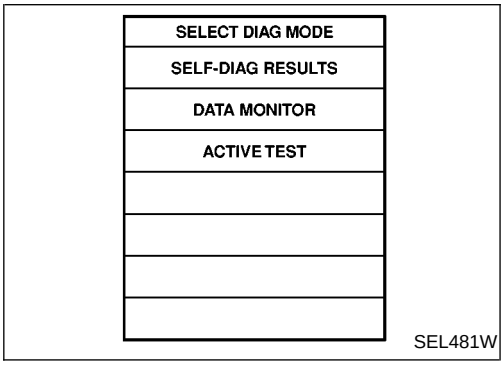
3. Turn ignition switch “ON”.
4. Touch “START”.



5. Touch “IVMS”.



6. Touch “DOOR LOCK”.

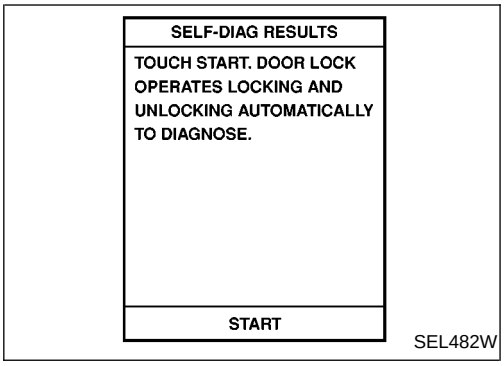


- DATA MONITOR, ACTIVE TEST, and SELF-DIAGNOSIS are available for the power door lock.

CONSULT-II (Cont'd)

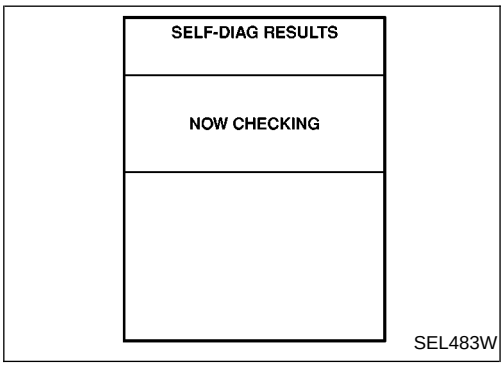
HOW TO PERFORM SELF-DIAGNOSIS

1. Choose "DOOR LOCK" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



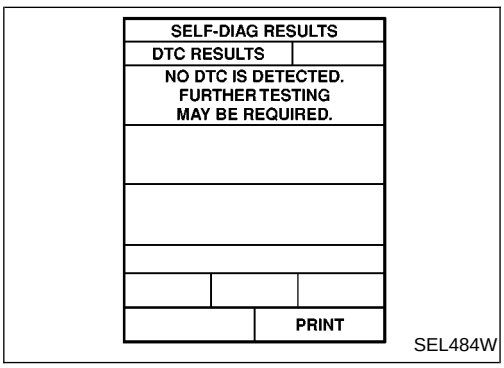
SEL482W

4. Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.



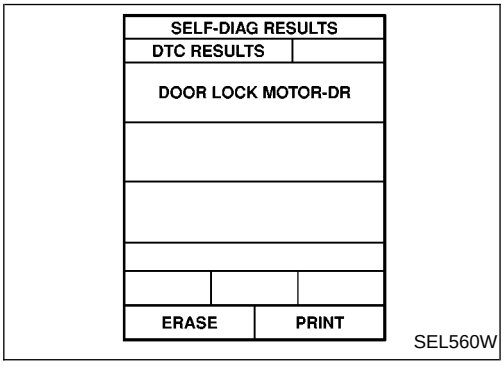
SEL483W

- When no malfunction is detected.



SEL484W

- When malfunction is detected.
  A summary of diagnostic results is given in the following chart.

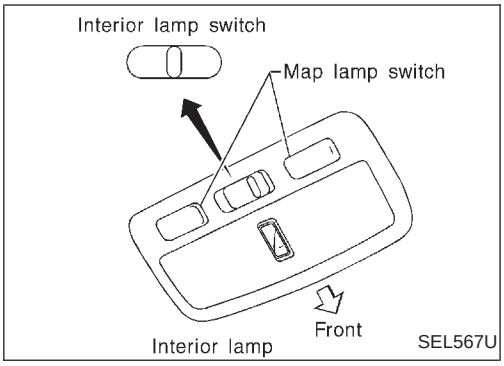


SEL560W

CONSULT-II (Cont'd)

SELF DIAGNOSTIC RESULT LIST

Diagnostic result	Explanation	Diagnostic procedure	Reference page
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock actuator/unlock sensor is malfunctioning.	Procedure 5 (Door unlock sensor check)	EL-326
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock actuator/unlock sensor is malfunctioning.		
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock actuator/unlock sensor is malfunctioning.	Procedure 6 (Door lock actuator check)	EL-327
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.		
NO DTC IS DETECTED/ FURTHER TESTING MAY BE REQUIRED.	No malfunction in the above items	—	—



On board Diagnosis — Mode III (Power door lock operation)

HOW TO PERFORM MODE III

Condition
- Ignition switch: OFF
- **Lighting switch: 1st**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp switch: AUTO
- Driver side map lamp switch: OFF
- Passenger side map lamp switch: OFF
- Selector lever: “P” range

↓

Turn ignition switch “ON”.

↓

Return ignition switch to “ACC” and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Rear window defogger switch holds off.

↓

Turn ignition switch “ON” within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode III is performed.

↓

Turn ignition switch “OFF”.

↓

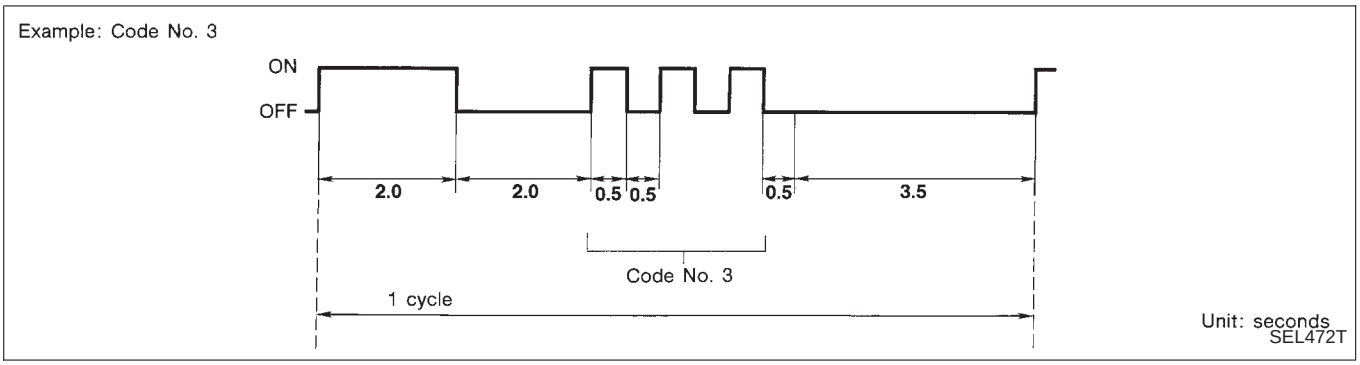
DIAGNOSIS END*1 (**Be sure to turn off the lighting switch.**)

*1: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

On board Diagnosis — Mode III (Power door lock operation) (Cont'd)

DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



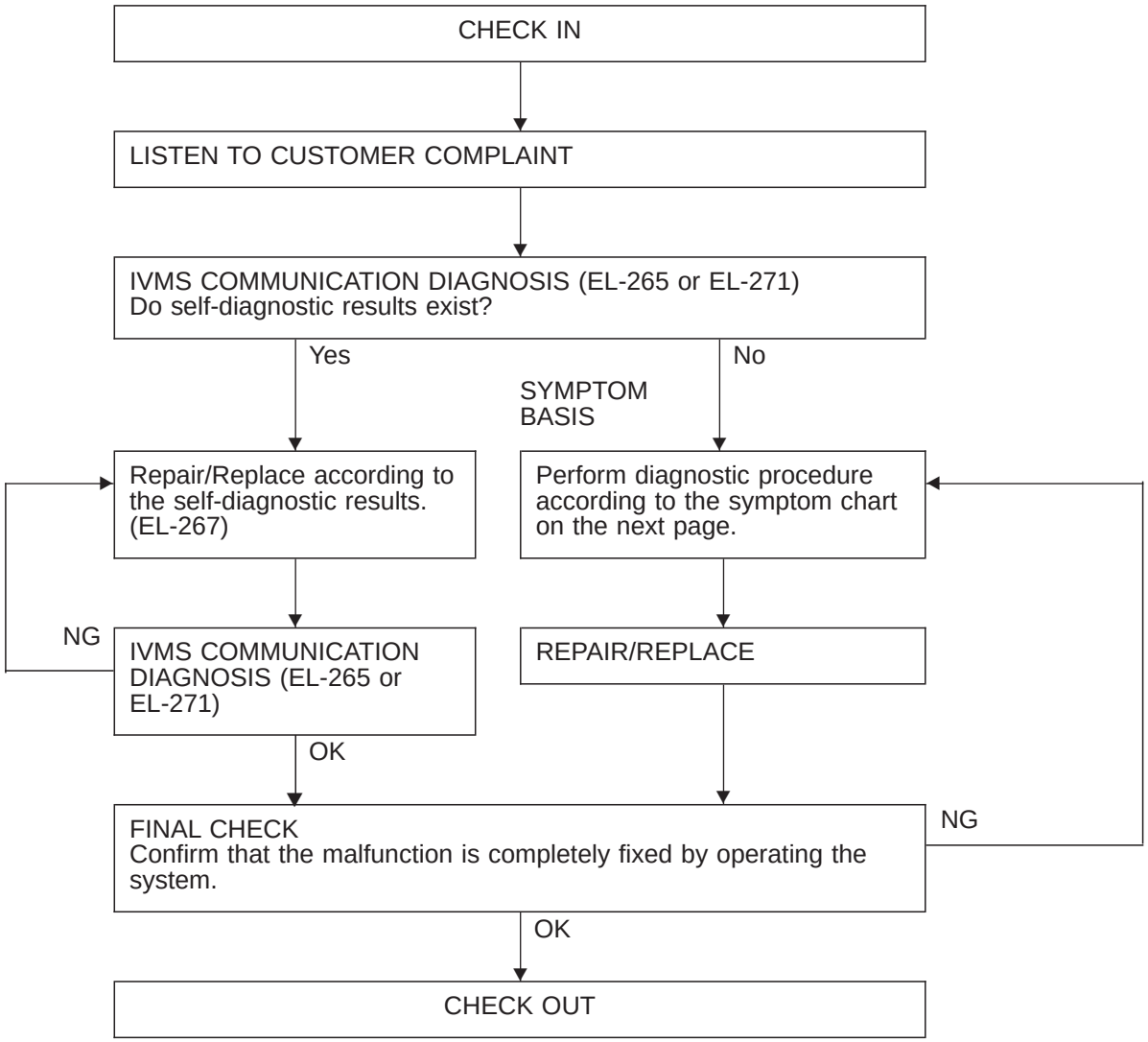
After indicator lamp turns ON for 2 seconds and then turns OFF, it flashes to indicate a malfunction code. For example, the indicator lamp goes on and off for 0.5 seconds three times. This indicates malfunction code "3".

MALFUNCTION CODE TABLE

Code No.	Detected items	Diagnostic procedure	Reference page
1	Driver door lock actuator/unlock sensor	Procedure 5 (Door unlock sensor check)	EL-326
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-327
4	Rear LH door lock actuator/unlock sensor		
9	No malfunction in the above items	—	—

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	Self-diagnosis		Diagnostic procedure						—
REFERENCE PAGE	EL-315	EL-317	EL-321	EL-322	EL-323	EL-324	EL-326	EL-327	EL-266
SYMPTOM	CONSULT-II	On board diagnosis (Mode III)	Procedure 1 (Door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door key cylinder switch check)	Procedure 5 (Door unlock sensor check)	Procedure 6 (Door lock actuator check)	Wake-up diagnosis
Key reminder door system does not operate properly.	X	X	X	X			X	X	
Specific door lock actuator does not operate.	X	X					X	X	
Power door lock does not operate with door lock and unlock switch on power window main switch.	X	X			X				X (LCU01)
Power door lock does not operate with front door key cylinder operation.	X	X				X			X (LCU01, LCU02)
Power door lock does not operate with front door lock knob switch.	X	X					X		X (LCU01, LCU02)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

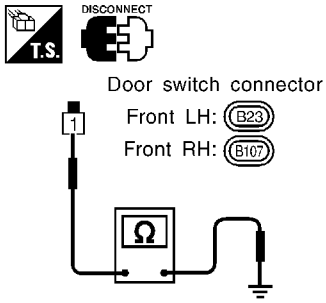
(Front door switch check)

A

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

SEL524W

B



SEL914U

CHECK FRONT DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SWITCH" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OR

ON BOARD

Check front door switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-310.

OK → Door switch is OK.

NG ↓

B

CHECK DOOR SWITCH.

1. Disconnect door switch connector.
2. Check continuity between terminal and switch body ground.

	Terminals	Condition	Continuity
Front door switch	① - Ground	Pressed	No
		Released	Yes

NG → Replace door switch.

OK ↓

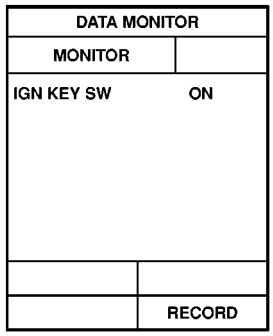
Check the following.
- Door switch ground condition
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

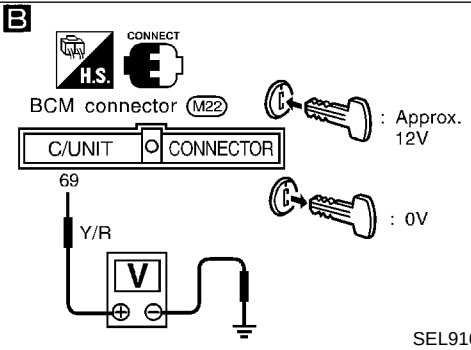
[Key switch (Insert) check]

A



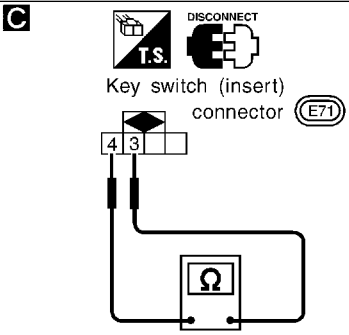
SEL532W

B



SEL916V

C



SEL907U

CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT-II

See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:

IGN KEY SW ON

When key is removed from ignition key cylinder:

IGN KEY SW OFF

OR

B TESTER

Check voltage between BCM terminal ⑥⑨ and ground.

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

Refer to wiring diagram in EL-310.

OK → Ignition key switch is OK.

NG ↓

C

CHECK KEY SWITCH.

1. Disconnect key switch connector.
2. Check continuity between key switch (insert) terminals ③ and ④ when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

Condition	Continuity
Key is inserted.	Yes
Key is removed.	No

NG → Replace key switch (insert).

OK ↓

Check the following.

- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Lock & unlock switch check)

A

DATA MONITOR	
MONITOR	
DOOR LK SW-LK	OFF
DOOR LK SW-UN	OFF
	RECORD

SEL561W

CHECK DOOR LOCK & UNLOCK SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR LK SW-LK or UN" in DATA MONITOR mode.
When lock & unlock switch is turned to lock:
DOOR LK SW-LK ON
When lock & unlock switch is turned to unlock:
DOOR LK SW-UN ON

OK → Lock & unlock switch is OK.

OR

ON BOARD

Check door lock & unlock switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

NG → Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

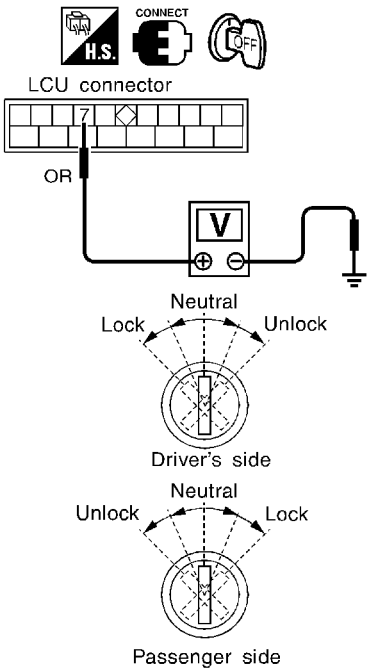
DIAGNOSTIC PROCEDURE 4-(1)
(Door key cylinder lock switch check)

A

DATA MONITOR	
MONITOR	
KEY CYL LK-DR	OFF
KEY CYL LK-AS	OFF
	RECORD

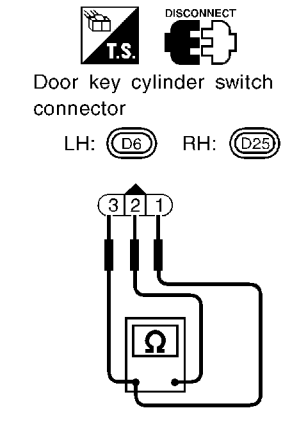
SEL537W

B



SEL951V

C



① : Door lock switch terminal (RH)

② : Ground terminal

③ : Door lock switch terminal (LH)

SEL909U

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK SIGNAL).

A CONSULT-II

See "KEY CYL LK" in DATA MONITOR mode.

"KEY CYL LK" should be "ON" when key inserted in door key cylinder was turned to lock.

OR

B TESTER

Check voltage between LCU01/02 terminal ⑦ and ground.

Key position	Voltage V
Neutral/Unlock	Approx. 5
Lock	0

Refer to wiring diagram in EL-311 or 312.

OK → Door key cylinder switch (lock) is OK.

NG ↓

C

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 RH: ① - ②	Neutral/Unlock	No
	Lock	Yes

NG → Replace door key cylinder switch.

OK ↓

Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between LCU and door key cylinder switch

Trouble Diagnoses (Cont'd)

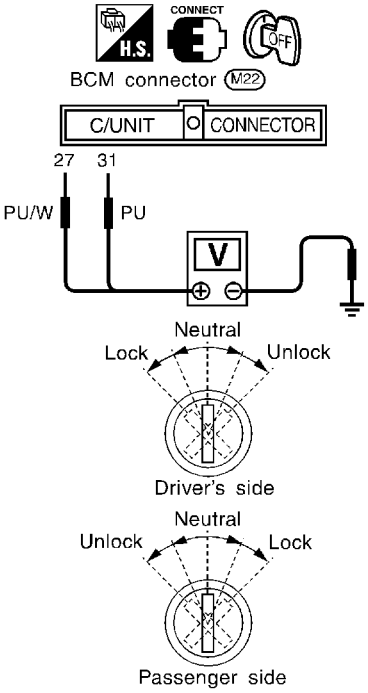
DIAGNOSTIC PROCEDURE 4-(2)
(Door key cylinder unlock switch check)

A

DATA MONITOR	
MONITOR	
KEY CYL UN-DR	OFF
KEY CYL UN-AS	OFF
	RECORD

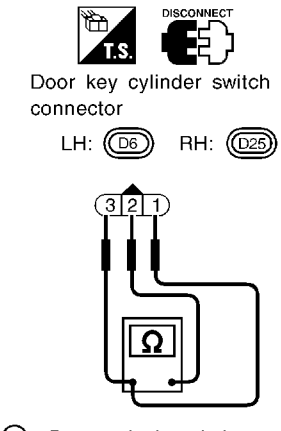
SEL538W

B



SEL952V

C



① : Door unlock switch terminal (LH)

② : Ground terminal

③ : Door unlock switch terminal (RH)

SEL913U

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

A CONSULT-II

See "KEY CYL UN" in DATA MONITOR mode.

"KEY CYL UN" should be "ON" when key inserted in door key cylinder was turned to unlock.

OR

B TESTER

Check voltage between BCM terminals ㉗ or ㉛ and ground.

	Terminals ⊕	Terminals ⊖	Key position	Voltage V
LH	㉛	Ground	Neutral/Lock	Approx. 12
			Unlock	0
RH	㉗	Ground	Neutral/Lock	Approx. 12
			Unlock	0

Refer to wiring diagram in EL-310.

OK → Door key cylinder switch (unlock) is OK.

NG ↓

C

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: ① - ②	Neutral/Lock	No
RH: ③ - ②	Unlock	Yes

NG → Replace door key cylinder switch.

OK ↓

Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between BCM and door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

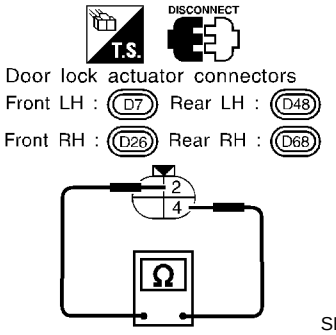
(Door unlock sensor check)

A

DATA MONITOR	
MONITOR	
LOCK SIG-DR	UNLK
LOCK SIG-AS	UNLK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK
	RECORD

SEL525W

B



SEL025V

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

A CONSULT-II

See "LOCK SIG" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON BOARD

Check door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-311, 312 or 313.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminals ② and ④.

Condition	Continuity
Locked	No
Unlocked	Yes

NG → Replace door lock actuator.

OK ↓

Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

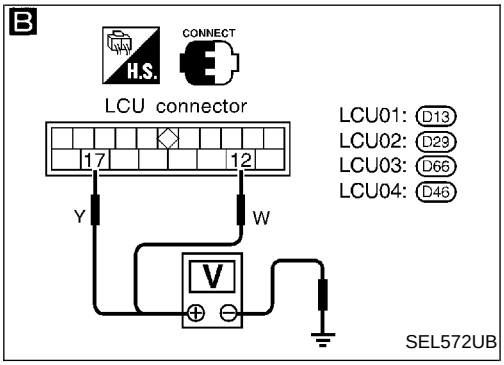
(Door lock actuator check)

A

ACTIVE TEST	
DR LOCK MTR-DRVR	OFF
OR	
DR LOCK MTR-ASST	OFF
DR LOCK MTR-R/RH	OFF
DR LOCK MTR-R/LH	OFF
LOCK	UNLOCK

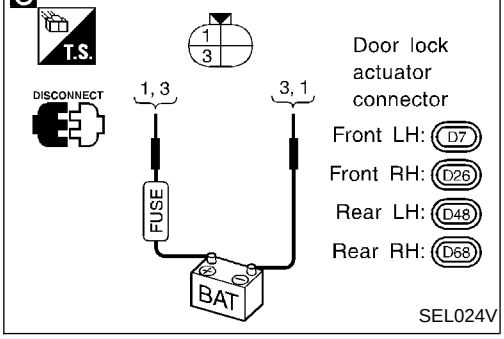
SEL526W

B



SEL572UB

C



SEL024V

CHECK DOOR LOCK MOTOR OPERATION.

A CONSULT-II

See "DR LOCK MTR" in ACTIVE TEST mode.
Perform operation shown on display. **Door lock motor should operate.**

OR

ON BOARD

Perform On board Diagnosis Mode III. (Refer to EL-317.)
Door lock motor should operate.

OK → Door lock actuator is OK.

NG ↓

B

Check voltage between LCU connector terminals ⑰ or ⑫ and body ground.

Door lock operation	Terminals ⊕	Terminals ⊖	Voltage
Lock	⑫	Ground	Battery voltage
Unlock	⑰	Ground	

Refer to wiring diagram in EL-311, 312 or 313.

NG → Replace LCU for malfunctioning portion.

OK ↓

C

CHECK DOOR LOCK ACTUATOR.

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

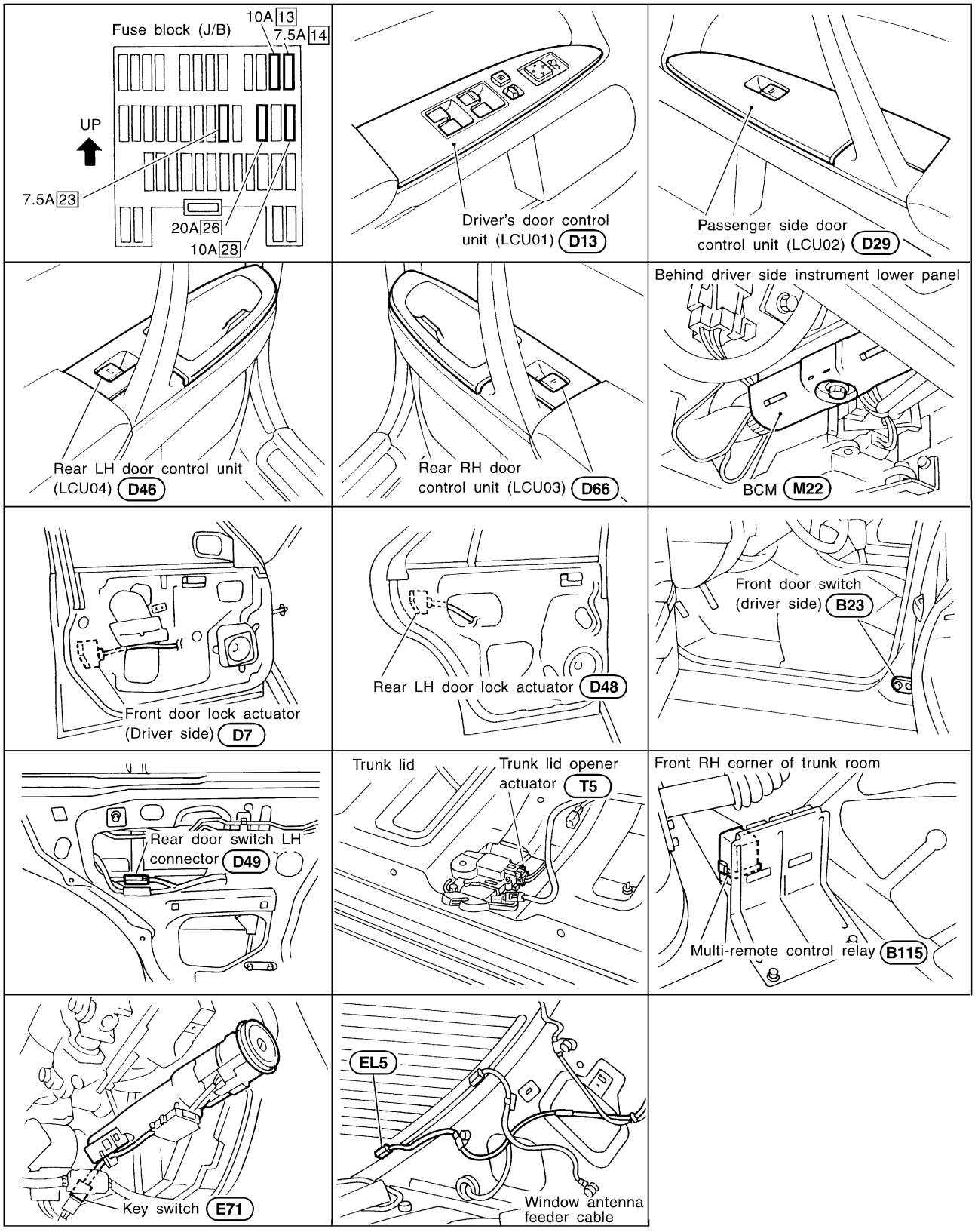
Door lock operation	Terminals ⊕	Terminals ⊖
Lock	③	①
Unlock	①	③

NG → Replace door lock actuator.

OK ↓

Check harness for open or short between door lock actuator and LCU.

Component Parts and Harness Connector Location



SEL817VA

System Description

POWER SUPPLY AND GROUND

BCM is connected to LCU01, LCU02, LCU03 and LCU04 as DATA LINE A-1 or A-2.
Power is supplied at all times
- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal ③.

When the key switch is in ON position (key is inserted in ignition key cylinder), power is supplied
- through key switch terminal ④
- to BCM terminal ⑲.

When any of the four door switches is in OPEN position, ground is supplied
- to BCM terminal ㉜ (㊲, ㉝, ㉘)
- through door switches body grounds.

When a door is unlocked, each door LCU terminal ⑤ receives a ground signal from terminal ② of each door unlock sensor.
Remote controller signal input
- through window antenna
- to BCM terminal ㊾.

The multi-remote control system controls operation of the
- power door lock
- trunk lid opener
- panic alarm
- hazard reminder

OPERATING PROCEDURE

BCM can receive signals from remote controller when key switch is in OFF position (key is not in cylinder). It then sends the signals to LCUs as DATA LINE A-1 or A-2.

Power door lock operation

- Key switch OFF signal (key is not in key cylinder)
- Door switch CLOSE signal (all doors closed)

The two above signals are already input into BCM. At this point, BCM receives a LOCK signal from remote controller. BCM will then send a LOCK signal
- from its terminals ⑳ and ㉑ (DATA LINES A-1 and A-2)
- to each door control unit (LCU) terminal ③.

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 3 seconds, all other doors will be unlocked. For detailed description, refer to "POWER DOOR LOCK — IVMS" (EL-308).

Hazard reminder

Power is supplied at all times
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to multi-remote control relay terminals ①, ③ and ⑥.

When BCM receives a LOCK signal from remote controller, ground is supplied
- to multi-remote control relay terminal ②
- through BCM terminal ⑥.

Multi-remote control relay is now energized and door lock actuators lock all doors. (Hazard warning lamps flash twice as a reminder.)

Trunk lid opener operation

Power is supplied at all times
- through 20A fuse [No. 26, located in the fuse block (J/B)]
- to trunk lid opener actuator terminal ①.

When a TRUNK OPEN signal is sent from remote controller, if the trunk lid opener cancel switch is in the ON position, ground is supplied
- to trunk lid opener actuator terminal ②
- through trunk lid cancel switch terminals ① and ②, and
- through BCM terminal (109).

Then power and ground are supplied, trunk lid opener actuator opens trunk lid.

System Description (Cont'd)

Panic alarm operation

Power is supplied at all times

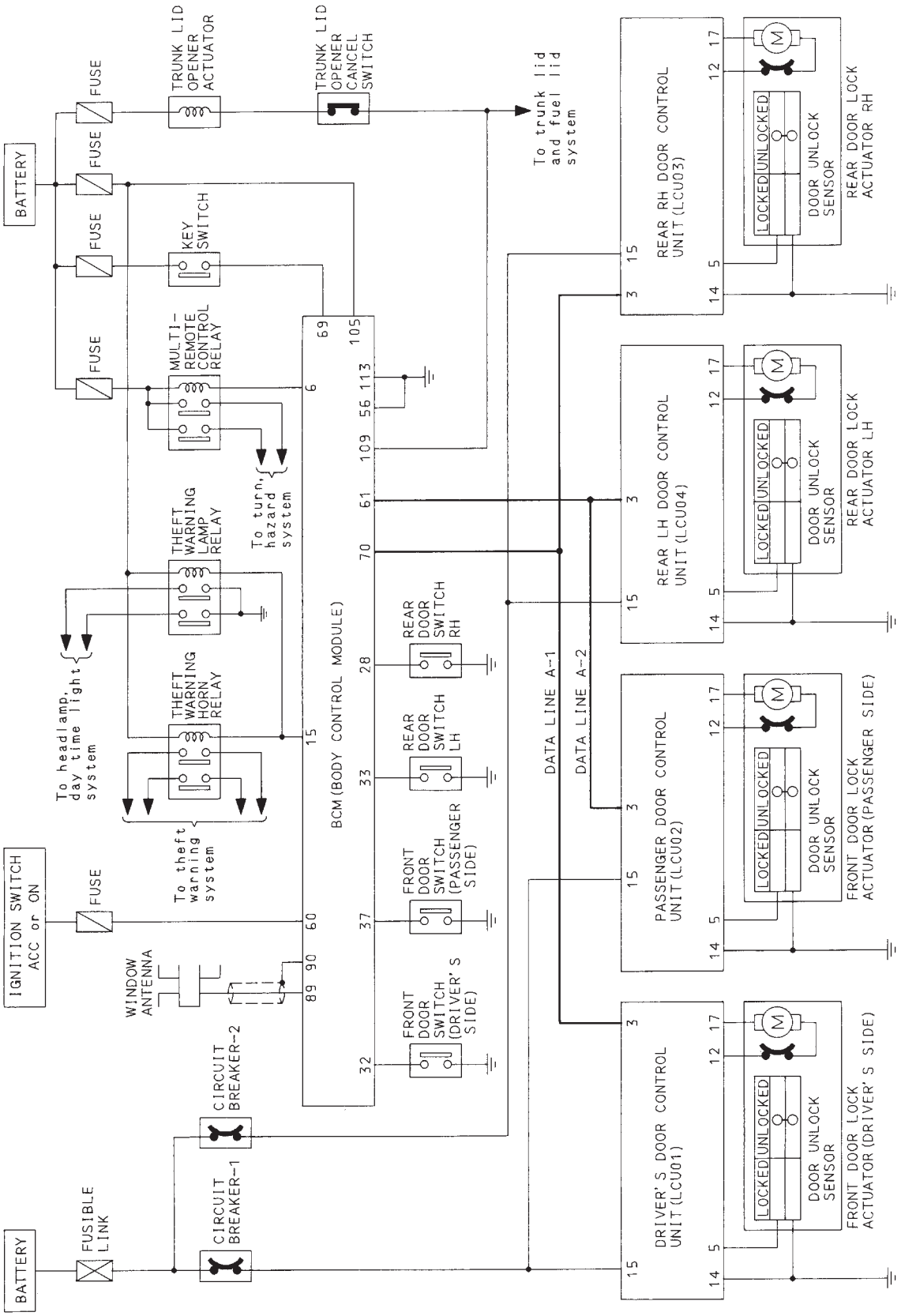
- through 7.5A fuse [No. 14, located in the fuse block (J/B)]
- to theft warning horn relay terminal ① and theft warning lamp relay terminal ①.

Theft warning horn relay terminal ② and theft warning lamp relay terminal ② are connected to BCM terminal ⑮.

Multi-remote control system activates horn and headlamps intermittently when an ALARM signal is sent from remote controller to multi-remote control system.

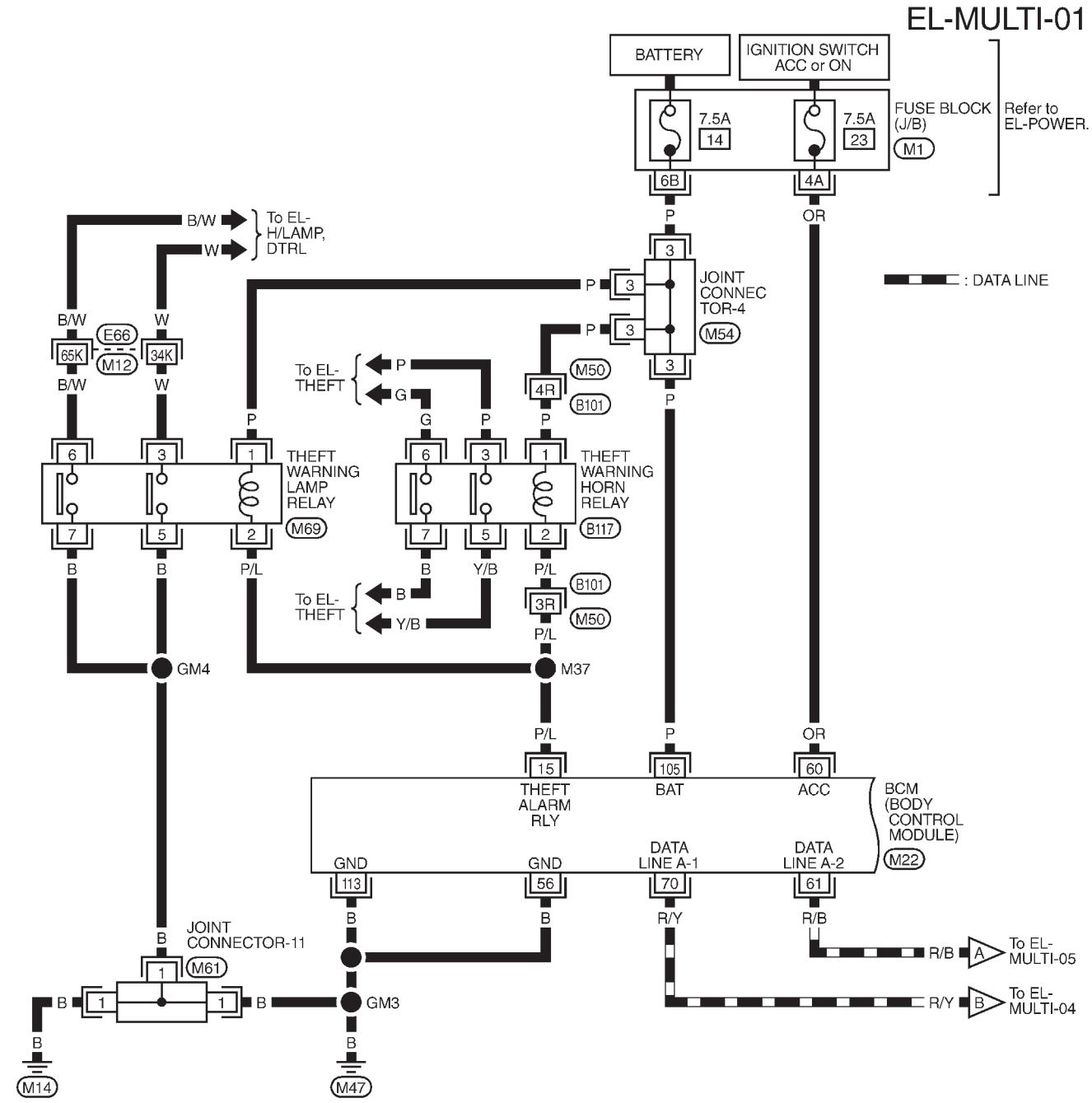
For detailed description, refer to "THEFT WARNING SYSTEM — IVMS" (EL-390).

Schematic



TEL843

Wiring Diagram — MULTI —



M54 G

M61 GY

M69 , B117 BR BR

Refer to last page (Foldout page).

M12 , E66

M50 , B101

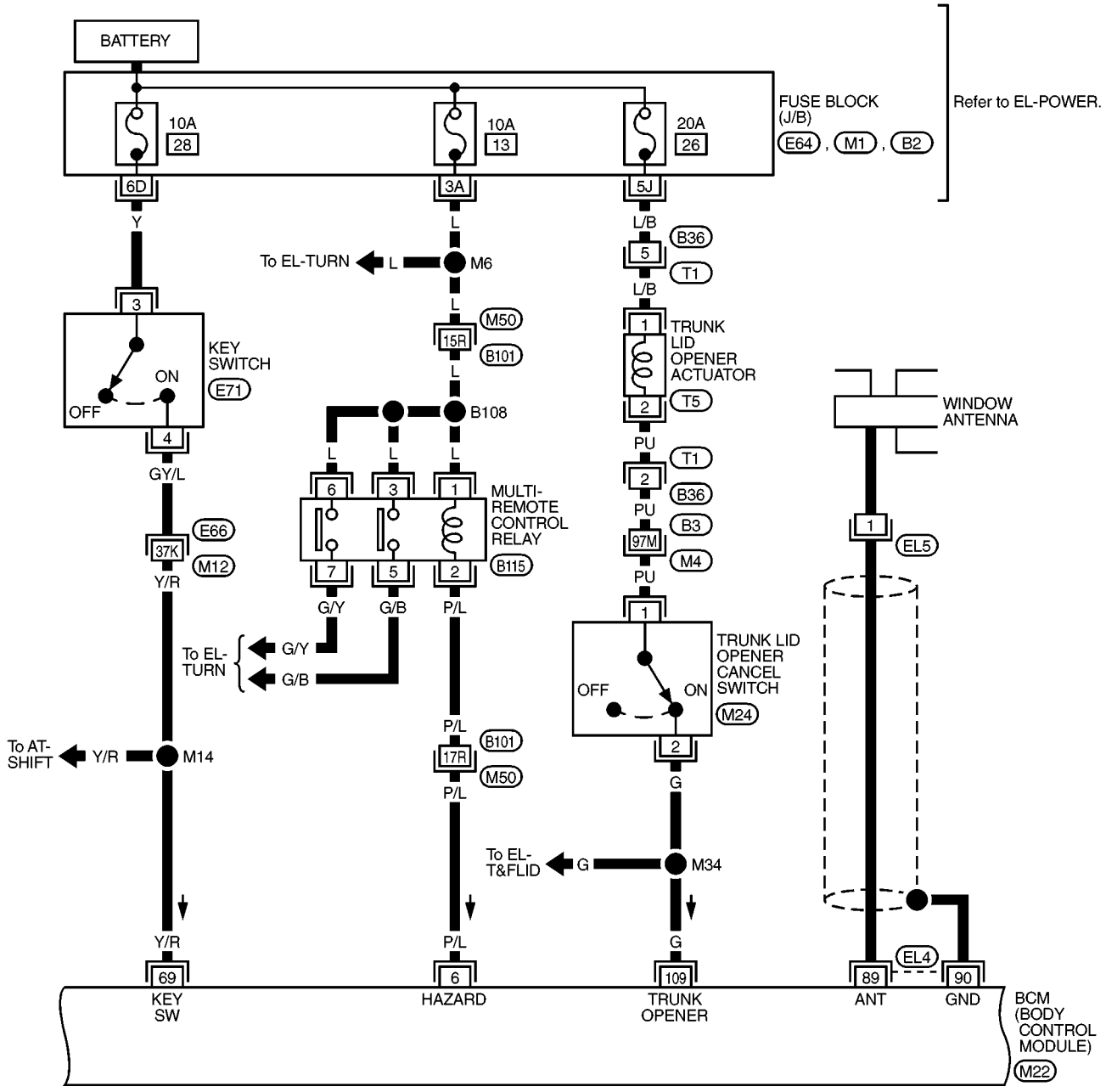
M1

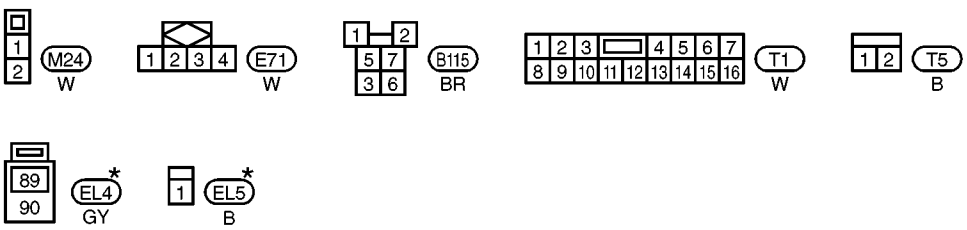
M22

TEL010B

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02





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

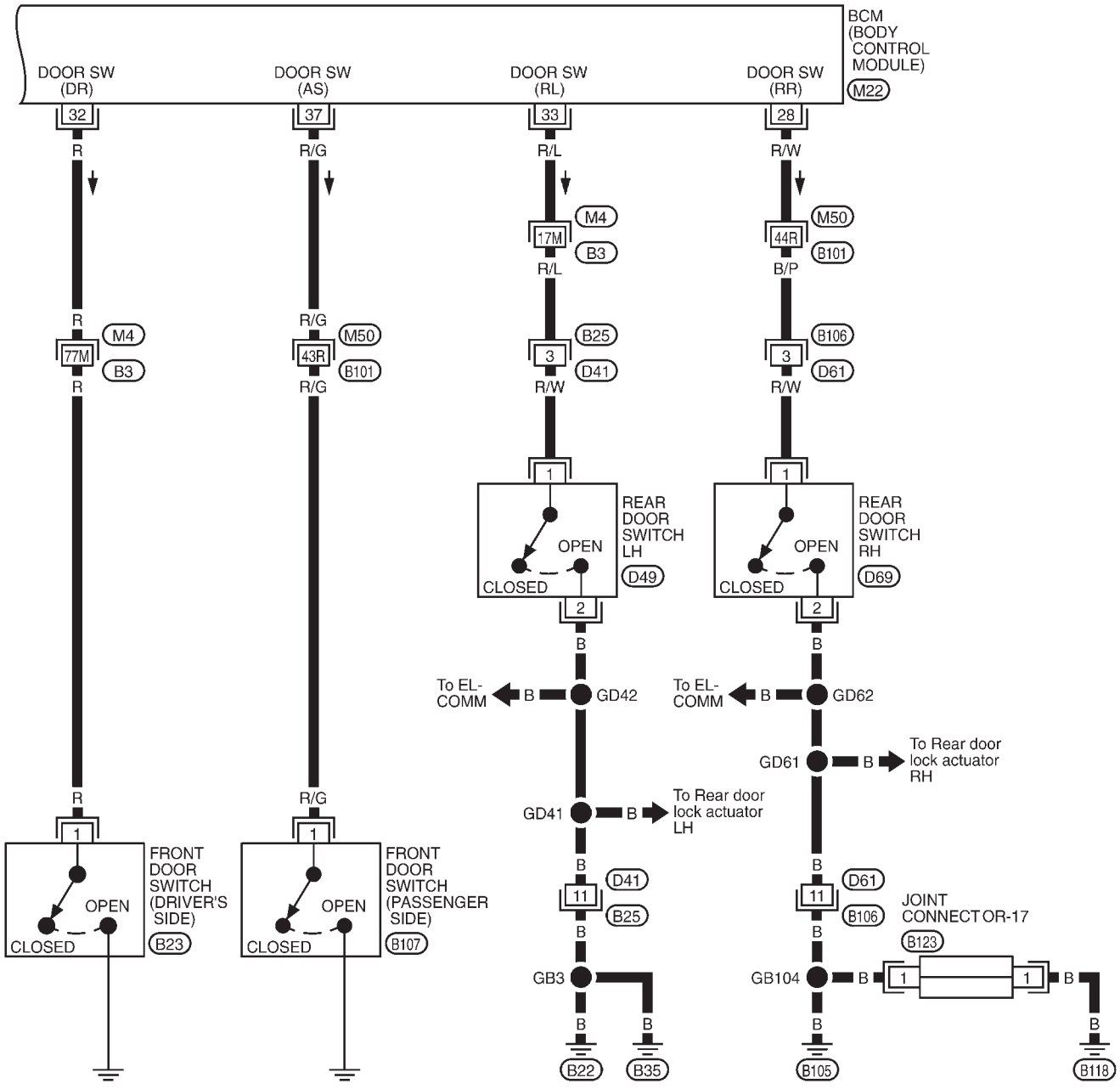
Refer to last page (Foldout page).

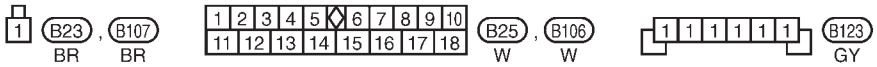
M4, B3
M12, E66
M50, B101
M1
M22
E64
B2

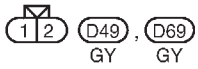
TEL397B

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03







Refer to last page (Foldout page).

M4 , B3

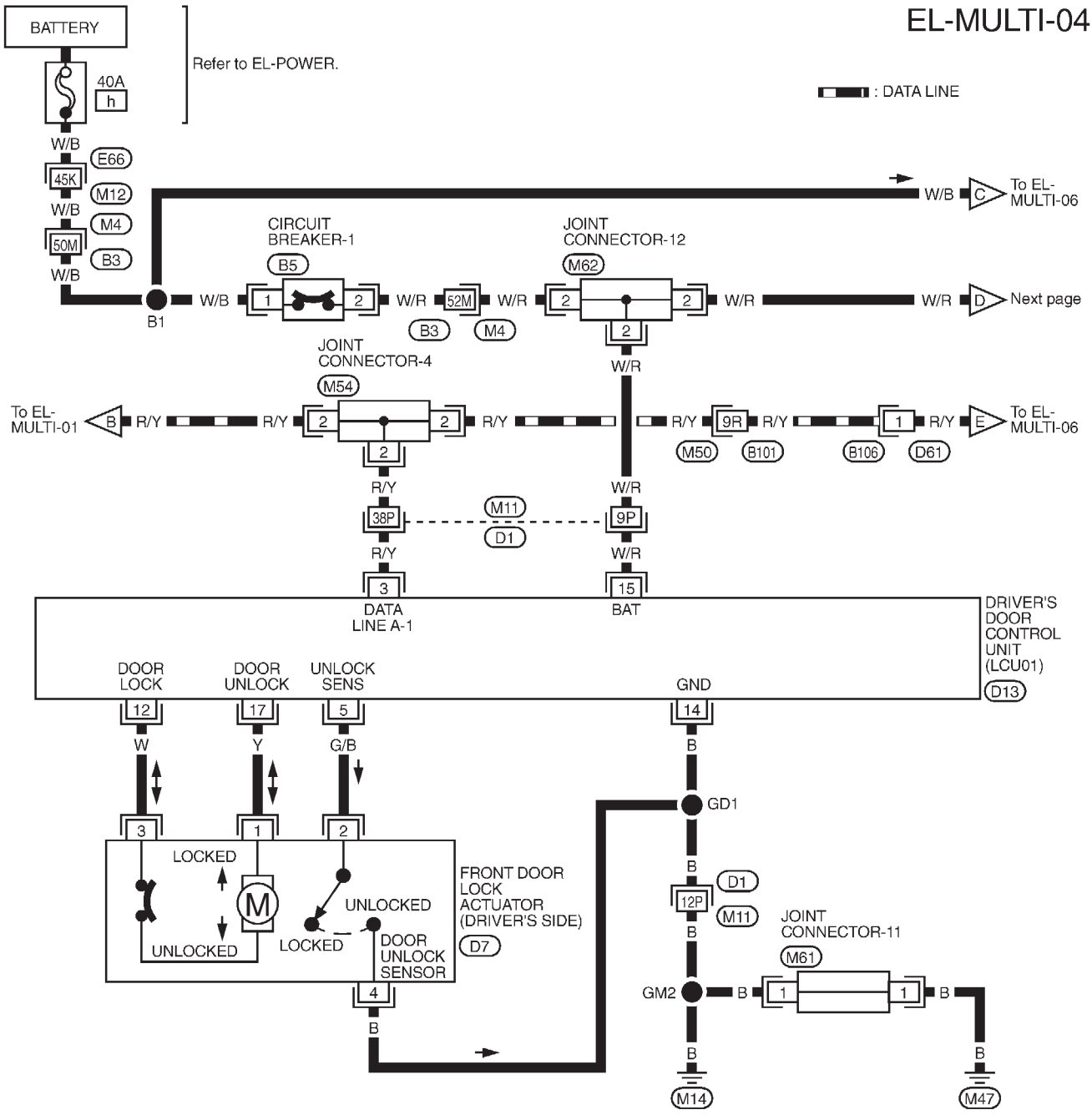
M50 , B101

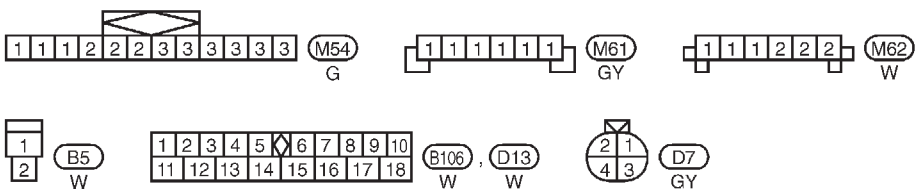
M22

TEL846

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04





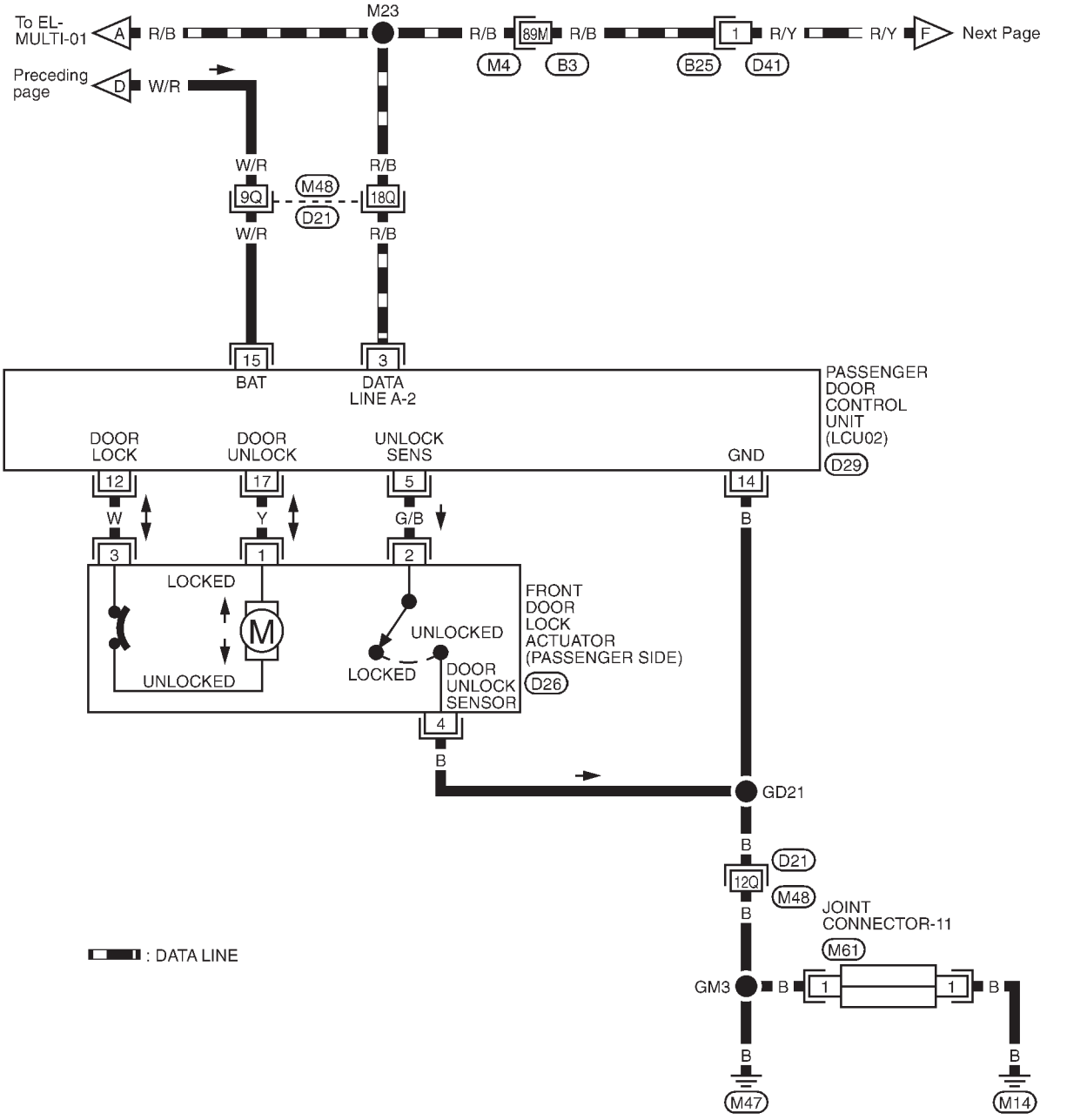
Refer to last page (Foldout page).

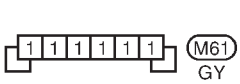
E66, M12
M4, B3
M11, D1
M50, B101

TEL847

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-05





Refer to last page (Foldout page).

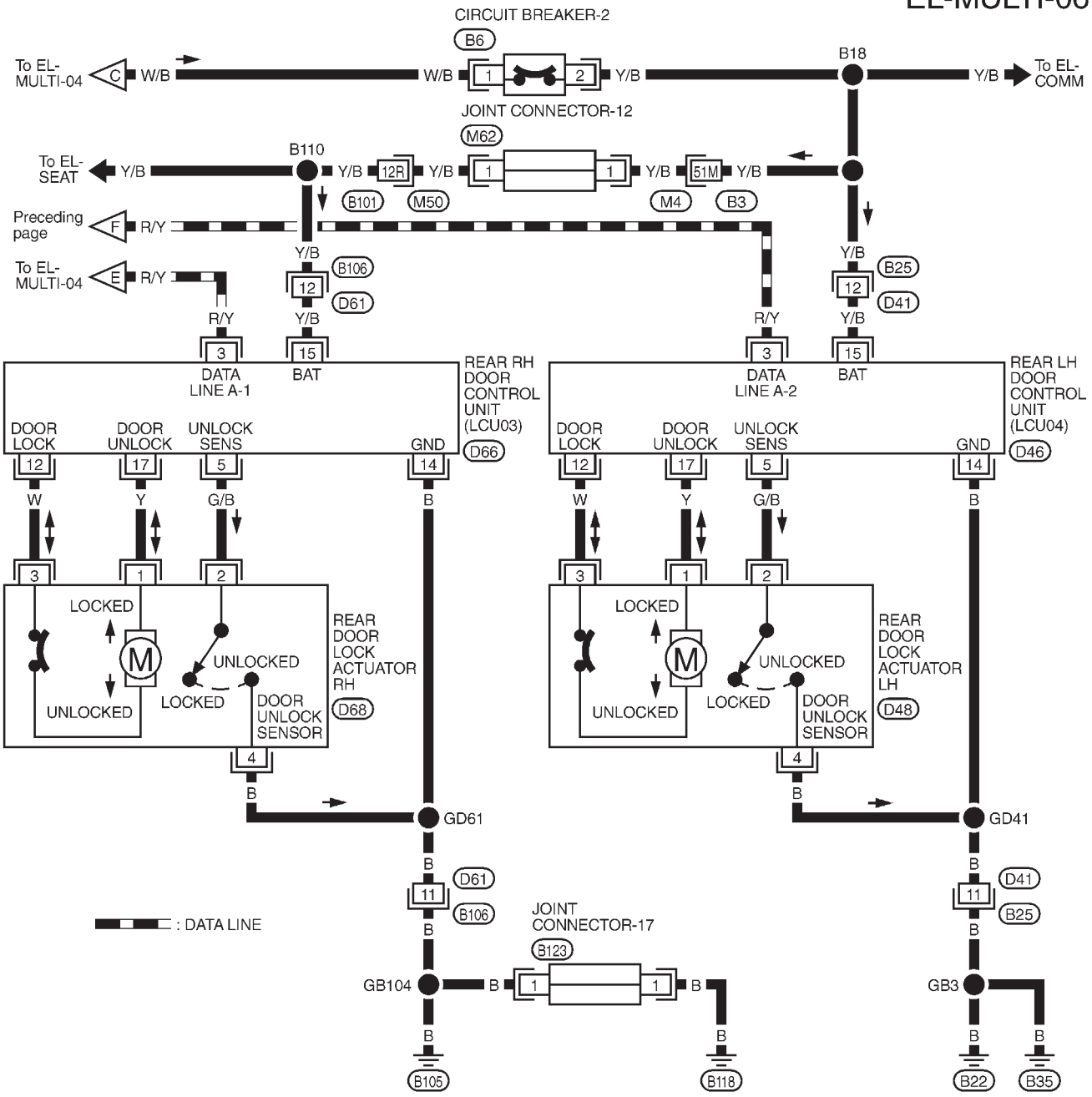
M4 , B3

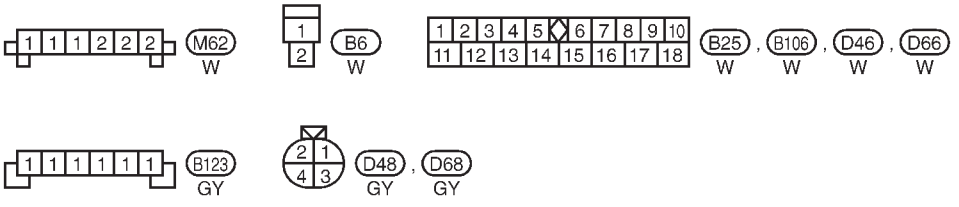
M48 , D21

TEL848

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-06



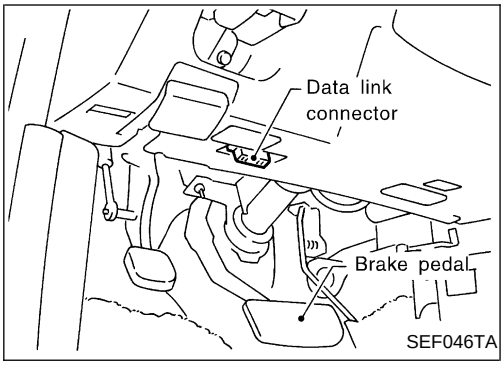


Refer to last page (Foldout page).

M4 , B3

M50 , B101

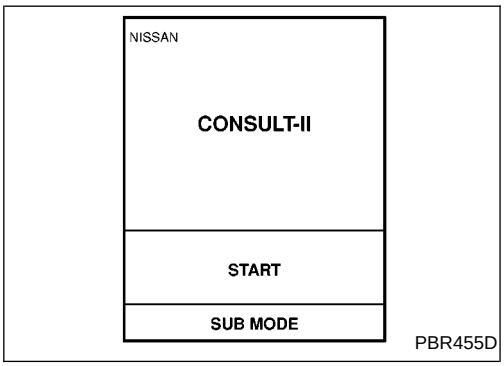
TEL011B



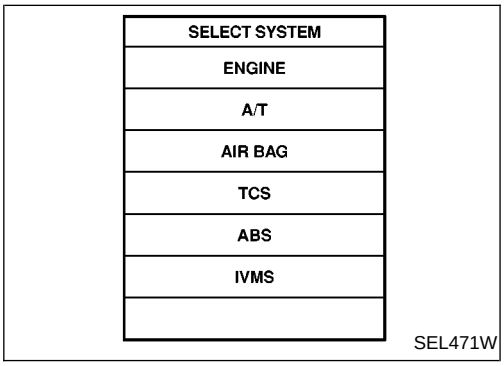
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

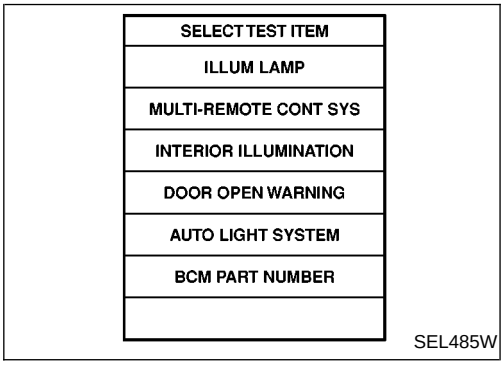
1. Turn ignition switch “OFF”.
2. Connect CONSULT-II to the data link connector.



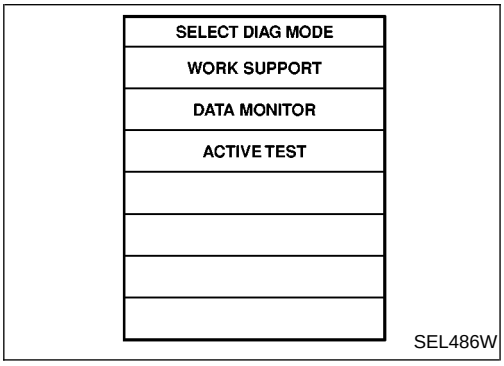
3. Turn ignition switch “ON”.
4. Touch “START”.



5. Touch “IVMS”.



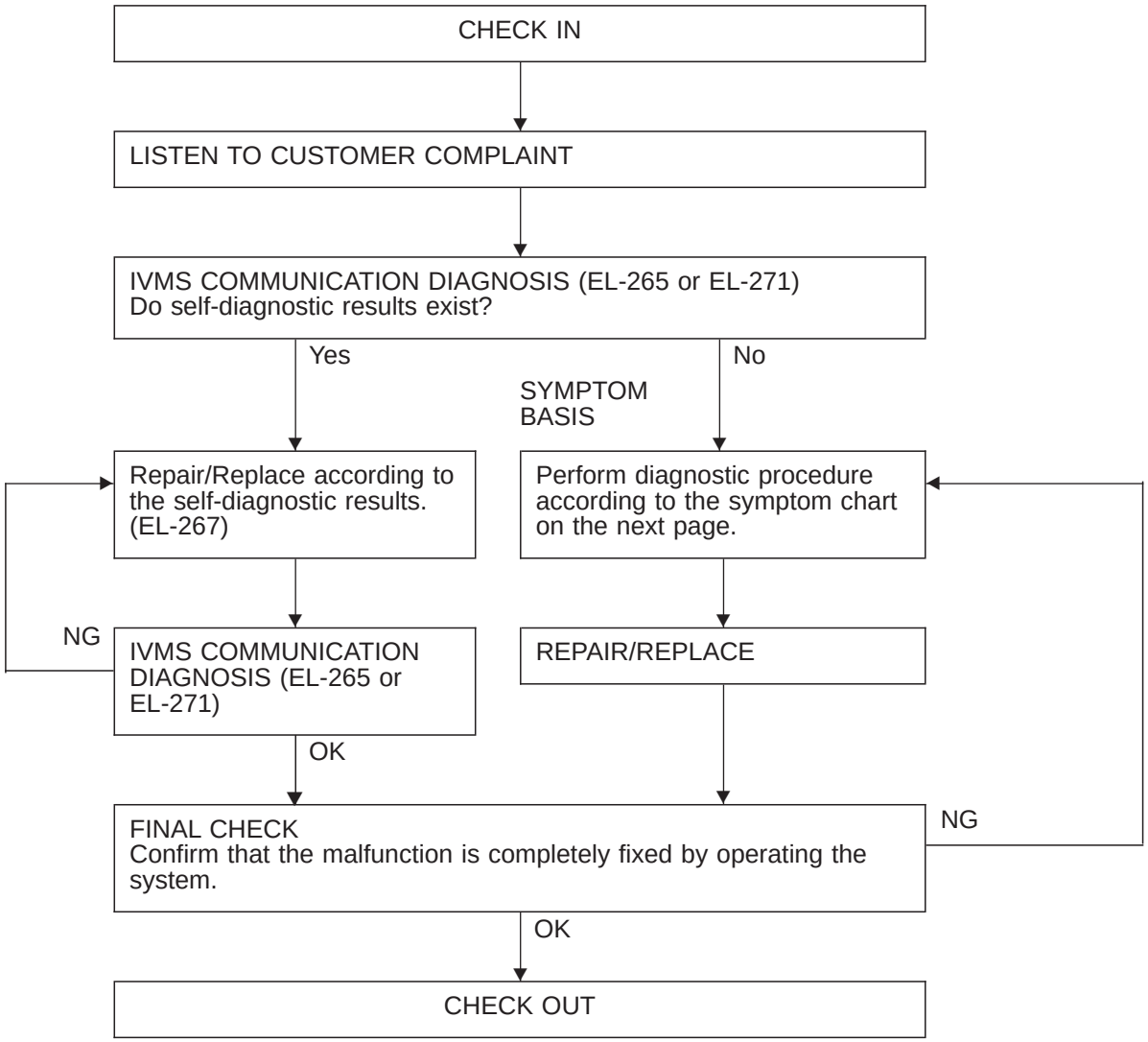
6. Touch “MULTI-REMOTE CONT SYS”.



- WORK SUPPORT, DATA MONITOR and ACTIVE TEST are available for the multi-remote control system.

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

TROUBLE SYMPTOM

- All functions of remote control system do not function.

CHECK REMOTE CONTROLLER BATTERY.
- Refer to DIAGNOSTIC PROCEDURE 1 (EL-341).

NG → Replace battery.

OK ↓

Enter the identity (ID) code of a different or new remote controller. (Refer to ID Code Entry Procedure, EL-348.)

Without CONSULT-II → Go to Ⓐ below.

With CONSULT-II ↓

Can the new ID code be entered?

No → Go to DIAGNOSTIC PROCEDURE 2 (EL-341).

Yes ↓

Check multi-remote control system operation using the new multi-remote controller whose ID has been entered.

NG → Go to DIAGNOSTIC PROCEDURE 3 (EL-342).

OK ↓

Replace with the originally used multi-remote controller.

Ⓐ ↓

Can the new ID code be entered?

No → Go to DIAGNOSTIC PROCEDURE 2 (EL-341) and DIAGNOSTIC PROCEDURE 3 (EL-342).

Yes ↓

Replace with the originally used multi-remote controller.

- Multi-remote controller does not operate a part of the functions.

CHECK REMOTE CONTROLLER INPUT SIGNAL.
- Check remote controller input signal using CONSULT-II (DATA MONITOR) or On-board diagnosis (Mode II, refer to EL-273).

NG → Replace the multi-remote controller.

OK ↓

① DOOR LOCK OR UNLOCK DOES NOT FUNCTION. (Pressing Unlock button once normally unlocks front LH door; pressing it twice then unlocks all of the other doors.)
- Check if power door lock system functions with door lock & unlock switch or door lock knob switch.

No → Check "**POWER DOOR LOCK**" system and door switch input signal. (Refer to DIAGNOSTIC PROCEDURE 3, EL-342.)

② HAZARD INDICATOR DOES NOT FLASH TWICE WHEN PRESSING LOCK BUTTON OF REMOTE CONTROLLER.
- Check if hazard indicator flashes with hazard switch.

If check is OK, Go to DIAGNOSTIC PROCEDURE 4, EL-344.

No → Check "Hazard indicator lamp" circuit.

③ PANIC ALARM (HORN AND HEADLAMP) DOES NOT ACTIVATE WHEN PANIC ALARM BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
- Check if horn and headlamps activate when test is conducted as follows:
  1. Open the driver's window.
  2. Close all doors, hood and trunk lid.
  3. Lock doors with the key.
  4. Wait for about 30 seconds to make sure that the lighted "SECURITY" warning lamp begins to blink.
  5. Open the hood with hood lock opener, then panic alarm should activate. (The alarm will stop when door is unlocked with the key.)

No → Check "THEFT WARNING" system.

Yes → Go to DIAGNOSTIC PROCEDURE 5 (EL-345).

④ TRUNK LID DOES NOT OPEN WHEN TRUNK OPENER BUTTON IS PRESSED.
- Check if trunk lid opens with trunk lid opener switch.

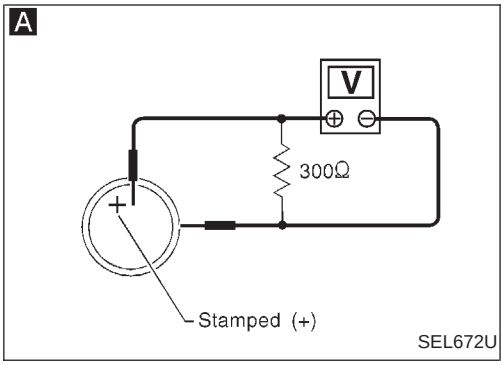
No → Go to DIAGNOSTIC PROCEDURE 6 (EL-346).

Note:
- The unlock and trunk open operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.
- The lock operation of multi-remote control system does not activate with the key inserted in the ignition key cylinder or if one of the doors is opened.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

A



A

CHECK REMOTE CONTROLLER BATTERY.

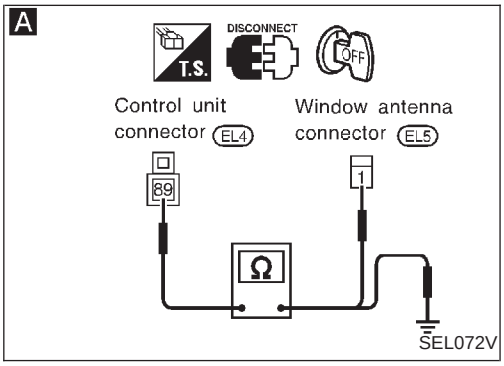
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

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

DIAGNOSTIC PROCEDURE 2

A



A

CHECK ANTENNA FEEDER CABLE.

1. Disconnect feeder cable connector from BCM.
2. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna. (Feeder cable connector is the one at bottom left.)
3. Check continuity between the feeder cable connectors.

Continuity should exist.

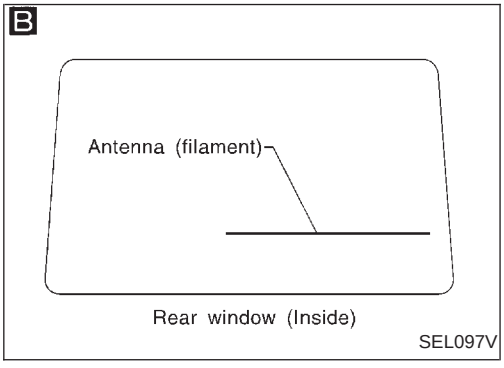
4. Check continuity between the feeder cable connector terminal and ground.

Continuity should not exist.

NG → Replace feeder cable.

OK ↓

B



B

CHECK REAR WINDOW GLASS ANTENNA.

1. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna.
2. Check continuity between glass antenna terminal and end of glass antenna.

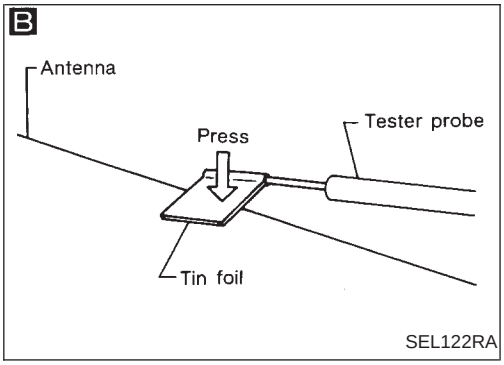
Continuity should exist.

Note: When checking continuity, wrap tin foil around top of the probe. Then press the foil against the wire with your finger.

NG → Repair glass window antenna. Refer to REAR WINDOW DEFOGGER "Filament Repair".

OK ↓

Antenna of multi-remote control is OK.



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

A

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

SEL527W

B

DATA MONITOR	
MONITOR	
LOCK SIG-DR	UNLK
LOCK SIG-AS	UNLK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK
	RECORD

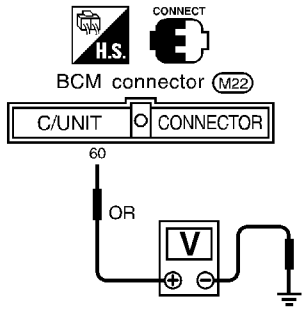
SEL525W

C

DATA MONITOR	
MONITOR	
IGN ACC SW	ON
	RECORD

SEL505W

D



SEL257V

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SW" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OR

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-334.

NG → Check the following.
- Door switch
  Refer to "Electrical Components Inspection" (EL-347).
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between BCM and door switch

OK ↓

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

B CONSULT-II

See "LOCK SIG" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON BOARD

Check door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-335, 336 or 337.

NG → Check the following.
- Door unlock sensor
  Refer to "Electrical Components Inspection" (EL-347).
- Door unlock sensor ground circuit
- Harness for open or short between LCU and unlock sensor

OK ↓

CHECK IGNITION SWITCH "ACC" CIRCUIT.

C CONSULT-II

See "IGN ACC SW" in DATA MONITOR mode.
When ignition switch is ACC or ON:
IGN ACC SW ON
When ignition switch is OFF:
IGN ACC SW OFF

OR

D TESTER

Check voltage between BCM terminal ⑥⓪ and ground.

Condition of ignition switch	Voltage V
ACC or ON	Approx. 12
OFF	0

Refer to wiring diagram in EL-332.

NG → Check the following.
- 7.5A fuse [No. 23, located in fuse block (J/B)]
- Harness for open or short between BCM and fuse

OK ↓

Ⓐ

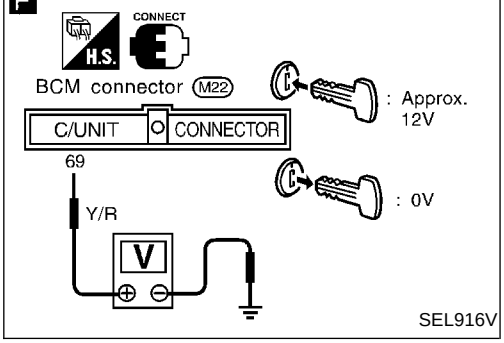
Trouble Diagnoses (Cont'd)

E

DATA MONITOR	
MONITOR	
IGN KEY SW	ON
	RECORD

SEL532W

F



SEL916V

Ⓐ

CHECK KEY SWITCH INPUT SIGNAL.

E CONSULT-II

See "IGN KEY SW" in DATA MONITOR mode.
When key is inserted in ignition key cylinder:
IGN KEY SW ON
When key is removed from ignition key cylinder:
IGN KEY SW OFF

OR

F TESTER

Check voltage between BCM terminals ⑥⑨ and ground.

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

Refer to wiring diagram in EL-333.

NG →

Check the following.
- 10A fuse [No. 28, located in fuse block (J/B)]
- Key switch
  Refer to "Electrical Components Inspection" (EL-347).
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

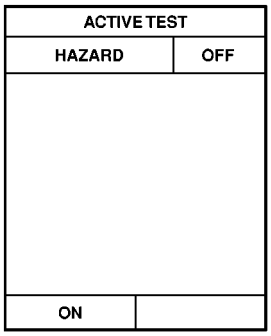
OK ↓

Check operation parts in multi-remote control system for function.

Trouble Diagnoses (Cont'd)

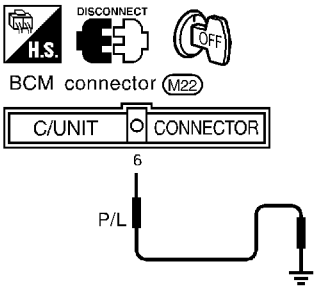
DIAGNOSTIC PROCEDURE 4

A



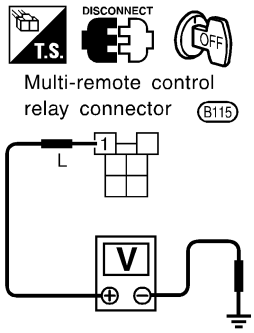
SEL528W

B



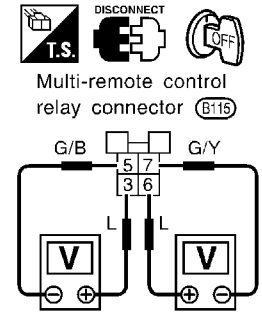
SEL258V

C



SEL747UC

D



SEL748UB

CHECK HAZARD INDICATOR OPERATION.

A CONSULT-II

See "HAZARD" in ACTIVE TEST mode.
Perform operation shown on display.
Hazard warning lamp should illuminate.

Yes → Hazard indicator is OK.

OR

B

1. Disconnect control unit connector.
2. Apply ground to BCM terminal ⑥ .
   Does hazard indicator illuminate?

   Refer to wiring diagram in EL-333.

No ↓

Check multi-remote control relay.

NG → Replace.

OK ↓

C

CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY.

1. Disconnect multi-remote control relay connector.
2. Check voltage between terminal ① and ground.
   Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 13, located in fuse block (J/B)]
- Harness for open or short between multi-remote control relay and fuse

OK ↓

D

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.

NG → Check harness for open or short.

OK ↓

Check harness for open or short between BCM and multi-remote control relay.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

A

DATA MONITOR	
MONITOR	
TRUNK BTN-CON	OFF
	RECORD

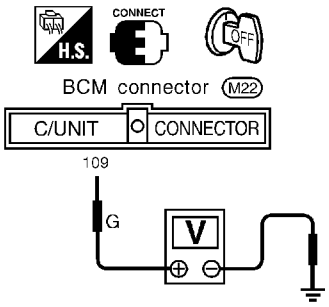
SEL530W

B

ACTIVE TEST	
TRUNK OPEN S/V	OFF
ON	

SEL529W

C



SEL917U

CHECK MULTI-REMOTE CONTROLLER OPERATION.

A CONSULT-II

See "TRUNK BTN-CON" in DATA MONITOR mode.

"TRUNK BTN-CON" should be "ON" when trunk lid opener button on multi-remote controller is continuously pressed for more than 1 second.

NG → Replace multi-remote controller.

OR

ON BOARD

Check trunk open signal from multi-remote controller in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273).

OK ↓

CHECK TRUNK LID OPENER CIRCUIT.

B CONSULT-II

See "TRUNK OPEN S/V" in ACTIVE TEST mode.
Perform operation shown on display.
Trunk lid opener should operate.

OK → Trunk opener operation is OK.

OR

C TESTER

Check voltage between BCM connector terminal (109) and ground.
Battery voltage should exist.

Refer to wiring diagram in EL-333.

NG ↓

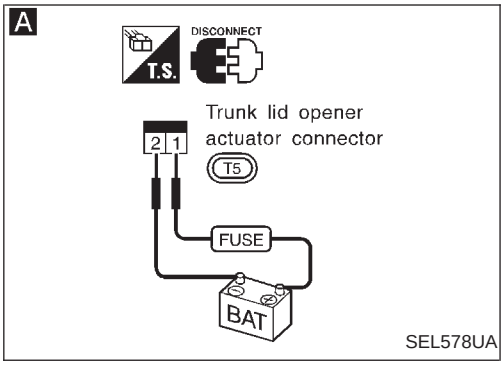
Check harness for open or short between BCM and trunk lid opener cancel switch.

Note:
Trunk lid opener cancel switch should be in ON (activate) position to perform DIAGNOSTIC PROCEDURE 5.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

A



A

CHECK TRUNK LID OPENER ACTUATOR.

1. Disconnect trunk lid opener actuator connector.
2. Check to see if trunk lid opens when 12V DC is applied across trunk lid opener actuator connector terminals ① and ② .

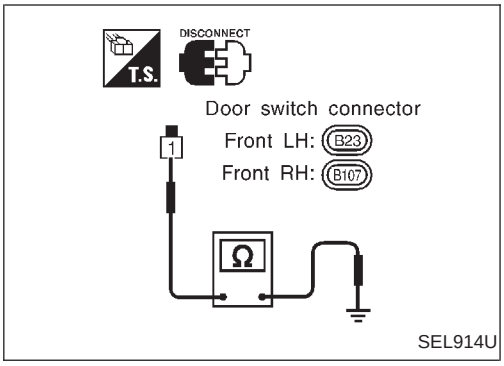
   Refer to wiring diagram in EL-333.

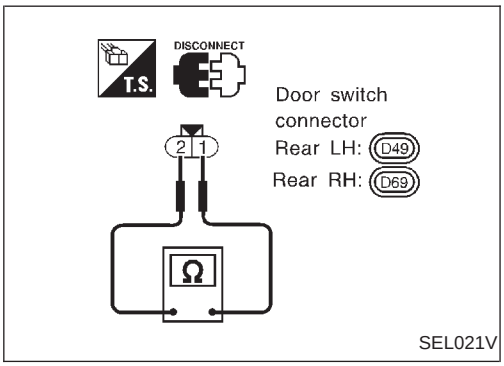
NG → Replace trunk lid opener actuator.

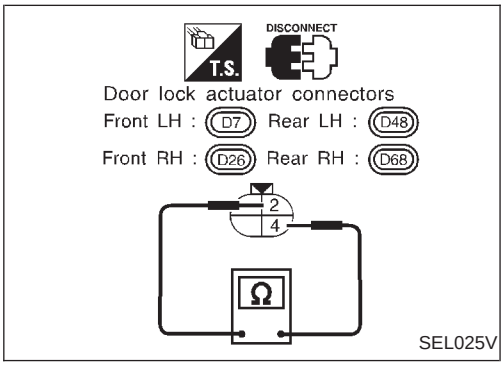
OK ↓

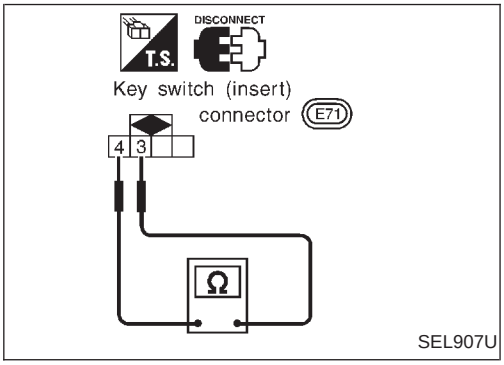
Check the following.

- 7.5A fuse [No. 26, located in fuse block (J/B)]
- Trunk lid opener cancel switch
- Harness for open or short between fuse and trunk lid opener actuator
- Harness for open or short between trunk lid opener actuator and cancel switch
- Harness for open or short between trunk lid opener cancel switch and BCM









Electrical Components Inspection

DOOR SWITCHES

Check continuity between terminals and switch body ground when door switch is pushed and released.

	Terminal No.	Condition	Continuity
Front door switch	① - Ground	Door switch is pushed.	No
		Door switch is released.	Yes
Rear door switches	① - ②	Door switch is pushed.	No
		Door switch is released.	Yes

DOOR LOCK ACTUATOR (Door unlock sensor)

Check continuity between terminals when door is locked and unlocked.

Terminal No.	Condition	Continuity
④ - ②	Door is locked.	No
	Door is unlocked.	Yes

KEY SWITCH (Insert)

Check continuity between terminals when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

Terminal No.	Condition	Continuity
③ - ④	Key is inserted.	Yes
	Key is removed.	No

ID Code Entry Procedure

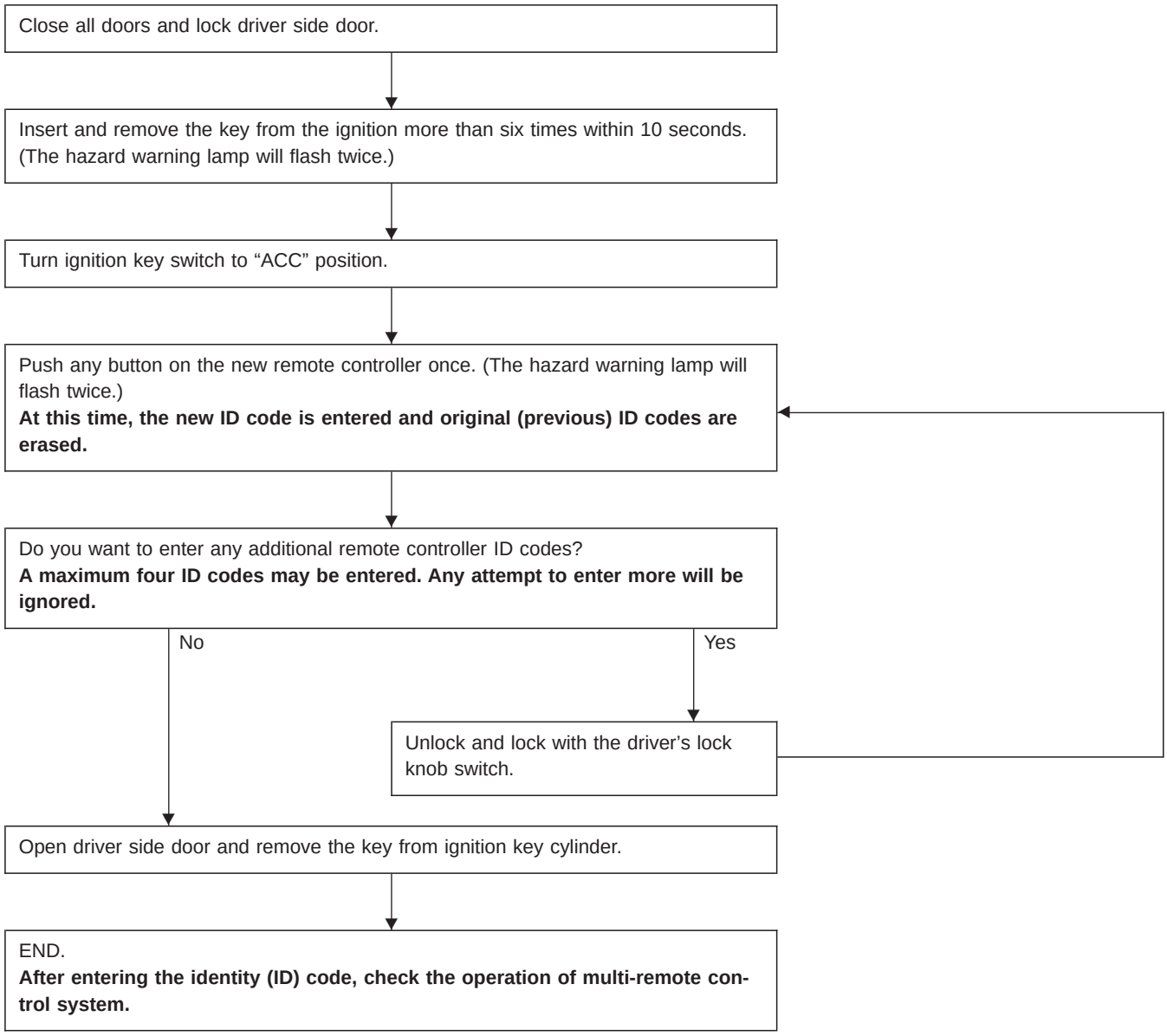
Enter the identity (ID) code manually when:

- **remote controller or BCM is replaced.**
- **an additional remote controller is activated.**

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

PROCEDURE 1 (Without CONSULT-II)

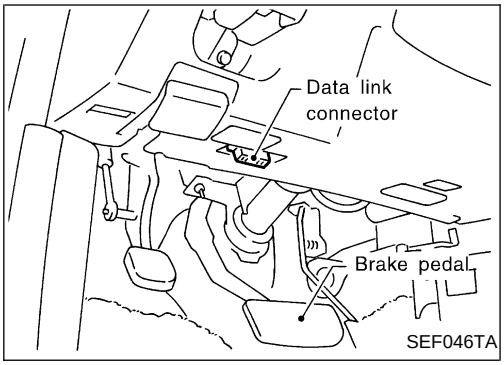


NOTE

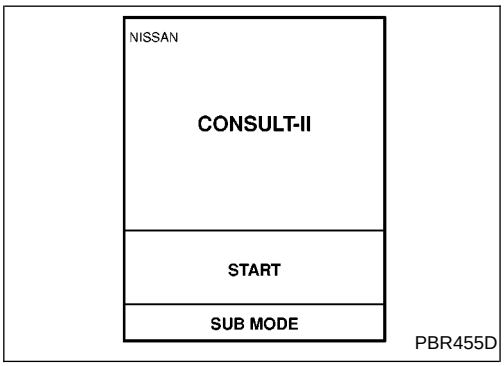
- **If you need to activate more than two additional new remote controllers, repeat the procedure “Additional ID code entry” for each new remote controller.**
- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**

ID Code Entry Procedure (Cont'd)

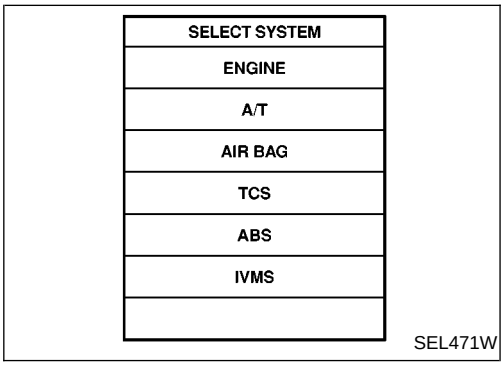
PROCEDURE 2 (With CONSULT-II)



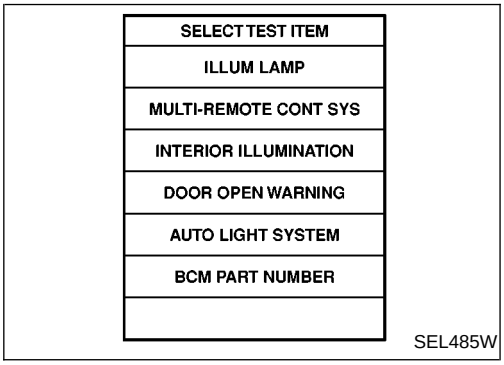
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



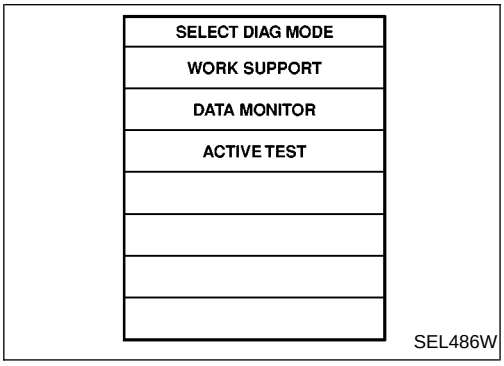
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

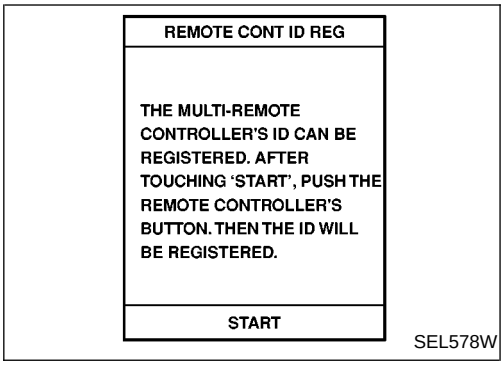


6. Touch "MULTI-REMOTE CONT SYS".

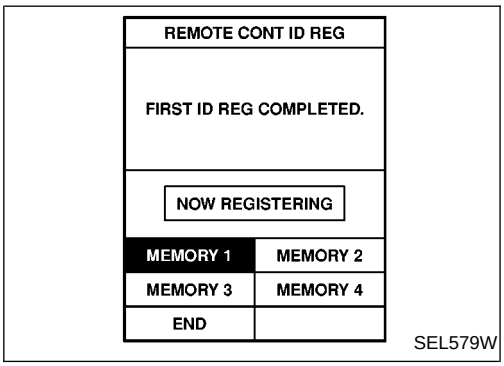


7. Touch "WORK SUPPORT".

ID Code Entry Procedure (Cont'd)



8. Touch "START". Then push button on the new remote controller once.



- **At this time, the new ID code is entered. (Then power door lock will lock, unlock, and the hazard warning lamp will flash twice.)**

Additional ID code entry

9. Push lock button on the additional remote controller once.
- **Maximum of four ID are able to be entered. Any attempt to enter more will be ignored.**
10. Touch "END".
- **After entering the identity (ID) code, check the operation of multi-remote control system.**

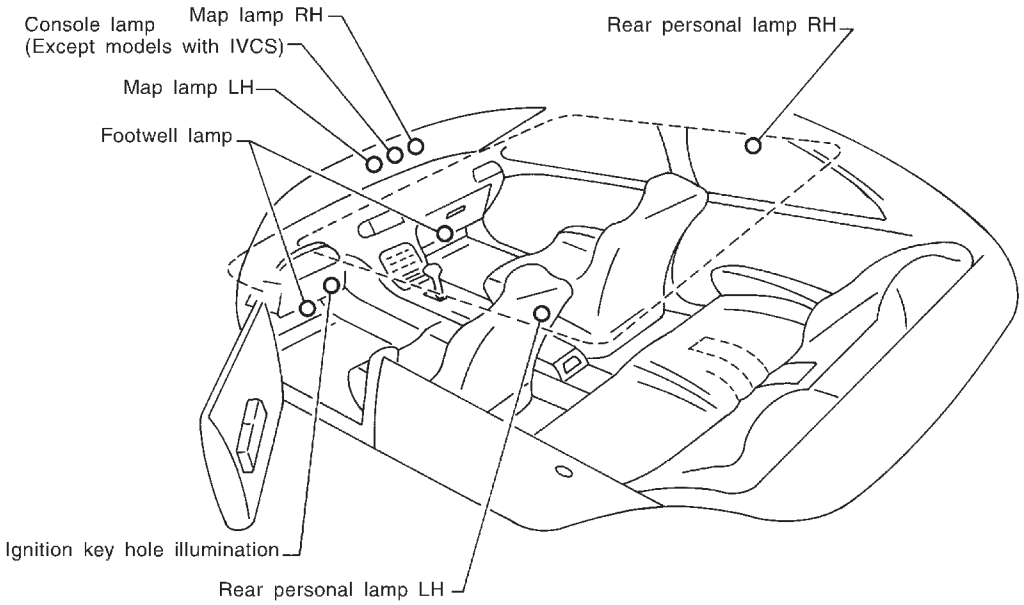
NOTE

- **If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.**
- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**

System Description

OUTLINE

Interior illumination system turns interior illumination lamps on and off while operating the timer. The system operates by means of key switch, lighting switch, each door switch, driver side door unlock sensor, and switches of each lamp. This system is controlled by BCM.



SEL073VA

TIMER OPERATION

The timer controls the lighting time of the interior illumination lamps via operation of the driver side door switch, key switch, driver side unlock sensor, and ignition key switch.

Switch	Operation
Driver side door unlock sensor	With driver side door closed and key removed from ignition key cylinder, the timer operates when driver side door unlock signal is received. The timer cancels itself when driver side door lock signal is received.
Driver side door switch	The timer operates when driver side door is opened and then closed.
Ignition key switch	The timer cancels itself when ignition key is in ACC or ON position while it is operating.
Key switch (Insert)	With driver side door closed, when key is removed from ignition key cylinder, the timer operates.

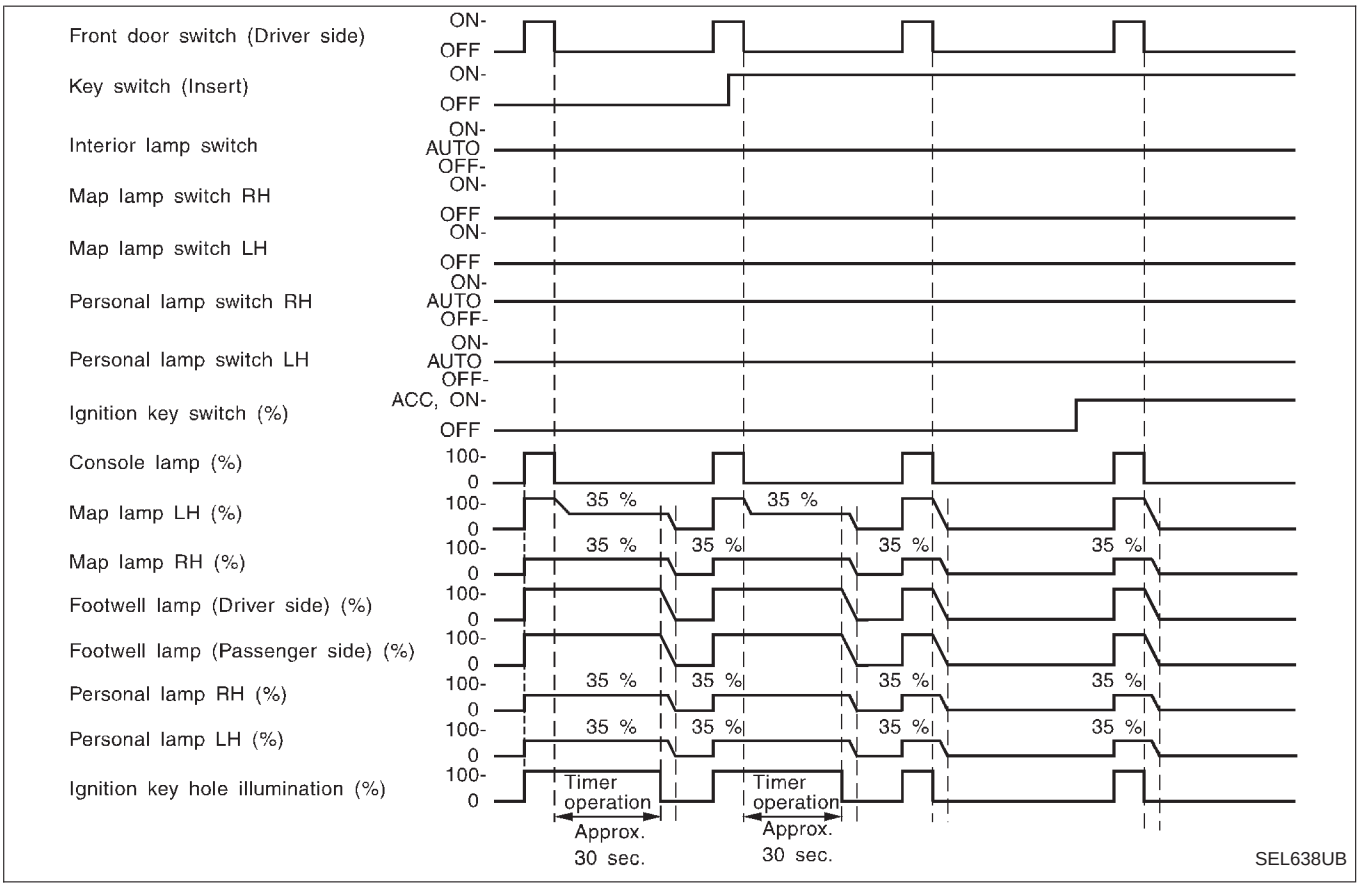
- For details of turning on/off function of each of the lamps, see the following charts.

BATTERY SAVER

When the main illumination switch and personal lamp switch are in AUTO position with ignition key in OFF or ACC position, if interior illumination lamps are turned on by door switch open signal and remain lit for more than 30 minutes, the lamps turn off automatically.

System Description (Cont'd)

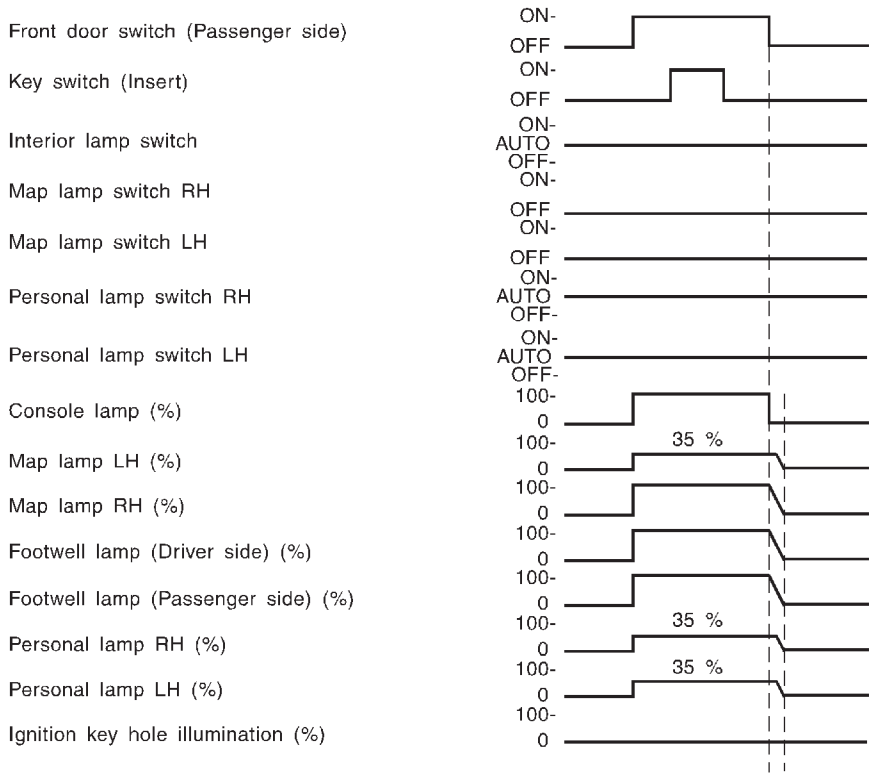
TURN ON/OFF MODE OF DRIVER SIDE DOOR OPEN/CLOSE



Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

System Description (Cont'd)

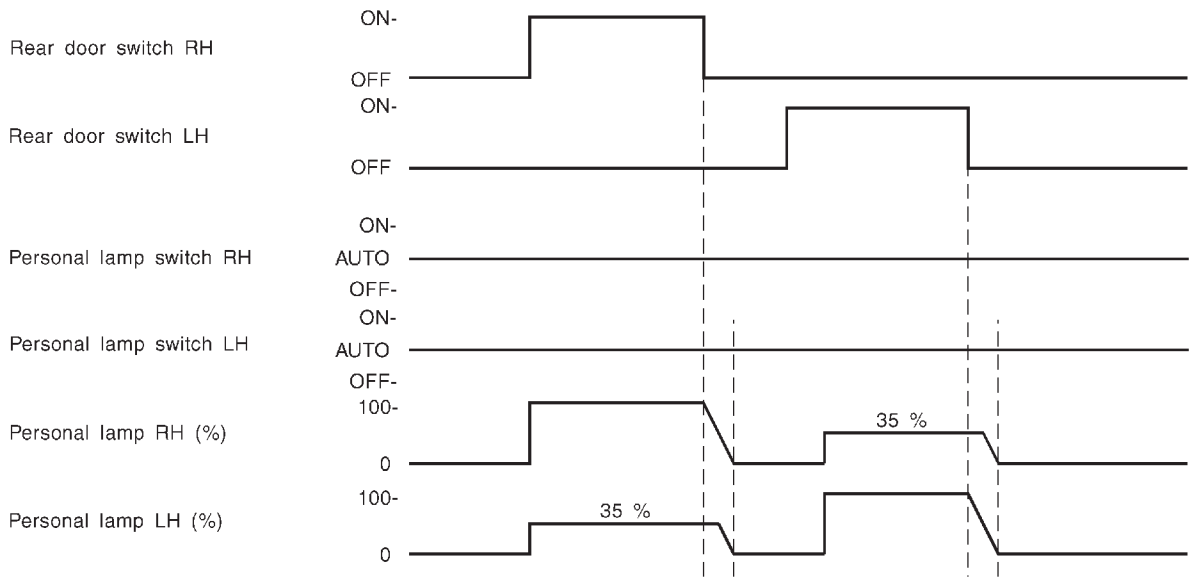
TURN ON/OFF MODE OF PASSENGER SIDE DOOR OPEN/CLOSE



Note: Timer does not operate.

SEL639UA

TURN ON/OFF MODE OF REAR DOOR OPEN/CLOSE



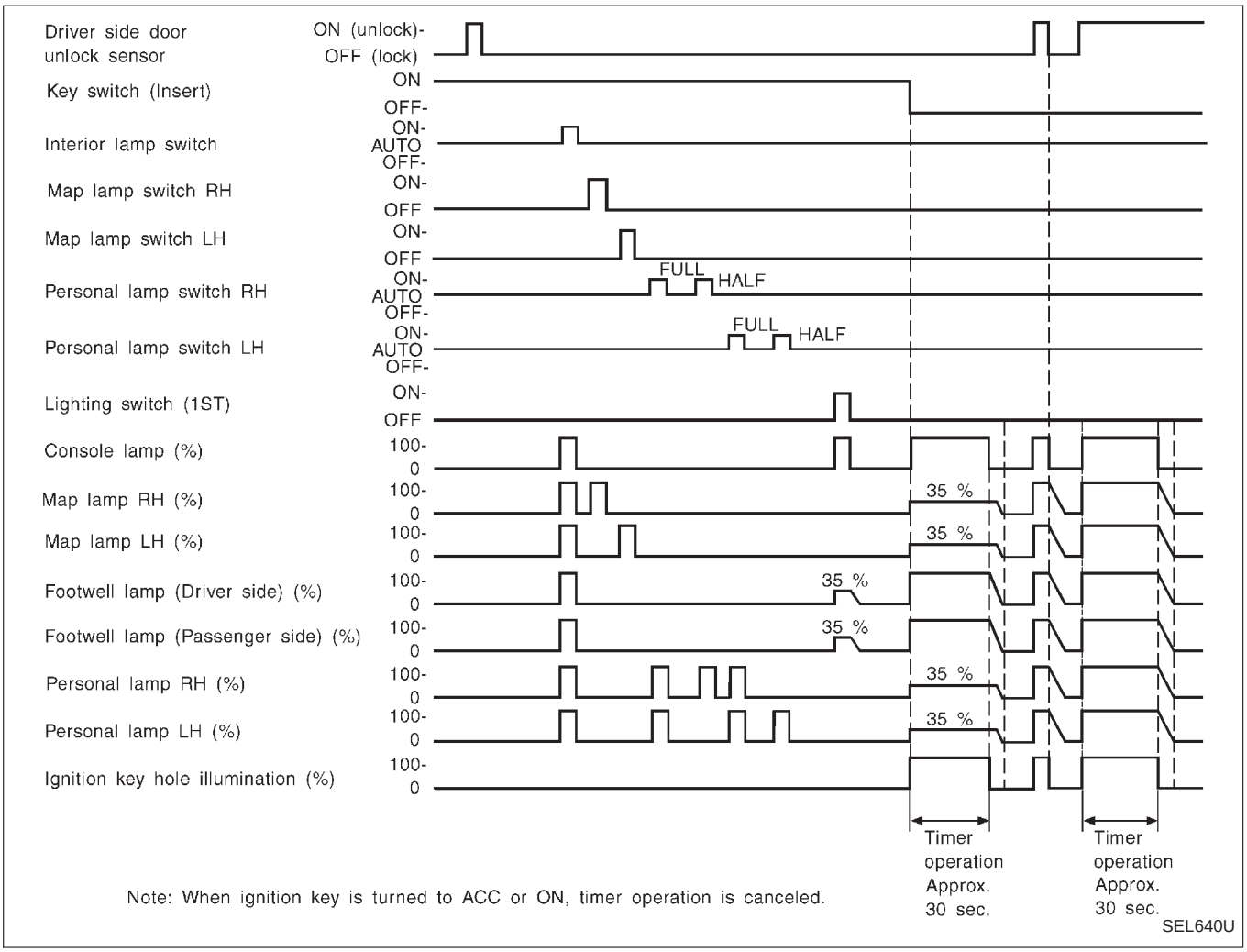
Note: Timer does not operate.

SEL641U

Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

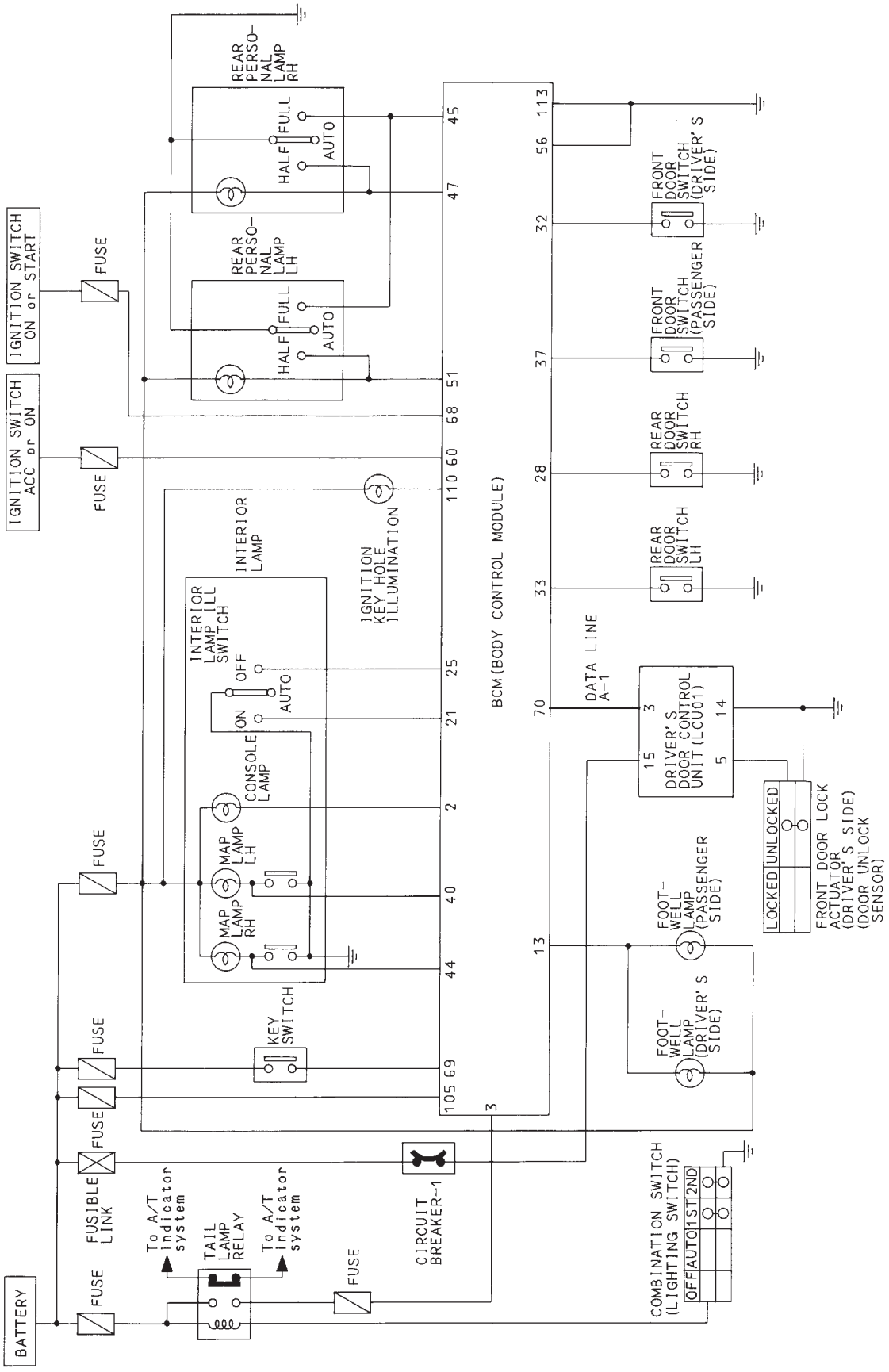
System Description (Cont'd)

TURN ON/OFF MODE OF EACH SWITCH CONDITION



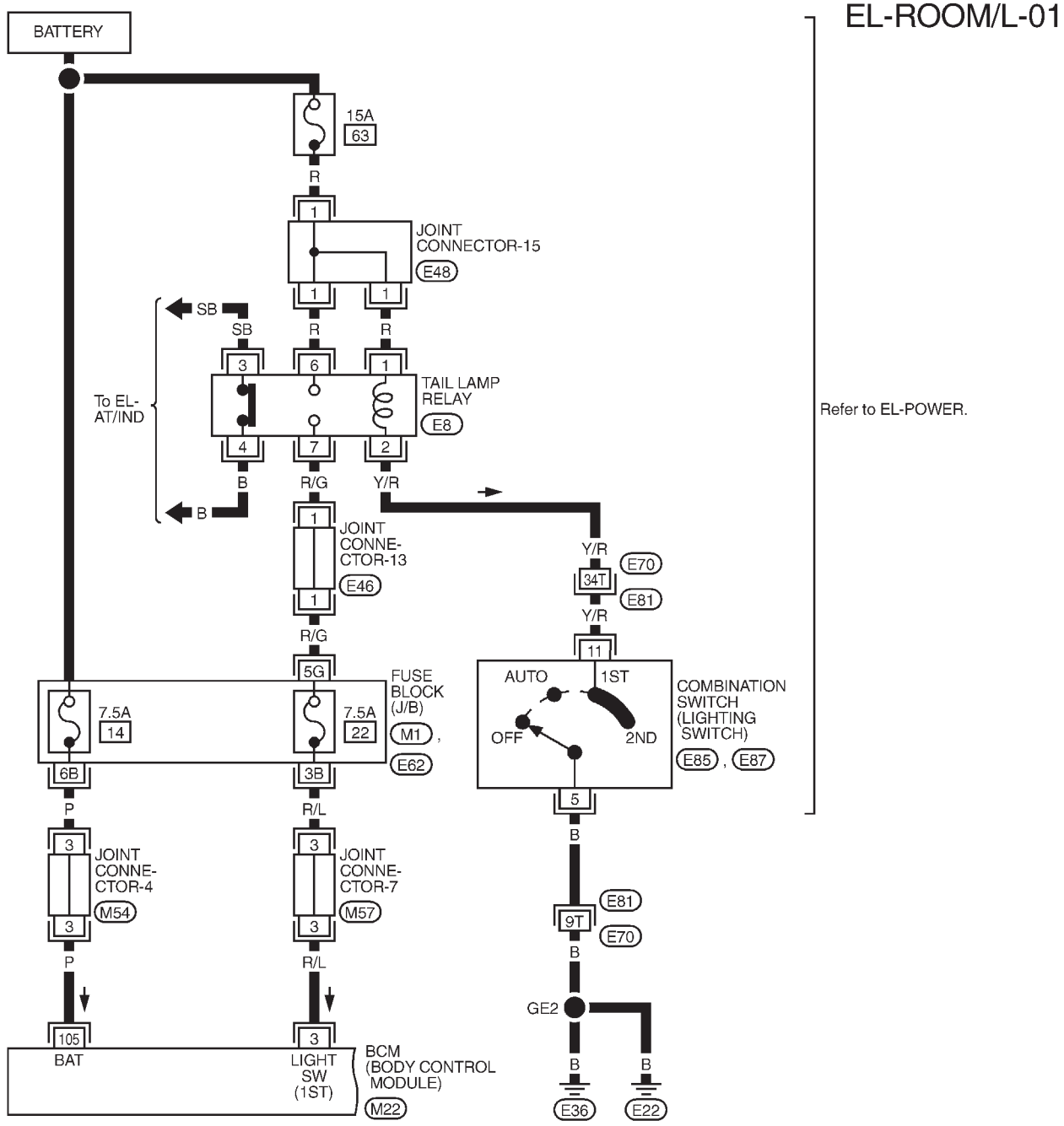
Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

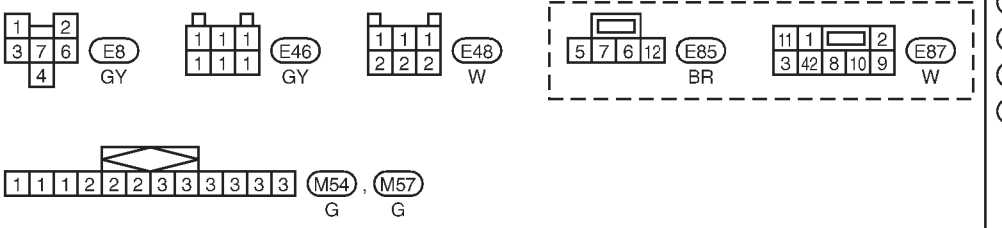
Schematic



TEL850

Wiring Diagram — ROOM/L —



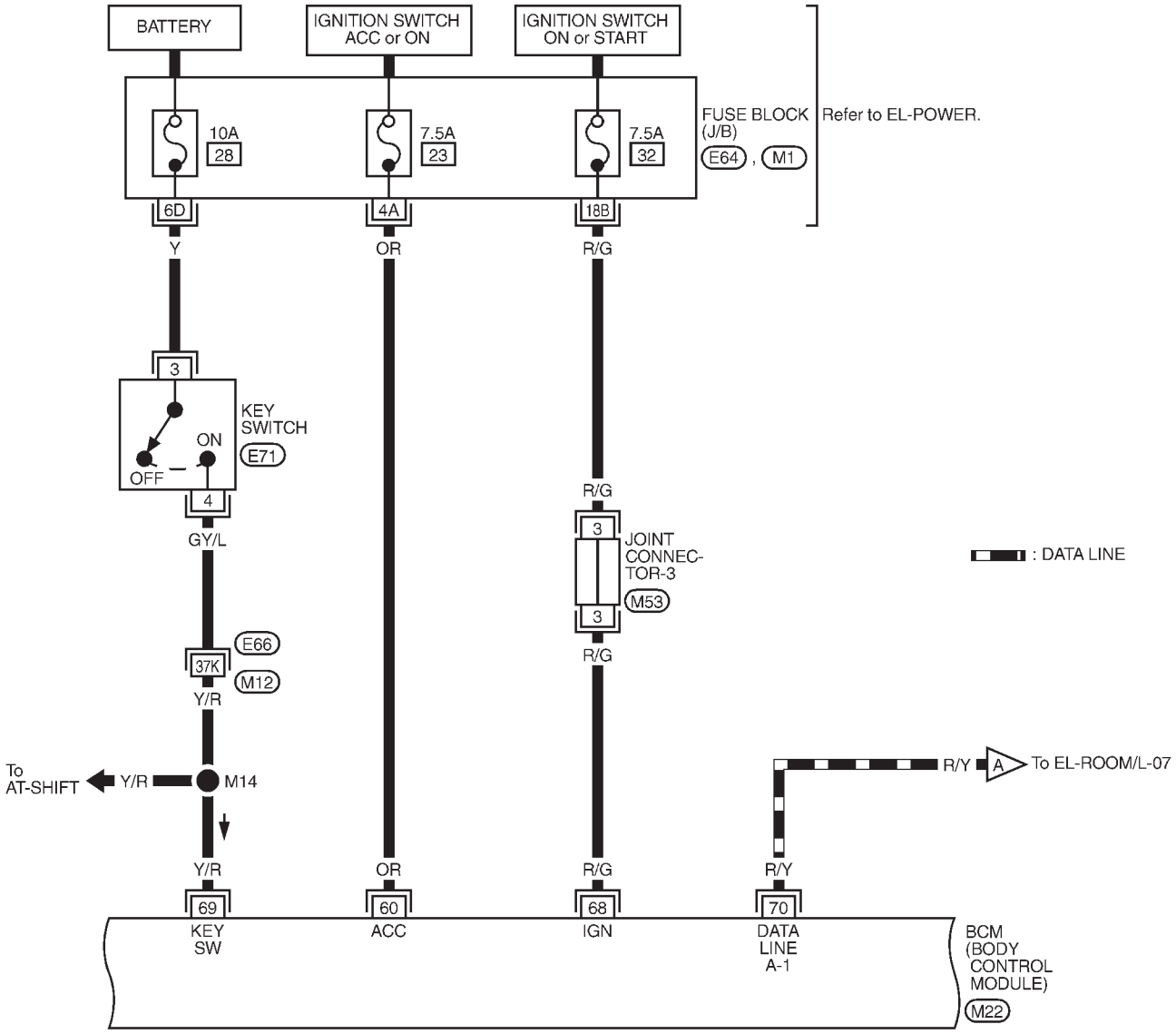


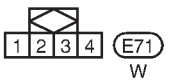
Refer to last page (Foldout page).
E70 , E81
M1
M22
E62

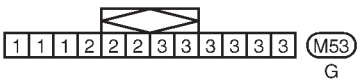
TEL221A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-02







Refer to last page (Foldout page).

E66, M12

E64

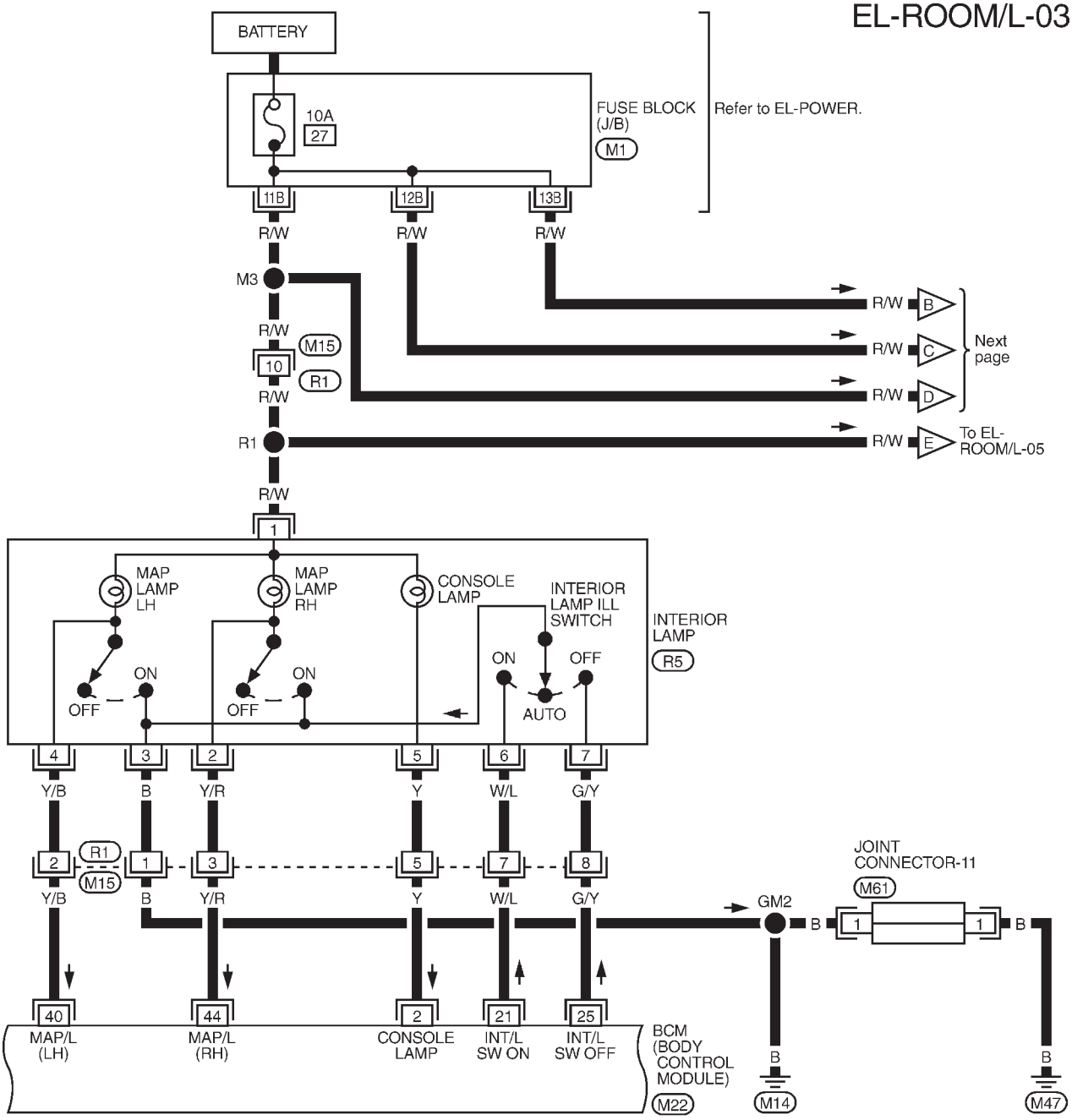
M1

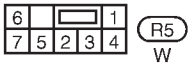
M22

TEL852

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-03





Refer to last page (Foldout page).

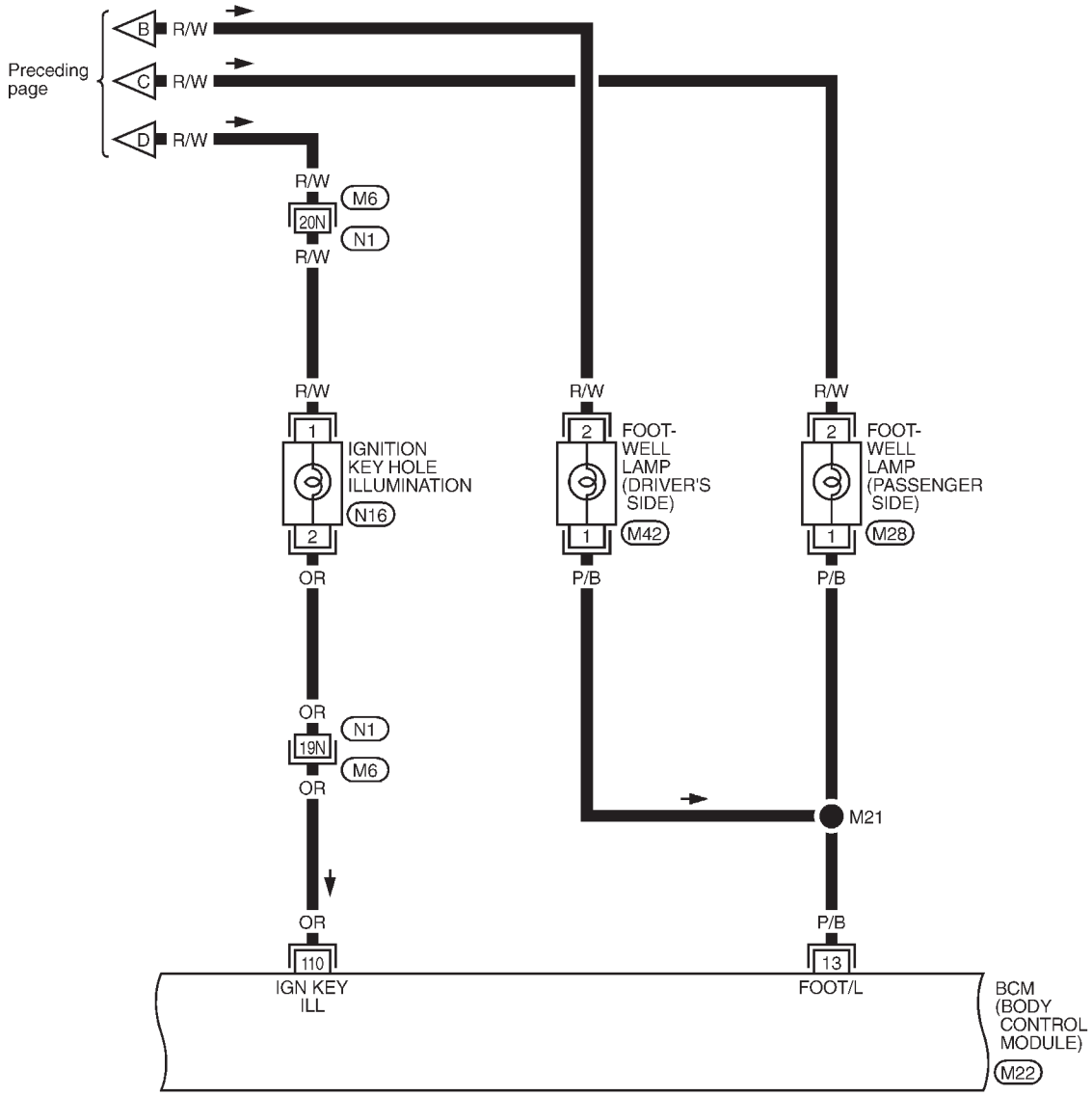
M1

M22

TEL222A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-04



2 1 M28 W , M42 W

2 1 N16 W

Refer to last page (Foldout page).

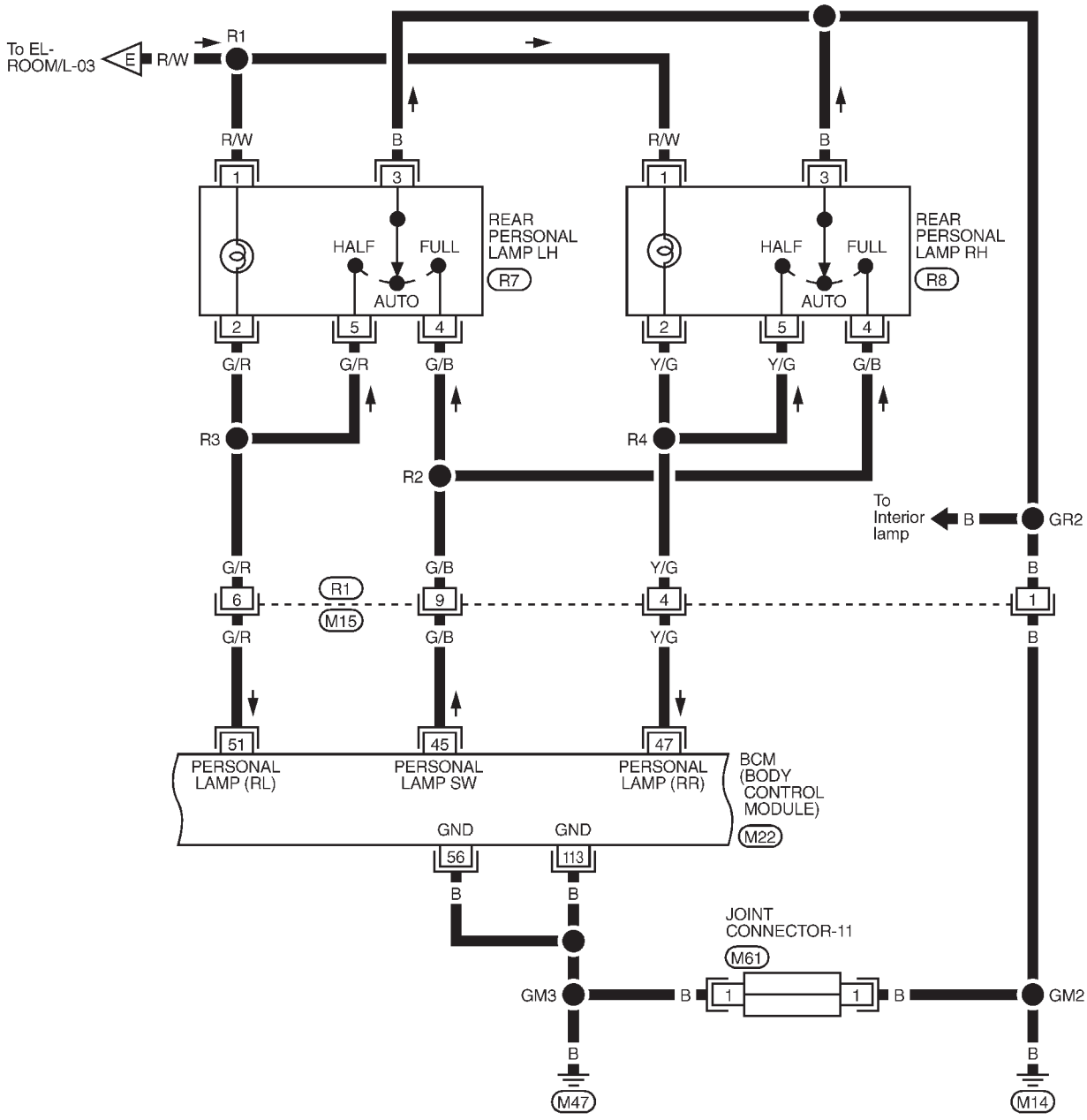
M6 , N1

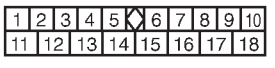
M22

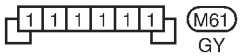
TEL223A

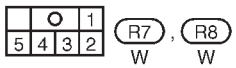
Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-05







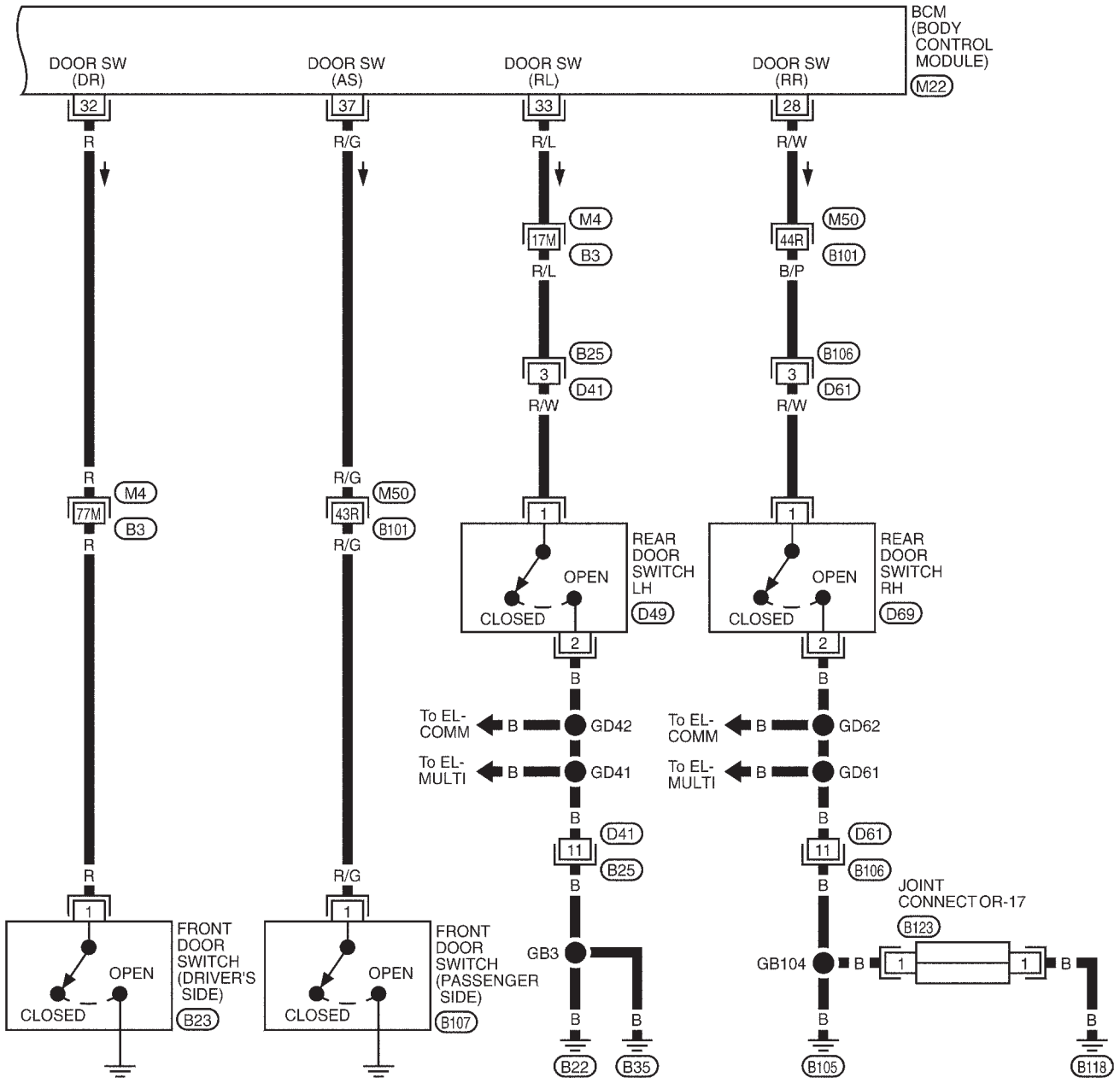


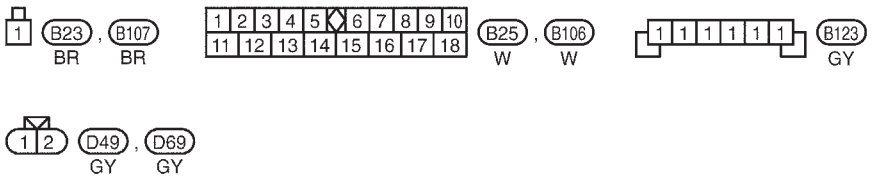
Refer to last page (Foldout page).
M22

TEL224A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-06





Refer to last page (Foldout page).

M4 , B3

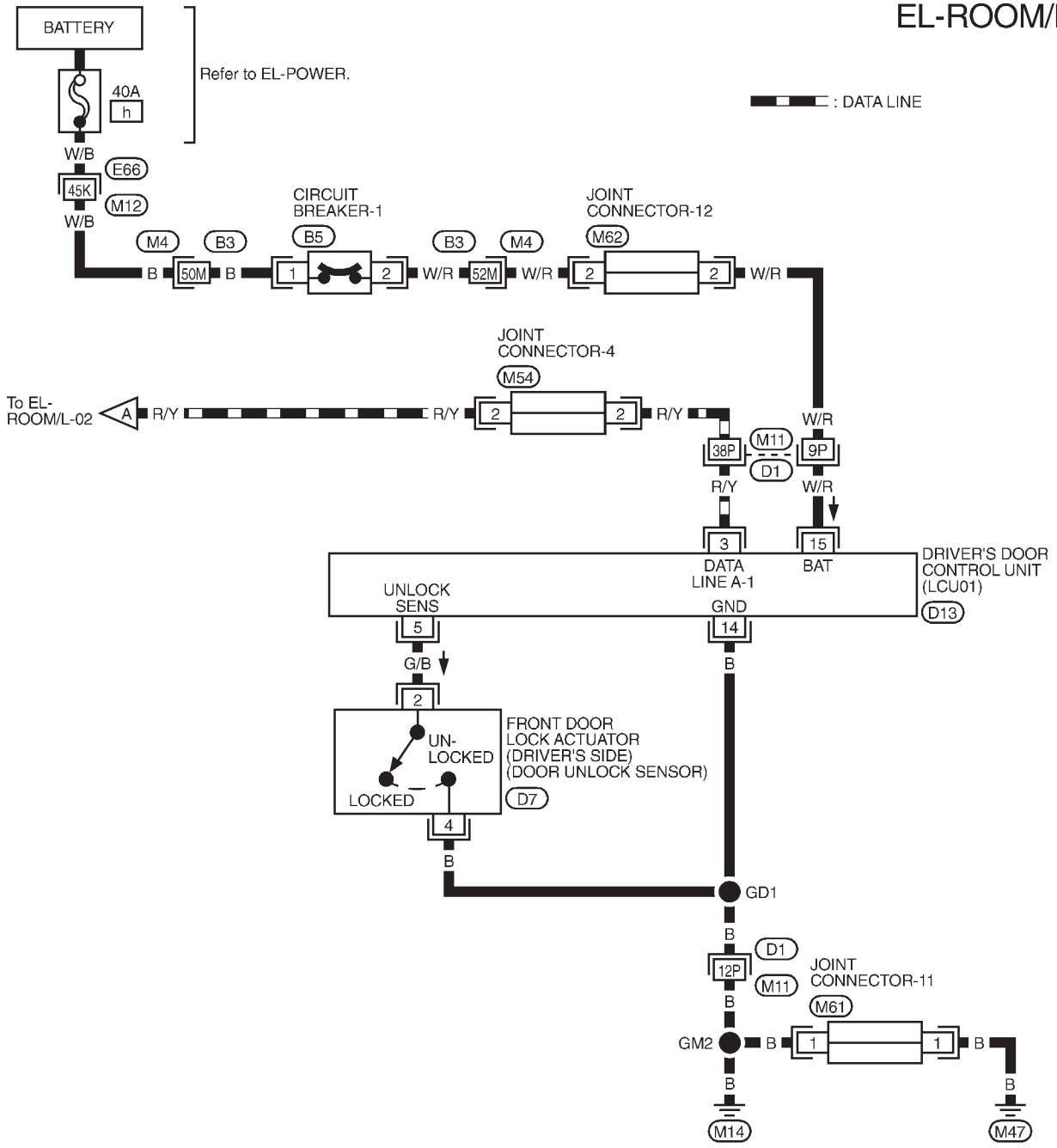
M50 , B101

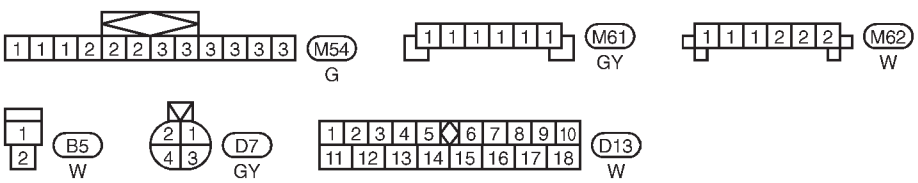
M22

TEL225A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-07





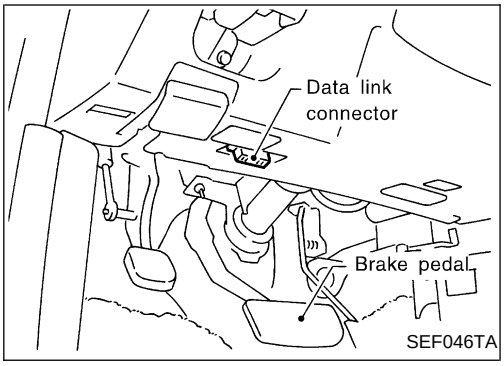
Refer to last page (Foldout page).

E66 , M12

M4 , B3

M11 , D1

TEL226A

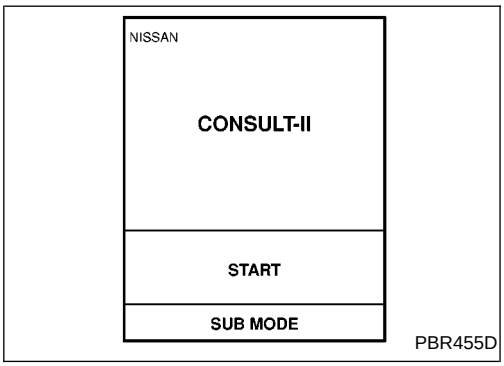


SEF046TA

CONSULT-II

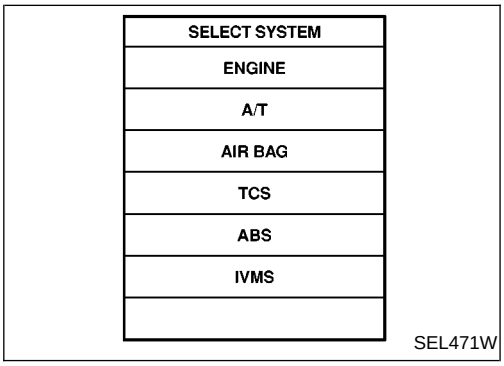
CONSULT-II INSPECTION PROCEDURE

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



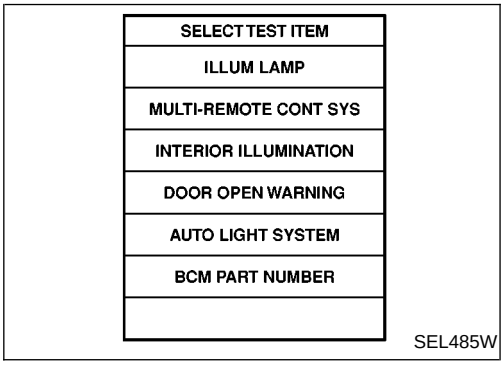
PBR455D

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



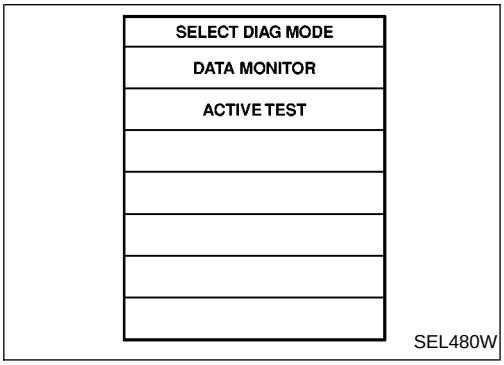
SEL471W

5. Touch “IVMS”.



SEL485W

6. Touch “INTERIOR ILLUMINATION”.

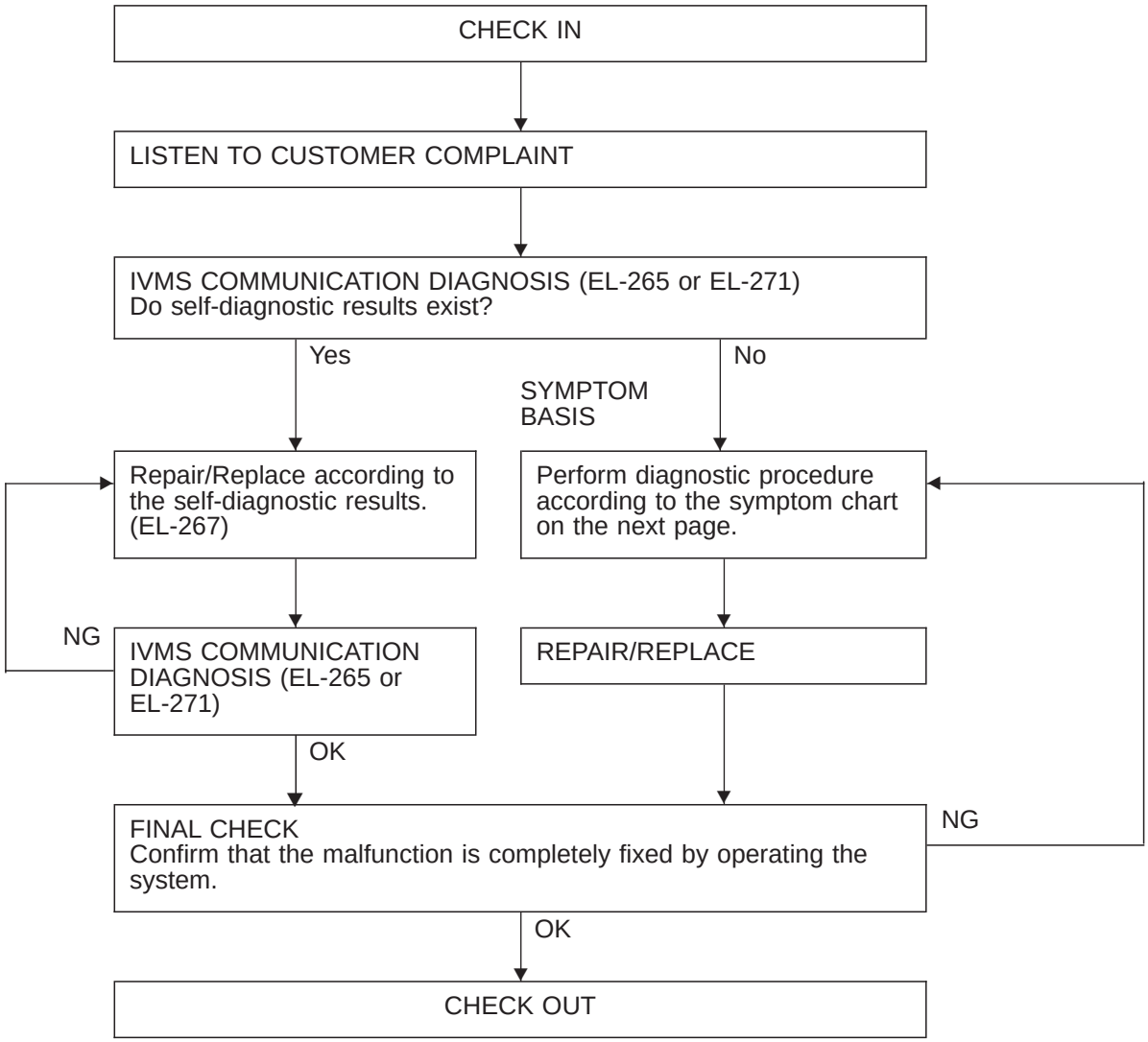


SEL480W

- DATA MONITOR and ACTIVE TEST are available for the interior illumination.

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

WORK FLOW

CHECK SYSTEM OPERATION.
Check illumination lamp control operation.
(Refer to System Description.)

OK → System is OK.

NG ↓

CHECK SWITCH INPUT SIGNAL.
Check the following switches input signal.
- Door unlock sensor (Driver side) ..... Refer to EL-366.
- Door switch ..... Refer to EL-367.
- Lighting switch (1st) ..... Refer to EL-368.
- Key switch (insert) ..... Refer to EL-369.
- Ignition key switch (ACC and IGN) ..... Refer to EL-370.
- Interior lamp switch ..... Refer to EL-371.
- Personal lamp switch ..... Refer to EL-371.

NG → Repair or replace.

OK ↓

CHECK ILLUMINATION LAMPS.
Check the following illumination lamps.
(Refer to EL-372.)
- Console lamp
- Map lamp
- Footwell lamp
- Personal lamp
- Ignition key hole illumination

NG → Repair or replace.

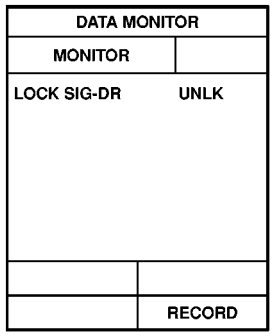
OK ↓

Check system again.

Trouble Diagnoses (Cont'd)

DOOR UNLOCK SENSOR CHECK (DRIVER SIDE)

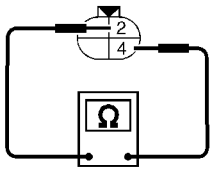
A



SEL531W

B

Door lock actuator connectors
Front LH : D7



SEL026V

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL. (DRIVER SIDE)

A CONSULT-II

See "LOCK SIG-DR" in DATA MONITOR mode.

"LOCK SIG-DR" should be "LOCK" when lock knob was locked.

OR

ON BOARD

Check driver's side door lock knob operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-362.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminals ② and ④.

Condition	Continuity
Locked	No
Unlocked	Yes

NG → Replace door lock actuator.

OK ↓

Check the following.

- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

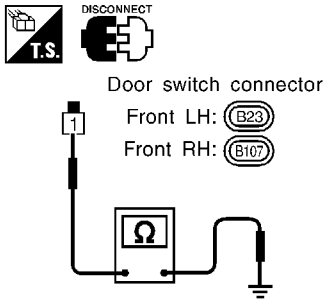
DOOR SWITCH CHECK

A

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

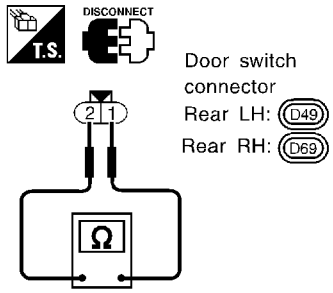
SEL527W

B



SEL914U

B



SEL021V

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SW" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OR

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-361.

OK → Door switch is OK.

NG ↓

B

CHECK DOOR SWITCH.

1. Disconnect door switch connector.
2. Check continuity between terminals or switch body ground.

	Terminals	Condition	Continuity
Front door switch	① - Ground	Pressed	No
		Released	Yes
Rear door switch	① - ②	Pressed	No
		Released	Yes

NG → Replace door switch.

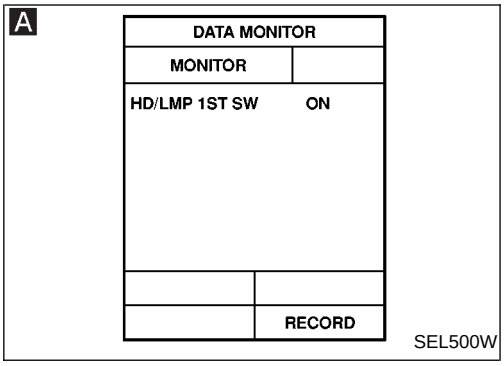
OK ↓

Check the following.
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

LIGHTING SWITCH (1ST) CHECK

A



A

CHECK LIGHTING SWITCH INPUT SIGNAL.

CONSULT-II

See "HD/LMP 1ST SW" in DATA MONITOR mode.
When lighting switch is in 1ST or 2ND:
HD/LMP 1ST SW ON
When lighting switch is OFF:
HD/LMP 1ST SW OFF

OR

ON BOARD

Check lighting switch in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-356.

NG → Check the following.
- 7.5A fuse [No. 22, located in the fuse block (J/B)]
- Tail lamp relay
- Harness for open or short between fuse and BCM
- Harness for open or short between tail lamp relay and fuse

OK ↓

Lighting switch (1st) is OK.

Trouble Diagnoses (Cont'd)

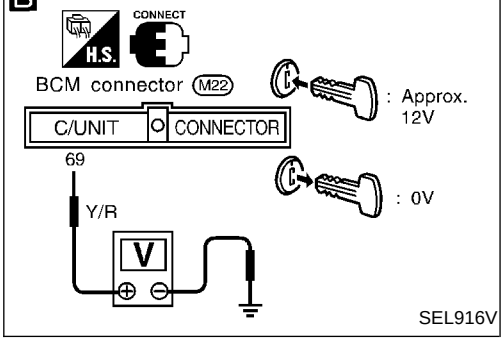
KEY SWITCH (INSERT) CHECK

A

DATA MONITOR	
MONITOR	
IGN KEY SW	ON
	RECORD

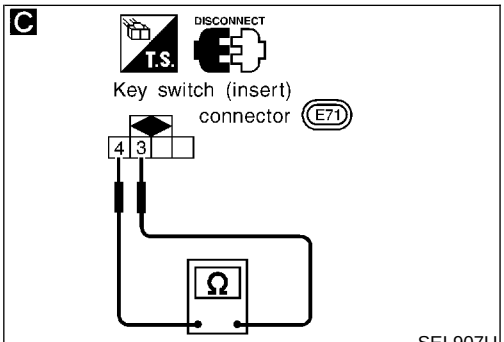
SEL532W

B



SEL916V

C



SEL907U

CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT-II

See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:

IGN KEY SW ON

When key is removed from ignition key cylinder:

IGN KEY SW OFF

OK → Key switch is OK.

OR

B TESTER

Check voltage between BCM terminals 69 and ground.

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

Refer to wiring diagram in EL-357.

NG ↓

C

CHECK KEY SWITCH.

1. Disconnect key switch connector.
2. Check continuity between key switch (insert) terminals ③ and ④ when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

NG → Replace key switch (insert).

Condition	Continuity
Key is inserted	Yes
Key is removed	No

OK ↓

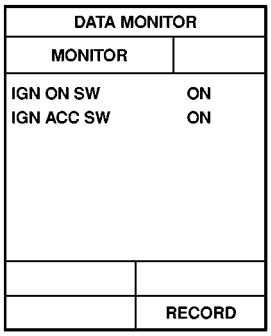
Check the following.

- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

Trouble Diagnoses (Cont'd)

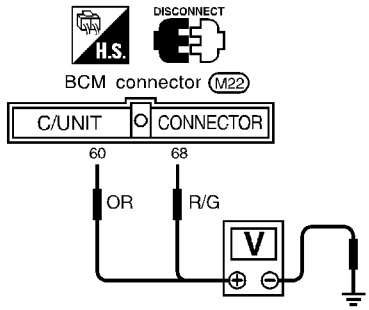
IGNITION KEY SWITCH (ACC AND IGN) INPUT SIGNAL CHECK

A



SEL533W

B



SEL642UA

CHECK ACC AND IGN INPUT SIGNAL.

A CONSULT-II

See "IGN ON SW" and "IGN ACC SW" in DATA MONITOR mode.

When ignition switch is ON:
IGN ON SW ON
IGN ACC SW ON

When ignition switch is ACC:
IGN ON SW OFF
IGN ACC SW ON

When ignition switch is OFF:
IGN ON SW OFF
IGN ACC SW OFF

NG → Check the following.
- 7.5A fuse [No. 23, located in the fuse block (J/B)]
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

OR

B TESTER

Check voltage between BCM terminal 60 or 68 and ground.

Terminals	Ignition switch position			
	OFF	ACC	ON	START
60 - Ground	Approx. 0V	Battery voltage		Approx. 0V
68 - Ground	Approx. 0V		Battery voltage	

Refer to wiring diagram in EL-357.

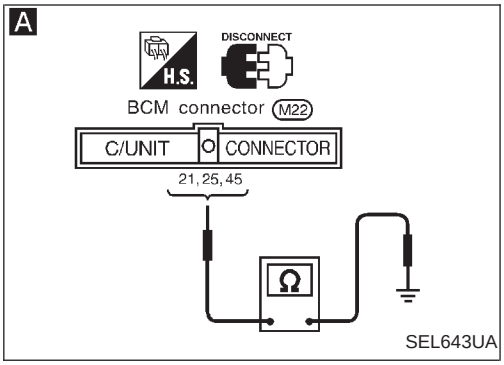
OK ↓

ACC and IGN input signal is OK.

Trouble Diagnoses (Cont'd)

INTERIOR LAMP AND PERSONAL LAMP SWITCH CHECK

A



CHECK LAMP SWITCHES INPUT SIGNAL.

1. Disconnect BCM connector.
2. Check continuity between BCM terminals and ground.

Note: To perform this procedure, turn both map lamp switches to OFF.

Switch	Terminals	Condition	Continuity
Interior lamp	㉑ - Ground	ON	Yes
		AUTO/ OFF	No
	㉕ - Ground	OFF	Yes
		AUTO/ ON	No
Rear personal lamp LH/RH	㊺ - Ground	FULL	Yes
		HALF/ AUTO	No

Refer to wiring diagram in EL-358 or 360.

NG → Check the following.
- Lamp switch
- Lamp switch ground circuit
- Harness for open or short between BCM and lamp switch

OK ↓

Lamp switches are OK.

Trouble Diagnoses (Cont'd)

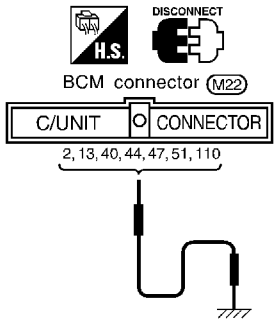
ILLUMINATION LAMP CHECK

A

ACTIVE TEST	
FR PERSONAL LUMP	OFF
OR	
FOOT LAMP	OFF
CONSOLE LAMP	OFF
RR PERSONAL LAMP	OFF
KEY RING ILLUM	OFF
ON	

SEL534W

B



SEL644UA

Check illumination lamp bulb.
- NG → Replace bulb.
- OK ↓

Check 10A fuse [No. 27 located in the fuse block (J/B)].
- NG → Replace fuse.
- OK ↓

CHECK ILLUMINATION LAMP OPERATION.

1. Turn each lamp switch to the following conditions.
   Map lamp LH/RH switch: OFF
   Interior lamp switch: AUTO
   Rear personal lamp LH/RH switch: OFF

A CONSULT-II

See "FR PERSONAL LAMP (Front map lamp)", "FOOT LAMP (Footwell lamp)", "CONSOLE LAMP", "RR PERSONAL LAMP" or "KEY RING ILLUM" in ACTIVE TEST mode.
Perform operation shown on display.
Illumination lamp should illuminate.

NG → Check the following.
- Harness for open or short between fuse and illumination lamp
- Harness for open or short between illumination lamp and BCM

OR

B

2. Disconnect BCM connector.
3. Apply ground to each terminal of BCM connector.
   Does illumination lamp turn on?

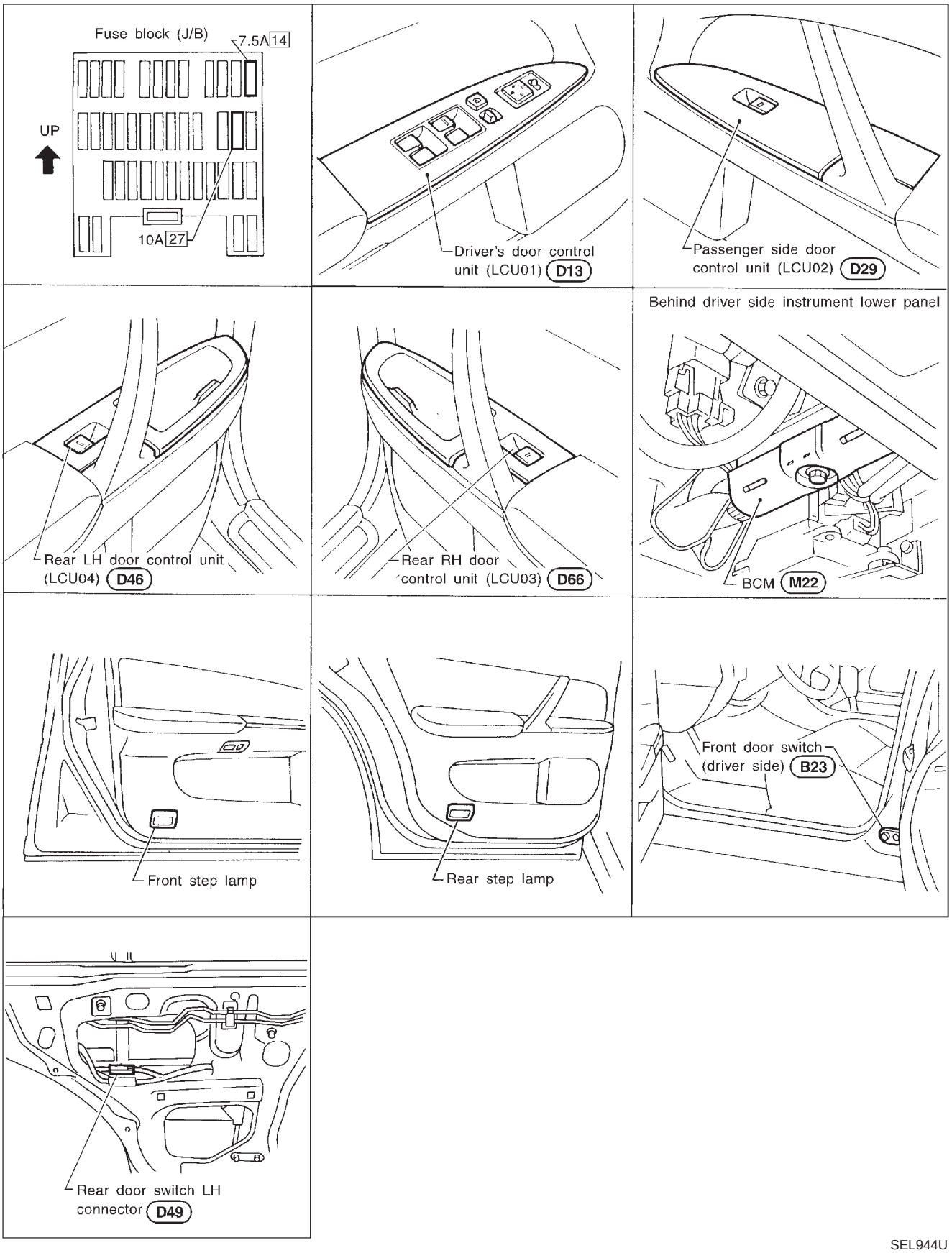
Illumination lamp	Terminals
Console lamp	②
Footwell lamp	⑬
Front map lamp LH	㊵
Front map lamp RH	㊹
Rear personal lamp RH	㊼
Rear personal lamp LH	㊶
Ignition key hole illumination	110

Refer to wiring diagram in EL-358, 359 or 360.

OK ↓

Illumination lamps and circuit is OK.

Component Parts and Harness Connector Locations



SEL944U

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times
- to BCM terminal (105)
- through 7.5A fuse [No. 14, located in the fuse block (J/B)].

Power is supplied at all times
- to all step lamps terminal ①
- through 10A fuse [No. 27, located in the fuse block (J/B)].

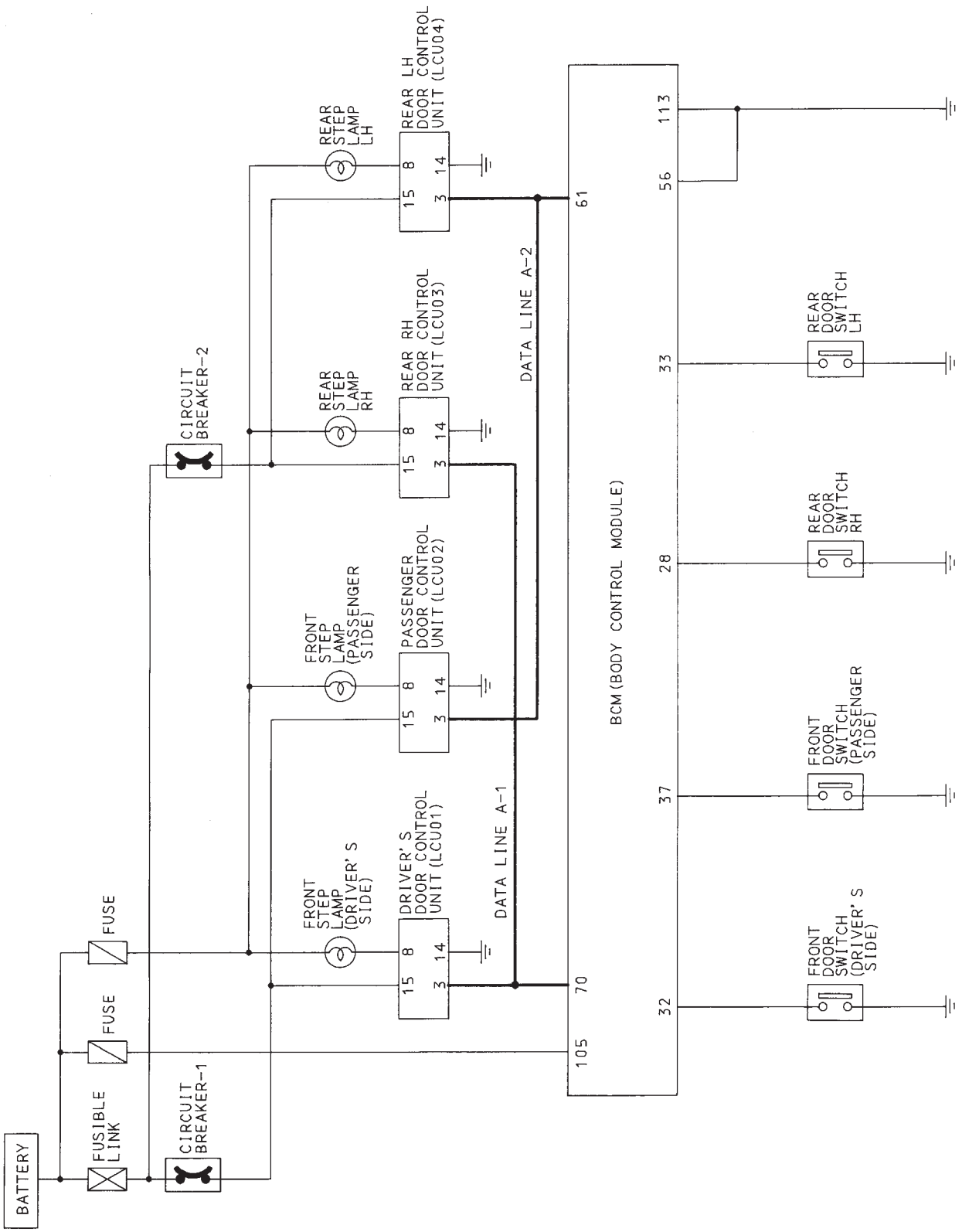
Ground is supplied to terminal ⑭ of LCU01 and LCU02 through body grounds (M14) and (M47).
Ground is also supplied to terminal ⑭ of LCU03 and LCU04 through body grounds (B105) and (B118) or (B22) and (B35).

OPERATING PROCEDURE

BCM is connected to LCU01, LCU02, LCU03 and LCU04 as DATA LINE A-1 or A-2.
When any door switch is in OPEN position, ground is supplied
- to BCM terminal ㉜, ㊲, ㉘, or ㉝
- through driver side, passenger side, rear LH or RH door switch.

Then BCM sends a signal to the LCU to turn on step lamp. With ground supplied, step lamp turns on.

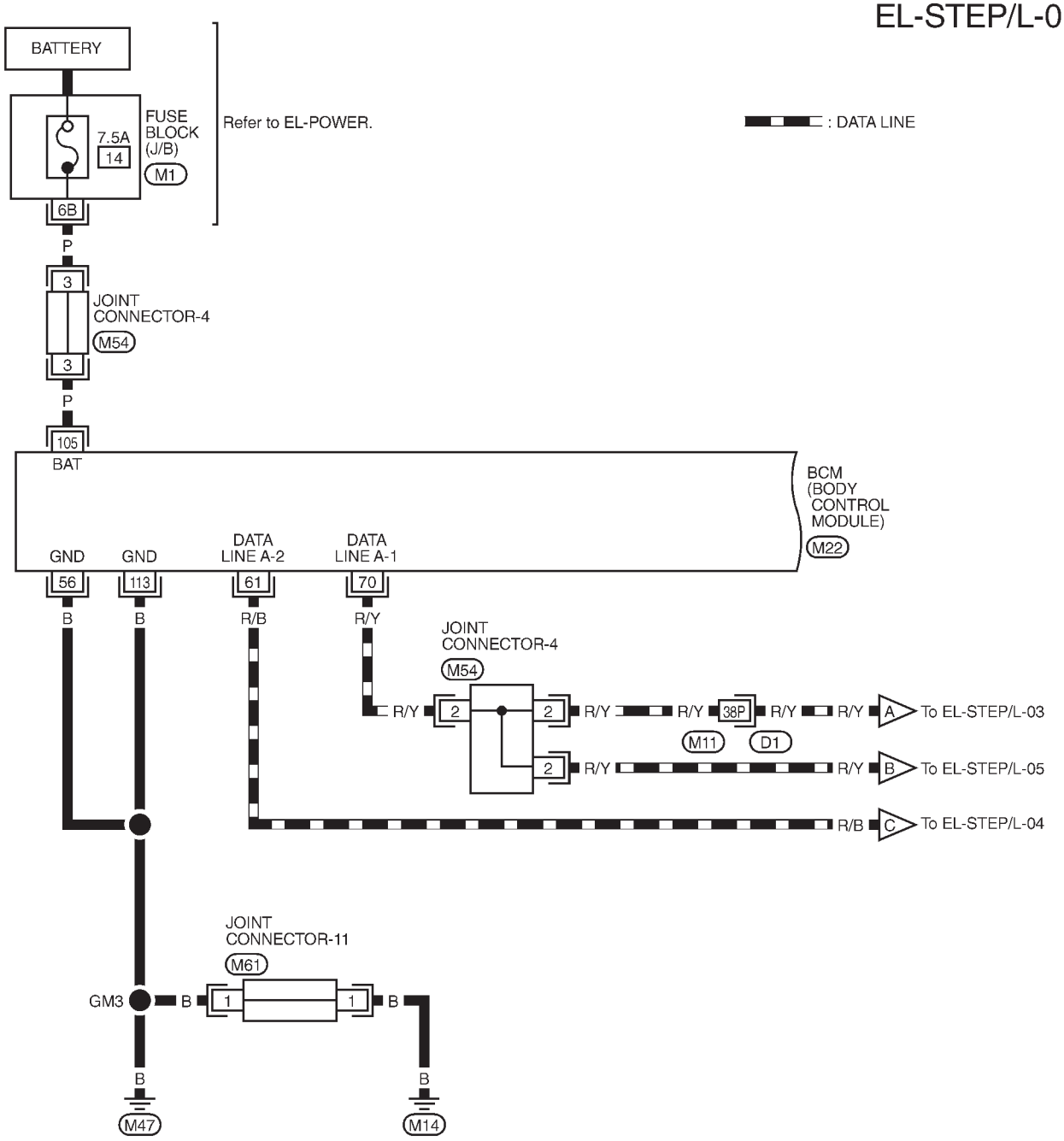
Schematic

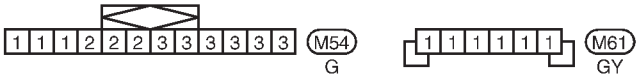


TEL858

Wiring Diagram — STEP/L —

EL-STEP/L-01





Refer to last page (Foldout page).

(M11), (D1)

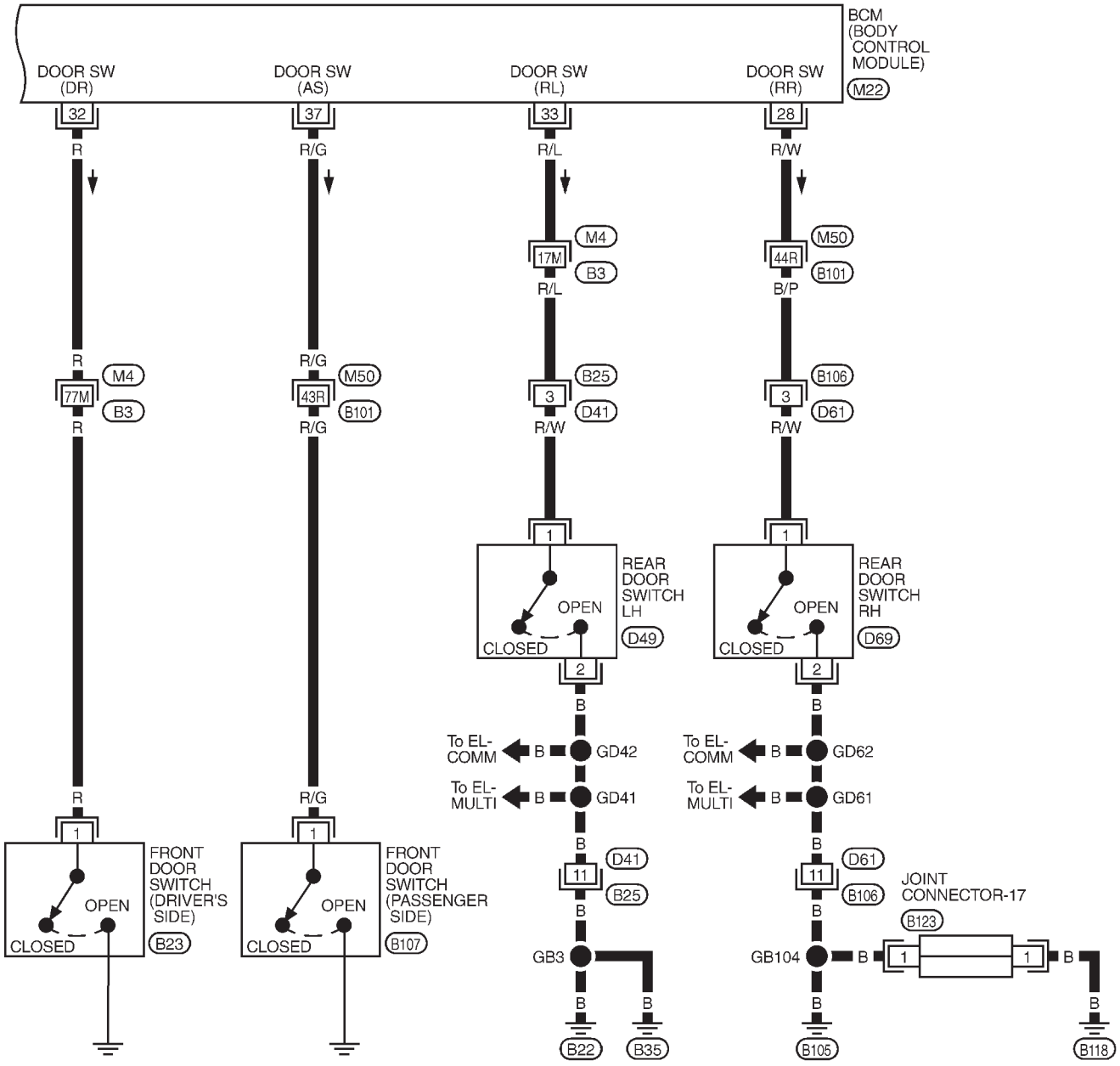
(M1)

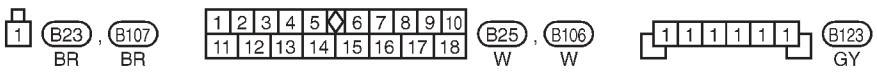
(M22)

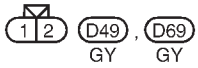
TEL227A

Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-02







Refer to last page (Foldout page).

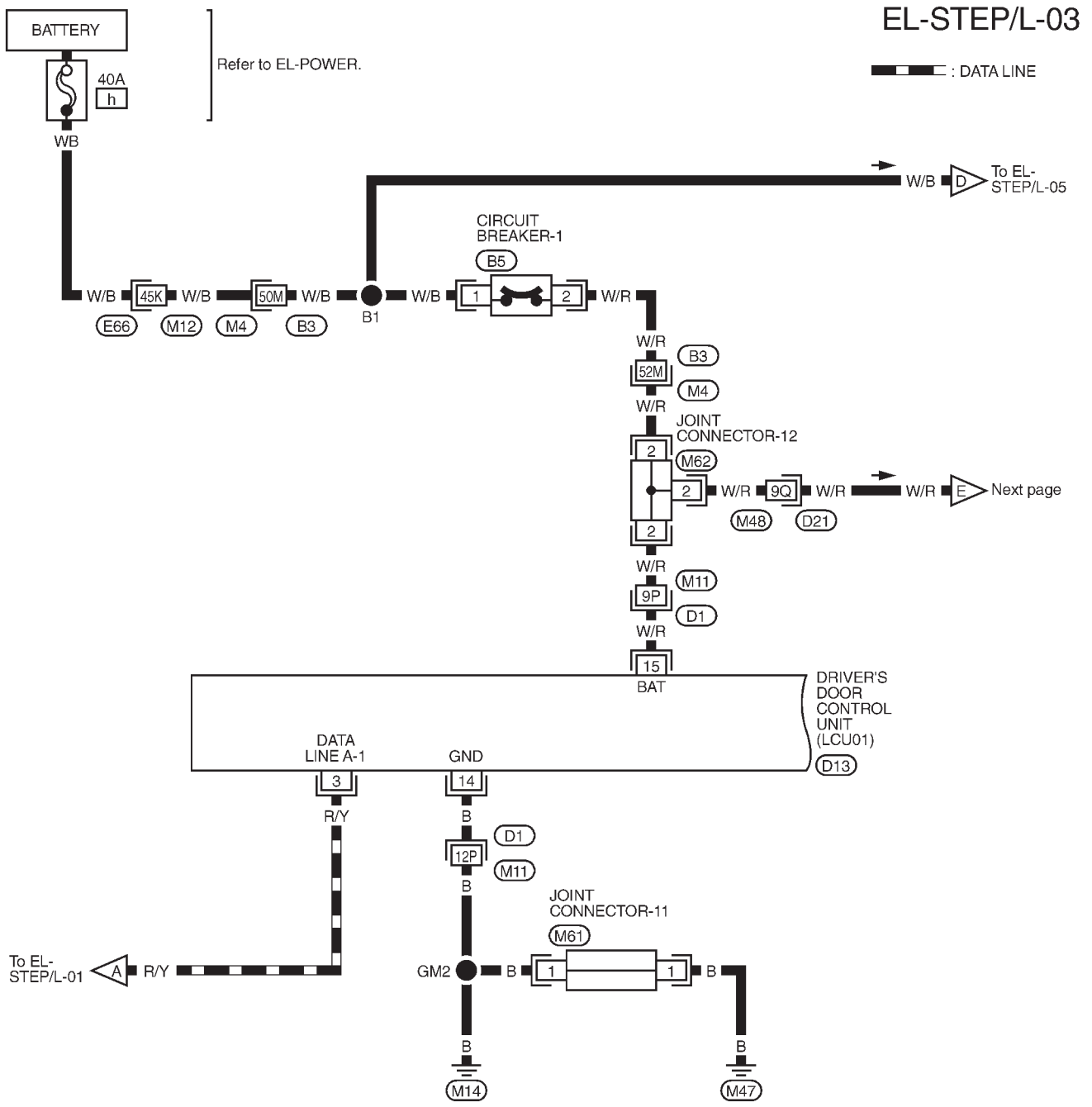
M4 , B3

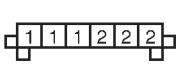
M50 , B101

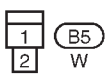
M22

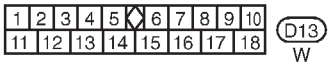
TEL860

Wiring Diagram — STEP/L — (Cont'd)









Refer to last page (Foldout page).

E66 , M12

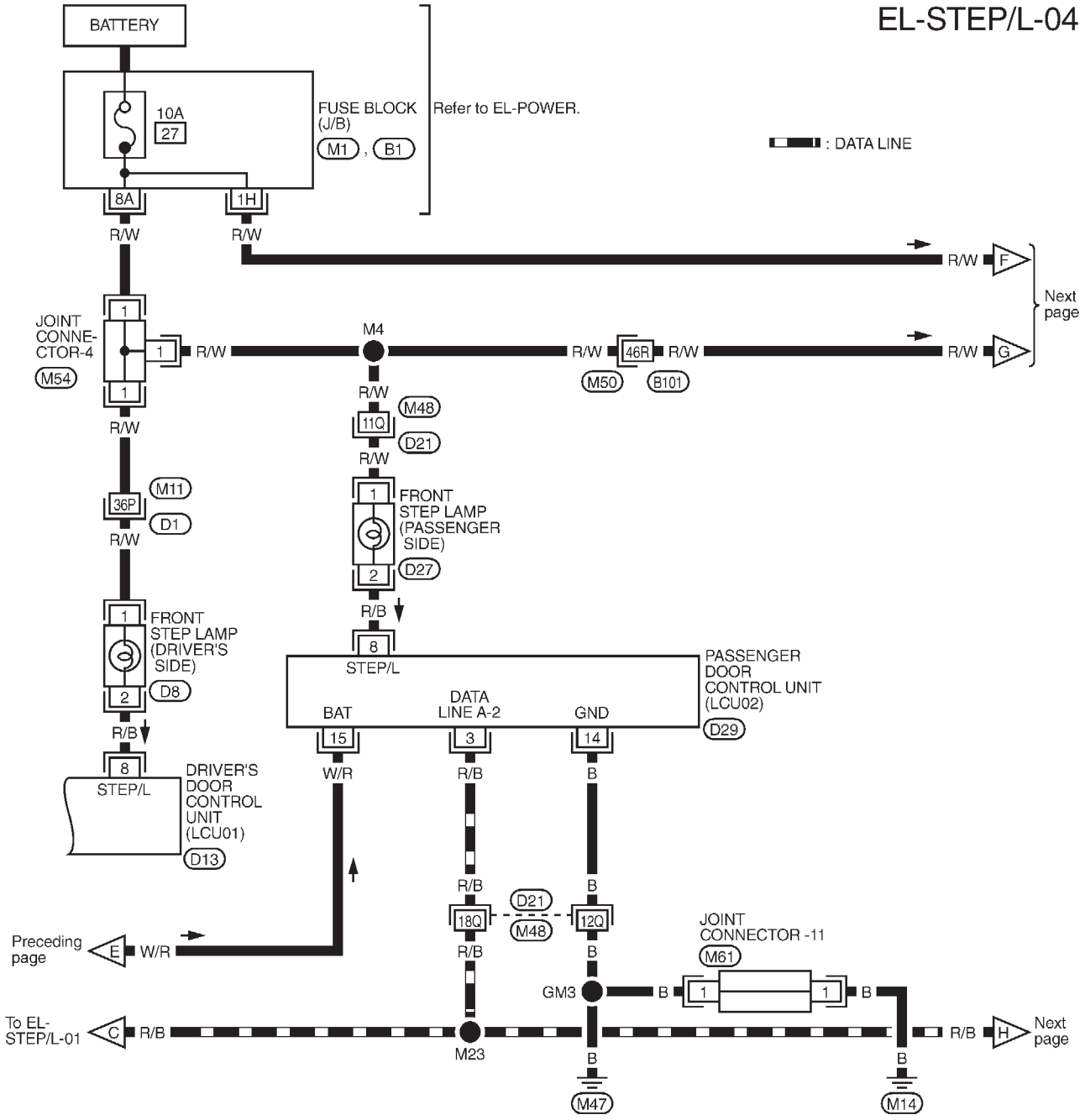
M4 , B3

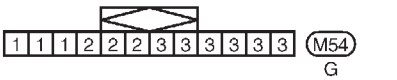
M11 , D1

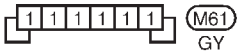
M48 , D21

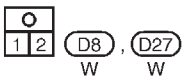
TEL245A

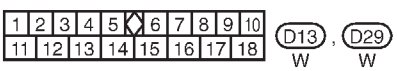
Wiring Diagram — STEP/L — (Cont'd)









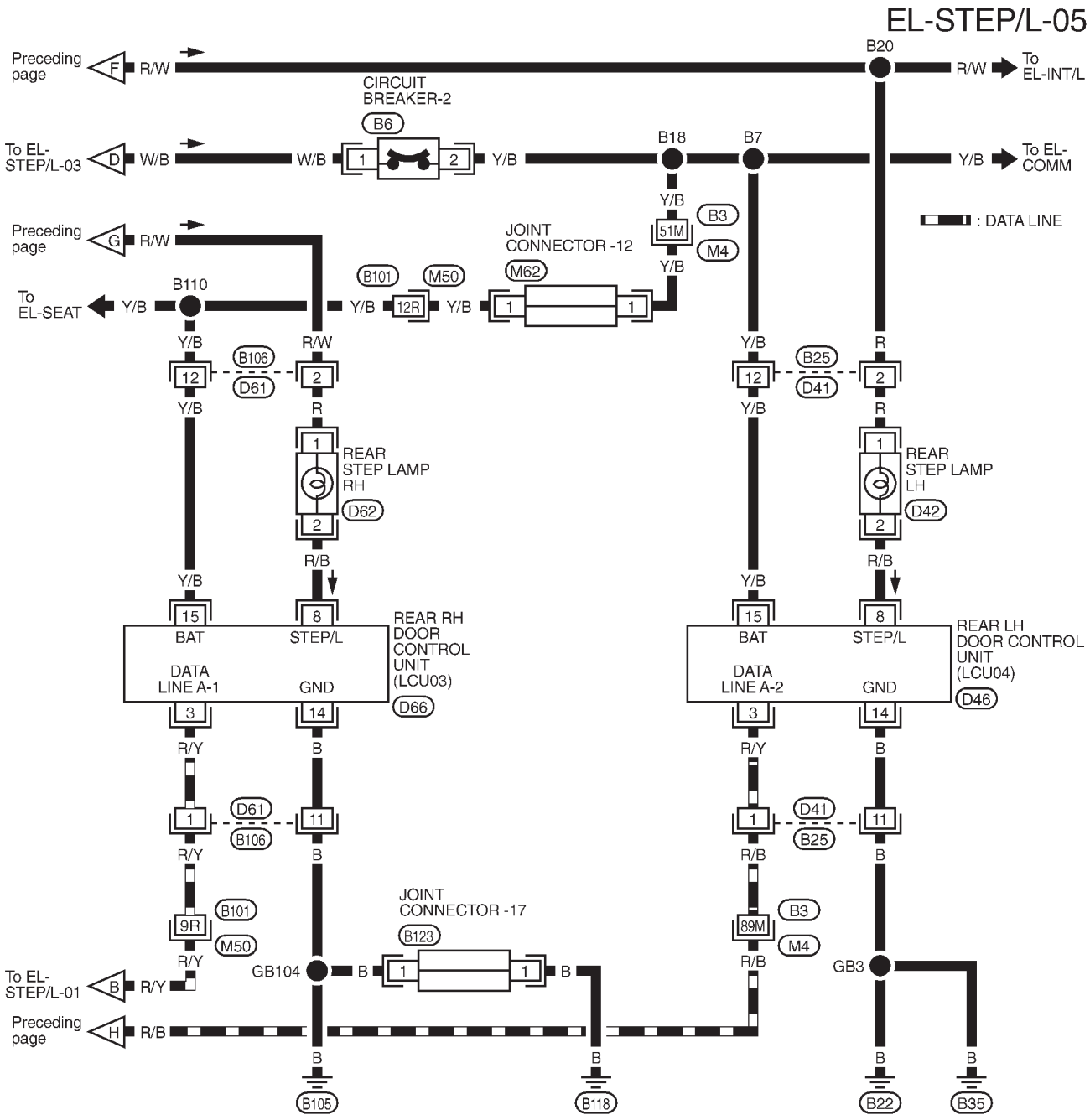


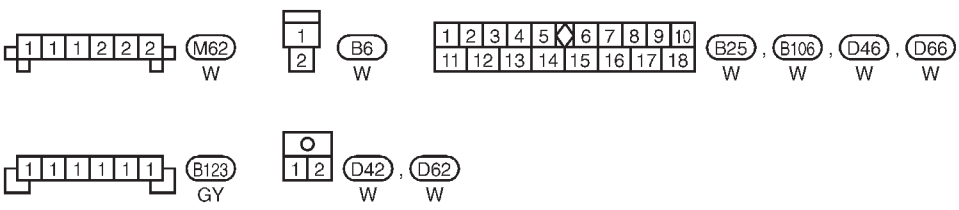
Refer to last page (Foldout page).

M11 , D1
M48 , D21
M50 , B101
M1
B1

TEL862

Wiring Diagram — STEP/L — (Cont'd)



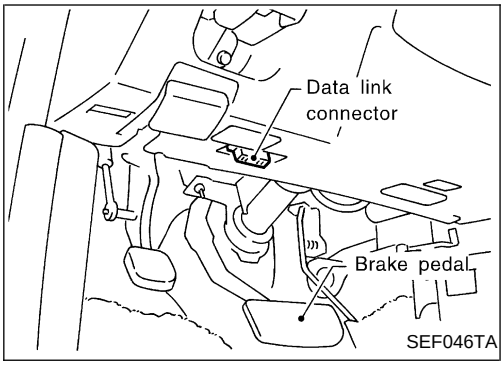


Refer to last page (Foldout page).

M4 , B3

M50 , B101

TEL863

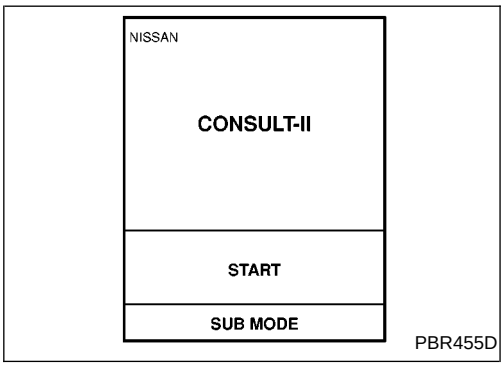


SEF046TA

CONSULT-II

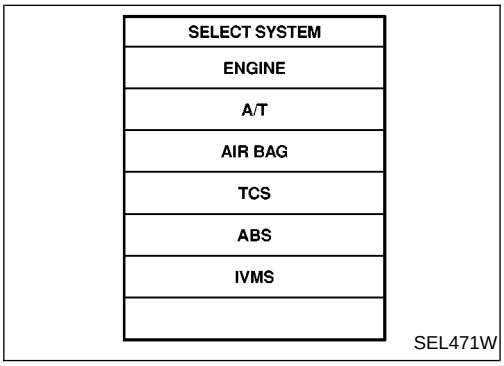
CONSULT-II INSPECTION PROCEDURE

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



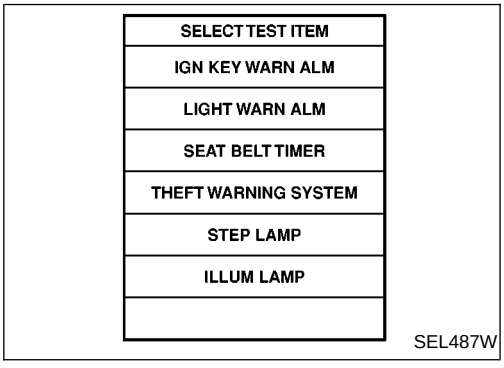
PBR455D

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



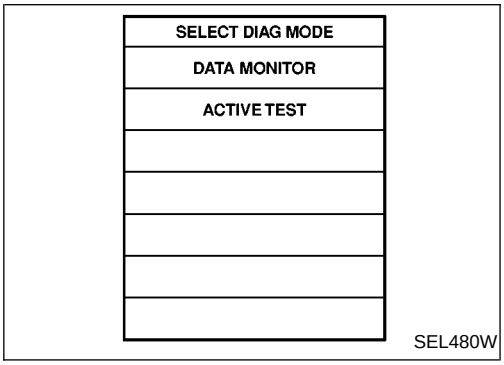
SEL471W

5. Touch “IVMS”.



SEL487W

6. Touch “STEP LAMP”.

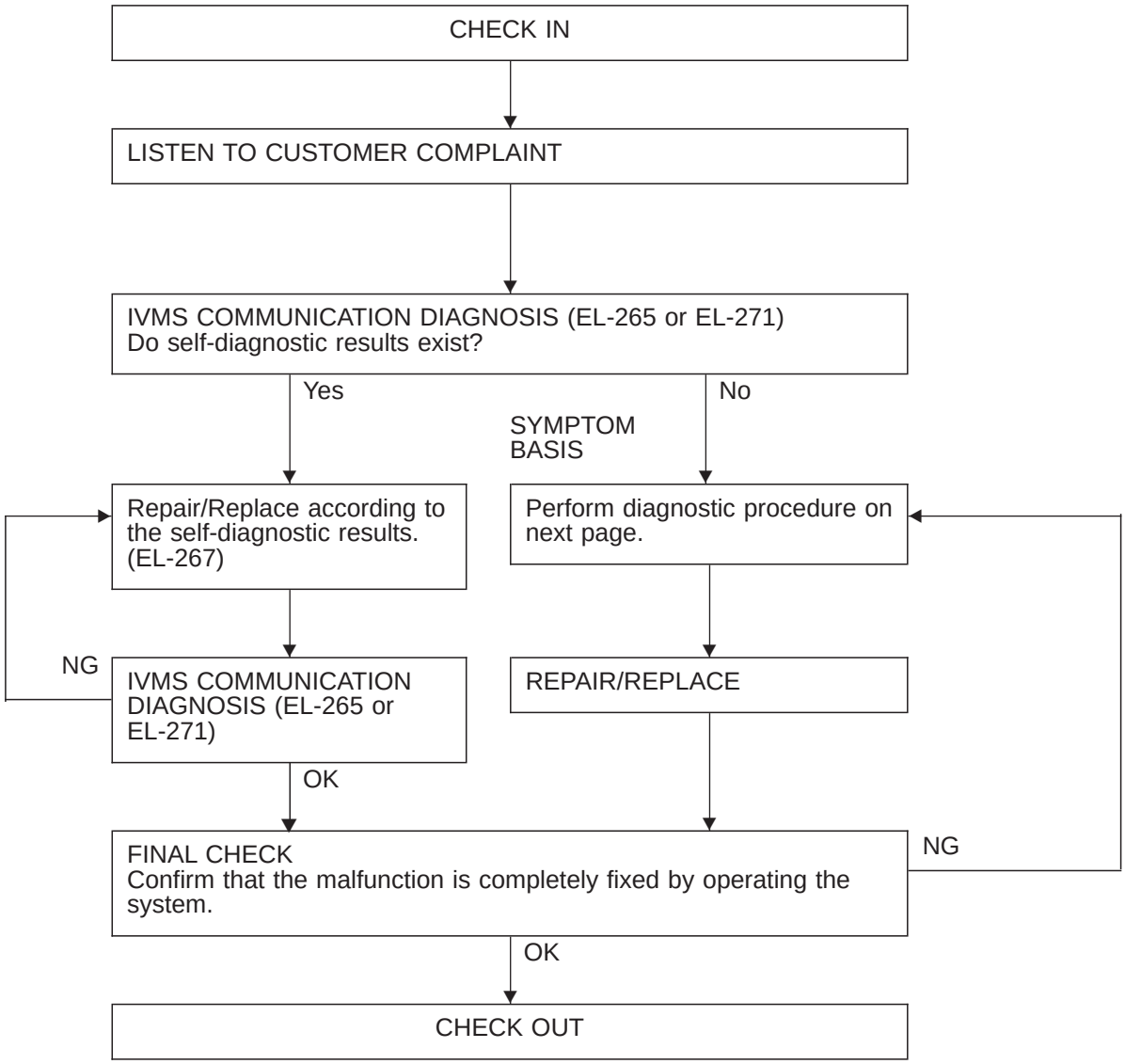


SEL480W

- DATA MONITOR and ACTIVE TEST are available for the step lamp.

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

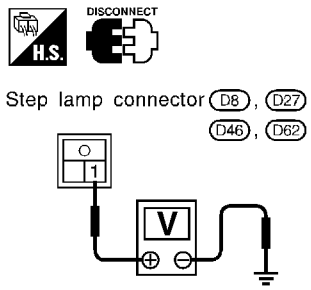
SYMPTOM: Step lamp does not illuminate/does not go off when door is opened/closed.

A

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

SEL527W

B



SEL673UA

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SW" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

NG → Check the following.
- Door switch
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between door switch and BCM

OR

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-377.

OK ↓

Check step lamp bulb.

NG → Replace bulb.

OK ↓

B

CHECK POWER SUPPLY CIRCUIT.
1. Disconnect step lamp connector.
2. Check voltage between step lamp terminal ① and ground.
   Battery voltage should exist.

Refer to wiring diagram in EL-379 or 380.

NG → Check the following.
- 10A fuse [No. 27, located in the fuse block (J/B)]
- Harness for open or short between fuse and step lamp

OK ↓

Check harness for open or short between step lamp and LCU.

System Description

REAR POWER WINDOW SWITCH ILLUMINATION

Power is supplied at all times
- to tail lamp relay terminals ① and ⑥
- through 15A fuse [No. 63, located in the fuse, fusible link and relay box].

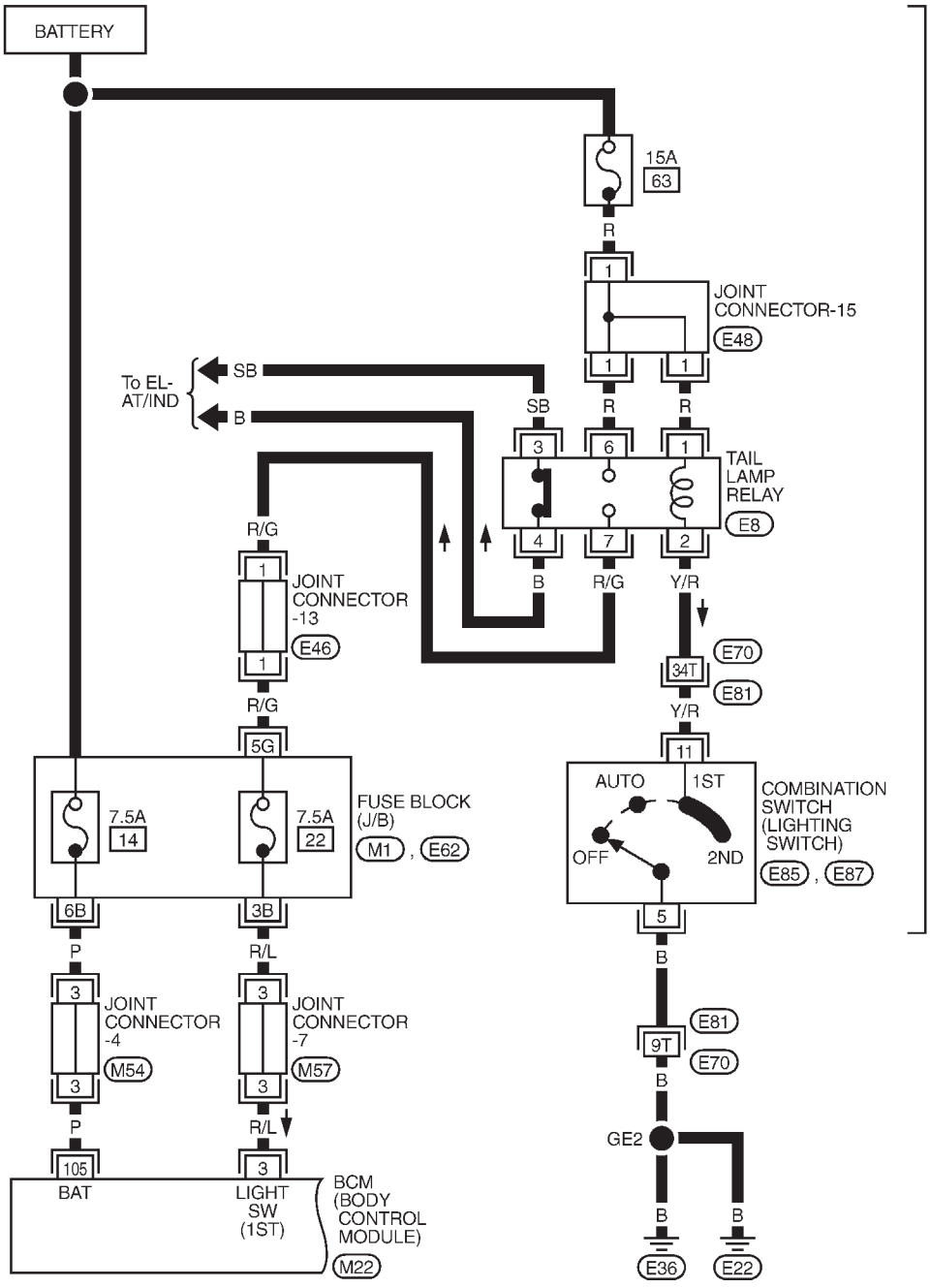
Ground is supplied
- to the lighting switch terminal ⑤
- through body grounds E22 and E36.

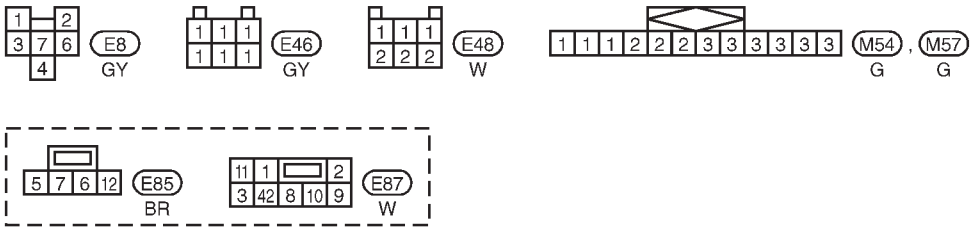
When the lighting switch is turned to 1ST or 2ND position, ground is supplied
- to tail lamp relay terminal ②
- from the lighting switch terminal ⑪.

Tail lamp relay is then energized, and power is supplied
- from tail lamp relay terminal ⑦
- through 7.5A fuse [No. 22, located in the fuse block (J/B)].
- to BCM terminal ③.

BCM is connected to LCU03 and LCU04 as DATA LINE A-1 or A-2.
Rear power window switch illuminations are combined with LCUs.
When lighting switch is turned to 1ST or 2ND position, BCM sends a signal to turn on rear power window switch illuminations.

Wiring Diagram — SW/ILL —



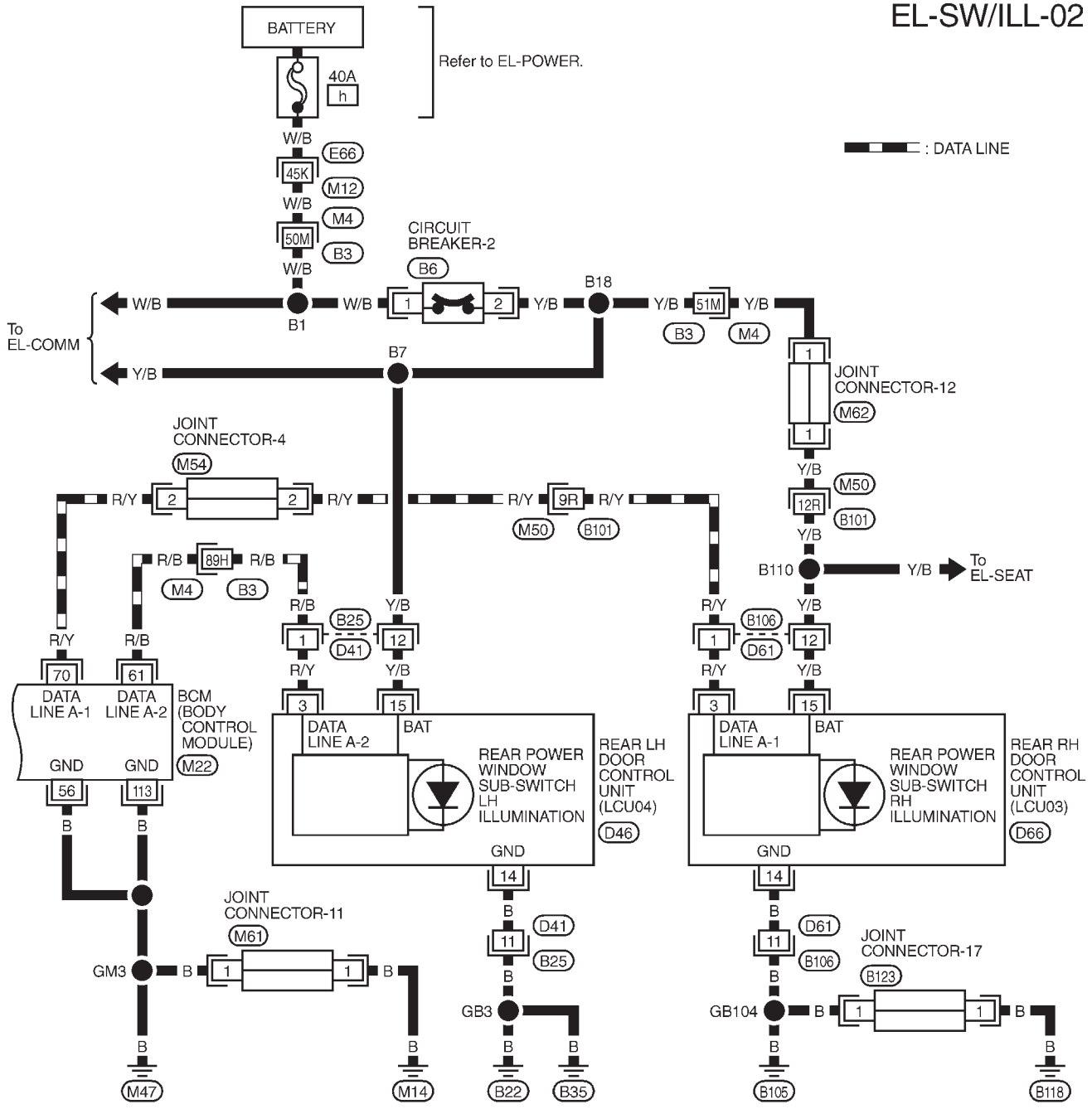


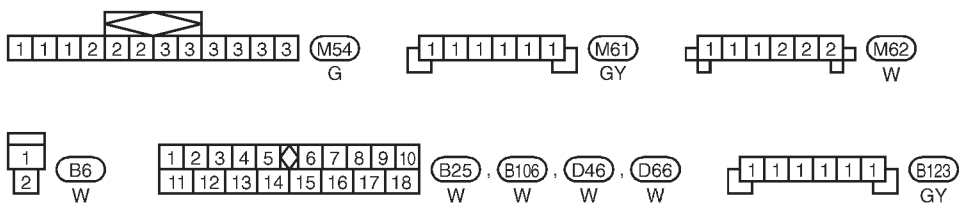
Refer to last page (Foldout page).
E70 , E81
M1
M22
E62

TEL228A

Wiring Diagram — SW/ILL — (Cont'd)

EL-SW/ILL-02





Refer to last page (Foldout page).

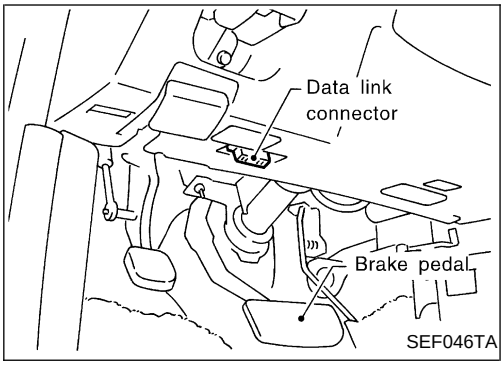
E66 , M12

M4 , B3

M50 , B101

M22

TEL229A

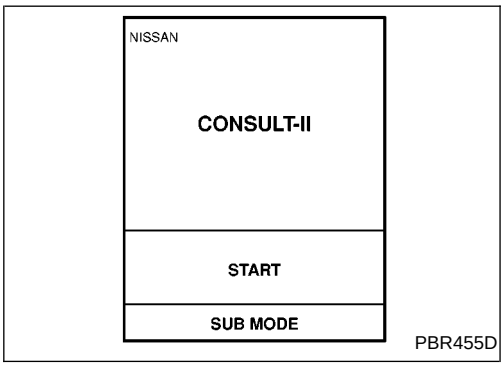


SEF046TA

CONSULT-II

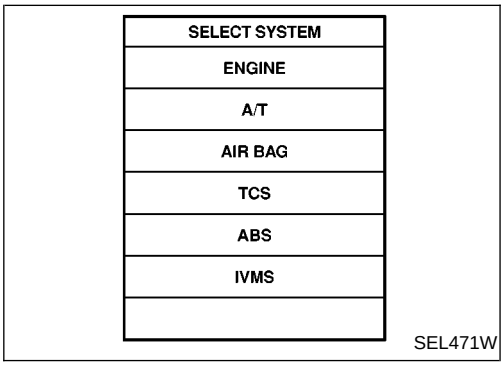
CONSULT-II INSPECTION PROCEDURE

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



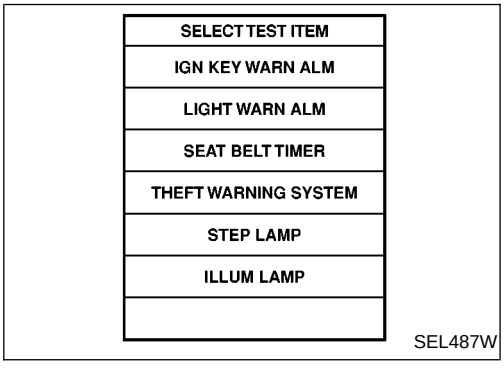
PBR455D

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



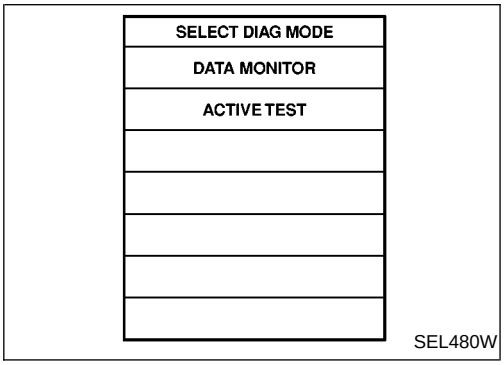
SEL471W

5. Touch “IVMS”.



SEL487W

6. Touch “ILLUM LAMP”.

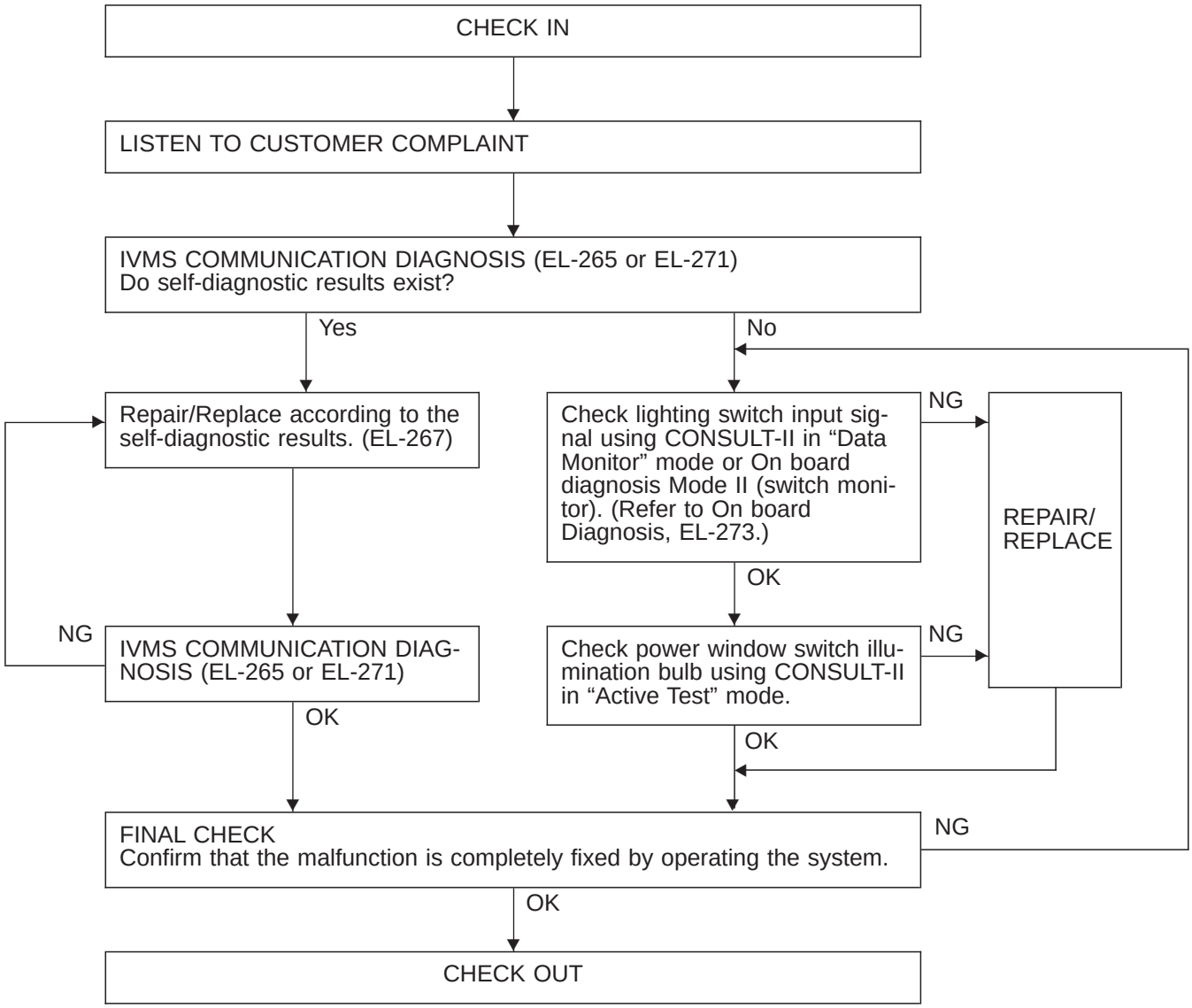


SEL480W

- DATA MONITOR and ACTIVE TEST are available for the rear power window switch illumination.

Trouble Diagnoses

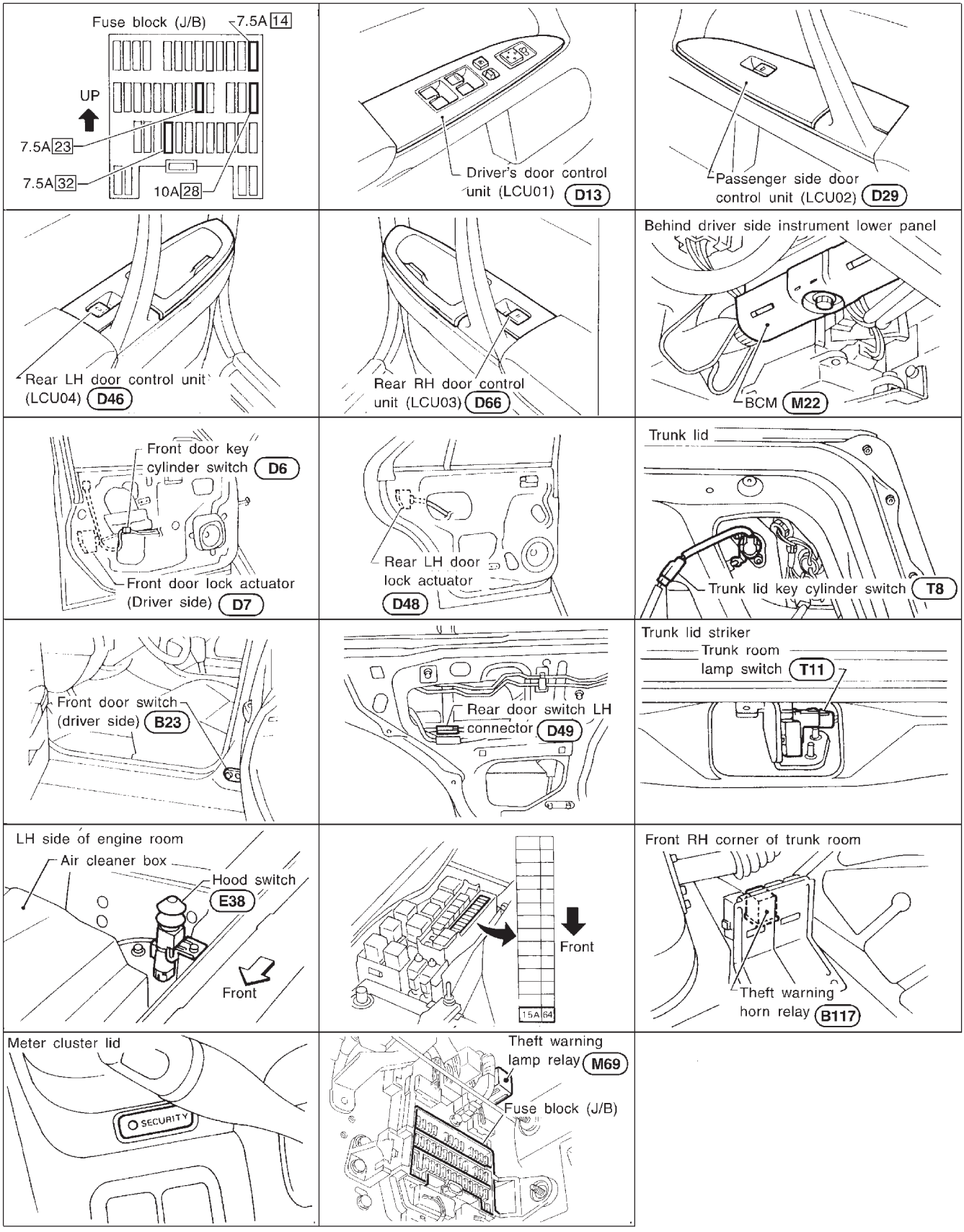
WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT-II will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Component Parts Harness Connector Location



SEL813V

System Description

DESCRIPTION

1. Setting the theft warning system

Disarmed phase

When the vehicle is being driven or when doors or trunk lid is open, the theft warning system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.

Pre-armed phase and armed phase

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

2. Canceling the set theft warning system

When the following (a) or (b) operation is performed, the armed phase is canceled.
(a) Unlock the doors with the key or multi-remote controller.
(b) Open the trunk lid with the key or multi-remote controller. When the trunk lid is closed after opening the trunk lid with the key or multi-remote controller, the system returns to the armed phase.

3. Activating the alarm operation of the theft warning system

Make sure the system is in the armed phase.
When the following operation (a), (b) or (c) is performed, the system sounds the horns and flashes the headlamps for about 2.5 minutes.
(a) Engine hood or any door is opened before unlocking door with key or multi-remote controller.
(b) Door is unlocked without using key or multi-remote controller.
(c) Trunk lid is opened without using key or multi-remote controller.

POWER SUPPLY

Power is supplied at all times
- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to security indicator lamp terminal ①.

Power is supplied at all times
- through 7.5A fuse [No. 14, located in the fuse block (J/B)]
- to BCM terminal (105).

With the ignition switch in the ACC or ON position, power is supplied
- through 7.5A fuse [No. 23, located in the fuse block (J/B)]
- to BCM terminal ⑥⓪.

With the ignition switch in the ON position, power is supplied
- through 7.5A fuse [No. 32, located in the fuse block (J/B)]
- to BCM terminal ⑥⑧.

BCM is connected to LCU01, LCU02, LCU03 and LCU04 as DATA LINE A-1 or A-2.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

The operation of the theft warning system is controlled by the doors, hood and trunk lid.
To activate the theft warning system, BCM must receive signals indicating the doors, hood and trunk lid are closed and the doors are locked.
When a door is open, BCM terminal ②⑧, ③②, ③③ or ③⑦ receives a ground signal from each door switch.
When a door is unlocked, each door LCU terminal ⑤ receives a ground signal from terminal ② of each door unlock sensor.
When the hood is open, BCM terminal ②⓪ receives a ground signal
- from terminal ① of the hood switch
- through body grounds (E22) and (E36).

When the trunk lid is open, BCM terminal ①⑨ receives a ground signal
- from terminal ① of the trunk room lamp switch
- through body grounds (T12), (B22) and (B35).

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

System Description (Cont'd)

THEFT WARNING SYSTEM ACTIVATION (With key or remote controller used to lock doors)

If the key is used to lock doors, LCU01 or LCU02 terminal ⑦ receives a ground signal
- from terminal ③ of the key cylinder switch LH or
- from terminal ① of the door key cylinder switch RH
- through body grounds M14 and M47

If this signal or lock signal from remote controller is received by BCM, the theft warning system will activate automatically.
Once the theft warning system has been activated, BCM terminal 65 supplies ground to terminal ② of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by
- opening a door
- opening the trunk lid
- opening the hood
- unlocking door without using the key or multi-remote controller.

Once the theft warning system is in armed phase, if BCM receives a ground signal at terminal 28, 32, 33, 37 (door switch), 19 (trunk room lamp switch) or 20 (hood switch), or LCU receives a ground signal at terminal ⑤ (door unlock sensor) the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently.
Power is supplied at all times
- through 7.5A fuse (No. 14 , located in fuse and fusible link box)
- to theft warning lamp relay terminal ① and
- to theft warning horn relay terminal ① .

When the theft warning system is triggered, ground is supplied intermittently
- from terminal 15 of BCM
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ② .

The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the trunk lid must be unlocked with the key or remote controller.
When the key is used to unlock a door, BCM terminal 31 or 27 receives a ground signal
- from terminal ① of the key cylinder switch LH or
- from terminal ③ of the key cylinder switch RH.

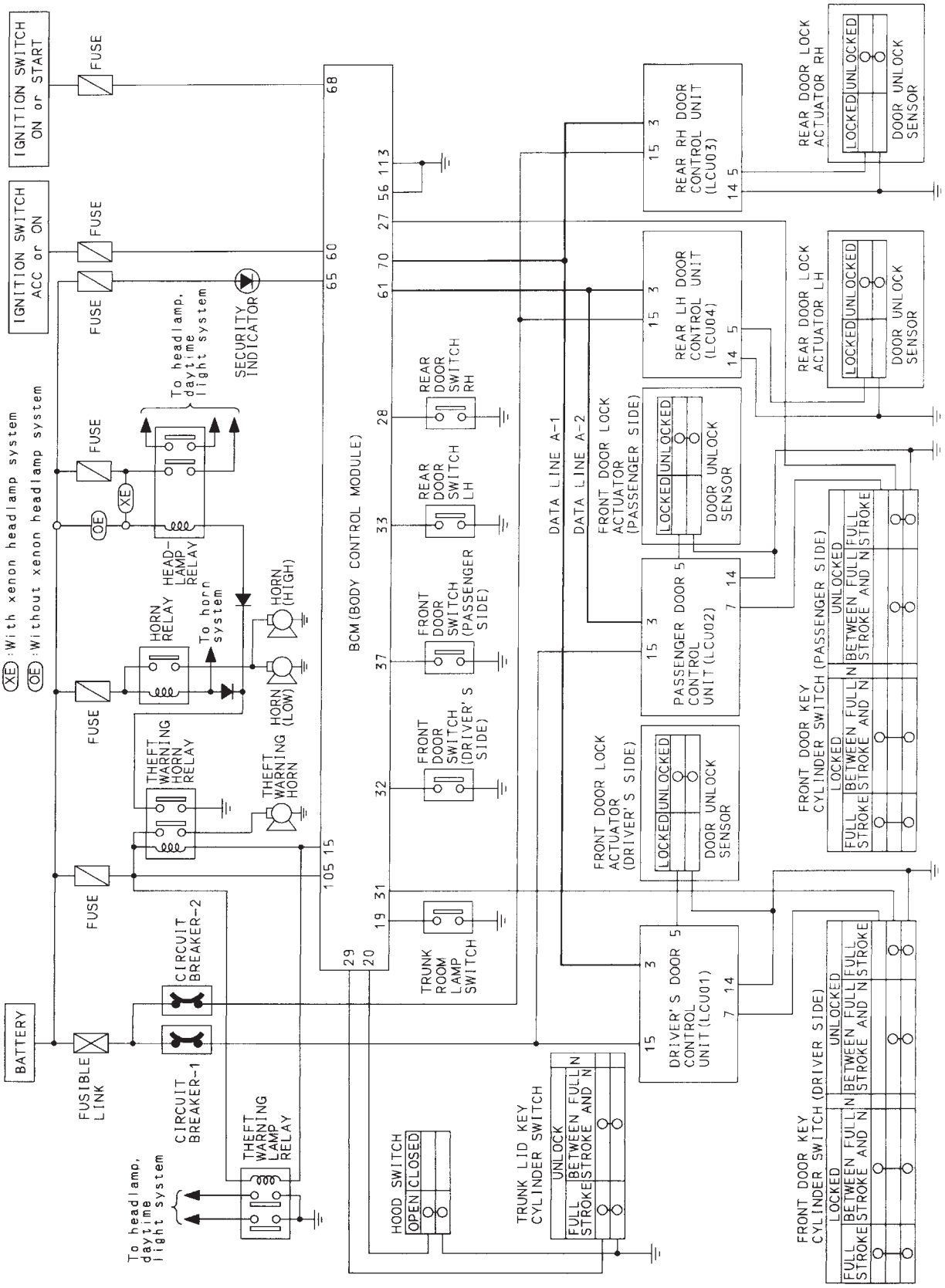
When the key is used to unlock the trunk lid, BCM terminal 29 receives a ground signal from terminal ① of the trunk lid key cylinder switch.
When the BCM receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.
When the multi-remote control system is triggered, ground is supplied intermittently.
- from BCM terminal 15
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ② .

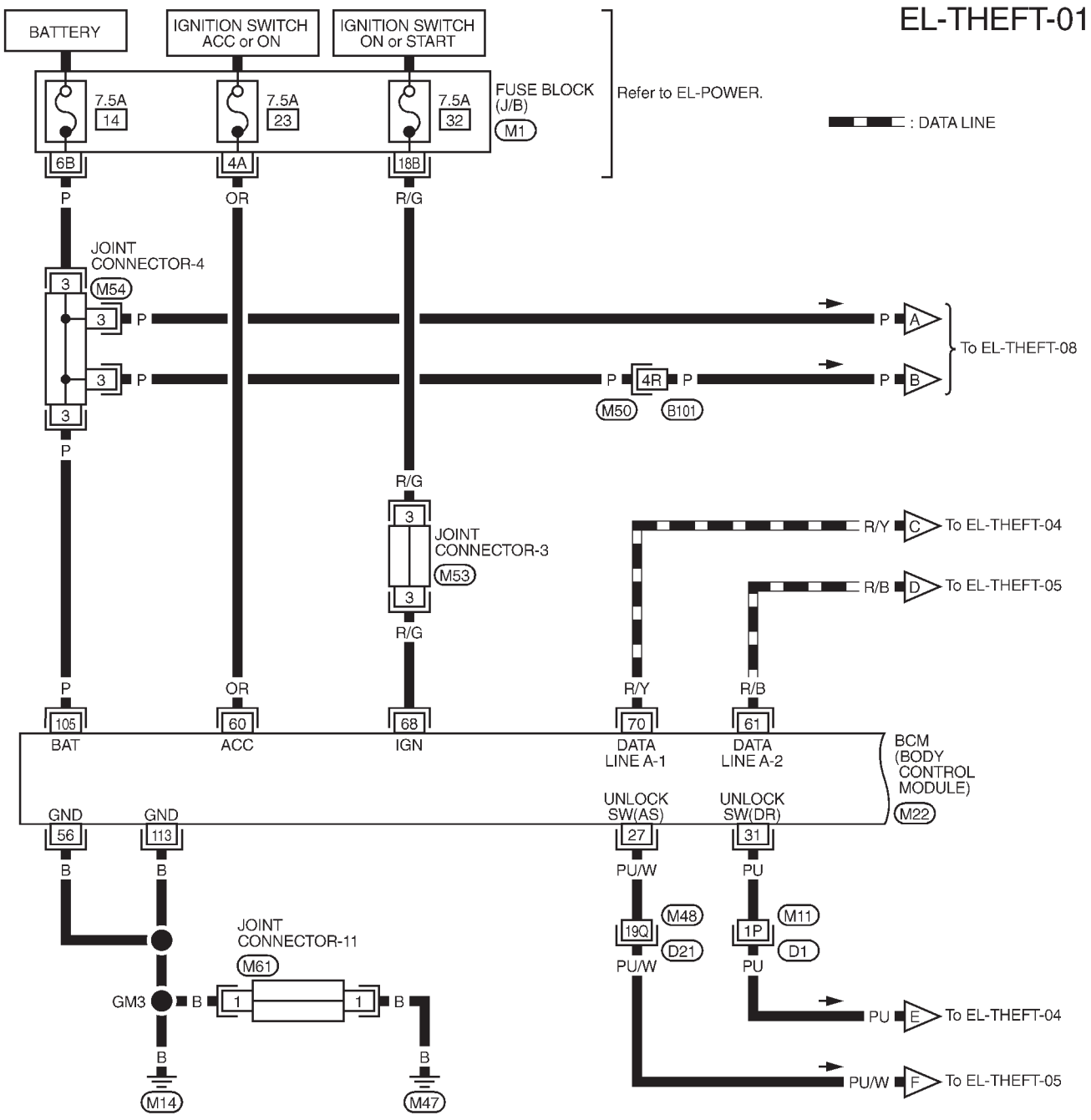
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

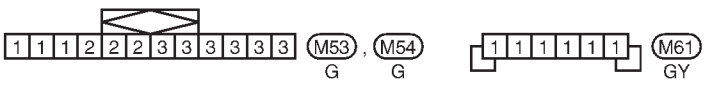
Schematic



TEL012B

Wiring Diagram — THEFT —



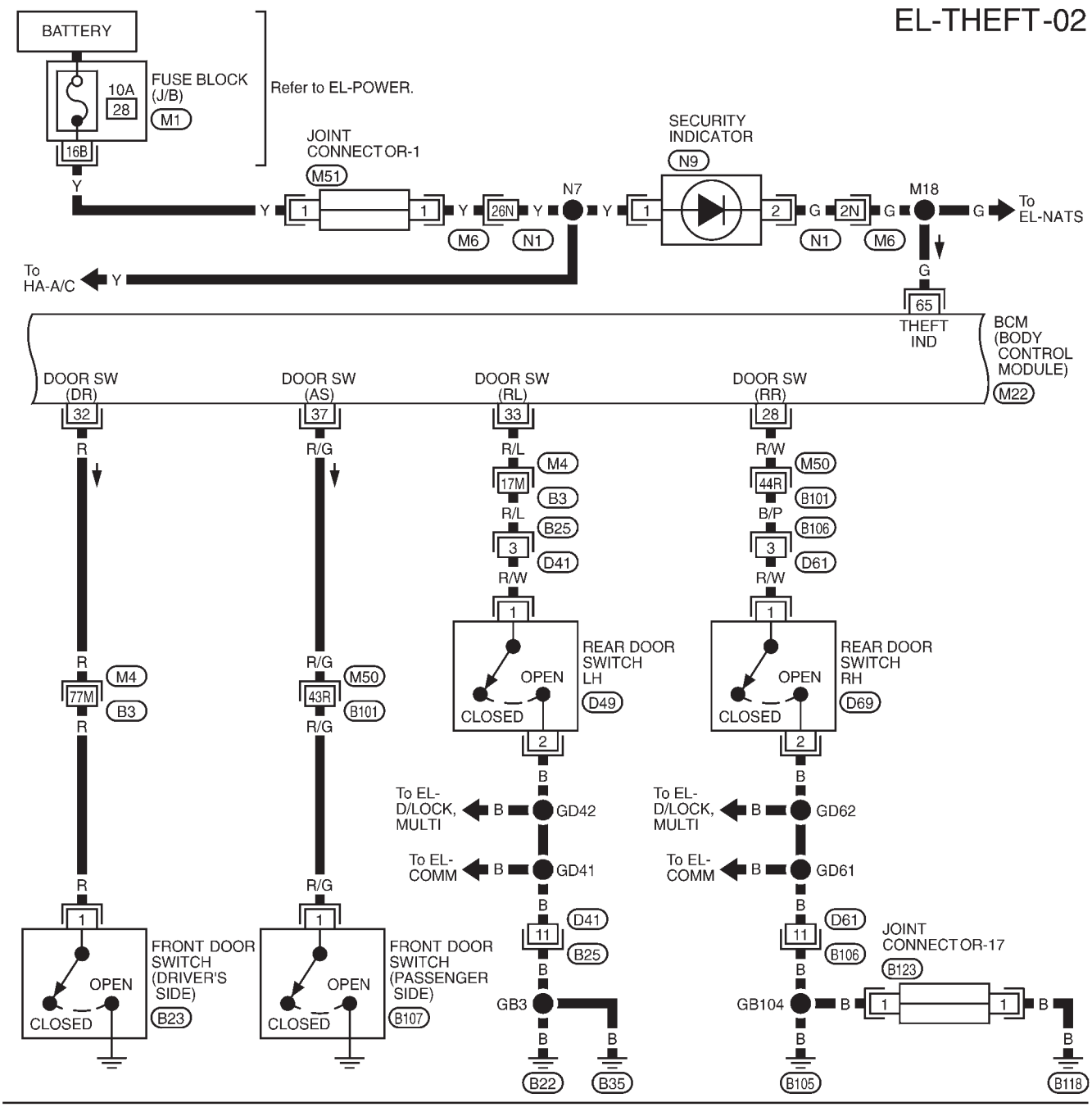


Refer to last page (Foldout page).

M11 , D1
M48 , D21
M50 , B101
M1
M22

TEL013B

Wiring Diagram — THEFT — (Cont'd)



M51 L
N9 W
B23 BR, B107 BR
B25 W, B106 W
B123 GY
D49 GY, D69 GY

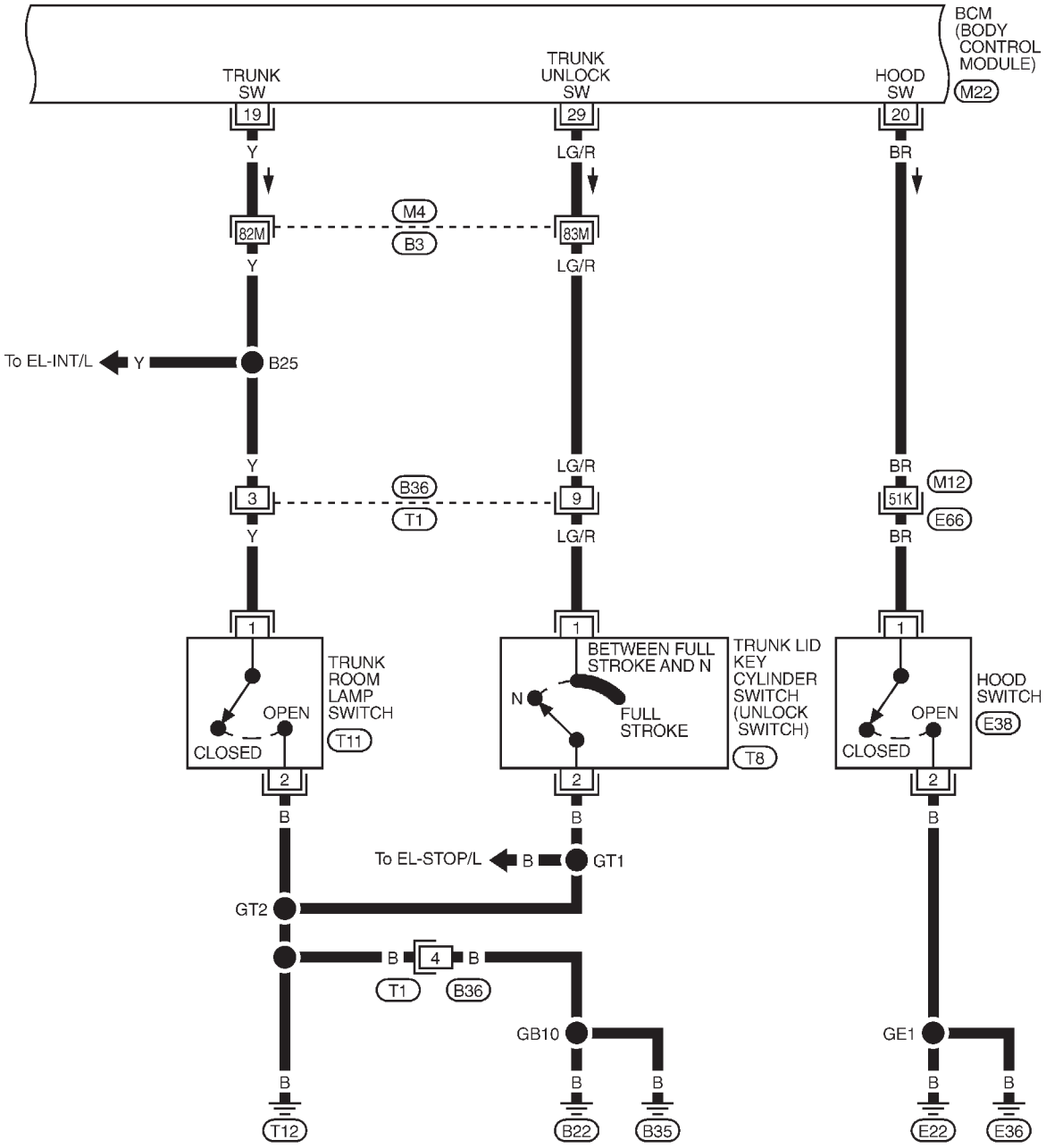
Refer to last page (Foldout page).

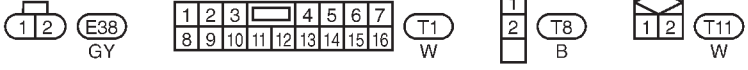
M4, B3
M6, N1
M50, B101
M1
M22

TEL014B

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-03





Refer to last page (Foldout page).

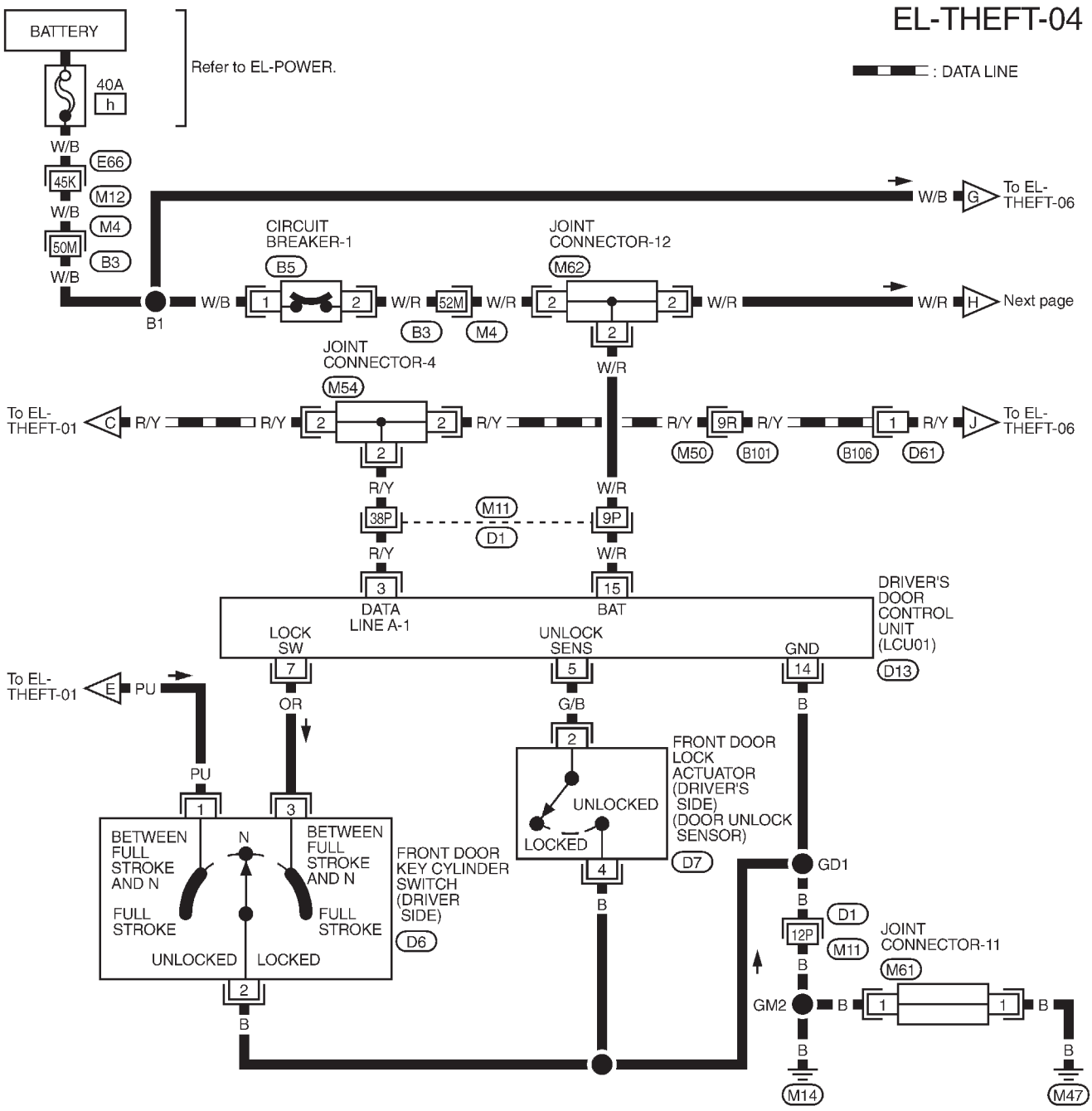
M4 , B3

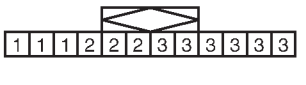
M12 , E66

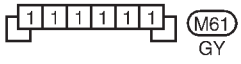
M22

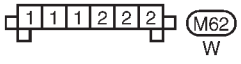
TEL015B

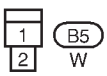
Wiring Diagram — THEFT — (Cont'd)

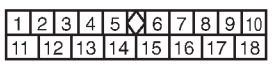


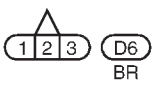












Refer to last page (Foldout page).

M4 , B3

M11 , D1

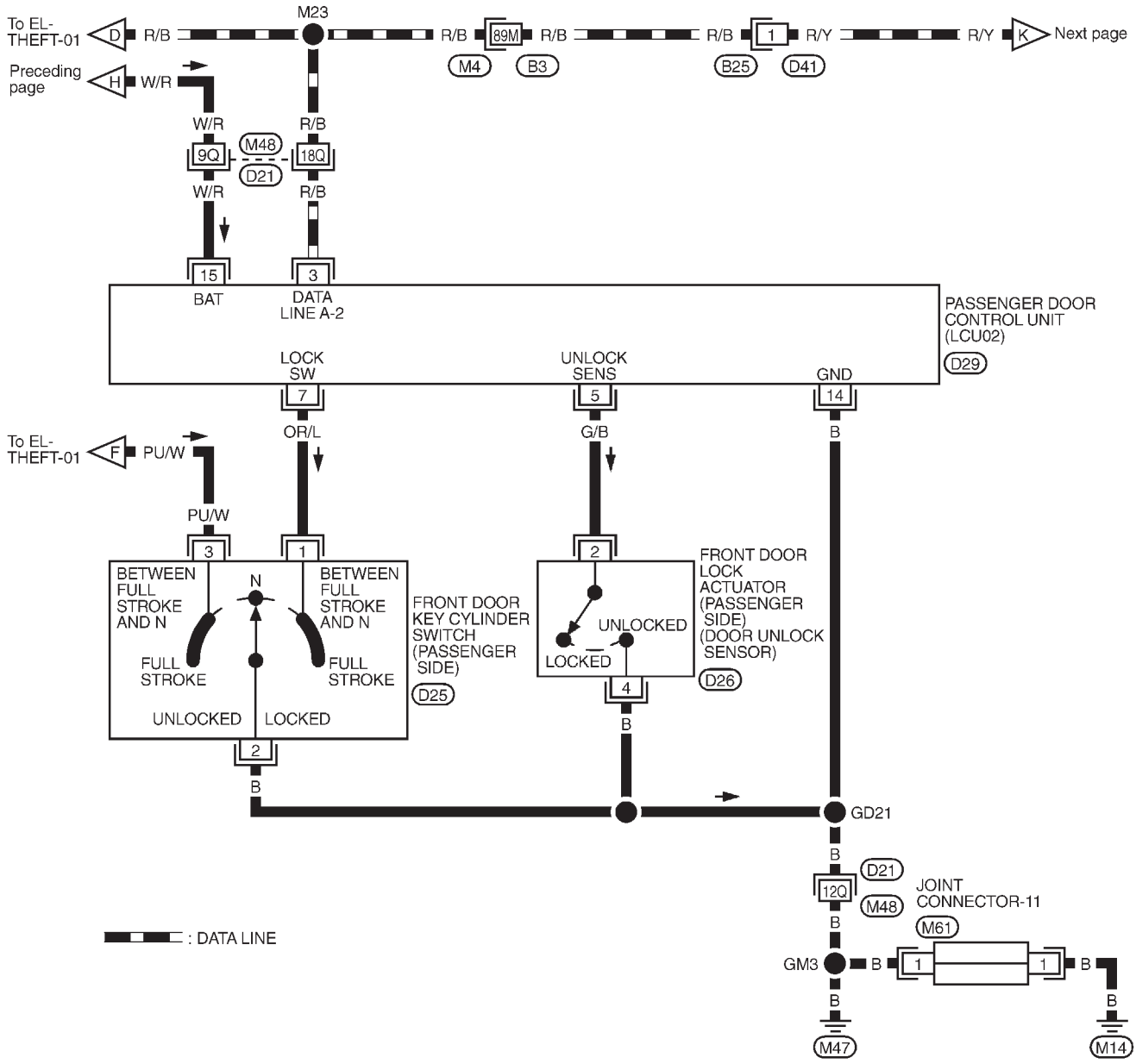
M12 , E66

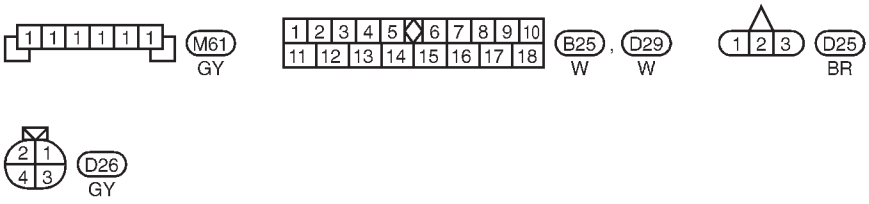
M50 , B101

TEL341B

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-05





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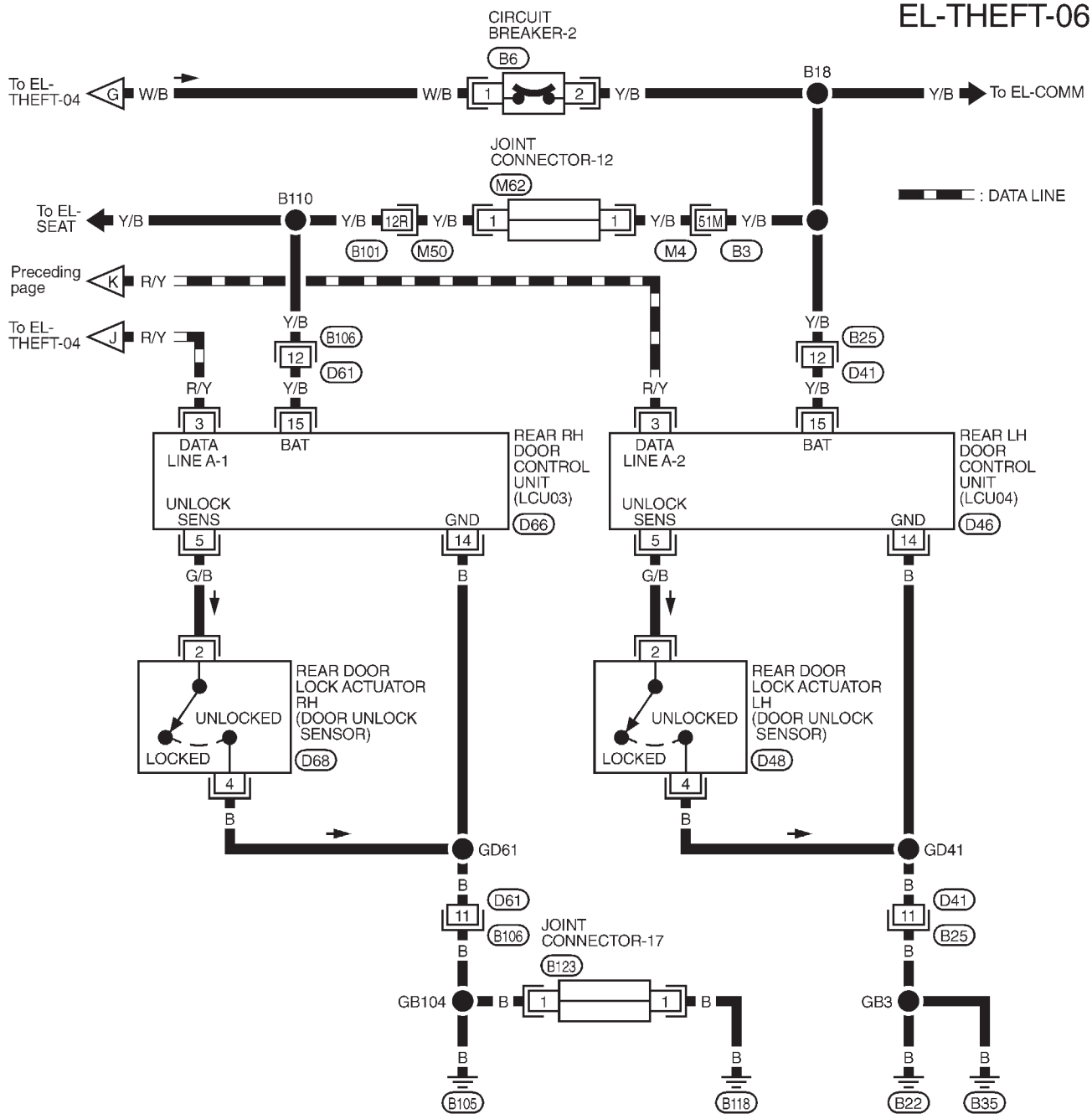
M4 , B3

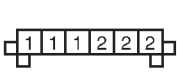
M48 , D21

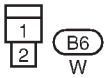
TEL342B

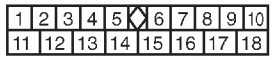
Wiring Diagram — THEFT — (Cont'd)

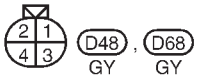
EL-THEFT-06











Refer to last page (Foldout page).

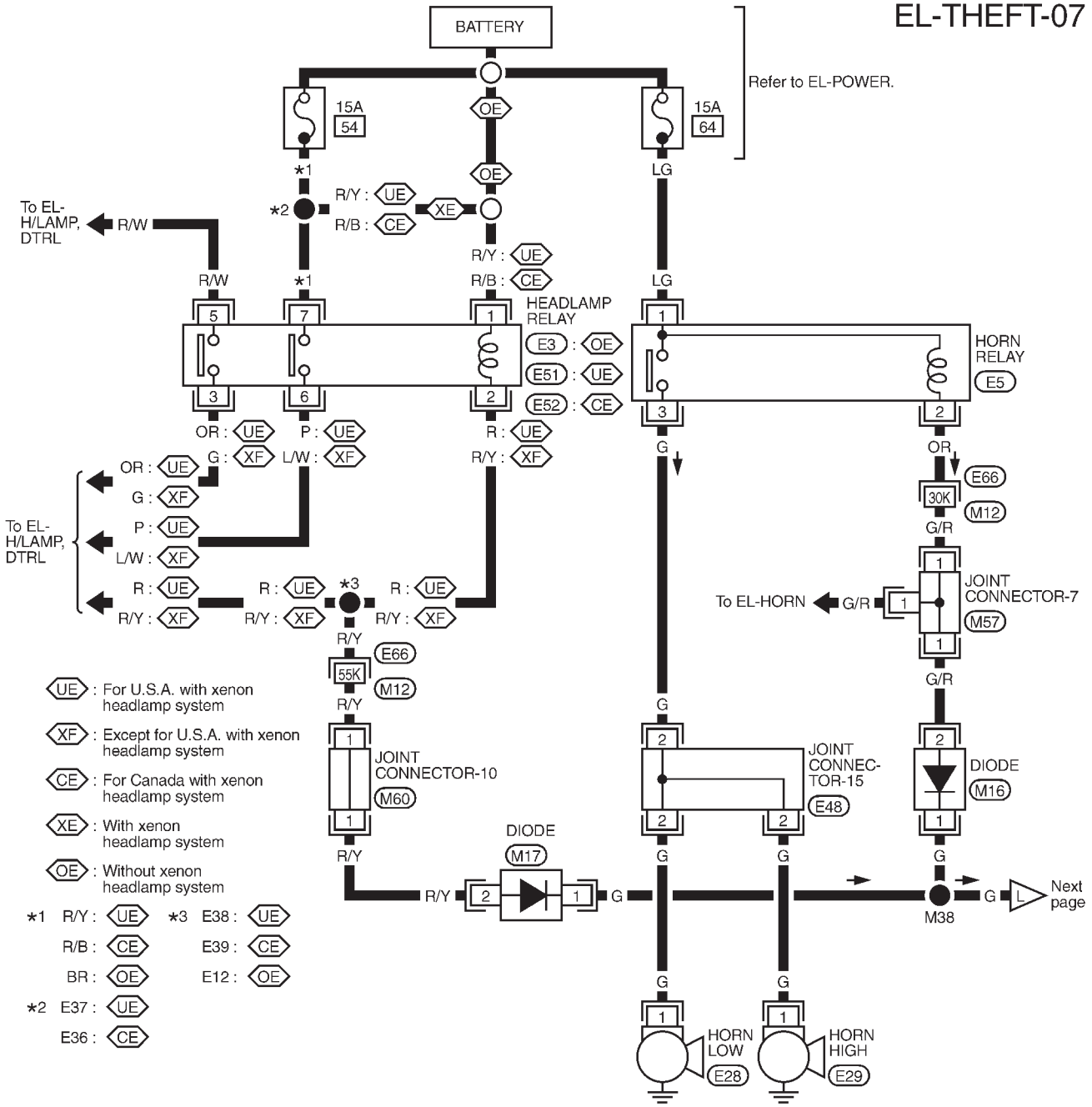
M4 , B3

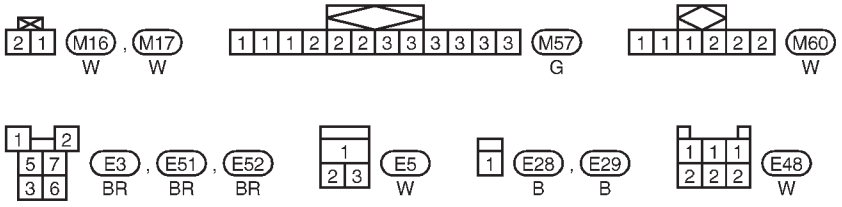
M50 , B101

TEL016B

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-07

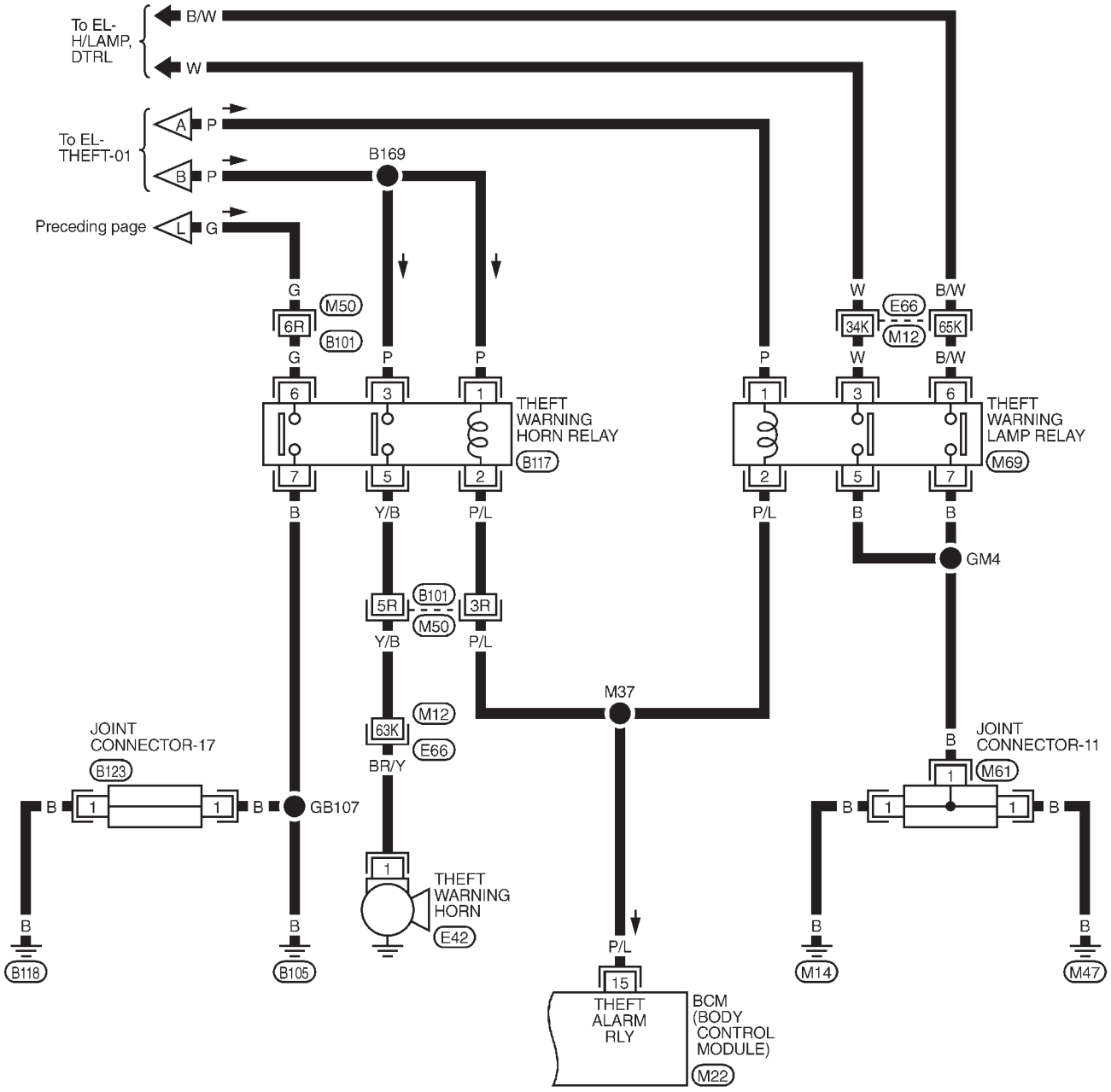




Refer to last page (Foldout page).
M12 , E66

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-08



1 1 1 1 1 1 M61 GY , B123 GY

1 2 / 5 7 / 3 6 M69 BR , B117 BR

1 E42 B

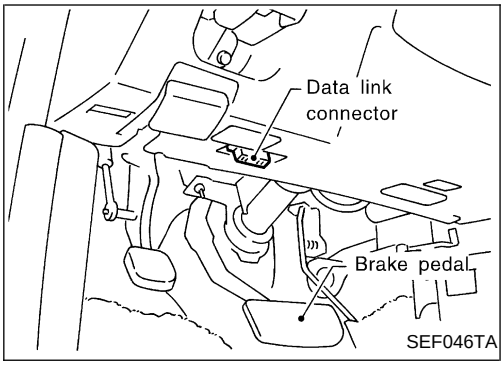
Refer to last page (Foldout page).

M12 , E66

M50 , B101

M22

TEL018B

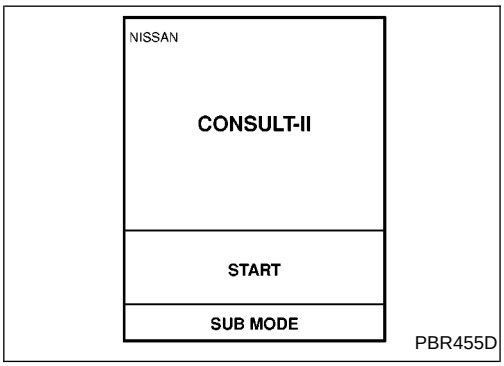


SEF046TA

CONSULT-II

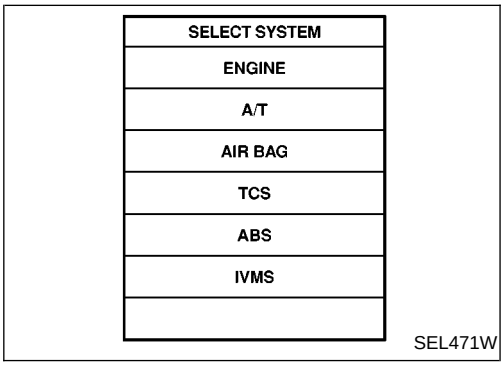
CONSULT-II INSPECTION PROCEDURE

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



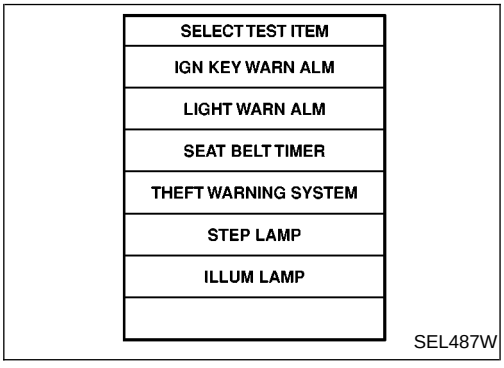
PBR455D

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



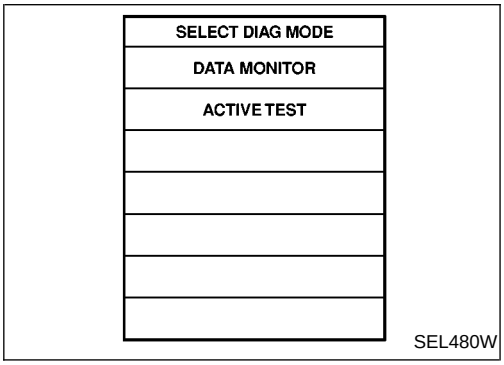
SEL471W

5. Touch “IVMS”.



SEL487W

6. Touch “THEFT WARNING SYSTEM”.

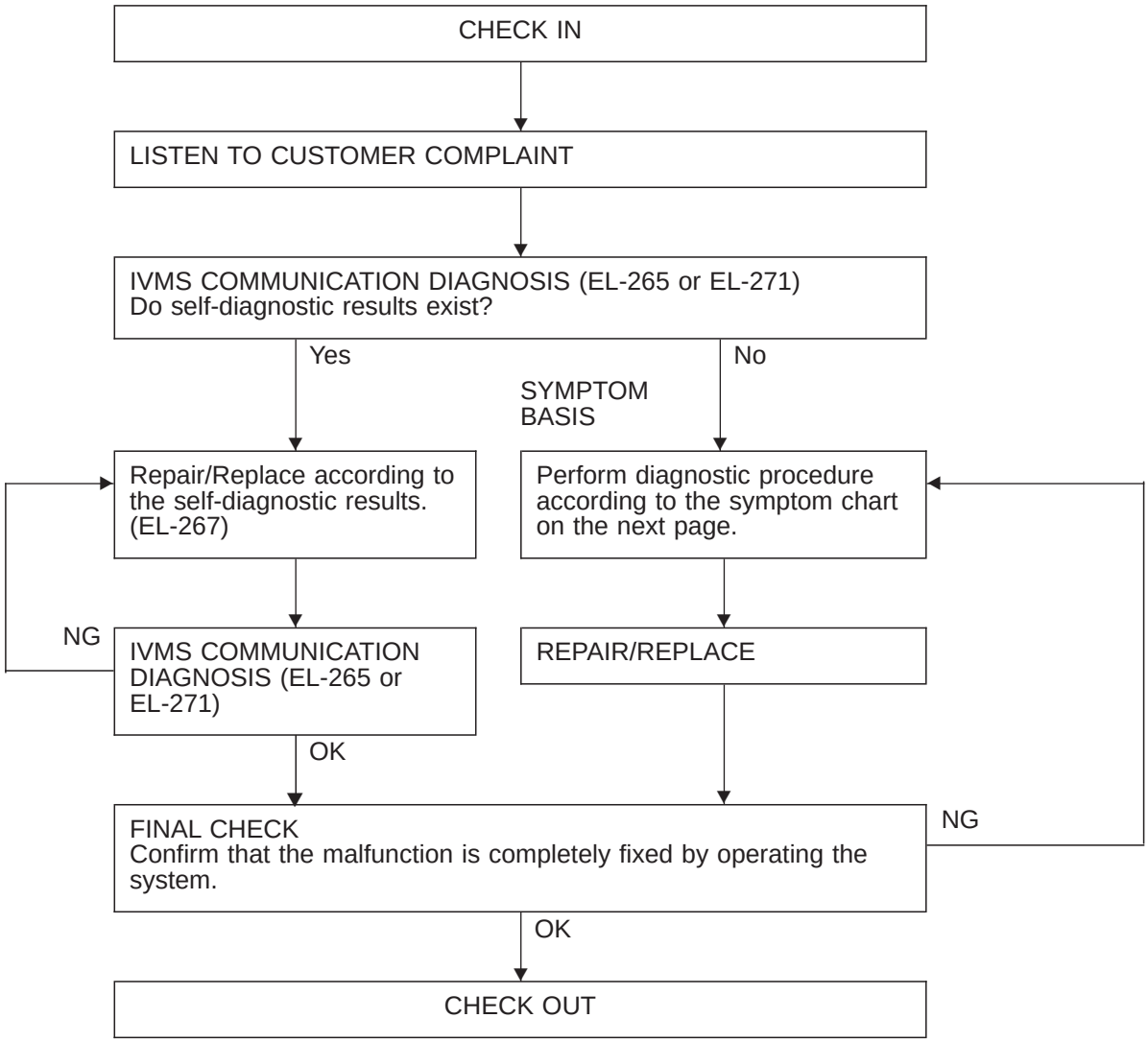


SEL480W

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

Trouble Diagnoses

WORK FLOW



NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

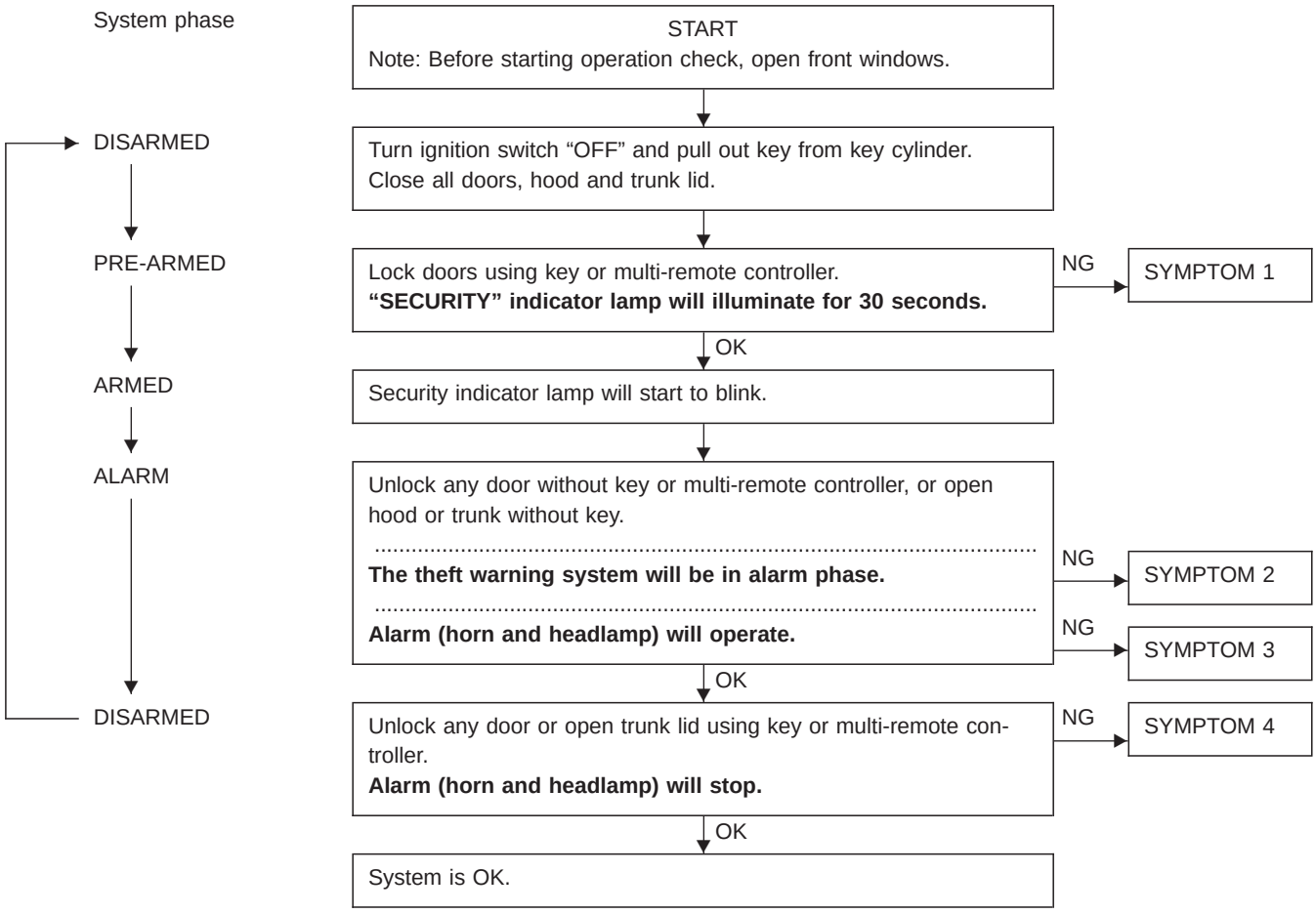
PRECAUTIONS FOR INFINITI COMMUNICATOR (IVCS)

The purpose of INFINITI Communicator is to increase security for the vehicle owner by providing a convenient way to contact the most appropriate emergency assistance provider during an emergency.
Improper operation of the system may result in a police response.
The theft warning system also activates INFINITI Communicator. For details, refer to INFINITI Communicator (IVCS), EL-480.

PRELIMINARY CHECK

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

NOTE: Before performing PRELIMINARY CHECK, disconnect IVCS unit connectors not to operate INFINITI communicator.



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

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-403.

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

SYMPTOM CHART

PROCEDURE			—		Diagnostic procedure							—	
REFERENCE PAGE			EL-403	EL-282	EL-405	EL-408	EL-409	EL-410	EL-412	EL-413	EL-414	EL-340	EL-266
SYMPTOM			Preliminary check	Power supply circuit check for BCM	Diagnostic Procedure 1 (Door, hood and trunk room lamp switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Trunk lid key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn alarm check)	Diagnostic Procedure 7 (Headlamp alarm check)	Check "MULTI-REMOTE CONTROL" system.	WAKE-UP DIAGNOSES
1	Theft warning system cannot be set by	All items	X	X	X		X						
		Door outside key	X					X					X (LCU01, LCU02)
		Multi-remote control	X									X	
	Theft warning indicator does not turn "ON".		X	X		X							
2	*1 Theft warning system does not alarm when ...	Any door is opened.	X		X								
		Any door is unlocked without using key or multi-remote controller	X				X						X (LCU01, 02, 03, 04)
3	Theft warning alarm does not activate.	Horn alarm	X							X			
		Headlamp alarm	X								X		
4	Theft warning system cannot be canceled by	Door outside key	X					X					X (LCU01, LCU02)
		Trunk lid key	X						X				
		Multi-remote control	X									X	

X : Applicable

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(1)

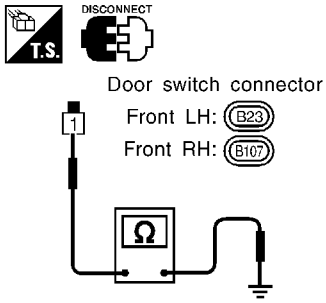
(Door switch check)

A

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

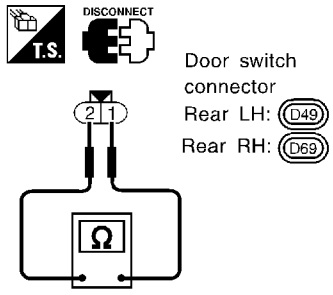
SEL527W

B



SEL914U

B



SEL021V

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT-II

See "DOOR SW" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OK → Door switch is OK.
Next, go to hood switch check.

OR

ON BOARD

Check all door switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-394.

NG ↓

B

CHECK DOOR SWITCH.

1. Disconnect door switch connector.
2. Check continuity between terminals or switch body ground.

	Terminals	Condition	Continuity
Front door switch	① - Ground	Pressed	No
		Released	Yes
Rear door switch	① - ②	Pressed	No
		Released	Yes

NG → Replace door switch.

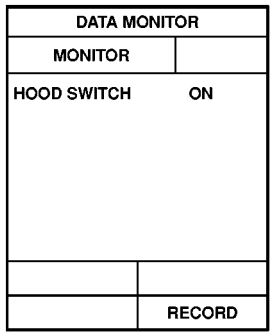
OK ↓

Check the following.
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

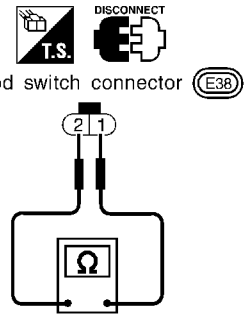
DIAGNOSTIC PROCEDURE 1-(2)
(Hood switch check)

A



SEL535W

B



SEL929U

CHECK HOOD SWITCH INPUT SIGNAL.

A CONSULT-II

See "HOOD SWITCH" in DATA MONITOR mode.
When hood is open:
HOOD SWITCH ON
When hood is closed:
HOOD SWITCH OFF

OR

ON BOARD

Check hood switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-395.

OK → Hood switch is OK. Next, go to trunk room lamp switch check.

NG ↓

Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK ↓

B

CHECK HOOD SWITCH.

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

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

NG → Replace hood switch.

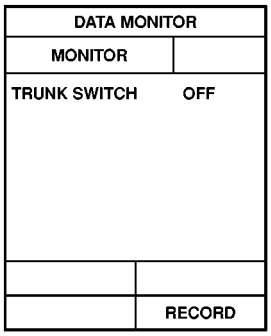
OK ↓

Check the following.
- Hood switch ground circuit
- Harness for open or short between BCM and hood switch

Trouble Diagnoses (Cont'd)

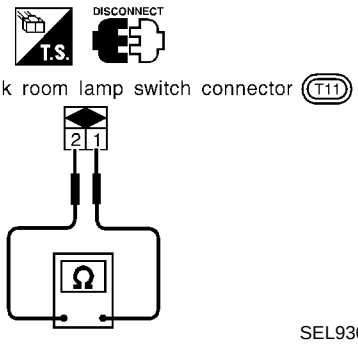
DIAGNOSTIC PROCEDURE 1-(3)
(Trunk room lamp switch check)

A



SEL536W

B



SEL930U

CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL.

A CONSULT-II

See "TRUNK SWITCH" in DATA MONITOR mode.
When trunk lid is open:
TRUNK SWITCH ON
When trunk lid is closed:
TRUNK SWITCH OFF

OR

ON BOARD

Check trunk room lamp switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-395.

OK → Trunk room lamp switch is OK.

NG ↓

B

CHECK TRUNK ROOM LAMP SWITCH.

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

Terminals	Condition	Continuity
① - ②	Closed	No
	Open	Yes

NG → Replace trunk room lamp switch.

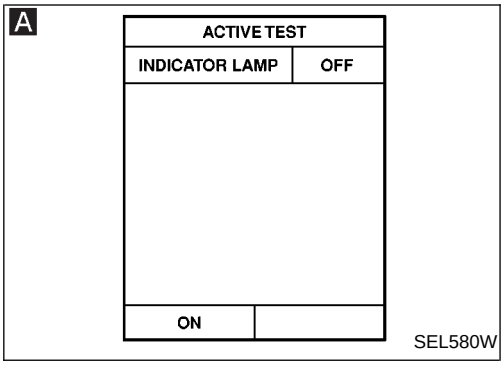
OK ↓

Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short between BCM and trunk room lamp switch

Trouble Diagnoses (Cont'd)

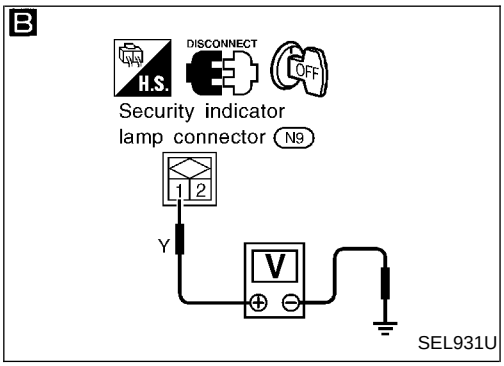
DIAGNOSTIC PROCEDURE 2
(Security indicator lamp check)

A



SEL580W

B



SEL931U

A

INDICATOR LAMP ACTIVE TEST

CONSULT-II

See "INDICATOR LAMP" in ACTIVE TEST mode.

Perform operation shown on display.
Indicator lamp should illuminate.

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

OK → Security indicator lamp is OK.

NG ↓

CHECK INDICATOR LAMP.

NG → Replace indicator lamp.

OK ↓

B

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.

   Refer to wiring diagram in EL-394.

NG → Check the following.
- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between security indicator lamp and fuse

OK ↓

Check harness for open or short between security indicator lamp and BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

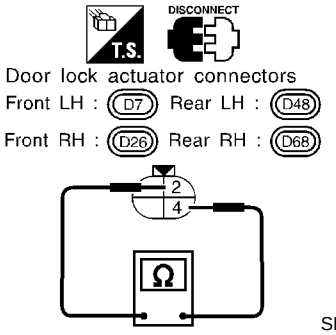
(Door unlock sensor check)

A

DATA MONITOR	
MONITOR	
LOCK SIG-DR	UNLK
LOCK SIG-AS	UNLK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK
	RECORD

SEL525W

B



SEL025V

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

A CONSULT-II

See "LOCK SIG" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON BOARD

Check door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnoses, EL-273.)

Refer to wiring diagram in EL-396, 397 or 398.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminals ② and ④.

Condition	Continuity
Locked	No
Unlocked	Yes

NG → Replace door lock actuator.

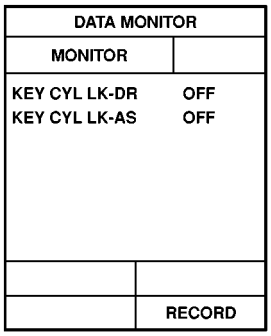
OK ↓

Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

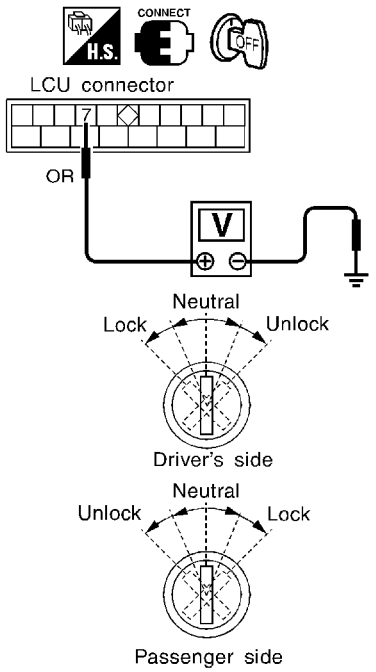
DIAGNOSTIC PROCEDURE 4-(1)
(Door key cylinder lock switch check)

A



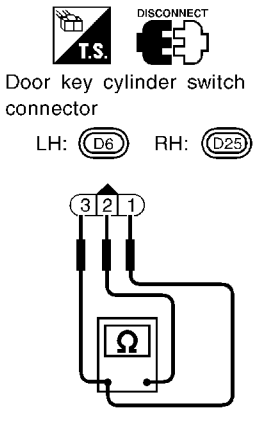
SEL537W

B



SEL951V

C



① : Door lock switch terminal (RH)

② : Ground terminal

③ : Door lock switch terminal (LH)

SEL909U

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK SIGNAL).

A CONSULT-II

See "KEY CYL LK" in DATA MONITOR mode.

"KEY CYL LK" should be "ON" when key inserted in door key cylinder was turned to lock.

OR

B TESTER

Check voltage between LCU01/02 terminal ⑦ and ground.

Key position	Voltage V
Neutral/Unlock	Approx. 5
Lock	0

Refer to wiring diagram in EL-396 or 397.

OK → Door key cylinder switch (lock) is OK.

NG ↓

C

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 RH: ① - ②	Neutral/Unlock	No
	Lock	Yes

NG → Replace door key cylinder switch.

OK ↓

Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between LCU and door key cylinder switch

Trouble Diagnoses (Cont'd)

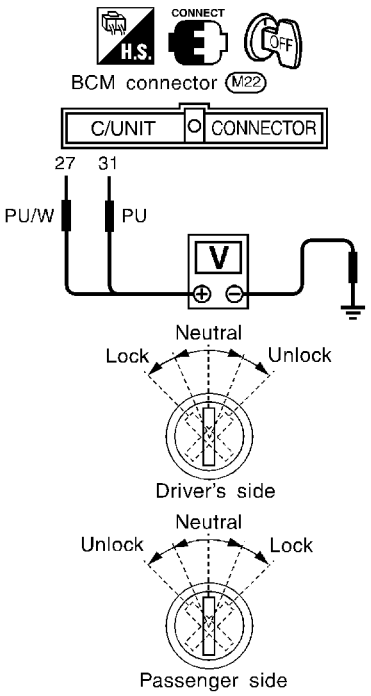
DIAGNOSTIC PROCEDURE 4-(2)
(Door key cylinder unlock switch check)

A

DATA MONITOR	
MONITOR	
KEY CYL UN-DR	OFF
KEY CYL UN-AS	OFF
	RECORD

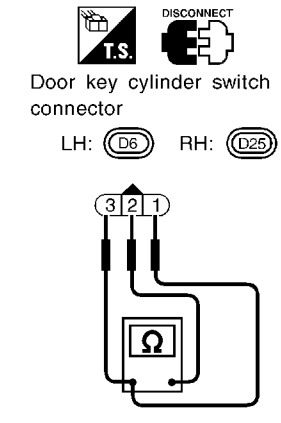
SEL538W

B



SEL952V

C



① : Door unlock switch terminal (LH)

② : Ground terminal

③ : Door unlock switch terminal (RH)

SEL913U

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

A CONSULT-II

See "KEY CYL UN" in DATA MONITOR mode.

"KEY CYL UN" should be "ON" when key inserted in door key cylinder was turned to unlock.

OR

B TESTER

Check voltage between BCM terminals ㉗ or ㉛ and ground.

	Terminals ⊕	Terminals ⊖	Key position	Voltage V
LH	㉛	Ground	Neutral/Lock	Approx. 12
			Unlock	0
RH	㉗	Ground	Neutral/Lock	Approx. 12
			Unlock	0

Refer to wiring diagram in EL-393.

OK → Door key cylinder switch (unlock) is OK.

NG ↓

C

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: ① - ②	Neutral/Lock	No
RH: ③ - ②	Unlock	Yes

NG → Replace door key cylinder switch.

OK ↓

Check the following.

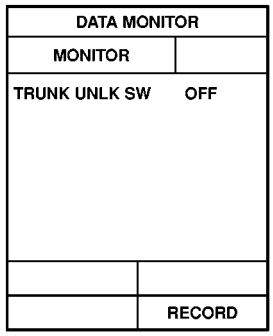
- Door key cylinder switch ground circuit
- Harness for open or short between BCM and door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

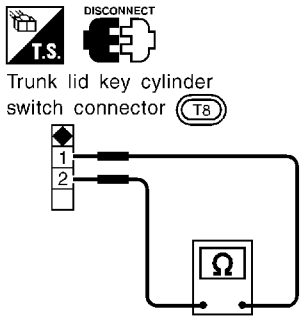
(Trunk lid key unlock signal check)

A



SEL539W

B



SEL932U

CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

A CONSULT-II

See "TRUNK UNLK SW" in DATA MONITOR mode.
When key in key cylinder is at "NEUTRAL" position,
TRUNK UNLK SW OFF
When key is "UNLOCK" position,
TRUNK UNLK SW ON

OR

ON BOARD

Check trunk lid key cylinder switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-273.)

Refer to wiring diagram in EL-395.

OK → Trunk lid key unlock switch is OK.

NG ↓

B

CHECK TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH).

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

Terminals	Condition	Continuity
① - ②	Neutral	No
	Unlocked	Yes

NG → Replace trunk lid key cylinder switch.

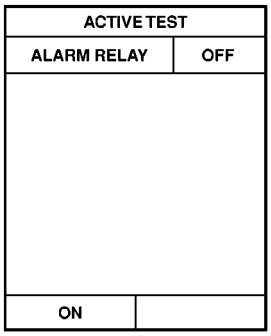
OK ↓

Check the following.
- Trunk lid key cylinder switch ground circuit
- Harness for open or short between trunk lid key cylinder switch and BCM

Trouble Diagnoses (Cont'd)

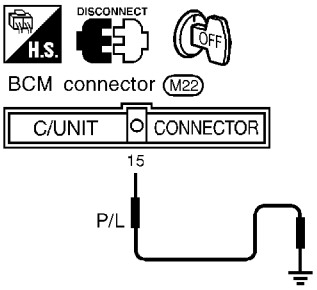
DIAGNOSTIC PROCEDURE 6
(Theft warning horn alarm check)

A



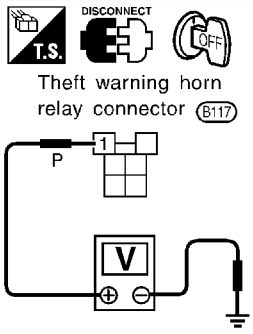
SEL540W

B



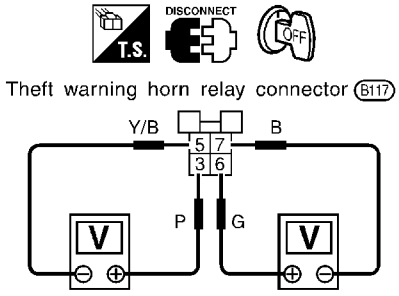
SEL933U

C



SEL755UA

D



SEL756UA

CHECK THEFT WARNING HORN ALARM OPERATION.

A CONSULT-II

See "ALARM RELAY" in ACTIVE TEST mode.
Perform operation shown on display.
Theft warning horn alarm should operate.

Yes → Horn alarm is OK.

OR

B

1. Disconnect BCM connector.
2. Apply ground to BCM terminal ⑮.
   Does horn alarm activate?

   Refer to wiring diagram in EL-400.

No ↓

Check theft warning horn relay. → NG → Replace.

OK ↓

C

CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAY.

1. Disconnect theft warning horn relay connector.
2. Check voltage between terminal ① and ground.
   Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 14, located in the fuse block (J/B)]
- Harness for open or short between theft warning horn relay and fuse

OK ↓

D

CHECK THEFT WARNING HORN RELAY CIRCUIT.

1. Disconnect theft warning horn 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.

NG → Check harness for open or short.

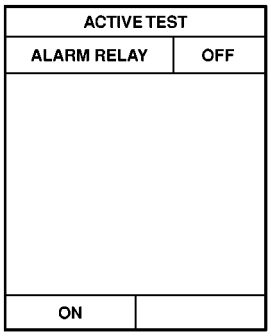
OK ↓

Check harness for open or short between theft warning horn relay and BCM.

Trouble Diagnoses (Cont'd)

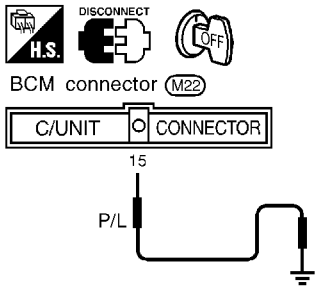
DIAGNOSTIC PROCEDURE 7
(Theft warning headlamp alarm check)

A



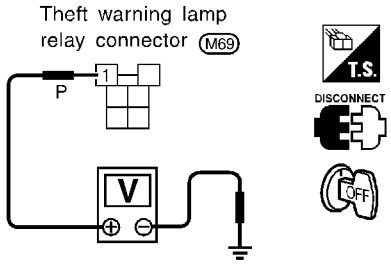
SEL540W

B



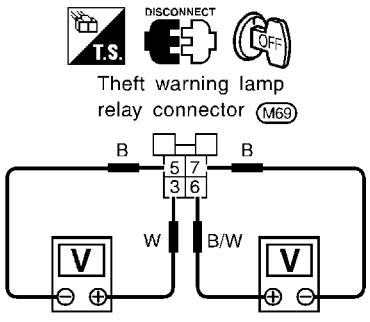
SEL933U

C



SEL757UC

D



SEL758UC

CHECK THEFT WARNING HEADLAMP ALARM OPERATION.

A CONSULT-II

See "ALARM RELAY" in ACTIVE TEST mode.
Perform operation shown on display.
Theft warning headlamp alarm should operate.

Yes → Headlamp alarm is OK.

OR

B

1. Disconnect BCM connector.
2. Apply ground to BCM terminal ⑮.
   Does headlamp alarm activate?

   Refer to wiring diagram in EL-400.

No ↓

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

No → Check headlamp system. Refer to "HEADLAMP".

Yes ↓

Check theft warning lamp relay.

NG → Replace.

OK ↓

C

CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY.

1. Disconnect theft warning lamp relay connector.
2. Check voltage between terminal ① and ground.
   Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 14, located in the fuse block (J/B)]
- Harness for open or short between theft warning lamp relay and fuse

OK ↓

D

CHECK THEFT WARNING LAMP RELAY CIRCUIT.

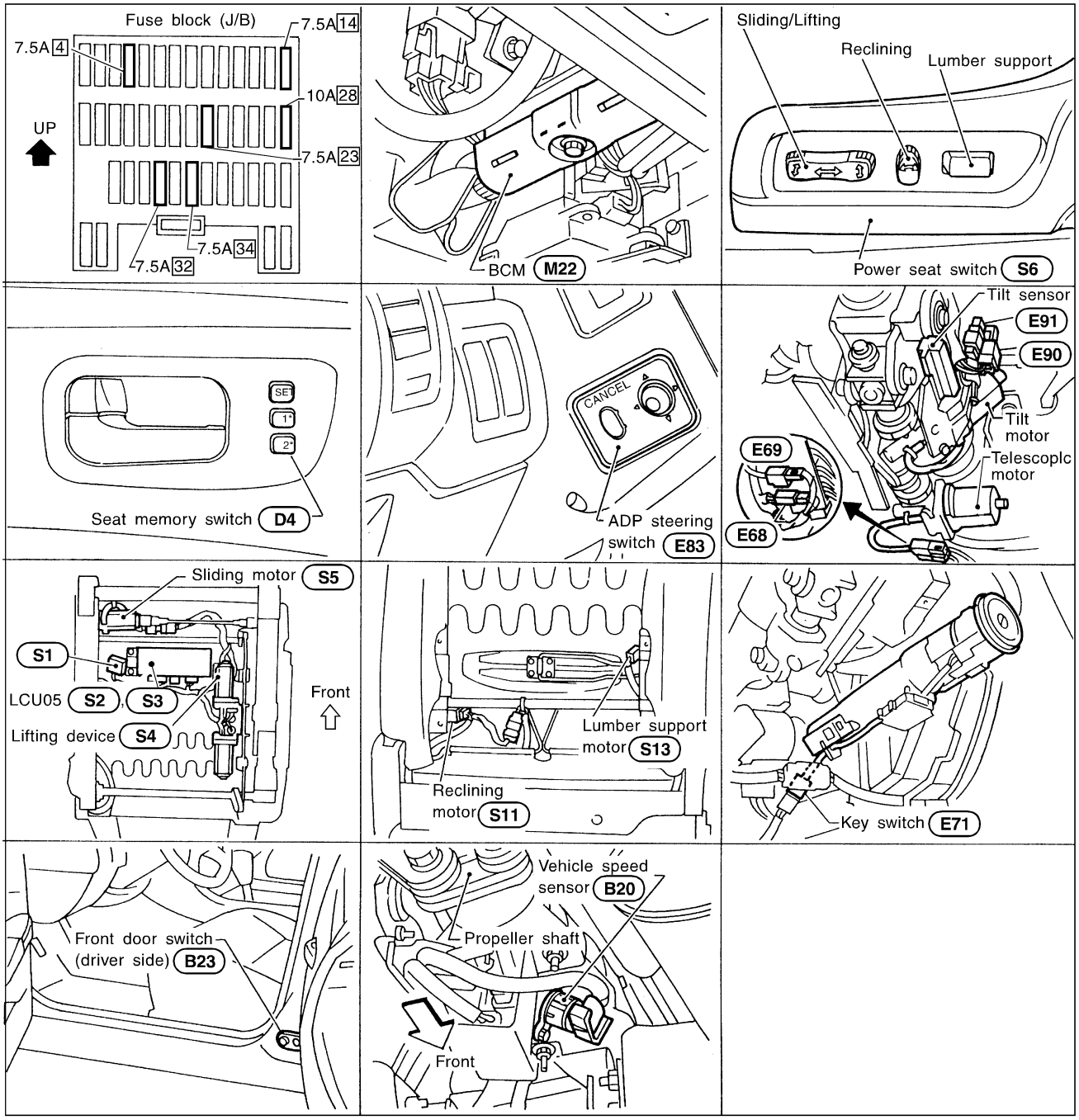
1. Disconnect theft warning lamp relay connector.
2. Turn lighting switch to 2nd position.
3. Check voltage between terminals ③ and ⑤.
   Battery voltage should exist.
4. Check voltage between terminals ⑥ and ⑦.
   Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

Check harness for open or short between theft warning lamp relay and BCM.

Component Parts and Harness Connector Location



SEL022V

System Description

OPERATIVE CONDITION

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

Manual operation

The driver's seat can be adjusted for sliding, reclining, front cushion height, rear cushion height, and lumbar support with the LH power seat switches. The steering column can be adjusted for tilt and reach (telescopic) with the steering switch. The manual operation can be adjusted with the IGN key in any position.

Automatic operation

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

CONDITIONS INHIBITING AUTOMATIC OPERATION

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

(a) When vehicle speed is more than 7 km/h (4 MPH).
(b) When driver's side power seat switch, tilt or telescopic steering switch is turned on.
(c) When any two of the switches (set switch and memory switches 1 and 2) are turned ON.
(d) When cancel switch is turned on.
(e) When selector lever is in any position other than "P".
(f) When ignition switch is turned to "START" position.
(Operation resumes when ignition switch is returned to "ON".)
(g) When any of the following malfunctions are detected:

- Steering tilt lock detection
(Steering tilt lock is sensed when tilt sensor signal value does not change for a certain period of time.)
- Steering tilt/telescopic sensor failure detection
(Sensor failure is sensed when sensor output is less than 0.1 volts or greater than 4.9 volts.)
- Detention switch abnormality detection
[Detention switch failure is sensed when detention switch remains off for at least 2 seconds at a vehicle speed of greater than 7 km/h (4 MPH).]

FAIL-SAFE SYSTEM

Output failure

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

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

Absolving

- When moving selector lever back to "P" position after having moved it to any position except "P", fail-safe operation will be canceled.
- If self-diagnosis is performed using CONSULT-II, fail-safe operation will be canceled.

System Description (Cont'd)

INITIALIZATION

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

PROCEDURE A

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

PROCEDURE B

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

MEMORY AUTOMATIC SET

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

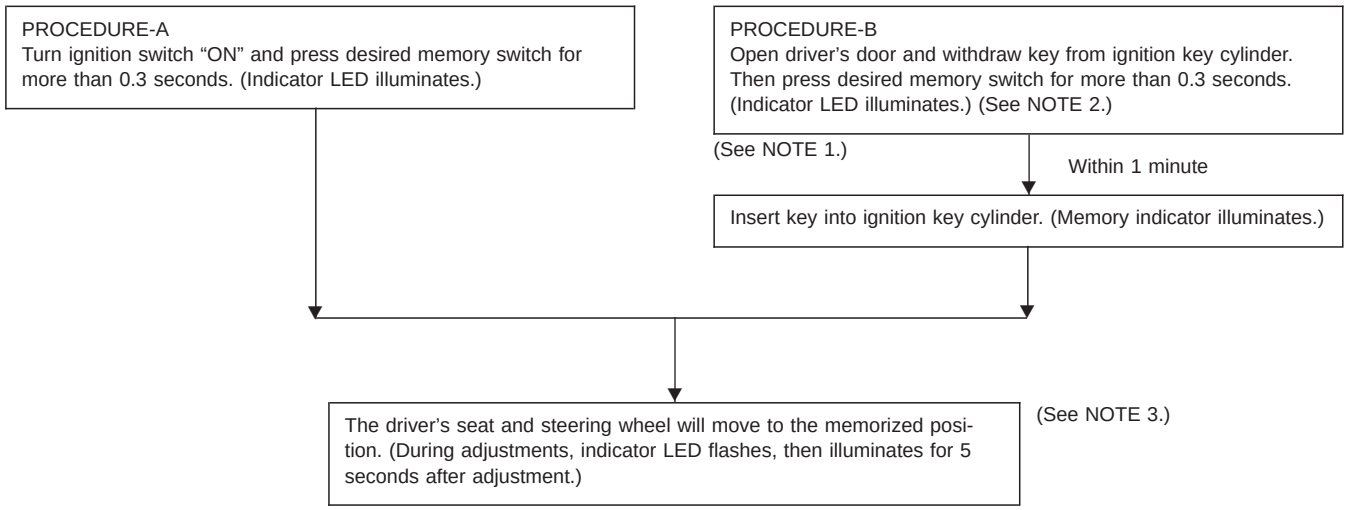
(1) PROCEDURE FOR STORING MEMORY

Adjust the position of driver's seat, steering column with manual set operations.	
↓ Ignition switch "ON".	
Touch set switch.	Indicator LEDs (1) Indicator LED for which driver's seat positions are already retained in memory illuminates for 5 seconds. (2) Indicator LED for which driver's seat positions are not entered in memory illuminates for 0.5 seconds.
↓ Within 5 seconds.	
Press memory switch for which driver's seat positions are to be entered in memory for more than 0.5 seconds. (2 driver's seat positions can be memorized.)	Indicator LEDs (1) To modify driver's seat positions, press memory switch. Indicator LED will then go out for 0.5 seconds and then illuminate for 5 seconds. (2) To enter driver's seat positions in blank memory, indicator LED illuminates for 5 seconds after memory switch is pressed.
↓	
END OF MEMORY SETTING	

NOTE: (1) When memory switch for which driver's seat positions are already retained in memory is pressed, new seat positions will be retained in memory in place of the previously set positions.
(2) Drive position is erased from the memory when battery cable is disconnected. After connecting battery cable, perform initialization procedures.

System Description (Cont'd)

(2) SELECTING THE MEMORIZED POSITION



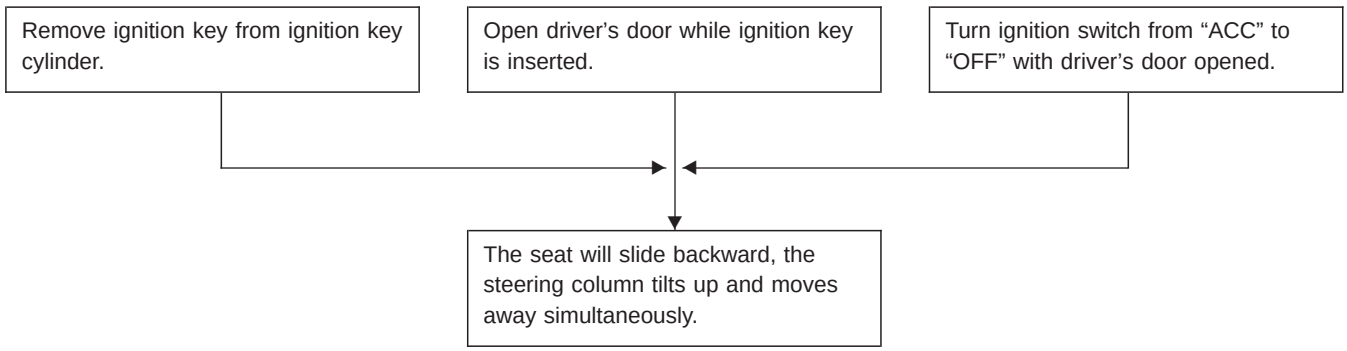
NOTES: (1) Do not keep cancel switch pressed as it will not operate.
(2) Automatic exiting setting will be performed.
(3) The driver's seat position and steering adjustment (see the following Table) operate simultaneously in the order of priority.

The order of priority	Operated portion
1	Seat sliding
2	Steering telescopic
3	Steering tilt
4	Seat reclining
5	Seat front lifting
6	Seat rear lifting

System Description (Cont'd)

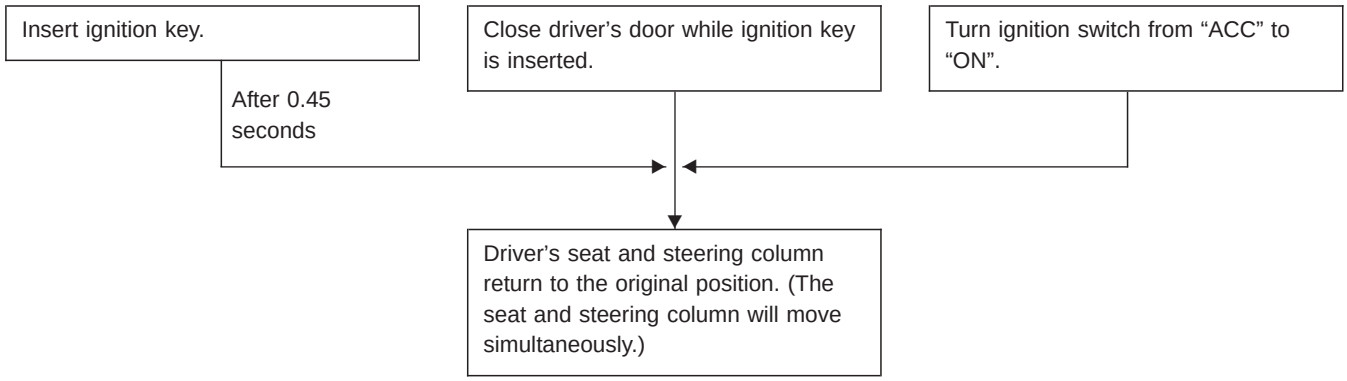
AUTOMATIC EXITING SETTING

For ease of entry and exit, move driver's seat to "exiting" position.
"Exiting" positions:
Driver's seat ... Slides about 40 mm (1.57 in) rear from normal sitting position.

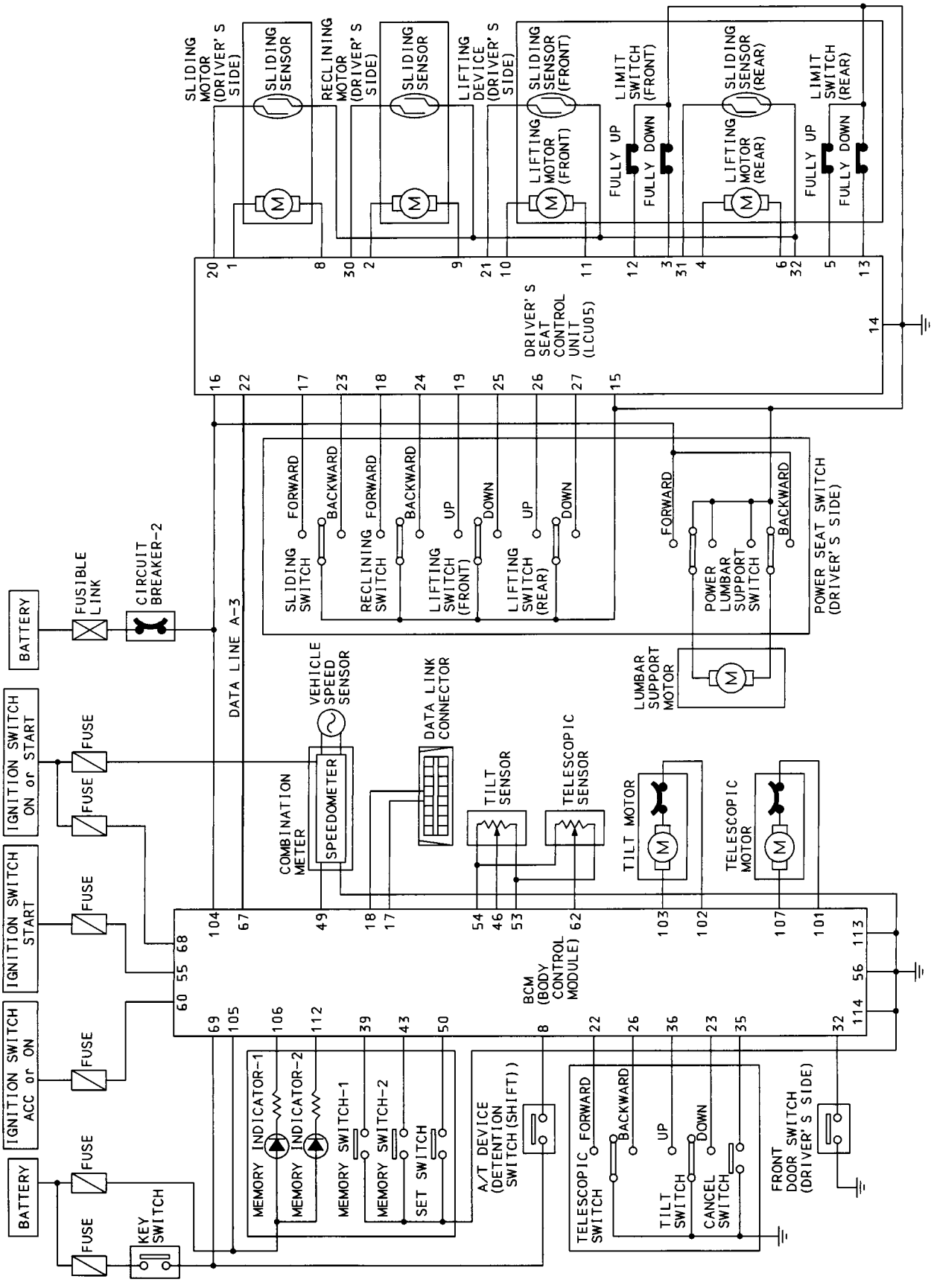


AUTOMATIC SET RETURN

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

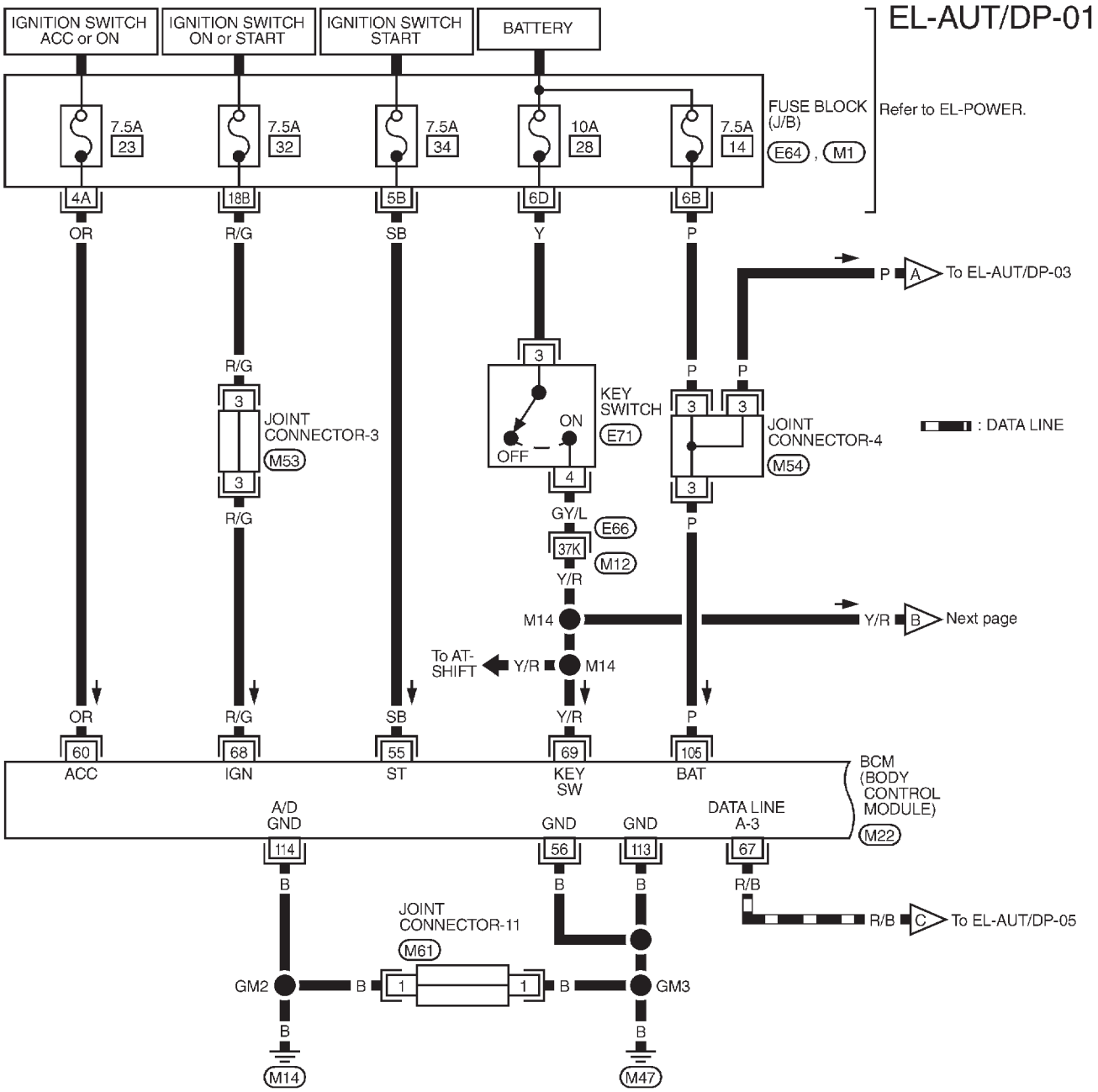


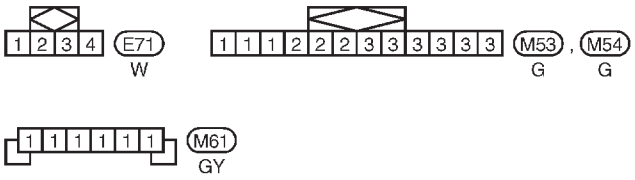
Schematic



TEL033M

Wiring Diagram — AUT/DP —





Refer to last page (Foldout page).

E66 , M12

E64

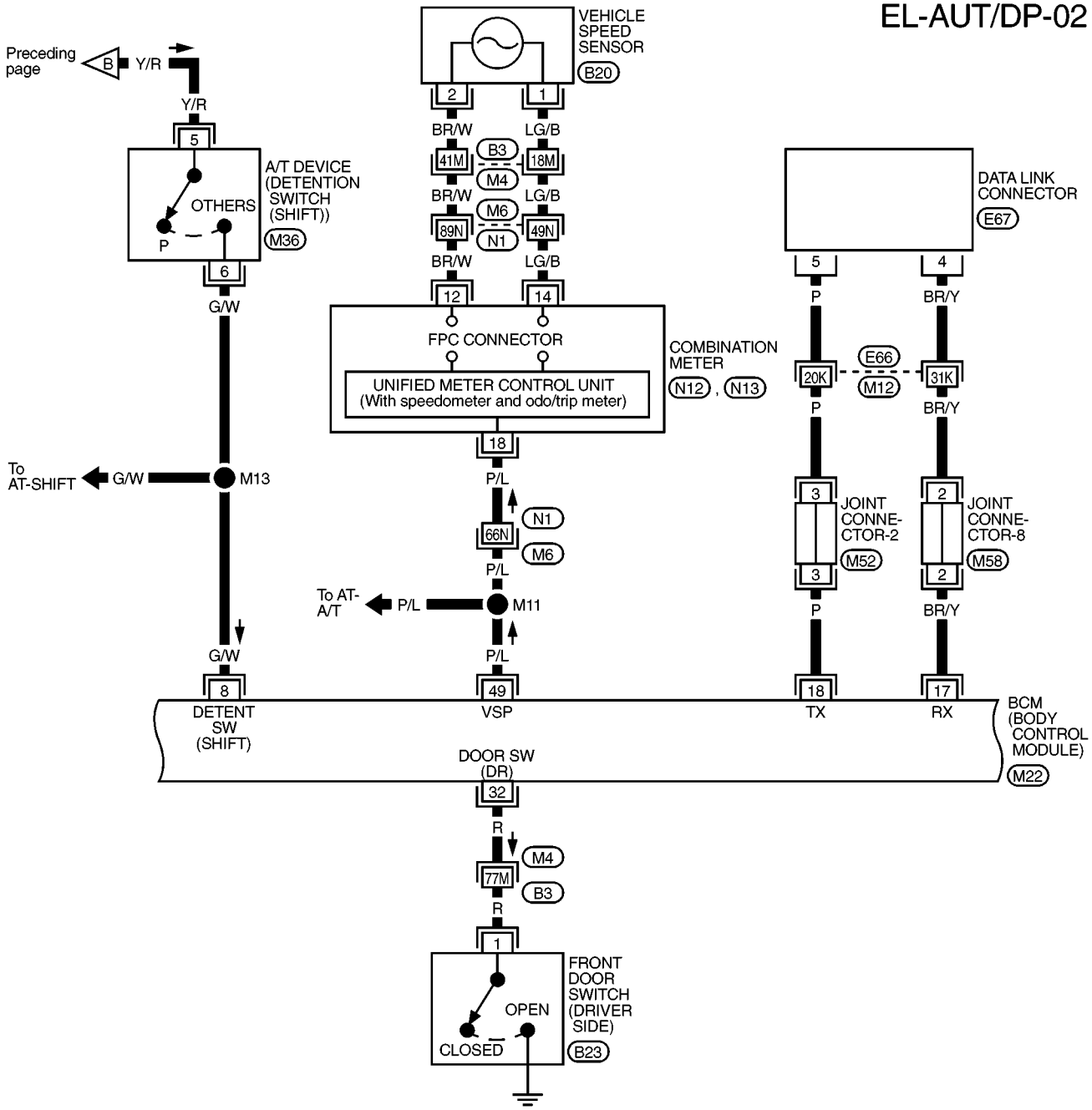
M1

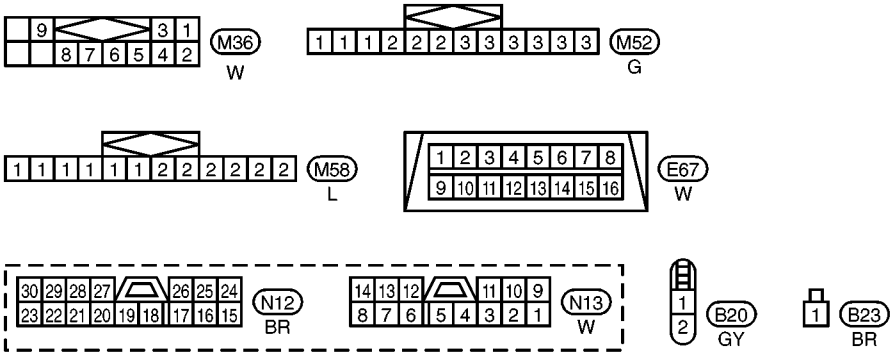
M22

TEL393A

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-02





Refer to last page (Foldout page).

M4 , B3

M6 , N1

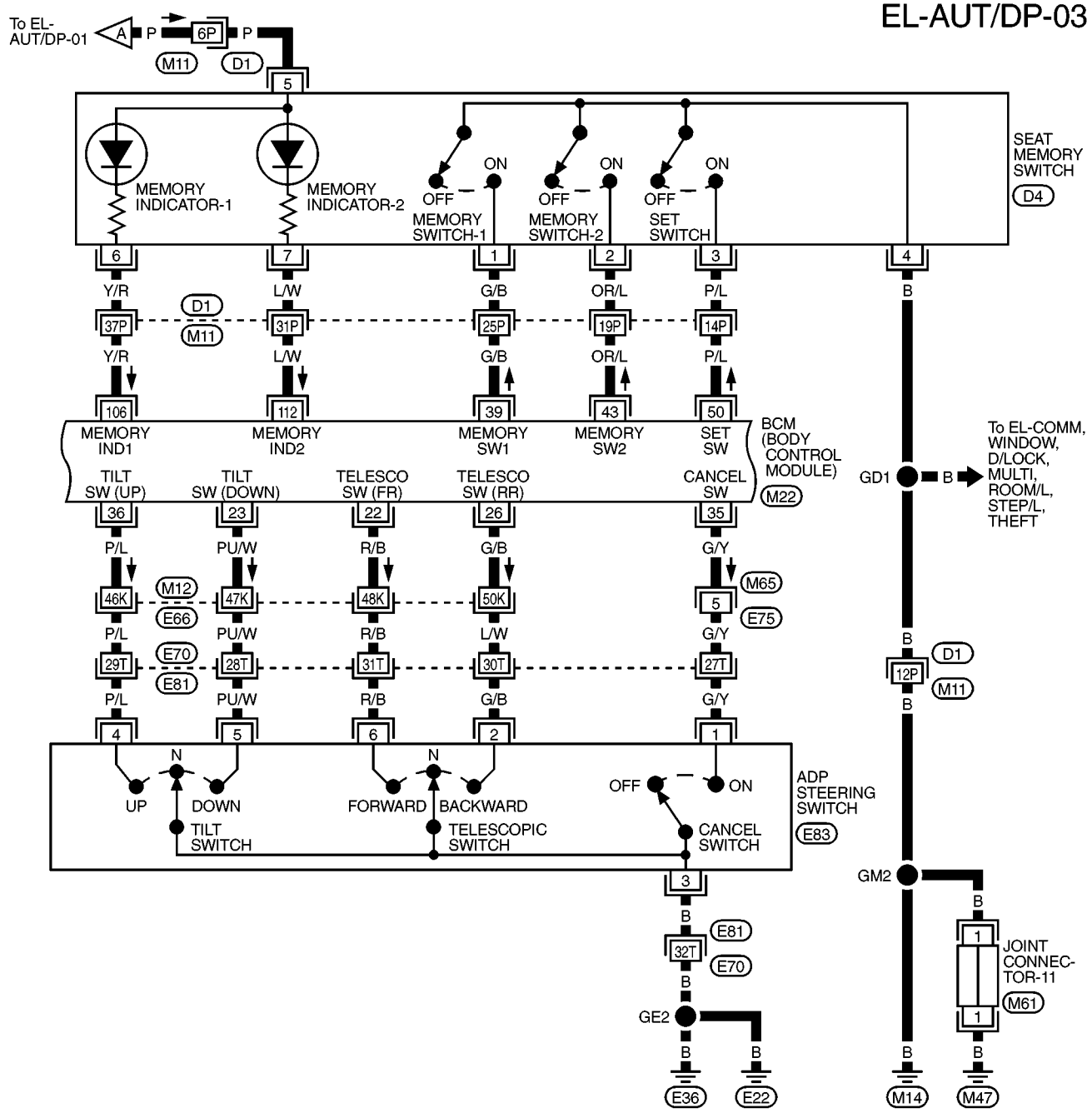
M12 , E66

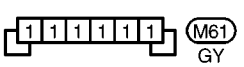
M22

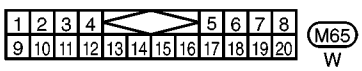
TEL034M

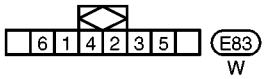
Wiring Diagram — AUT/DP — (Cont'd)

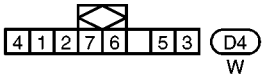
EL-AUT/DP-03











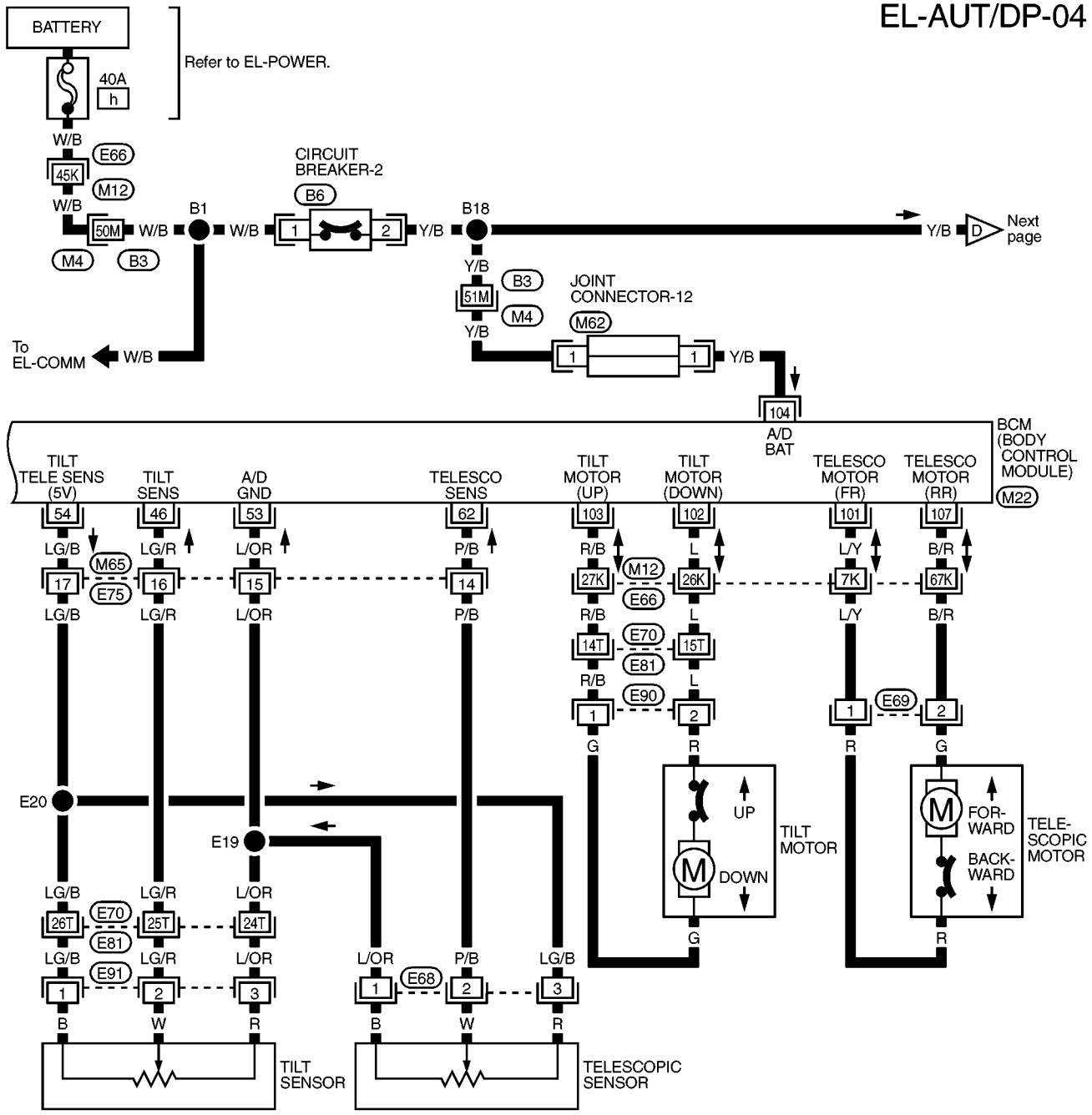
Refer to last page (Foldout page).

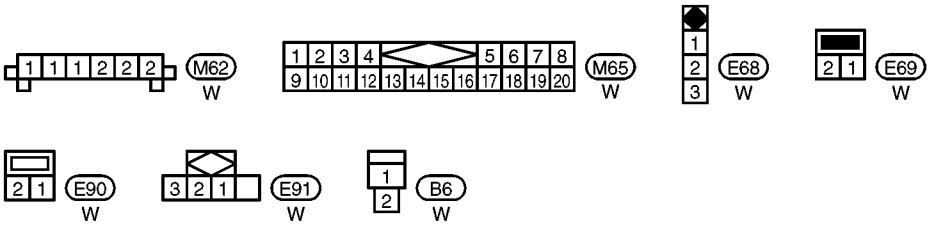
M11 , D1
M12 , E66
E70 , E81
M22

TEL022B

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-04





Refer to last page (Foldout page).

M4 , B3

M12 , E66

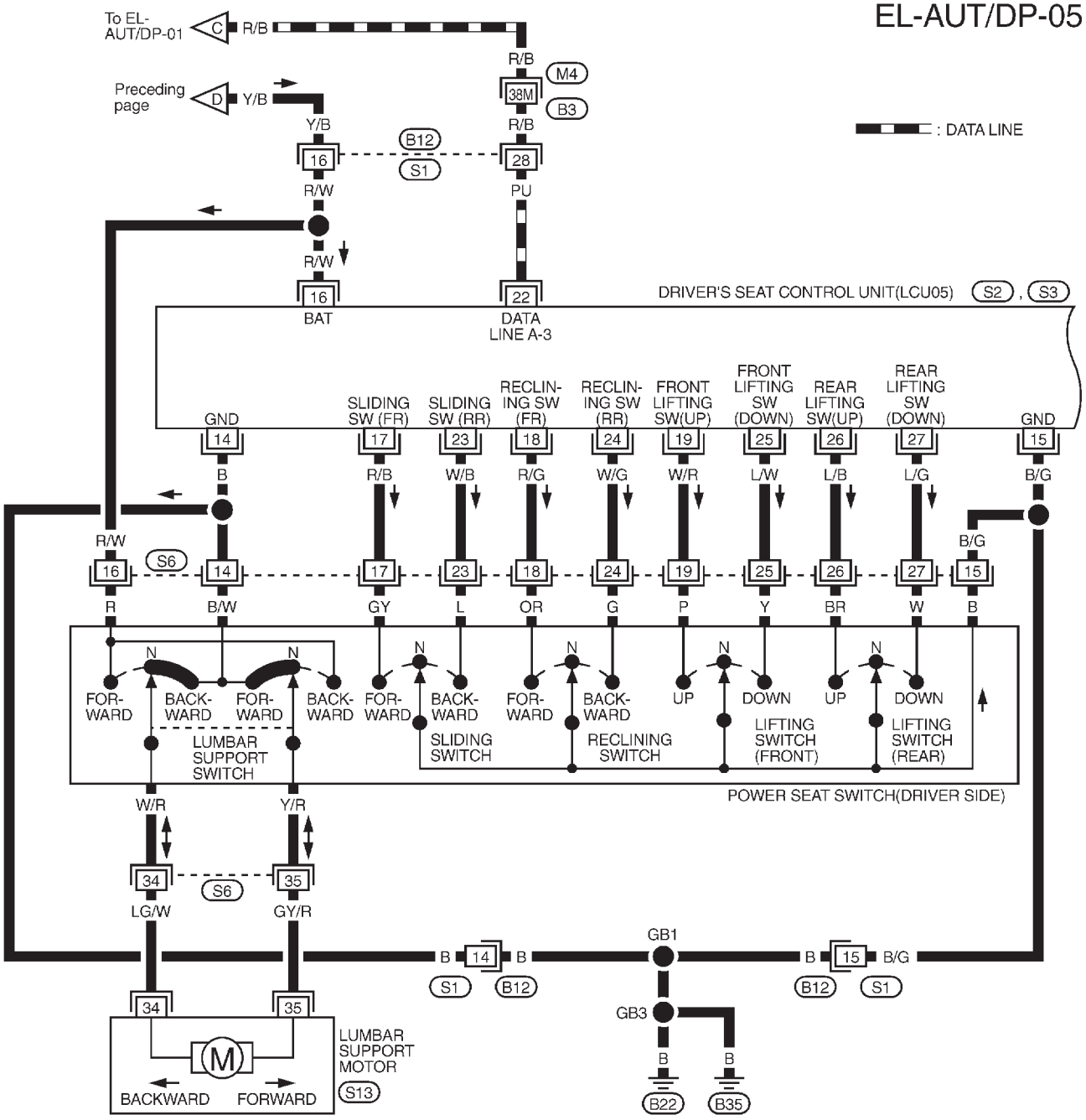
E70 , E81

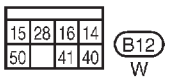
M22

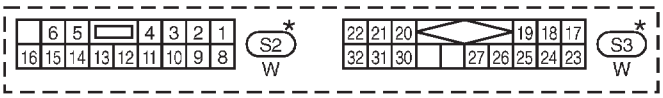
TEL023B

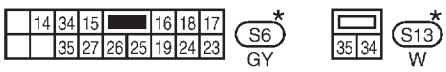
Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-05









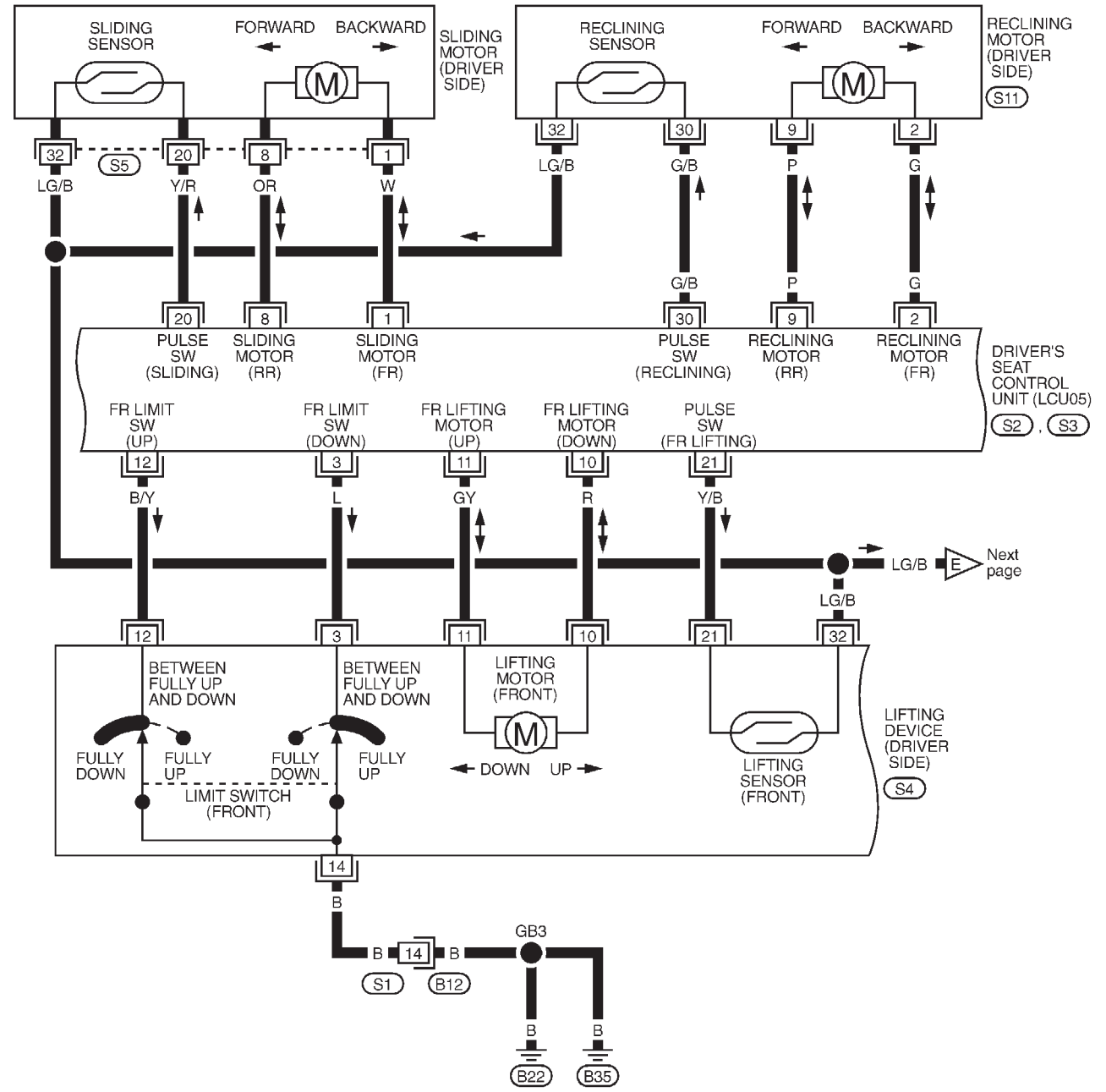
*: This connector is not shown in "HARNESS LAYOUT", EL section.

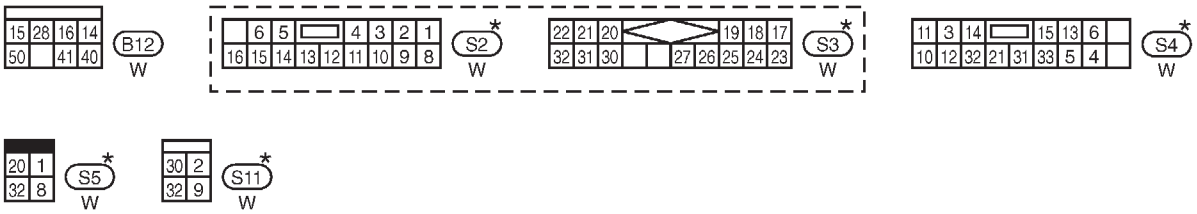
Refer to last page (Foldout page).
M4 , B3

TEL811A

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-06



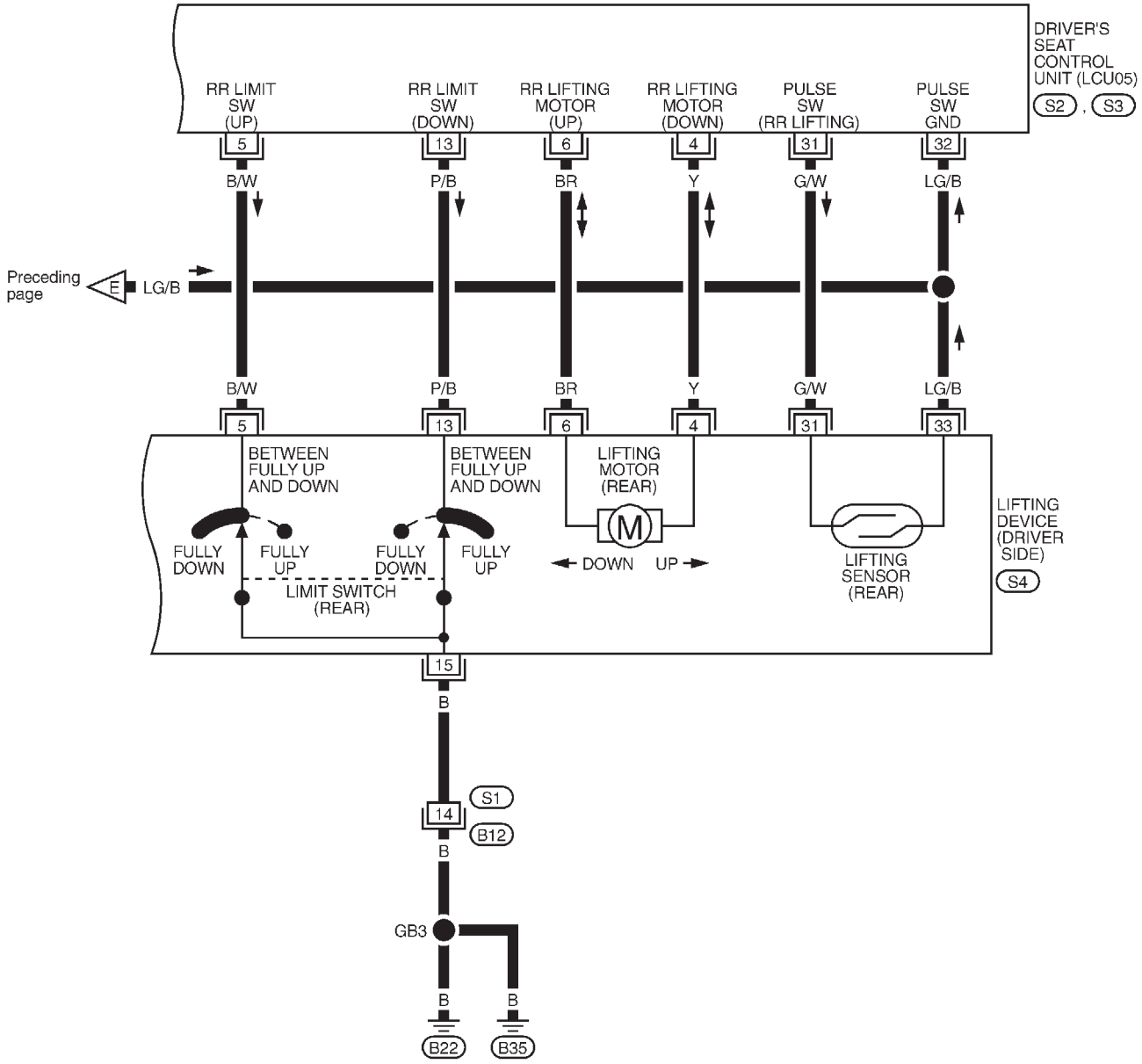


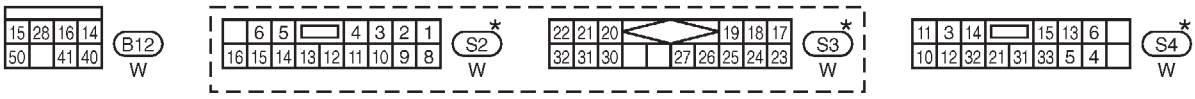
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL025B

Wiring Diagram — AUT/DP — (Cont'd)

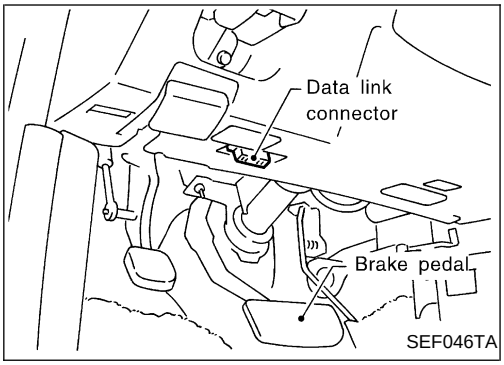
EL-AUT/DP-07





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

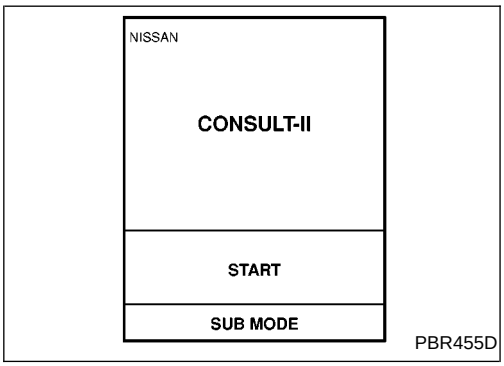
TEL026B



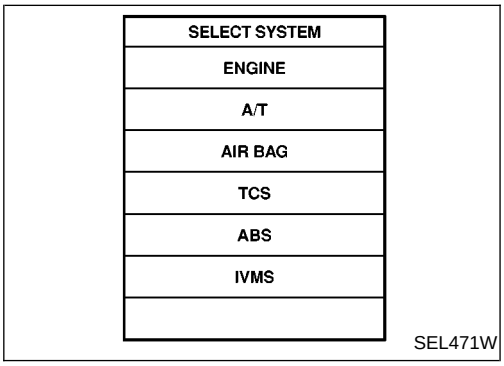
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

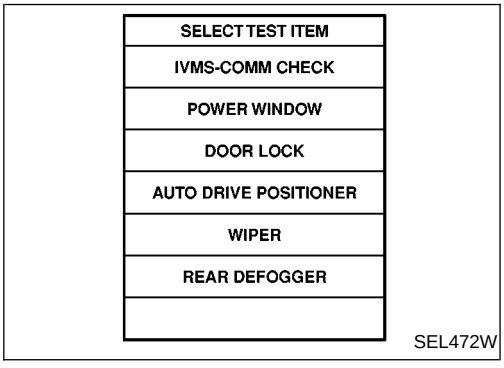
1. Turn ignition switch “OFF”.
2. Connect CONSULT-II to the data link connector.



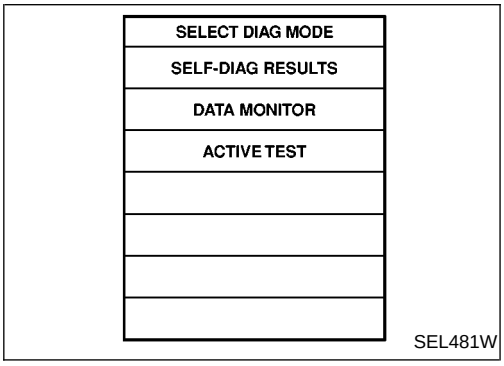
3. Turn ignition switch “ON”.
4. Touch “START”.



5. Touch “IVMS”.



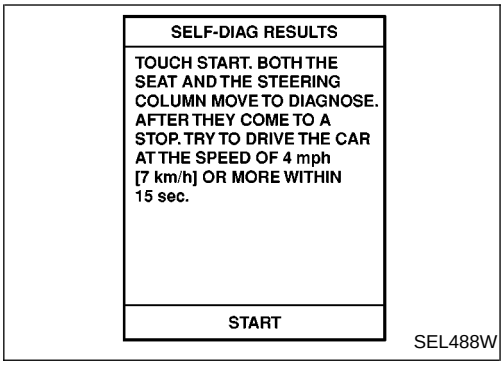
6. Touch “AUTO DRIVE POSITIONER”.



- DATA MONITOR, ACTIVE TEST, and SELF-DIAGNOSIS are available for the automatic drive positioner.

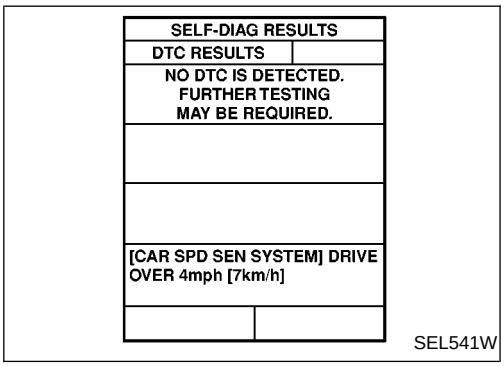
CONSULT-II (Cont'd)

HOW TO PERFORM SELF-DIAGNOSIS



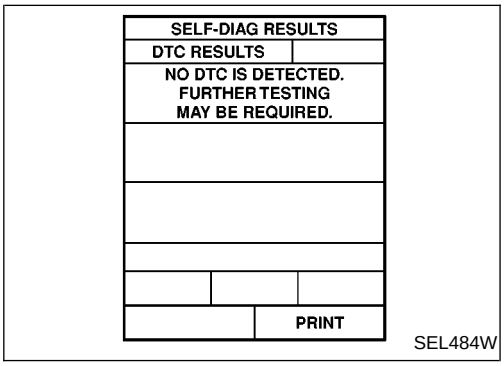
SEL488W

1. Choose "AUTO DRIVE POSITIONER" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG MODE.
3. Touch "START".



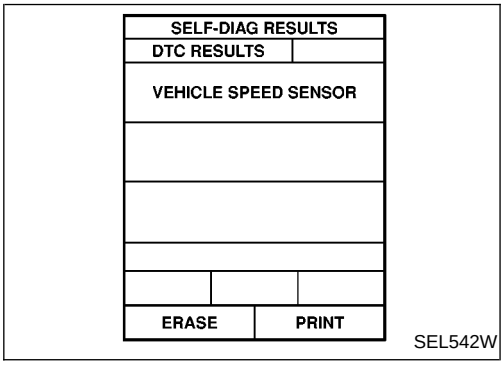
SEL541W

4. Seats and steering automatically move, and self-diagnosis will start.
5. Within 15 seconds after seat and steering come to a stop, drive the vehicle at speeds greater than 7 km/h (4 MPH) to diagnose the vehicle speed sensor.
6. After completing self-diagnosis, diagnostic results appear on the display.



SEL484W

- When no malfunction is detected.



SEL542W

- When malfunction is detected.
  A summary of diagnostic results is given in the following chart.

7. Erase the diagnostic results memory.

a. Turn ignition switch "ON".
b. Touch "IVMS".
c. Touch "AUTO DRIVE POSITIONER".
d. Touch "SELF-DIAG RESULTS".
e. Touch "START".
f. Touch "ERASE".

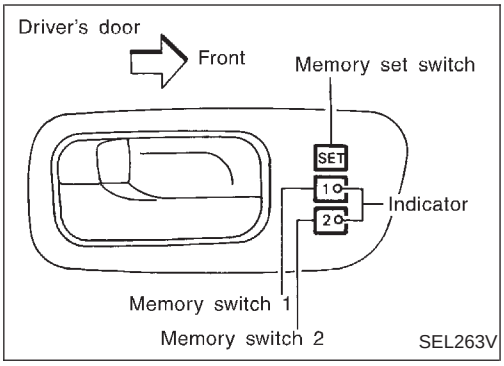
CONSULT-II (Cont'd)

SELF DIAGNOSTIC RESULT LIST

Diagnostic item	Explanation	Diagnostic procedure	Reference page
NO DTC IS DETECTED/FURTHER TESTING MAY BE REQUIRED.	Normal The automatic drive positioner system is in good order.	—	—
SEAT SLIDE	Condition: While the seat slide is moving backward for 2.5 seconds, then forward for 2.5 seconds. If the number of seat slide sensor pulses changes 2 times or less, the seat slide is determined to be malfunctioning.	PROCEDURE 5 (Sliding sensor check) PROCEDURE 11 (Sliding motor check)	EL-442 EL-448
SEAT RECLINING	Condition: While the seat is reclining forward for 2.5 seconds, then backward for 2.5 seconds. If the number of seat reclining sensor pulses changes 2 times or less, the seat reclining device is determined to be malfunctioning.	PROCEDURE 6 (Reclining sensor check) PROCEDURE 12 (Reclining motor check)	EL-443 EL-449
SEAT LIFTER-FR	Condition: While the lifter's front section is moving down for 2.5 seconds, then up for 2.5 seconds. If the number of sensor pulses (located in the front section of the seat lifter) changes 2 times or less, the front seat lifter is determined to be malfunctioning.	PROCEDURE 7 [Lifting sensor (front) check] PROCEDURE 13 [Lifting motor (front) check]	EL-444 EL-450
SEAT LIFTER-RR	Condition: While the lifter's rear section is moving down for 2.5 seconds, then up for 2.5 seconds. If the number of sensor pulses (located in the rear section of the seat lifter) changes 2 times or less, the rear seat lifter is determined to be malfunctioning.	PROCEDURE 8 [Lifting sensor (rear) check] PROCEDURE 14 [Lifting motor (rear) check]	EL-445 EL-451
STEERING TELESCO	Condition: While steering telesco is moving forward for 1 second, then backward for 1 second. If telesco sensor output changes 0.2 volts or less, the steering telesco section is determined to be malfunctioning.	PROCEDURE 4 (Telescopic sensor check) PROCEDURE 10 (Telescopic motor check)	EL-441 EL-447
STEERING TILT	Condition: While the steering wheel is tilting up for 1 second, then down for 1 second. If tilt sensor output changes 0.2 volts or less, the steering tilt device is determined to be malfunctioning.	PROCEDURE 3 (Tilt sensor check) PROCEDURE 9 (Tilt motor check)	EL-440 EL-446
VEHICLE SPEED SENSOR	If the vehicle speed sensor output of less than 7 km/h (4 MPH) is detected within 15 seconds after completing self-diagnosis on the seat and steering systems, the vehicle speed sensor is determined to be malfunctioning.	PROCEDURE 19 (Vehicle speed sensor check)	EL-456
DETENT SW [PAST INPUT FAIL]	If a vehicle speed of greater than 7 km/h (4 MPH) is detected while the A/T selector lever is set to "P", the detent switch input system is determined to be malfunctioning.	PROCEDURE 19 (Detent switch check)	EL-456

CONSULT-II (Cont'd)

Diagnostic item	Explanation	Diagnostic procedure	Reference page
SEAT SLIDE [PAST OUTPUT FAIL]	When neither manual input nor ADP output signal is produced, if the seat slides greater than 6 mm (0.24 in) within 2.5 seconds after the seat slide sensor receives an input signal, the seat slide output system is determined to be malfunctioning.	—	—
SEAT RECLINING [PAST OUTPUT FAIL]	When neither manual input nor ADP output signal is produced, if the seat reclines greater than 1° within 2.5 seconds after the seat reclining sensor receives an input signal, the seat reclining output system is determined to be malfunctioning.	—	—
STEERING TILT [PAST OUTPUT FAIL]	When neither manual input signal nor ADP output signal is produced, if the steering wheel tilts greater than 1° within 2.5 seconds after the steering tilt sensor receives an input signal, the steering tilt output system is determined to be malfunctioning.	—	—
TELESCO SEN [PAST]	If a voltage greater than 4.9 volts (in relation to the sensor power source of 5 volts) or less than 0.1 volts is detected across the telesco sensor, the telesco sensor system is determined to be malfunctioning.	PROCEDURE 4 (Telescopic sensor check)	EL-441
TILT SEN [PAST]	If a voltage greater than 4.9 volts (in relation to the sensor power source of 5 volts) or less than 0.1 volts is detected across the steering tilt sensor, the tilt sensor system is determined to be malfunctioning.	PROCEDURE 3 (Tilt sensor check)	EL-440



On board Diagnosis — Mode V (Automatic drive positioner operation)

HOW TO PERFORM MODE V

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

↓

Turn ignition switch "ON".

↓ Within 5 seconds

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

↓

Mode V should be performed.
— Two indicator lamps should go on. (At the same time, driver's seat and steering column move automatically.)

↓

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

↓ Within 15 seconds

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

↓

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

↓

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

↓

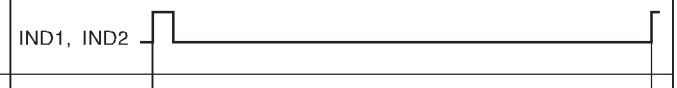
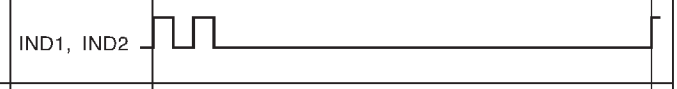
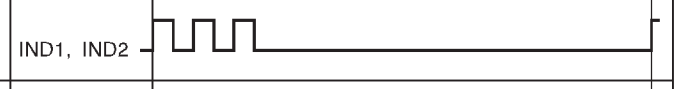
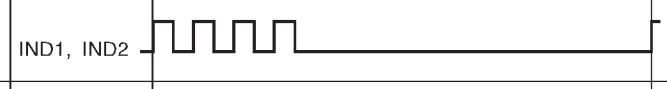
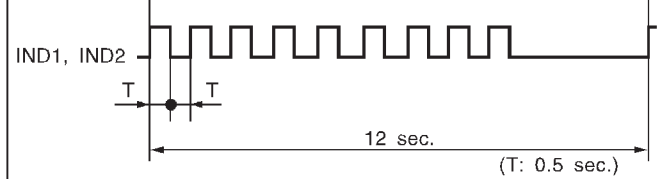
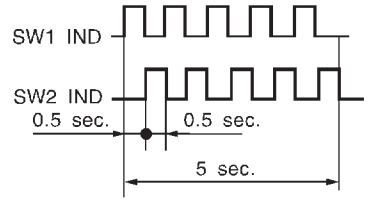
DIAGNOSIS END*2

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

On board Diagnosis — Mode V (Automatic drive positioner operation) (Cont'd)

MALFUNCTION CODE TABLE

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

Code No.	Detected items	Indication of seat memory switches 1 and 2	Explanation
1	Seat sliding		While the seat motors are moving for 2.5 seconds, if the number of seat sliding/reclining/lifting sensor pulses changes 2 times or less, the seat device is determined to be malfunctioning.
2	Seat reclining		
3	Seat lifting front		
4	Seat lifting rear		
7	Steering telescopic		While the steering motors are moving, if the steering sensor output changes 0.2 volts or less, the steering device is determined to be malfunctioning.
8	Steering tilt		
9	Vehicle speed sensor circuit		If the vehicle speed sensor output of less than 7 km/h (4 MPH) is detected, the vehicle speed sensor is determined to be malfunctioning.
–	No malfunction in the above items		—

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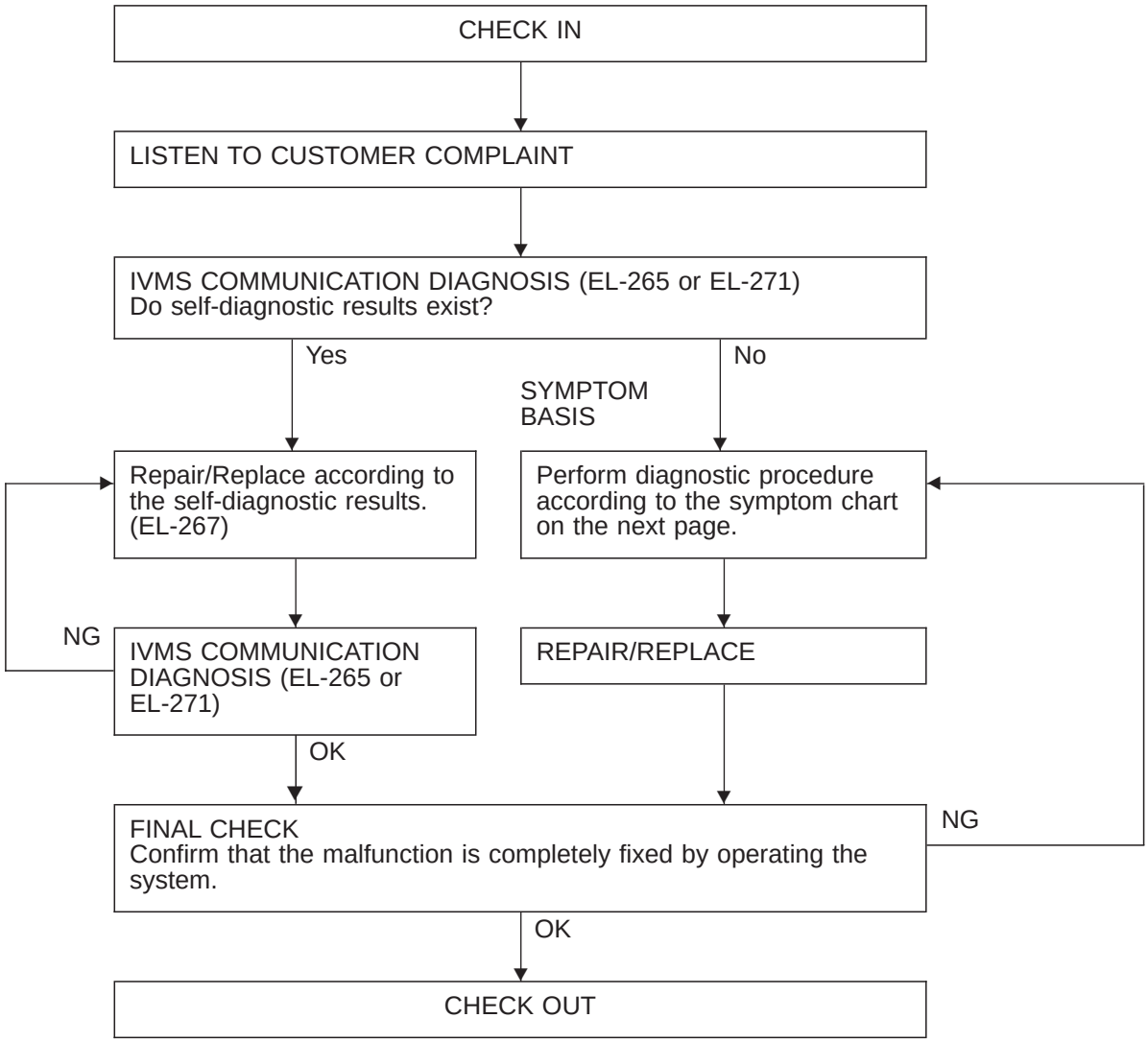
Code No.	Detected items	Diagnostic procedure	Reference page	Code No.	Detected items	Diagnostic procedure	Reference page
1	Seat sliding	PROCEDURE 5 (Sliding sensor check) PROCEDURE 11 (Sliding motor check)	EL-442 EL-448	7	Steering telescopic	PROCEDURE 4 (Telescopic sensor check) PROCEDURE 10 (Telescopic motor check)	EL-441 EL-447
2	Seat reclining	PROCEDURE 6 (Reclining sensor check) PROCEDURE 12 (Reclining motor check)	EL-443 EL-449	8	Steering tilt	PROCEDURE 3 (Tilt sensor check) PROCEDURE 9 (Tilt motor check)	EL-440 EL-446
3	Seat lifting front	PROCEDURE 7 [Lifting sensor (front) check] PROCEDURE 13 [Lifting motor (front) check]	EL-444 EL-450	9	Vehicle speed sensor	PROCEDURE 19 (Vehicle speed sensor check)	EL-456
4	Seat lifting rear	PROCEDURE 8 [Lifting sensor (rear) check] PROCEDURE 14 [Lifting motor (rear) check]	EL-445 EL-451				

Trouble Diagnoses

WORK FLOW

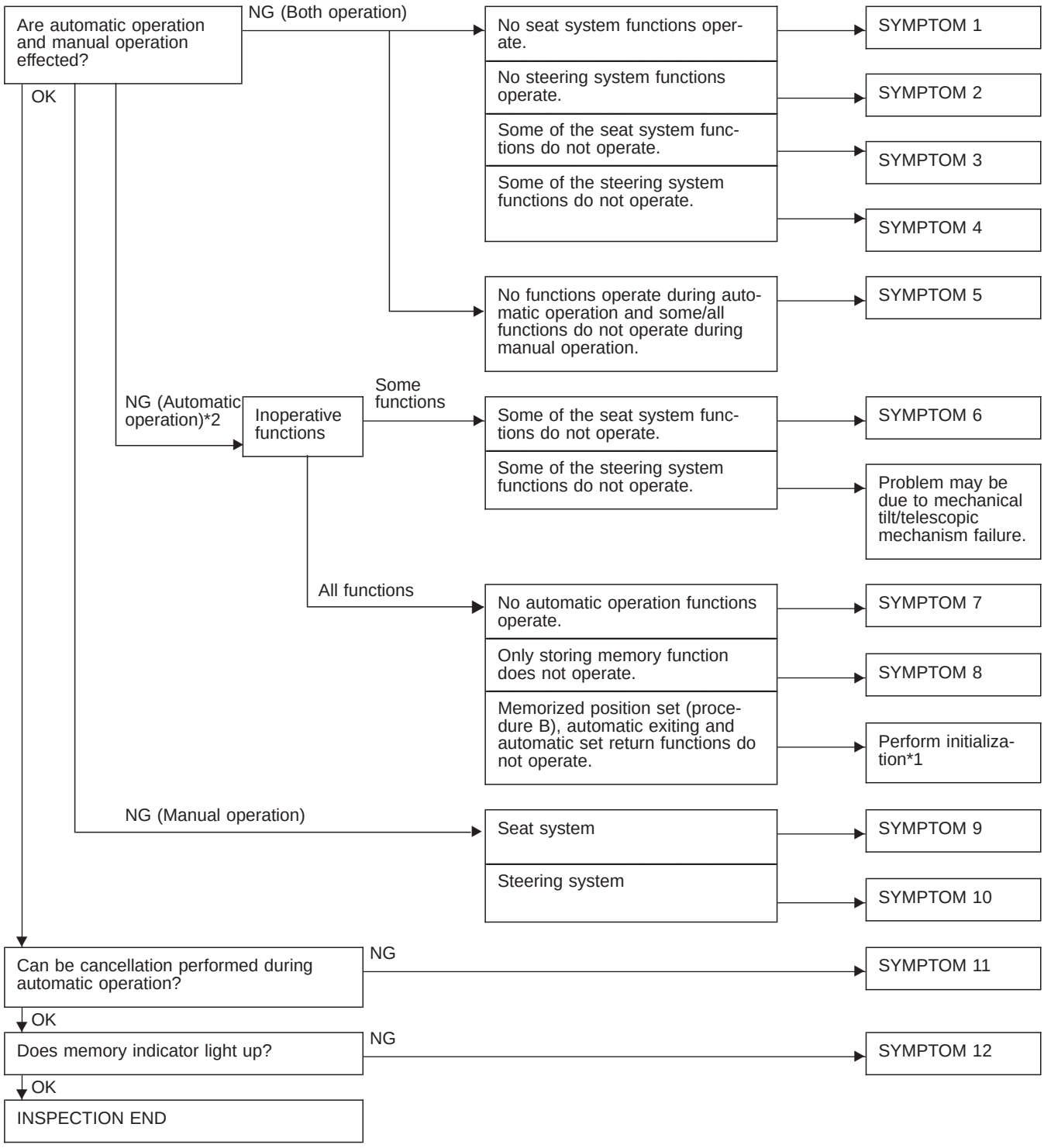


NOTICE:

- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. (While BCM memorizes the “disconnected” data, IVMS communication diagnosis of CONSULT-II will display “PAST NO RESPONSE”.) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT-II (Refer to EL-265.) or turn the ignition switch to “OFF” position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK



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

PROCEDURE A

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

PROCEDURE B

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

*2: If only seat slide operates during automatic exit setting, the problem may be due to mechanical tilt mechanism failure. (In this case, all other automatic operation items do not operate.)

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

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-435. Symptom numbers in the symptom chart correspond with those of preliminary check.

SYMPTOM CHART

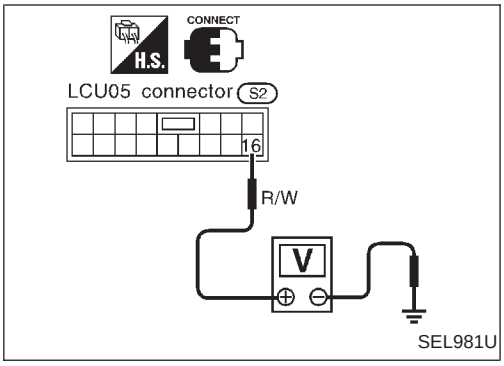
PROCEDURE			Self-diagnosis		Diagnostic procedure									
REFERENCE PAGE			EL-429	EL-432	EL-438	EL-438	EL-440	EL-441	EL-442	EL-443	EL-444	EL-445	EL-446	EL-447
SYMPTOM			CONSULT-II	On board diagnosis (Mode V)	DIAGNOSTIC PROCEDURE 1 (Power supply and ground circuit for LCU05)	DIAGNOSTIC PROCEDURE 2 (Power supply and ground circuit for tilt/telescopic motor)	DIAGNOSTIC PROCEDURE 3 (Tilt sensor check)	DIAGNOSTIC PROCEDURE 4 (Telescopic sensor check)	DIAGNOSTIC PROCEDURE 5 (Sliding sensor check)	DIAGNOSTIC PROCEDURE 6 (Reclining sensor check)	DIAGNOSTIC PROCEDURE 7 [Lifting sensor (front) check]	DIAGNOSTIC PROCEDURE 8 [Lifting sensor (rear) check]	DIAGNOSTIC PROCEDURE 9 (Tilt motor check)	DIAGNOSTIC PROCEDURE 10 (Telescopic motor check)
1	No seat system functions operate.				X									
2	No steering system functions operate.		X	X		X	X	X						
3	Some of the seat system functions do not operate during automatic/manual operation.	Sliding	X	X										
		Reclining	X	X										
		Lifting (Front)	X	X										
		Lifting (Rear)	X	X										
4	Some of the steering system functions do not operate during automatic/manual operation.	Tilt	X	X									X	
		Telescopic	X	X										X
5	No functions operate during automatic operation, and some/all functions do not operate during manual operation.													
6	Some of the seat system functions do not operate during automatic operation.	Sliding	X	X					X					
		Reclining	X	X						X				
		Lifting (Front)	X	X							X			
		Lifting (Rear)	X	X								X		
7	No automatic operation functions operate.		X	X			X	X						
8	Drive position cannot be retained in the memory.													
9	Does not operate during manual operation. (Operates during automatic operation.)	Seat — Sliding												
		Seat — Reclining												
		Seat — Lifting (Front)												
		Seat — Lifting (Rear)												
		Seat — Lumber support												
10		Steering — Tilt												
		Steering — Telescopic												
11	Automatic operation cannot be canceled.													
12	Memory indicator does not light up.													

X: Applicable

Trouble Diagnoses (Cont'd)

Diagnostic procedure												
DIAGNOSTIC PROCEDURE 11 (Sliding motor check)	DIAGNOSTIC PROCEDURE 12 (Reclining motor check)	DIAGNOSTIC PROCEDURE 13 [Lifting motor (front) check]	DIAGNOSTIC PROCEDURE 14 [Lifting motor (rear) check]	DIAGNOSTIC PROCEDURE 15 (Lifting limit switch check)	DIAGNOSTIC PROCEDURE 16 (Tilt/telescopic switch check)	DIAGNOSTIC PROCEDURE 17 (Power seat switch check)	DIAGNOSTIC PROCEDURE 18 (Cancel switch check)	DIAGNOSTIC PROCEDURE 19 (Key, detention, door switch and vehicle speed sensor check)	DIAGNOSTIC PROCEDURE 20 (Seat memory switch check)	DIAGNOSTIC PROCEDURE 21 (Memory indicator check)	DIAGNOSTIC PROCEDURE 22 (Lumber support check)	Wake-up Diagnosis for LCU05
EL-448	EL-449	EL-450	EL-451	EL-452	EL-453	EL-454	EL-455	EL-456	EL-458	EL-459	EL-459	EL-266
X												
	X											
		X		X								
			X	X								
						X		X (ACC, ON START signal)				
							X	X				
								X (IGN ON signal)	X			
						X						X
						X						X
						X						X
						X						X
											X	
					X							
					X							
							X					
										X		

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1
(Power supply and ground circuit for LCU05)

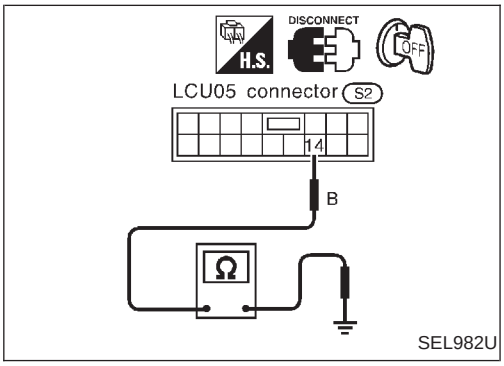
Power supply circuit check

Check voltage between LCU05 terminal ⑯ and ground.
(Refer to wiring diagram in EL-425.)

Terminals	Ignition switch position			
	OFF	ACC	ON	START
⑯ - Ground	Battery voltage			

If NG, check the following.

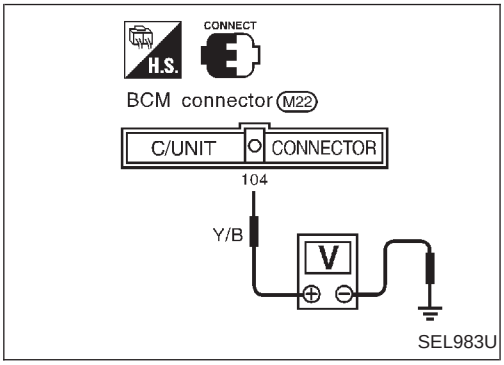
- Circuit breaker-2
- Harness for open or short between circuit breaker-2 and LCU05



Ground circuit check

Check continuity between LCU05 terminal ⑭ and ground.
(Refer to wiring diagram in EL-425.)

Terminals	Continuity
⑭ - Ground	Yes



DIAGNOSTIC PROCEDURE 2
(Power supply and ground circuit for tilt/telescopic motor)

Power supply circuit check

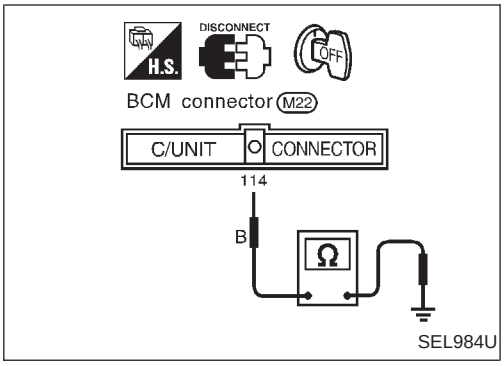
Check voltage between BCM terminal 104 and ground.
(Refer to wiring diagram in EL-424.)

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

If NG, check the following.

- Circuit breaker-2
- Harness for open or short between circuit breaker-2 and BCM

Trouble Diagnoses (Cont'd)



Ground circuit check

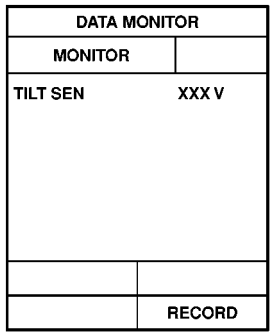
Check continuity between BCM terminal (114) and ground.
(Refer to wiring diagram in EL-421.)

Terminals	Continuity
(114) - Ground	Yes

Trouble Diagnoses (Cont'd)

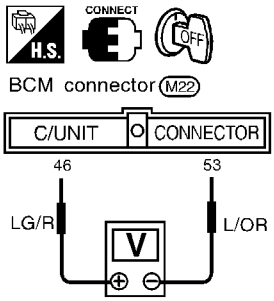
DIAGNOSTIC PROCEDURE 3
(Tilt sensor check)

A



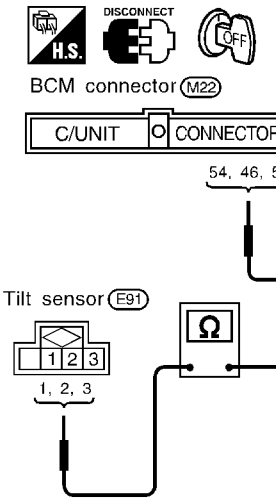
SEL543W

B



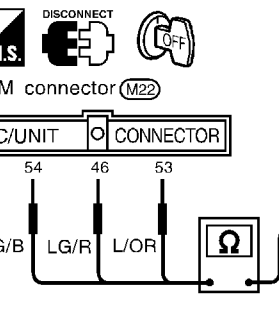
SEL986U

C



SEL987U

D



SEL988U

CHECK TILT SENSOR INPUT SIGNAL.

A CONSULT-II

See "TILT SEN" in DATA MONITOR mode.
Steering column in the uppermost position:
Approx. 2V
Steering column in the lowermost position:
Approx. 4V

OR

B TESTER

Check voltage between BCM terminals ㊻ and ㊸.

Steering column position	Voltage V
Uppermost	Approx. 2
Lowermost	Approx. 4

Refer to wiring diagram in EL-424.

OK → Tilt sensor is OK.

NG ↓

C

CHECK TILT SENSOR OPEN CIRCUIT.

1. Disconnect BCM connector and tilt sensor connector.
2. Check harness continuity between BCM connector and tilt sensor connector.

Terminals		Continuity
BCM	Tilt sensor	
㊹	①	Yes
㊻	②	
㊸	③	

NG → Repair harness.

OK ↓

D

CHECK TILT SENSOR SHORT CIRCUIT.

Check harness continuity between BCM connector terminals and ground.

Terminals	Continuity
㊹ - ground	No
㊻ - ground	
㊸ - ground	

NG → Repair harness.

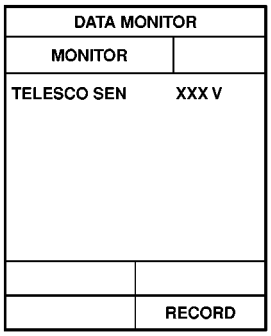
OK ↓

Replace tilt sensor.

Trouble Diagnoses (Cont'd)

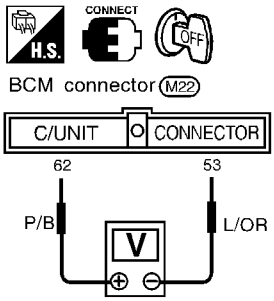
DIAGNOSTIC PROCEDURE 4 (Telescopic sensor check)

A



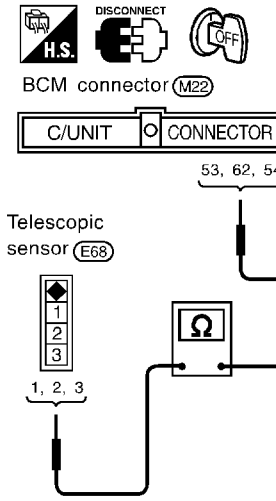
SEL544W

B



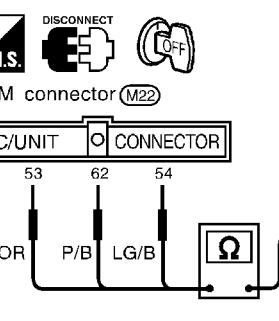
SEL990U

C



SEL991U

D



SEL992U

CHECK TELESCOPIC SENSOR INPUT SIGNAL.

A CONSULT-II

See "TELESCO SEN" in DATA MONITOR mode.
Steering column in the extreme front end position:
Approx. 4.5V
Steering column in the extreme rear end position:
Approx. 0.5V

OR

B TESTER

Check voltage between BCM terminals ⑤③ and ⑥②.

Steering column position	Voltage
Extreme front end	Approx. 4.5V
Extreme rear end	Approx. 0.5V

Refer to wiring diagram in EL-424.

OK → Telescopic sensor is OK.

NG ↓

C

CHECK TELESCOPIC SENSOR OPEN CIRCUIT.

1. Disconnect BCM connector and telescopic sensor connector.
2. Check harness continuity between BCM connector and telescopic sensor connector.

Terminals		Continuity
BCM	Telescopic sensor	
⑤③	①	Yes
⑥②	②	
⑤④	③	

NG → Repair harness.

OK ↓

D

CHECK TELESCOPIC SENSOR SHORT CIRCUIT.

Check harness continuity between BCM connector terminals and ground.

Terminals	Continuity
⑤③ - ground	No
⑥② - ground	
⑤④ - ground	

NG → Repair harness.

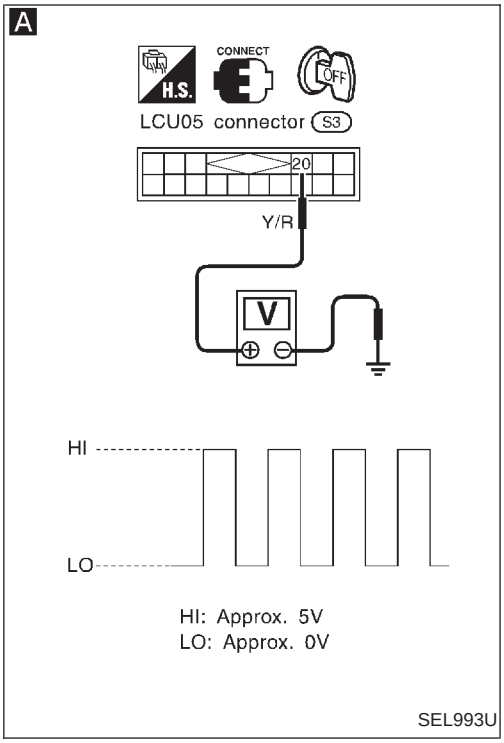
OK ↓

Replace telescopic sensor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5
(Sliding sensor check)

A



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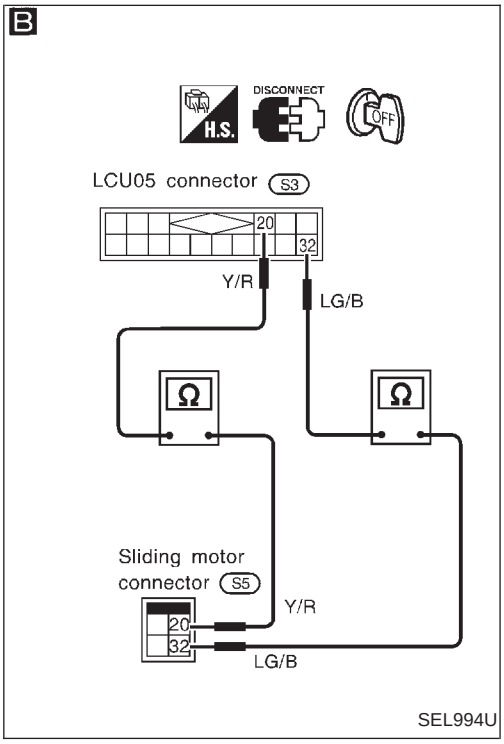

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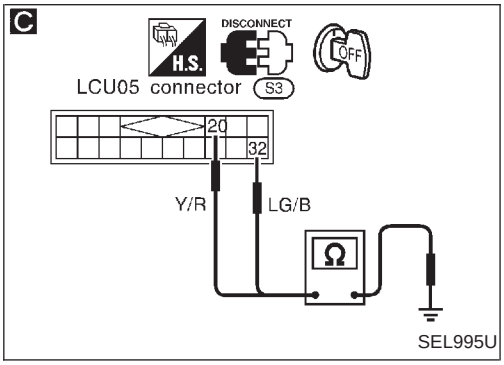


A

CHECK SLIDING SENSOR INPUT SIGNAL.
Measure voltage between LCU05 terminal ⑳ and ground with oscilloscope when power seat slide is operated.

Refer to wiring diagram in EL-426.

OK → Sliding sensor is OK.

NG ↓

B

CHECK SLIDING SENSOR OPEN CIRCUIT.
1. Disconnect LCU05 connector and sliding motor connector.
2. Check harness continuity between LCU05 connector and sliding motor connector.

Terminals		Continuity
LCU05	Slide motor (Sliding sensor)	
⑳	⑳	Yes
㉜	㉜	

NG → Repair harness.

OK ↓

C

CHECK SLIDING SENSOR SHORT CIRCUIT.
Check harness continuity between LCU05 connector and ground.

Terminals	Continuity
⑳ - ground	No
㉜ - ground	

NG → Repair harness.

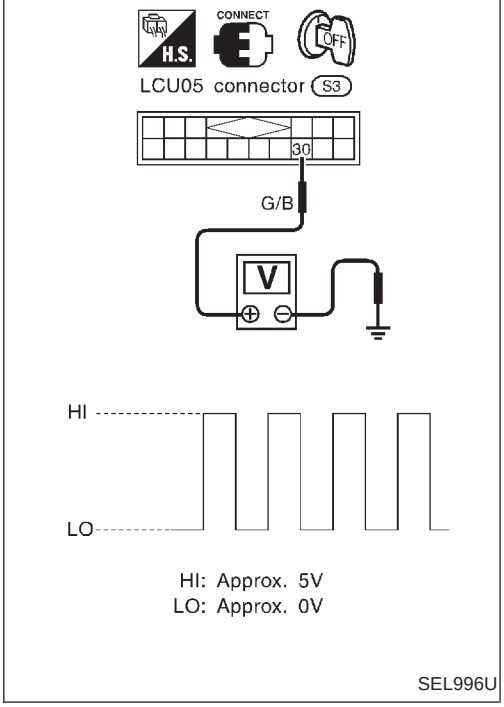
OK ↓

Replace sliding sensor.

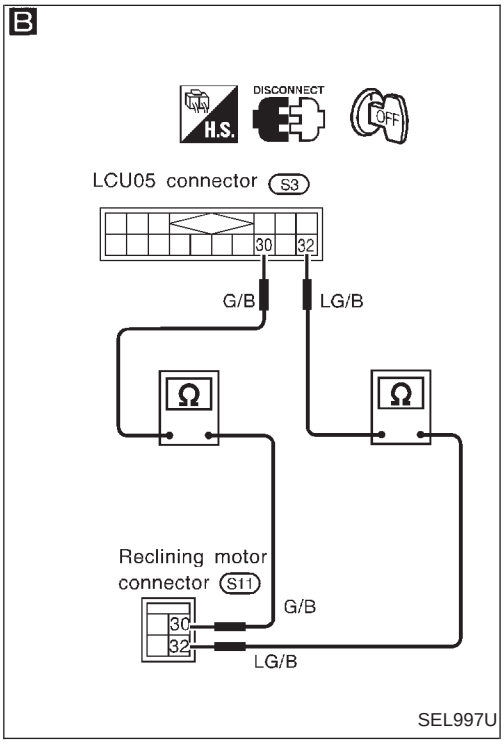
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6
(Reclining sensor check)

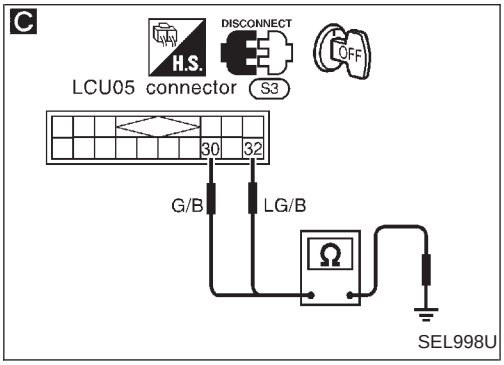
A



B



C



A

CHECK RECLINING SENSOR INPUT SIGNAL.
Measure voltage between LCU05 terminal ㉚ and ground with oscilloscope when power seat reclining is operated.

Refer to wiring diagram in EL-426.

OK → Reclining sensor is OK.

NG ↓

B

CHECK RECLINING SENSOR OPEN CIRCUIT.
1. Disconnect LCU05 connector and reclining motor connector.
2. Check harness continuity between LCU05 connector and reclining motor connector.

Terminals		Continuity
LCU05	Reclining motor (Sliding sensor)	
㉚	㉚	Yes
㉜	㉜	

NG → Repair harness.

OK ↓

C

CHECK RECLINING SENSOR SHORT CIRCUIT.
Check harness continuity between LCU05 connector and ground.

Terminals	Continuity
㉚ - ground	No
㉜ - ground	

NG → Repair harness.

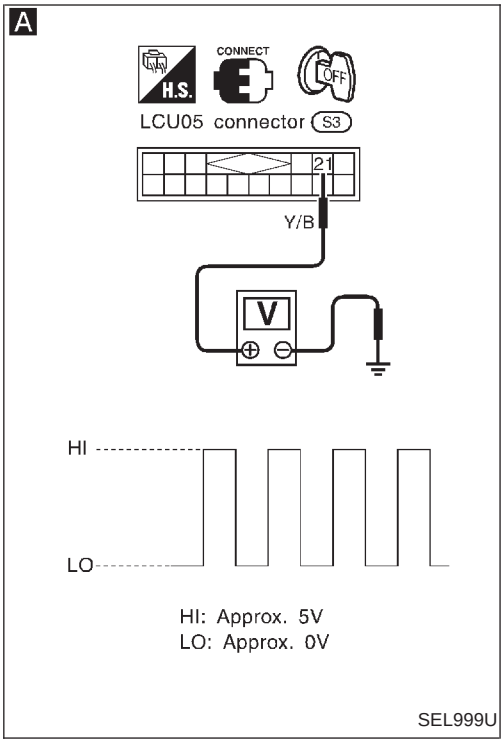
OK ↓

Replace reclining sensor.

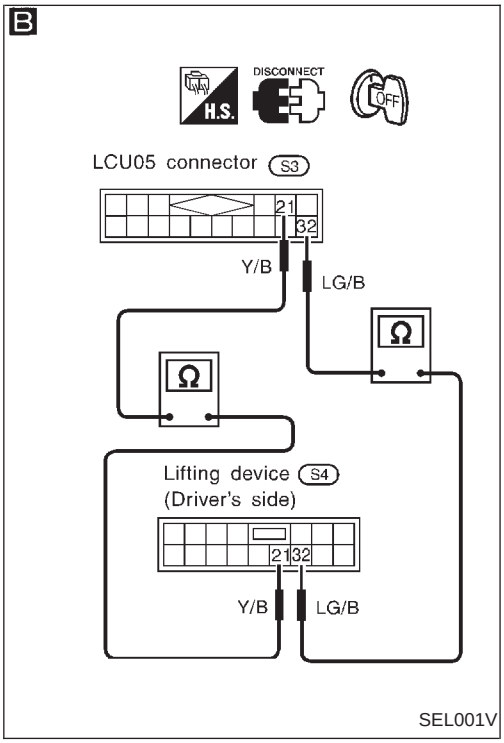
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7
[Lifting sensor (front) check]

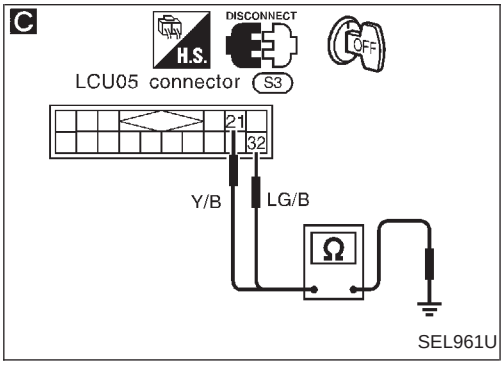
A



B



C



A

CHECK LIFTING SENSOR (FRONT) INPUT SIGNAL.
Measure voltage between LCU05 terminal ㉑ and ground with oscilloscope when power seat lifting (front) is operated.

Refer to wiring diagram in EL-426.

OK → Lifting sensor (front) is OK.

NG ↓

B

CHECK LIFTING SENSOR (FRONT) OPEN CIRCUIT.
1. Disconnect LCU05 connector and lifting device connector.
2. Check harness continuity between LCU05 connector and lifting device connector.

Terminals		Continuity
LCU05	Lifting device (Sliding sensor)	
㉑	㉑	Yes
㉜	㉜	

NG → Repair harness.

OK ↓

C

CHECK LIFTING SENSOR (FRONT) SHORT CIRCUIT.
Check harness continuity between LCU05 connector and ground.

Terminals	Continuity
㉑ - ground	No
㉜ - ground	

NG → Repair harness.

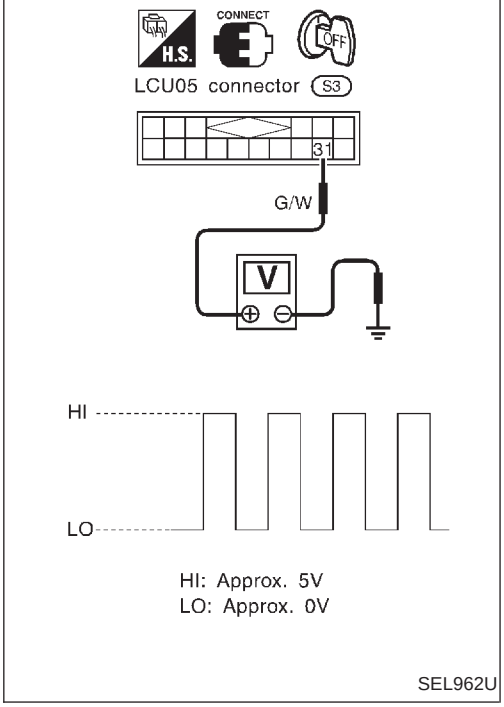
OK ↓

Replace lifting sensor (front).

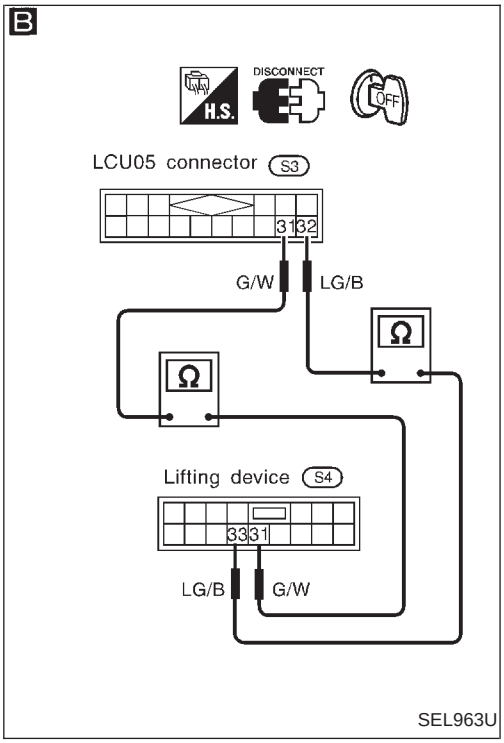
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8
[Lifting sensor (rear) check]

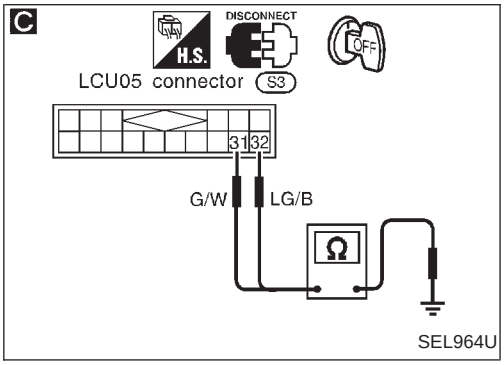
A



B



C



A

CHECK LIFTING SENSOR (REAR) INPUT SIGNAL.
Measure voltage between LCU05 terminal ㉛ and ground with oscilloscope when power seat lifting (rear) is operated.

Refer to wiring diagram in EL-427.

OK → Lifting sensor (rear) is OK.

NG ↓

B

CHECK LIFTING SENSOR (REAR) OPEN CIRCUIT.
1. Disconnect LCU05 connector and lifting device connector.
2. Check harness continuity between LCU05 connector and lifting device connector.

Terminals		Continuity
LCU05	Lifting device (Sliding sensor)	
㉛	㉛	Yes
㉜	㉝	

NG → Repair harness.

OK ↓

C

CHECK LIFTING SENSOR (REAR) SHORT CIRCUIT.
Check harness continuity between LCU05 connector and ground.

Terminals	Continuity
㉛ - Ground	No
㉜ - Ground	

NG → Repair harness.

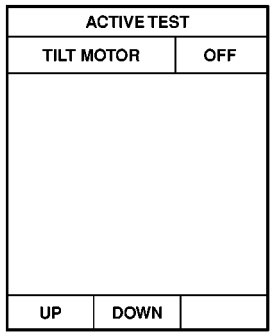
OK ↓

Replace lifting sensor (rear).

Trouble Diagnoses (Cont'd)

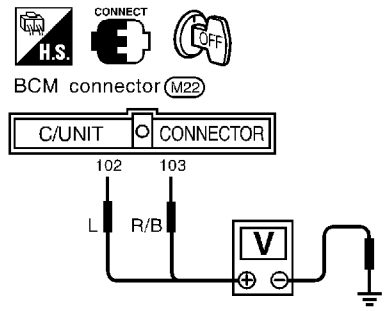
DIAGNOSTIC PROCEDURE 9
(Tilt motor check)

A



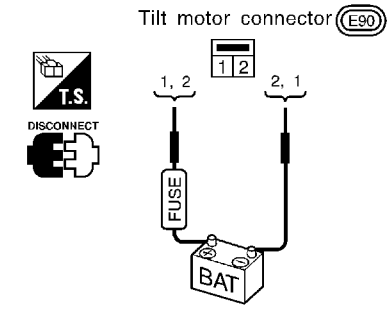
SEL545W

B



SEL966U

C



SEL967U

A

TILT MOTOR ACTIVE TEST

CONSULT-II

See "TILT MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Tilt motor should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Tilt motor is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO TILT MOTOR.

Check voltage between BCM connector terminals 102 or 103 and ground.

Condition of tilt switch	Terminals ⊕	Terminals ⊖	Voltage V
Up	103	Ground	Approx. 12
Down	102	Ground	Approx. 12

Refer to wiring diagram in EL-424.

NG → Replace BCM.

OK ↓

C

CHECK TILT MOTOR.

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

Terminals ⊕	Terminals ⊖	Operation
①	②	Up
②	①	Down

NG → Replace tilt motor.

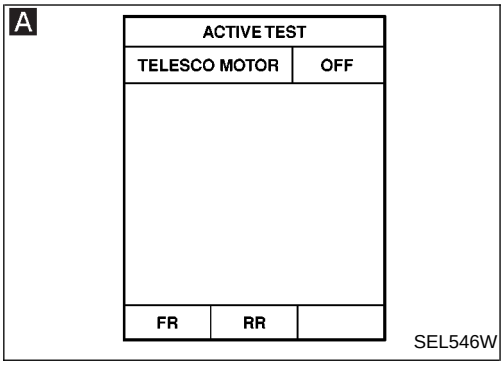
OK ↓

Check harness for operation between BCM and tilt motor.

Trouble Diagnoses (Cont'd)

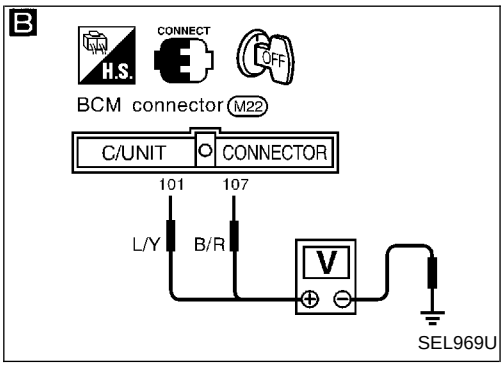
DIAGNOSTIC PROCEDURE 10
(Telescopic motor check)

A



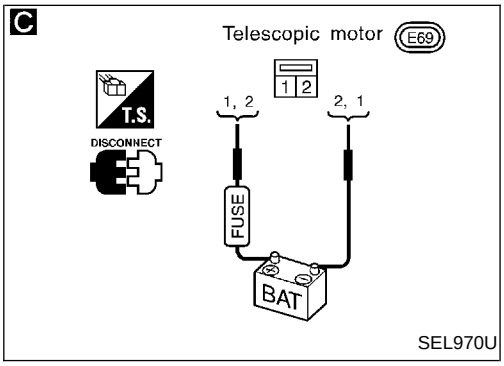
SEL546W

B



SEL969U

C



SEL970U

A

TELESCOPIC MOTOR ACTIVE TEST

CONSULT-II

See "TELESCO MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Telescopic motor should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Telescopic motor is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO TELESCOPIC MOTOR.

Check voltage between BCM connector terminals (101) or (107) and ground.

Condition of telescopic switch	Terminals ⊕	Terminals ⊖	Voltage V
Forward	(101)	Ground	Approx. 12
Backward	(107)	Ground	Approx. 12

Refer to wiring diagram in EL-424.

NG → Replace BCM.

OK ↓

C

CHECK TELESCOPIC MOTOR.

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

Terminals ⊕	Terminals ⊖	Operation
①	②	Forward
②	①	Upward

NG → Replace telescopic motor.

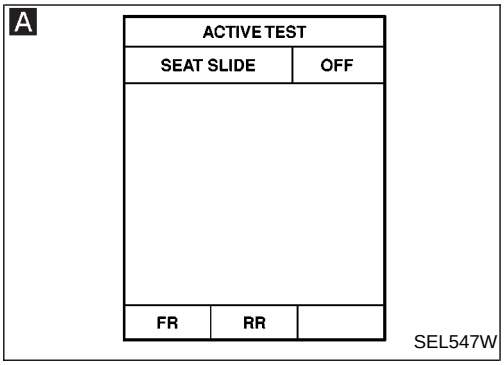
OK ↓

Check harness for operation between BCM and telescopic motor.

Trouble Diagnoses (Cont'd)

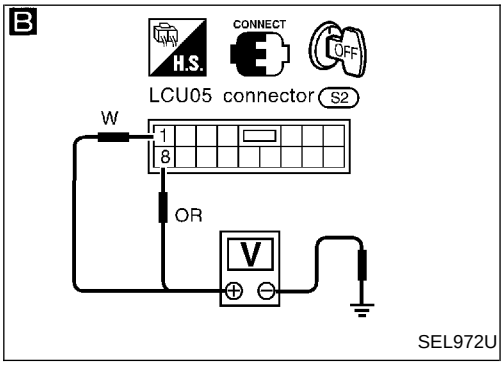
DIAGNOSTIC PROCEDURE 11
(Sliding motor check)

A



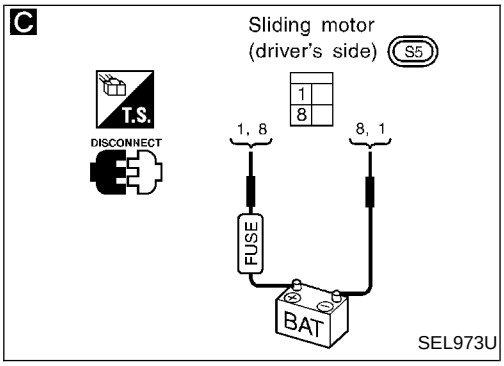
SEL547W

B



SEL972U

C



SEL973U

A

SLIDING MOTOR ACTIVE TEST

CONSULT-II

See "SEAT SLIDE" in ACTIVE TEST mode.
Perform operation shown on display.
Sliding motor should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Sliding motor is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO SLIDING MOTOR.

Check voltage between LCU05 connector terminals ① or ⑧ and ground.

Condition of sliding switch	Terminals ⊕	Terminals ⊖	Voltage V
Forward	①	Ground	Approx. 12
Backward	⑧	Ground	Approx. 12

Refer to wiring diagram in EL-426.

NG → Replace LCU05.

OK ↓

C

CHECK SLIDING MOTOR.

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

Terminals ⊕	Terminals ⊖	Operation
①	⑧	Forward
⑧	①	Backward

NG → Replace sliding motor.

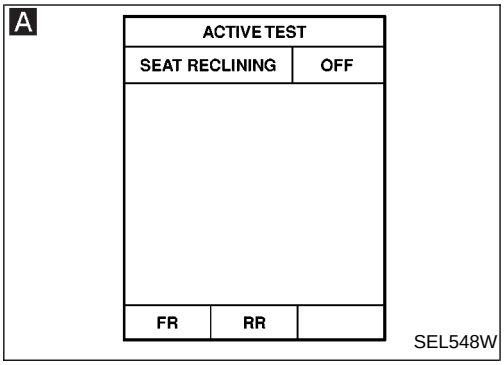
OK ↓

Check harness for operation between LCU05 and sliding motor.

Trouble Diagnoses (Cont'd)

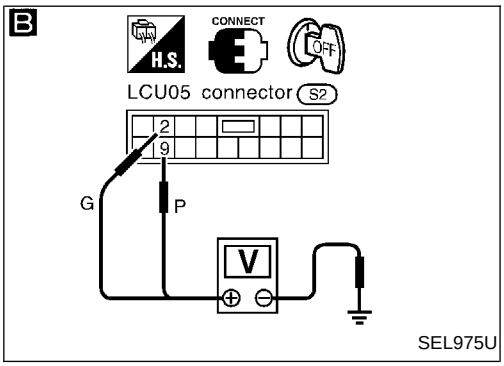
DIAGNOSTIC PROCEDURE 12
(Reclining motor check)

A



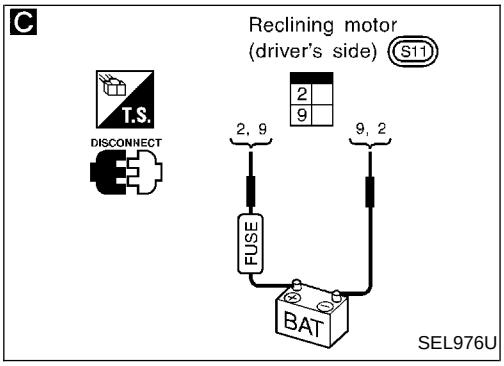
SEL548W

B



SEL975U

C



SEL976U

A

RECLINING MOTOR ACTIVE TEST

CONSULT-II

See "SEAT RECLINING" in ACTIVE TEST mode.
Perform operation shown on display.
Reclining motor should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Reclining motor is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO RECLINING MOTOR.

Check voltage between LCU05 connector terminals ② or ⑨ and ground.

Condition of reclining switch	Terminals ⊕	Terminals ⊖	Voltage V
Forward	②	Ground	Approx. 12
Backward	⑨	Ground	Approx. 12

Refer to wiring diagram in EL-426.

NG → Replace LCU05.

OK ↓

C

CHECK RECLINING MOTOR.

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

Terminals ⊕	Terminals ⊖	Operation
②	⑨	Forward
⑨	②	Backward

NG → Replace reclining motor.

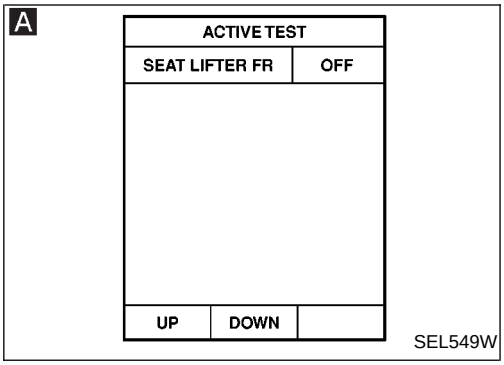
OK ↓

Check harness for operation between LCU05 and reclining motor.

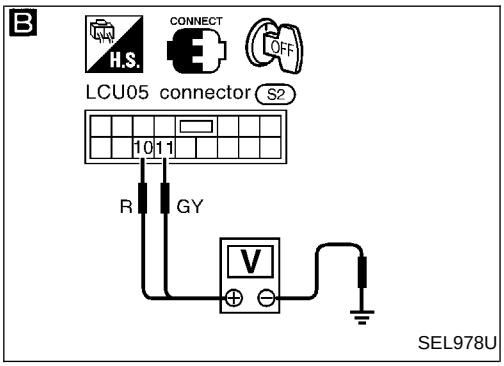
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 13
[Lifting motor (Front) check]

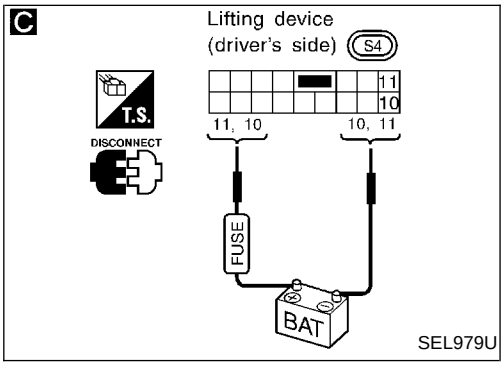
A



B



C



A

LIFTING MOTOR (FRONT) ACTIVE TEST

CONSULT-II

See "SEAT LIFTER FR" in ACTIVE TEST mode.
Perform operation shown on display.
Lifting motor (front) should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Lifting motor (front) is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO LIFTING MOTOR (FRONT).
Check voltage between LCU05 connector terminals ⑪ or ⑩ and ground.

Condition of lifting switch (front)	Terminals ⊕	Terminals ⊖	Voltage V
Up	⑪	Ground	Approx. 12
Down	⑩	Ground	Approx. 12

Refer to wiring diagram in EL-426.

NG → Replace LCU05.

OK ↓

C

CHECK LIFTING MOTOR (FRONT).
1. Disconnect lifting device connector.
2. Apply 12V DC direct current to motor and check operation.

Terminals ⊕	Terminals ⊖	Operation
⑪	⑩	Up
⑩	⑪	Down

NG → Replace lifting motor (front).

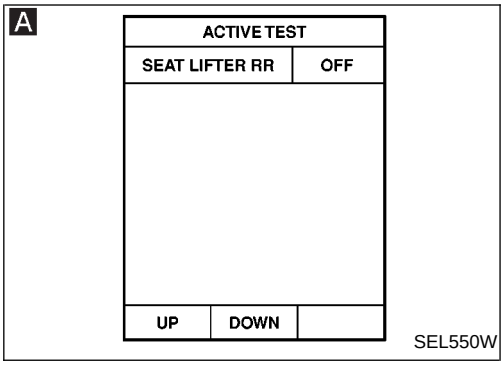
OK ↓

Check harness for operation between LCU05 and lifting motor (front).

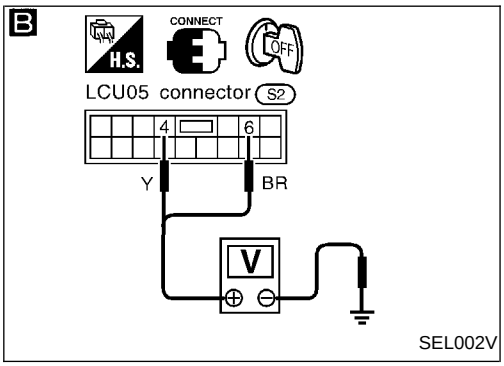
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 14
[Lifting motor (Rear) check]

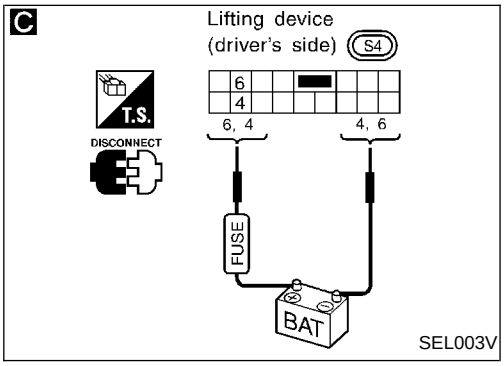
A



B



C



A

LIFTING MOTOR (REAR) ACTIVE TEST

CONSULT-II

See "SEAT LIFTER RR" in ACTIVE TEST mode.
Perform operation shown on display.
Lifting motor (rear) should operate.
Note: If CONSULT-II is not available, start with diagnostic procedure B .

OK → Lifting motor (rear) is OK.

NG ↓

B

CHECK OUTPUT SIGNAL TO LIFTING MOTOR (REAR).

Check voltage between LCU05 connector terminals ⑥ or ④ and ground.

Condition of lifting switch (rear)	Terminals ⊕	Terminals ⊖	Voltage V
Up	⑥	Ground	Approx. 12
Down	④	Ground	Approx. 12

Refer to wiring diagram in EL-427.

NG → Replace LCU05.

OK ↓

C

CHECK LIFTING MOTOR (REAR).

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

Terminals ⊕	Terminals ⊖	Operation
⑥	④	Up
④	⑥	Down

NG → Replace lifting motor (rear).

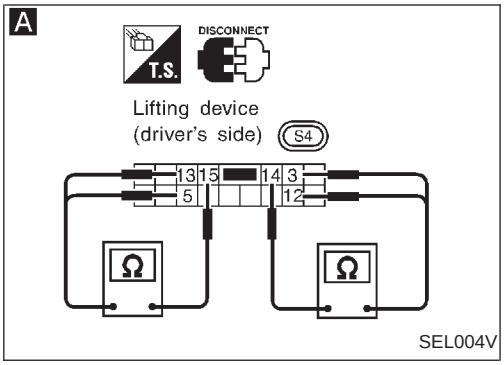
OK ↓

Check harness for operation between LCU05 and lifting motor (rear).

Trouble Diagnoses (Cont'd)

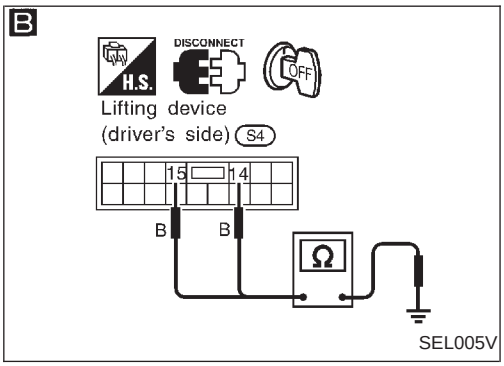
DIAGNOSTIC PROCEDURE 15
(Lifting limit switch check)

A



SEL004V

B



SEL005V

A

CHECK LIMIT SWITCH.

1. Disconnect lifting device connector.
2. Check continuity between lifting device (limit switch) terminals.

	Terminals	Condition of seat lifting	Continuity
Front	⑫ - ⑭	Fully up	No
		Except the above	Yes
	③ - ⑭	Fully down	No
		Except the above	Yes
Rear	⑤ - ⑮	Fully up	No
		Except the above	Yes
	⑬ - ⑮	Fully down	No
		Except the above	Yes

Refer to wiring diagram in EL-426 or 427.

NG → Replace limit switch.

OK ↓

B

CHECK GROUND CIRCUIT FOR LIMIT SWITCH.

Check continuity between lifting device terminal ⑭ (for limit switch front) or ⑮ (for limit switch rear) and ground.

Continuity should exist.

NG → Repair harness.

OK ↓

Check harness for open or short between LCU05 and limit switch.

Trouble Diagnoses (Cont'd)

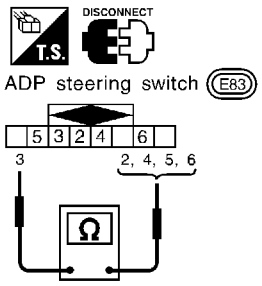
DIAGNOSTIC PROCEDURE 16
(Tilt/telescopic switch check)

A

DATA MONITOR	
MONITOR	
TELESCO SW-FR	OFF
TELESCO SW-RR	OFF
TILT SW-UP	OFF
TILT SW-DOWN	OFF
	RECORD

SEL551W

B



SEL007V

CHECK TILT/TELESCOPIC SWITCH INPUT SIGNAL.

A CONSULT-II

See "TELESCO SW - FR/RR, TILT SW - UP/DOWN" in DATA MONITOR mode.
These switches should change from "OFF" to "ON" when switch is operated.

OR

ON BOARD

Check tilt/telescopic switch operation is switch monitor (Mode II) mode.
(Refer to On board diagnosis EL-273.)

Refer to wiring diagram in EL-423.

OK → Tilt/telescopic switch is OK.

NG ↓

B

CHECK TILT/TELESCOPIC SWITCH.

1. Disconnect ADP steering switch connector.
2. Check continuity between ADP steering switch terminals.

Switch	Condition	Terminal ②	③	④	⑤	⑥
Tilt	Up		○	○		
	Down		○		○	
Telescopic	Forward		○			○
	Backward	○	○			

NG → Replace ADP steering switch.

OK ↓

Check the following.
- Ground circuit for ADP steering switch
- Harness for open or short between BCM and ADP steering switch

Trouble Diagnoses (Cont'd)

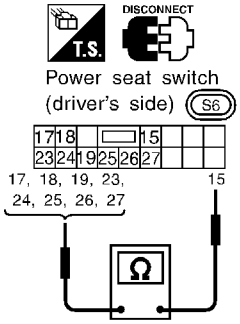
DIAGNOSTIC PROCEDURE 17
(Power seat switch check)

A

DATA MONITOR	
MONITOR	
SLIDE SW-FR	OFF
SLIDE SW-RR	OFF
RECLN SW-FR	OFF
RECLN SW-RR	OFF
LIFT FR SW-UP	OFF
LIFT FR SW-DN	OFF
LIFT RR SW-UP	OFF
LIFT RR SW-DN	OFF
	Scroll Down
	RECORD

SEL552W

B



SEL008V

CHECK POWER SEAT SWITCH INPUT SIGNAL.

A CONSULT-II

See "SLIDE SW, RECLN SW, LIFT FR, RR SW" in DATA MONITOR mode.
These switches should change from "OFF" to "ON" when switch is operated.

OR

ON BOARD

Check each power seat switch operation in switch monitor (Mode II) mode.
(Refer to On board diagnosis EL-273.)

Refer to wiring diagram in EL-425.

OK → Power seat switch is OK.

NG ↓

B

CHECK POWER SEAT SWITCH.

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

Switch	Condition	Terminals								
		⑮	⑰	⑱	⑲	㉓	㉔	㉕	㉖	㉗
Sliding	Forward	○	○							
	Backward	○				○				
Reclining	Forward	○		○						
	Backward	○					○			
Lifting (Front)	Up	○			○					
	Down	○						○		
Lifting (Rear)	Up	○							○	
	Down	○								○

NG → Replace power seat switch.

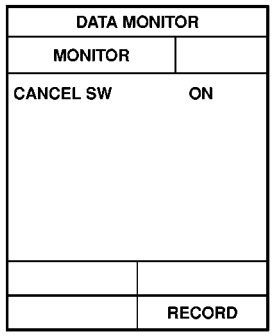
OK ↓

Check the following.
- Ground circuit for power seat switch
- Harness for open or short between LCU05 and power seat switch

Trouble Diagnoses (Cont'd)

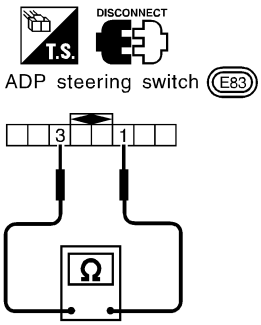
DIAGNOSTIC PROCEDURE 18
(Cancel switch check)

A



SEL553W

B



SEL066X

CHECK CANCEL SWITCH INPUT SIGNAL.

A CONSULT-II

See "CANCEL SW" in DATA MONITOR mode.
When cancel switch is ON:
CANCEL SW ON
When cancel switch is OFF:
CANCEL SW OFF

OR

ON BOARD

Check cancel switch in switch monitor (Mode II) mode.
(Refer to On board Diagnosis EL-273.)

Refer to wiring diagram in EL-423.

OK → Cancel switch is OK.

NG ↓

B

CHECK CANCEL SWITCH.

1. Disconnect ADP steering switch connector.
2. Check continuity between ADP steering switch terminals.

Terminals	Cancel switch condition	Continuity
① - ③	ON	Yes
	OFF	No

NG → Replace ADP steering switch.

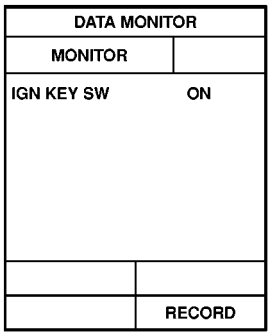
OK ↓

Check the following.
- Ground circuit for ADP steering switch
- Harness for open or short between BCM and ADP steering switch

Trouble Diagnoses (Cont'd)

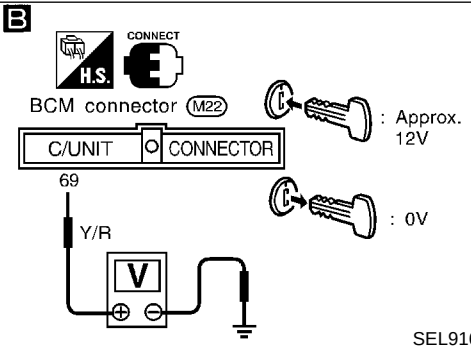
DIAGNOSTIC PROCEDURE 19
(Key, detention, door switch and vehicle speed sensor check)

A



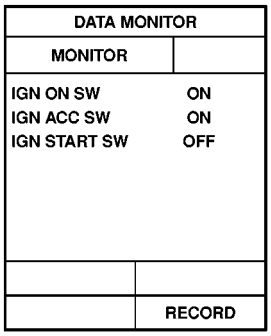
SEL532W

B



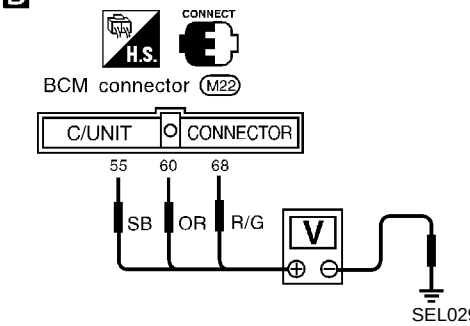
SEL916V

C



SEL555W

D



SEL029V

CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT-II

See "IGN KEY SW" in DATA MONITOR mode.
When key is inserted in ignition key cylinder:
IGN KEY SW ON
When key is removed from ignition key cylinder:
IGN KEY SW OFF

OR

B TESTER

Check voltage between BCM terminals ⑥⑨ and ground.

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

Refer to wiring diagram in EL-421.

NG → Check the following.
- 10A fuse [No. 28, located in fuse block (J/B)]
- Key switch
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

OK ↓

CHECK IGNITION SWITCH INPUT SIGNAL (ACC, ON AND START).

C CONSULT-II

See "IGN ACC SW, IGN ON SW, IGN START SW" in DATA MONITOR mode.
These switches should change from "OFF" to "ON" when ignition key switch is turned to each position.

OR

D TESTER

Check voltage between BCM terminals and ground.

Terminals		Ignition key switch position			
⊕	⊖	OFF	ACC	ON	START
⑥⓪	Ground	Approx. 0V	Battery voltage		Approx. 0V
⑥⑧	Ground	Approx. 0V		Battery voltage	
⑤⑤	Ground	Approx. 0V			Battery voltage

Refer to wiring diagram in EL-421.

NG → Check the following.
- 7.5A fuse [No. 23 located in the fuse block (J/B)]
- 7.5A fuse [No. 32 located in the fuse block (J/B)]
- 7.5A fuse [No. 34 located in the fuse block (J/B)]
- Harness for open or short between BCM and fuse

OK ↓

Ⓐ

(Go to next page.)

Trouble Diagnoses (Cont'd)

E

DATA MONITOR	
MONITOR	
DETENT SW	ON
	RECORD

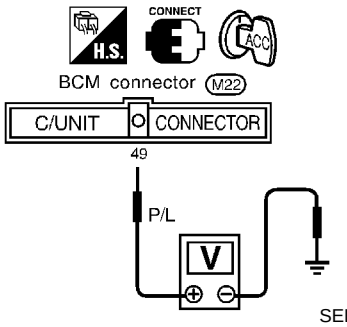
SEL554W

F

DATA MONITOR	
MONITOR	
DOOR SW-DR	OFF
	RECORD

SEL556W

G



SEL681UA

Ⓐ

CHECK DETENTION SWITCH INPUT SIGNAL.

E CONSULT-II

See "DETENT SW" in DATA MONITOR mode.
"DETENT SW" should be "ON" when setting A/T selector lever in "P" position.

NG → Check the following.
- Detention switch
- Harness for open or short

OR

ON BOARD

Check detention switch operation in switch monitor (Mode II) mode.
(Refer to On board Diagnoses, EL-273.)

Refer to wiring diagram in EL-422.

OK ↓

CHECK DRIVER DOOR SWITCH INPUT SIGNAL.

F CONSULT-II

See "DOOR SW DR" in DATA MONITOR mode.
When driver's door is open:
DOOR SW-DR ON
When driver's door is closed:
DOOR SW-DR OFF

NG → Check the following.
- Driver door switch
- Driver door switch ground condition
- Harness for open or short between driver door switch and BCM

OR

ON BOARD

Check driver's door switch operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnoses EL-273.)

Refer to wiring diagram in EL-422.

OK ↓

CHECK VEHICLE SPEED SENSOR.
Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit.
Refer to EL-127.

Yes ↓

G

CHECK VEHICLE SPEED SENSOR PULL UP VOLTAGE.
1. Turn ignition switch to ACC.
2. Check voltage between BCM terminal ㊾ and ground.
   Approx. 5V should exist.

   Refer to wiring diagram in EL-422.

NG → Replace BCM.

OK ↓

Check harness for open or short between BCM terminal ㊾ and combination meter terminal ⑯.

NG → Repair harness.

OK ↓

INSPECTION END

Trouble Diagnoses (Cont'd)

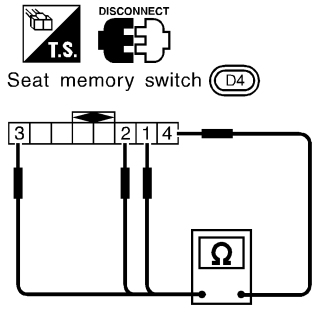
DIAGNOSTIC PROCEDURE 20
(Seat memory switch check)

A

DATA MONITOR	
MONITOR	
SET SW	OFF
MEMORY SW 1	OFF
MEMORY SW 2	OFF
	RECORD

SEL557W

B



SEL067X

CHECK SEAT MEMORY SWITCH INPUT SIGNAL.

A CONSULT-II

See "SET SW, MEMORY SW-1, 2" in DATA MONITOR mode.

These switches should change from "OFF" to "ON" when switch is operated.

OR

ON BOARD

Check each seat memory switch operation in Switch monitor (Mode II) mode.
(Refer to On board diagnosis EL-273.)

Refer to wiring diagram in EL-423.

OK → Seat memory switch is OK.

NG ↓

B

CHECK SEAT MEMORY SWITCH.

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

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

NG → Replace seat memory switch.

OK ↓

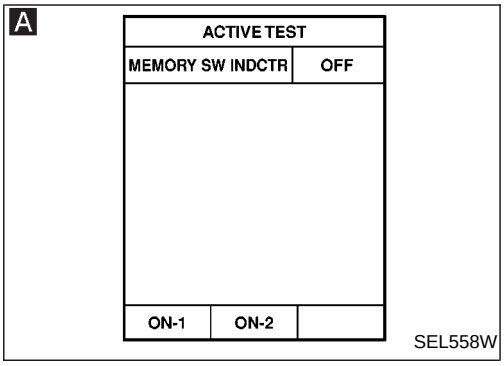
Check the following.

- Ground circuit for seat memory switch
- Harness for open or short between BCM and seat memory switch

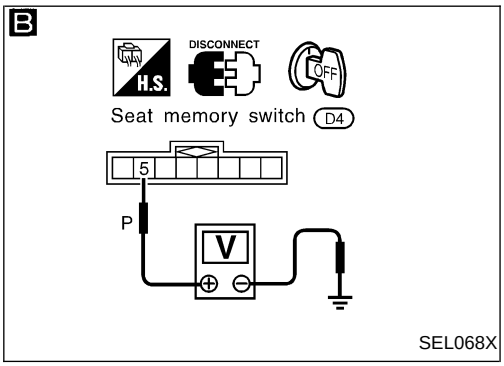
Trouble Diagnoses (Cont'd)

DIAGNOSES PROCEDURE 21
(Memory indicator check)

A



B



A

INDICATOR ACTIVE TEST

CONSULT-II

See "MEMORY SW INDCTR" in ACTIVE TEST mode.
Perform operation shown on display.
Indicator lamp should illuminate.
Note: If CONSULT-II is not available, skip this procedure and go to the next procedure.

OK → Indicator lamp is OK.

NG ↓

CHECK INDICATOR LAMP.

NG → Replace seat memory switch (indicator lamp).

OK ↓

B

CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP.

1. Disconnect seat memory switch connector.
2. Check voltage between seat memory switch terminal ⑤ and ground.
   Battery voltage should exist.

   Refer to wiring diagram in EL-423.

NG → Check the following.
- 7.5A fuse [No. 14 located in the fuse block (J/B)]
- Harness for open or short between fuse and indicator lamp

OK ↓

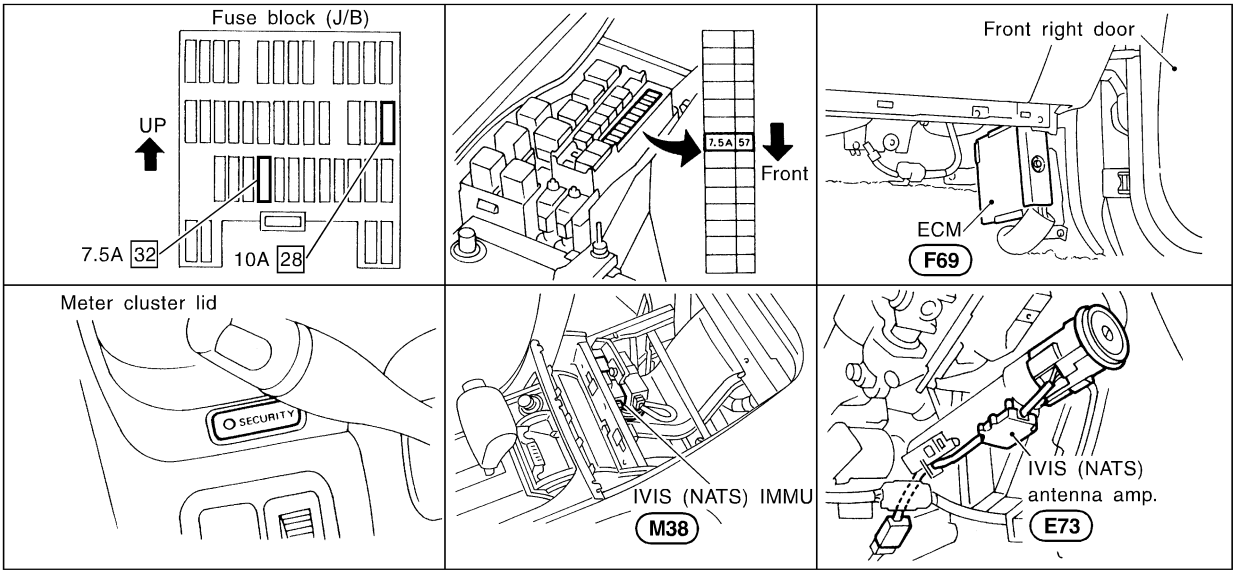
Check harness for open or short between BCM and seat memory switch.

DIAGNOSTIC PROCEDURE 22
(Lumbar support check)

Symptom	Possible cause	Repair order
Power lumbar support moves neither forward nor backward.	1. Power supply circuit for power lumbar support switch 2. Ground circuit 3. Lumbar support motor 4. Lumbar support motor circuit	1. Verify battery voltage is present at terminal ⑯ of power seat switch. 2. Check ground circuit for power seat switch terminal ⑭. 3. Check lumbar support motor. 4. Check harness for open or short between lumbar support motor and power seat switch.
Power lumbar support does not move forward or backward.	1. Lumbar support switch	1. Check power seat switch.

Refer to wiring diagram in EL-425.

Component Parts and Harness Connector Location



SEL828VA

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

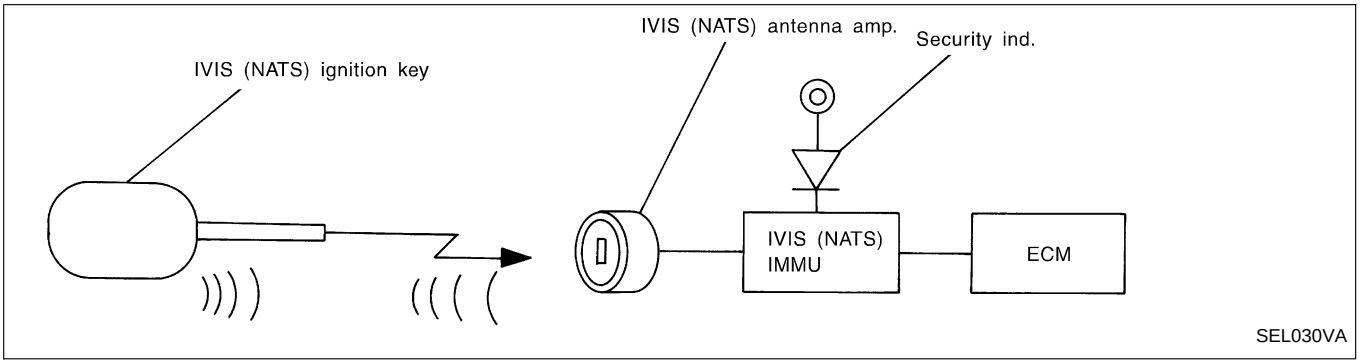
IVIS (Infiniti Vehicle Immobilizer System — NATS) has the following immobilizer functions:

- 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.
  When IVIS (NATS) initialization has been completed, the ID of the inserted ignition key is automatically IVIS (NATS) registered. Then, if necessary, additional registration of other IVIS (NATS) ignition key IDs can be carried out.
  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 (NATS) (indicated by lighting up of Security Indicator Lamp) or registering another IVIS (NATS) ignition key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

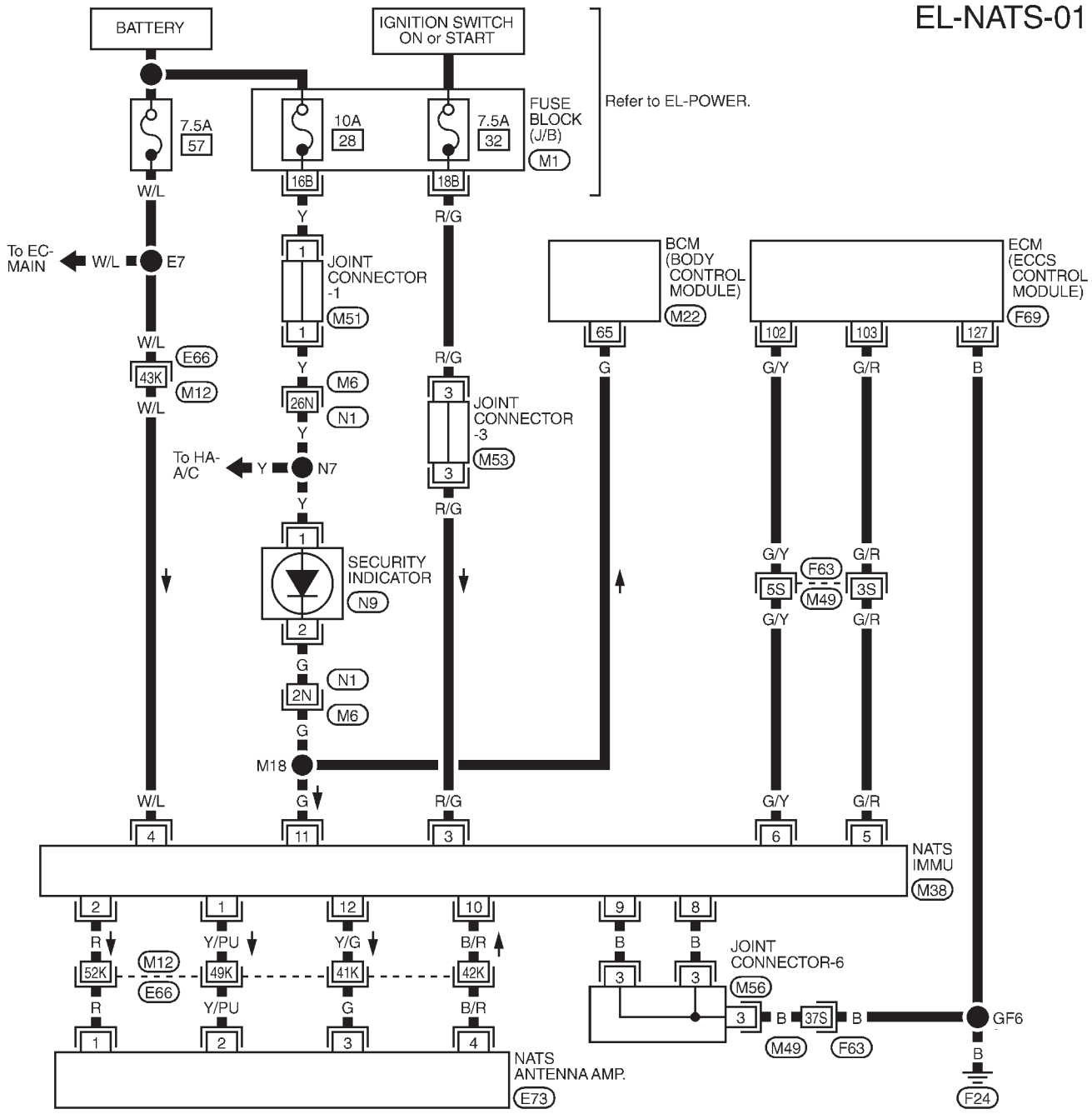
System Composition

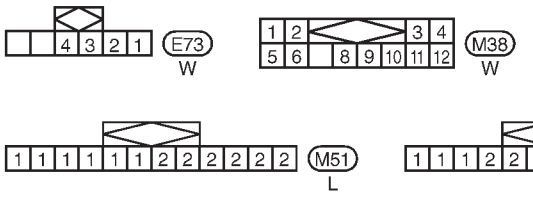
The immobilizer function of the IVIS (NATS) consists of the following:

- IVIS (NATS) ignition key
- IVIS (NATS) antenna amp. located in the ignition key cylinder
- IVIS (NATS) immobilizer control unit (IMMU)
- Engine control module (ECM)
- Security indicator



Wiring Diagram — IVIS (NATS) —

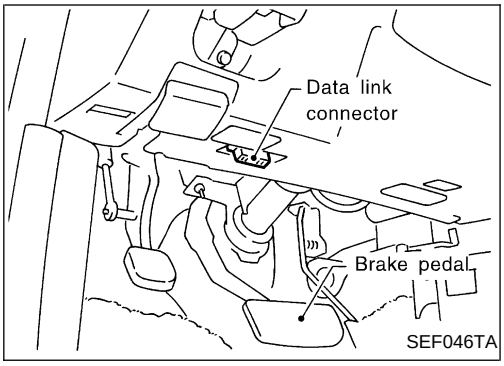




Refer to last page (Foldout page).

(E66), (M12)
(M6), (N1)
(M49), (F63)
(M1)
(M22)
(F69)

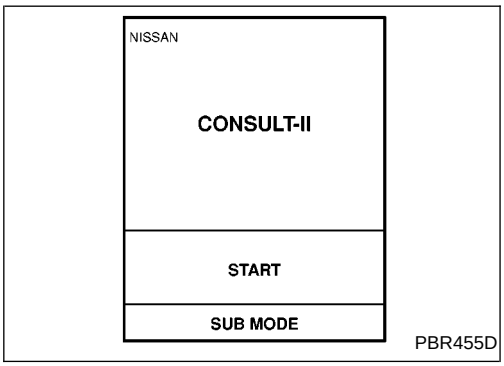
TEL233A



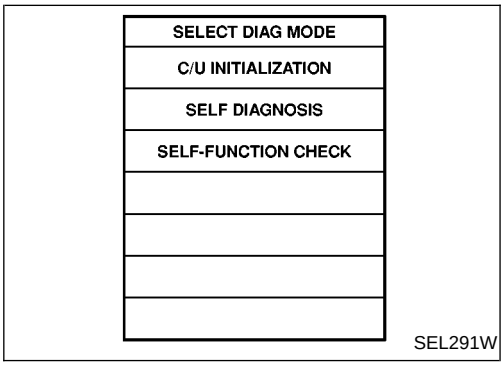
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

1. Turn ignition switch OFF.
2. Insert IVIS (NATS) program card into CONSULT-II.
   Program card
   NATS (UEN99A)
3. Connect CONSULT-II to the data link connector.



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



6. Perform each diagnostic test mode according to each service procedure.

For further information, see the CONSULT-II Operation Manual, IVIS/NVIS.

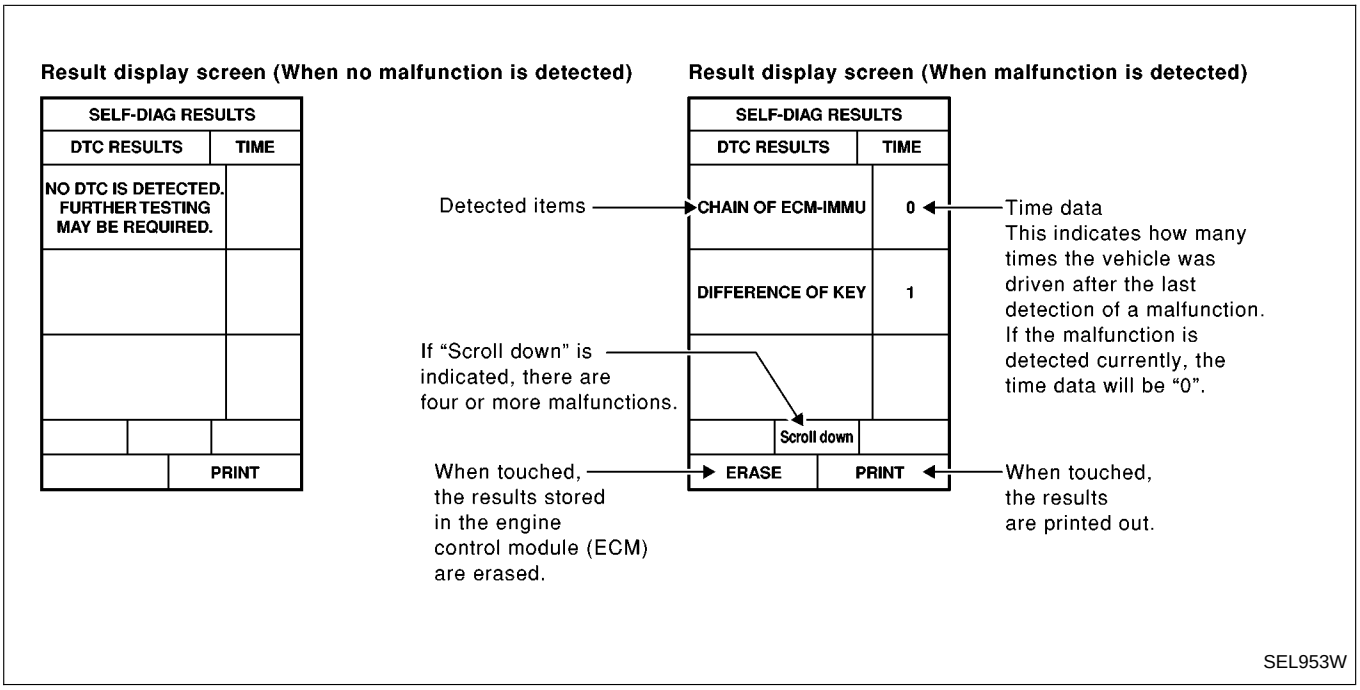
CONSULT-II (Cont'd)

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [IVIS (NATS) ignition key/IMMU/ECM]
SELF-FUNCTION CHECK	ECM checks its own IVIS (NATS) communication interface by itself.
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart below.

NOTE:
When any initialization is performed, all ID numbers previously registered will be erased and all IVIS (NATS) ignition keys must be registered again. The engine cannot be started with an unregistered key. The system will show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.

HOW TO READ SELF-DIAGNOSTIC RESULTS



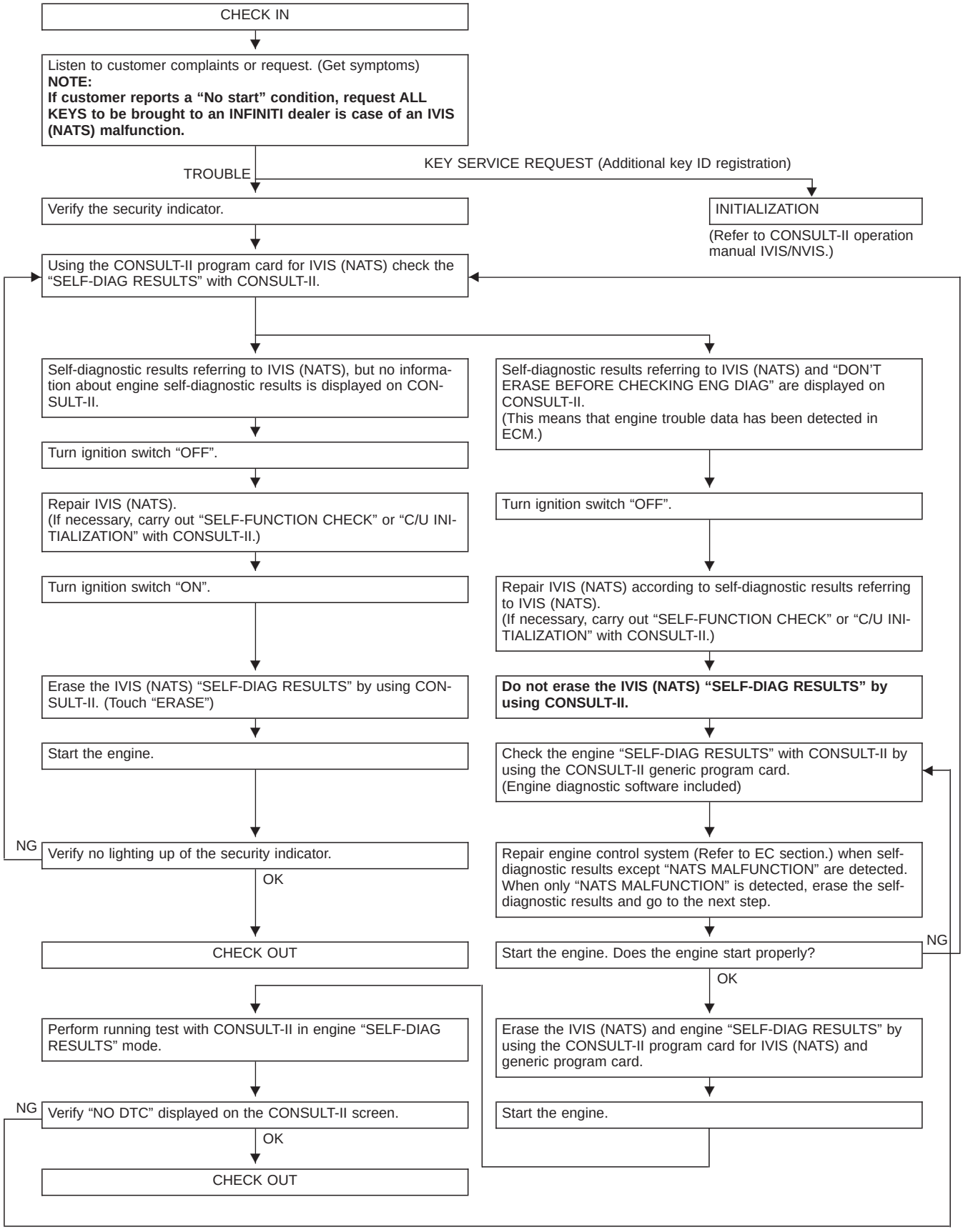
SEL953W

SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-468
ECM	ECM is malfunctioning.	EL-468
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU.	EL-469
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-471
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal.	EL-472
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-473
ELECTRONIC/MINGLE NOISE	Noise (interference) interfered into IVIS (NATS) communication lines during communicating.	EL-474
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and IVIS (NATS) trouble data have been detected in ECM.	EL-465
LOCK MODE	When an unregistered ignition key is used, or if the starting operation is carried out 5 or more times consecutively with the ignition key, IMMU or ECM malfunctioning, IVIS (NATS) will shift the mode to one which prevents the engine from being started.	EL-476

Trouble Diagnoses

WORK FLOW



Trouble Diagnoses (Cont'd)

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine cannot be started	IMMU	PROCEDURE 1 (EL-468)	IMMU	A
	ECM	PROCEDURE 2 (EL-468)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-469)	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
			Open circuit in power source line of ANT/AMP circuit	E3
			ECM	B
			IMMU	A
	DIFFERENCE OF KEY	PROCEDURE 4 (EL-471)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-472)	Communication line between ANT/AMP and IMMU: Open circuit or short circuit of battery voltage line or short circuit of ground line	E1
				E2
			Open circuit in power source line of ANT/AMP circuit	E3
			Open circuit in ground line of ANT/AMP circuit	E4
			Malfunction of key ID chip	E5
			IMMU	A
			Antenna amp.	E6

*: When IVIS (NATS) detects trouble, the security indicator lights up while ignition key is in the "ON" position.

Trouble Diagnoses (Cont'd)

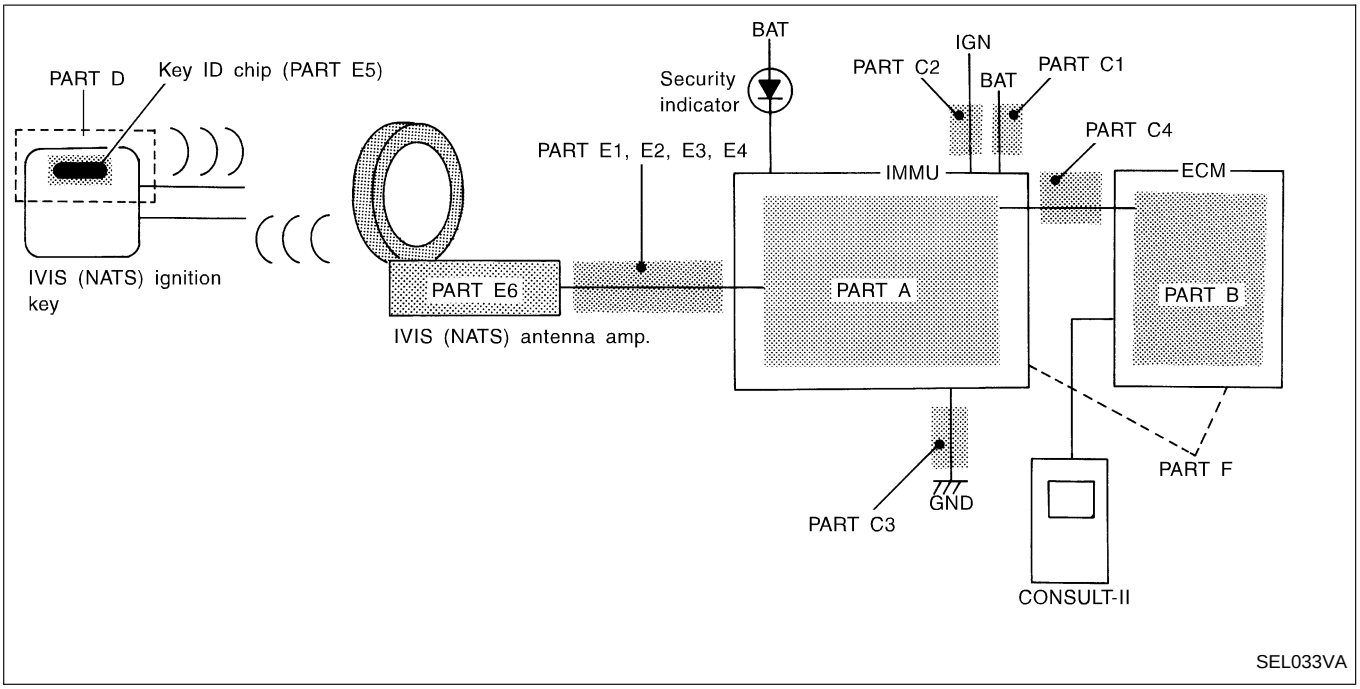
SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine cannot be started	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-473)	System initialisation has not yet been completed.	F
			ECM	F
	ELECTRONIC/MINGLE NOISE	PROCEDURE 7 (EL-474)	Noise interference in communication line	—
	LOCK MODE	PROCEDURE 9 (EL-476)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-465)	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)

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 8 (EL-475)	Security ind.
		Open circuit between Fuse and IVIS (NATS) IMMU
		Continuation of initialization mode
		IVIS (NATS) IMMU

DIAGNOSTIC SYSTEM DIAGRAM



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:
"IMMU" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
IMMU	0

SEL951W

A

Confirm SELF-DIAGNOSTIC RESULTS "IMMU" displayed on CONSULT-II screen.
Ref. part No.* A.

Yes

Replace IMMU.

Perform initialisation with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

* Ref. part No.: reference part No. of Diagnostic System Diagram on EL-467.

DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:
"ECM" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ECM	0

SEL952W

A

Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT-II screen.
Ref. part No. B.

Replace ECM.

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

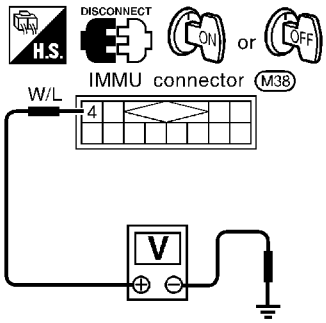
Self-diagnostic results:
"CHAIN OF ECM-IMMU" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

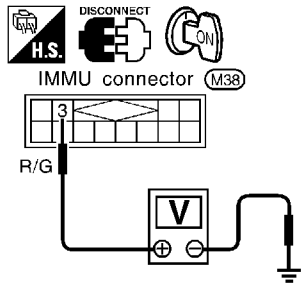
SEL954W

B



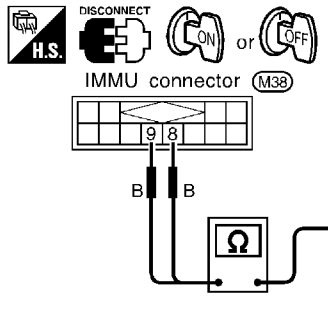
SEL867UA

C



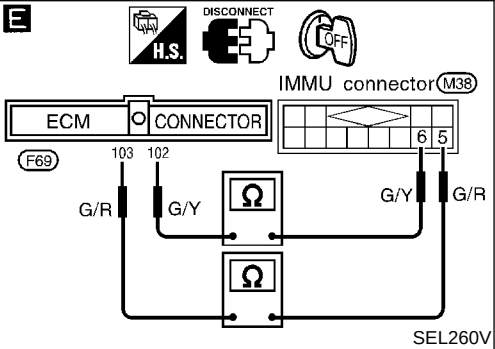
SEL868UA

D



SEL869UA

E



SEL260V

A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF ECM-IMMU" displayed on CONSULT-II screen.

OK ↓

B

Check voltage between terminal ④ of IMMU and ground with CONSULT-II or tester.
Voltage: Battery voltage

NG → Check the following:
- 7.5A fuse (No. 57, located in the fuse, fusible link and relay box)
- Harness for open or short between fuse and IMMU connector

Ref. part No. C1

OK ↓

C

Check voltage between terminal ③ of IMMU and ground with CONSULT-II or tester.
Voltage: Battery voltage

NG → Check the following:
- 7.5A fuse [No. 32, located in the fuse block (J/B)]
- Harness for open or short between fuse and IMMU connector

Ref. part No. C2

OK ↓

D

Check harness continuity between IMMU terminal ⑧ or ⑨ and ground.
Continuity should exist.

NG → Repair harness.
Ref. part No. C3

OK ↓

E

Check harness continuity between the following ECM terminals and IMMU terminals.
ECM (102) and IMMU ⑥
ECM (103) and IMMU ⑤
Continuity should exist.

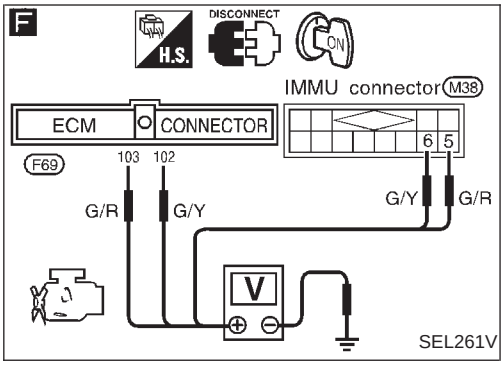
NG → Communication line is open circuit.
Repair harness or connectors.
Ref. part No. C4

OK ↓

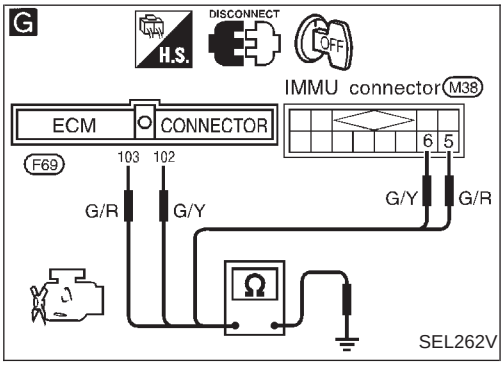
Ⓐ

Trouble Diagnoses (Cont'd)

F



G



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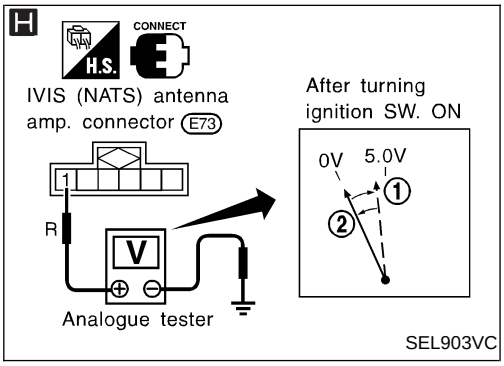

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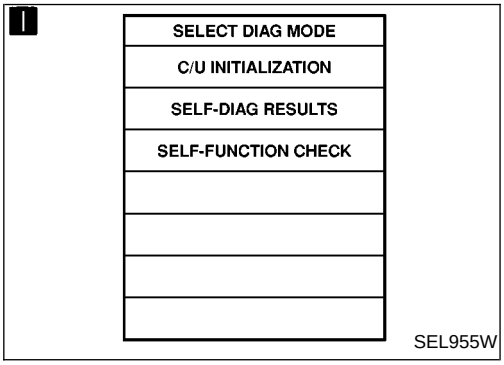
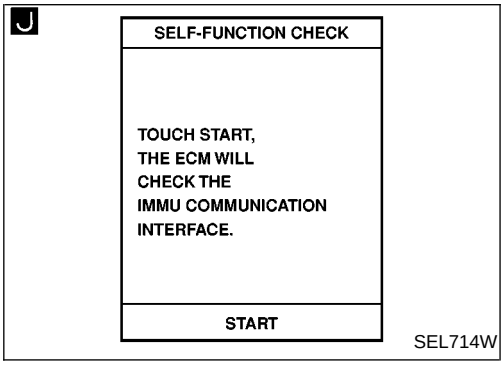


J



Ⓐ

F

CHECK COMMUNICATION LINE CIRCUIT.
1. Disconnect ECM connector and IMMU connector.
2. Check voltage between the following terminals and ground.
   ECM (102), ECM (103), IMMU ⑤ and IMMU ⑥
   Voltage: 0V

NG → Communication line is short-circuited with battery voltage line or ignition switch ON line.
Repair harness or connectors.
Ref. part No. C4

OK

G

Check continuity between the following terminals and ground.
ECM (102), ECM (103), IMMU ⑤ and IMMU ⑥
Continuity should not exist.

NG → Communication line is short-circuited with ground line.
Repair harness or connectors.
Ref. part No. C4

OK

H

CHECK POWER SUPPLY FOR IVIS (NATS) ANTENNA AMP.
1. Connect IMMU connector and IVIS (NATS) antenna amp. connector.
2. Check voltage between IVIS (NATS) antenna amp. terminal ① and ground (Power supply from IVIS (NATS) IMMU terminal ②) with analogue tester.
   Before turning ignition switch "ON"
   Voltage: 0V
   Just after turning ignition switch "ON"
   Pointer of tester should move.

NG → IVIS (NATS) antenna amp. +5V line is short-circuited with battery voltage line or ground line.
Repair harness or connectors.
Ref. part No. E3

OK

I

SELF-FUNCTION CHECK
1. Connect ECM connector and disconnect IMMU connector.
2. Turn ignition switch "ON".
3. Touch "SELF-FUNCTION CHECK" on CONSULT-II "SELECT DIAG MODE" screen.

J

Touch "START". ECM will then check its communication interface by itself.

NG → ECM is malfunctioning.
Replace ECM.
Ref. part No. B

Perform initialisation with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

OK

Ⓑ

Trouble Diagnoses (Cont'd)

Ⓑ

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".

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL956W

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT-II screen

A

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT-II screen.

OK

Perform initialization with CONSULT-II.
Re-register all NATS ignition key IDs.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

Initialization with CONSULT-II incomplete or failed

B

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".

Initialization completed

Start engine.

END
(Ignition key ID was unregistered.)
Ref. part No. D

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

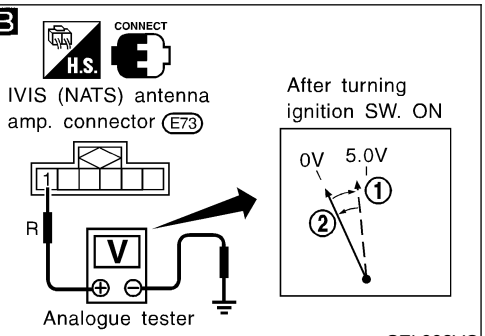
Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

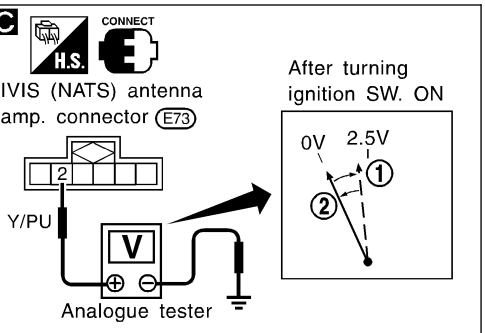
SEL957W

B



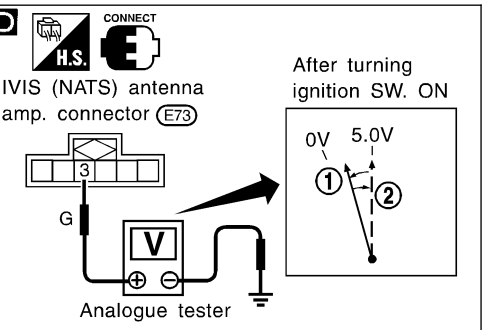
SEL903VC

C



SEL904VC

D



SEL905VC

A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT-II screen.

OK ↓

CHECK IVIS (NATS) IGNITION KEY ID CHIP.
Start engine with another registered IVIS (NATS) ignition key.

Start OK → Ignition key ID chip was malfunctioning.
Replace the ignition key.
Ref. part No. E5

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

Start NG ↓

CHECK IVIS (NATS) ANTENNA AMP. INSTALLATION.
Refer to "How to Replace IVIS (NATS) Antenna Amp." in EL-477.

NG → Reinstall IVIS (NATS) antenna amp. correctly.

OK ↓

B

CHECK POWER SUPPLY FOR IVIS (NATS) ANTENNA AMP.
1. Connect IMMU connector and IVIS (NATS) antenna amp. connector.
2. Check voltage between IVIS (NATS) antenna amp. terminal ① and ground (Power supply from IVIS (NATS) IMMU terminal ②) with analogue tester.
   Before turning ignition switch "ON"
   Voltage: 0V
   Just after turning ignition switch "ON"
   Pointer of tester should move.

NG → Check harness for open or short between for open or short between IMMU and IVIS (NATS) antenna amp.
If harness is OK, replace IMMU, perform initialisation with CONSULT-II.
For the initialisation procedure, refer to "CONSULT-II operation manual IVIS/NVIS".

OK ↓

C

CHECK SIGNAL LINE 1 BETWEEN IMMU AND IVIS (NATS) ANTENNA AMP.
Check voltage between IVIS (NATS) antenna amp. terminal ② and ground with analogue tester. Before turning ignition switch "ON"
Voltage: 0V
Just after turning ignition switch "ON"
Pointer of tester should move.

NG → (Check harness for open or short between for open or short between IMMU and IVIS (NATS) antenna amp. If harness is OK, replace IMMU, perform initialisation with CONSULT-II. For the initialisation procedure, refer to "CONSULT-II operation manual IVIS/NVIS".)

OK ↓

D

CHECK SIGNAL LINE 2 BETWEEN IMMU AND IVIS (NATS) ANTENNA AMP.
Check voltage between IVIS (NATS) antenna amp. terminal ③ and ground with analogue tester. Before turning ignition switch "ON"
Voltage: 4.5 - 5V
Just after turning ignition switch "ON"
Pointer of tester should move.

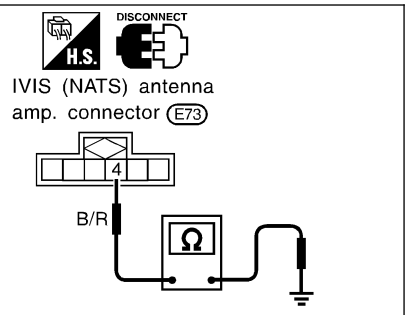
NG → (Check harness for open or short between for open or short between IMMU and IVIS (NATS) antenna amp. If harness is OK, replace IMMU, perform initialisation with CONSULT-II. For the initialisation procedure, refer to "CONSULT-II operation manual IVIS/NVIS".)

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

E



Ⓐ

E

CHECK ANTENNA AMP. GROUND LINE CIRCUIT.
1. Turn ignition switch "OFF".
2. Check continuity between IVIS (NATS) antenna amp. terminal ④ and ground. (Signal from IVIS (NATS) IMMU terminal ⑩)
   Continuity should exist.

NG → Check harness for open or short between IMMU and IVIS (NATS) antenna amp. If harness is OK, replace IMMU.
After replacing IMMU, perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual IVIS/NVIS".

OK → IVIS (NATS) antenna amp. is malfunctioning.
When replacing the amp. hold on to amp. body. Take care not to pull on amp. harness.

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL958W

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

DIAGNOSTIC PROCEDURE 6

Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen

A

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM*" displayed on CONSULT-II screen.

* "ID DISCORD, IMM-ECM": Registered ID of IMMU is in discord with that of ECM.

Perform initialization with CONSULT-II.
Re-register all IVIS (NATS) ignition key IDs.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

Initialization with CONSULT-II incomplete or failed → B

B

ECM is malfunctioning.
Replace ECM.
Ref. part No. F

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

Initialization completed → Start engine.

END
Ref. part No. F

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

Self-diagnostic results:
"ELECTRONIC/MINGLE NOISE" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ELECTRONIC/MINGLE NOISE	0

SEL959W

A

Confirm SELF-DIAGNOSTIC RESULTS "ELECTRONIC/MINGLE NOISE" displayed on CONSULT-II screen.

↓

Turn off or remove any possible noise sources.

↓

Touch "ERASE" on CONSULT-II SELF-DIAGNOSTIC RESULTS screen.

↓

Start engine. — NG → (back to Confirm SELF-DIAGNOSTIC RESULTS "ELECTRONIC/MINGLE NOISE" displayed on CONSULT-II screen.)

↓ OK

END

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

"SECURITY IND. DOES NOT LIGHT UP"

Check 10A fuse [No. 28, located in the fuse block (J/B)].
NG → Replace fuse.
OK ↓

IVIS (NATS) INITIALIZATION
1. Install the 10A fuse.
2. Perform initialization with CONSULT-II.
   For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

↓

Turn ignition switch "OFF".

↓

Start engine and turn ignition switch "OFF".

↓

Check the security ind. lighting.
OK → END
NG ↓

A

Check voltage between security ind. connector terminal ① and ground.
Voltage: Battery voltage
NG → Check harness for open or short between fuse and security ind.
OK ↓

CHECK INDICATOR LAMP.
NG → Repair harness.
OK ↓

B

CHECK IVIS (NATS) IMMU FUNCTION.
1. Connect IVIS (NATS) IMMU connector.
2. Disconnect security ind. connector.
3. Check continuity between IVIS (NATS) IMMU terminal ⑪ and ground.
   Continuity should exist intermittently.

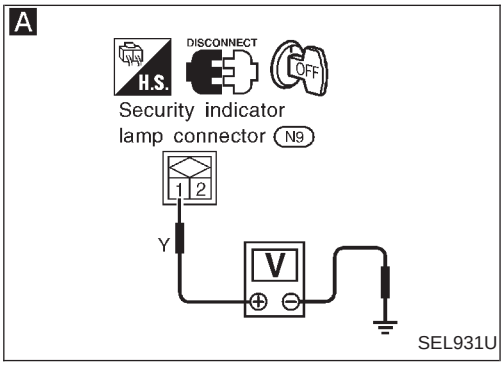
NG → IVIS (NATS) IMMU is malfunctioning. Replace IVIS (NATS) IMMU.

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS/NVIS".

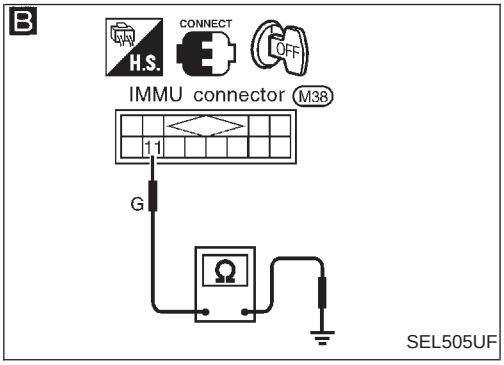
OK ↓

Check harness for open or short between security indicator and IVIS (NATS) IMMU.

A



B



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 9

Self-diagnostic results: "LOCK MODE" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL960W

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

A

Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT-II screen.

1. Turn the ignition switch to OFF position.
2. Turn the ignition key switch to ON position with a registered key. (Do not start engine.) Wait for 5 seconds.
3. Return the key to the OFF position.
4. Repeat steps 2 and 3 twice (total of three cycles).
5. Start the engine.

Can the engine start?

Yes → System is OK. (Now the system is escaped from "LOCK MODE".)

No

CHECK IVIS (NATS) ANTENNA AMP. INSTALLATION.
Refer to "How to Replace IVIS (NATS) Antenna Amp." in EL-477.

NG → Reinstall IVIS (NATS) antenna amp. correctly.

OK

PERFORM INITIALISATION
Perform initialisation with CONSULT-II. For the initialisation procedure, refer to "CONSULT-II operation manual IVIS/NVIS" .

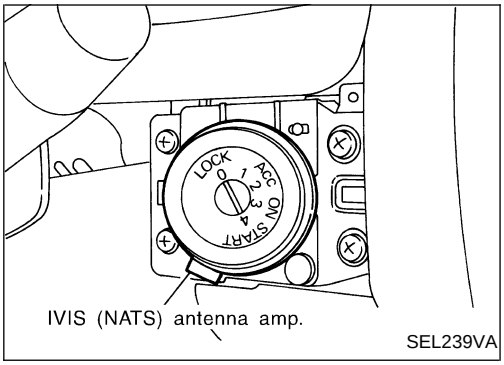
Can the system be initialized?

Note: If the initialisation is incompleted or failed, CONSULT-II shows B message on the screen.

Yes → System is OK.

No

Go to DIAGNOSTIC PROCEDURE 5, EL-472 to check "CHAIN OF IMMU-KEY".

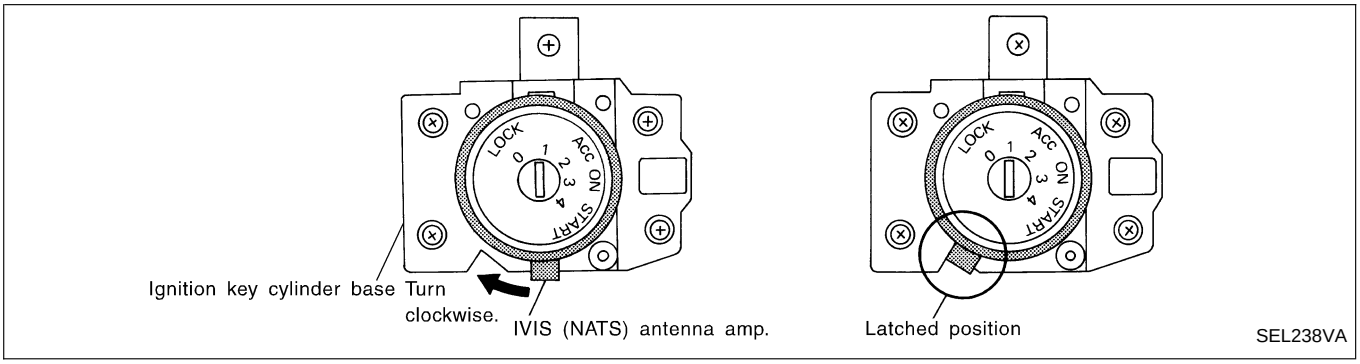


How to Replace IVIS (NATS) Antenna Amp.

NOTE:

- **If IVIS (NATS) antenna amp. is not installed correctly, IVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show “LOCK MODE” or “CHAIN OF IMMU-KEY”.**
- **Initialization is not necessary only when IVIS (NATS) antenna amp. is replaced with a new one.**

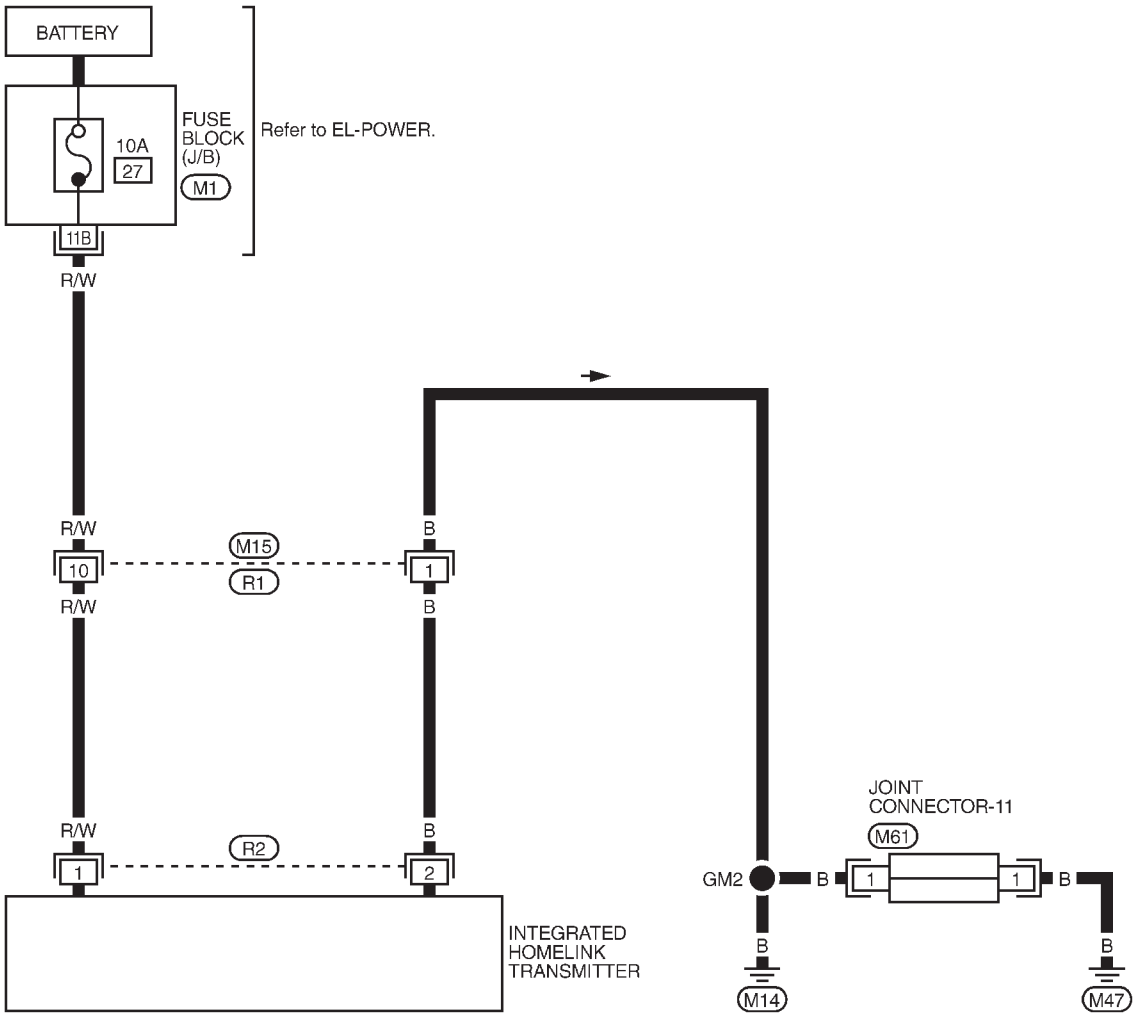
INSTALLATION

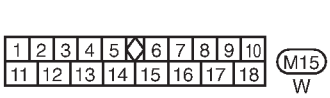


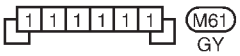
- After inserting the IVIS (NATS) antenna amp. into the ignition key cylinder, check if the IVIS (NATS) antenna amp. is set in the latched position as shown in the above illustration.

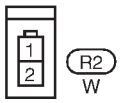
Wiring Diagram — TRNSMT —

EL-TRNSMT-01





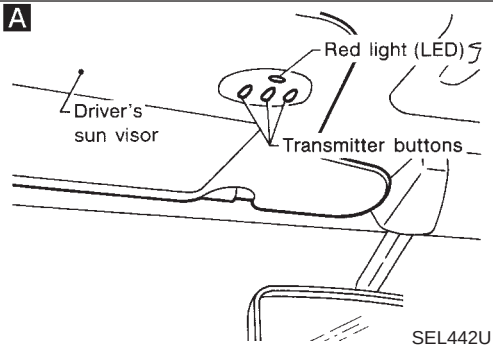




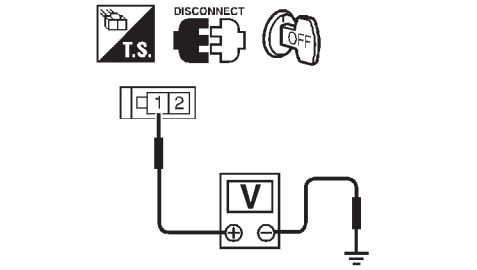
Refer to last page (Foldout page).
M1

TEL892

A



B



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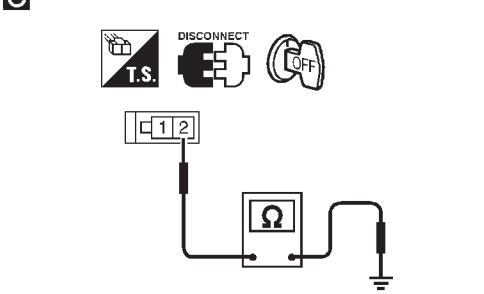


Trouble Diagnoses

DIAGNOSTIC PROCEDURE

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.

A

1. Turn ignition switch "OFF".
2. Does red light (LED) of transmitter illuminate when any button is pressed?

OK → Check transmitter with Tool*.

Check transmitter with Tool*.
- OK → Receiver or hand-held transmitter fault, not vehicle related.
- NG → Replace transmitter with sunvisor assembly.

NG →

B

POWER SUPPLY CHECK.
1. Disconnect transmitter connector.
2. Turn ignition switch "OFF".
3. Check voltage between terminal ① and body ground.
   Voltage: Battery voltage

NG → Check the following.
- 10A fuse [No. 27, located in the fuse block (J/B)]
- Harness for open or short between fuse and transmitter

OK →

C

GROUND CIRCUIT CHECK.
Check continuity between terminal ② and body ground.
Continuity should exist.

NG → Repair harness.

OK →

Replace transmitter with sunvisor assembly.

*For details, refer to Technical Service Bulletin.

Precaution

CAUTION:

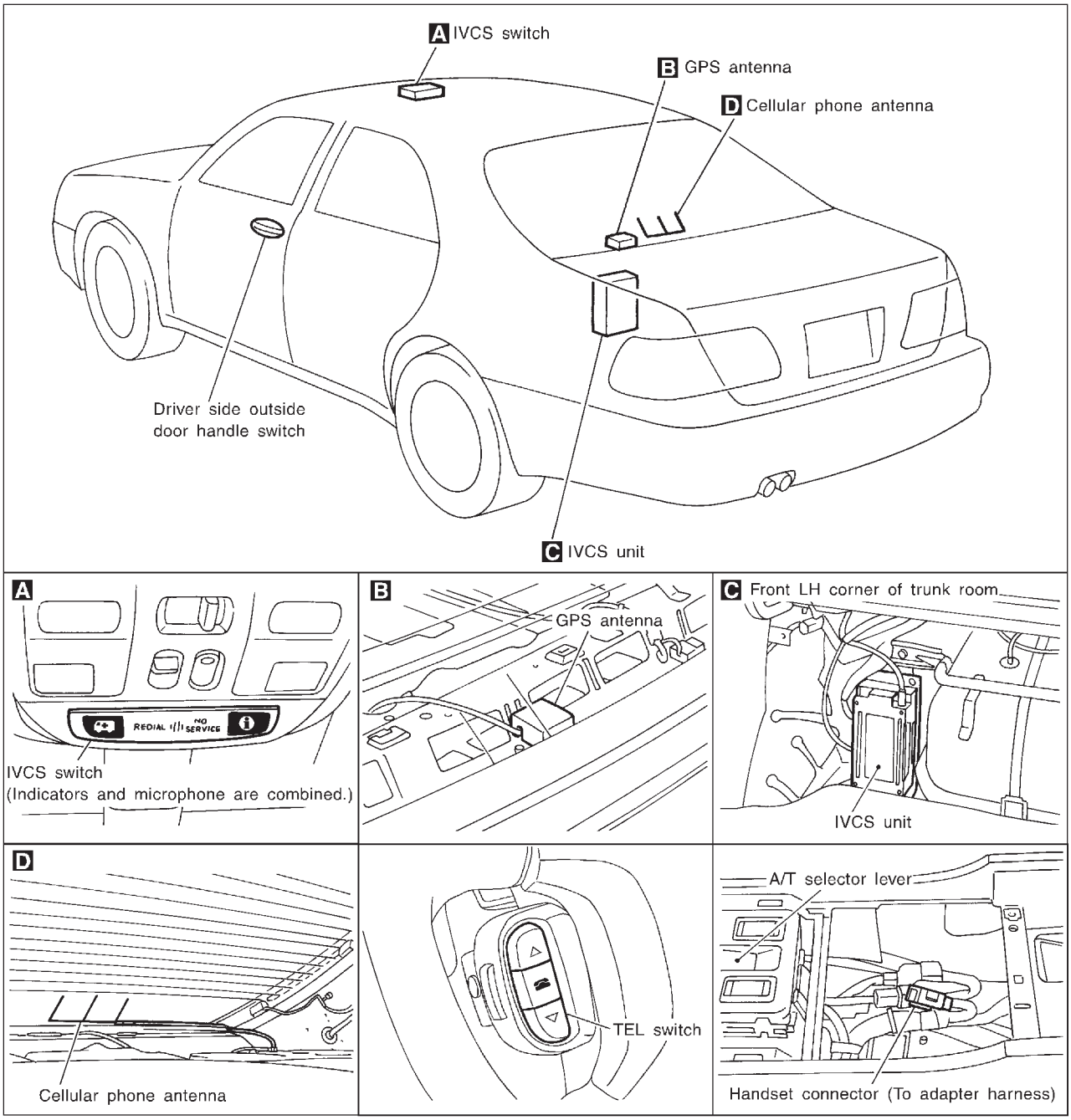
- **Use CONSULT-II to set the system "Demonstration mode" if INFINITI Communicator needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-508.)**
- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, no service from the Communicator Response Center is available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**
- **If the theft warning system is activated for more than 7 seconds, INFINITI Communicator will dial to the Communicator Response Center automatically. The operator will contact the customer to confirm whether the vehicle has been stolen or not.**
- **When "Mayday" emergency dialing is activated (if the system is not in the demonstration mode), the Communicator Response Center operator will come online. If there is no emergency, the operator will ask the occupant for the user password (option). Failure to provide the correct password results in a police response.**
- **IVCS unit memory includes VIN (Vehicle Identification Number) and other such vehicle specific data. Therefore, the IVCS unit cannot be transferred to another vehicle. When the IVCS unit is replaced, the new unit must be set up and programmed. The INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started after a phone number has been changed or a module (IVCS unit) is replaced. The VIN will be written in the memory of the new unit by transmitting data from the Communicator Response Center. For details, refer to "System Setting", EL-510.**
- **Before servicing the vehicle, confirm that the VIN memorized by the IVCS unit is the same as the VIN on the vehicle's identification plate.**

Communicator Response Center Telephone Number for Technicians

The Communicator Response Center telephone number for technicians is **1-888-427-4812**.
Whenever an INFINITI dealer technician dials the above number, the following information will be required by the Communicator Response Center operator.

- Customer name
- Unit ID number of old IVCS unit (For details, refer to EL-496.)
- Unit ID number of new IVCS unit
- VIN
- Dealer name and code (For security purposes)
- Dealer contact person (technician)
- Dealer phone and fax numbers

Component Parts and Harness Connector Location



SEL647V

System Description

OUTLINE

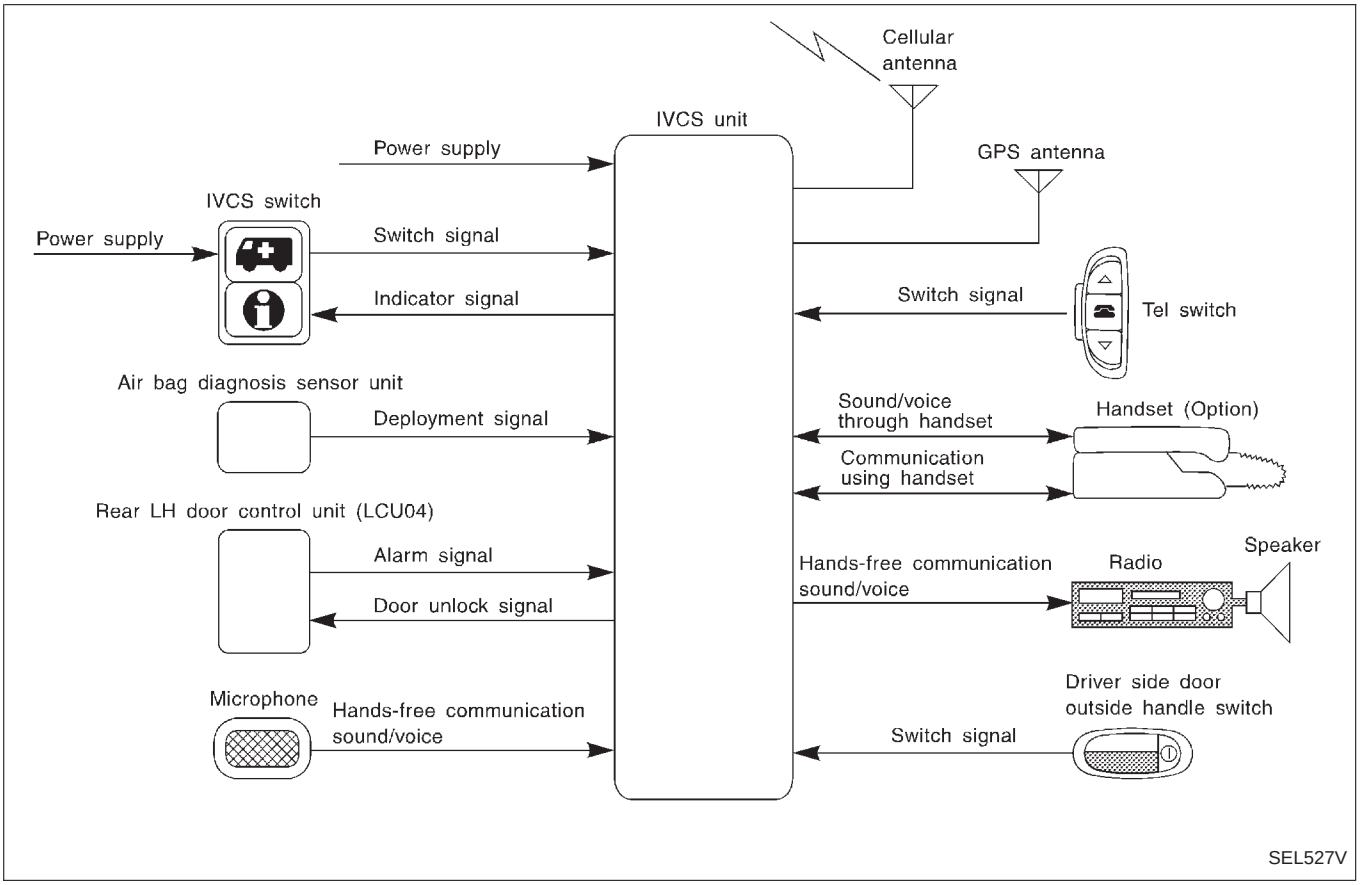
INFINITI Communicator system uses the Global Positioning System (GPS), cellular phone technology and the Communicator Response Center to provide the following functions.

- One touch “Information” dialing
- One touch “Mayday” emergency dialing
- Automatic air bag inflation notification
- Stolen vehicle tracking
- Alarm notification
- Remote door unlock

There are limitations to the INFINITI Communicator system. To understand the system, read SYSTEM LIMITATIONS (EL-483) thoroughly.

SYSTEM COMPOSITION

- The INFINITI Communicator system is controlled by the IVCS (In Vehicle Communication System) unit. System status (“Mayday”-emergency dialing, or re-dialing, etc.) is displayed by the indicators in the IVCS switch.
- The INFINITI Communicator system can only make calls to the Communicator Response Center and receive calls from the center, unless the customer chooses to have the optional handset install.



System Description (Cont'd)

SYSTEM LIMITATIONS

Service area

Depending on the cellular provider chosen, service is provided in the 48 contiguous states. Service is not available in Alaska, Hawaii, Canada, or Mexico. The Communicator Response Center will not be able to locate the customer's vehicle outside of the continental United States.

Inoperative if cellular phone is inactive or inoperative

INFINITI Communicator will be inoperative if the customer does not have an active account with cellular provider, since INFINITI Communicator relies on the cellular network. When the INFINITI Communicator system is outside of cellular service, the "NO SERVICE" indicator will illuminate. If you try to activate INFINITI Communicator, the REQUEST will be cancelled. Cellular phone transmission may become temporarily disabled, or interrupted by environmental factors like tunnels, bridges, or tall buildings. In such cases, INFINITI Communicator will re-dial up to four times. After several failed attempts, the system will quit dialing and return to normal mode.

Inoperative if the system is in the demonstration mode

The INFINITI Communicator system remains in the demonstration mode until the setup procedures are completed. If the system is activated in this mode, the Communicator Response Center will recognize this operation as a demonstration and will not provide any service. The system can be changed to the demonstration mode by using CONSULT-II to check the system operation. Do not forget to turn off the demonstration mode after confirmation.

Battery

Since INFINITI Communicator is powered by the vehicle's battery, if the battery is removed, damaged or discharged, the system will not work.

Inoperative if cellular system is busy

When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to re-dial for up to two hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the re-dialing attempts.

Roaming

If the customer's cellular provider does not have a roaming agreement with the provider where the vehicle locates, it may not be possible to use the lines of a different cellular provider. Therefore, it is impossible that INFINITI Communicator will contact the Communicator Response Center.

Special cellular features

Some cellular carriers offer custom phone numbers that are assigned a Personal Identification Number (PIN). The cellular phone user is required to enter the PIN anytime a phone call is made. The INFINITI Communicator system is not compatible with the PIN feature. A PIN requirement on the cellular phone will cause the INFINITI Communicator system to be inoperative.

Other special features such as call waiting, voice mail, call forwarding, etc. can interfere with INFINITI Communicator system operation.

Cellular airwave interference

At times someone other than the Communicator Response Center operator may be heard. This is caused by Cellular Airwave Interference and is not caused by an INFINITI Communicator system malfunction.

Possibility of positioning capability degraded

Vehicle positioning is accomplished using the GPS (Global Positioning System). If the signal from the GPS satellite is obstructed by a tunnel or building, positioning capability may be degraded or lost. In this case, the last valid position obtained before the obstruction is transmitted to the Communicator Response Center. The precision is also influenced by the location of GPS satellites.

Once the battery cable is disconnected, it will take about 5 minutes to determine the vehicle location. This is because the memory related to GPS is lost when the battery cable is disconnected.

OPERATION

One touch "Information" dialing

- If the vehicle becomes disabled due to problems such as engine trouble, press the "Information" switch to connect to the Communicator Response Center and receive the desired service.
- When the indicator lamp on the switch lights up, it means that the system has started to contact the Communicator Response Center. (Voice communication with Communicator Response Center operator is not available while DATA is being transmitted even if the indicator lamp is lit.)
- When the indicator lamp blinks, it means that the system is preparing for cellular connection or attempting to re-dial.

System Description (Cont'd)

One touch "Mayday" emergency dialing

- When an emergency occurs, press the "Mayday" emergency switch to connect to the Communicator Response Center. With this report, the Communicator Response Center recognizes that an emergency has occurred and provides necessary service.
- The operator will request a password (if the customer chooses to establish a password). If the wrong password or if no password is provided, the Communicator Response Center will assume the customer is in a duress situation and dispatch police.
- When no voice reply is heard from the vehicle or the sound heard indicates an emergency situation, the Communicator Response Center will have the police rush to the scene.
- Other operations are the same as service dialing.

Automatic air bag inflation notification

- When an air bag inflates, the air bag diagnosis sensor unit sends the air bag inflation signal to the IVCS unit, and the system automatically dials the Communicator Response Center to report the occurrence of an accident.

Stolen vehicle tracking

- When a vehicle is stolen, the owner can contact the Communicator Response Center to attempt to locate the stolen vehicle. The Communicator Response Center will activate the stolen vehicle tracking to locate the vehicle. If the Communicator Response Center successfully locates the vehicle, they will contact the police to provide the location.
- The vehicle location data is calculated using GPS.
- The vehicle ignition switch must be turned to the ON position to obtain the vehicle location. (This is because the system is in the sleep mode when the ignition switch is OFF.)
- Once this function starts up, regardless of the ignition switch position, the system keeps transmitting the vehicle location until the cancel signal is transmitted from the Communicator Response Center.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Alarm notification

- When theft warning system sounds an alarm for more than 7 seconds because of improper access, the alarm signal is transmitted from the rear LH passenger door control unit (LCU04) to the IVCS unit, and the system executes automatic dialing to the Communicator Response Center.
  If the alarm is reset before 7 seconds has elapsed, the INFINITI Communicator will not place a call to the Communicator Response Center.
- This function operates regardless of ignition switch position.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Remote door unlock

- When the door is locked with the key inside the vehicle, the door can be unlocked by contacting the Communicator Response Center (Proof that the person calling is the owner must be received by the Communicator Response Center.)
- When the ignition key is in the "OFF" position, the system is in the sleep mode. Therefore, driver's outside handle must be pulled to wake up the system.
- To perform remote door unlock, call the Communicator Response Center and follow the operator's instructions.

NOTE:

- **When the system contacts the Communicator Response Center, data including the vehicle location is transmitted to the Communicator Response Center.**
- **Communication with the Communicator Response Center is not completed until the completion signal is transmitted from the Communicator Response Center. (Any calls to the Communicator Response Center can only be terminated by Communicator Response Center.)**
- **Functions other than alarm notification and remote door unlock operate while the ignition switch is ON and only for three minutes after the switch is turned OFF.**
- **Once a call to the Communicator Response Center is made, the communication continues regardless of the ignition key switch position.**
- **All the voice communication with the Communicator Response Center is made through the hands-free telephone.**
- **When the INFINITI Communicator system is activated, the handset does not function.**

System Description (Cont'd)

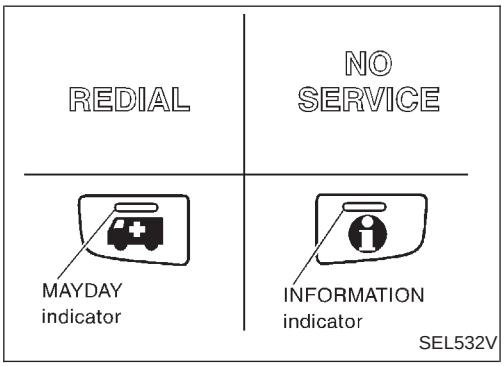
DATA TRANSMITTING

When contact to the Communicator Response Center is made, vehicle sends electrical data including type of activation (i.e., emergency call or alarm notification), vehicle location, time, etc.

SLEEP/WAKE UP CONTROL

3 minutes after the ignition switch is turned OFF, the system goes into the SLEEP MODE to save battery power supply. Communication with Communicator Response Center is not available in the SLEEP MODE.
To wake up the system, perform either of the following operations.

- Turn Ignition switch ON.
- Pull driver side outside door handle for more than 10 seconds. (Operation for door unlock function)



INDICATOR LAMPS OPERATION

The system status is displayed as below by the indicator lamps.

Indicator	Condition	Description
MAYDAY	Blinks.	System is trying to acquire an available cellular channel by "Mayday" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
INFORMATION	Blinks.	System is trying to acquire an available cellular channel by "Information" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
REDIAL	Lights up.	Re-dialing
	Blinks.	Waiting for re-dial
NO SERVICE	Lights up.	Out of CELLULAR PHONE service area or signal is too weak.

NOTE:

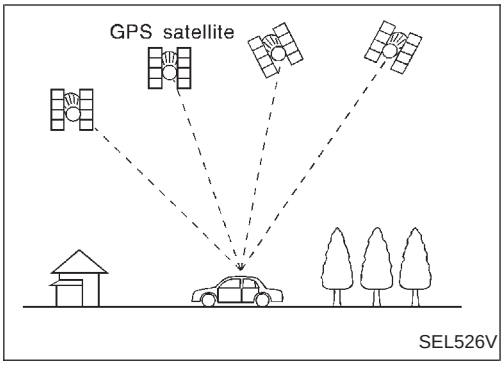
- **When connection to Communicator Response Center by re-dial ends in failure, all the indicators are turned off.**
- **All indicators illuminate for up to 30 seconds or more when ignition switch is turned from OFF to ON and the system performs a self check.**
- **If both of MAYDAY and INFORMATION indicators do not turn off 30 seconds or more after the ignition switch is turned to ON, the system is malfunctioning.**

AUTOMATIC RE-DIAL/AUTO RESET TO READY

- When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to dial for up to 2 hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the dialing attempts. The vehicle owner can press the button again if he or she still needs to contact the Communicator Response Center.
- INFINITI Communicator automatically redials if communication between the vehicle owner and Communicator Response Center is lost for some reason.
- The only way for a transmission to be officially terminated is for the Communicator Response Center to send an end transmission signal, which turns off the indicator in the switch. (Communication with Communicator Response Center can not be terminated by the occupant.)
- If the vehicle owner start the engine during a call, the conversation may be interrupted. When this happens the system may try to resume transmission once after the engine has been started.

System Description (Cont'd)

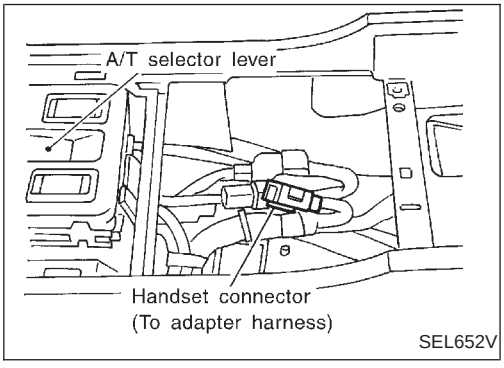
GPS (Global Positioning System)



GPS is the global positioning system developed and operated by the US Department of Defense. GPS satellites (NAVSTAR) transmit radio waves and orbit around the earth at an altitude of approximately 21,000 km (13,000 miles).
GPS receiver calculates the three-dimensional position of the vehicle (latitude, longitude, and altitude from the sea level) by the time difference of the radio wave arriving from more than four GPS satellites (three-dimensional positioning).
When the radio wave is received from only three GPS satellites, the two-dimensional position (latitude and longitude) is calculated, using the altitude from the sea level data calculated by using four GPS satellites (two-dimensional positioning).

Positioning capability is degraded in the following cases.

- In two-dimensional positioning, when the vehicle's altitude from the sea level changes, the precision becomes lower.
- The location detection performance can have an error of about 100 m (300 ft) even in three-dimensional positioning with high precision. Because the precision is influenced by the location of GPS satellites used for positioning, the location detection performance may drop depending on the location of GPS satellites.
- When the radio wave from GPS satellites cannot be received, for example, when the vehicle is in a tunnel, in a parking lot inside building, under an elevated superhighway or near strong power lines, the location may not be detected. Turbulent/electric weather conditions may also affect positioning performance. If something is placed on the antenna, the radio wave from GPS satellites may not be received.

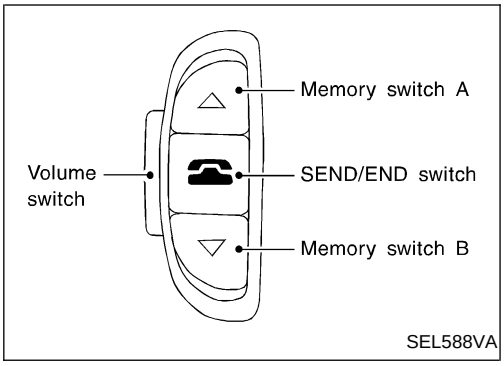


HANDSET (OPTION)

NOTE:

- If an optional handset is installed, INFINITI Communicator can be used as a normal cellular phone.
- If INFINITI Communicator is activated when INFINITI Communicator system's cellular phone is in use, the current phone transmission will be cut and INFINITI Communicator will dial the Communicator Response Center. The cellular handset will be disabled, and communication with the Communicator Response Center operator will be carried out through the hands-free microphone.
- After communication with Communicator Response Center is finished, the handset last number memory will be erased.
- While INFINITI Communicator is activated, the handset becomes inoperative and all communication with the operator is accomplished via the hands-free phone. When an activation is terminated, the handset will be unlocked.

System Description (Cont'd)



TEL SWITCH

When any of the TEL switches is pressed, the TEL switch which is combined with the multiplex transmitting unit sends operational commands to the IVCS unit. TEL switch has following three functions.

- Volume adjust
- Placing re-dial call
- Placing memorized call (The telephone numbers are stored in the handset. A maximum of 6 memories are operative.)

SEND/END switch operation

- When a call is received, press SEND/END switch to permit conversation.
- At the completion of the conversation, press the SEND/END switch to terminate the call.
- To re-dial the last phone number, press SEND/END switch.

MEMORY switch operation

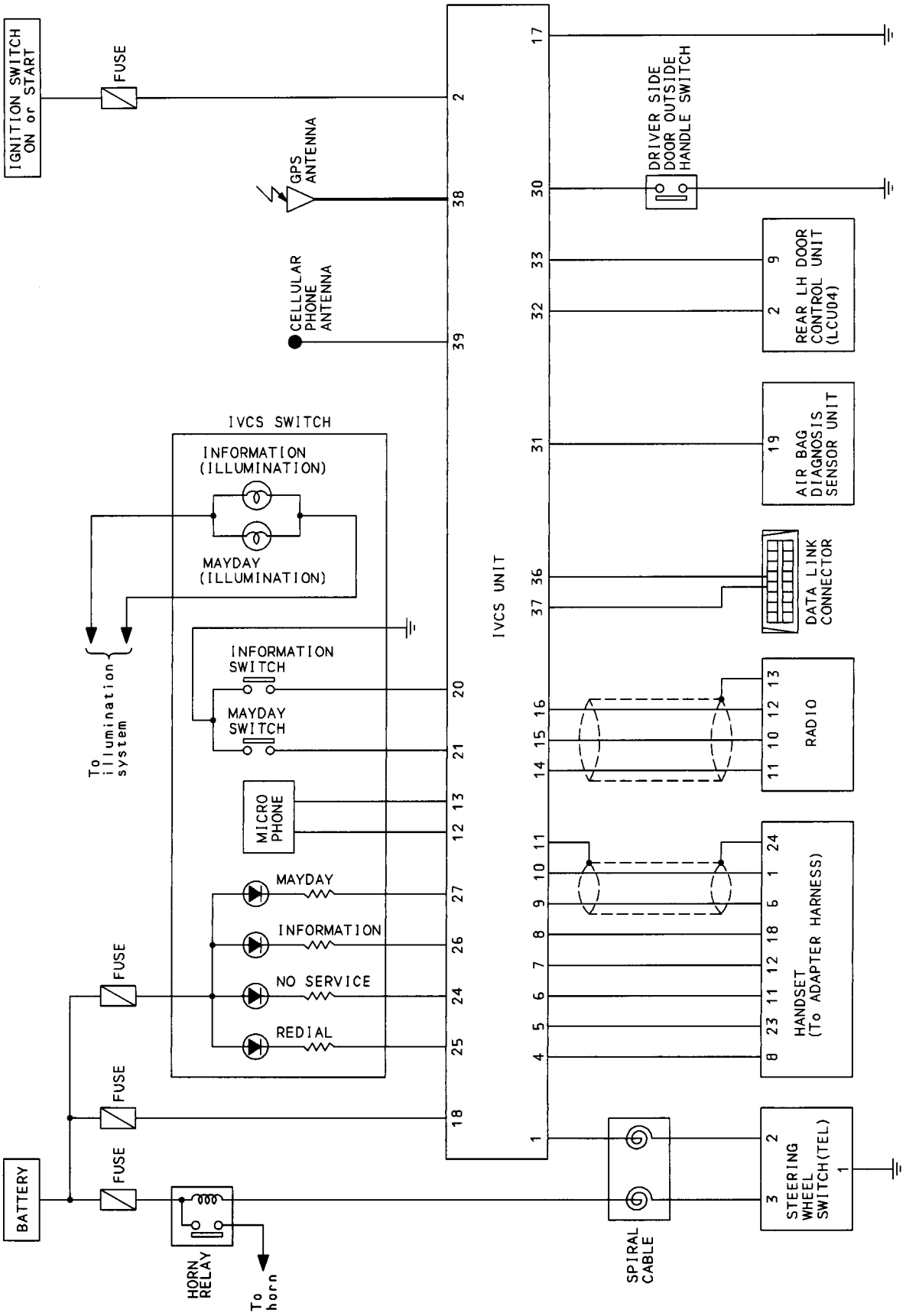
- A maximum of 6 telephone numbers which stored in the memory of the handset can be dialed by MEMORY switch operation.
- The last phone number is erased if the ignition switch is turned off or if the INFINITI Communicator system has been activated.
- For the procedure to input telephone numbers, refer to the handset operation manual.
- To select memory 1 to 6, push MEMORY switch A or B. Every push on the switch changes the memory as follows.
  SWITCH A: Memory 1 → 2 → 3 → OFF
  SWITCH B: Memory 4 → 5 → 6 → OFF
  After selecting memory, push SEND/END switch to make a call.

VOLUME switch

Voice volume from the front RH speaker can be adjusted by using the VOLUME switch.

NOTE:
Memory switches are not functional unless handset is installed.

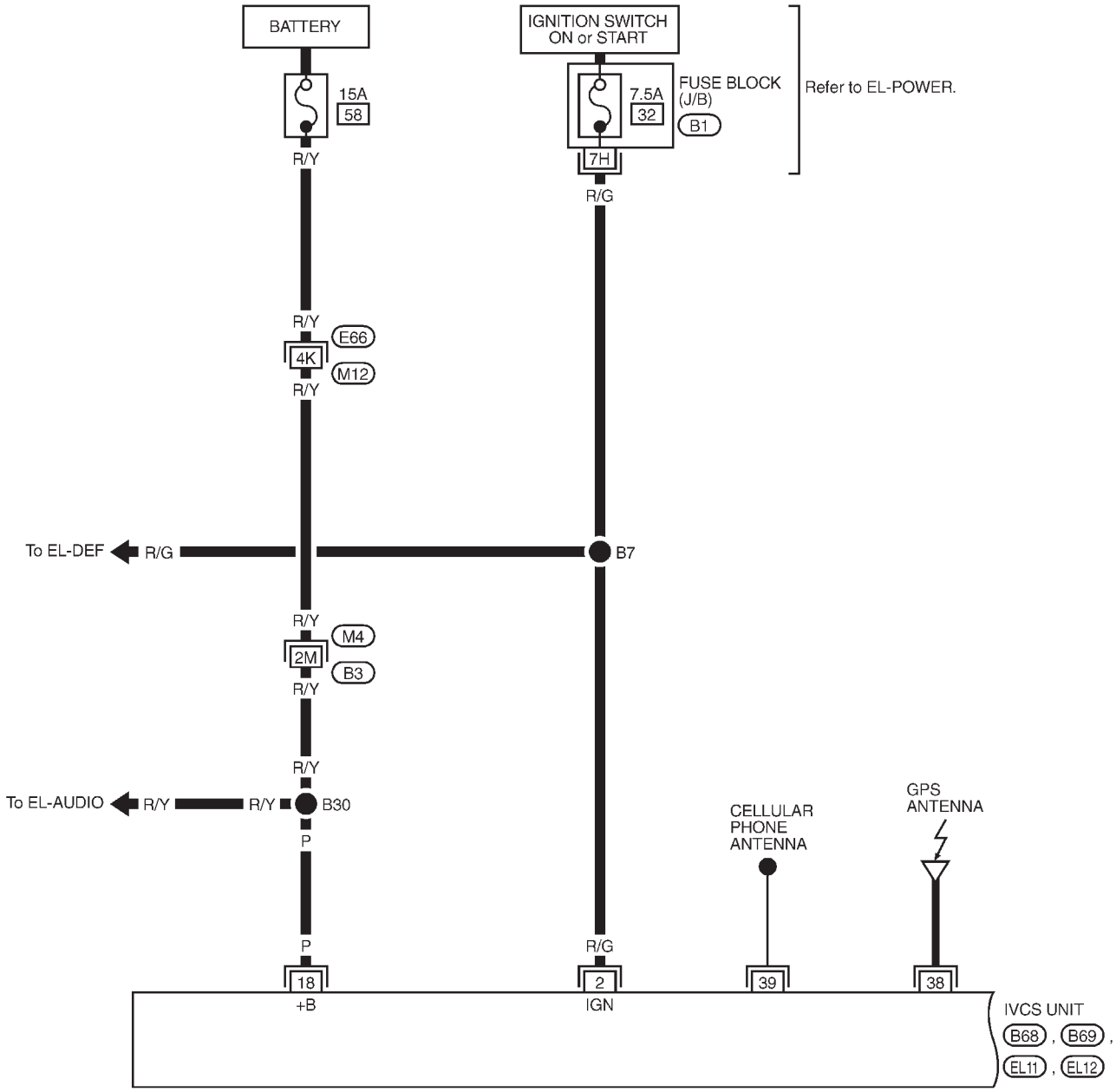
Schematic

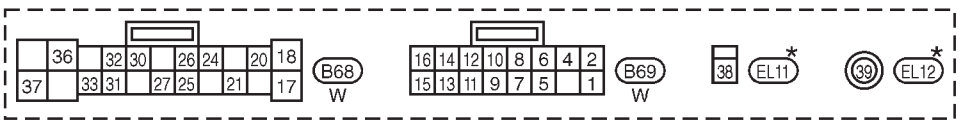


TEL035M

Wiring Diagram — IVCS —

EL-IVCS-01





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

Refer to last page (Foldout page).

M4 , B3

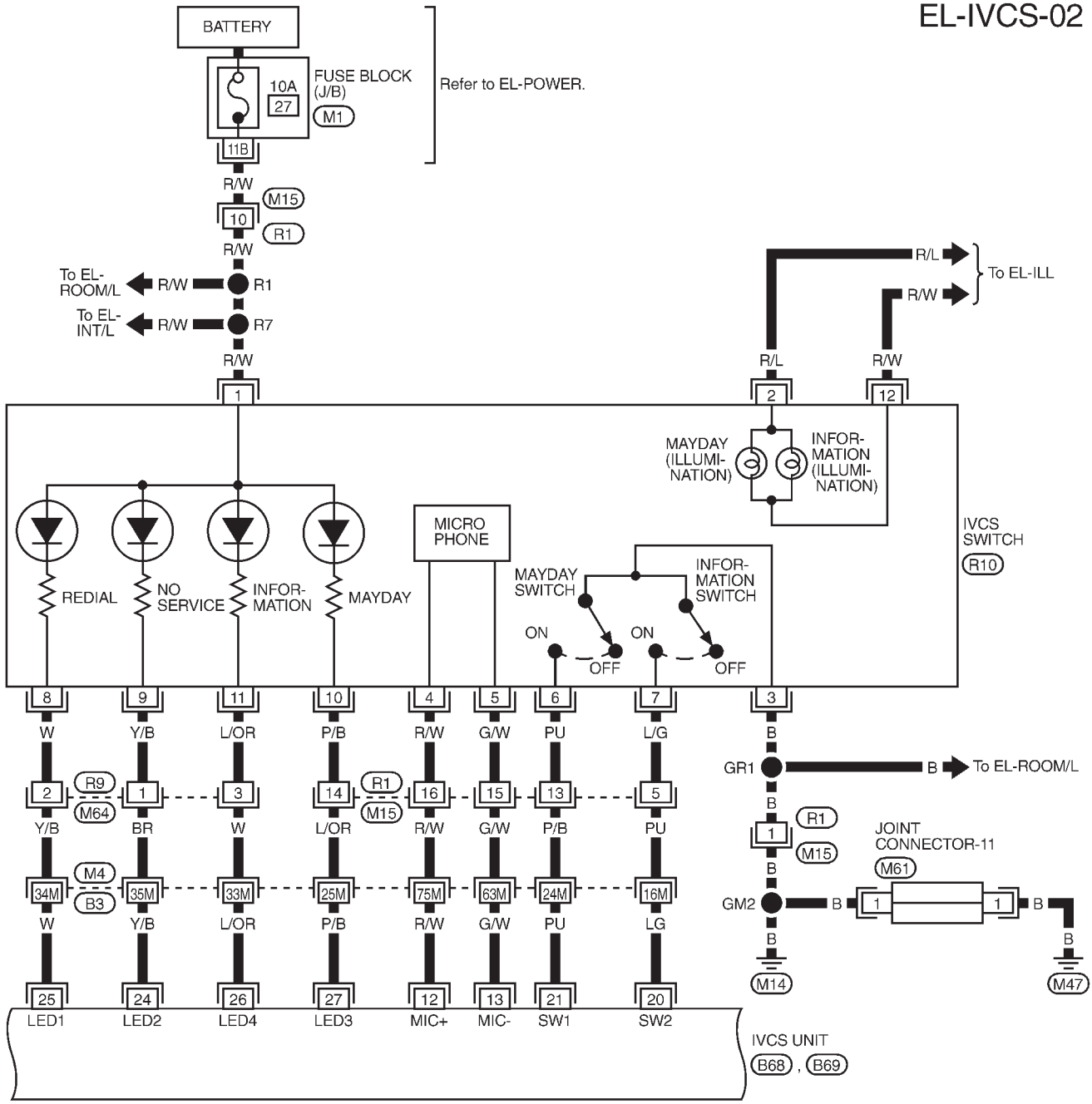
M12 , E66

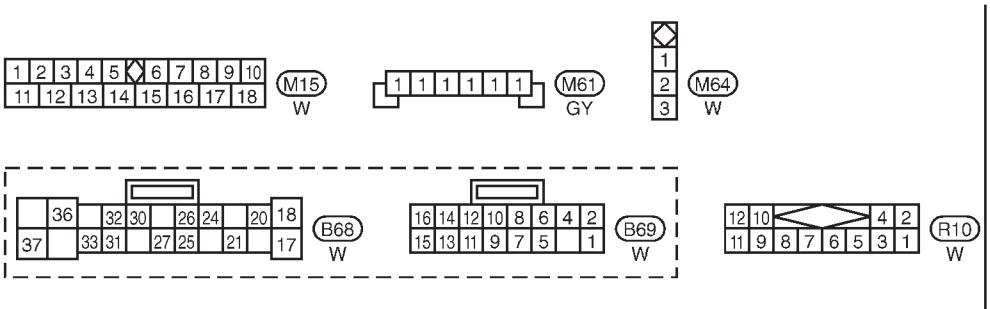
B1

TEL030B

Wiring Diagram — IVCS — (Cont'd)

EL-IVCS-02

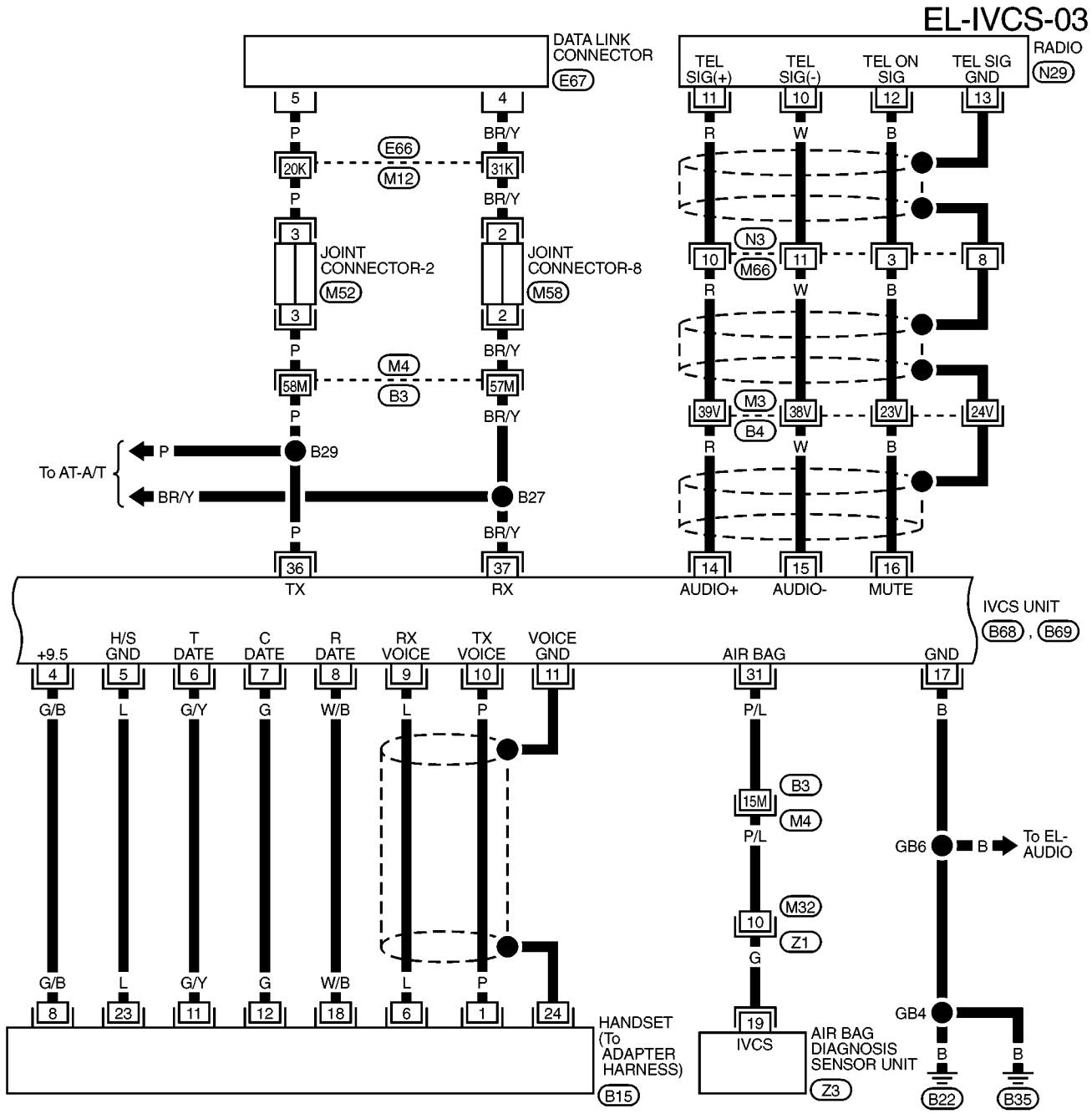


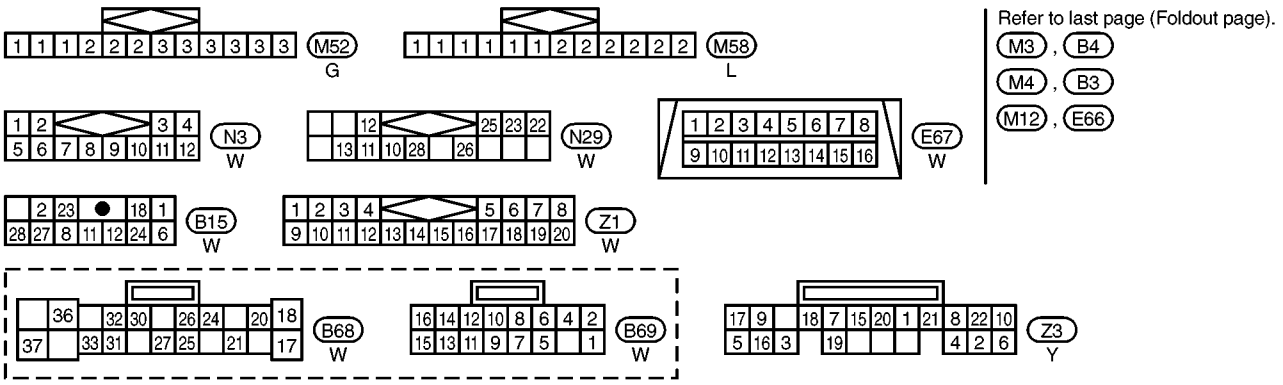


Refer to last page (Foldout page).
M4 , B3
M1

TEL031B

Wiring Diagram — IVCS — (Cont'd)





Refer to last page (Foldout page).

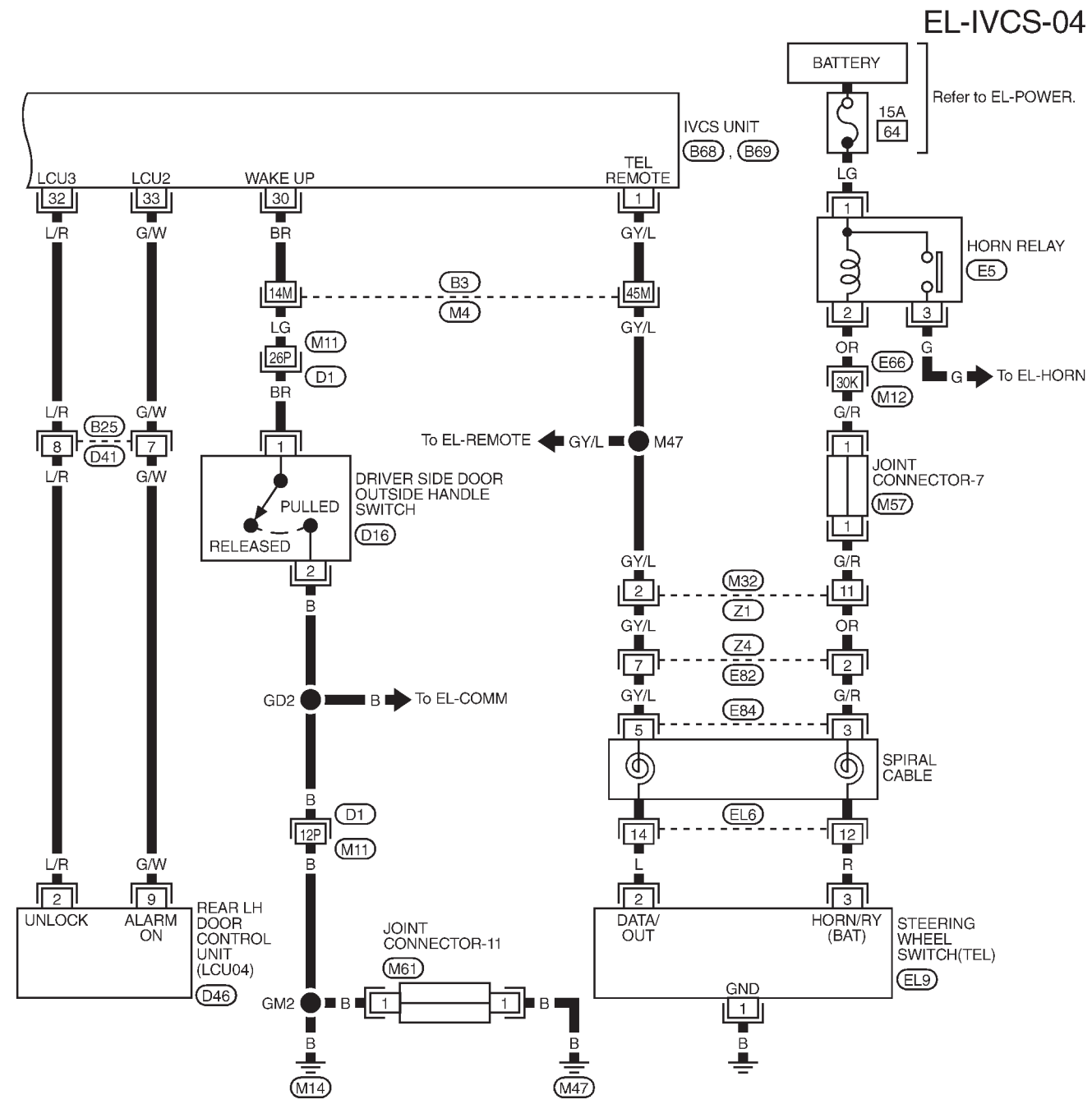
M3 , B4

M4 , B3

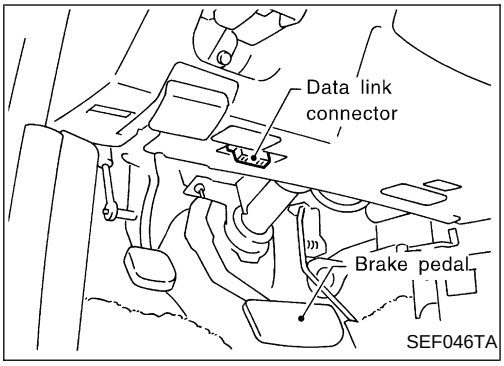
M12 , E66

TEL036M

Wiring Diagram — IVCS — (Cont'd)



TEL033B

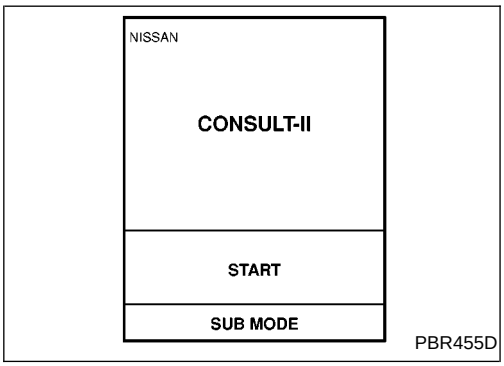


SEF046TA

CONSULT-II

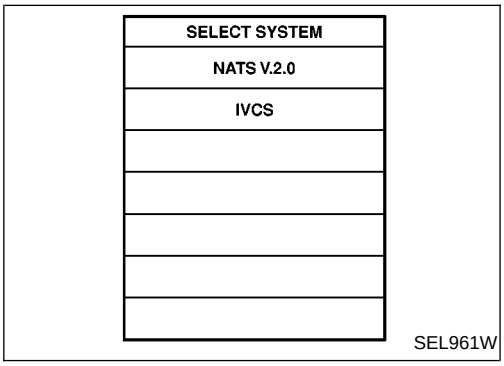
CONSULT-II INSPECTION PROCEDURE

1. Turn ignition switch “OFF”.
2. Insert UEN99A program card into CONSULT-II.
3. Connect CONSULT-II to the data link connector.



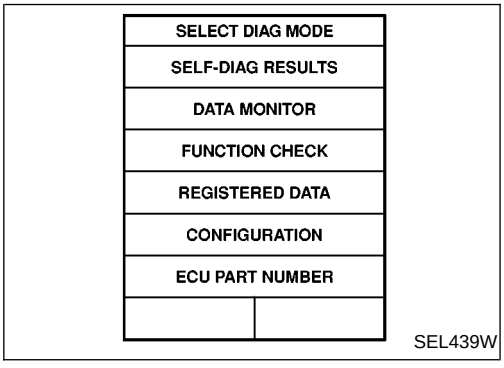
PBR455D

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



SEL961W

6. Touch “IVCS”.



SEL439W

7. Perform each diagnostic item according to the item application chart as follows:

8. When CONSULT-II inspection is terminated, follow the procedure shown below.

a. Touch “BACK” key of CONSULT-II until “SELECT SYSTEM” appears, then turn ignition switch to the OFF position.
b. Turn off CONSULT-II.
c. Disconnect CONSULT-II DDL connector.

NOTE: If the DDL connector is disconnected before turning ignition switch to “OFF” position, INFINITI communicator may not operate properly.

CONSULT-II (Cont'd)

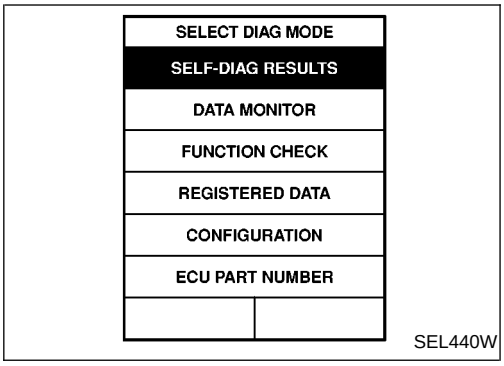
APPLICATION ITEMS

Mode	Description	Reference page
SELF DIAG RESULTS	Displays the result of self-diagnosis.	EL-495
DATA MONITOR	Two modes, "GPS MONITOR" and "SWITCH MONITOR" can be selected in this mode. ● Displays current data related to GPS in "GPS MONITOR" mode. ● Displays IVCS switch and outside door handle switch condition in "SWITCH MONITOR" mode.	EL-496
FUNCTION CHECK	In this mode, "Remote door unlock function" can be checked using CONSULT-II. Door can be unlocked according to the commands to the door LCU by the IVCS unit. This check verifies communication circuit between LCU and IVCS unit.	EL-504
REGISTERED DATA	Displays the following data registered in the IVCS unit. In this mode the data cannot be re-written. ● Unit ID ● Cellular phone number ● VIN (Vehicle Identification Number)	EL-496
CONFIGURATION (See Note.)	In this mode, the system can be set up in the demonstration mode to confirm system operation.	EL-508
	Various data related to both the Communicator Response Center contract and cellular provider can be written/updated in this mode. ● Phone number ● NAM (Number Assignment Module) ● Stolen vehicle tracking setting (Default should always be on.) ● Alarm notification setting (Default should always be on.)	EL-510
ECU PART NUMBER	Displays the part number of the IVCS unit.	—

Note: Data must not be rewritten without prior approval from the customer.

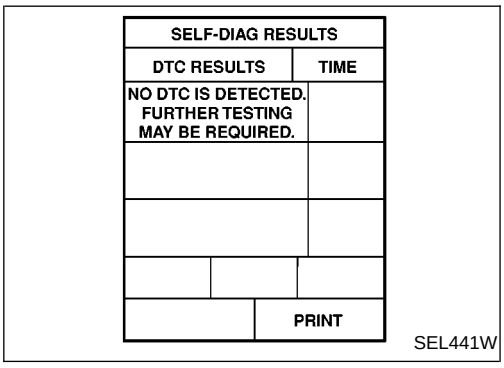
CONSULT-II (Cont'd)

"SELF-DIAG RESULTS" MODE

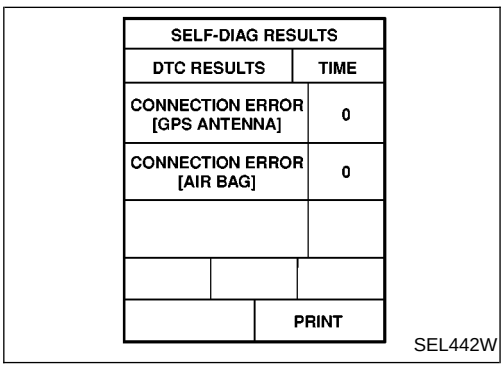


How to perform self-diagnosis

1. Touch "SELF-DIAG RESULTS".
2. Touch "START".

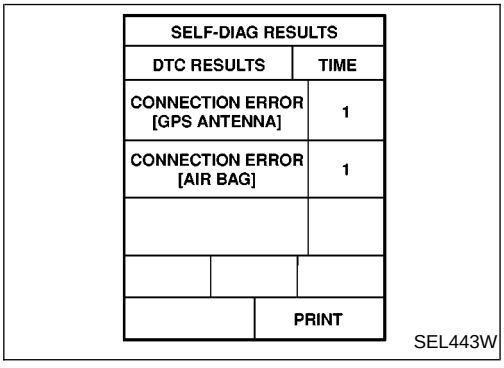


3. If no failure is detected, CONSULT-II will show "NO FAILURE".



- If trouble codes are displayed with "TIME = 0", repair/replace the system according to "SYMPTOM CHART 1 (SELF-DIAGNOSIS ITEM)", EL-498.
- In this case, both "MAYDAY" and "INFORMATION" indicator lamps illuminate for more than 30 seconds while the ignition switch is in the ON position.

Note:
The time data in CONSULT-II "SELF-DIAG RESULTS" mode displays the number of ignition switch cycles without the same malfunctioning occurring.



- If trouble codes are displayed with "TIME = 1 or greater", it means that the trouble code is historical data. So no further diagnosis is required.

Note:
If trouble codes are displayed with "TIME = 1 or greater" even though the INFINITI Communicator has never been serviced. Intermittent incidents may occur. Check the system, refer to "Trouble Diagnoses for Intermittent Incident", EL-507.

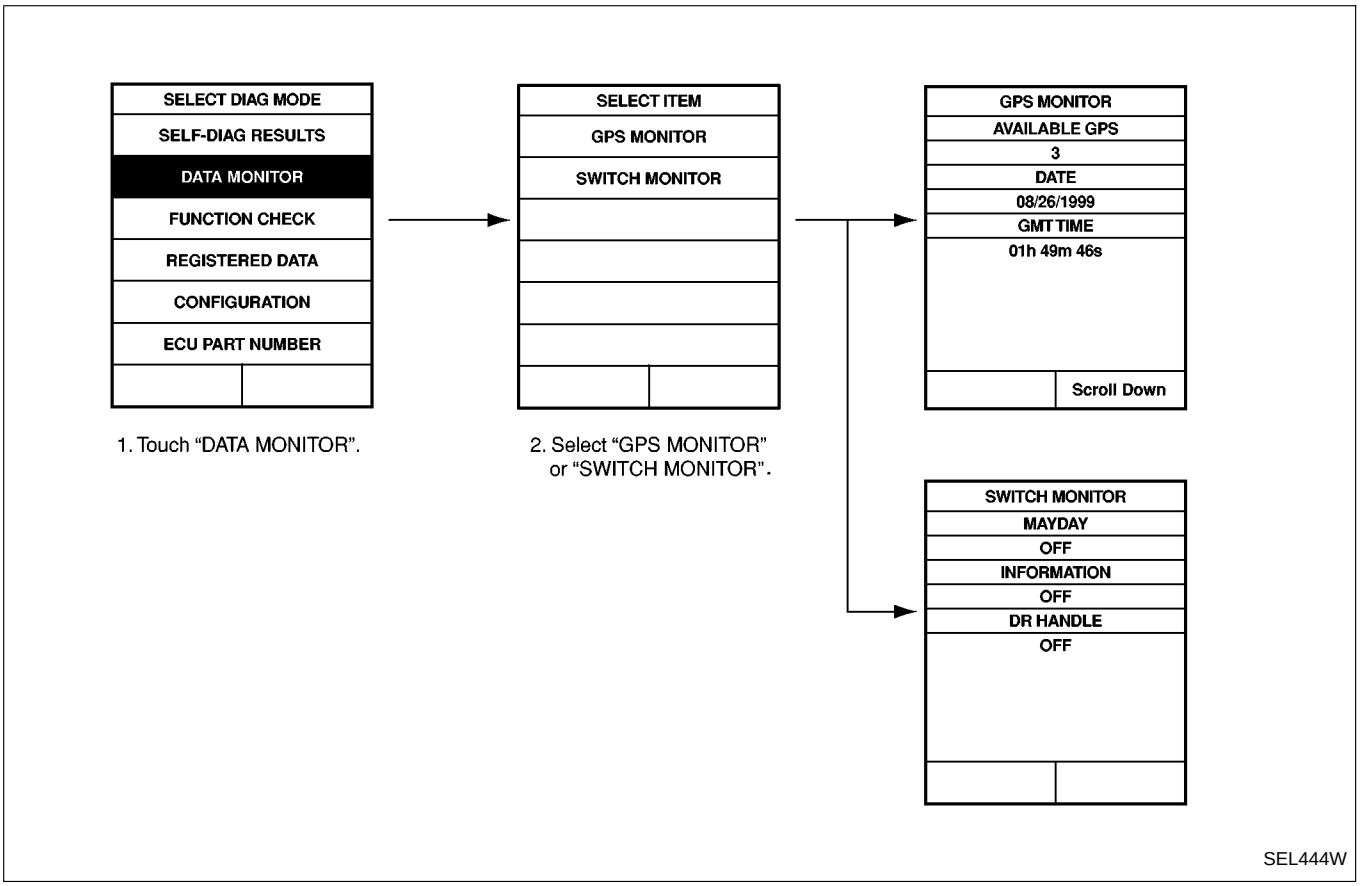
- If the system does not detect any trouble, the IVCS indicators will turn off after bulb check (self-diagnosis) is completed while the ignition switch is in the ON position.

Note:
- **The trouble codes cannot be erased by CONSULT-II.**
- **After 50 ignition cycles, the trouble codes are no longer displayed in the CONSULT-II "SELF-DIAG RESULTS" mode.**
- **The IVCS unit does not count the ignition switch cycles unless the ignition switch is OFF for more than 3 minutes between each ignition switch cycle.**

CONSULT-II (Cont'd)

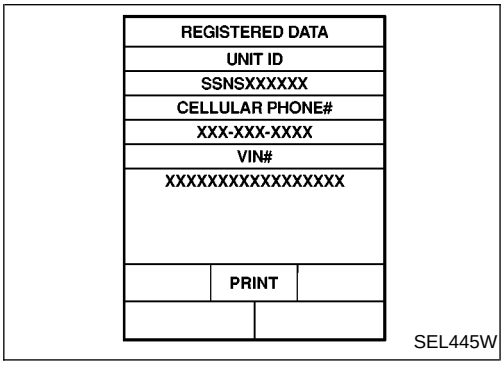
"DATA MONITOR" MODE

How to perform data monitor



Data monitor item chart

Mode	Monitor item	Description
GPS MONITOR	AVAILABLE GPS	The number of GPS satellites captured by GPS antenna
	DATE	Date of Greenwich mean time
	GMT TIME	Greenwich mean time (Different from local time)
	LAT.	Latitude
	LONG.	Longitude
	DOP	Index of precision (an index of location status of GPS satellites. The smaller the value is, the higher the positioning precision is.)
SWITCH MONITOR	MAYDAY	"MAYDAY" emergency switch condition
	INFORMATION	"INFORMATION" switch condition
	DR HANDLE	Driver side outside door handle switch condition



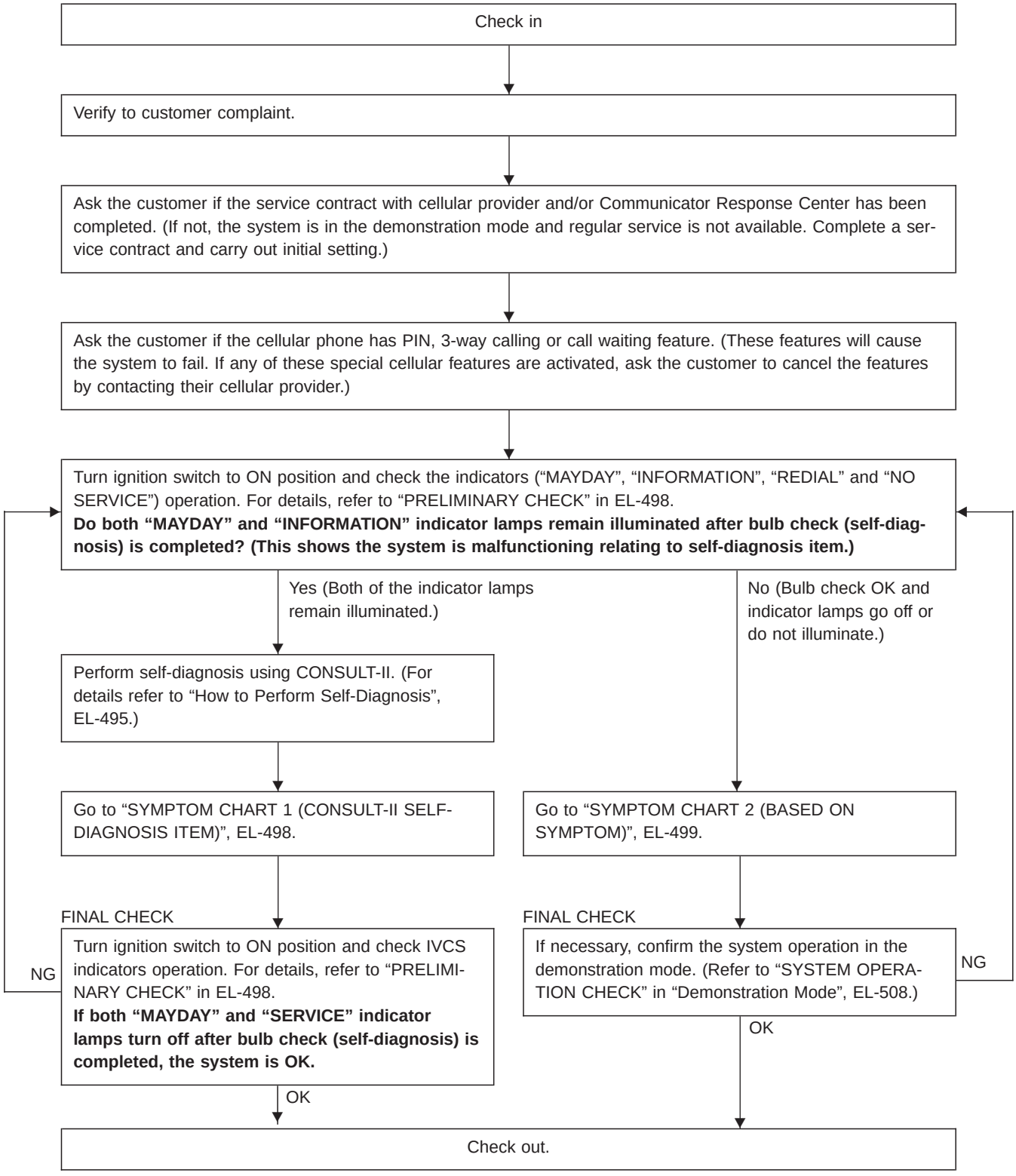
"REGISTERED DATA" MODE

Item	Description
UNIT ID	ID number of the IVCS unit. ID number is unique to each unit and differs for each unit.
CELLULAR PHONE #	—
VIN #	Vehicle Identification Number. When the IVCS unit is replaced, VIN # is written in the memory of the replaced unit by transmitting data from the Communicator Response Center.

Note: No data can be changed in this CONSULT-II mode.

Trouble Diagnoses

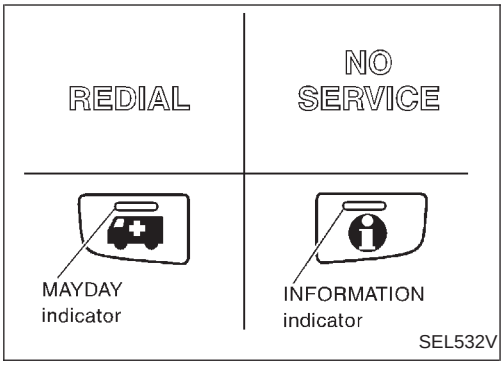
WORK FLOW



WARNING:

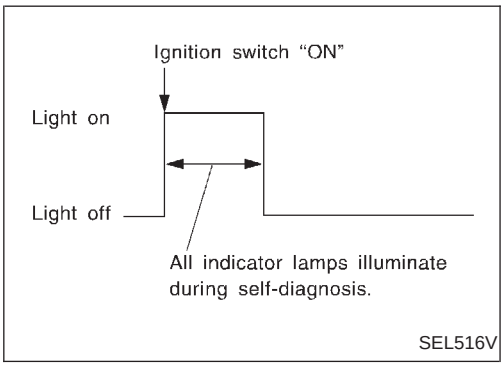
- **Whenever possible, set the system to “Demonstration mode” if INFINITI Communicator system needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-508.)**
- **If you activate the INFINITI Communicator system (when the system is not in the demonstration mode), the Communicator Response Center operator may dispatch police.**

Trouble Diagnoses (Cont'd)



PRELIMINARY CHECK

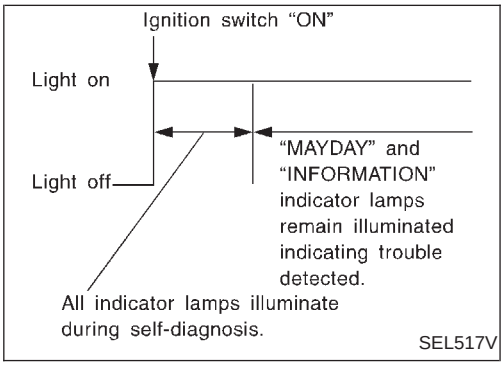
1. Turn ignition switch ON.
2. Check "MAYDAY", "INFORMATION", "REDIAL" and "NO SERVICE" indicator lamps operation.



- If no failure is detected, indicator lamps will turn off after the bulb check (self-diagnosis) is terminated for about 30 seconds or more.

NOTE:

- Bulb check (self-diagnosis) is not performed unless the ignition switch has been turned off for at least 3 minutes.
- Bulb check is not performed during contact with Communicator Response Center.



- If the system detects problems, both "MAYDAY" and "INFORMATION" indicator lamps remain illuminated. Perform self-diagnosis using CONSULT-II and repair or replace the system. Refer to "How to Perform Self-diagnosis", EL-495.

NOTE:
For details of indicator lamps operation, refer to "INDICATOR LAMPS OPERATION", EL-485.

SYMPTOM CHART 1 (CONSULT-II SELF-DIAGNOSIS ITEM)

Detected items (Screen items)	Description	Service procedure
CONNECTION ERROR [GPS ANTENNA]	Connection error between GPS antenna and IVCS unit.	Go to GPS ANTENNA CHECK, EL-505.
CELLULAR PHONE [TWB ERROR]	Communication error between CPU in the IVCS unit and transceiver	Replace IVCS unit.
MEMORY ERROR	Inner memory error of the IVCS unit	Replace IVCS unit.
CONNECTION ERROR [AIR BAG]	Connection error between air bag diagnosis sensor unit and IVCS unit.	Go to AIR BAG DIAGNOSIS SENSOR COMMUNICATION CHECK, EL-505.
CONNECTION ERROR [IVMS OR S/ENT]	Connection error between door switch control unit (LCU04) and IVCS unit. If this error occurs, alarm notification and auto door unlock may not operate.	Go to IVMS (LAN) COMMUNICATION CHECK, EL-506.

NOTE: After replacing IVCS unit, set up the replaced IVCS unit. Refer to "System Setting (When IVCS Unit is Replaced.)" in EL-510.

Trouble Diagnoses (Cont'd)

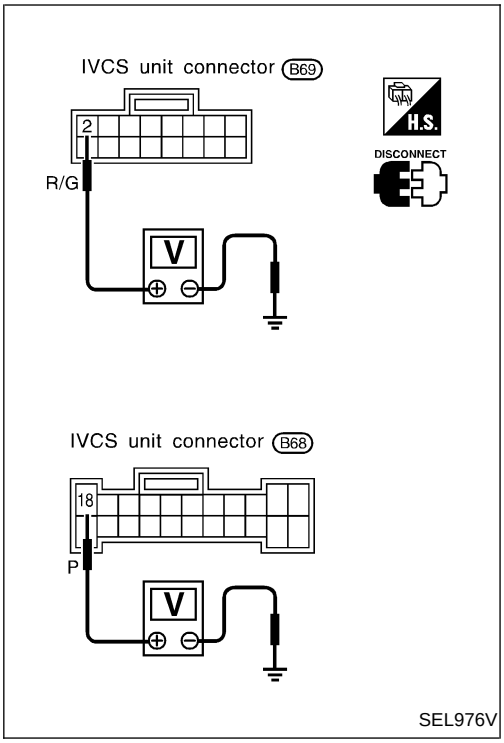
SYMPTOM CHART 2 (BASED ON SYMPTOM)

Before referencing this chart, confirm the operation of the indicator lamps. Refer to "PRELIMINARY CHECK" in EL-498. If the indicators show the system is malfunctioning, perform the self-diagnosis using CONSULT-II.

Symptom	Diagnoses/service procedure	Reference page
"MAYDAY", "INFORMATION", "RE-DIAL", "NO SERVICE" indicator lamps do not illuminate when ignition switch is turned to ON position. (Bulb check is NG.)	1. Power supply and ground circuit for IVCS unit check	EL-500
	2. Indicator lamps check	EL-501
Mayday/Information call does not operate.	1. IVCS switch check	EL-502
	2. INFINITI Communicator operation check in demonstration mode	EL-508
Remote door unlocking function does not operate.	1. Driver's outside door handle switch check	EL-503
	2. Remote door unlock function check	EL-504
	3. INFINITI Communicator operation check in demonstration mode	EL-508
Stolen vehicle tracking function does not operate.	1. Stolen vehicle tracking setting check (Check whether the function is disabled or not.)	EL-504
	2. INFINITI Communicator operation check in demonstration mode	EL-508
Alarm notification function does not operate.	1. Alarm notification setting check (Check whether the function is disabled or not.)	EL-504
	2. INFINITI Communicator operation check in demonstration mode	EL-508
Hands free telephone cannot be operated by using steering switch. (Cellular phone operates properly by using optional handset.)	1. Telephone steering switch check	EL-506
No sounds related to the telephone are heard from Front RH speaker. (If the audio does not operate properly, check the audio system.)	1. Check harness for open or short between IVCS unit and radio.	—
The "NO SERVICE" indicator lamp is not turned off. (Even if a contract with telephone carrier has not been made, the indicator lamp remains illuminated.)	1. Make sure the vehicle is in an area with cellular service.	—
	2. Check cellular phone antenna feeder cable connection.	—
Cellular phone does not operate properly.	1. Check hand set connector connection.	—
	2. Check hand set.	—
No sound is transmitted to the other party by hands free telephone.	1. Check harness for open or short between IVCS unit and microphone.	—
	2. Replace microphone. (IVCS switch assembly)	—

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT FOR IVCS UNIT CHECK

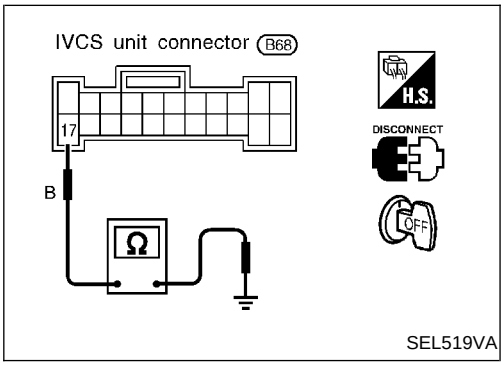


Main power supply circuit check

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
⑱	Ground	Battery voltage	Battery voltage	Battery voltage
②	Ground	0V	0V	Battery voltage

If NG, check the following:

- 15A fuse [No. 58, located in fuse and fusible link box]
- 7.5A fuse [No. 32, located in fuse block (J/B)]
- Harness for open or short between fuse and IVCS unit



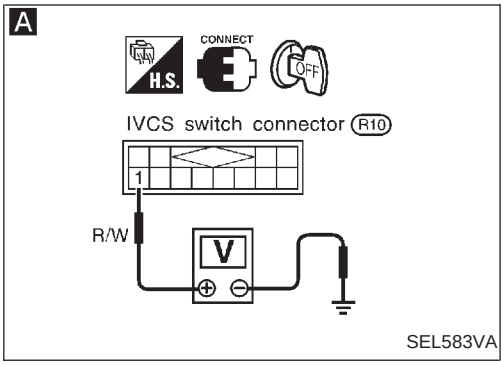
Ground circuit check

Terminals	Continuity
⑰ - Ground	Yes

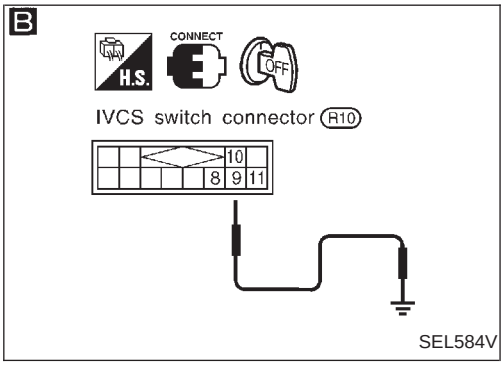
Trouble Diagnoses (Cont'd)

INDICATOR LAMPS CHECK

A



B



A

CHECK POWER SUPPLY FOR INDICATOR LAMPS.
Check voltage between IVCS switch terminal ① and ground.
Does battery voltage exist?

No → Check the following.
- 10A fuse [No. 27, located in fuse block (J/B)]
- Harness for open or short between fuse and IVCS switch

Yes ↓

B

CHECK INDICATOR LAMPS.
1. Disconnect IVCS unit connector (Control unit connector).
2. Apply ground to IVCS switch each terminal and check illumination.

Indicator	Terminal
Redial	⑧
No service	⑨
Mayday	⑩
Information	⑪

NG → Replace IVCS switch assembly.

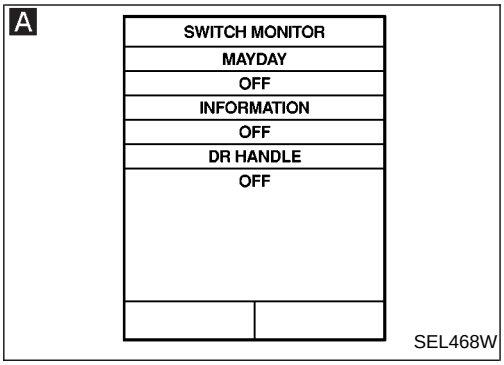
OK ↓

Check harness for open or short between indicators and IVCS unit.

Trouble Diagnoses (Cont'd)

IVCS SWITCH CHECK

A



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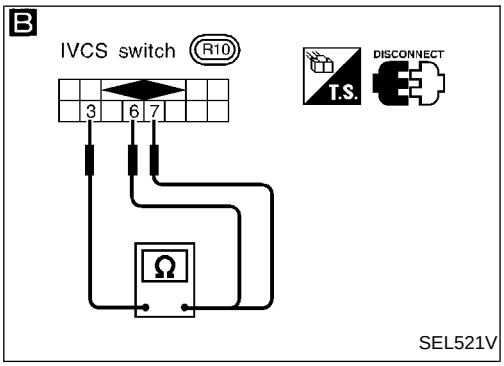


A

CHECK IVCS SWITCH INPUT SIGNAL.

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check each switch signal.
   When MAYDAY/INFORMATION switch is pushed:
   MAYDAY/INFORMATION ON
   When MAYDAY/INFORMATION switch is released:
   MAYDAY/INFORMATION OFF

NOTE:
When CONSULT-II "Data mode" is operating, INFINITI Communicator does not dial to Communicator Response Center when the switches are operated.

OK → IVCS switch is OK.

NG ↓

B

CHECK IVCS SWITCH.

1. Disconnect IVCS switch.
2. Check continuity between IVCS switch terminals.

Terminals	Condition	Continuity
⑥ - ③	Mayday switch is turned ON.	Yes
	Mayday switch is OFF.	No
⑦ - ③	Information switch is turned ON.	Yes
	Information switch is OFF.	No

OK → Check the following:
- IVCS switch ground circuit
- Harness for open or short between IVCS switch and IVCS unit.

NG ↓

Replace IVCS switch assembly.

Trouble Diagnoses (Cont'd)

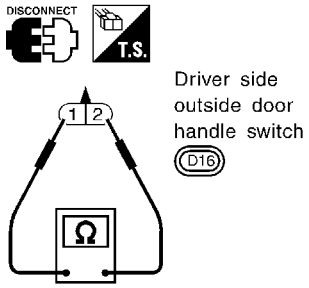
DRIVER'S OUTSIDE DOOR HANDLE SWITCH CHECK

A

SWITCH MONITOR
MAYDAY
OFF
INFORMATION
OFF
DR HANDLE
OFF

SEL468W

B



Driver side outside door handle switch D16

SEL653V

A

CHECK OUTSIDE DOOR HANDLE SWITCH INPUT SIGNAL.

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check the switch operation.
   When driver side outside door handle is pulled:
   DR HANDLE ON
   When driver side outside door handle is released:
   DR HANDLE OFF

NOTE:
When CONSULT-II "Data mode" is operating, INFINITI Communicator do not dial to Communicator Response Center when the switches are operated.

OK → Driver's door outside handle switch is OK.

NG ↓

B

CHECK OUTSIDE DOOR HANDLE SWITCH.

1. Disconnect driver side door key cylinder switch connector. (outside door handle switch connector is combined with the key cylinder switch.)
2. Check continuity between the door key cylinder switch terminal ① and ② .

Outside door handle switch condition	Continuity
Pulled	Yes
Released	No

OK → Check the following.
- Outside door handle switch ground circuit
- Harness for open or short between outside door handle switch and IVCS unit.

NG ↓

Replace outside door handle switch.

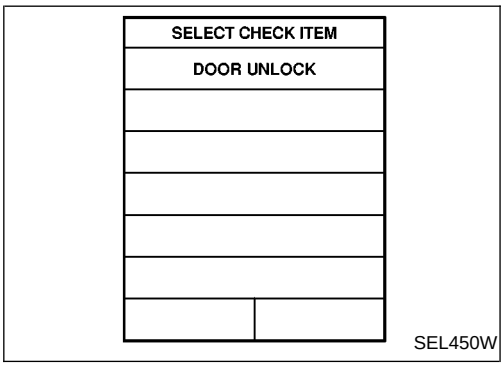
Trouble Diagnoses (Cont'd)

REMOTE DOOR UNLOCK FUNCTION CHECK (CONSULT-II "FUNCTION CHECK" MODE)

Description

"Remote door unlock function" can be checked using CONSULT-II. Driver side door can be unlocked according to the commands to the door LCU by the IVCS unit.

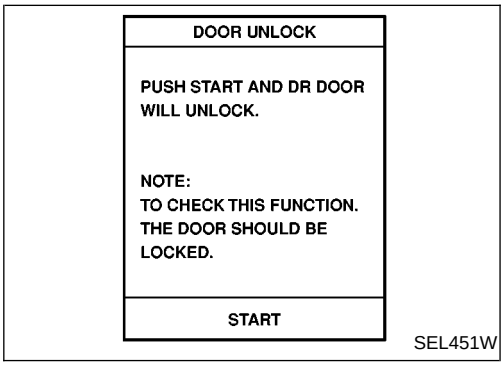
Note:
Before performing the function check, confirm that power door lock system operates properly.



SEL450W

How to perform function check.

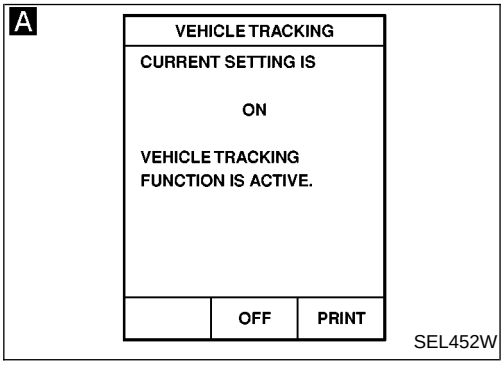
1. Lock the doors with door lock/unlock switch on driver's door trim.
2. Touch "FUNCTION CHECK".
3. Touch "DOOR UNLOCK".



SEL451W

4. Touch "START". Then driver side door will be unlocked.

- If the door cannot be unlocked using CONSULT-II, check harness for open or short between rear LH door control unit (LCU04) terminal ② and IVCS unit terminal ㉜.



SEL452W

STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK (CONSULT-II "CONFIGURATION" MODE)

A

CHECK SYSTEM SETTING.

1. Turn ignition switch "ON".
2. Select "VHCL TRACKING" or "ALARM NOTIFICATION" in "CONFIGURATION" mode.
3. Check the function setting.

- "ON" shows the function is activated.
- "OFF" shows the function is deactivated.

Does the system setting comply with the customer's contract?

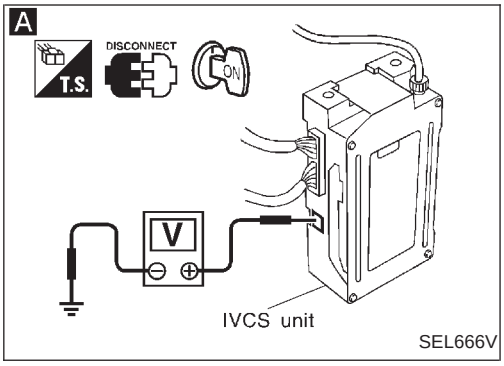
NOTE:
Setting of "VEHICLE TRACKING" must be ON at any time.

NG → If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.
NOTE:
Whenever dialing the above number, some information about the vehicle is required by the operator. For details, refer to EL-480.

OK → System setting is OK.

Trouble Diagnoses (Cont'd)

GPS ANTENNA CHECK



A

CHECK VOLTAGE FOR GPS ANTENNA.
1. Disconnect GPS feeder cable connector from IVCS unit.
2. Turn ignition switch ON.
3. Check voltage at IVCS unit GPS feeder cable terminal.

Does approx. 5V exist?

No → Replace IVCS unit.

Yes ↓

Replace GPS antenna.

AIR BAG DIAGNOSES SENSOR UNIT COMMUNICATION CHECK

A

AIR BAG OPERATION CHECK

Turn ignition switch ON and check air bag warning lamp operation. (For details, refer to RS section.)

Does air bag warning lamp operate properly?

No → Check supplemental restraint system. Refer to RS section in the Service manual.

Yes ↓

Check harness connector connection between air bag diagnosis sensor unit and IVCS unit.

Trouble Diagnoses (Cont'd)

IVMS (LAN) COMMUNICATION CHECK

CHECK IVMS OPERATION.
Check the system related rear LH door control unit (LCU04) operation (e.g.: power door lock, power window).
Do the systems operate properly?

No → Check IVMS (LAN), refer to "IVMS (LAN)" in the Service manual.

Yes ↓

Check harness for open or short between rear LH door control unit (LCU04) terminal ⑨ and IVCS unit terminal ㉝.

TELEPHONE STEERING SWITCH CHECK

CHECK POWER SUPPLY FOR STEERING SWITCH.
Does horn work?

No → Check the following.
- 10A fuse (No. 64, located in fuse and fusible link box)
- Horn relay
- Harness for open or short

Yes ↓

CHECK STEERING SWITCH SUB HARNESS.
1. Remove driver's air bag module. For removal procedure, refer to RS section.
2. Check steering switch sub-harness for open or short and ground screw.
   For details of the harness circuit, refer to "STEERING SWITCH", EL-44.

NG → Replace or repair the harness.

OK ↓

Check harness for open or short between telephone steering switch and IVCS unit.
If the circuit is OK, replace telephone steering switch.

Trouble Diagnoses for Intermittent Incident

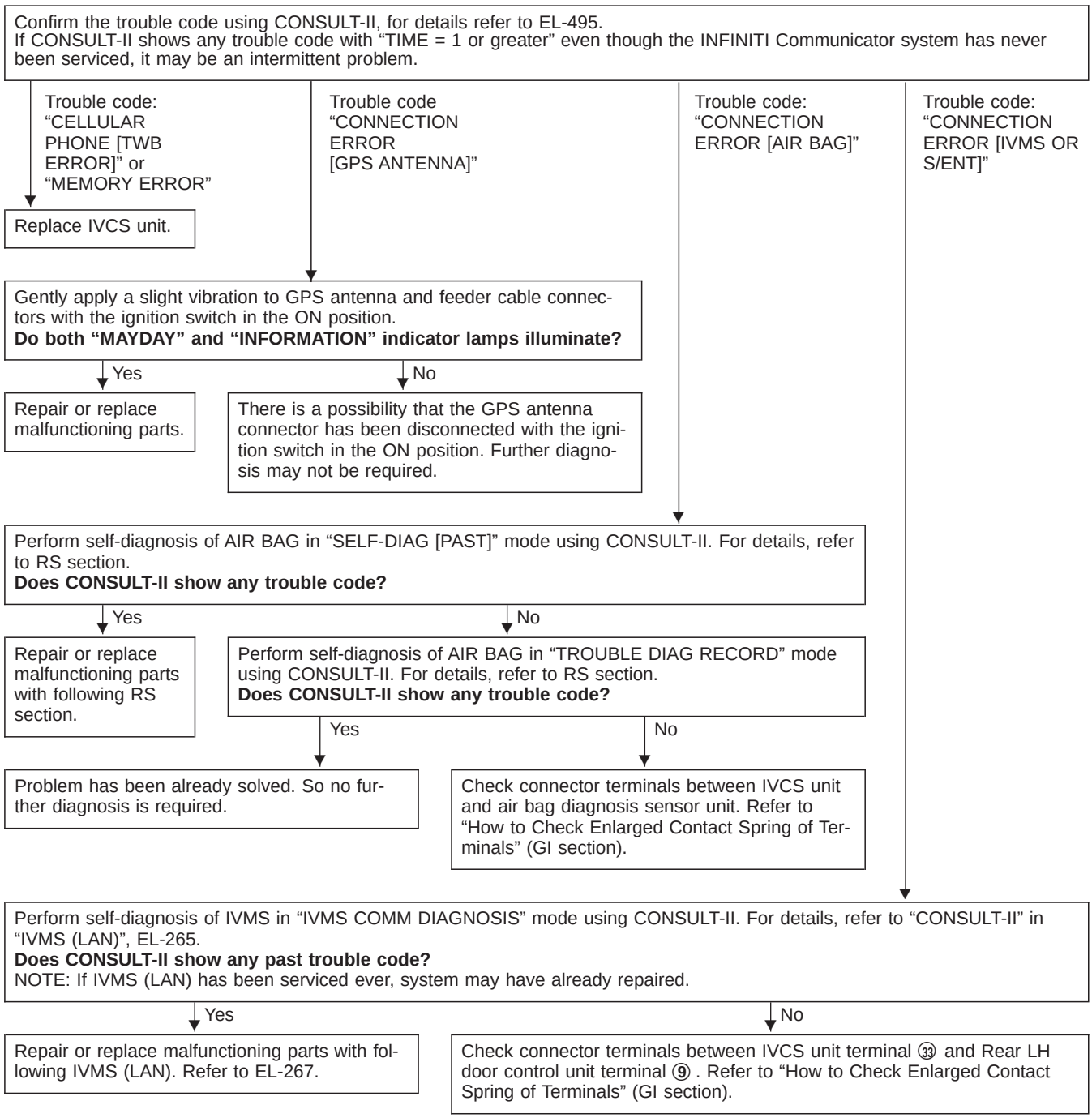
DESCRIPTION

An intermittent incident may be occurring if all of the following conditions exist.

- Both “MAYDAY” emergency and “INFORMATION” indicators have shown that the system is malfunctioning.
- CONSULT-II self-diagnosis result screen indicates a trouble code with “TIME = 1 or greater”.
- The INFINITI Communicator system has not been previously serviced.

To find out the cause of a problem, follow the procedures shown below.

DIAGNOSTIC PROCEDURE



NOTE:
Enlarged spring contact of terminals may be cause of intermittent problem for “CONNECTION ERROR [AIR BAG]/[IVMS OR S/ENT]”. When you inspect terminals for enlarged contact, refer to “How to Check Enlarged Contact Spring of Terminals” in GI section.

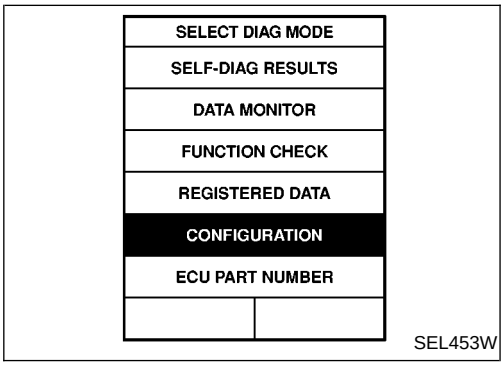
Demonstration Mode

DESCRIPTION

By setting up the system in the demonstration mode, automatic dialing operation can be confirmed by “MAYDAY” emergency and “INFORMATION” switch operation.
Automatic dialing in this mode is connected to the demonstration center of Communicator Response Center, and is different from the normal service.
When the contract with Communicator Response Center is not concluded, all the INFINITI Communicator operations are connected to the demonstration center.
Connection to Communicator Response Center in this mode will not be charged by Communicator Response Center nor will the call be handled as an emergency.

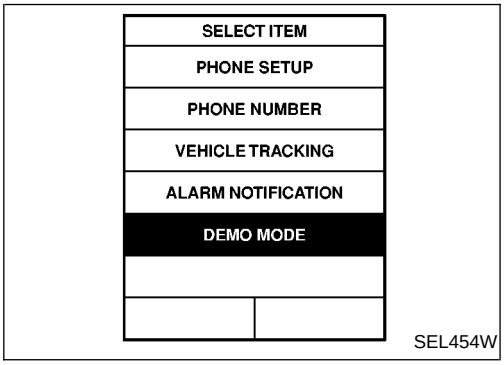
SYSTEM OPERATION CHECK

1. Touch “CONFIGURATION”.



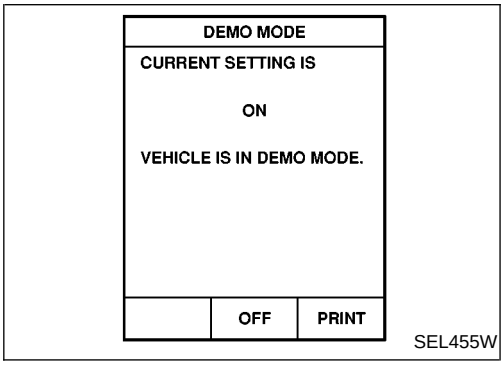
SEL453W

2. Touch “DEMO MODE”.



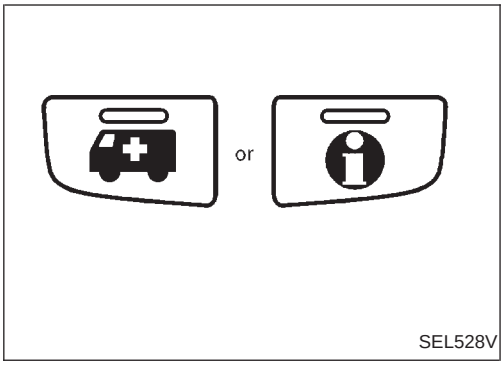
SEL454W

3. Touch “ON”. Now, the system is in demonstration mode. (To return to normal mode, touch “OFF”.)



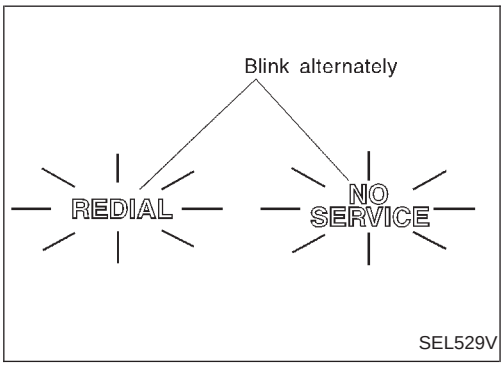
SEL455W

Demonstration Mode (Cont'd)



SEL528V

4. Touch "BACK" key of CONSULT-II until "SELECT SYSTEM" appears, then turn off CONSULT-II.
5. Turn ignition switch to the OFF position.
6. Disconnect CONSULT-II DDL connector.
7. Start the engine.
8. Touch the "MAYDAY" or "INFORMATION" switches. Then the system will call the demonstration center.

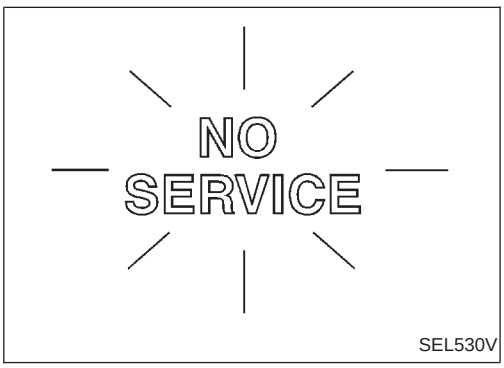


SEL529V

9. Check INFINITI Communicator operation.

- If contact with Communicator Response Center is successful, system is OK.

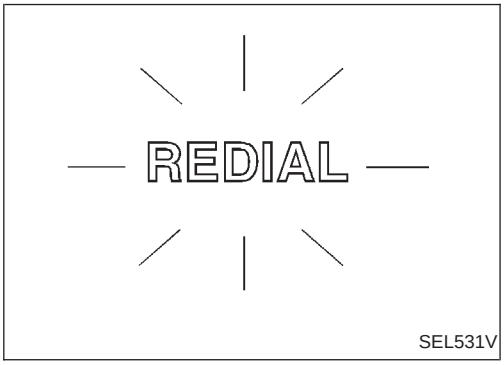
NOTE:
During the system contact to Communicator Response Center in demonstration mode, "REDIAL" and "NO SERVICE" indicators blink alternately.



SEL530V

- If "NO SERVICE" indicator illuminates and the contact to Communicator Response Center is unsuccessful, retry from other location where the cellular connection seems good. (e.g.; move the vehicle outside of the workshop and retry.)

NOTE:
If "NO SERVICE" indicator frequently illuminates from a location where the cellular connection seems good, check the connection of the feeder cable for the cellular phone antenna.



SEL531V

- If "REDIAL" indicator lamp illuminates and the contact to Communicator Response Center is unsuccessful, the cellular network is busy or there are no open cellular channels. The system will redial automatically.

NOTE:
If redial fails several times, confirm whether the roaming agreement of customer's cellular provider at the vehicle location is available or not.

Warning:

- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, any service from Communicator Response Center is not available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**

System Setting (When IVCS unit is replaced)

DESCRIPTION

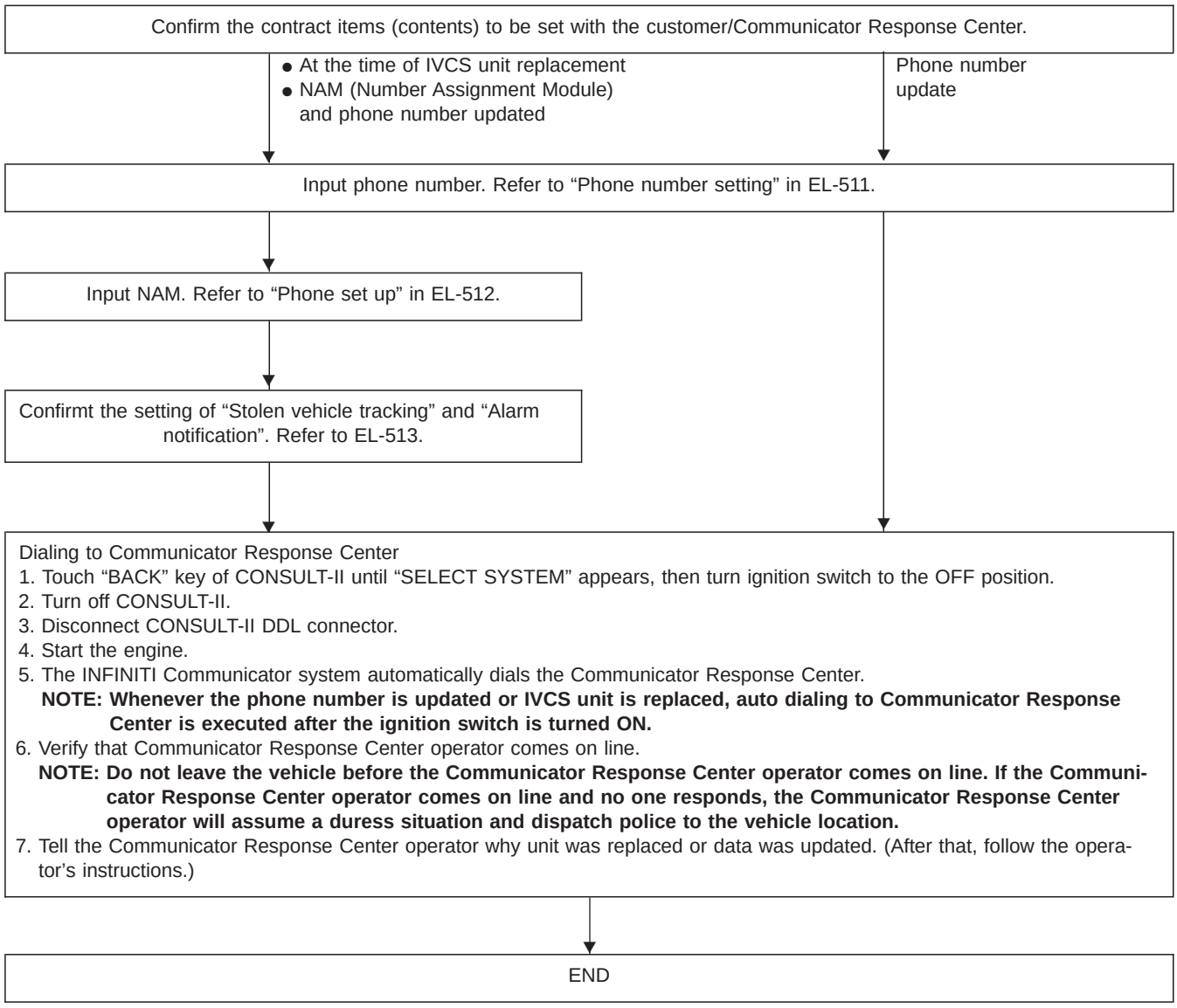
When the IVCS unit is replaced, carry out the following data settings.

- Phone setup — Data setting regarding NAM (Number Assignment Module)
- Phone number — Phone number setting

NOTE:

- **Data must not be updated without prior approval from the customer.**
- **NAM and phone number can be programed by using optional handset. For details, refer to the handset operation manual.**
- **The IVCS unit does not permit updating of NAM more than 15 times.**

WORK FLOW



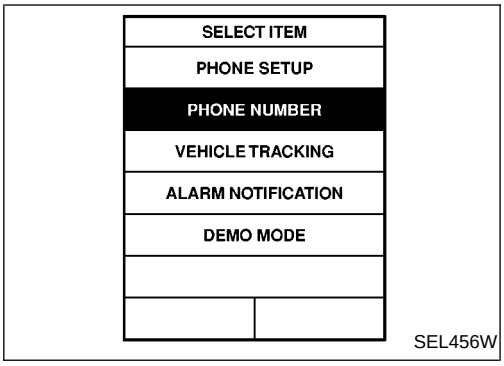
NOTE:

- **If a Communicator Response Center operator does not come on line even though the system activates, the system may not be properly configured. Call the Communicator Response Center at 1-888-427-4812 to verify the configuration information.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-480.**
- **Never release the vehicle to the customer unless INFINITI Communicator system operation is verified by a Communicator Response Center operator coming on line.**

System Setting (When IVCS unit is replaced) (Cont'd)

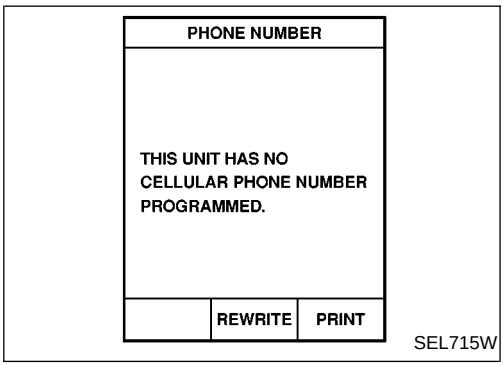
PHONE NUMBER SETTING

1. Touch "CONFIGURATION".
2. Touch "PHONE NUMBER".



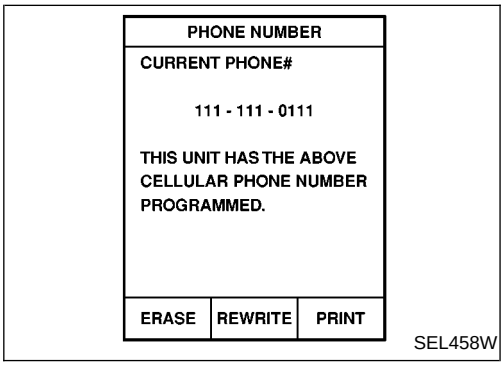
SEL456W

3. Touch "WRITE" or "REWRITE".
- If no phone number is previously memorized, the display shows "This unit has no cellular phone number programmed".



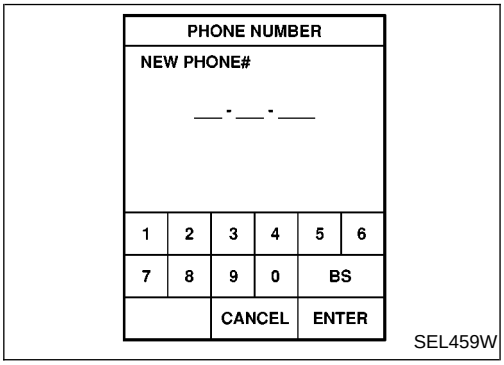
SEL715W

- If the phone number is previously memorized, the display shows the current phone number.
- To erase the phone number, touch "ERASE".



SEL458W

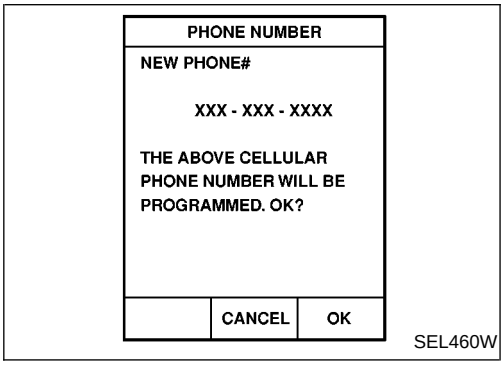
4. Input new phone number.
5. Touch "ENTER".



SEL459W

6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and information them that data has been updated or the IVCS unit has been replaced. For details, refer to EL-510.

NOTE: Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started.

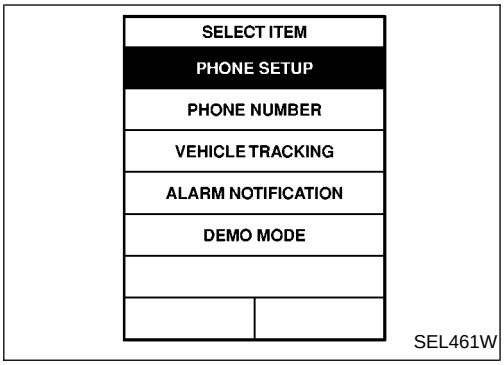


SEL460W

System Setting (When IVCS unit is replaced) (Cont'd)

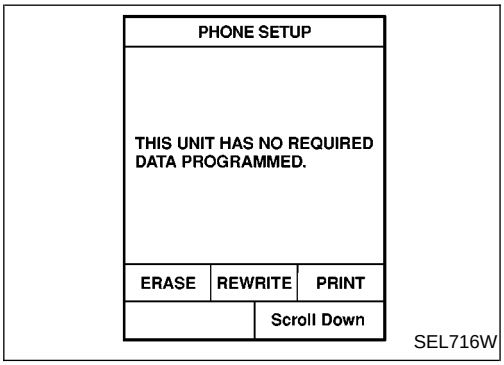
PHONE SET UP

1. Touch "CONFIGURATION".
2. Touch "PHONE SET UP".

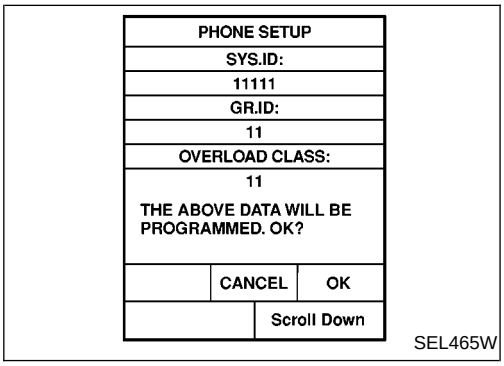


3. Touch "WRITE" or "REWRITE".

- If no data is previously memorized, the display shows "This unit has no required data programmed".



- If NAM (Number Assignment Module) data is previously memorized, the display shows the current NAM data.
- To erase the NAM, touch "ERASE".

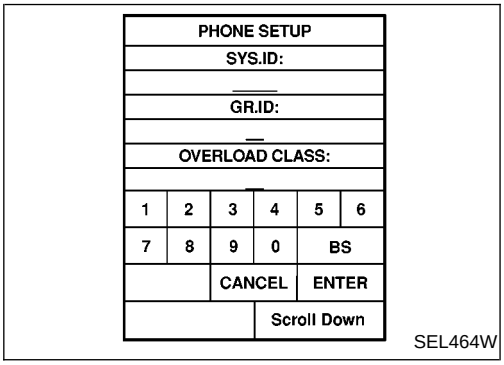


4. Input new NAM data.

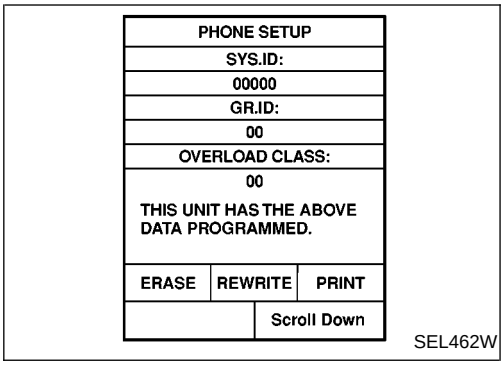
- SYS ID (Carrier system ID number) — Available number: 0 to 32765
- GR ID (Group ID mark) — Available number: 0 to 15
- OVERLOAD CLASS (Access overload class) — Available number: 0 to 15
- SECURITY CODE (User security code)
- UNLOCK CODE
- INIT PAGE CH (Initial paging channel)

NOTE: If an unavailable number is input as "SYS ID", "GR ID" or "OVERLOAD CLASS", CONSULT-II may be locked. In such cases, disconnect the vehicle battery cable once and then setup the system again.

5. Touch "ENTER".



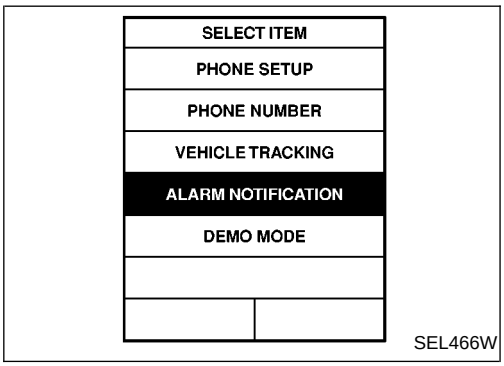
System Setting (When IVCS unit is replaced) (Cont'd)



SEL462W

6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or IVCS unit has been replaced. For details, refer to EL-510.

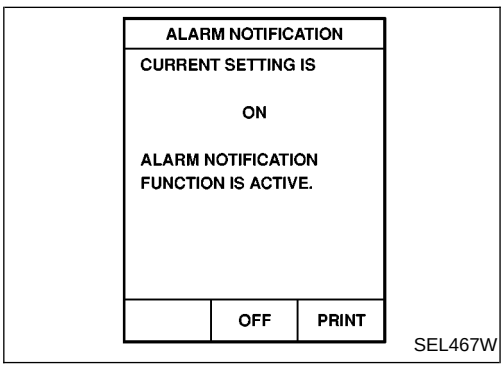
NOTE: Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is stared.



SEL466W

STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK

1. Touch "CONFIGURATION".
2. Touch "VEHICLE TRACKING" or "ALARM NOTIFICATION".



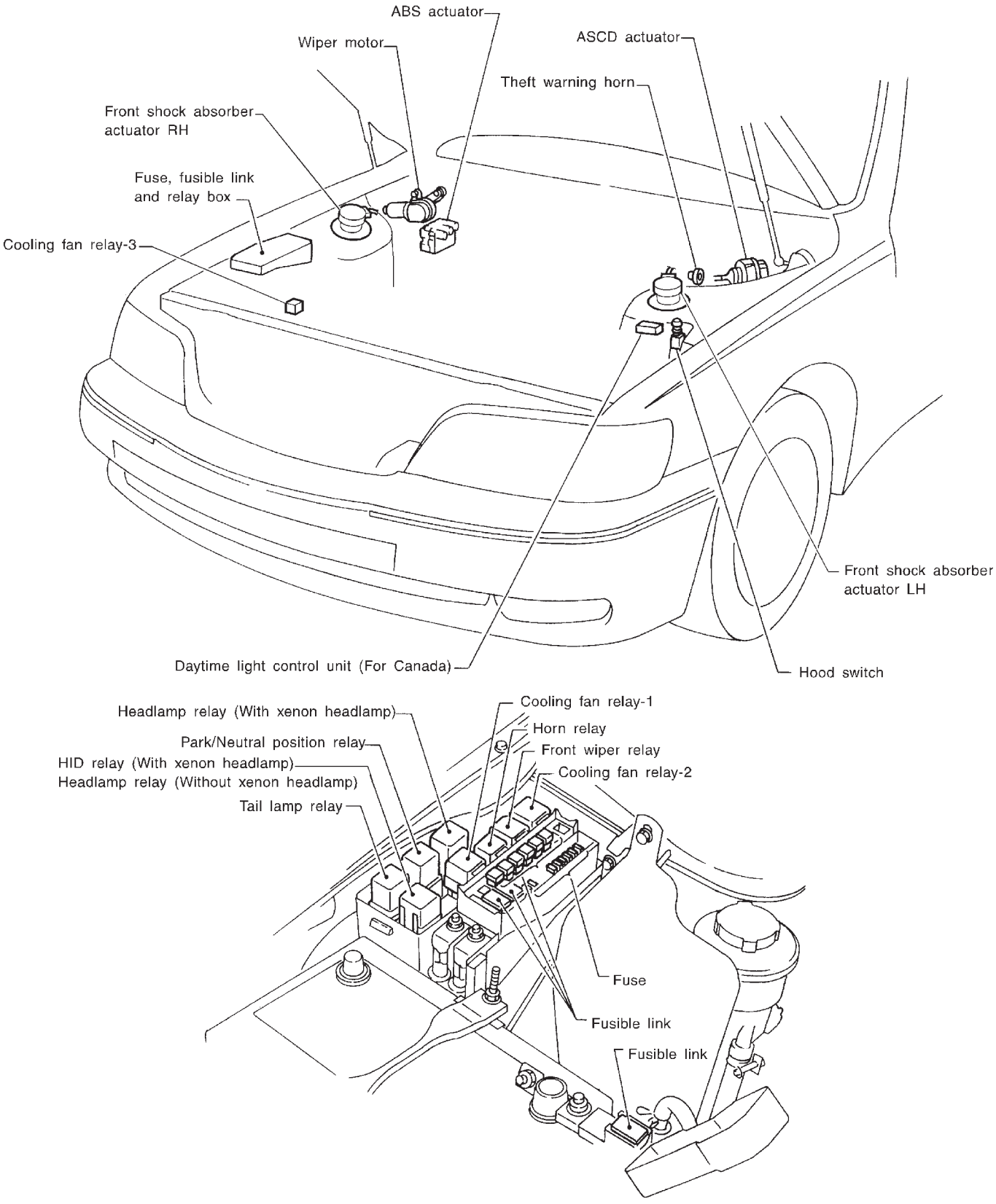
SEL467W

3. This function should always be "ON" (function activate.)

NOTE:

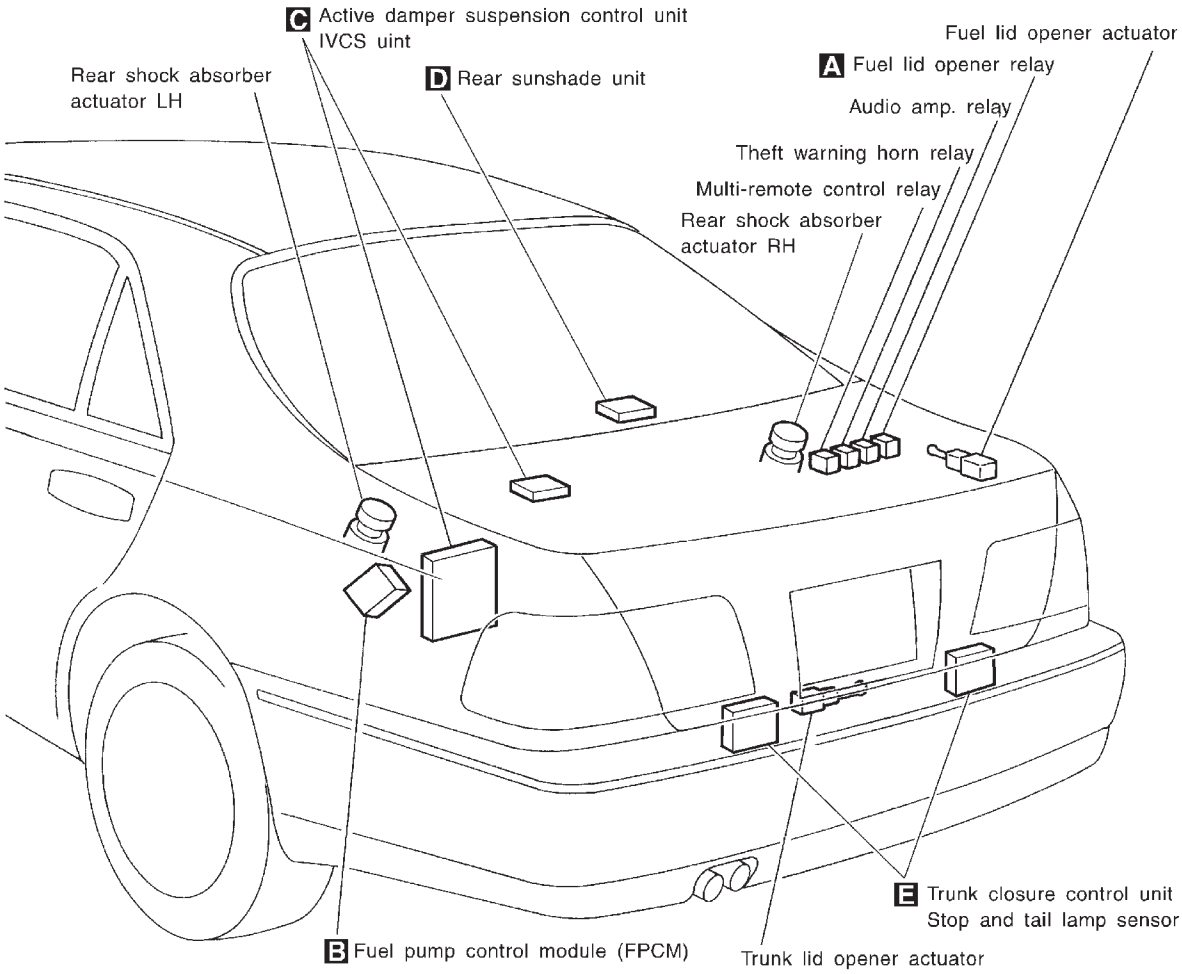
- **If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-480.**

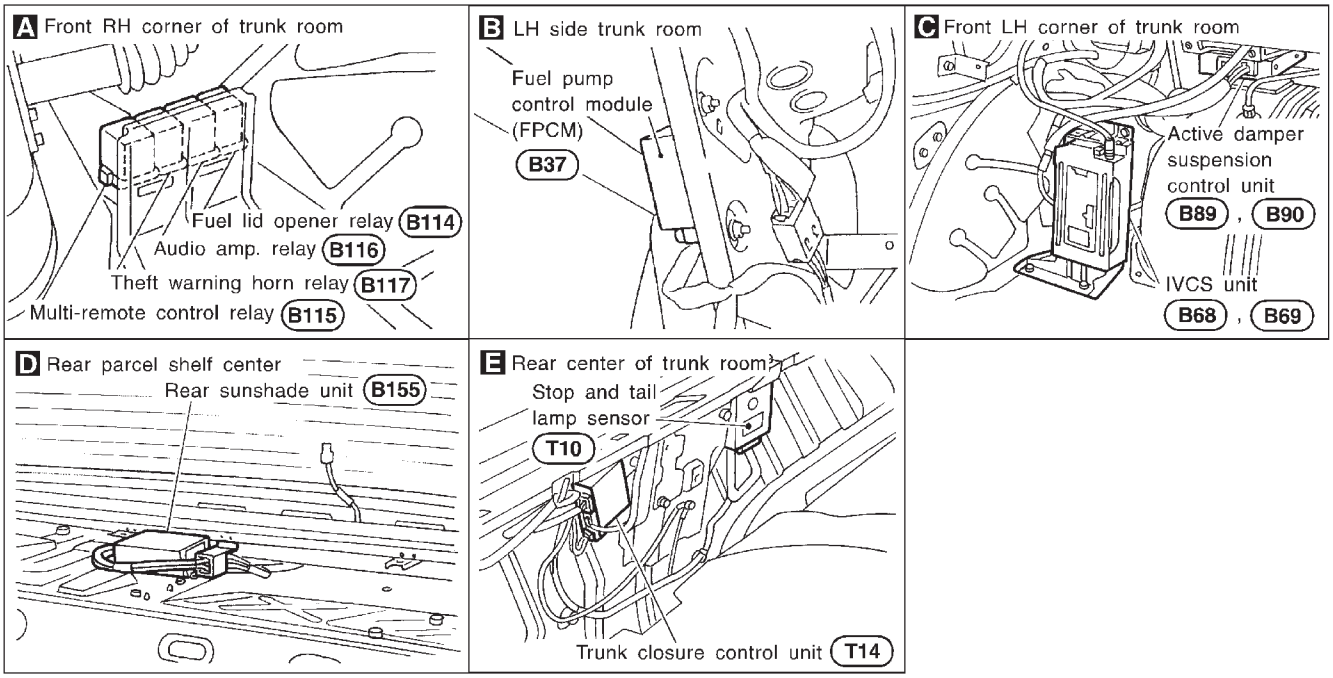
Engine Compartment



CEL997

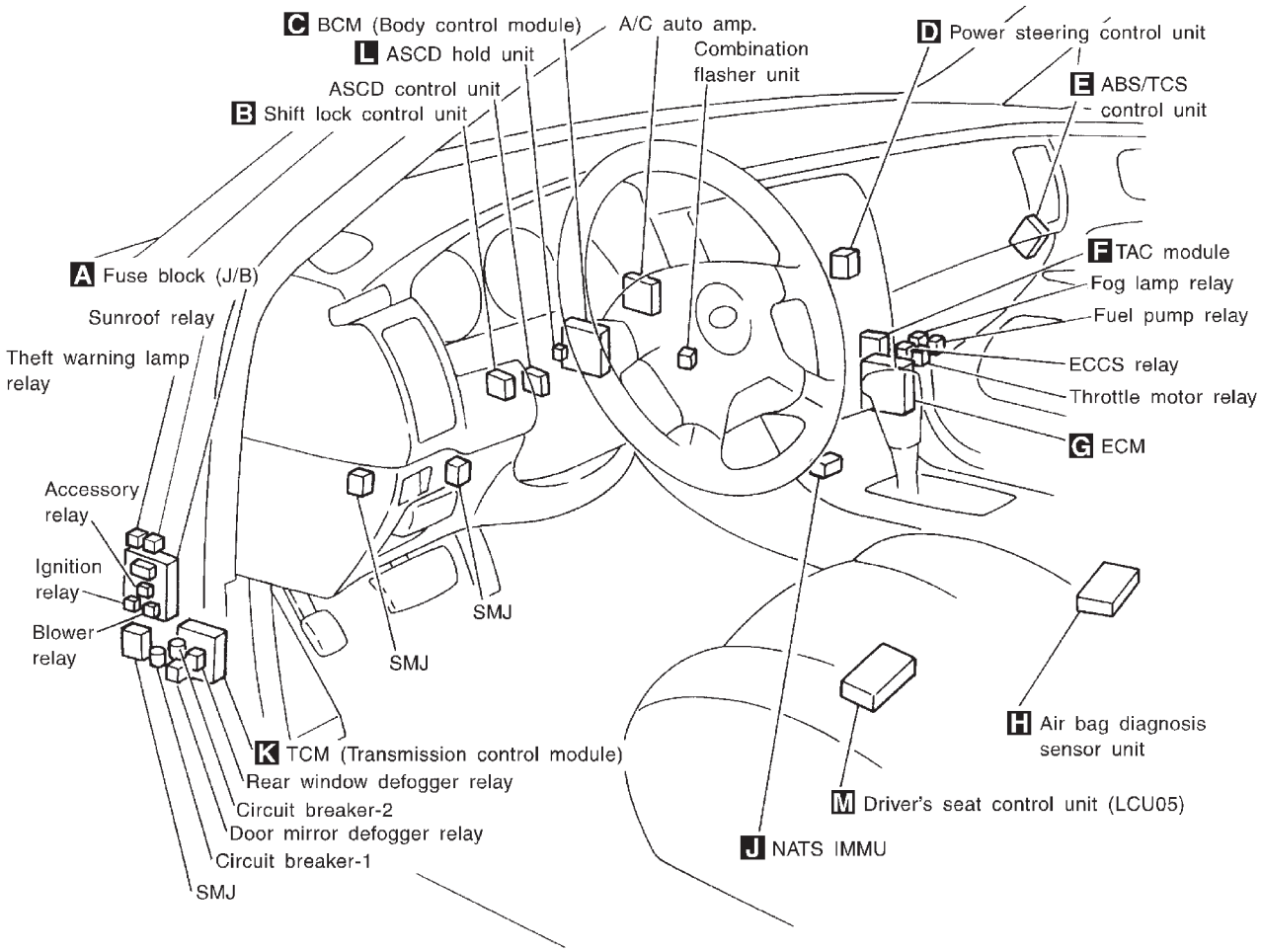
Luggage Compartment



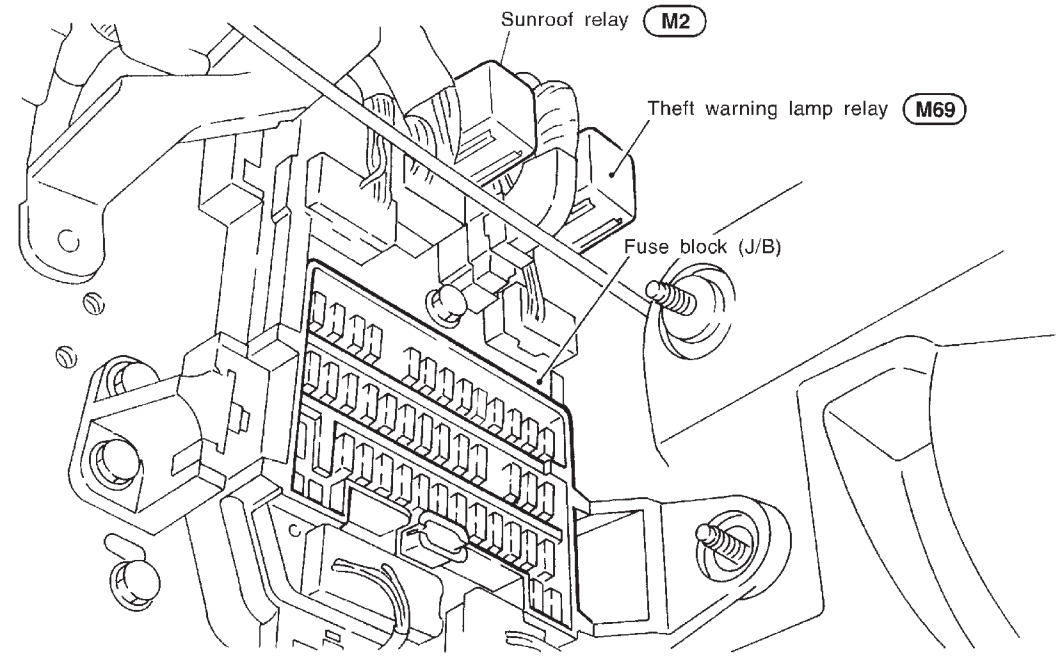


CEL998

Passenger Compartment

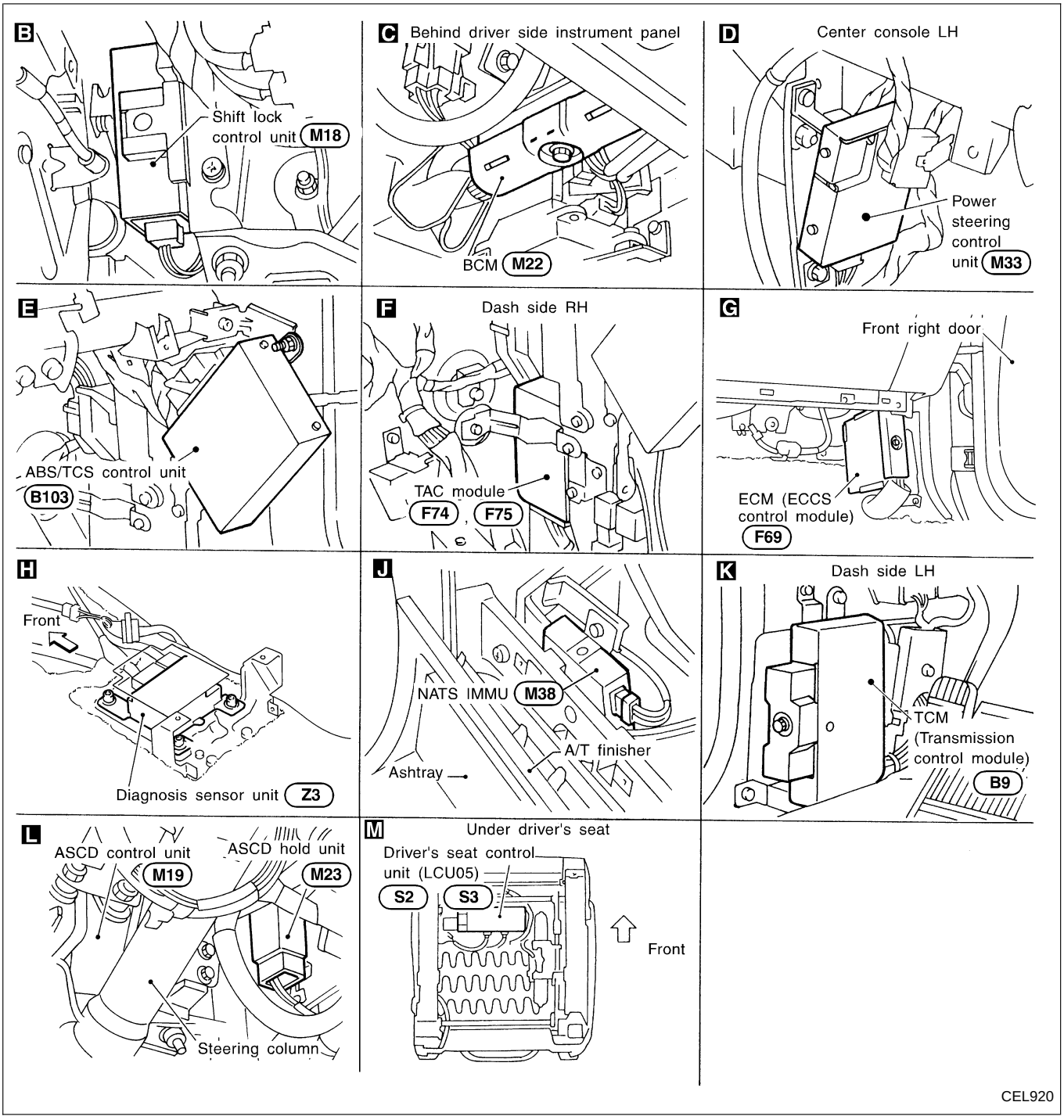


A Instrument panel LH side

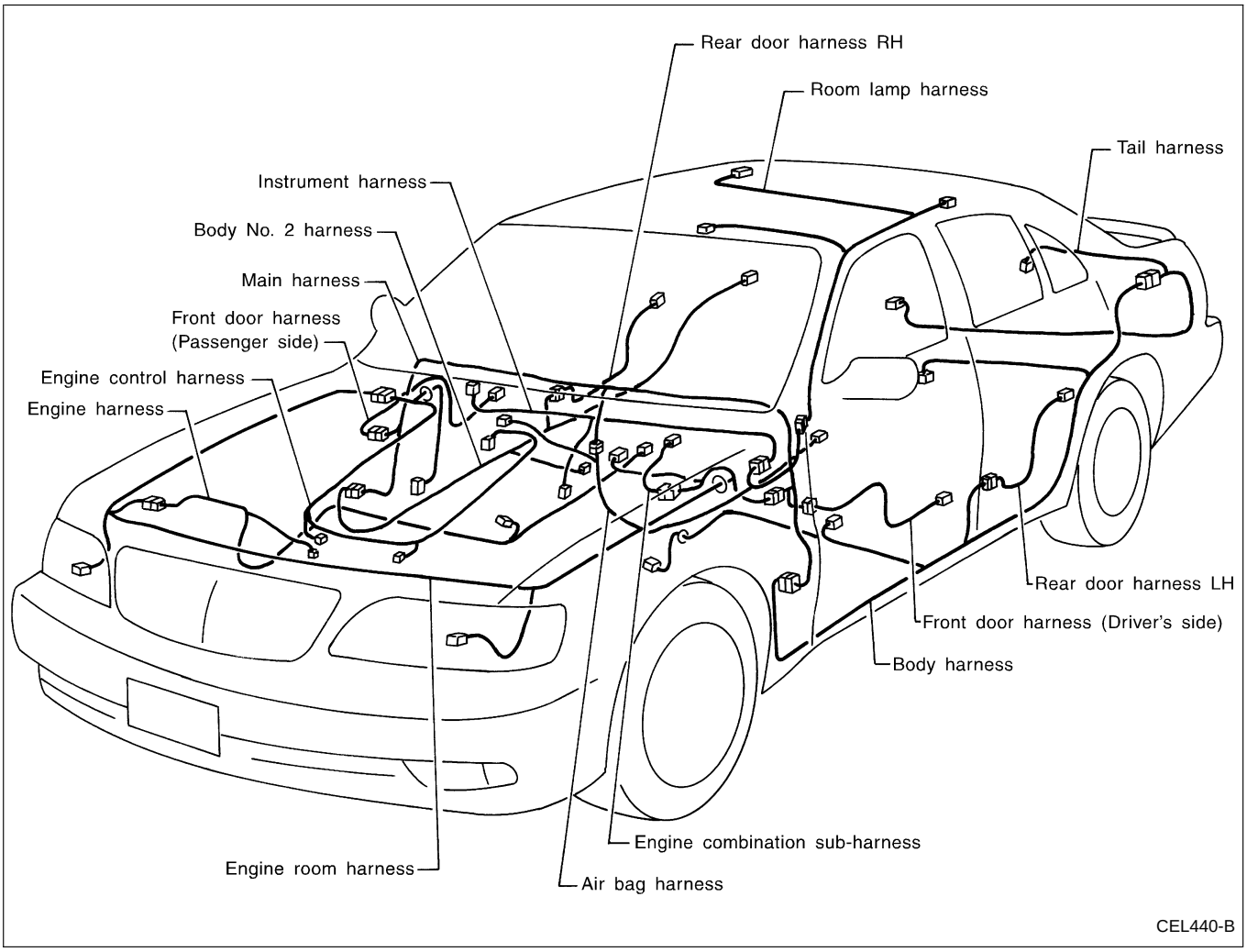


CEL999

Passenger Compartment (Cont'd)



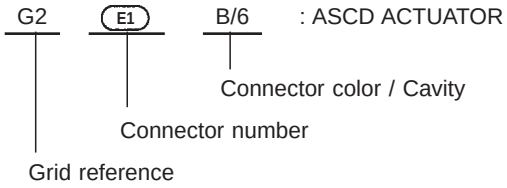
Outline



NOTE: For detailed ground distribution information, refer to "GROUND DISTRIBUTION", EL-21.

How to Read Harness Layout

Example:



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)
- Body Harness and Tail Harness
- Body No. 2 Harness

To use the grid reference

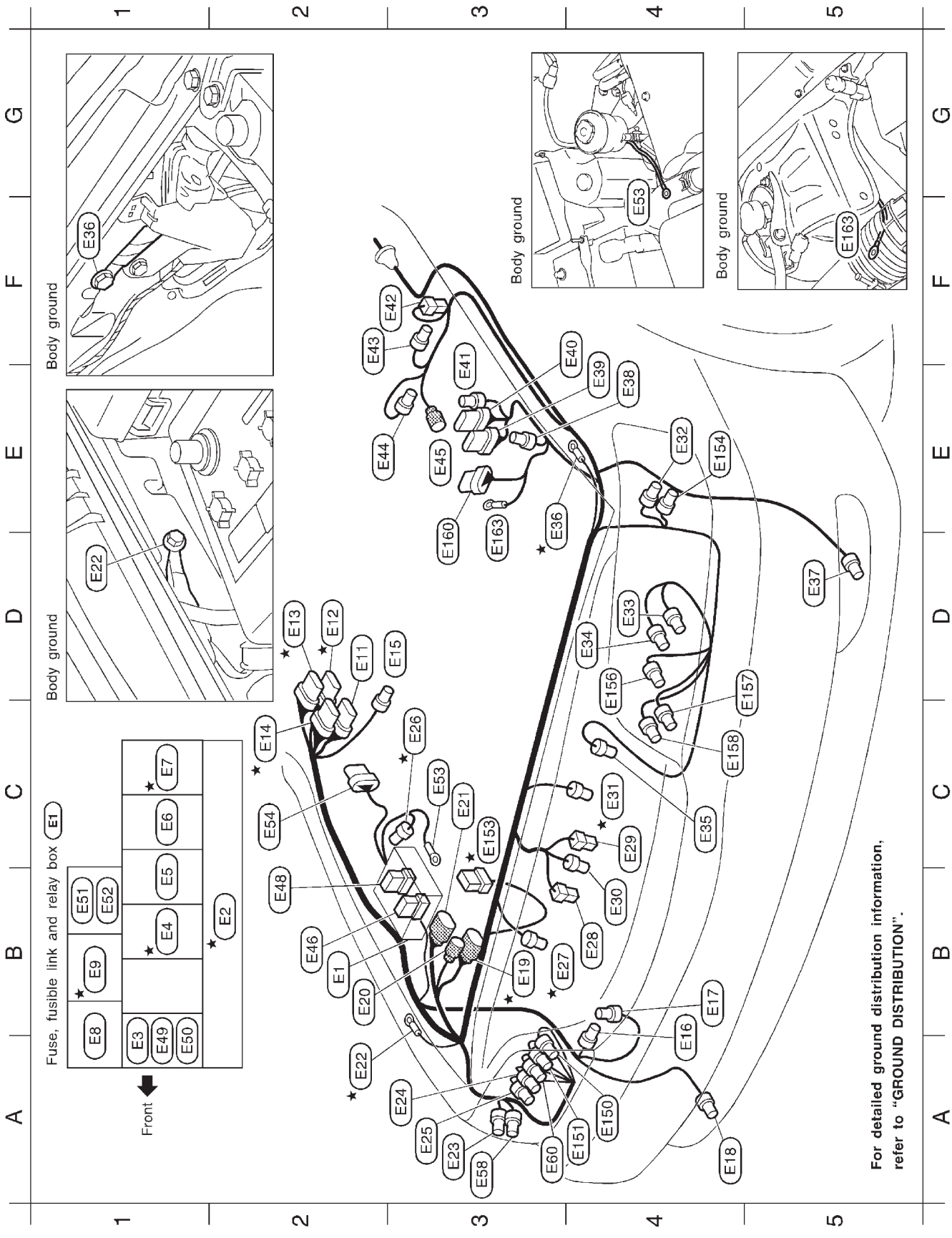
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

CONNECTOR SYMBOL

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.	—			

Engine Room Harness



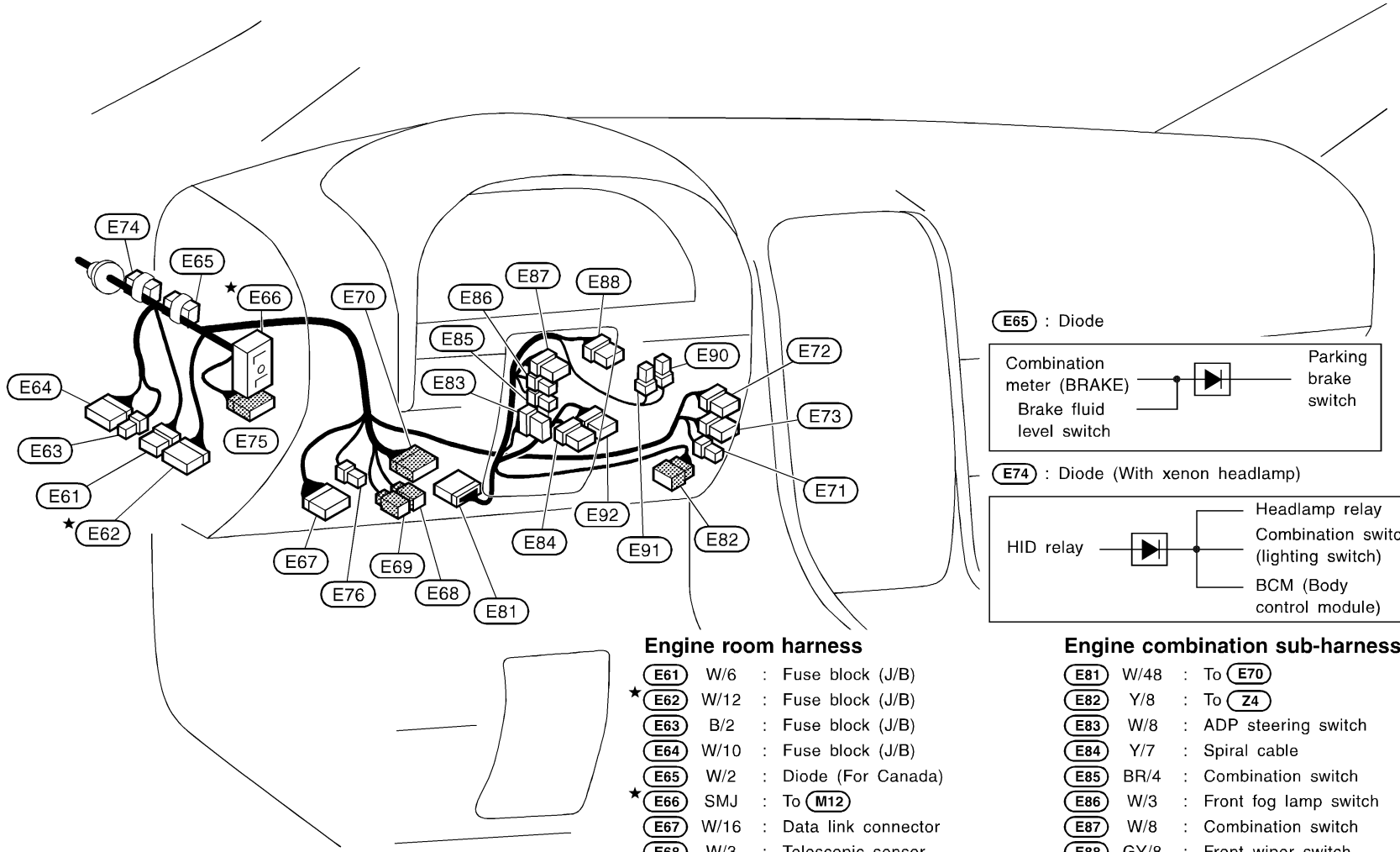
CEL002A

Engine Room Harness (Cont'd)

B2 (E1) – : Fuse, fusible link and relay box
B1★ (E2) – : Fuse, fusible link and relay box
B1 (E3) BR/6 : Headlamp relay
B1★ (E4) BR/6 : Cooling fan relay-1
B1 (E5) W/3 : Horn relay
C1 (E6) B/5 : Front wiper relay
C1★ (E7) BR/6 : Cooling fan relay-2
B1 (E8) GY/6 : Tail lamp relay
B1★ (E9) GY/6 : Park/Neutral position relay
D2 (E11) B/8 : To (F4)
D2★ (E12) GY/8 : To (F3)
D2★ (E13) GY/8 : To (F2)
C2★ (E14) GY/6 : To (F1)
D3 (E15) B/2 : ABS actuator
A4 (E16) GY/2 : Front washer motor
B4 (E17) BR/2 : Washer level switch
A4 (E18) GY/2 : Front fog lamp RH
B3★ (E19) B/6 : To (E102)
B2 (E20) GY/1 : To (E103)
C3 (E21) GY/8 : To (E101)
A2★ (E22) – : Body ground
A3 (E23) BR/3 : Front combination lamp RH (Without xenon headlamp)
A3 (E24) B/3 : Headlamp RH (For U.S.A. without xenon headlamp)
A3 (E25) B/3 : Headlamp RH (For Canada without xenon headlamp)
C3★ (E26) GY/2 : Dropping resistor
B3★ (E27) B/4 : Cooling fan motor-2
B4 (E28) B/1 : Horn low
C4 (E29) B/1 : Horn high
B4 (E30) B/2 : Ambient sensor
C4★ (E31) B/4 : Cooling fan motor-1
E4 (E32) BR/3 : Front combination lamp LH (Without xenon headlamp)
D4 (E33) B/3 : Headlamp LH (For Canada without xenon headlamp)
D4 (E34) B/3 : Headlamp LH (For U.S.A. without xenon headlamp)
C4 (E35) B/4 : Triple-pressure switch
E3★ (E36) – : Body ground
D5 (E37) GY/2 : Front fog lamp LH
E4 (E38) GY/2 : Hood switch
E4 (E39) GY/8 : Daytime light control unit (For Canada)
F4 (E40) GY/6 : Daytime light control unit (For Canada)
F3 (E41) GY/4 : Daytime light control unit (For Canada)
F3 (E42) B/1 : Theft warning horn
F2 (E43) GY/4 : ASCD pump
E2 (E44) GY/2 : Brake fluid level switch
E3 (E45) GY/2 : Front wheel sensor LH
B2 (E46) GY/6 : Joint connector-13
B2 (E48) W/6 : Joint connector-15
A1 (E49) BR/6 : HID Relay (For U.S.A. with xenon headlamp)
A1 (E50) BR/6 : HID Relay (For Canada with xenon headlamp)
B1 (E51) BR/6 : Headlamp relay (For U.S.A. with xenon headlamp)
B1 (E52) BR/6 : Headlamp relay (For Canada with xenon headlamp)
C3 (E53) – : Body ground (With active damper suspension)
C2 (E54) B/6 : Front shock absorber actuator RH (With active damper suspension)
A3 (E58) GY/3 : Front combination lamp RH (With xenon headlamp)
A3 (E60) B/3 : Headlamp aiming motor RH (With headlamp aiming system)
A4 (E150) GY/4 : Headlamp RH (For U.S.A. with xenon headlamp)
A4 (E151) GY/4 : Headlamp RH (For Canada with xenon headlamp)
C3★ (E153) BR/6 : Cooling fan relay-3
E4 (E154) GY/3 : Front combination lamp LH (With xenon headlamp)
D4 (E156) B/3 : Headlamp aiming motor LH (With headlamp aiming system)
D4 (E157) GY/4 : Headlamp LH (For U.S.A. with xenon headlamp)
C4 (E158) GY/4 : Headlamp LH (For Canada with xenon headlamp)
D3 (E160) GY/6 : Front shock absorber actuator LH (With active damper suspension)
D3 (E163) – : Body ground (With active damper suspension system)

★ : 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.**

CEL003A



Engine room harness

E61	W/6	:	Fuse block (J/B)
★ E62	W/12	:	Fuse block (J/B)
E63	B/2	:	Fuse block (J/B)
E64	W/10	:	Fuse block (J/B)
E65	W/2	:	Diode (For Canada)
★ E66	SMJ	:	To M12
E67	W/16	:	Data link connector
E68	W/3	:	Telescopic sensor
E69	W/2	:	Telescopic motor
E70	W/48	:	To E81
E71	W/4	:	Key switch and key lock solenoid
E72	B/5	:	Ignition switch
E73	W/6	:	IVIS (NATS) antenna amp.
E74	W/2	:	Diode (With xenon headlamp)
E75	W/20	:	To M65
E76	W/2	:	Telephone microphone

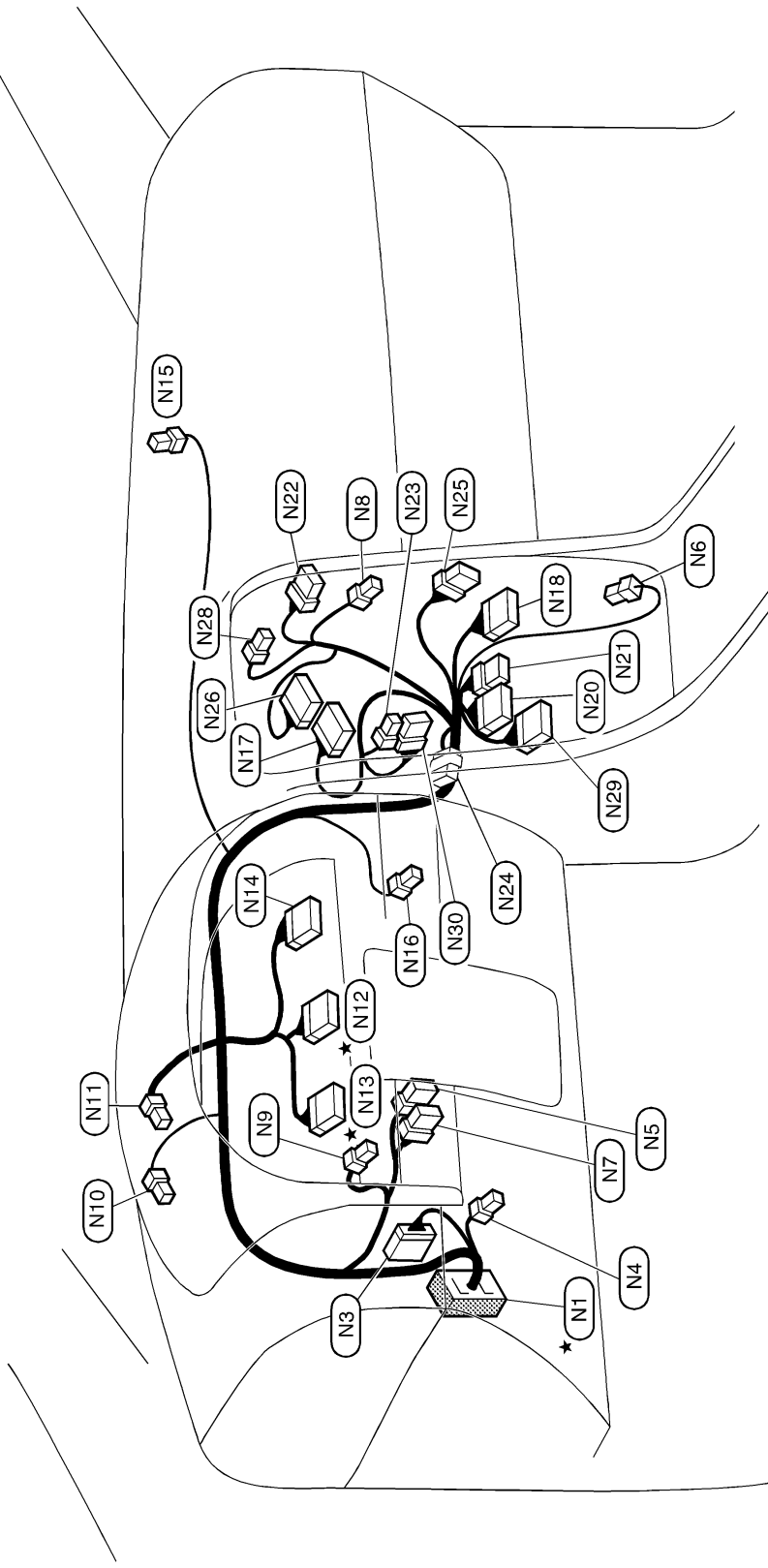
Engine combination sub-harness

E81	W/48	:	To E70
E82	Y/8	:	To Z4
E83	W/8	:	ADP steering switch
E84	Y/7	:	Spiral cable
E85	BR/4	:	Combination switch
E86	W/3	:	Front fog lamp switch
E87	W/8	:	Combination switch
E88	GY/8	:	Front wiper switch
E90	W/2	:	Tilt motor
E91	W/4	:	Tilt sensor
E92	W/6	:	Steering wheel angle sensor (With active damper suspention)

★ : 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.**

CEL003M

Instrument Harness



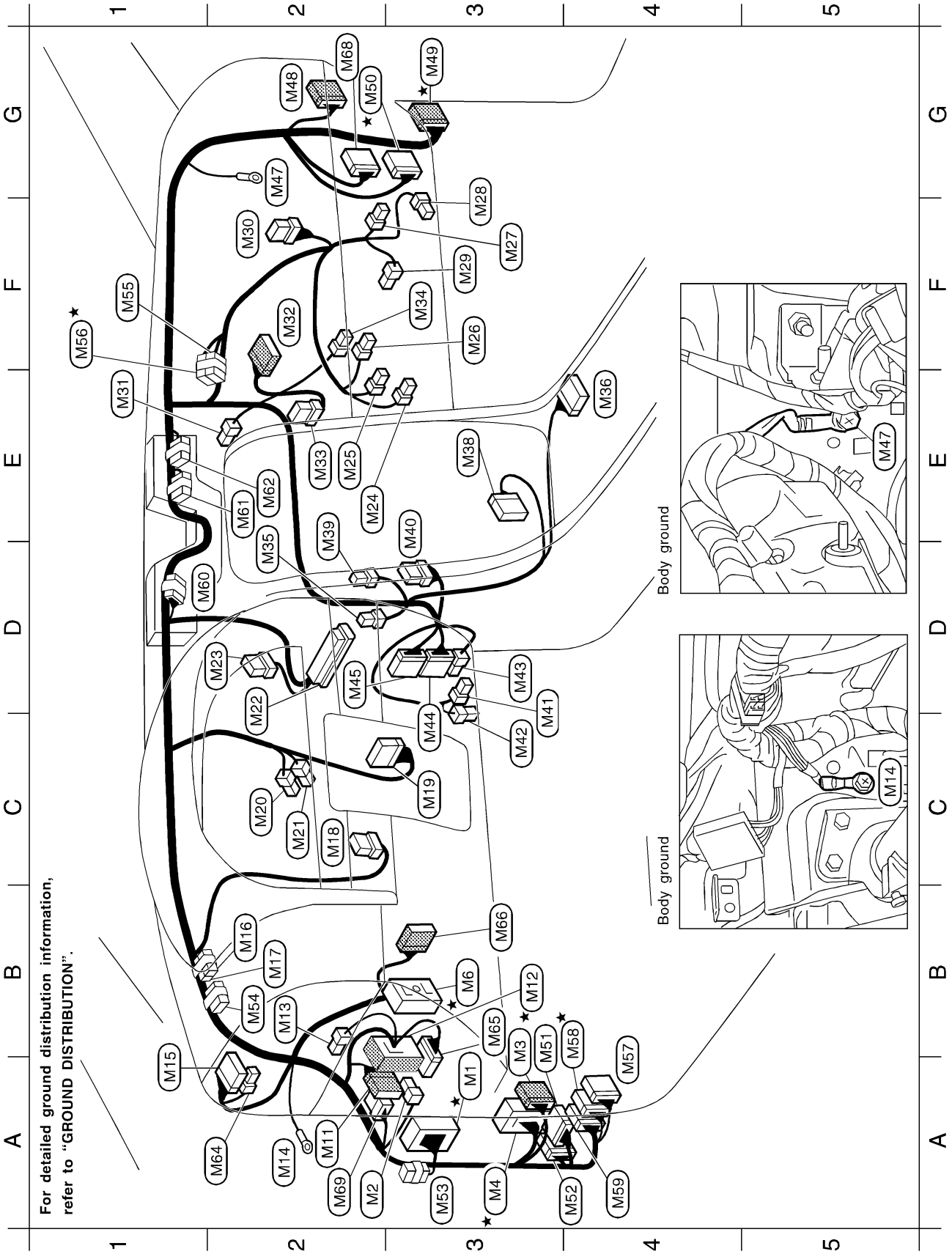
★ N1	SMJ	: To M6	
N3	W/12	: To M66	
N4	W/4	: Headlamp aiming switch (With headlamp aiming system)	
N5	W/8	: Active damper suspension select switch (With Active damper suspension)	
N6	W/3	: Front cigarette lighter	
N7	W/6	: TCS switch	
N8	W/4	: Illumination time control switch	
N9	W/2	: Security indicator	
N10	W/3	: Warning chime	
N11	W/4	: Optical sensor	
★ N12	BR/16	: Combination meter	
★ N13	W/14	: Combination meter	
N14	W/16	: Combination meter	
N15	B/2	: Sunload sensor	
N16	W/2	: Ignition key hole illumination	
N17	W/12	: A/C control unit	
N18	W/12	: Radio	
N20	W/10	: Radio	
N21	W/6	: Radio	
N22	W/8	: Hazard switch	
N23	W/3	: Illumination control switch	
N24	GY/6	: Joint connector-18	
N25	W/6	: Telephone switch	
N26	B/20	: Steering wheel receiver control switch	
N28	W/4	: Clock	
N29	W/16	: Radio	
N30	W/6	: Rear sunshade switch	

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

CEL005A

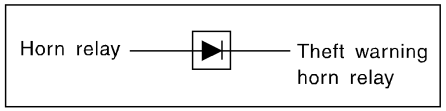
Main Harness



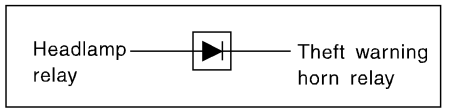
CEL004M

A3★	M1	SMJ	:	Fuse block (J/B)
A2	M2	L/4	:	Sunroof relay
A3	M3	W/48	:	To B4
A3★	M4	SMJ	:	To B3
B3★	M6	SMJ	:	To N1
A2	M11	W/40	:	To D1
B3★	M12	SMJ	:	To E66
B2	M13	B/1	:	Parking brake switch
A2	M14	–	:	Body ground
A1	M15	W/18	:	To R1
B2	M16	W/2	:	Diode
B2	M17	W/2	:	Diode
C2	M18	W/8	:	Shift lock control unit
C3	M19	B/20	:	ASCD control unit
C2	M20	B/2	:	Stop lamp switch
C2	M21	L/2	:	ASCD brake switch
D2	M22	SMJ	:	BCM (Body control module)
D2	M23	W/6	:	ASCD hold unit
E2	M24	W/2	:	Trunk lid opener cancel switch
E2	M25	BR/2	:	Glove box lamp switch
F3	M26	W/2	:	Glove box lamp
F3	M27	W/2	:	Blower motor
G3	M28	W/2	:	Footwell lamp (Passenger side)
F3	M29	W/4	:	Fan control amp.
F2	M30	W/8	:	Intake door motor
E1	M31	W/3	:	Bi-level door motor
F2	M32	W/20	:	To Z1
E2	M33	W/8	:	Power steering control unit
F3	M34	W/3	:	Intake sensor
D2	M35	W/3	:	Mode door motor
E4	M36	W/12	:	A/T device
E3	M38	W/12	:	IVIS (NATS) IMMU
E2	M39	B/3	:	Combination flasher unit
E3	M40	B/6	:	Rear vent door motor
D3	M41	W/2	:	In-vehicle sensor
C3	M42	W/2	:	Footwell lamp (Driver's side)
D3	M43	W/3	:	Air mix door motor
C3	M44	W/20	:	A/C auto amp.
C2	M45	W/16	:	A/C auto amp.
G2	M47	–	:	Body ground
G2	M48	W/40	:	To D21
G3★	M49	W/48	:	To F63
G2★	M50	W/48	:	To B101
B3	M51	L/12	:	Joint connector-1
A3	M52	G/12	:	Joint connector-2
A3	M53	G/12	:	Joint connector-3
B2	M54	G/12	:	Joint connector-4
F1	M55	B/12	:	Joint connector-5
F1★	M56	G/12	:	Joint connector-6
B4	M57	G/12	:	Joint connector-7
B4★	M58	L/12	:	Joint connector-8
A4	M59	B/12	:	Joint connector-9
D1	M60	W/6	:	Joint connector-10
E2	M61	GY/6	:	Joint connector-11
E2	M62	W/6	:	Joint connector-12
A2	M64	W/3	:	To R9
B3	M65	W/20	:	To E75
B3	M66	W/12	:	To N3
G2	M68	W/20	:	To B185
A2	M69	BR/6	:	Theft warning lamp relay

M16 : Diode



M17 : Diode

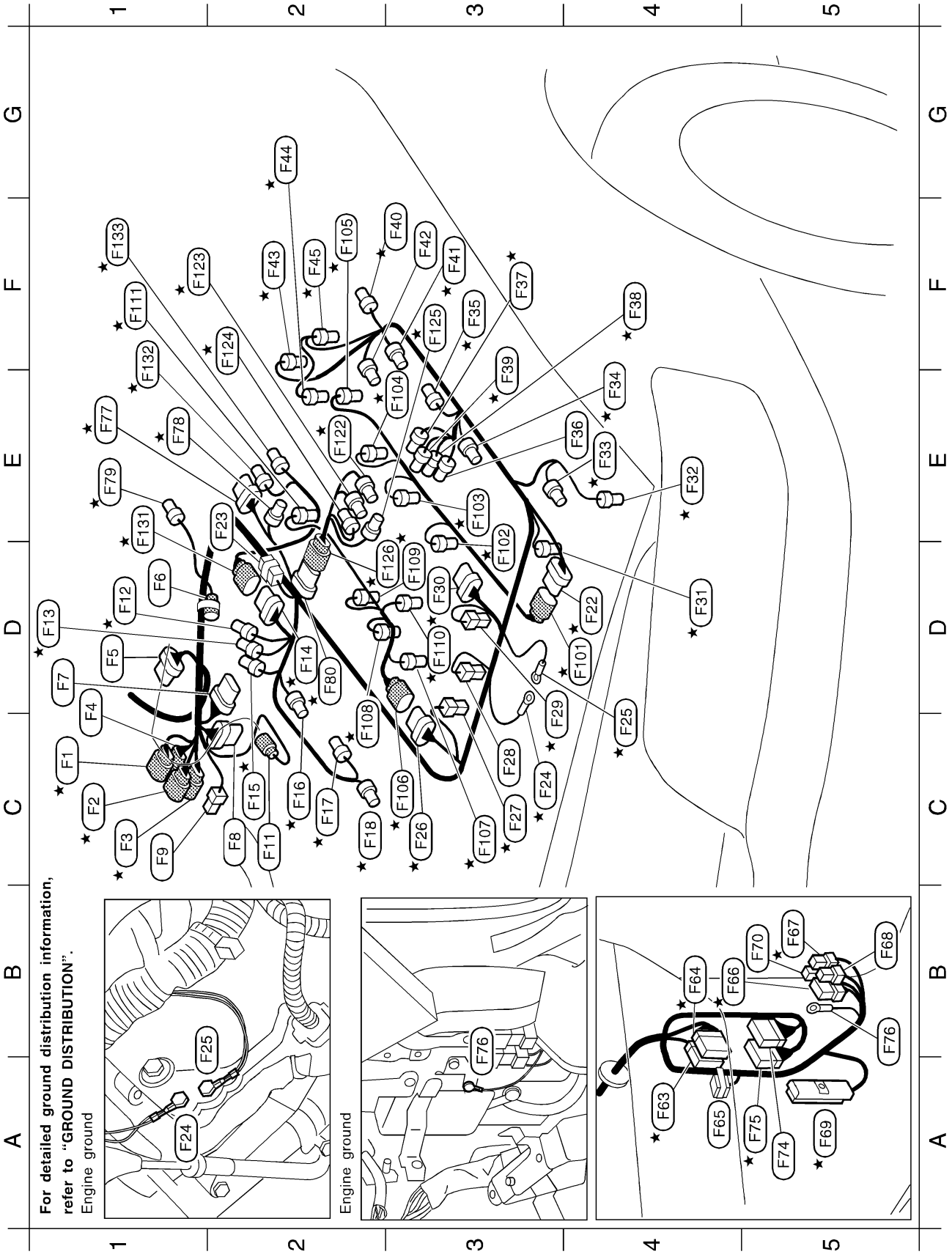


★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

CEL005M

EXIT

Engine Control Harness



CEL009M

Engine control harness

C1★	F1	GY/6	:	To E14
C1★	F2	GY/8	:	To E13
C1★	F3	GY/8	:	To E12
D1	F4	B/8	:	To E11
D1	F5	GY/6	:	Front wiper motor
D1	F6	GY/1	:	Check connector
D1	F7	GY/8	:	ABS actuator
C2	F8	B/8	:	ABS actuator
C1	F9	L/4	:	Air conditioner relay
C2	F11	GY/2	:	Front wheel sensor RH
D1★	F12	GY/3	:	Front heated oxygen sensor RH
D1★	F13	GY/3	:	Intake valve timing control position sensor RH
D2★	F14	GY/8	:	To F131
C2★	F15	GY/3	:	Ignition coil (With power transistor No. 8)
C2★	F16	GY/3	:	Ignition coil (With power transistor No. 6)
C2★	F17	GY/3	:	Ignition coil (With power transistor No. 4)
C2★	F18	GY/3	:	Ignition coil (With power transistor No. 2)
D4★	F22	GY/6	:	To F101
E2	F23	GY/2	:	Condenser
C3★	F24	–	:	Engine ground
C4★	F25	–	:	Engine ground
C3★	F26	GY/8	:	To F106
C3★	F27	B/2	:	Intake valve timing control solenoid valve RH
C3	F28	B/1	:	Thermal transmitter
C3★	F29	B/2	:	Intake valve timing control solenoid valve LH
D3★	F30	GY/6	:	IACV-AAC valve
D4★	F31	GY/4	:	Camshaft position sensor
E4★	F32	GY/3	:	Mass air flow sensor
E4★	F33	GY/2	:	Intake air temperature sensor
E4★	F34	GY/3	:	Ignition coil (With power transistor No. 1)
F3★	F35	GY/3	:	Ignition coil (With power transistor No. 3)
E4	F36	PU/2	:	IACV-FICD solenoid valve
F3★	F37	BR/3	:	Secondary throttle position sensor
F4★	F38	GY/4	:	Throttle position switch
F3★	F39	B/4	:	Throttle position sensor
F3★	F40	GY/3	:	Ignition coil (With power transistor No. 7)
F3★	F41	GY/3	:	Ignition coil (With power transistor No. 5)
F3	F42	B/2	:	Throttle motor
F2★	F43	GY/2	:	EGR temperature sensor
G2★	F44	GY/3	:	Intake valve timing control position sensor LH
F2★	F45	GY/3	:	Front heated oxygen sensor LH
A4★	F63	W/48	:	To M49
B4★	F64	W/30	:	To B102
A4	F65	GY/2	:	Resistor
B4★	F66	BR/6	:	ECM relay
B5★	F67	L/4	:	Fuel pump relay
B5	F68	L/4	:	Throttle motor relay
A5★	F69	SMJ	:	ECM
B5	F70	L/4	:	Fog lamp relay
A5	F74	GY/16	:	TAC module
A5★	F75	GY/20	:	TAC module
B5	F76	–	:	Body ground
E1★	F77	GY/6	:	EVAP canister purge volume control solenoid valve
E1★	F78	B/2	:	EVAP canister purge control solenoid valve
E1★	F79	GY/3	:	Absolute pressure sensor
D2★	F80	GY/8	:	To F126

Engine control sub-harness-1

D4★	F101	GY/6	:	To F22
E3★	F102	B/2	:	Injector No. 1
E3★	F103	B/2	:	Injector No. 3
E3★	F104	B/2	:	Injector No. 5
F2★	F105	B/2	:	Injector No. 7
C2★	F106	GY/8	:	To F26
C3★	F107	B/2	:	Injector No. 2
D2★	F108	B/2	:	Injector No. 4
E3★	F109	B/2	:	Injector No. 6
D3★	F110	GY/2	:	Engine coolant temperature sensor
F1★	F111	B/2	:	Injector No. 8

Engine control sub-harness-2

E2★	F122	B/2	:	Knock sensor LH
F2★	F123	B/2	:	Knock sensor RH
F2★	F124	BR/2	:	MAP/BARO switch solenoid valve
F3★	F125	B/2	:	EGRC-solenoid valve
D3★	F126	GY/8	:	To F80

Engine control sub-harness-3

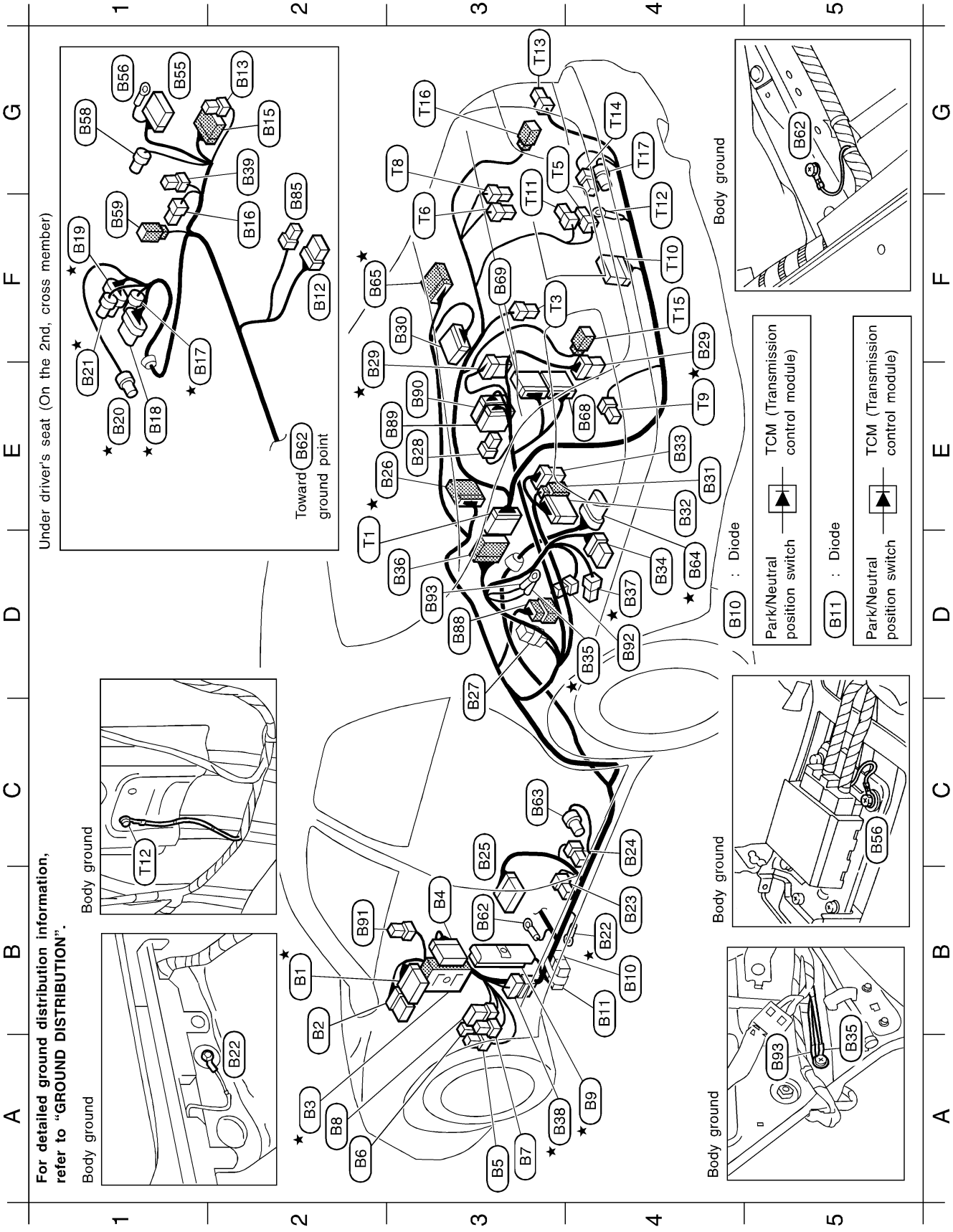
D1★	F131	GY/8	:	To F14
E1★	F132	GY/2	:	Crankshaft position sensor (OBD)
F1★	F133	GY/4	:	Rear heated oxygen sensor RH

★ : 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.

CEL010M

EXIT

Body Harness and Tail Harness



CEL010A

Body harness

B2★	B1	W/16	:	Fuse block (J/B)
B2	B2	W/6	:	Fuse block (J/B)
B3★	B3	SMJ	:	To M4
B3	B4	W/48	:	To M3
A3	B5	W/2	:	Circuit breaker-1
A2	B6	W/2	:	Circuit breaker-2
A3	B7	L/4	:	Door mirror defogger relay
A2	B8	BR/6	:	Rear window defogger relay
A4★	B9	SMJ	:	TCM (Transmission control module)
B4	B10	W/2	:	Diode
B4	B11	W/2	:	Diode
F2	B12	W/8	:	Driver's seat control unit (LCU05)
G2	B13	B/2	:	Front power socket
G2	B15	W/12	:	Handset
F2	B16	L/4	:	Heated seat switch (Driver's side)
F1★	B17	GY/3	:	Revolution sensor
E1★	B18	BR/8	:	A/T solenoid valve
F1★	B19	GY/8	:	Park/Neutral position switch
E1★	B20	GY/2	:	Vehicle speed sensor
F1★	B21	BR/3	:	Turbine revolution sensor
B4★	B22	–	:	Body ground
B4	B23	BR/1	:	Front door switch (Driver side)
C4	B24	W/4	:	Seat belt pre-tensioner (Driver side)
B3	B25	W/18	:	To D41
E2★	B26	GY/16	:	To B111
D3	B27	W/2	:	Condenser
E3	B28	W/4	:	Rear speaker LH
E2★	B29	W/6	:	Fuel pump, Fuel tank gauge unit
F3	B30	GY/26	:	BOSE speaker amp.
E4	B31	B/4	:	Receiver
E4	B32	W/16	:	Receiver
E4	B33	W/6	:	Receiver
D4	B34	W/6	:	Power antenna timer and motor
D4★	B35	–	:	Body ground
D3	B36	W/16	:	To T1
D4★	B37	W/4	:	Fuel pump control module (FPCM)
A3★	B38	GY/6	:	Joint connector-16
G2	B39	W/4	:	Heated seat switch (Passenger side)
G1	B55	Y/10	:	Air bag diagnosis sensor unit
G1	B56	–	:	Body ground
G1	B58	Y/4	:	To B175
F1	B59	W/3	:	To B177
E2	B62	–	:	Body ground
C3	B63	Y/2	:	Satellite sensor LH
F3★	B64	GY/8	:	To C14
E3★	B65	W/20	:	To B178
E4	B68	W/22	:	IVCS unit
E2	B69	W/16	:	IVCS unit
F2	B85	Y/2	:	Side air bag module LH
D3	B88	W/6	:	Rear shock absorber actuator LH
E3	B89	W/24	:	Active damper suspension control unit
E3	B90	GY/24	:	Active damper suspension control unit
B3	B91	W/3	:	Front vertical G sensor
D4	B92	W/3	:	Rear vertical G sensor LH
D3	B93	–	:	Body ground

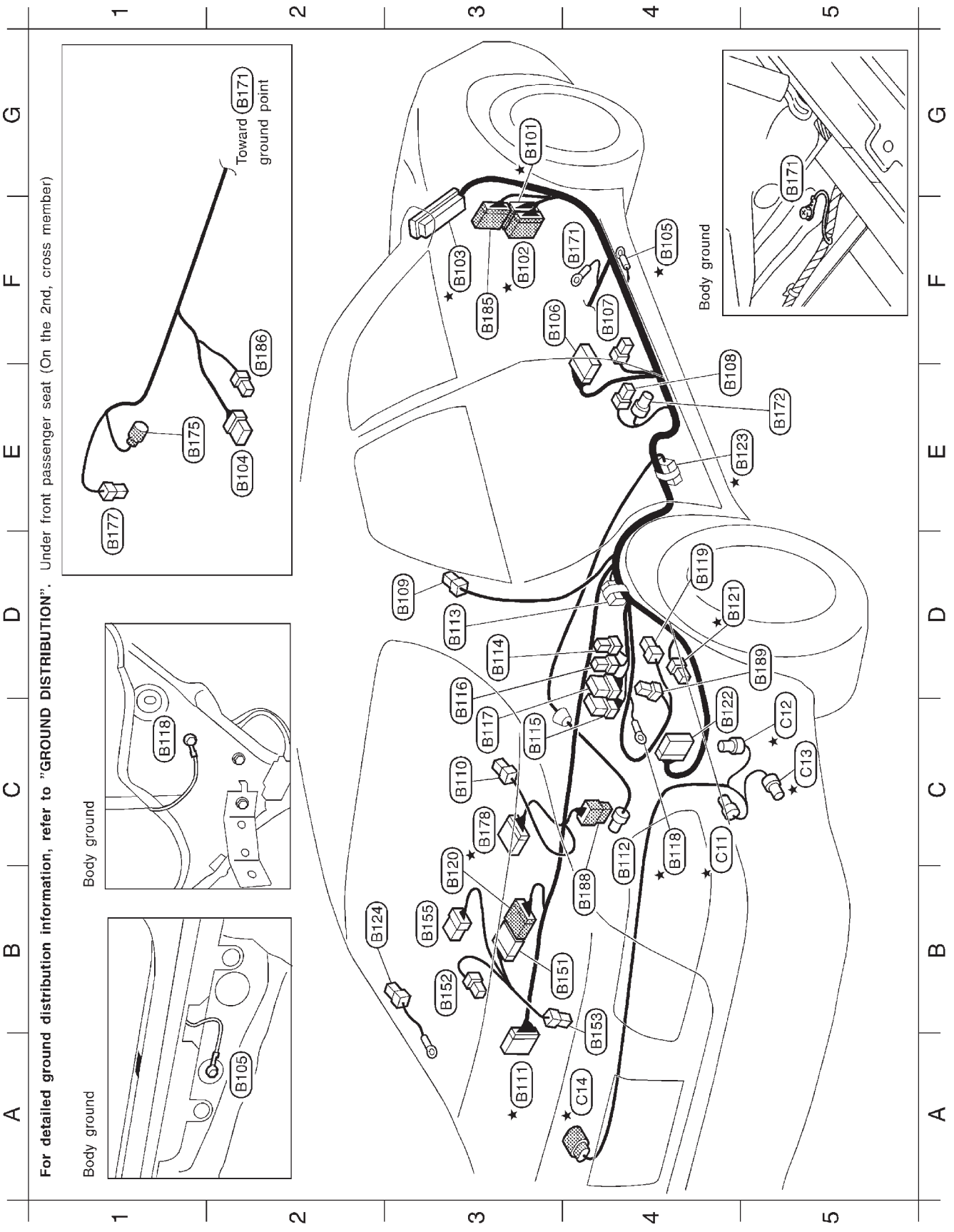
(With active damper suspension)

Tail harness

D2	T1	W/16	:	To B36
F3	T3	W/2	:	License lamp LH
G3	T5	B/2	:	Trunk lid opener actuator
F3	T6	W/2	:	License lamp RH
G3	T8	W/3	:	Trunk lid key cylinder switch (Unlock switch)
E4	T9	W/4	:	Rear combination lamp LH
G4	T10	W/12	:	Stop and Tail lamp sensor
F3	T11	W/2	:	Trunk room lamp switch
F4	T12	–	:	Body ground
G3	T13	W/4	:	Rear combination lamp RH
G4	T14	W/4	:	Trunk closure control unit
F4	T15	W/2	:	Back-up lamp LH
G3	T16	W/2	:	Back-up lamp RH
G4	T17	GY/2	:	Striker switch

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

Body No. 2 Harness



CEL012A

Body No. 2 harness

G3★	B101	W/48	:	To M50
F3★	B102	W/30	:	To F64
F3★	B103	SMJ	:	ABS/TCS control unit
E2	B104	W/6	:	Power seat switch (Passenger side)
F4★	B105	–	:	Body ground
F3	B106	W/18	:	To D61
F4	B107	BR/1	:	Front door switch (Passenger side)
E4	B108	W/4	:	Seat belt pre-tensioner (Passenger side)
D3	B109	B/1	:	Condenser (Rear window defogger)
C3	B110	W/4	:	Rear speaker RH
A3★	B111	GY/16	:	To B26
C4	B112	GY/4	:	Rear wheel sensor
D3	B113	W/2	:	Diode
D3	B114	L/4	:	Fuel lid opener relay
C3	B115	BR/6	:	Multi-remote control relay
D3	B116	L/4	:	Audio amp. relay
C3	B117	BR/6	:	Theft warning horn relay
C4★	B118	–	:	Body ground
D4	B119	BR/2	:	Fuel lid opener actuator
B3	B120	W/10	:	To B151
D4★	B121	W/2	:	Dropping resistor
C4	B122	W/16	:	CD auto changer
E5★	B123	GY/6	:	Joint connector-17
B2	B124	B/1	:	Rear window defogger (Ground cable)
F4	B171	–	:	Body ground
E5	B172	Y/2	:	Satellite sensor RH
E1	B175	Y/4	:	To B58
D1	B177	W/3	:	To B59
A3★	B178	W/20	:	To B65
F3	B185	W/20	:	To M68
F2	B186	Y/2	:	Side air bag module RH
B4	B188	W/6	:	Rear shock absorber actuator RH (With active damper suspention)
D5	B189	W/3	:	Rear vertical G sensor RH (With active damper suspension)

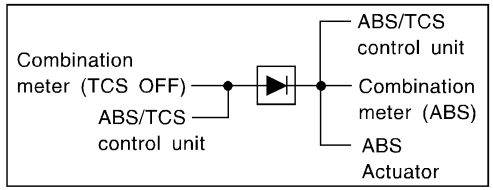
Body No. 2 sub-harness

B3	B151	W/10	:	To B120
B3	B152	W/2	:	High-mounted stop lamp
B4	B153	W/2	:	Trunk room lamp
B3	B155	W/6	:	Rear sunshade unit

Chassis sub-harness

C5★	C11	GY/3	:	EVAP control system pressure sensor
D5★	C12	G/2	:	Vacuum cut valve bypass valve
C5★	C13	B/2	:	EVAP canister vent control valve
A4★	C14	GY/8	:	To B64

B113 : Diode

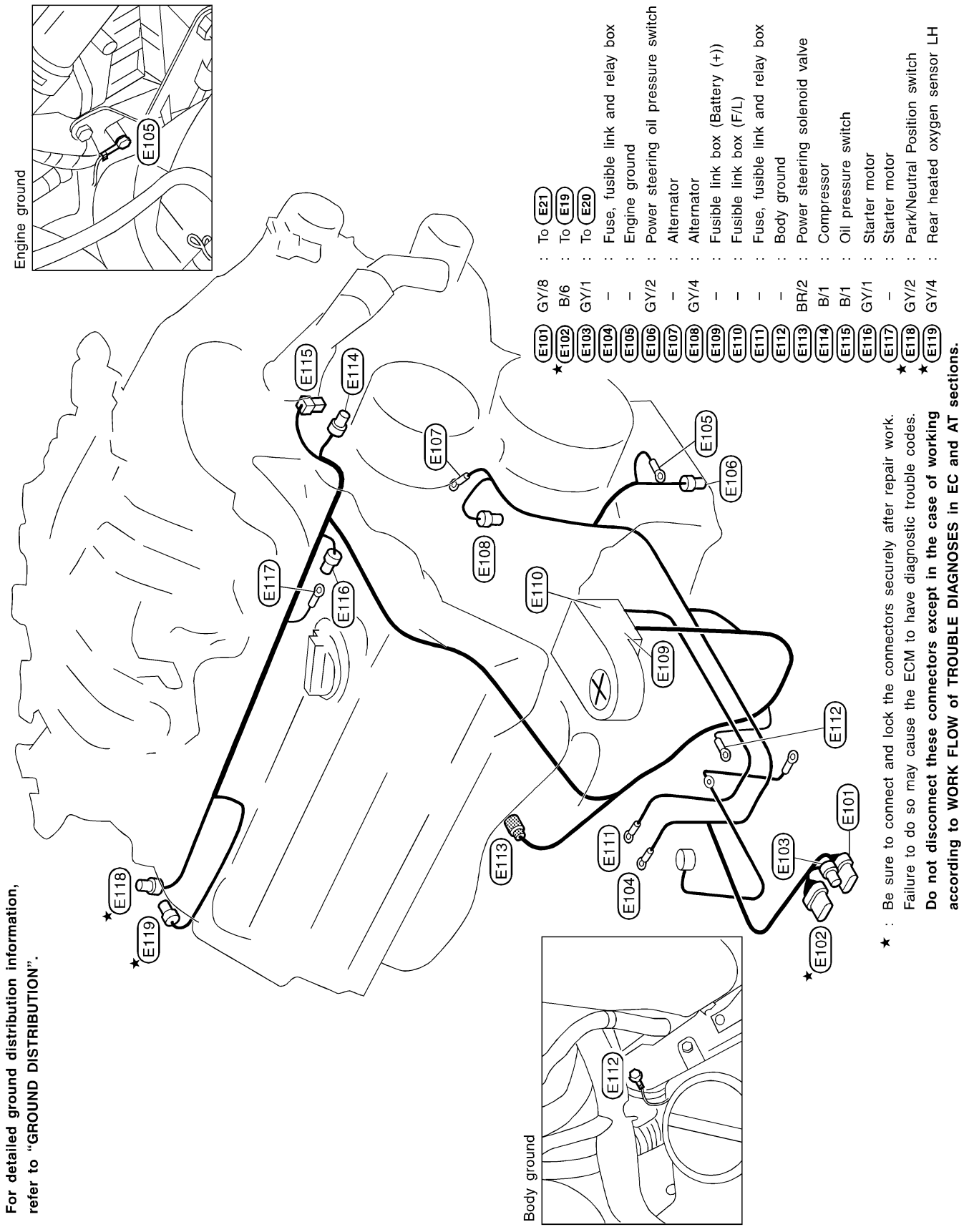


★ : Be sure to connect and lock the connectors securely after the repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

CEL013A

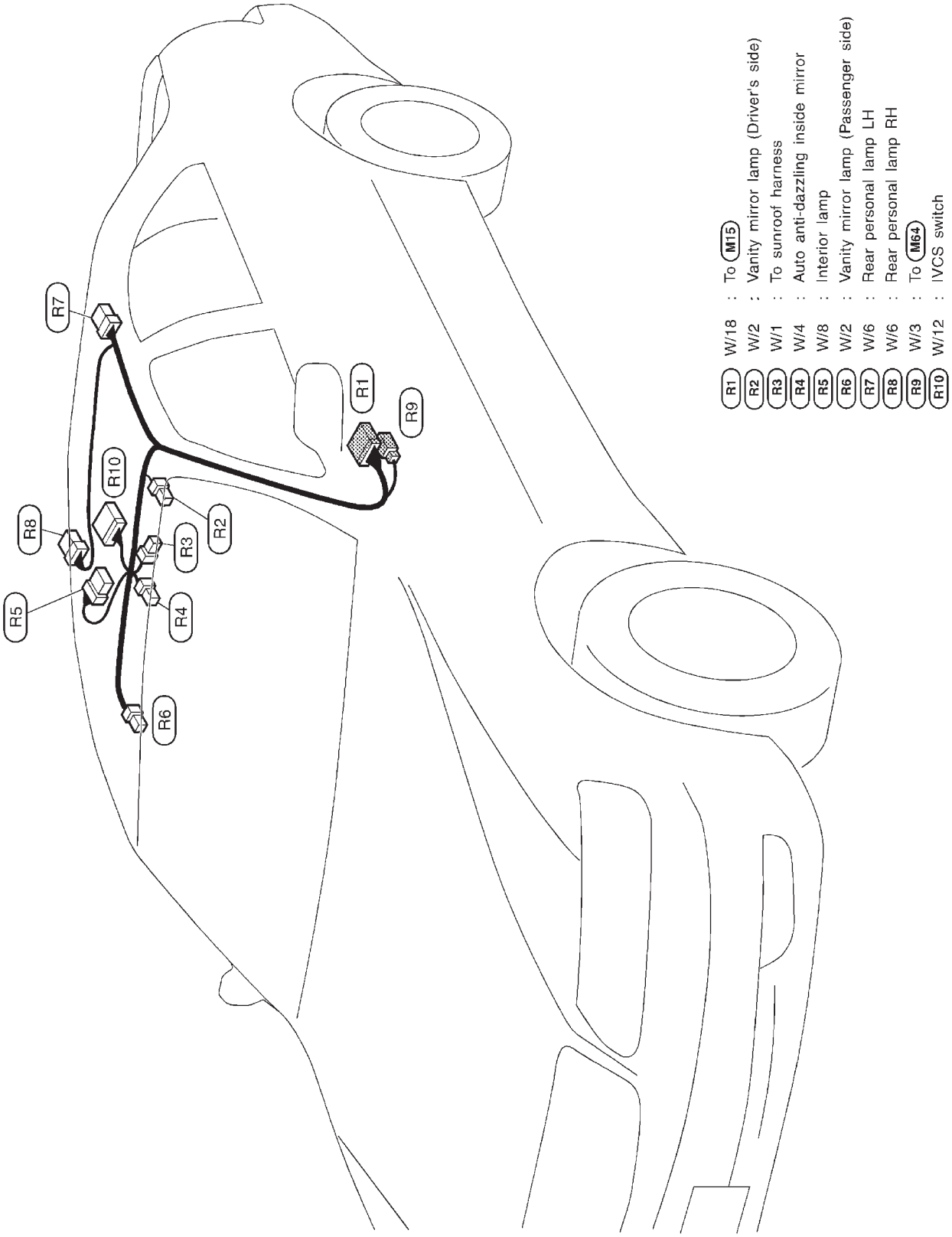
EXIT

Engine Harness



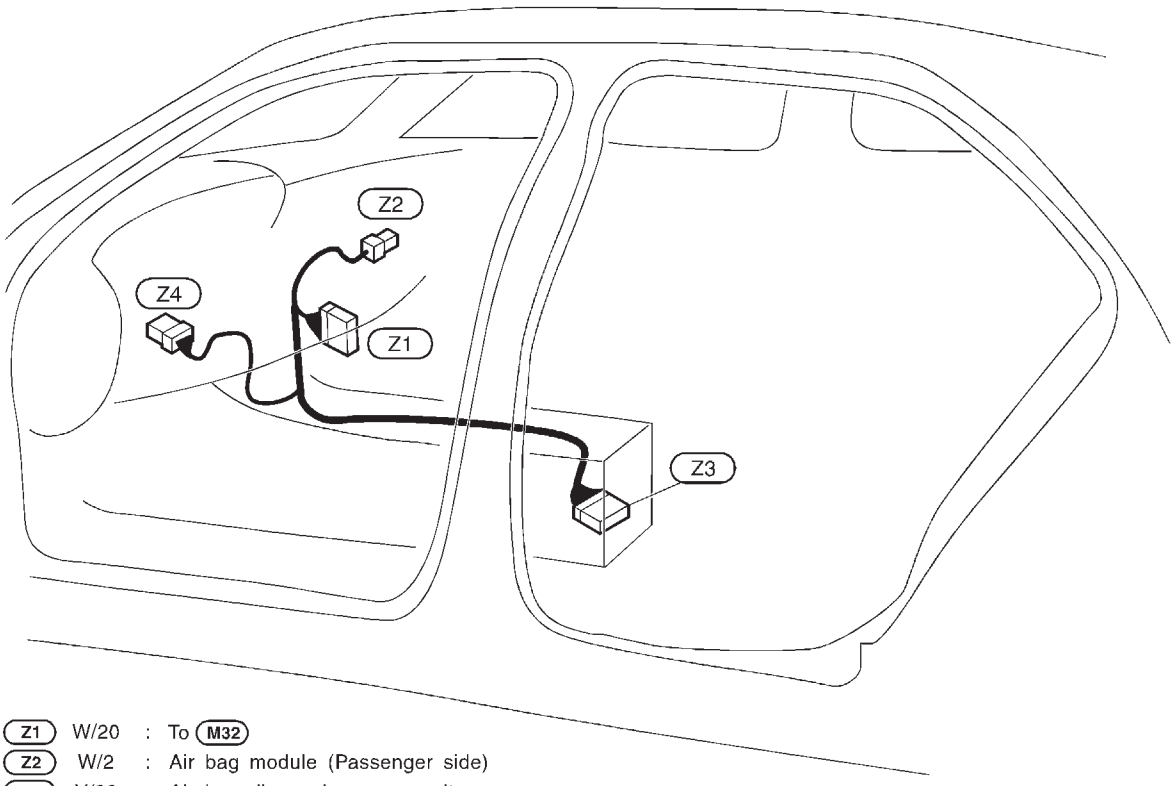
CEL014A

Room Lamp Harness



CEL899

Air Bag Harness



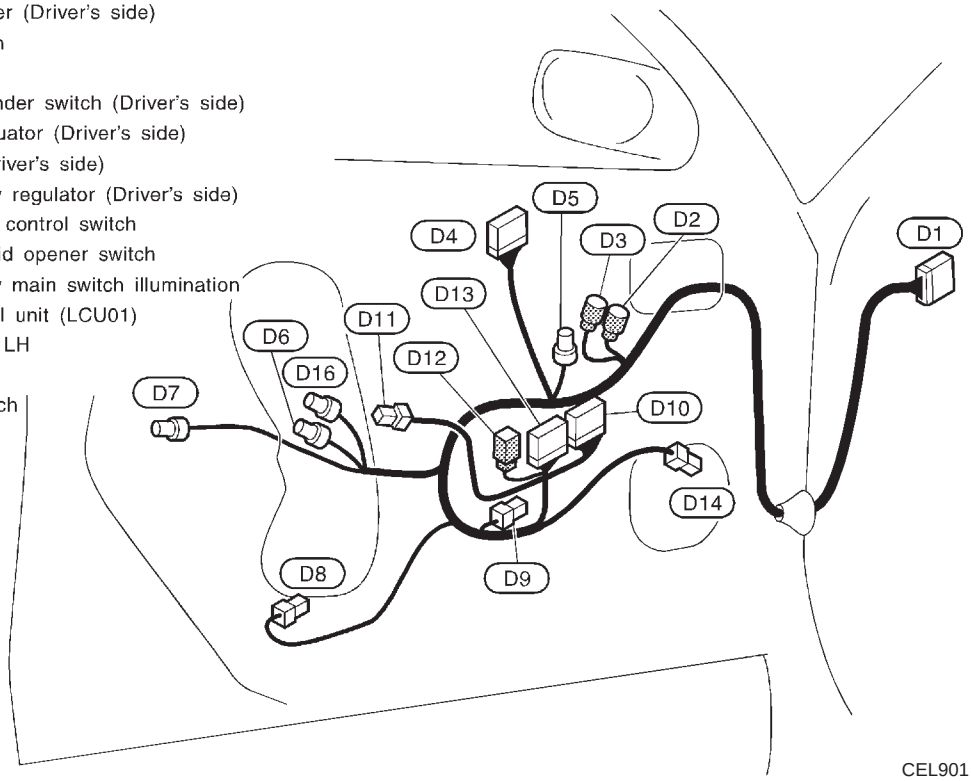
Z1 W/20 : To M32
Z2 W/2 : Air bag module (Passenger side)
Z3 Y/22 : Air bag diagnosis sensor unit
Z4 Y/6 : To E82

CEL455

DRIVER SIDE

Front Door Harness

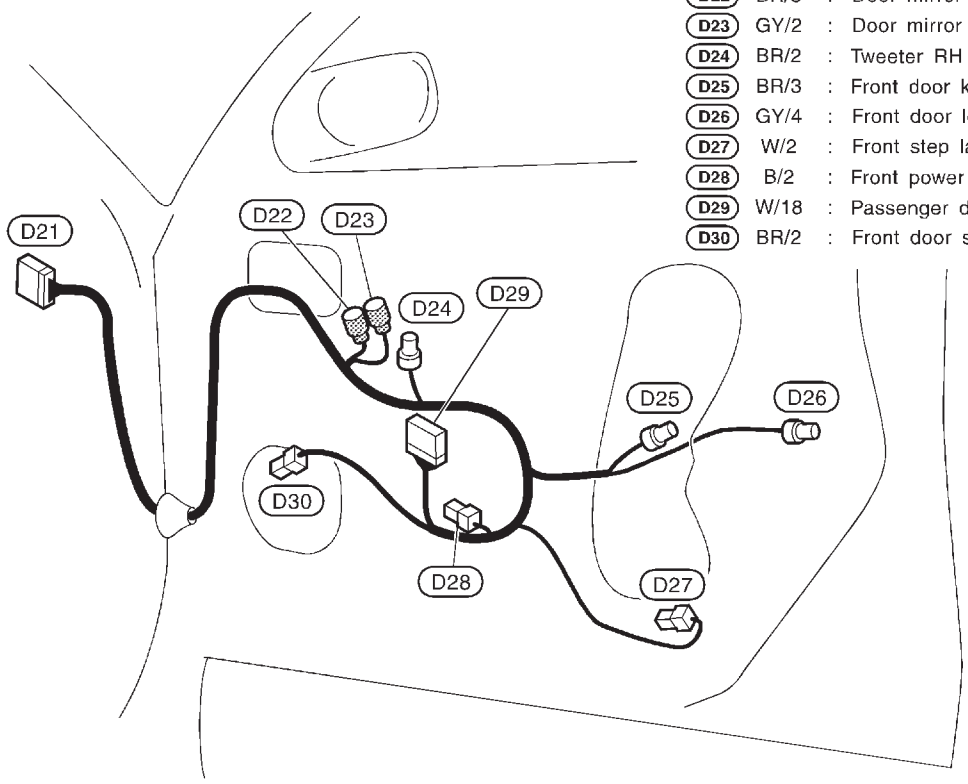
D1	W/40	:	To M11
D2	BR/3	:	Door mirror actuator (Driver's side)
D3	GY/2	:	Door mirror defogger (Driver's side)
D4	W/8	:	Seat memory switch
D5	BR/2	:	Tweeter LH
D6	BR/3	:	Front door key cylinder switch (Driver's side)
D7	GY/4	:	Front door lock actuator (Driver's side)
D8	W/2	:	Front step lamp (Driver's side)
D9	B/2	:	Front power window regulator (Driver's side)
D10	W/10	:	Door mirror remote control switch
D11	W/3	:	Trunk lid and fuel lid opener switch
D12	W/2	:	Front power window main switch illumination
D13	W/18	:	Driver's door control unit (LCU01)
D14	BR/2	:	Front door speaker LH
D16	GY/2	:	Driver side door outside handle switch



CEL901

PASSENGER SIDE

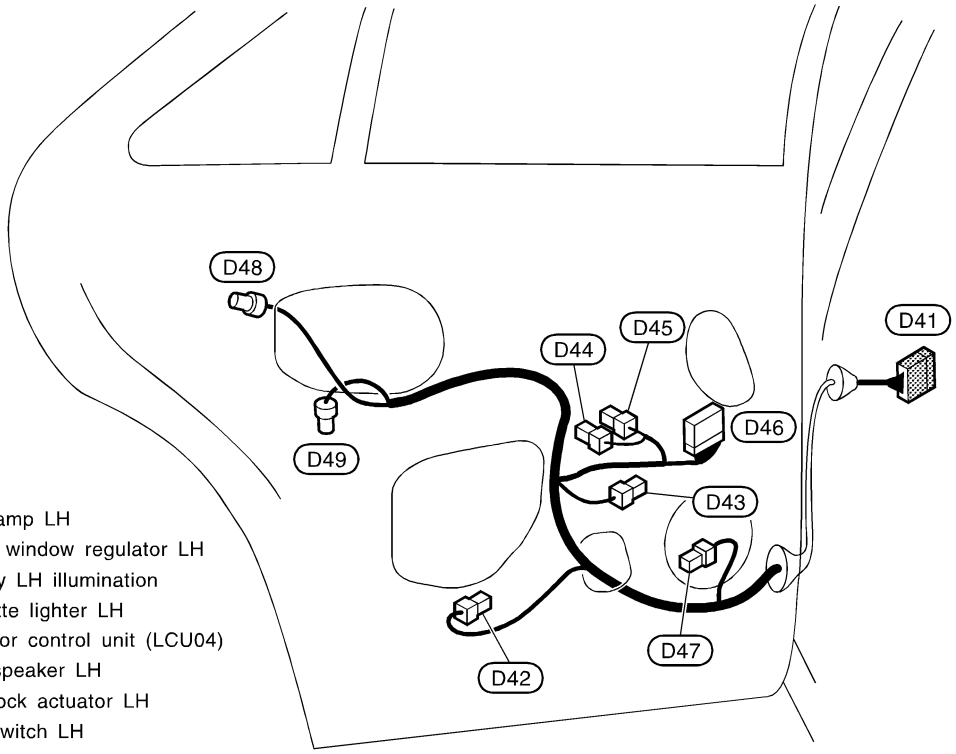
D21	W/40	:	To M48
D22	BR/3	:	Door mirror actuator (Passenger side)
D23	GY/2	:	Door mirror defogger (Passenger side)
D24	BR/2	:	Tweeter RH
D25	BR/3	:	Front door key cylinder switch (Passenger side)
D26	GY/4	:	Front door lock actuator (Passenger side)
D27	W/2	:	Front step lamp (Passenger side)
D28	B/2	:	Front power window regulator (Passenger side)
D29	W/18	:	Passenger door control unit (LCU02)
D30	BR/2	:	Front door speaker RH



CEL902

LH SIDE

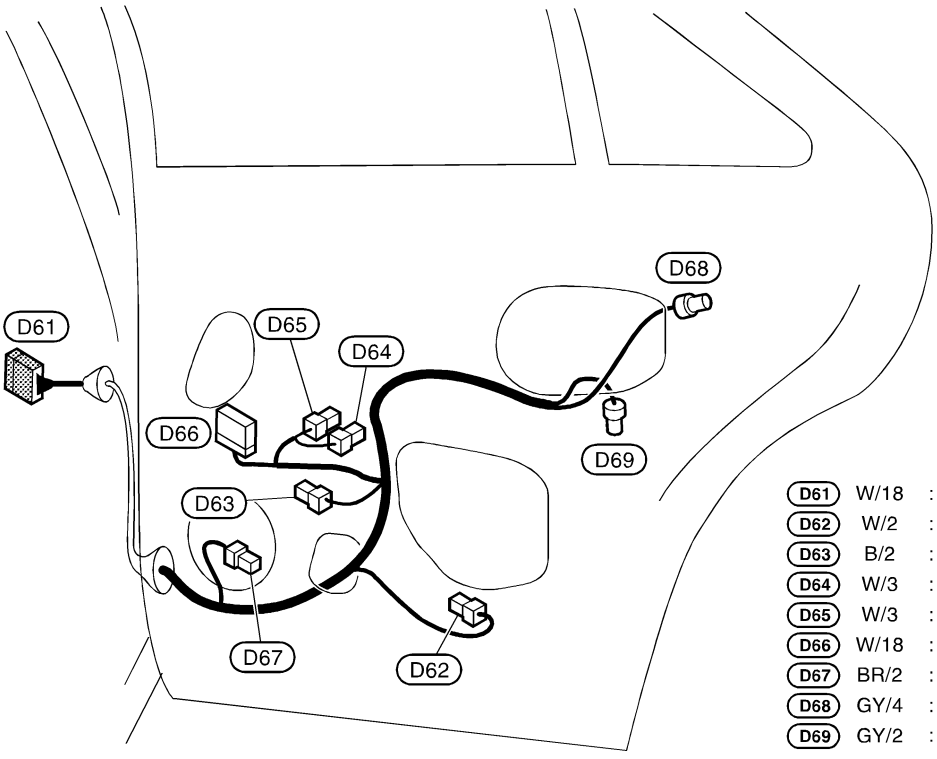
Rear Door Harness



D41	W/18	:	To B25
D42	W/2	:	Rear step lamp LH
D43	B/2	:	Rear power window regulator LH
D44	W/3	:	Rear ashtray LH illumination
D45	W/3	:	Rear cigarette lighter LH
D46	W/18	:	Rear LH door control unit (LCU04)
D47	BR/2	:	Rear door speaker LH
D48	GY/4	:	Rear door lock actuator LH
D49	GY/2	:	Rear door switch LH

CEL458

RH SIDE

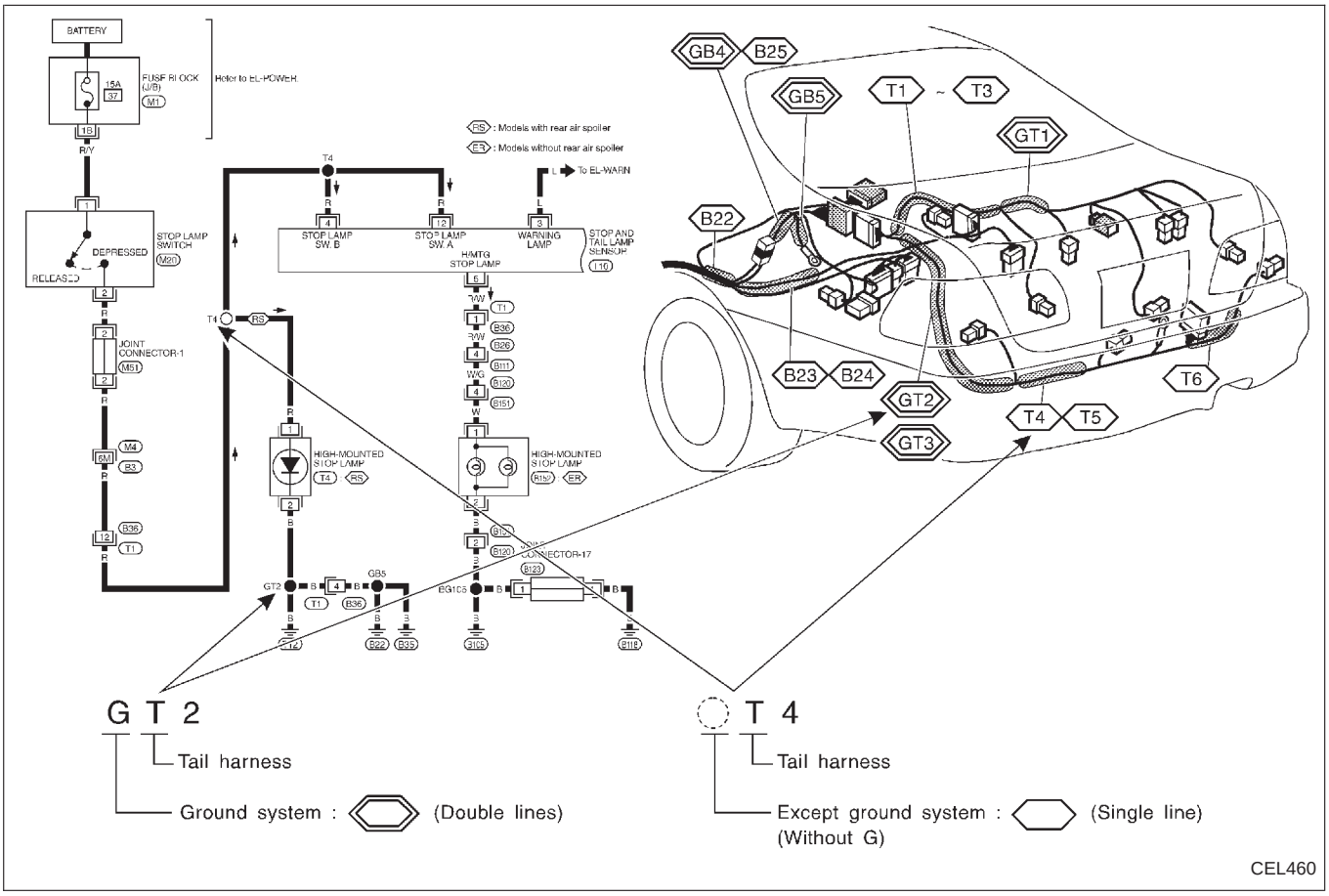


D61	W/18	:	To B106
D62	W/2	:	Rear step lamp RH
D63	B/2	:	Rear power window regulator RH
D64	W/3	:	Rear ashtray RH illumination
D65	W/3	:	Rear cigarette lighter RH
D66	W/18	:	Rear RH door control unit (LCU03)
D67	BR/2	:	Rear door speaker RH
D68	GY/4	:	Rear door lock actuator RH
D69	GY/2	:	Rear door switch RH

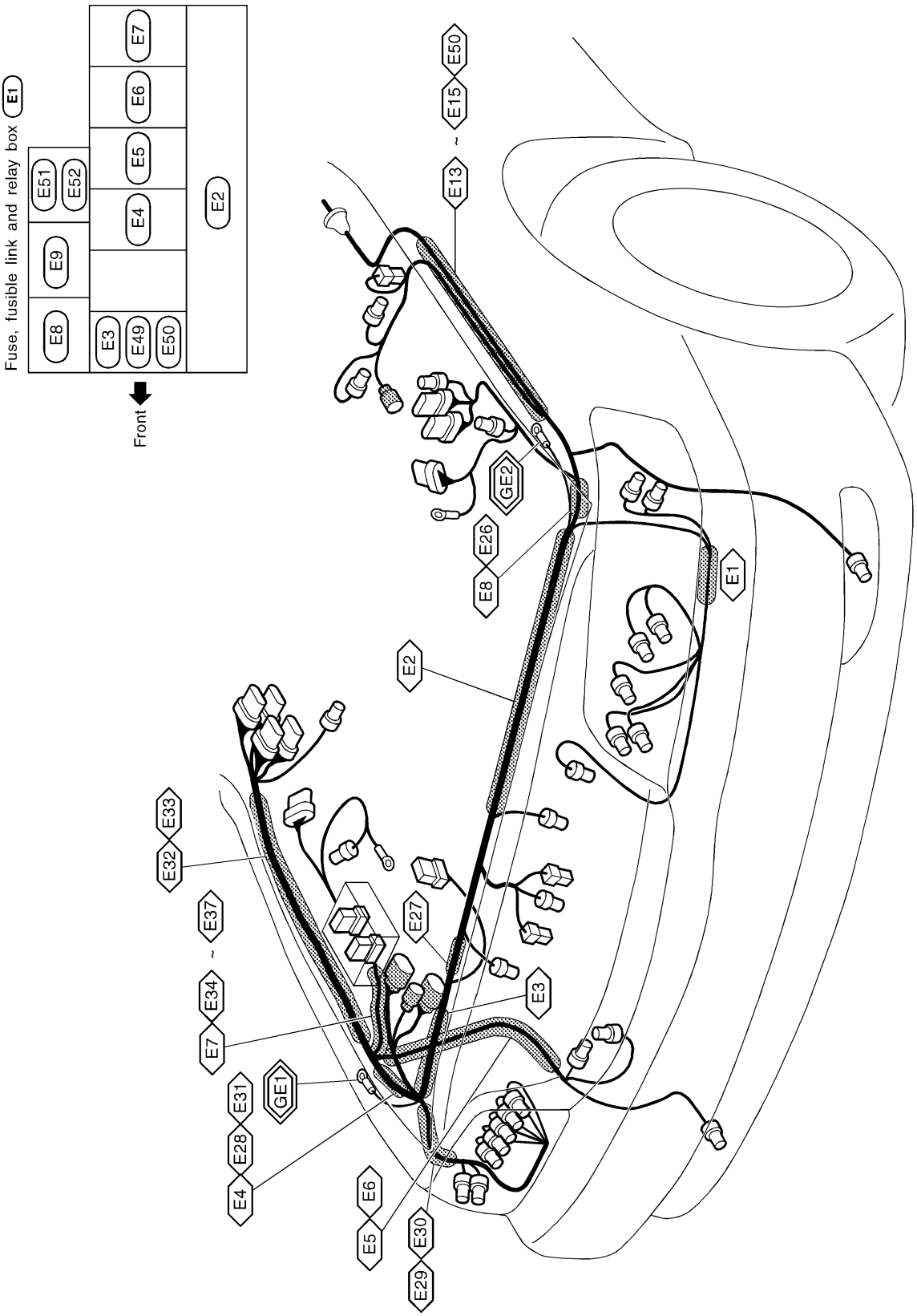
CEL459

How to Read Splice Location

- "GT2", "T4" etc., which are shown in the wiring diagram, refer to wiring harness splice points. These points are located in shaded areas "GT2", "T4", etc. in illustrations under the title "SPLICE LOCATION".
- Wiring harness splice points are subject to change without prior notice.

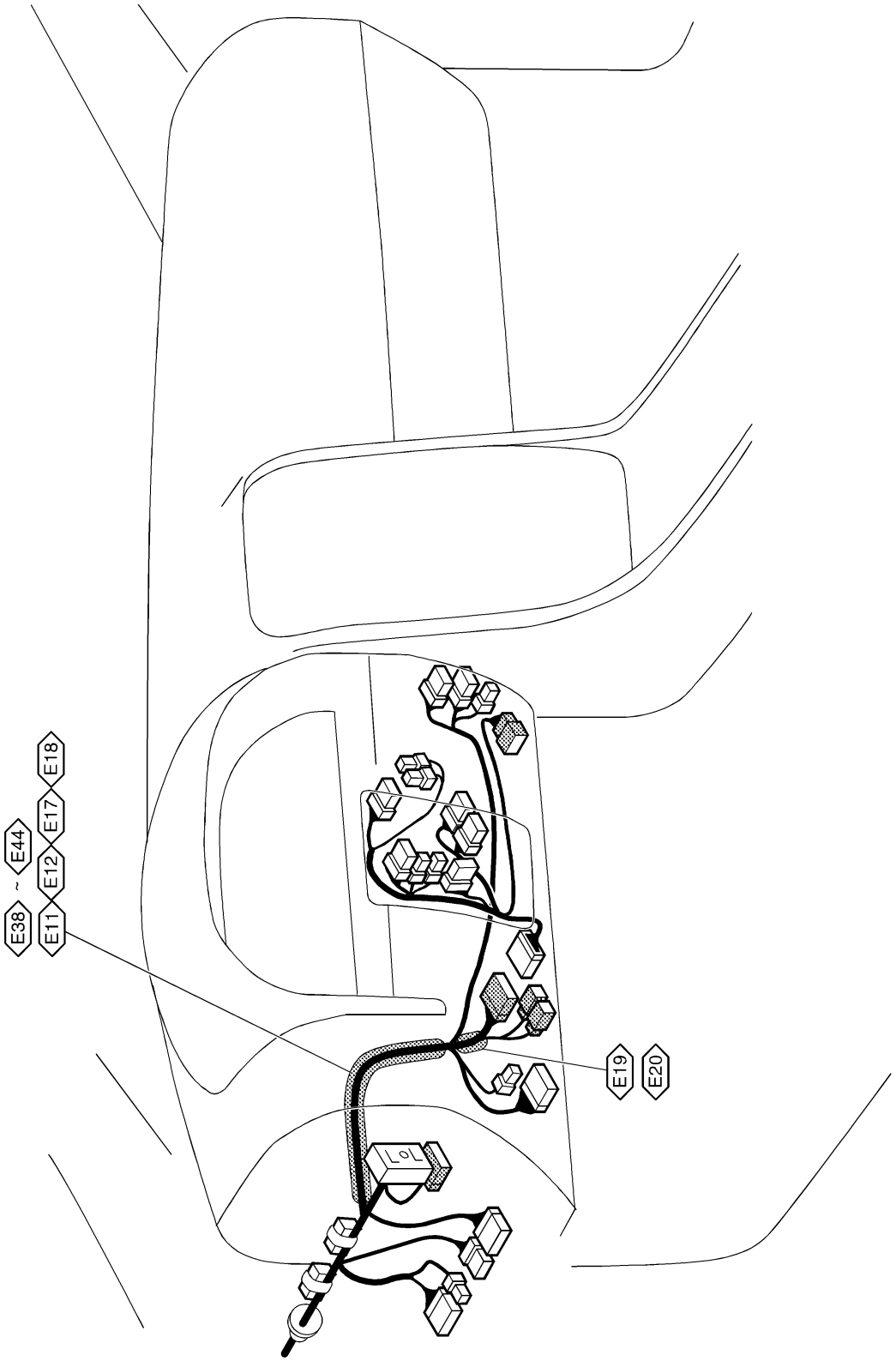


Engine Room Harness



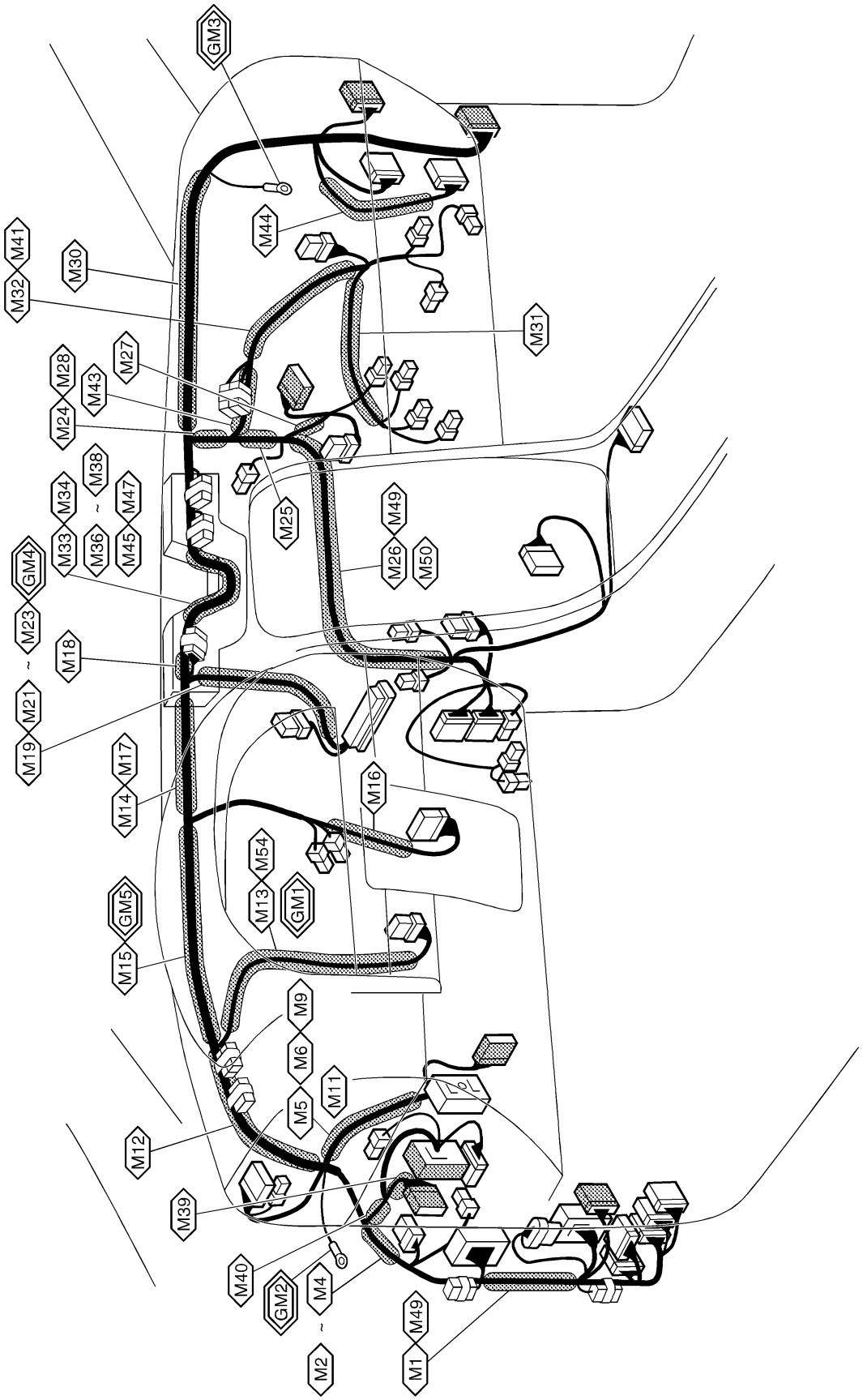
CEL006M

Engine Room Harness (Cont'd)



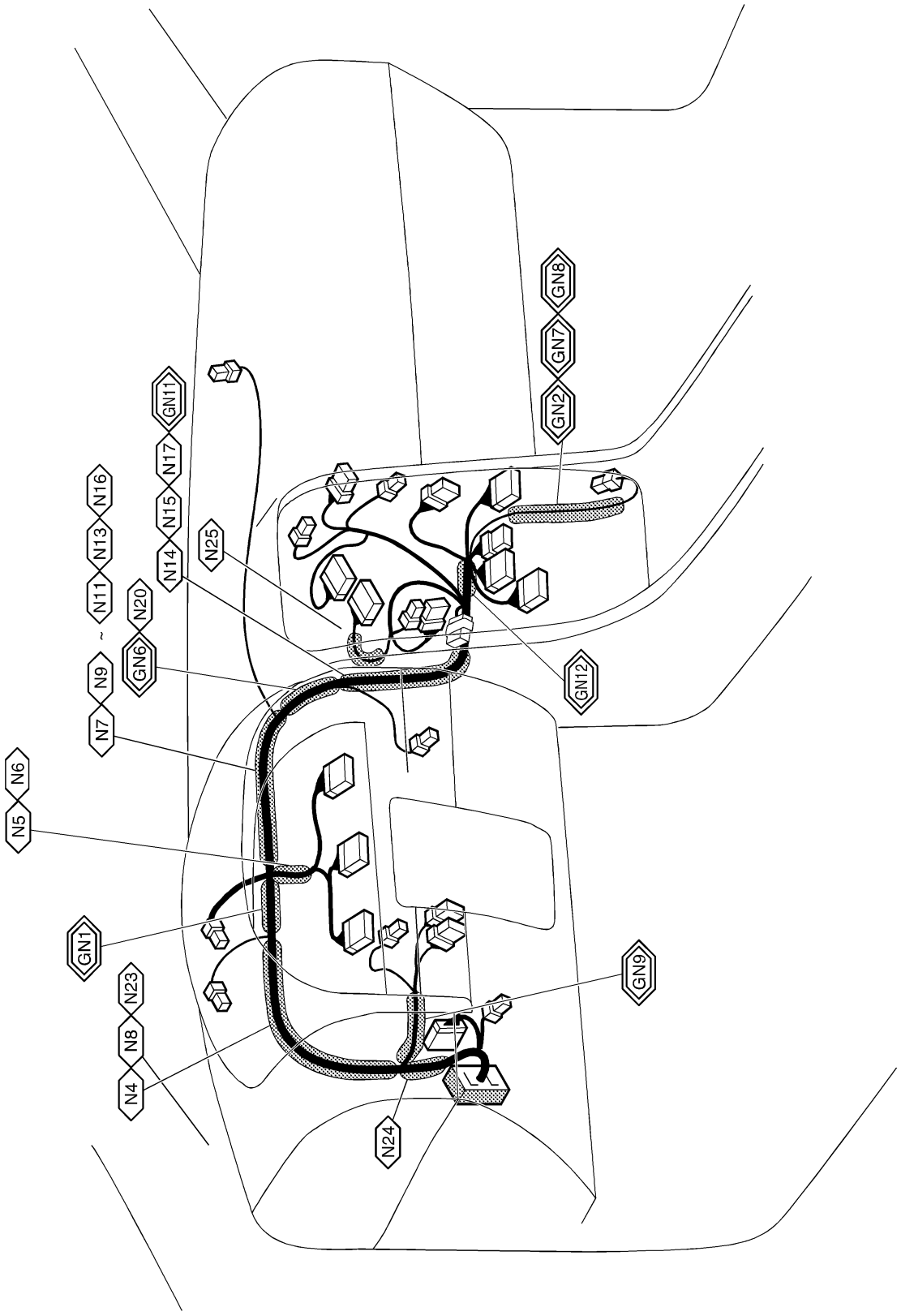
CEL016A

Main Harness



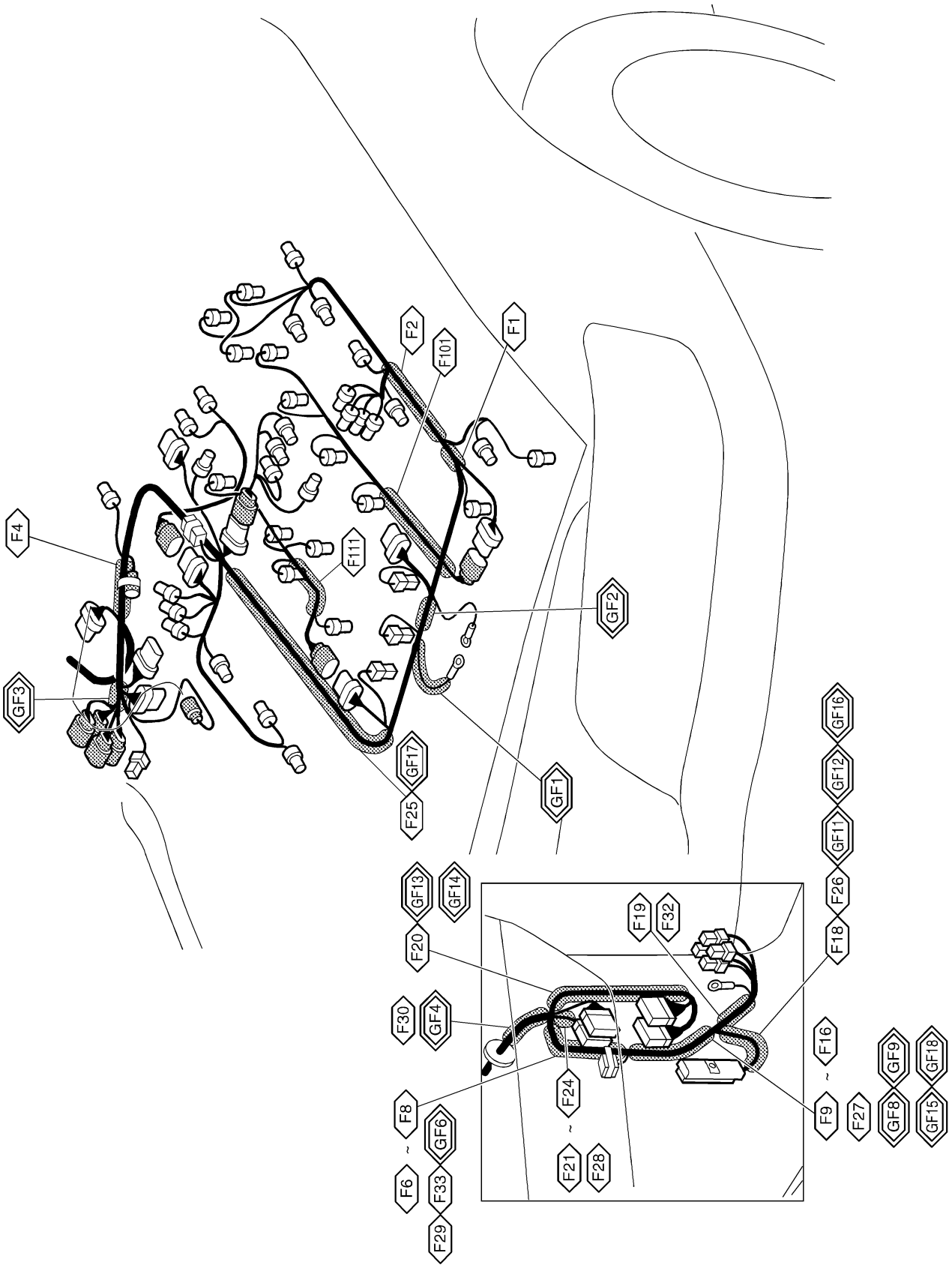
CEL007M

Instrument Harness



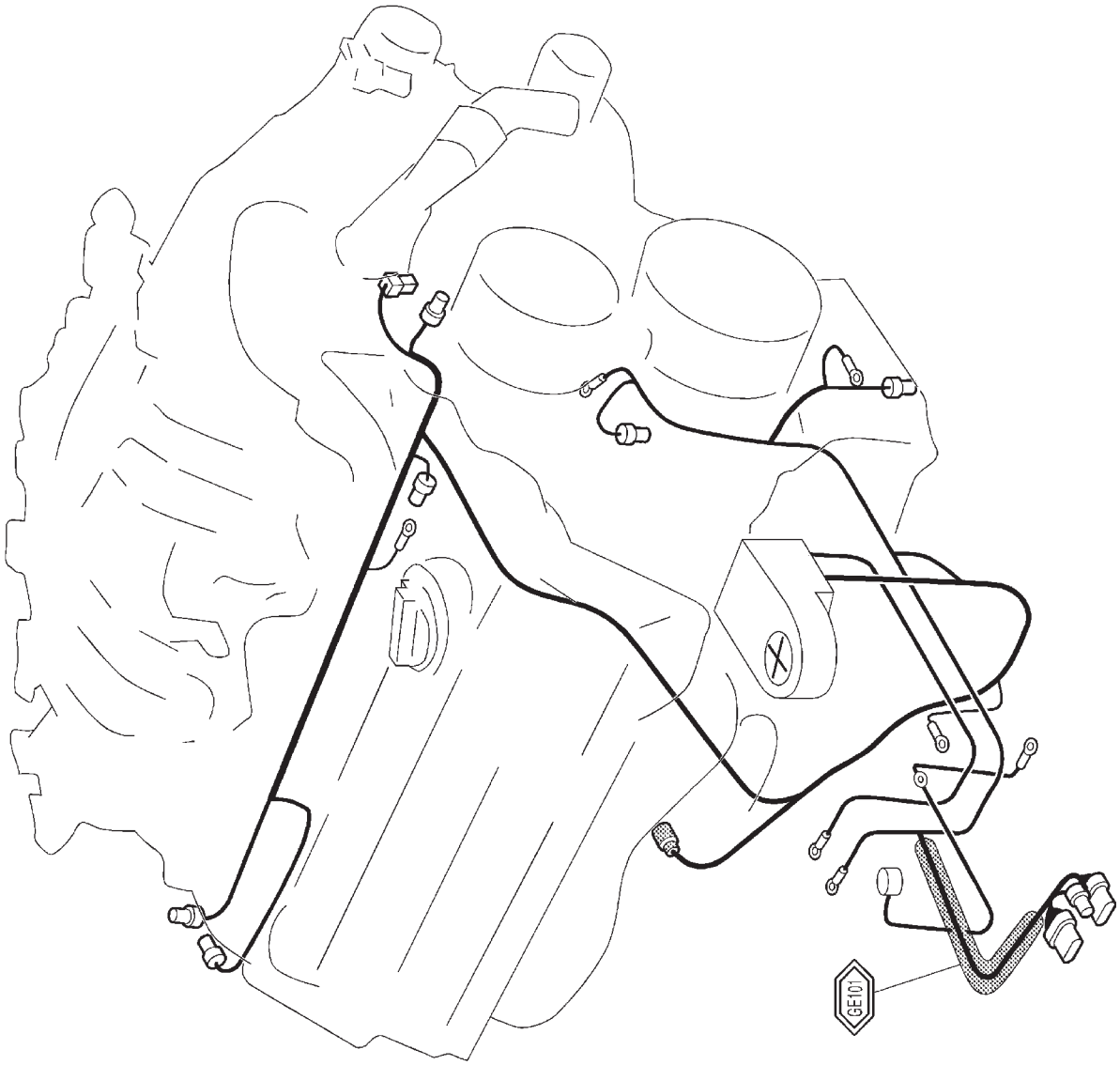
CEL018A

Engine Control Harness



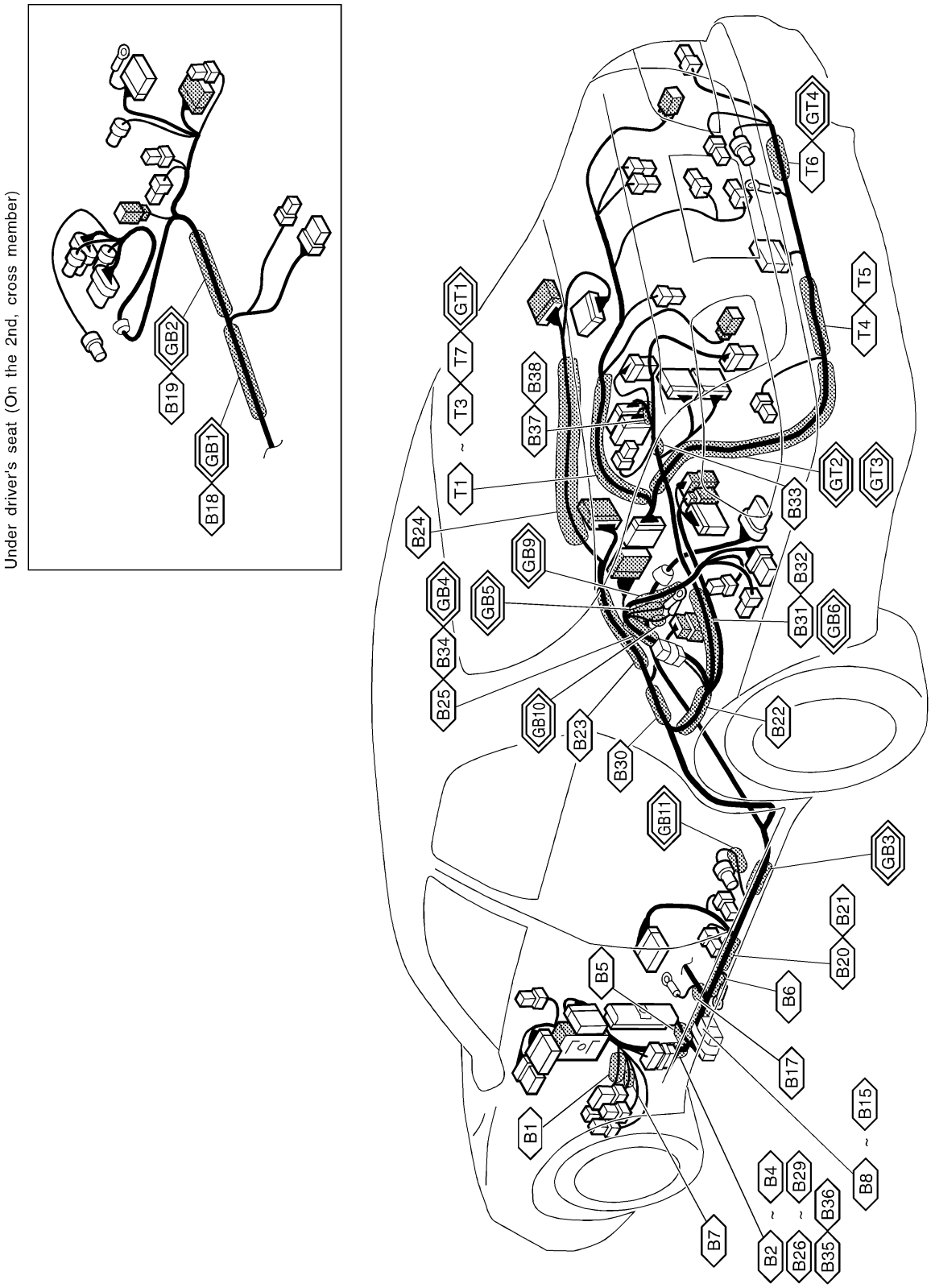
CEL011M

Engine Harness



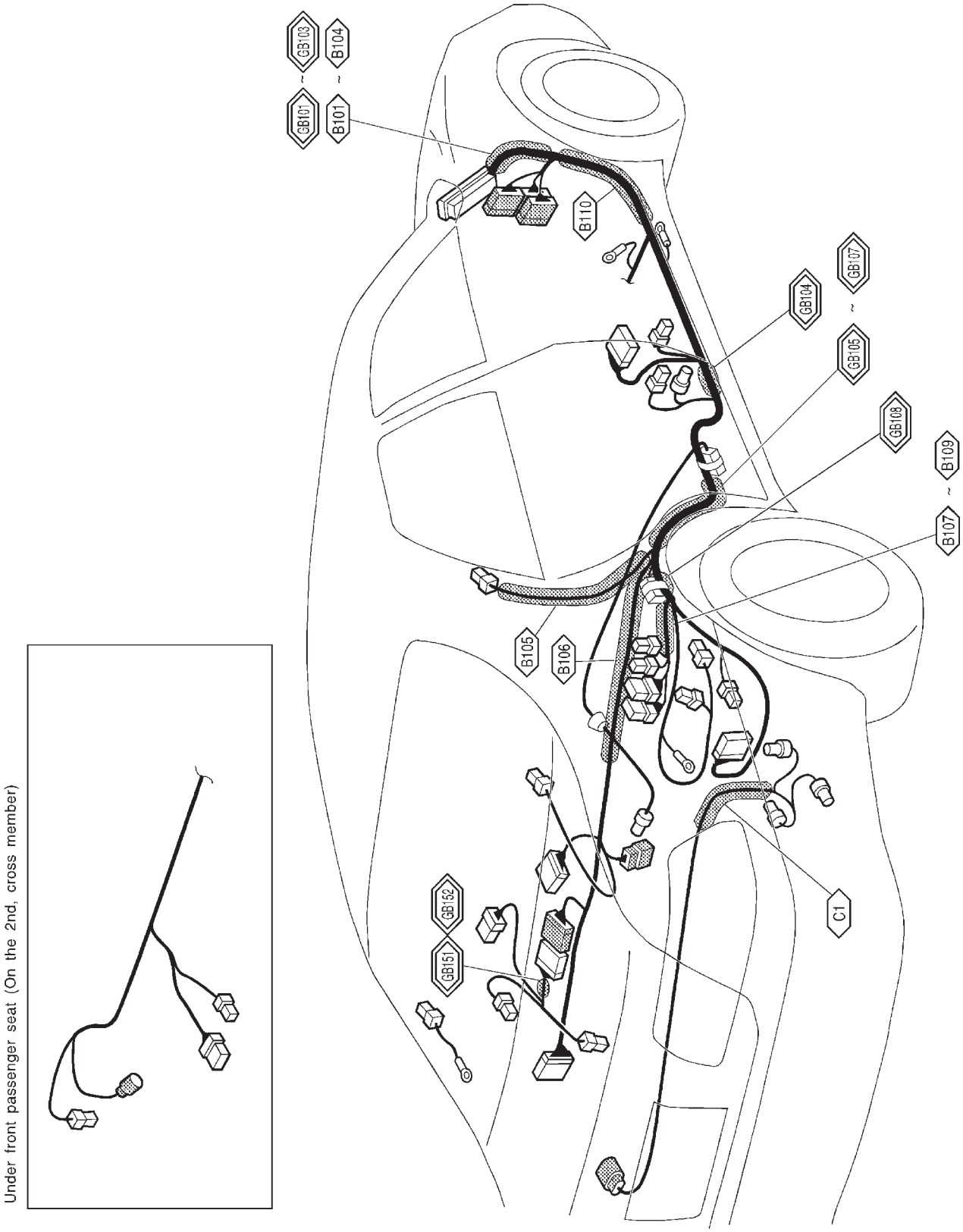
CEL466

Body Harness and Tail Harness



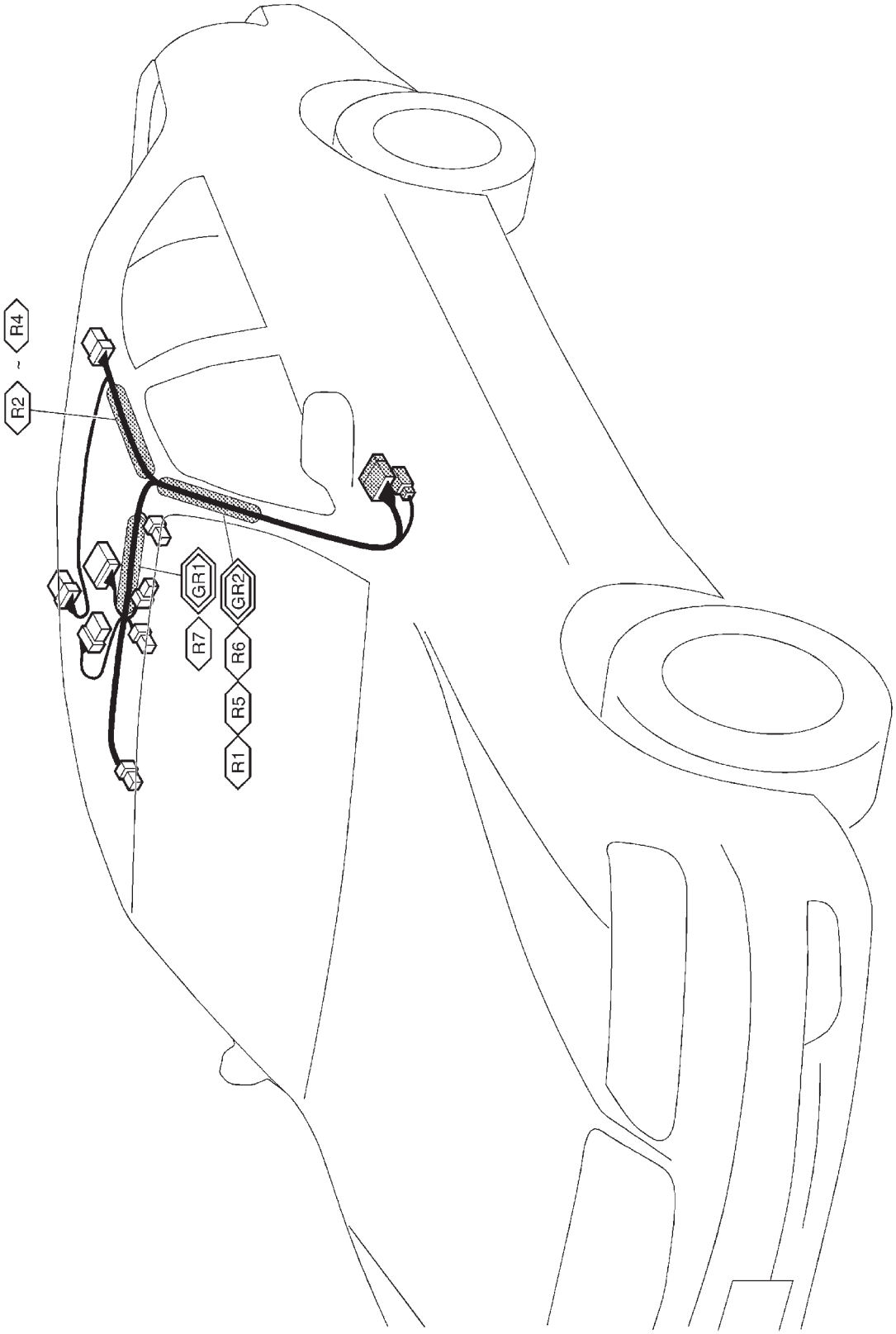
CEL159A

Body No. 2 Harness



CEL021A

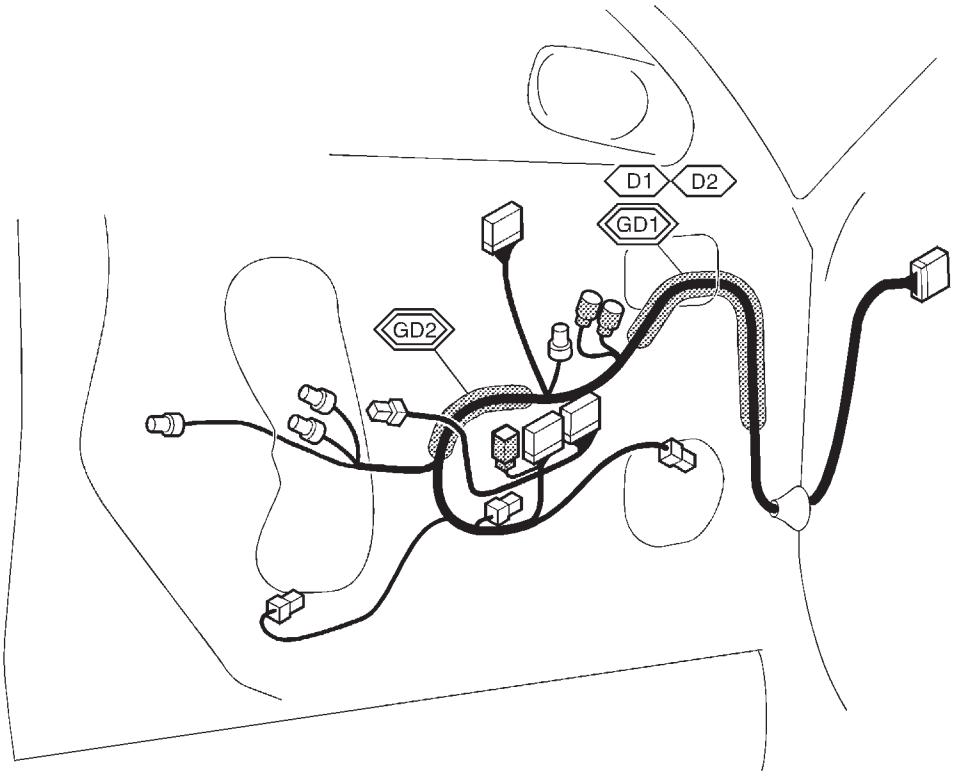
Room Lamp Harness



CEL910

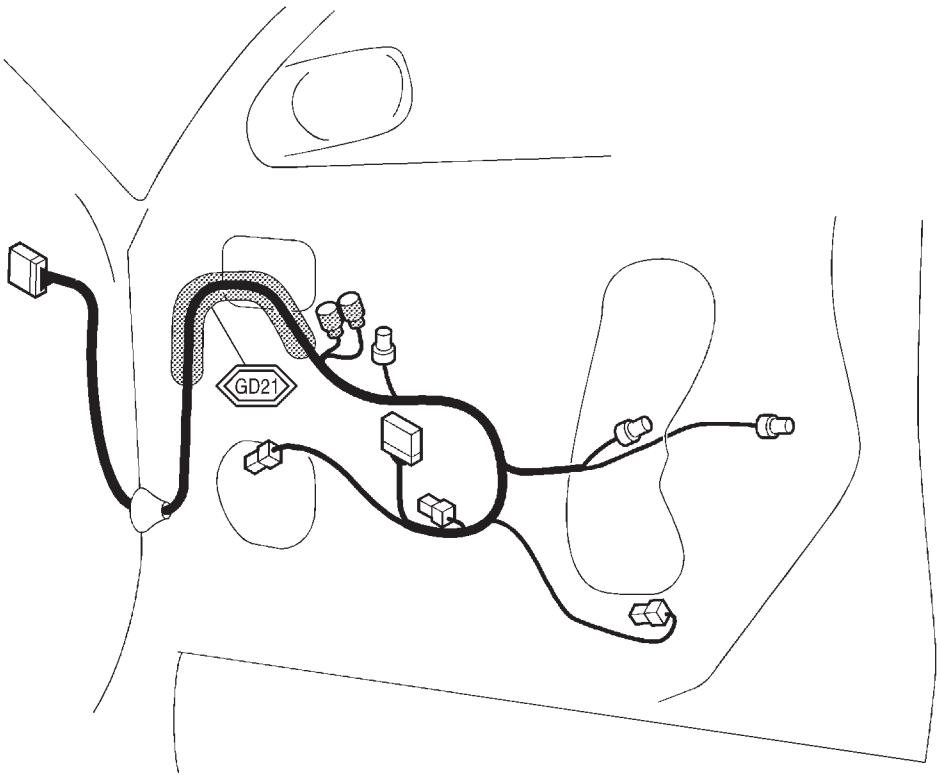
DRIVER SIDE

Front Door Harness



CEL022A

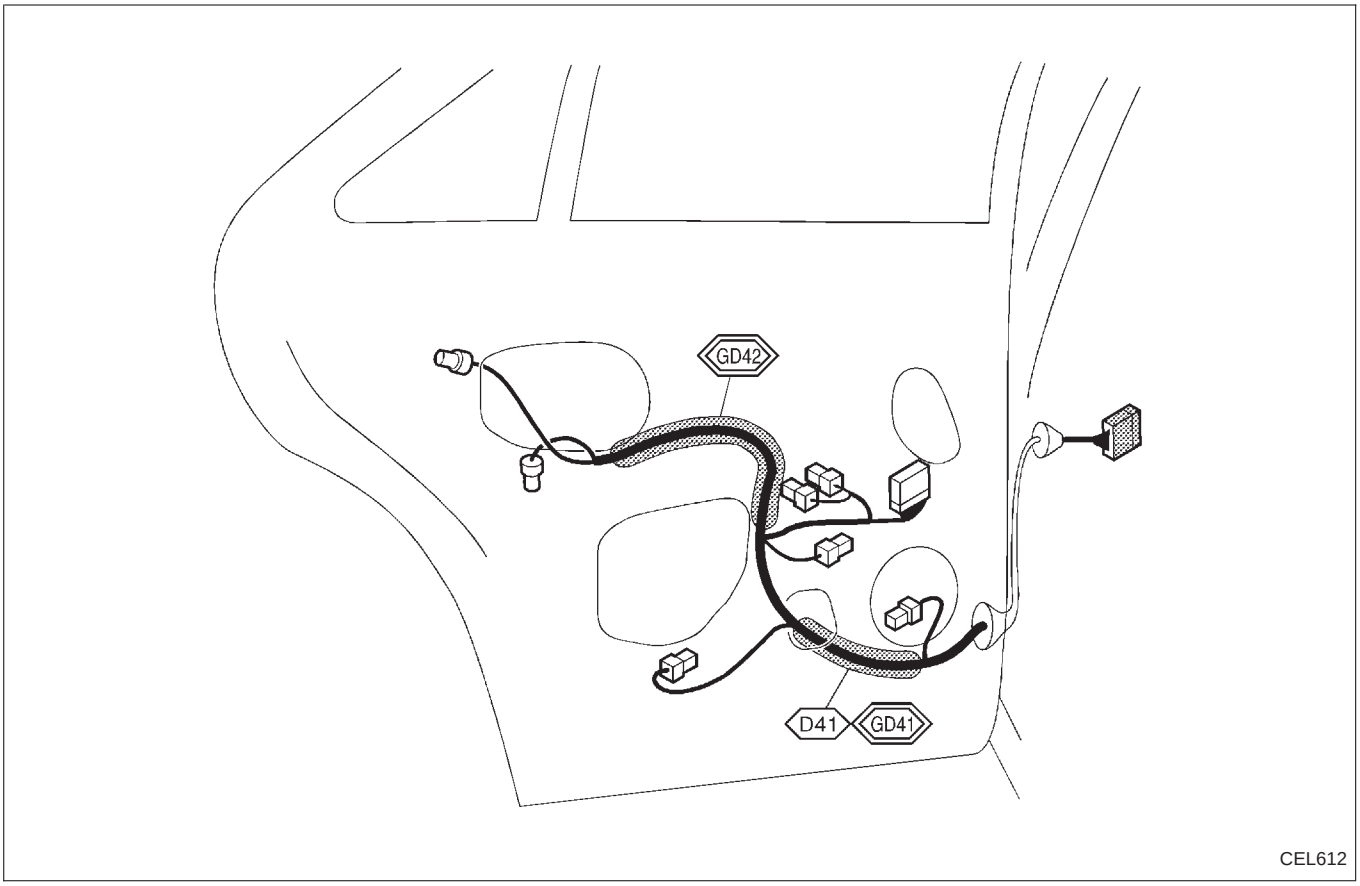
PASSENGER SIDE



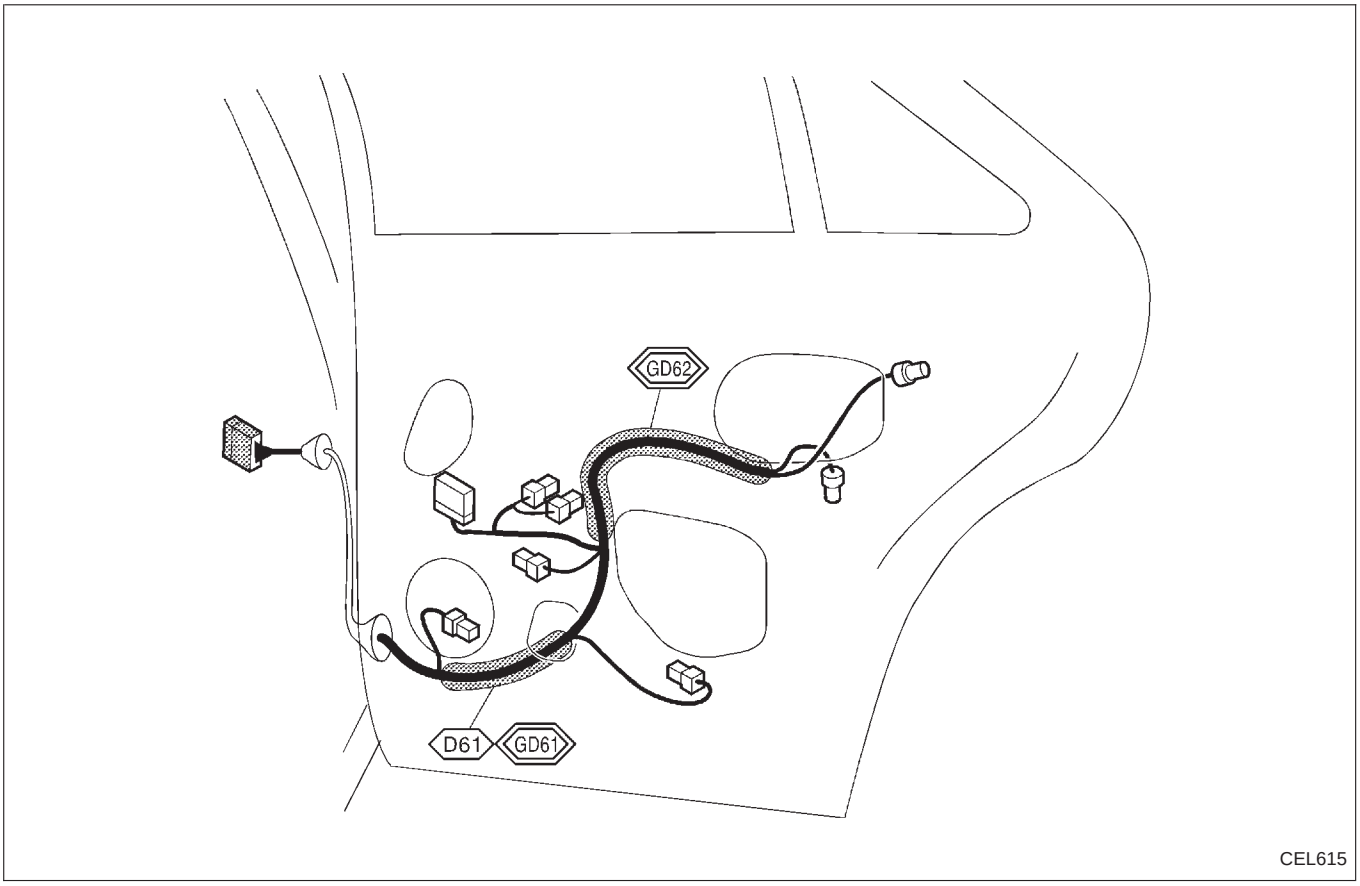
CEL912

Rear Door Harness

LH SIDE



RH SIDE



Headlamp

Item	Wattage W
High/Low (Without xenon headlamp)	60/55 (HB2)
High/Low (With xenon headlamp)	55/35 (H1/D2R)

Exterior Lamp

Item	Wattage W
Front fog lamp	55
Front combination lamp	
Turn signal/Parking lamp	27/8
Rear combination lamp	
Turn signal lamp	21
Stop/Tail lamp	21/5
Tail lamp	5
Back-up lamp	18
License lamp	5
High-mounted stop lamp	18

Interior Lamp

Item	Wattage W
Front map lamp	8
Rear personal lamp	8
Vanity mirror lamp	1.4
Step lamp	2.7
Footwell lamp	3.4
Trunk room lamp	3.4

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
AAC/V	EC	IACV-AAC Valve
A/C	HA	Air Conditioner
ACTIVE	FA	Active Damper Suspension System
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	A/T
AT/IND	EL	A/T Indicator Lamp
AT/C	EC	A/T Control
AUDIO	EL	Audio
AUT/DP	EL	Automatic Drive Positioner — IVMS
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CANI/V	EC	EVAP Canister Purge Control Valve/ Solenoid Valve
CHARGE	EL	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crank Shaft Position Sensor (OBD)
CLOCK	EL	Clock
CMPS	EC	Camshaft Position Sensor
COMM	EL	IVMS — Communication Check, Power Supply & Ground
COOL/F	EC	Cooling Fan Control
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock — IVMS
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRC1	EC	EGR Function
EGRC/V	EC	EGRC-Solenoid Valve
EGR/TS	EC	EGR Temperature Sensor
EPS	ST	Electric Controlled Power Steering System
F/FOG	EL	Front Fog Lamp
FO2H-L	EC	Front Heated Oxygen Sensor Heater (Left Bank)
FO2H-R	EC	Front Heated Oxygen Sensor Heater (Right Bank)
FPCM	EC	Fuel Pump Control Module

Code	Section	Wiring Diagram Name
F/PUMP	EC	Fuel Pump
FRO2LH	EC	Front Heated Oxygen Sensor Heater (Front HO2S) (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor Heater (Front HO2S) (Right Bank)
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/AIM	EL	Headlamp Aiming Control System
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
I/MIRR	EL	Inside Mirror
INJECT	EC	Injector
INT/L	EL	Vanity Mirror and Trunk Room Lamps
IVC-L	EC	Intake Valve Timing Control Solenoid Valve LH
IVC-R	EC	Intake Valve Timing Control Solenoid Valve RH
IVCS	EL	Infiniti Communicator (IVCS)
IVCS-L	EC	Intake Valve Timing Control Position Sensor LH
IVCS-R	EC	Intake Valve Timing Control Position Sensor RH
KS	EC	Knock Sensor
LOAD	EC	Load Signal
MAFS	EC	Mass Air Flow Sensor
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 — IVMS
NATS	EL	NATS (Nissan Anti-Theft System)
P/ANT	EL	Power Antenna

Code	Section	Wiring Diagram Name
PGC/V	EC	EVAP Canister Purge Control Solenoid Valve
PHONE	EL	Telephone
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
REMOTE	EL	Audio (Remote Control Switch)
ROOM/L	EL	Interior Room Lamp — IVMS
RO2H-L	EC	Rear Heated Oxygen Sensor Heater LH
RO2H-R	EC	Rear Heated Oxygen Sensor Heater RH
RRO2LH	EC	Rear Heated Oxygen Sensor LH
RRO2H	EC	Rear Heated Oxygen Sensor RH
SEAT	EL	Power Seat
SHADE	EL	Rear Sunshade
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
STEP/L	EL	Step Lamp — IVMS

Code	Section	Wiring Diagram Name
STOP/L	EL	Stop lamp
STPS	EC	Secondary Throttle Position Sensor
SW/ILL	EL	Power Window Switch Illumination — IVMS
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License, Tail and Stop Lamps
T/CLOS	EL	Trunk Closure
TCS	BR	Traction Control System
TCS/SW	EC	TCS Signal
T&FLID	EL	Trunk Lid and Fuel Filler Lid Opener
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System — IVMS
TPS	EC	Throttle Position Sensor
TP/SW	EC	Throttle Position Switch
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
WARN	EL	Warning Lamps
WINDOW	EL	Power Window — IVMS
WIPER	EL	Front Wiper and Washer

NOTES