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.**

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Terminal Arrangement ..... Foldout

WIRING DIAGRAM REFERENCE CHART

ECCS ..... EC SECTION
A/T CONTROL, SHIFT LOCK CONTROL ..... AT SECTION
TRACTION CONTROL SYSTEM ..... BR SECTION
SRS "AIR BAG" ..... RS SECTION
AIR CONDITIONER ..... HA SECTION
STEERING SYSTEM ..... ST SECTION

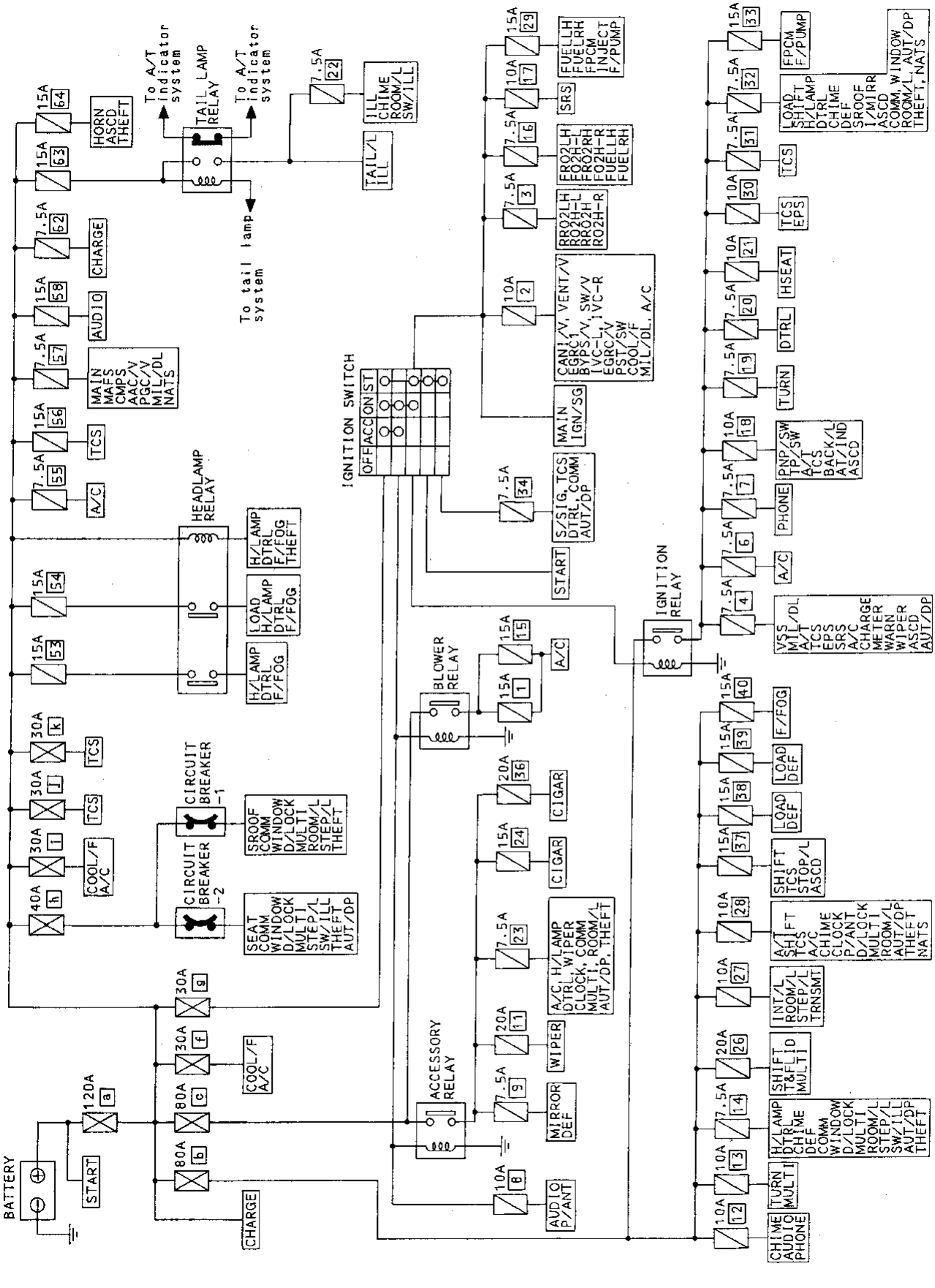
Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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).**

Schematic

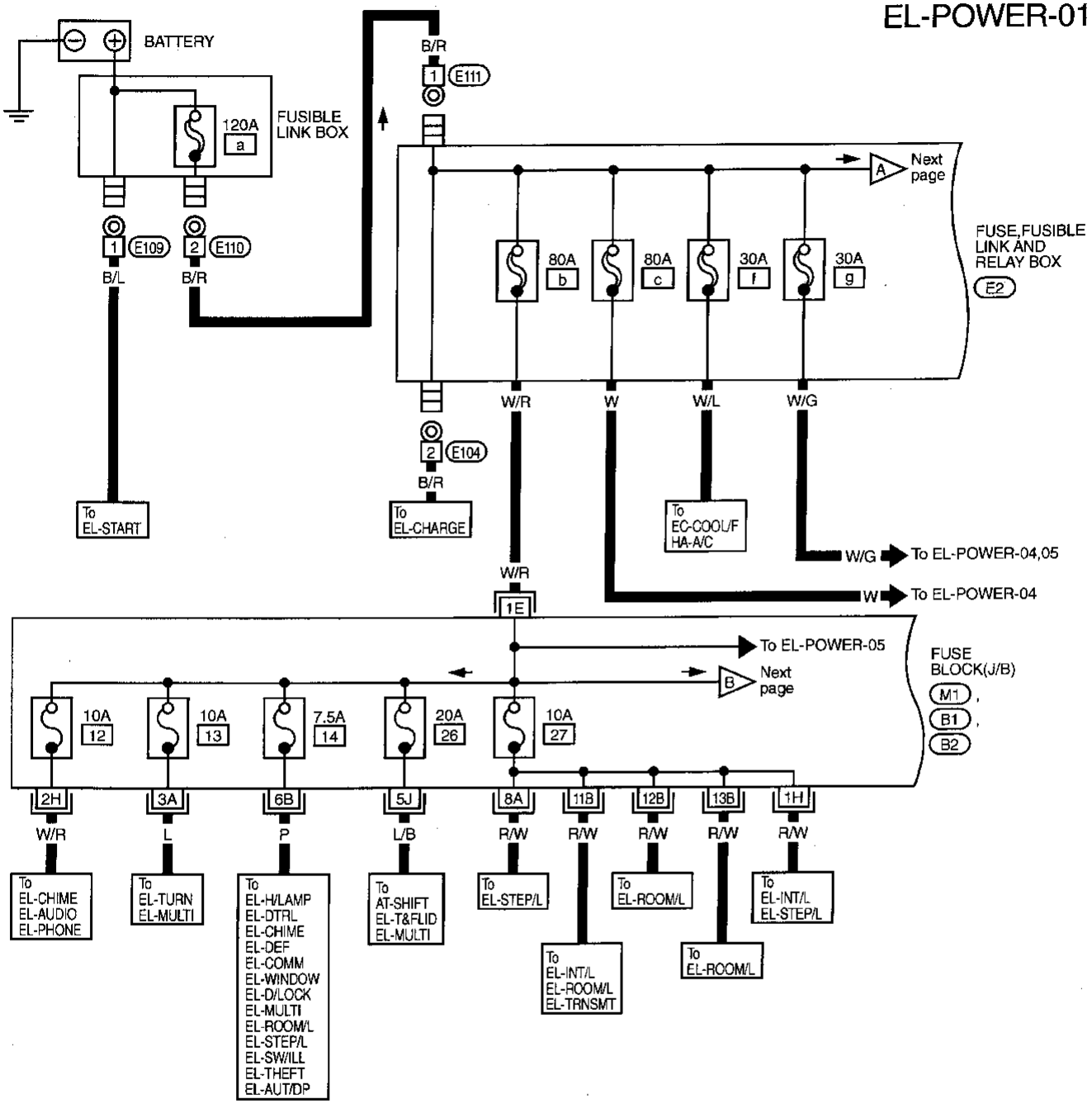


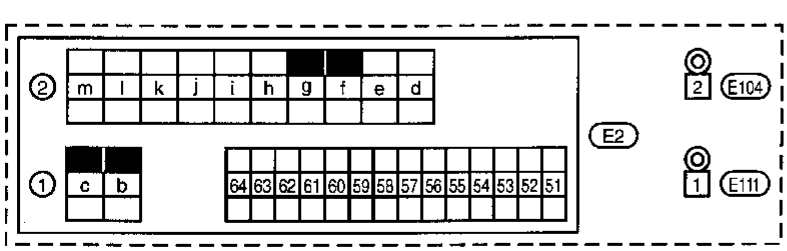
TEL174A

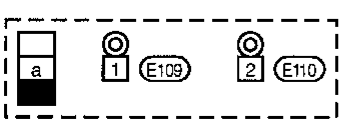
Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

EL-POWER-01







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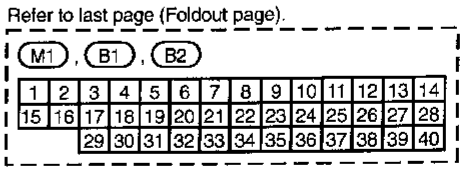
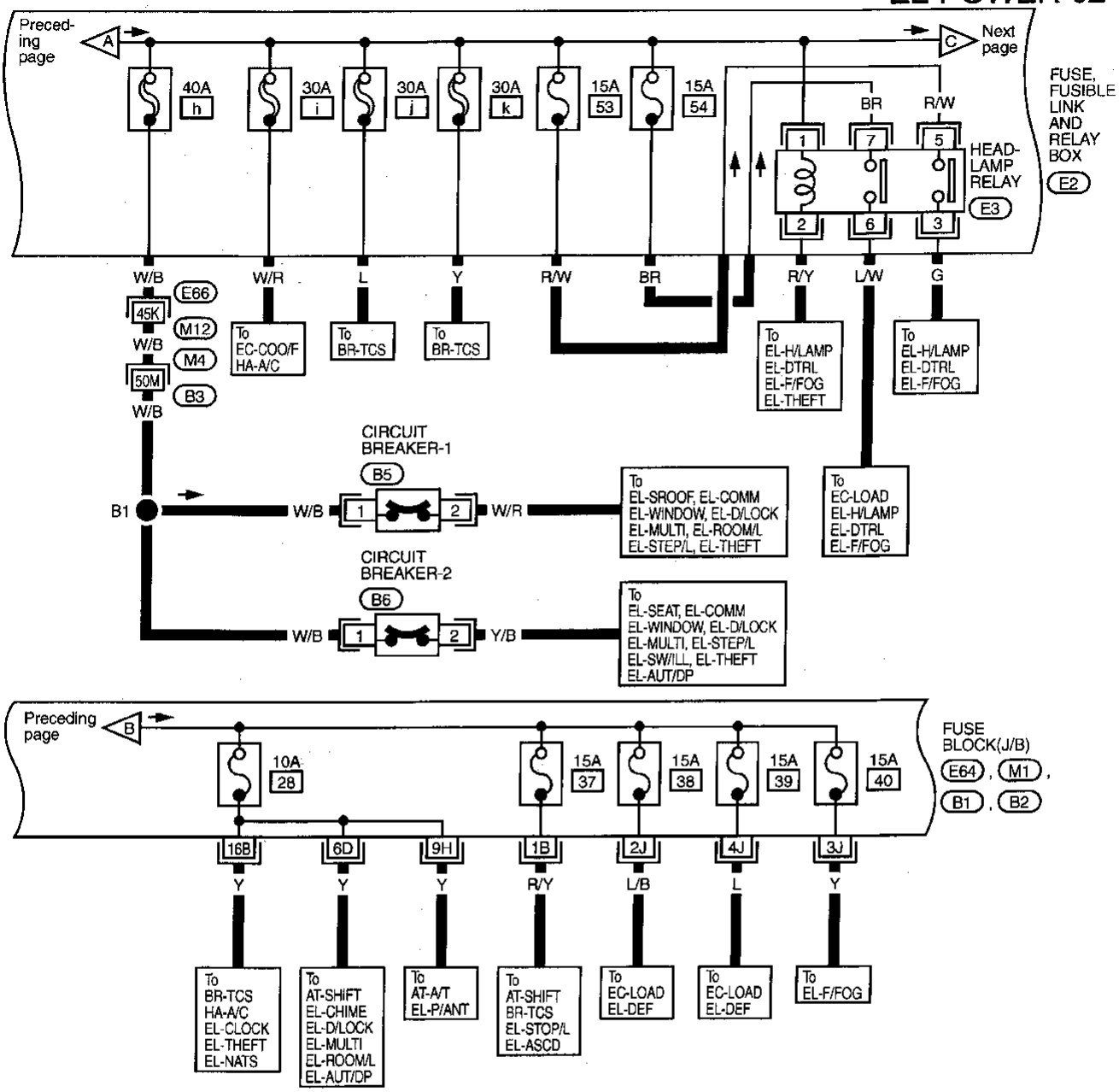
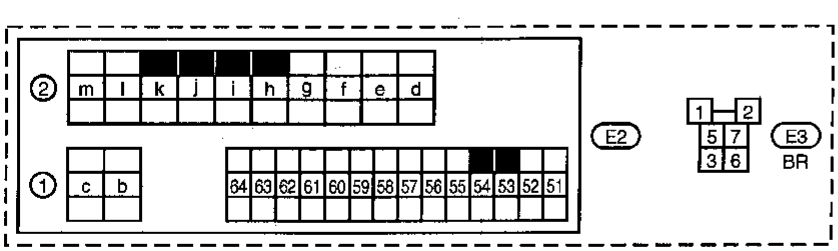


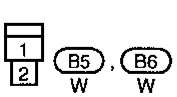
TEL175A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02







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E66, M12

M4, B3

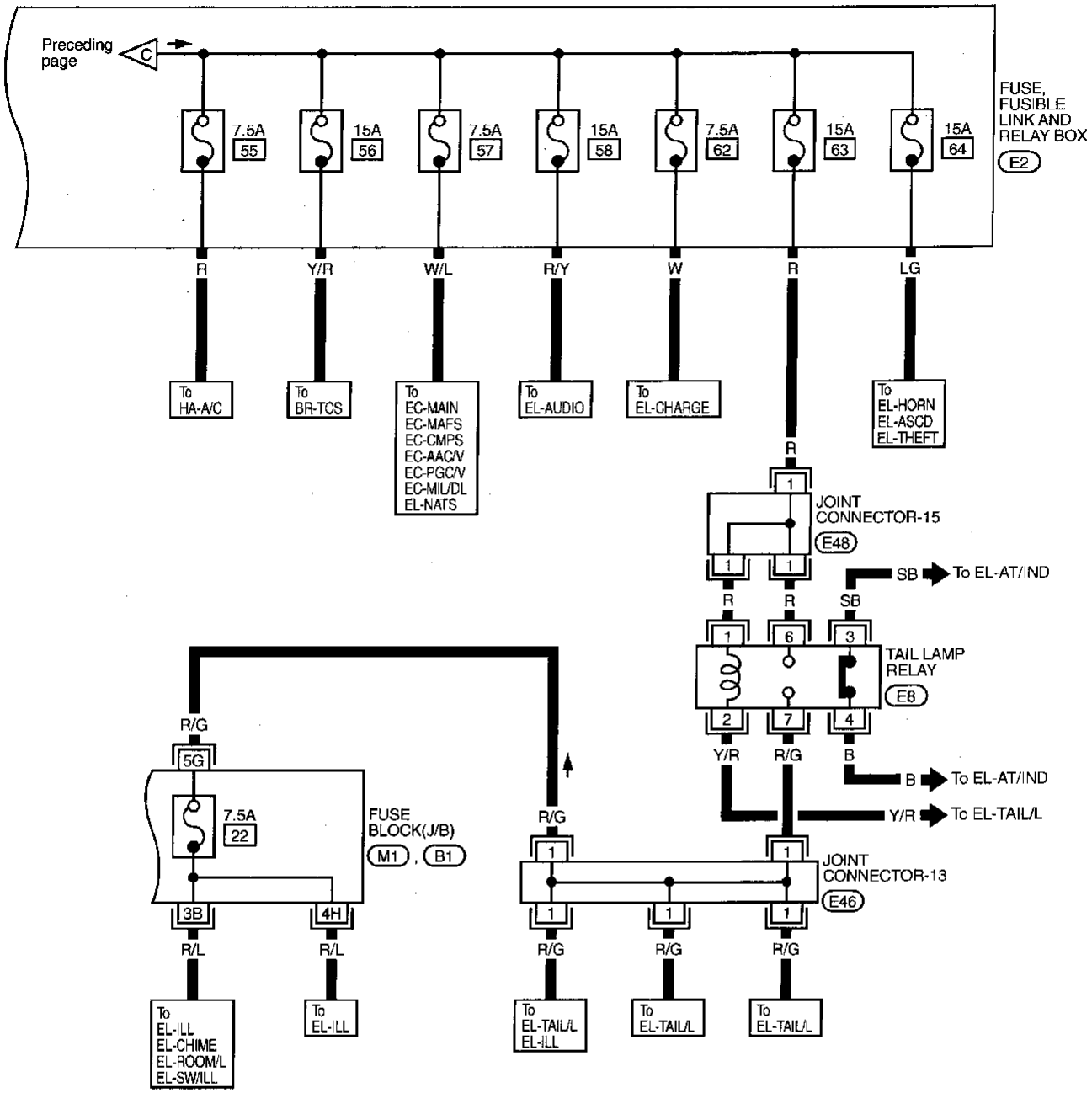
E64, M1, B1, B2

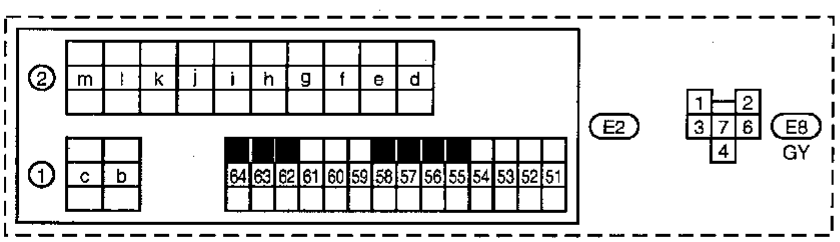
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

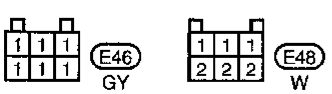
TEL176A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03







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M1, B1

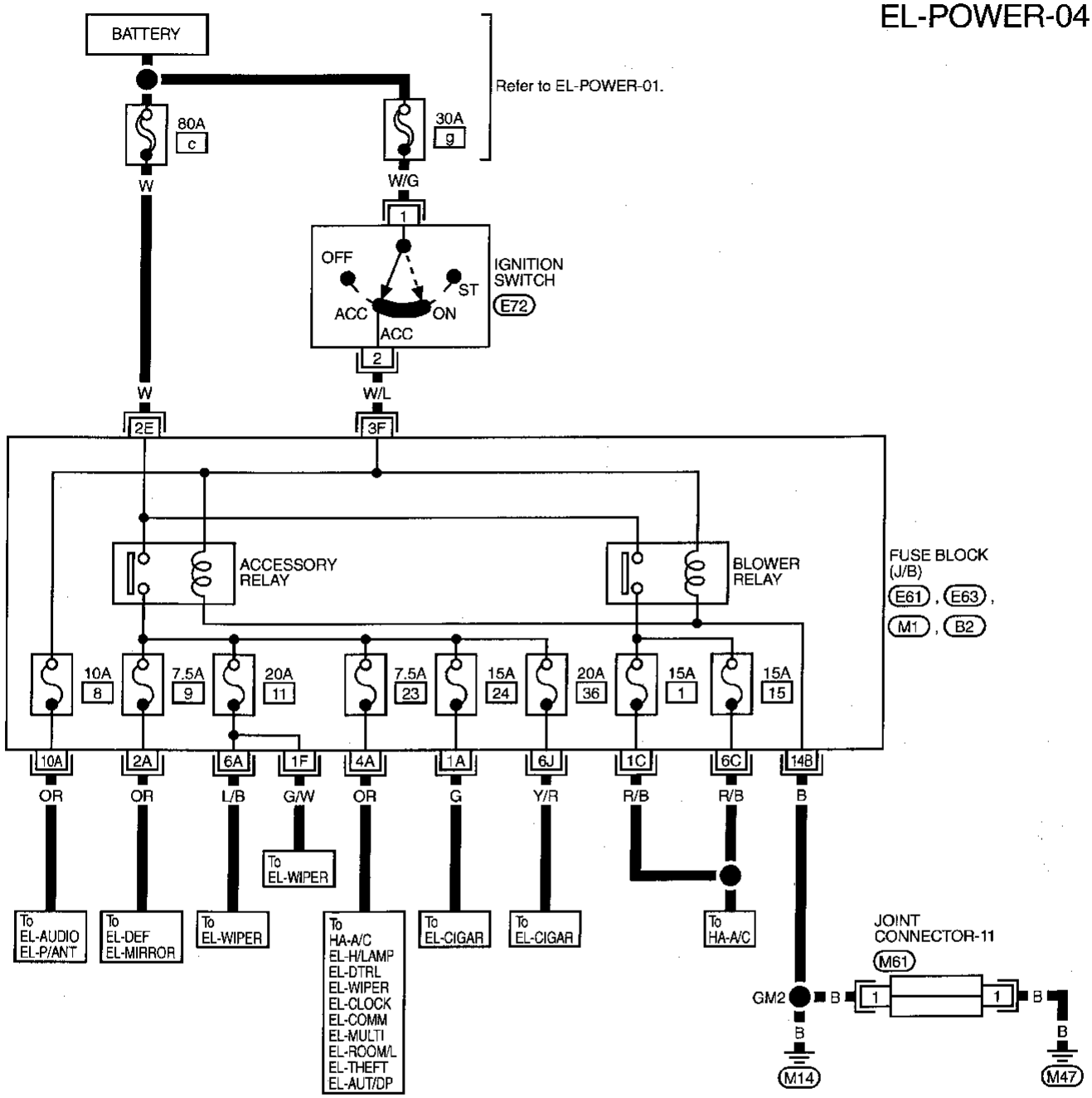
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL177A

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-04



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E61, E63, M1, B2

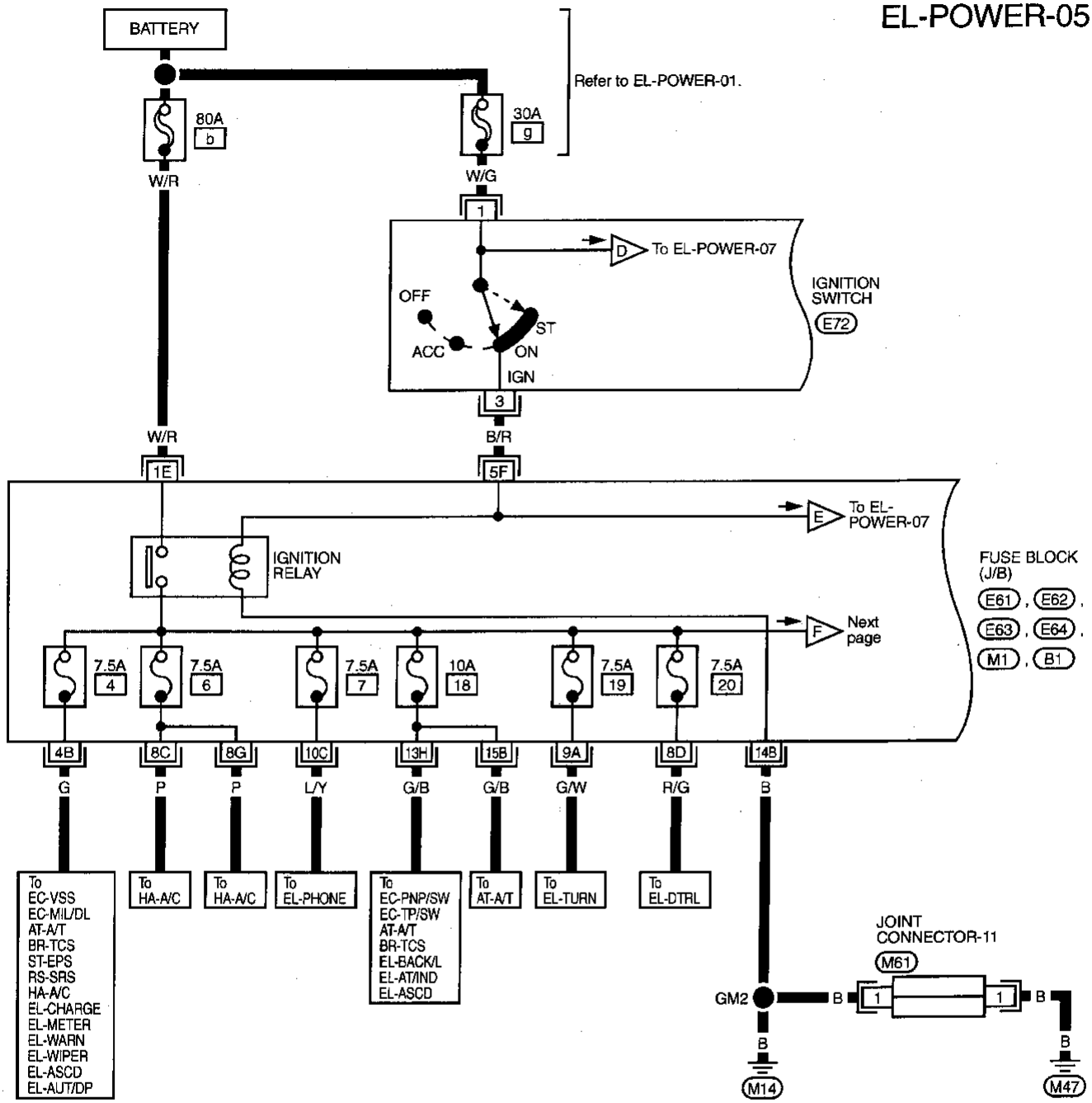
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

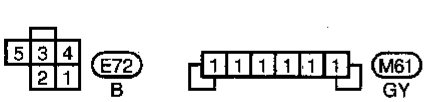
TEL178A

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-05





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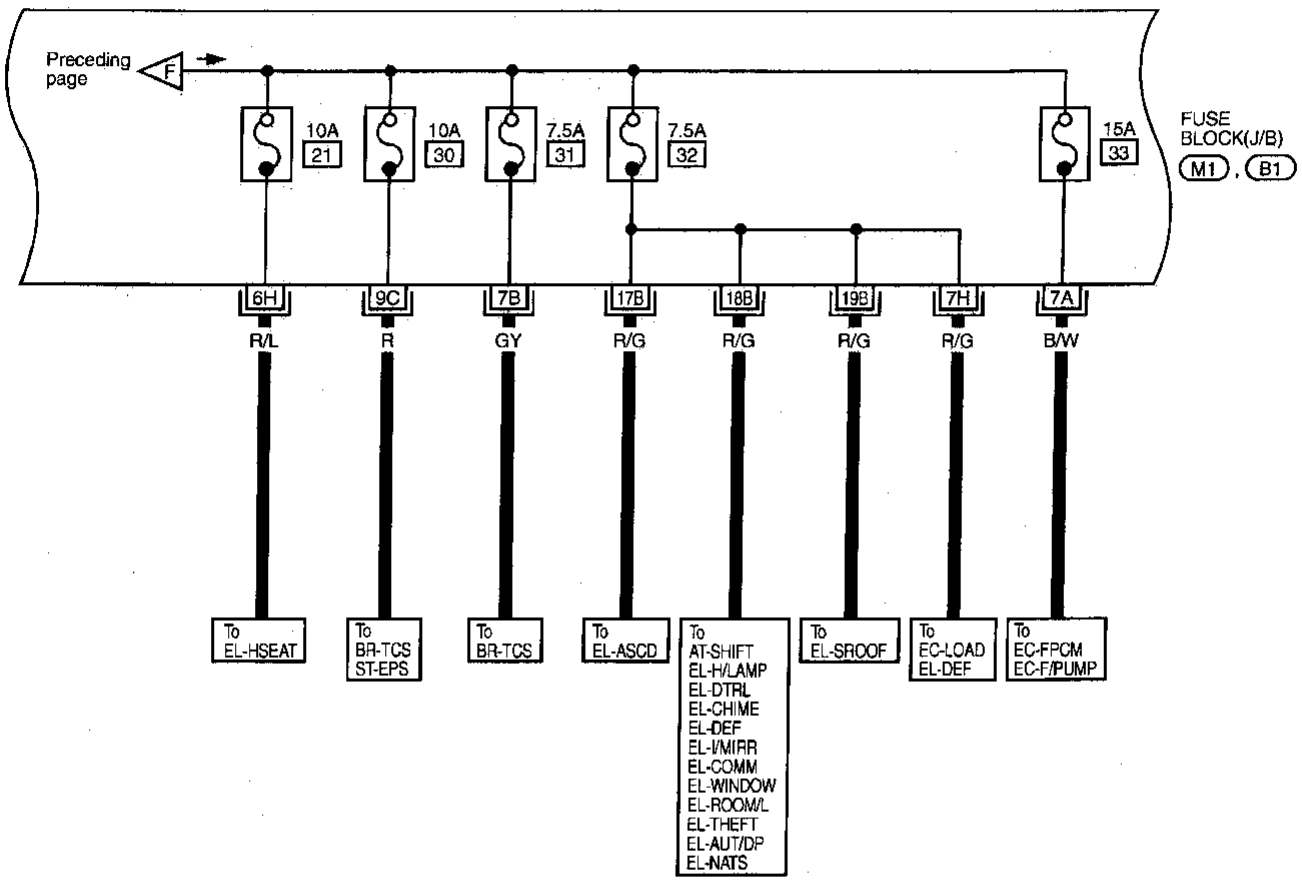
E61, E62, E63, E64
M1, B1

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

TEL234A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



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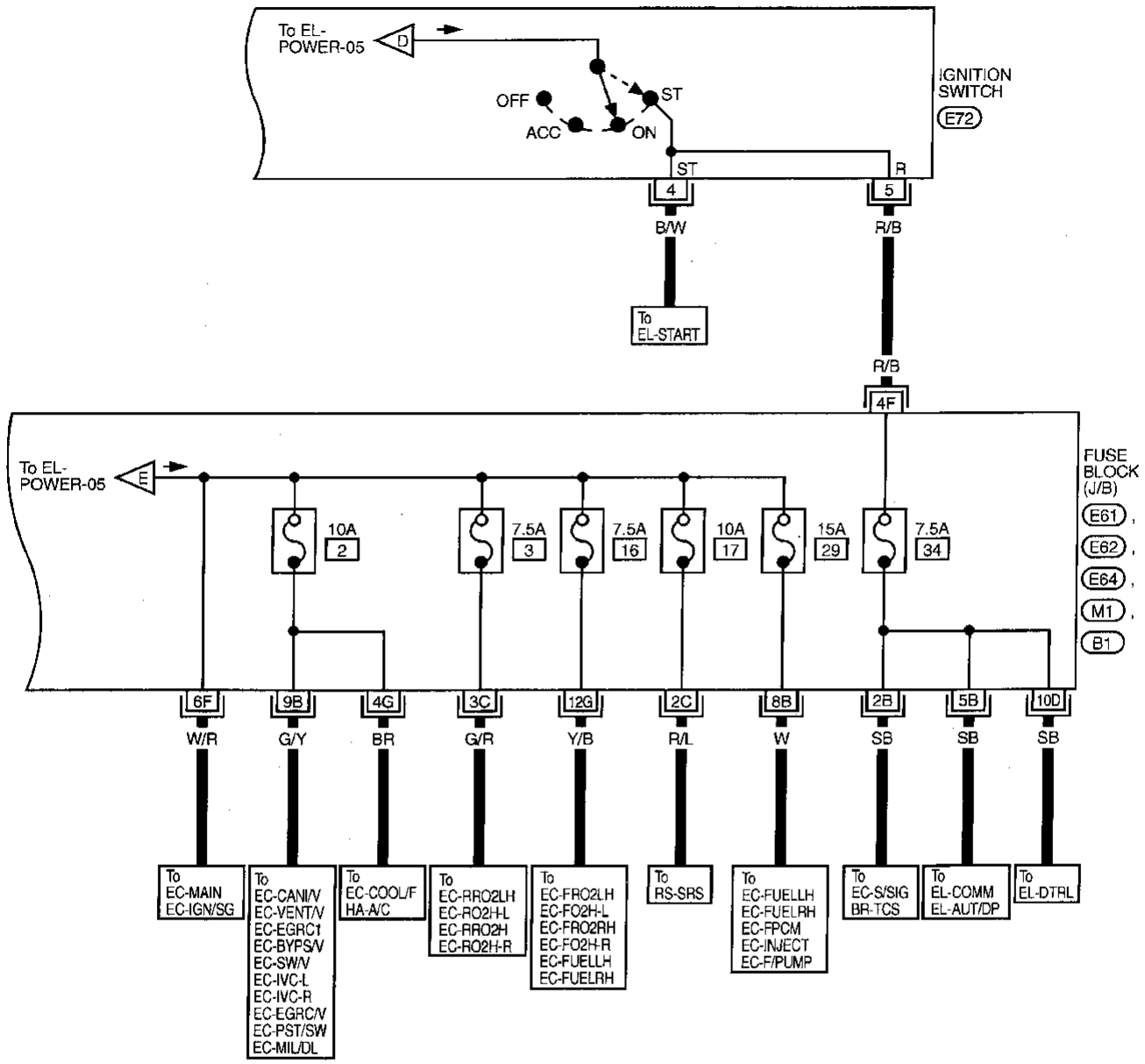
M1, B1

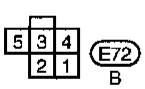
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL235A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07





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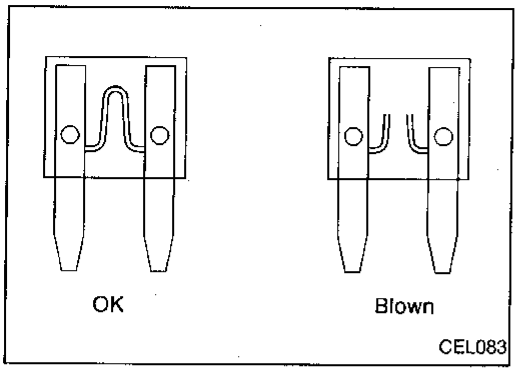
E61, E62, E64, M1, B1

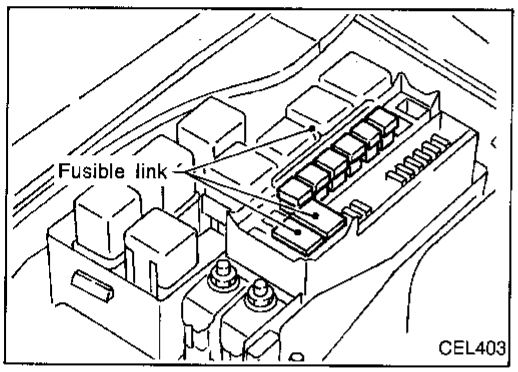
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
		29	30	31	32	33	34	35	36	37	38	39	40

TEL236A



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.

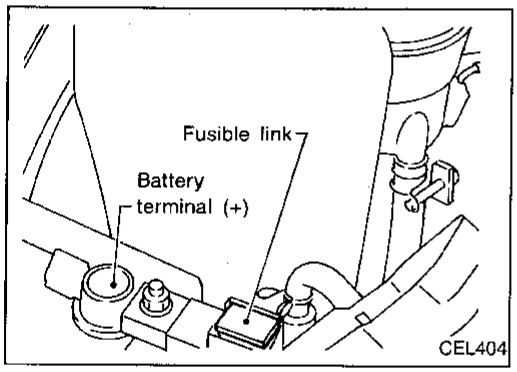


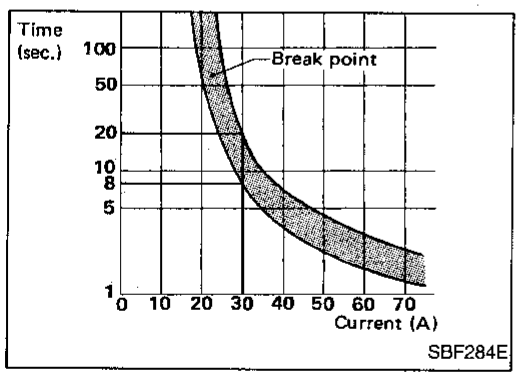
Fusible Link

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.





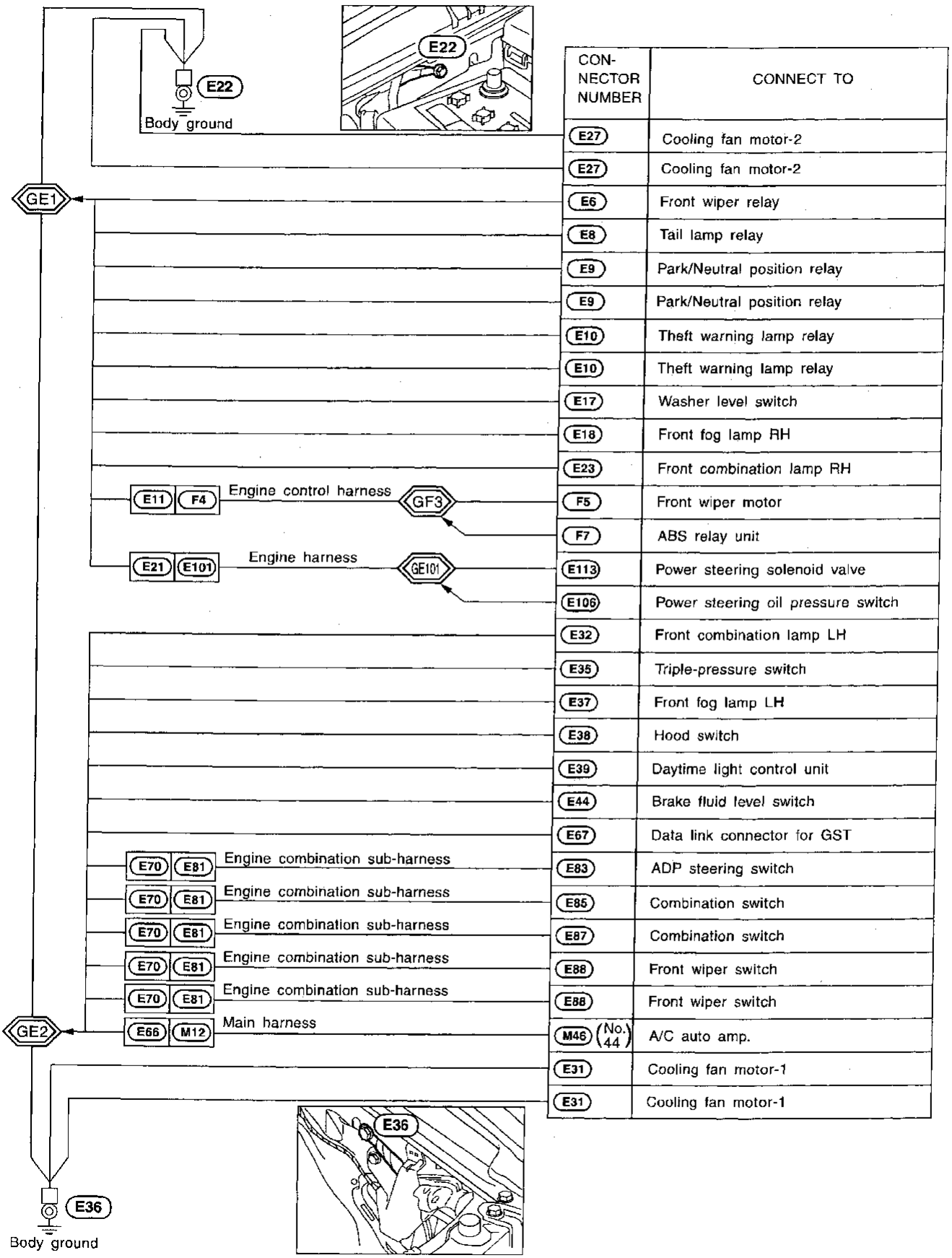
Circuit Breaker Inspection

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

Circuit breakers are used in the following systems.

- Electric sunroof
- Power seat
- Main power supply, ground and communication circuits — IVMS
- Power window — IVMS
- Power door lock — IVMS
- Multi-remote control — IVMS
- Interior lamp control — IVMS
- Step lamp — IVMS
- Illumination — IVMS
- Automatic drive positioner — IVMS
- Theft warning system — IVMS

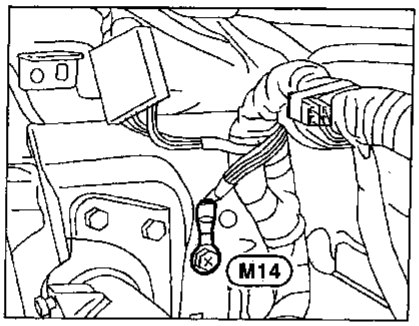
Engine Room Harness



CONNECTOR NUMBER	CONNECT TO
E27	Cooling fan motor-2
E27	Cooling fan motor-2
E6	Front wiper relay
E8	Tail lamp relay
E9	Park/Neutral position relay
E9	Park/Neutral position relay
E10	Theft warning lamp relay
E10	Theft warning lamp relay
E17	Washer level switch
E18	Front fog lamp RH
E23	Front combination lamp RH
F5	Front wiper motor
F7	ABS relay unit
E113	Power steering solenoid valve
E106	Power steering oil pressure switch
E32	Front combination lamp LH
E35	Triple-pressure switch
E37	Front fog lamp LH
E38	Hood switch
E39	Daytime light control unit
E44	Brake fluid level switch
E67	Data link connector for GST
E83	ADP steering switch
E85	Combination switch
E87	Combination switch
E88	Front wiper switch
E88	Front wiper switch
M46 (No. 44)	A/C auto amp.
E31	Cooling fan motor-1
E31	Cooling fan motor-1

CEL492

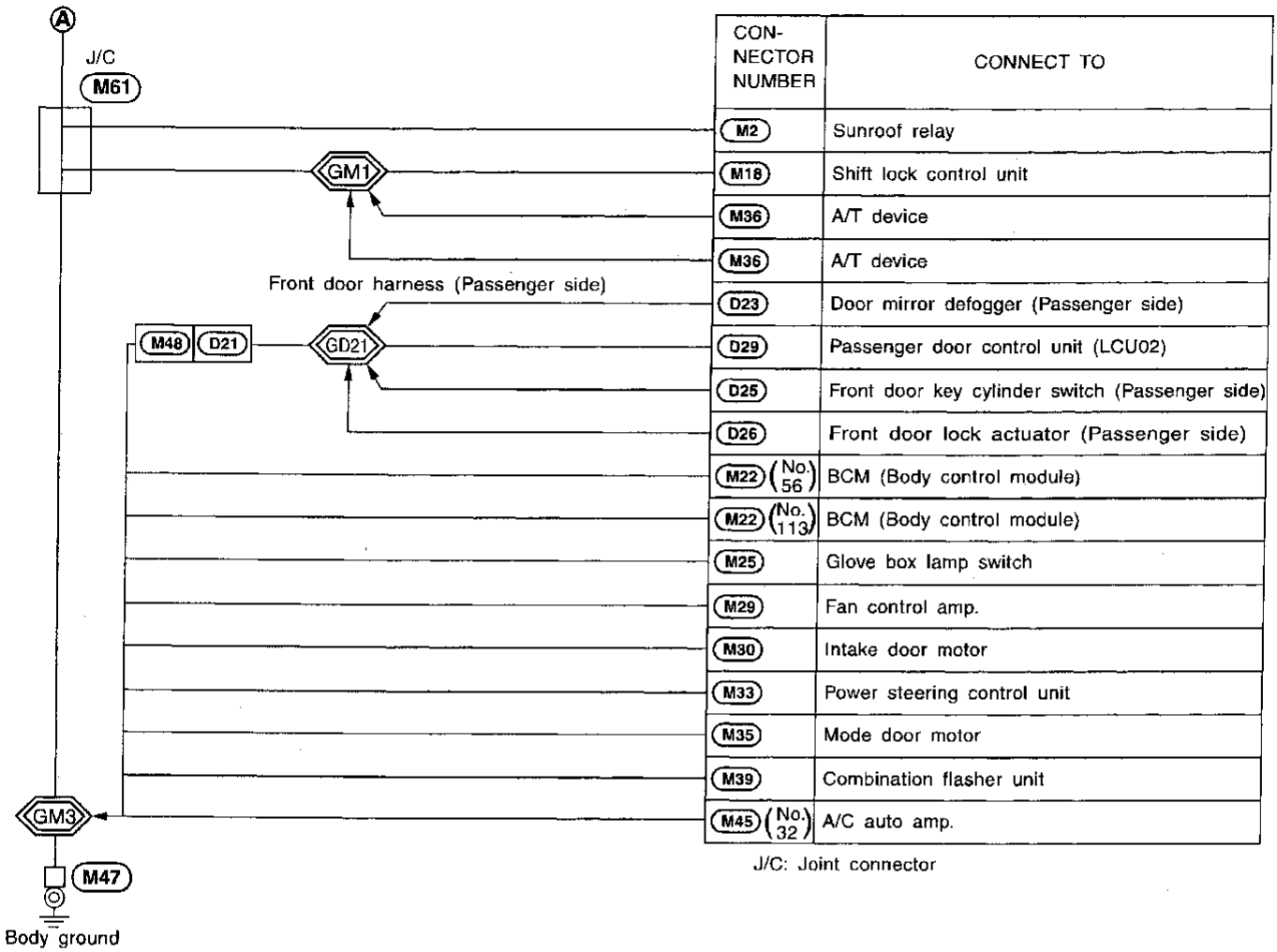
Main Harness



CONNECTOR NUMBER	CONNECT TO
N12	Combination meter
N6	Front cigarette lighter
N23	Illumination control switch
N17	A/C control unit
N3	ASCD main switch
N14	Combination meter
N14	Combination meter
N8	Illumination time control switch
N7	TCS switch
R2	Integrated homelink transmitter
R2	Vanity mirror lamp (Driver's side)
R5	Interior lamp
R4	Auto anti-dazzling inside mirror
R6	Vanity mirror lamp (Passenger side)
R7	Rear personal lamp LH
R8	Rear personal lamp RH
D3	Door mirror defogger (Driver's side)
D4	Seat memory switch
D13	Driver's door control unit (LCU01)
D6	Front door key cylinder switch (Driver's side)
D7	Front door lock actuator (Driver's side)
D10	Door mirror remote control switch
D11	Trunk lid and fuel lid opener switch
M1	Fuse block (J/B)
M19	ASCD control unit
M22 (No. 114)	BCM (Body control module)
M23	ASCD hold relay
Z3	Air bag diagnosis sensor unit

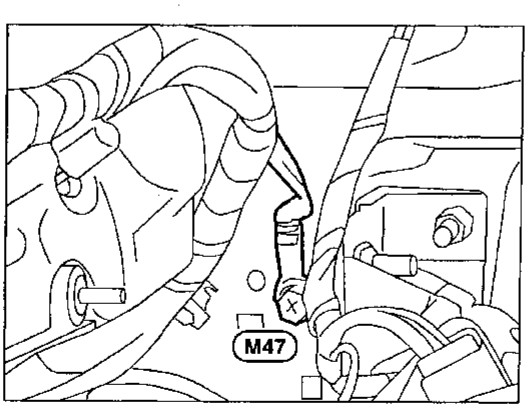
CEL593

Main Harness (Cont'd)



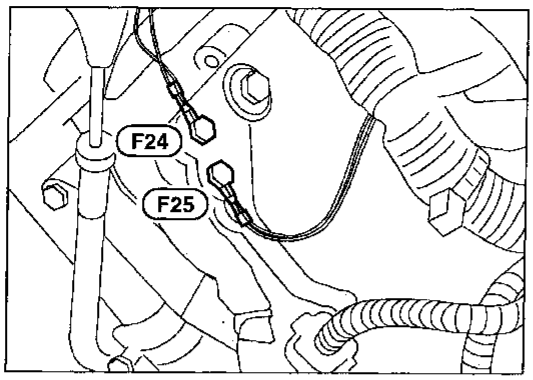
CONNECTOR NUMBER	CONNECT TO
M2	Sunroof relay
M18	Shift lock control unit
M36	A/T device
M36	A/T device
D23	Door mirror defogger (Passenger side)
D29	Passenger door control unit (LCU02)
D25	Front door key cylinder switch (Passenger side)
D26	Front door lock actuator (Passenger side)
M22 (No. 56)	BCM (Body control module)
M22 (No. 113)	BCM (Body control module)
M25	Glove box lamp switch
M29	Fan control amp.
M30	Intake door motor
M33	Power steering control unit
M35	Mode door motor
M39	Combination flasher unit
M45 (No. 32)	A/C auto amp.

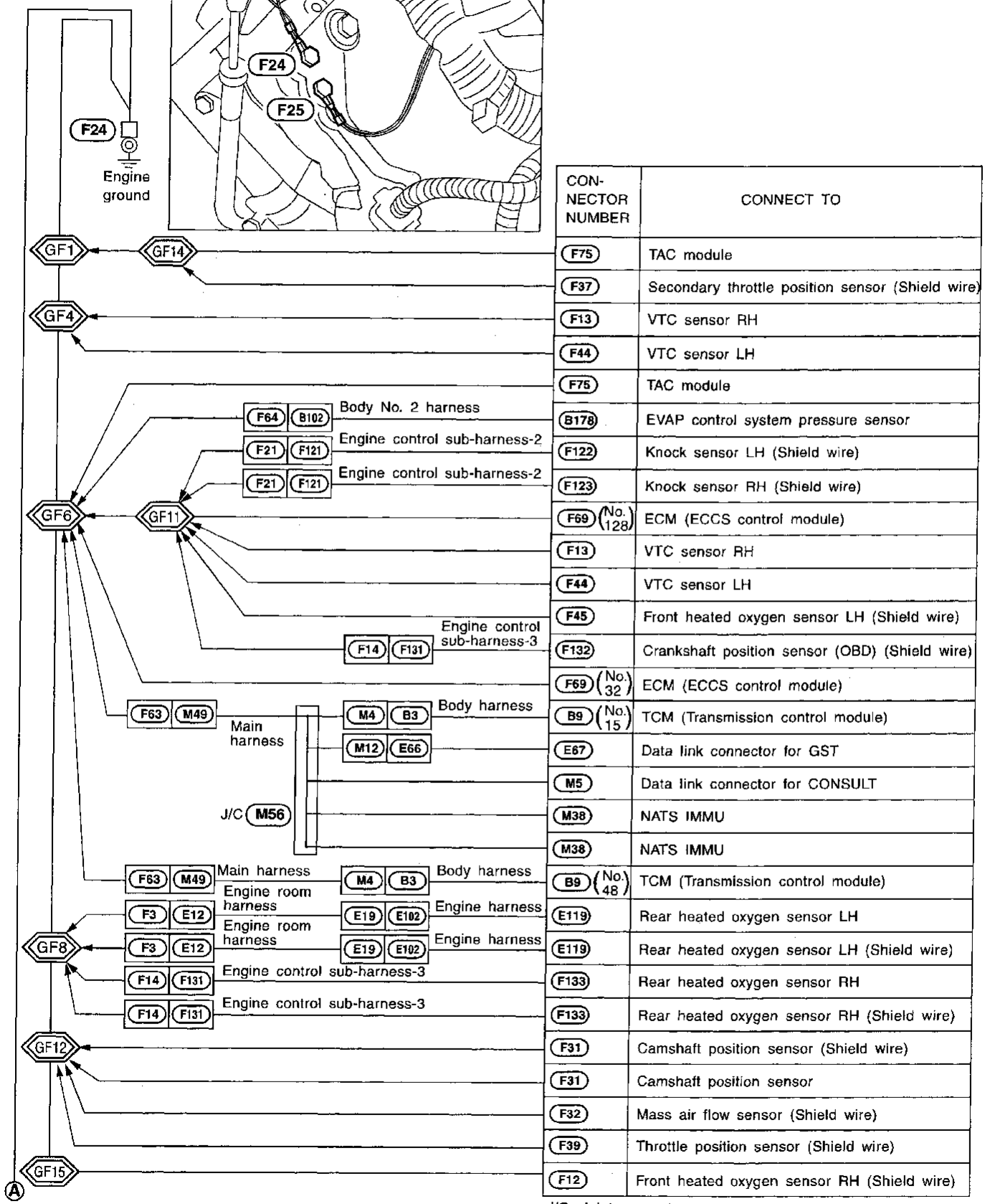
J/C: Joint connector



CEL494

Engine Control Harness



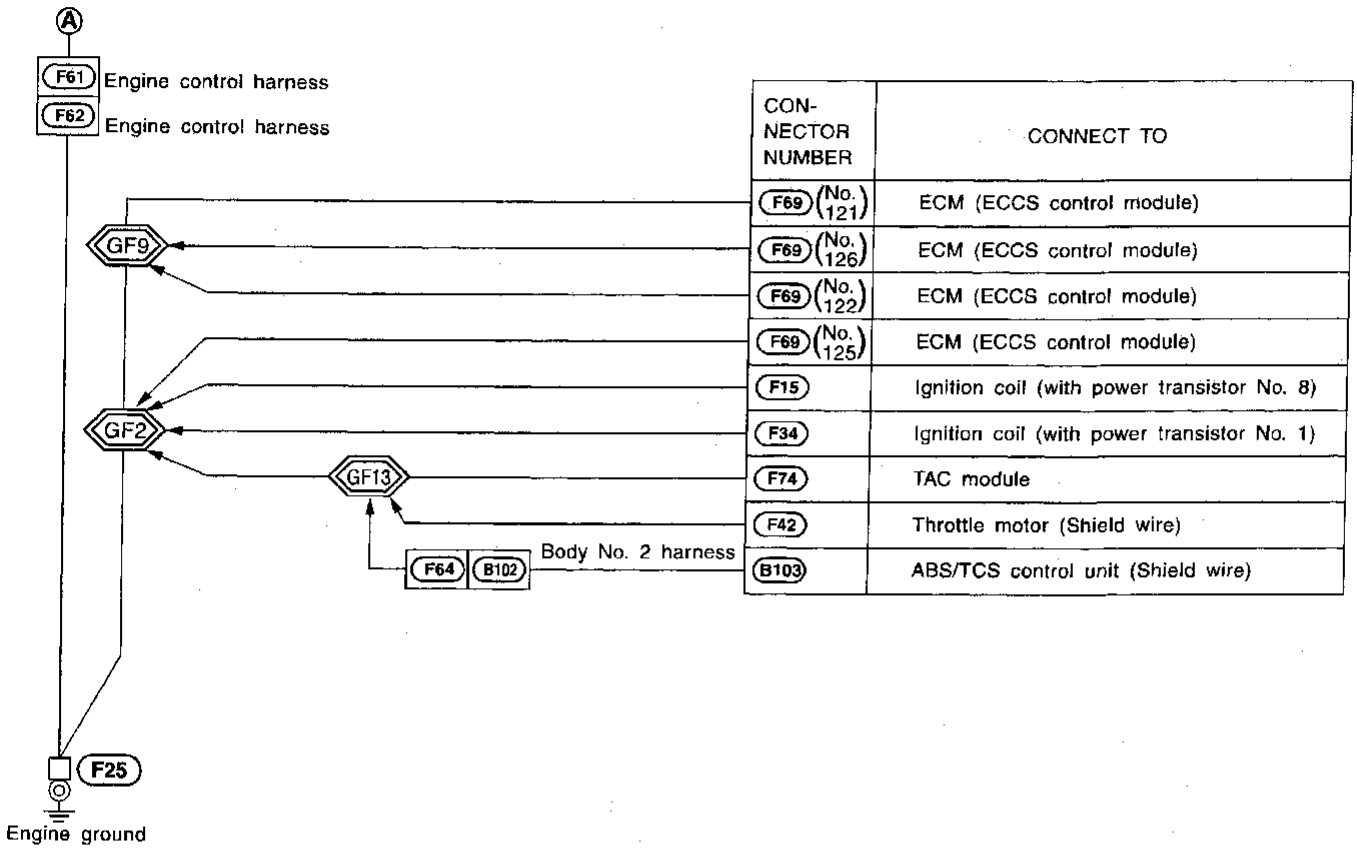


CONNECTOR NUMBER	CONNECT TO
F75	TAC module
F37	Secondary throttle position sensor (Shield wire)
F13	VTC sensor RH
F44	VTC sensor LH
F75	TAC module
B178	EVAP control system pressure sensor
F122	Knock sensor LH (Shield wire)
F123	Knock sensor RH (Shield wire)
F69 (No. 128)	ECM (ECCS control module)
F13	VTC sensor RH
F44	VTC sensor LH
F45	Front heated oxygen sensor LH (Shield wire)
F132	Crankshaft position sensor (OBD) (Shield wire)
F69 (No. 32)	ECM (ECCS control module)
B9 (No. 15)	TCM (Transmission control module)
E67	Data link connector for GST
M5	Data link connector for CONSULT
M38	NATS IMMU
M38	NATS IMMU
B9 (No. 48)	TCM (Transmission control module)
E119	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	Camshaft position sensor
F32	Mass air flow sensor (Shield wire)
F39	Throttle position sensor (Shield wire)
F12	Front heated oxygen sensor RH (Shield wire)

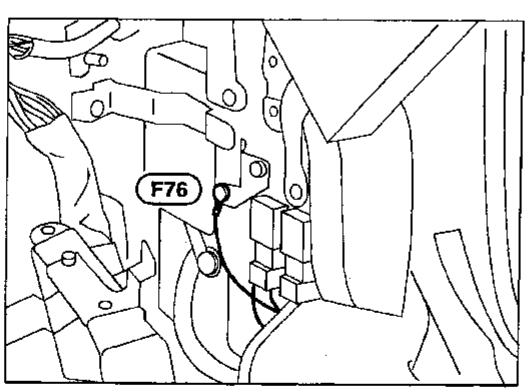
J/C: Joint connector

CEL594

Engine Control Harness (Cont'd)

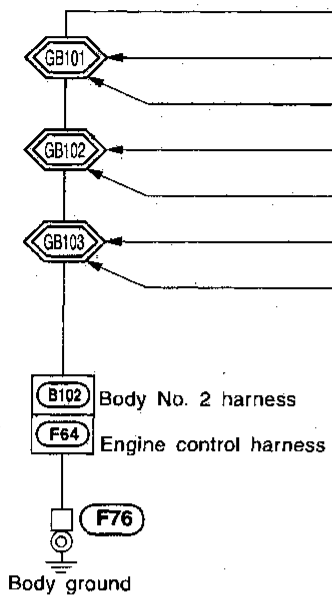


CONNECTOR NUMBER	CONNECT TO
F69 (No. 121)	ECM (ECCS control module)
F69 (No. 126)	ECM (ECCS control module)
F69 (No. 122)	ECM (ECCS control module)
F69 (No. 125)	ECM (ECCS control module)
F15	Ignition coil (with power transistor No. 8)
F34	Ignition coil (with power transistor No. 1)
F74	TAC module
F42	Throttle motor (Shield wire)
B103	ABS/TCS control unit (Shield wire)

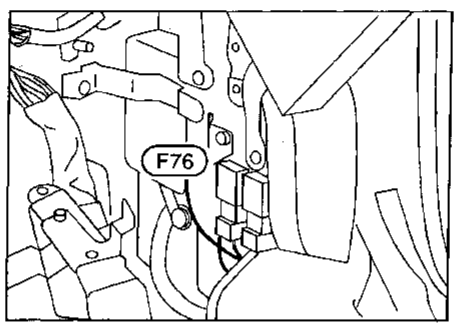


CEL595

Engine Control Harness (Cont'd)

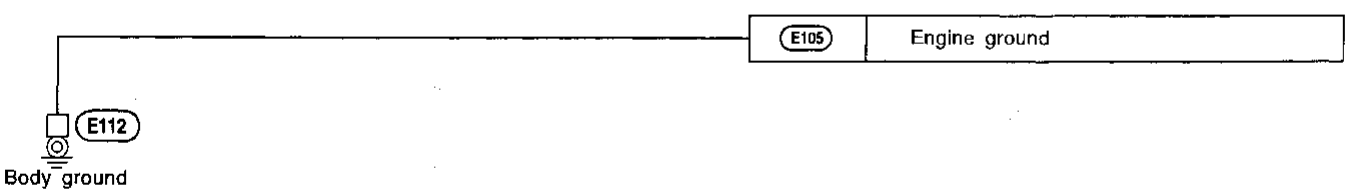


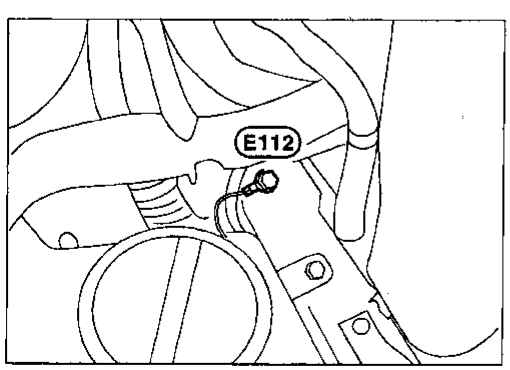
CONNECTOR NUMBER	CONNECT TO
B103 (No. 109)	ABS/TCS control unit
B103 (No. 110)	ABS/TCS control unit
B103 (No. 111)	ABS/TCS control unit
B103 (No. 113)	ABS/TCS control unit
B103 (No. 114)	ABS/TCS control unit
B103 (No. 115)	ABS/TCS control unit
B103 (No. 116)	ABS/TCS control unit

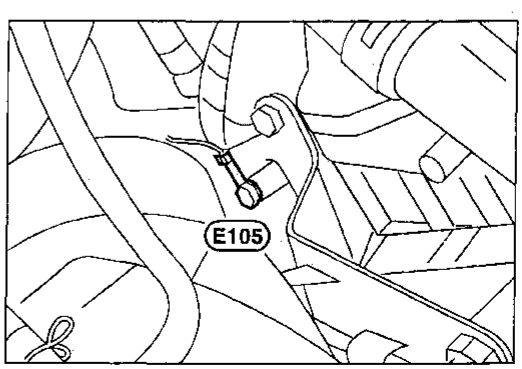


CEL497

Engine Harness

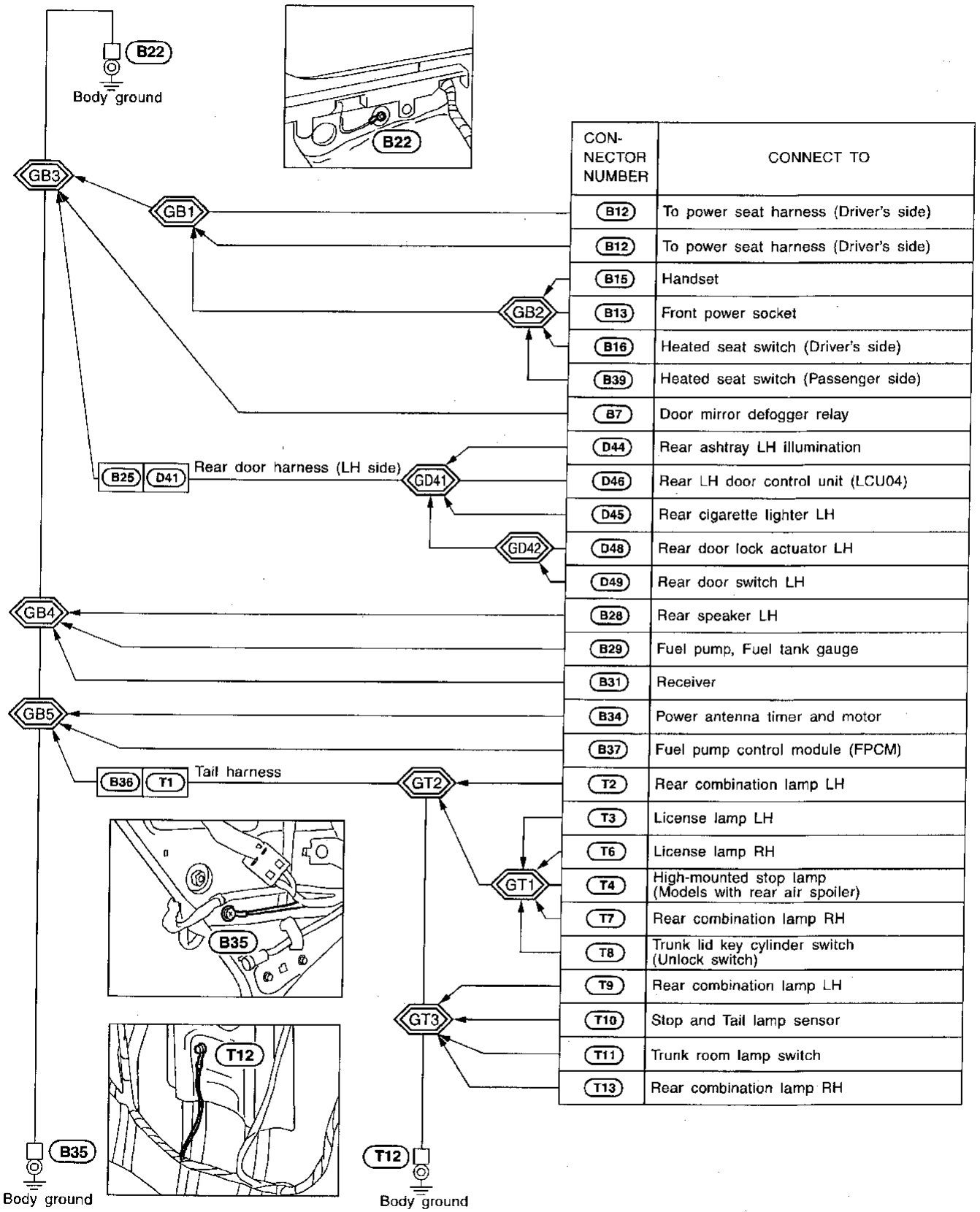






CEL498

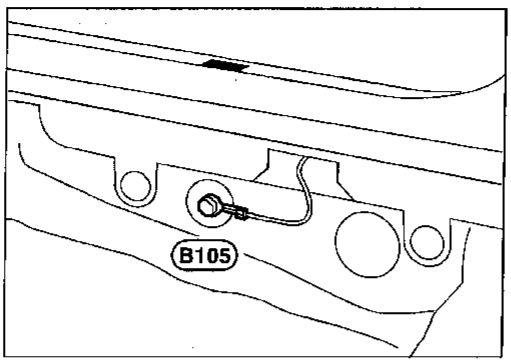
Body Harness

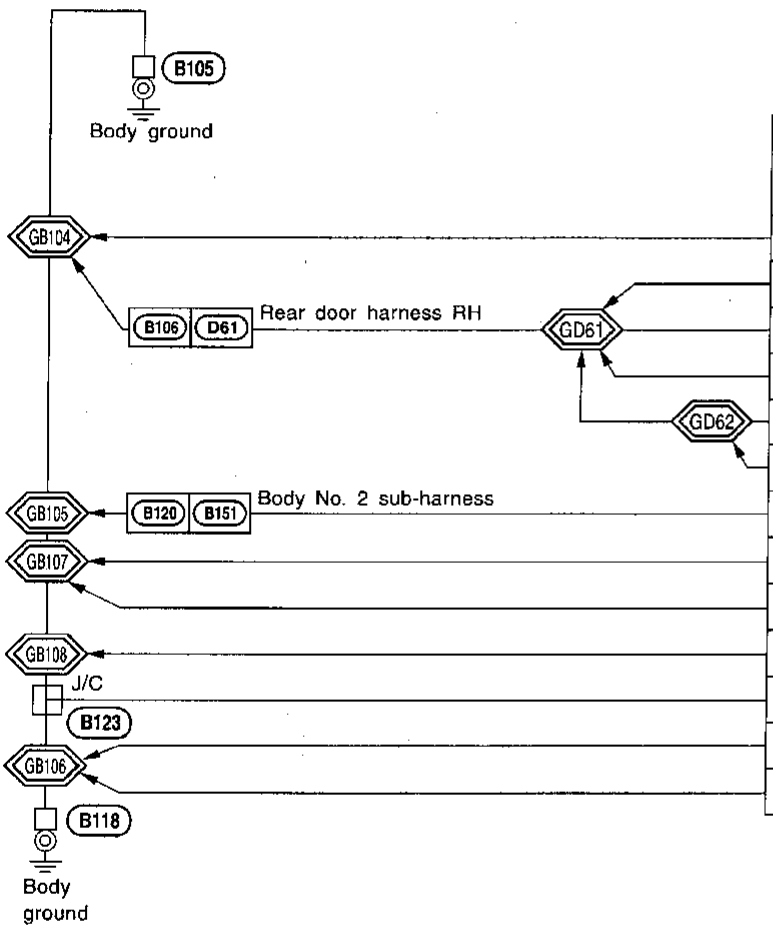


CONNECTOR NUMBER	CONNECT TO
B12	To power seat harness (Driver's side)
B12	To power seat harness (Driver's side)
B15	Handset
B13	Front power socket
B16	Heated seat switch (Driver's side)
B39	Heated seat switch (Passenger side)
B7	Door mirror defogger relay
D44	Rear ashtray LH illumination
D46	Rear LH door control unit (LCU04)
D45	Rear cigarette lighter LH
D48	Rear door lock actuator LH
D49	Rear door switch LH
B28	Rear speaker LH
B29	Fuel pump, Fuel tank gauge
B31	Receiver
B34	Power antenna timer and motor
B37	Fuel pump control module (FPCM)
T2	Rear combination lamp LH
T3	License lamp LH
T6	License lamp RH
T4	High-mounted stop lamp (Models with rear air spoiler)
T7	Rear combination lamp RH
T8	Trunk lid key cylinder switch (Unlock switch)
T9	Rear combination lamp LH
T10	Stop and Tail lamp sensor
T11	Trunk room lamp switch
T13	Rear combination lamp RH

CEL596

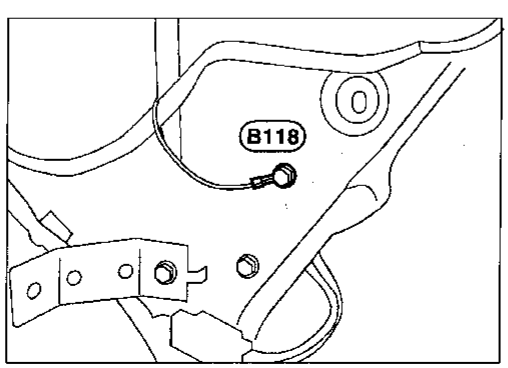
Body No. 2 Harness





CONNECTOR NUMBER	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
B152	High-mounted stop lamp (Models without rear air spoiler)
B116	Audio amp. relay
B117	Theft warning horn relay
B119	Fuel lid opener actuator
B122	CD auto changer
B110	Rear speaker RH
B121	Dropping resistor

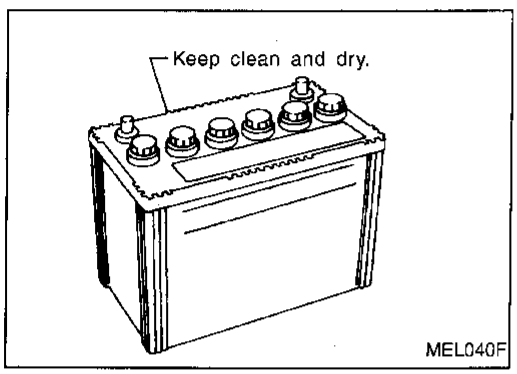
J/C: Joint connector



CEL597

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.**

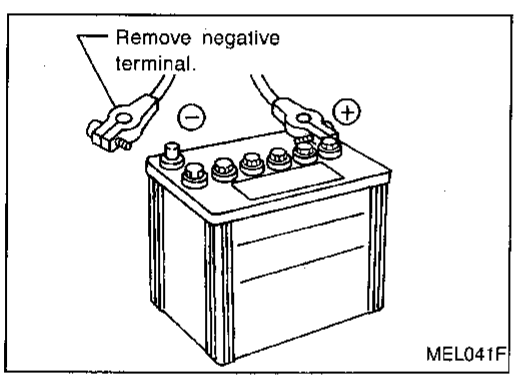


How to Handle Battery

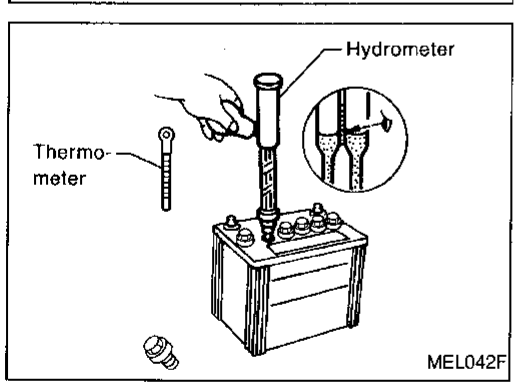
METHODS OF PREVENTING OVER-DISCHARGE

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.)



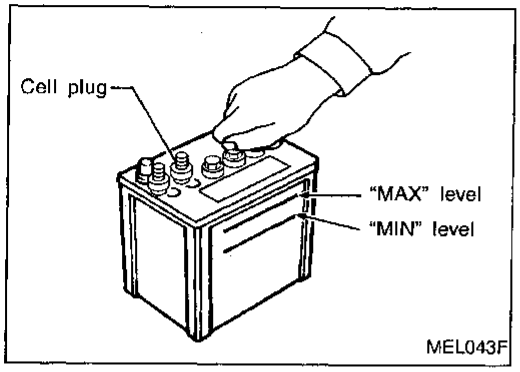
- Check the charge condition of the battery. Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

CHECKING ELECTROLYTE LEVEL

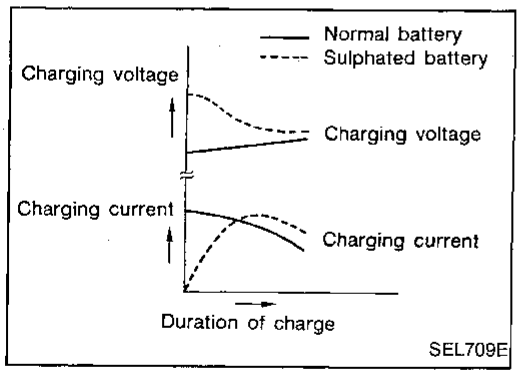
WARNING:

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.

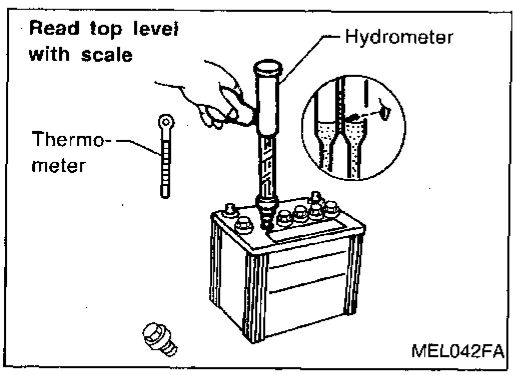


SULPHATION

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 (129)	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 (39)	−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:

a. Do not "quick charge" a fully discharged battery.
b. Keep the battery away from open flame while it is being charged.
c. 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.
d. 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

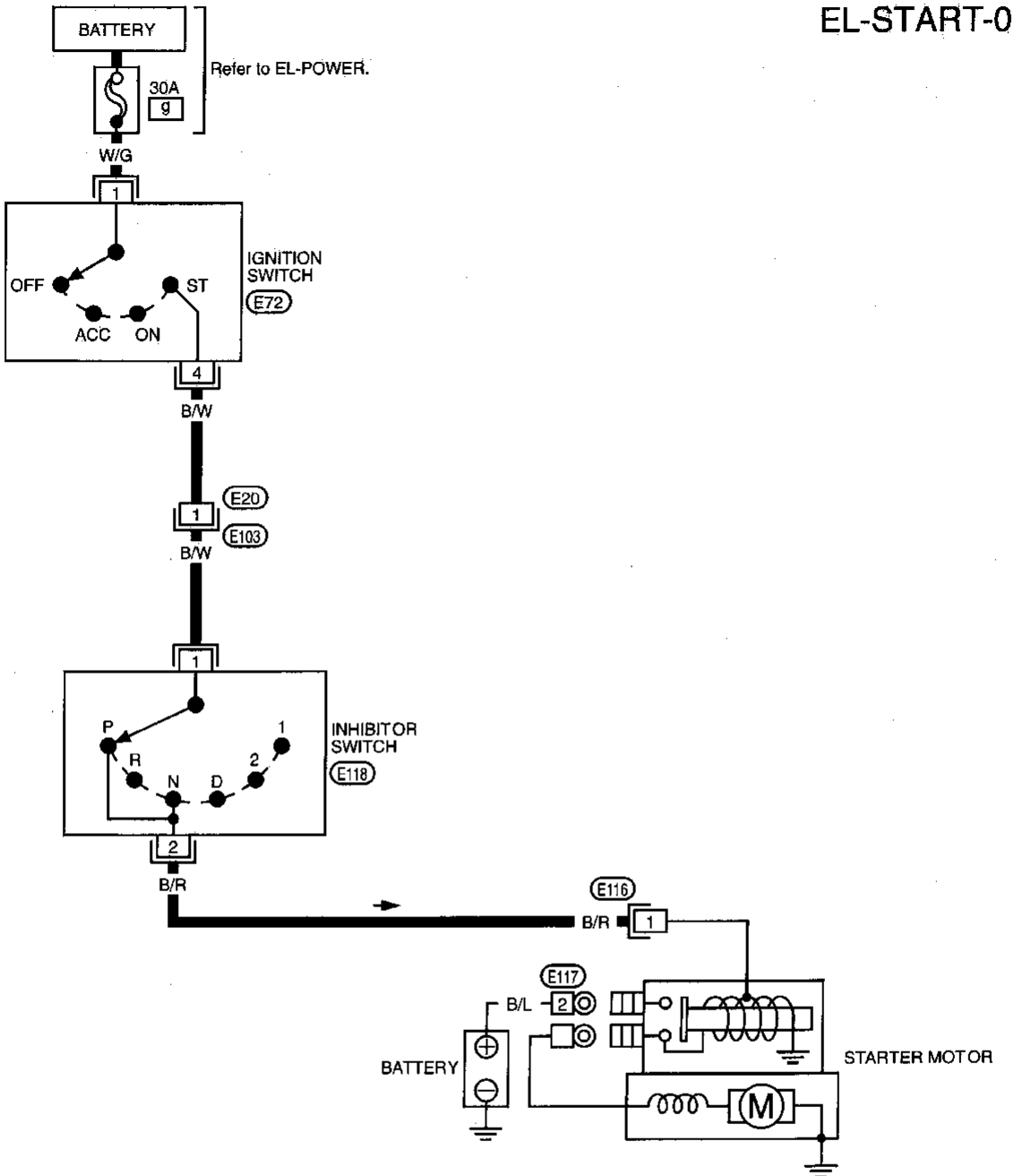
Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter g , located in the fuse, fusible link and relay box).

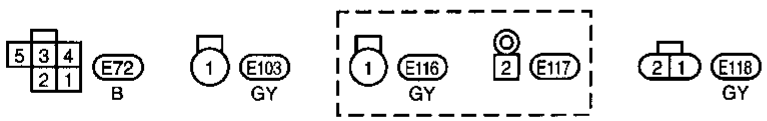
With the ignition switch in the START position, power is supplied
- from ignition switch terminal ④
- to inhibitor switch terminal ①
- through inhibitor switch terminal ② , with the selector lever in the P or N position
- to terminal ① of the starter motor windings.

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 —

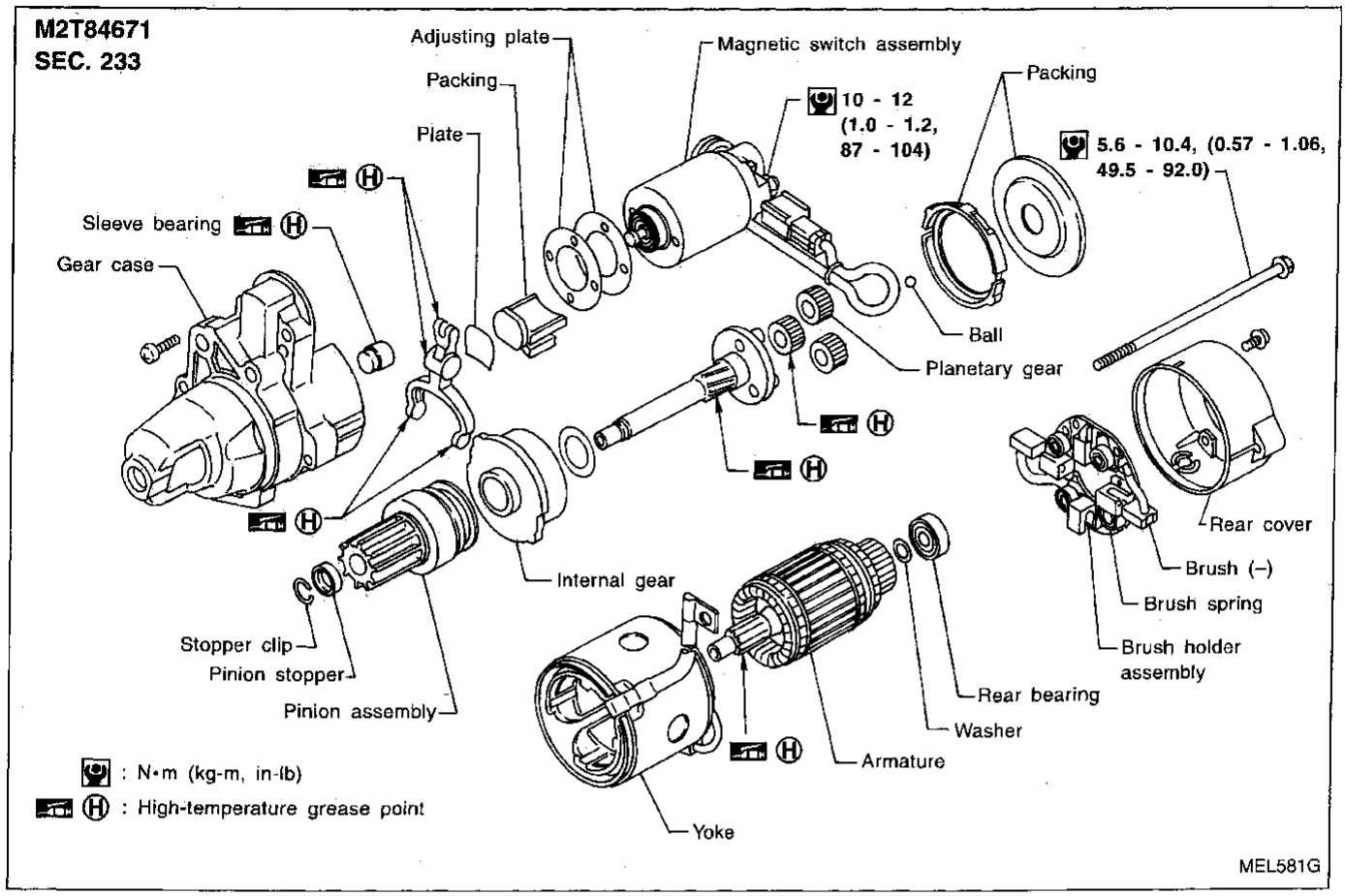
EL-START-01

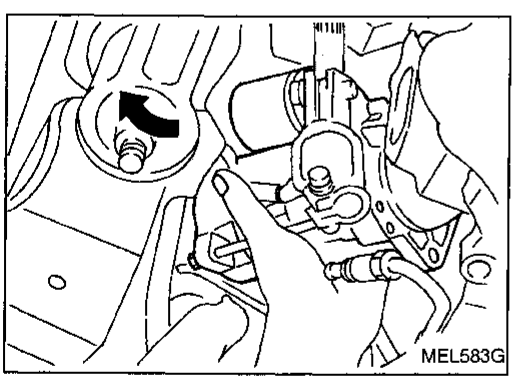


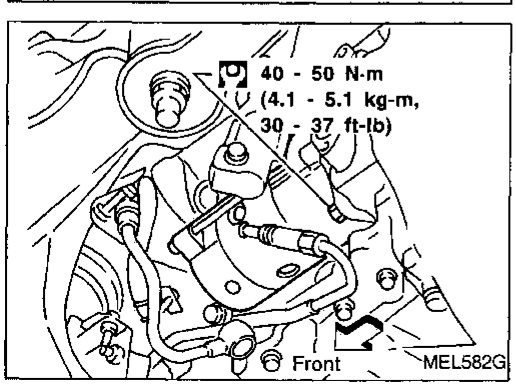


TEL730

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

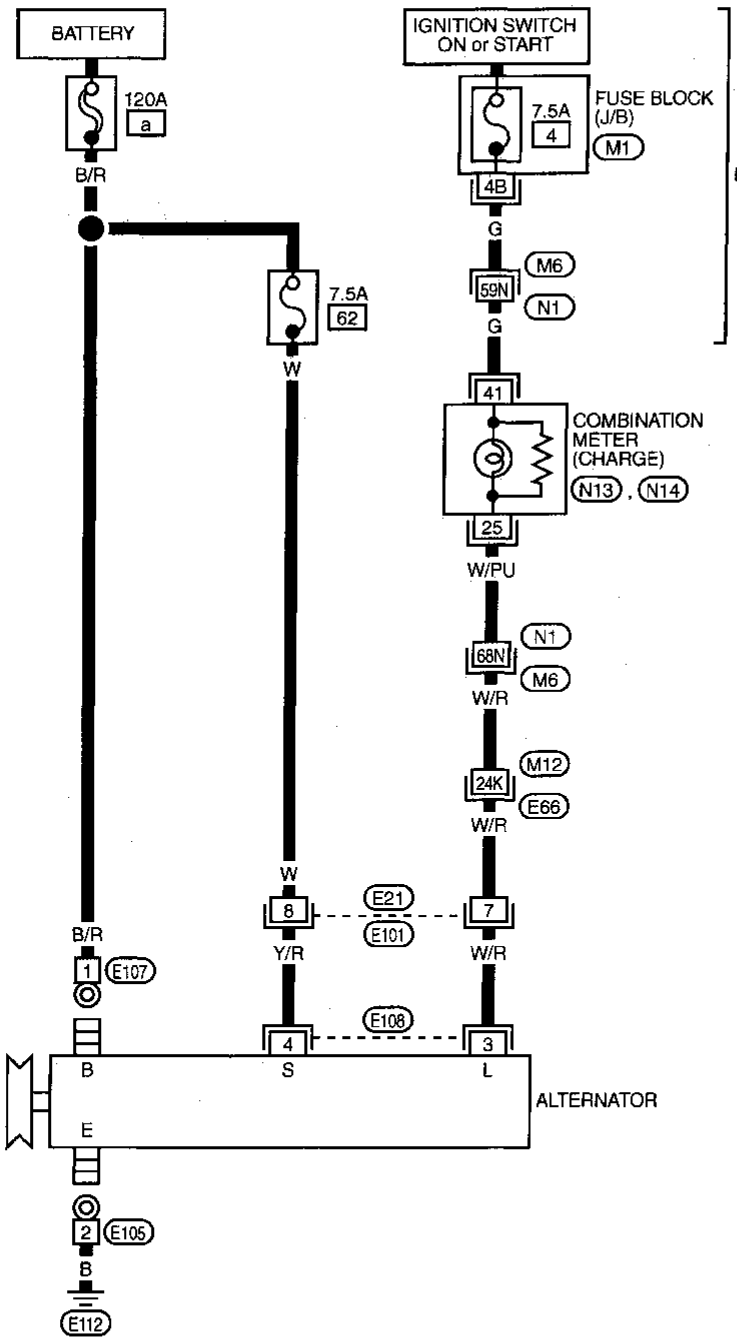
- through 7.5A fuse [No. [4], located in the fuse block (J/B)]
- to combination meter terminal (41) for the charge warning lamp.

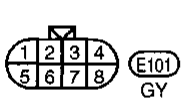
Ground is supplied to terminal (25) of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning lamp will illuminate. When the alternator is providing sufficient voltage with the engine running, the ground is opened and the charge warning lamp will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

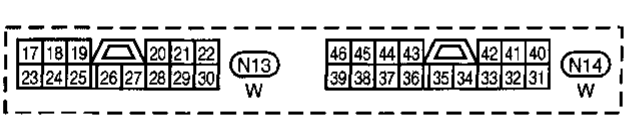
If the charge warning lamp illuminates with the engine running, a fault is indicated.

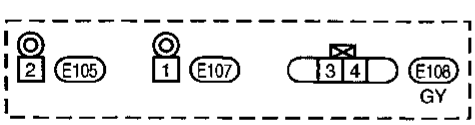
Wiring Diagram — CHARGE —

EL-CHARGE-01









Refer to last page (Foldout page).

E66 , M12

M6 , N1

M1

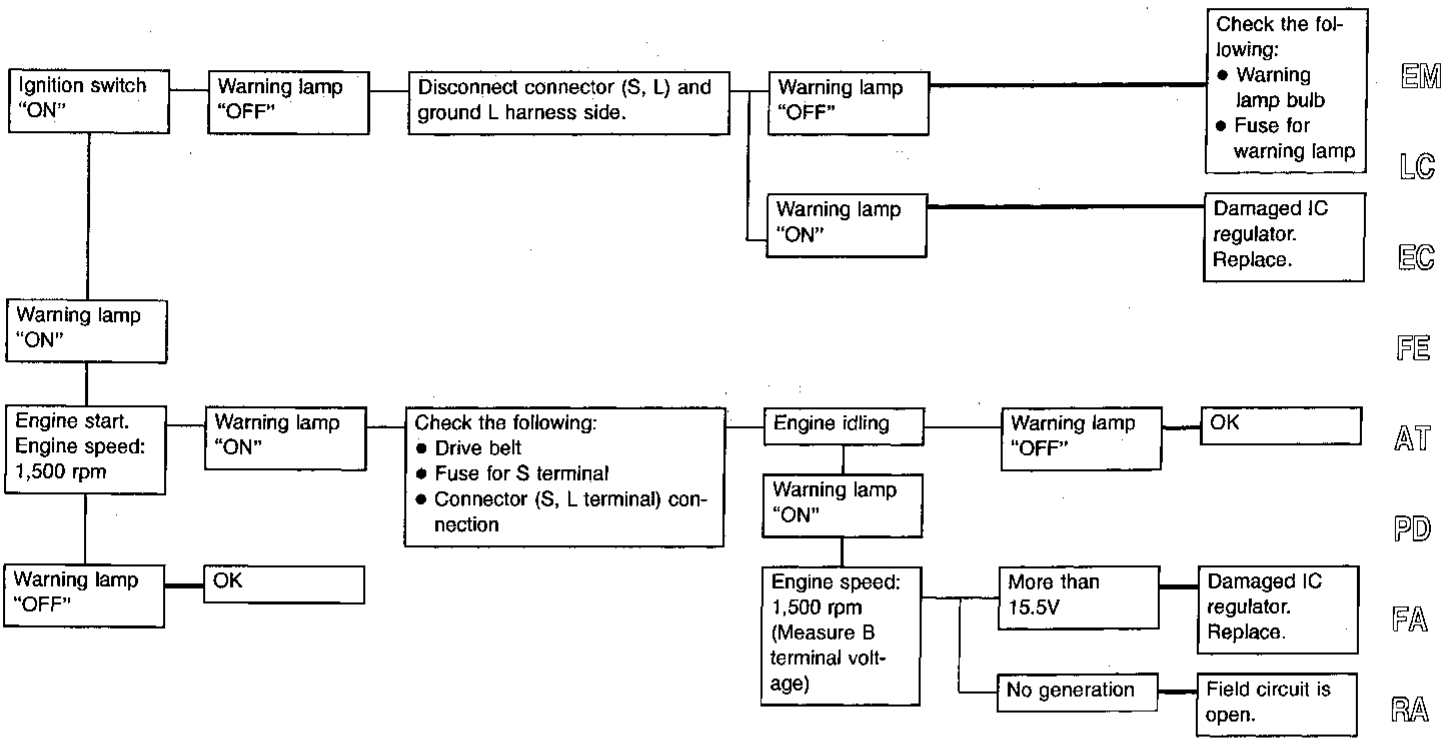
TEL731

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

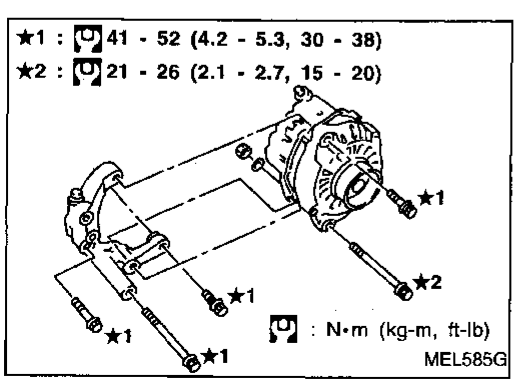
Note:

- **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

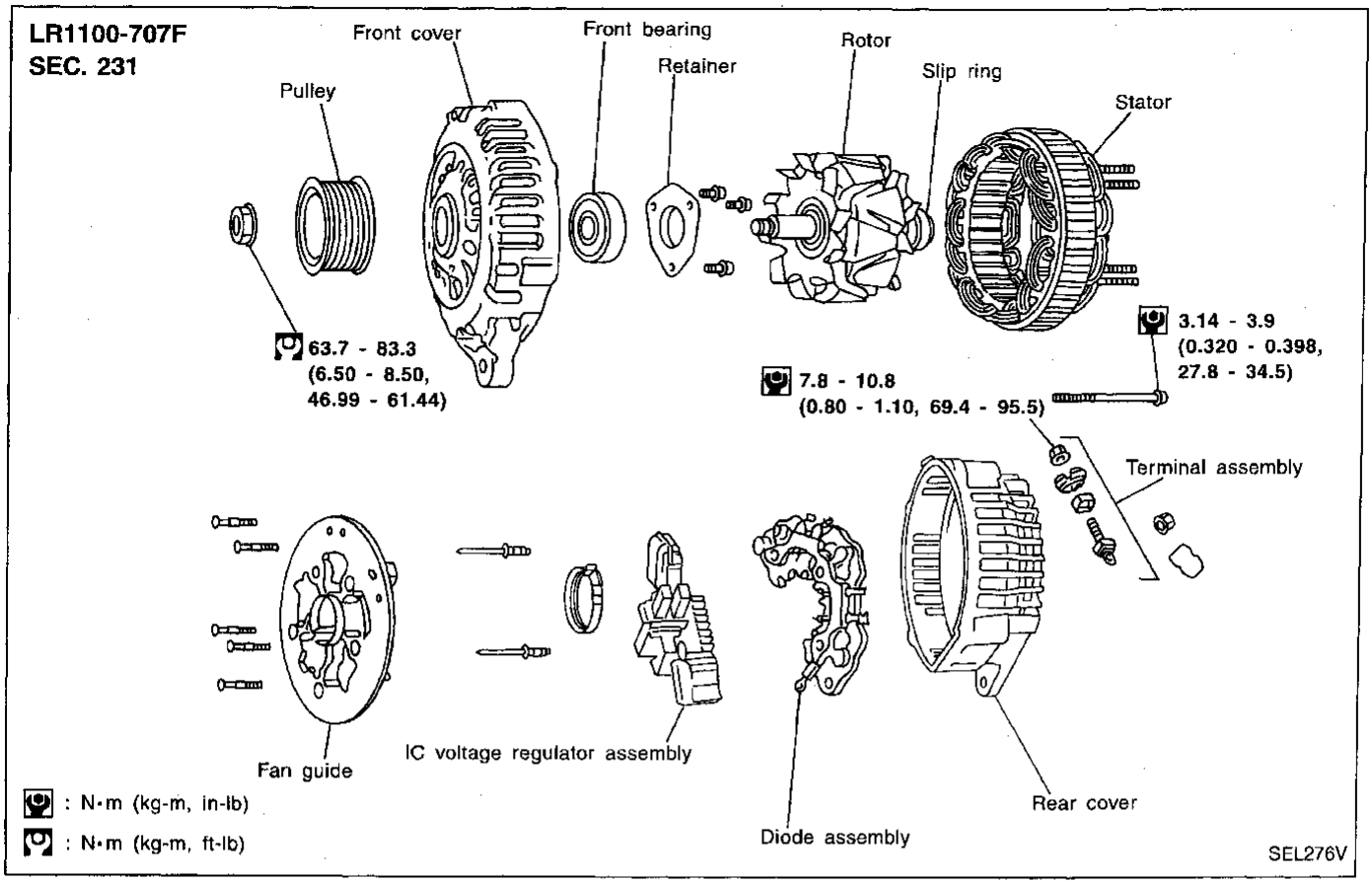
REMOVAL

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

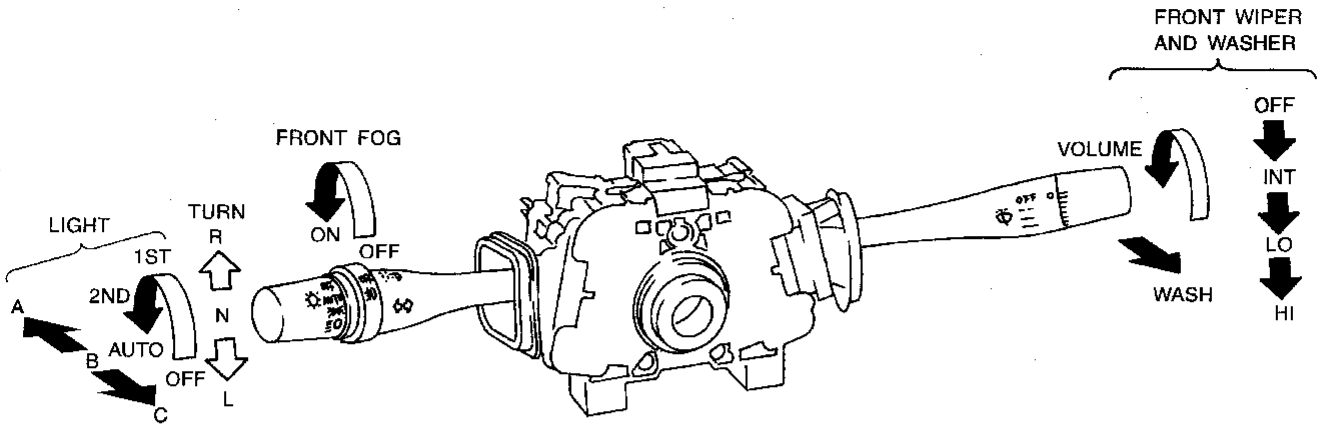


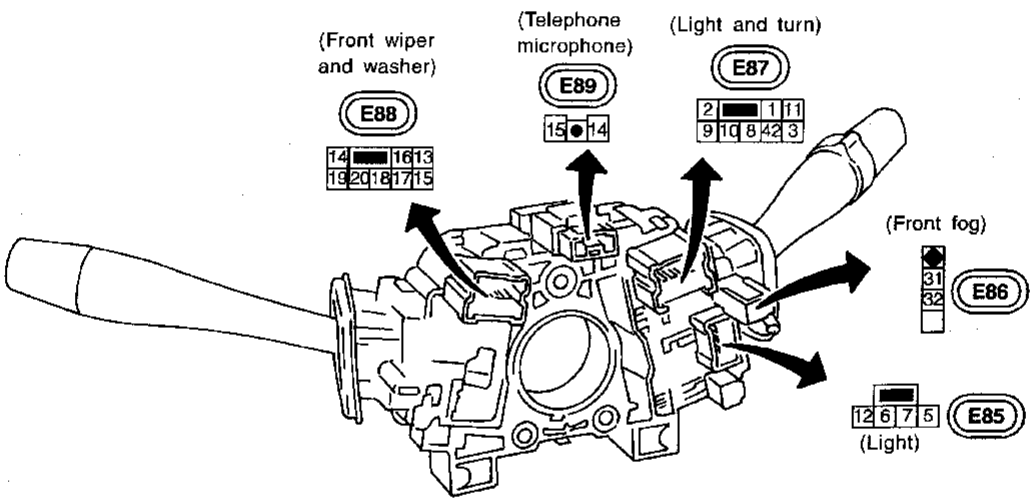
Service Data and Specifications (SDS)

ALTERNATOR

Type		LR1110-707F
		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 1,000
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

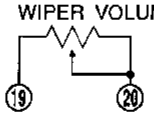




FRONT WIPER SWITCH

	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

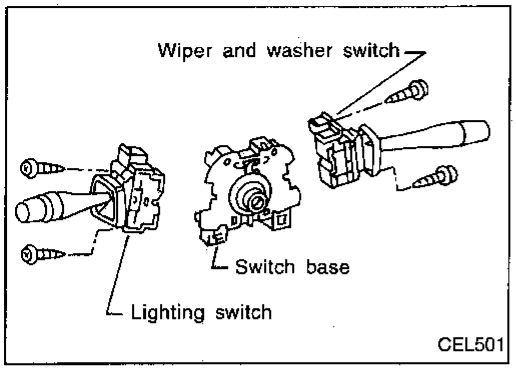
	L	N	R
1	○		○
2			○
3	○		

LIGHTING SWITCH

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

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

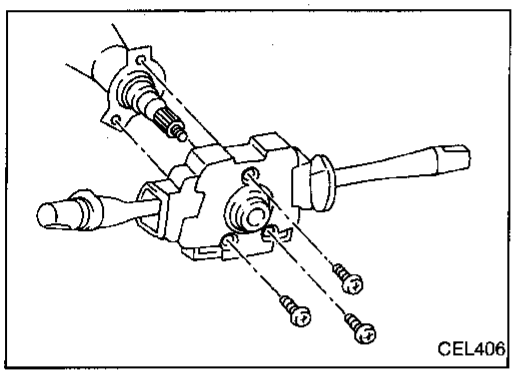
CEL405



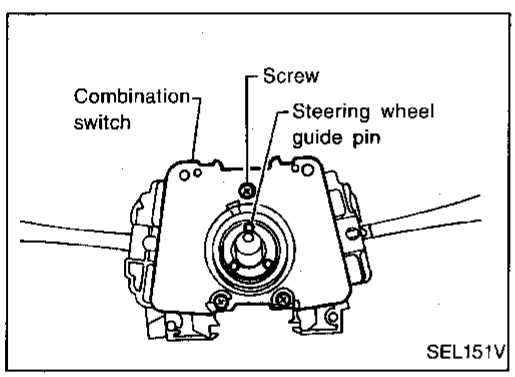
Replacement

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.

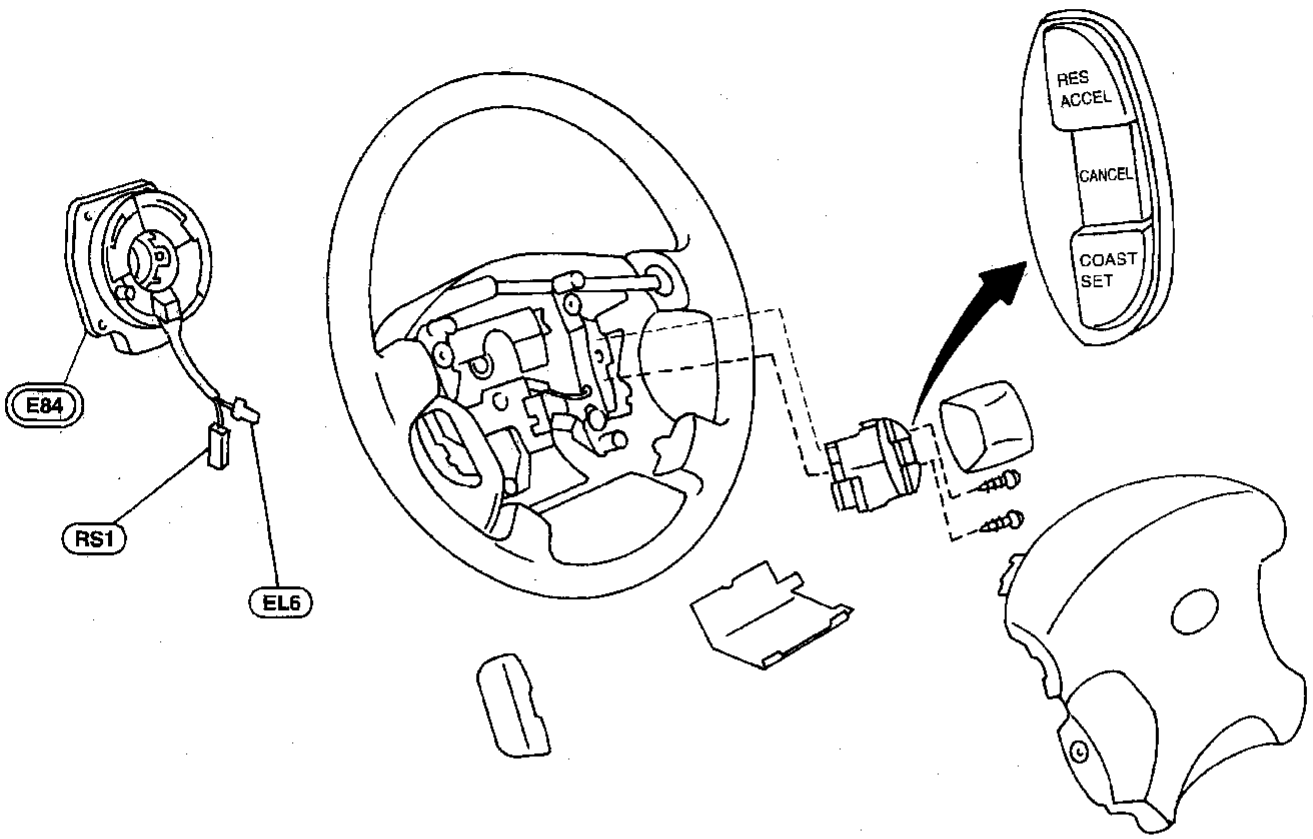


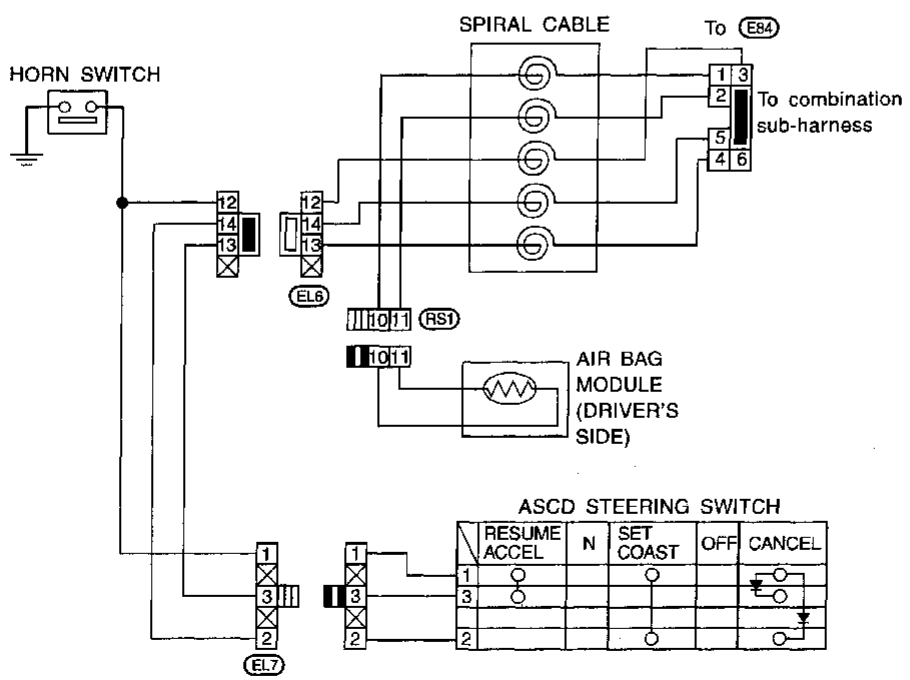
- To remove combination switch base, remove base attaching screw.



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

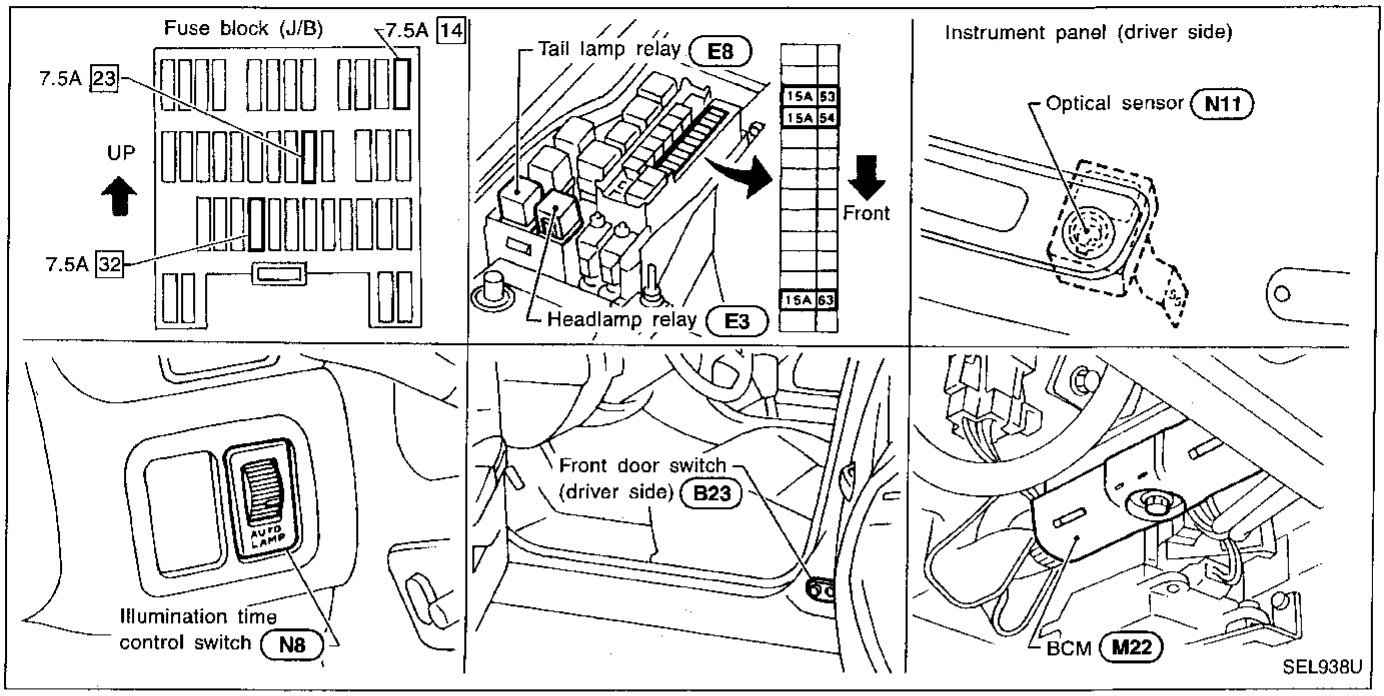
Check





CEL407

Component Parts and Harness Connector Location



System Description (For U.S.A.)

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 (For U.S.A.) (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 ㉞ 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 ㉝
- 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".

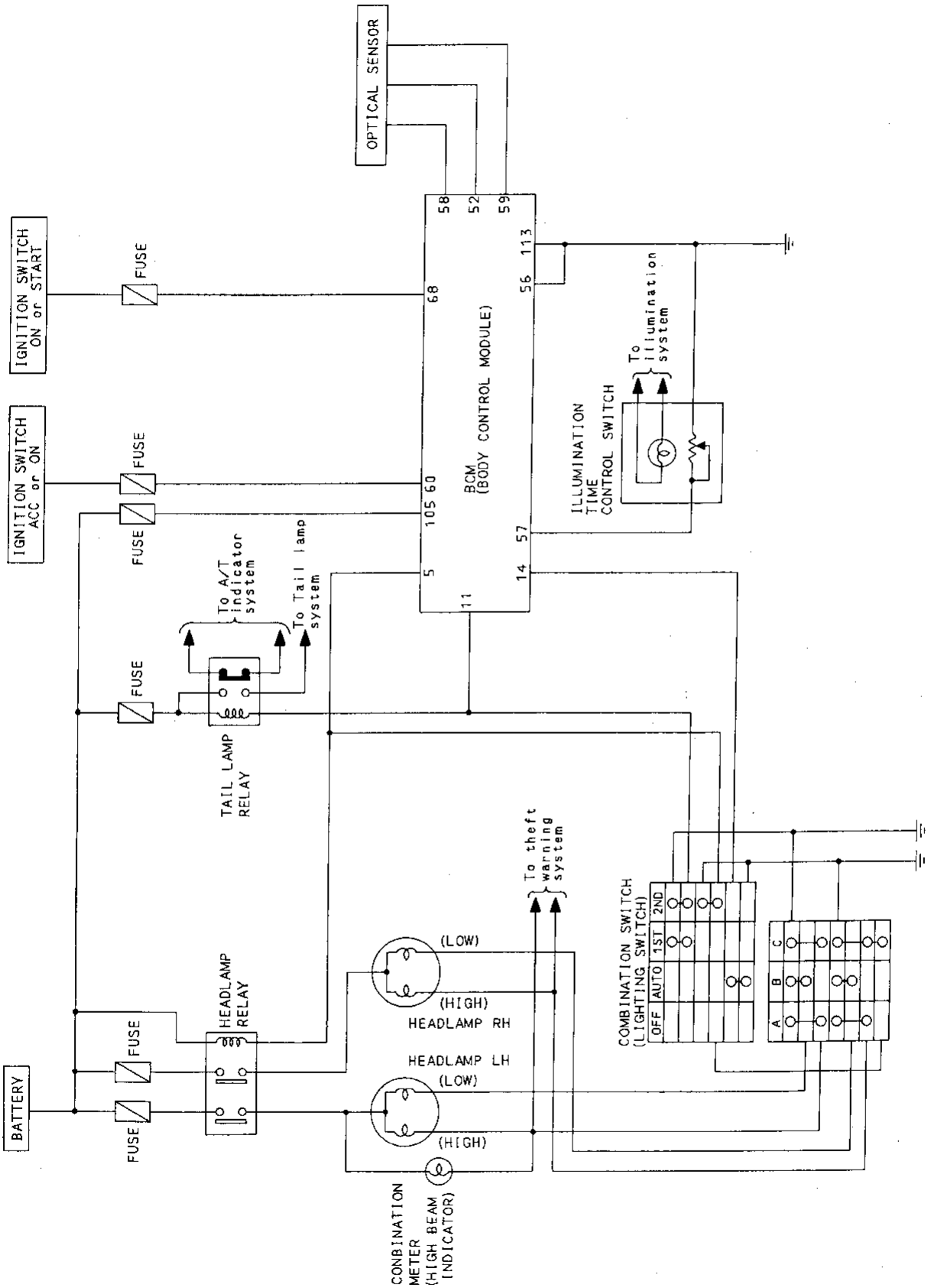
SHUT OFF DELAY

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

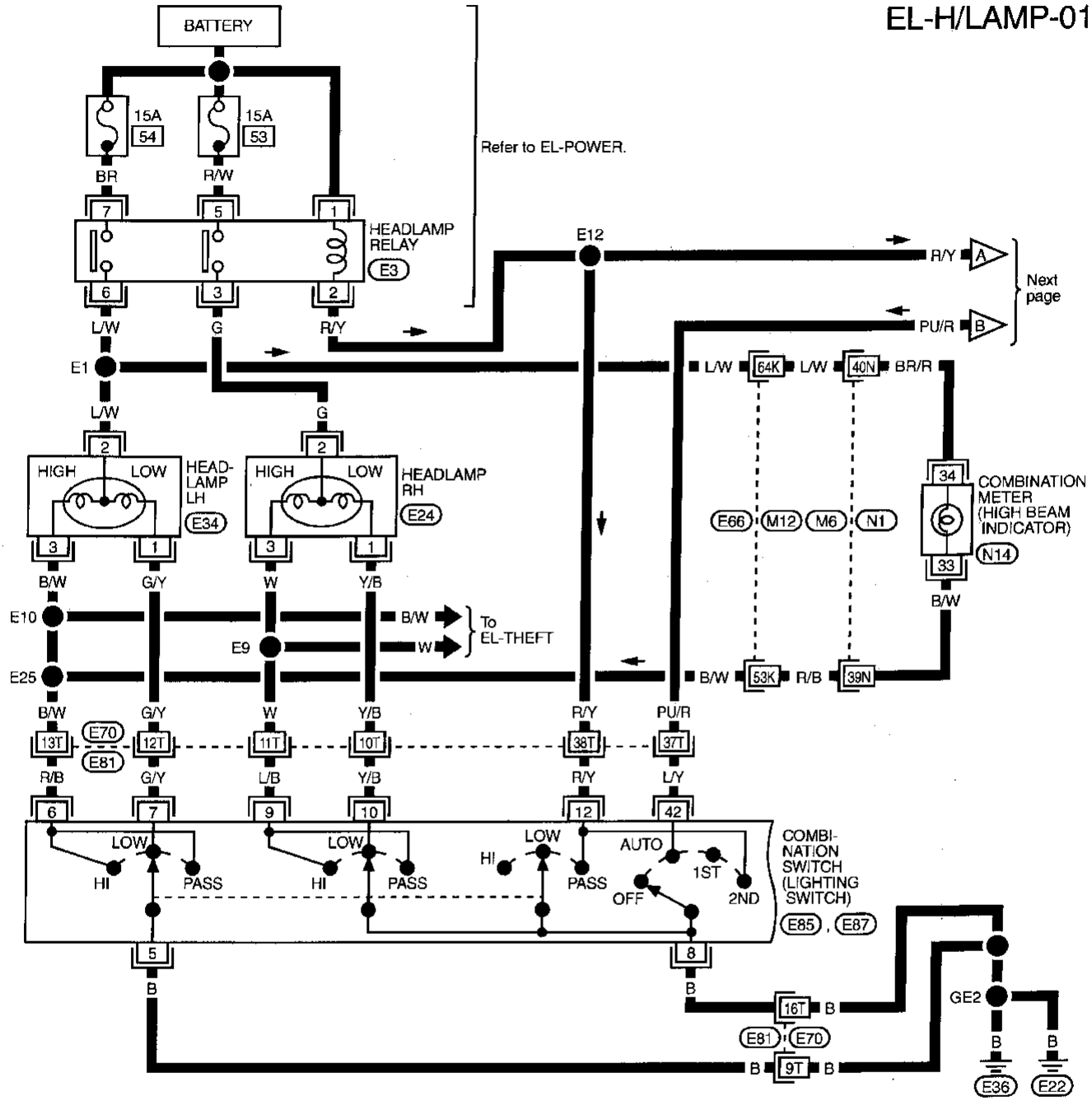
The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS".

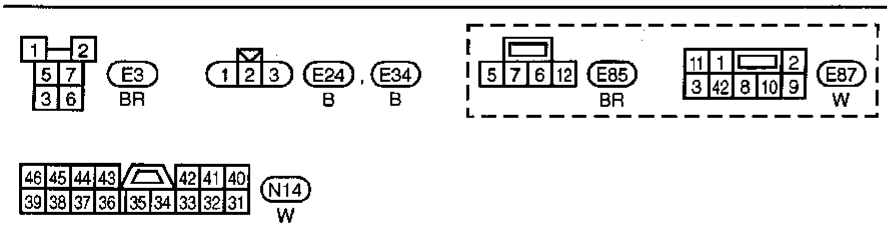
Schematic (For U.S.A.)



TEL732

Wiring Diagram (For U.S.A.) — H/LAMP —



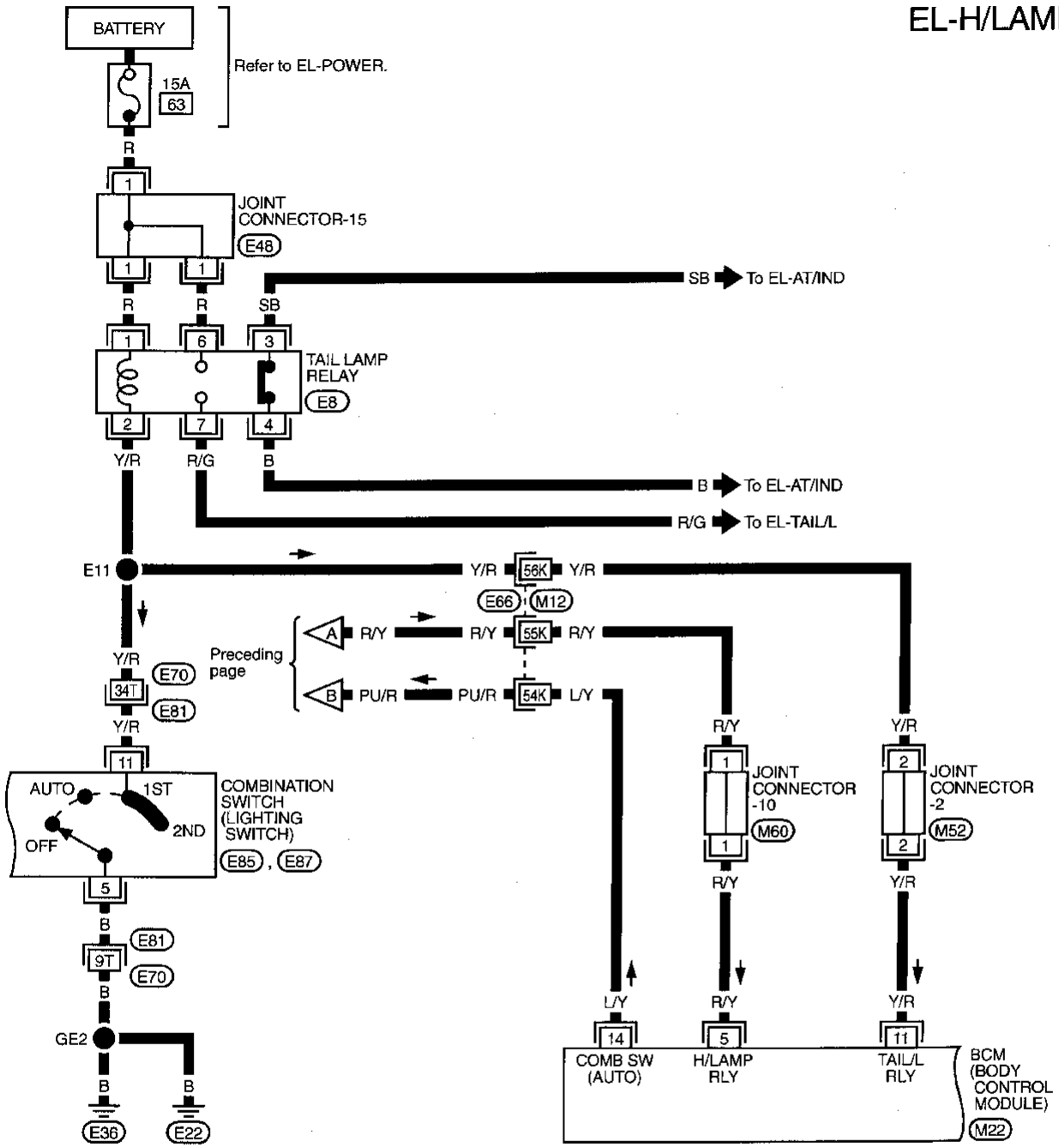


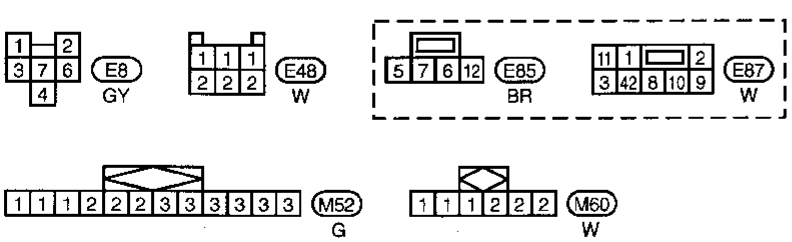
Refer to last page (Foldout page).
E66, M12
E70, E81
M6, N1

TEL733

Wiring Diagram (For U.S.A.) — H/LAMP — (Cont'd)

EL-H/LAMP-02





Refer to last page (Foldout page).

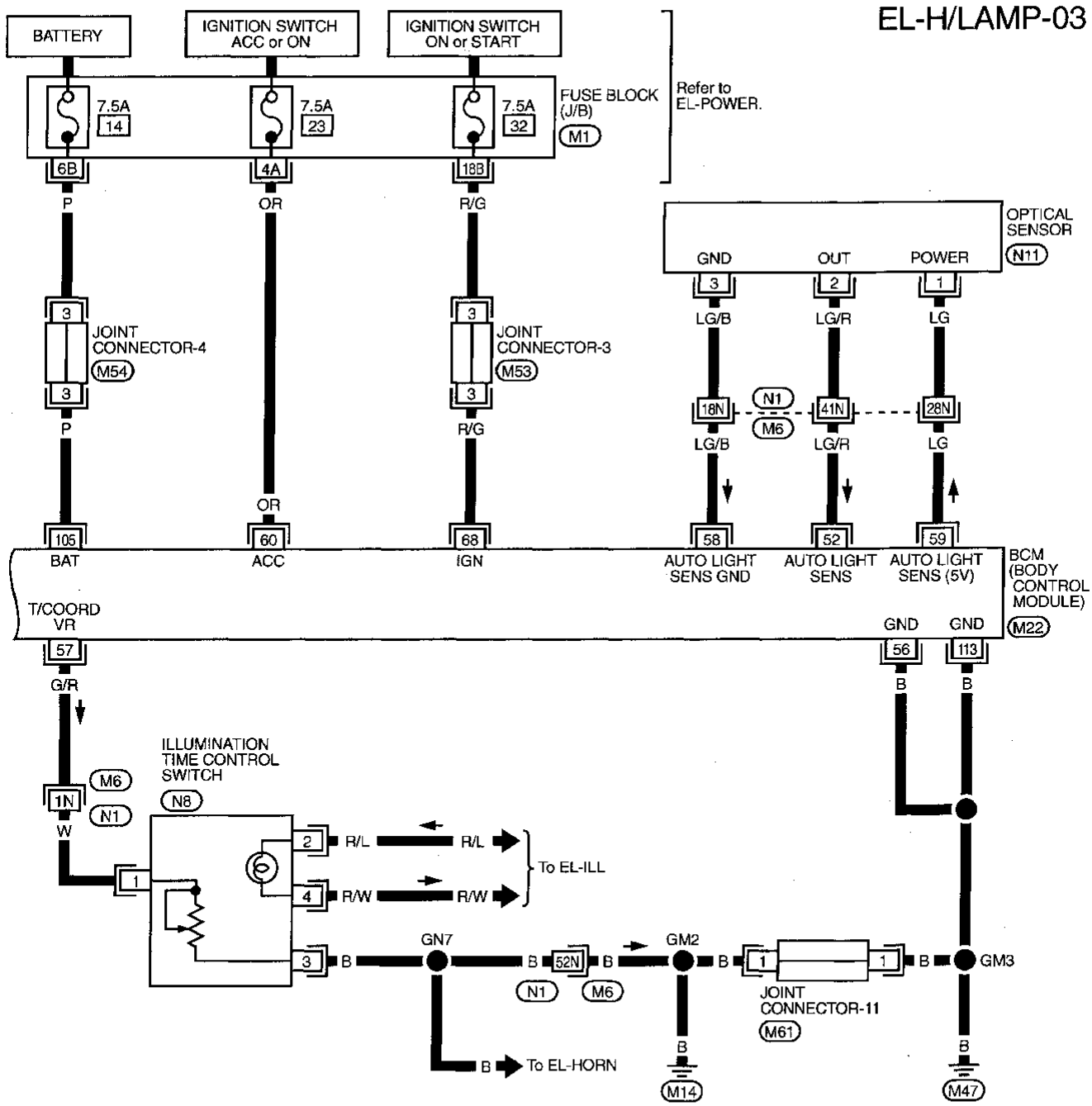
E66 , M12

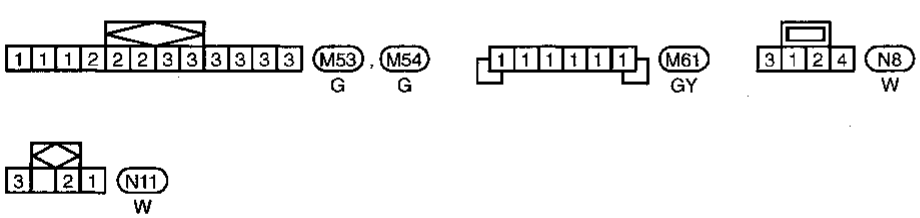
E70 , E81

M22

TEL734

Wiring Diagram (For U.S.A.) — H/LAMP — (Cont'd)

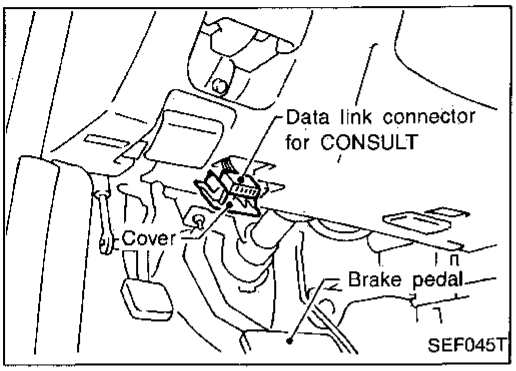




Refer to last page (Foldout page).
M6, N1
M1
M22

TEL180A

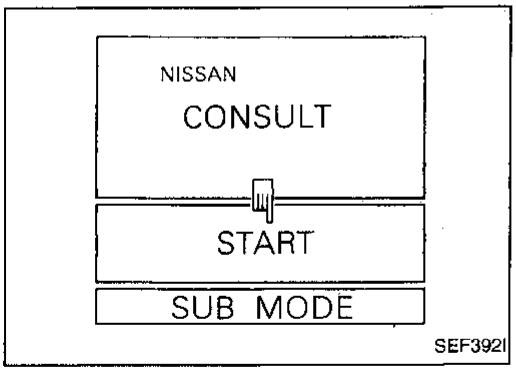
1473



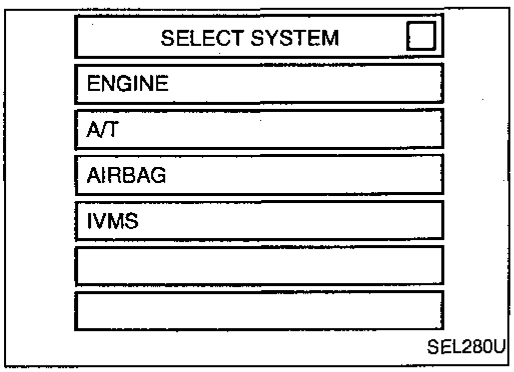
CONSULT (For auto light operation)

CONSULT INSPECTION PROCEDURE

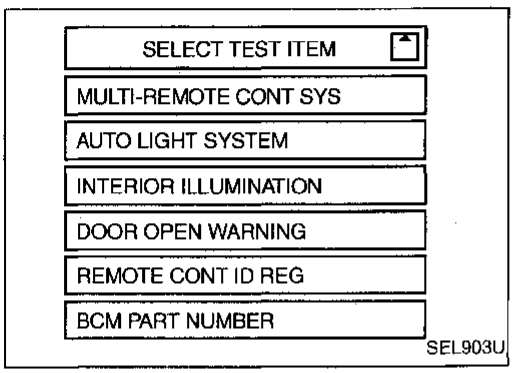
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



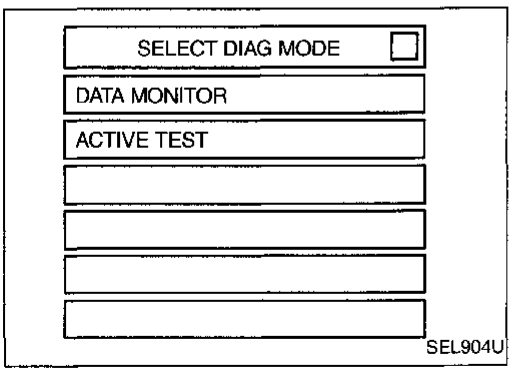
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



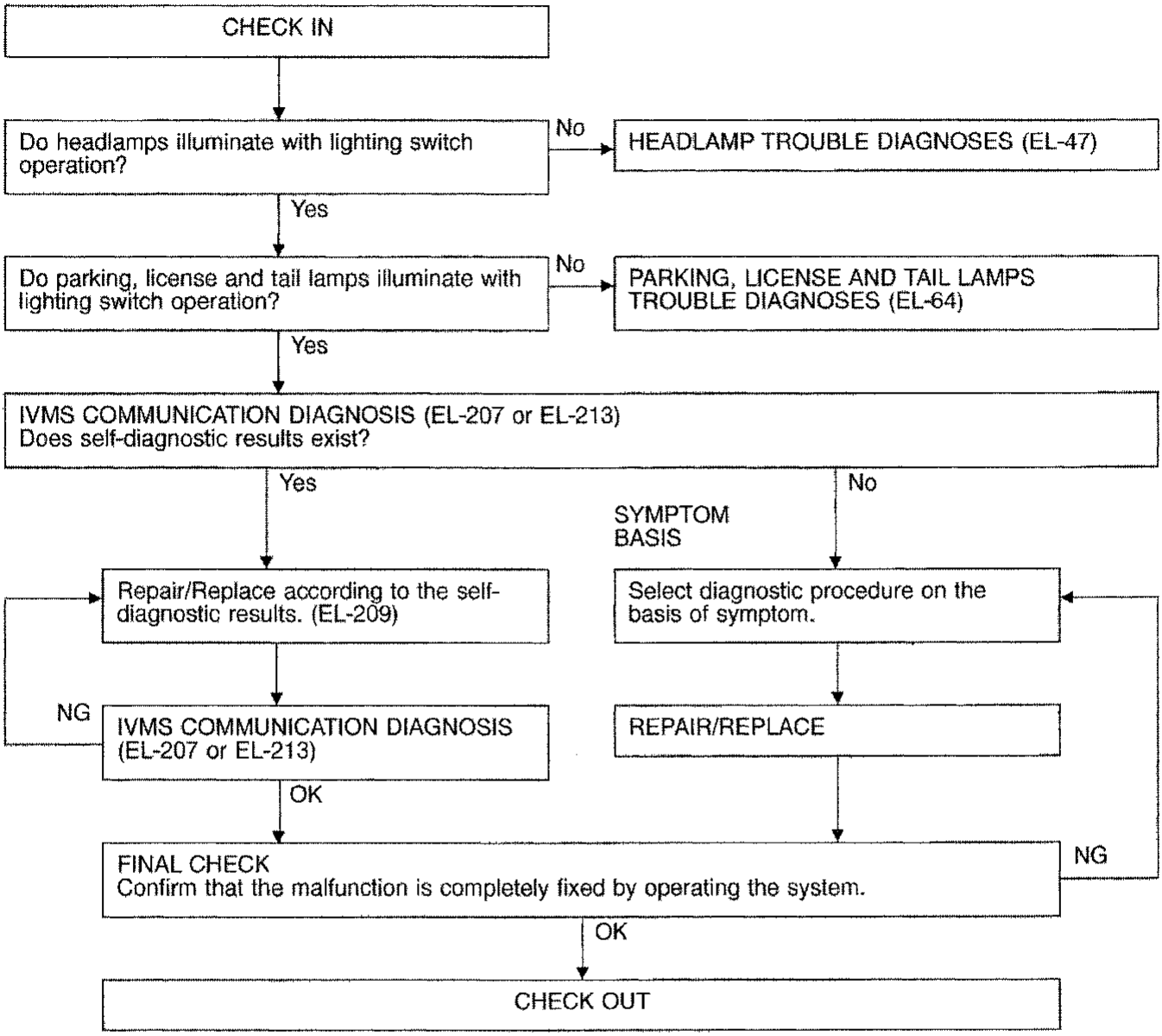
6. Touch "AUTO LIGHT SYSTEM".



- 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 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 (Refer to EL-207.) 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)

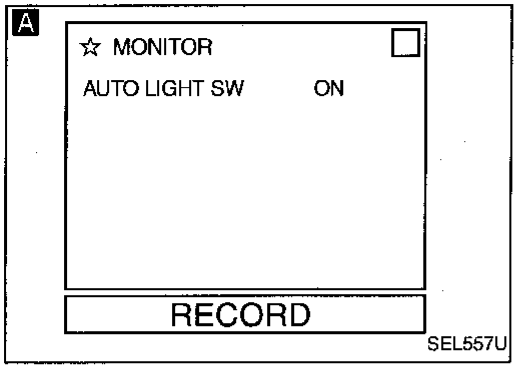
SYMPTOM CHART

PROCEDURE	DIAGNOSTIC PROCEDURE				
REFERENCE PAGE	EL-43	EL-43	EL-44	EL-45	EL-46
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]



CHECK LIGHTING SWITCH (AUTO) INPUT SIGNAL.

A CONSULT

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

— OR —

ON-BOARD

Perform On-board diagnosis — Mode II (Switch monitor) for light switch. Refer to EL-215.

Refer to wiring diagram in EL-38.

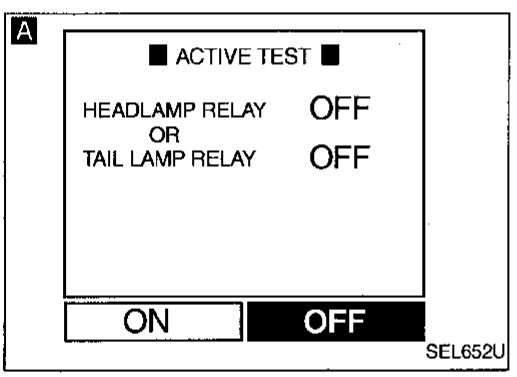
NG → Check the following.
- Lighting switch
- Harness for open or short between BCM and lighting switch
- Ground circuit for lighting switch

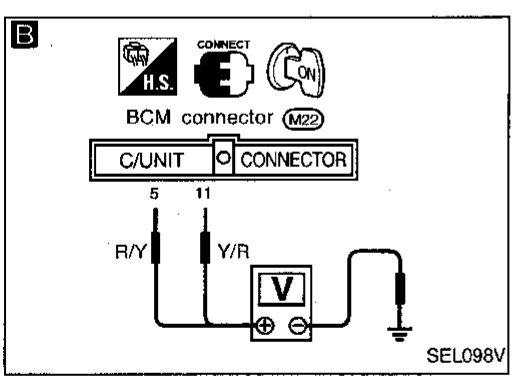
OK ↓

Lighting switch (AUTO) is OK.

DIAGNOSTIC PROCEDURE 2

(Auto light output check)





CHECK AUTO LIGHT OUTPUT SIGNAL/ CIRCUIT.

A CONSULT

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.

— 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-38.

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

OK ↓

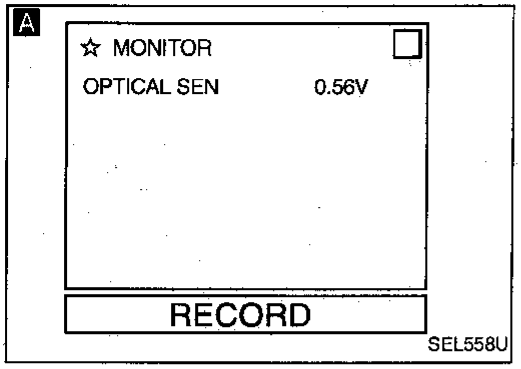
Auto light output is OK.

Trouble Diagnoses/Auto Light Operation (Cont'd)

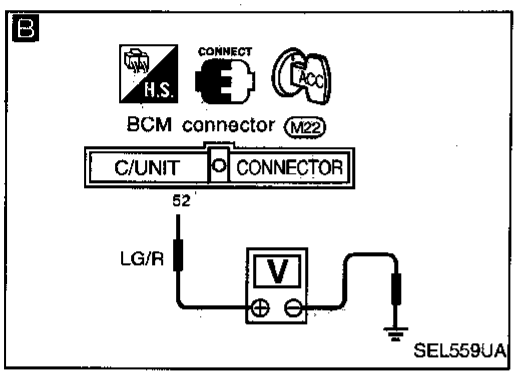
DIAGNOSTIC PROCEDURE 3

(Optical sensor check)

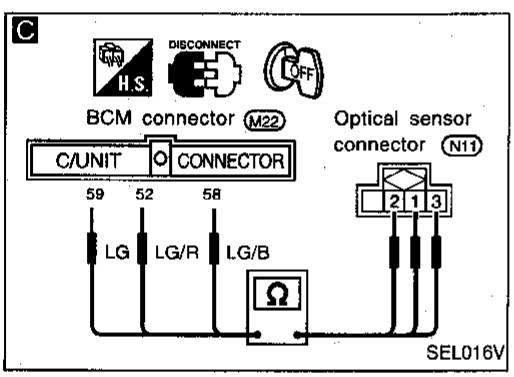
A



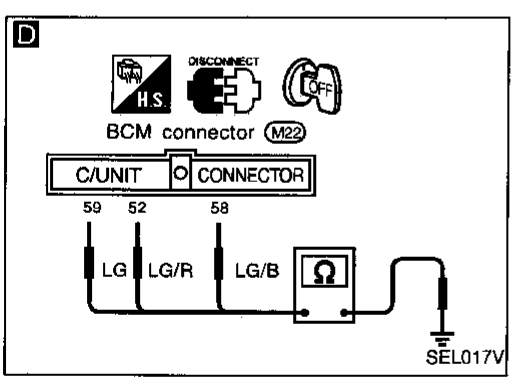
B



C



D



CHECK OPTICAL SENSOR INPUT SIGNAL.

A CONSULT

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 ㊿ 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-39.

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	
㊿	③	Yes
㊾	②	
㊽	①	

NG → Repair harness.

OK ↓

D

CHECK OPTICAL SENSOR SHORT CIRCUIT.

Check harness continuity between BCM connector and body ground.

Terminals	Continuity
㊿ - ground	No
㊾ - ground	
㊽ - ground	

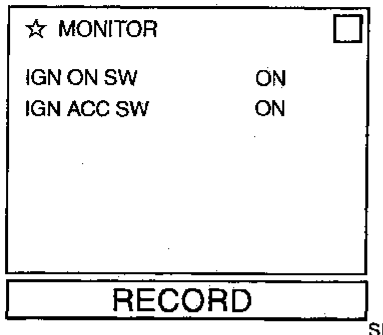
NG → Repair harness.

OK ↓

Replace optical sensor.

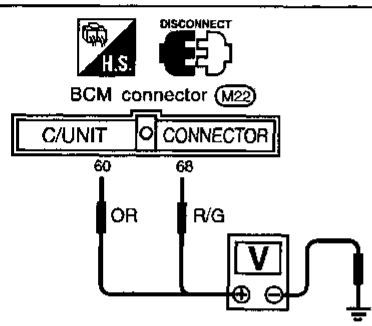
Trouble Diagnoses/Auto Light Operation (Cont'd)

A



SEL922U

B



SEL642UA

DIAGNOSTIC PROCEDURE 4

(ACC and IGN input signal check)

CHECK ACC AND IGN INPUT SIGNAL.

A CONSULT

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-39.

OK ↓

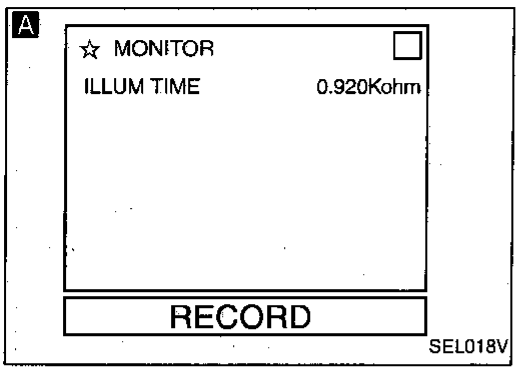
ACC and IGN input signal is OK.

Trouble Diagnoses/Auto Light Operation (Cont'd)

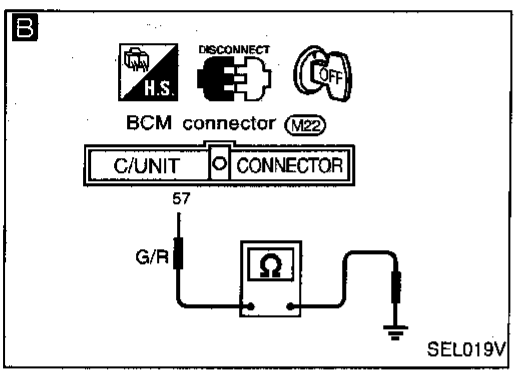
DIAGNOSTIC PROCEDURE 5

(Illumination time control switch check)

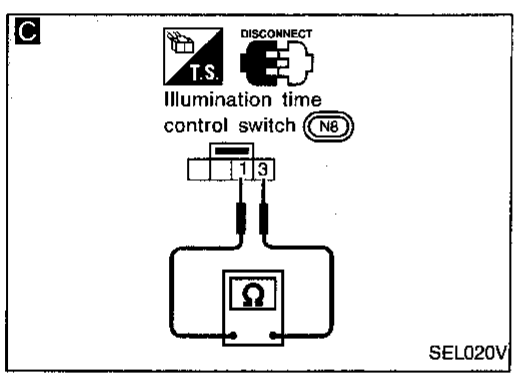
A



B



C



CHECK ILLUMINATION TIME CONTROL SWITCH INPUT SIGNAL.

A CONSULT

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

OR

B TESTER

1. Disconnect BCM connector.
2. Check resistance between BCM terminal ⑰ and ground.

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

Refer to wiring diagram in EL-39.

OK → Illumination time control switch is OK.

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

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 ㉞ of combination meter, when high beam illuminates.

Daytime Light System/System Description (For Canada)

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 ㉞ 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.

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 ㉝ 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.

Daytime Light System/System Description (For Canada) (Cont'd)

AUTO LIGHT OPERATION

For auto light operation, refer to "HEADLAMP" (EL-34).

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.

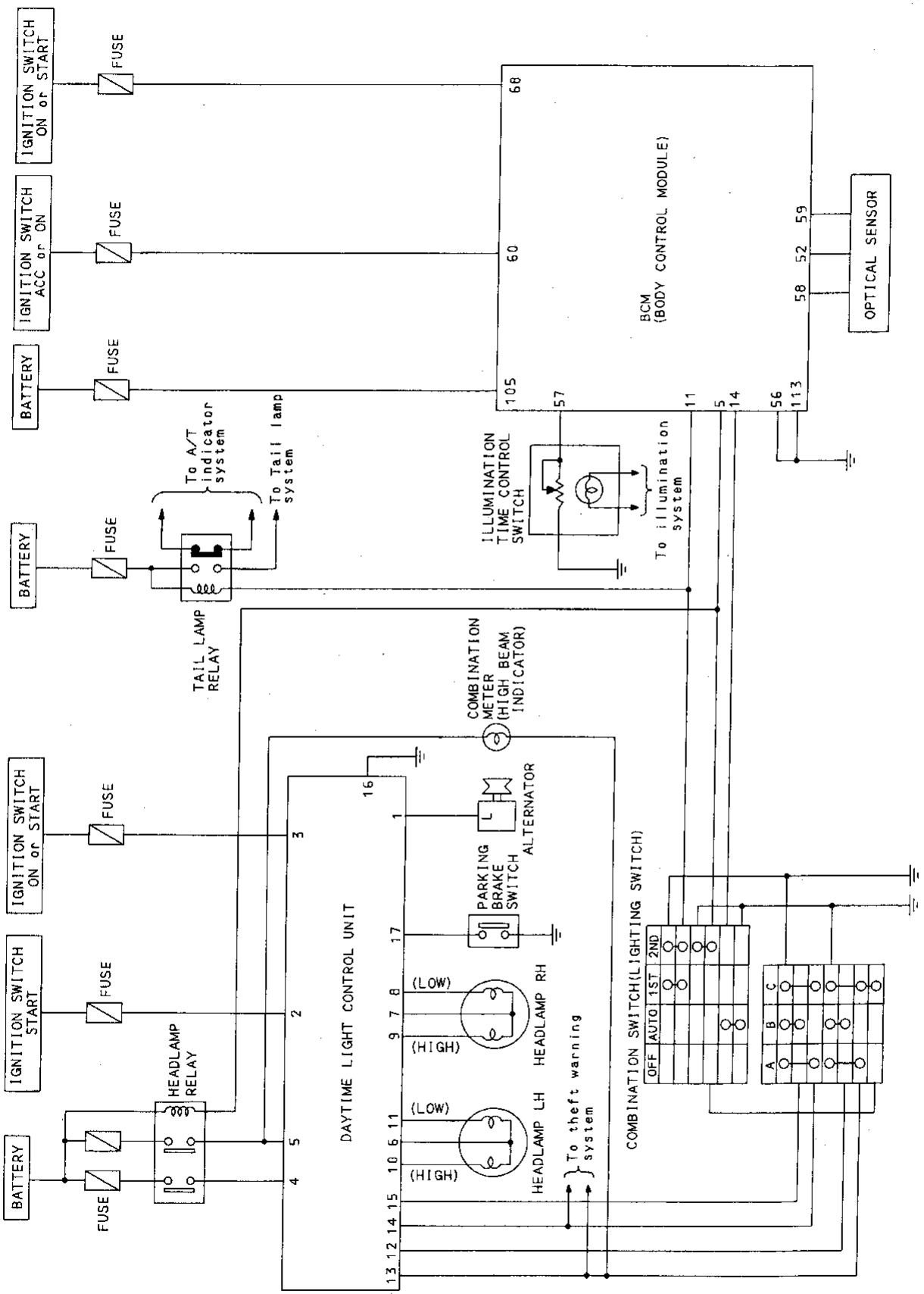
Operation (Daytime light system for Canada)

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	○	○	○	○	○	○

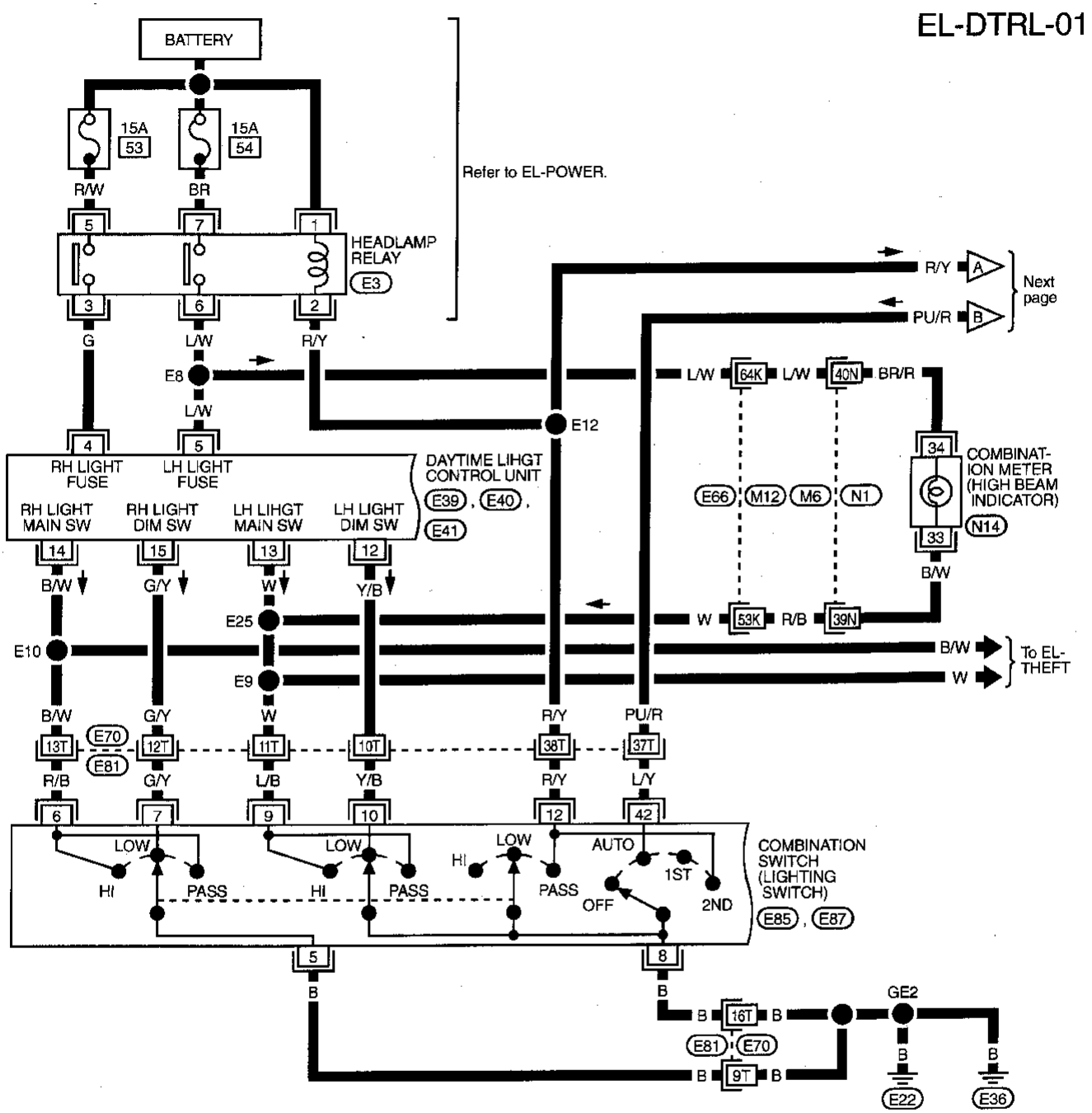
○ : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
□ : Added functions
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won't come ON.

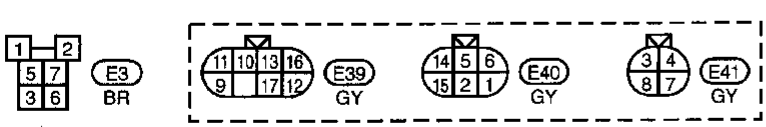
Schematic (For Canada)

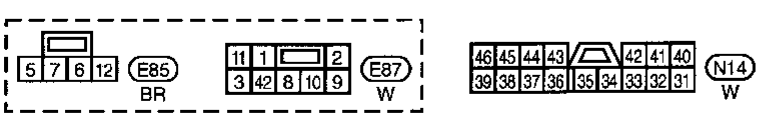


TEL736

Wiring Diagram (For Canada) — DTRL —







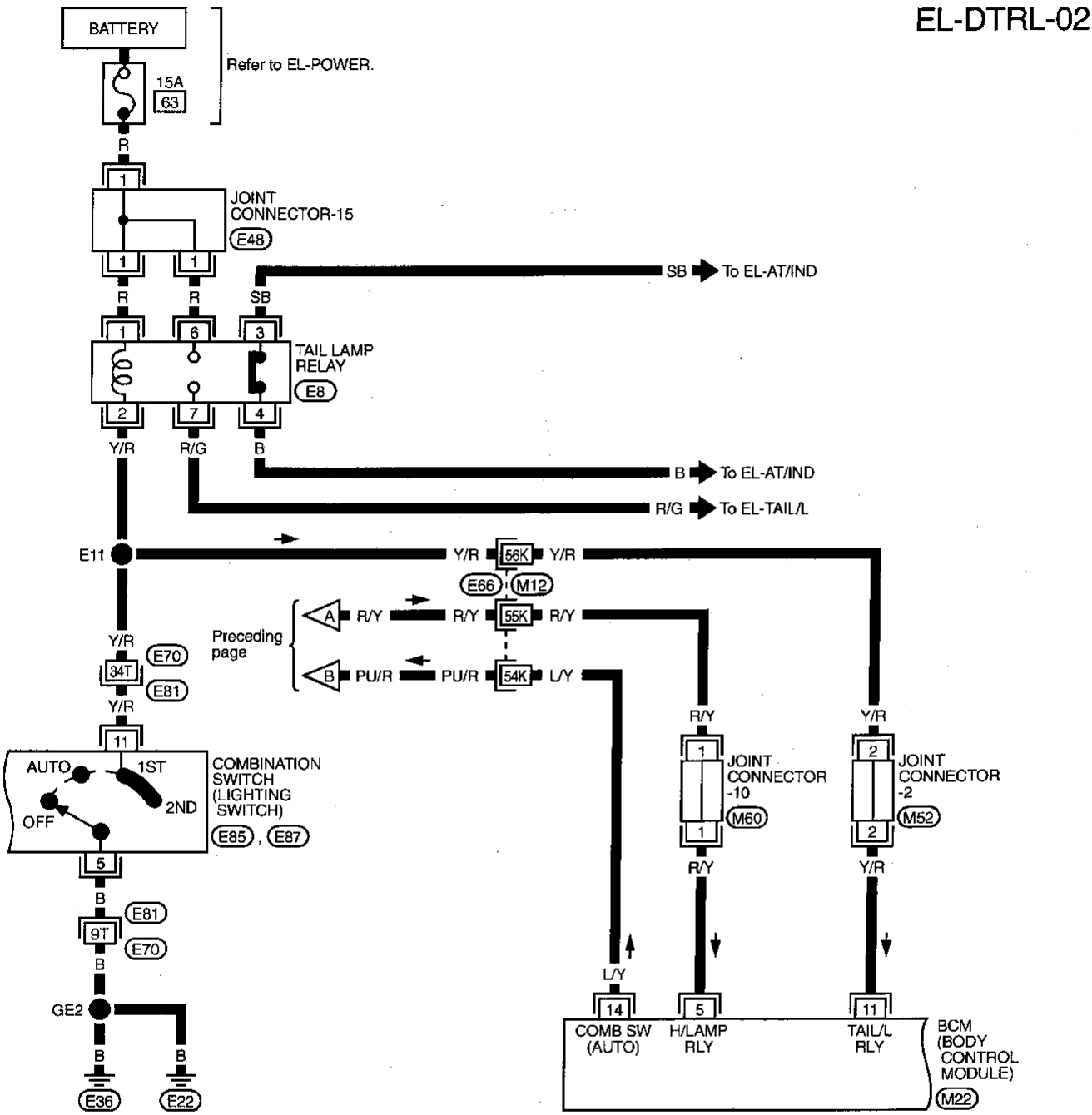
Refer to last page (Foldout page).

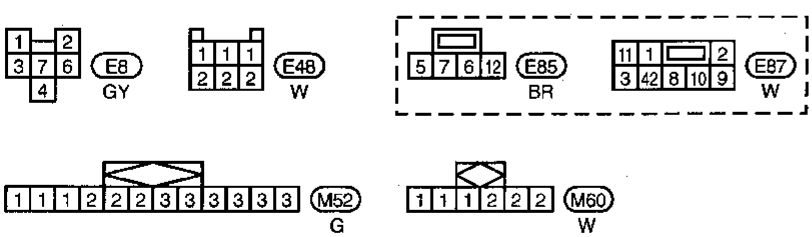
E66, M12
E70, E81
M6, N1

TEL181A

Wiring Diagram (For Canada) — DTRL — (Cont'd)

EL-DTRL-02





Refer to last page (Foldout page).

E66 , M12

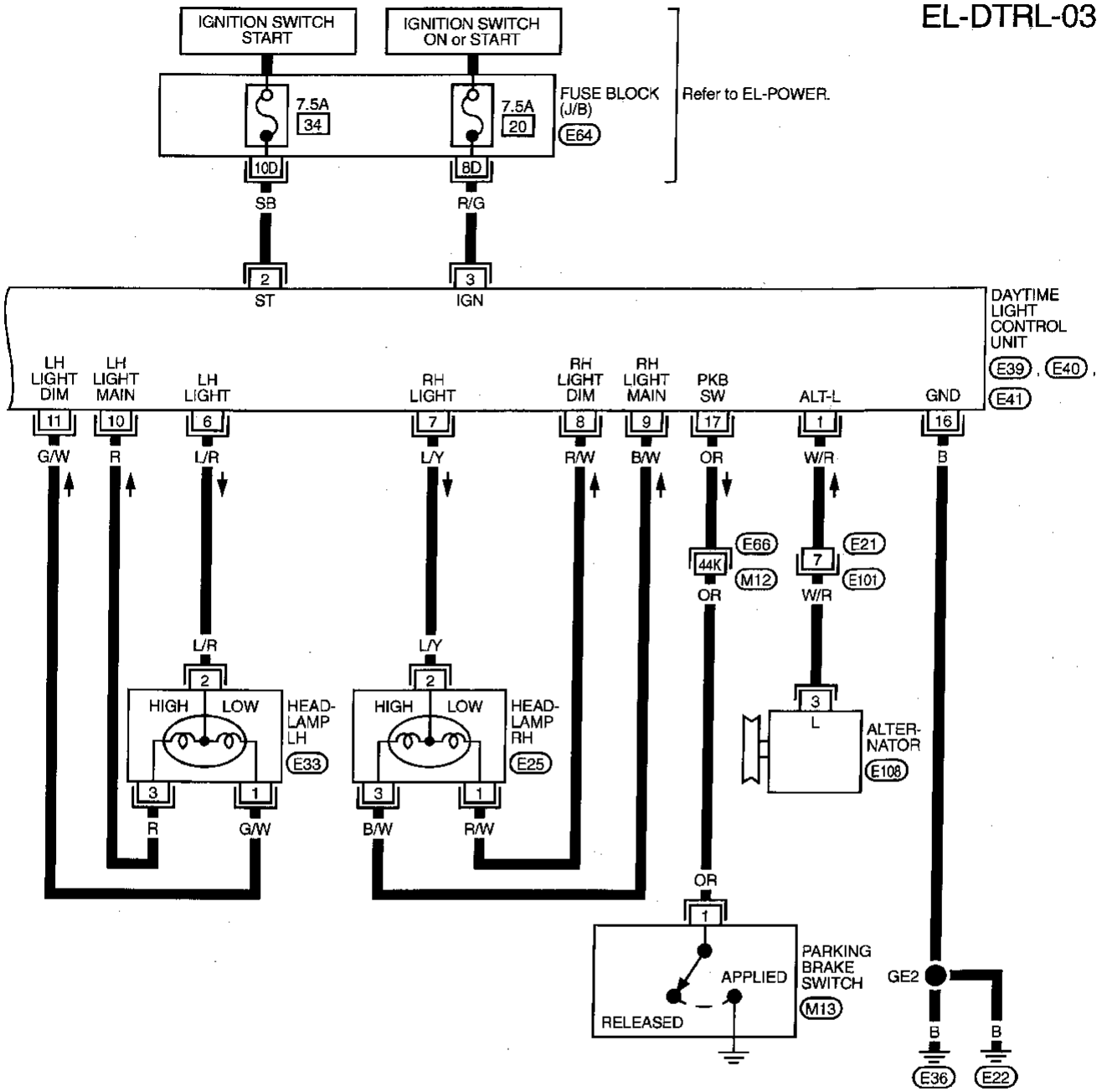
E70 , E81

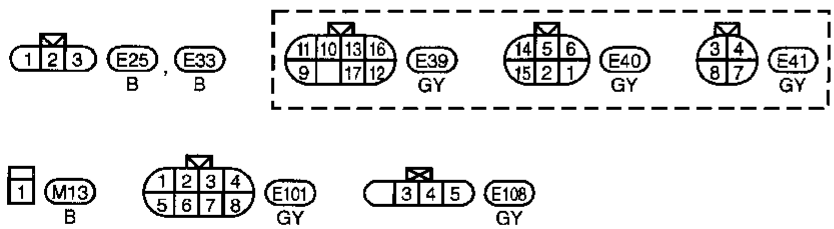
M22

TEL738

Wiring Diagram (For Canada) — DTRL — (Cont'd)

EL-DTRL-03



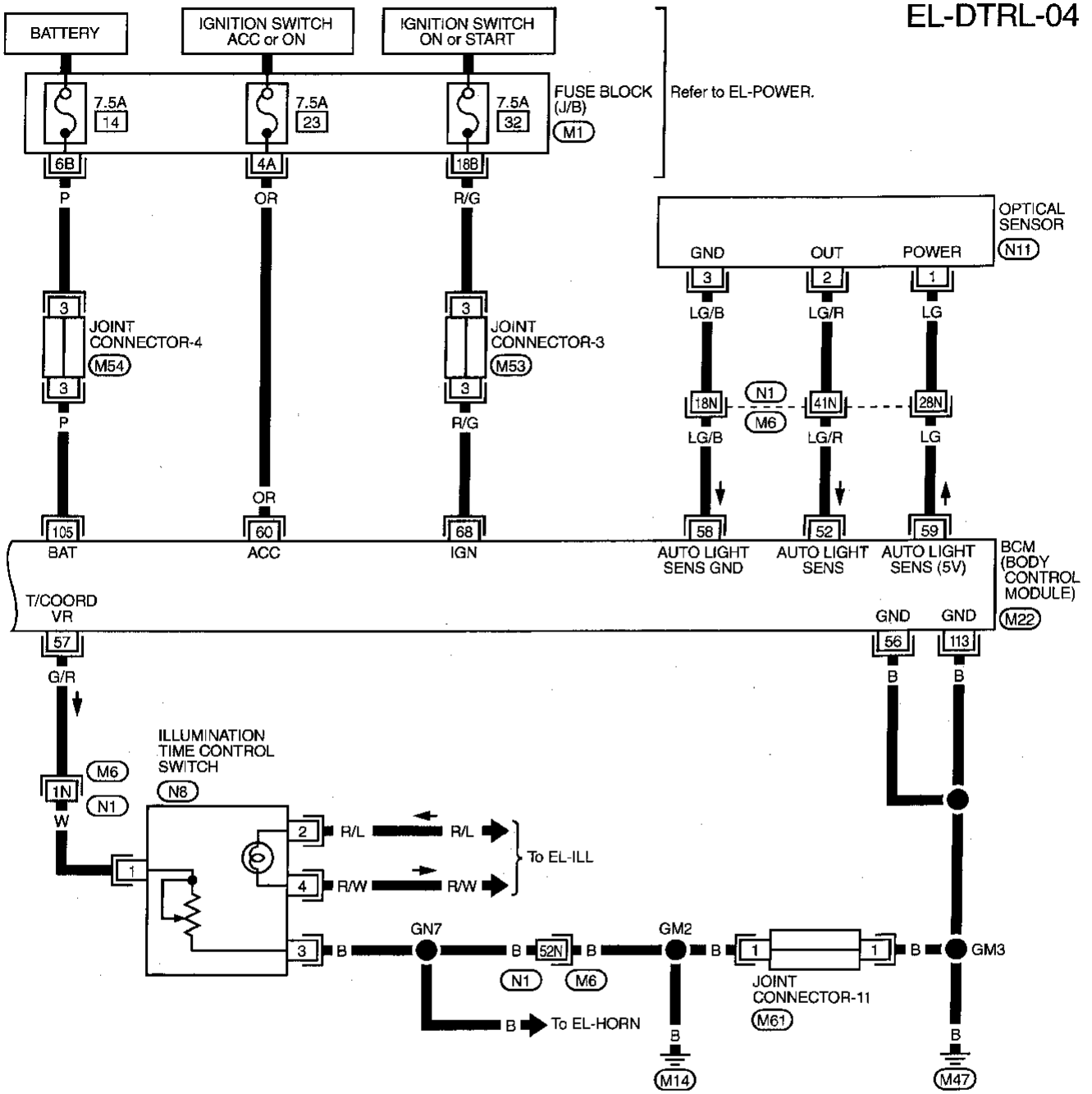


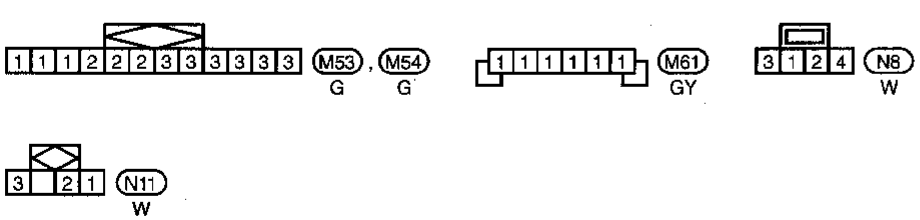
Refer to last page (Foldout page).
E66, M12
E64

TEL182A

Wiring Diagram (For Canada) — DTRL — (Cont'd)

EL-DTRL-04





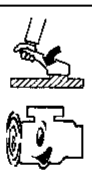
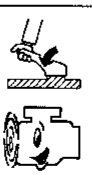
Refer to last page (Foldout page).
M6, N1
M1
M22

TEL183A

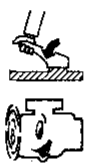
Trouble Diagnoses (For Canada)

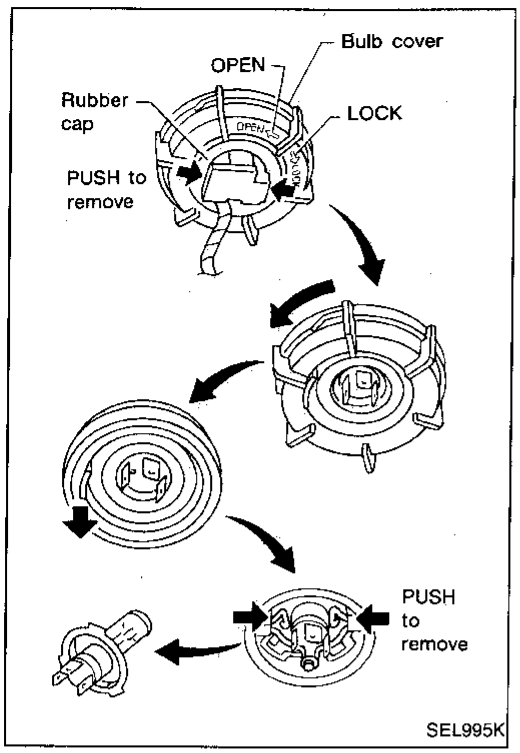
DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Item	Condition		Judgement standard
1	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	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	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	Power source		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
			Except the above	1V or less
5	Power source		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
			Except the above	Less than 1V
6	LH headlamp control (ground)		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	RH headlamp control (ground)		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 (For Canada) (Cont'd)

Terminal No.	Item	Condition		Judgement standard
8	RH low beam		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
9	RH high beam		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	LH high beam		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	LH low beam		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
12	Lighting switch (LH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
13	Lighting switch (LH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
14	Lighting switch (RH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
15	Lighting switch (RH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
16	Ground		—	—
17	Parking brake switch		When parking brake is released	Battery voltage
			When parking brake is set	Less than 1.5V



Bulb Replacement

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

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

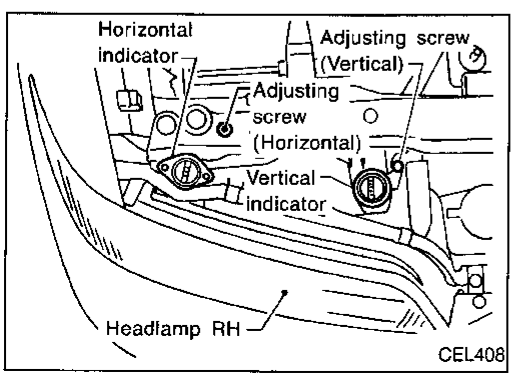
Aiming Adjustment

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

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

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

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).

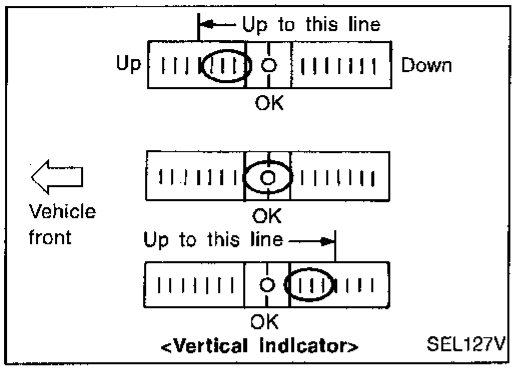


Before performing aiming adjustment, make sure of the following.

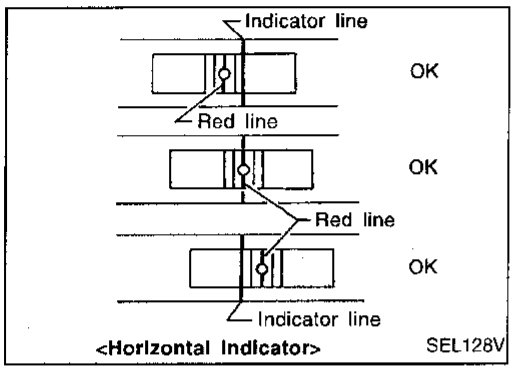
a. Keep all tires inflated to correct pressure.
b. Place vehicle on level ground.
c. See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.

Aiming Adjustment (Cont'd)

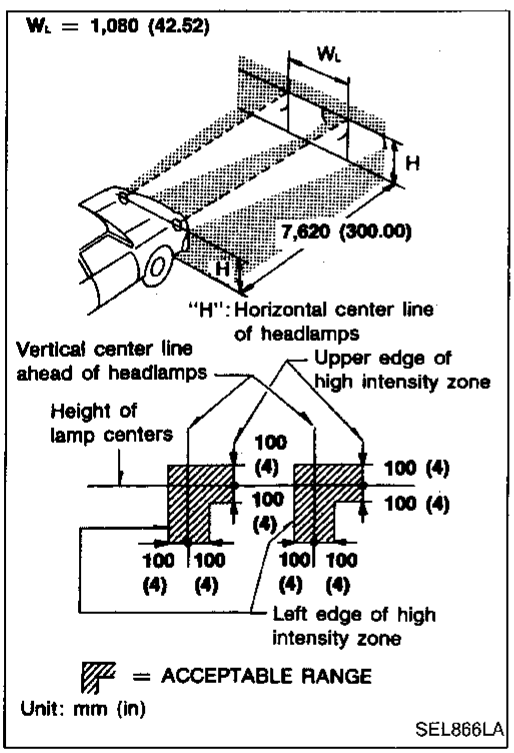
LOW BEAM



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

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.

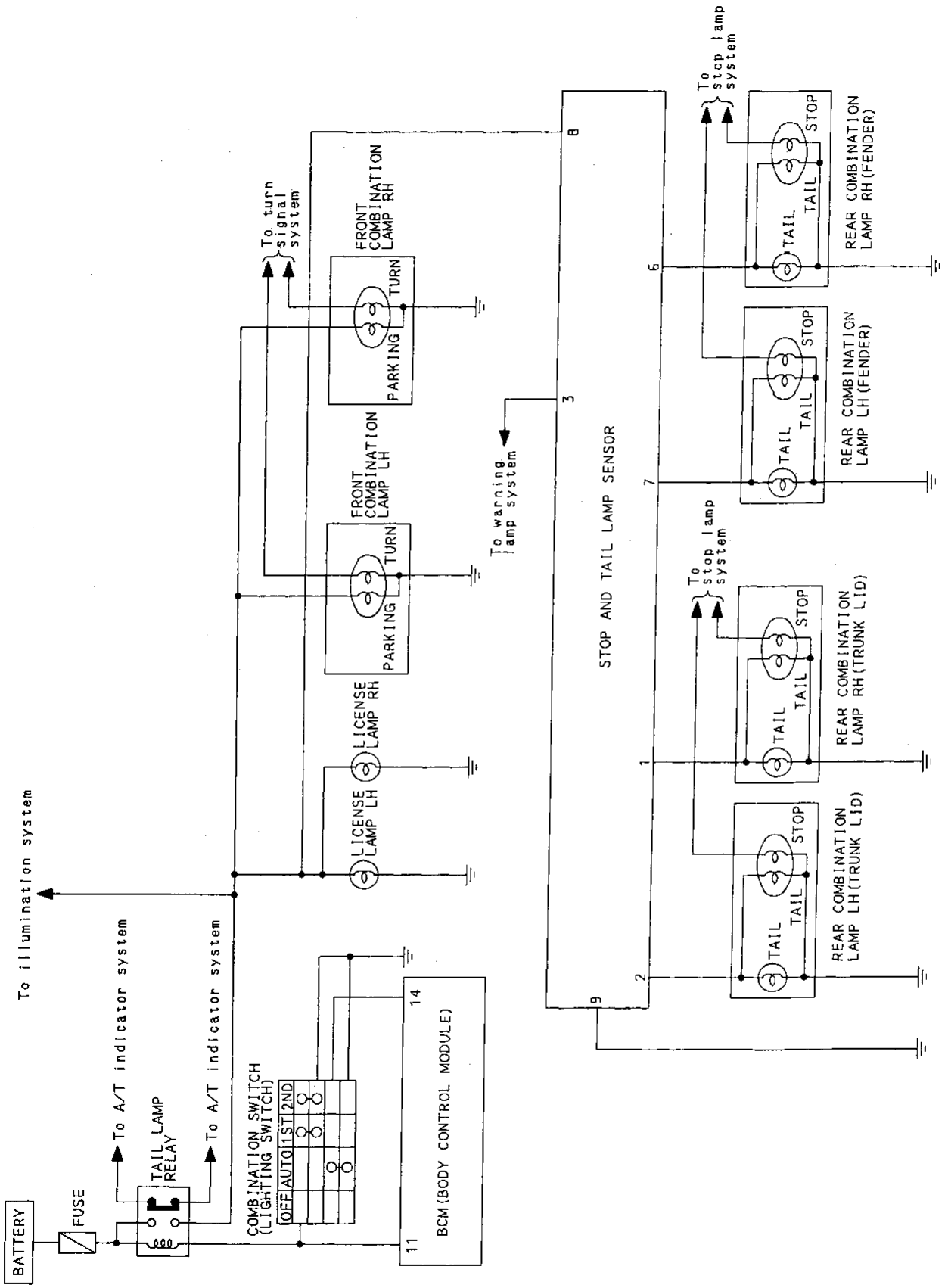
When ignition switch is set to ON or START and outside is darker than the prescribed level, ground is supplied
- to tail lamp relay terminal ②
- from the BCM terminal ⑪.

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

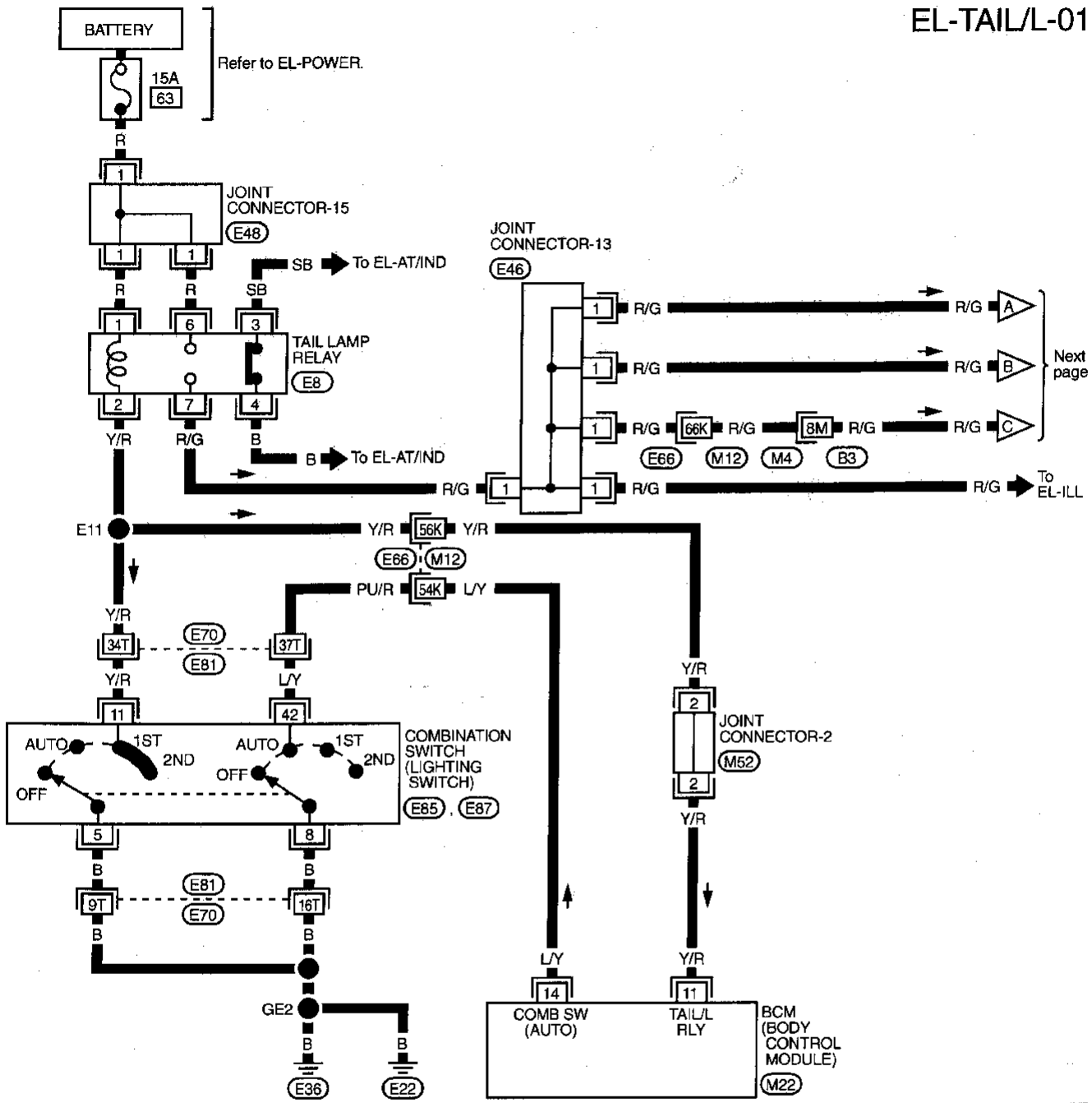
When one of the stop lamp bulbs is burned out with the stop lamp switch depressed, or one of the tail bulbs is burned out with the lighting switch in the 1ST or 2ND position, the tail and stop warning lamp illuminate. For details, refer to "WARNING LAMPS" (EL-95).

Schematic



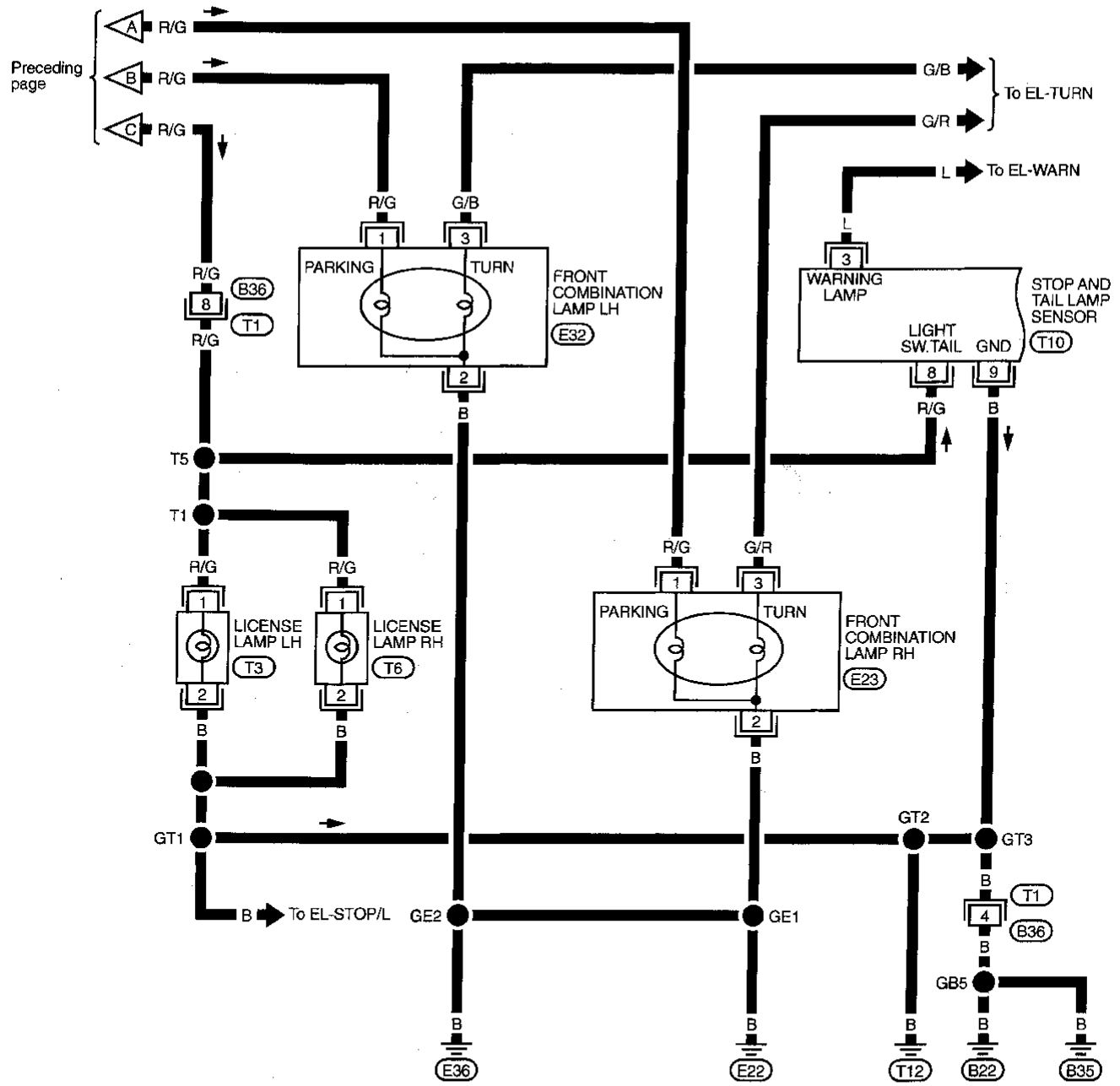
TEL186A

Wiring Diagram — TAIL/L —



Wiring Diagram — TAIL/L — (Cont'd)

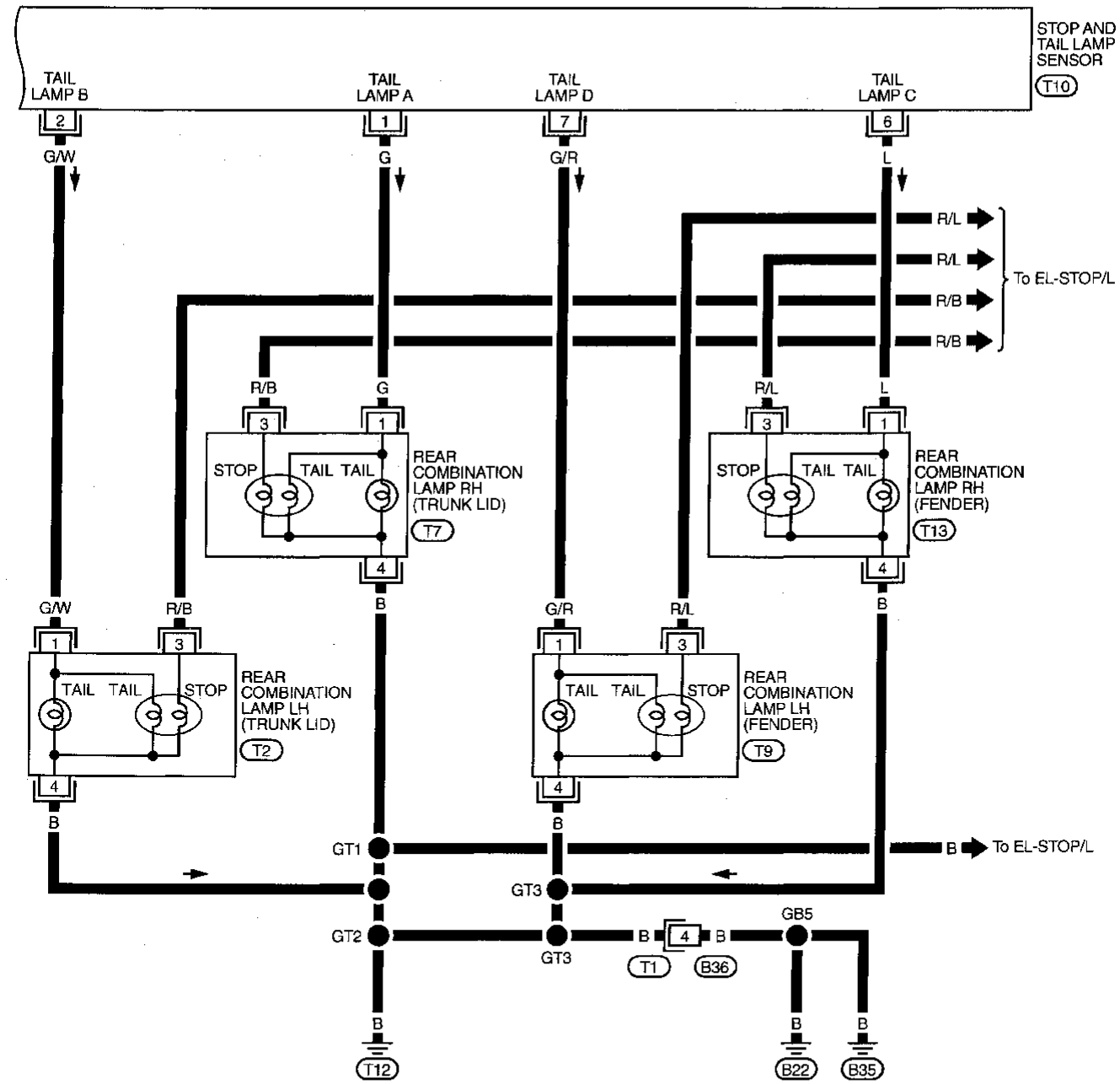
EL-TAIL/L-02

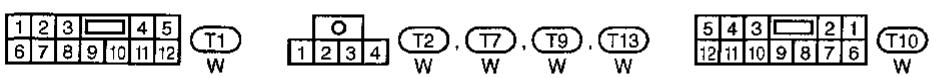


TEL184A

Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-03





TEL185A

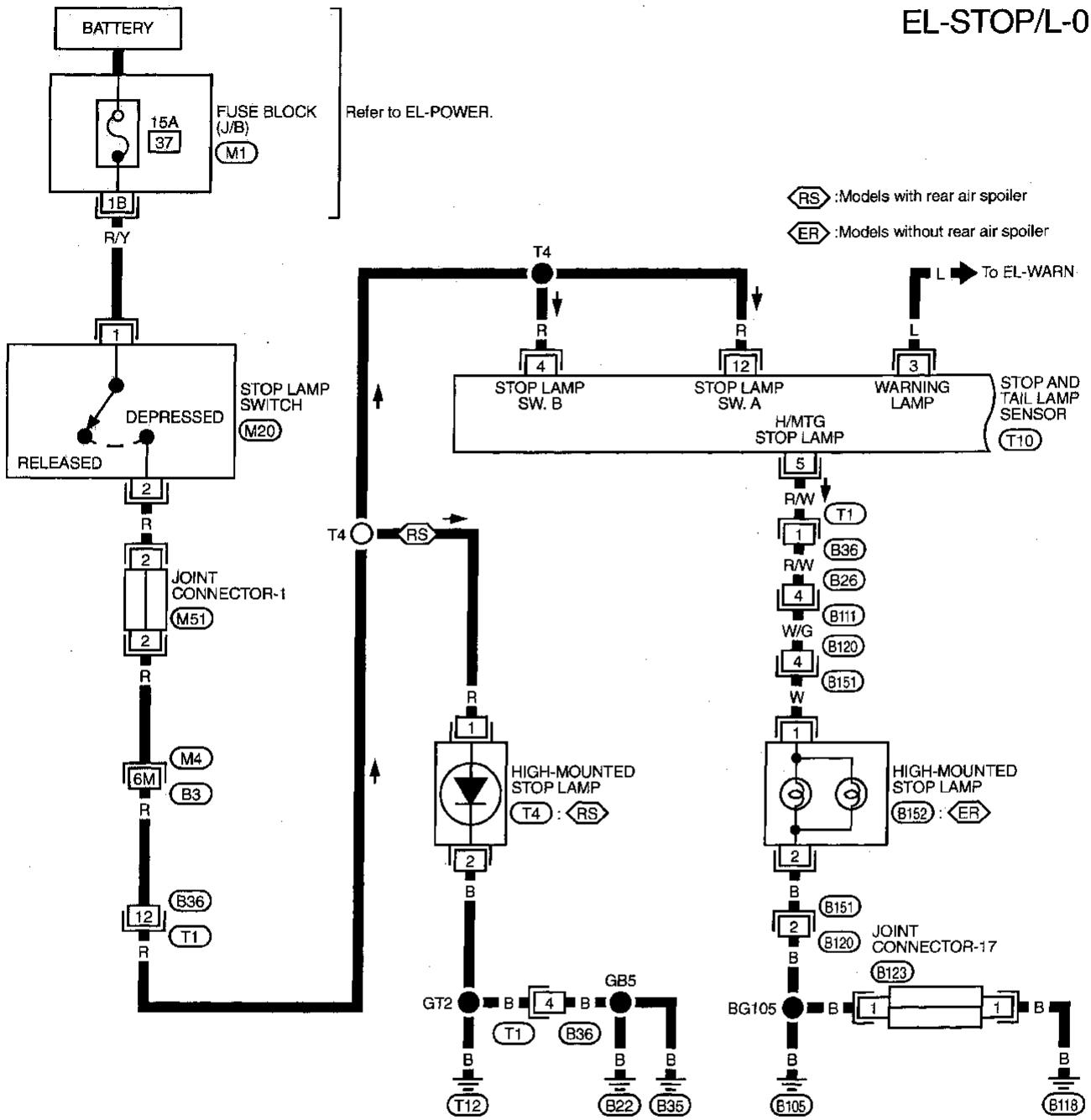
Trouble Diagnoses

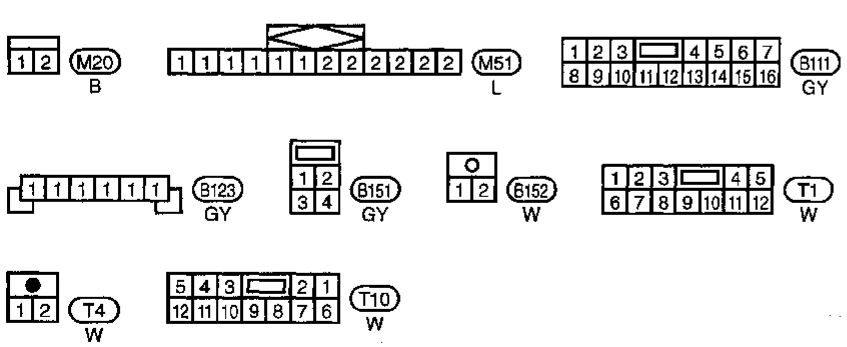
Symptom	Possible cause	Repair order
Parking, license and tail lamps do not operate.	1. 15A fuse 2. Tail lamp relay 3. Lighting switch 4. Open in tail lamp relay circuit	1. Check 15A fuse (No. 63, located in fuse, fusible link and relay box). 2. Check tail lamp relay. 3. Check lighting switch. 4. Check harness between tail lamp relay terminal ② and lighting switch terminal ⑪ for an open circuit.
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-104.)
Auto light malfunctioning.	—	Refer to trouble diagnoses in "HEADLAMP" (EL-41).

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 —

EL-STOP/L-01



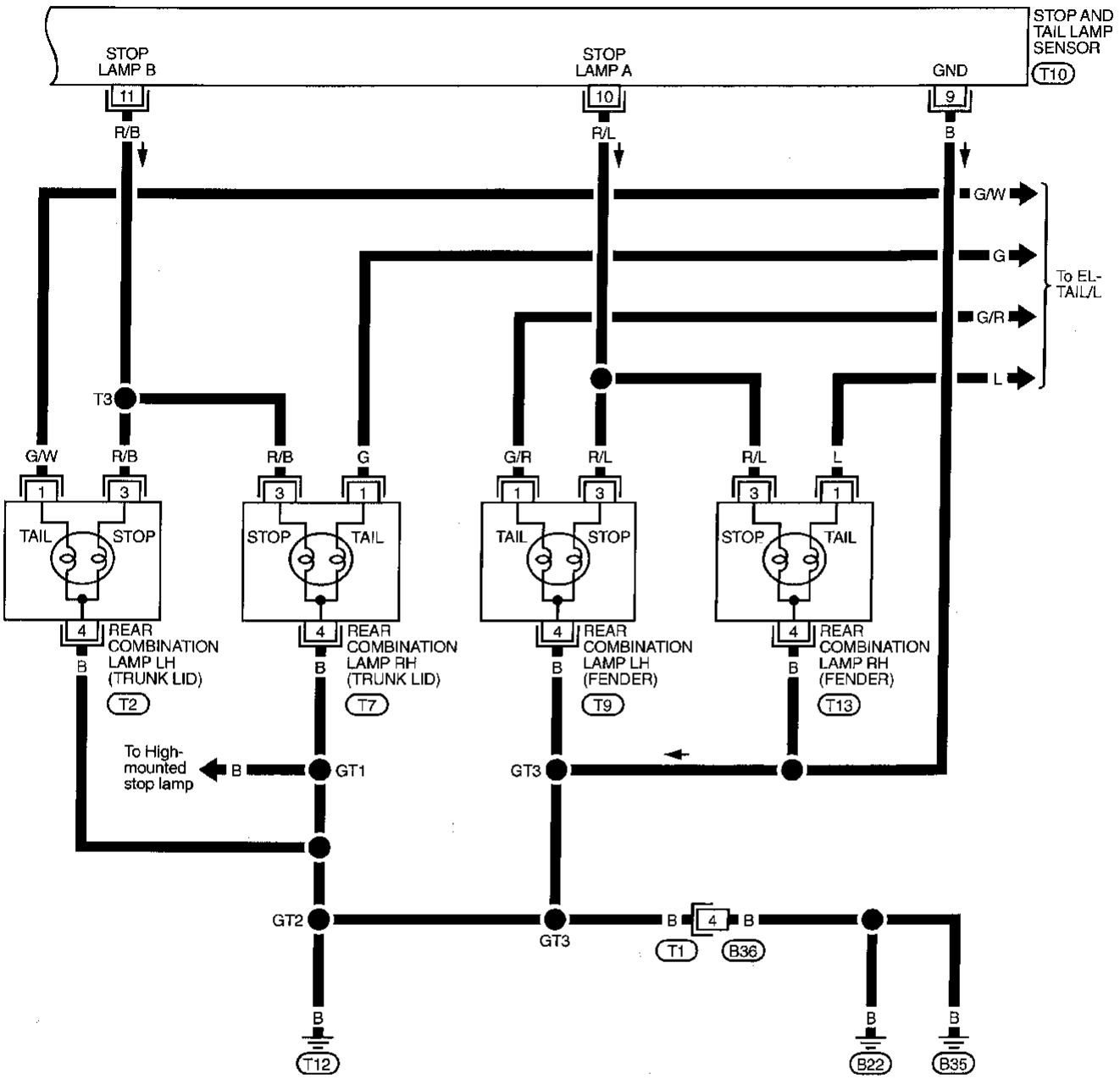


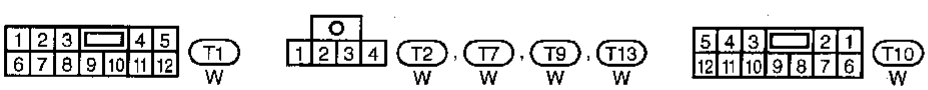
Refer to last page (Foldout page).
M4 , B3
M1

TEL747

Wiring Diagram — STOP/L — (Cont'd)

EL-STOP/L-02

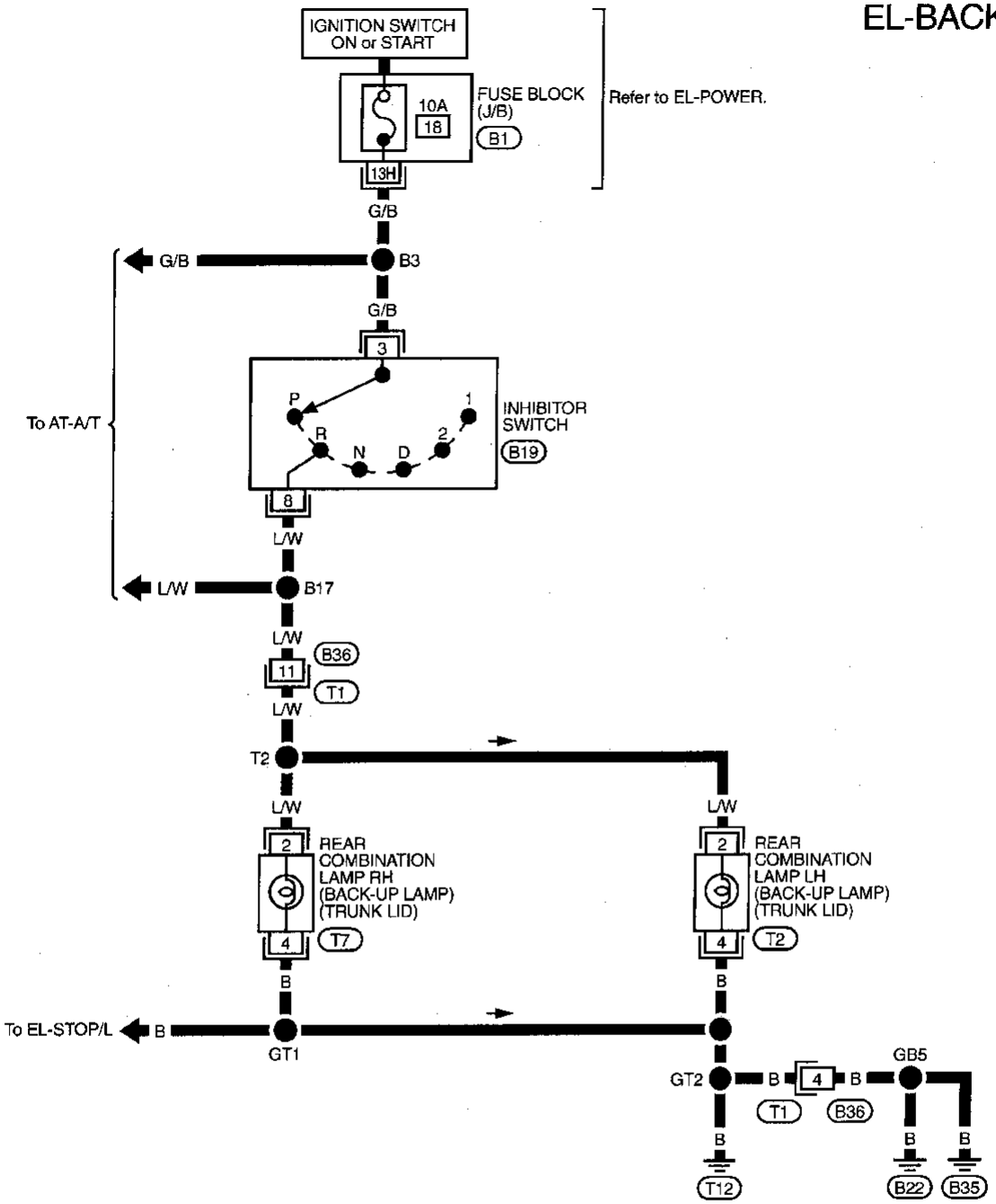


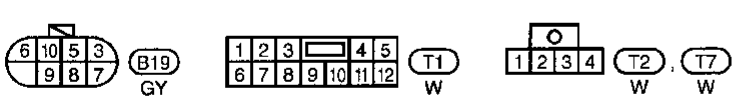


TEL187A

Wiring Diagram — BACK/L —

EL-BACK/L-01





Refer to last page (Foldout page).
B1

TEL189A

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

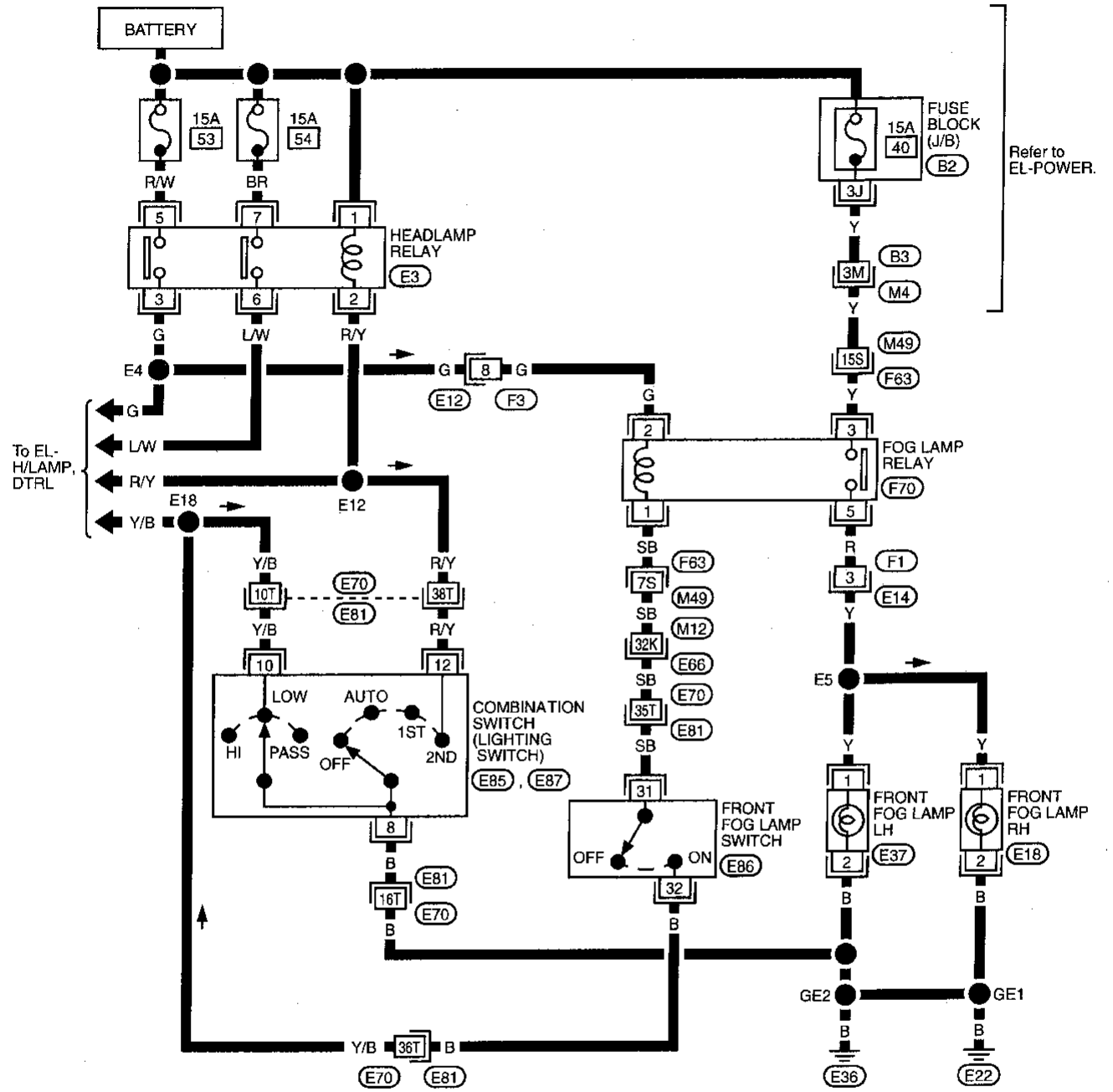
The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW ("B") position for fog lamp operation. With the fog lamp switch in the ON position, ground is supplied
- to fog lamp relay terminal ①
- through front fog lamp switch terminal ㉛
- to front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

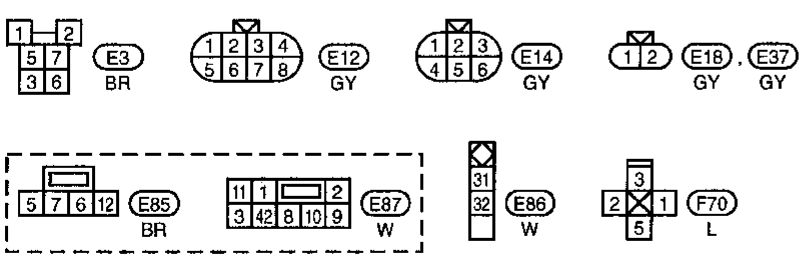
The fog lamp relay is energized and power is supplied
- from fog lamp relay terminal ⑤
- to terminal ① of each fog lamp.

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 —

EL-F/FOG-01



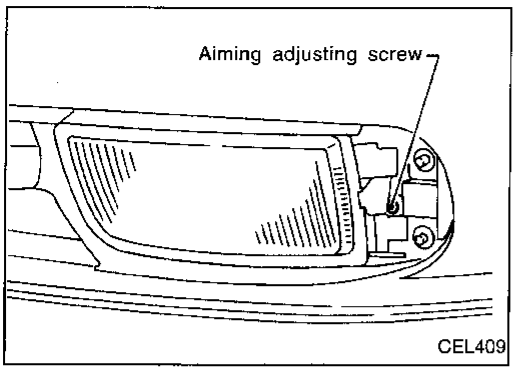


Refer to last page (Foldout page).

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

TEL190A

1503

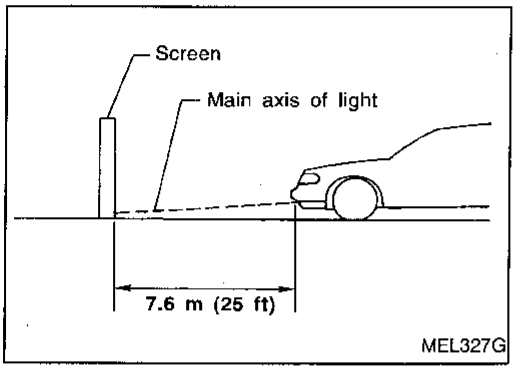


Aiming Adjustment

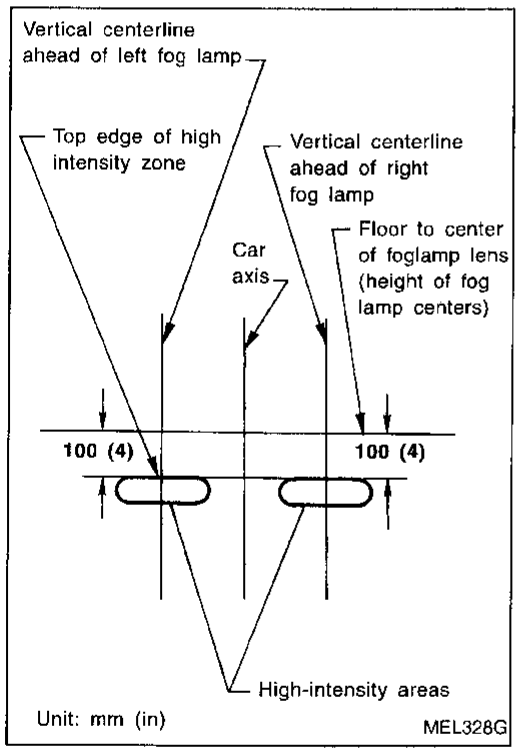
Before performing aiming adjustment, make sure of the following.

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 ㉟.

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 ㉛ 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 ㉜.

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 ㉛ 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 ㉟.

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 ㉜.

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 ㉛ 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-269).
The multi-remote control relay is energized.
Power is supplied through terminal ⑤ of the multi-remote control relay

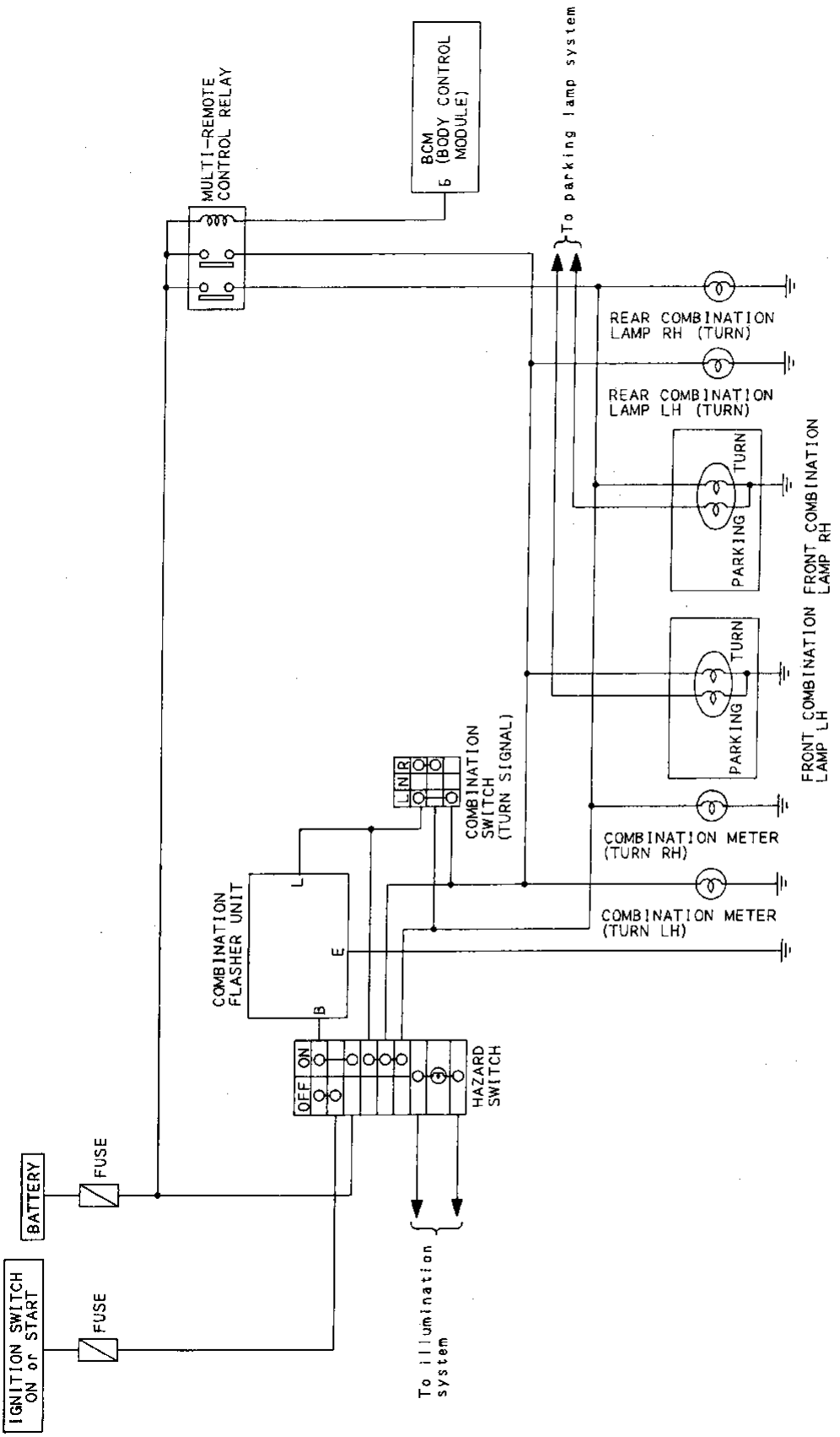
- to front combination lamp LH terminal ③,
- to rear combination lamp LH terminal ② and
- to combination meter terminal ㉟.

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 ㉜.

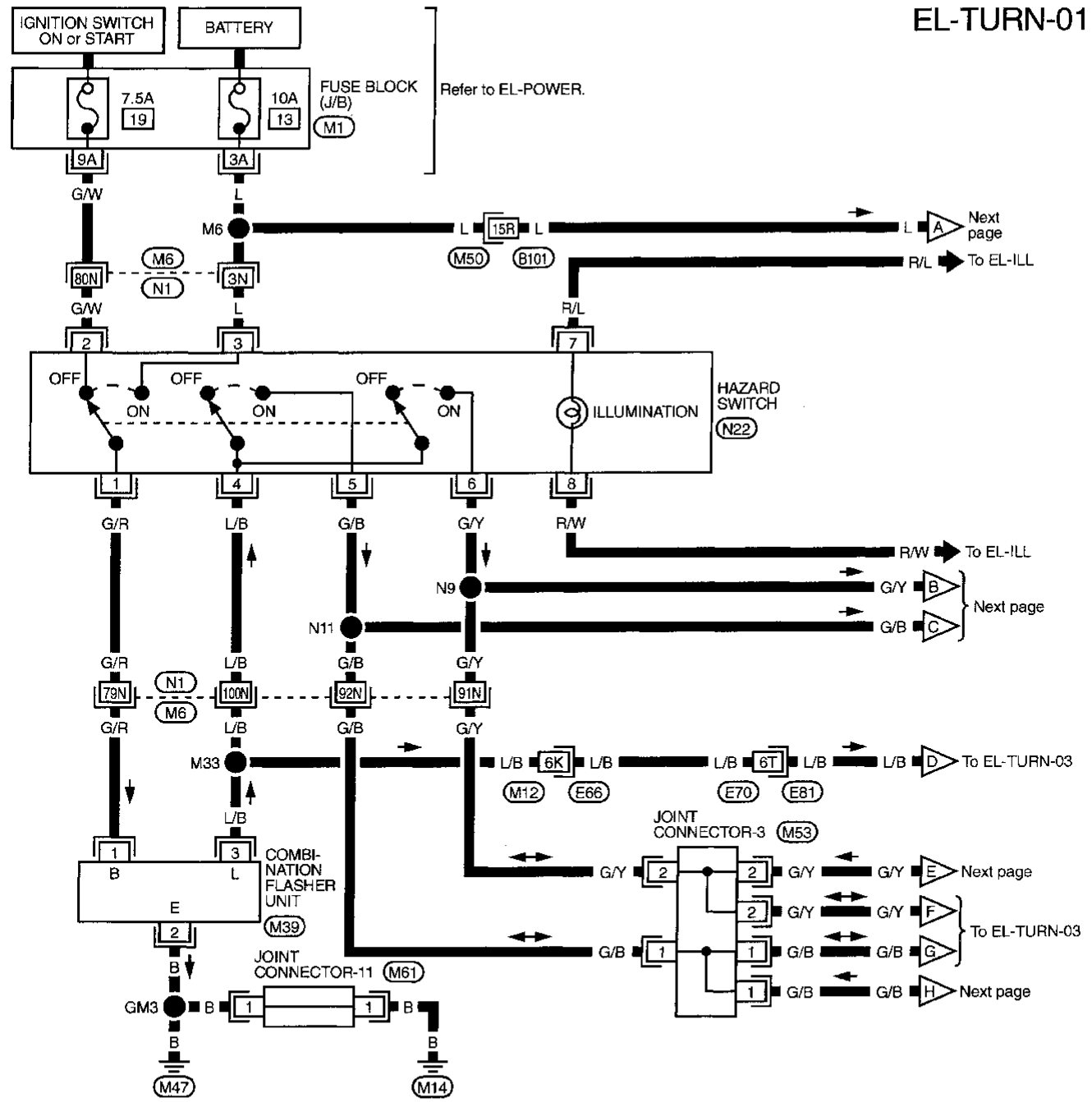
Ground is supplied to terminal ② of each front combination lamp through body grounds (E22) and (E36).
Ground is supplied to terminal ④ of each rear combination lamp through body grounds (T12), (B22) and (B35).
Ground is supplied to combination meter terminal ㉛ through body grounds (M14) and (M47).
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

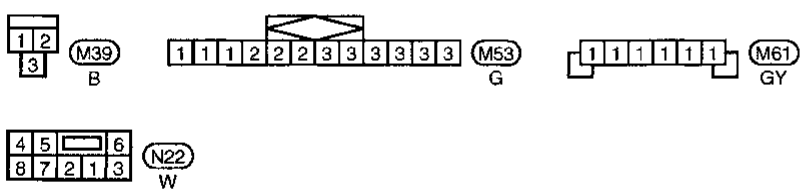
Schematic



TEL752

Wiring Diagram — TURN —





Refer to last page (Foldout page).

E66, M12

E70, E81

M6, N1

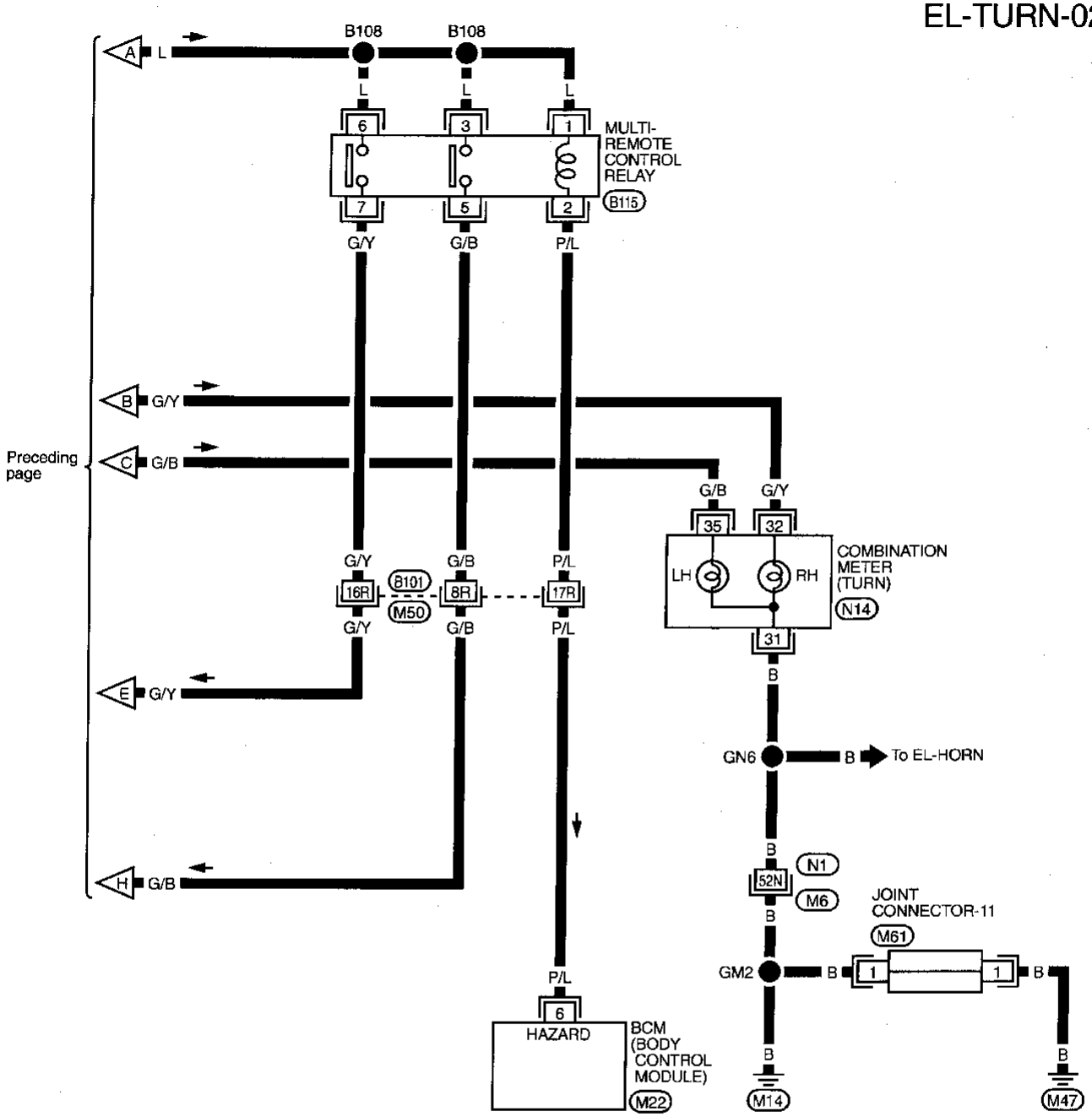
M50, B101

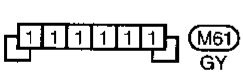
M1

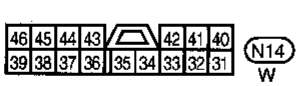
TEL753

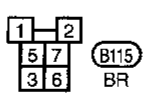
Wiring Diagram — TURN — (Cont'd)

EL-TURN-02





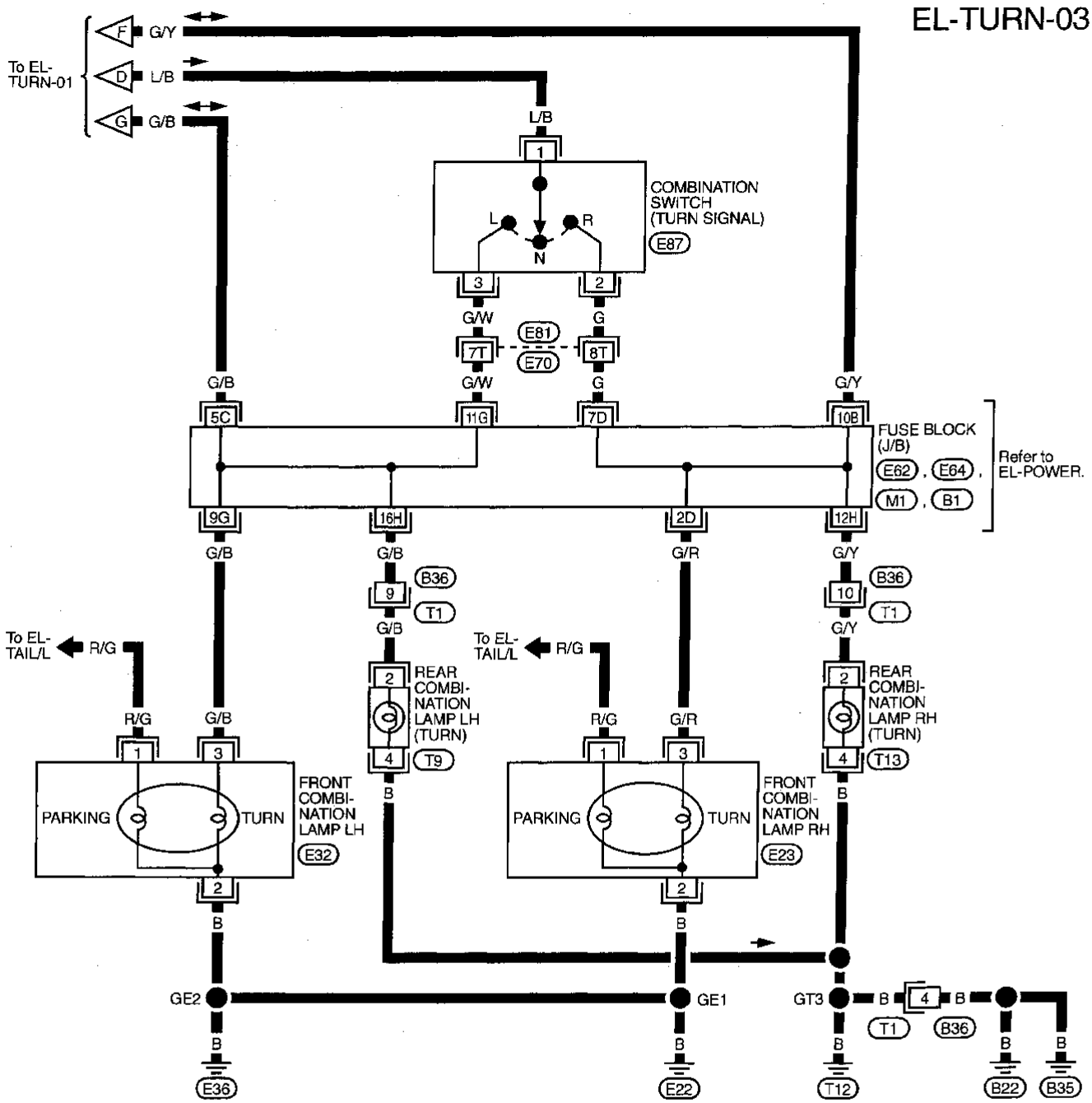


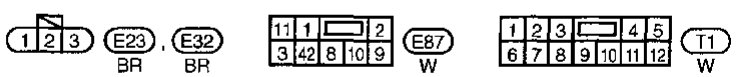


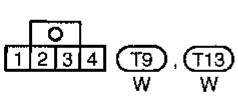
Refer to last page (Foldout page).
(M6), (N1)
(M50), (B101)
(M22)

TEL191A

Wiring Diagram — TURN — (Cont'd)







Refer to last page (Foldout page).

E70 , E81

E62

E64

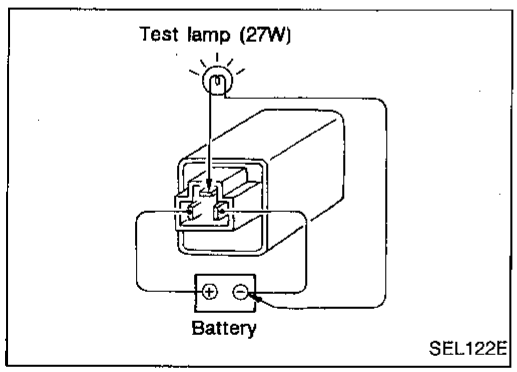
M1

B1

TEL755

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-77) 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)	1. Check bulb. 2. Check grounds (E22) and (E36).
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (T12), (B22) and (B35)	1. Check bulb. 2. Check grounds (T12), (B22) and (B35).
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	1. Check bulb in combination meter.



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

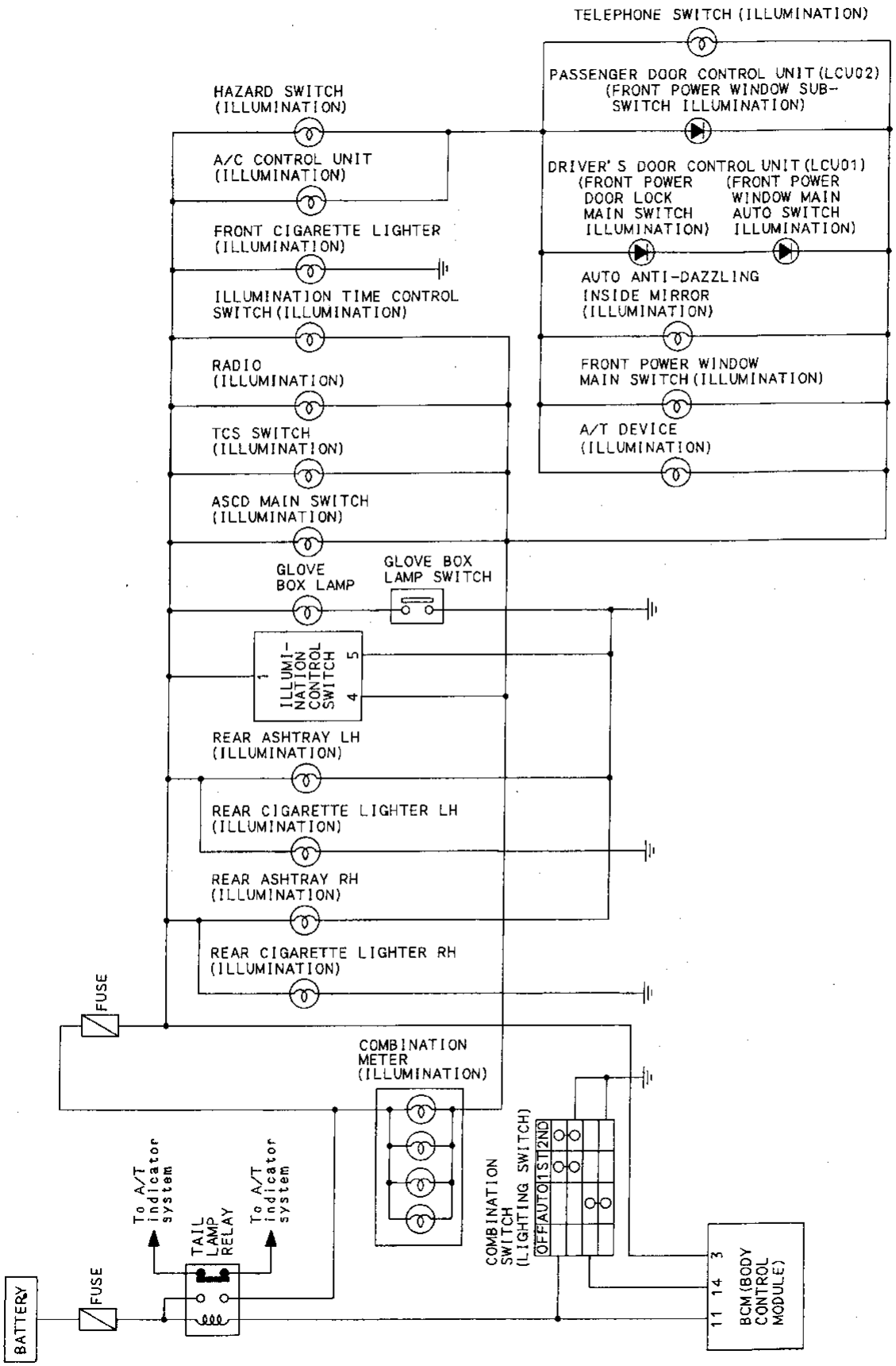
Power is supplied at all times
- through 15A fuse (No. 63, located in the fuse, fusible link and relay box)
- to tail lamp relay terminals ① and ⑥.

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, N13	⑥	㉚
Rear cigarette lighter	D45, D65	③	— (Unit ground)
Rear ashtray	D44, D64	①	②
Illumination control switch	N23	①	⑤
Glove box lamp	M26	①	②
ASCD main switch	N3	⑤	⑥
TCS switch	N7	⑤	⑥
Radio	N20	⑧	⑦
Illumination time control switch	N8	②	④
Front cigarette lighter	N6	②	— (Unit ground)
A/C control unit	N17	①	④
Hazard switch	N22	⑦	⑧
A/T device	M36	③	④
Power window main switch	D12	②	①
Auto anti-dazzling inside mirror	R4	③	④
Driver door control unit	D13	②	⑩
Passenger door control unit	D29	②	⑩
Telephone switch	N25	㉔	㉓

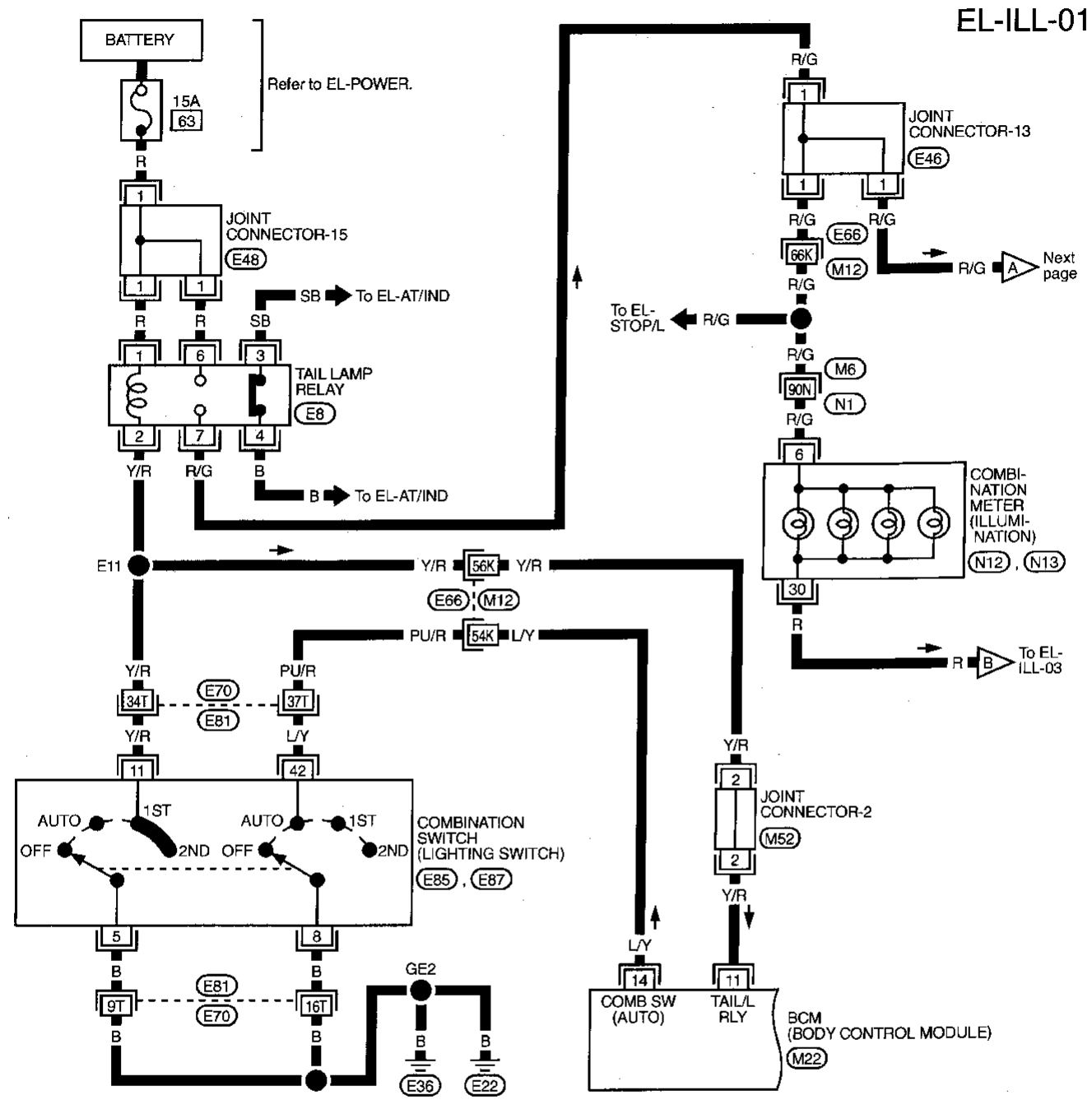
The ground for all of the components except for rear ashtray, and rear cigarette lighter, glove box lamp and front cigarette lighter are controlled through terminals ④ and ⑤ of the illumination control switch and body grounds M14 and M47.

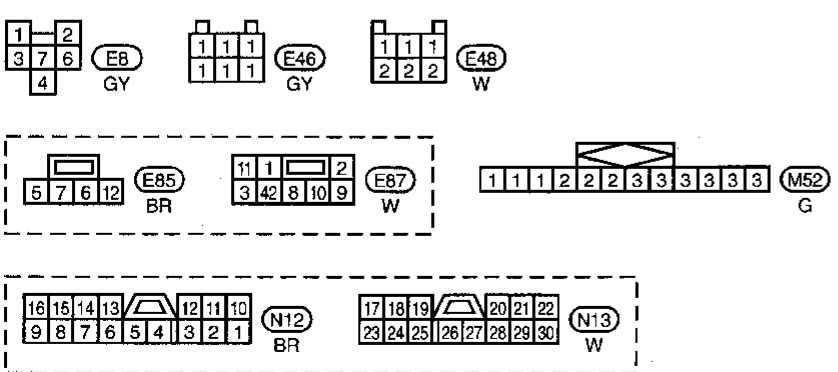
Schematic



TEL756

Wiring Diagram — ILL —



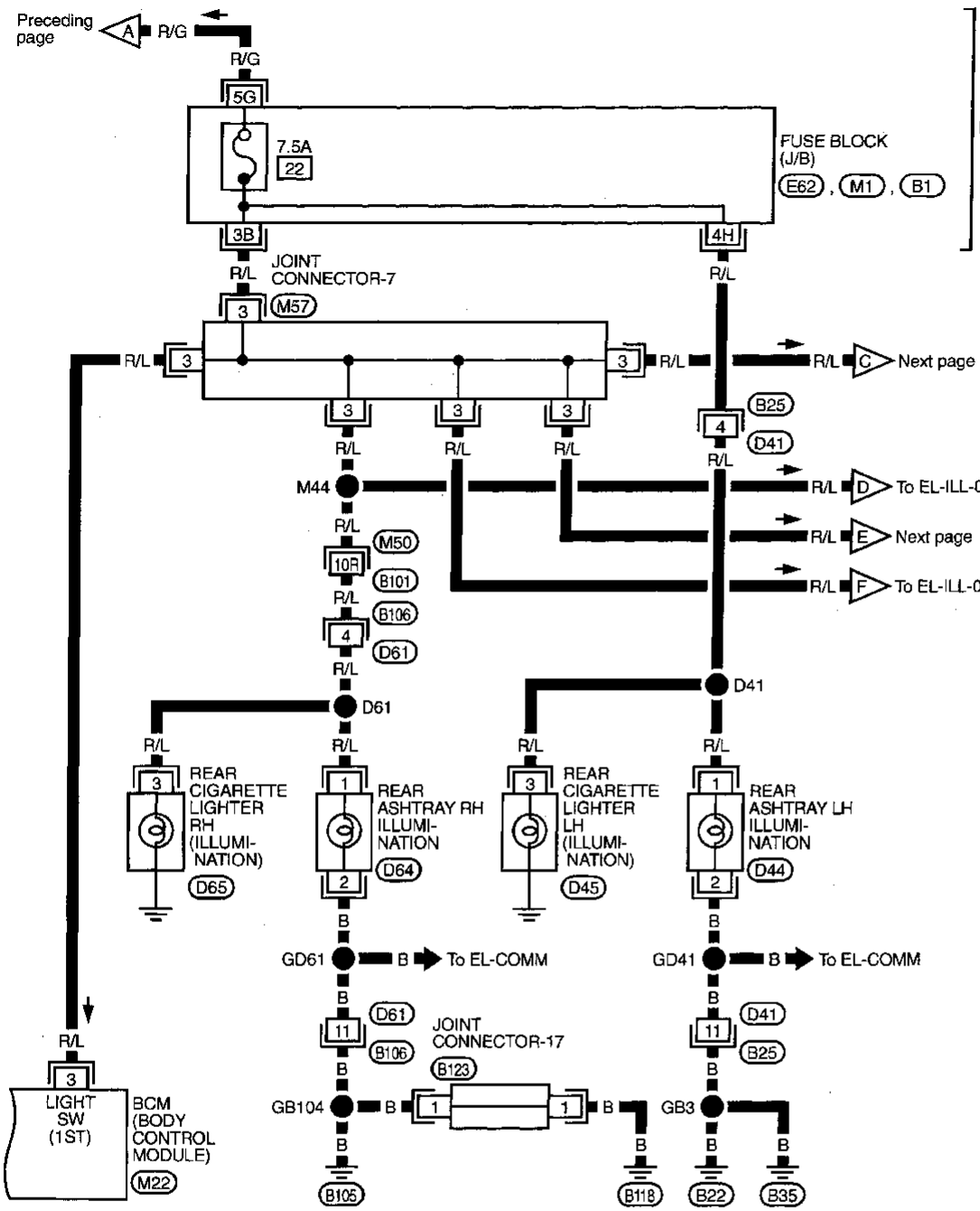


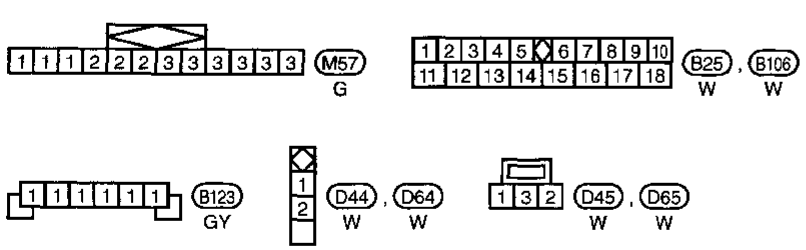
Refer to last page (Foldout page).

E66 , M12
E70 , E81
M6 , N1
M22

TEL757

Wiring Diagram — ILL — (Cont'd)





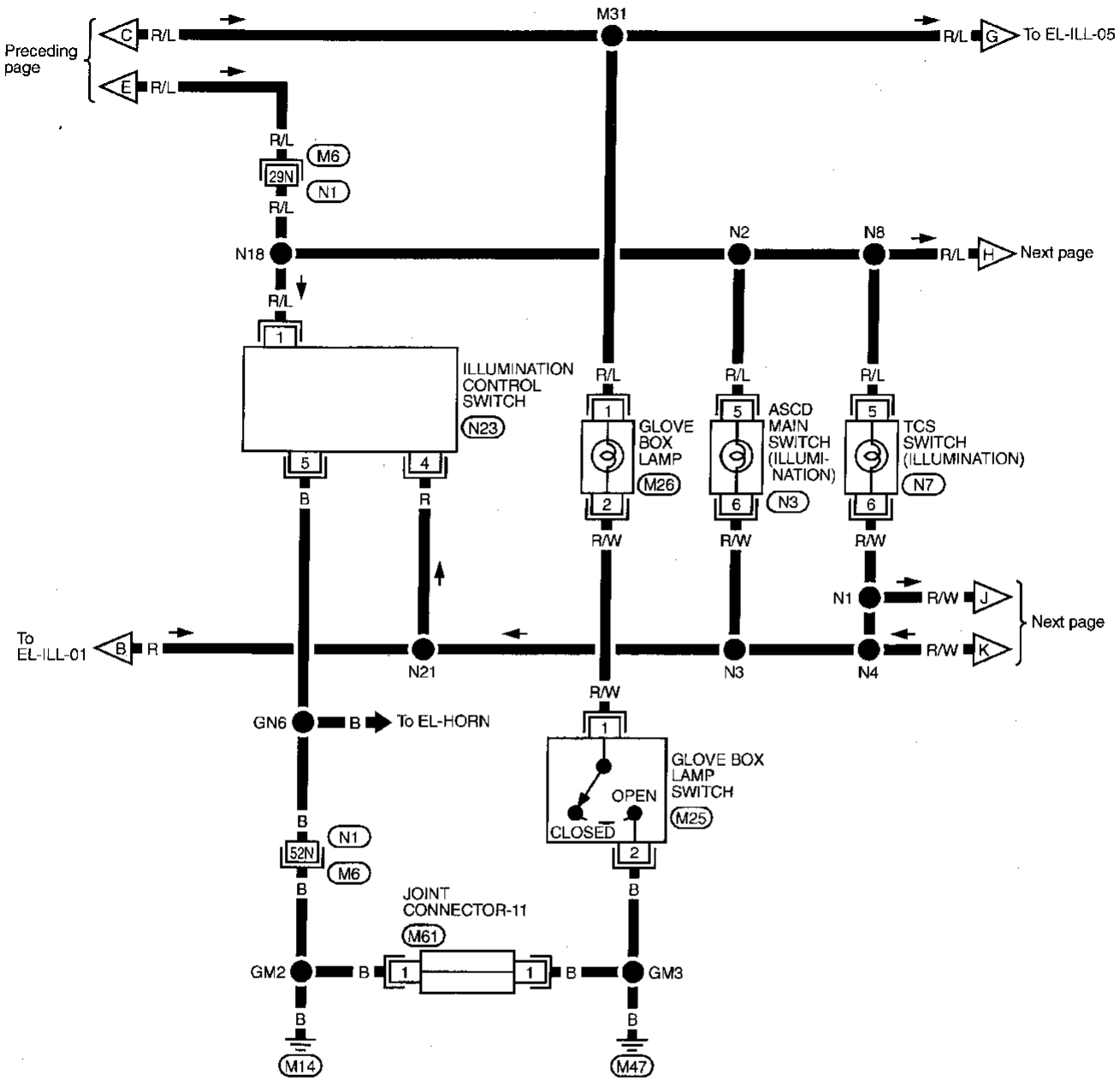
Refer to last page (Foldout page).

M50, B101
E62
M1
M22
B1

TEL192A

Wiring Diagram — ILL — (Cont'd)

EL-ILL-03



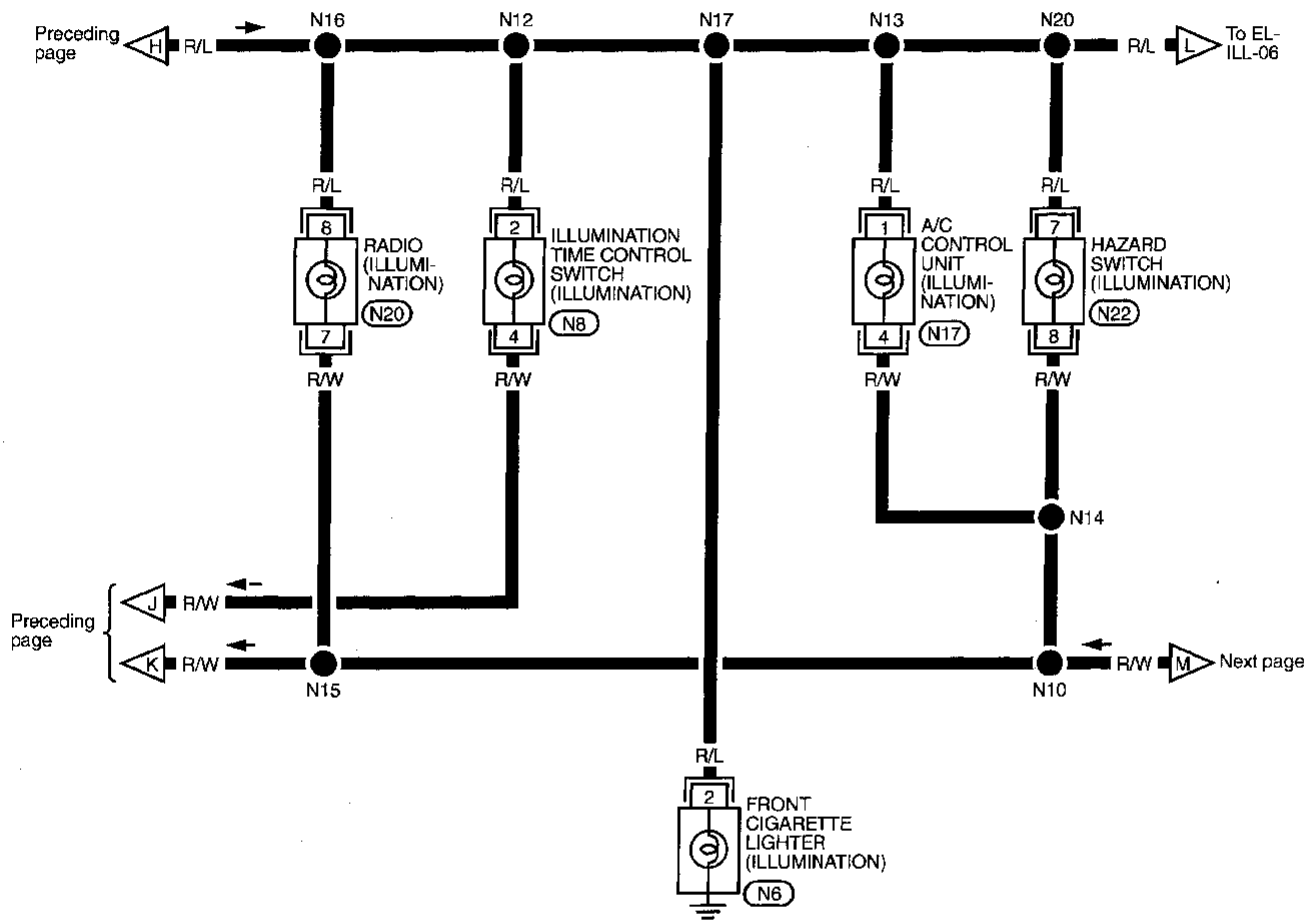
M25 BR
M26 W
M61 GY
N3 W
N7 W
N23 W

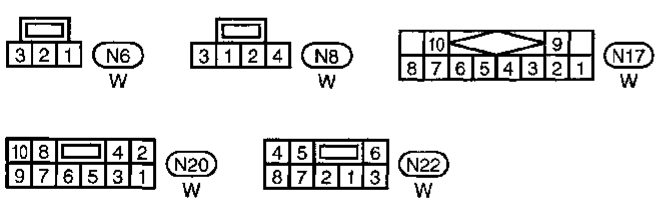
Refer to last page (Foldout page).
M6 , N1

TEL193A

Wiring Diagram — ILL — (Cont'd)

EL-ILL-04

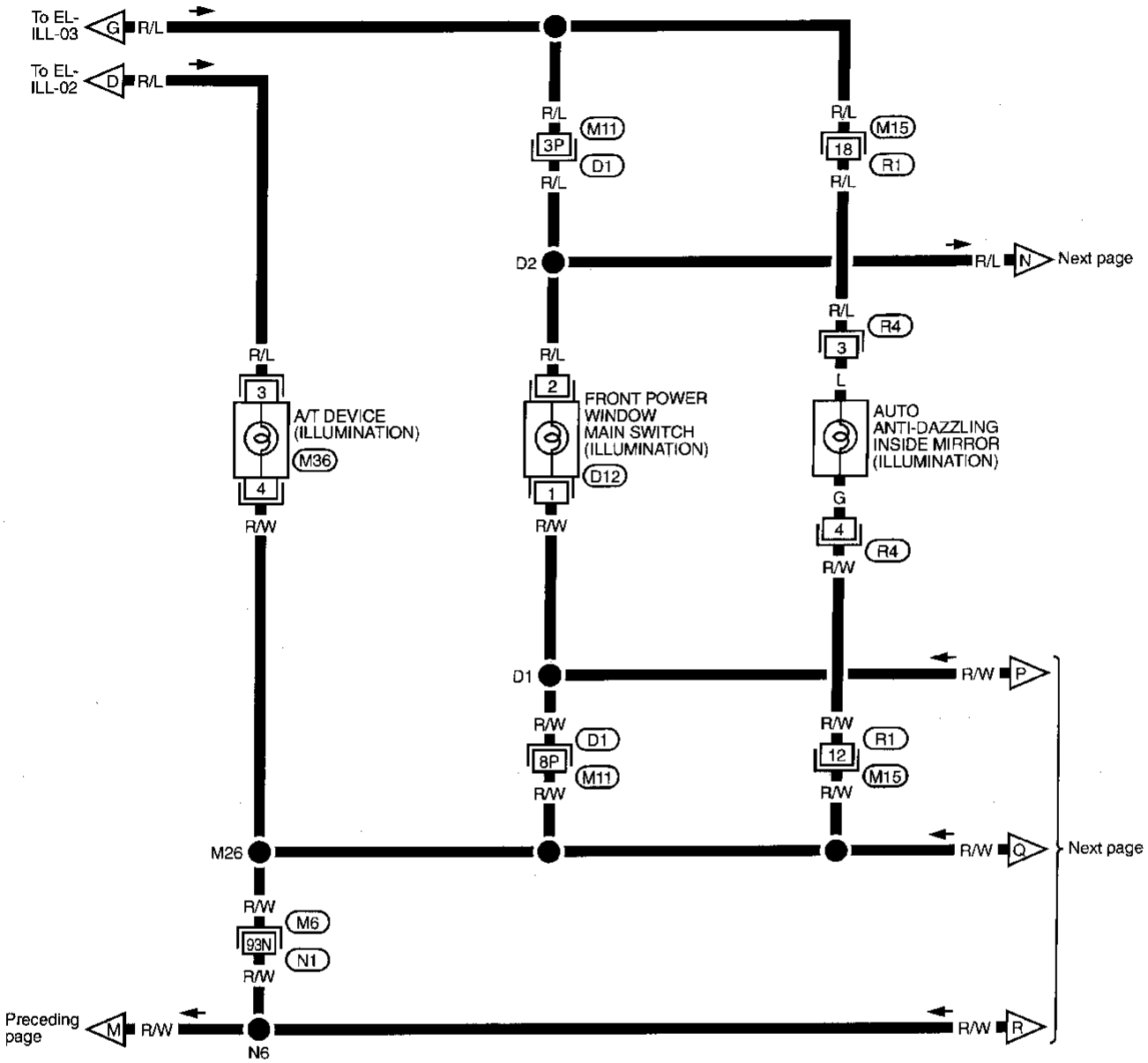


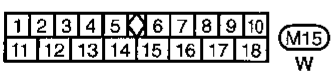


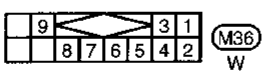
TEL238A

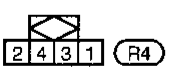
Wiring Diagram — ILL — (Cont'd)

EL-ILL-05









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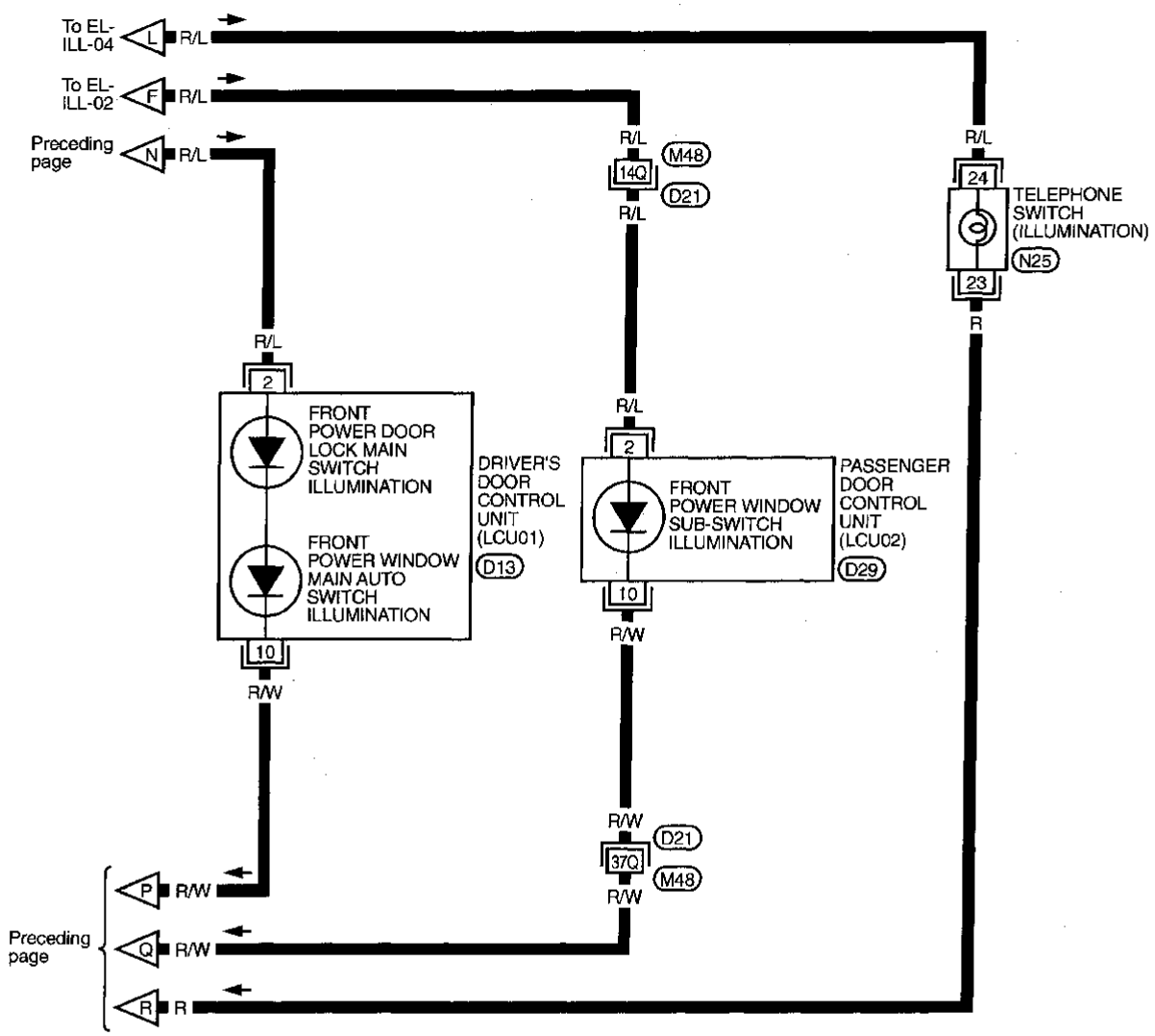
M6, N1

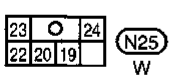
M11, D1

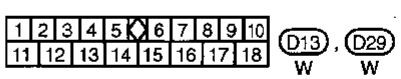
TEL194A

Wiring Diagram — ILL — (Cont'd)

EL-ILL-06



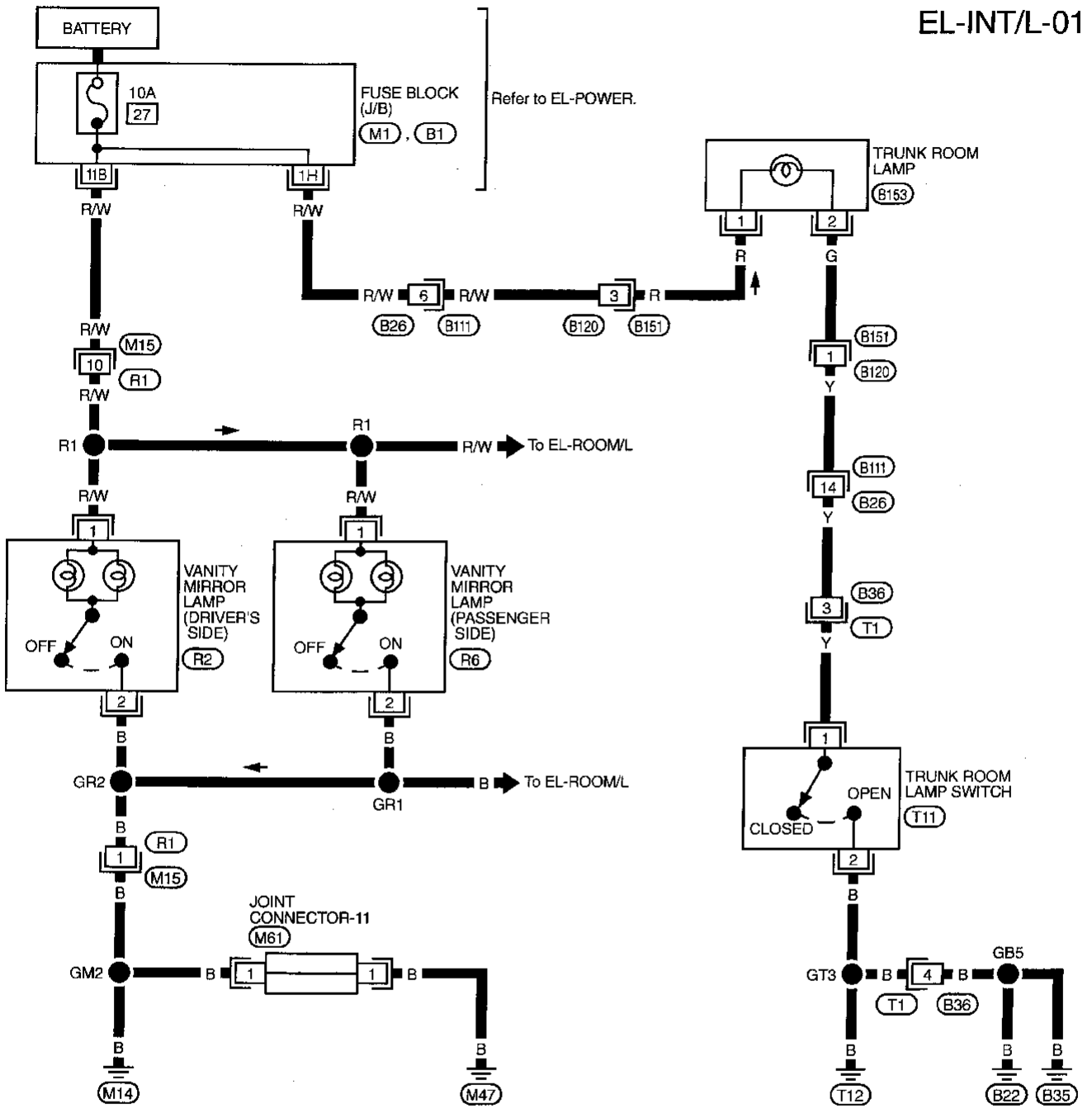


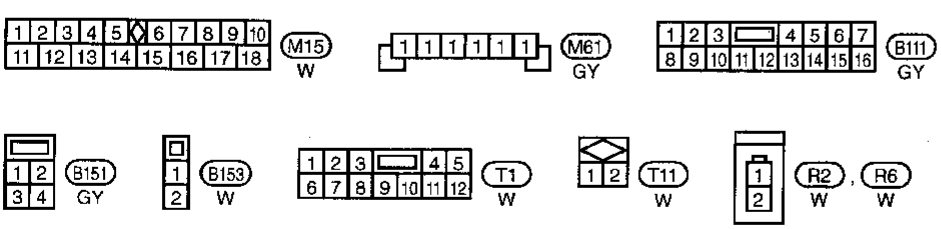


Refer to last page (Foldout page).
M48, D21

TEL195A

Wiring Diagram — INT/L —

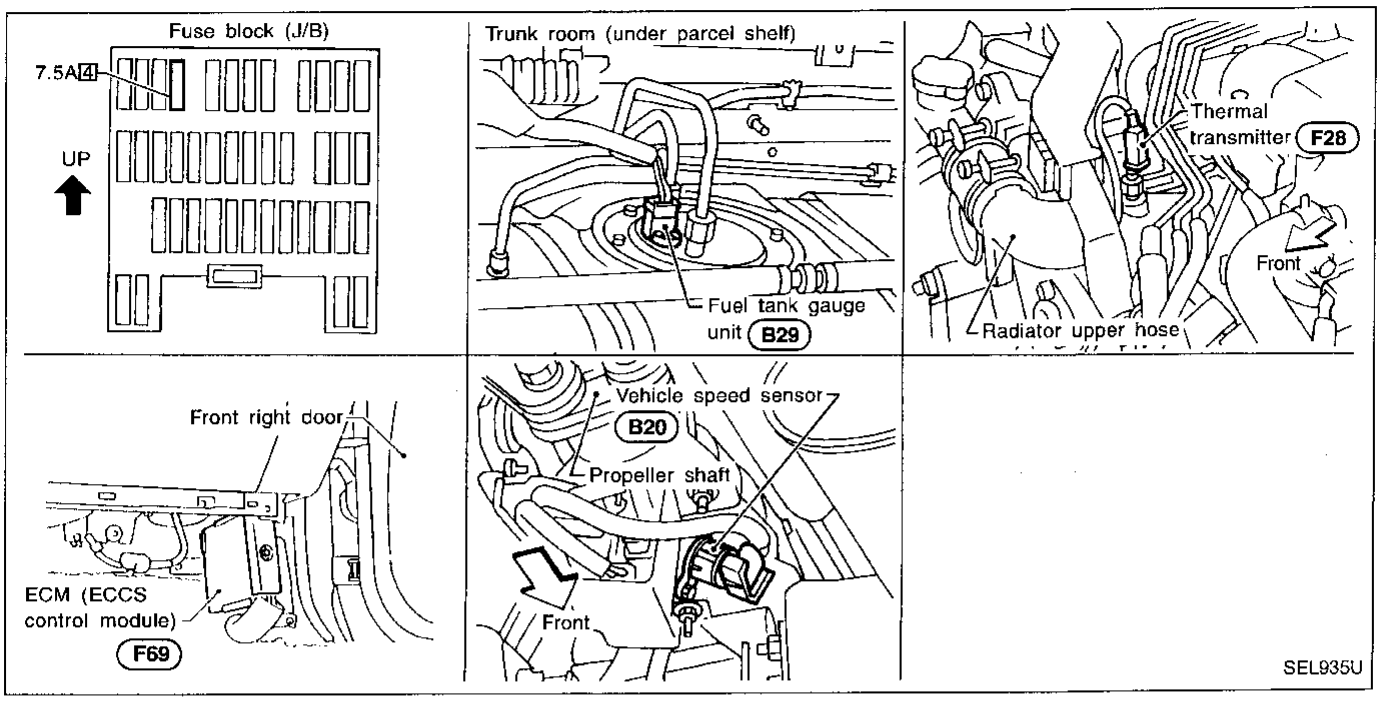




Refer to last page (Foldout page).
M1
B1

TEL763

Component Parts and Harness Connector Location



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 terminals ⑭, ㉛ and ㊸
- 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 ⑪ for the fuel gauge
- from terminal ⑤ of the fuel tank gauge unit
- through terminal ④ of the fuel tank gauge unit and
- through body grounds (B22) and (B35).

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 ㊻ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

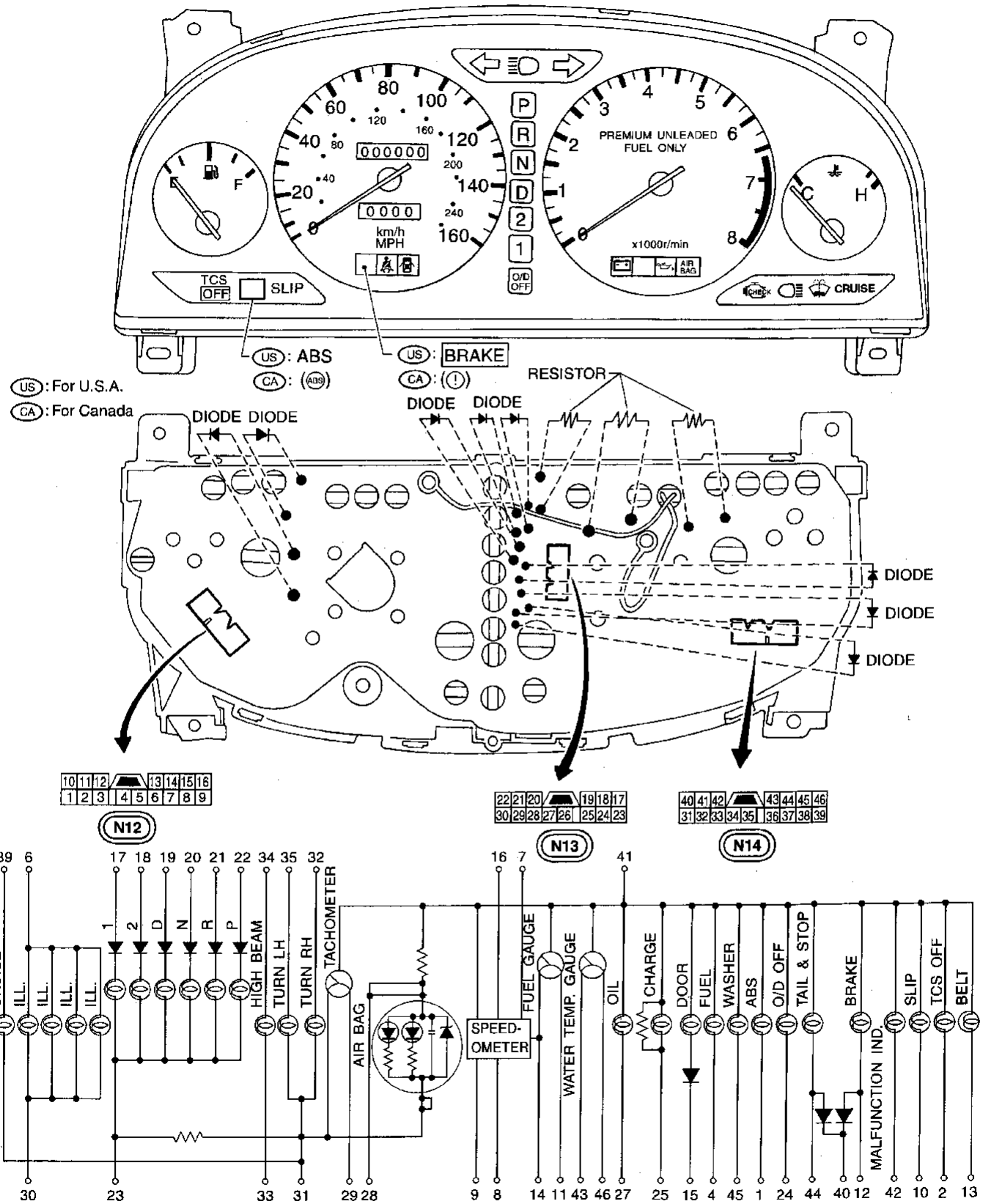
The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal
- from terminal ㊷ of the ECM (ECCS control module)
- to combination meter terminal ㉙ for the tachometer.

SPEEDOMETER

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
The voltage is supplied
- to combination meter terminals ⑧ and ⑨ for the speedometer
- from terminals ① and ② of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

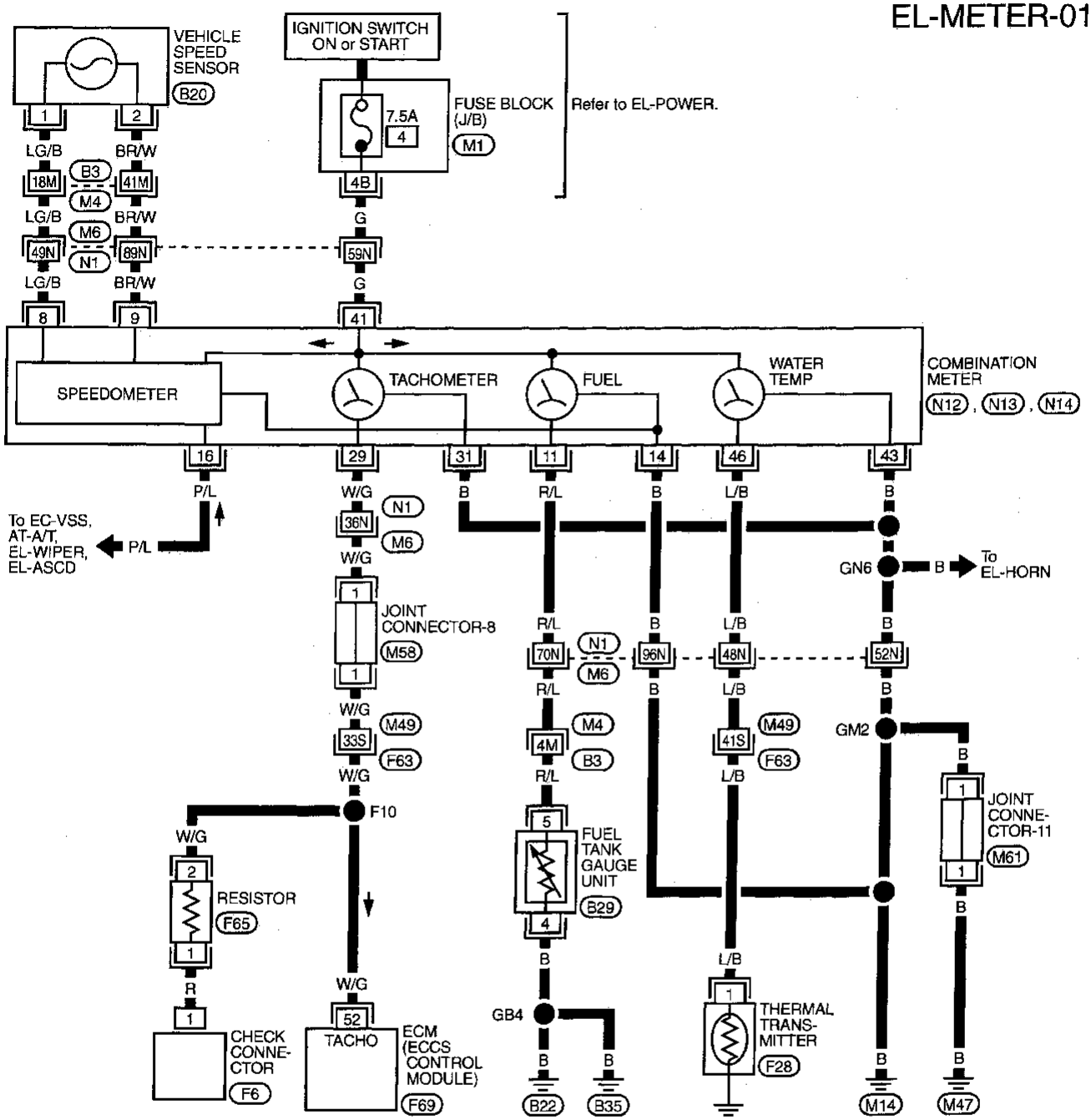
Combination Meter

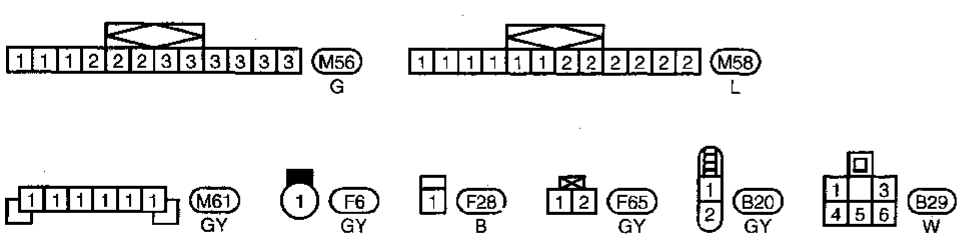


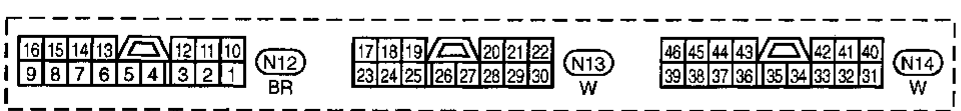
CEL410

Wiring Diagram — METER —

EL-METER-01







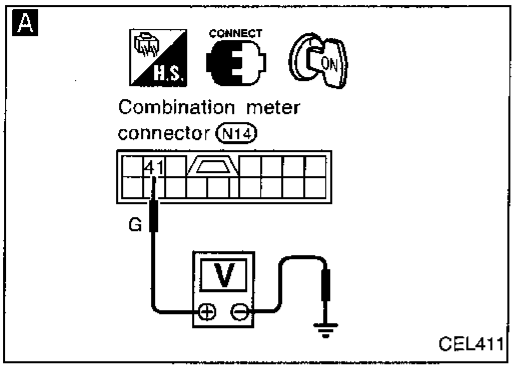
Refer to last page (Foldout page).

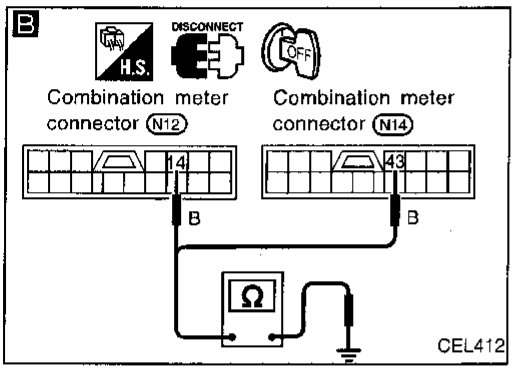
M4, B3
M6, N1
M49, F63
M1
F69

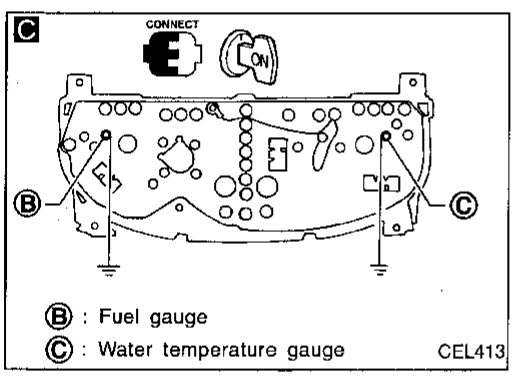
TEL196A

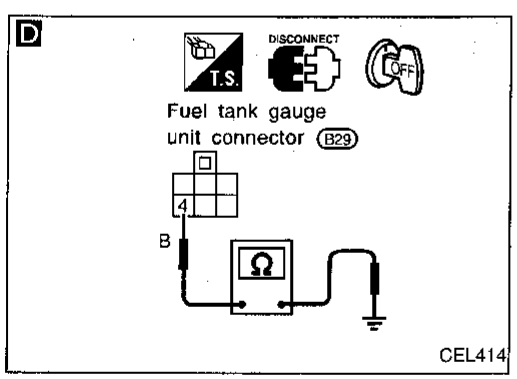
Trouble Diagnoses

INSPECTION/FUEL GAUGE AND/OR WATER TEMPERATURE GAUGE









A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch "ON".
2. Check voltage between combination meter terminal ㊶ and ground.
Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 4 , located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR GAUGES.
Check continuity between combination meter terminals ⑭, ㊸ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

CHECK GAUGE OPERATION.
1. Turn ignition switch "ON".
2. Connect terminals Ⓑ (Fuel), Ⓒ (Temp.) and ground with wire for **less than 10 seconds.**
3. Check operation of gauge.
Gauge should move smoothly to full scale.

NG → Repair or replace gauge.

OK ↓

D

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.

OK ↓

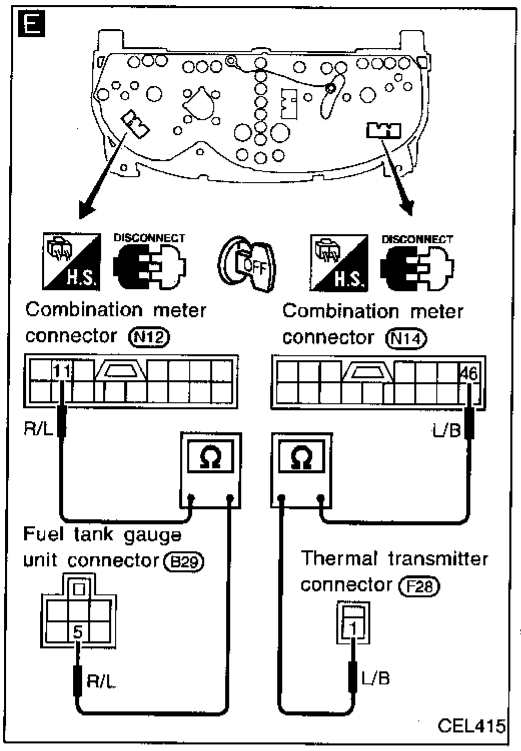
CHECK COMPONENT.
Check gauge units.
Refer to "Fuel Tank Gauge Unit Check" (EL-93) or "Thermal Transmitter Check" (EL-93).

NG → Repair or replace.
Refer to FE section. (Fuel gauge)

OK ↓

(Go to Ⓐ on next page.)

Trouble Diagnoses (Cont'd)



Ⓐ

E

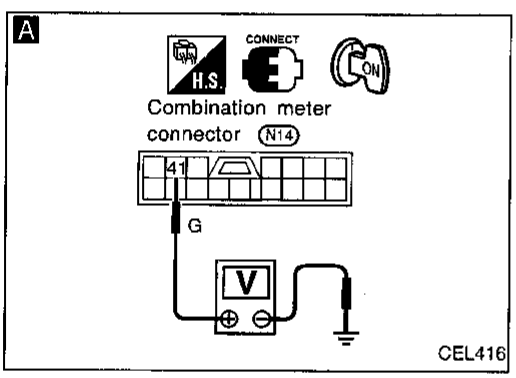
CHECK HARNESS.
Check harness continuity between terminals.

Terminals	
Combination meter connector	Component
⑪	Fuel tank gauge unit connector ⑤
㊽	Thermal transmitter connector ①

Continuity should exist.

NG → Repair harness or connector.

OK → INSPECTION END



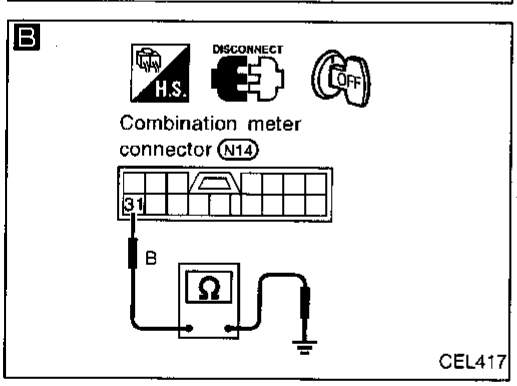
INSPECTION/TACHOMETER

A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch "ON".
2. Check voltage between combination meter terminal ㊶ and ground.
   Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 4 , located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK

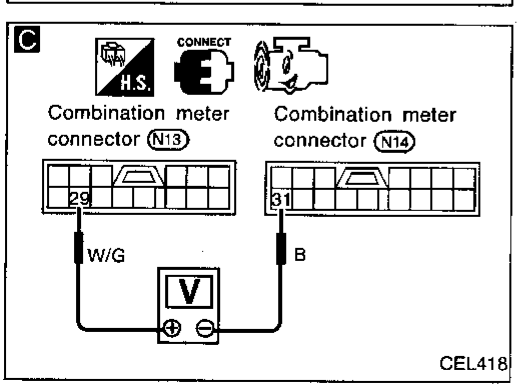


B

CHECK GROUND CIRCUIT FOR TACHOMETER.
Check continuity between combination meter terminal ㉛ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK



C

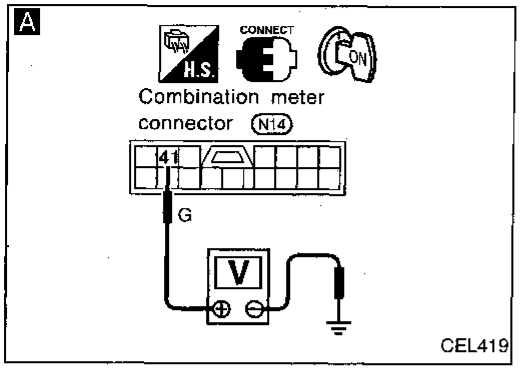
CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminals ㉙ and ㉛ at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

NG → Check harness for open or short between ECM and combination meter.

OK → Replace tachometer.

Trouble Diagnoses (Cont'd)

INSPECTION/SPEEDOMETER AND VEHICLE SPEED SENSOR

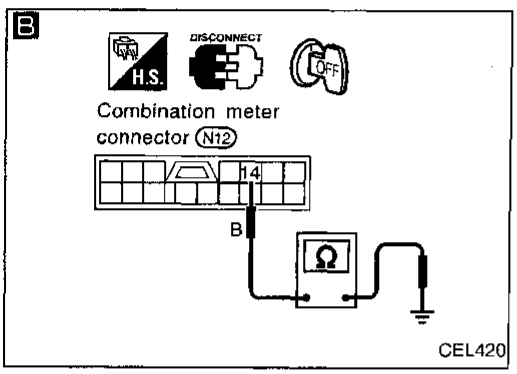


A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch "ON".
2. Check voltage between combination meter terminal ㊶ and ground.
Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 4], located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓



B

CHECK GROUND CIRCUIT FOR SPEEDOMETER.
Check continuity between combination meter terminal ⑭ and ground.
Continuity should exist.

NG → Repair harness or connector.

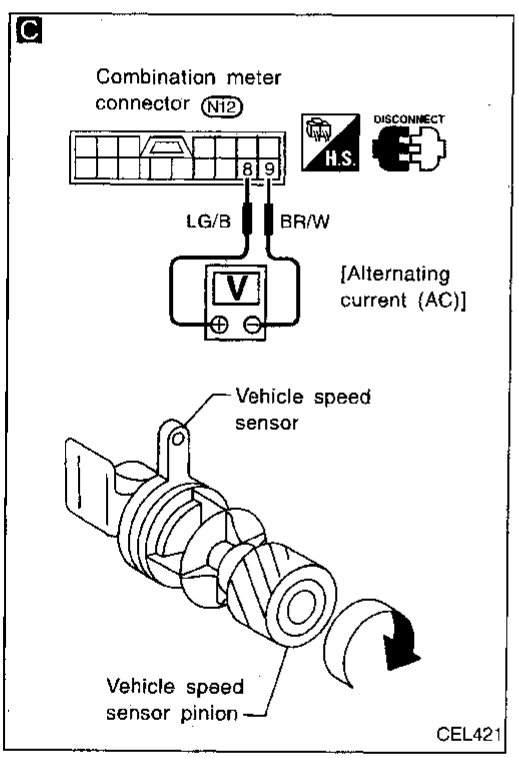
OK ↓

C

CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals ⑧ and ⑨ while quickly turning speed sensor pinion.
Voltage: Approx. 0.5V

OK → Replace speedometer.

NG ↓



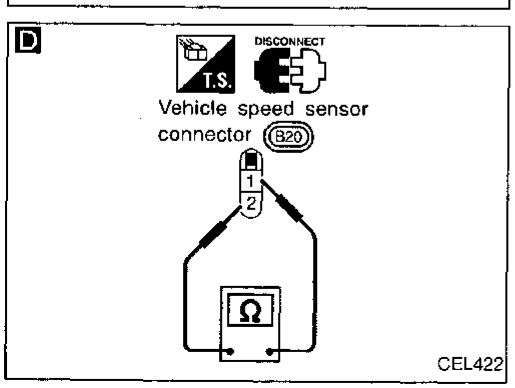
D

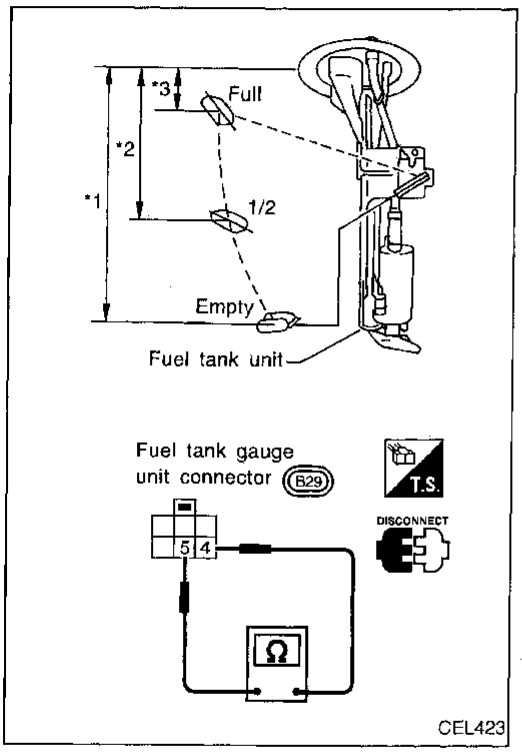
CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor terminals ① and ②.
Resistance: Approx. 250Ω

NG → Replace vehicle speed sensor.

OK ↓

Check harness or connector between speedometer and vehicle speed sensor.





Electrical Components Inspection

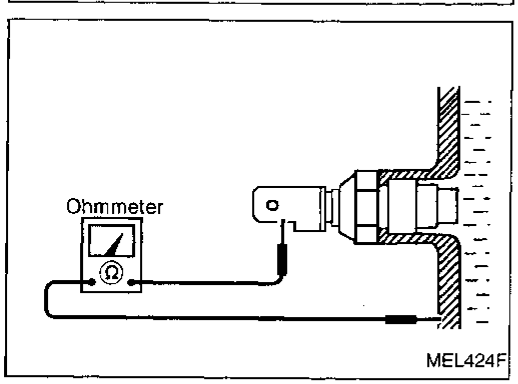
FUEL TANK GAUGE UNIT CHECK

- For removal, refer to FE section.

Check the resistance between terminals ④ and ⑤.

Ohmmeter (+)	Ohmmeter (−)		Float position mm (in)		Resistance value (Ω)
⑤	④	*1	Full	70 (2.76)	Approx. 4 - 6
		*2	1/2	189 (7.44)	32 - 33
		*3	Empty	308 (12.13)	80 - 83

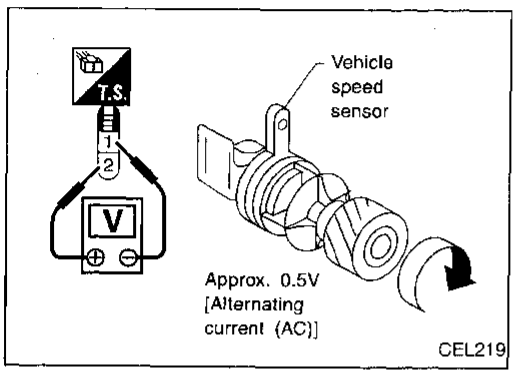
*1 and *3: When float rod is in contact with stopper.



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



VEHICLE SPEED SENSOR SIGNAL CHECK

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

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 terminals ㊶.

Ground is supplied:
- to combination meter terminals ㉛ 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, and
- 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 ㉘.

Ground is supplied
- through combination meter terminal ㉛.

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 terminal ㉘, ㉜, ㉝ or ㊲.
And then ground is supplied
- to combination meter terminal ⑮
- from BCM terminal (111).

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

LOW OIL PRESSURE WARNING LAMP

Low oil pressure causes oil pressure switch terminal ① to provide ground to combination meter terminal ㉗.
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 ㉕ and ㊵
- from alternator terminal ③.

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

LOW WASHER LEVEL WARNING LAMP

When the washer fluid level is low, ground is supplied
- to combination meter terminal ㊺
- 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 ㉔
- 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").

System Description (Cont'd)

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 ④. 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 ①
- 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 ②
- 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 ⑩
- 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 ⑬
- 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 ⑫
- 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 ㊹
- from stop and tail lamp sensor terminal ③.

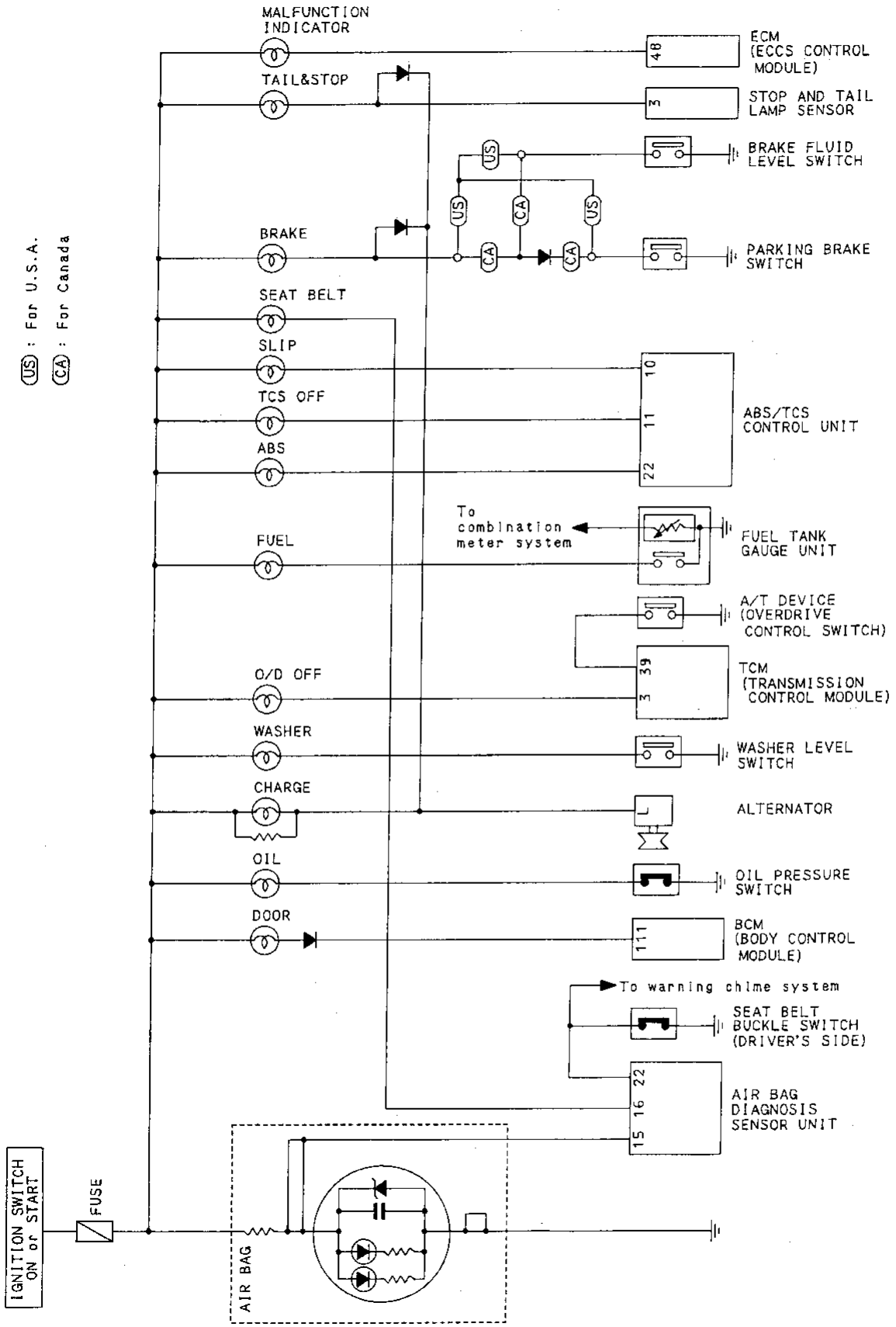
With power and ground is supplied, the tail and stop lamp warning lamp illuminates.

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"].

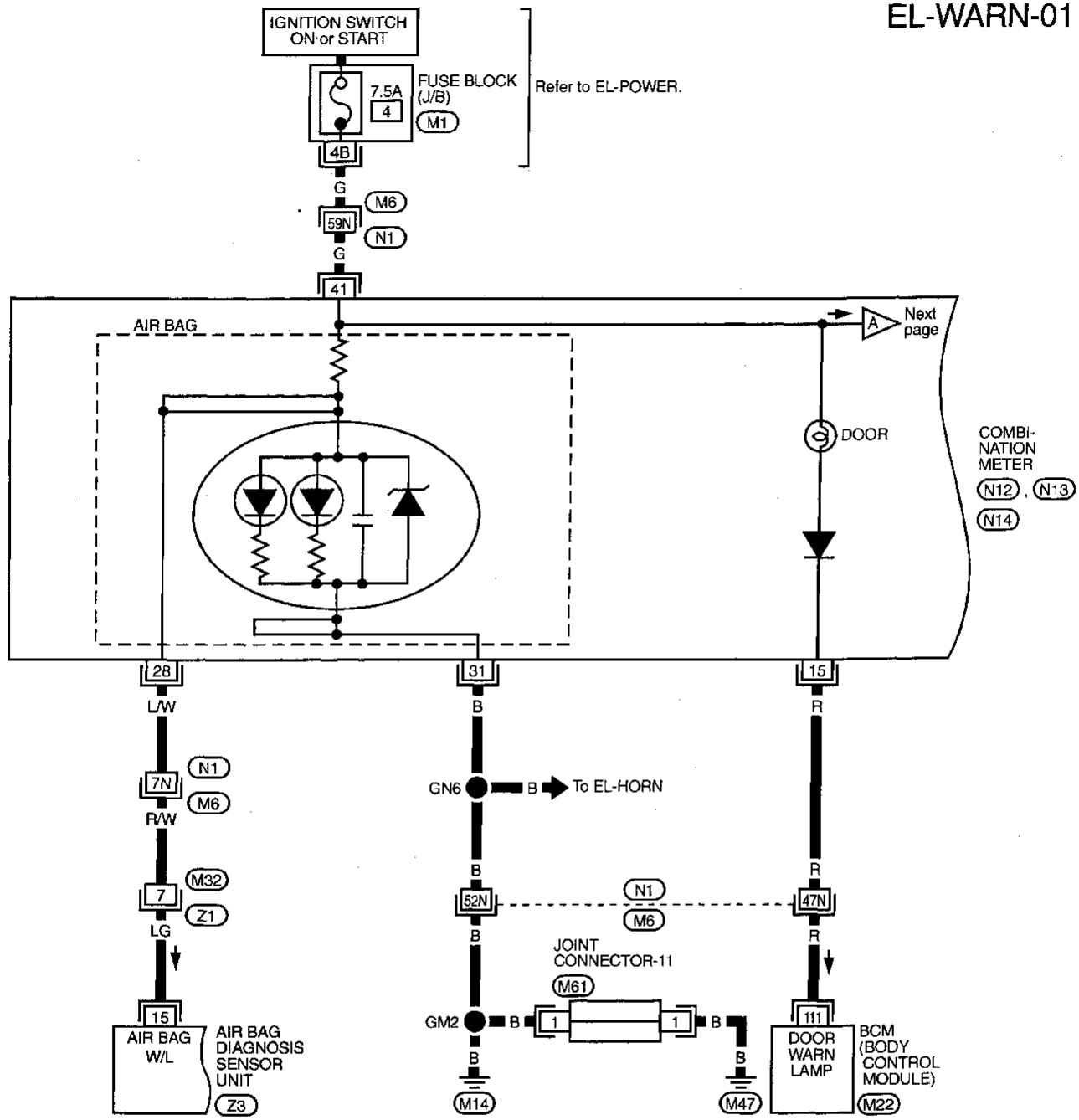
Schematic

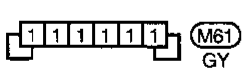


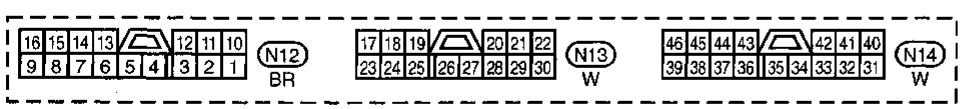
TEL198A

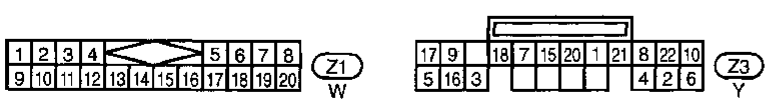
Wiring Diagram — WARN —

EL-WARN-01







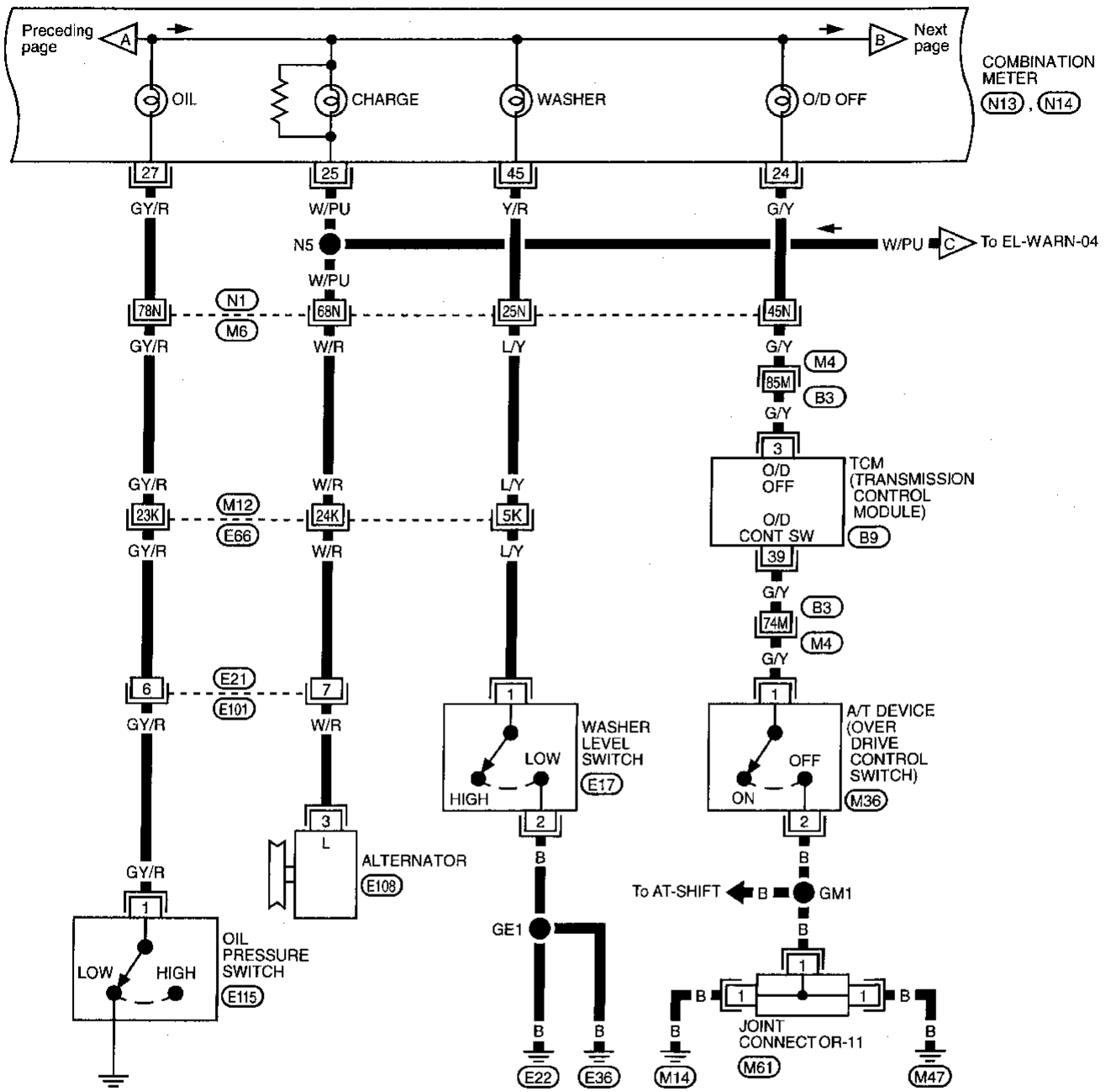


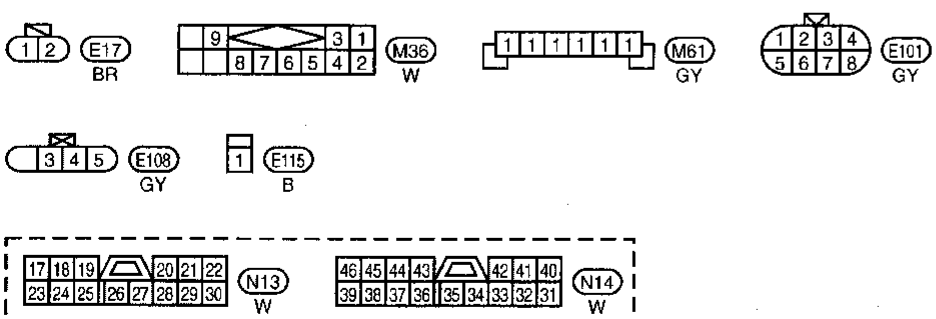
Refer to last page (Foldout page).
M6, N1
M1
M22

TEL199A

Wiring Diagram — WARN — (Cont'd)

EL-WARN-02





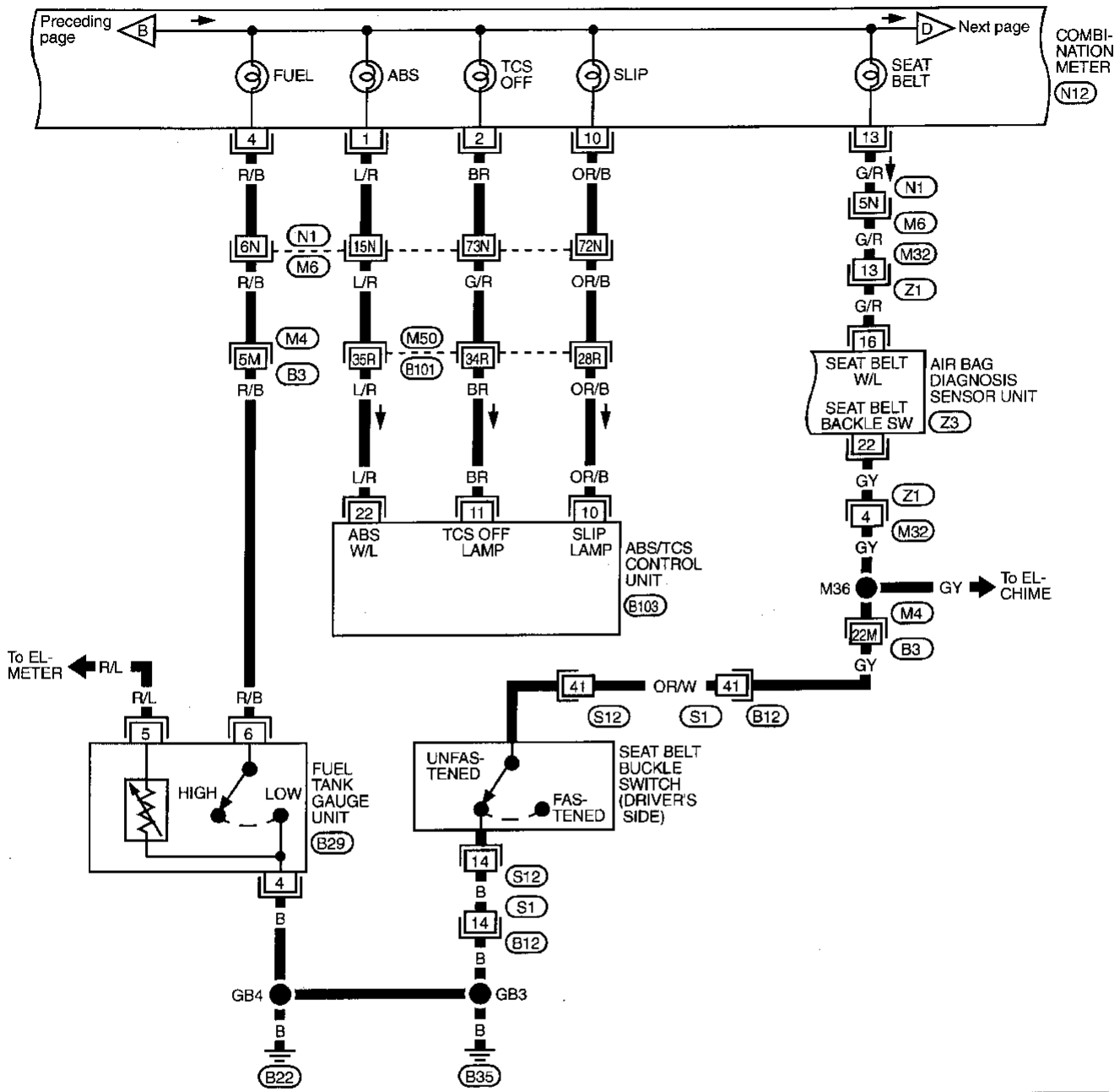
Refer to last page (Foldout page).

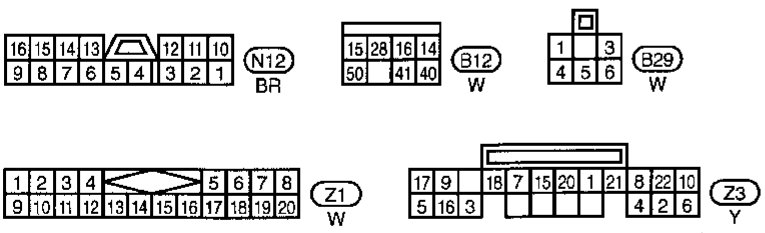
E66, M12
M4, B3
M6, N1
B9

TEL200A

Wiring Diagram — WARN — (Cont'd)

EL-WARN-03





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

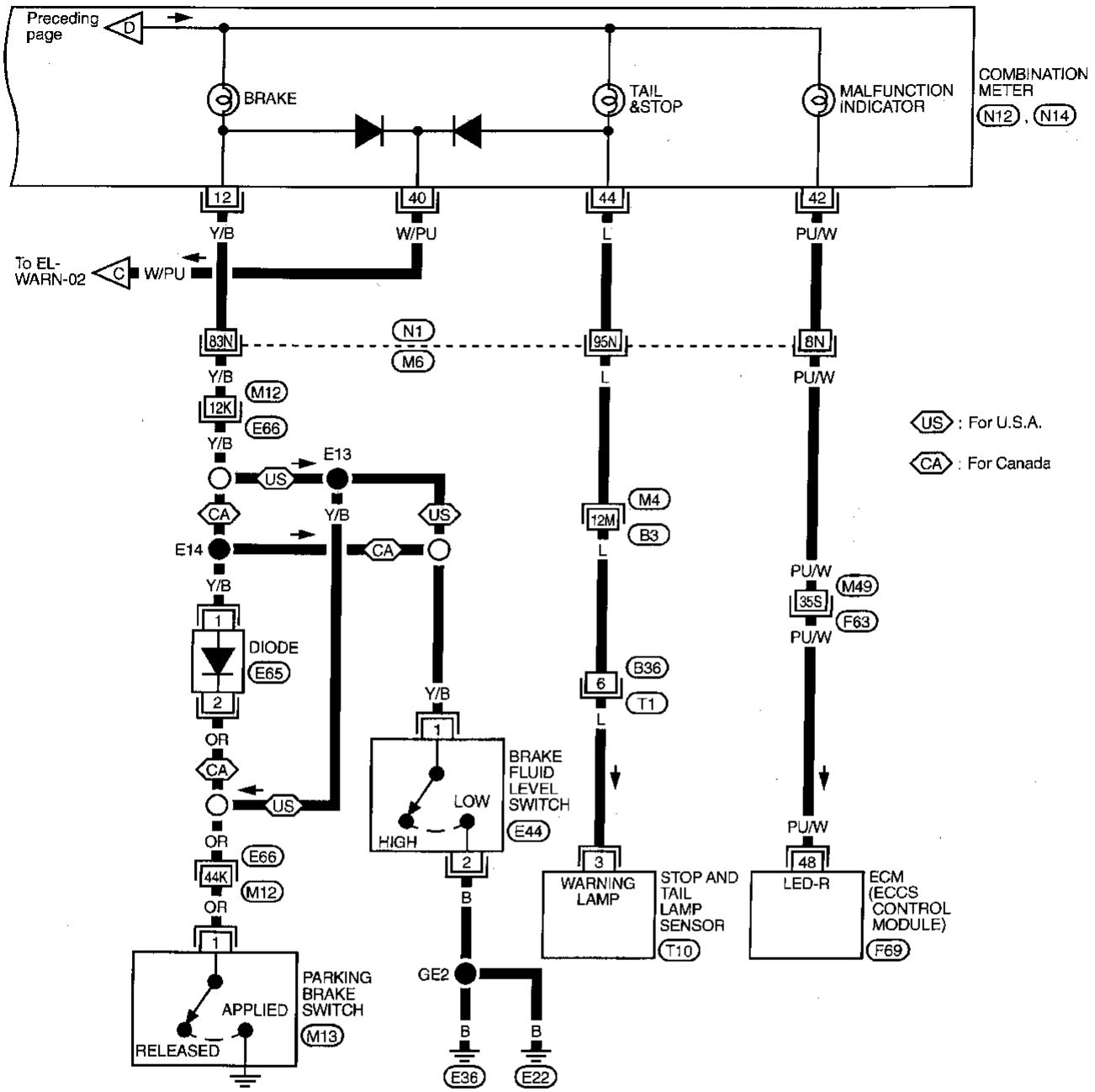
Refer to last page (Foldout page).

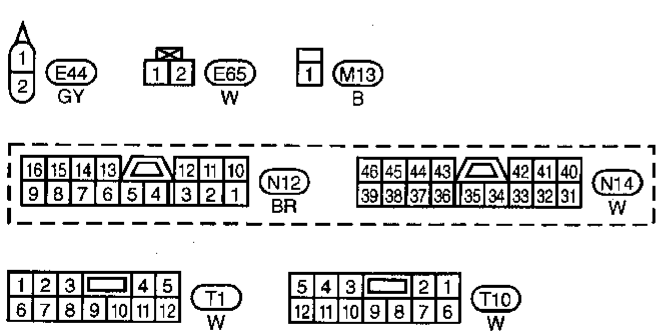
M4, B3
M6, N1
M50, B101
B103

TEL769

Wiring Diagram — WARN — (Cont'd)

EL-WARN-04

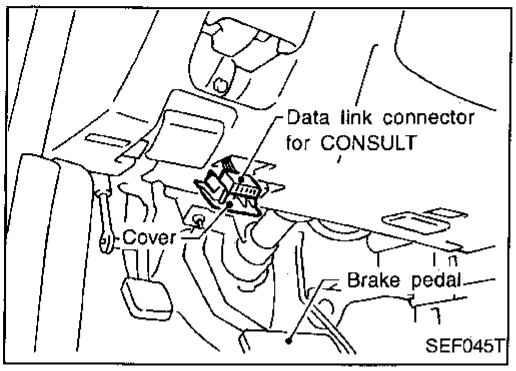




Refer to last page (Foldout page).

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

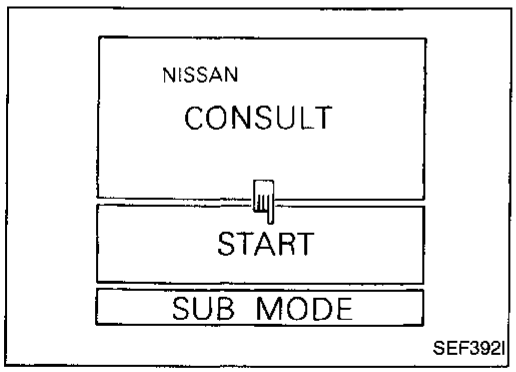
TEL201A



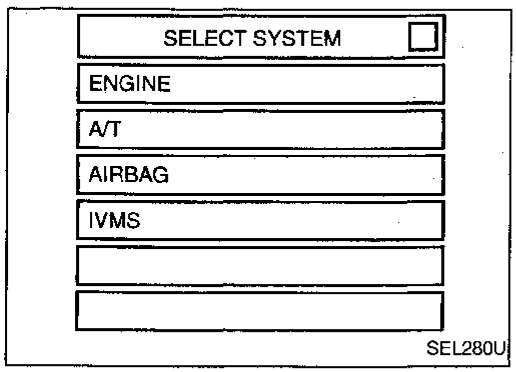
CONSULT (For door warning lamp)

CONSULT INSPECTION PROCEDURE

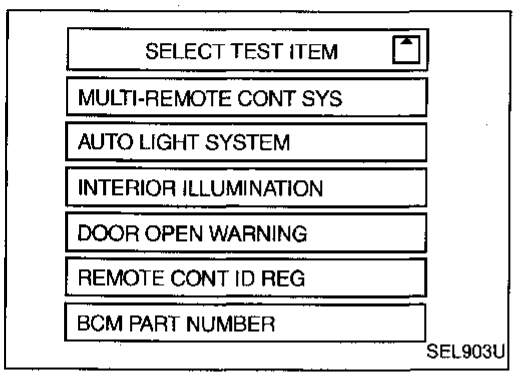
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



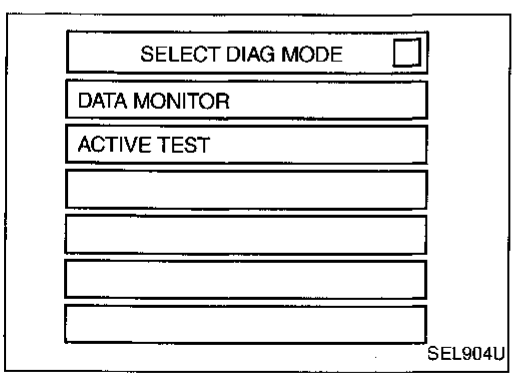
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



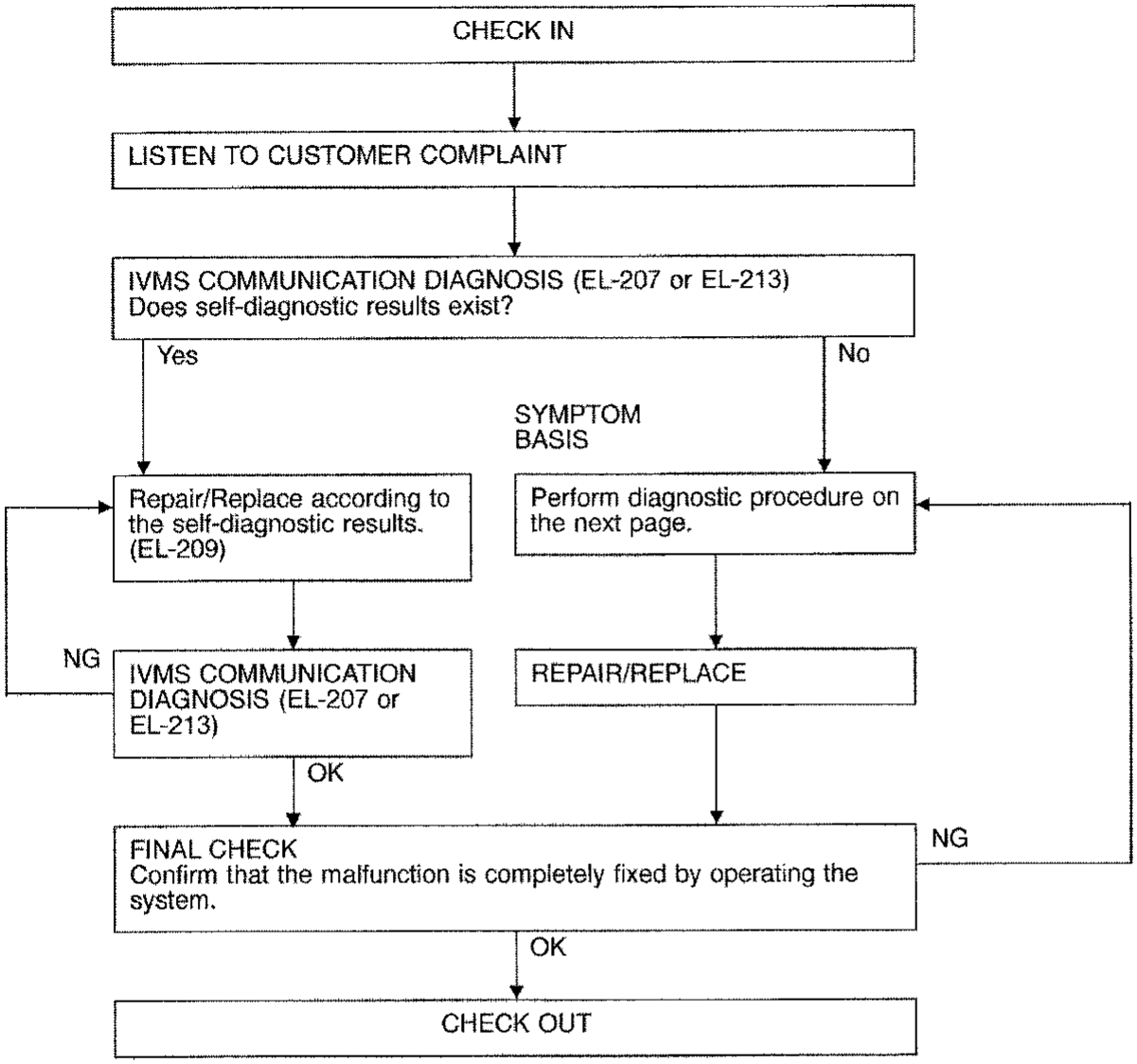
6. Touch "DOOR OPEN WARNING".



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

Trouble Diagnoses/Door Warning Lamp

WORK FLOW



NOTICE:

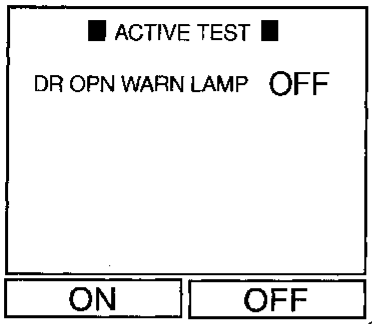
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (Refer to EL-207.) 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

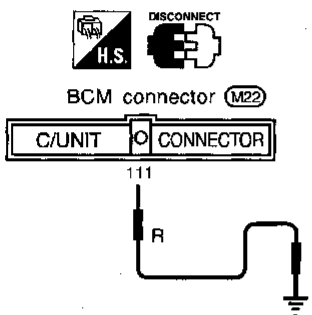
SYMPTOM: Door warning lamp is not operating correctly.

A



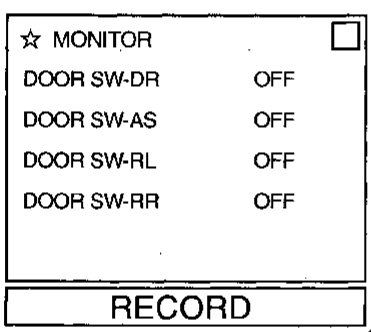
SEL676U

B



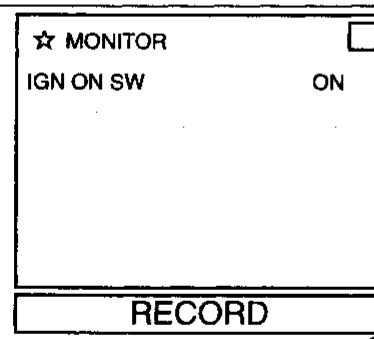
SEL677UA

C



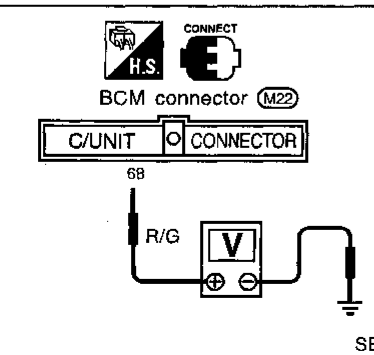
SEL575U

D



SEL358U

E



SEL556UB

CHECK WARNING LAMP OPERATION.

A CONSULT

Perform "DOOR OPEN WARNING" 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

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 all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

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

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.

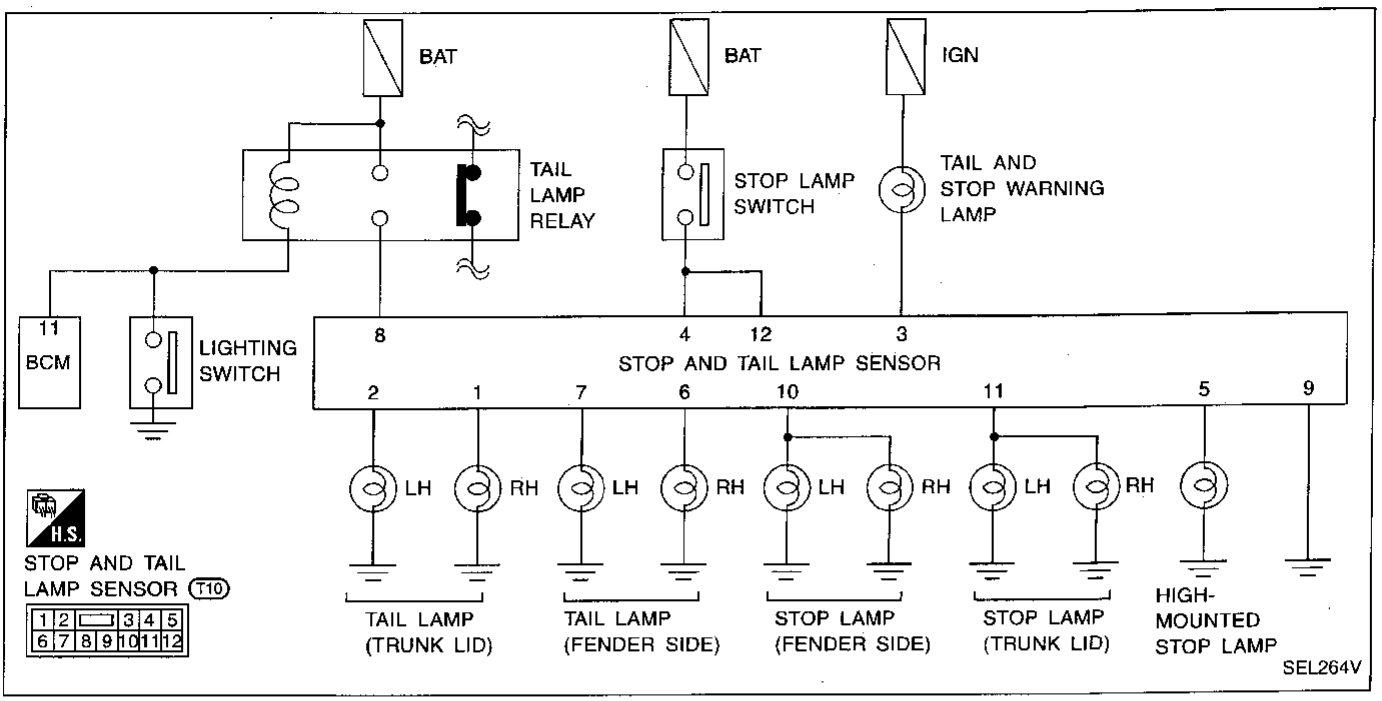
Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

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.

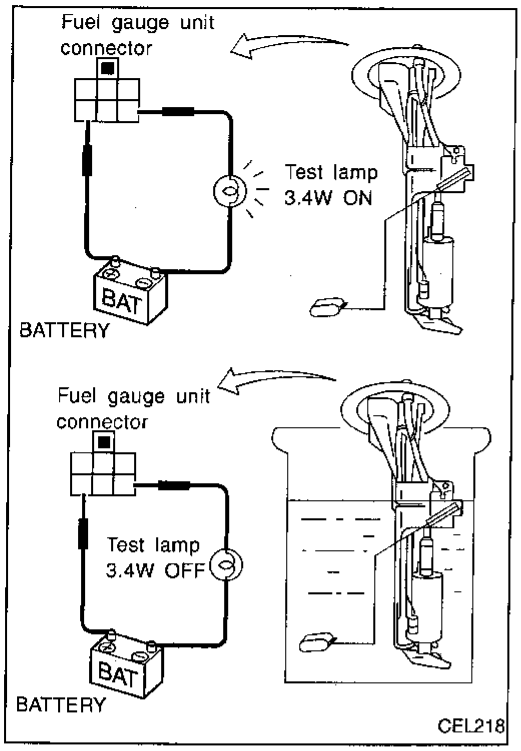
Trouble Diagnoses/Stop and Tail Lamp Sensor



STOP AND TAIL LAMP SENSOR INSPECTION TABLE

Terminal No.	Connections	Operated condition		Voltage (Approximate values)
1	Tail lamp RH (Trunk lid)	Lighting switch or auto lamp	Turned ON	12V
2	Tail lamp LH (Trunk lid)		Turned OFF	0V
3	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	Stop lamp switch	Depressed		12V
		Released		0V
5	High-mounted stop lamp	Stop lamp switch	Depressed	11V
			Released	0V
6	Tail lamp RH (Fender side)	Lighting switch or auto lamp	Turned ON	11V
7	Tail lamp LH (Fender side)		Turned OFF	0V
8	Tail lamp relay	Lighting switch or auto lamp	Turned ON	11V
			Turned OFF	0V
9	Ground	—		—
10	Stop lamp LH and RH (Fender side)	Stop lamp switch	Depressed	11V
11	Stop lamp LH and RH (Trunk lid)		Released	0V
12	Stop lamp switch	Depressed		12V
		Released		0V

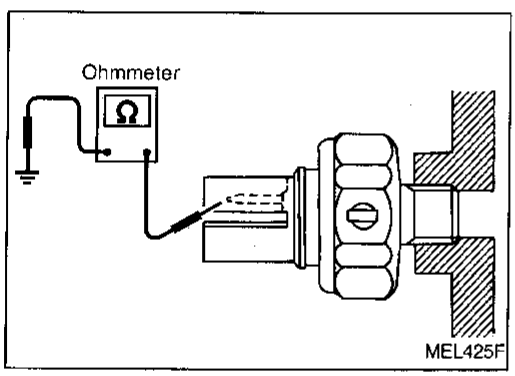
Note: The system senses bulb burnout only when the stop lamp switch is depressed for stop lamps or tail lamp relay is energized for tail lamps.



Electrical Components Inspection

FUEL WARNING LAMP SENSOR CHECK

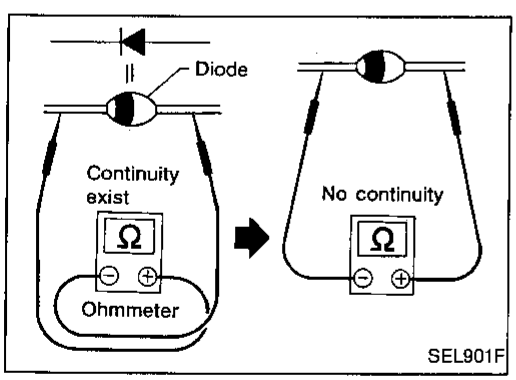
- It will take a short time for the bulb to light.



OIL PRESSURE SWITCH CHECK

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

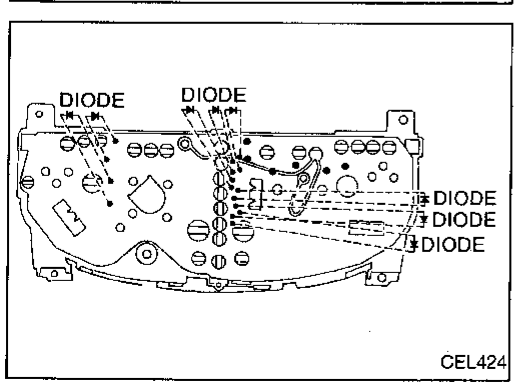
Check the continuity between the terminals of oil pressure switch and body ground.



DIODE CHECK

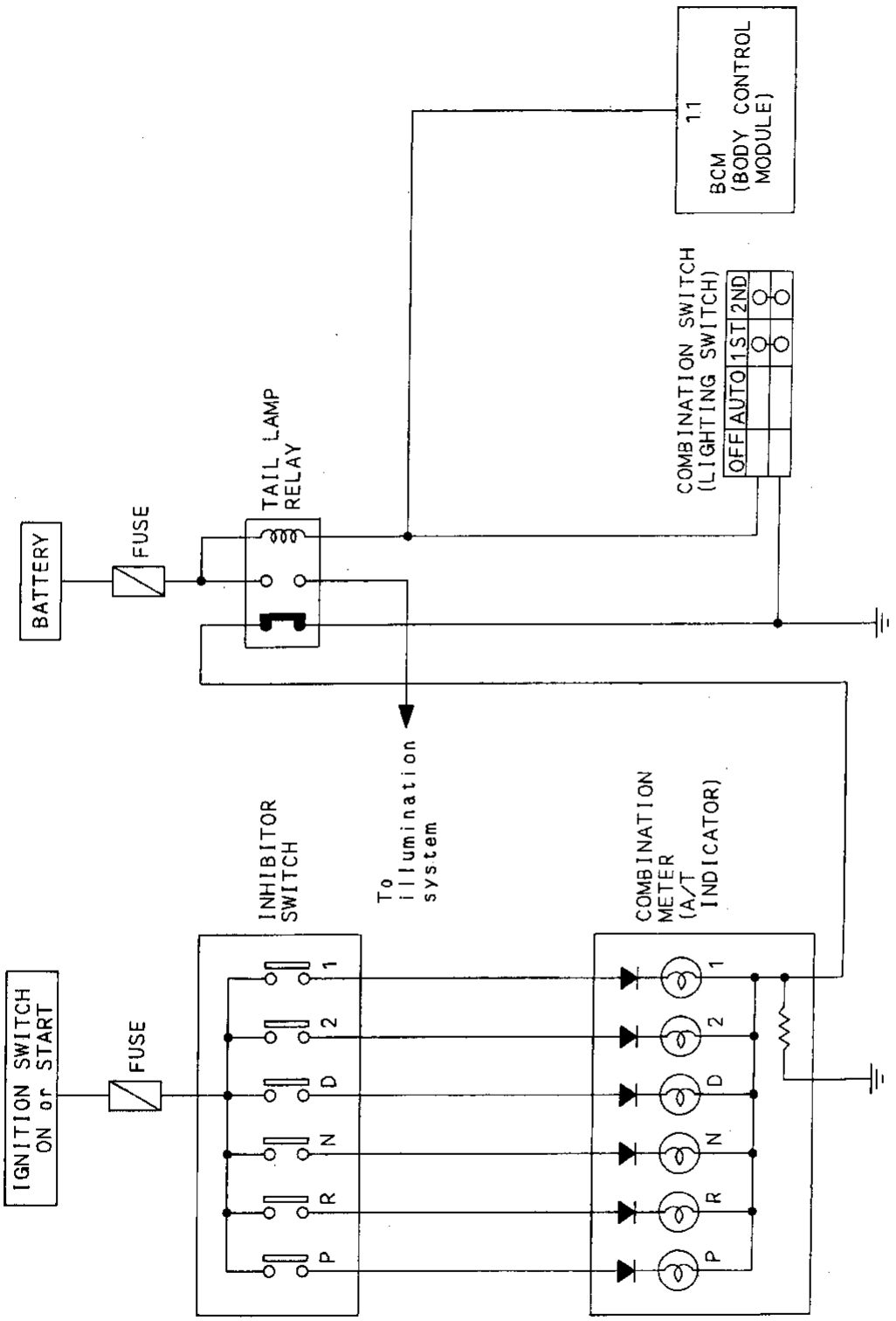
- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

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.

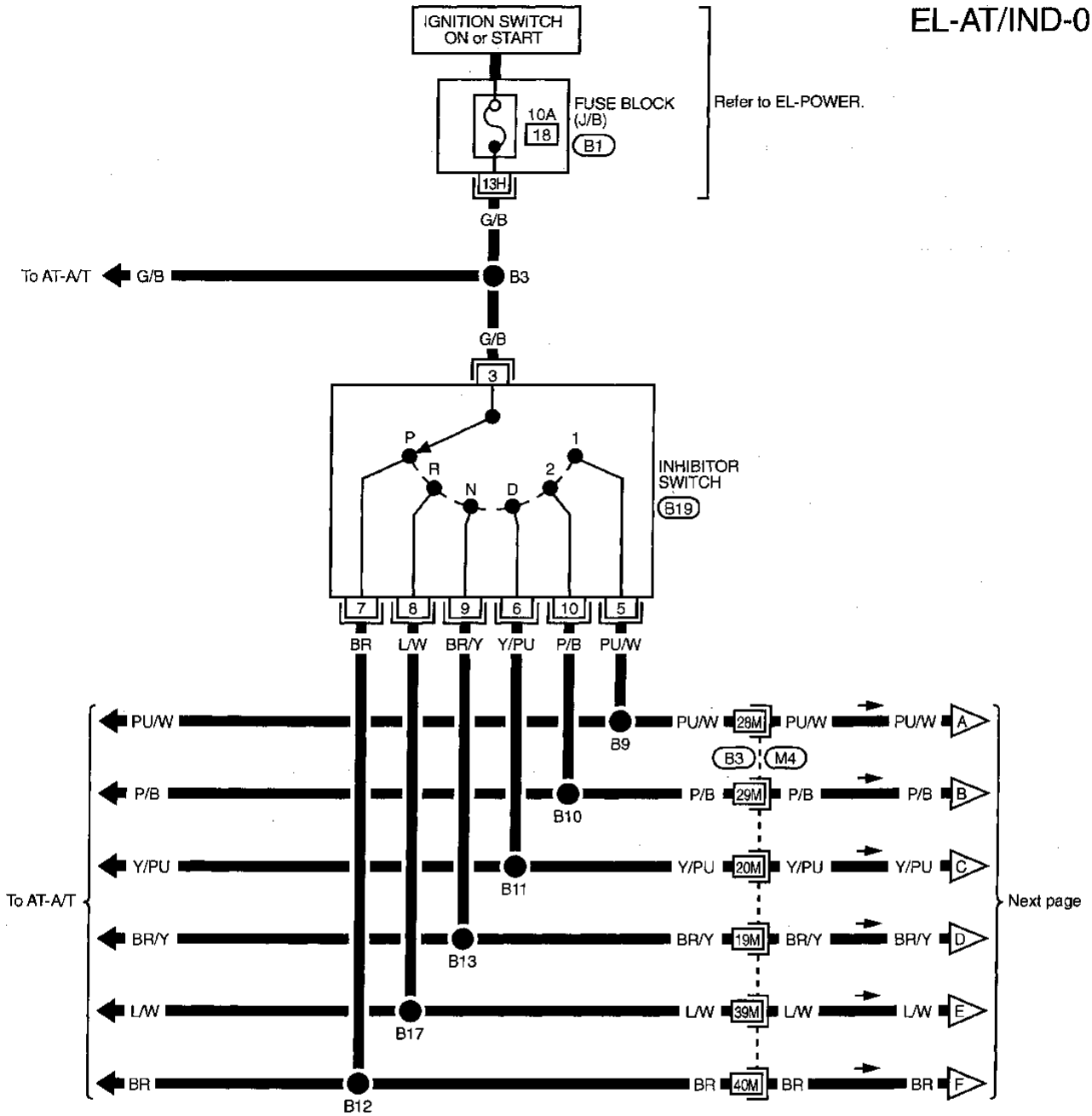
Schematic

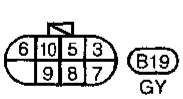


TEL771

Wiring Diagram — AT/IND —

EL-AT/IND-01





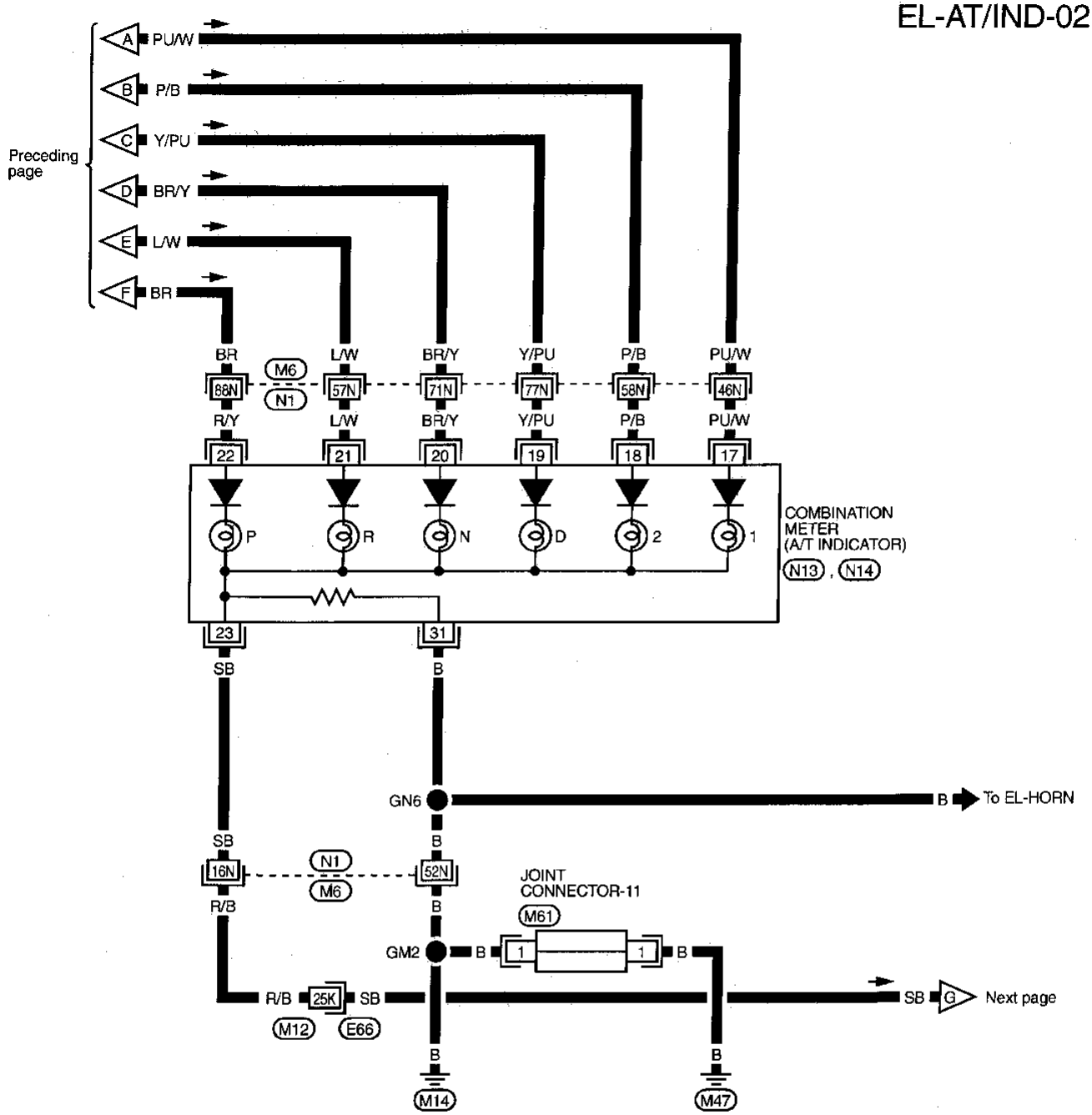
Refer to last page (Foldout page).
M4, B3
B1

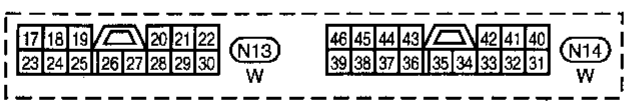
TEL772

1541

Wiring Diagram — AT/IND — (Cont'd)

EL-AT/IND-02





Refer to last page (Foldout page).

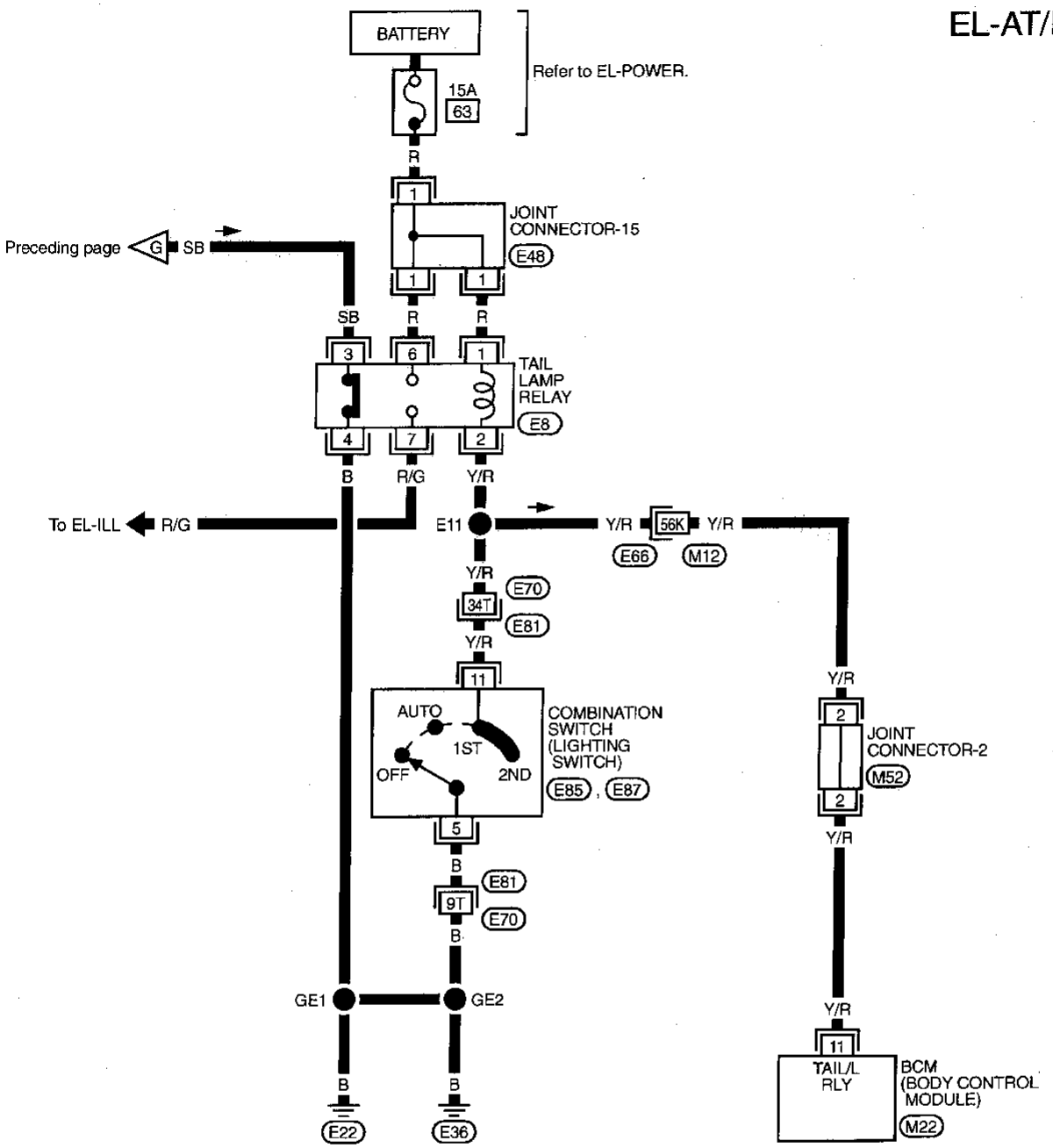
E66 , M12

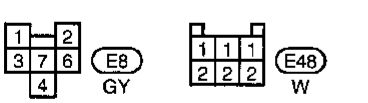
M6 , N1

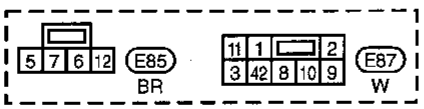
TEL202A

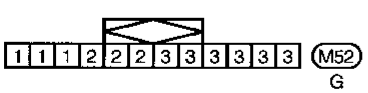
Wiring Diagram — AT/IND — (Cont'd)

EL-AT/IND-03





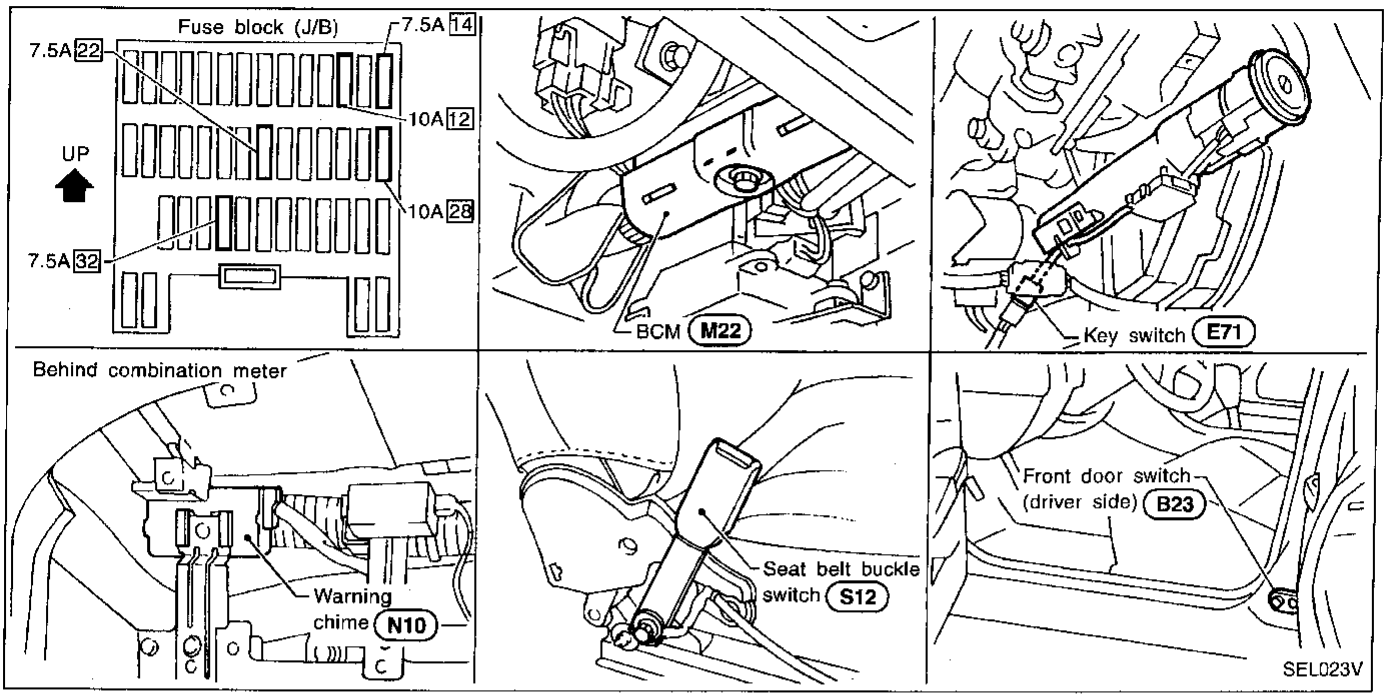




Refer to last page (Foldout page).
E66 , M12
E70 , E81
M22

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 or fog lamp switch in ON 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 ⑱.

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]

System Description (Cont'd)

- to tail lamp relay terminals ① and ⑥.

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 ⑱.

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 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.

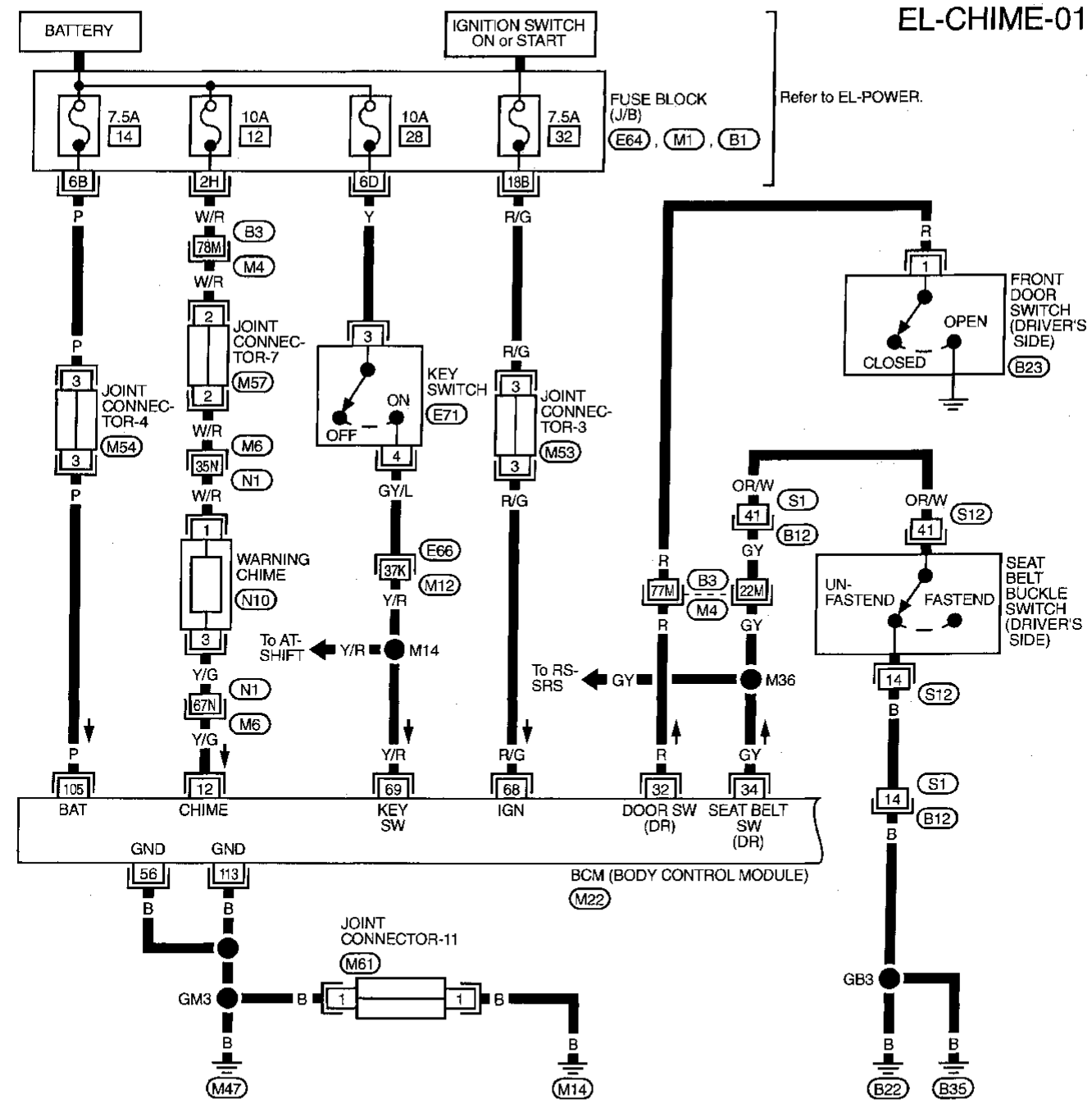
With the ignition switch in the ON or START position, power is supplied

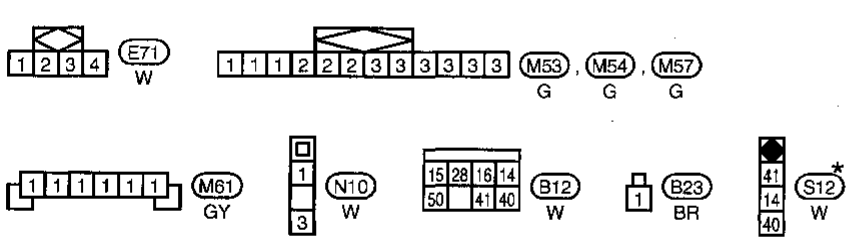
- through 7.5A fuse [No. 32], located in the fuse block (J/B)]
- to BCM terminal ⑱.

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 —





Refer to last page (Foldout page).

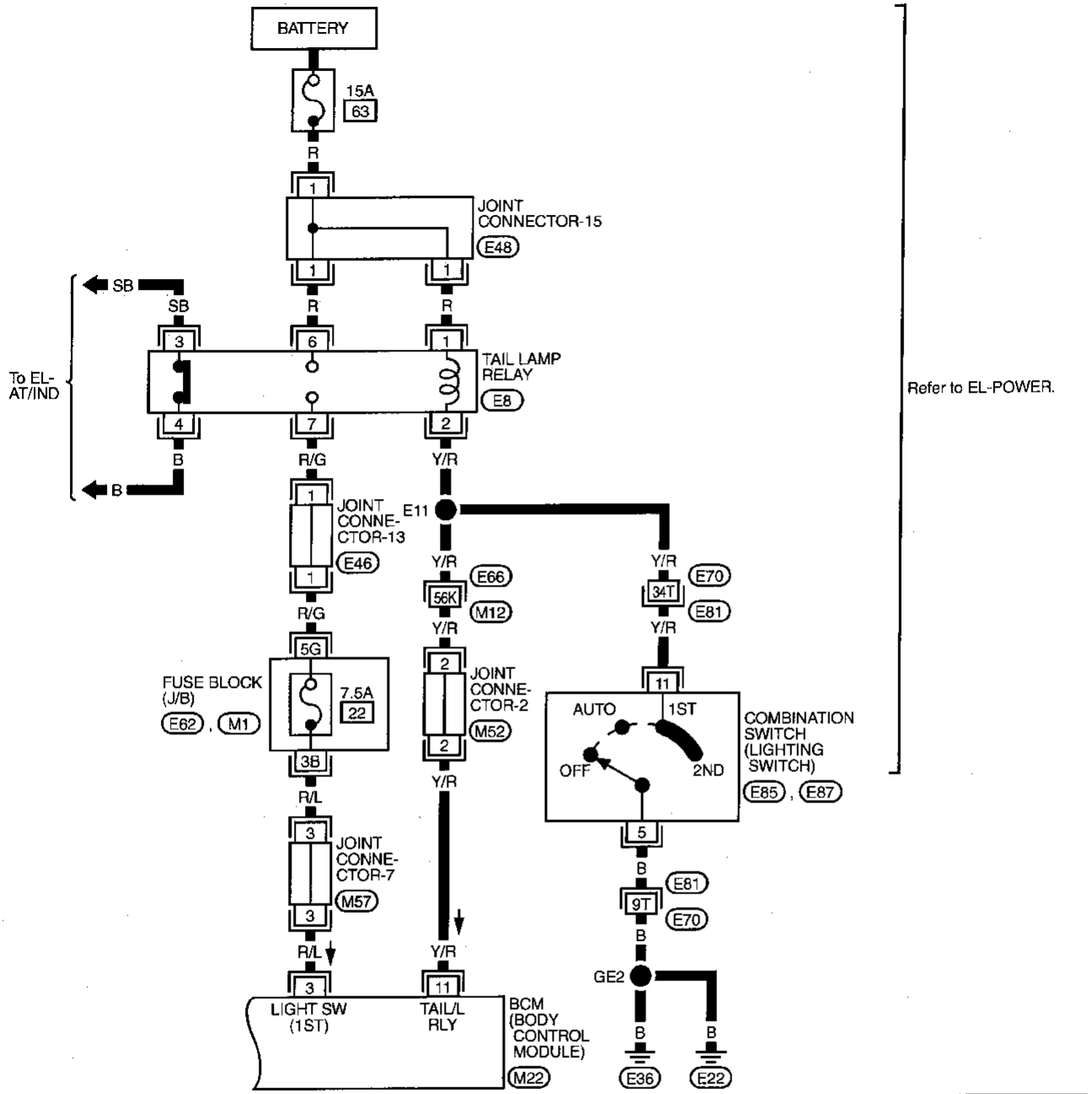
E66, M12
M4, B3
M6, N1
E64
M1
M22
B1

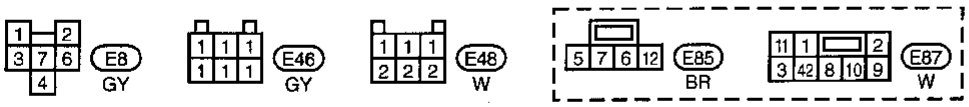
*: This connector is not shown in "HARNESS LAYOUT", EL section.

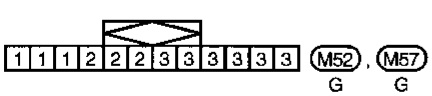
TEL203A

Wiring Diagram — CHIME — (Cont'd)

EL-CHIME-02

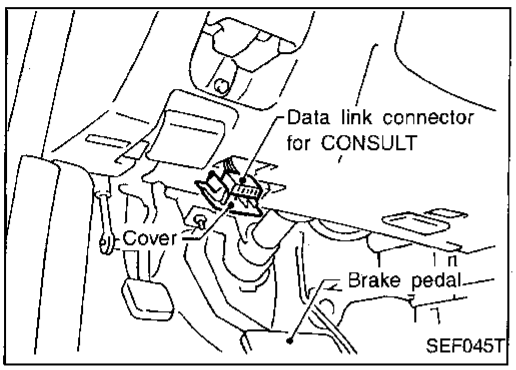






Refer to last page (Foldout page).
E66, M12
E70, E81
E62
M1
M22

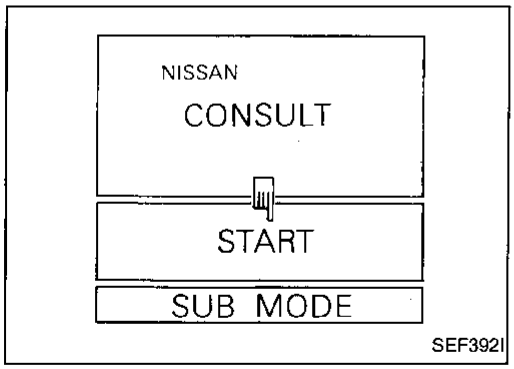
TEL776



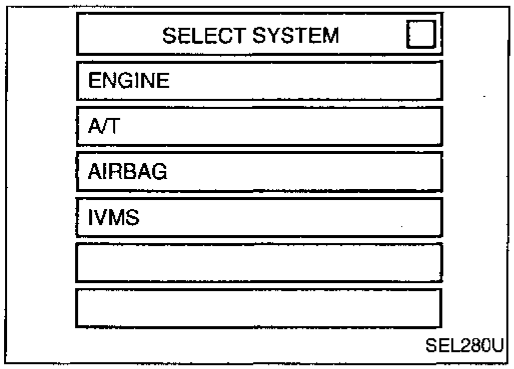
CONSULT

CONSULT INSPECTION PROCEDURE

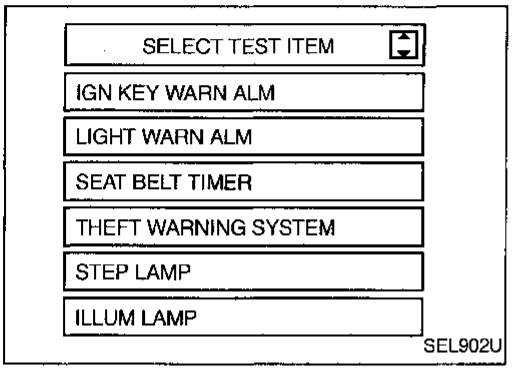
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



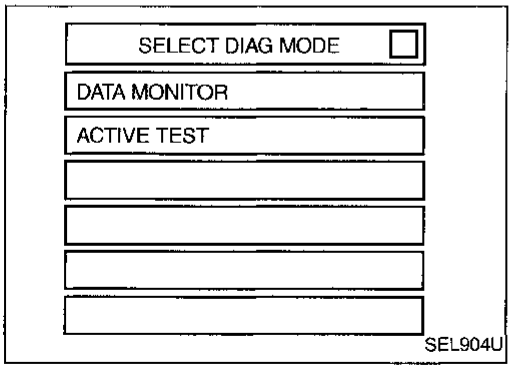
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



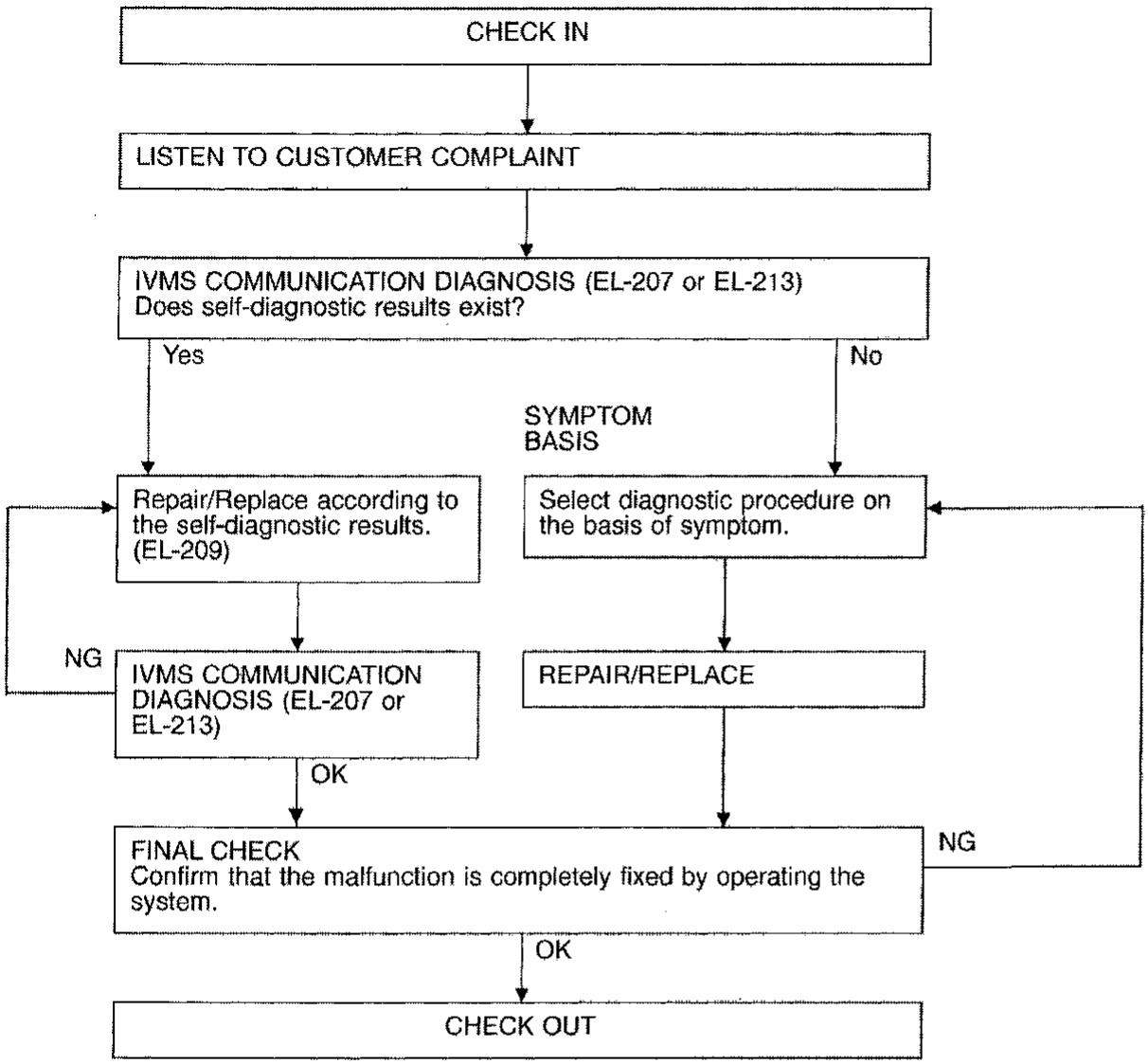
6. Touch "IGN KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT TIMER".



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

Trouble Diagnoses

WORK FLOW



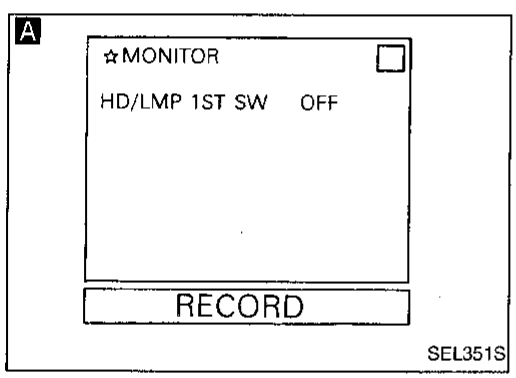
NOTICE:

- **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 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 (Refer to EL-207.) 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-116	EL-117	EL-117	EL-118
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



DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)

CHECK LIGHTING SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

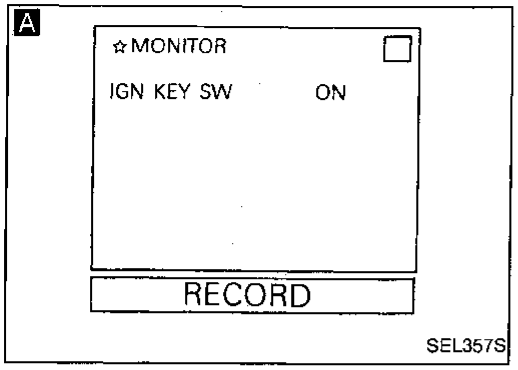
OK ↓

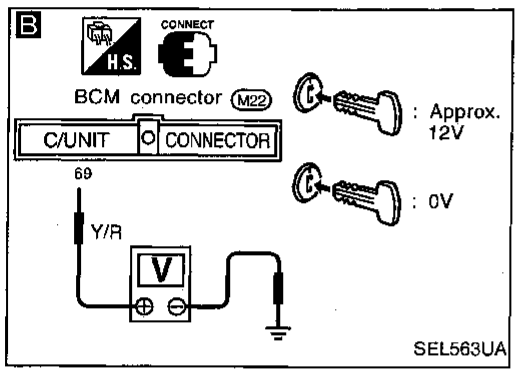
Go to Procedure 4.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)





CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

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.

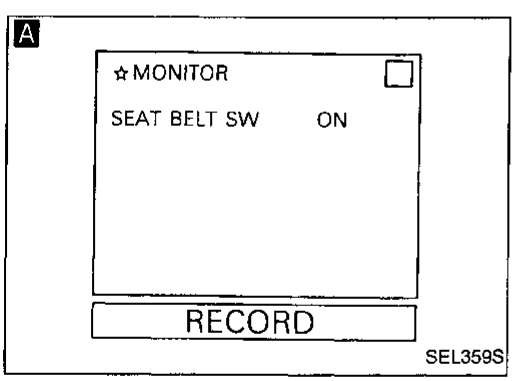
Condition of key switch	Voltage [V]
Key is inserted	Approx. 12
Key is removed	0

NG → Check the following.
- Key switch
  Refer to "Electrical Components Inspection" (EL-119).
- 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.

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)



CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

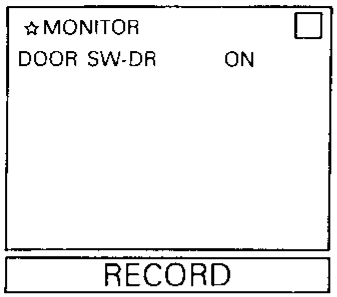
NG → Check the following.
- Seat belt buckle switch
  Refer to "Electrical Components Inspection" (EL-119).
- Seat belt buckle switch ground circuit
- Harness for open or short between BCM and seat belt buckle switch

OK → Go to procedure 4.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

A



SEL347S

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT

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

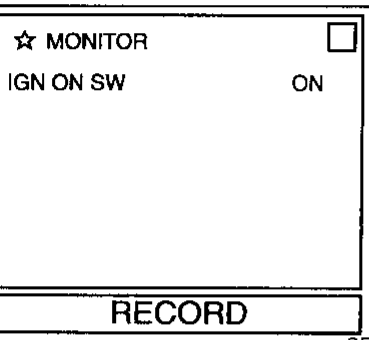
ON-BOARD

Check driver side door switch in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

NG → Check the following.
- Driver door switch
  Refer to "Electrical Components Inspection" (EL-119).
- Driver door switch ground condition
- Harness for open or short between driver door switch and BCM

OK ↓

B



SEL358U

CHECK IGNITION SWITCH ON SIGNAL.

B CONSULT

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

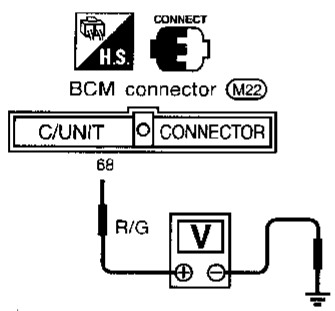
Check voltage between BCM terminal (68) and ground.

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

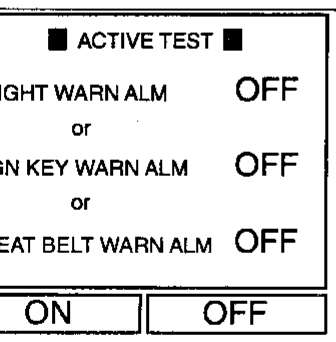
D

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

OK → System is OK.

NG ↓

D



SEL323U

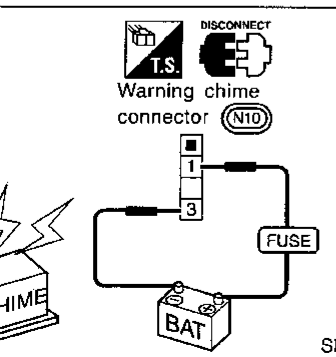
E

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

NG → Replace chime.

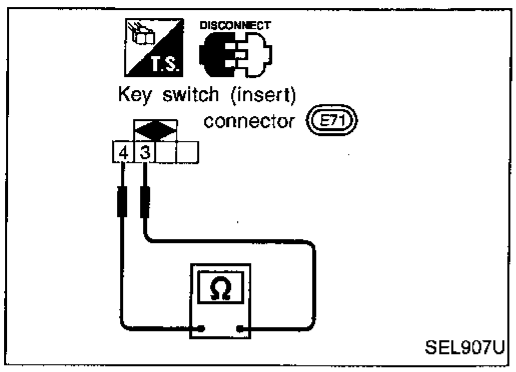
OK ↓

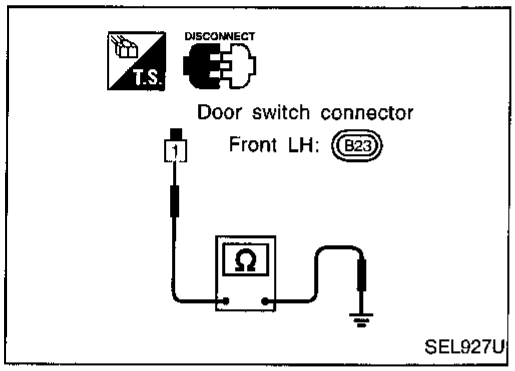
E

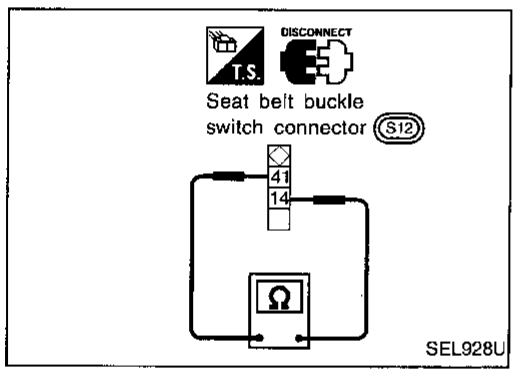


SEL564UB

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.

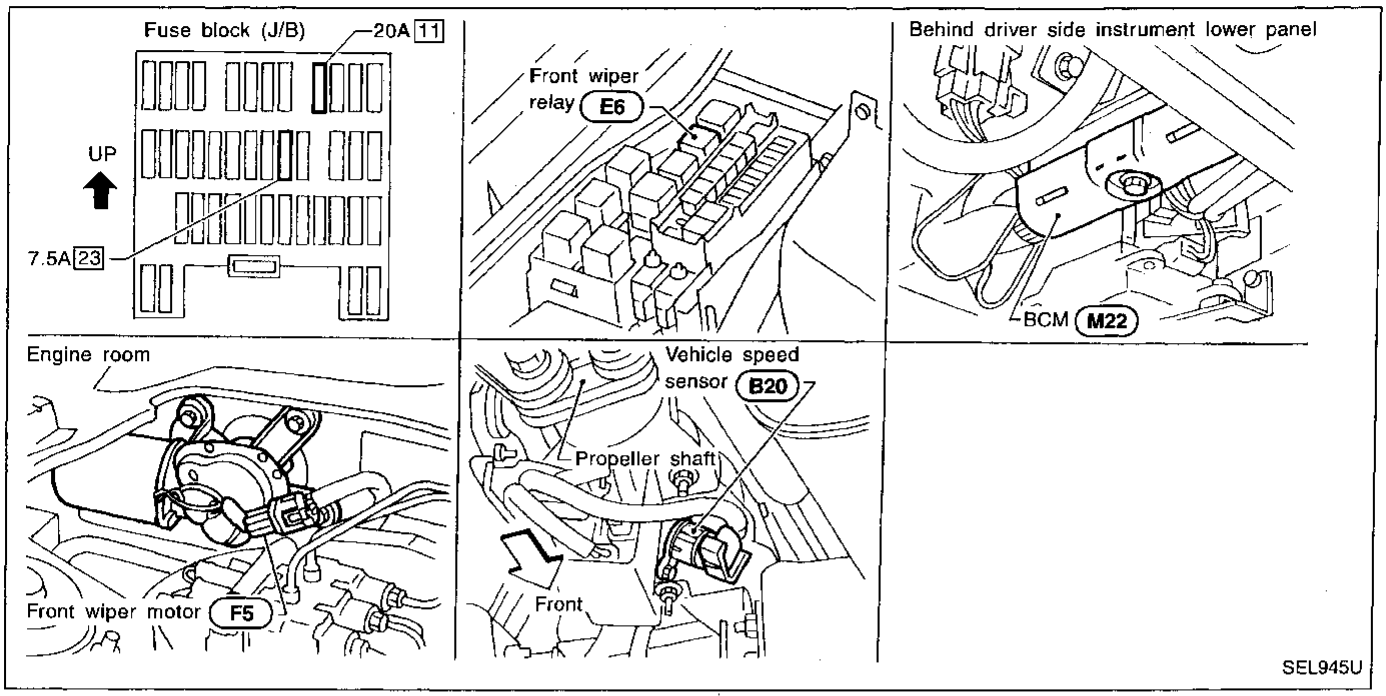
Terminal No.	Condition	Continuity
① - ground	Door switch is pushed.	No
	Door switch is released.	Yes

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.

System Description (Cont'd)

When the front wiper switch is placed in the INT position, ground is supplied
- 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 ⑯ (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)

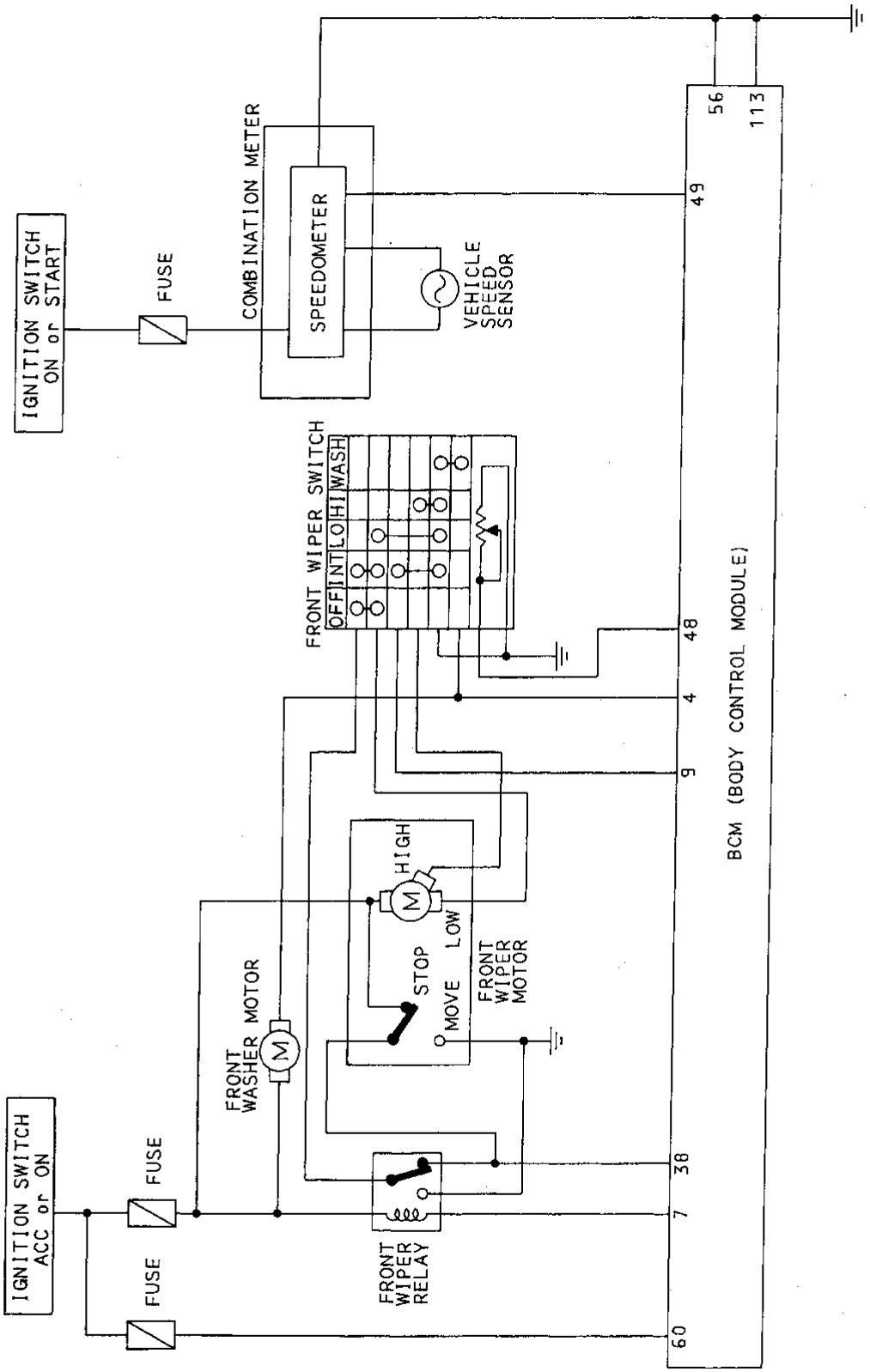
WASHER OPERATION

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.

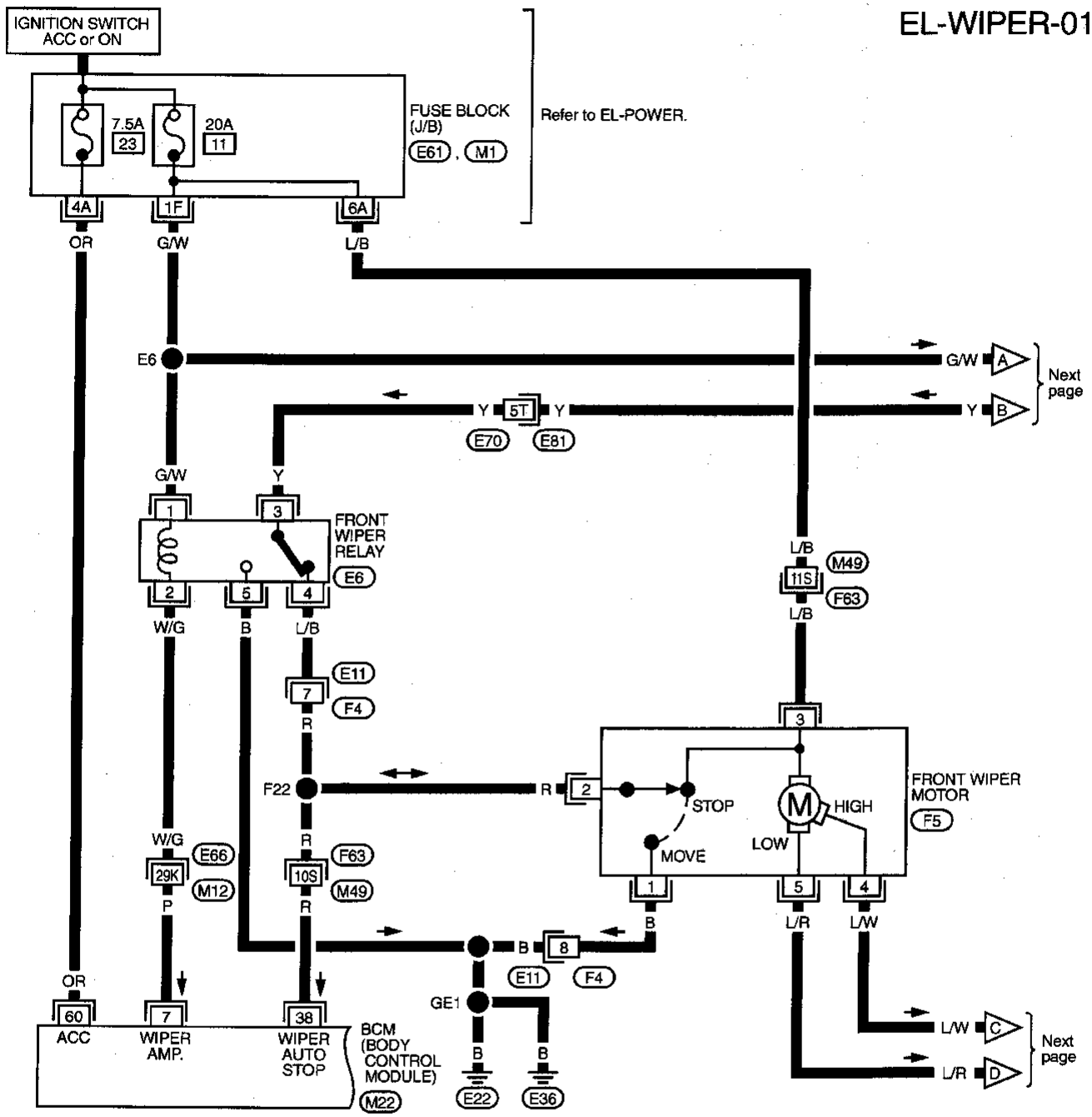
Schematic

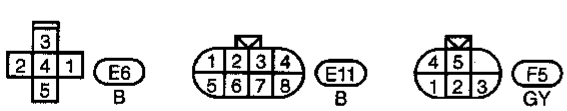


TEL777

Wiring Diagram — WIPER —

EL-WIPER-01





Refer to last page (Foldout page).

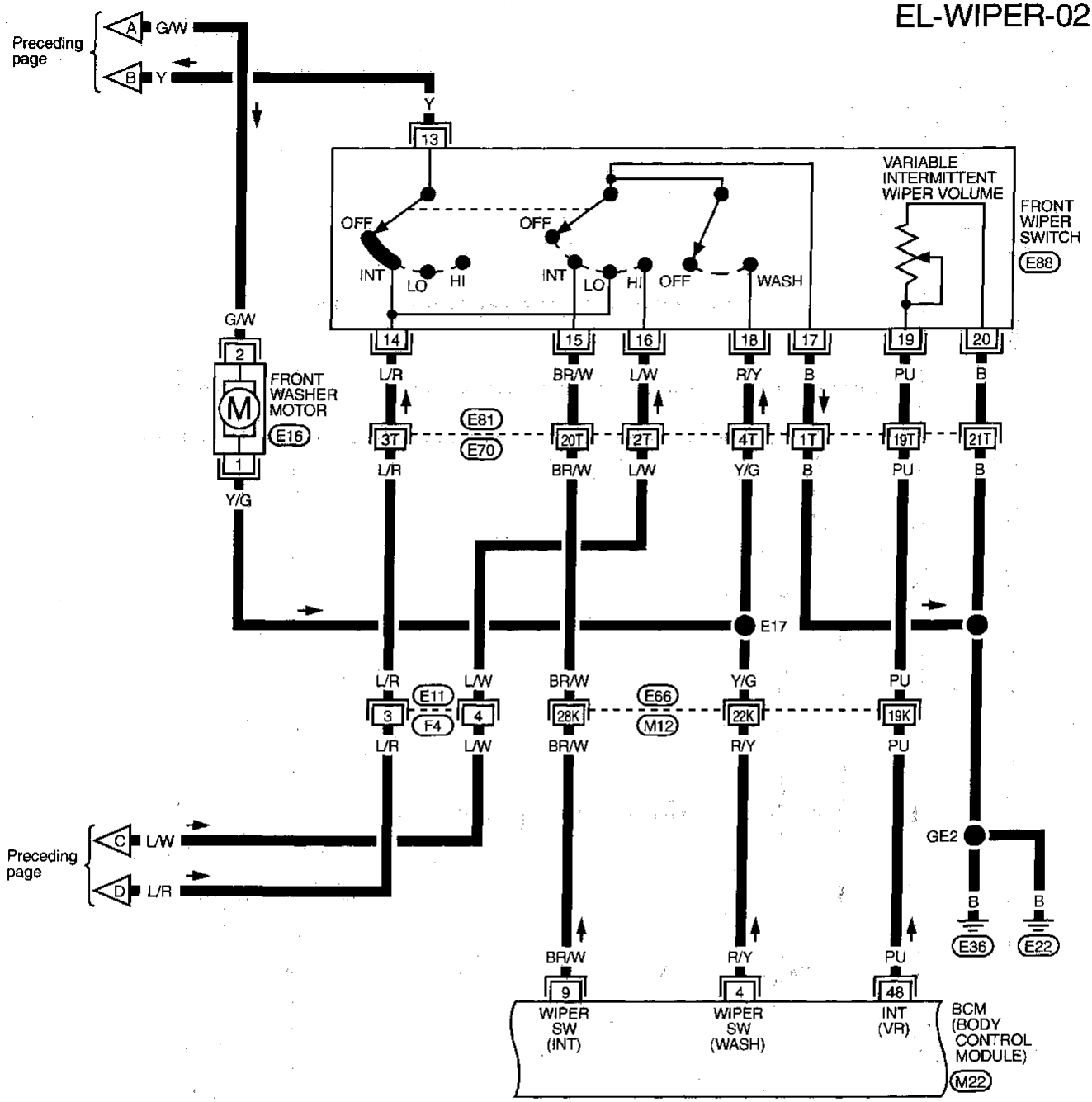
E66, M12
E70, E81
M49, F63
E61
M1
M22

TEL778

1557

Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-02



E11 B

E16 GY

E88 GY

Refer to last page (Foldout page).

E66, M12

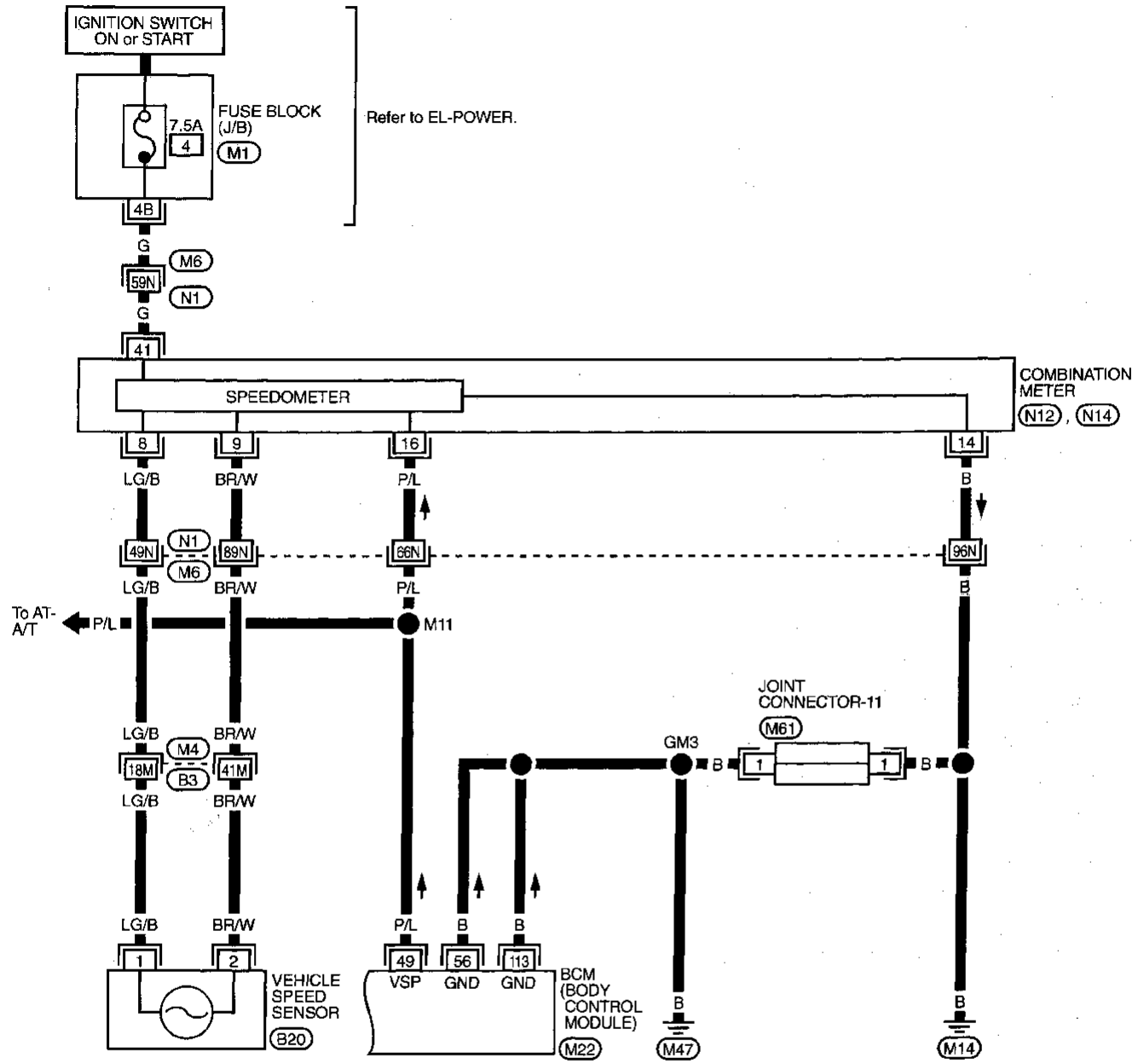
E70, E81

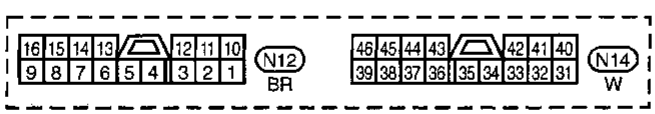
M22

TEL246A

Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-03

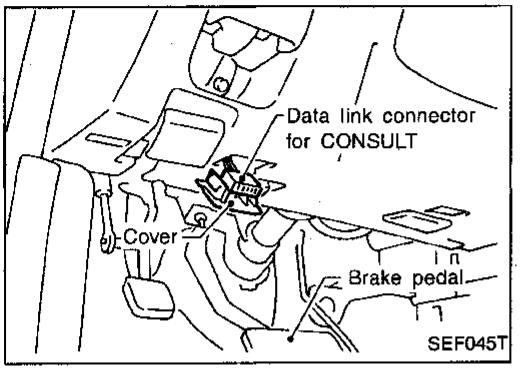




Refer to last page (Foldout page).
M4, B3
M6, N1
M1
M22

TEL204A

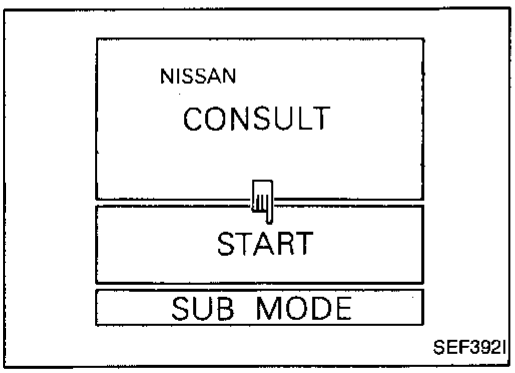
1559



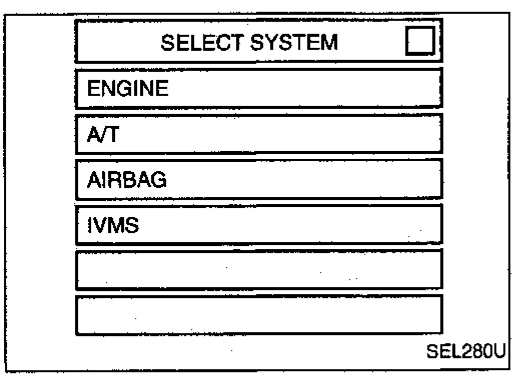
CONSULT

CONSULT INSPECTION PROCEDURE

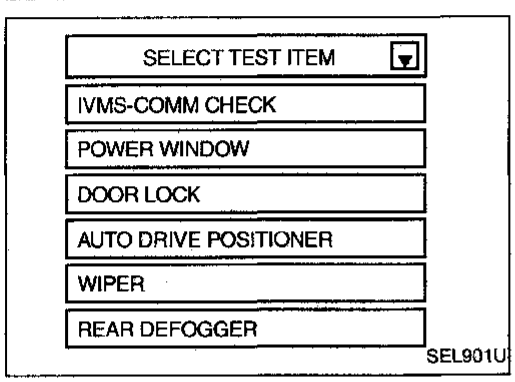
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



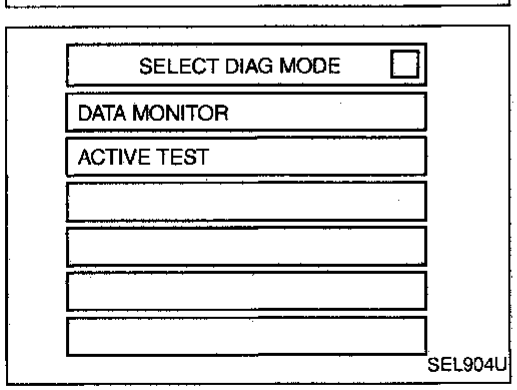
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



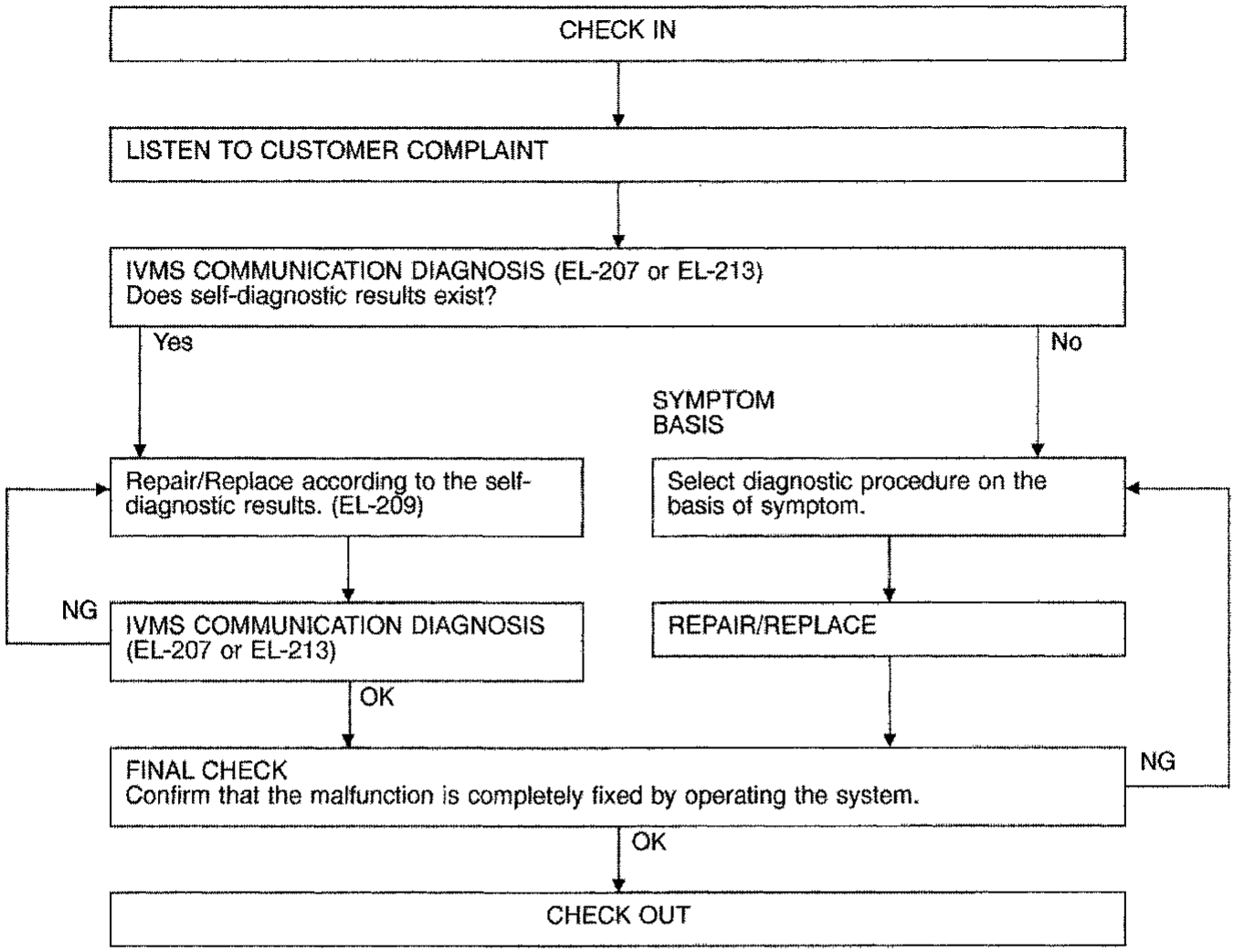
6. Touch "WIPER".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

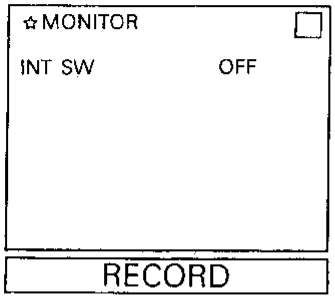
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (Refer to EL-207.) 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

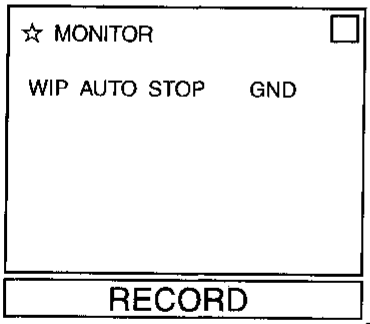
SYMPTOM: Intermittent wiper does not operate.

A



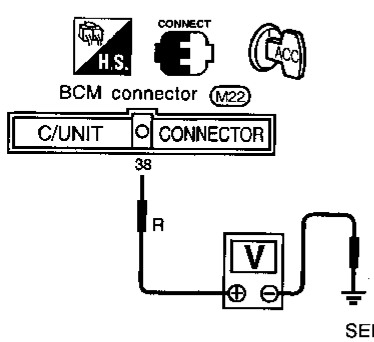
SEL340S

B



SEL647U

C



SEL648UB

CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL.

A CONSULT

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

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.

OR

ON-BOARD

Check wiper switch (INT) in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-124.

OK ↓

CHECK WIPER AUTO STOP SIGNAL.

B CONSULT

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

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

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

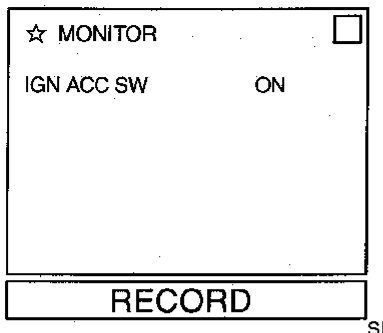
Refer to wiring diagram in EL-123.

OK ↓

Ⓐ

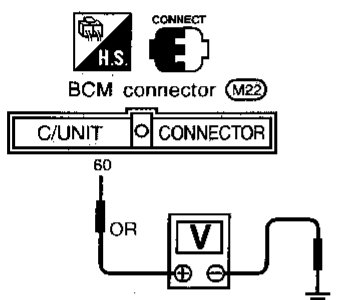
Trouble Diagnoses (Cont'd)

D



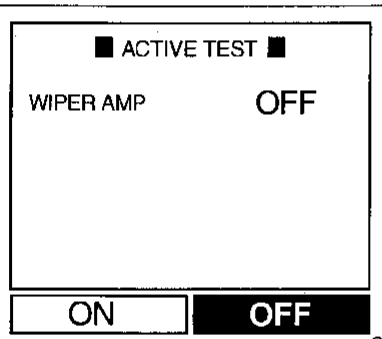
SEL919U

E



SEL682UA

F



SEL649U

Ⓐ

CHECK IGNITION SWITCH ACC SIGNAL.

D CONSULT

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-123.

OK ↓

F

CHECK WIPER OPERATION.

CONSULT

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

OK → Replace BCM.

NG ↓

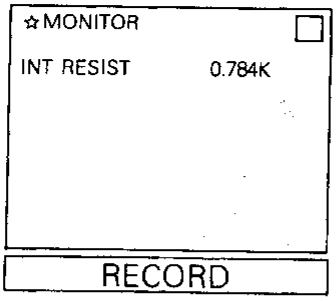
Go to procedure 5.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

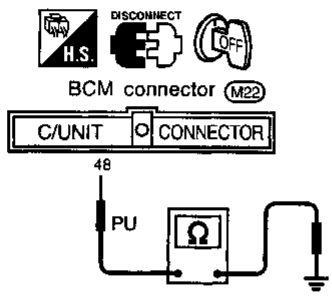
SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



SEL342S

B



SEL566UA

CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL.

A CONSULT

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-124.

OK → Replace BCM.

NG

Check front wiper switch.

NG → Replace intermittent wiper volume.

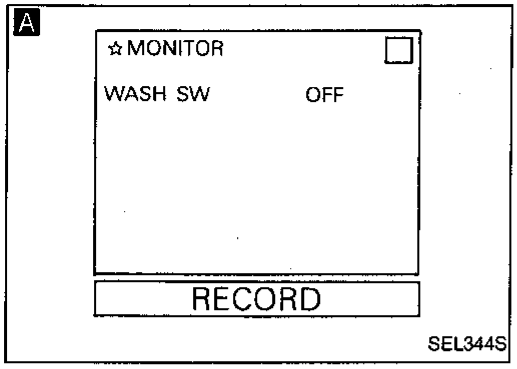
OK

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

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

OR

ON-BOARD

Check wiper switch (WASH) in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215).

Refer to wiring diagram in EL-124.

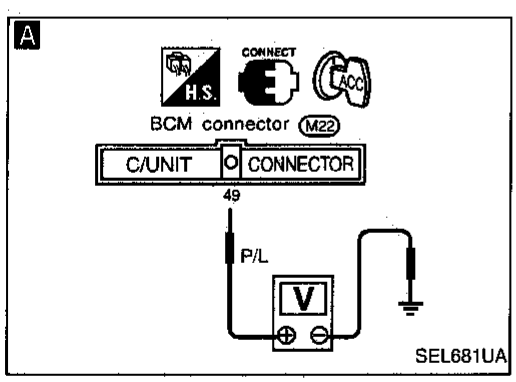
NG → Check the following.
- Front wiper switch
- Harness for open or short between BCM and wiper switch

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 speedometer and vehicle speed sensor circuit. Refer to EL-92.

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-125.

NG → Replace BCM.

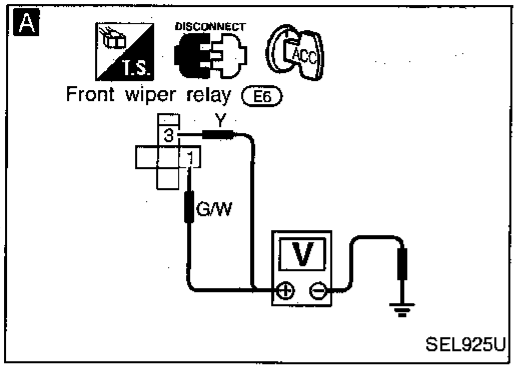
OK ↓

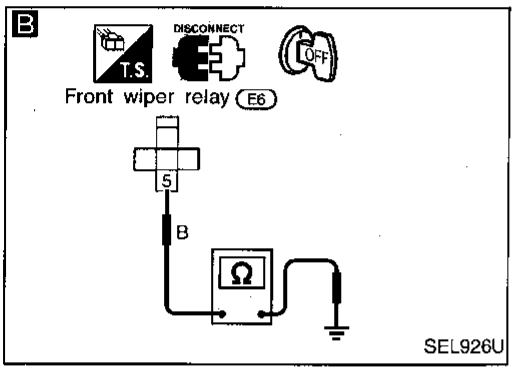
Check harness for open or short between BCM terminal ㊾ and combination meter terminal ⑯.

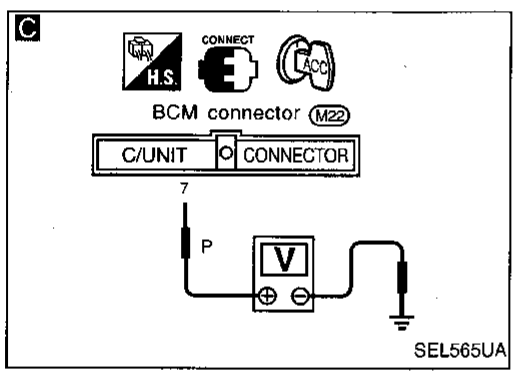
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

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







A

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-123.

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

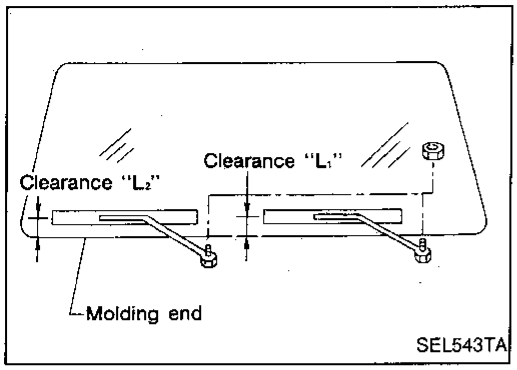
CHECK BCM OUTPUT SIGNAL.
1. Connect front wiper relay.
2. Turn ignition switch to ACC.
3. Check voltage between BCM connector terminal ⑦ and ground.

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.

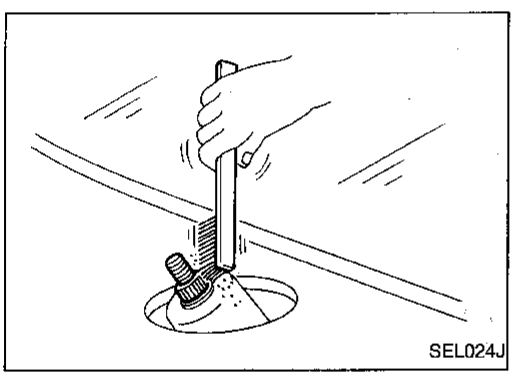


Removal and Installation

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)

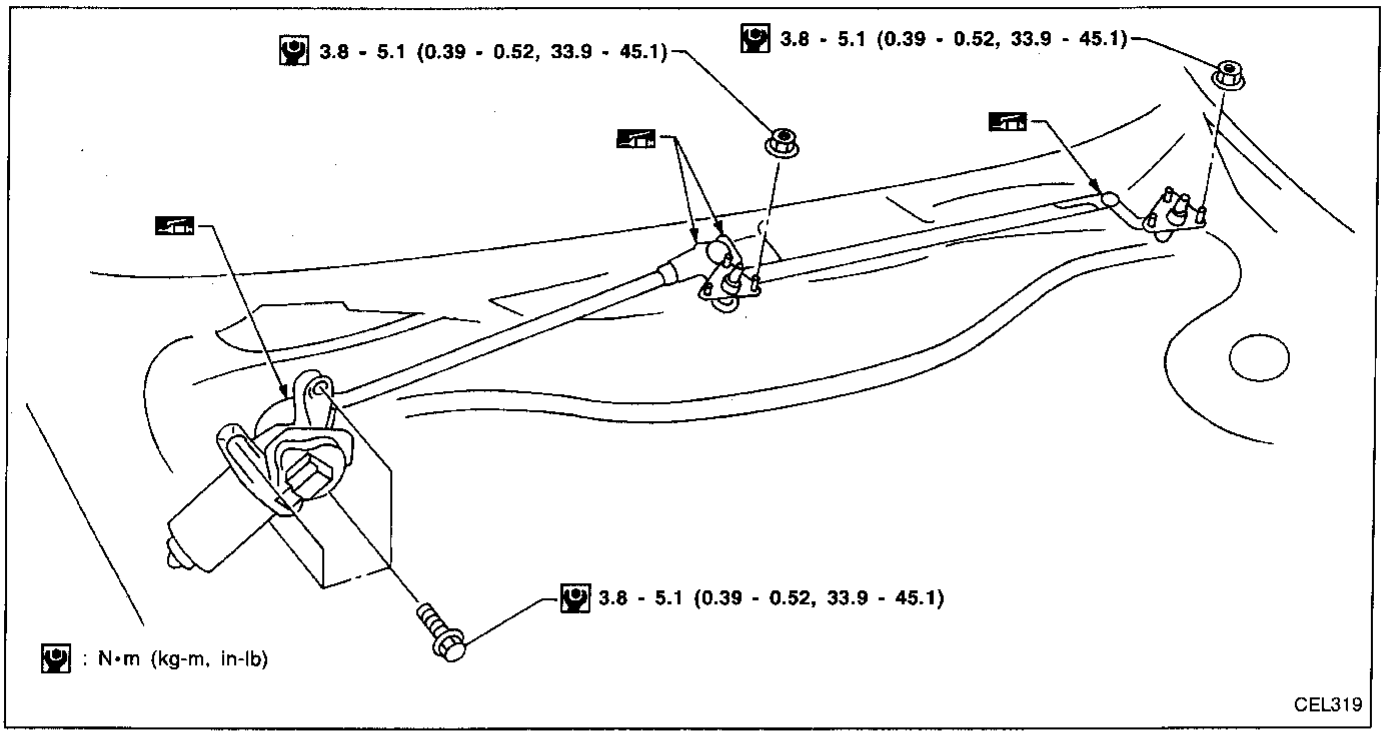
- Tighten wiper arm nuts to specified torque.
  Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)



- **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

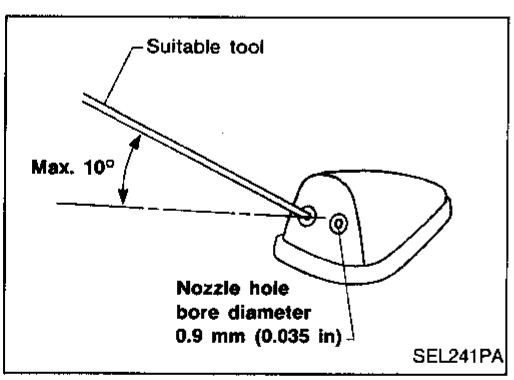
1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

Be careful not to break ball joint rubber boot.

Installation

- Grease ball joint portion before installation.

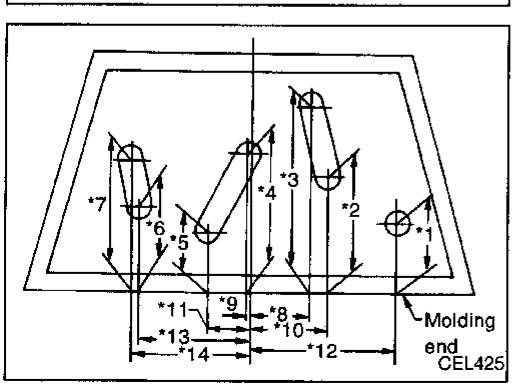
1. Installation is the reverse order of removal.



Washer Nozzle Adjustment

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

  Adjustable range: ±10°

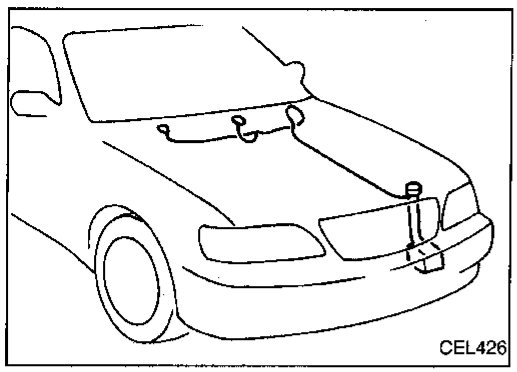


Unit: mm (in)

*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)

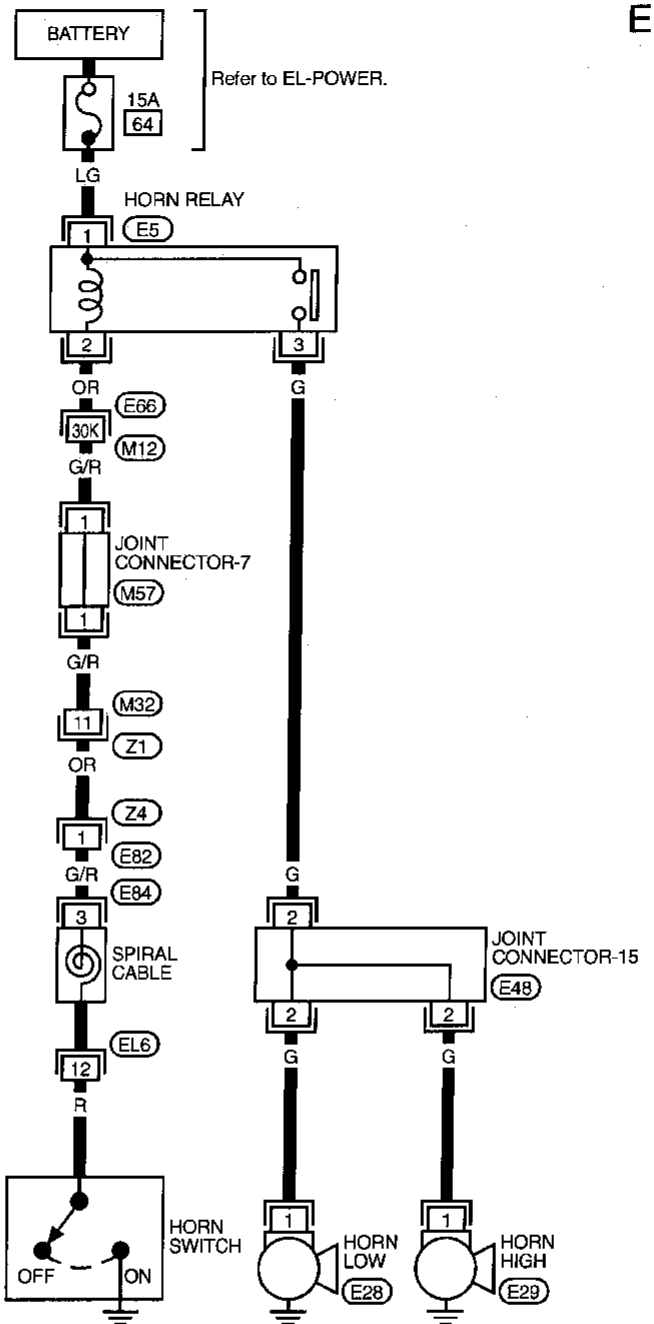
*1: The diameter of a circle is less than 80 mm (3.15 in).
*2 - 7: The radius of the arc across the end of these areas is less than 40 mm (1.57 in).

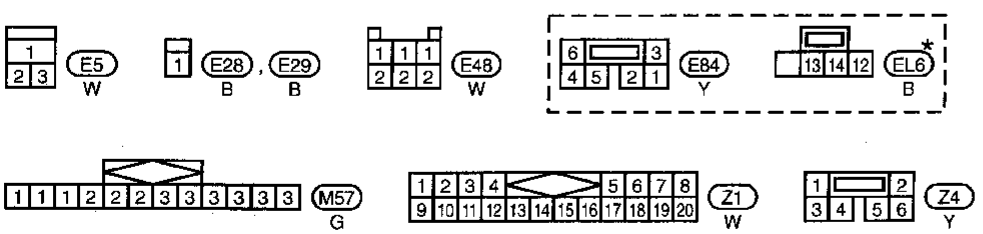
Washer Tube Layout



Wiring Diagram — HORN —

EL-HORN-01





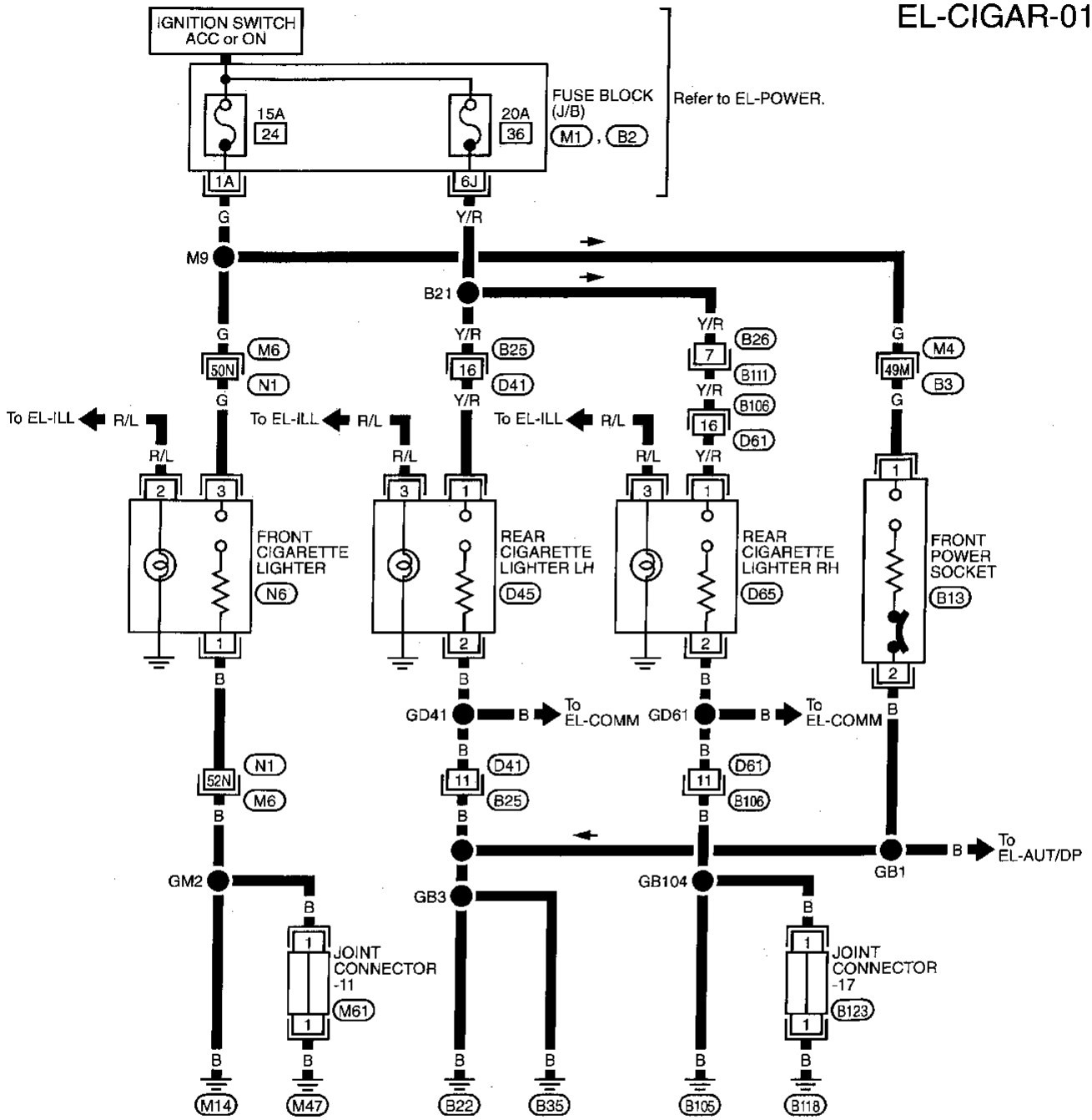
Refer to last page (Foldout page).
E66 , M12

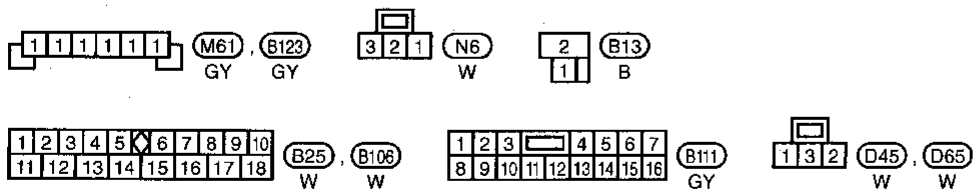
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL205A

Wiring Diagram — CIGAR —

EL-CIGAR-01



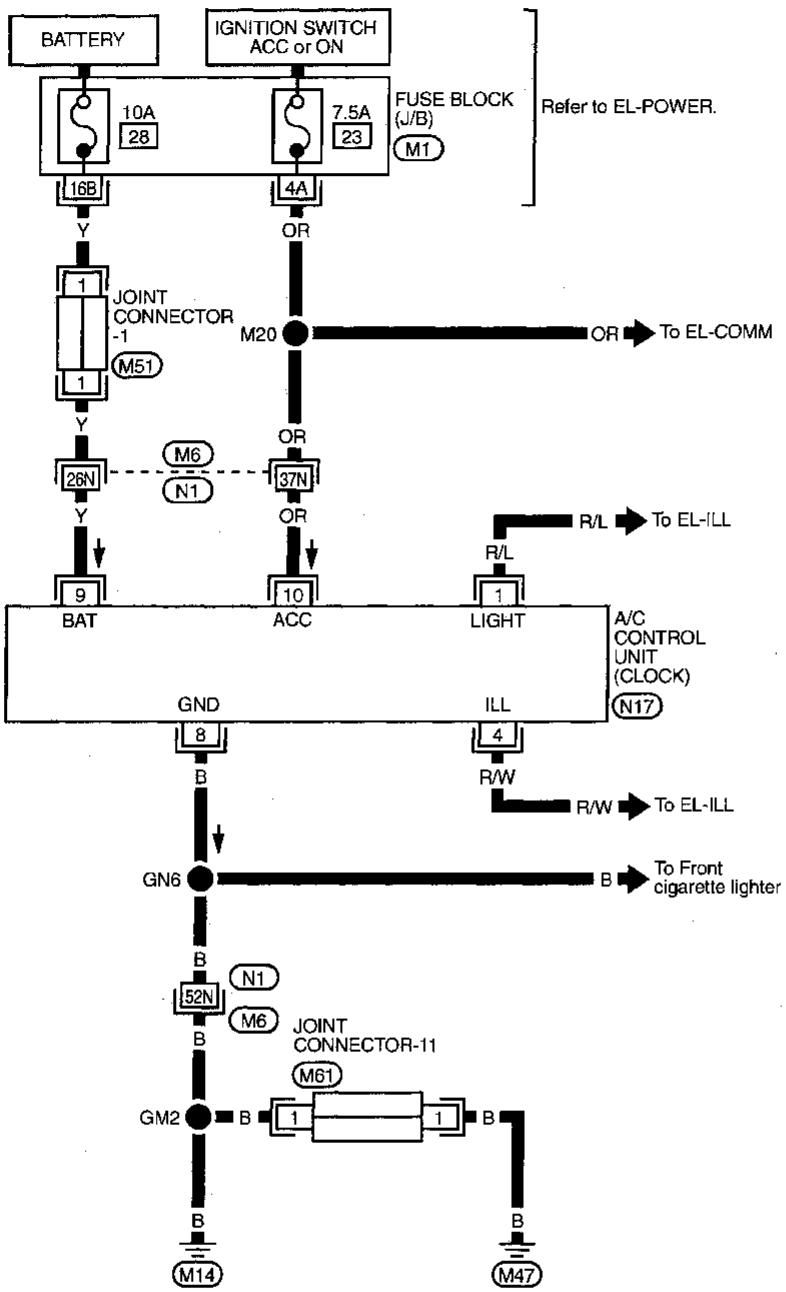


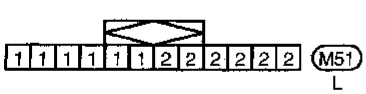
Refer to last page (Foldout page).
M4, B3
M6, N1
M1
B2

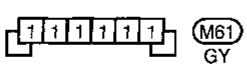
TEL240A

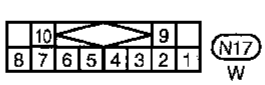
Wiring Diagram — CLOCK —

EL-CLOCK-01





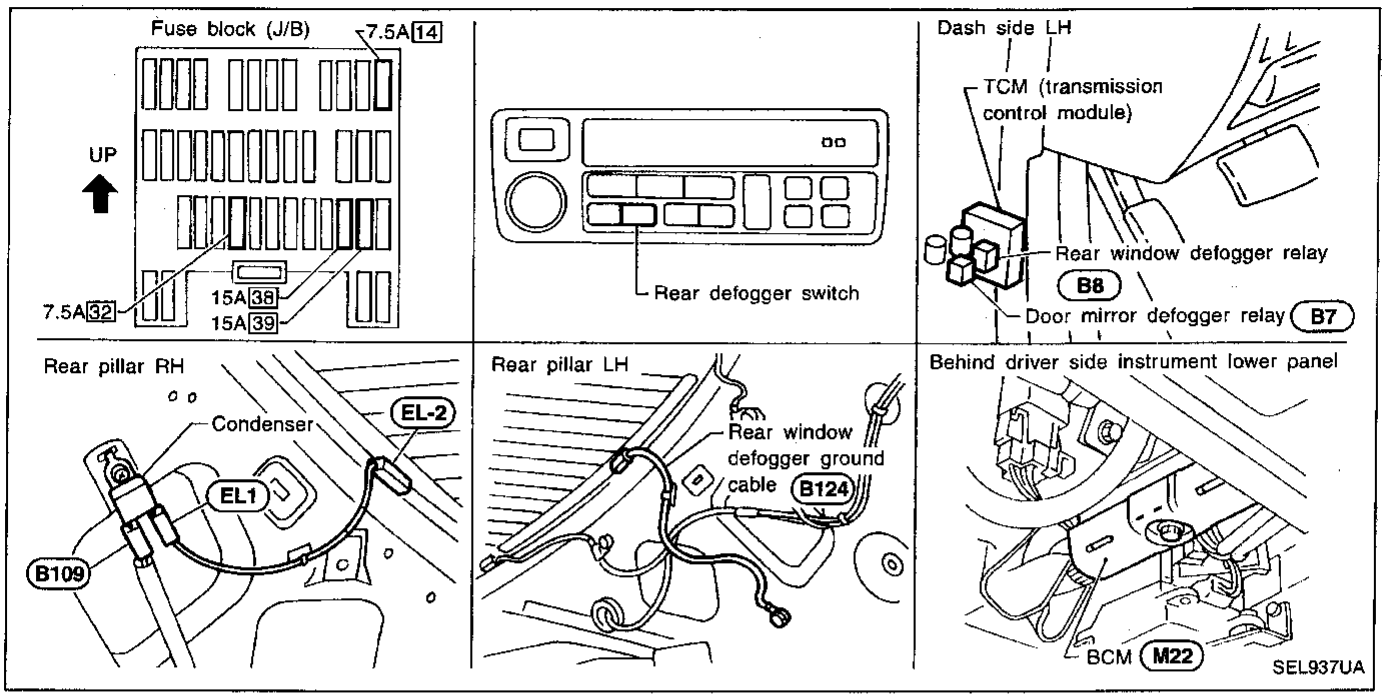




Refer to last page (Foldout page).
M6, N1
M1

TEL239A

Component Parts and Harness Connector Location



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 ⑱
- through 7.5A fuse [No. 32, located in the fuse block (J/B)].

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

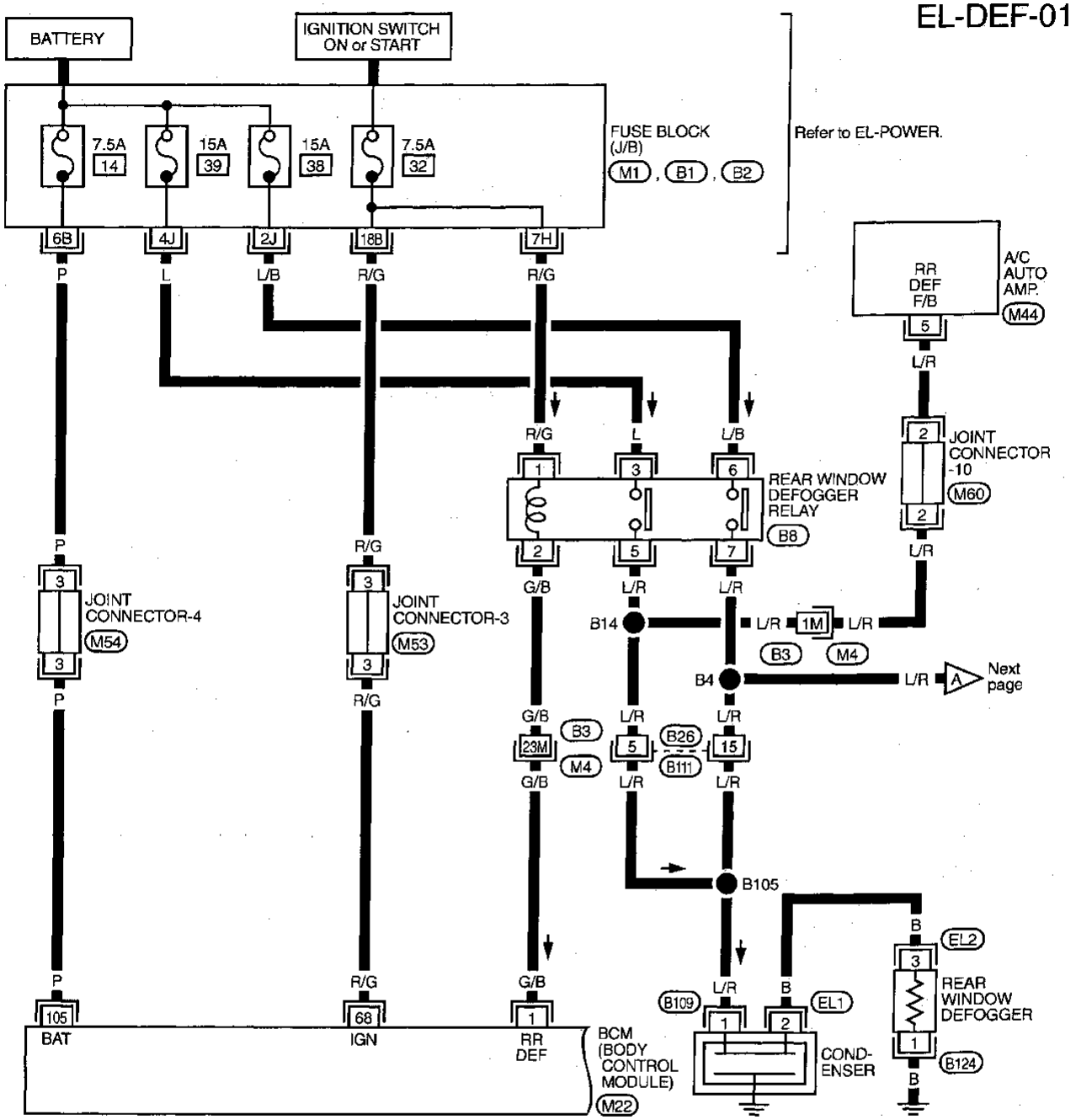
- through terminal ② of the rear window defogger switch (A/C control unit)
- to BCM terminal ⑩.

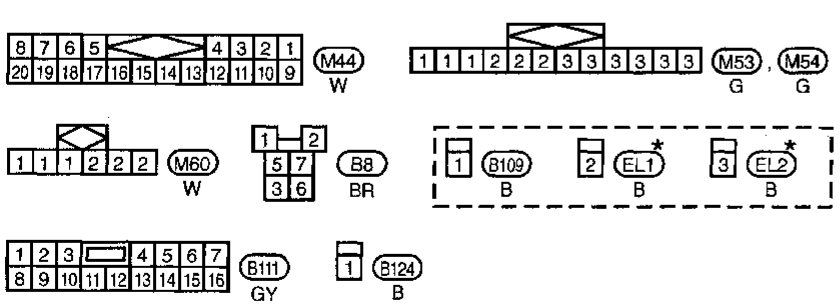
Terminal ① of the BCM then supplies ground to the rear window defogger relay terminal ②.
With power and ground supplied, the rear window defogger relay is energized to operate rear window defogger for about 15 minutes.
When the system is activated, the rear window defogger indicator in the rear window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





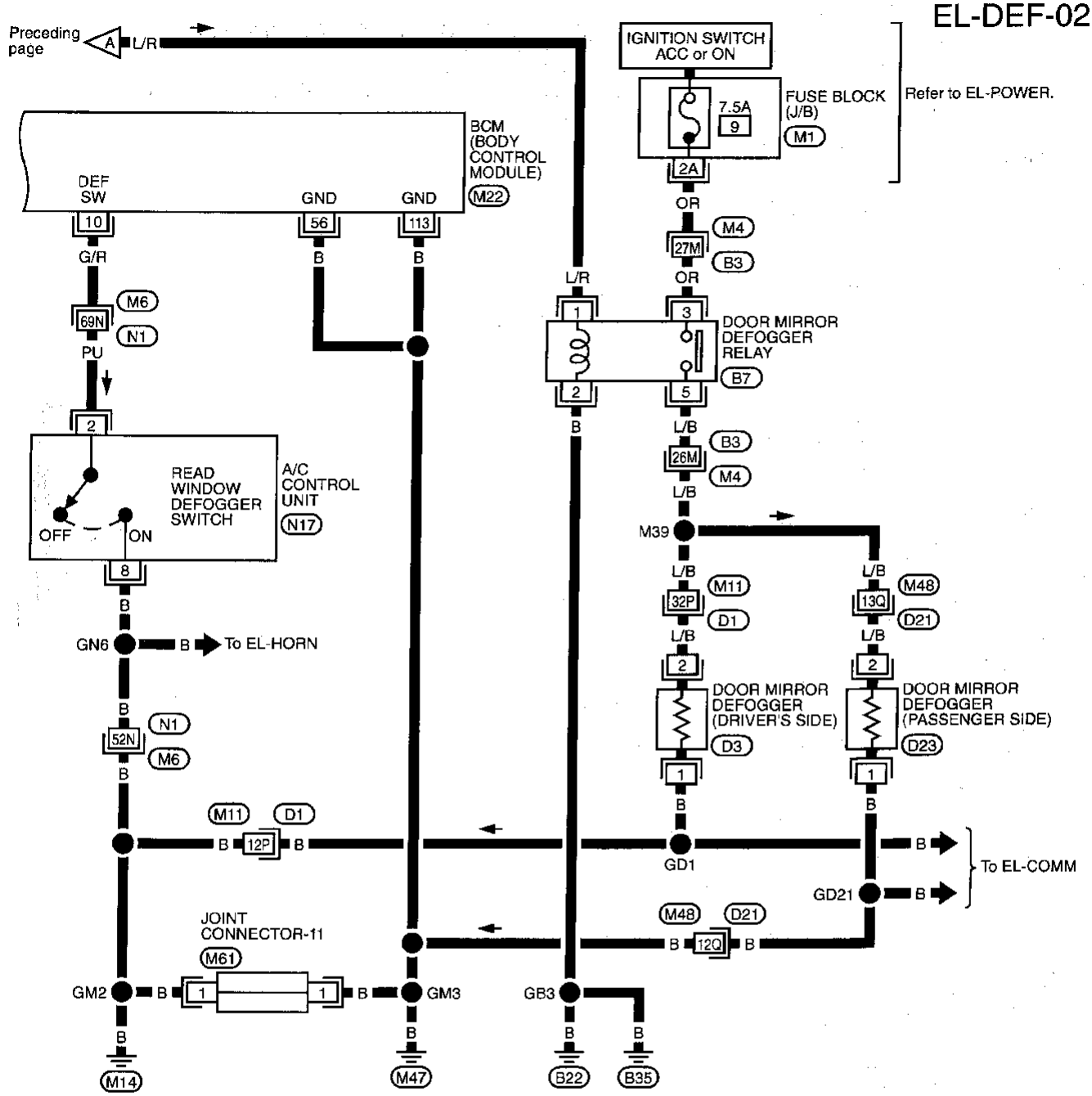
★: This connector is not shown in "HARNESS LAYOUT", EL section.

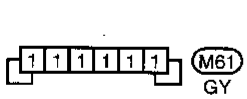
Refer to last page (Foldout page).
M4, B3
M1
M22
B1
B2

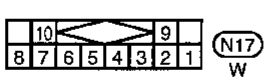
TEL206A

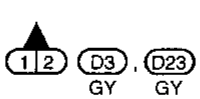
Wiring Diagram — DEF — (Cont'd)

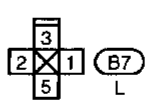
EL-DEF-02







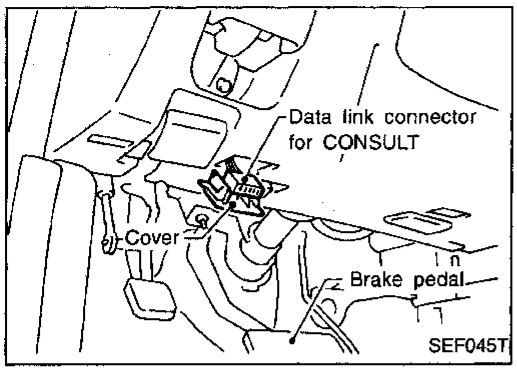




Refer to last page (Foldout page).

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

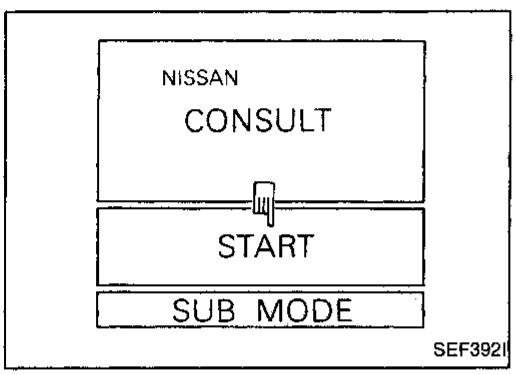
TEL241A



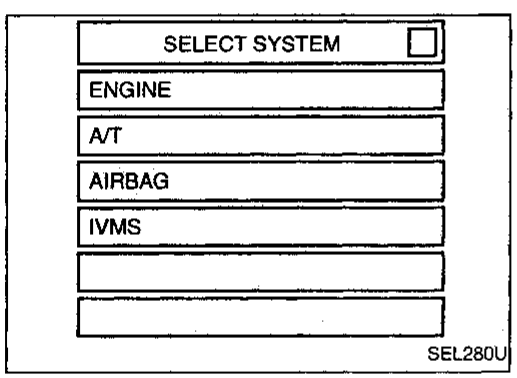
CONSULT

CONSULT INSPECTION PROCEDURE

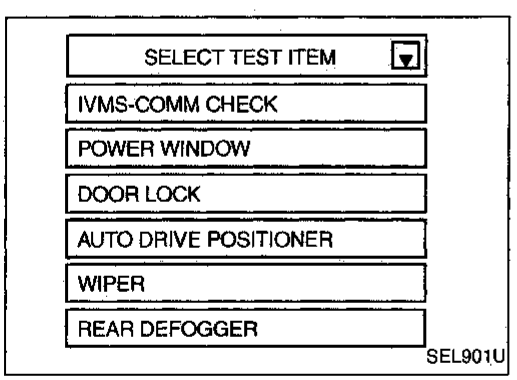
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



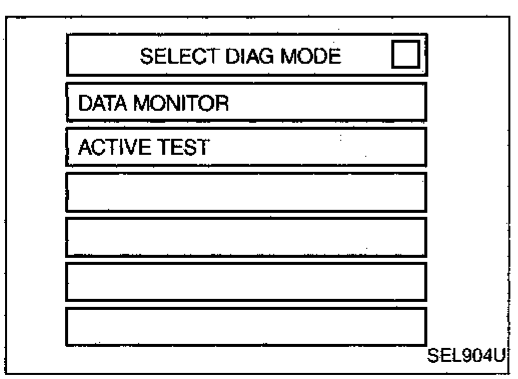
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



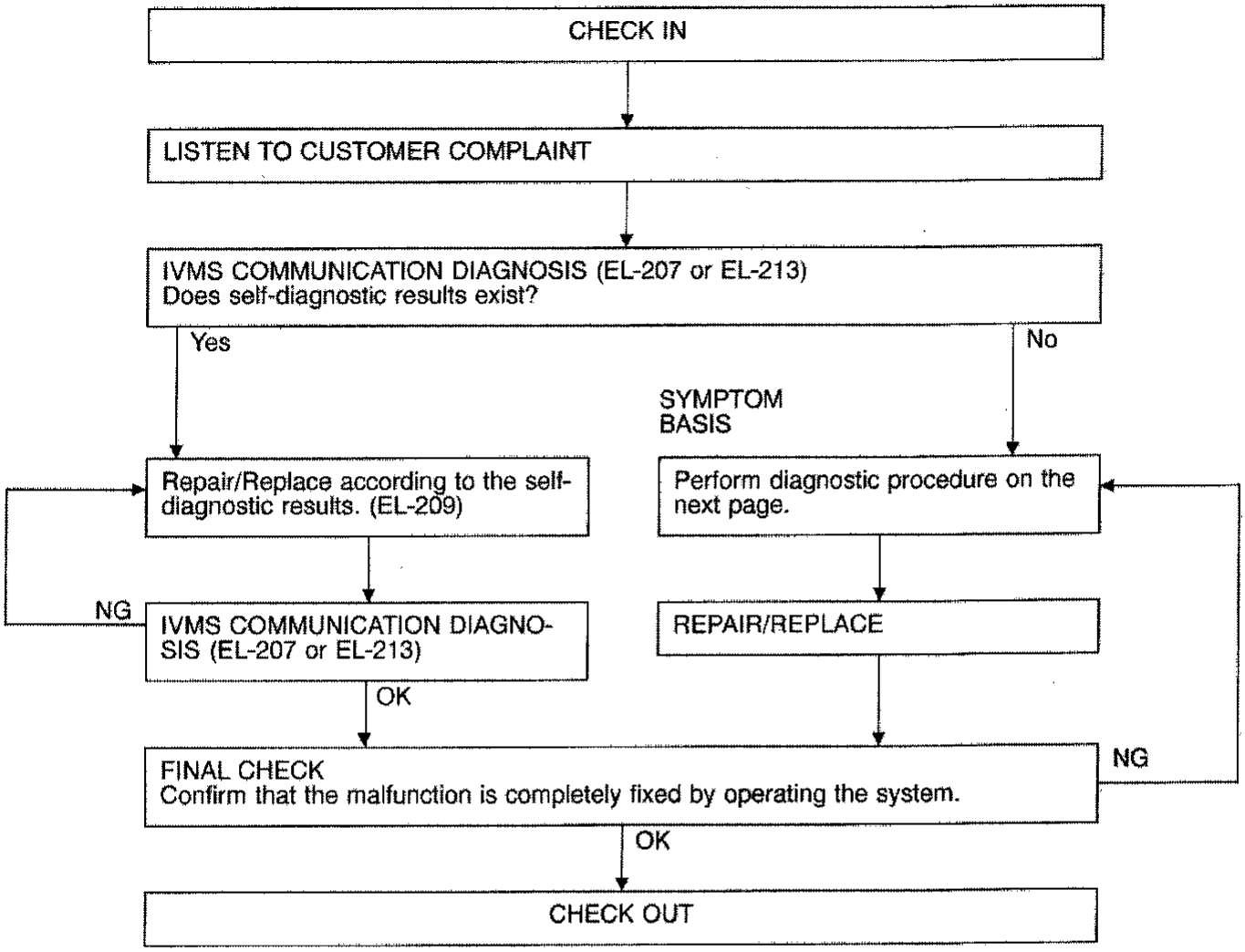
6. Touch "REAR DEFOGGER".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

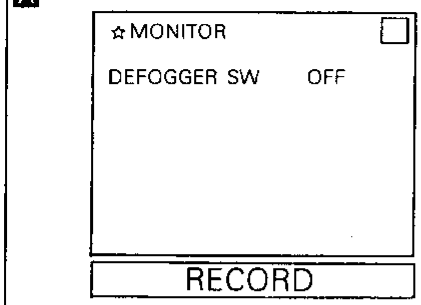
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (Refer to EL-207.) 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

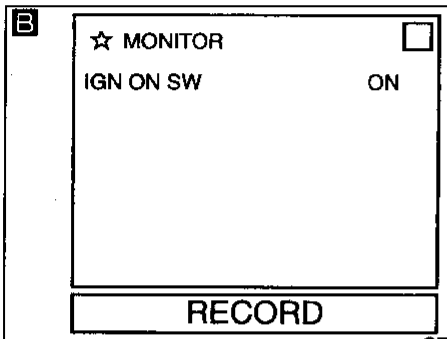
SYMPTOM: Rear window defogger does not activate or does not turn off after activating.

A



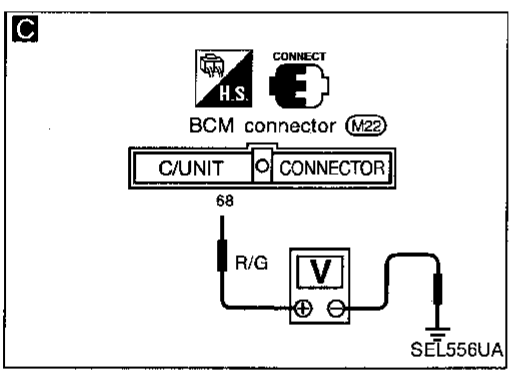
SEL364S

B



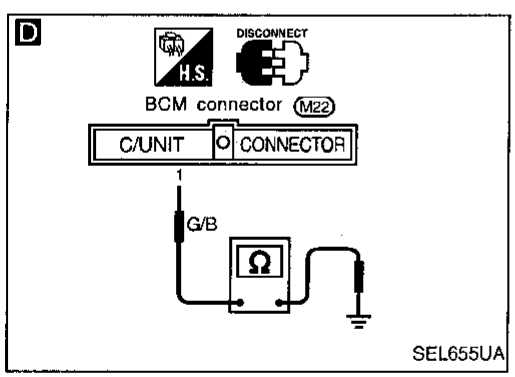
SEL358U

C



SEL556UA

D



SEL655UA

CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

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

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

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.

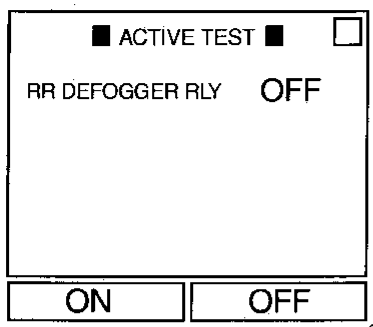
OK

Connect BCM connector.

Ⓐ

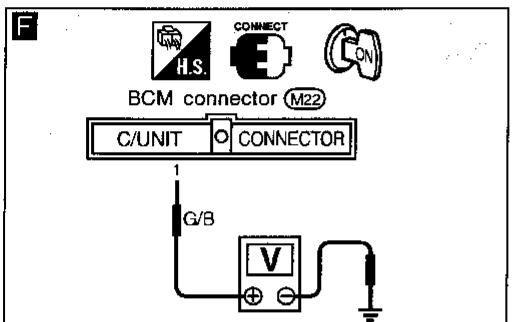
Trouble Diagnoses (Cont'd)

E



SEL667U

F



SEL924U

Ⓐ

REAR WINDOW DEFOGGER ACTIVE TEST.

E CONSULT

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

NG → Replace BCM.

OR

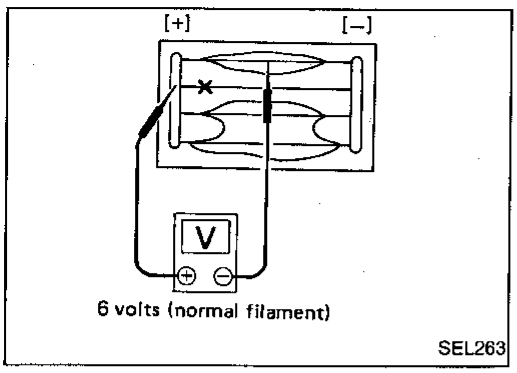
F TESTER

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

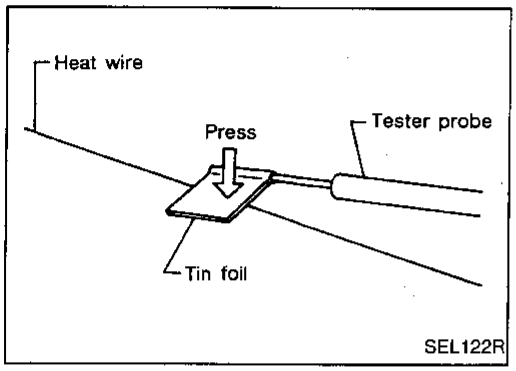
OK ↓

Check rear window defogger circuit.

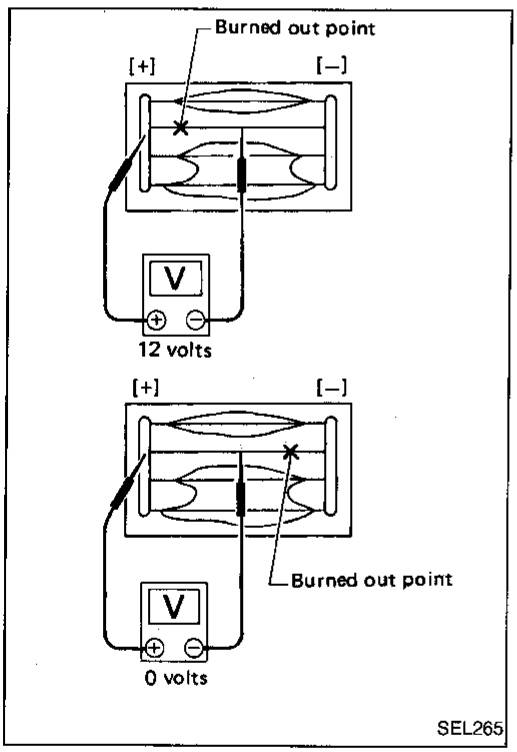


Filament Check

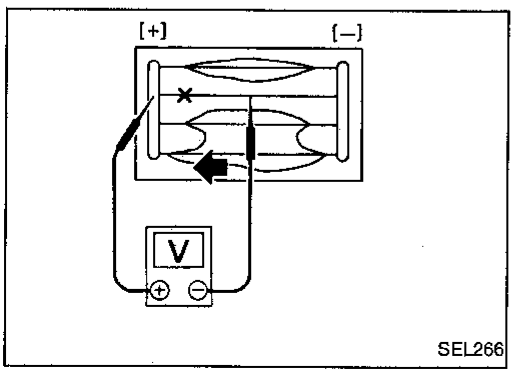
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **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.

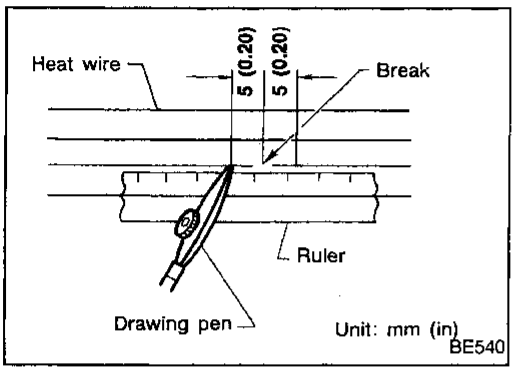


3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

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



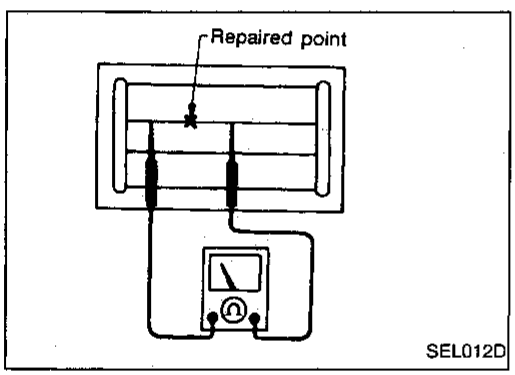
REPAIRING PROCEDURE

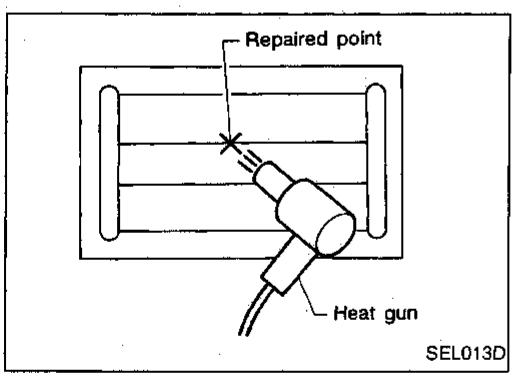
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

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 .

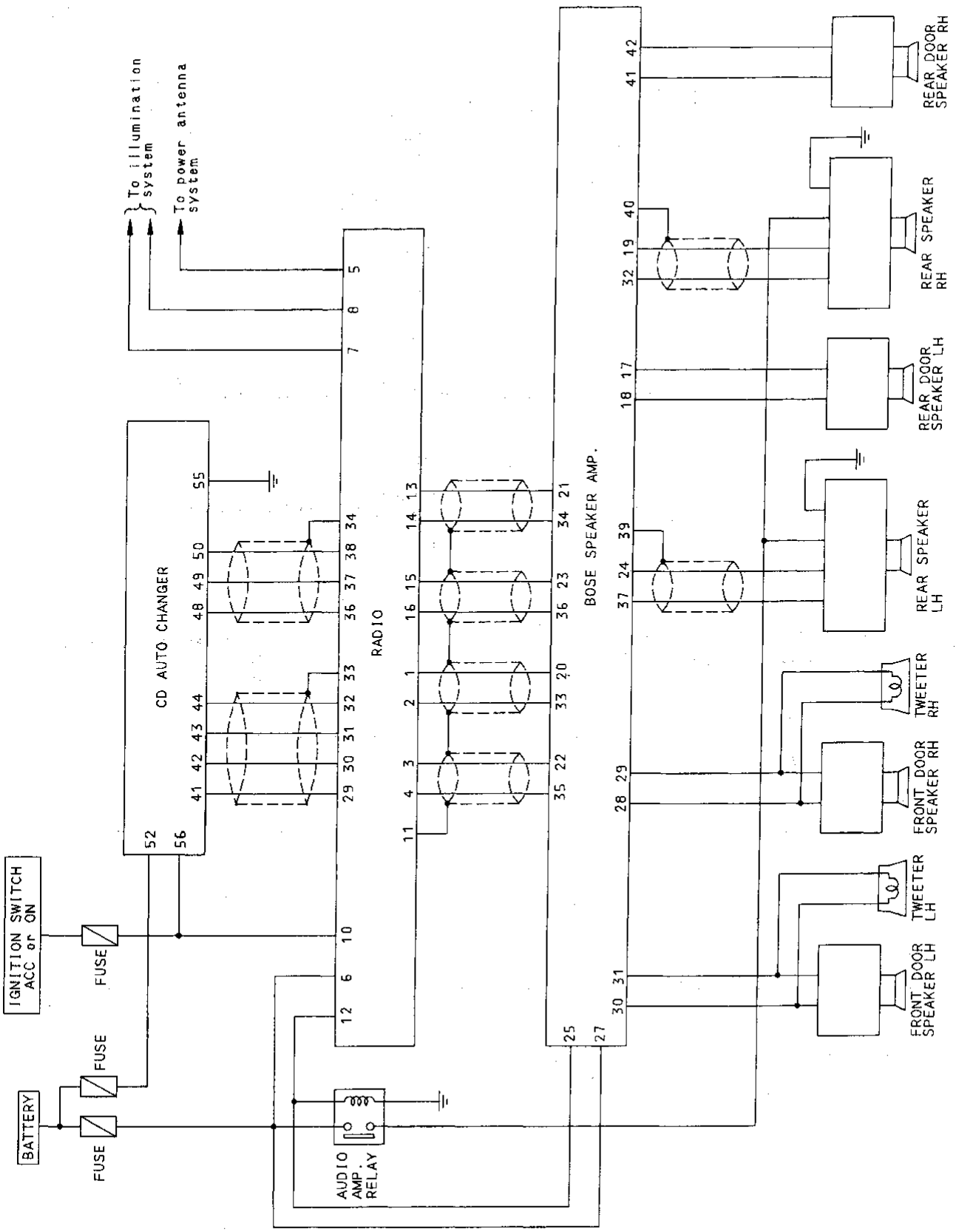
With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to radio terminal ⑩ and
- to CD auto changer terminal ㊻ .

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 , ㉗ , 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 .

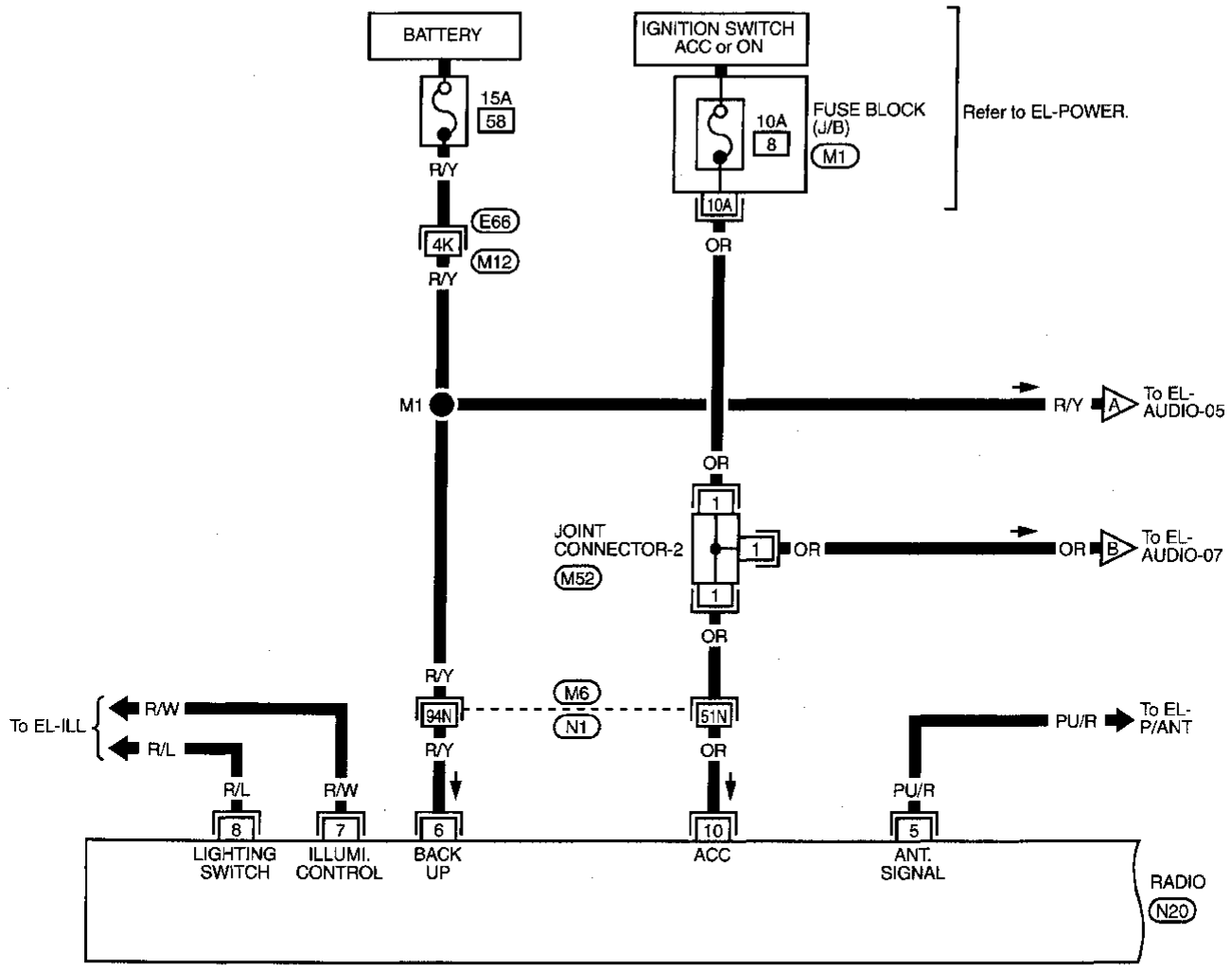
Schematic

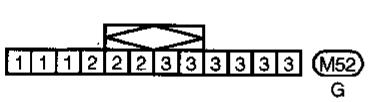


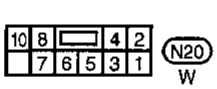
TEL787

Wiring Diagram — AUDIO —

EL-AUDIO-01







Refer to last page (Foldout page).

E66 , M12

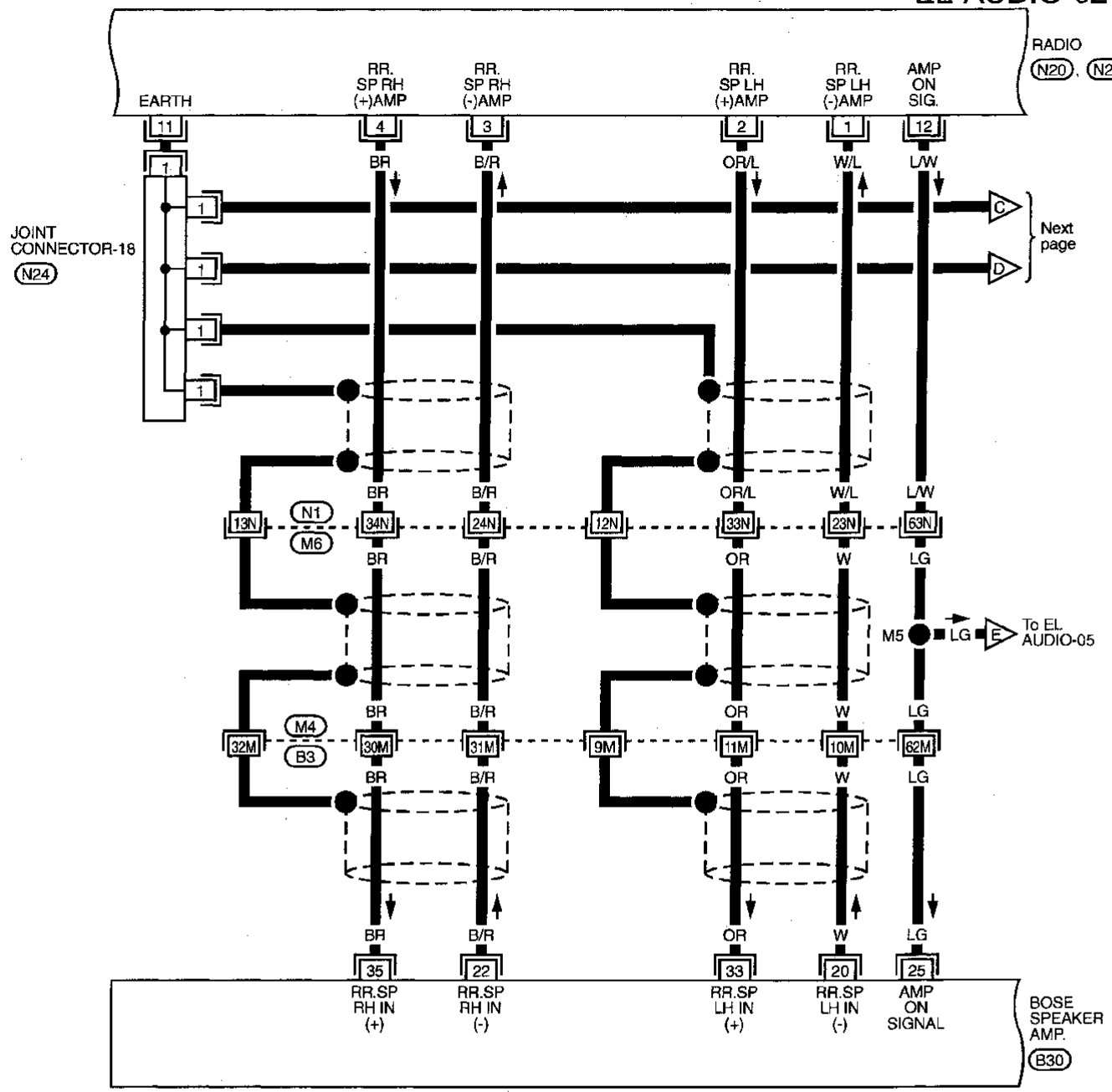
M6 , N1

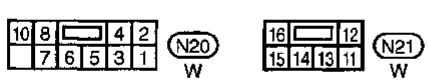
M1

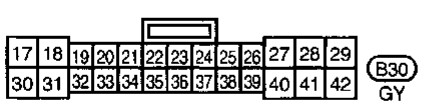
TEL788

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-02







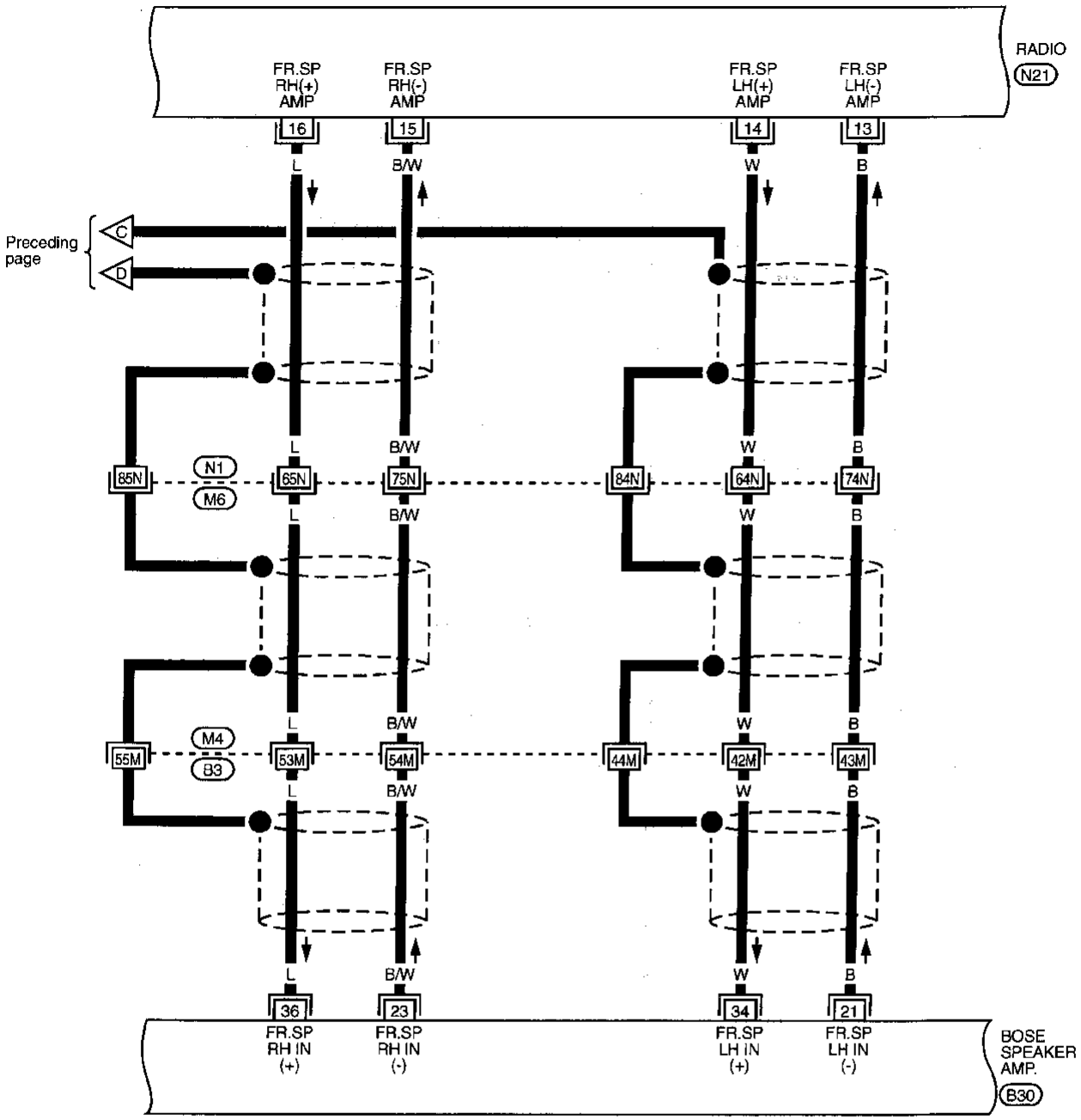
Refer to last page (Foldout page).
M4, B3
M6, N1

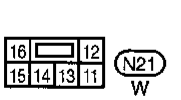
TEL789

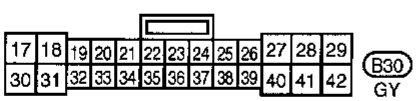
1585

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03







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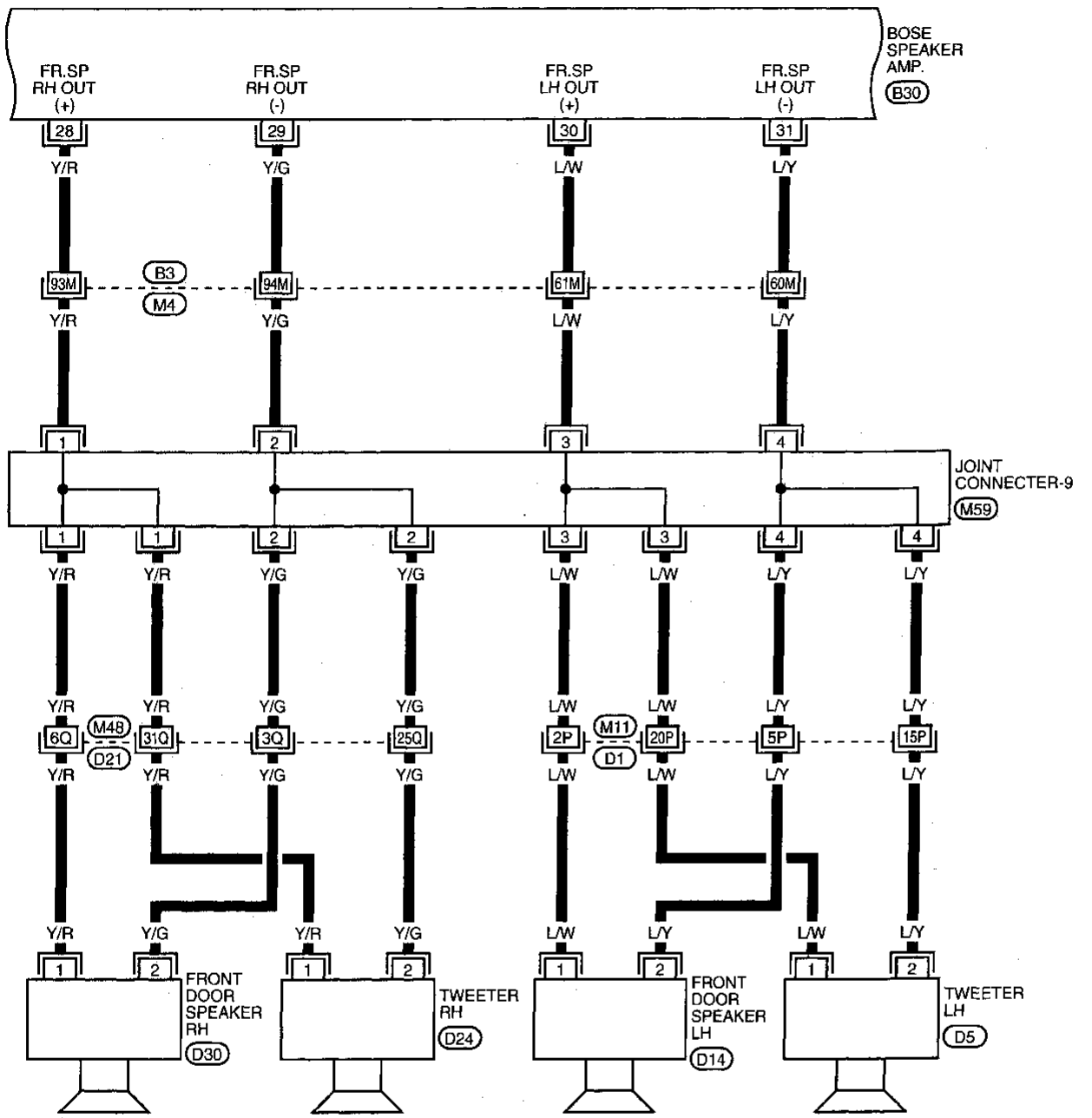
M4 , B3

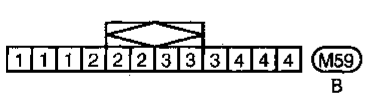
M6 , N1

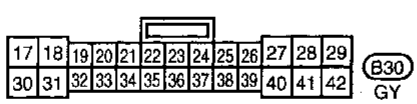
TEL207A

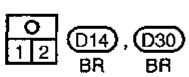
Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04









Refer to last page (Foldout page).

M4 , B3

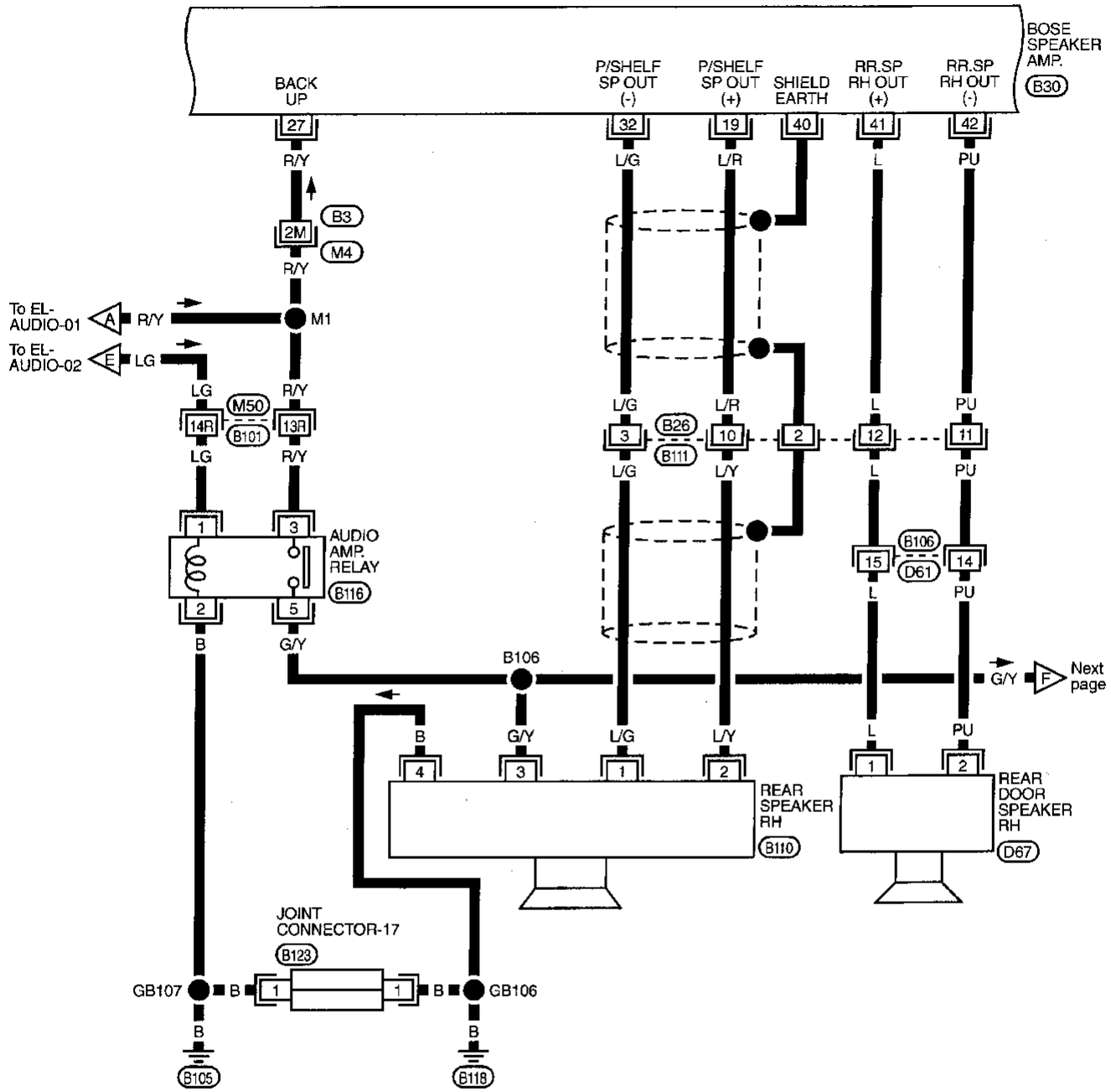
M11 , D1

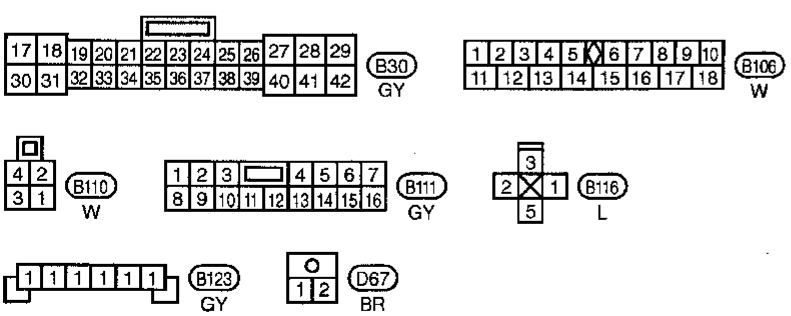
M48 , D21

TEL791

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-05





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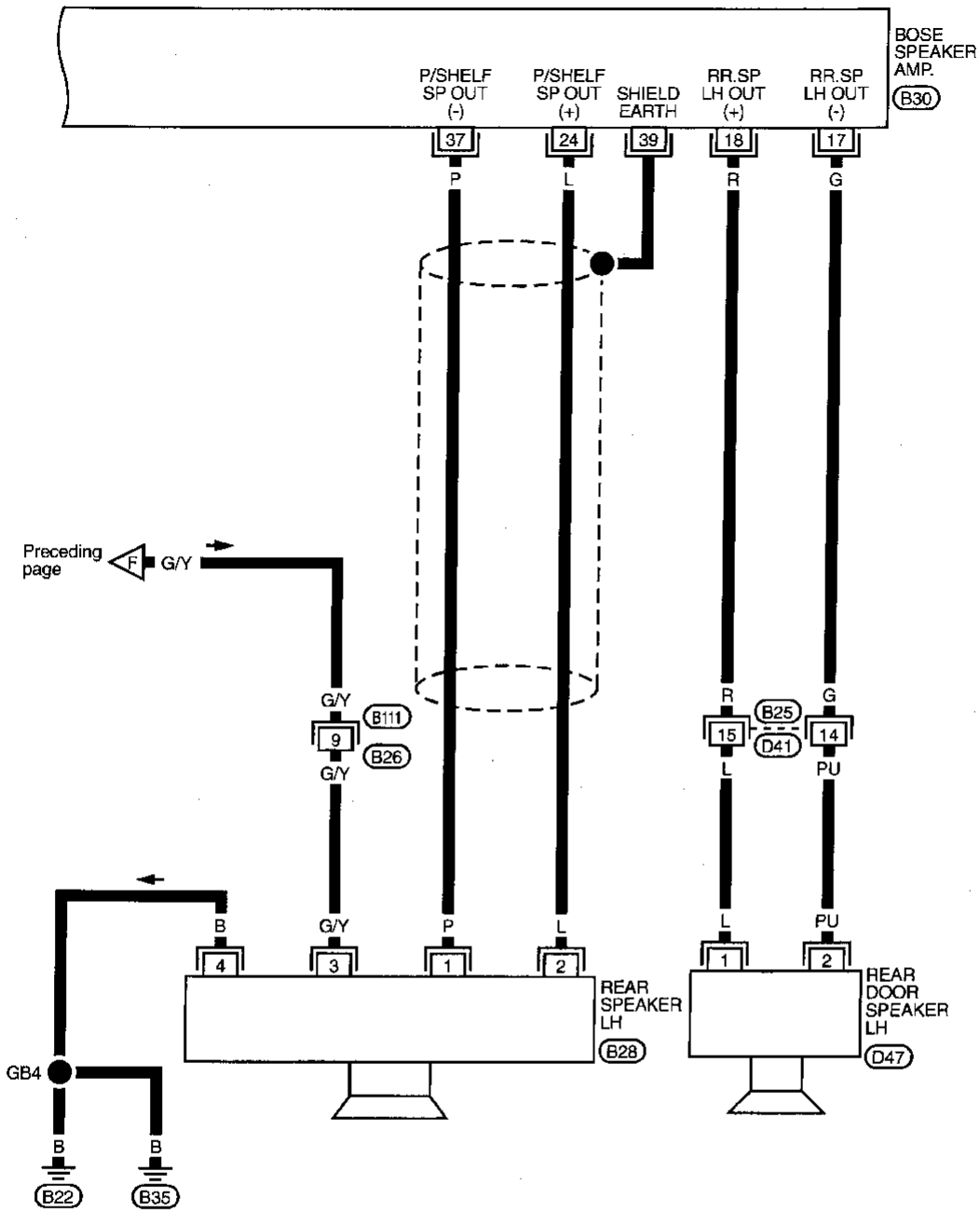
M4 , B3

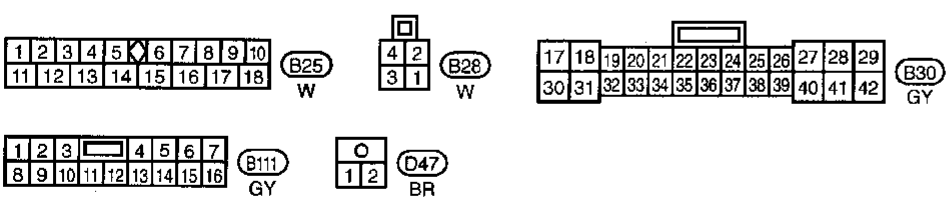
M50 , B101

TEL208A

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-06

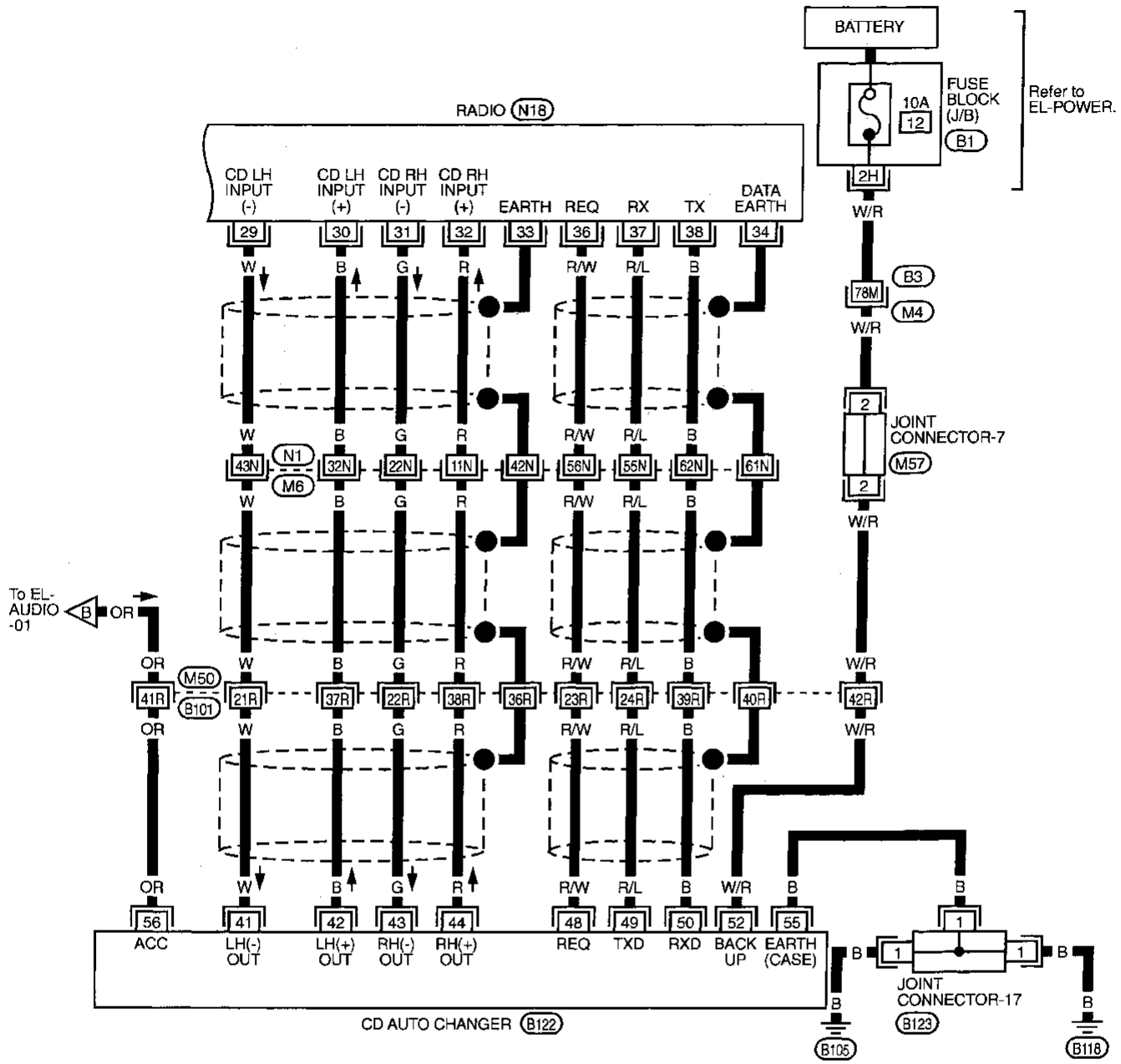


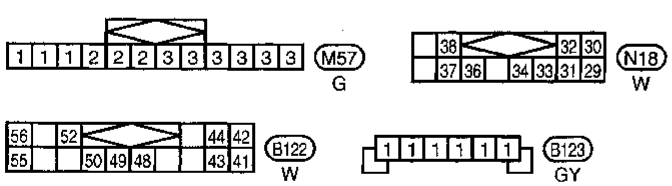


TEL209A

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.**

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.

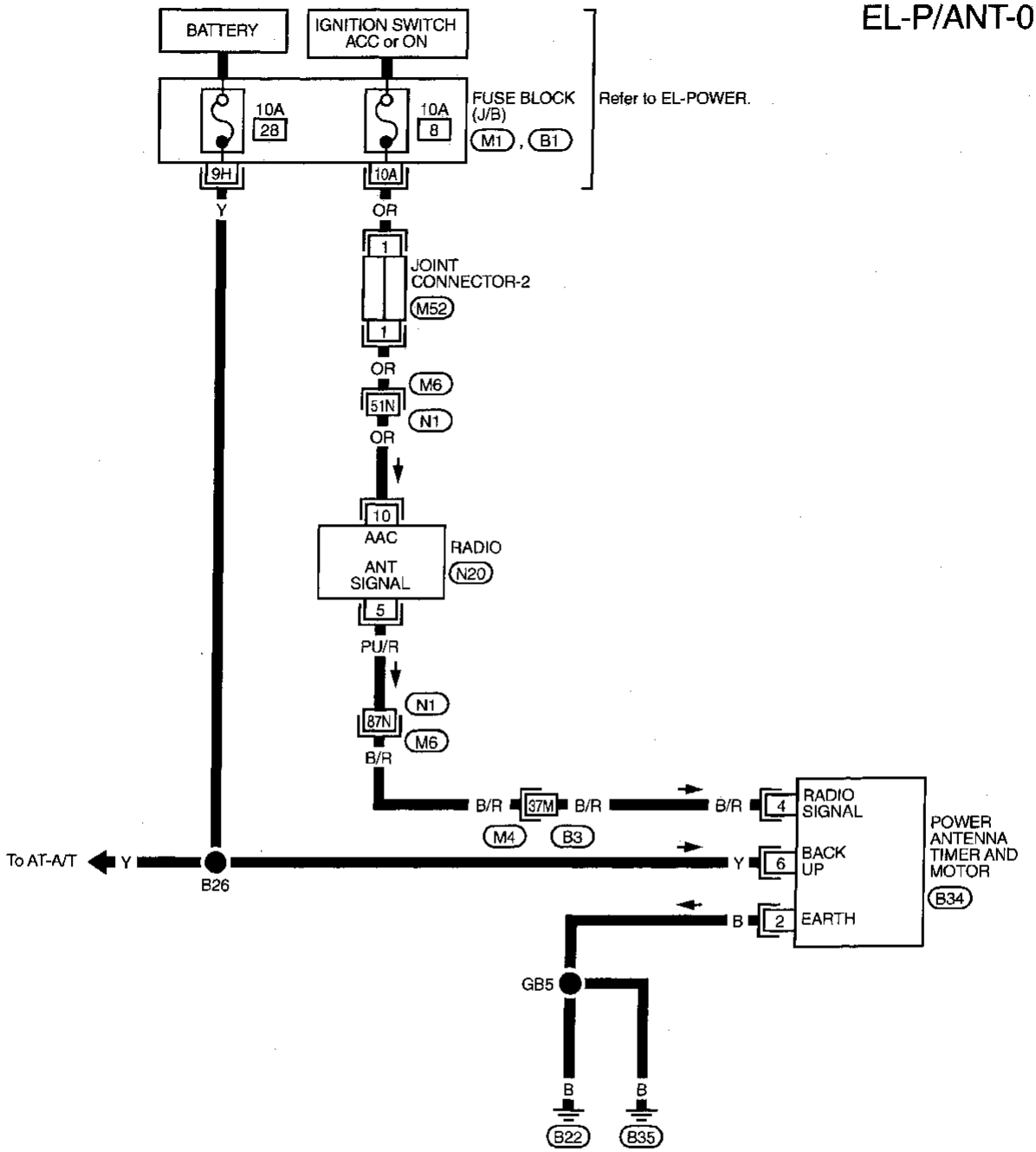
Ground is supplied to the power antenna timer and motor terminal ② through body grounds (B22) and (B35).
When the radio is turned to the ON position, battery positive voltage is supplied
- through radio terminal ⑤
- to power antenna timer and motor terminal ④.

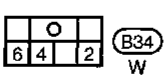
The antenna raises and is held in the extended position.
When the radio is turned to the OFF position, battery positive voltage is interrupted
- from radio terminal ⑤
- to power antenna timer and motor terminal ④.

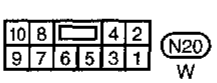
The antenna retracts.

Wiring Diagram — P/ANT —

EL-P/ANT-01







Refer to last page (Foldout page).

M4, B3
M6, N1
M1
B1

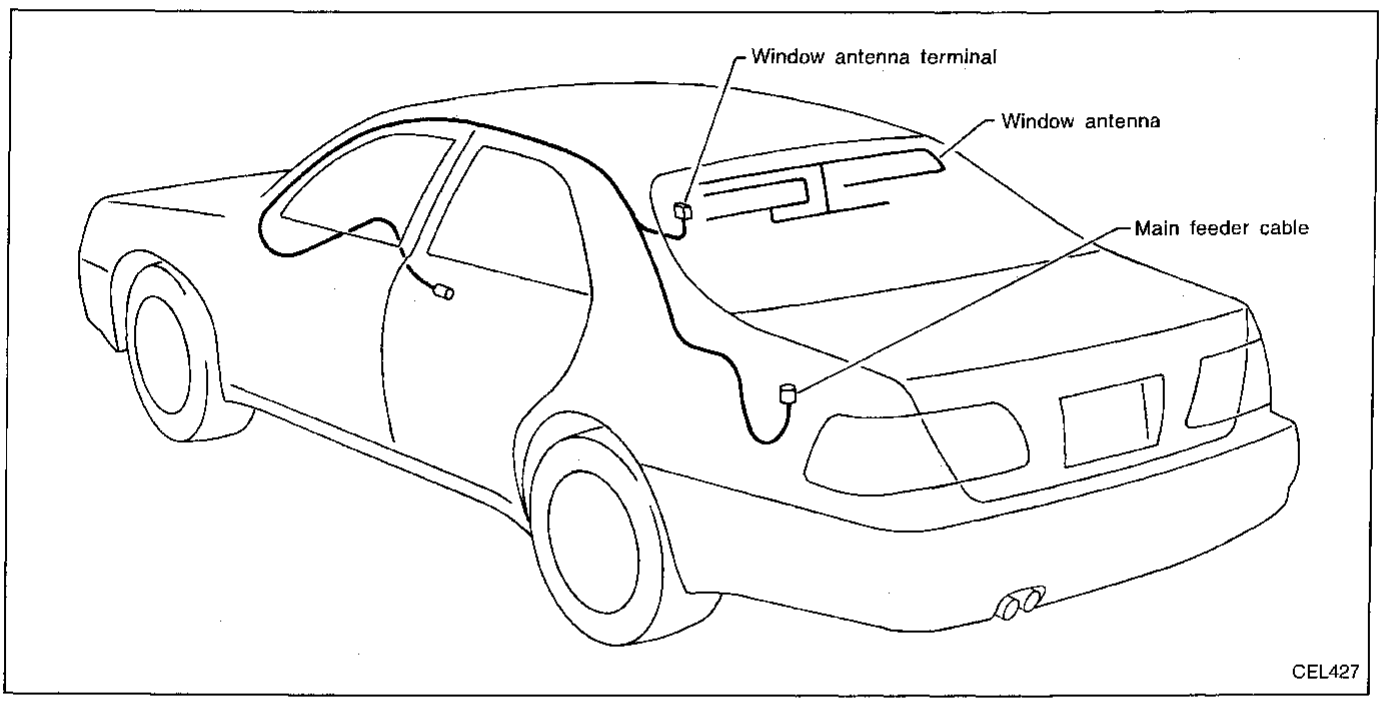
TEL210A

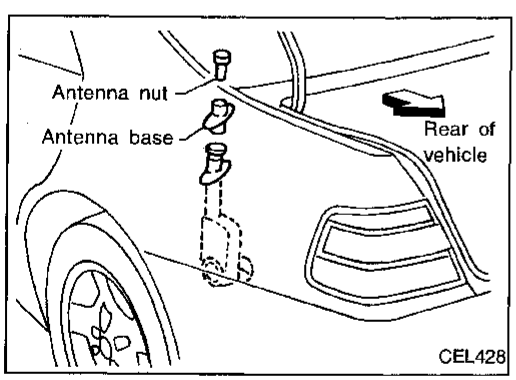
Trouble Diagnoses

POWER ANTENNA

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 10A fuse 2. Radio signal 3. Grounds (B22) and (B35) 4. Power antenna timer and motor	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. 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. Check grounds (B22) and (B35). 4. Check power antenna timer and motor.

Location of Antenna

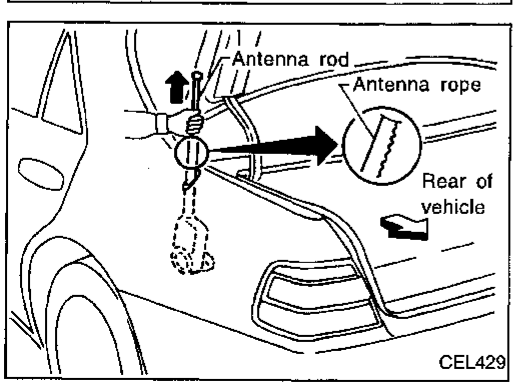




Antenna Rod Replacement

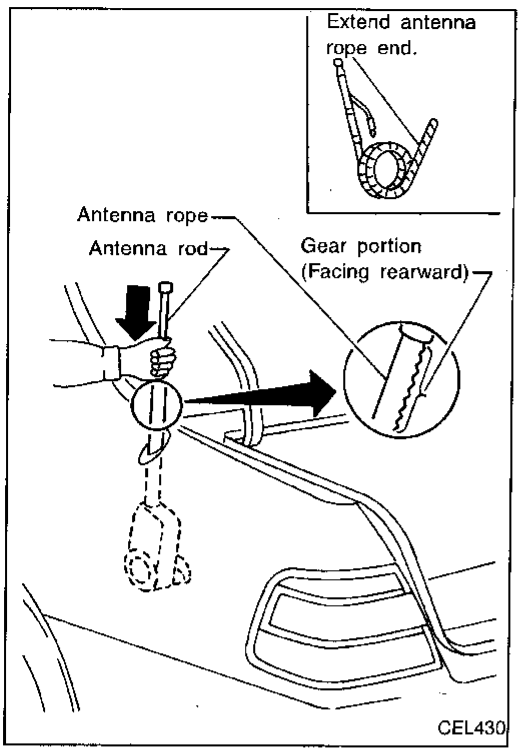
REMOVAL

1. Remove antenna nut and antenna base.



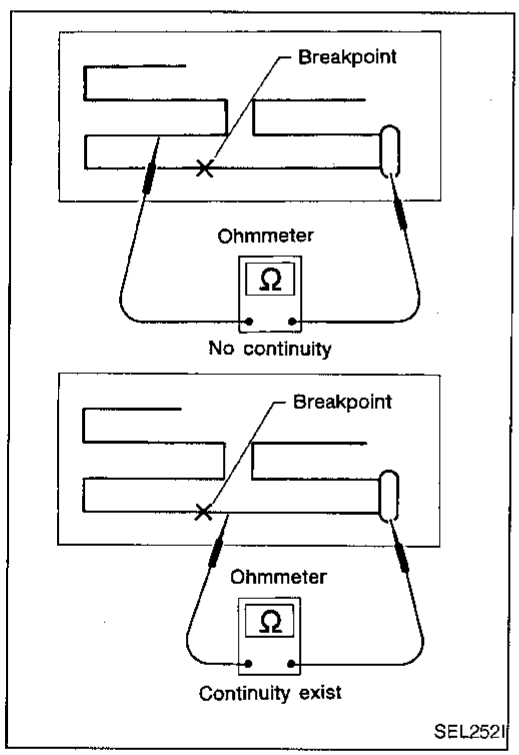
2. Withdraw antenna rod while raising it by operating antenna motor.

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

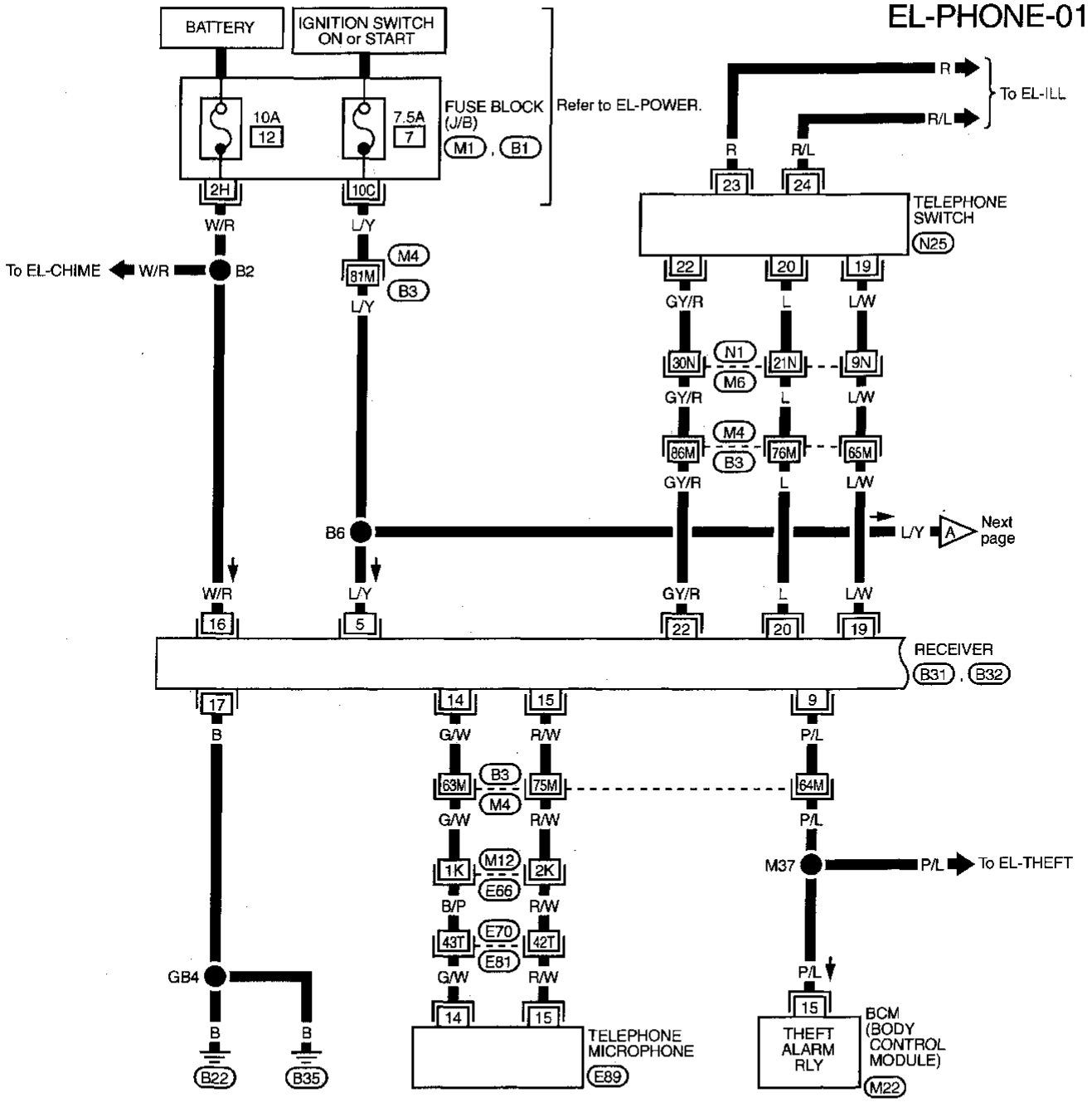
ELEMENT CHECK

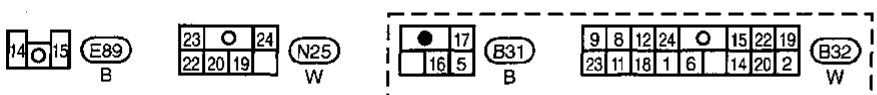
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.
2. If an element is broken, no continuity will exist.
3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-147).

Wiring Diagram — PHONE —





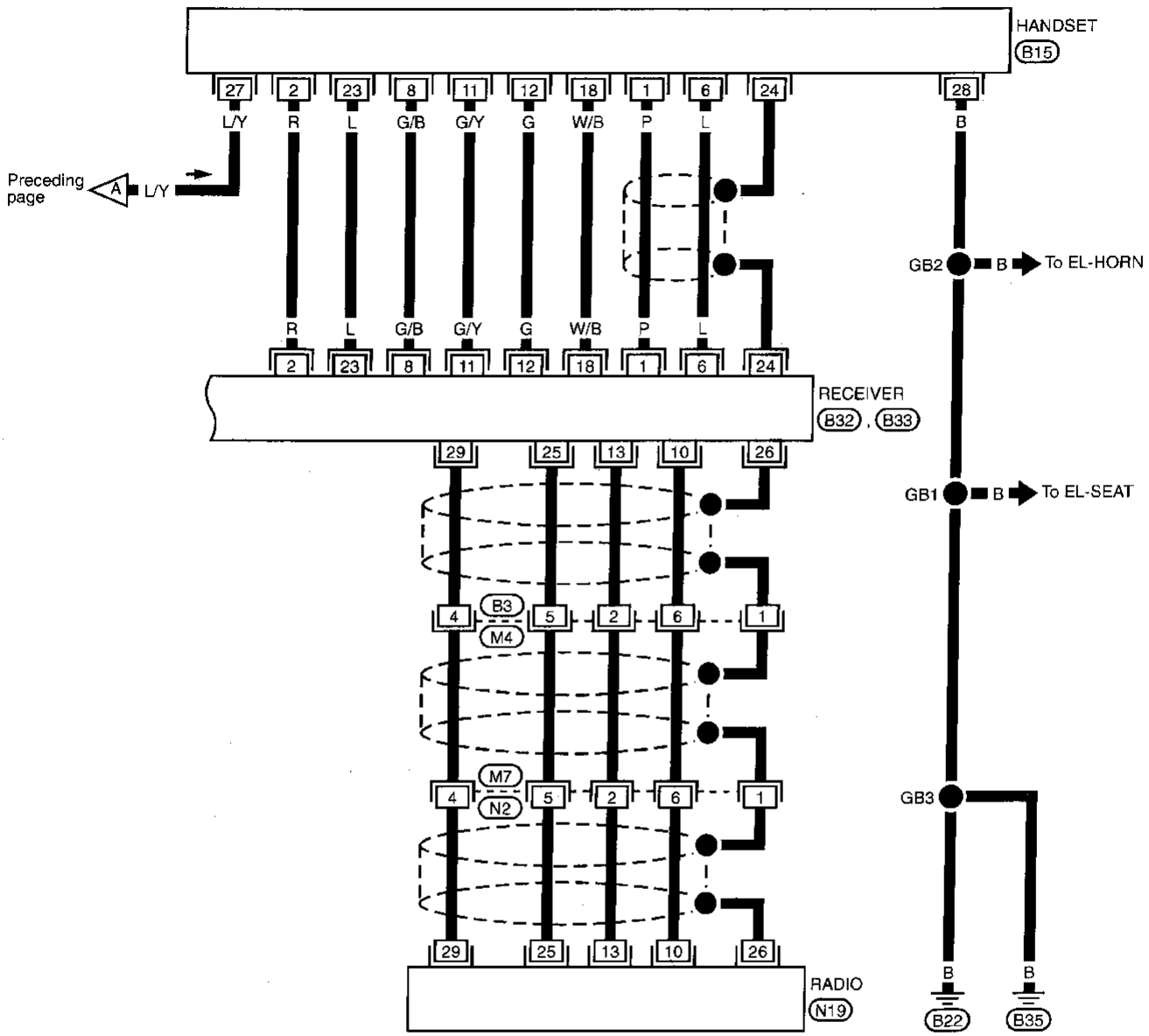
Refer to last page (Foldout page).

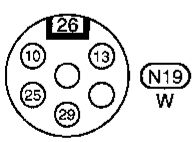
E66, M12
E70, E81
M4, B3
M6, N1
M1
M22
B1

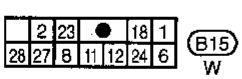
TEL391A

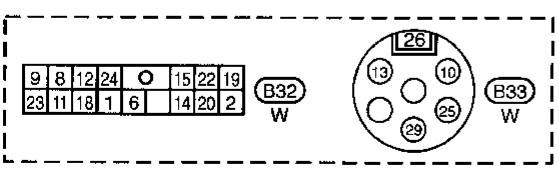
Wiring Diagram — PHONE — (Cont'd)

EL-PHONE-02







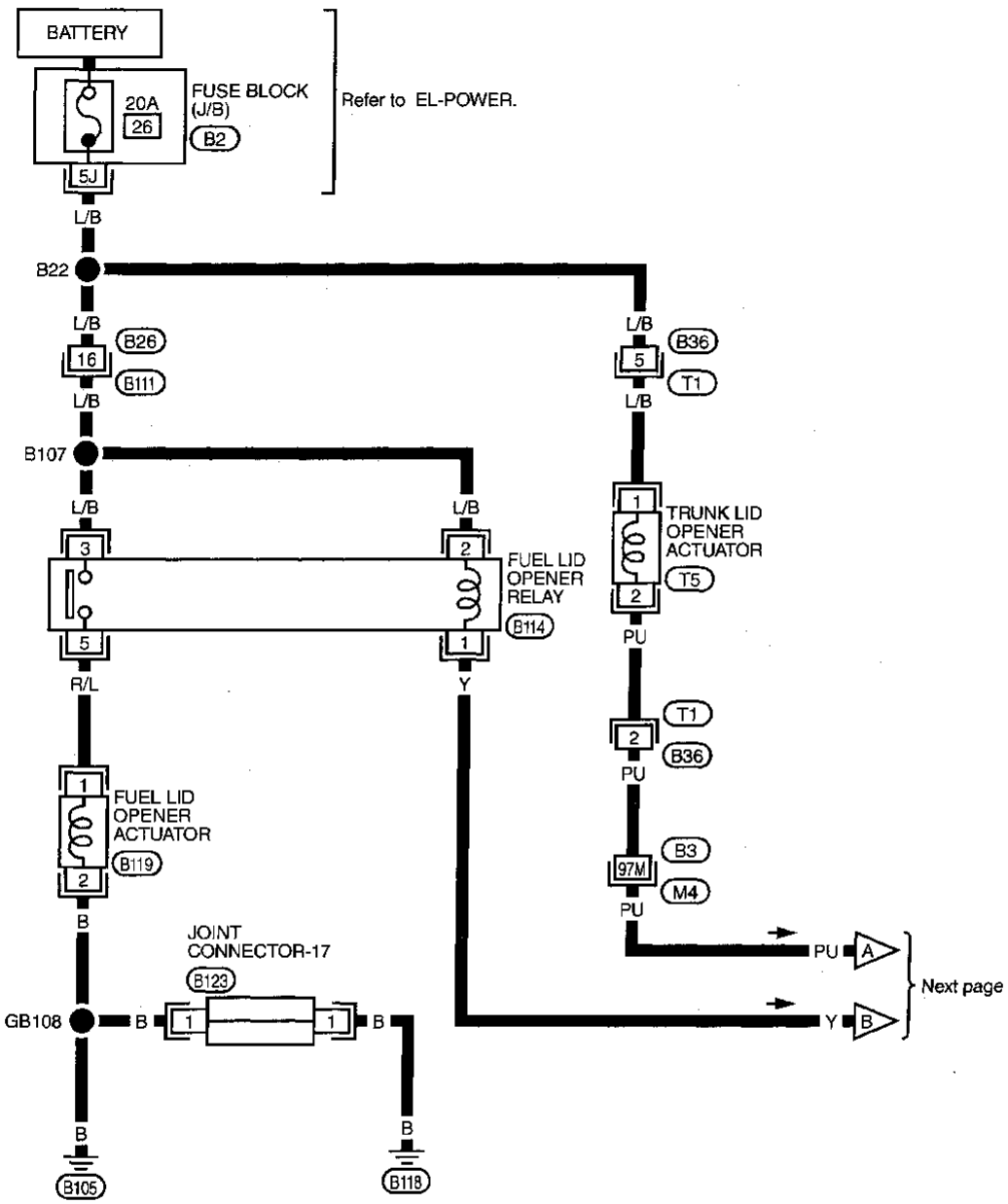


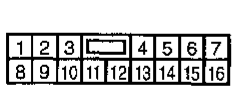
Refer to last page (Foldout page).
(M4) , (B3)
(M7) , (N2)

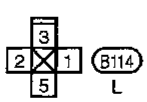
TEL392A

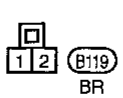
Wiring Diagram — T&FLID —

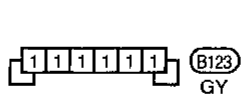
EL-T&FLID-01

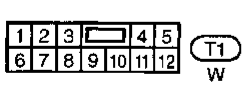


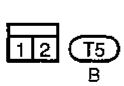










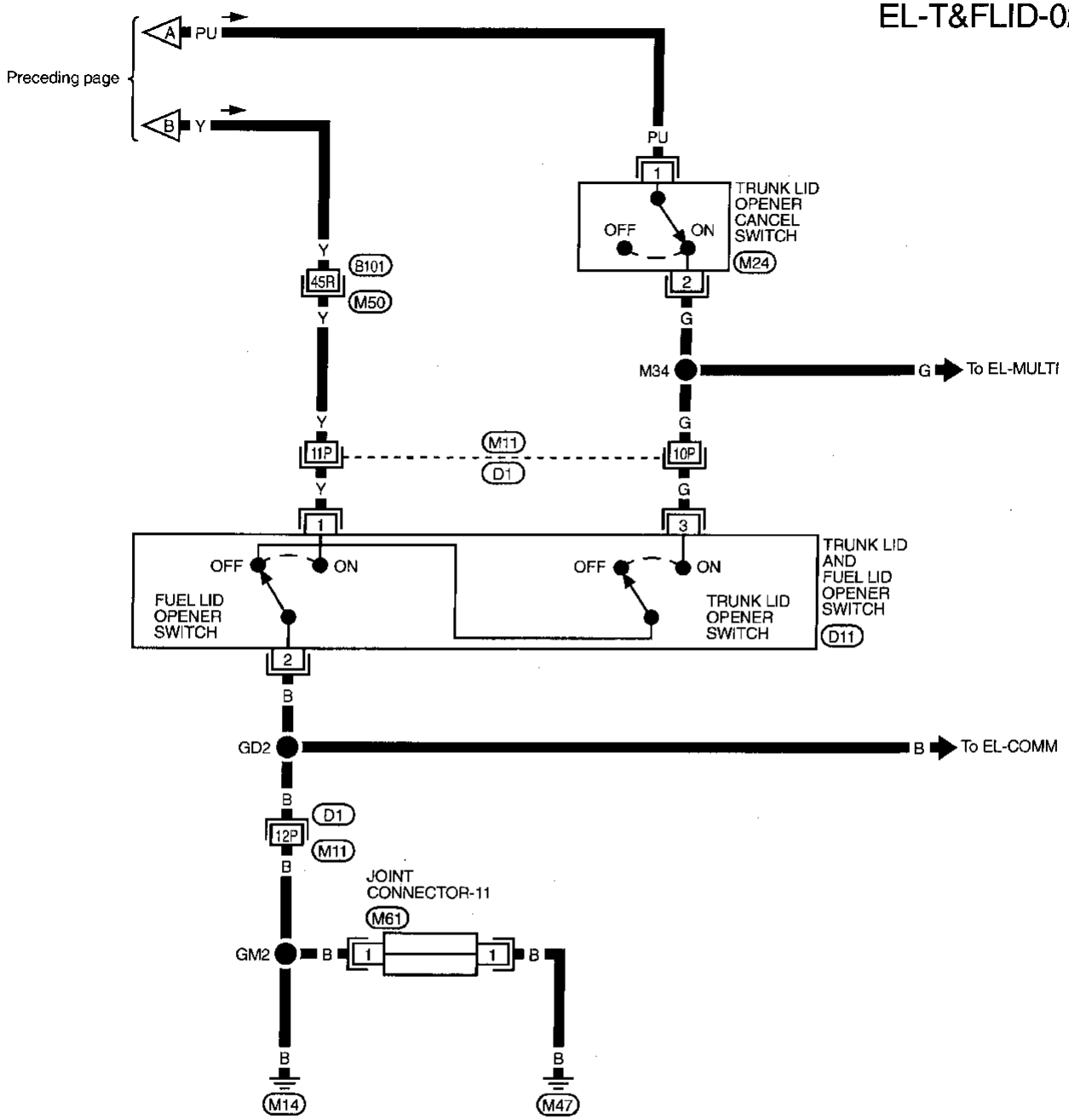


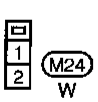
Refer to last page (Foldout page).
M4, B3
B2

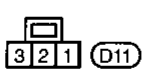
TEL800

Wiring Diagram — T&FLID — (Cont'd)

EL-T&FLID-02







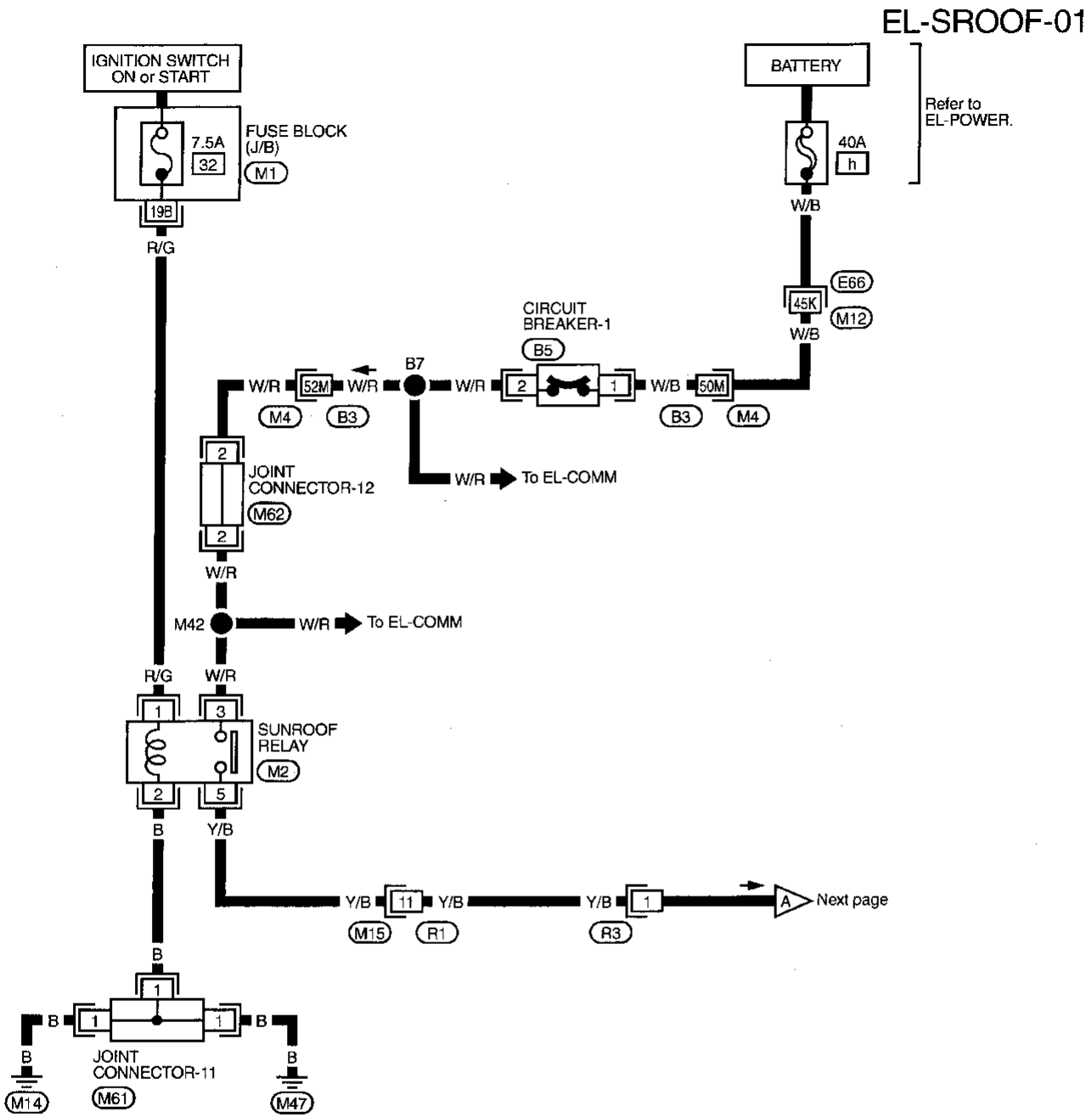
Refer to last page (Foldout page).

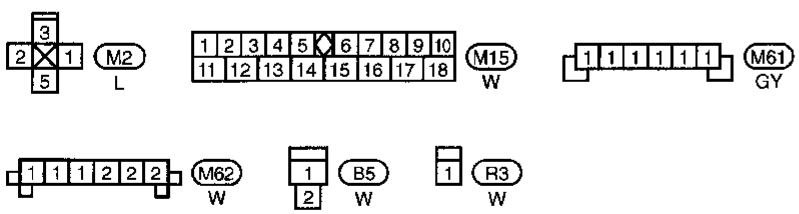
M11 , D1

M50 , B101

TEL250A

Wiring Diagram — SROOF —





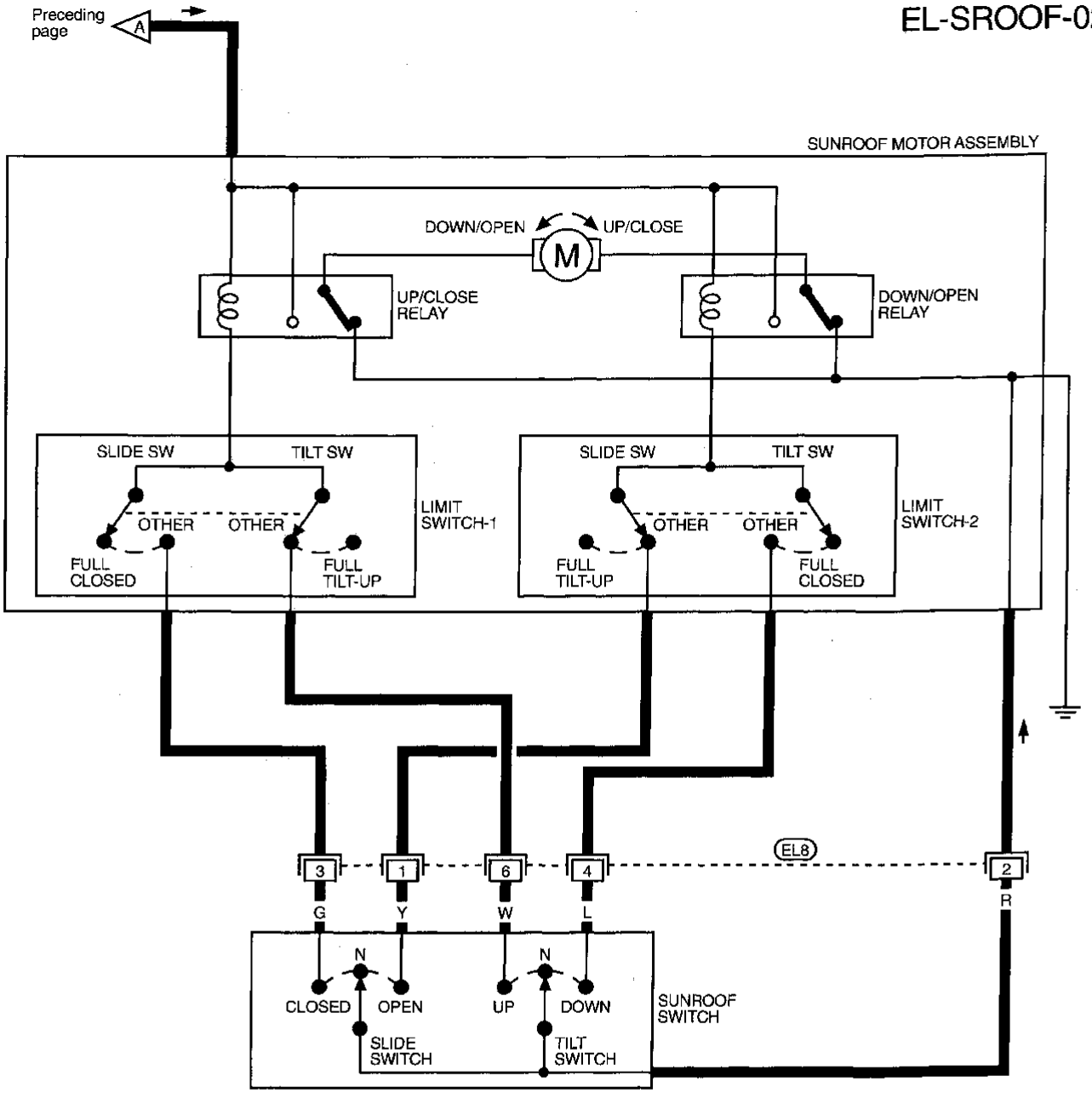
Refer to last page (Foldout page).
E66, M12
M4, B3
M1

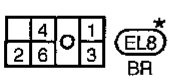
TEL802

1601

Wiring Diagram — SROOF — (Cont'd)

EL-SROOF-02



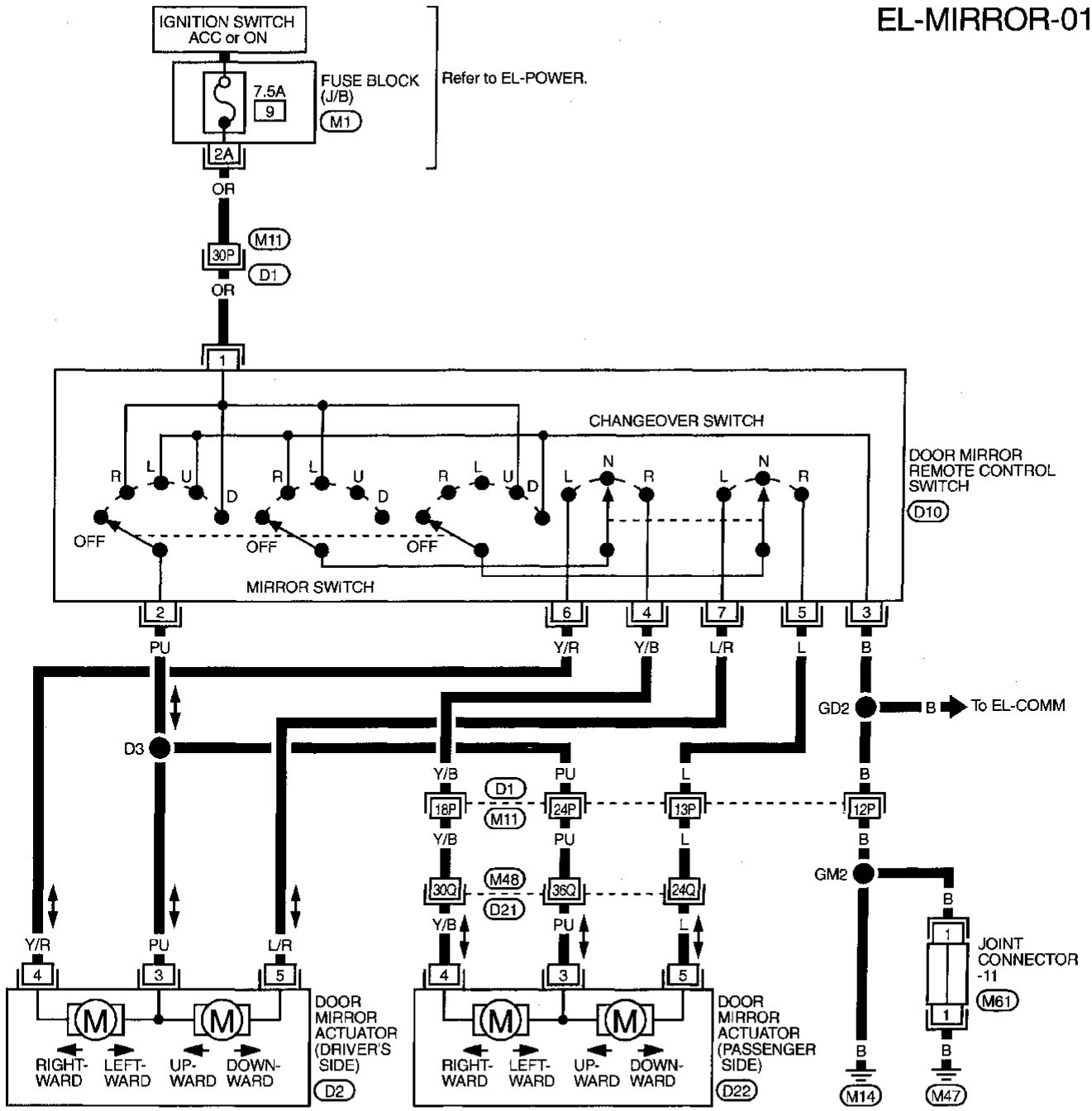


★ : This connector is not shown in "HARNESS LAYOUT", EL section.

TEL803

Wiring Diagram — MIRROR —

EL-MIRROR-01



Refer to last page (Foldout page).

M11 , D1

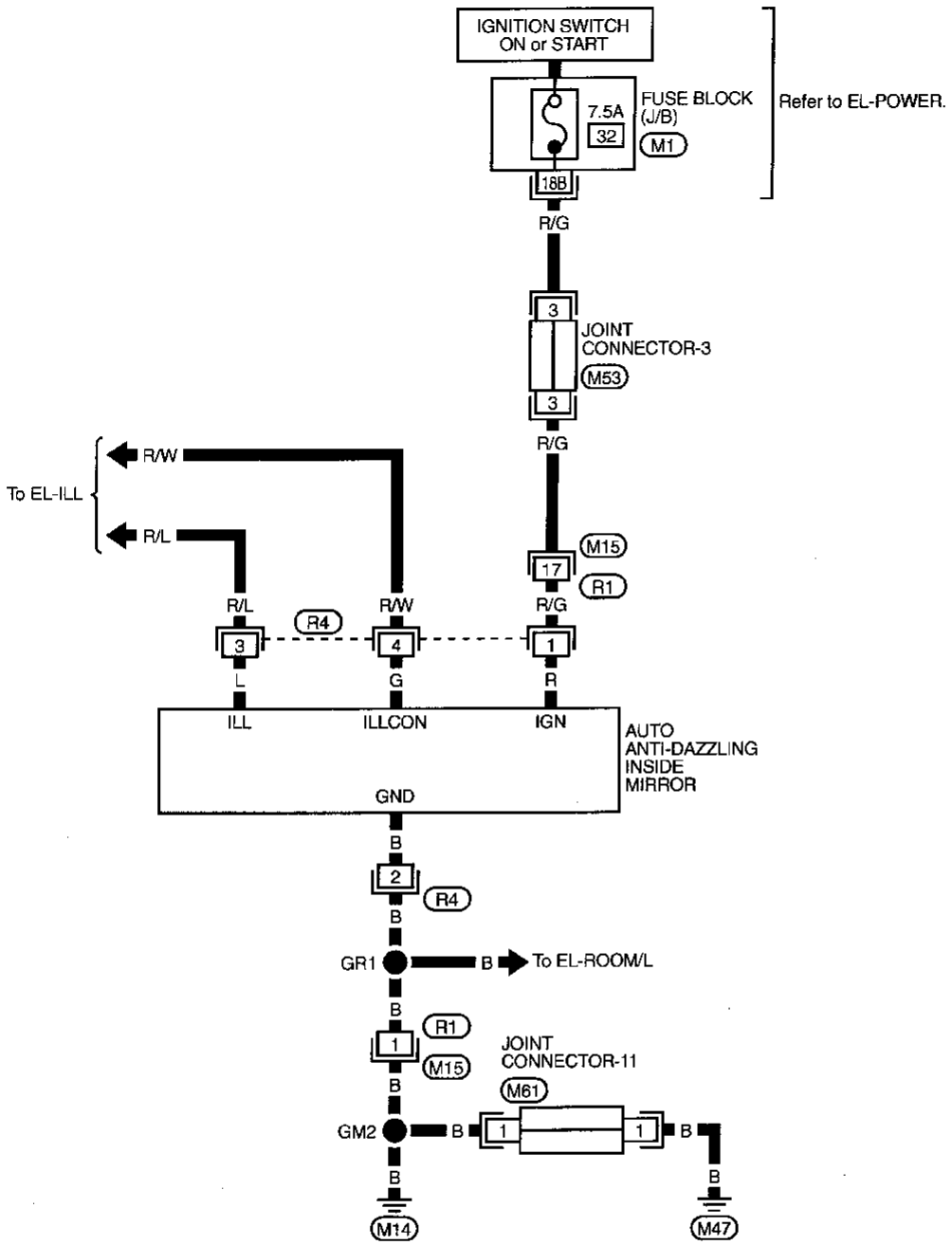
M48 , D21

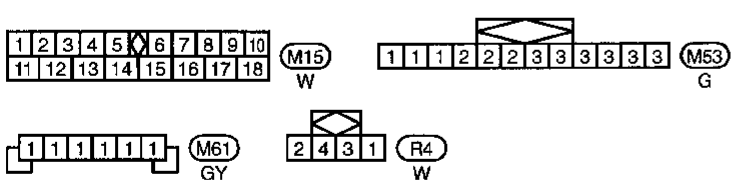
M1

TEL805

Wiring Diagram — I/MIRR —

EL-I/MIRR-01

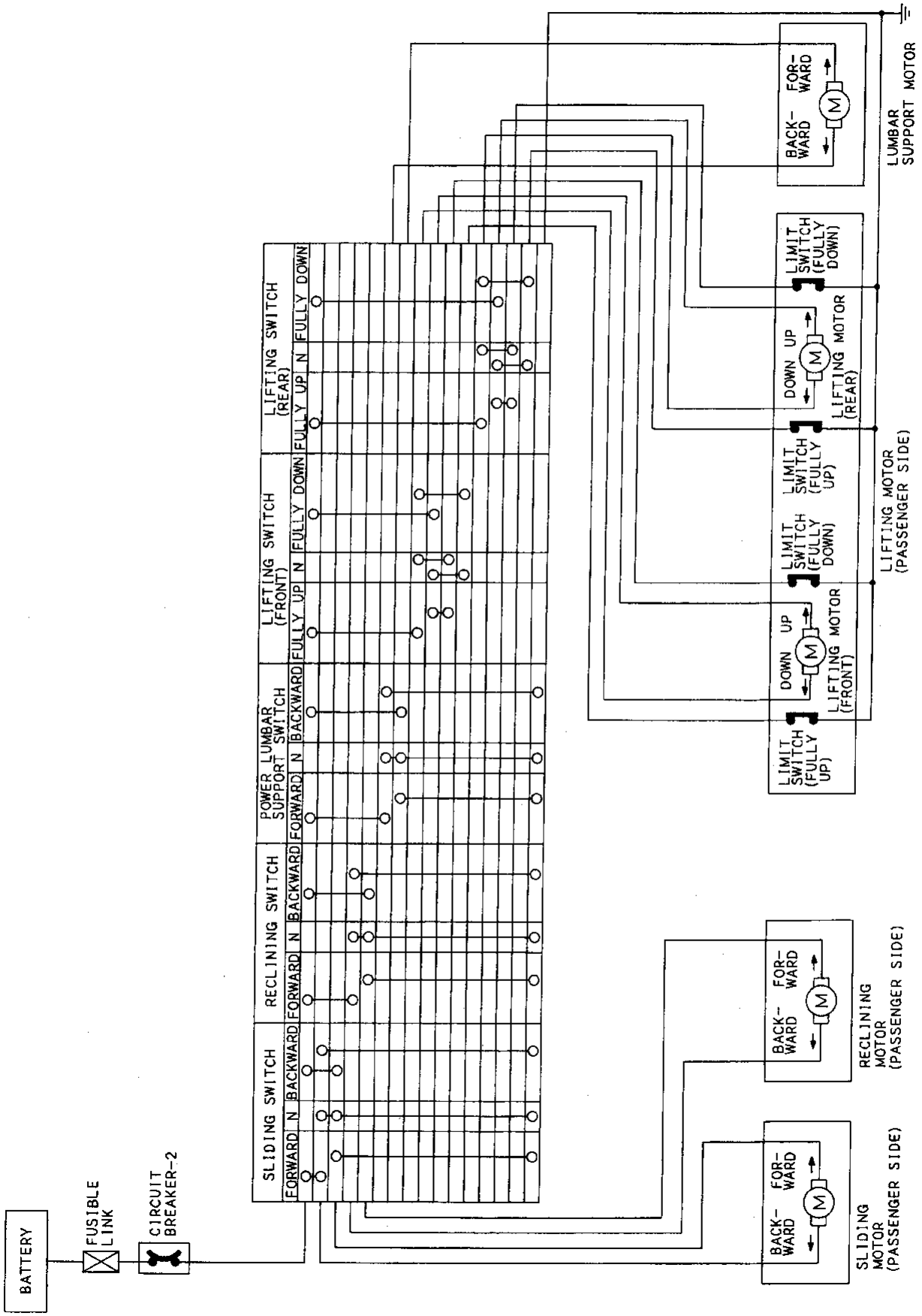




Refer to last page (Foldout page).
M1

TEL808

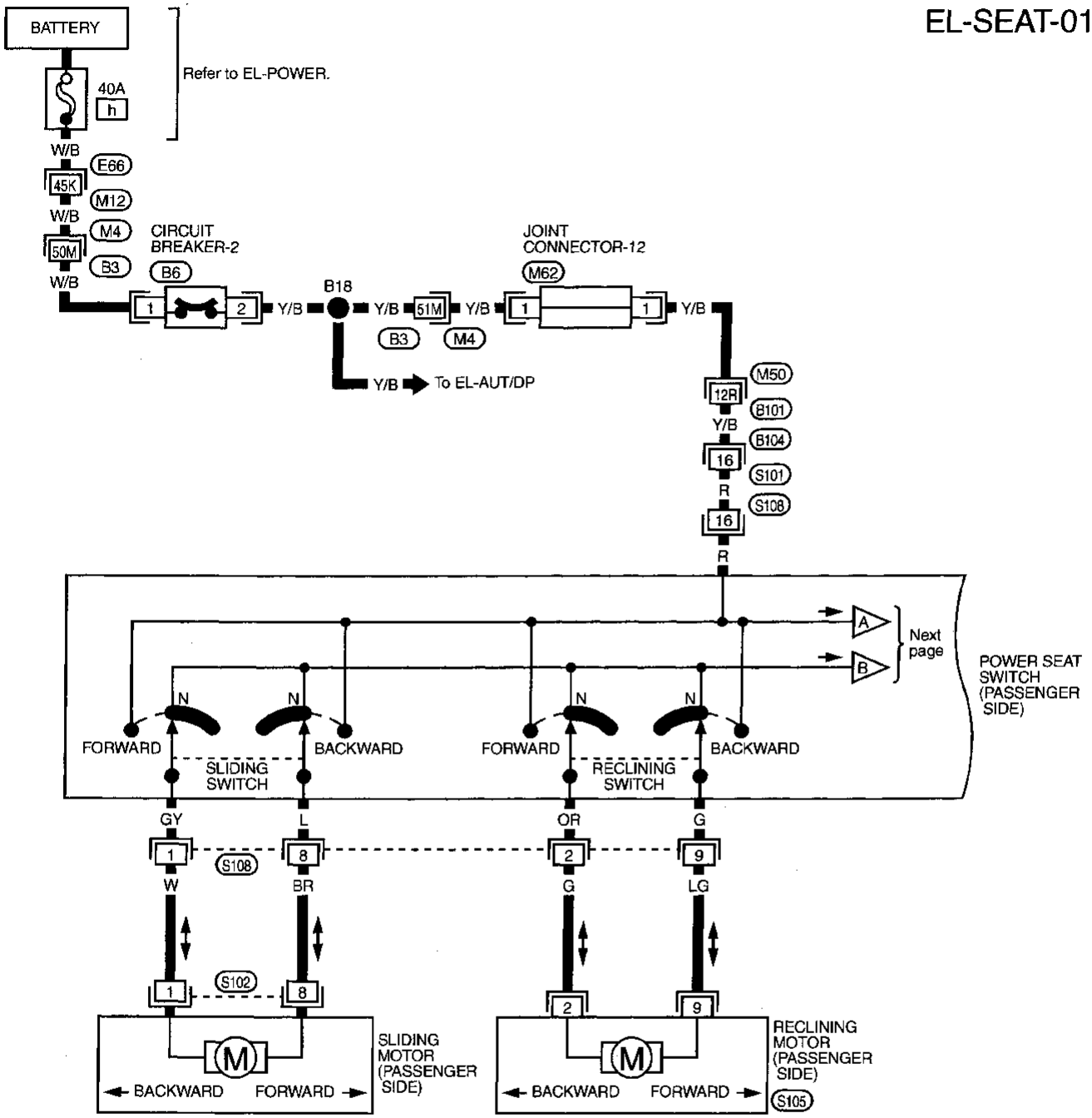
Schematic

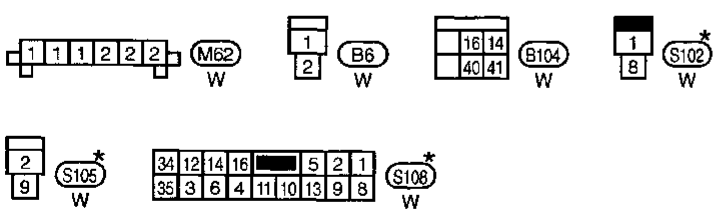


TEL809

Wiring Diagram — SEAT —

EL-SEAT-01





Refer to last page (Foldout page).

E66 , M12

M4 , B3

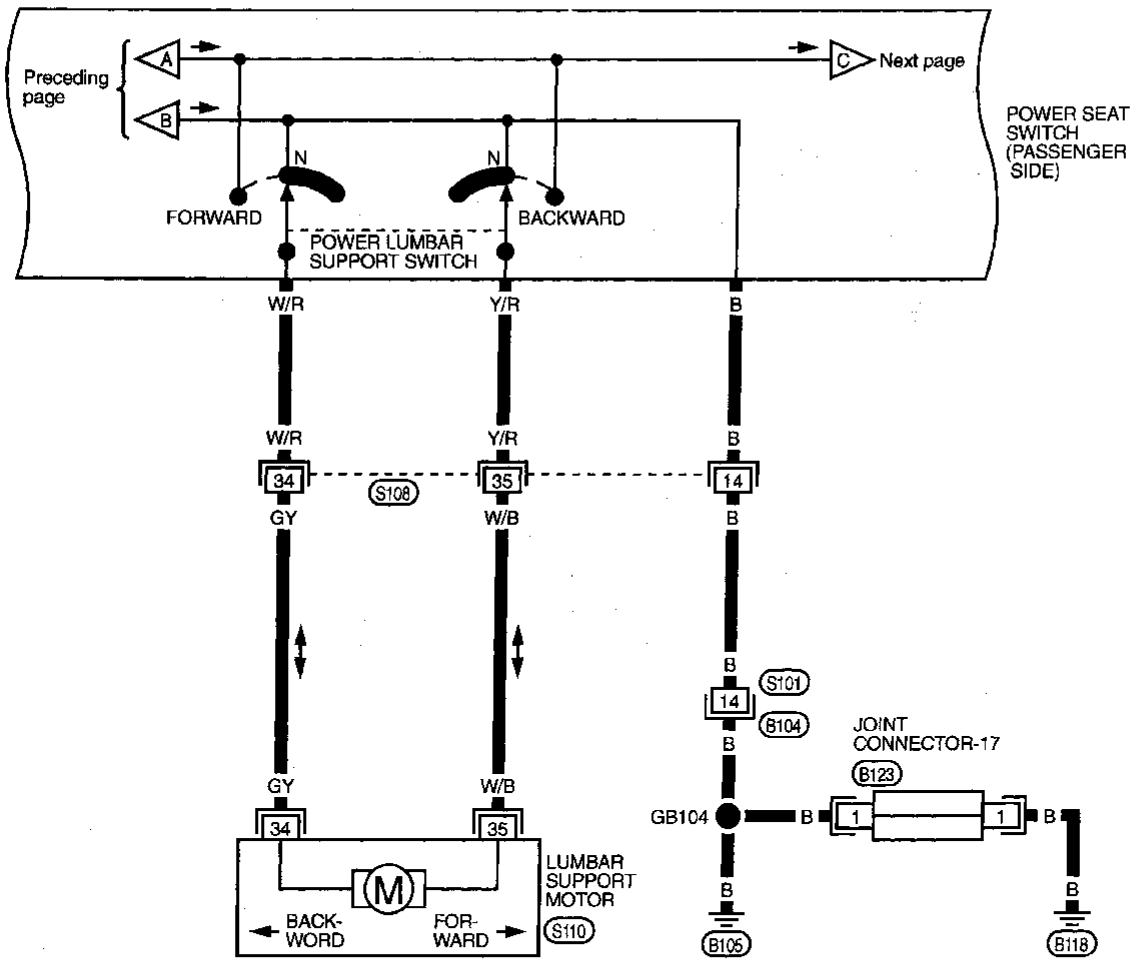
M50 , B101

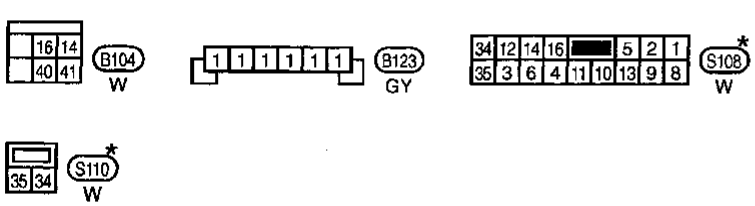
* : This connector is not shown in "HARNESS LAYOUT", EL section.

TEL810

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02



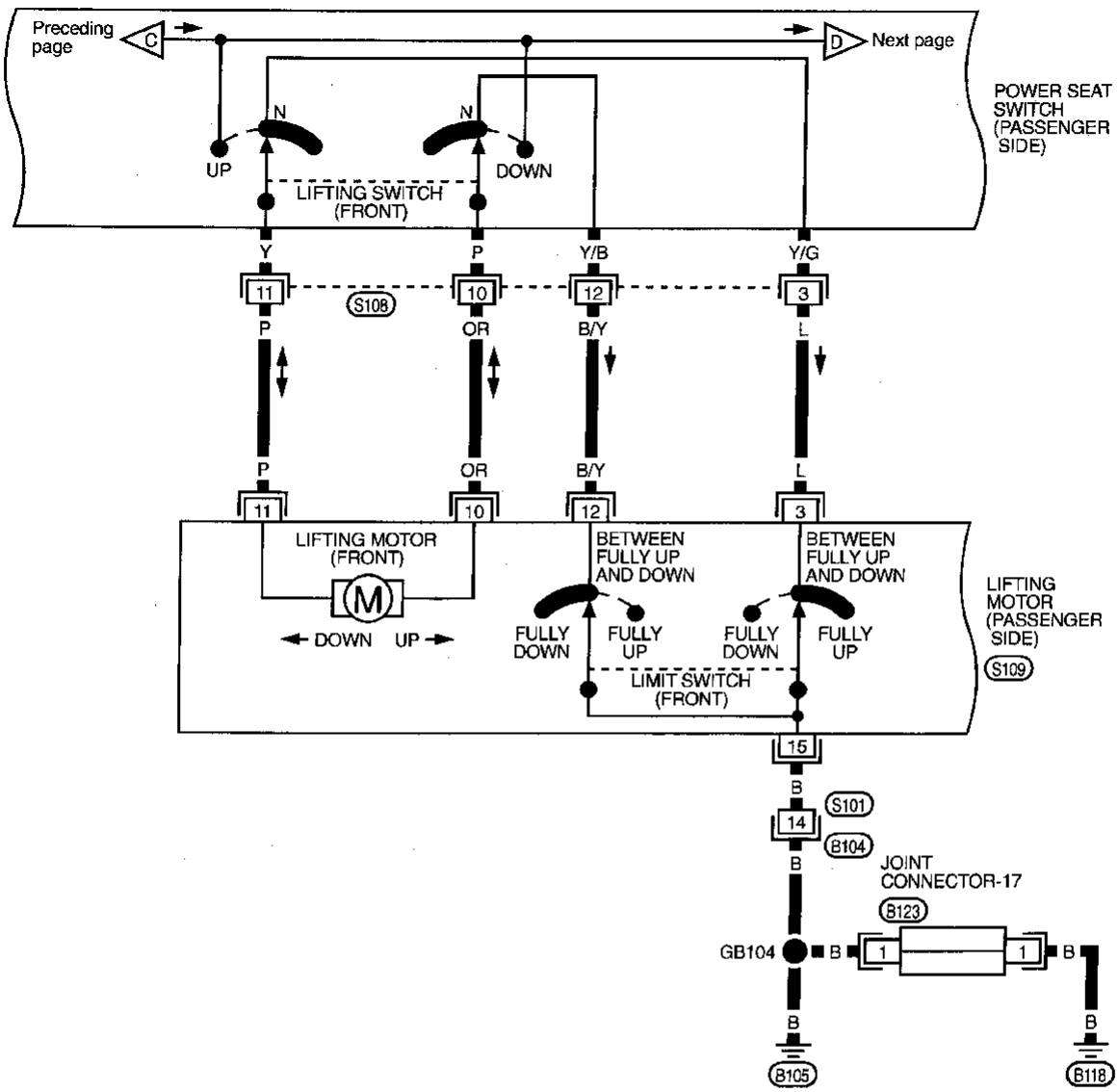


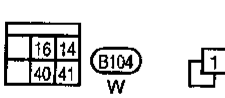
*: This connector is not shown in "HARNESS LAYOUT", EL section.

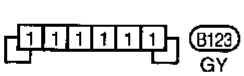
TEL811

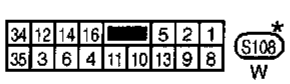
Wiring Diagram — SEAT — (Cont'd)

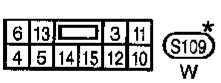
EL-SEAT-03









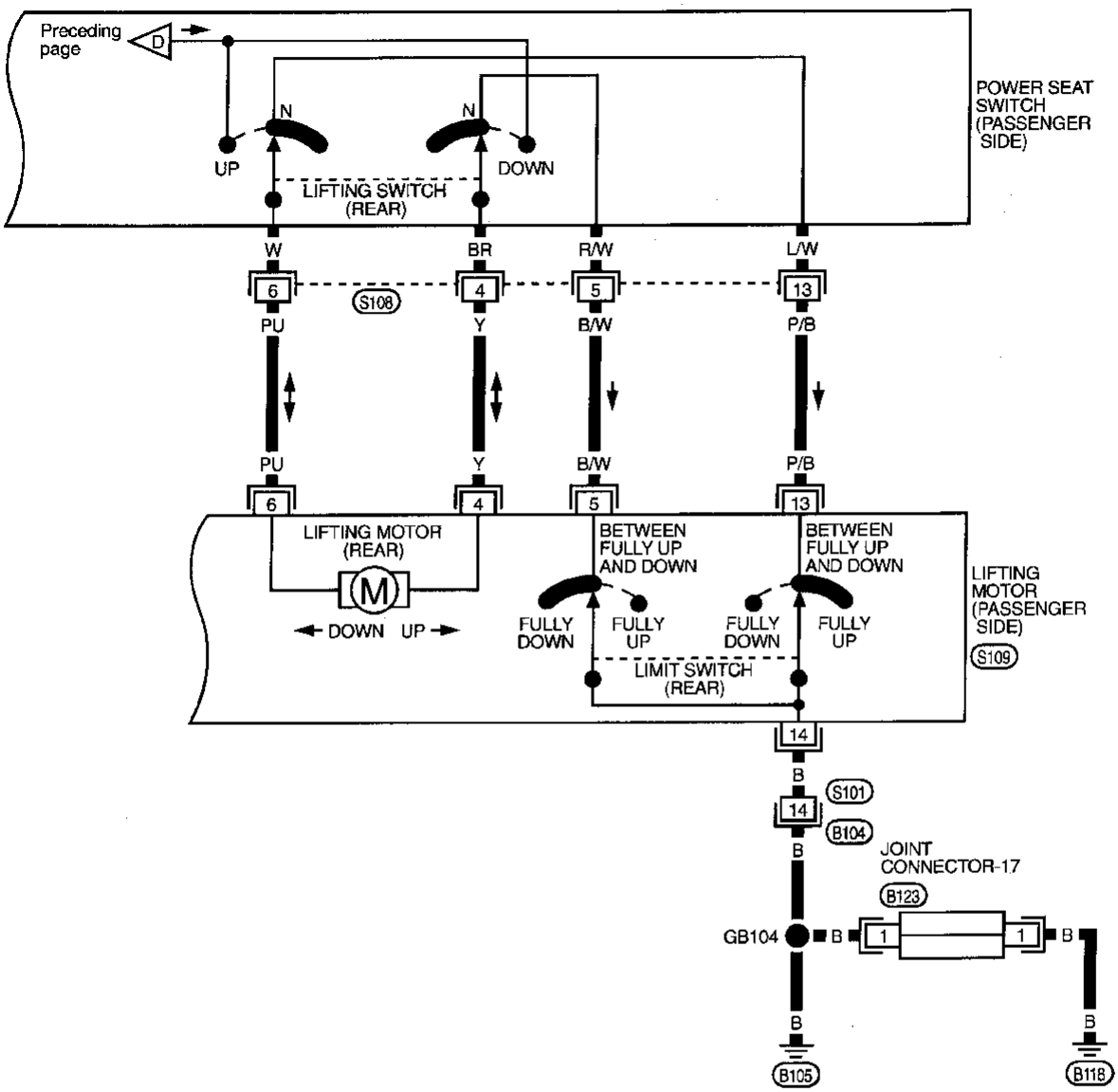


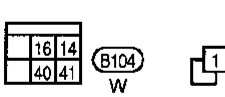
★ : This connector is not shown in "HARNESS LAYOUT", EL section.

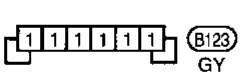
TEL812

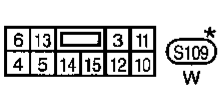
Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-04







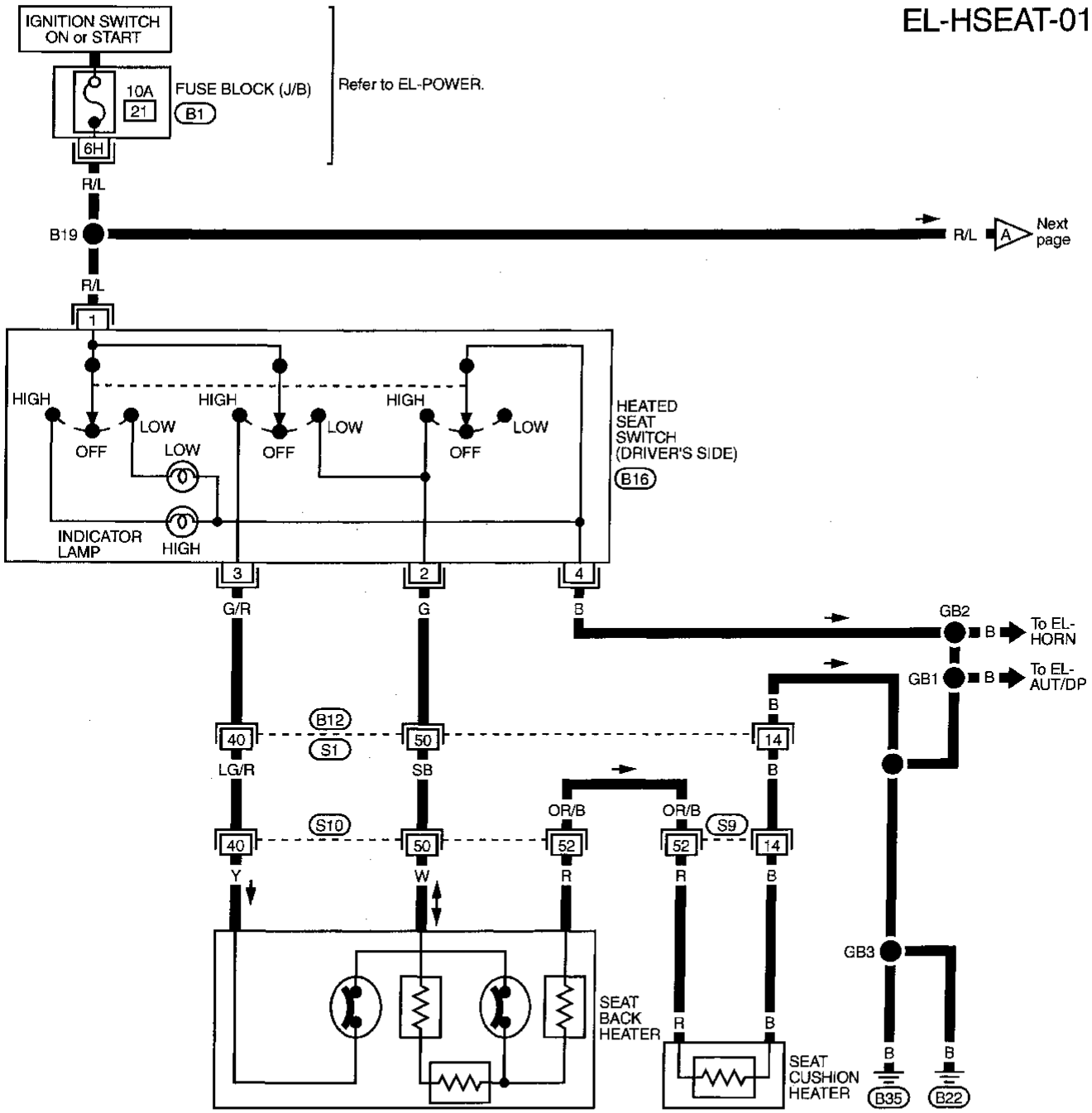


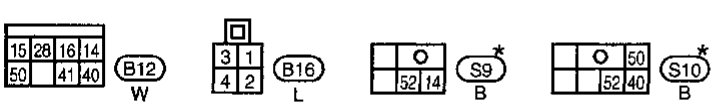
★: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL213A

Wiring Diagram — HSEAT —

EL-HSEAT-01





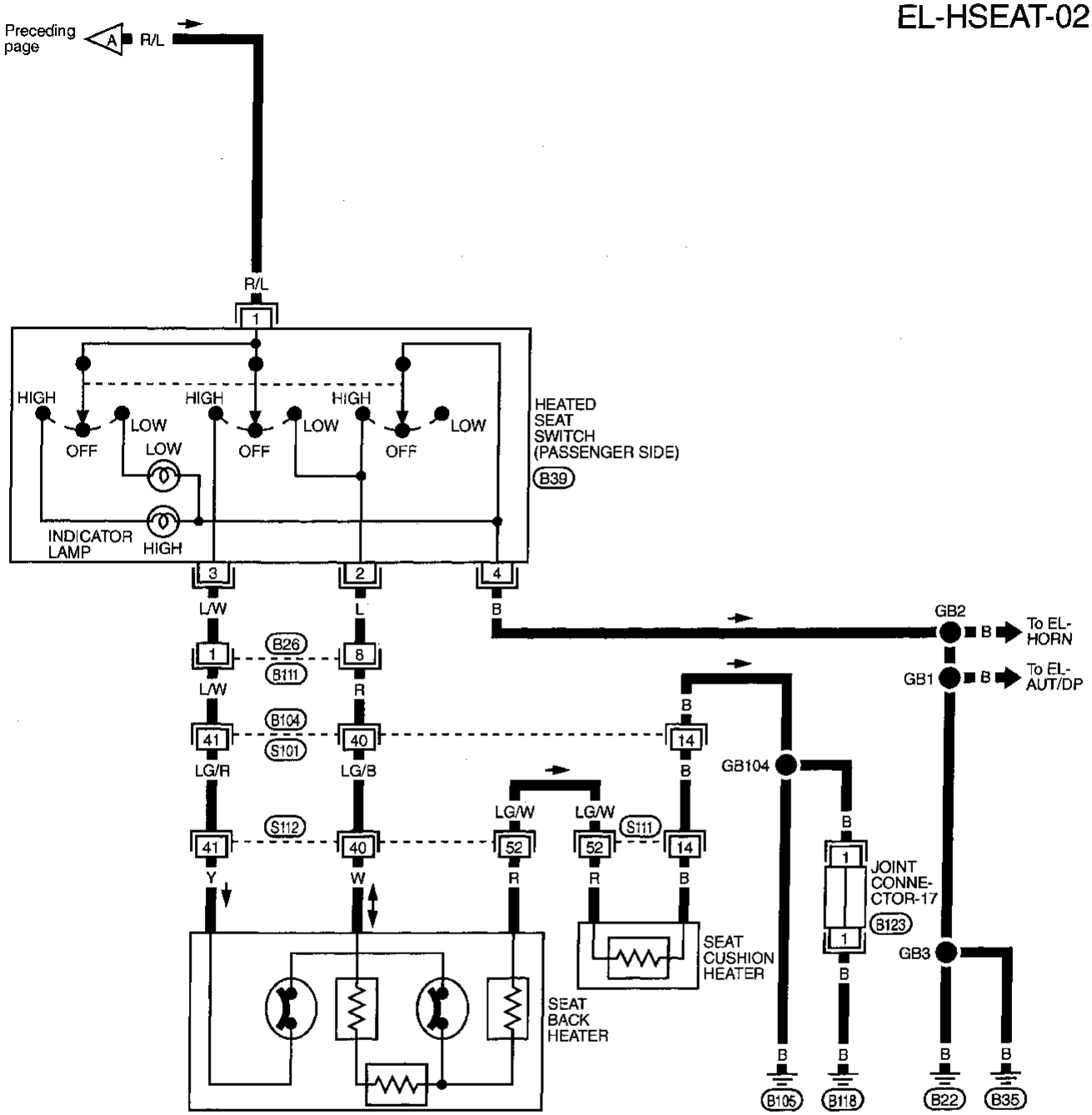
★ : This connector is not shown in "HARNESS LAYOUT", EL section.

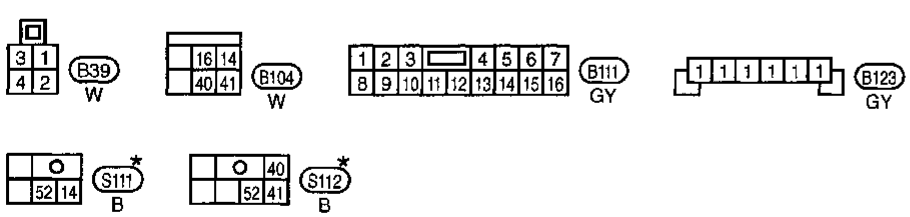
Refer to last page (Foldout page).
B1

TEL814

Wiring Diagram — HSEAT — (Cont'd)

EL-HSEAT-02



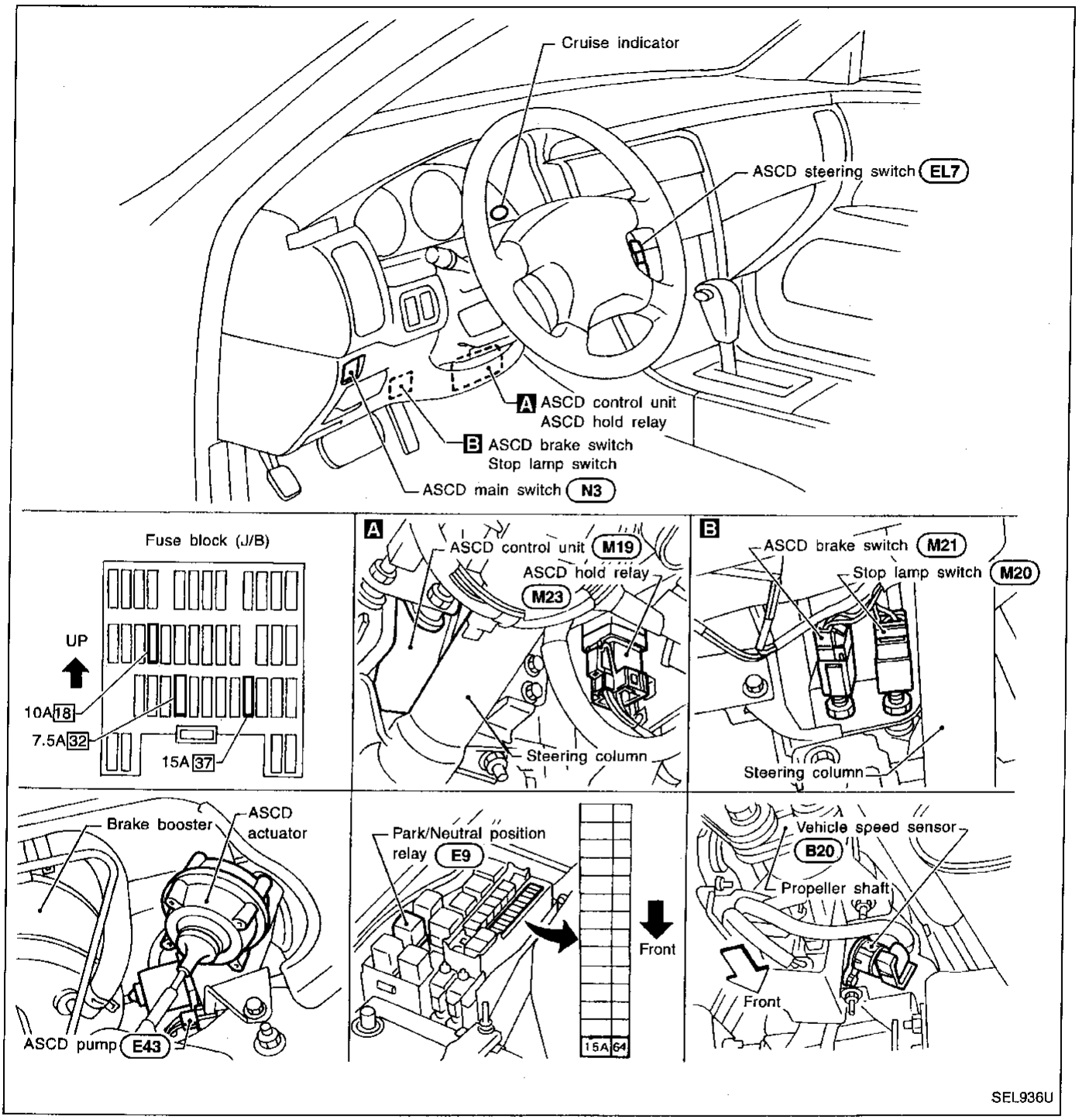


★: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL815

1611

Component Parts and Harness Connector Location



System Description

Refer to Owner's Manual for ASCD operating instructions.
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 ASCD main switch terminal ① and
- to ASCD hold relay terminal ③.

When ASCD main switch is in the ON position, power is supplied
- from terminal ③ of the ASCD main switch
- to ASCD hold relay terminal ②.

Ground is supplied
- to ASCD hold relay terminal ①
- through body grounds (M14) and (M47).

With power and ground supplied, the ASCD hold relay is activated, and power is supplied
- from ASCD hold relay terminal ⑤
- to ASCD control unit terminal ④,
- to park/neutral position relay terminal ④ and
- to ASCD main switch terminal ②.

After the ASCD main switch is released, power continues to be supplied
- to the coil circuit of ASCD hold relay
- through ASCD main switch terminals ② and ③.

This power supply continues until one of following things happens
- ignition switch is returned to the ACC or OFF position
- ASCD main switch is turned to OFF position.

While ASCD hold relay is energized power is also supplied
- to ASCD control unit terminal ⑤
- through park/neutral position relay and ASCD brake switch.

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

Inputs

At this point, the system is ready to activate or deactivate, based on inputs from the following:
- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- park/neutral position relay
- ASCD brake switch.

A vehicle speed input is supplied
- to ASCD control unit terminal ⑦
- from terminal ⑯ of the combination meter.

Power is supplied at all times
- through 15A fuse [No. 37], located in the fuse block (J/B)]
- to stop lamp switch terminal ①.

When the brake pedal is depressed, power is supplied
- from terminal ② of the stop lamp switch
- to ASCD control unit terminal ⑪.

Power is supplied at all times
- through 15A fuse (No. 64], located in the fuse, fusible link and relay box)
- to horn relay terminal ①
- through terminal ② of the horn relay
- to ASCD steering switch terminal ①.

When the SET/COAST switch is depressed, power is supplied
- from terminal ② of the ASCD steering switch
- to ASCD control unit terminal ②.

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

When the CANCEL switch is depressed, power is supplied
- to ASCD control unit terminals ① and ②.

When the system is activated, power is supplied
- to ASCD control unit terminal ⑤.

System Description (Cont'd)

Power is interrupted when
- the selector lever is placed in P or N or
- the ASCD brake switch is depressed.

Outputs

The ASCD pump controls the throttle drum via the ASCD wire based on inputs from the ASCD control unit. The ASCD pump consists of a vacuum motor, an air valve, and a release valve.
Power is supplied
- from terminal ⑧ of the ASCD control unit
- to ASCD pump terminal ①.

Ground is supplied to the vacuum motor
- from terminal ⑨ of the ASCD control unit
- to ASCD pump terminal ④.

Ground is supplied to the air valve
- from terminal ⑩ of the ASCD control unit
- to ASCD pump terminal ②.

Ground is supplied to the release valve
- from terminal ⑭ of the ASCD control unit
- to ASCD pump terminal ③.

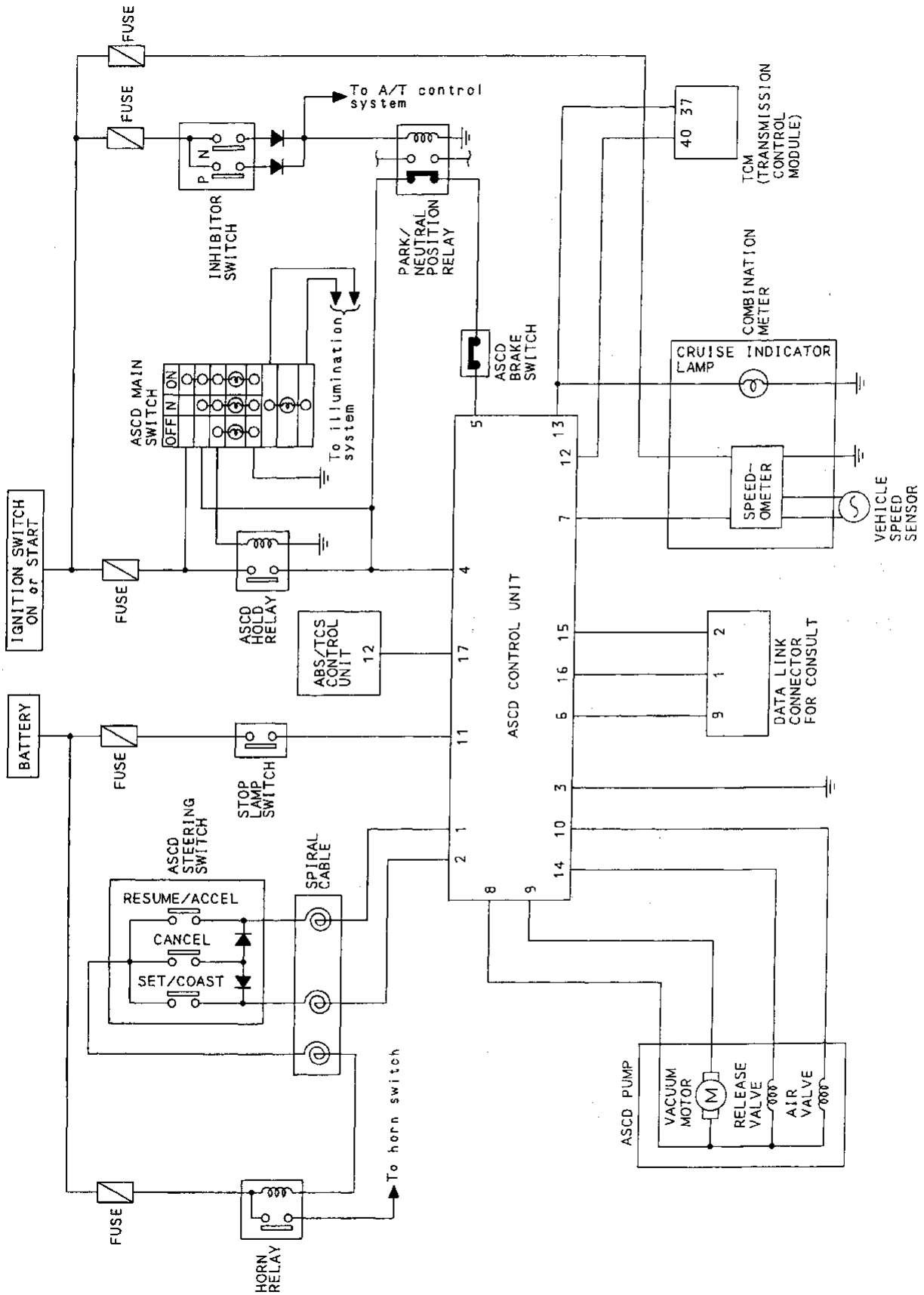
When the system is activated, power is supplied
- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ㊴ and
- to TCM (transmission control module) terminal ㊲.

Ground is supplied
- to combination meter terminal ㉛
- through body grounds (M14) and (M47).

With power and ground supplied, the CRUISE indicator illuminates.
When vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent
- from terminal ⑫ of the ASCD control unit
- 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.

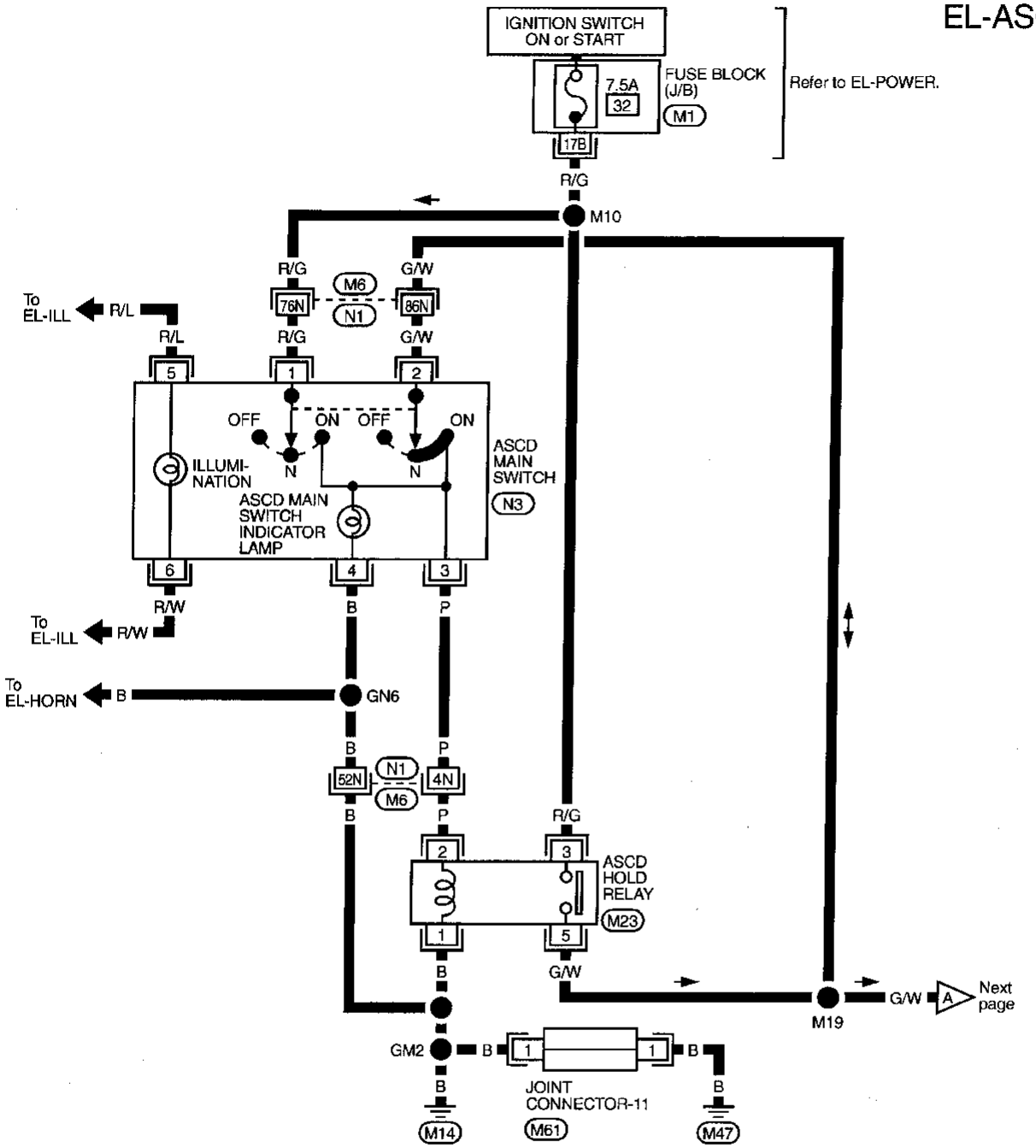
Schematic

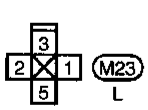


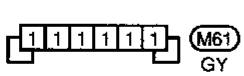
TEL214A

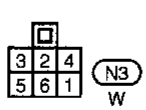
Wiring Diagram — ASCD —

EL-ASCD-01







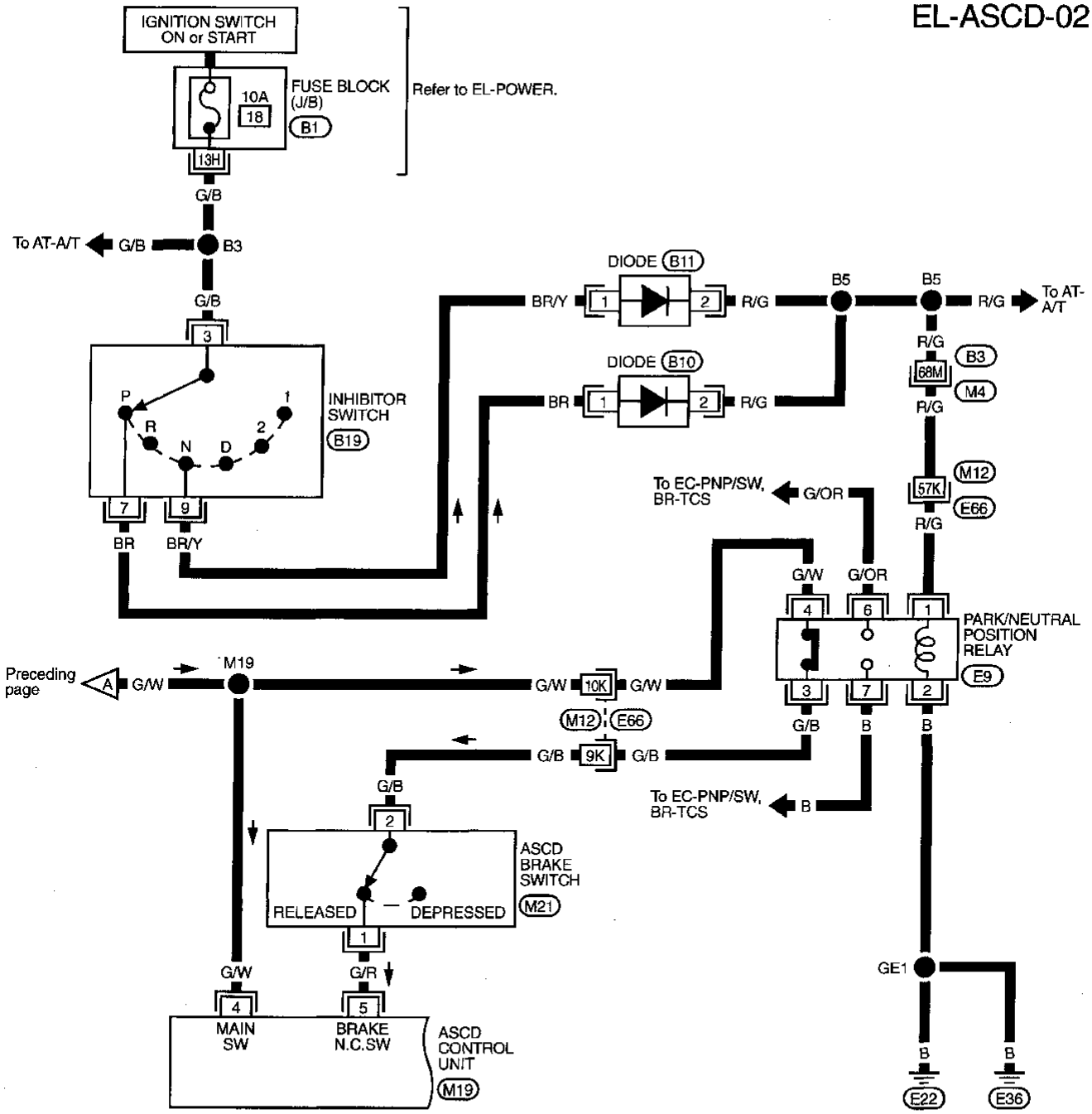


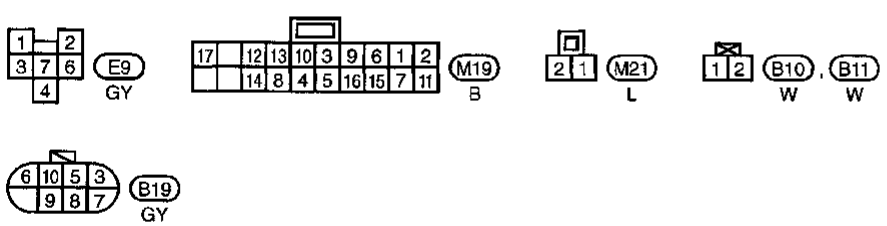
Refer to last page (Foldout page).
M6, N1
M1

TEL215A

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-02





Refer to last page (Foldout page).

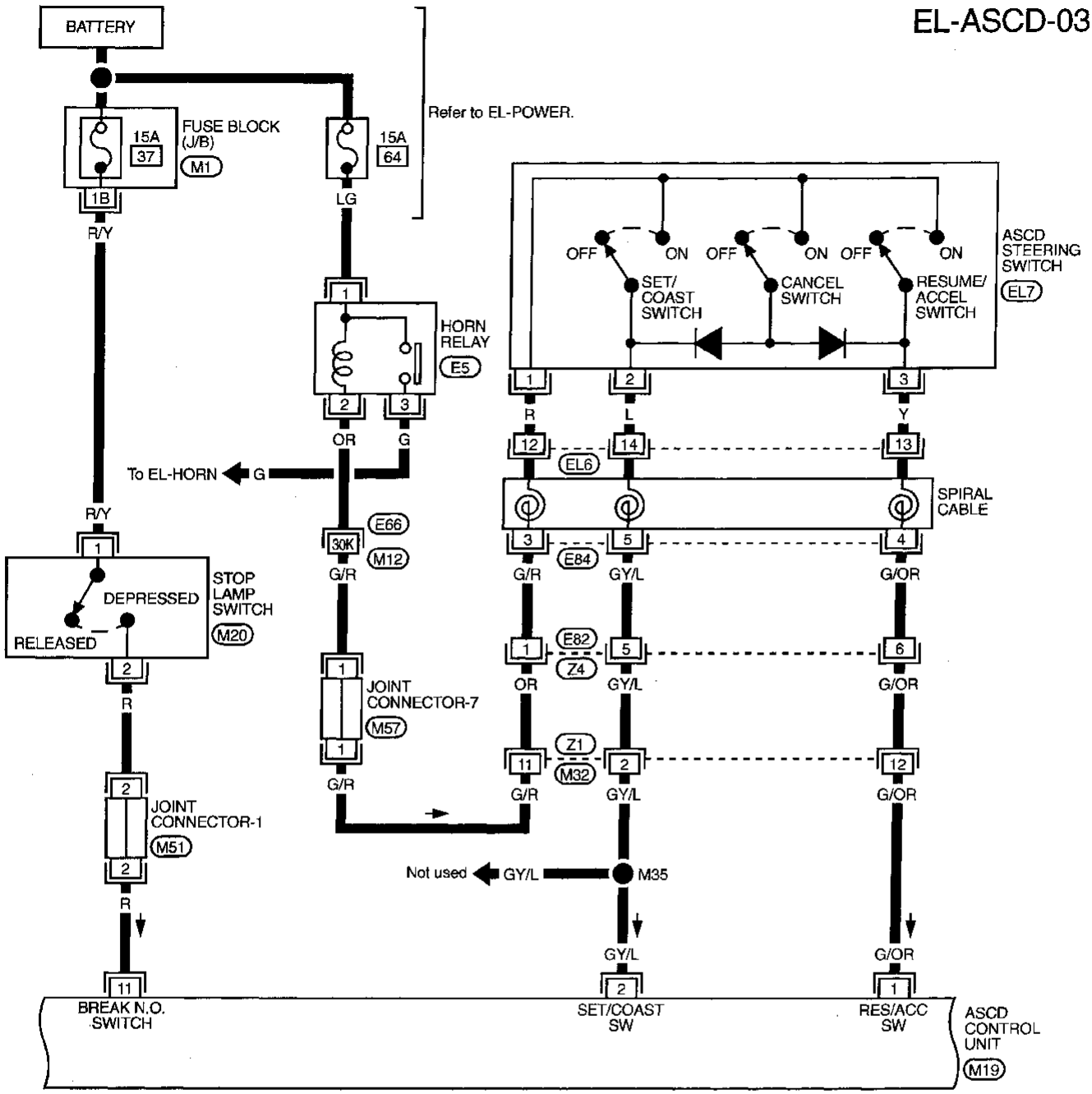
E66, M12
M4, B3
B1
B9

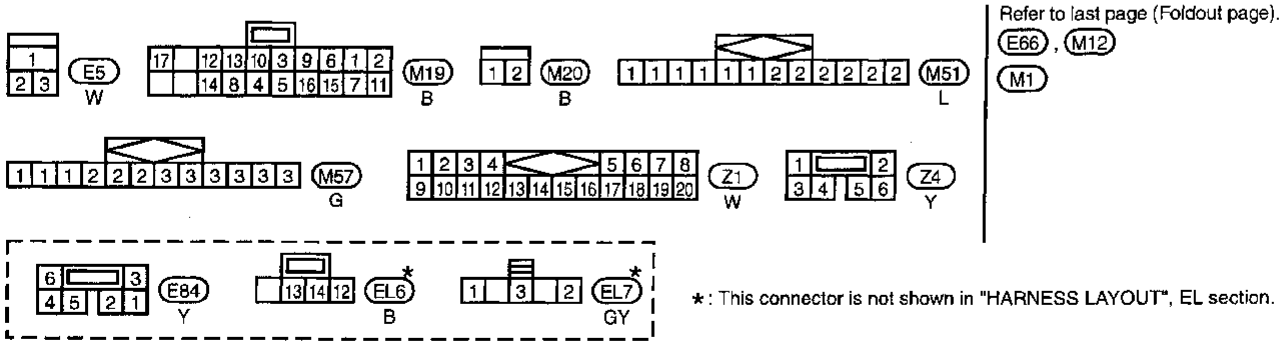
TEL216A

1617

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03





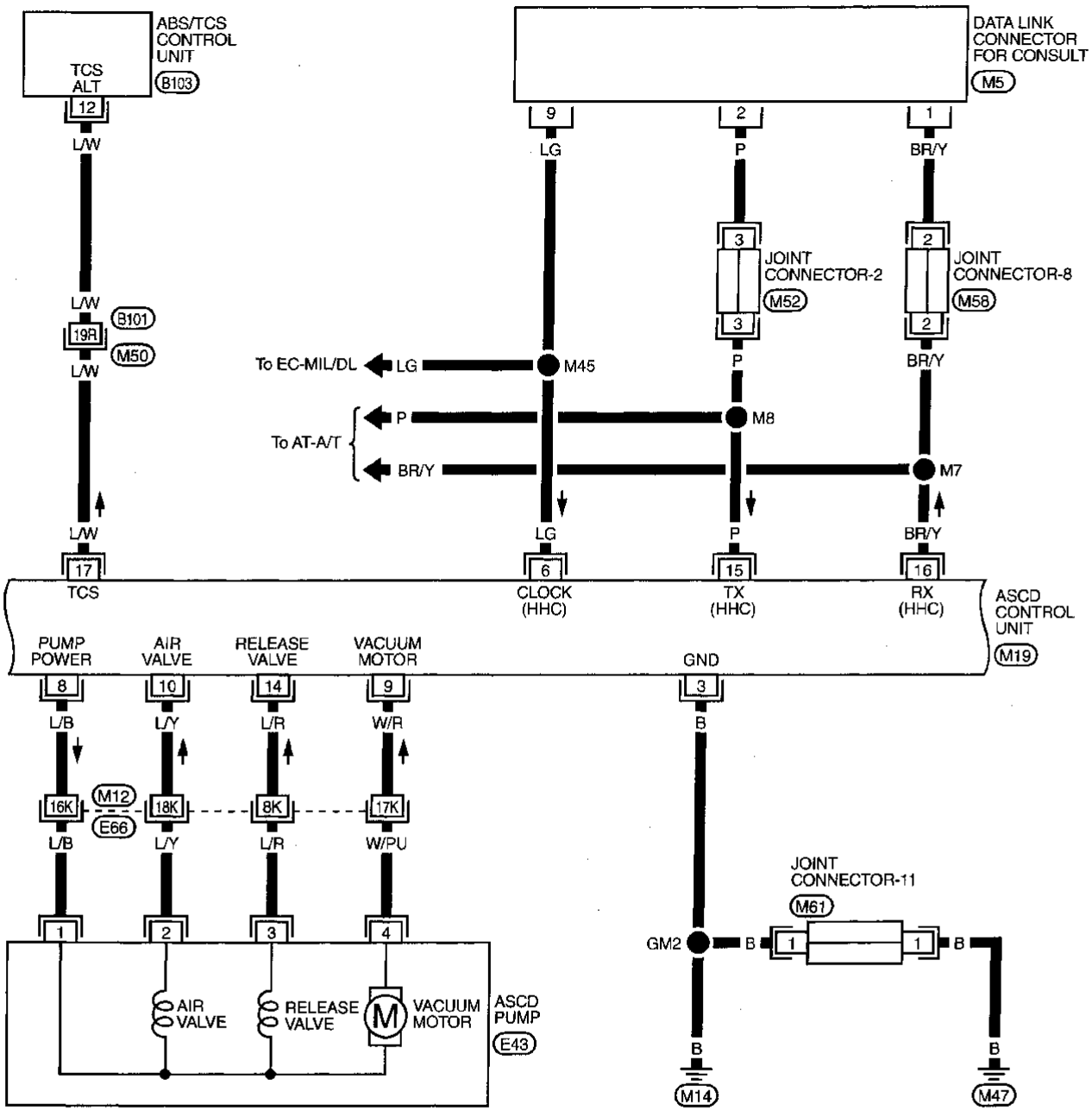
Refer to last page (Foldout page).
E66, M12
M1

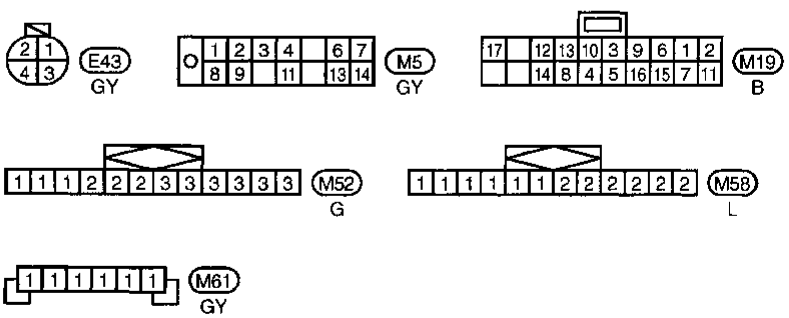
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL251A

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-04



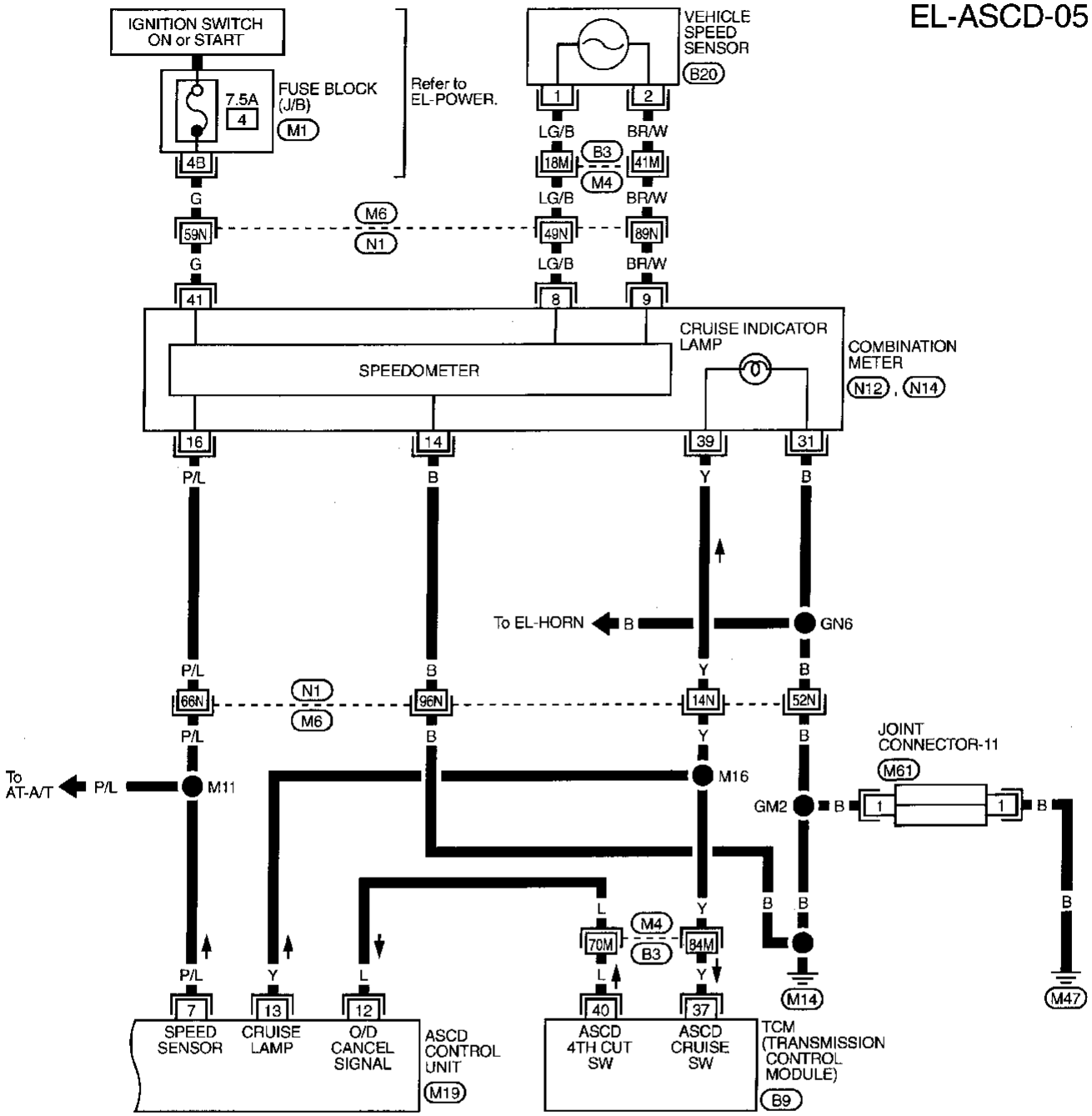


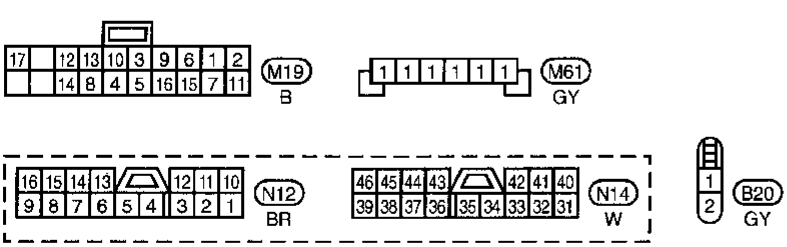
Refer to last page (Foldout page).
E66, M12
M50, B101
B103

TEL820

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05

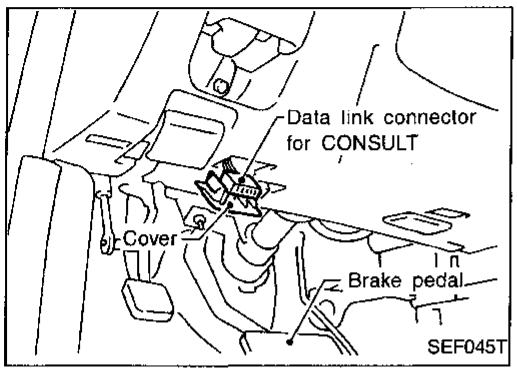




Refer to last page (Foldout page).

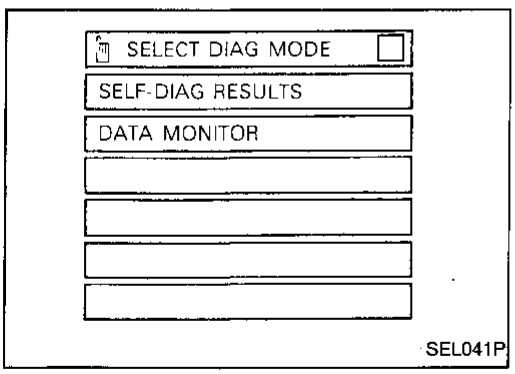
M4, B3
M6, N1
M1
B9

TEL217A

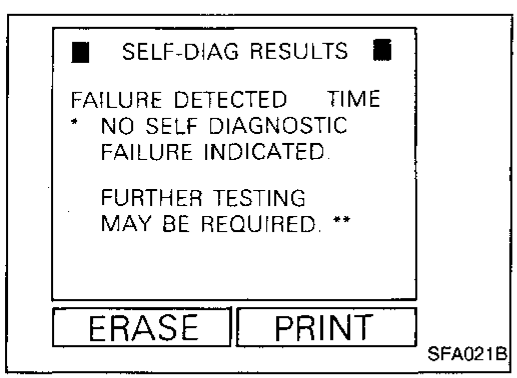


CONSULT

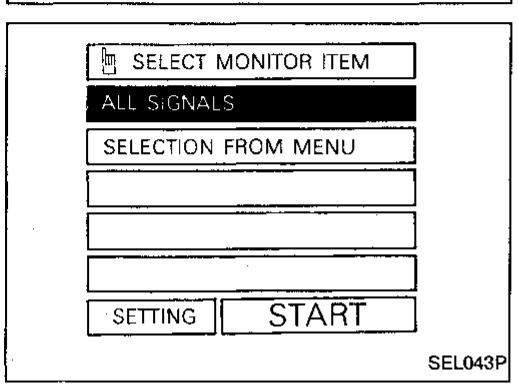
1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector for CONSULT.



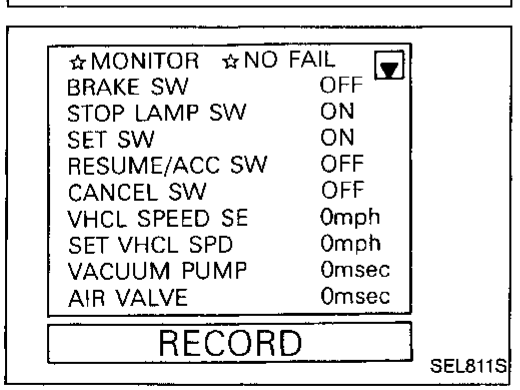
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



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



8. Touch DATA MONITOR.



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

For further information, read the CONSULT Operation Manual.

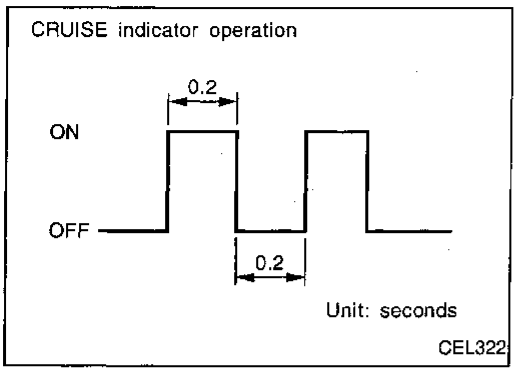
CONSULT (Cont'd)

SELF-DIAGNOSTIC RESULTS

Diagnostic item	Description	Repair/Check order
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	• Even if no self diagnostic failure 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 7 (EL-197)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-197)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-197)
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-197)
VHCL SP·S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.	Diagnostic procedure 6 (EL-196)
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 4 (EL-194)

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.
FAIL SAFE·LOW	• The fail-safe (LOW) circuit function is displayed.
FAIL SAFE·SPD	• The fail-safe (SPEED) circuit function is displayed.

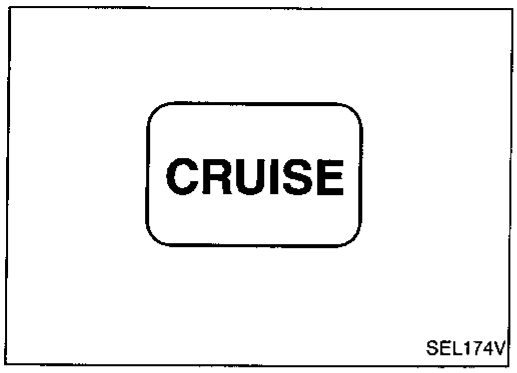


Fail-safe System

When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE 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.

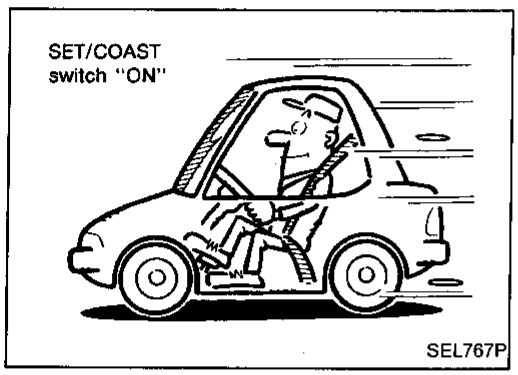


Fail-safe System Check

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "cruise indicator" blinks.

   If the indicator lamp blinks, check the following.

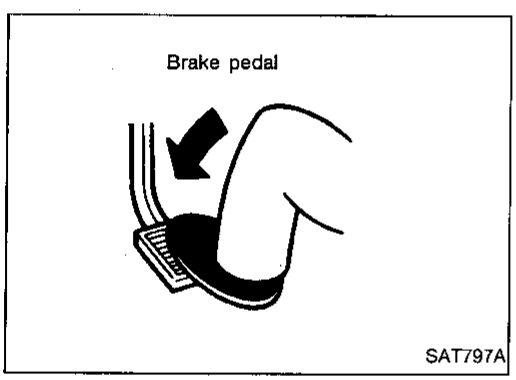
- ASCD steering switch. Refer to "DIAGNOSTIC PROCEDURE 5" (EL-195).



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 6" (EL-196).
- ASCD pump circuit. Refer to "DIAGNOSTIC PROCEDURE 7" (EL-197).
- Replace control unit.



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 4" (EL-194).

5. END. (System is OK.)

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	—		Diagnostic procedure							
REFERENCE PAGE	EL-187	EL-190	EL-192	EL-192	EL-193	EL-194	EL-195	EL-196	EL-197	EL-198
SYMPTOM	Self-diagnosis in CONSULT	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)	X		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" 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
Deceleration is greatest immediately after ASCD has been set.	X									X

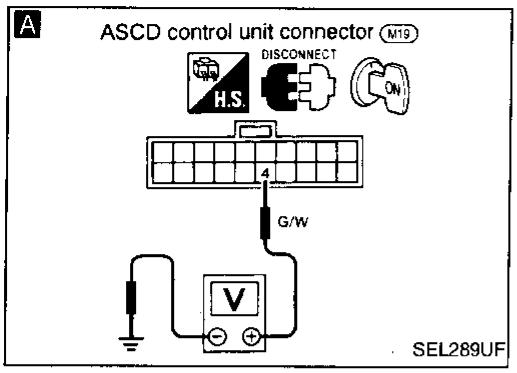
★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "Fail-safe System Check" (EL-190) to verify repairs.

★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)



1. Turn ignition switch ON.
2. Turn ASCD main switch "ON" to make sure indicators illuminate.

NG → Go to DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK).

OK ↓

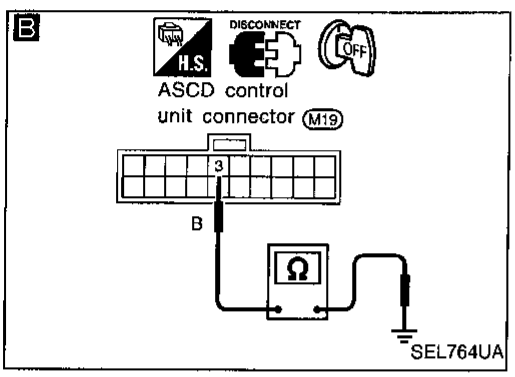
A

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.
   Battery voltage should exist.

   Refer to wiring diagram in EL-183.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-193.

OK ↓



B

CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.
Check continuity between ASCD control unit harness terminal ③ and ground.

Refer to wiring diagram in EL-185.

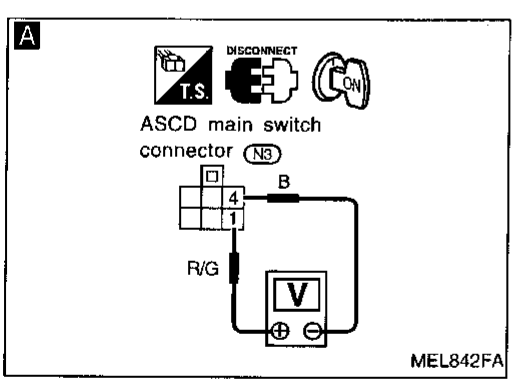
NG → Repair harness.

OK ↓

Power supply and ground circuit are OK.

DIAGNOSTIC PROCEDURE 2

(ASCD MAIN SWITCH CHECK)



A

CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.
1. Disconnect main switch connector.
2. Measure voltage between main switch terminals ① and ④.
   Battery voltage should exist.

   Refer to wiring diagram in EL-182.

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

OK ↓

Check ASCD main switch. Refer to "Electrical Components Inspection" (EL-199).

NG → Replace ASCD main switch.

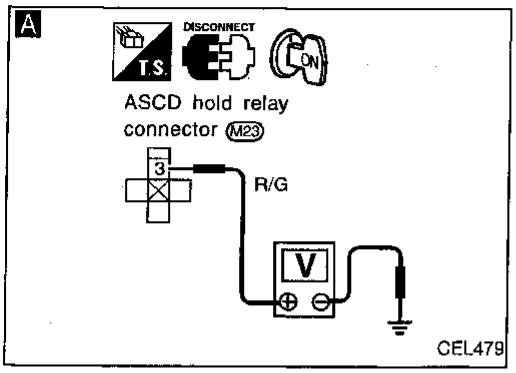
OK ↓

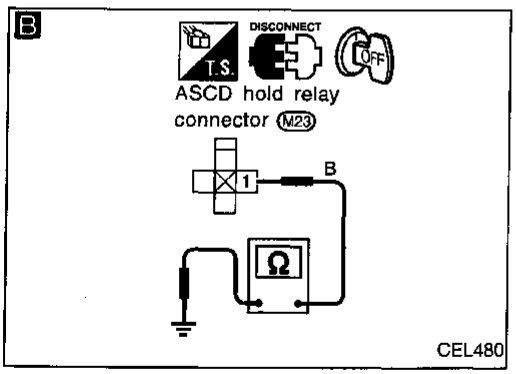
Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-193.

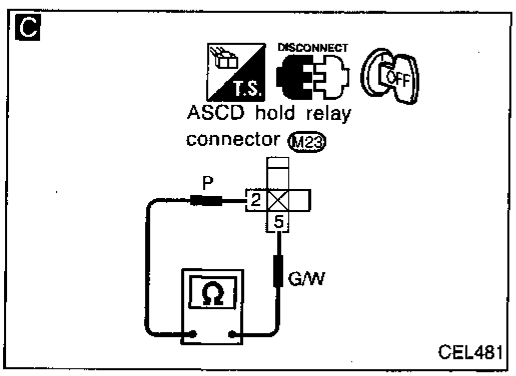
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CIRCUIT CHECK)







A

CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY.
1. Disconnect ASCD hold relay
2. Do approx. 12 volts exist between ASCD hold relay terminal ③ and ground?

Refer to wiring diagram in EL-182.

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

Yes ↓

B

CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY.
Does continuity exist between ASCD hold relay terminal ① and ground?

No → Repair harness.

Yes ↓

C

CHECK ASCD HOLD RELAY CIRCUIT.
Does continuity exist between ASCD hold relay terminals ② and ⑤ ?

Yes → Check ASCD hold relay.

No ↓

CHECK ASCD MAIN SWITCH.
Refer to "Electrical Components Inspection" (EL-199).

NG → Replace ASCD main switch.

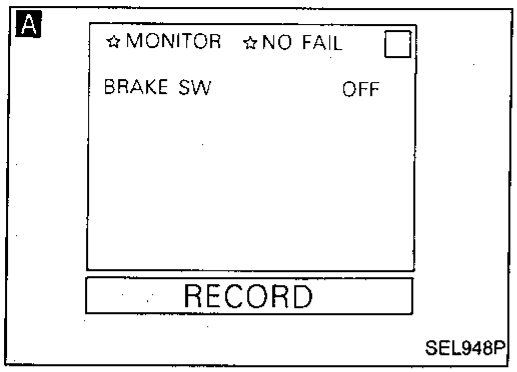
OK ↓

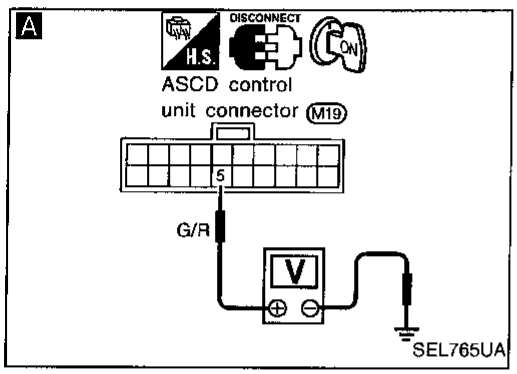
ASCD hold relay circuit is OK.

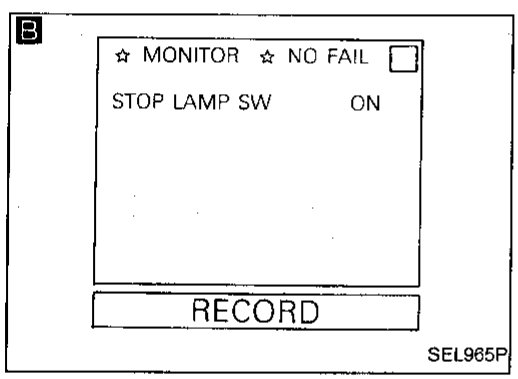
Trouble Diagnoses (Cont'd)

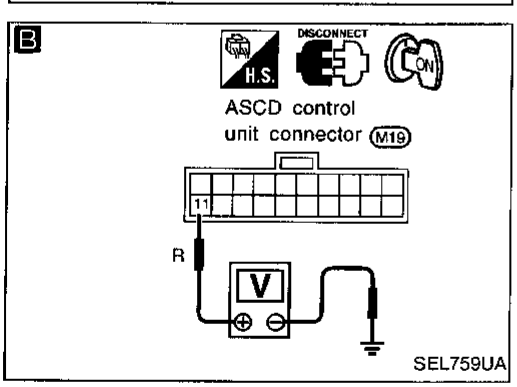
DIAGNOSTIC PROCEDURE 4

(ASCD BRAKE/STOP LAMP SWITCH CHECK)









A

CHECK ASCD BRAKE SWITCH CIRCUIT.

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

BRAKE SW ON

NG → Check the following.
- ASCD brake switch
  Refer to "Electrical Components Inspection" (EL-199).
- Inhibitor switch
  Refer to "Electrical Components Inspection" (EL-199).
- ASCD hold relay
- Park/neutral position relay
- Diode B10, B11
  Refer to "Electrical Components Inspection" (EL-199).
- Harness for open or short

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-183.

OK ↓

B

CHECK STOP LAMP SWITCH CIRCUIT.

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

STOP LAMP SW

When brake pedal is released: OFF

When brake pedal is depressed: ON

NG → Check the following.
- 15A fuse [No. 37, located in the fuse block (J/B)]
- Harness for open or short between ASCD control unit and stop lamp switch
- Stop lamp switch
  Refer to "Electrical Components Inspection" (EL-199).

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-184.

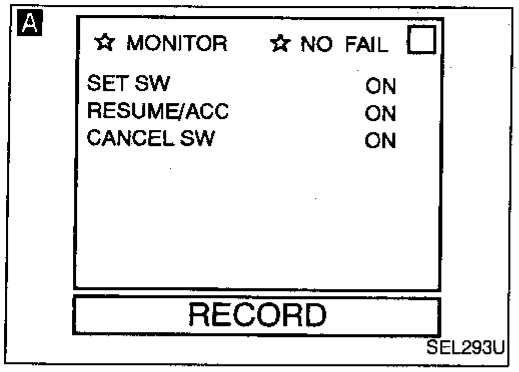
OK ↓

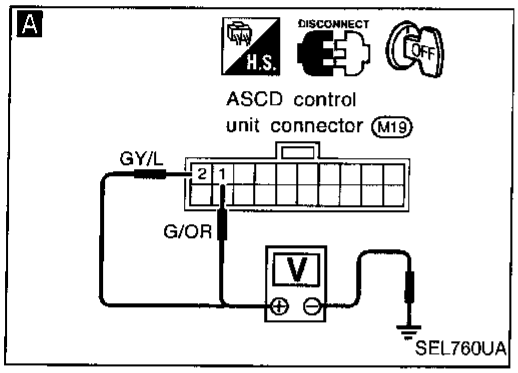
ASCD brake/stop lamp switch is OK.

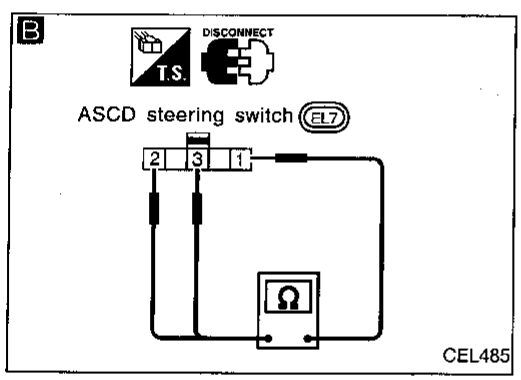
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)







A

CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT.

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

OK → ASCD steering switch is OK.

OR

1. Disconnect control unit connector.
2. Check voltage between control unit terminal 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-184.

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.

NG → Replace ASCD steering switch.

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

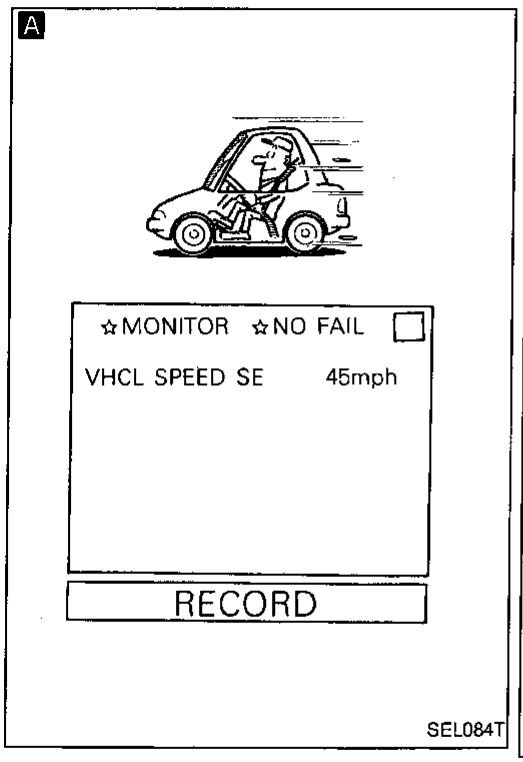
OK ↓

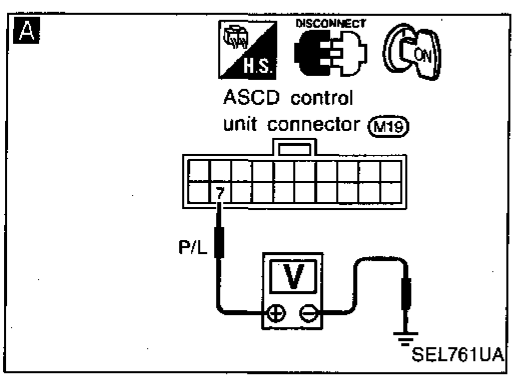
Check harness for open or short between ASCD steering switch and ASCD control unit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)





A

CHECK VEHICLE SPEED SENSOR CIRCUIT.

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 ASCD control unit connector.
3. Connect voltmeter between ASCD control unit terminal ⑦ and ground.
4. Slowly turn drive wheel.
5. Check deflection of voltmeter pointer.

Refer to wiring diagram in EL-186.

NG ↓

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-92.

Yes ↓

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ⑯.

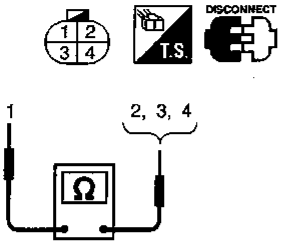
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(ASCD PUMP CIRCUIT CHECK)

A

ASCD pump connector E43



MEL401GB

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-185.

NG → Replace ASCD pump.

OK ↓

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

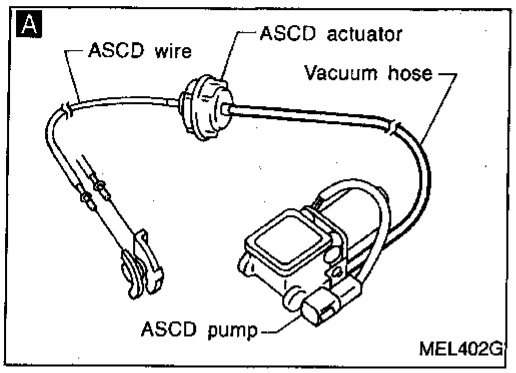
If a self-diagnostic result has already been accomplished, check using the following table.

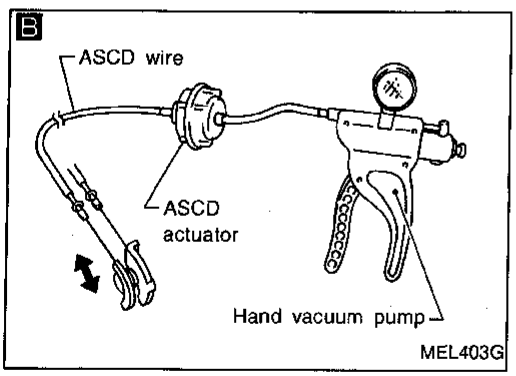
CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑭	③

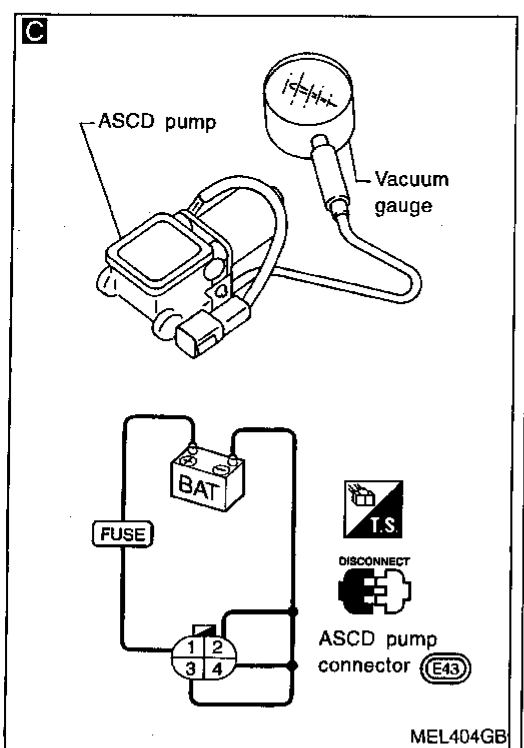
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(ASCD ACTUATOR/PUMP CHECK)







A

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

NG → Repair or replace hose.

OK ↓

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

NG → Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-200).

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.

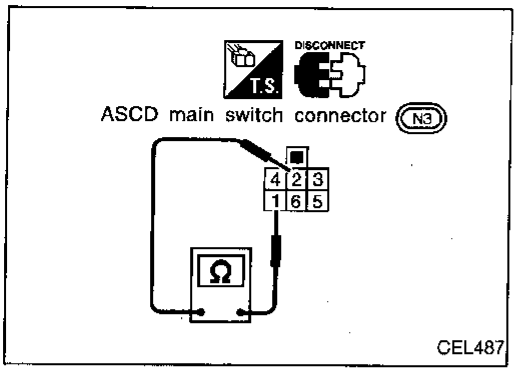
	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

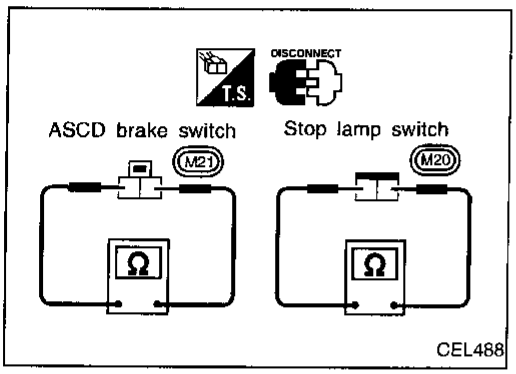
A vacuum pressure of at least –40 kPa (–0.41 kg/cm^2, –5.8 psi) should be generated.

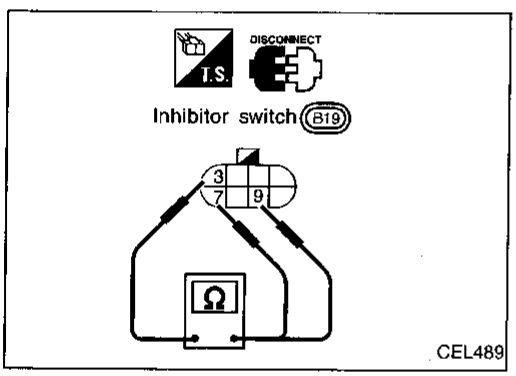
NG → Replace ASCD pump.

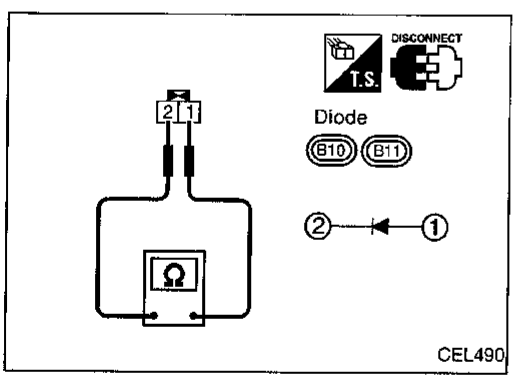
OK ↓

ASCD actuator/pump is OK.









Electrical Components Inspection

ASCD MAIN SWITCH

Check continuity between terminals by pushing switch to each position.

Switch position	Terminals					
	1	2	3	4	5	6
ON	○	○	○	○	ILL.	
N		○	○	○	○	○
OFF						

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.

INHIBITOR SWITCH

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

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

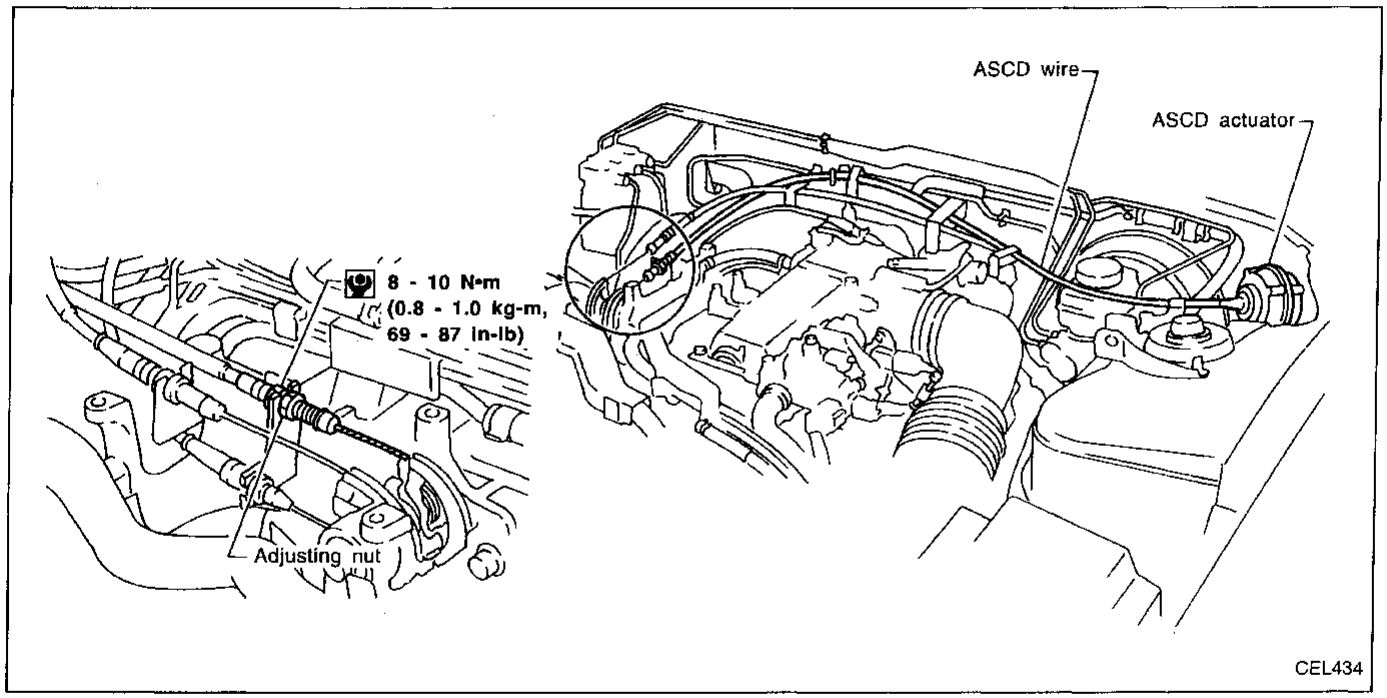
DIODE

- 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 just until throttle drum 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.

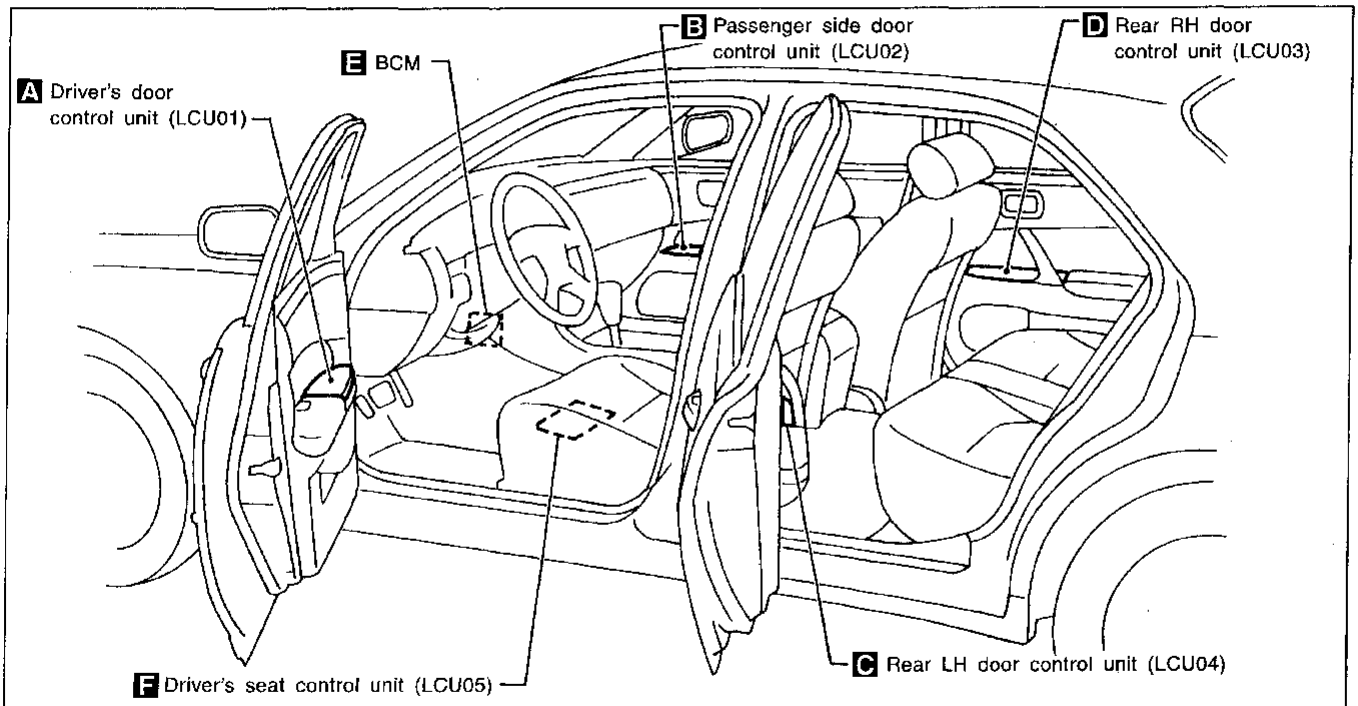
CONTROLLED SYSTEMS

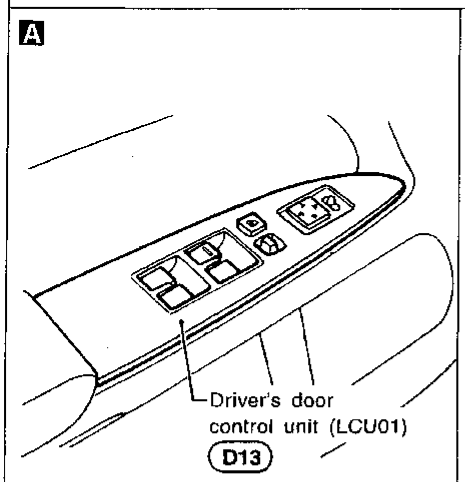
The IVMS controls several body-electrical systems. The systems included in the IVMS are as follows:

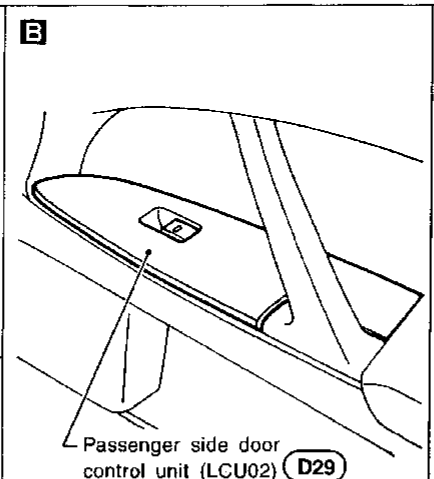
- Power window
- Power door lock
- Multi-remote control system
- Theft warning system
- Interior illumination control system
- Step lamp
- Illumination (Power window switch illumination)
- Auto drive positioner
- Auto light (Refer to "HEADLAMP".)
- Door open warning (Refer to "WARNING LAMPS".)
- Ignition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

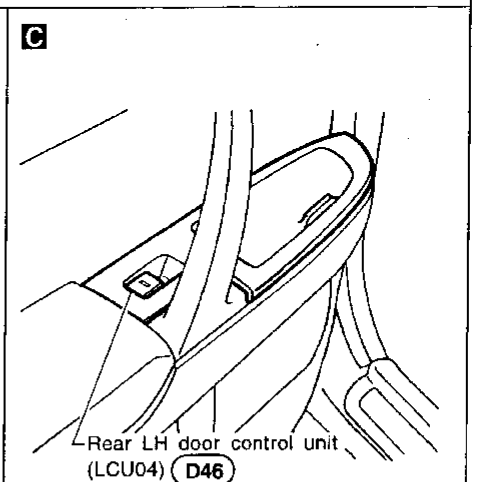
Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to "Sleep/Wake-up Control".

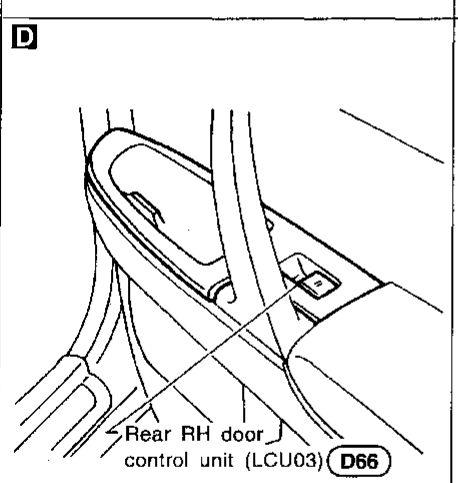
Component Parts Location

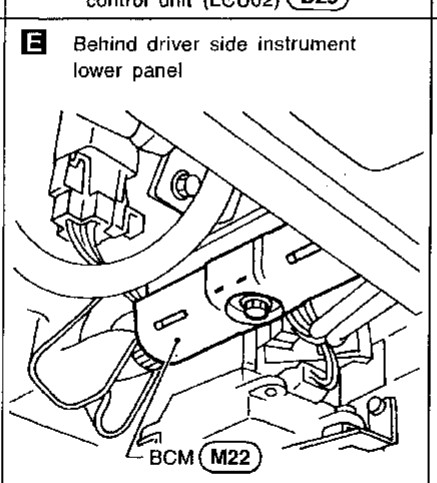


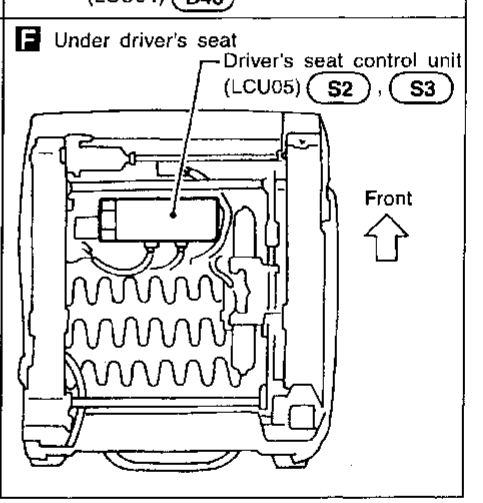










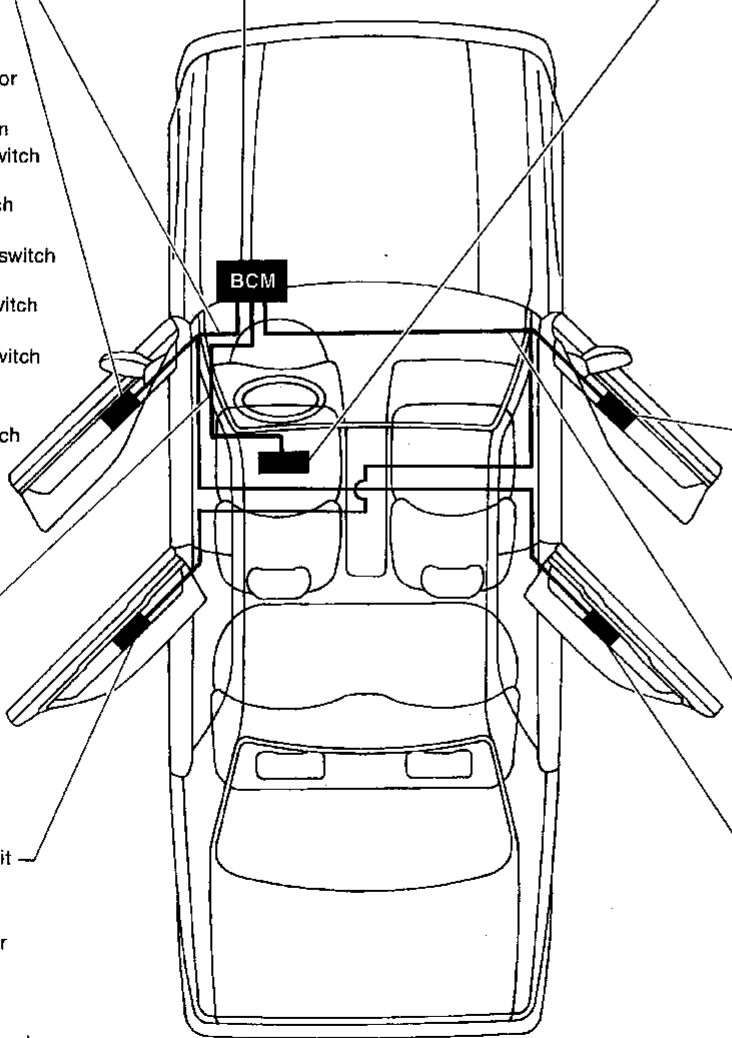


SEL934U

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



Data line A-1

Driver door control unit (LCU01)
- ● Door lock actuator
- ● Power window regulator
- ● Step lamp
- ● P/W switch illumination
- ○ Door lock & unlock switch
- ○ Door unlock sensor
- ○ Driver P/W main switch (Up/Down/Auto)
- ○ Passenger P/W main switch (Up/Down)
- ○ Rear LH P/W main switch (Up/Down)
- ○ Rear RH P/W main switch (Up/Down)
- ○ P/W lock switch
- ○ Door key cylinder switch (Lock)

Data line A-3

Rear LH door control unit (LCU04)
- ● Door lock actuator
- ● Power window regulator
- ● Step lamp
- ● P/W switch illumination
- ○ Door unlock sensor
- ○ P/W sub-switch (Up/Down)

Driver seat control unit (LCU05)
- ● Sliding motor
- ● Reclining motor
- ● Lifting motor (Front)
- ● Lifting motor (Rear)
- ○ Sliding switch (Forward)
- ○ Sliding switch (Backward)
- ○ Reclining switch (Forward)
- ○ Reclining switch (Backward)
- ○ Lifting switch (Front, Up)
- ○ Lifting switch (Front, Down)
- ○ Lifting switch (Rear, UP)
- ○ Lifting switch (Rear, Down)
- ○ Sliding sensor (Sliding)
- ○ Sliding sensor (Reclining)
- ○ Sliding sensor (Lifting, Front)
- ○ Sliding sensor (Lifting, Rear)
- ○ Lifting limit switch (Front)
- ○ Lifting limit switch (Rear)

Passenger door control unit (LCU02)
- ● Door lock actuator
- ● Power window regulator
- ● Step lamp
- ● P/W switch illumination
- ○ Door unlock sensor
- ○ P/W sub-switch (Up/Down)
- ○ Door key cylinder switch (Lock)

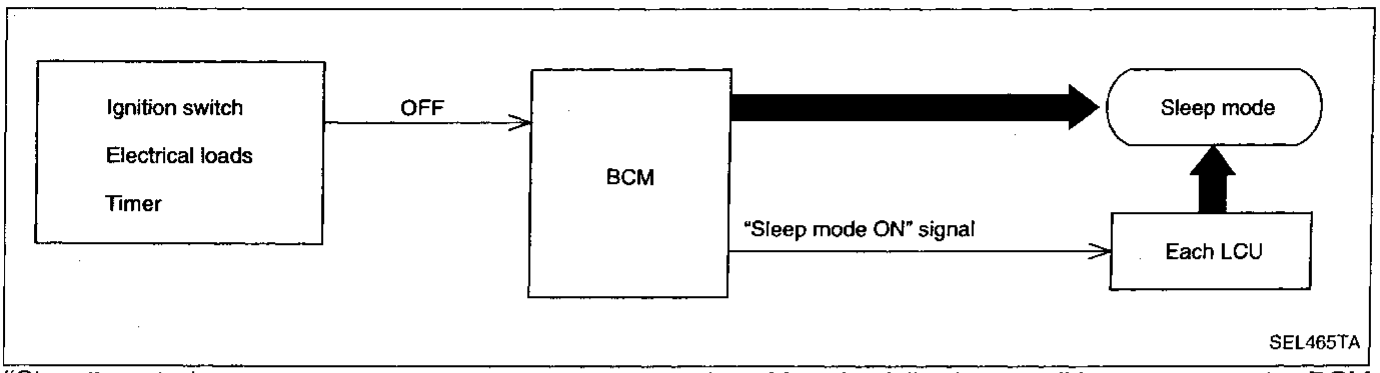
Data line A-2

Rear RH door control unit (LCU03)
- ● Door lock actuator
- ● Power window regulator
- ● Step lamp
- ● P/W switch illumination
- ○ Door unlock sensor
- ○ P/W sub-switch (Up/Down)

SEL354V

Sleep/Wake-up Control

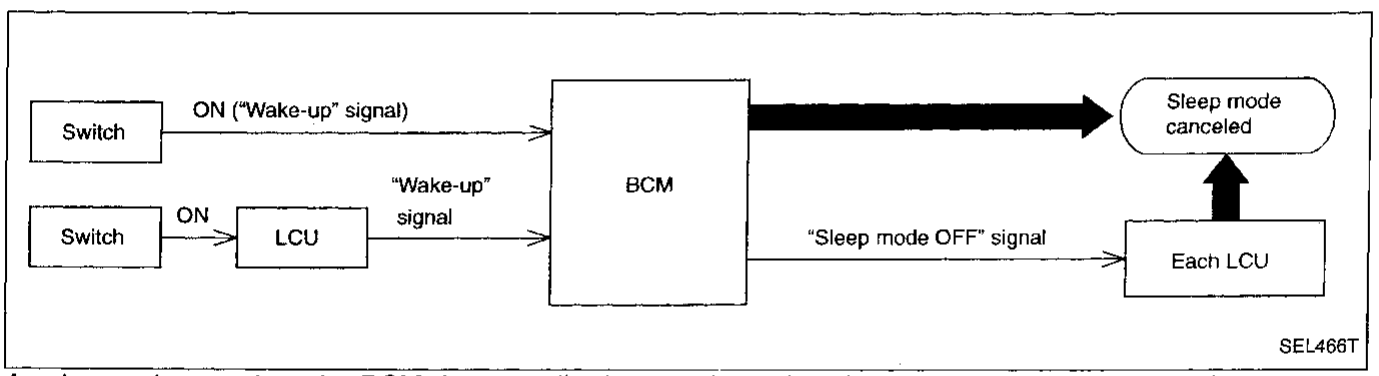
SLEEP CONTROL



"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

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	MODE				
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	SELF-DIAGNOSTIC RESULTS	DATA MONITOR	ACTIVE TEST
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
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	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
REAR DEFOGGER	Rear window defogger				X	X

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

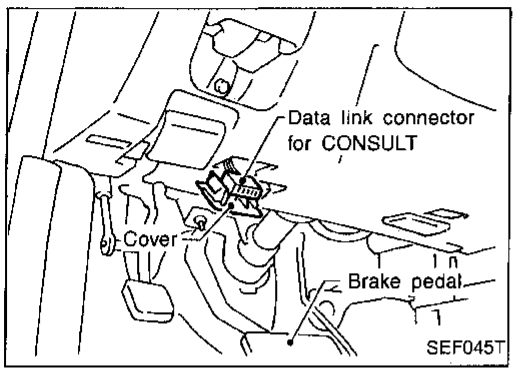
DIAGNOSTIC ITEMS DESCRIPTION

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 unit.

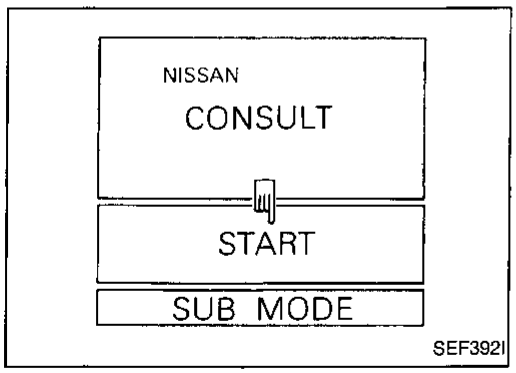
NOTE: When CONSULT diagnosis is operating, some systems under IVMS control do not operate.

CONSULT (Cont'd)

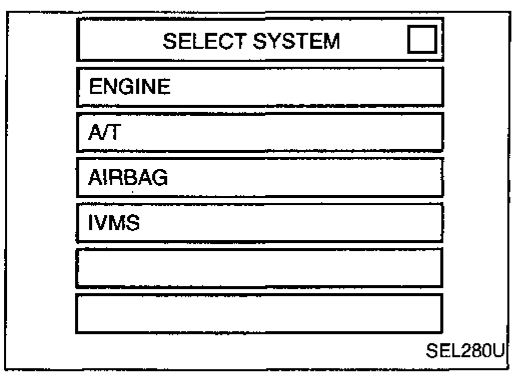
CONSULT INSPECTION PROCEDURE



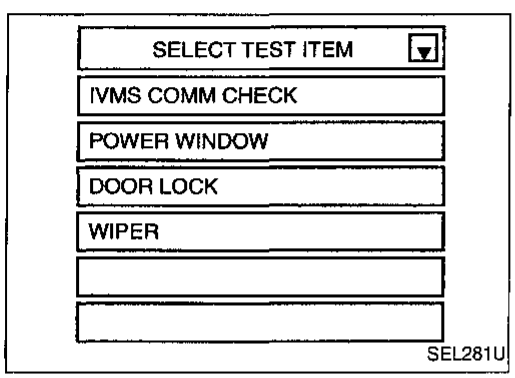
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



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



5. Touch "IVMS".

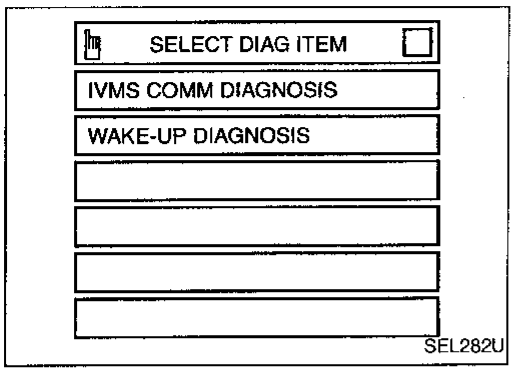


6. Perform each diagnostic item according to the item application chart as follows:

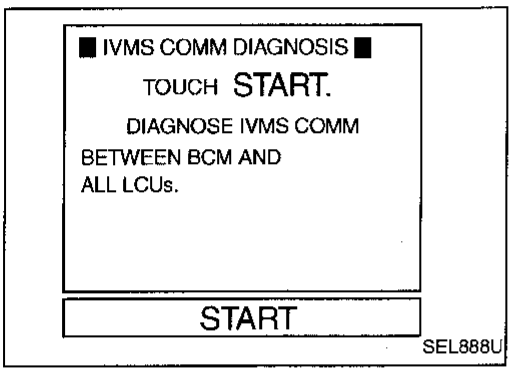
For further information, read the CONSULT Operation Manual.

CONSULT (Cont'd)

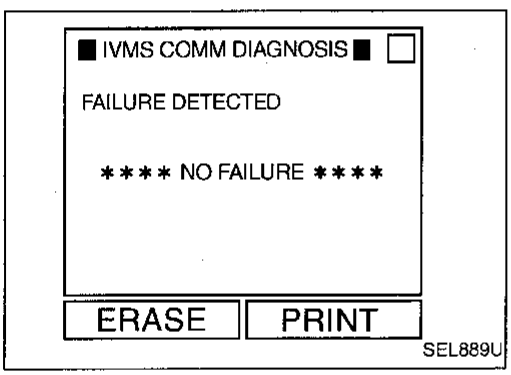
IVMS COMMUNICATION DIAGNOSIS



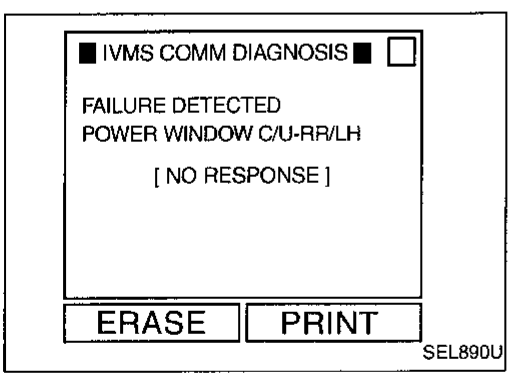
1. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".



2. Touch "START".



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



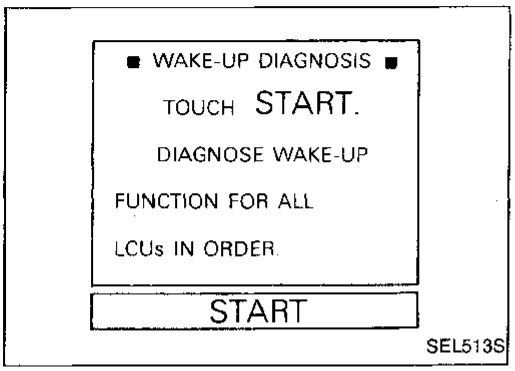
If any problem code is displayed, repair/replace the system according to the IVMS communication diagnosis results. (Refer to EL-209.)

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".

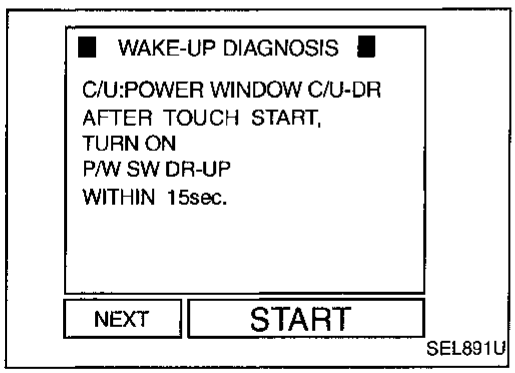
CONSULT (Cont'd)

WAKE-UP DIAGNOSIS

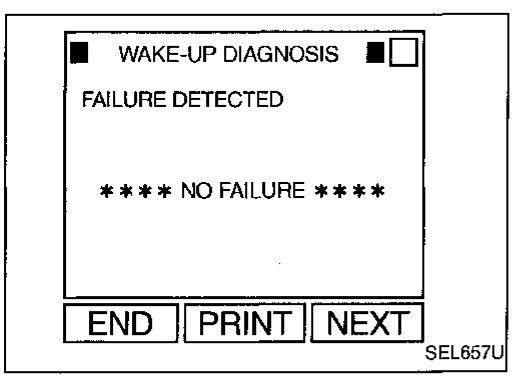
1. Touch "WAKE-UP DIAGNOSIS" in "IVMS-COMM CHECK".
2. Touch "START" for "WAKE-UP DIAGNOSIS".



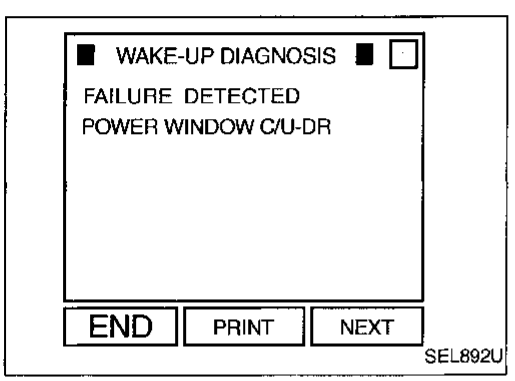
3. After touching "START", turn ON switch designated on CONSULT display within 15 seconds.



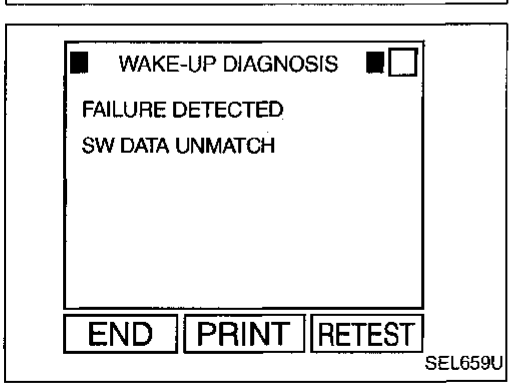
4. If no failure is detected, touch "NEXT" and perform wake-up diagnosis for next LCU or touch "END". (INSPECTION END)



If any problem is displayed, replace the LCU.



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



CONSULT (Cont'd)

IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 1

Diagnostic item	Number of malfunctioning LCU	CONSULT 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 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 or turn the ignition to "OFF" position and remove 7.5A fuse [No. 14, located in the fuse block (J/B)].

CONSULT (Cont'd)

IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 2

Diagnostic item	Number of malfunctioning LCU	CONSULT 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-224) 2. Check connector connection of LCU in question. 3. Check ground circuit of the LCU in question. (EL-223) 4. Check open circuit in the data line between BCM and LCU in question. (EL-225) 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-224) 2. Check connector connection of LCU in question. 3. Check open circuit in the data line between BCM and LCU in question. (EL-225)
	All	BCM/HARNESS [COMM LINE]	25, 35, 42, 45 and 48	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-225) 2. Check connector connection of BCM. 3. Check open circuit in the data line between BCM and all LCUs. (EL-225) 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 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 or turn the ignition to "OFF" position and remove 7.5A fuse [No. 14, located in the fuse block (J/B)].

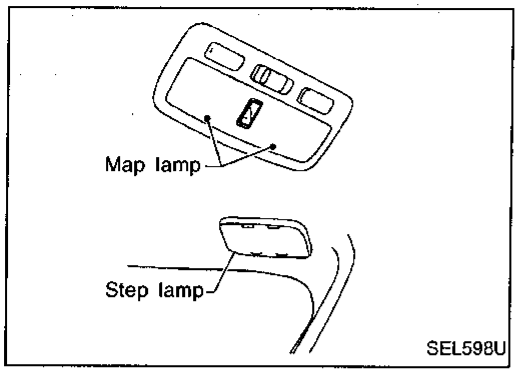
CONSULT (Cont'd)

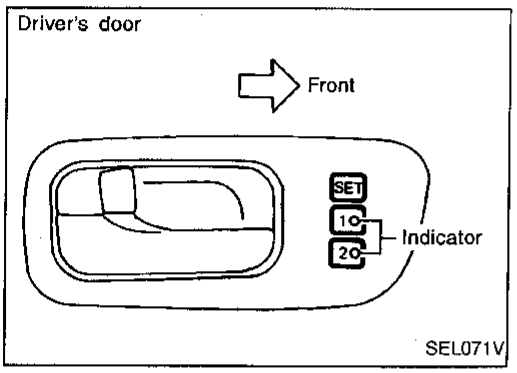
IVMS COMMUNICATION DIAGNOSES RESULTS LIST — 3

Diagnostic item	Number of malfunctioning LCU	CONSULT 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 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 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

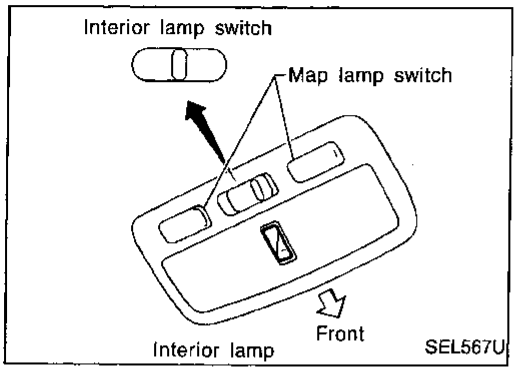
Front map lamps and step lamps (all seats) act as the indicators for the on-board diagnosis Mode I, II, III and IV. Seat memory indicator-1 and 2 act as the indicators for the on-board diagnosis Mode V. These lamps blink simultaneously in response to diagnostic results.

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-213
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	X	X	—	EL-215
Mode III	Power door lock self-diagnosis	—	X	X	—	EL-257
Mode IV	Power window operation	Automatically operating driver side window	X	X	—	EL-239
Mode V	Automatic drive positioner self-diagnosis	—	—	—	X	EL-372

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 mile/h).

↓

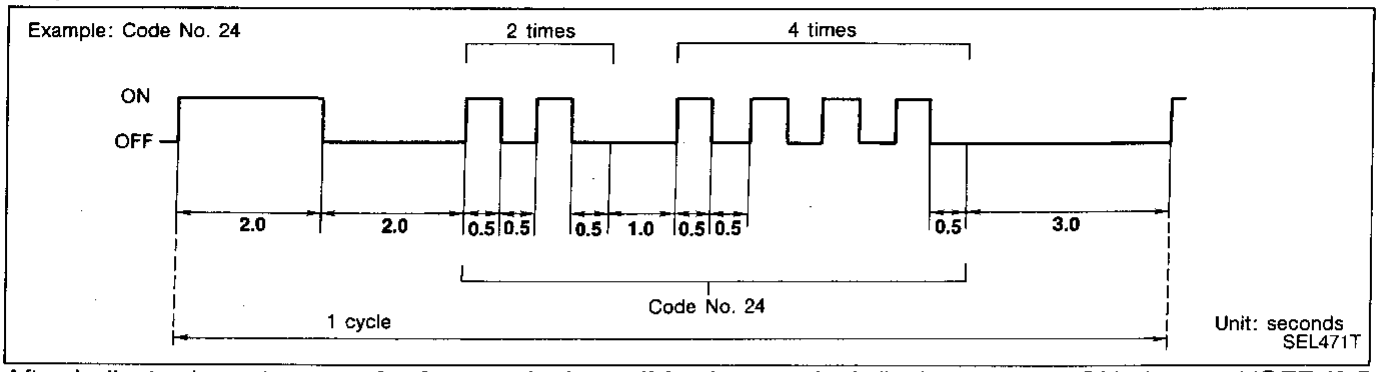
DIAGNOSIS END*

*: 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

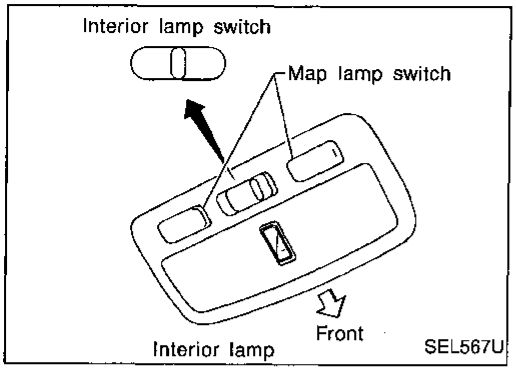
In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



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 DIAGNOSTIC CHART, "COMM FAIL" (EL-209).
25		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-210).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-209).
35		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-210).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-209).
42		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-210).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-209).
45		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-210).
47	Driver's seat control unit (LCU05)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-209).
48		No response from data line A-3	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-210).
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 ON, and turn ignition switch "ON" within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode II is 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 mile/h).

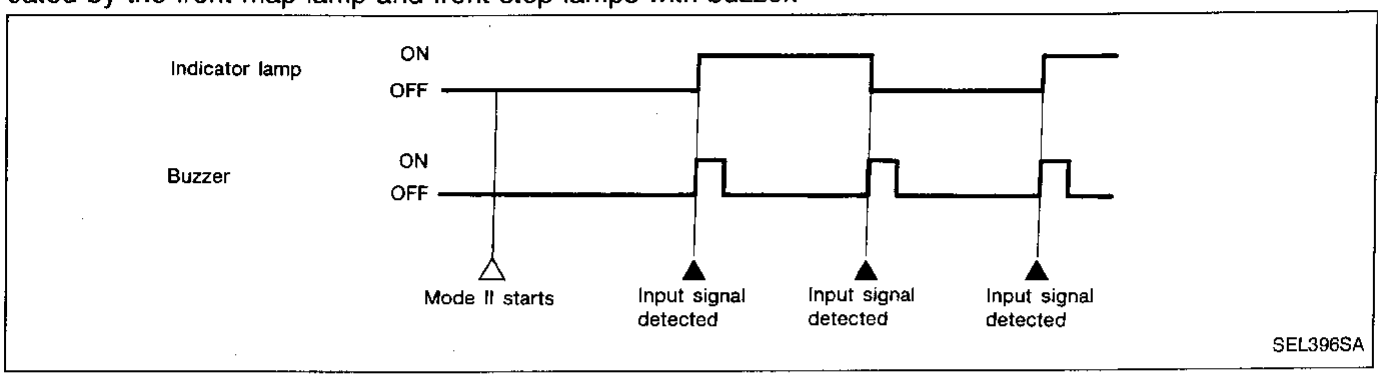
↓

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.



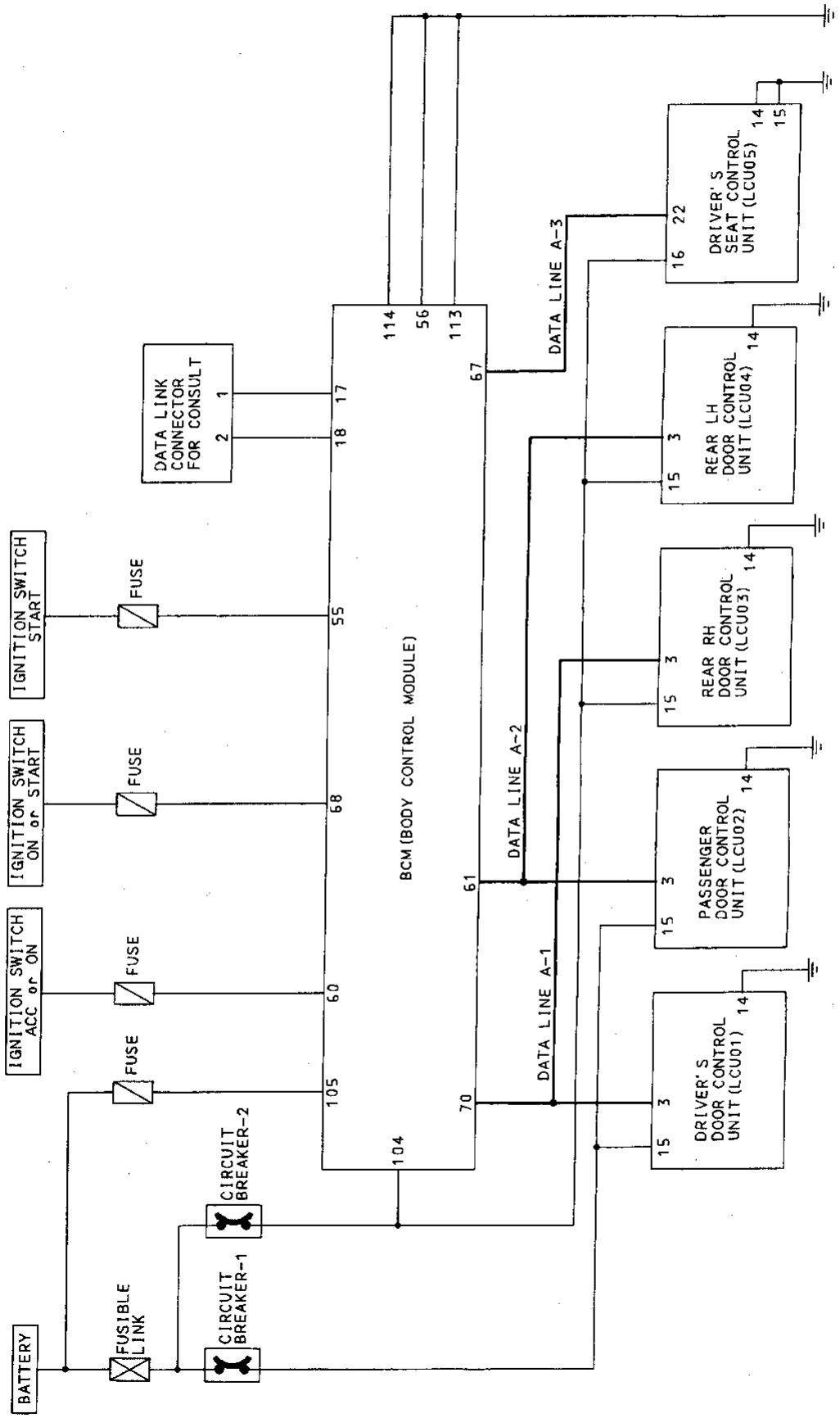
SWITCH MONITOR ITEM

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

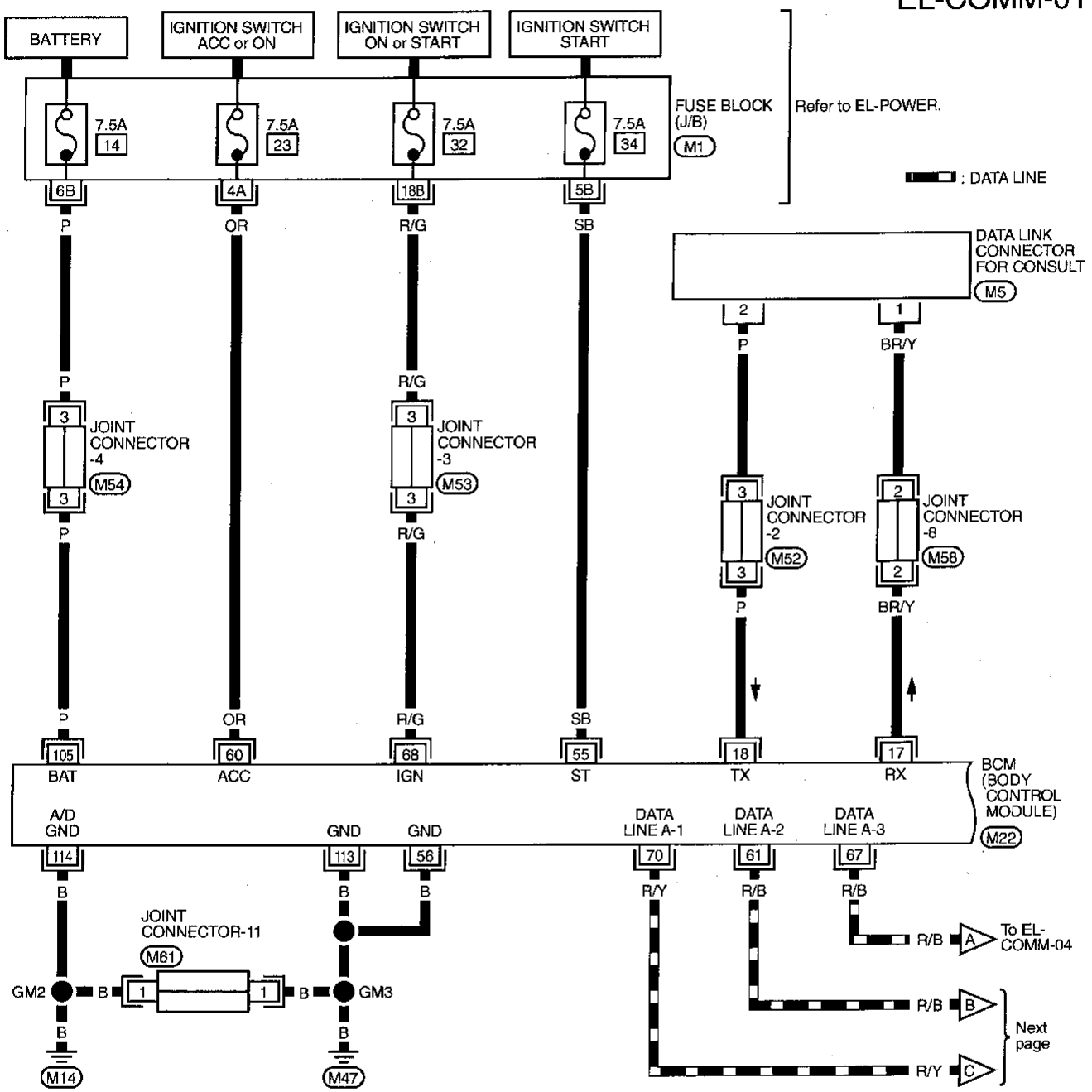


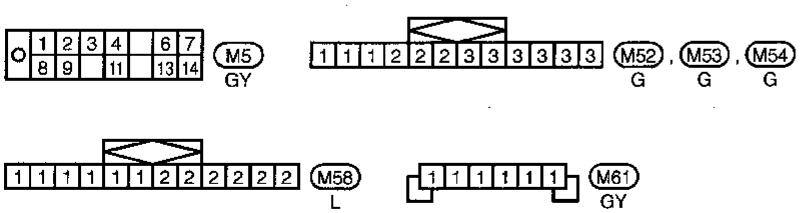
TEL828

Wiring Diagram — COMM —

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS

EL-COMM-01





Refer to last page (Foldout page).

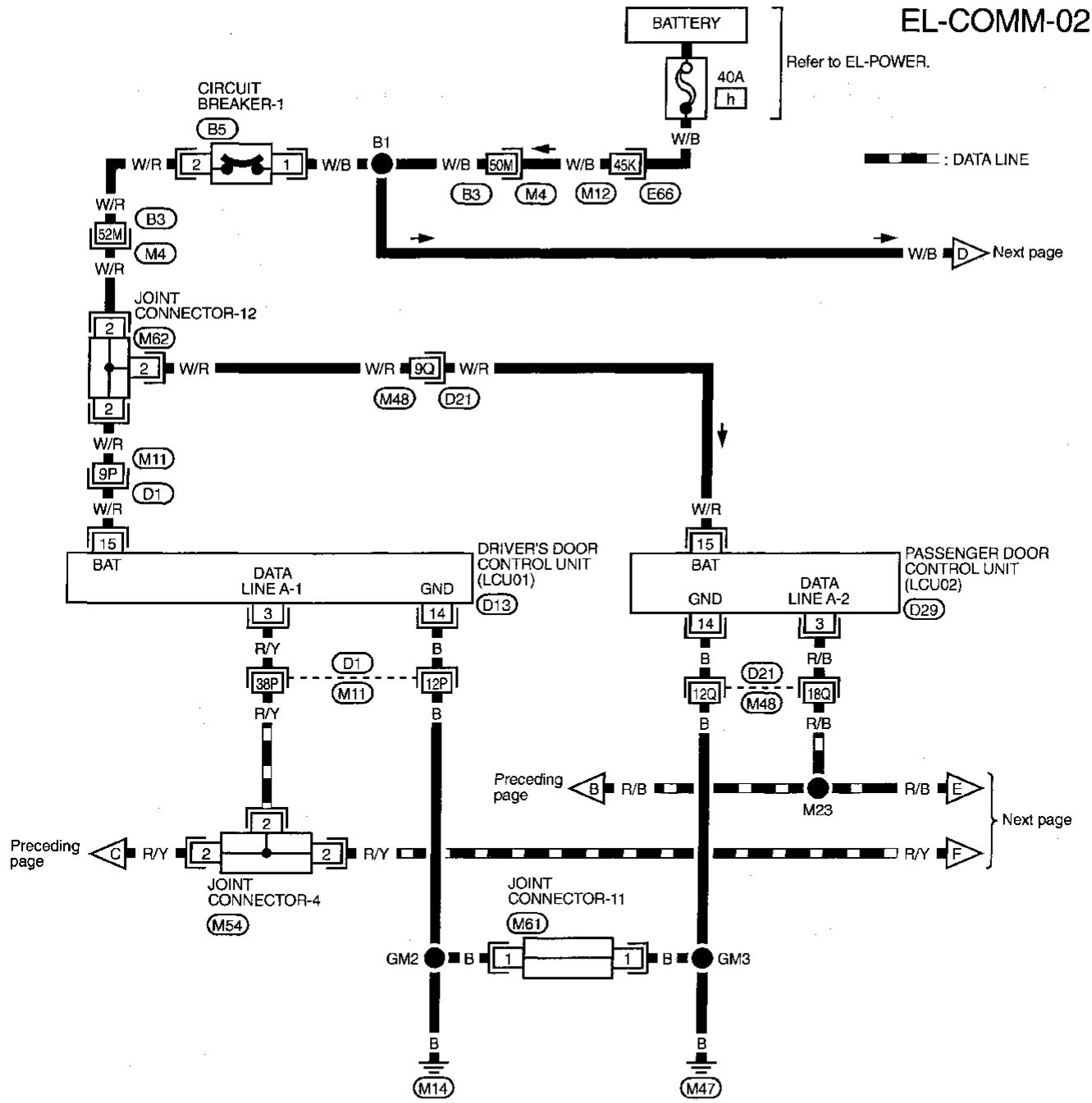
M1

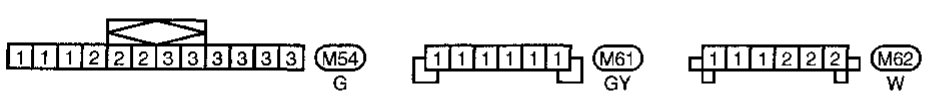
M22

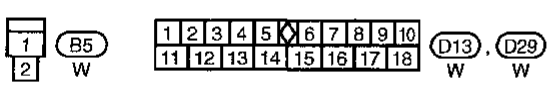
TEL829

Wiring Diagram — COMM — (Cont'd)

EL-COMM-02







Refer to last page (Foldout page).

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

TEL247A

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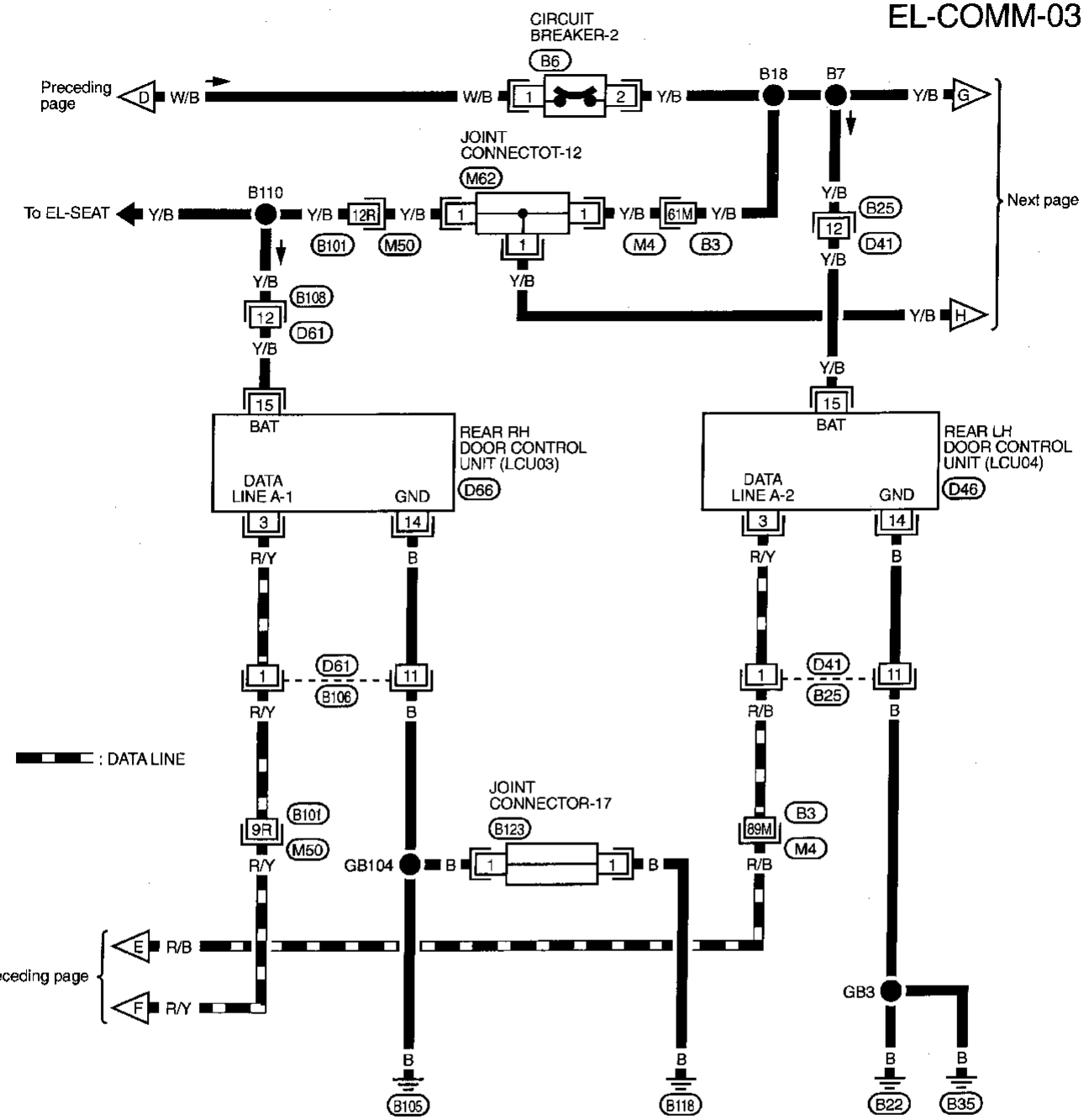
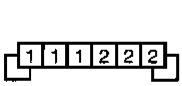
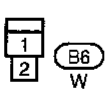
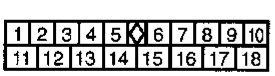
Wiring Diagram — COMM — (Cont'd)

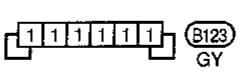
EL-COMM-03









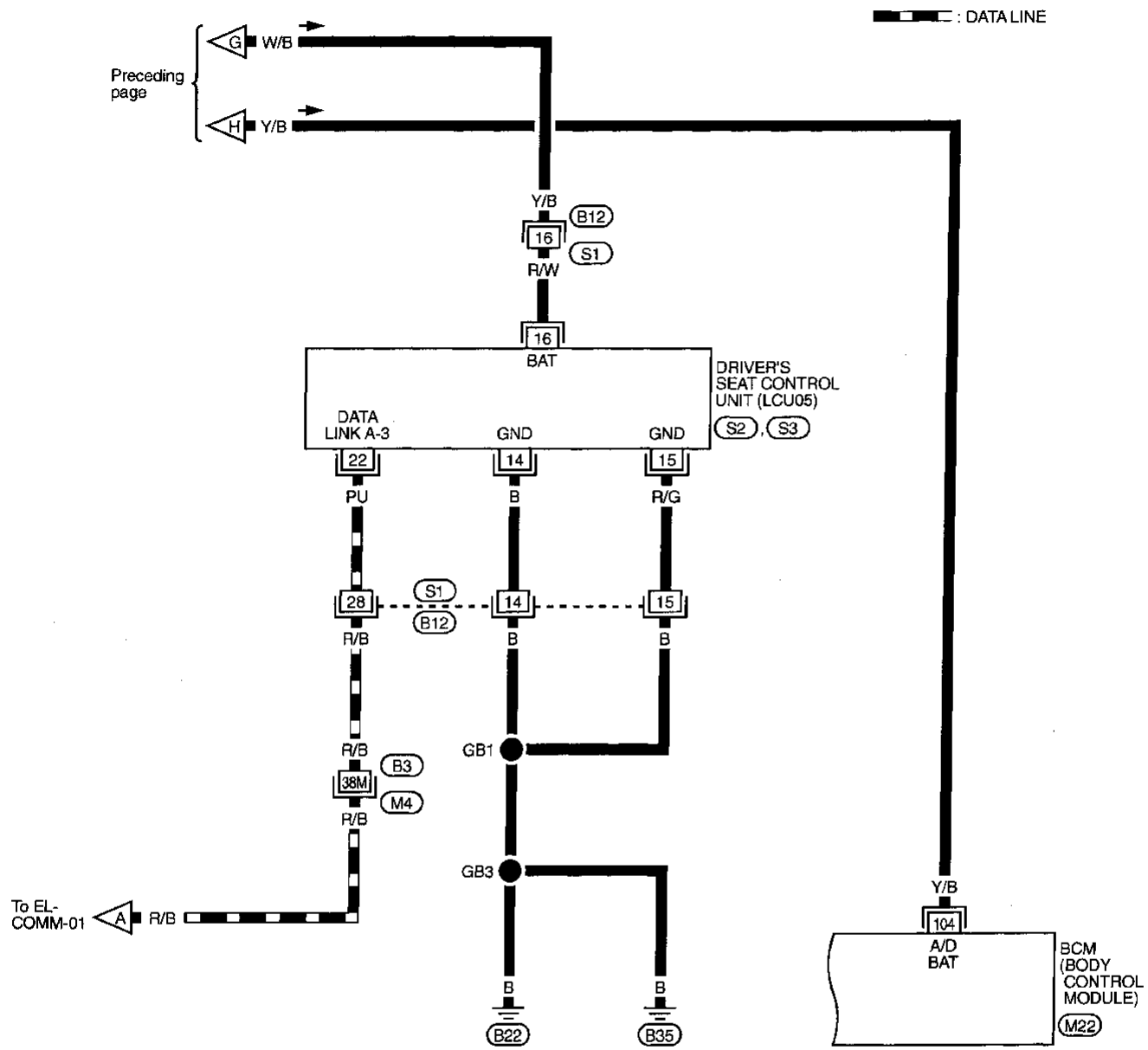


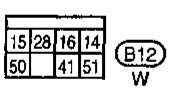
Refer to last page (Foldout page).
M4, B3
M50, B101

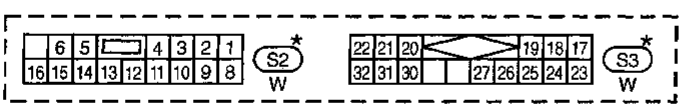
TEL248A

Wiring Diagram — COMM — (Cont'd)

EL-COMM-04







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

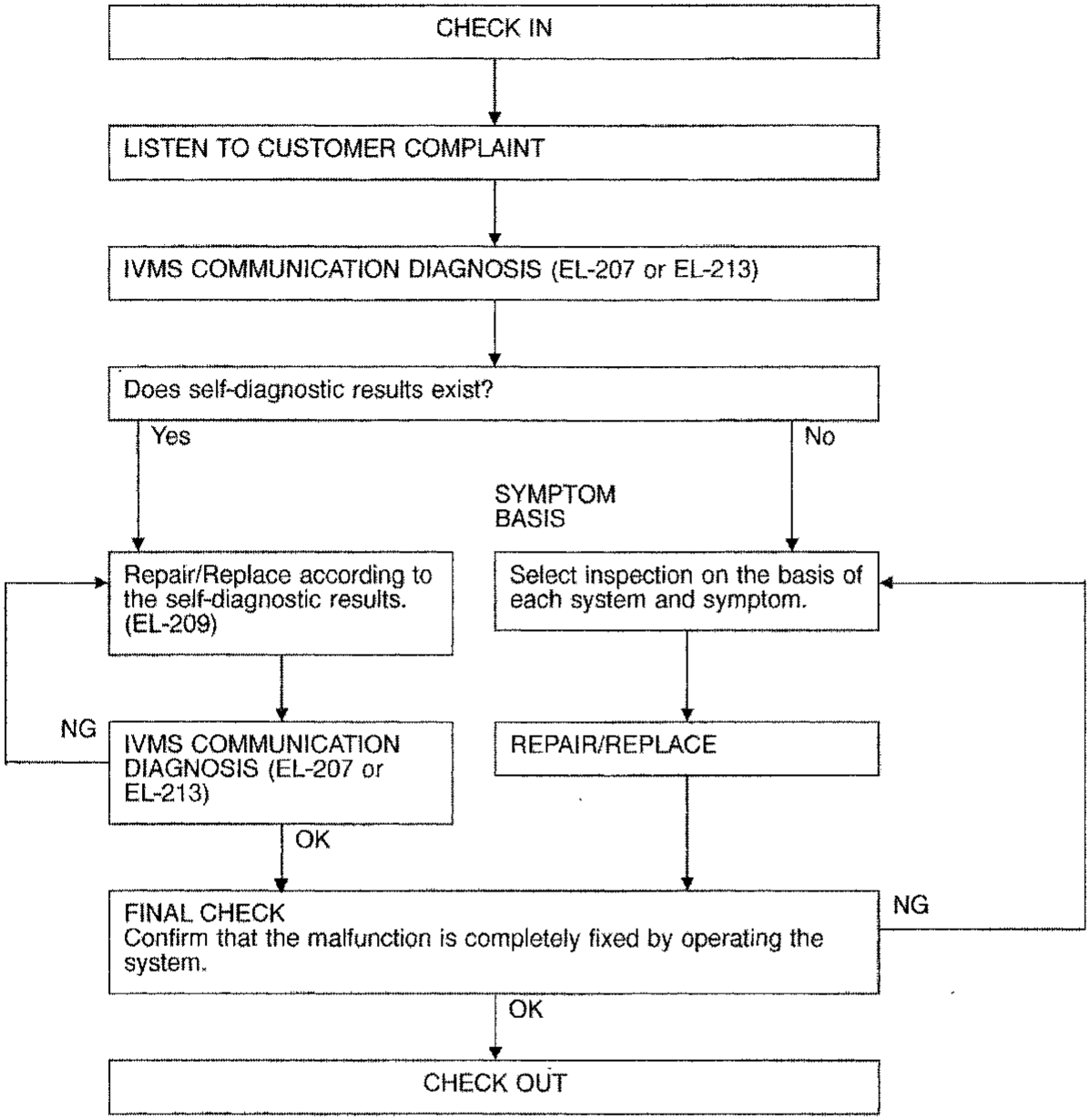
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL249A

1655

Trouble Diagnoses

WORK FLOW

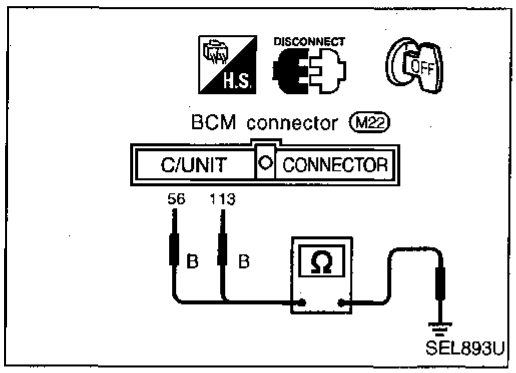


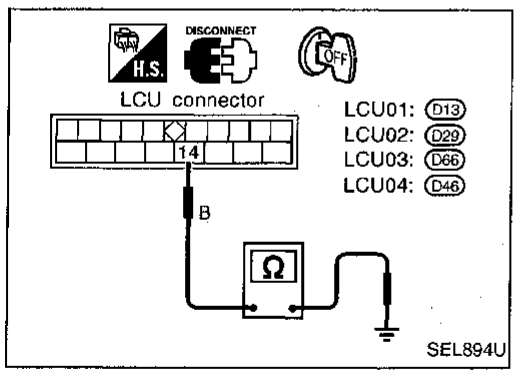
NOTICE:

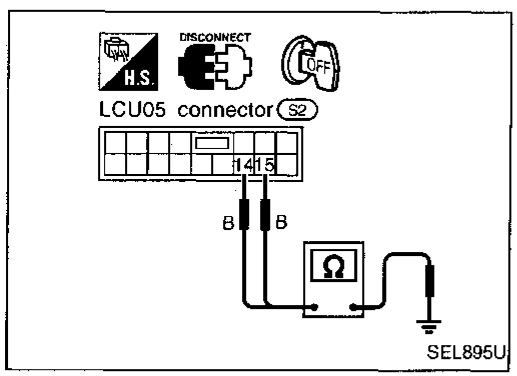
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (Refer to EL-207.) 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



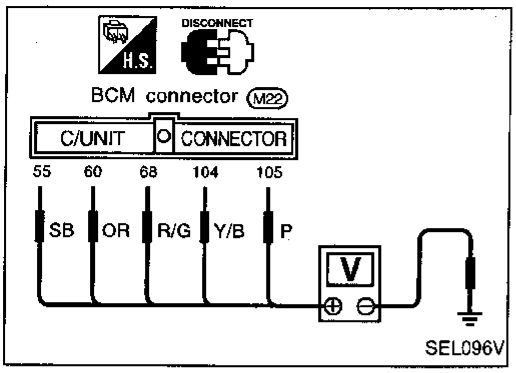


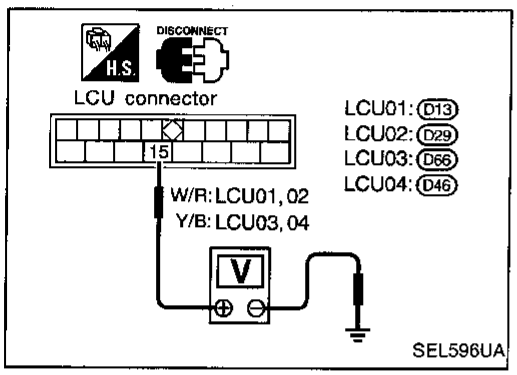


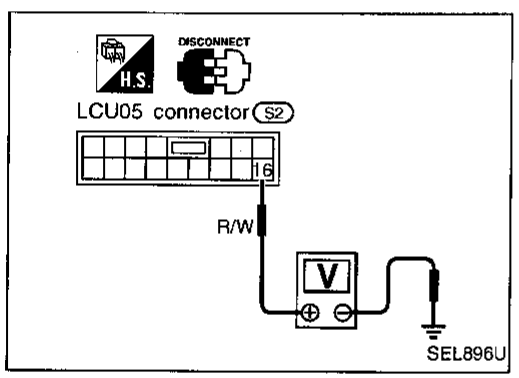
Control unit	Terminals	Continuity
BCM	56 - Ground	Yes
	113 - Ground	
LCU01, LCU02, LCU03 and LCU04	14 - Ground	
LCU05	14 - Ground	
	15 - Ground	

Trouble Diagnoses (Cont'd)

POWER SUPPLY CIRCUIT CHECK





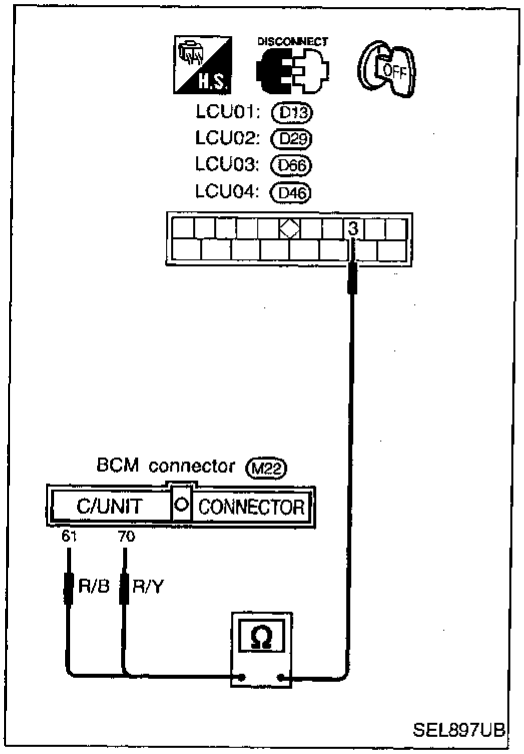


Control unit	Terminals	Ignition switch position			
		OFF	ACC	ON	START
BCM	104 - Ground	Battery voltage			
	105 - Ground				
	60 - Ground	Approx. 0V	Battery voltage		Approx. 0V
	68 - Ground	Approx. 0V		Battery voltage	
	55 - Ground	Approx. 0V			Battery voltage
LCU01, LCU02, LCU03 and LCU04	15 - Ground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

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

Trouble Diagnoses (Cont'd)

DATA LINES CIRCUIT CHECK



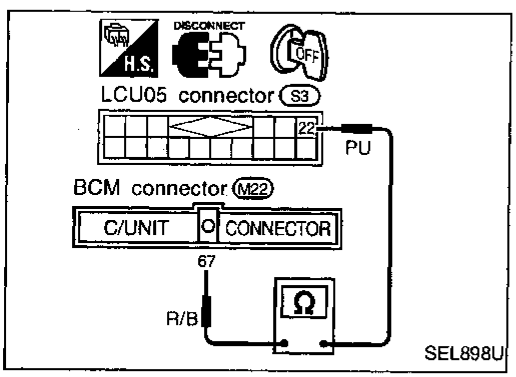
SEL897UB

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	

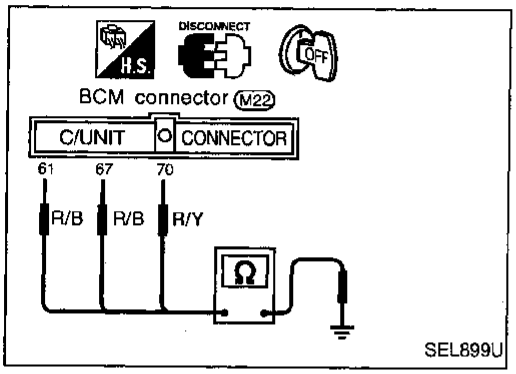


SEL898U

Data lines short circuit check

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

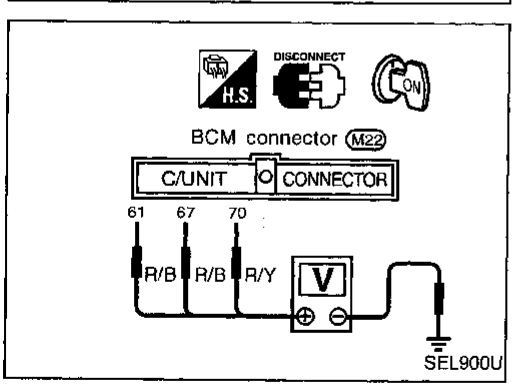
Terminals	Continuity
⑥① - Ground	No
⑥⑦ - Ground	
⑦⓪ - Ground	



SEL899U

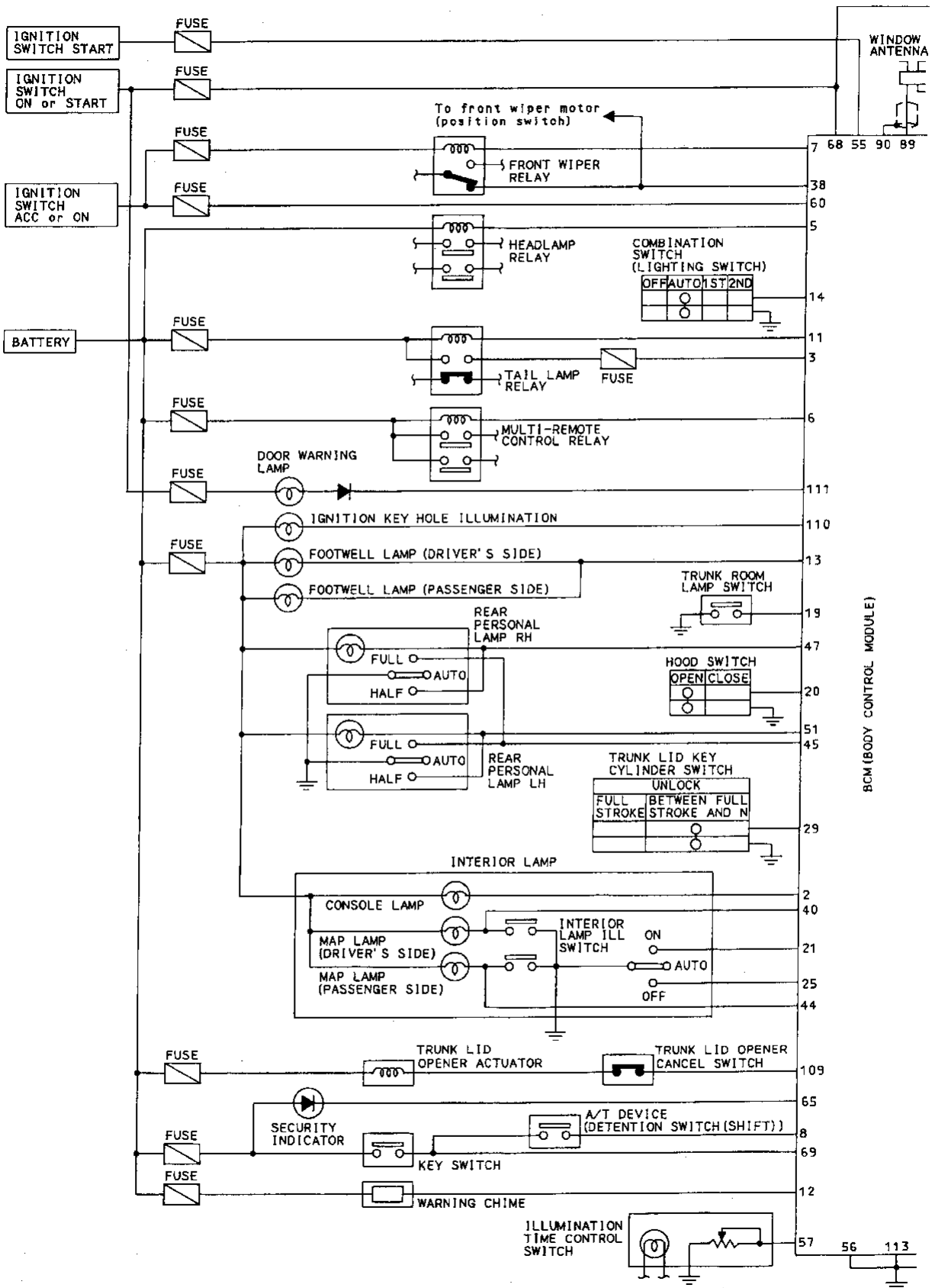
3. Check voltage between BCM terminal and body ground.

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

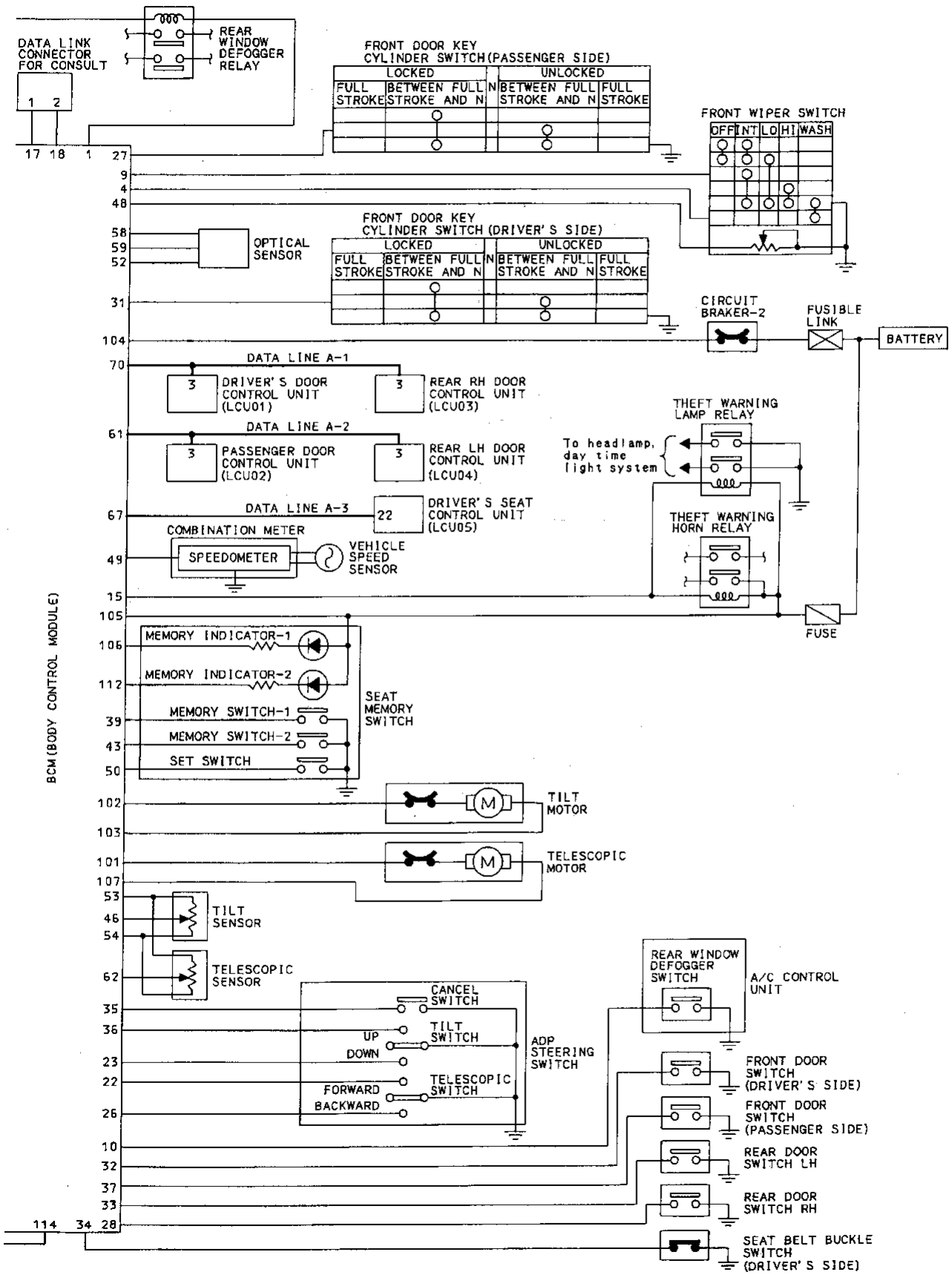


SEL900U

Schematic



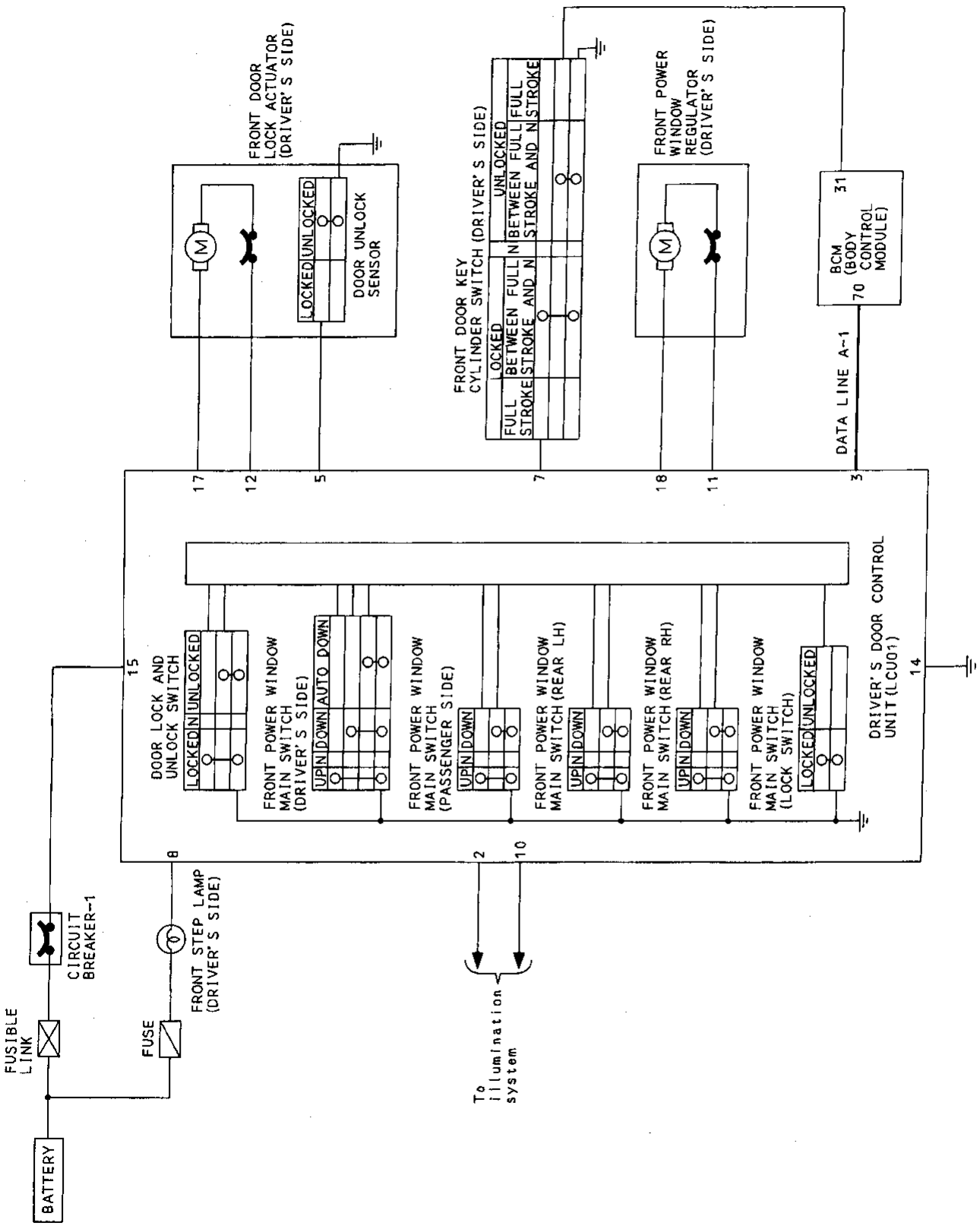
TEL890


DATA LINK CONNECTOR FOR CONSULT
REAR WINDOW DEFOGGER RELAY
FRONT DOOR KEY CYLINDER SWITCH (PASSENGER SIDE)
LOCKED
UNLOCKED
FULL STROKE
BETWEEN FULL N STROKE AND N
FRONT WIPER SWITCH
OFF INT LO HI WASH
FRONT DOOR KEY CYLINDER SWITCH (DRIVER'S SIDE)
OPTICAL SENSOR
CIRCUIT BRAKER-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, day time 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
TILT MOTOR
TELESCOPIC MOTOR
TILT SENSOR
TELESCOPIC SENSOR
CANCEL SWITCH
UP
DOWN
TILT SWITCH
FORWARD
BACKWARD
TELESCOPIC SWITCH
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)

TEL891

Schematic

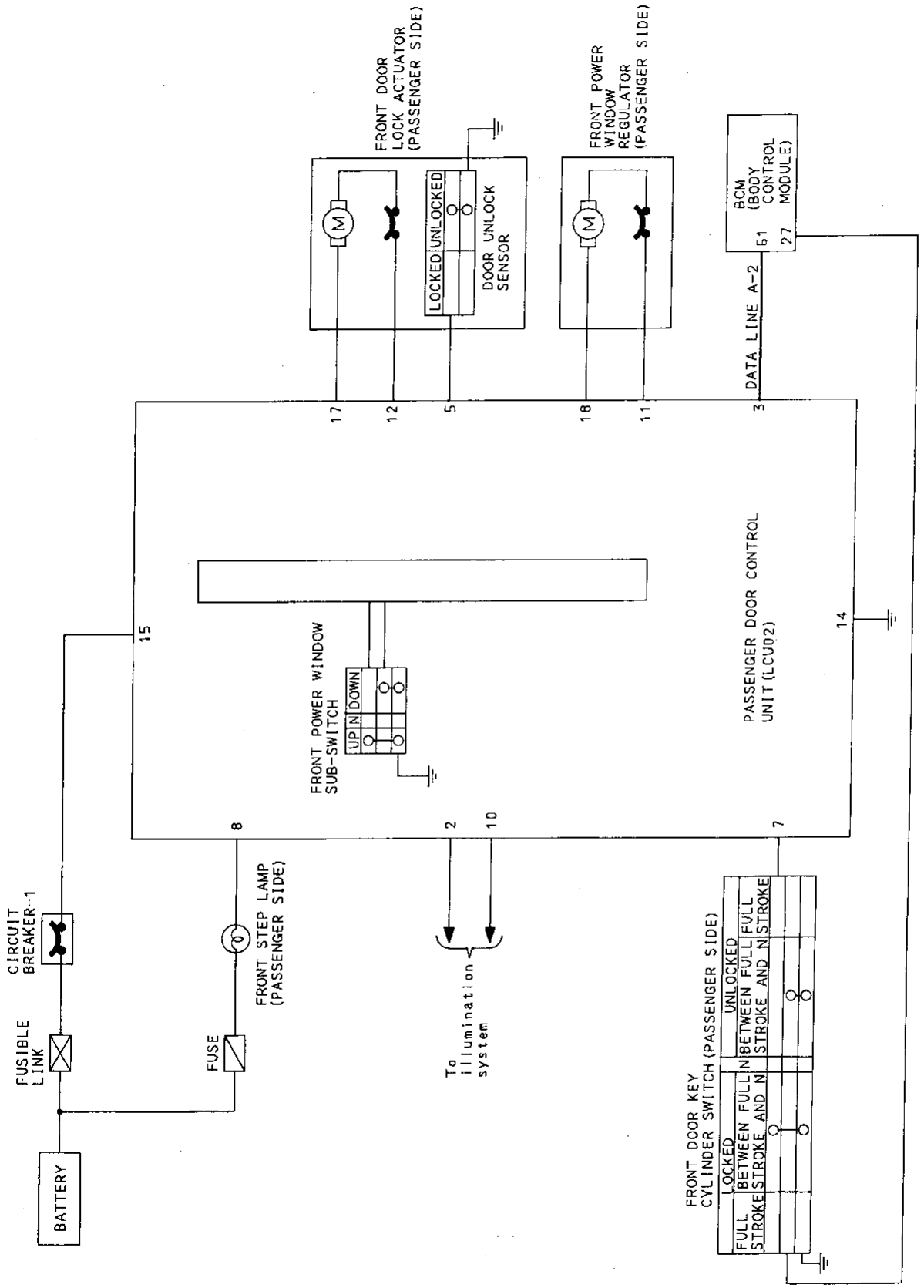
DRIVER'S DOOR CONTROL UNIT (LCU01)



TEL823

Schematic (Cont'd)

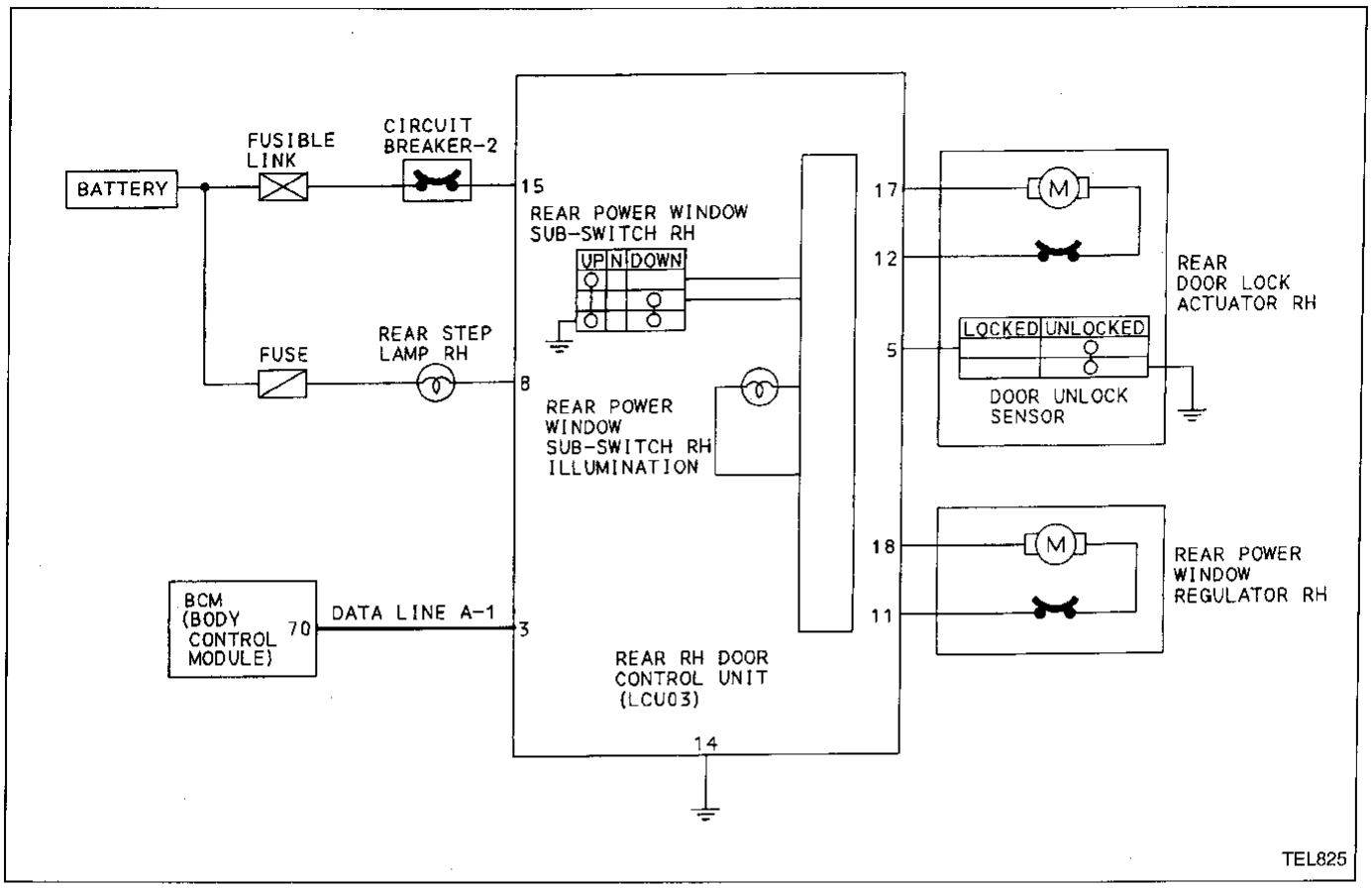
PASSENGER DOOR CONTROL UNIT (LCU02)



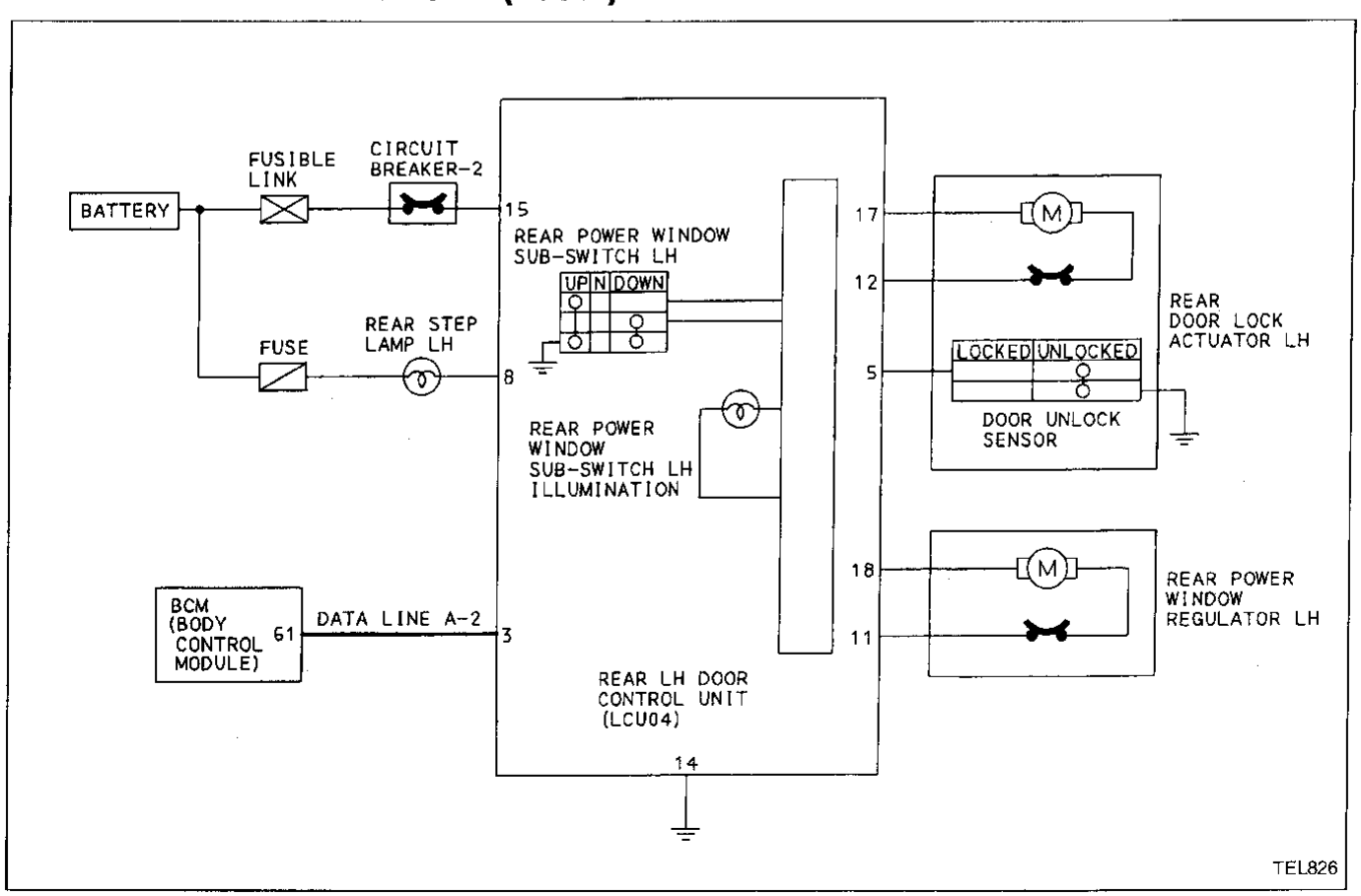
TEL824

Schematic (Cont'd)

REAR RH DOOR CONTROL UNIT (LCU03)

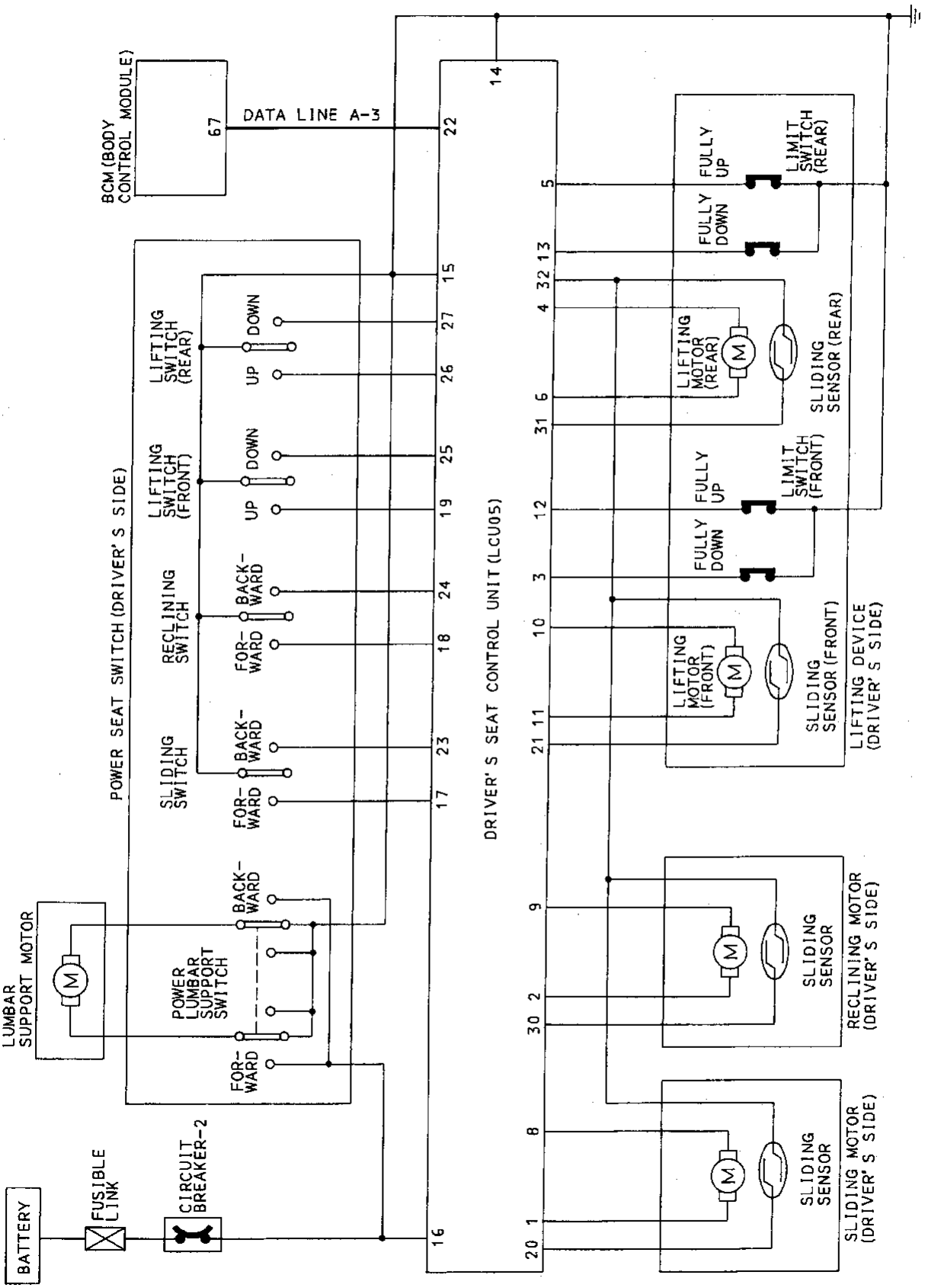


REAR LH DOOR CONTROL UNIT (LCU04)



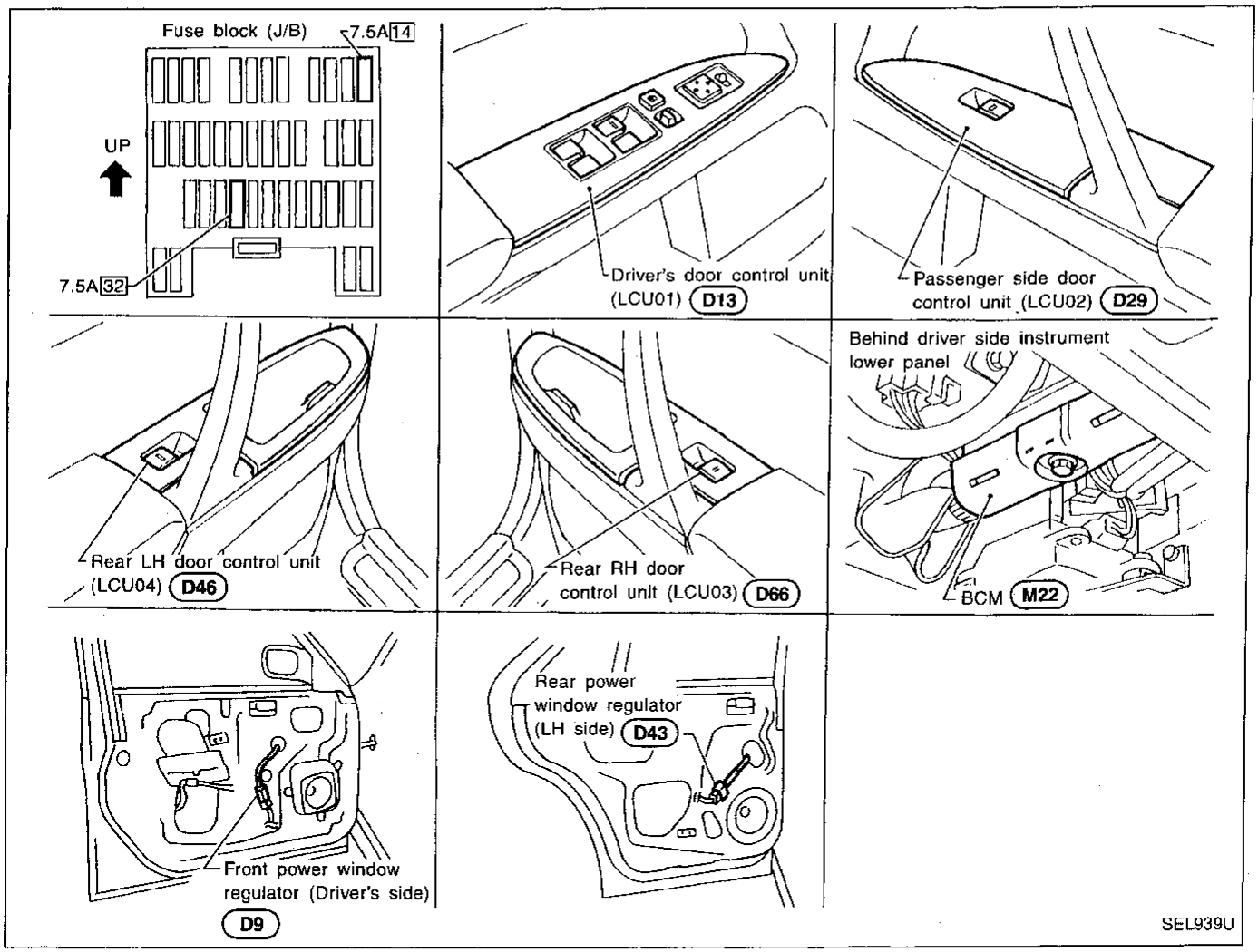
Schematic (Cont'd)

DRIVER'S SEAT CONTROL UNIT (LCU05)



TEL827

Component Parts and Harness Connector Location



System Description

OUTLINE

Power window system consists of

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

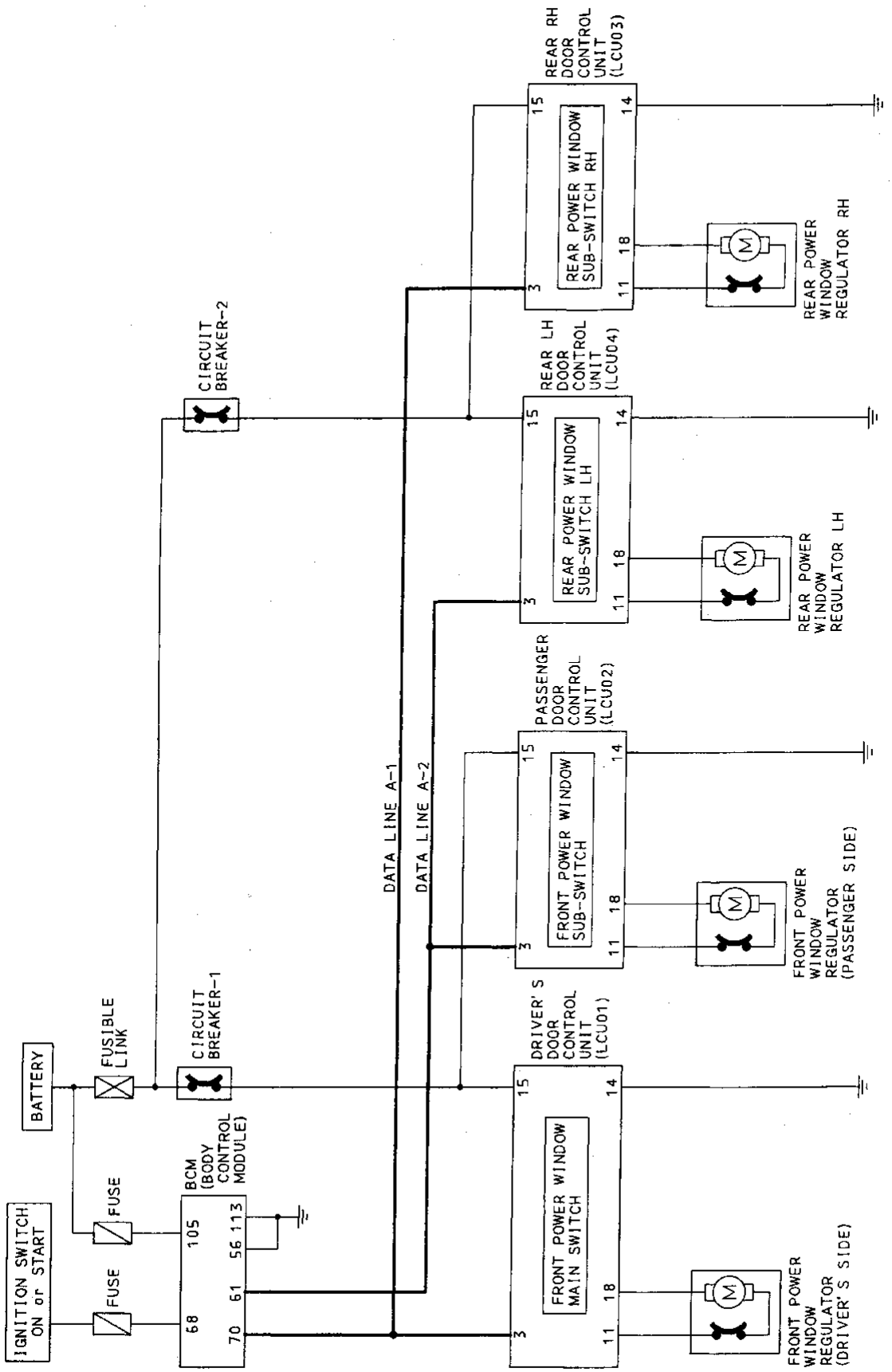
BCM is connected to each LCU via DATA LINE A-1 or A-2 and LCUs supply power and ground to each power window regulator.

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.

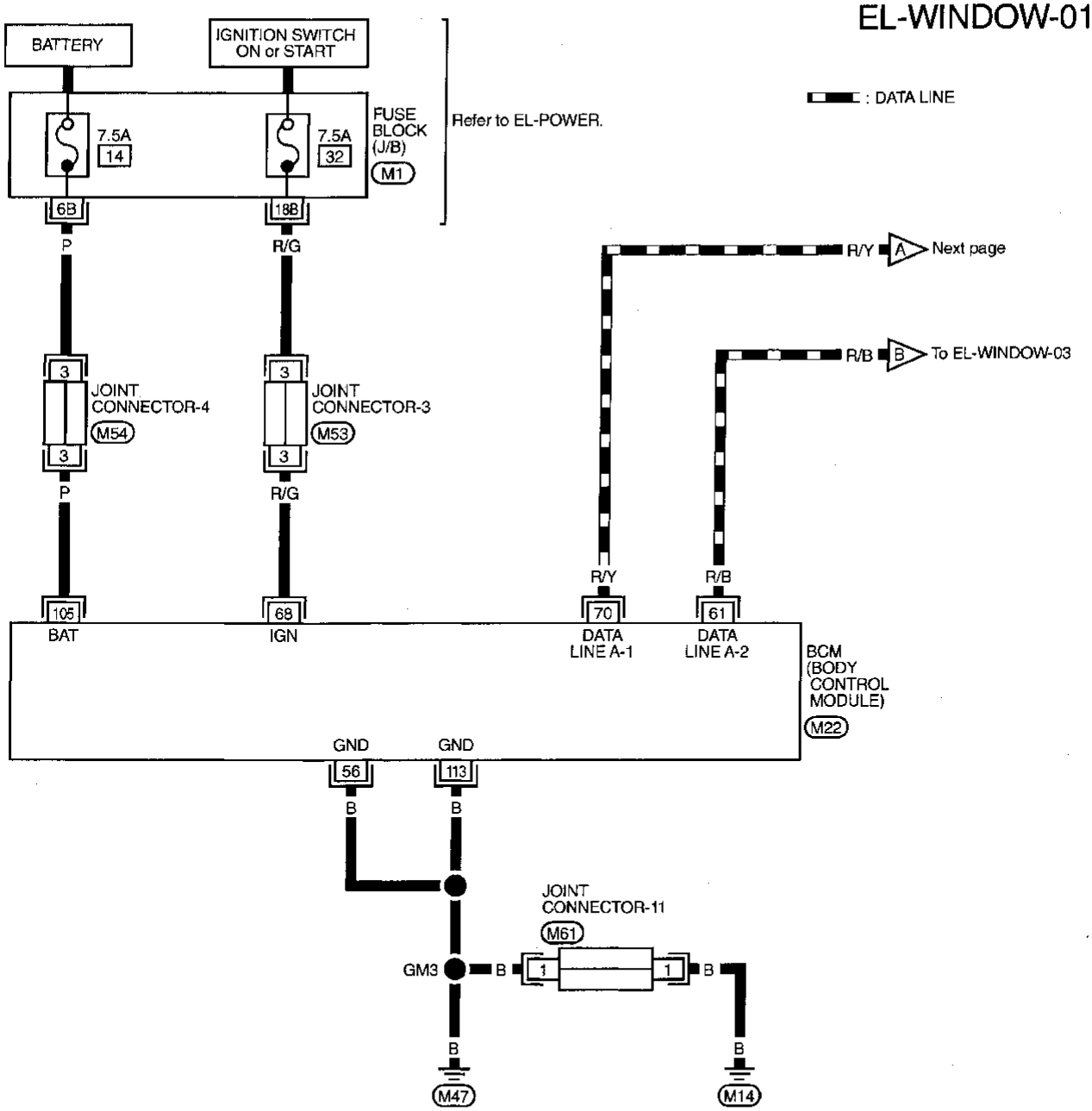
Schematic

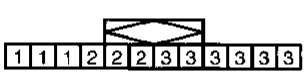


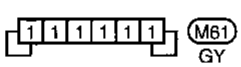
TEL833

Wiring Diagram — WINDOW —

EL-WINDOW-01







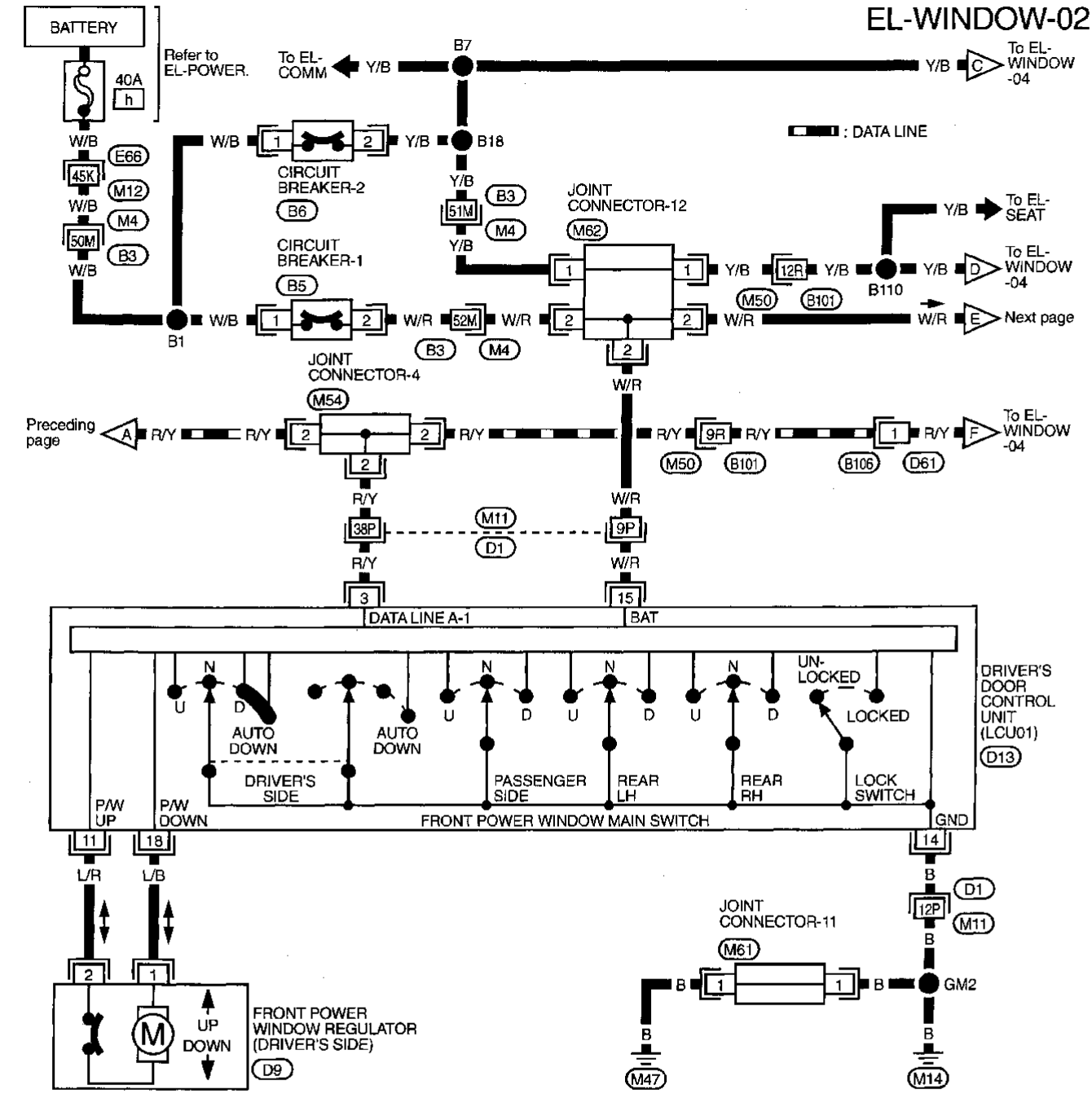
Refer to last page (Foldout page).

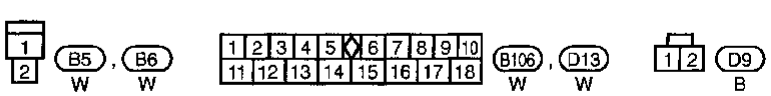
M1

M22

TEL834

Wiring Diagram — WINDOW — (Cont'd)





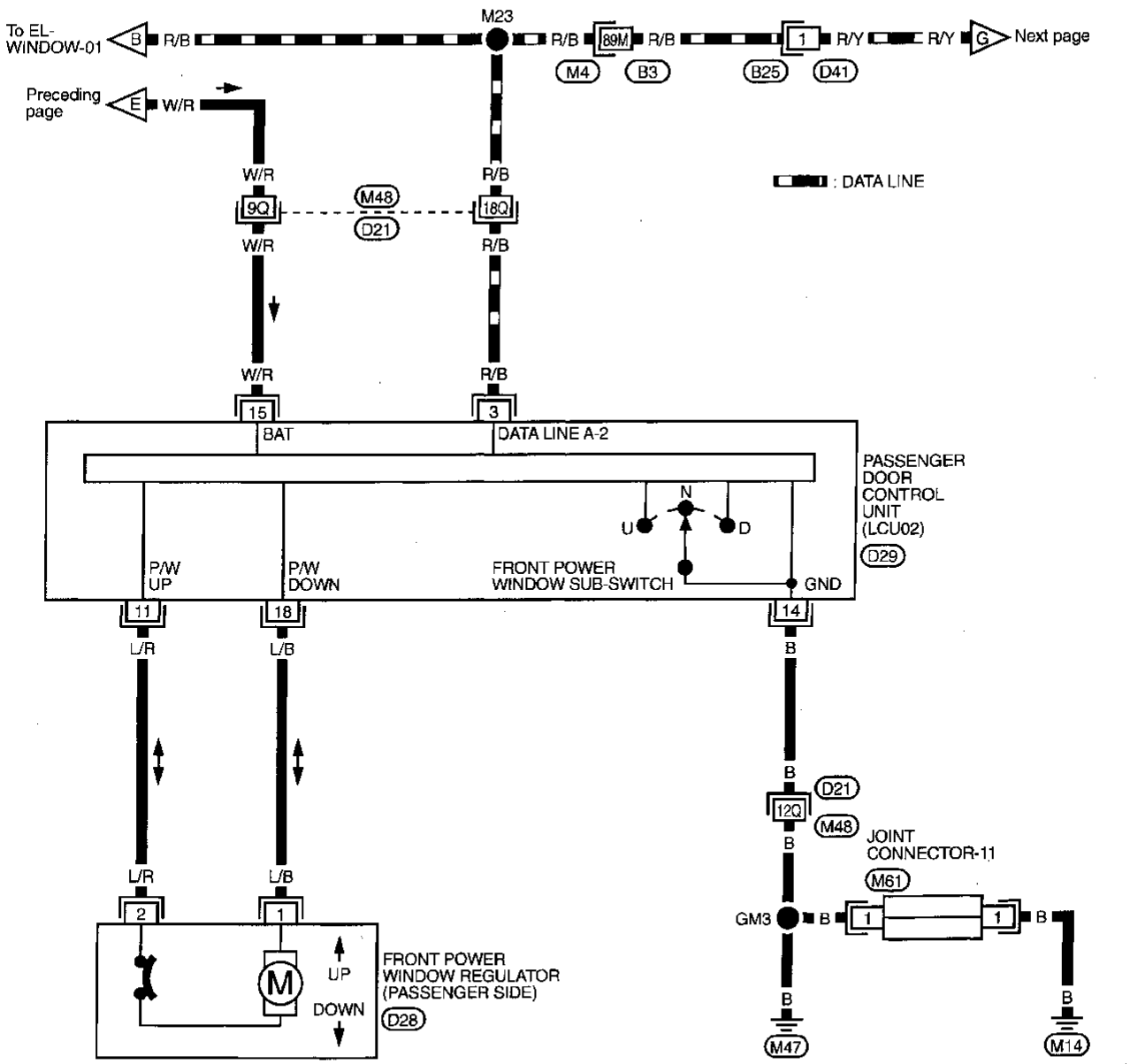
Refer to last page (Foldout page).

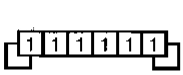
E66 , M12
M4 , B3
M11 , D1
M50 , B101

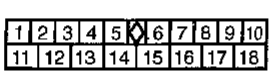
TEL835

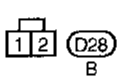
Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03









Refer to last page (Foldout page).

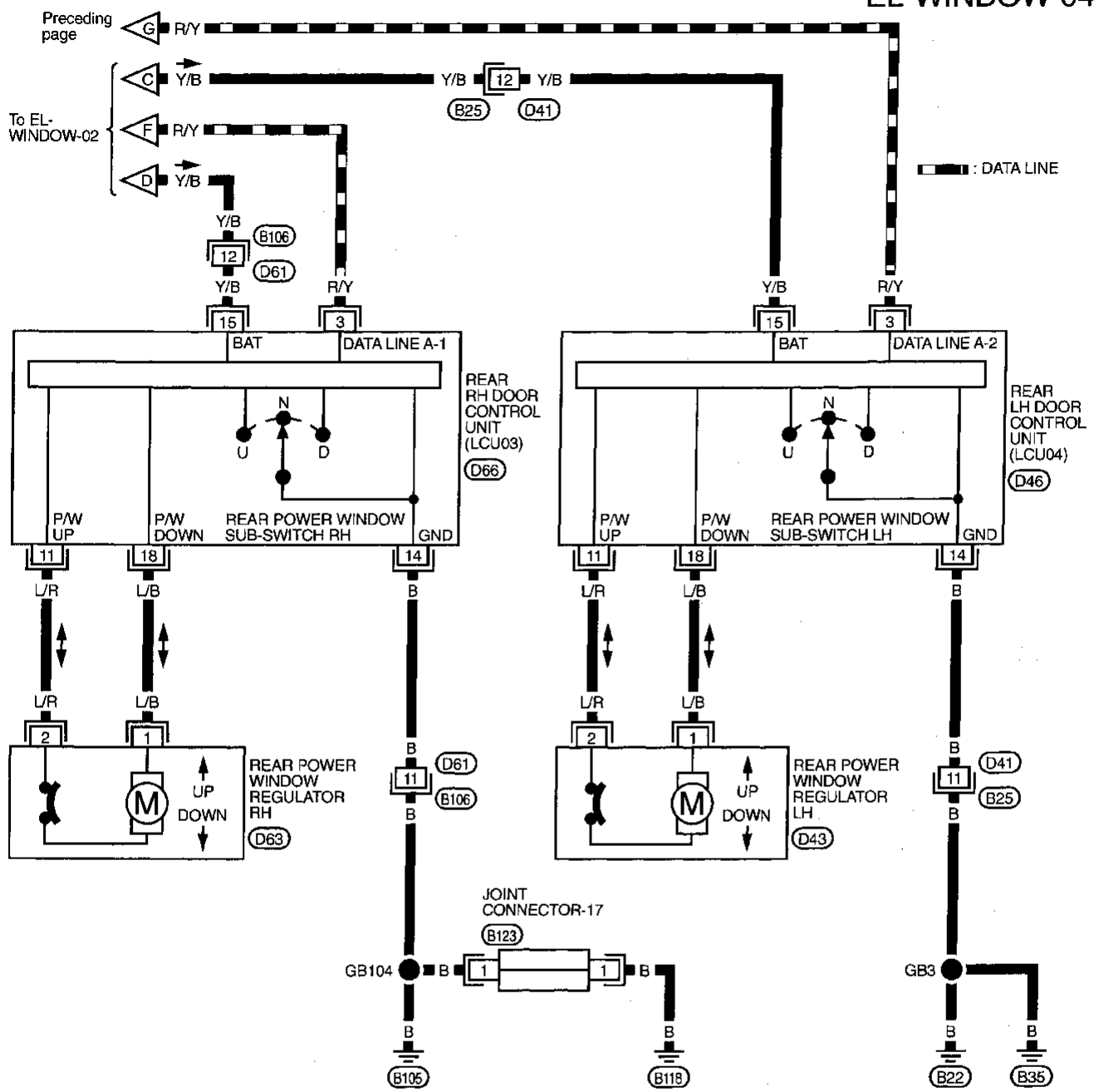
M4 , B3

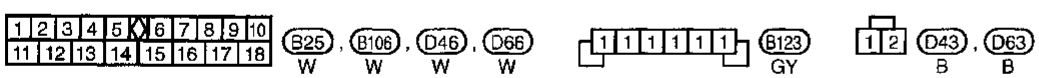
M48 , D21

TEL836

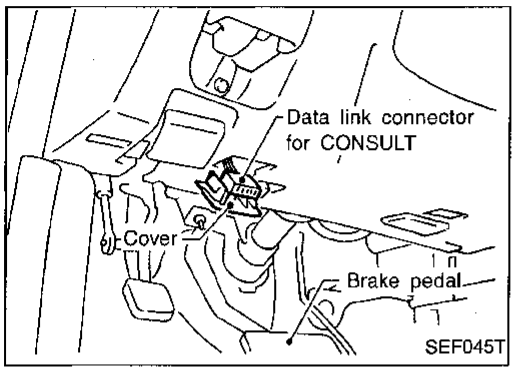
Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-04





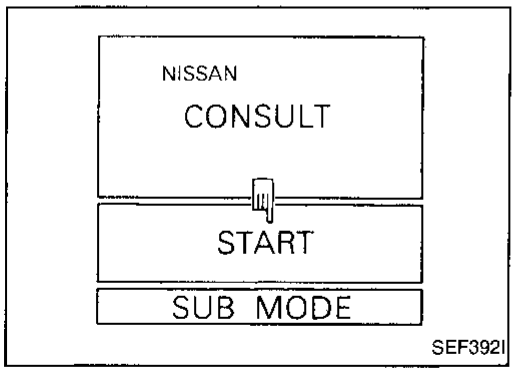
TEL837



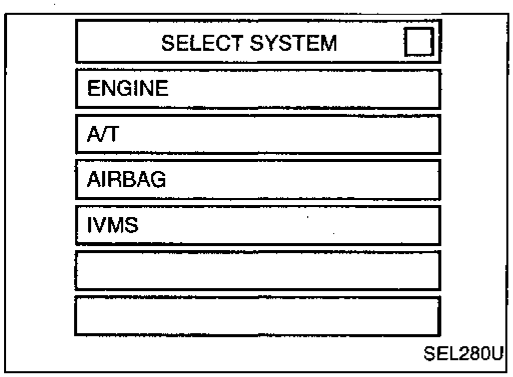
CONSULT

CONSULT INSPECTION PROCEDURE

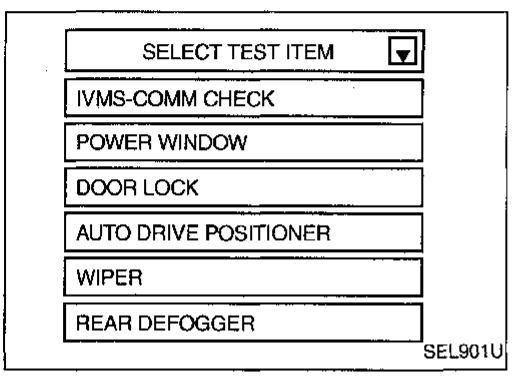
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



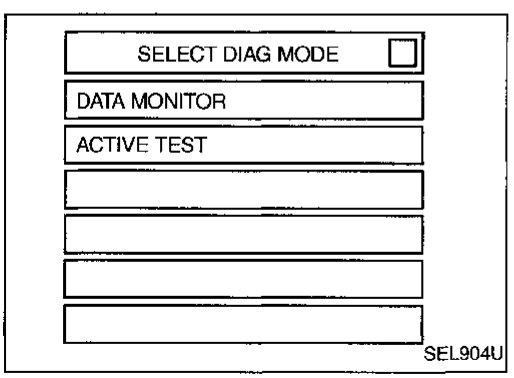
3. Turn ignition switch "ON".
4. Touch "START".



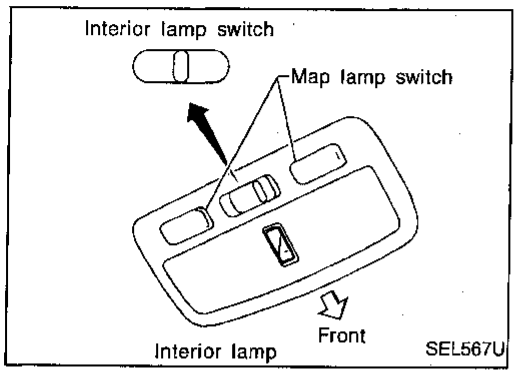
5. Touch "IVMS".



6. Touch "POWER WINDOW".



- 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 ON, 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 mile/h).

↓

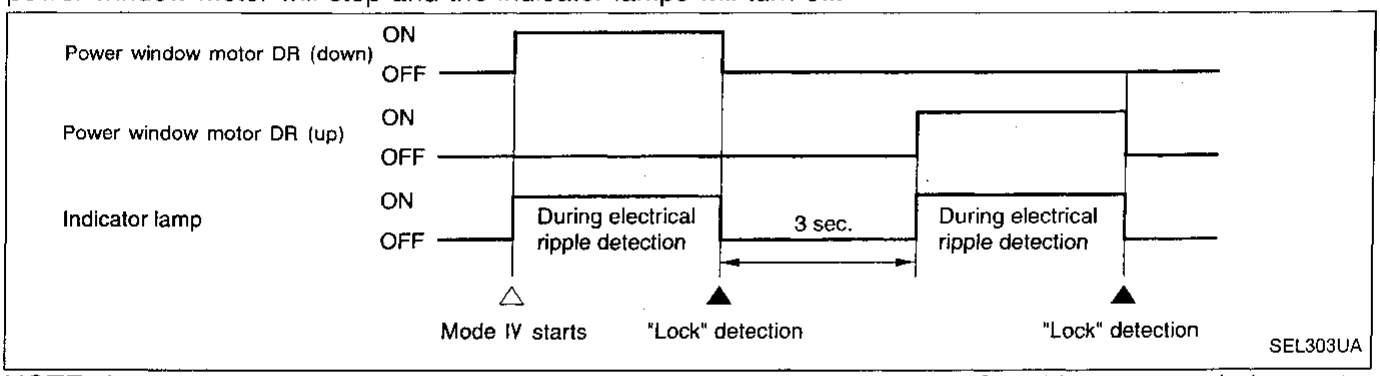
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

*: 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 and UP) "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.

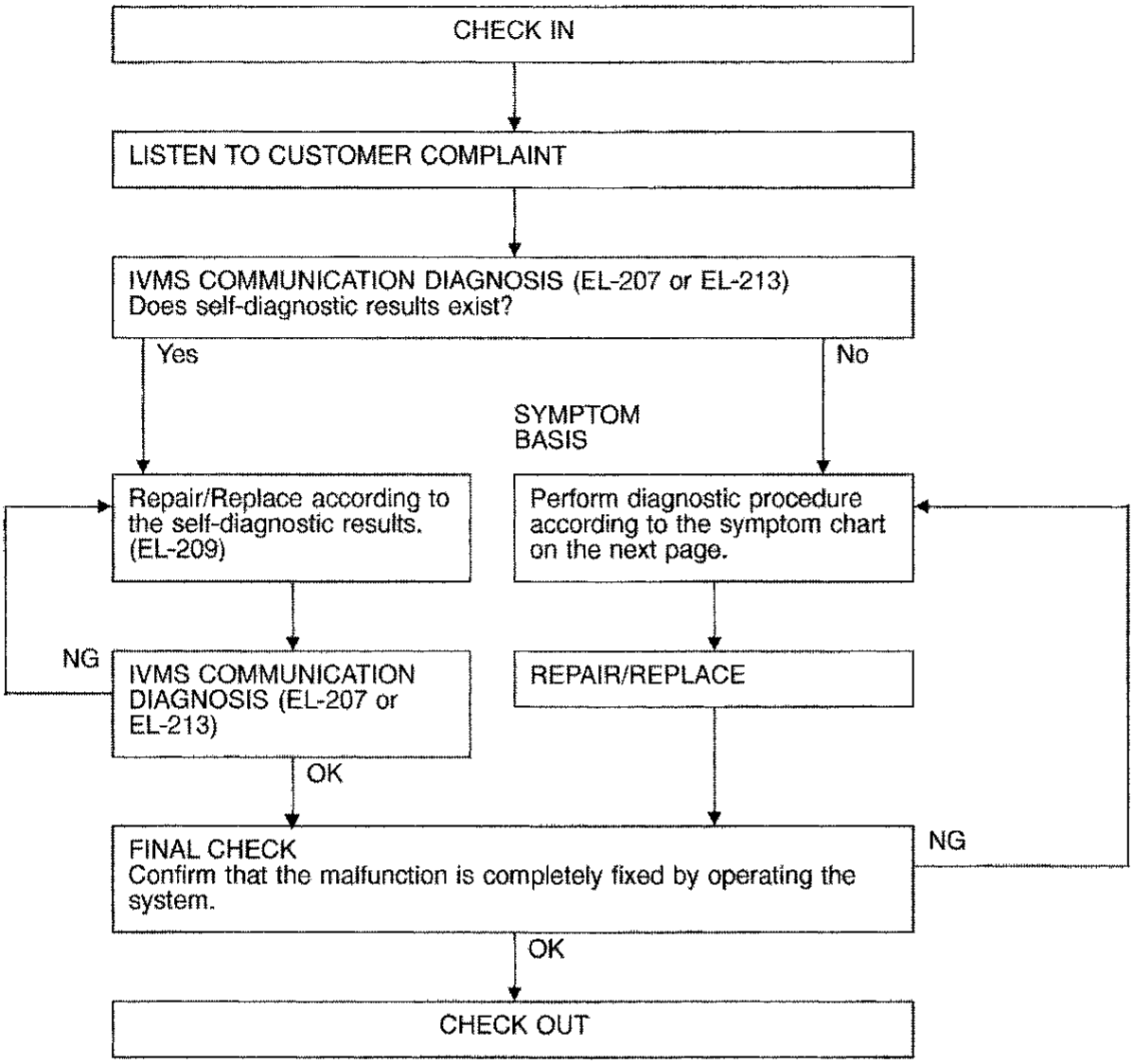


NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor stops and diagnosis ends.

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

Trouble Diagnoses

WORK FLOW

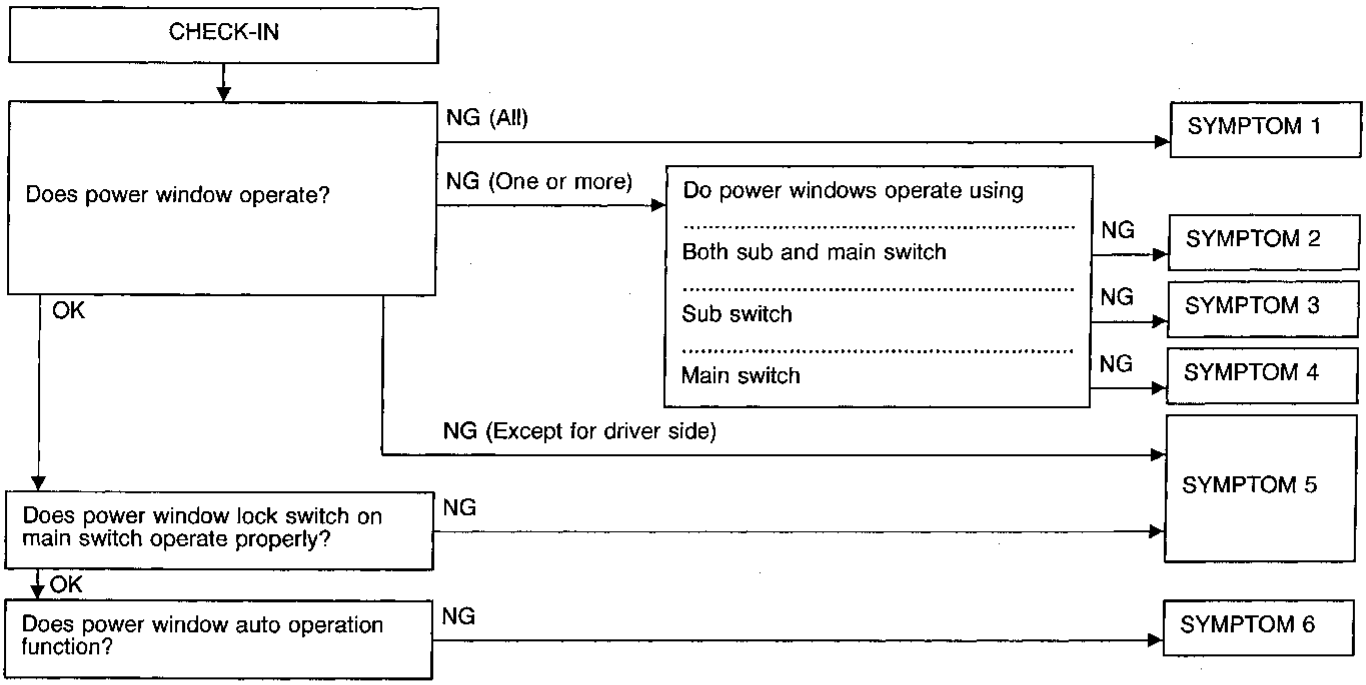


NOTICE:

- **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 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 (Refer to EL-207.) 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

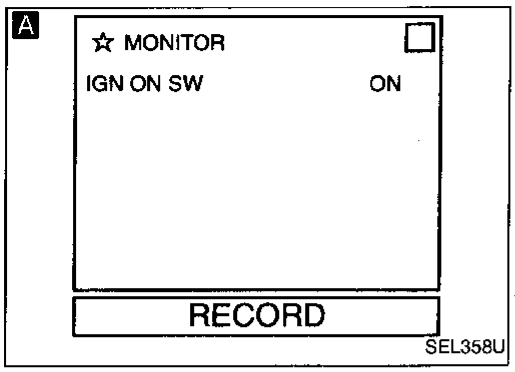
PROCEDURE		Diagnostic procedure					
REFERENCE PAGE		EL-243	EL-243	EL-244	EL-244	EL-245	EL-246
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 5 (Power window regulator check)	Procedure 6 (Power window automatic switch check)
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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

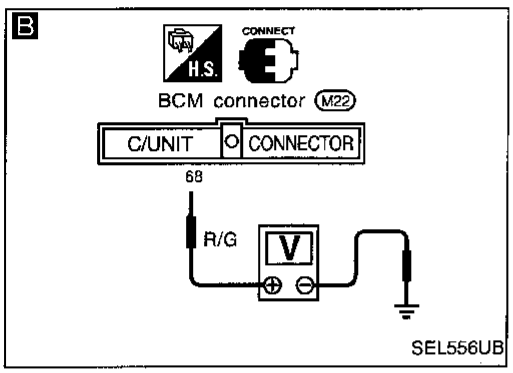
(Ignition switch ON signal check)

A



SEL358U

B



SEL556UB

CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT

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-234.

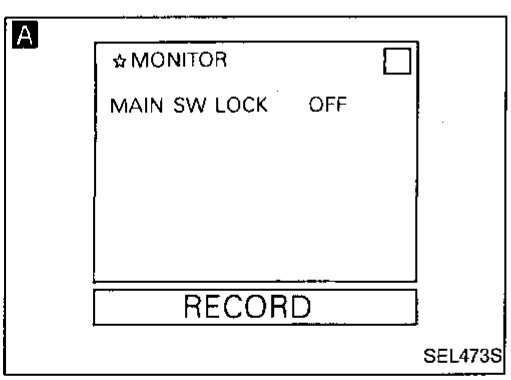
OK ↓

Ignition switch ON signal is OK.

DIAGNOSTIC PROCEDURE 2

(Power window lock switch check)

A



SEL473S

CHECK POWER WINDOW LOCK SWITCH INPUT SIGNAL.

A CONSULT

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

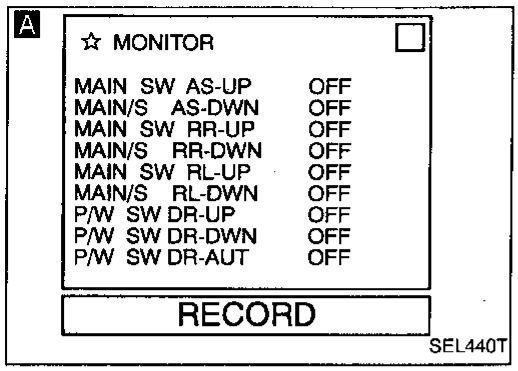
ON-BOARD

Check power window lock switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

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]

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

A CONSULT

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.

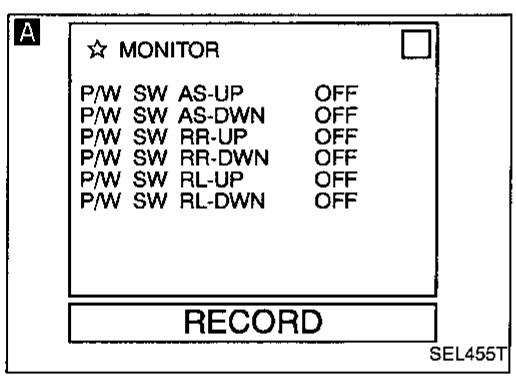
OR

ON-BOARD

Check power window main switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

OK ↓

Power window main switch is OK.



DIAGNOSTIC PROCEDURE 4

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

CHECK POWER WINDOW SUB-SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

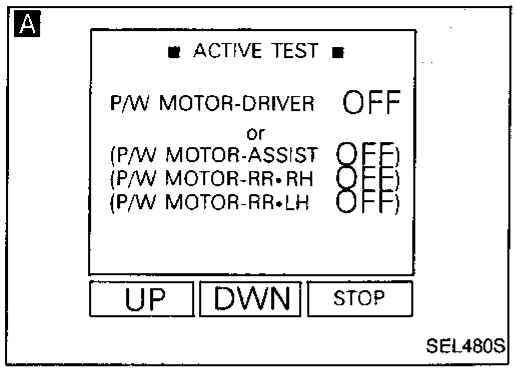
OK ↓

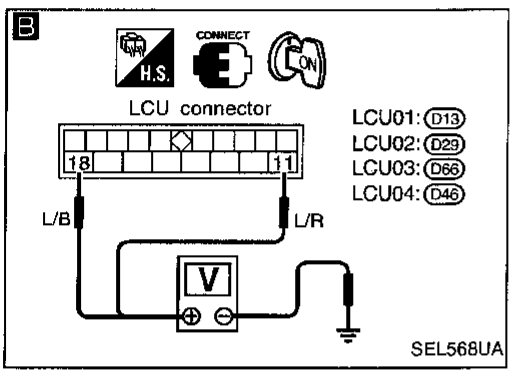
Power window sub-switch is OK.

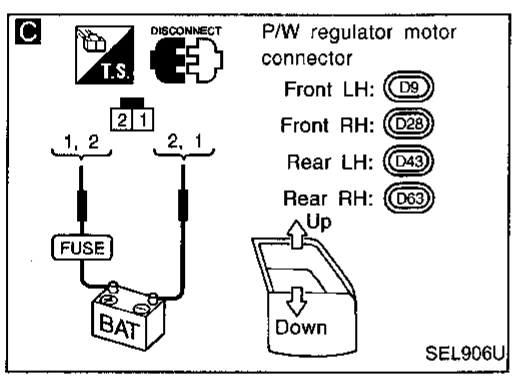
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Power window regulator check)







A

POWER WINDOW REGULATOR ACTIVE TEST.
CONSULT
See "P/W MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Power window motor should operate.
NOTE: If CONSULT 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 ⊕	Terminals ⊖	Voltage
Up	⑪	Ground	Battery voltage
Down	⑱	Ground	

Refer to wiring diagram in EL-235, 236 or 237.

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 ⊕	Terminals ⊖	Operation
①	②	Downward
②	①	Upward

NG → Replace power window regulator motor.

OK ↓

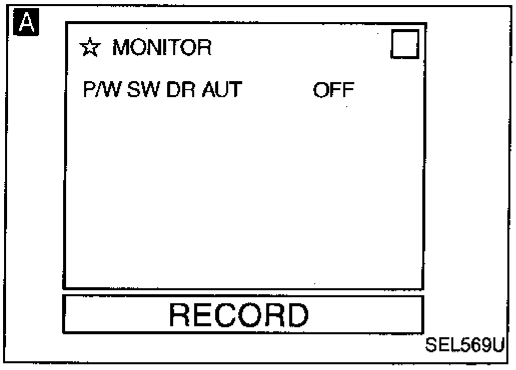
Check harness for open or short between power window switch, and power window regulator motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

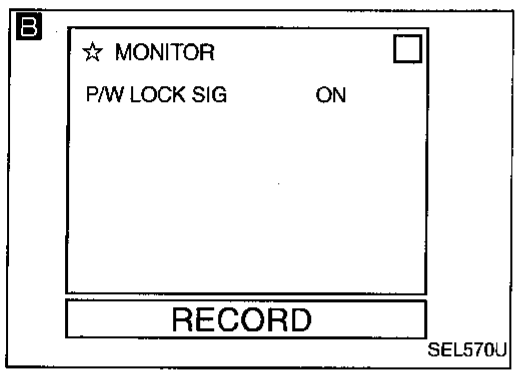
(Power window automatic switch check)

A



SEL569U

B



SEL570U

CHECK POWER WINDOW AUTO SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

OK ↓

CHECK POWER WINDOW LOCK SIGNAL.

B CONSULT

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

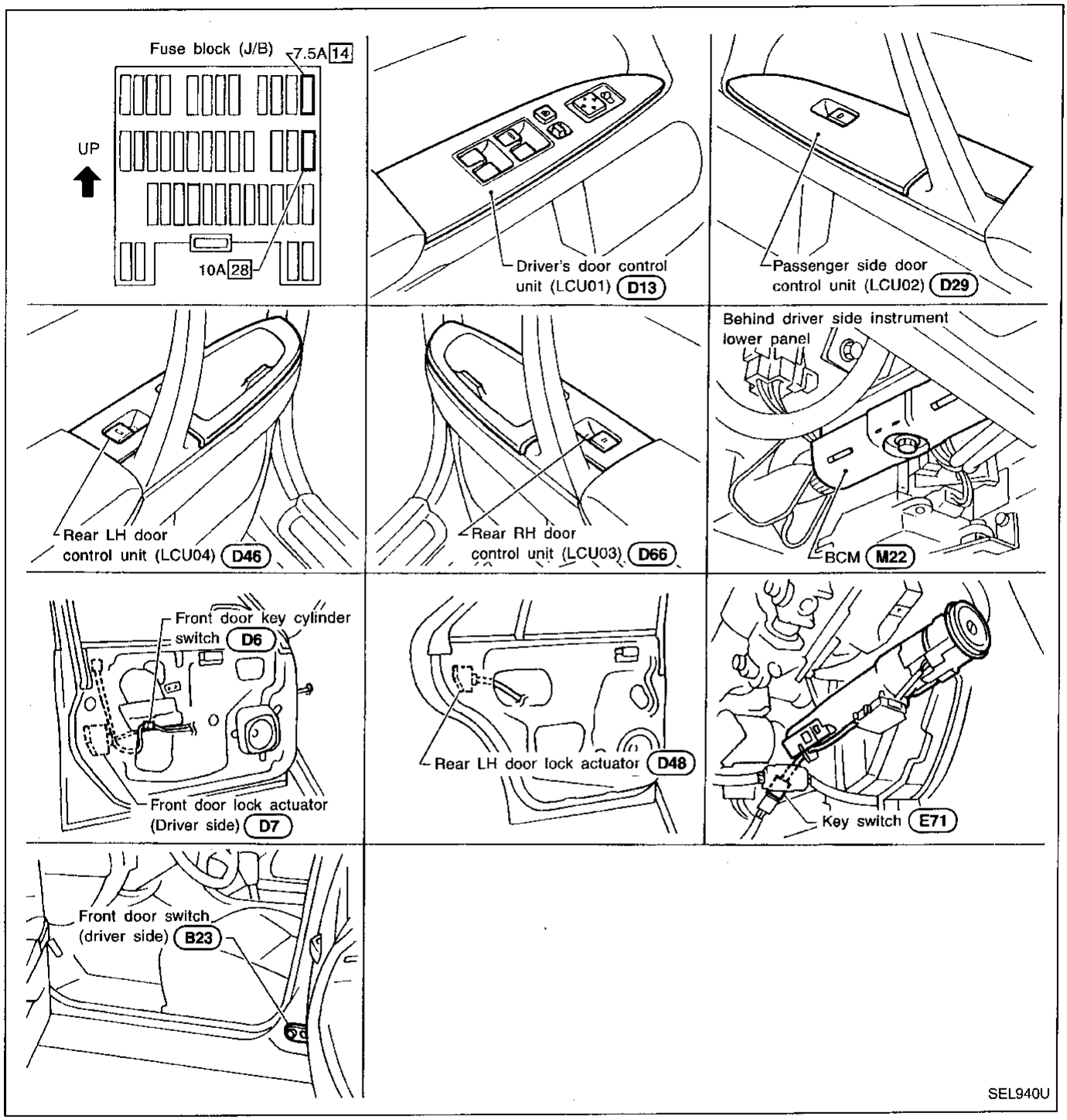
ON-BOARD

Perform On-board diagnosis Mode IV.
(Refer to EL-239.)
Electrical ripple should occur, when the window is moving.

OK ↓

Check the system again.

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).

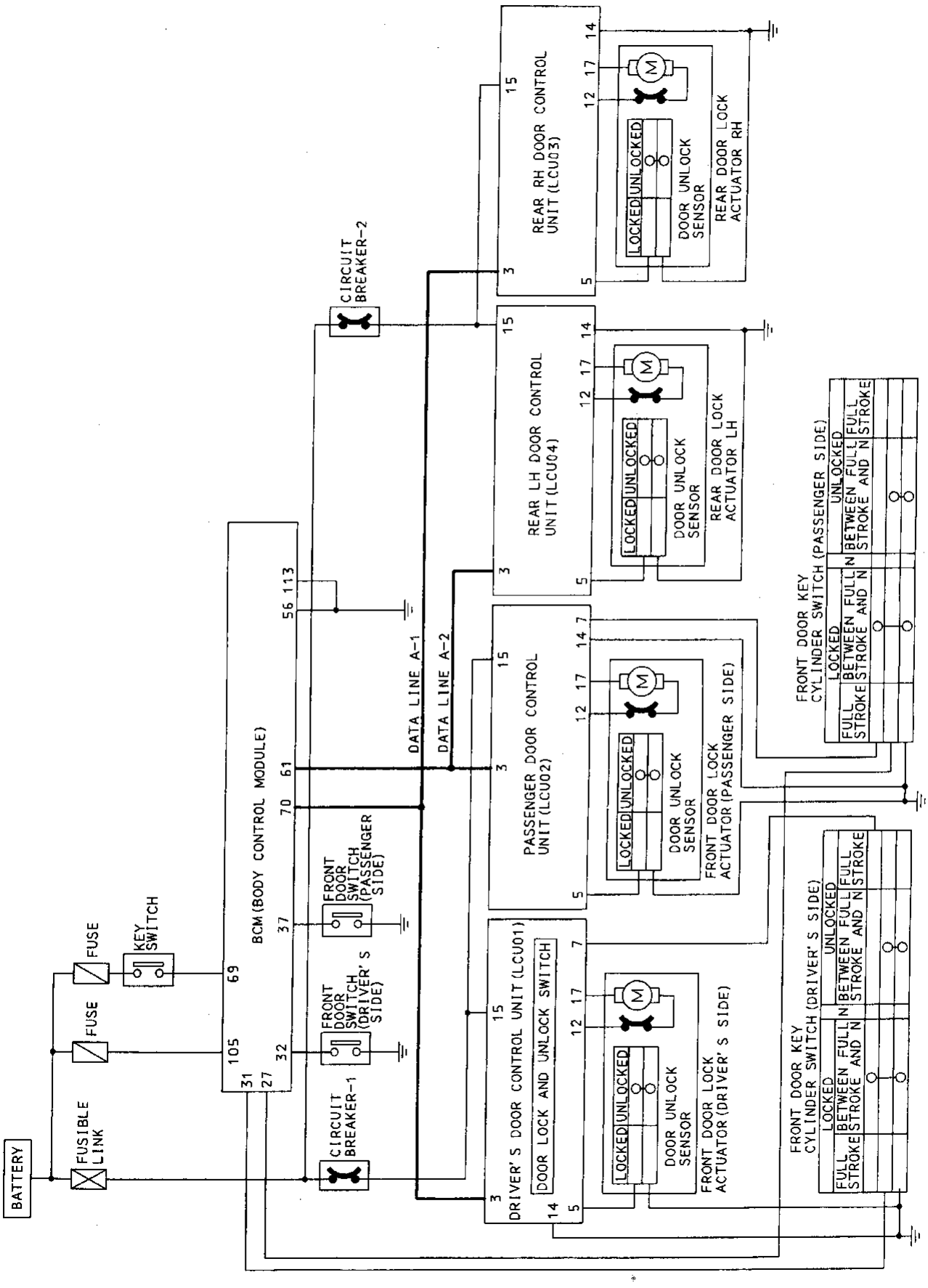
When lock/unlock signal is sent to BCM or LCU, BCM sends a lock/unlock signal to LCUs via DATA LINE A-1 or A-2. LCUs then supply power and ground to each door lock actuator.

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)

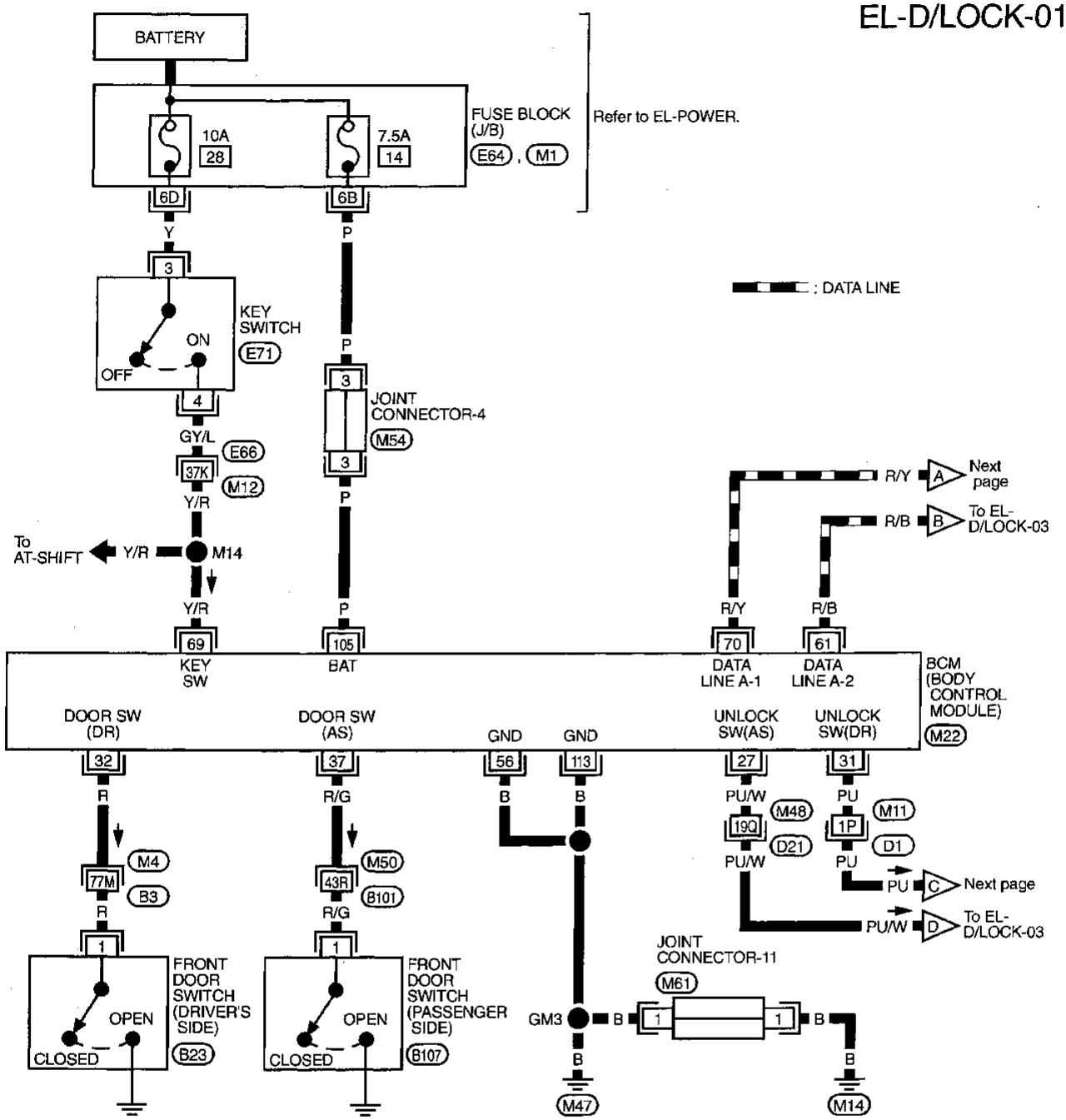
Schematic

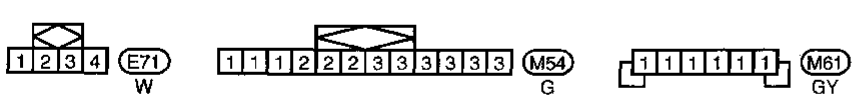


TEL838

Wiring Diagram — D/LOCK —

EL-D/LOCK-01





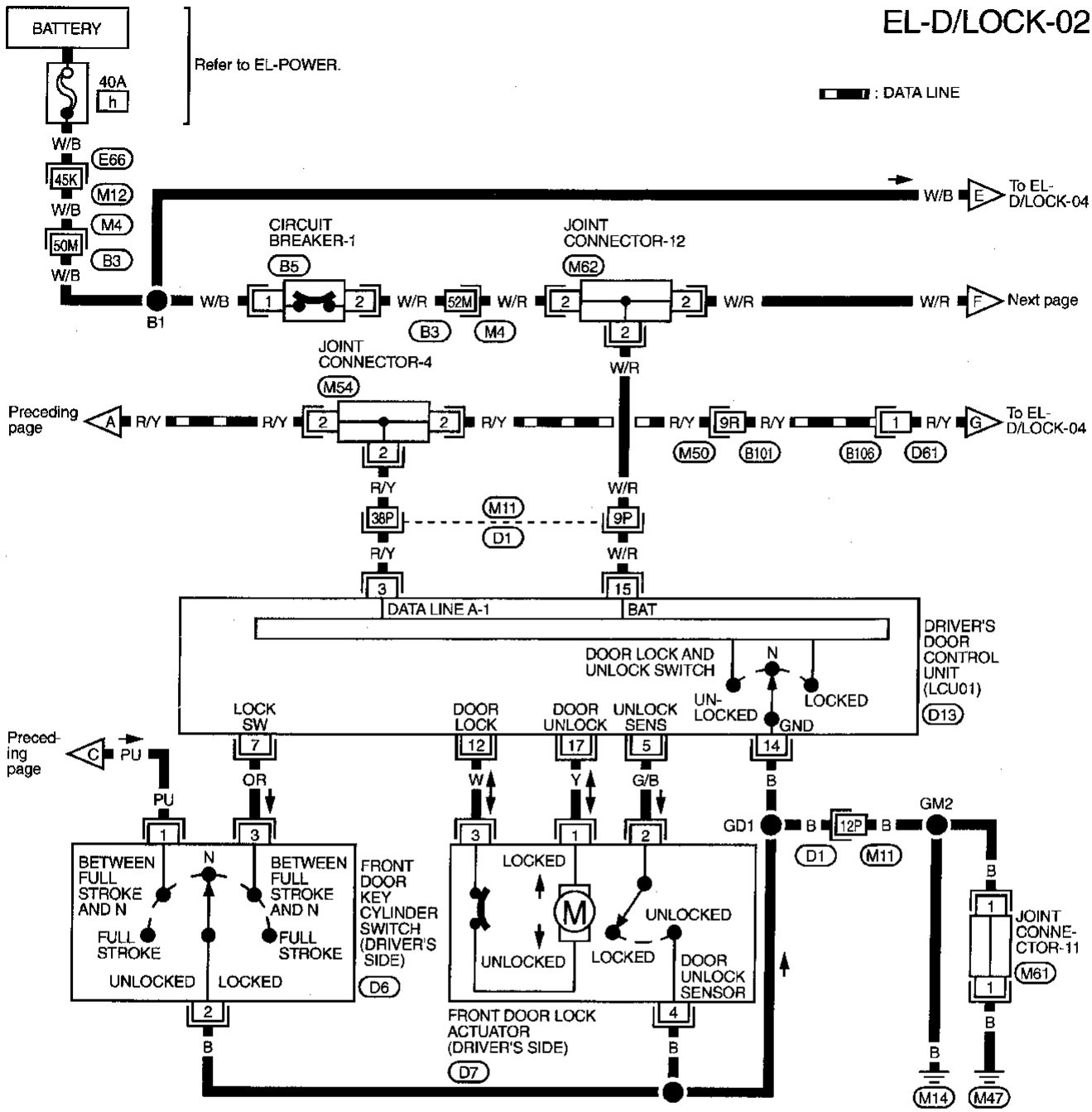
Refer to last page (Foldout page).

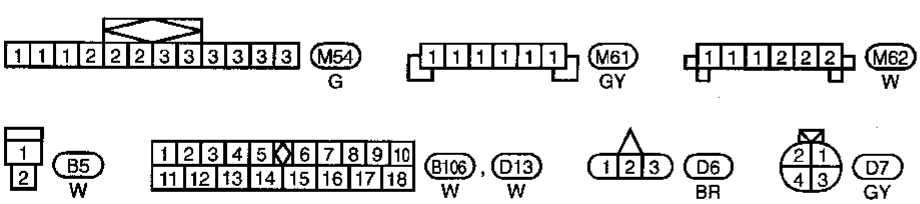
E66 , M12
M4 , B3
M11 , D1
M48 , D21
M50 , B101
E64
M1
M22

TEL218A

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02





Refer to last page (Foldout page).

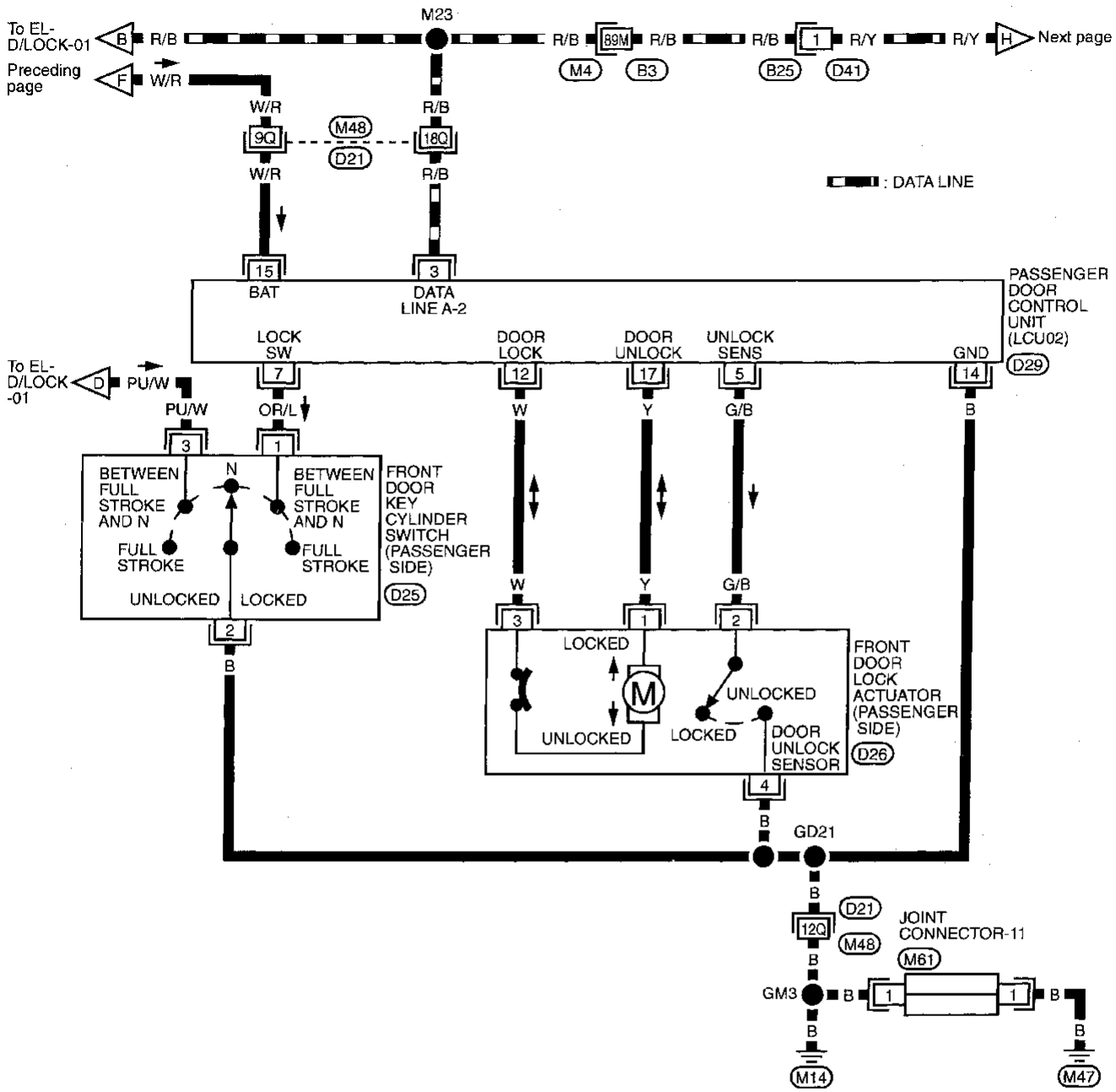
E66, M12
M4, B3
M11, D1
M50, B101

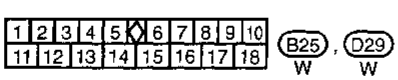
TEL840

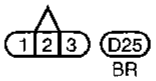
1685

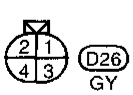
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-03









Refer to last page (Foldout page).

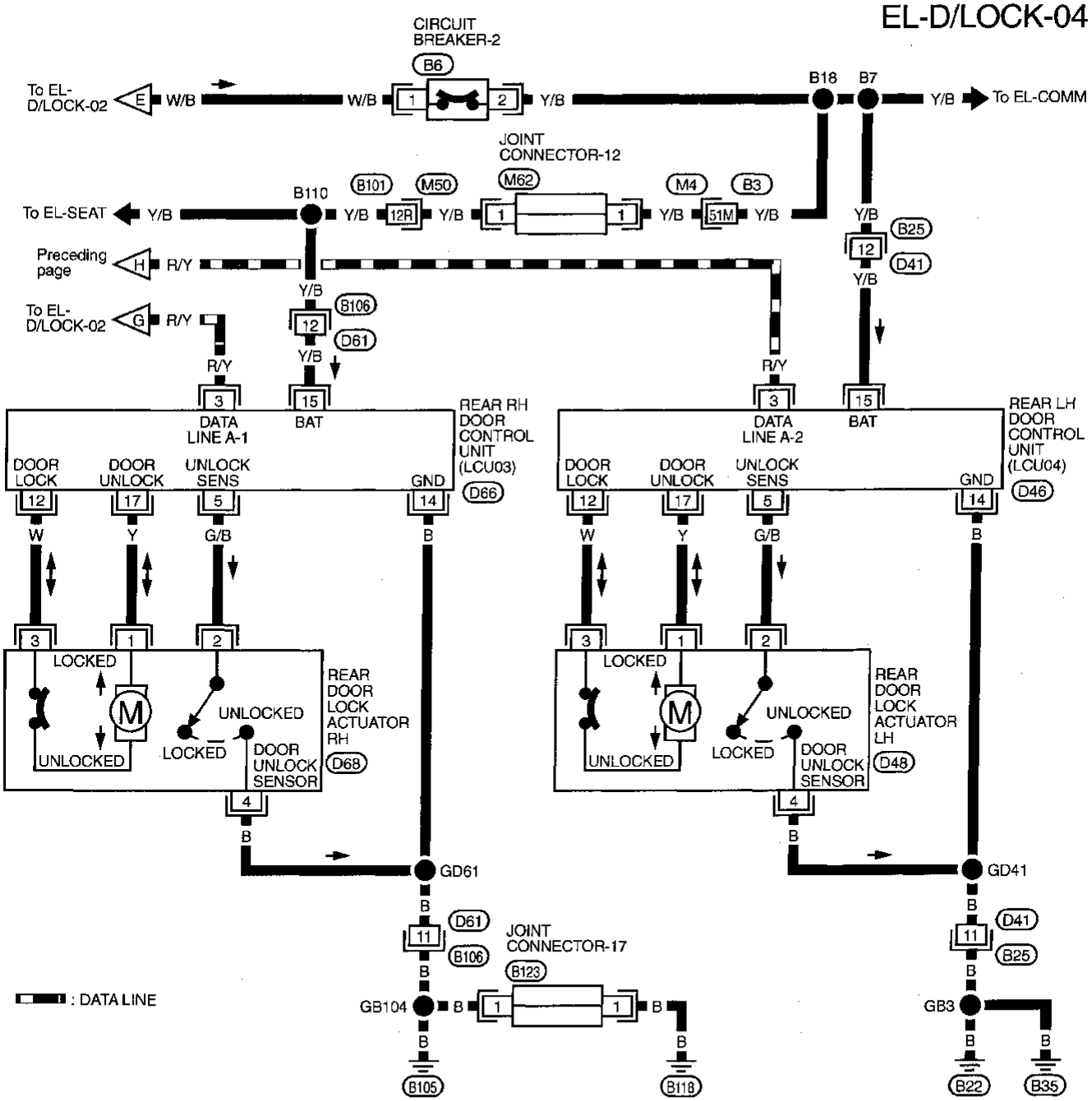
M4 , B3

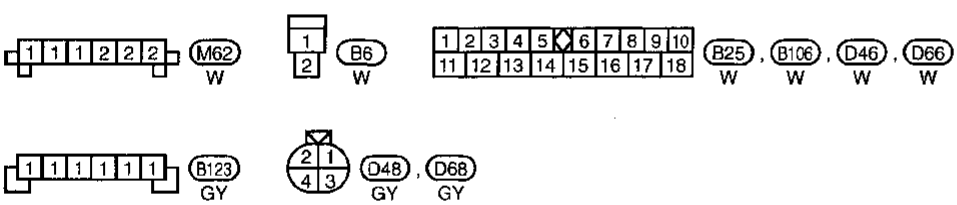
M48 , D21

TEL841

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-04

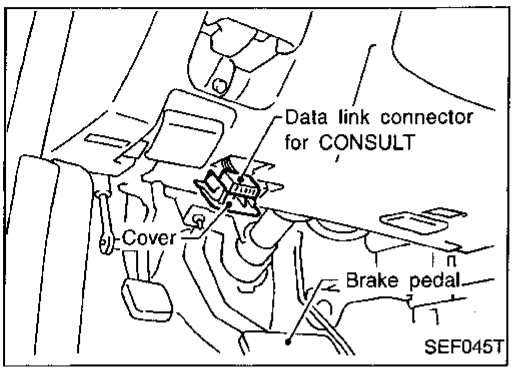




Refer to last page (Foldout page).
M4, B3
M50, B101

TEL842

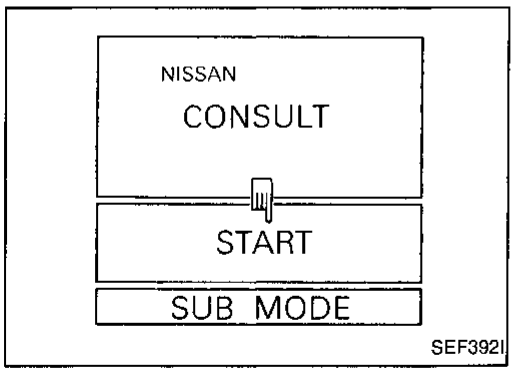
1687



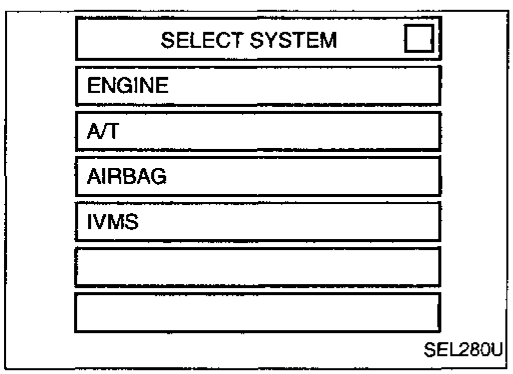
CONSULT

CONSULT INSPECTION PROCEDURE

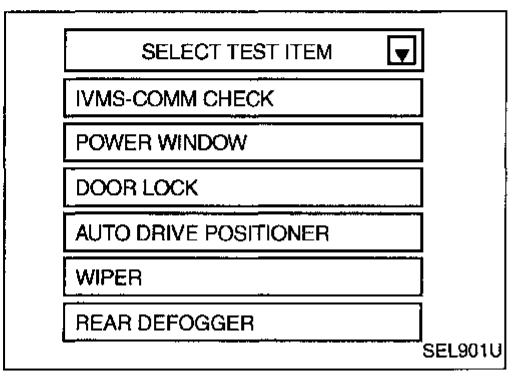
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



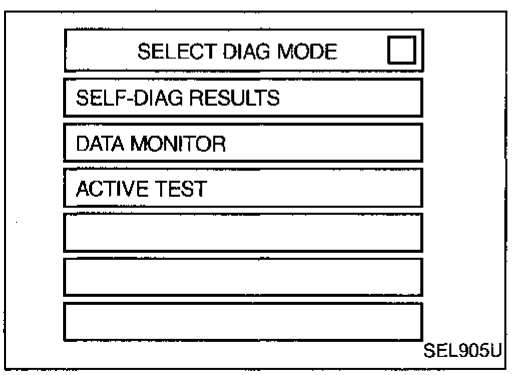
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "DOOR LOCK".

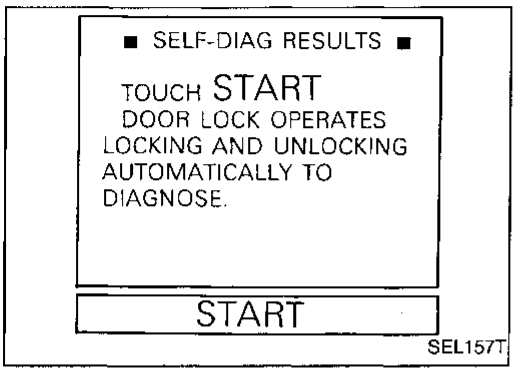


- DATA MONITOR, ACTIVE TEST, and SELF-DIAGNOSIS are available for the power door lock.

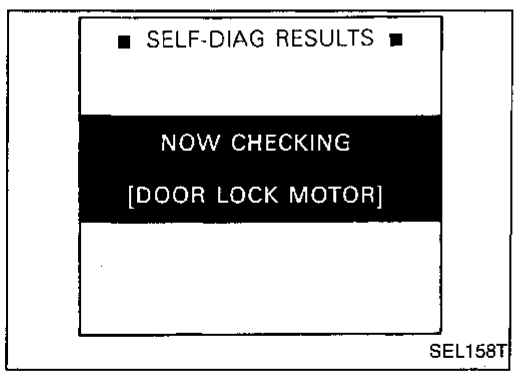
CONSULT (Cont'd)

HOW TO PERFORM SELF-DIAGNOSIS

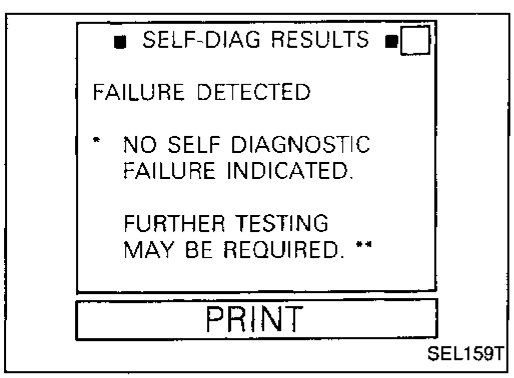
1. Choose "DOOR LOCK" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



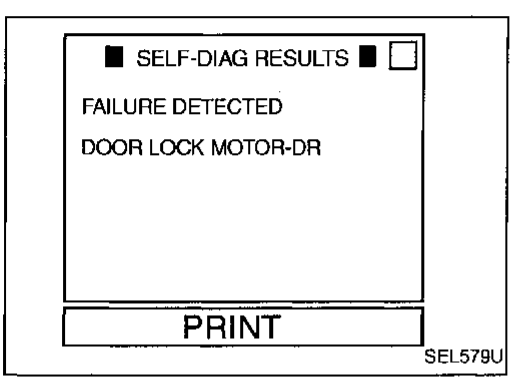
4. Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.



- When no malfunction is detected.



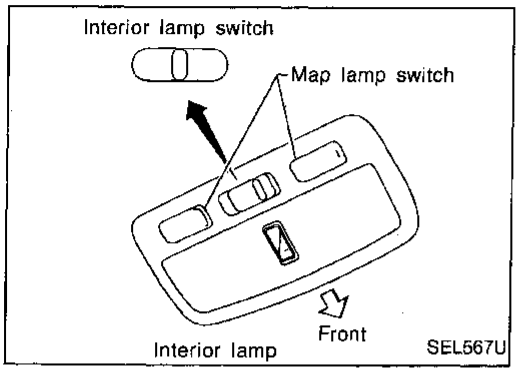
- When malfunction is detected.
  A summary of diagnostic results is given in the following chart.



CONSULT (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-266
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-267
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.		
*NO SELF DIAGNOSTIC FAILURE INDICATED/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".

↓

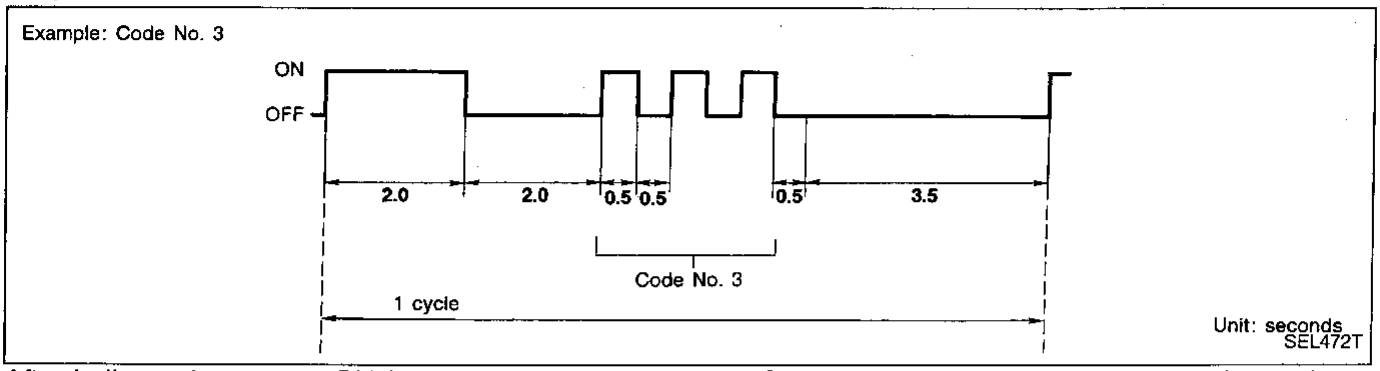
DIAGNOSIS END*1 (**Be sure to turn off the lighting switch.**)

*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:



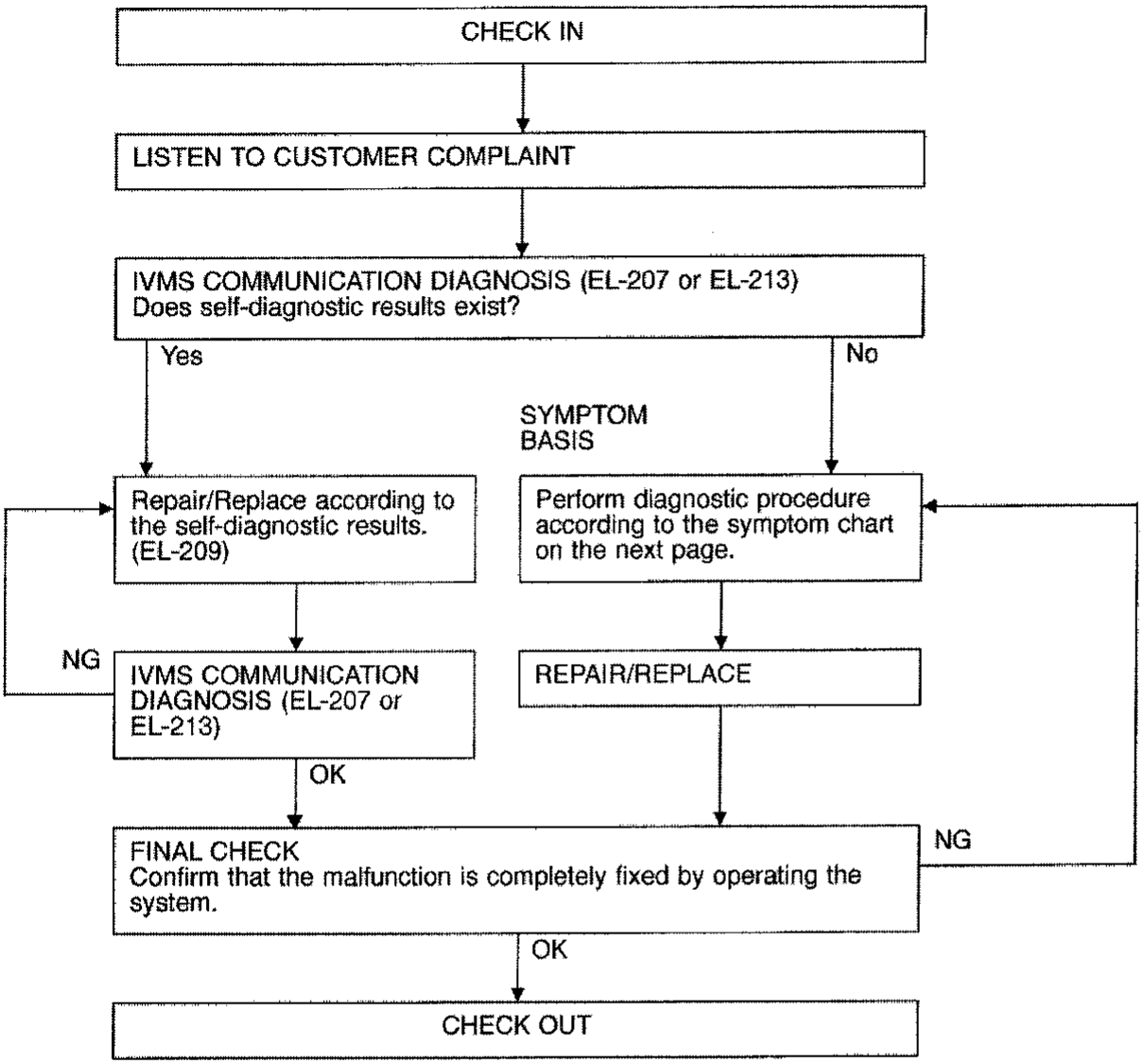
After indicator lamp turns ON for 2 seconds and then turns OFF, it flashes to indicate a malfunction code. For example, the indicator lamp goes on and off for 0.5 seconds three times. This indicates malfunction code "3".

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-266
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-267
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 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 (Refer to EL-207.) 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

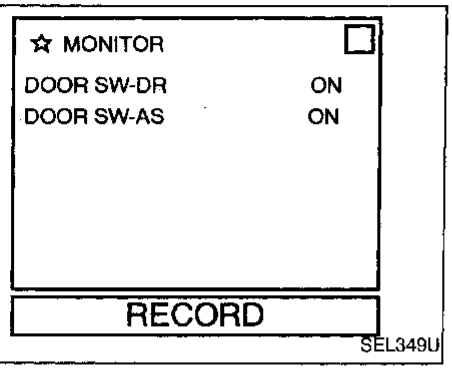
PROCEDURE	Self-diagnosis		Diagnostic procedure						—
REFERENCE PAGE	EL-255	EL-257	EL-261	EL-262	EL-263	EL-264	EL-266	EL-267	EL-208
SYMPTOM	CONSULT	On-board diagnosis (Mode III)	Procedure 1 (Door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door key 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)

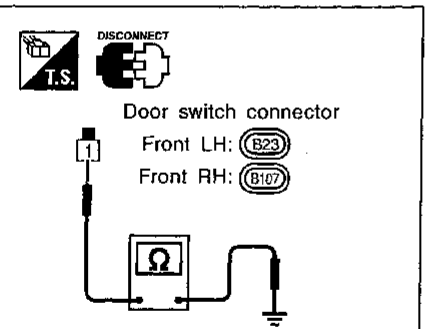
DIAGNOSTIC PROCEDURE 1

(Front door switch check)

A



B



CHECK FRONT DOOR SWITCH INPUT SIGNAL.

A CONSULT

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

OK → Door switch is OK.

— OR —

ON-BOARD

Check front door switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-250.

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 ↓

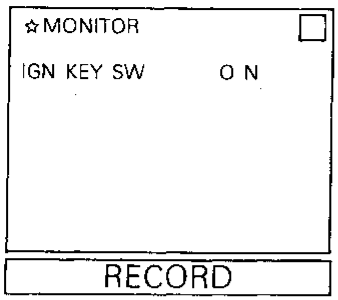
Check the following.
- Door switch ground condition
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

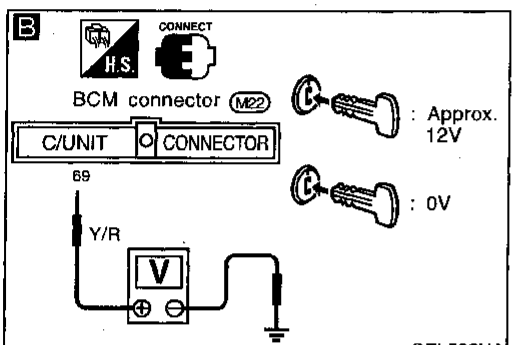
[Key switch (Insert) check]

A



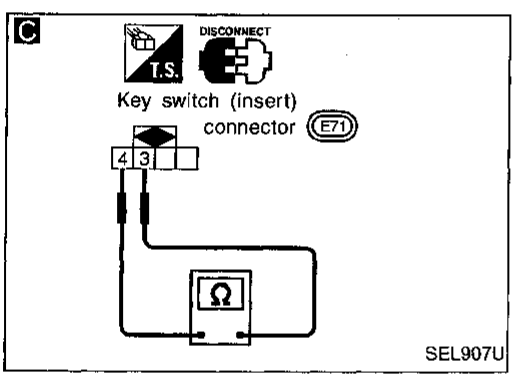
SEL451S

B



SEL563UA

C



SEL907U

CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

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 → Ignition key switch is OK.

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-250.

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 ↓

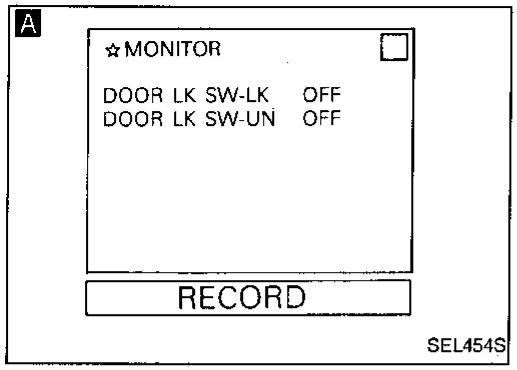
Check the following.

- 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)



CHECK DOOR LOCK & UNLOCK SWITCH INPUT SIGNAL.

A CONSULT

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

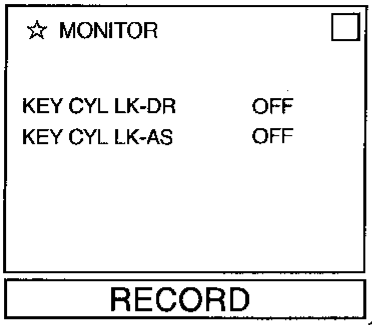
Check door lock & unlock switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

NG → Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

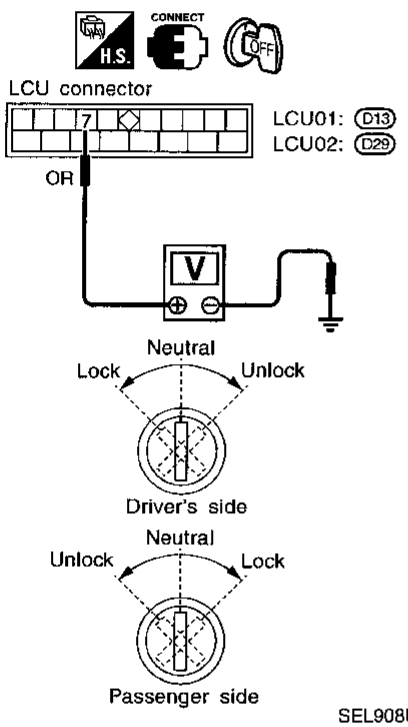
DIAGNOSTIC PROCEDURE 4-(1)
(Door key cylinder lock switch check)

A



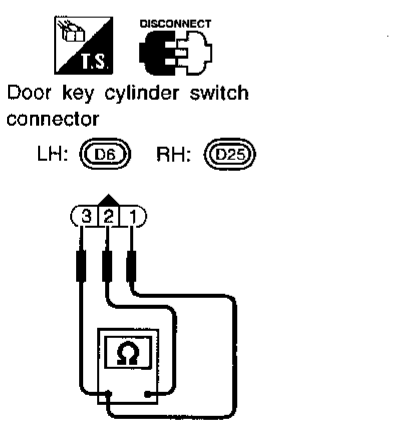
SEL910U

B



SEL908U

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

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.

OK → Door key cylinder switch (lock) is OK.

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-251 or 252.

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 ↓

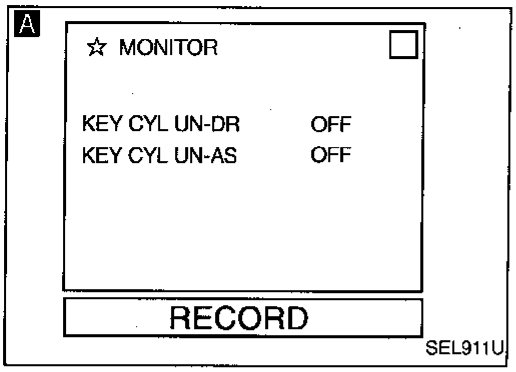
Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between LCU and door key cylinder switch

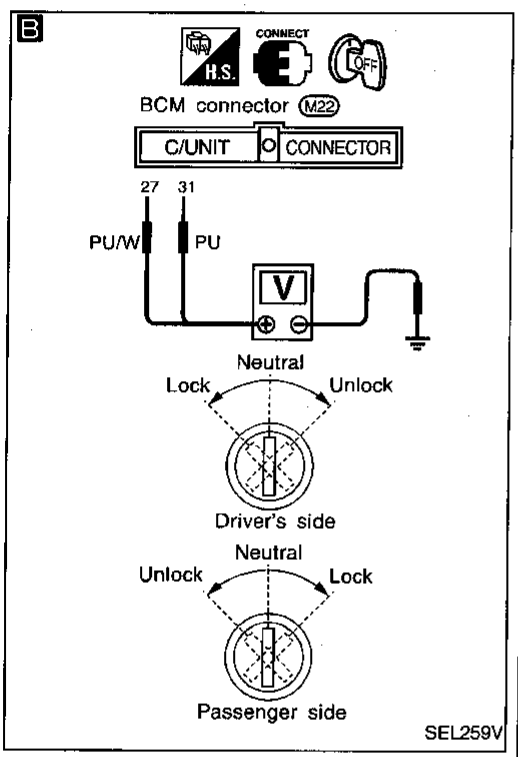
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4-(2)
(Door key cylinder unlock switch check)

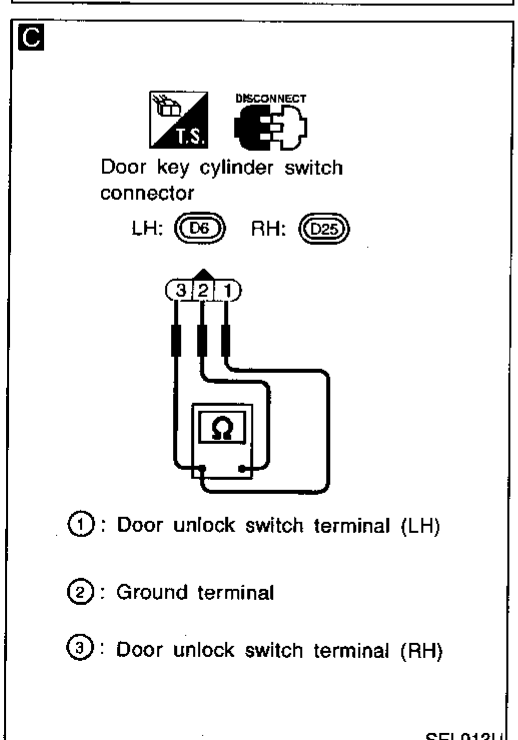
A



B



C



① : Door unlock switch terminal (LH)

② : Ground terminal

③ : Door unlock switch terminal (RH)

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

A CONSULT

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.

OK → Door key cylinder switch (unlock) is OK.

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-250.

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.

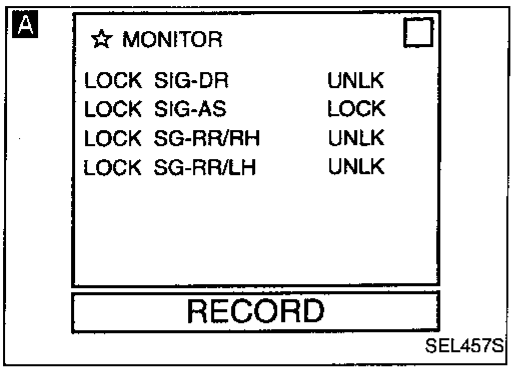
- Door key cylinder switch ground circuit
- Harness for open or short between BCM and door key cylinder switch

Trouble Diagnoses (Cont'd)

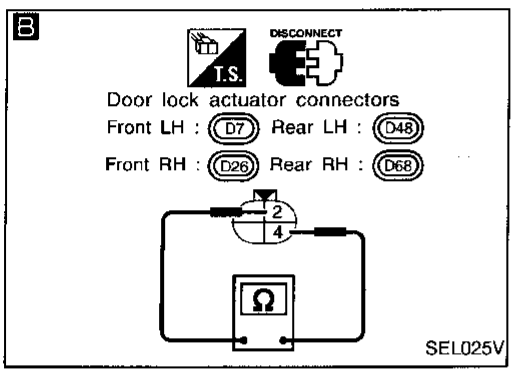
DIAGNOSTIC PROCEDURE 5

(Door unlock sensor check)

A



B



CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

A CONSULT

See "LOCK SIG SW" 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-215.)

Refer to wiring diagram in EL-251, 252 or 253.

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 ↓

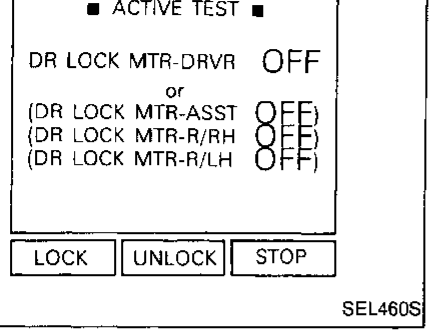
Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

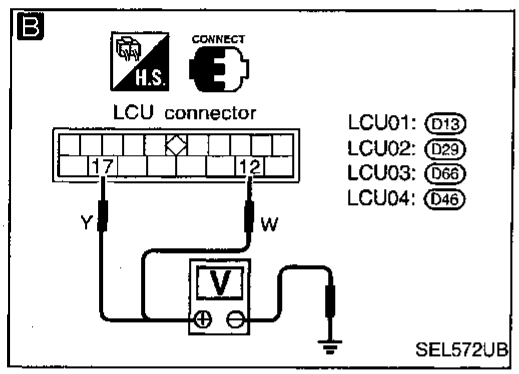
DIAGNOSTIC PROCEDURE 6

(Door lock actuator check)

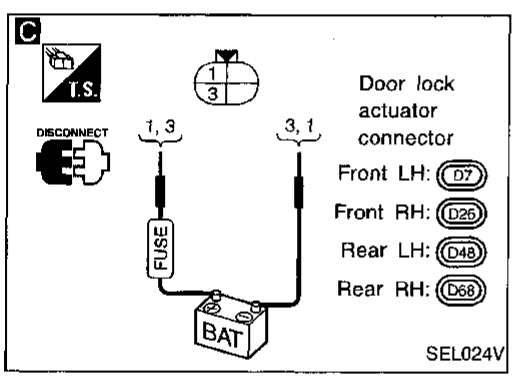
A



B



C



CHECK DOOR LOCK MOTOR OPERATION.

A CONSULT

See "DR LOCK MTR" in ACTIVE TEST mode.

Perform operation shown on display. **Door lock motor should operate.**

OK → Door lock actuator is OK.

— OR —

ON-BOARD

Perform On-board Diagnosis Mode III. (Refer to EL-257.)

Door lock motor should operate.

NG ↓

B

Check voltage between LCU connector terminals ⑰ or ⑫ and body ground.

NG → Replace LCU for malfunctioning portion.

Door lock operation	Terminals ⊕	Terminals ⊖	Voltage
Lock	⑫	Ground	Battery voltage
Unlock	⑰	Ground	

Refer to wiring diagram in EL-251, 252 or 253.

OK ↓

C

CHECK DOOR LOCK ACTUATOR.

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

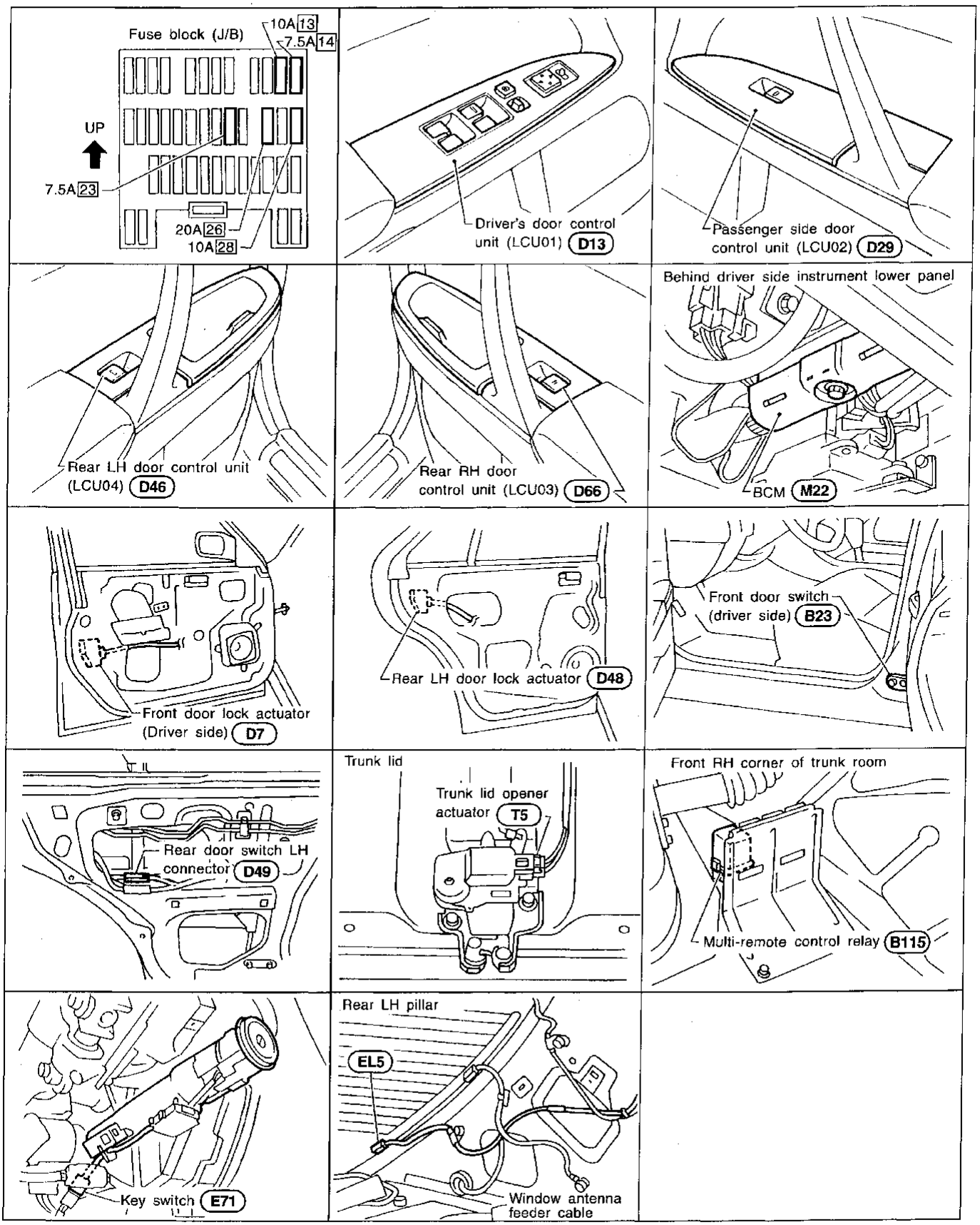
NG → Replace door lock actuator.

Door lock operation	Terminals ⊕	Terminals ⊖
Lock	③	①
Unlock	①	③

OK ↓

Check harness for open or short between door lock actuator and LCU.

Component Parts and Harness Connector Location



SEL941U

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 ⑯.

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 ⑪ (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-248).

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

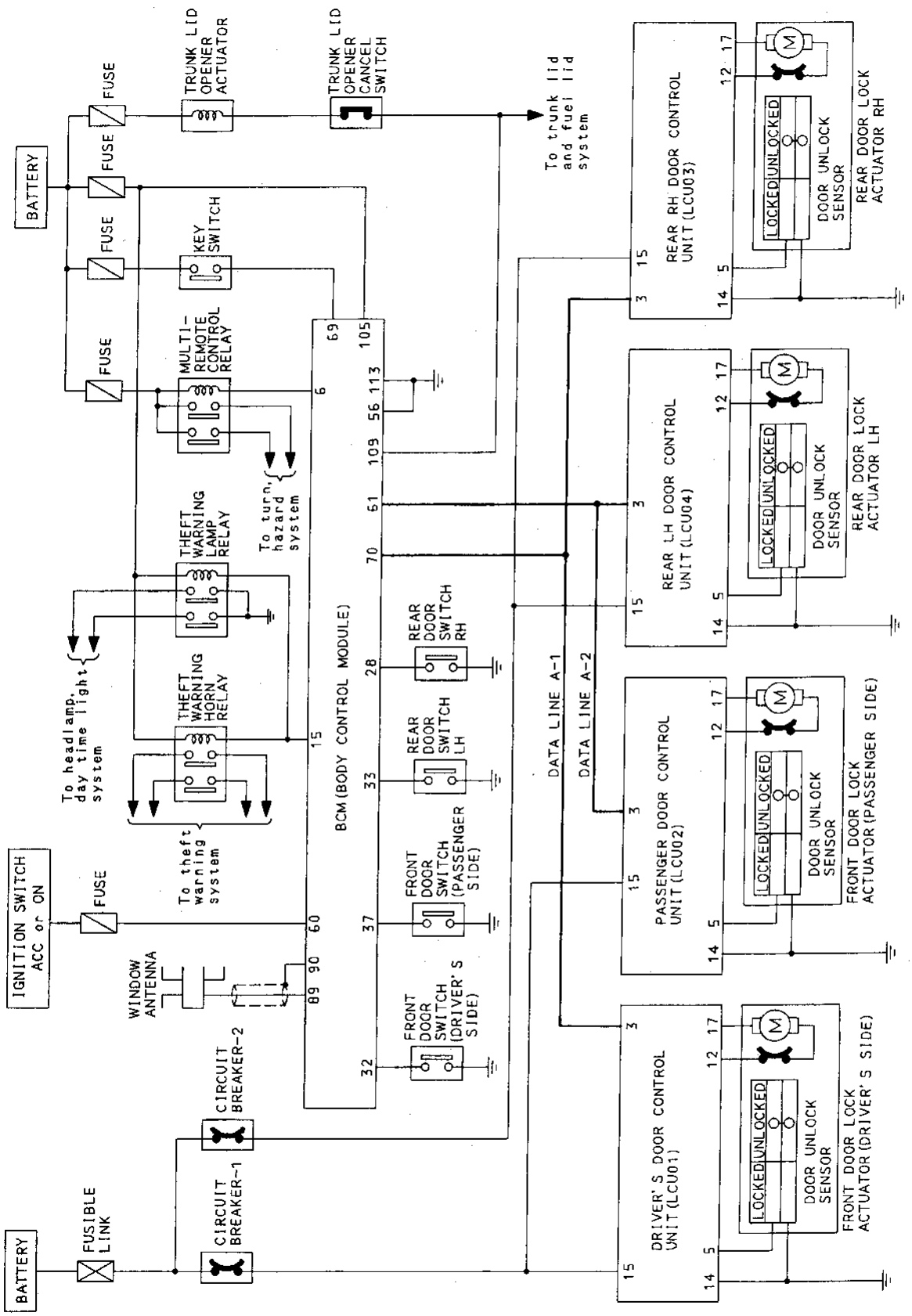
- through 7.5A fuse [No. 14, located in the fuse block (J/B)]
- to theft warning horn relay terminal ① and theft warning lamp relay terminal ①.

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.

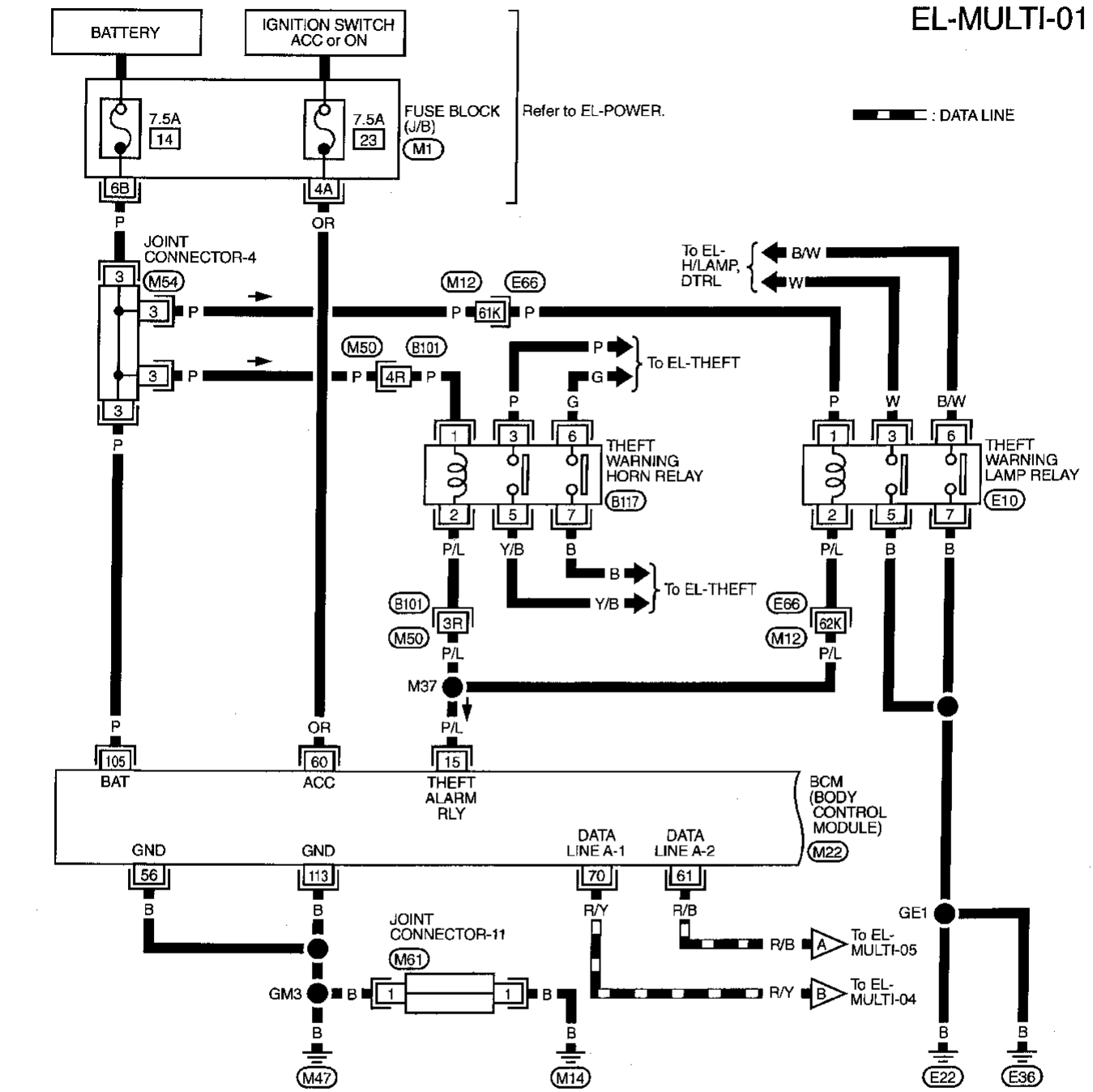
For detailed description, refer to "THEFT WARNING SYSTEM — IVMS" (EL-330).

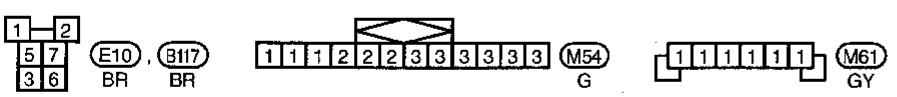
Schematic



TEL843

Wiring Diagram — MULTI —



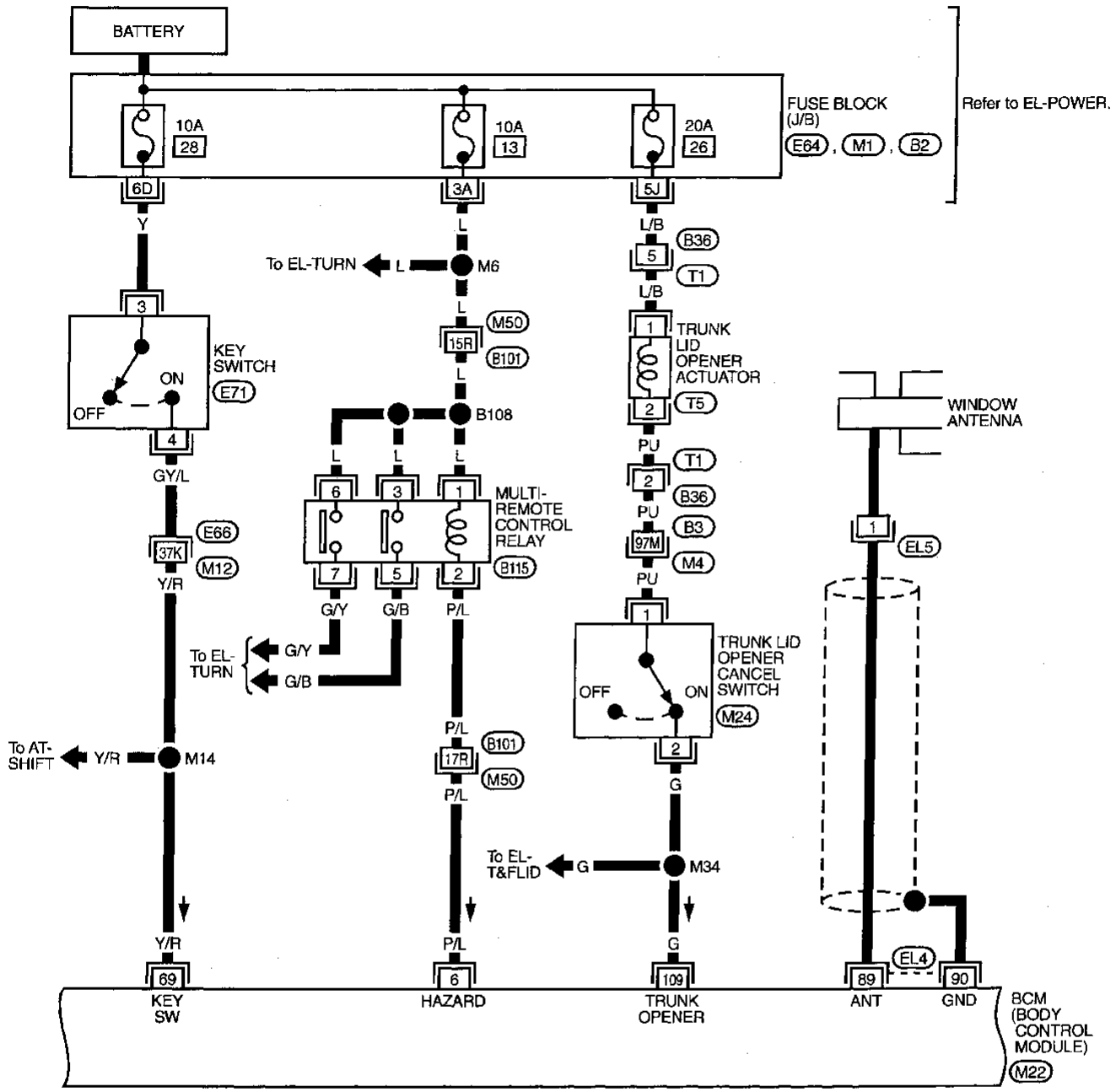


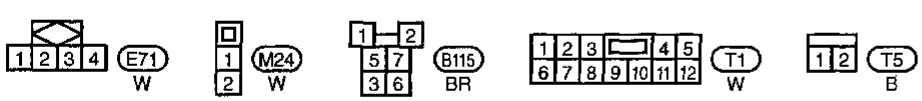
Refer to last page (Foldout page).
E66, M12
M50, B101
M1
M22

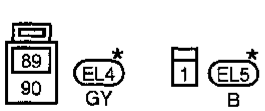
TEL219A

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02







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

Refer to last page (Foldout page).

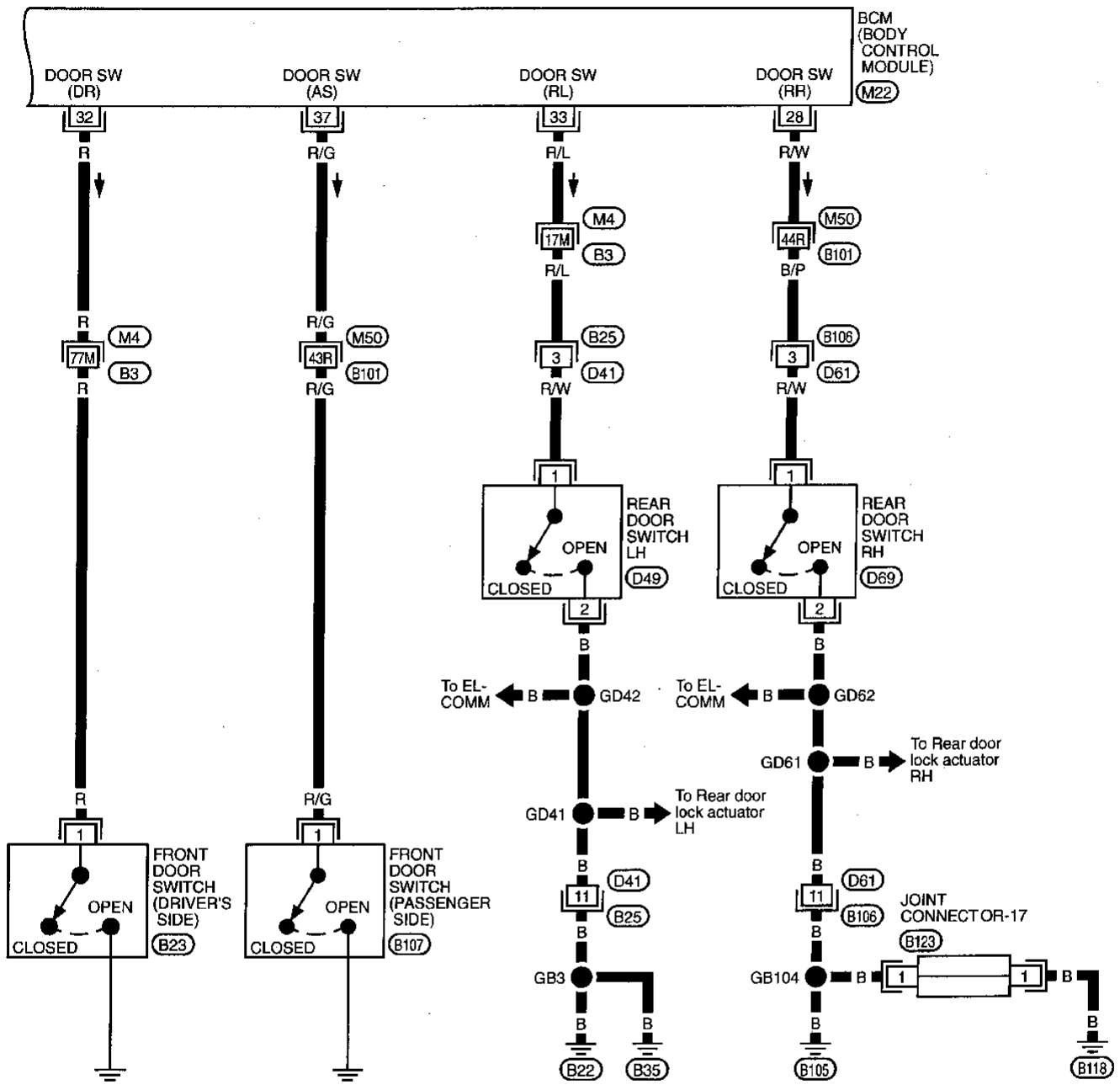
E66, M12
M4, B3
M50, B101
E64
M1
M22
B2

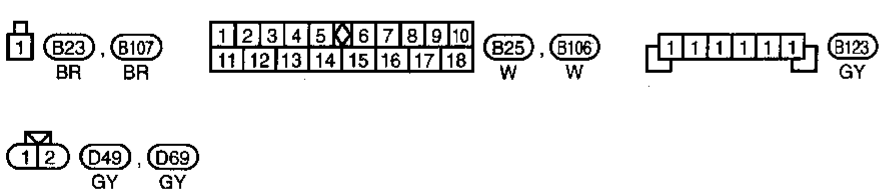
TEL220A

1707

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03





Refer to last page (Foldout page).

M4 , B3

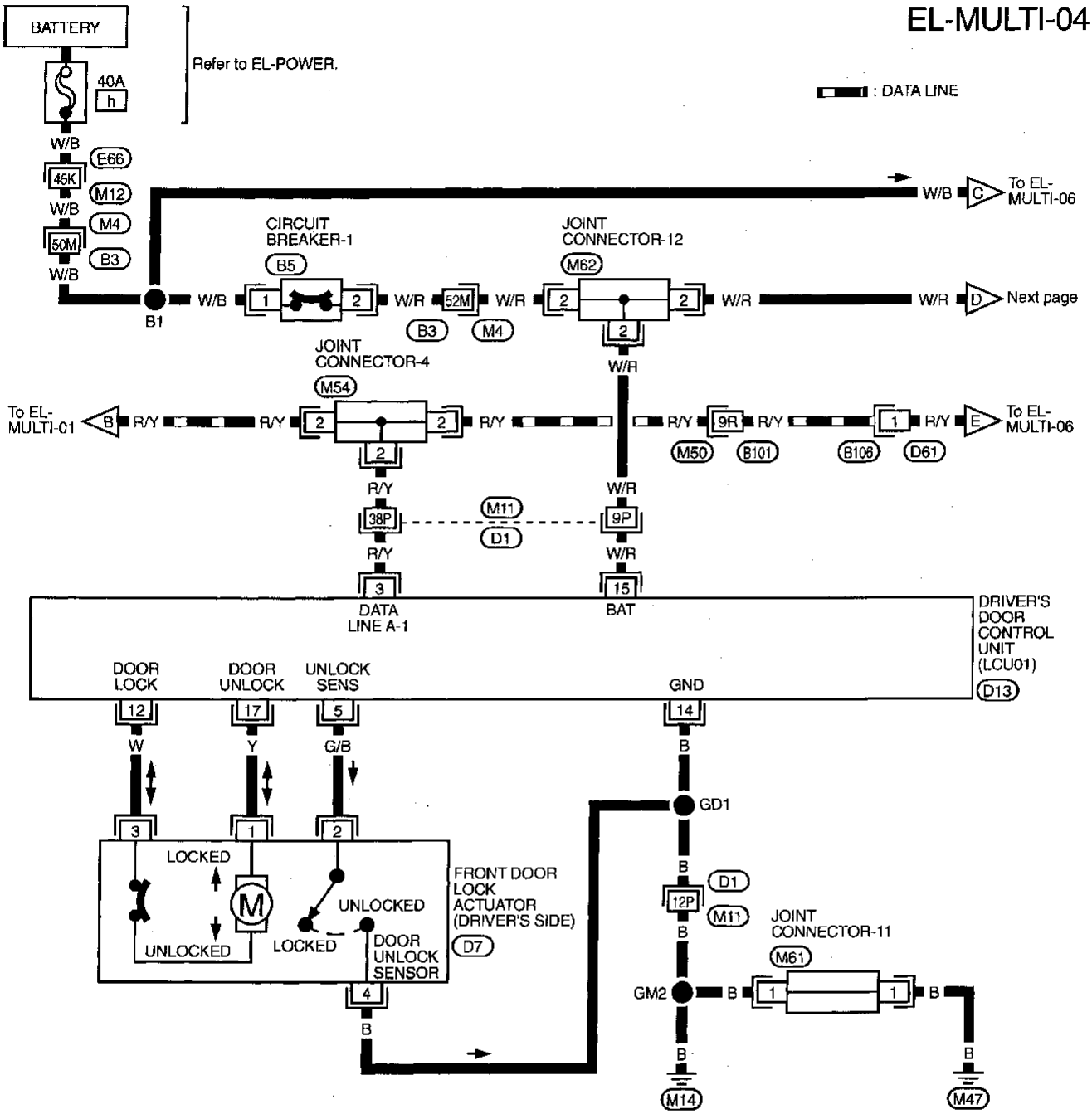
M50 , B101

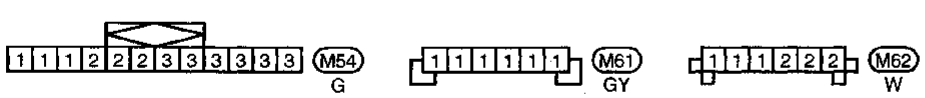
M22

TEL846

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04





Refer to last page (Foldout page).

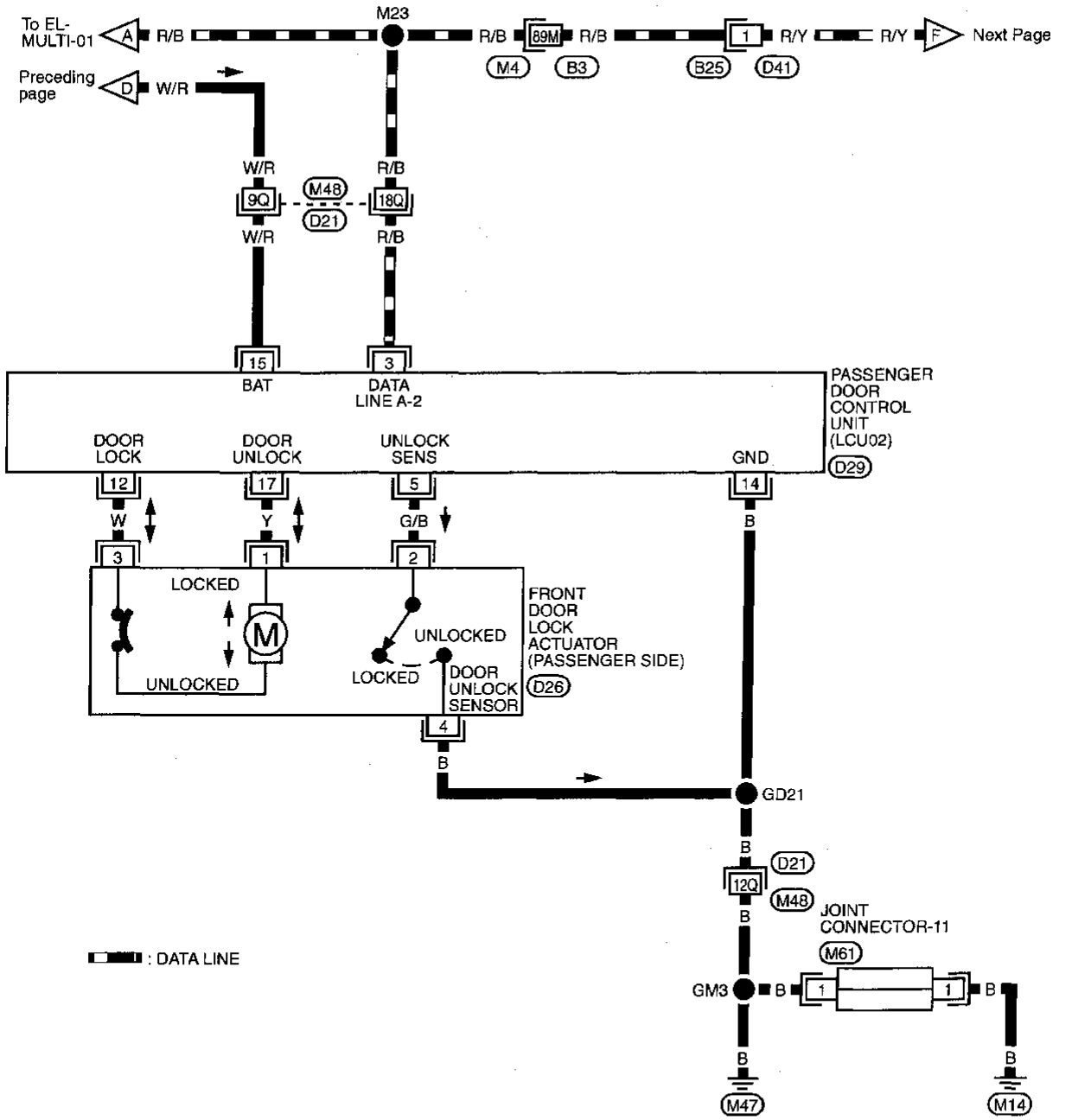
E66, M12
M4, B3
M11, D1
M50, B101

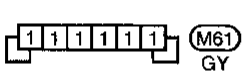
TEL847

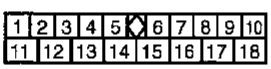
1709

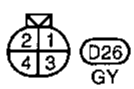
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-05







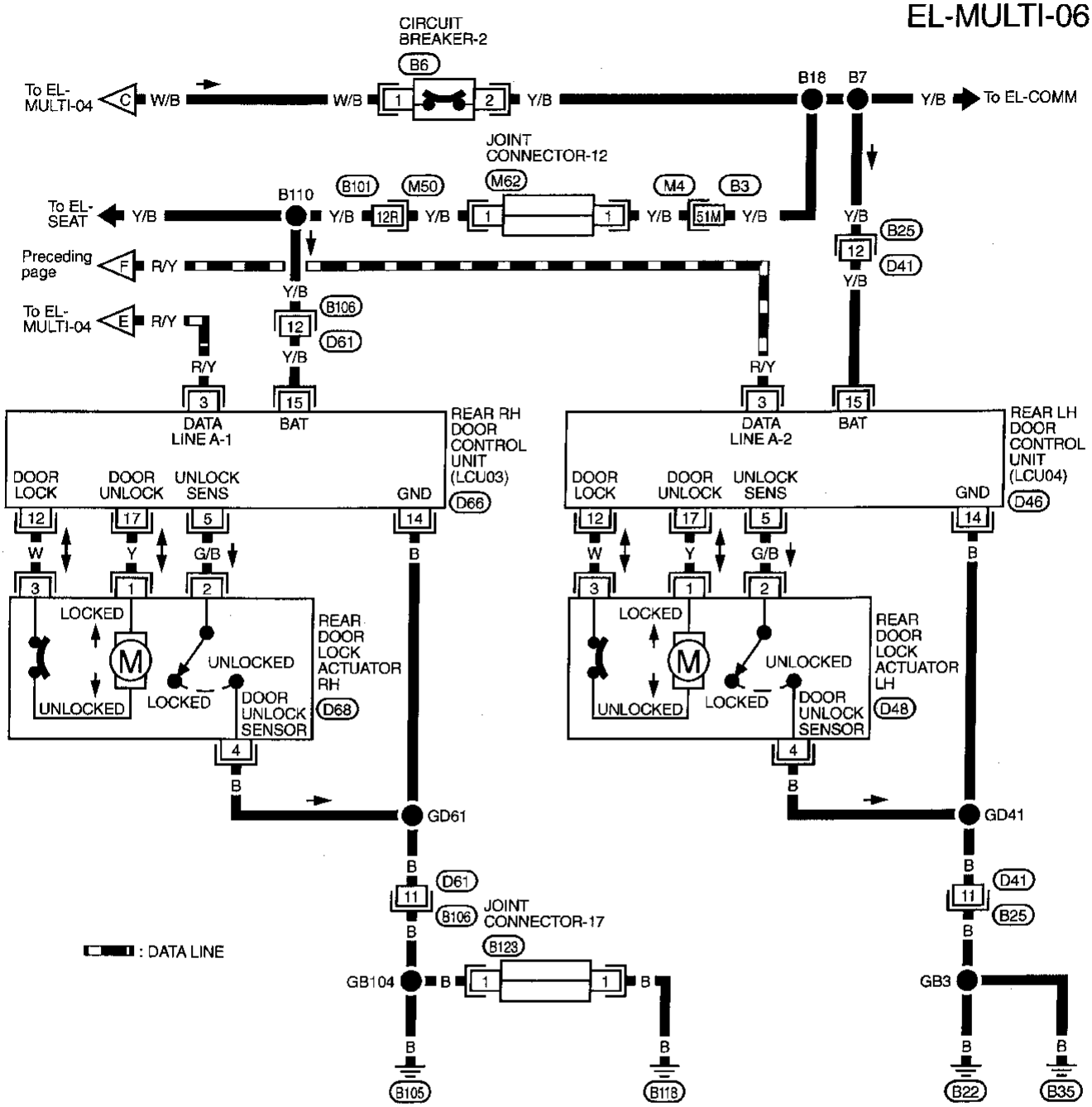


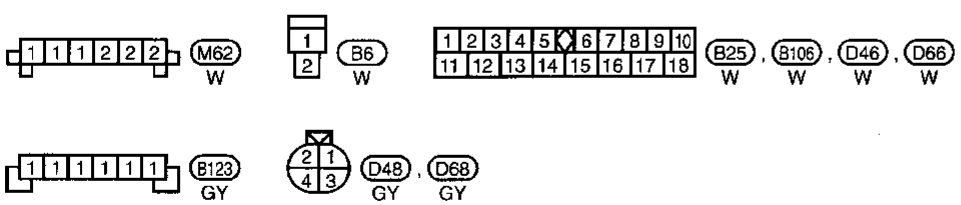
Refer to last page (Foldout page).
M4, B3
M48, D21

TEL848

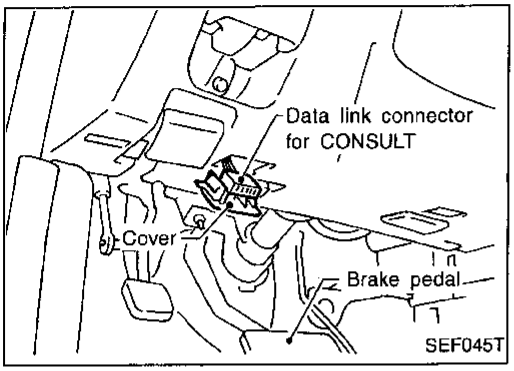
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-06





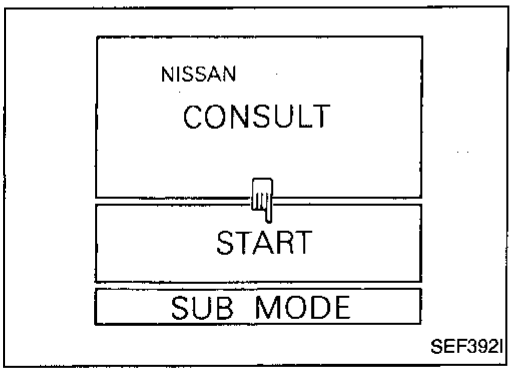
Refer to last page (Foldout page).
M4, B3
M50, B101



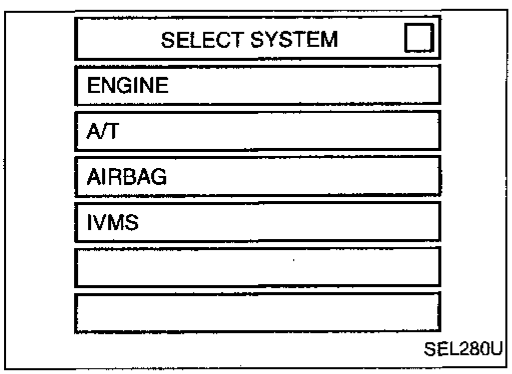
CONSULT

CONSULT INSPECTION PROCEDURE

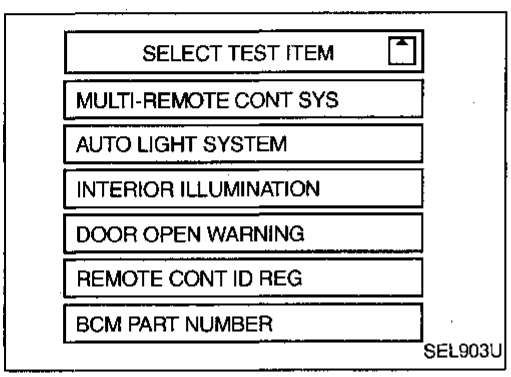
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



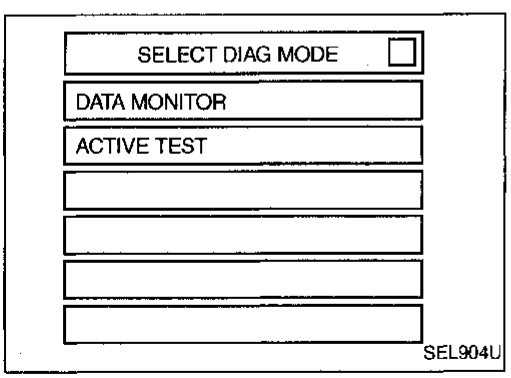
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



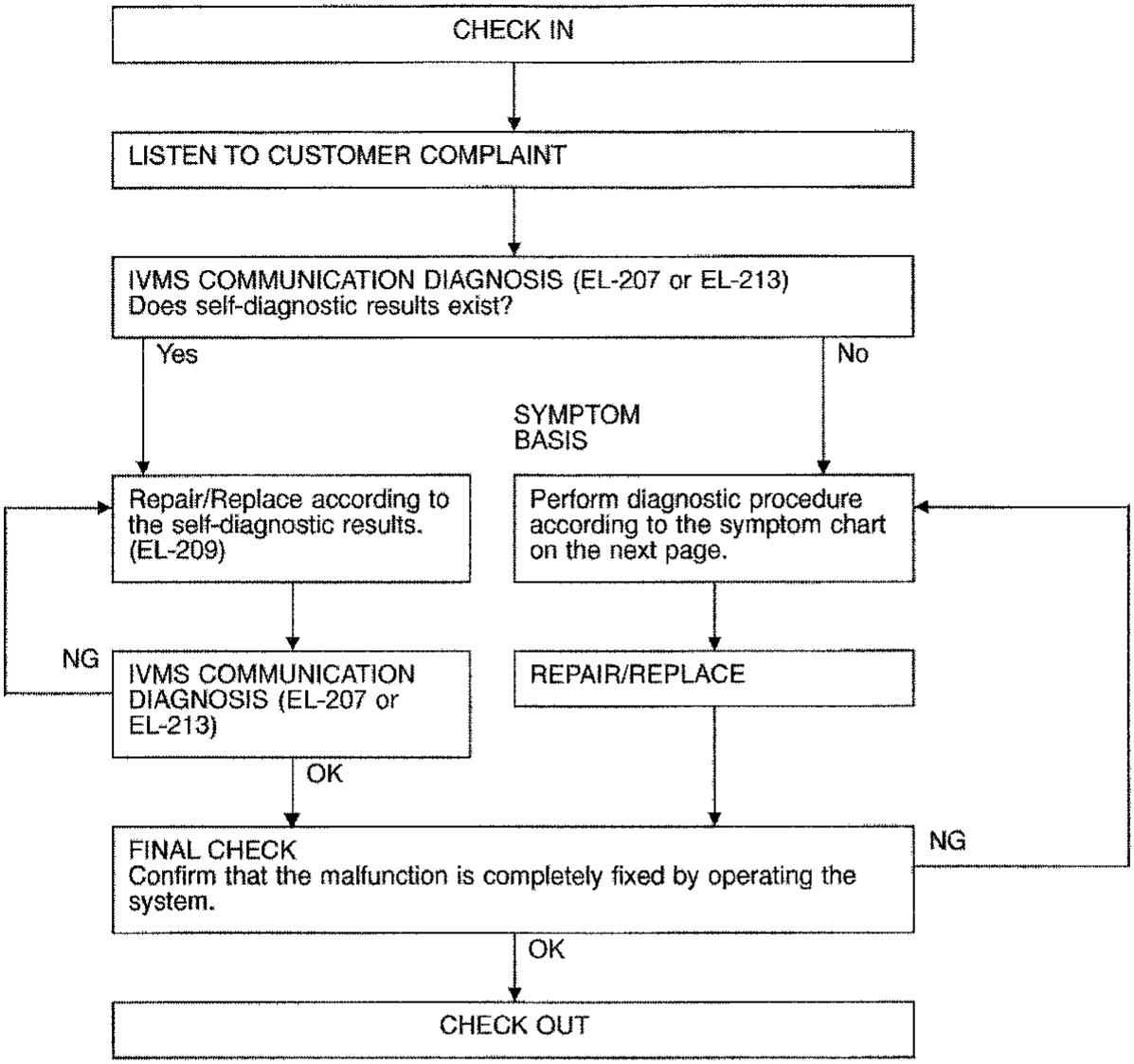
6. Touch "MULTI-REMOTE CONT SYS".



- DATA MONITOR and ACTIVE TEST are available for the multi-remote control system.

Trouble Diagnoses

WORK FLOW



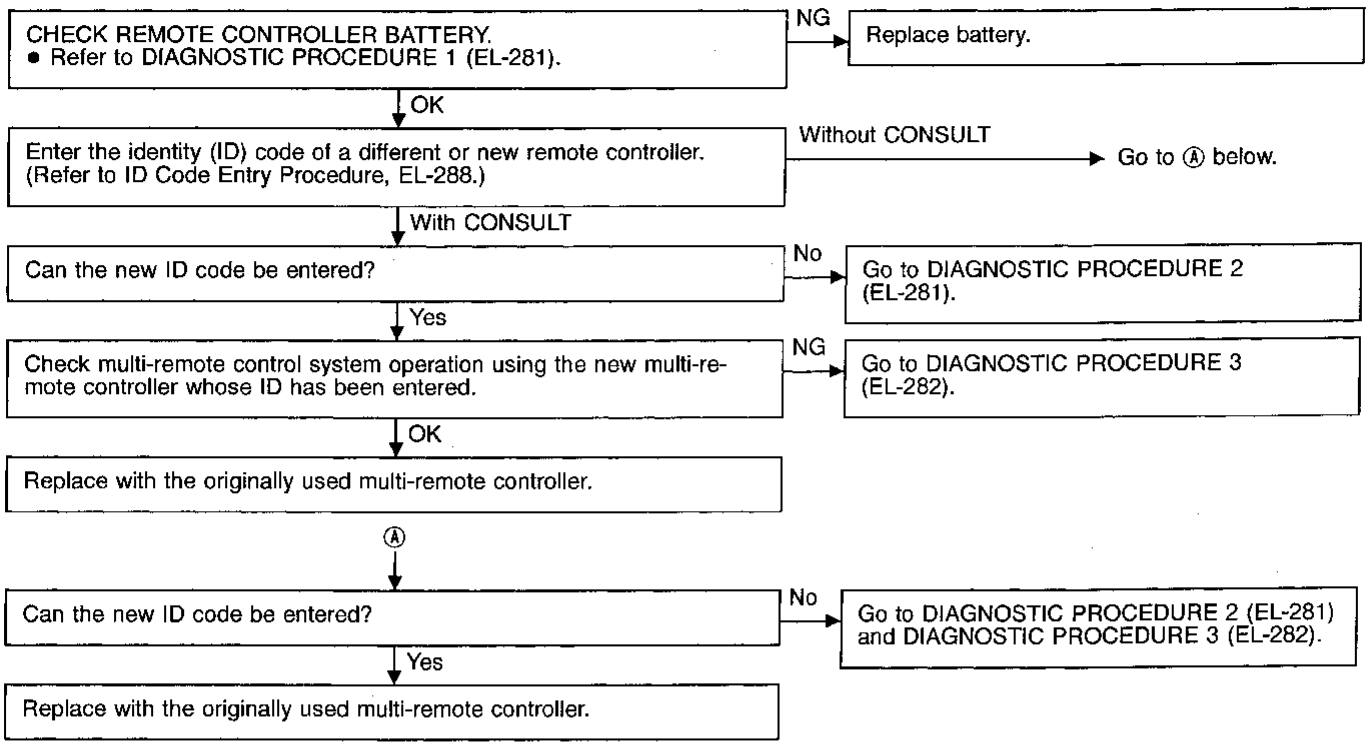
NOTICE:

- **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 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 (Refer to EL-207.) or turn the ignition switch to "OFF" position and remove 7.5A fuse [No. 14 located in the fuse block (J/B)].

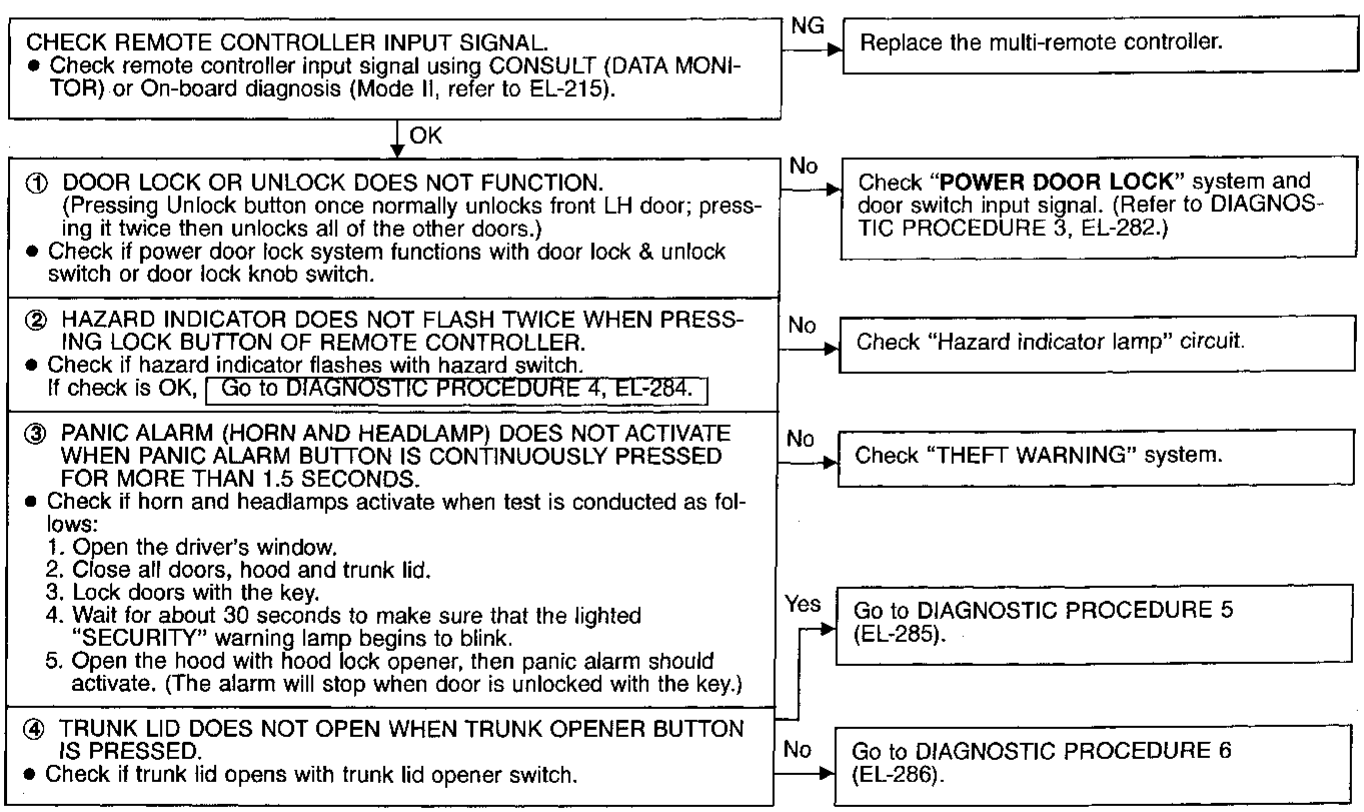
Trouble Diagnoses (Cont'd)

TROUBLE SYMPTOM

- All functions of remote control system do not function.



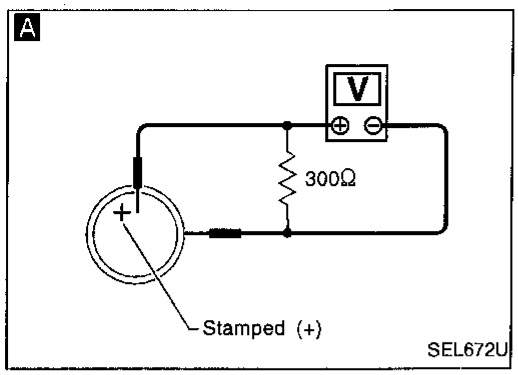
- Multi-remote controller does not operate a part of the functions.



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



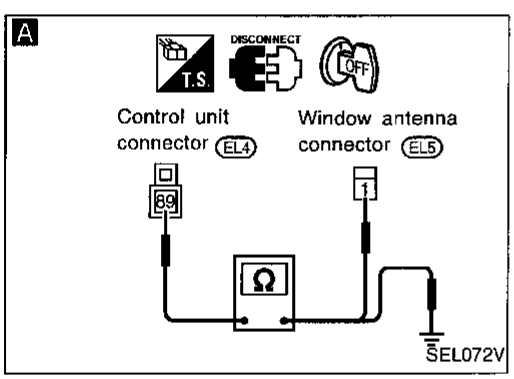
A

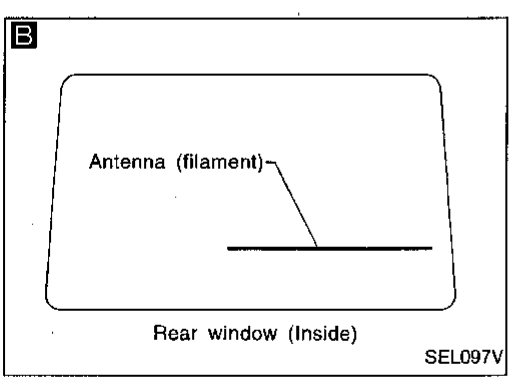
CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

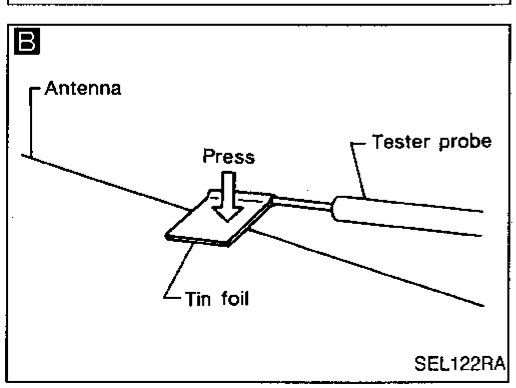
Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

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

DIAGNOSTIC PROCEDURE 2







A

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

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".

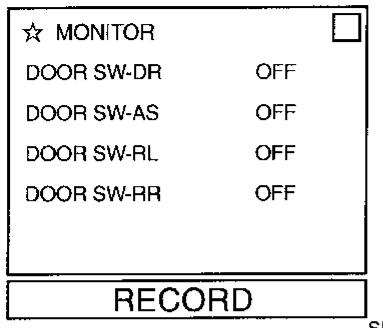
OK ↓

Antenna of multi-remote control is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

A



CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT

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

OR

ON-BOARD

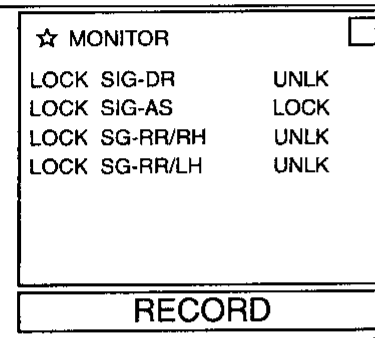
Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-274.

NG → Check the following.
- Door switch
  Refer to "Electrical Components Inspection" (EL-287).
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between BCM and door switch

OK ↓

B



CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

B CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON-BOARD

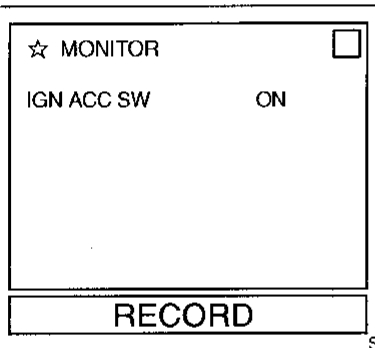
Check door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-275, 276 or 277.

NG → Check the following.
- Door unlock sensor
  Refer to "Electrical Components Inspection" (EL-287).
- Door unlock sensor ground circuit
- Harness for open or short between LCU and unlock sensor

OK ↓

C



CHECK IGNITION SWITCH "ACC" CIRCUIT.

C CONSULT

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

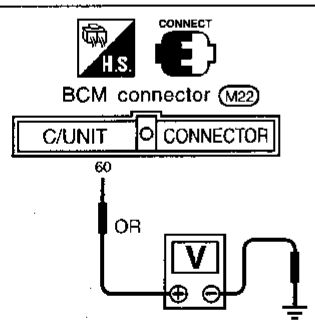
Refer to wiring diagram in EL-272.

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

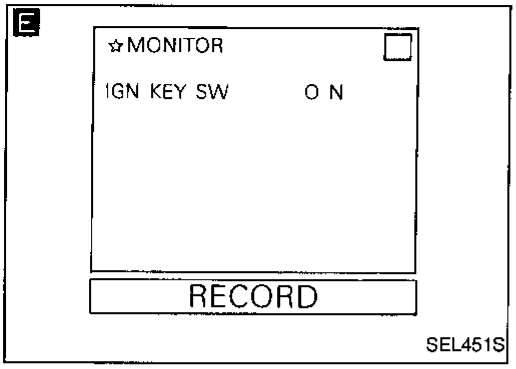
OK ↓

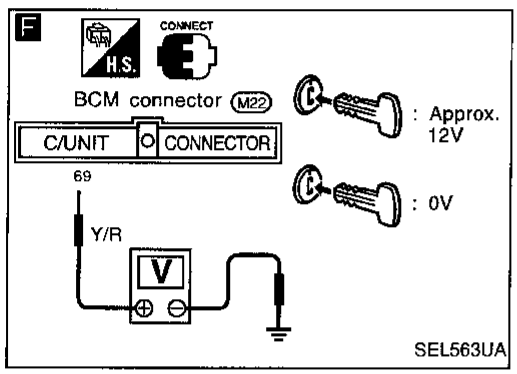
Ⓐ

D



Trouble Diagnoses (Cont'd)





Ⓐ

CHECK KEY SWITCH INPUT SIGNAL.

E CONSULT

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

NG → Check the following.
- 10A fuse [No. 28], located in fuse block (J/B)]
- Key switch
  Refer to "Electrical Components Inspection" (EL-287).
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

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-273.

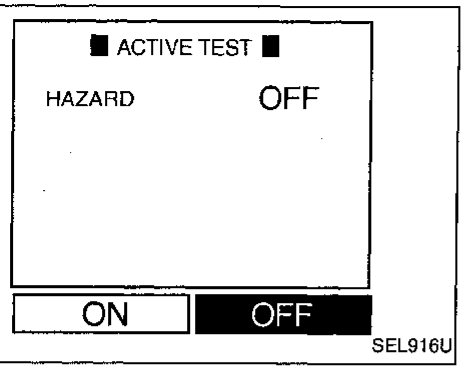
OK ↓

Check operation parts in multi-remote control system for function.

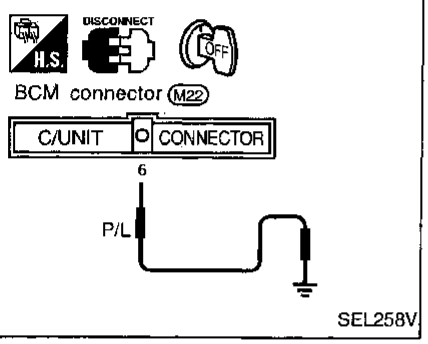
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

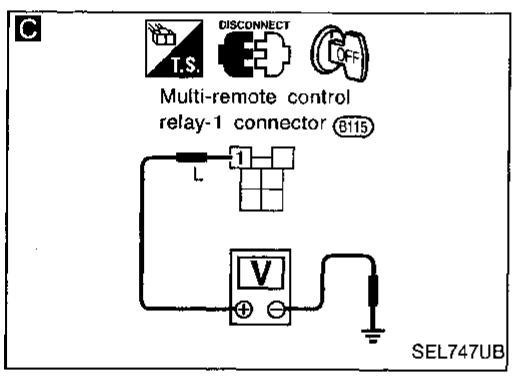
A



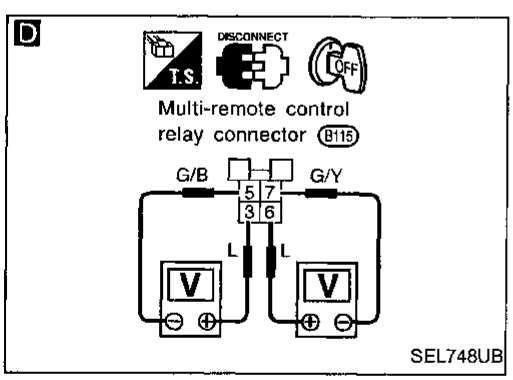
B



C



D



CHECK HAZARD INDICATOR OPERATION.

A CONSULT

See "HAZARD" in ACTIVE TEST mode.
Perform operation shown on display.
Hazard warning lamp should illuminate.

OR

B

1. Disconnect control unit connector.
2. Apply ground to BCM terminal ⑥.
   Does hazard indicator illuminate?

   Refer to wiring diagram in EL-273.

Yes → Hazard indicator is OK.

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.

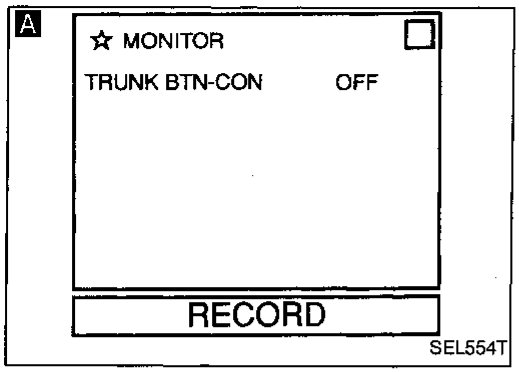
NG → Check harness for open or short.

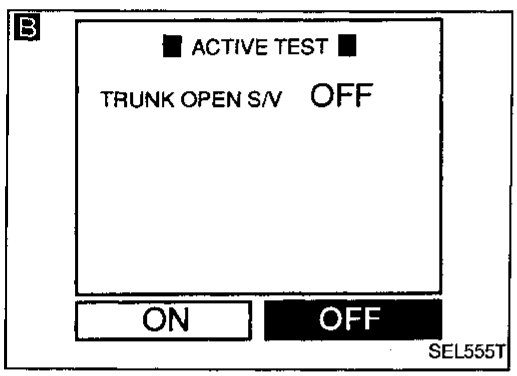
OK ↓

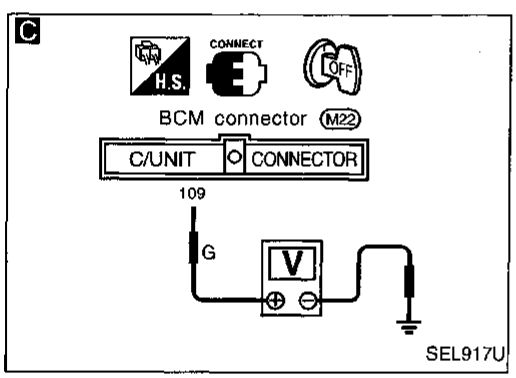
Check harness for open or short between BCM and multi-remote control relay.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5







CHECK MULTI-REMOTE CONTROLLER OPERATION.

A CONSULT

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-215).

OK ↓

CHECK TRUNK LID OPENER CIRCUIT.

B CONSULT

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-273.

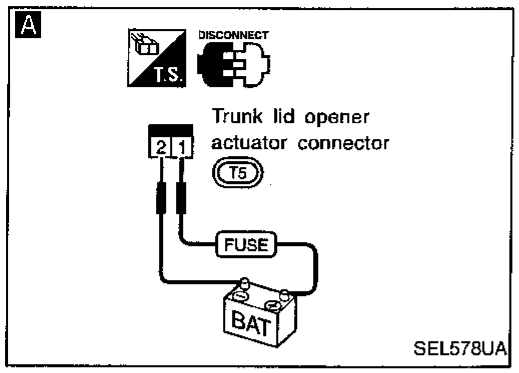
NG ↓

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

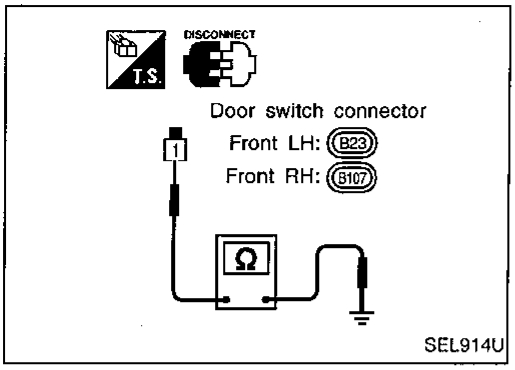
CHECK TRUNK LID OPENER ACTUATOR.
1. Disconnect trunk lid opener actuator connector.
2. Check to see if trunk lid opens when 12V DC is applied across trunk lid opener actuator connector terminals ① and ② .

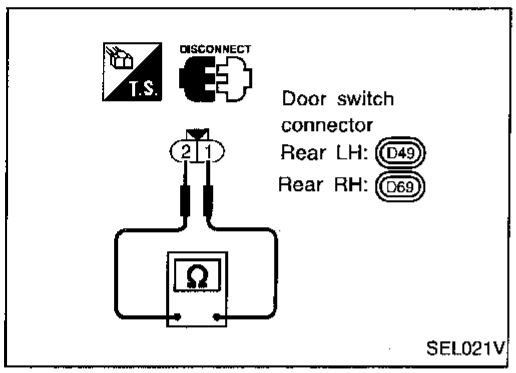
Refer to wiring diagram in EL-273.

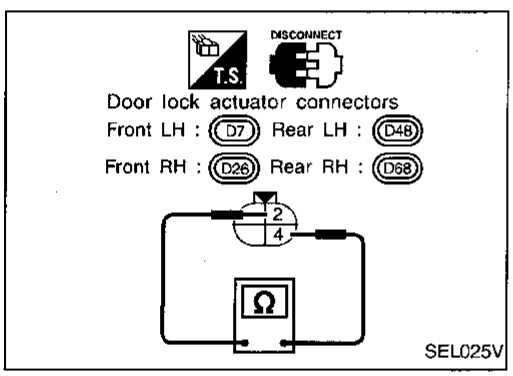
NG → Replace trunk lid opener actuator.

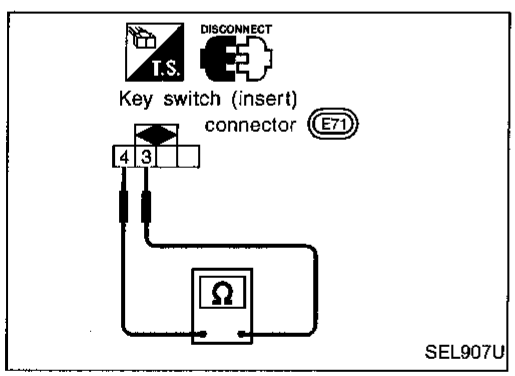
OK ↓

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

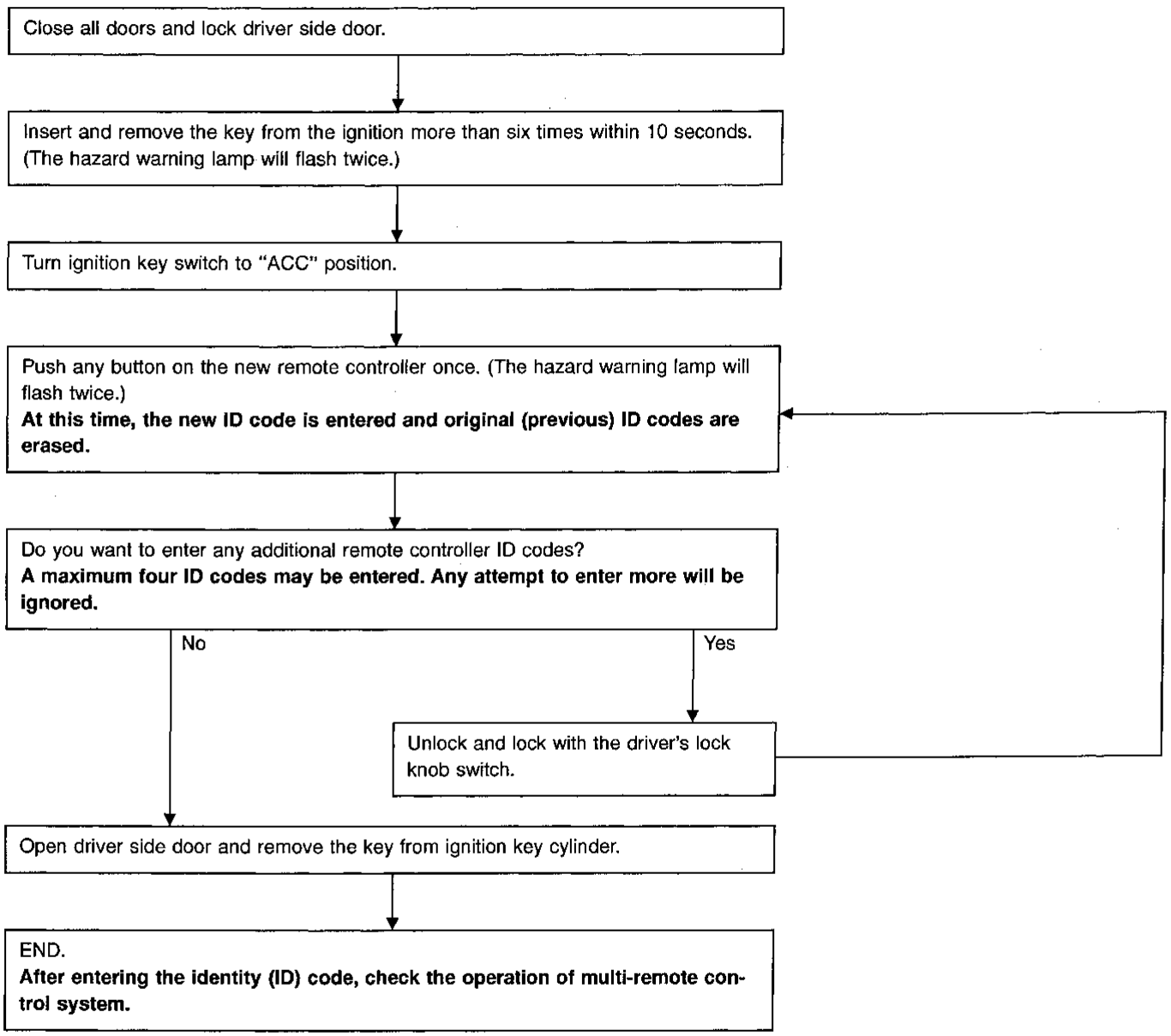
Enter the identity (ID) code manually when:

- **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)



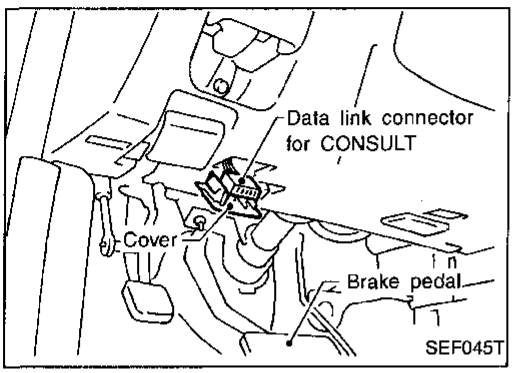
NOTE

- **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.**

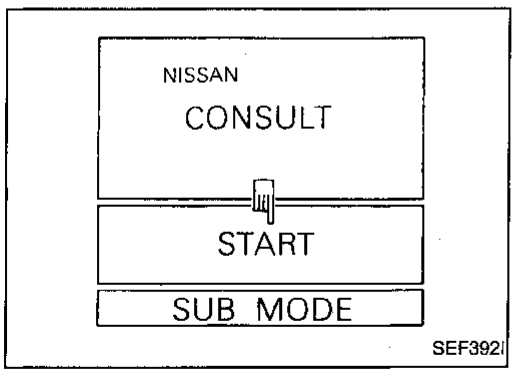
ID Code Entry Procedure (Cont'd)

PROCEDURE 2 (With CONSULT)

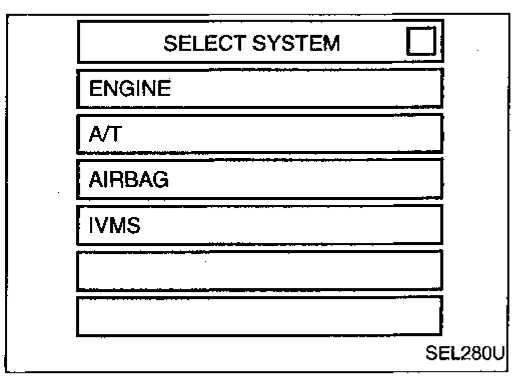
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



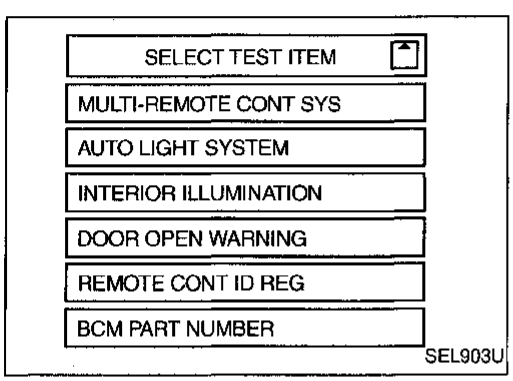
3. Turn ignition switch "ON".
4. Touch "START".



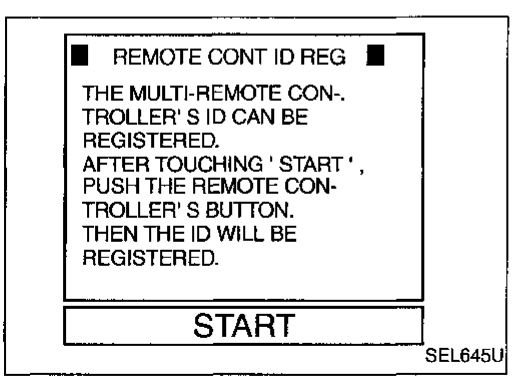
5. Touch "IVMS".



6. Touch "REMOTE CONT ID REG".

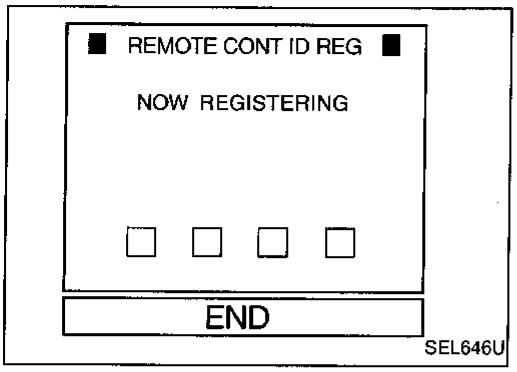


7. Touch "START".

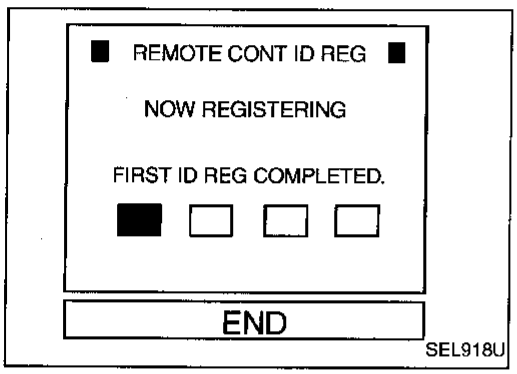


- **At this time, the original ID codes are eliminated. (Then power door lock will lock, unlock, and the hazard warning lamp will flash twice.)**

ID Code Entry Procedure (Cont'd)



8. Push lock 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.**

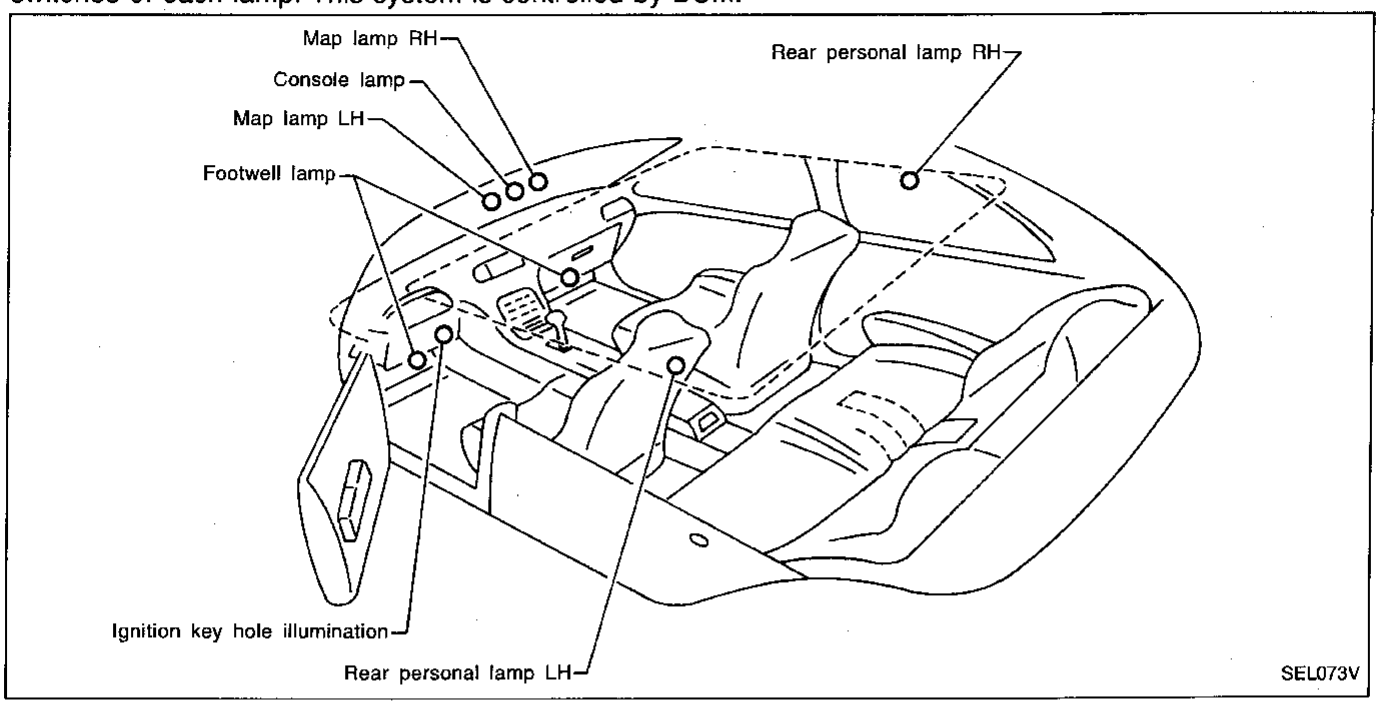
NOTE

- **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.



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.

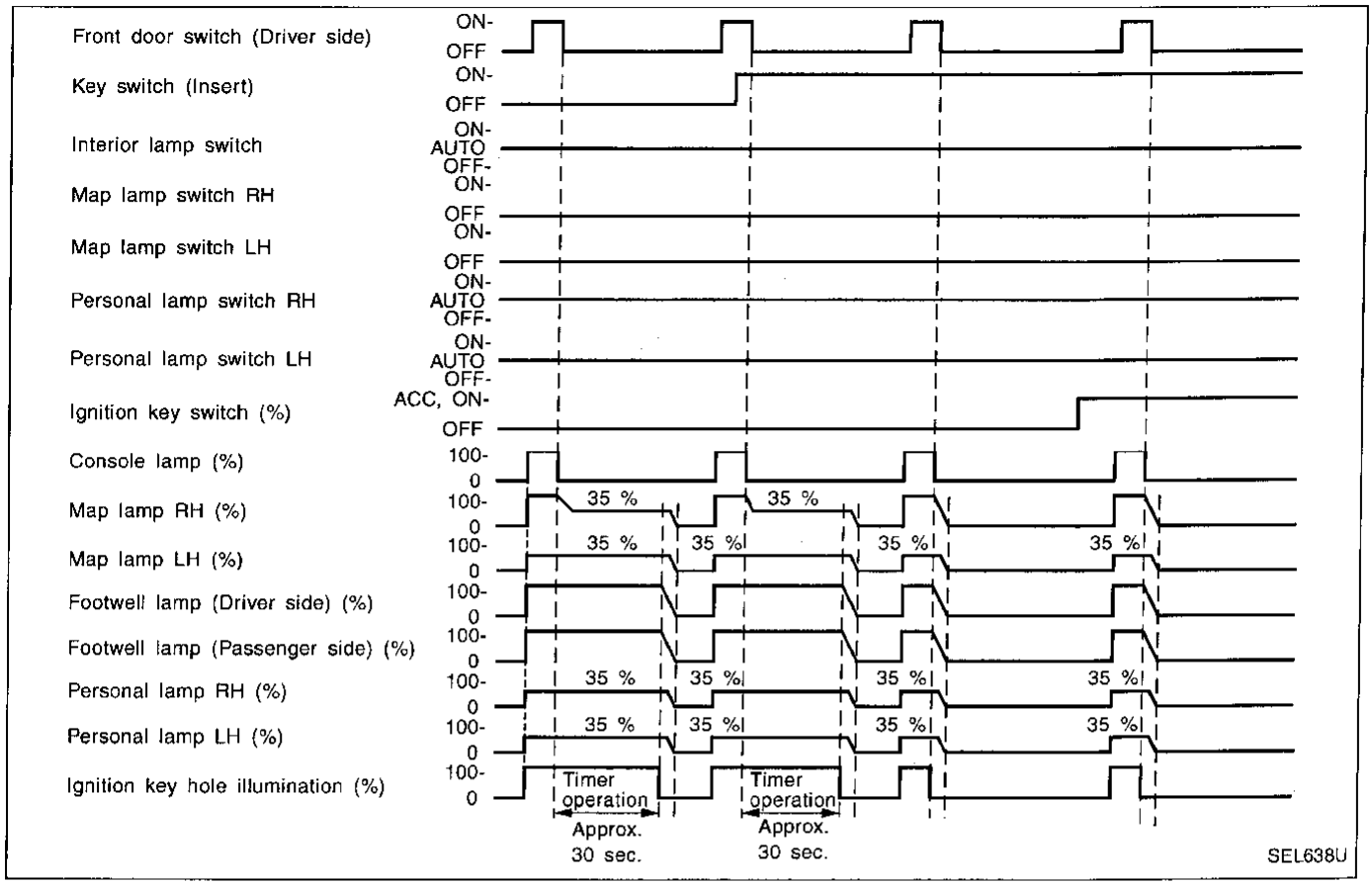
- For details of turning on/off function of each of the lamps, see the following charts.

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)

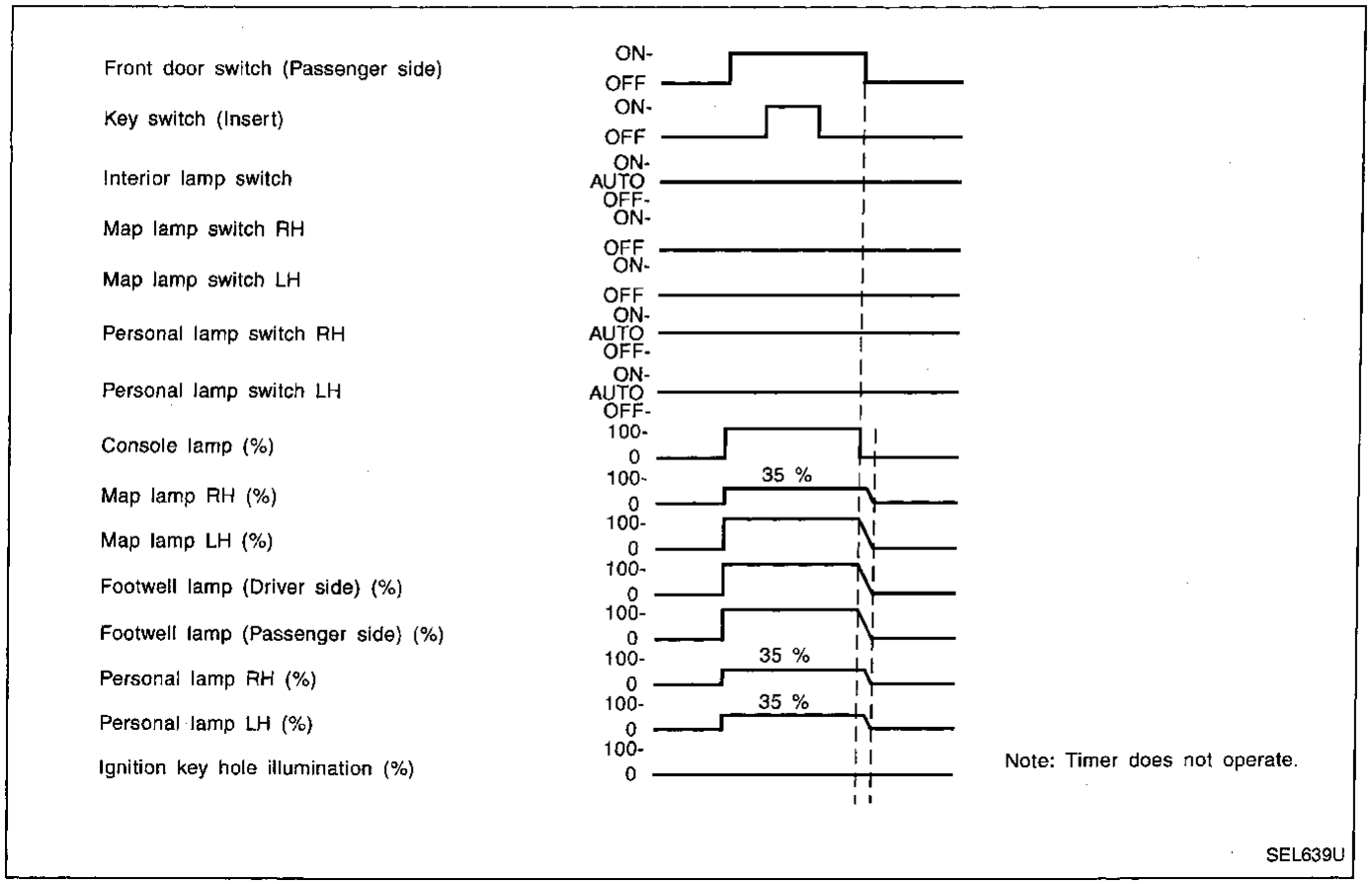
TURN ON/OFF MODE OF DRIVER SIDE DOOR OPEN/CLOSE



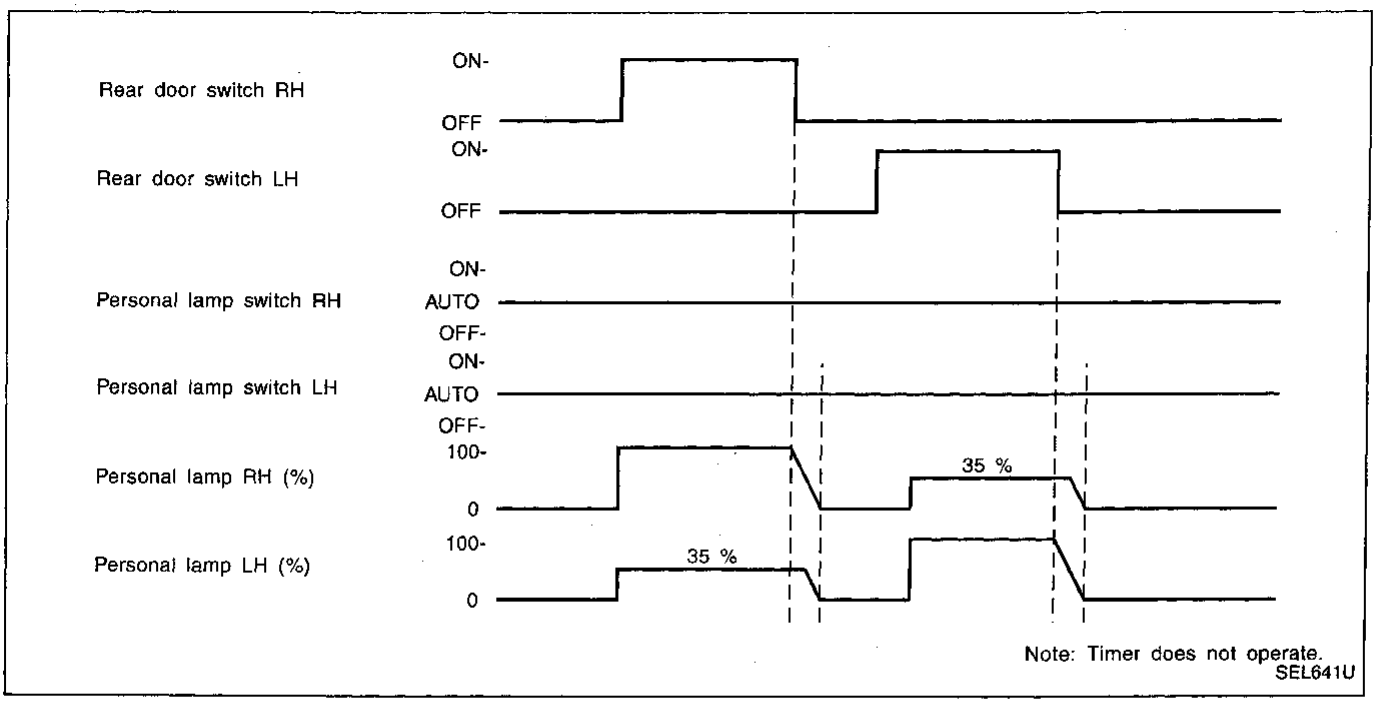
Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

System Description (Cont'd)

TURN ON/OFF MODE OF PASSENGER SIDE DOOR OPEN/CLOSE



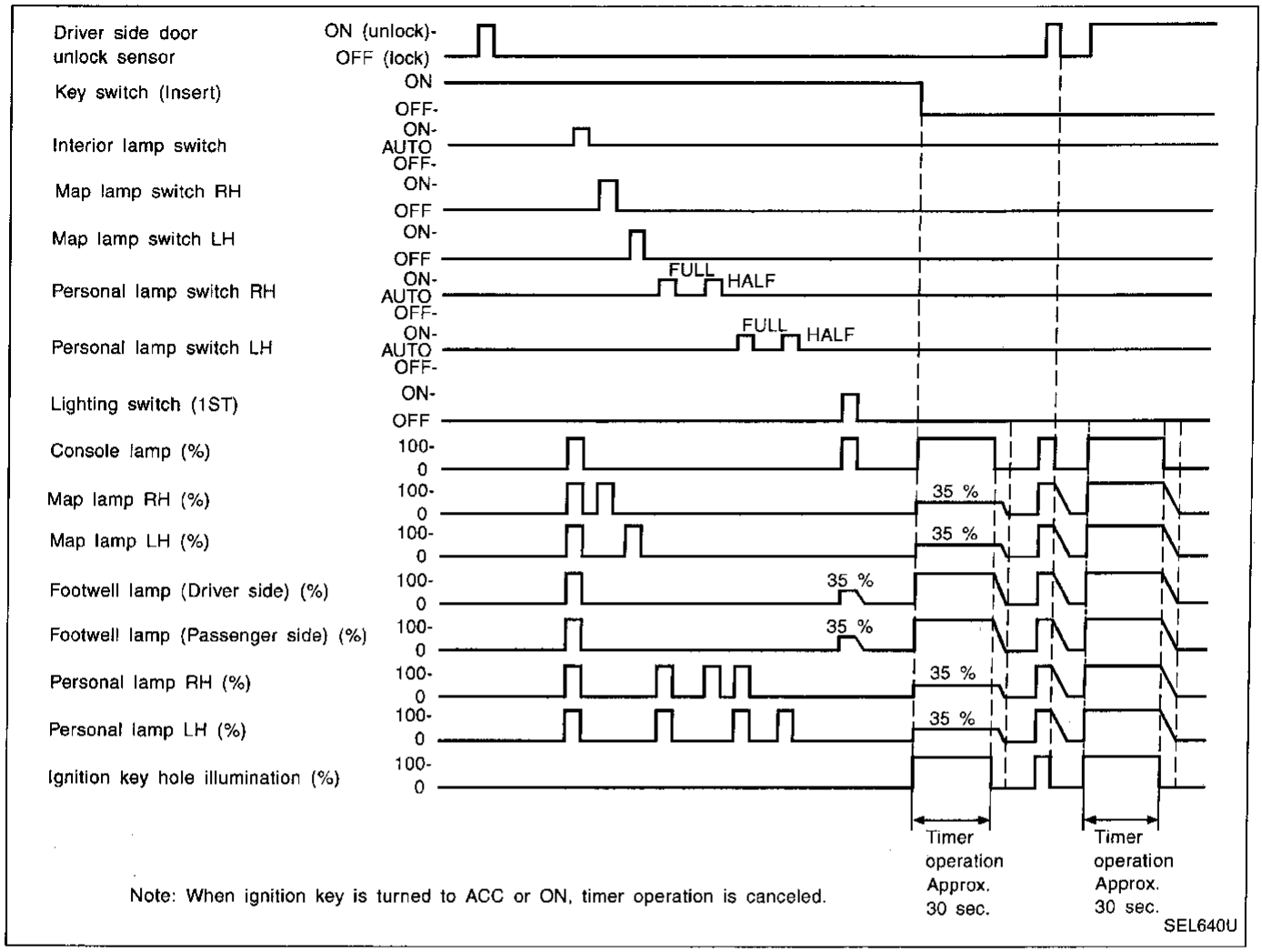
TURN ON/OFF MODE OF REAR DOOR OPEN/CLOSE



Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

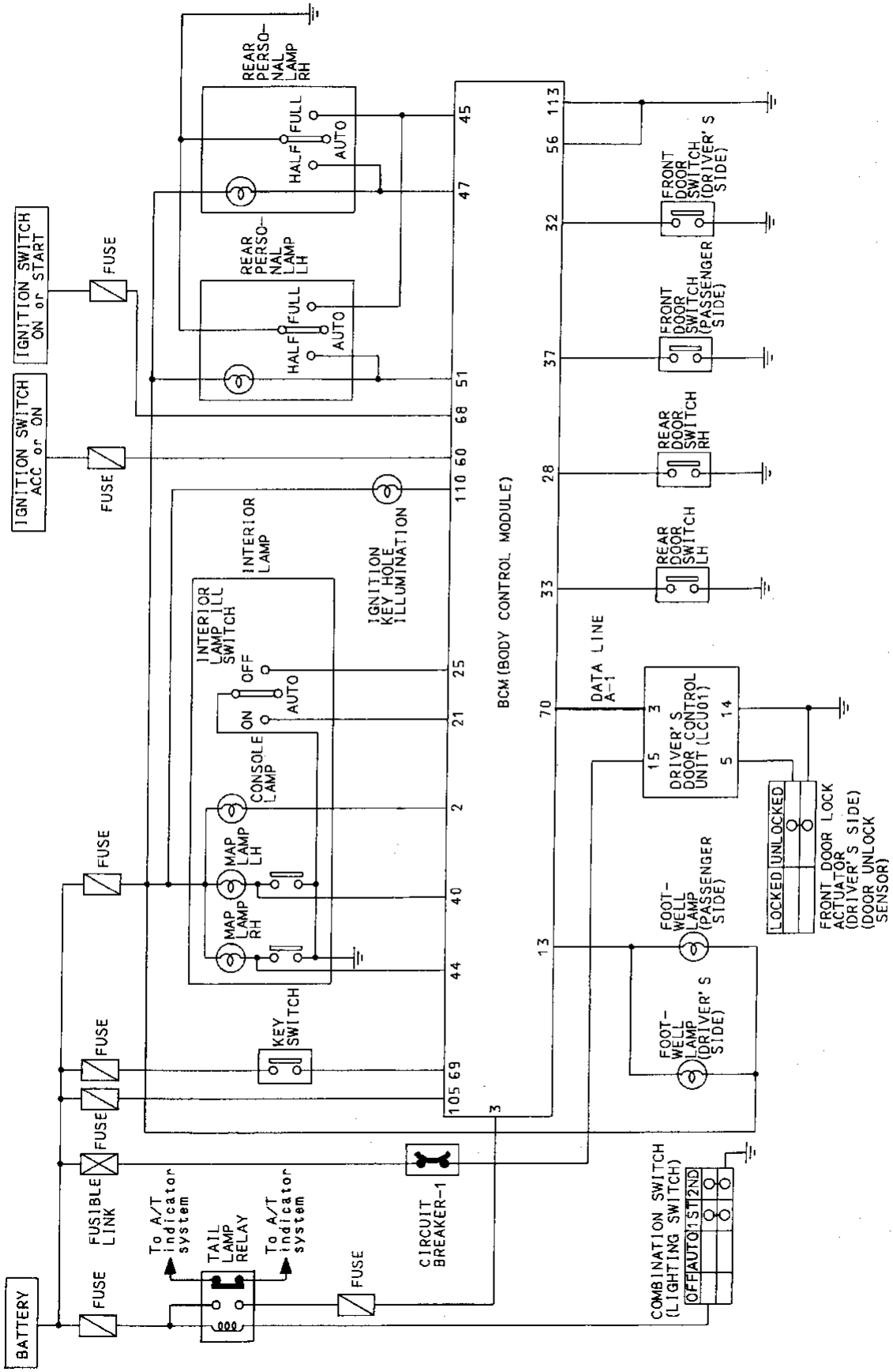
System Description (Cont'd)

TURN ON/OFF MODE OF EACH SWITCH CONDITION



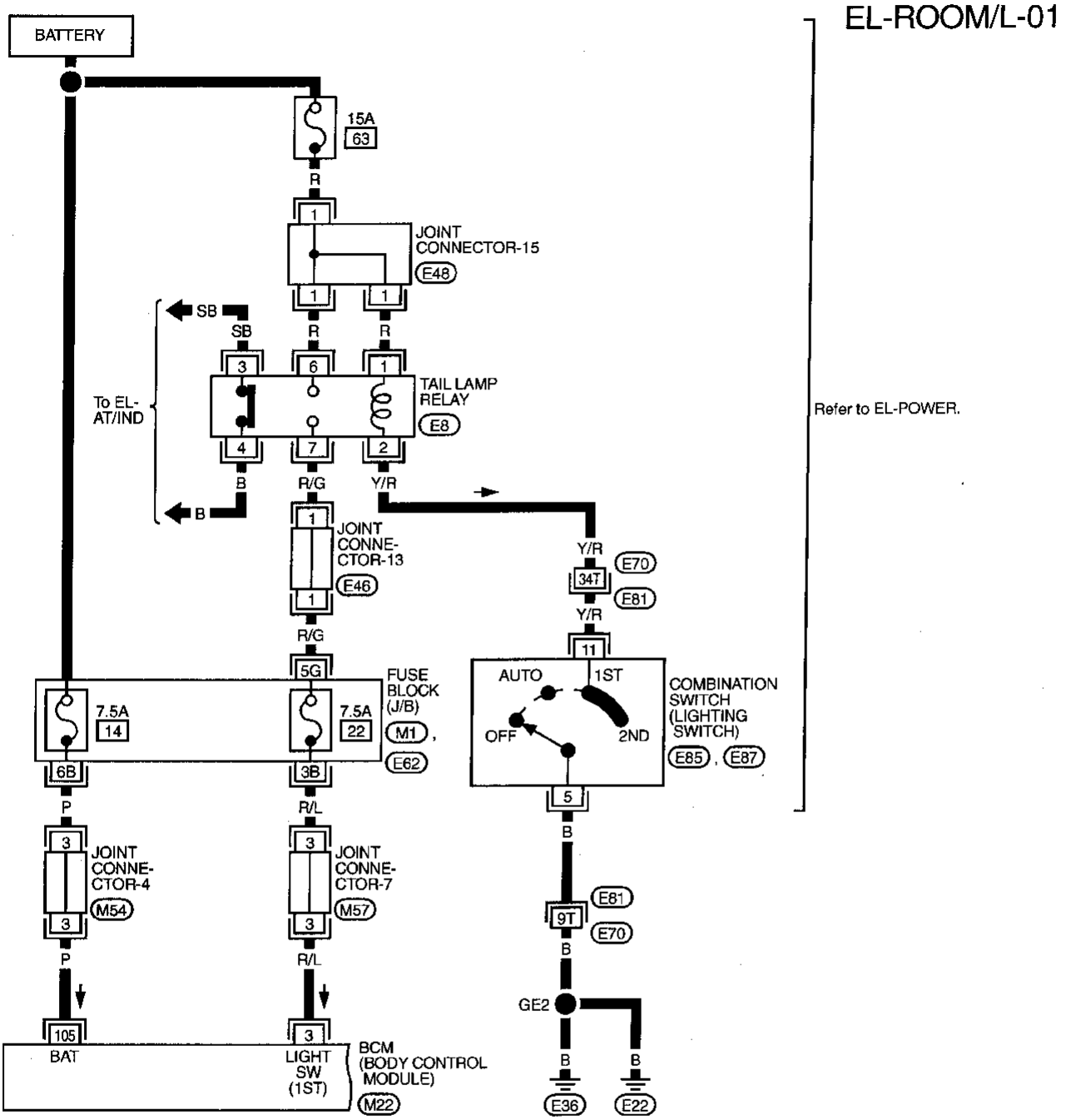
Note: Illumination lamp lighting is available in both 100% and 35% luminosity modes.

Schematic



TEL850

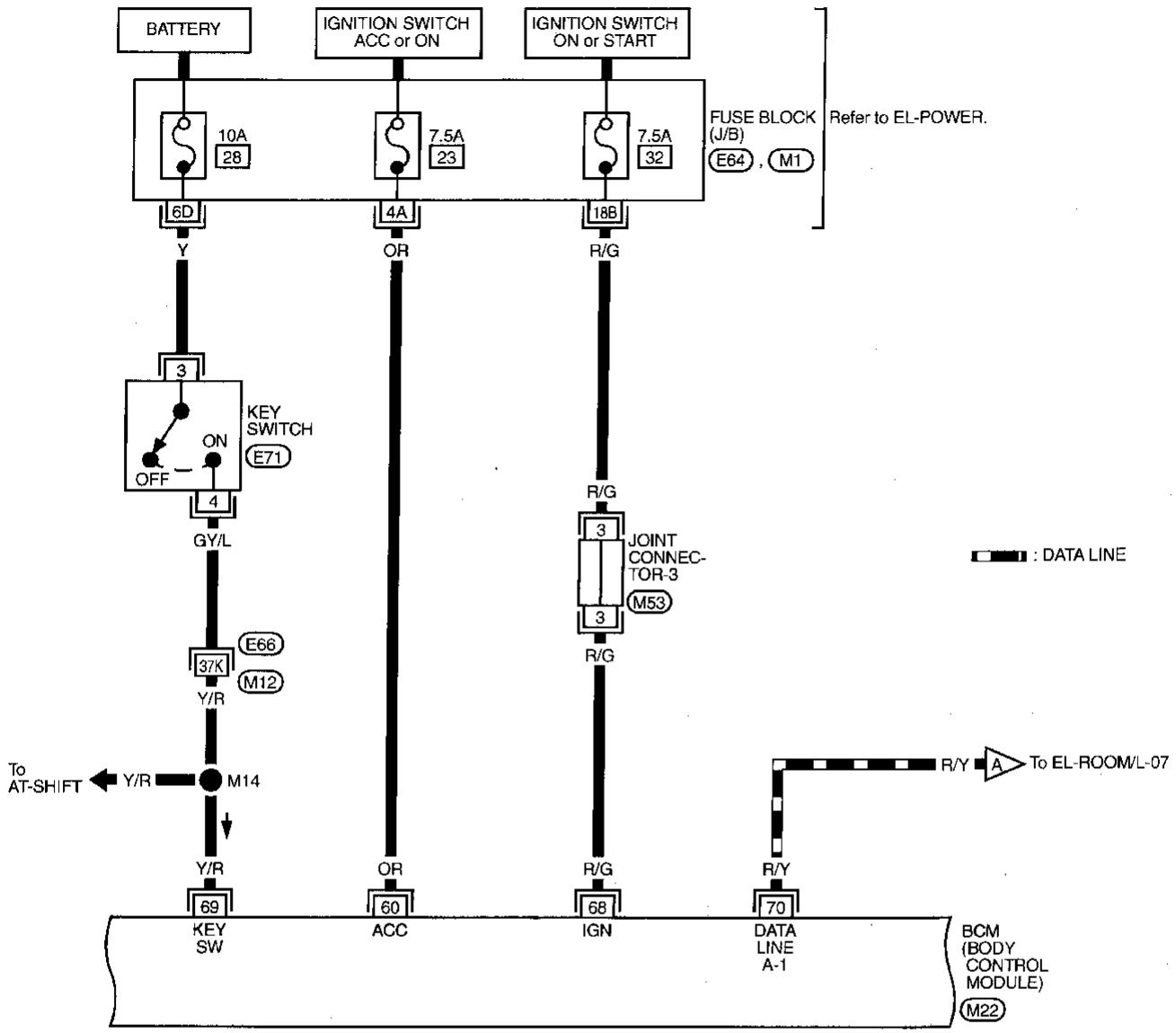
Wiring Diagram — ROOM/L —

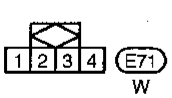


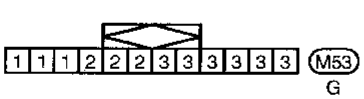
TEL221A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-02







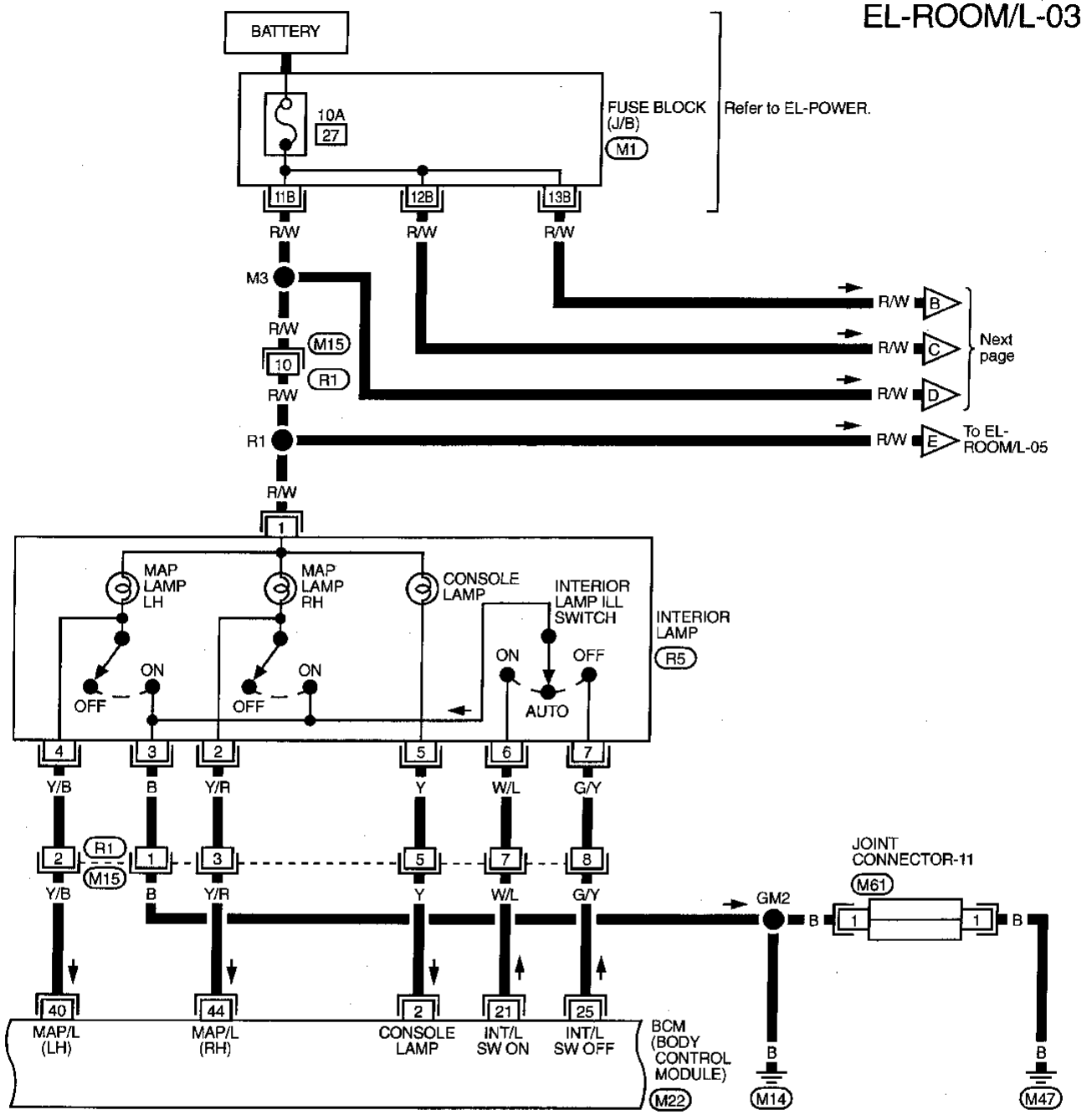
Refer to last page (Foldout page).
E66, M12
E64
M1
M22

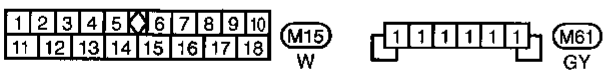
TEL852

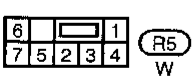
1731

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-03







Refer to last page (Foldout page).

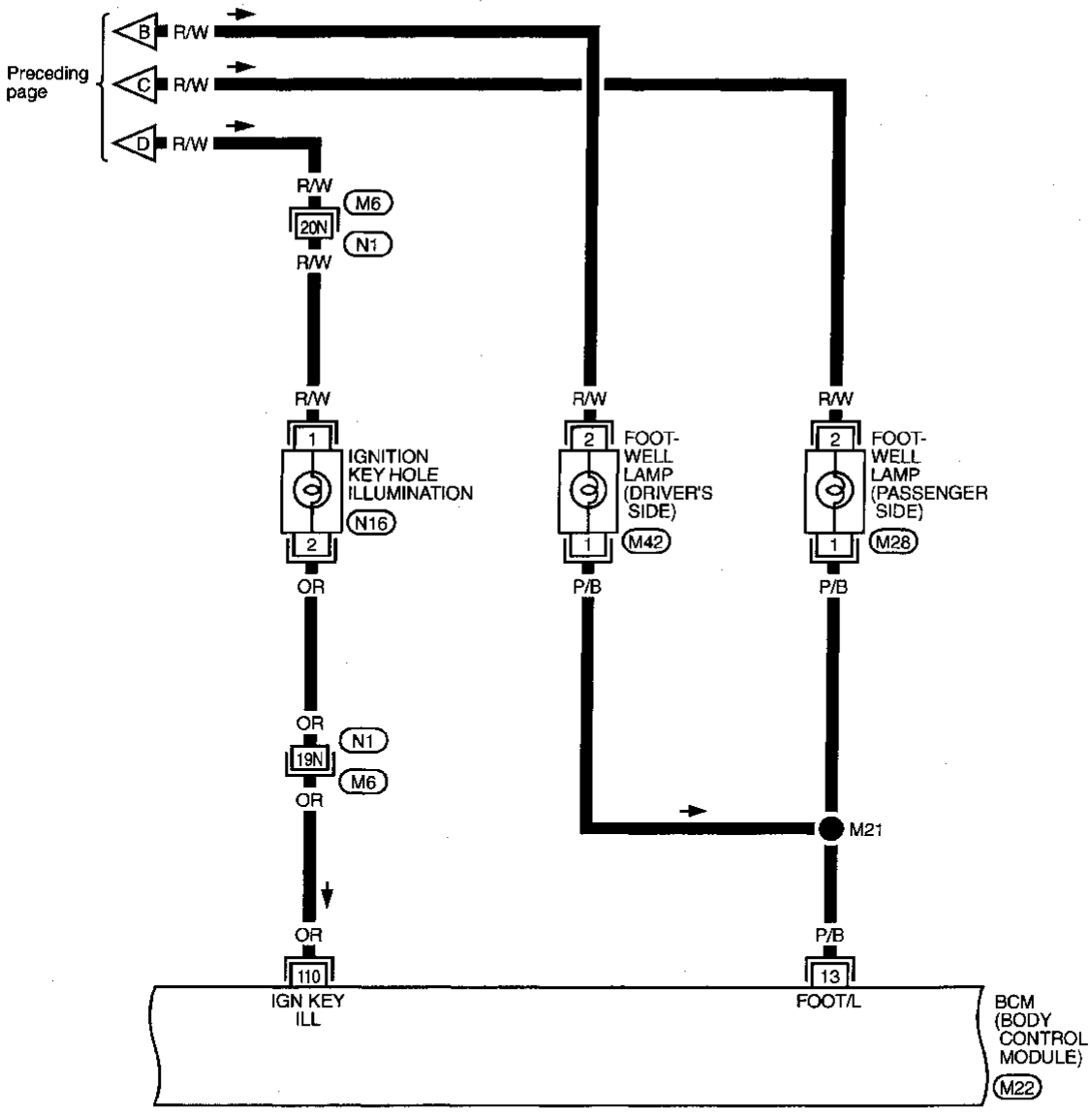
M1

M22

TEL222A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-04



M28, M42 W

N16 W

Refer to last page (Foldout page).

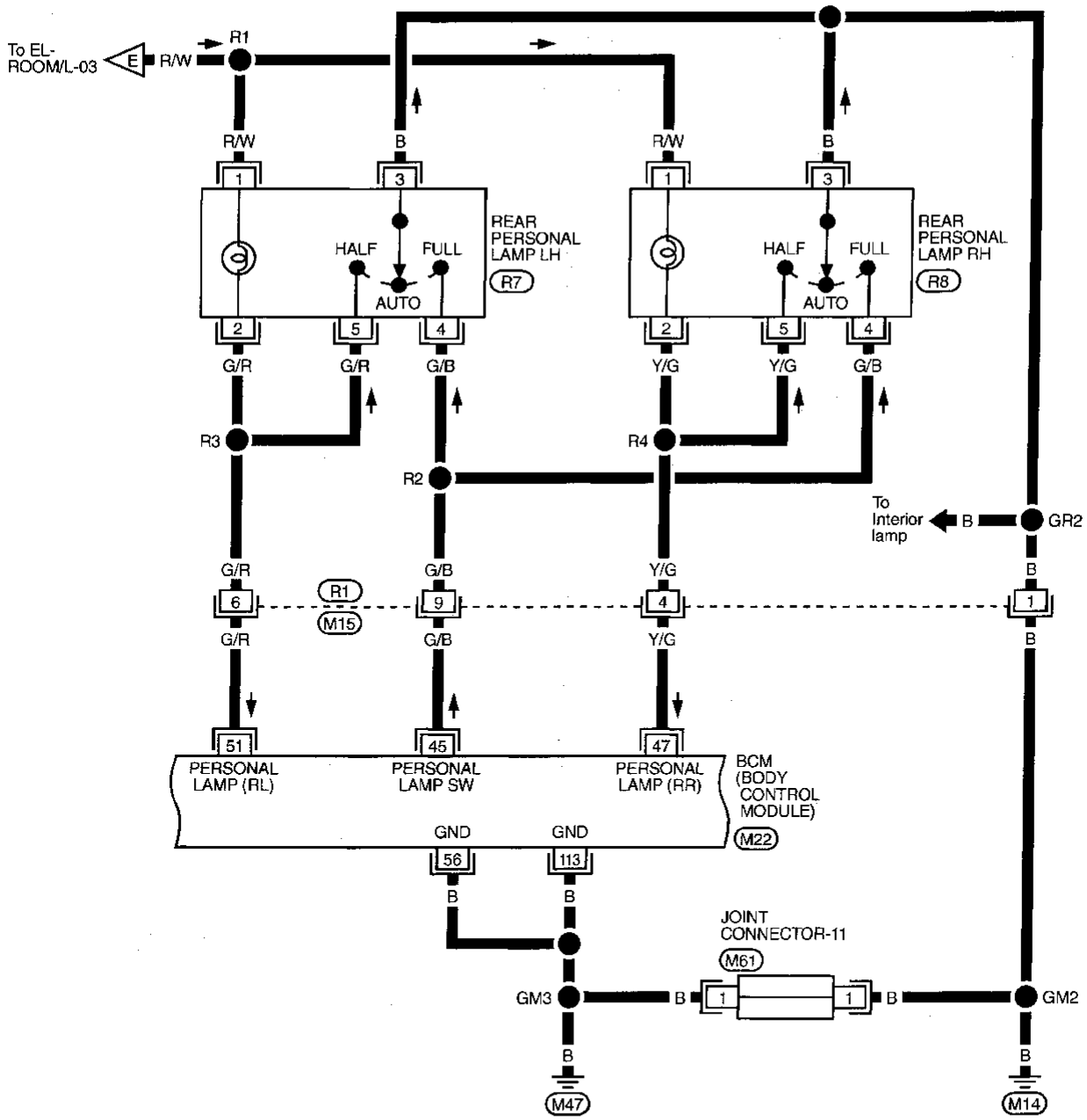
M6, N1

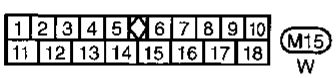
M22

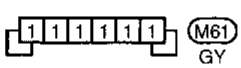
TEL223A

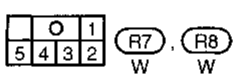
Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-05




M15 W


M61 GY

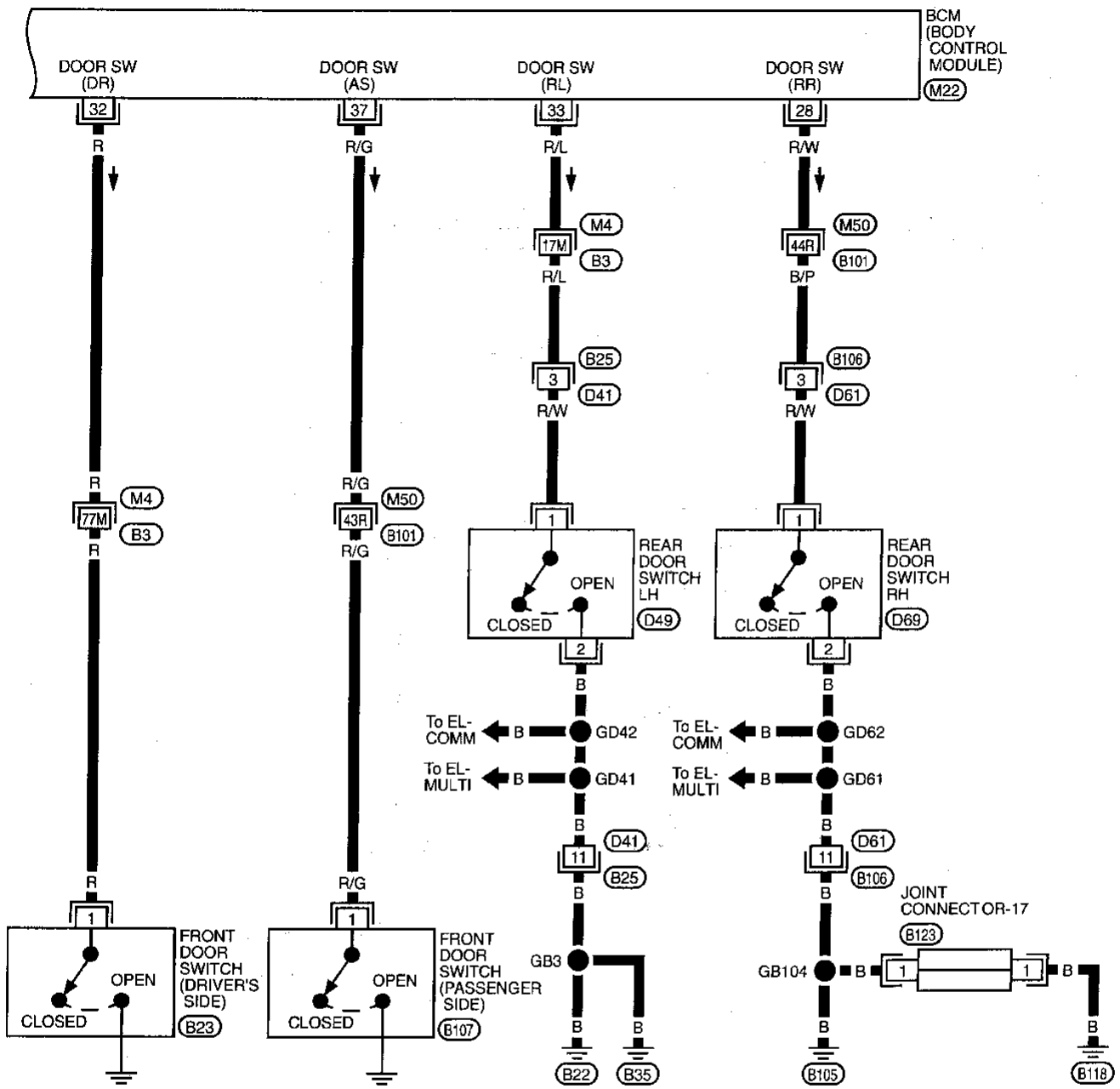

R7 W, R8 W

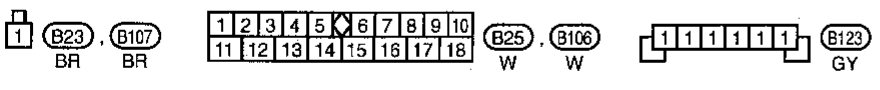
Refer to last page (Foldout page).
M22

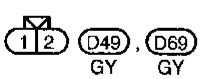
TEL224A

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-06







Refer to last page (Foldout page).

M4, B3

M50, B101

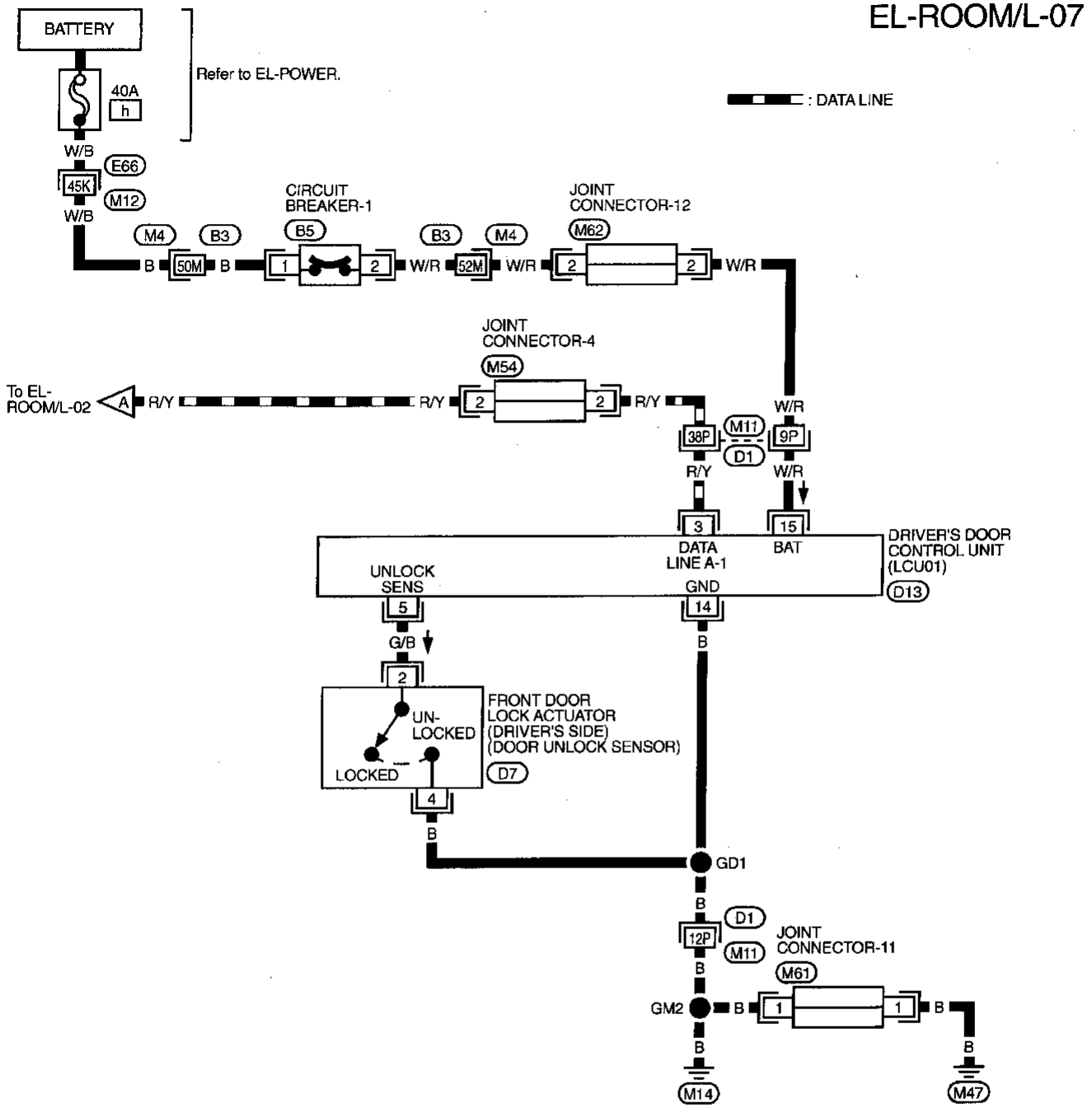
M22

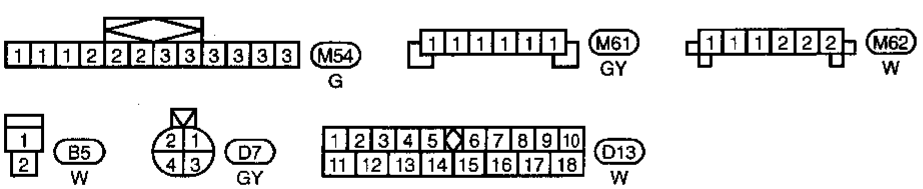
TEL225A

1735

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-07





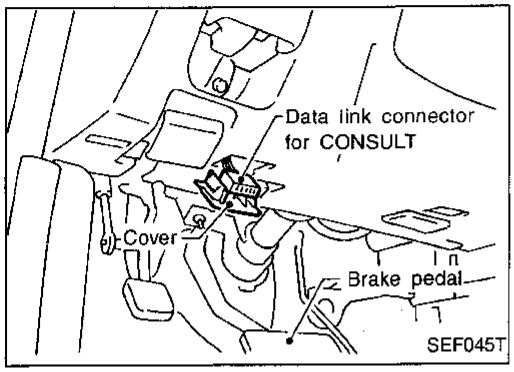
Refer to last page (Foldout page).

E66 , M12

M4 , B3

M11 , D1

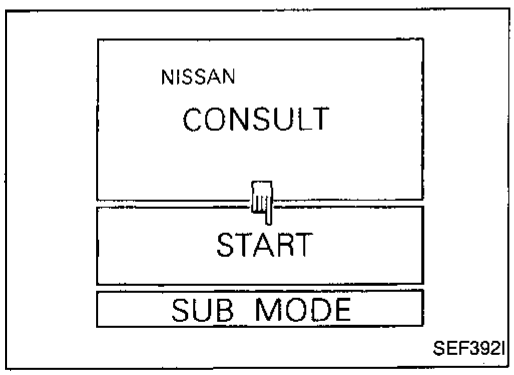
TEL226A



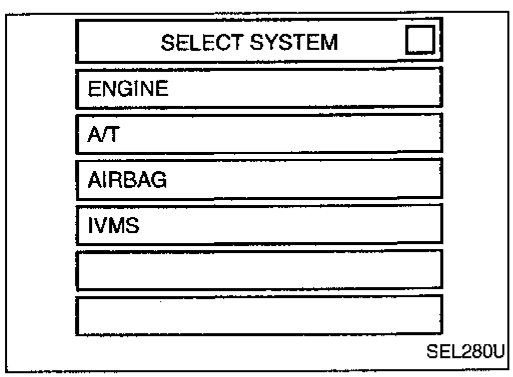
CONSULT

CONSULT INSPECTION PROCEDURE

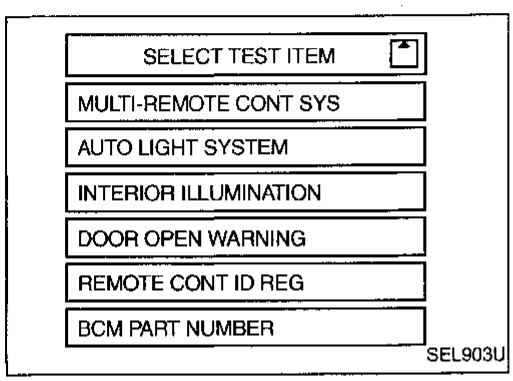
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



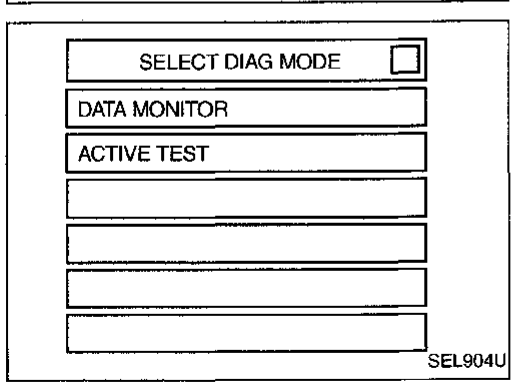
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



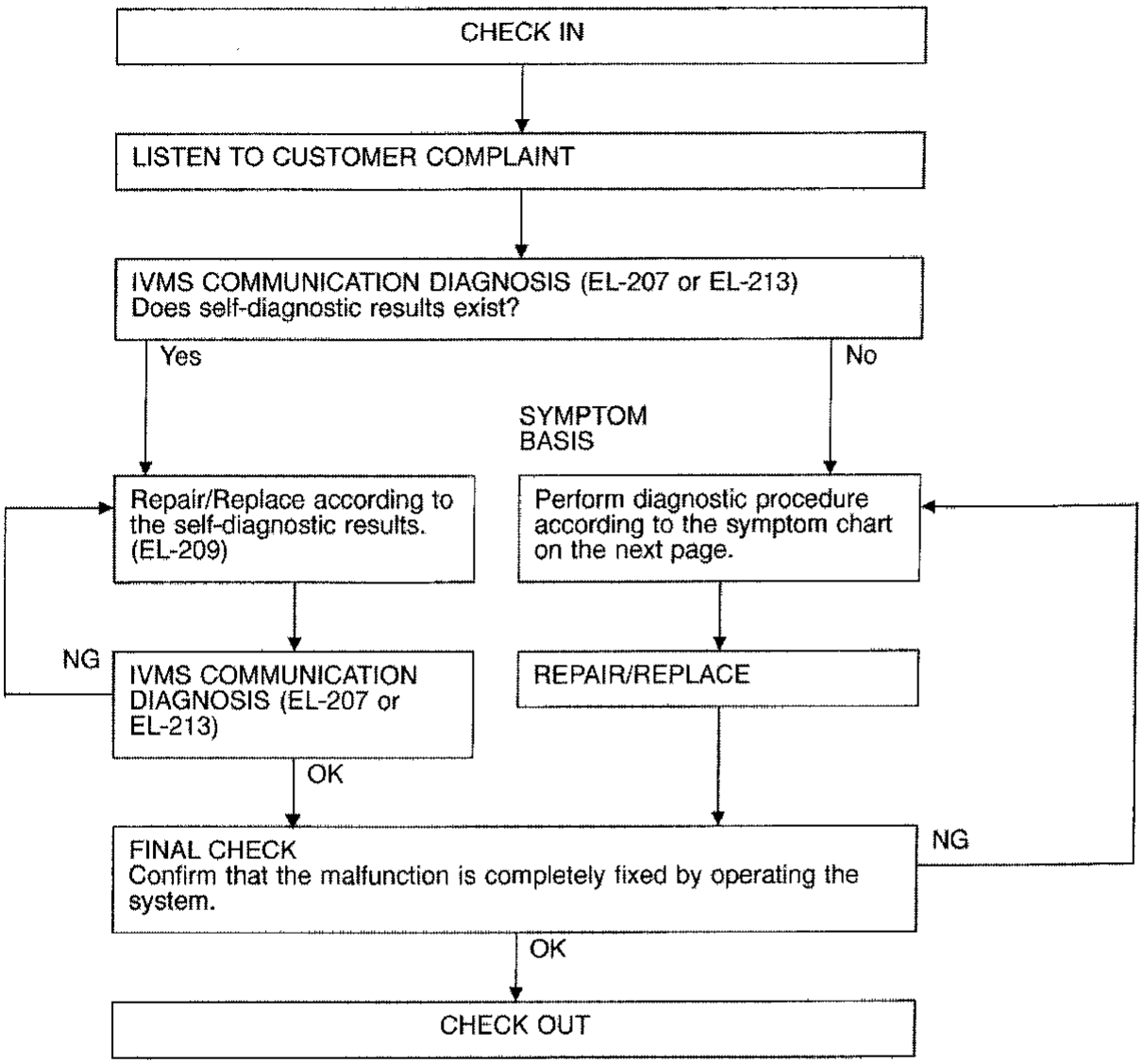
6. Touch "INTERIOR ILLUMINATION".



- DATA MONITOR and ACTIVE TEST are available for the interior illumination.

Trouble Diagnoses

WORK FLOW

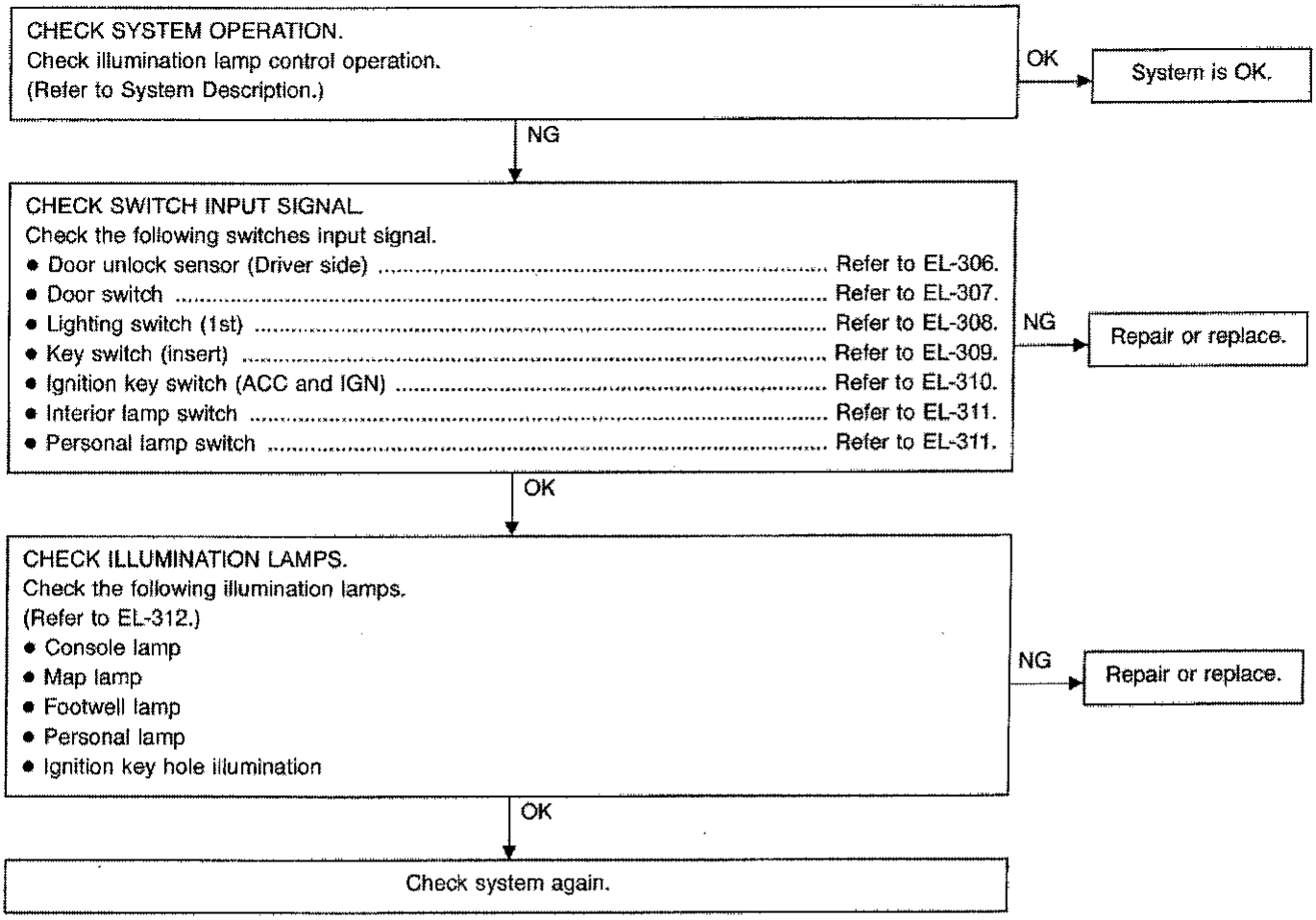


NOTICE:

- **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 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 (Refer to EL-207.) 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)

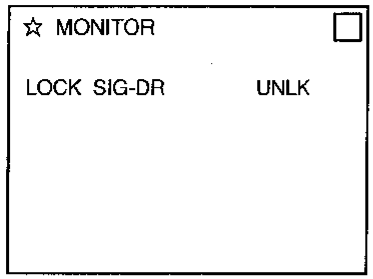
WORK FLOW



Trouble Diagnoses (Cont'd)

DOOR UNLOCK SENSOR CHECK (DRIVER SIDE)

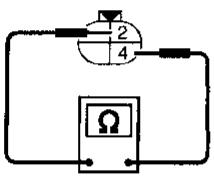
A



SEL680U

B

Door lock actuator connectors
Front LH : D7



SEL026V

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL. (DRIVER SIDE)

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

"LOCK SIG SW" 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-215.)

Refer to wiring diagram in EL-302.

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 ↓

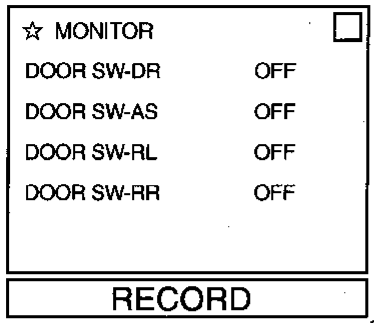
Check the following.

- 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



SEL575U

CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT

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

OR

ON-BOARD

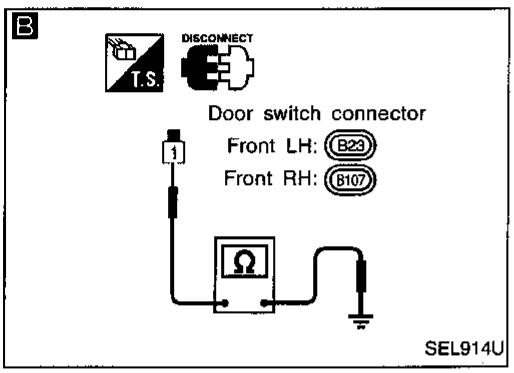
Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-301.

OK → Door switch is OK.

NG ↓

B



SEL914U

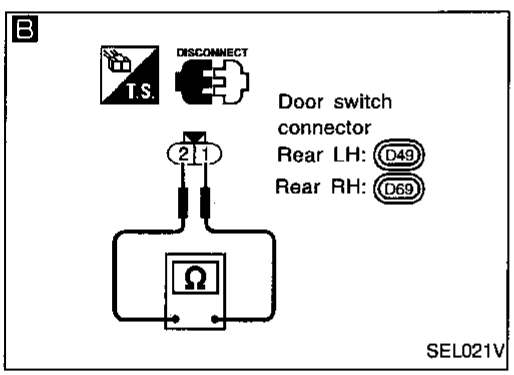
B

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 ↓

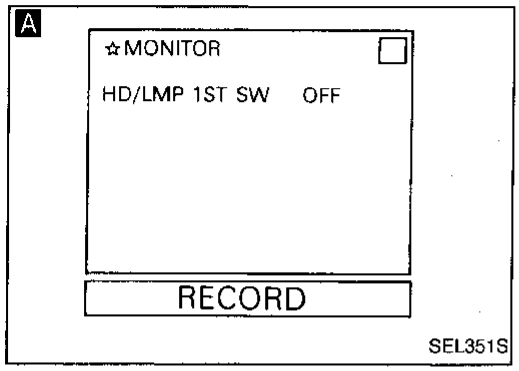


SEL021V

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

CHECK LIGHTING SWITCH INPUT SIGNAL.

CONSULT

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-215.)

Refer to wiring diagram in EL-296.

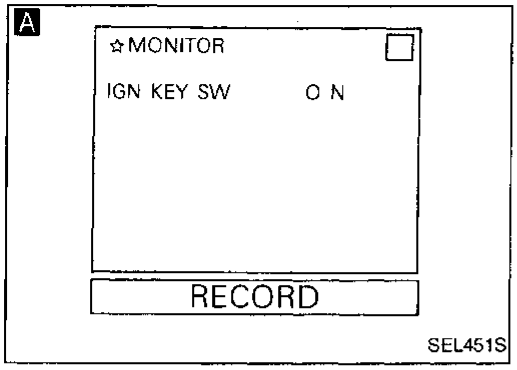
NG → Check the following.
- 7.5A fuse [No. 22], located in the fuse block (J/B)]
- Tail lamp relay
- Harness for open or short between fuse and BCM
- Harness for open or short between tail lamp relay and fuse

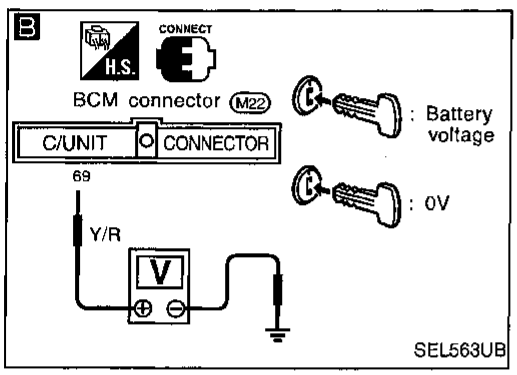
OK ↓

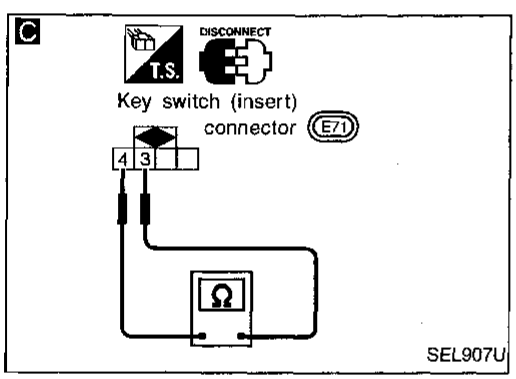
Lighting switch (1st) is OK.

Trouble Diagnoses (Cont'd)

KEY SWITCH (INSERT) CHECK







CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

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-297.

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

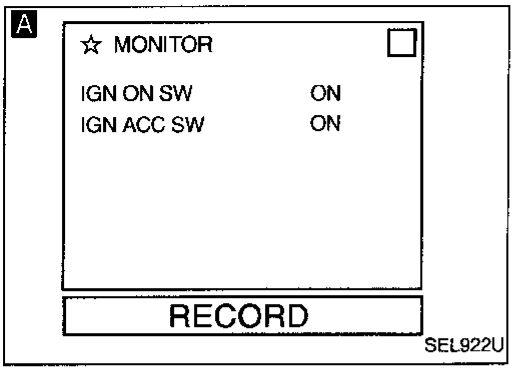
OK ↓

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

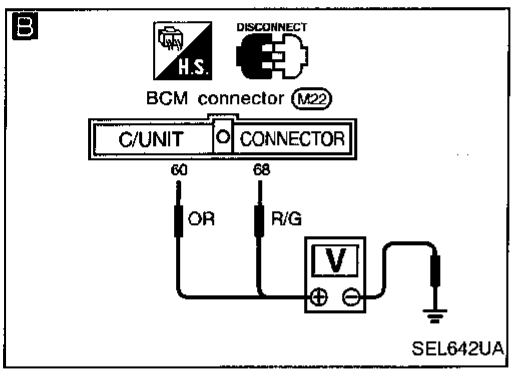
Trouble Diagnoses (Cont'd)

IGNITION KEY SWITCH (ACC AND IGN) INPUT SIGNAL CHECK

A



B



CHECK ACC AND IGN INPUT SIGNAL.

A CONSULT

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	

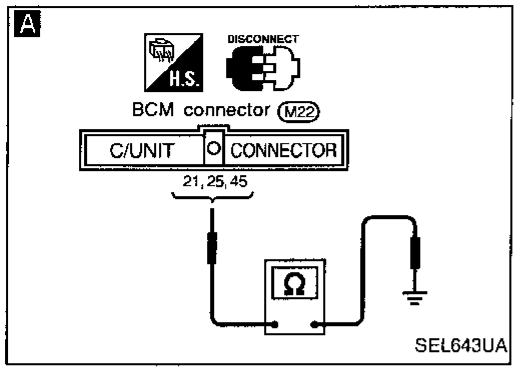
Refer to wiring diagram in EL-297.

OK → ACC and IGN input signal is OK.

Trouble Diagnoses (Cont'd)

INTERIOR LAMP AND PERSONAL LAMP SWITCH CHECK

A



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-298 or 300.

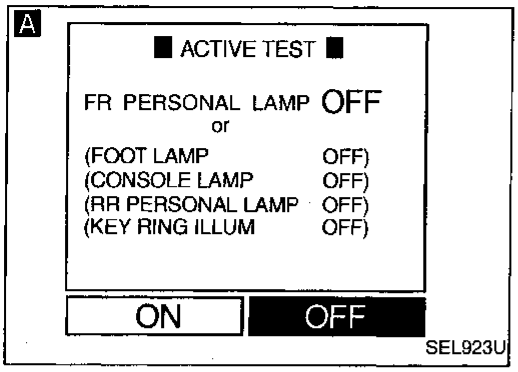
NG → Check the following.
- Lamp switch
- Lamp switch ground circuit
- Harness for open or short between BCM and lamp switch

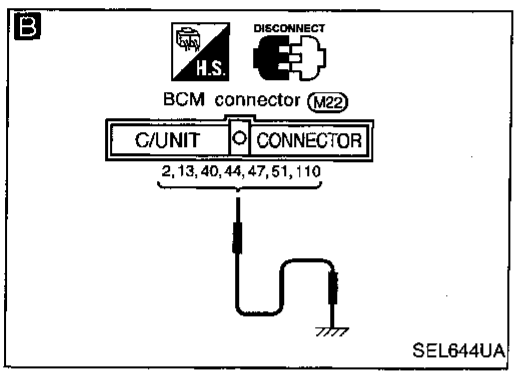
OK ↓

Lamp switches are OK.

Trouble Diagnoses (Cont'd)

ILLUMINATION LAMP CHECK





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

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?

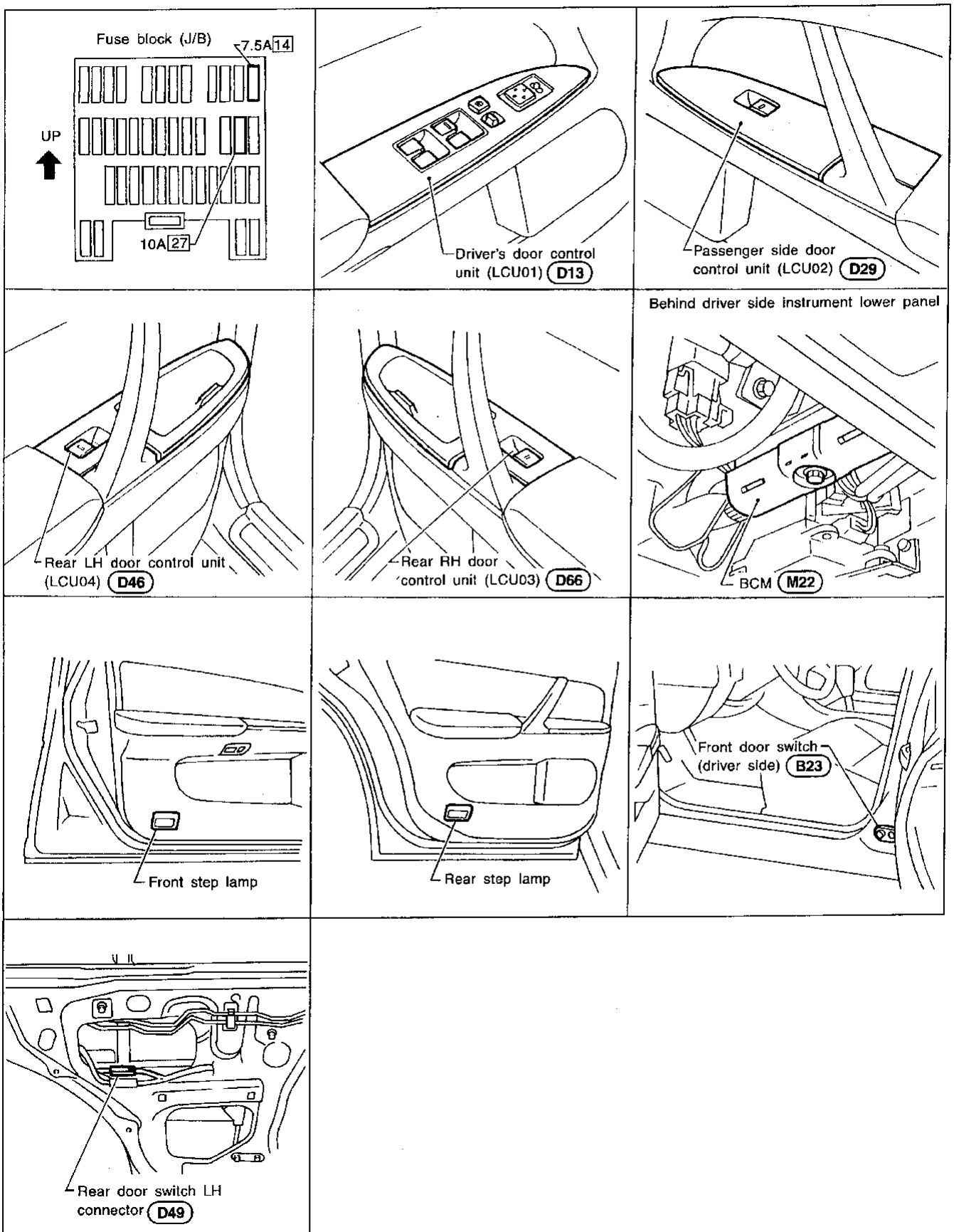
Illumination lamp	Terminals
Console lamp	②
Footwell lamp	⑬
Front map lamp LH	㊵
Front map lamp RH	㊹
Rear personal lamp RH	㊼
Rear personal lamp LH	㊶
Ignition key hole illumination	(110)

Refer to wiring diagram in EL-298, 299 or 300.

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)].

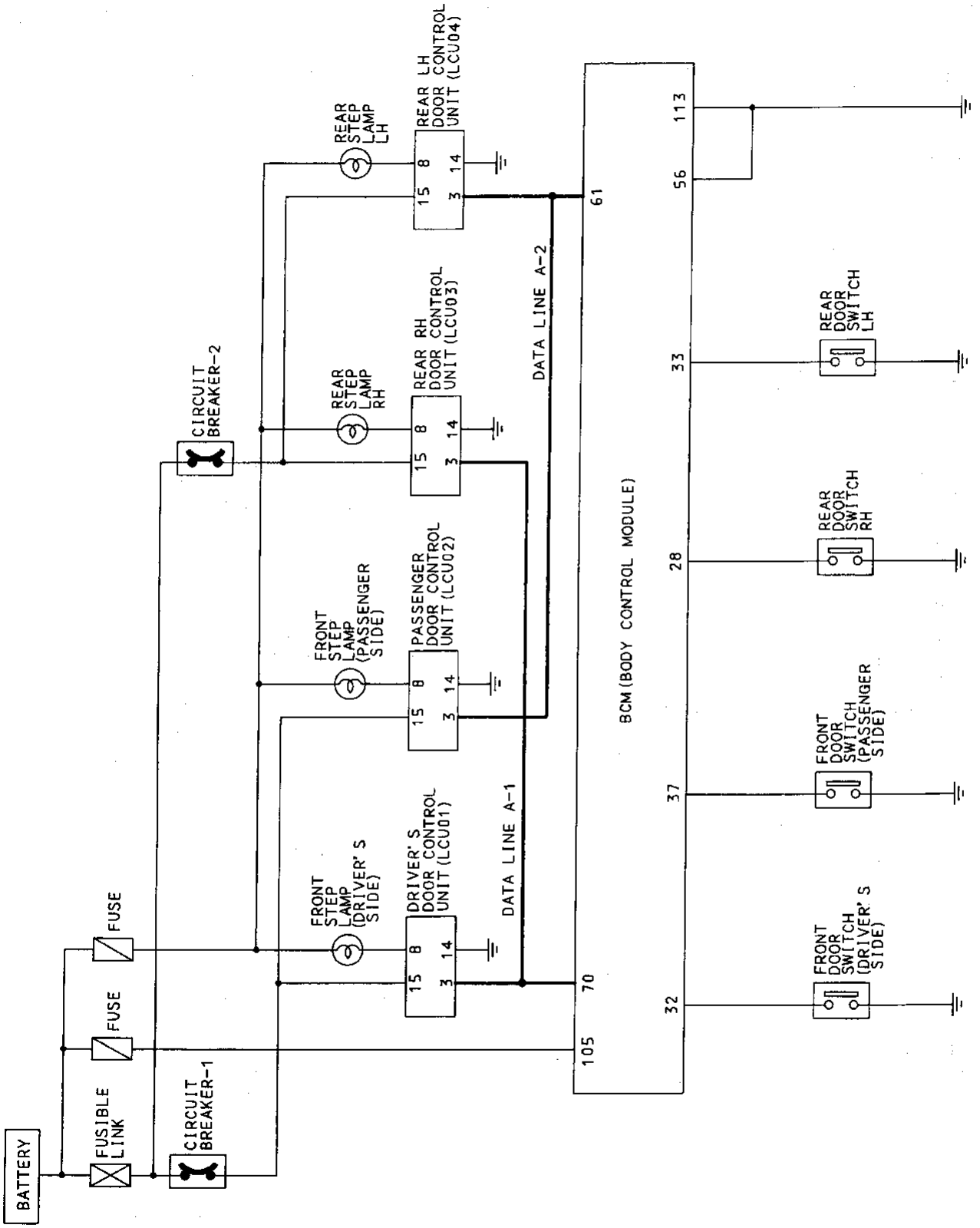
Ground is supplied to terminal ⑭ of LCU01 and LCU02 through body grounds (M14) and (M47).
Ground is also supplied to terminal ⑭ of LCU03 and LCU04 through body grounds (B105) and (B118) or (B22) and (B35).

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.

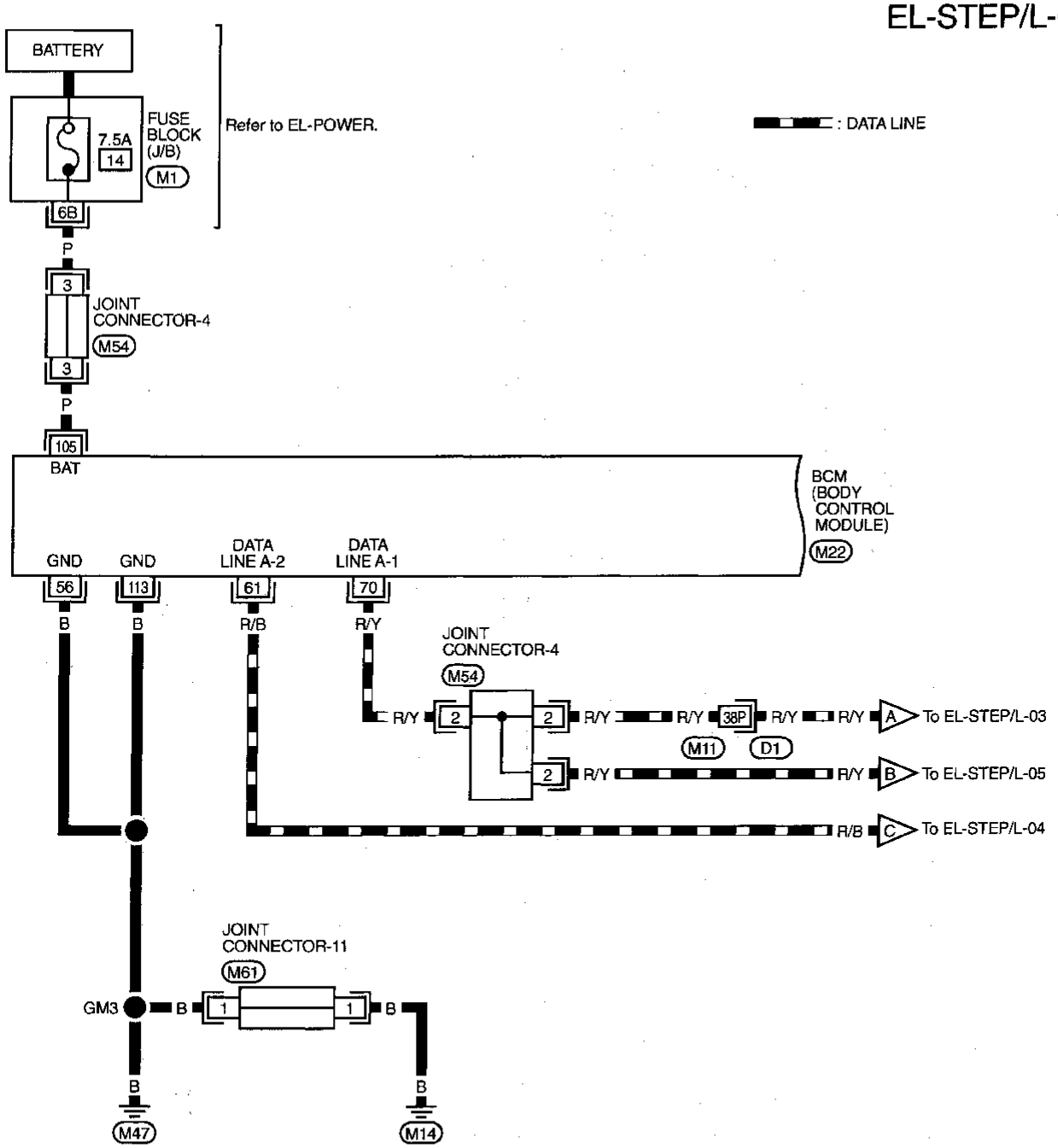
Schematic

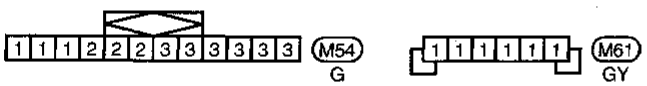


TEL858

Wiring Diagram — STEP/L —

EL-STEP/L-01





Refer to last page (Foldout page).

(M11), (D1)

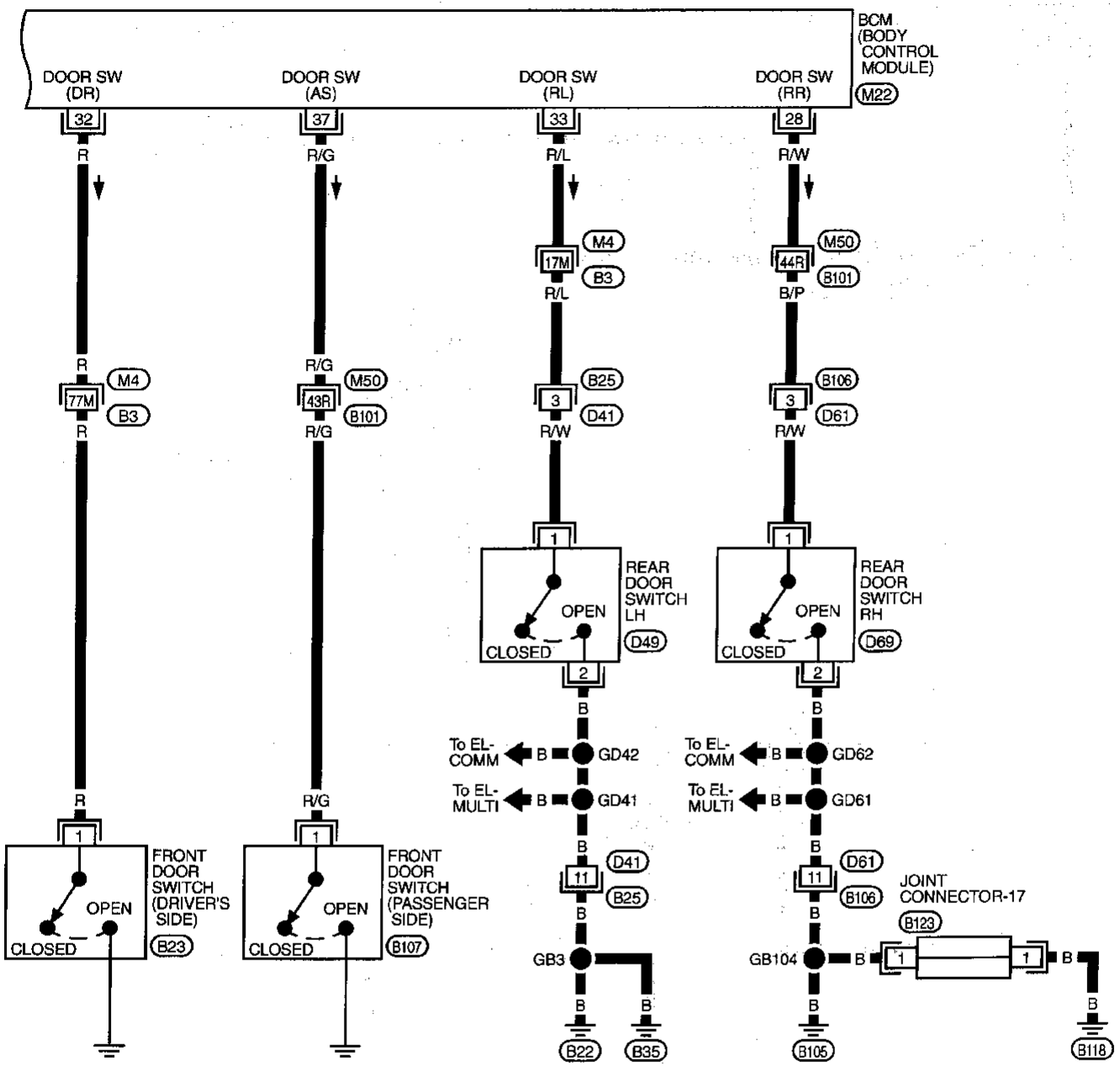
(M1)

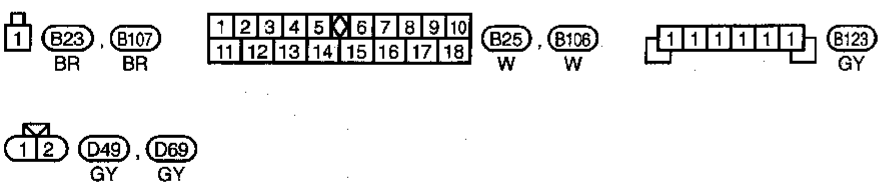
(M22)

TEL227A

Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-02





Refer to last page (Foldout page).

M4, B3

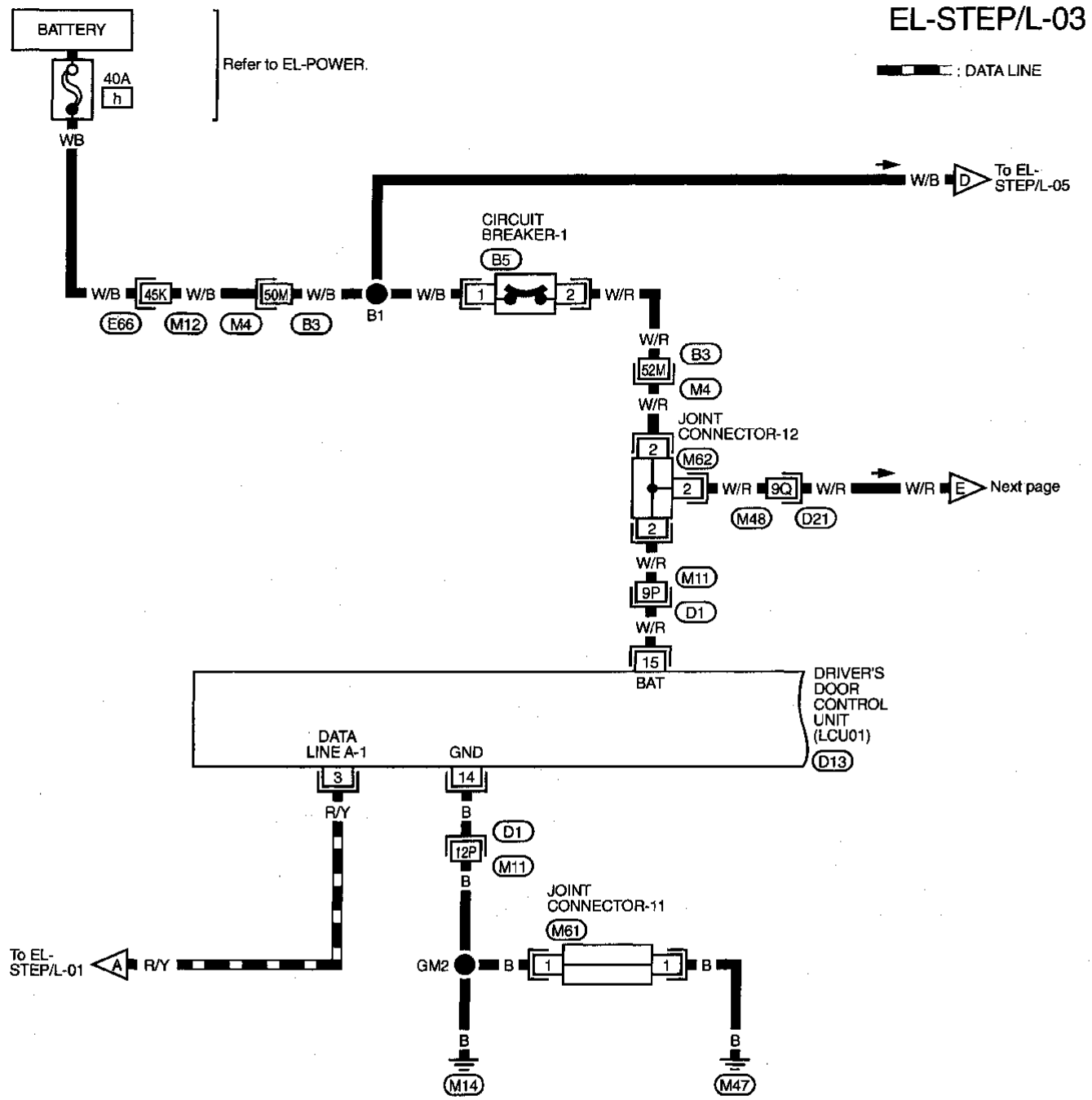
M50, B101

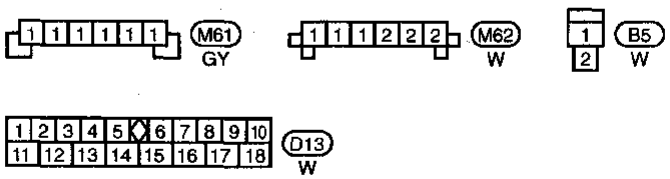
M22

TEL860

1751

Wiring Diagram — STEP/L — (Cont'd)





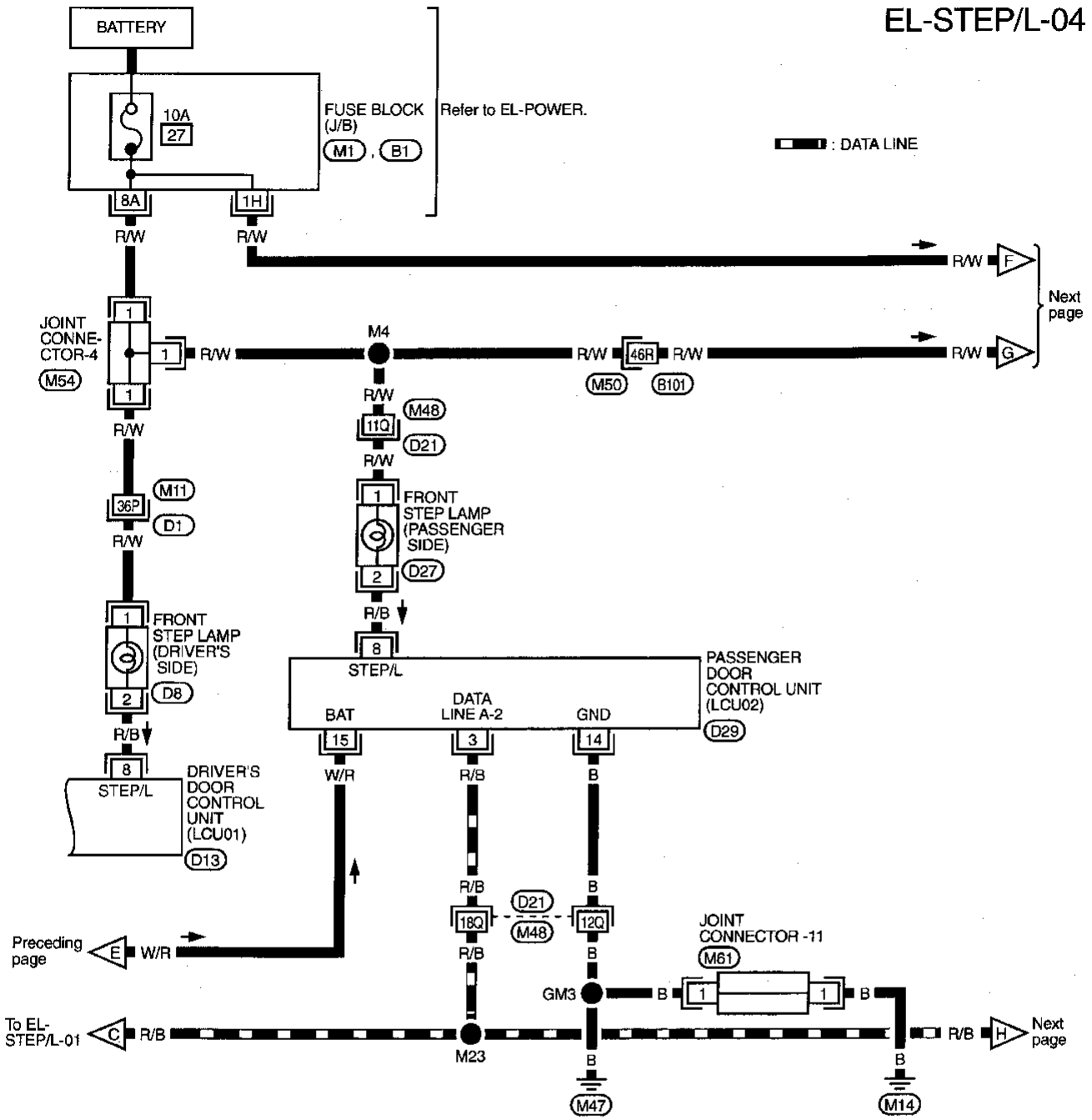
Refer to last page (Foldout page).

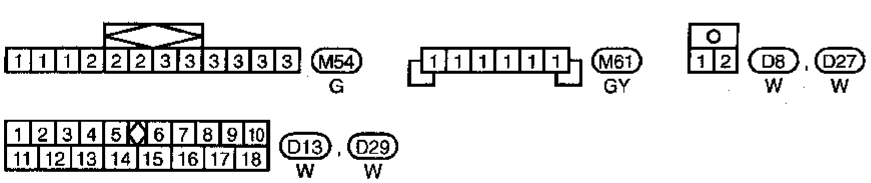
E66, M12
M4, B3
M11, D1
M48, D21

TEL245A

Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-04





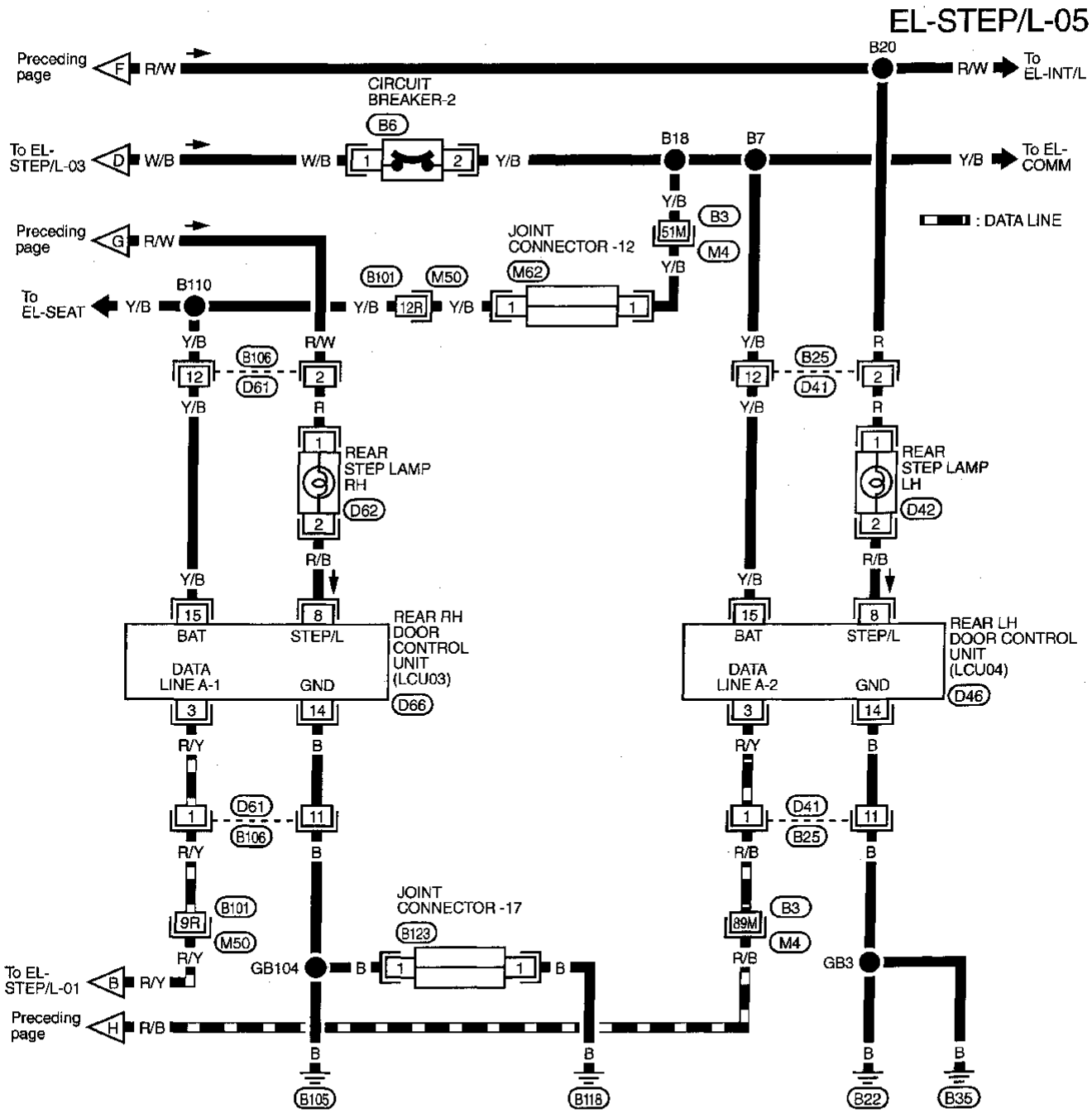
Refer to last page (Foldout page).

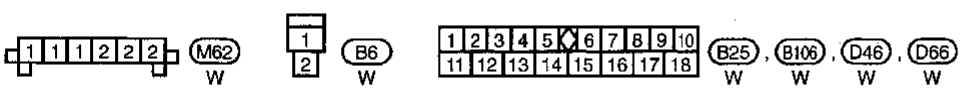
M11, D1
M48, D21
M50, B101
M1
B1

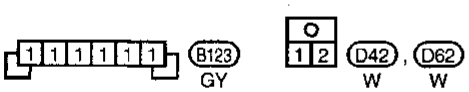
TEL862

1753

Wiring Diagram — STEP/L — (Cont'd)

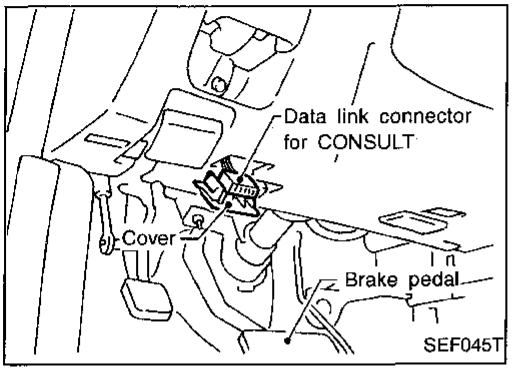






Refer to last page (Foldout page).
M4, B3
M50, B101

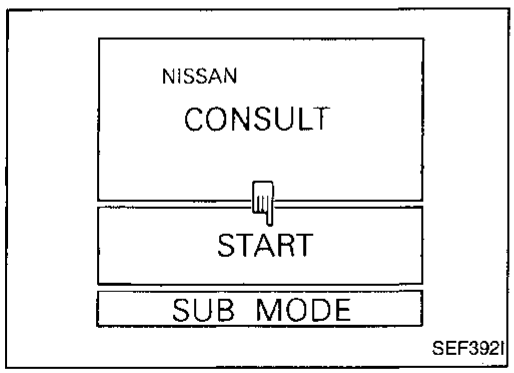
TEL863



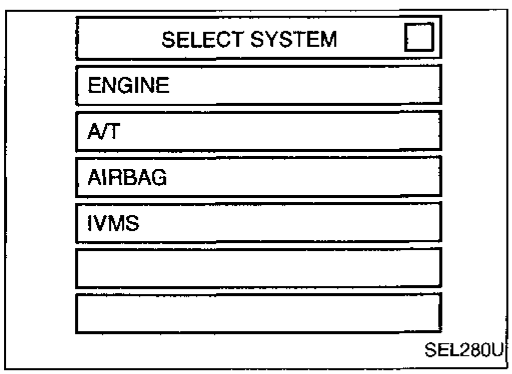
CONSULT

CONSULT INSPECTION PROCEDURE

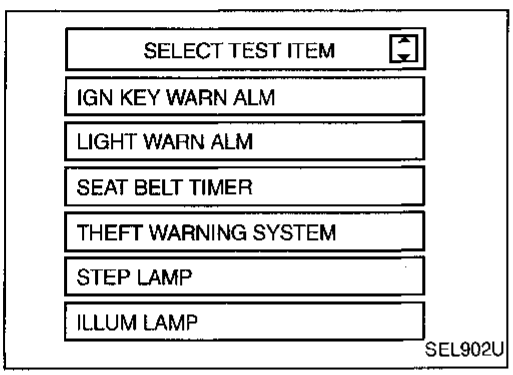
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



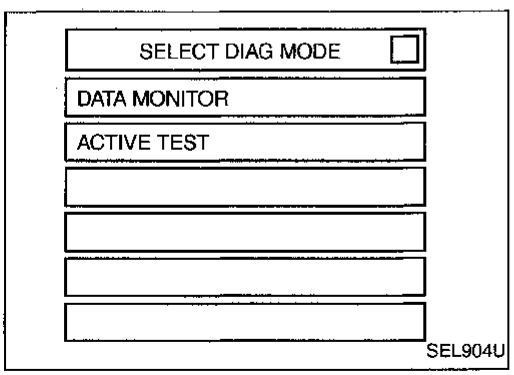
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



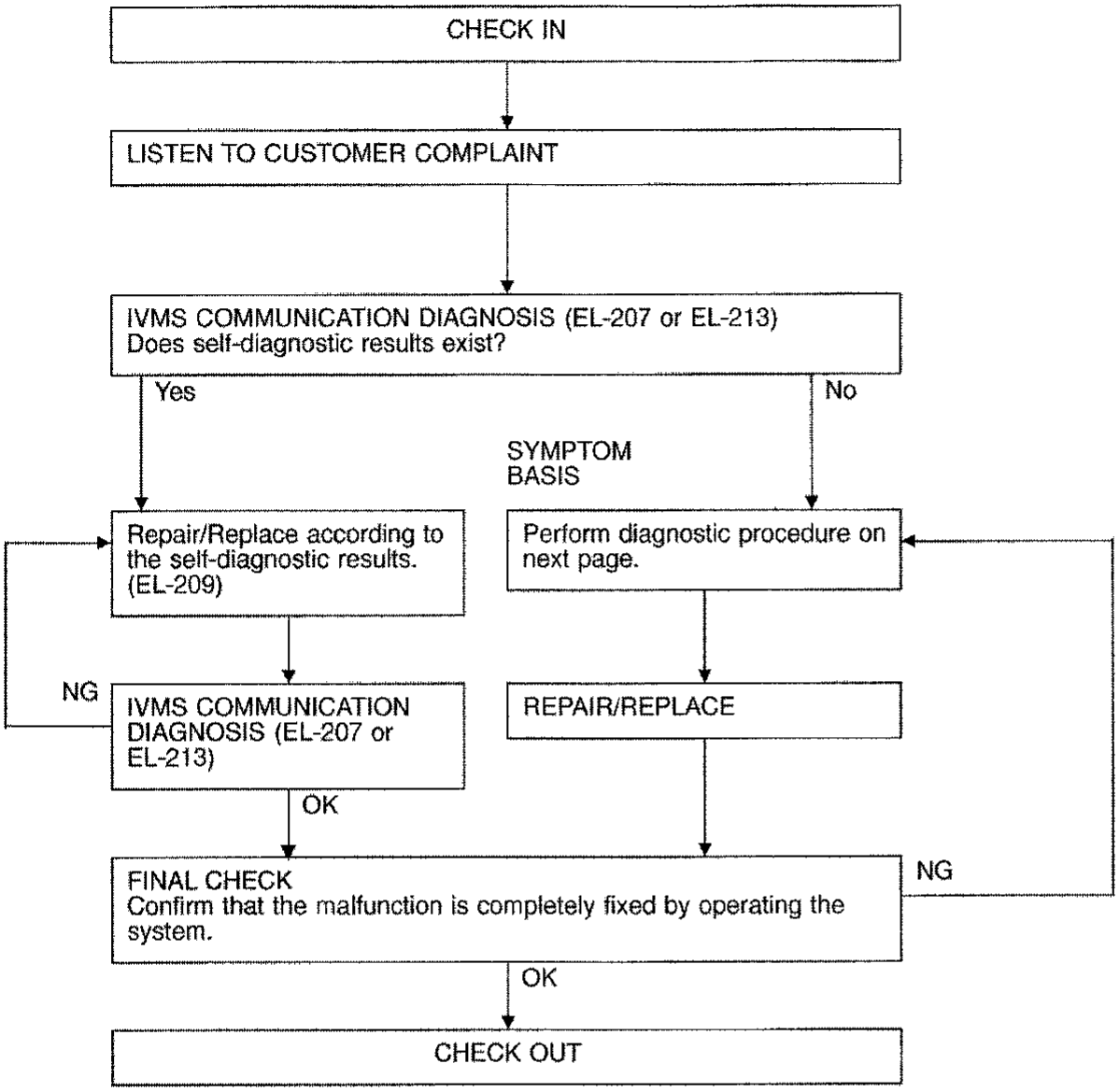
6. Touch "STEP LAMP".



- DATA MONITOR and ACTIVE TEST are available for the step lamp.

Trouble Diagnoses

WORK FLOW



NOTICE:

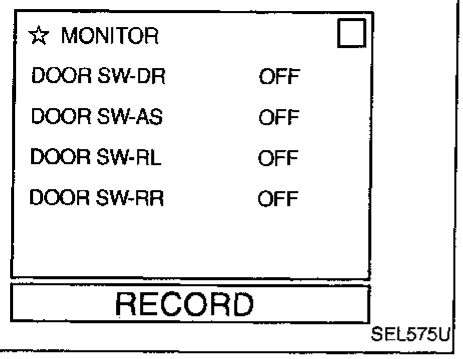
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. (While BCM memorizes the "disconnected" data, IVMS communication diagnosis of CONSULT will display "PAST NO RESPONSE".) Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (Refer to EL-207.) 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)

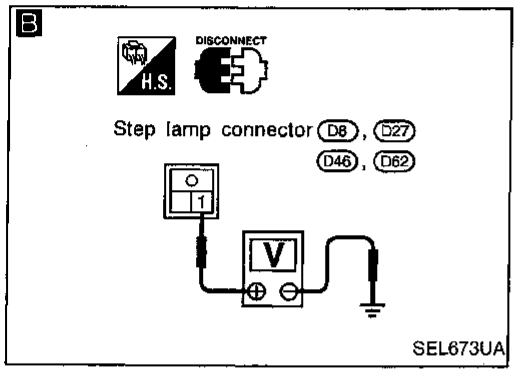
DIAGNOSTIC PROCEDURE

SYMPTOM: Step lamp does not illuminate/does not go off when door is opened/closed.

A



B



CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT

See "DOOR SWITCH" 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-215.)

Refer to wiring diagram in EL-317.

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-319 or 320.

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].

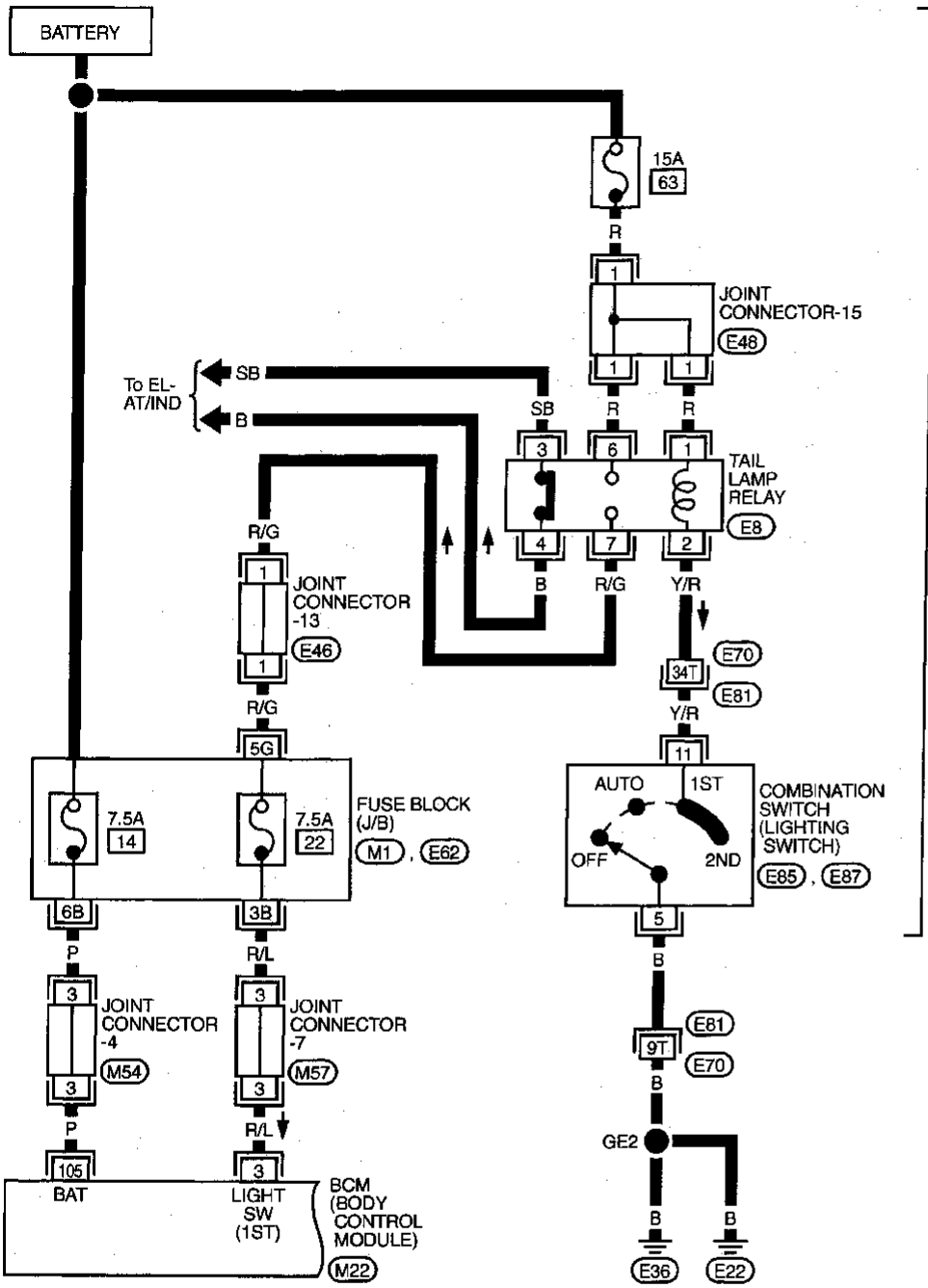
Ground is supplied
- to the lighting switch terminal ⑤
- through body grounds E22 and E36.

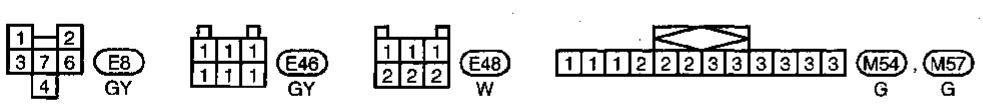
When the lighting switch is turned to 1ST or 2ND position, ground is supplied
- to tail lamp relay terminal ②
- from the lighting switch terminal ⑪.

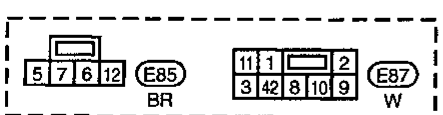
Tail lamp relay is then energized, and power is supplied
- from tail lamp relay terminal ⑦
- through 7.5A fuse [No. 22, located in the fuse block (J/B)].
- to BCM terminal ③.

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 —







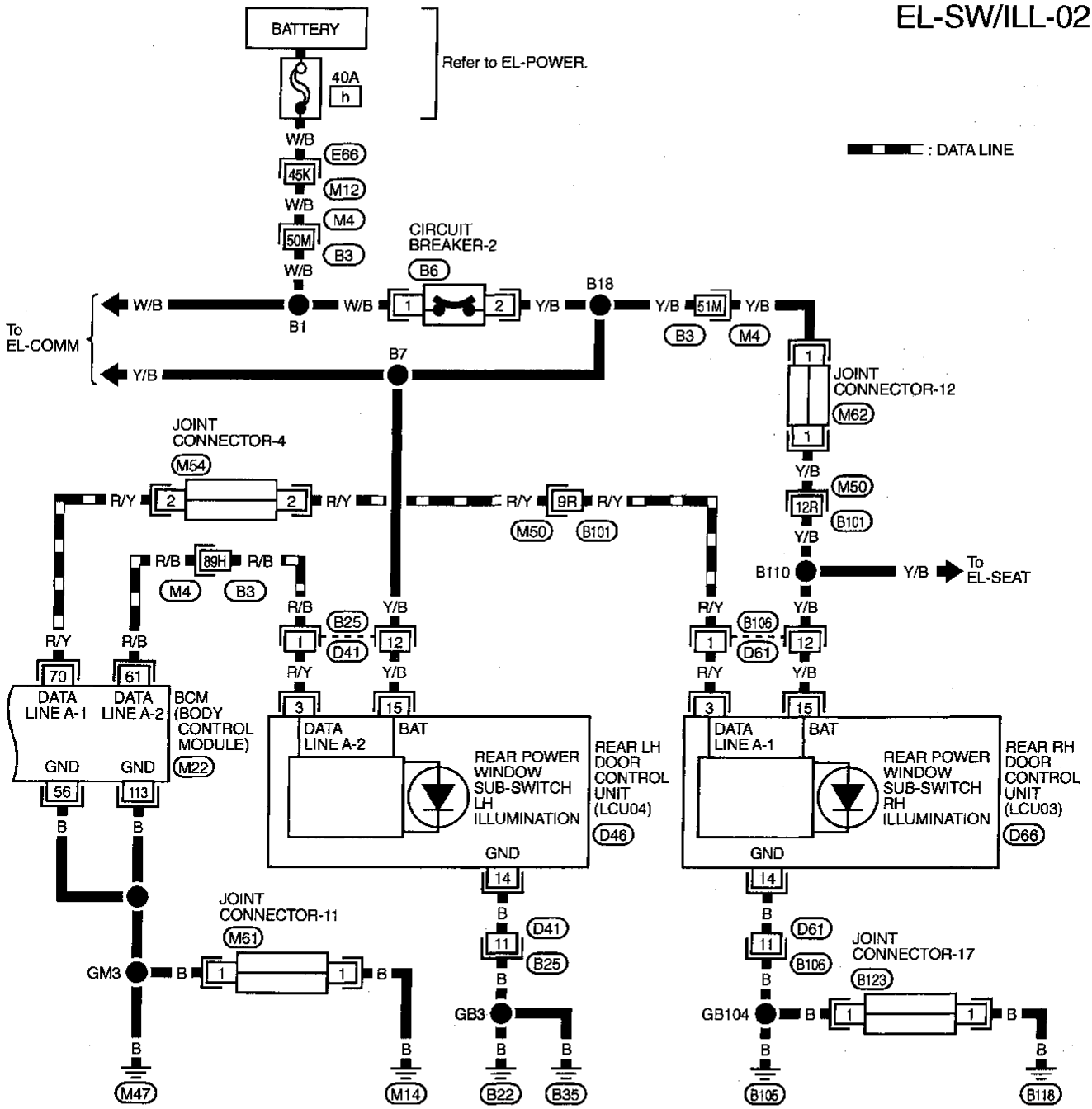
Refer to last page (Foldout page).
E70, E81
M1
M22
E62

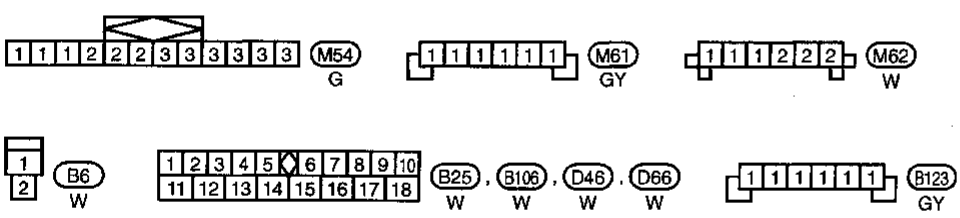
TEL228A

1759

Wiring Diagram — SW/ILL — (Cont'd)

EL-SW/ILL-02

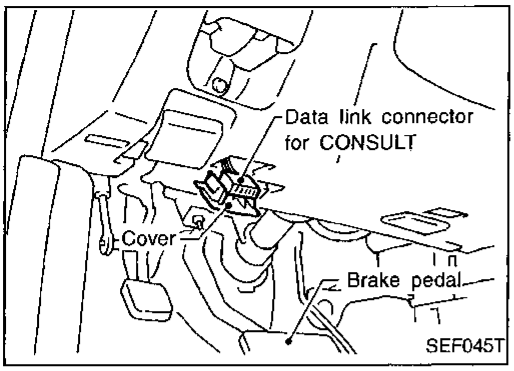




Refer to last page (Foldout page).

E66, M12
M4, B3
M50, B101
M22

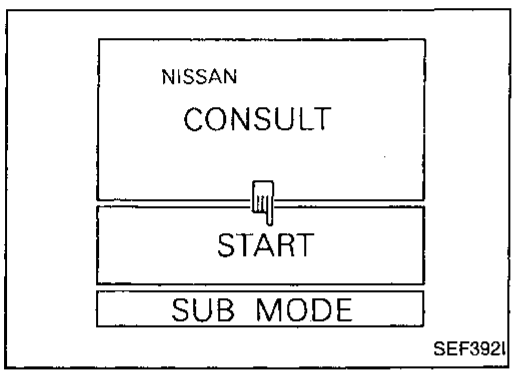
TEL229A



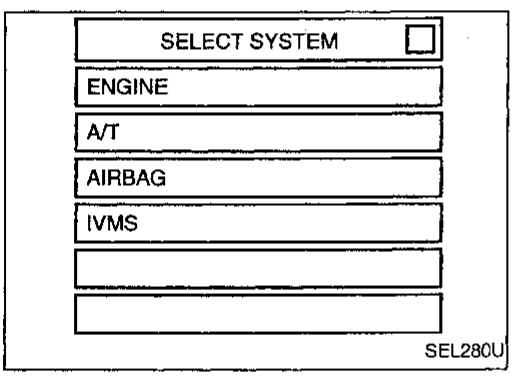
CONSULT

CONSULT INSPECTION PROCEDURE

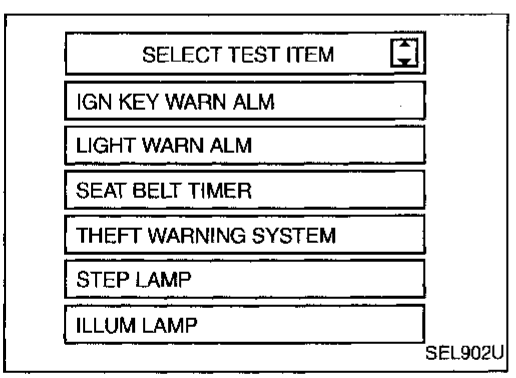
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



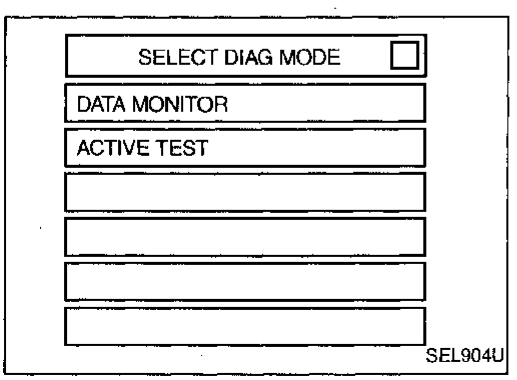
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



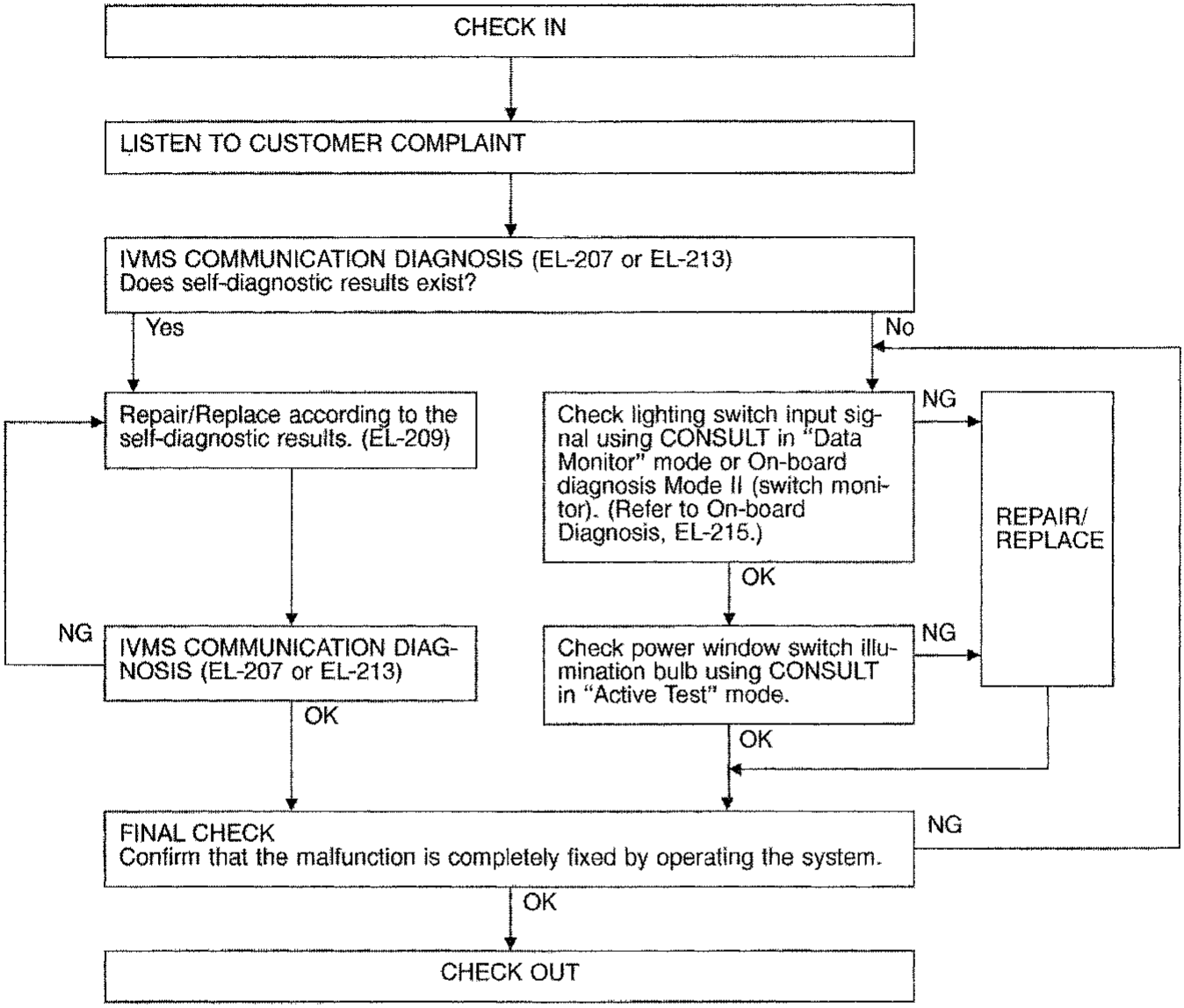
6. Touch "ILLUM LAMP".



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

Trouble Diagnoses

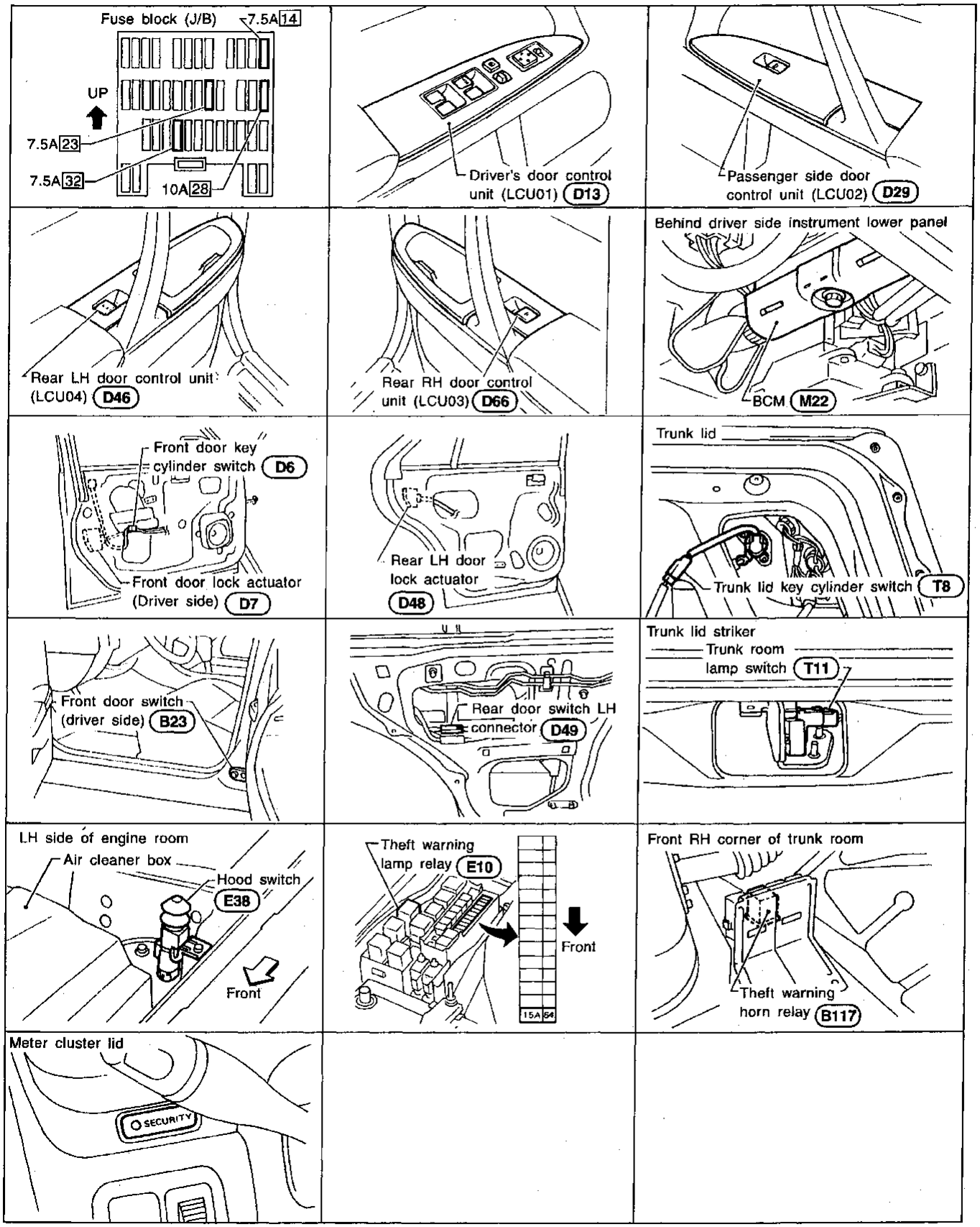
WORK FLOW



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 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 (Refer to EL-207.) 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



SEL942U

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 ⑮ 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.

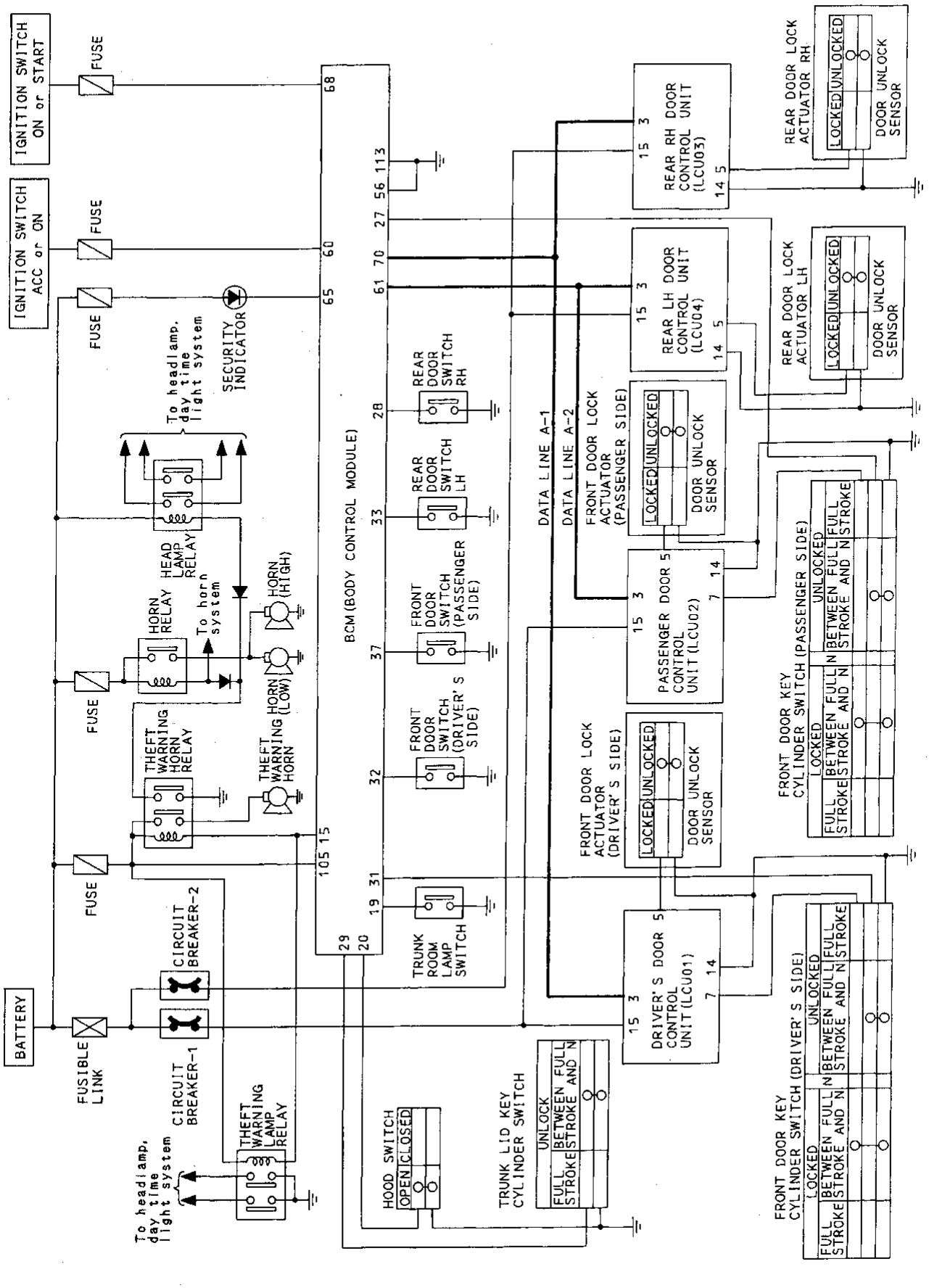
When the key is used to unlock the trunk lid, BCM terminal ㉙ receives a ground signal from terminal ① of the trunk lid key cylinder switch.
When the BCM receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

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.

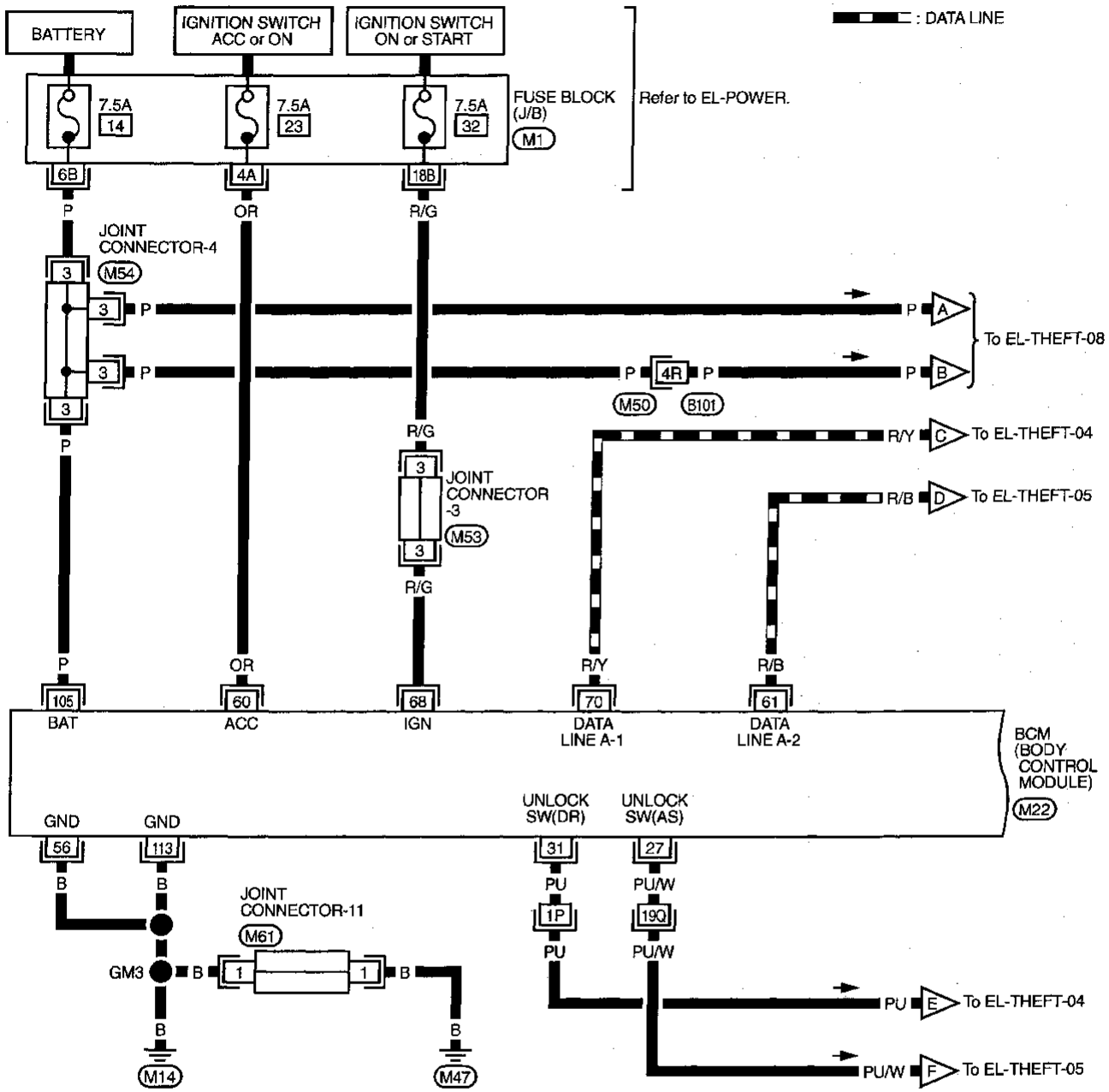
Schematic

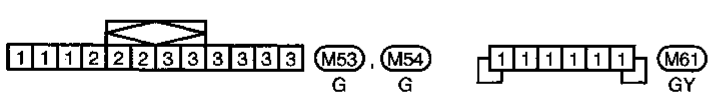


TEL880

Wiring Diagram — THEFT —

EL-THEFT-01





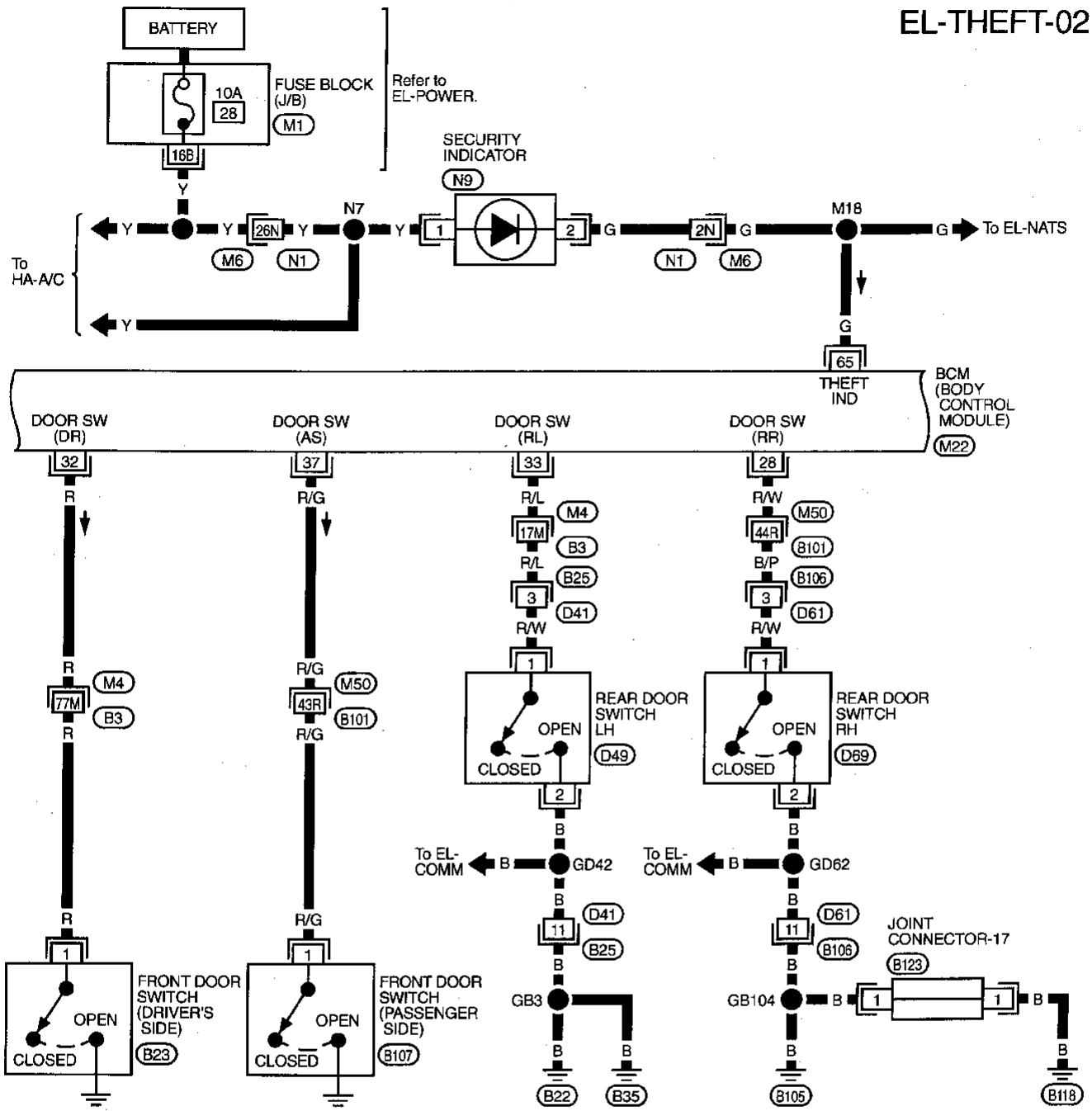
Refer to last page (Foldout page).

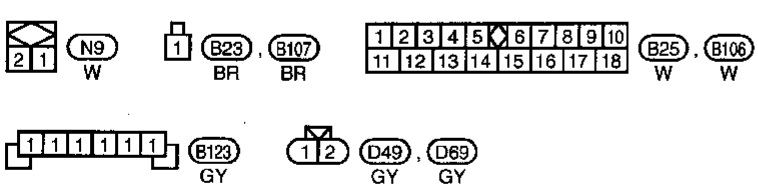
M11 , D1
M48 , D21
M50 , B101
M1
M22

TEL242A

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-02





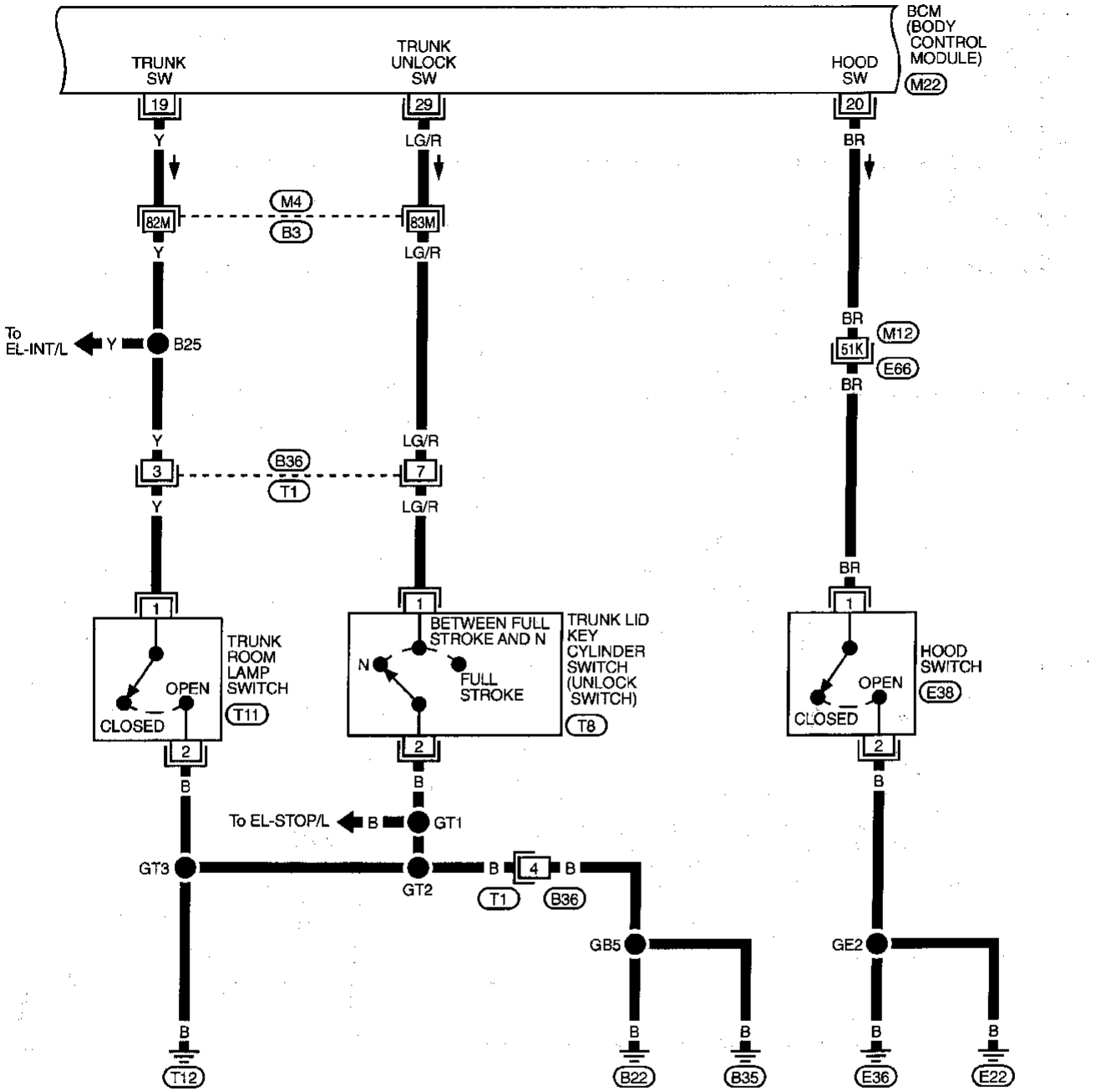
Refer to last page (Foldout page).

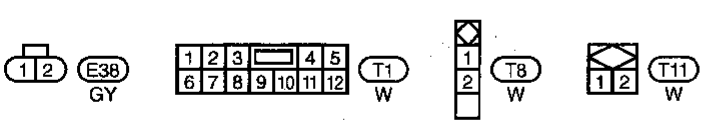
M4, B3
M6, N1
M50, B101
M1
M22

TEL882

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-03





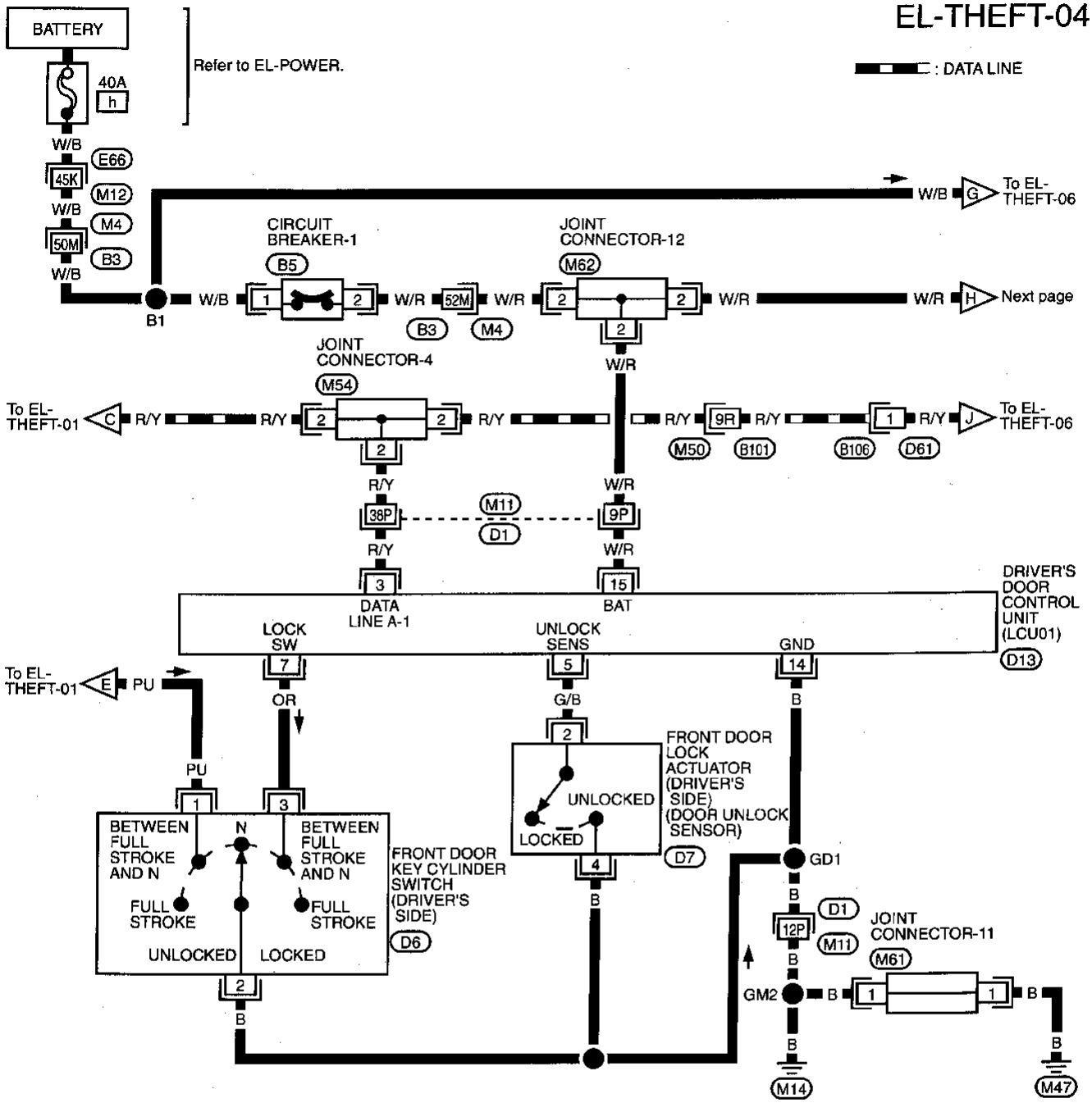
Refer to last page (Foldout page).
E66, M12
M4, B3
M22

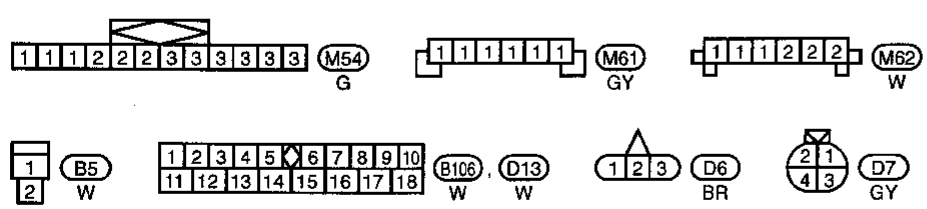
TEL230A

1769

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-04





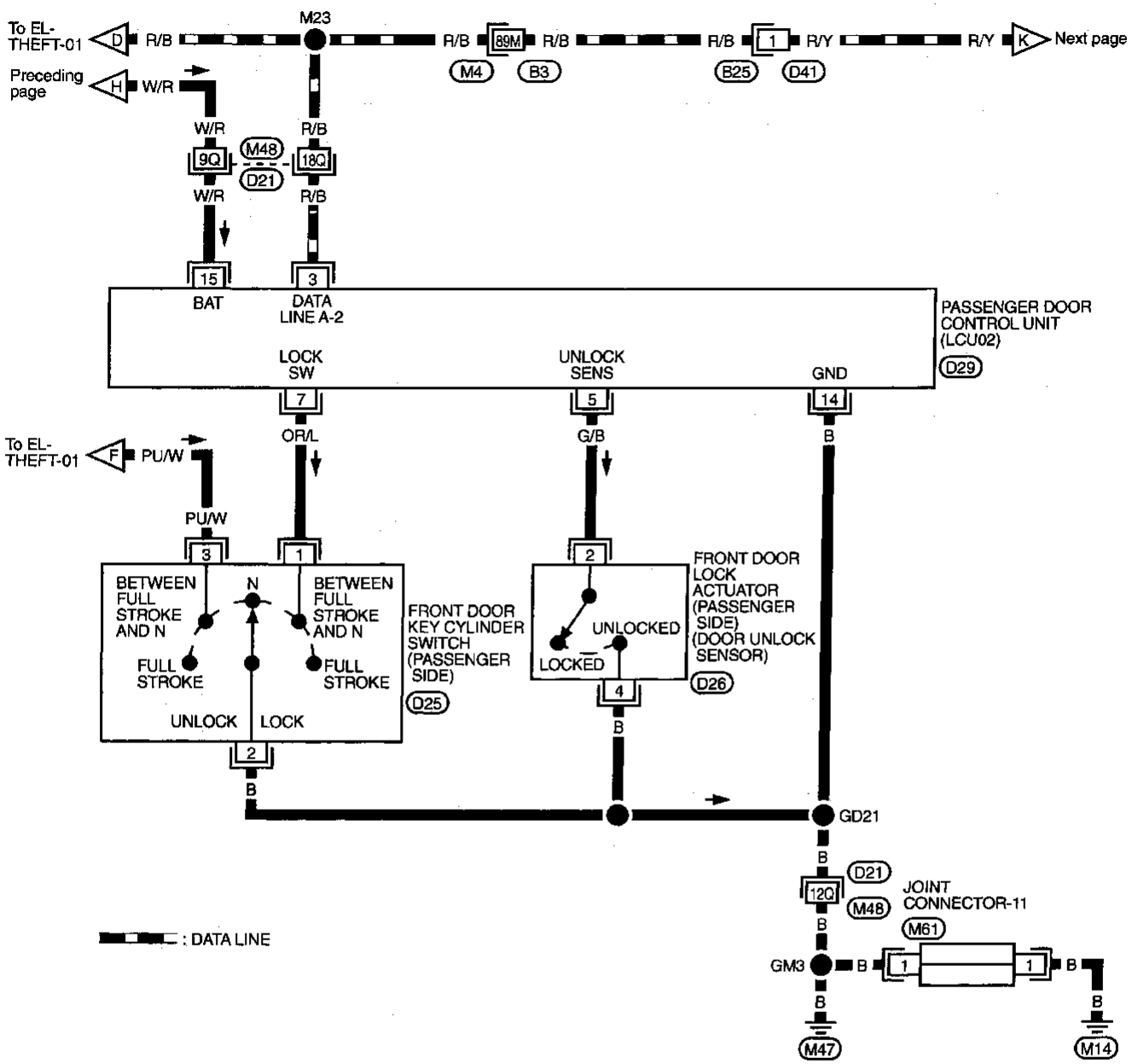
Refer to last page (Foldout page).

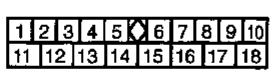
E66, M12
M4, B3
M11, D1
M50, B101

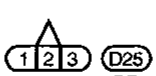
TEL243A

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-05







Refer to last page (Foldout page).

M4, B3

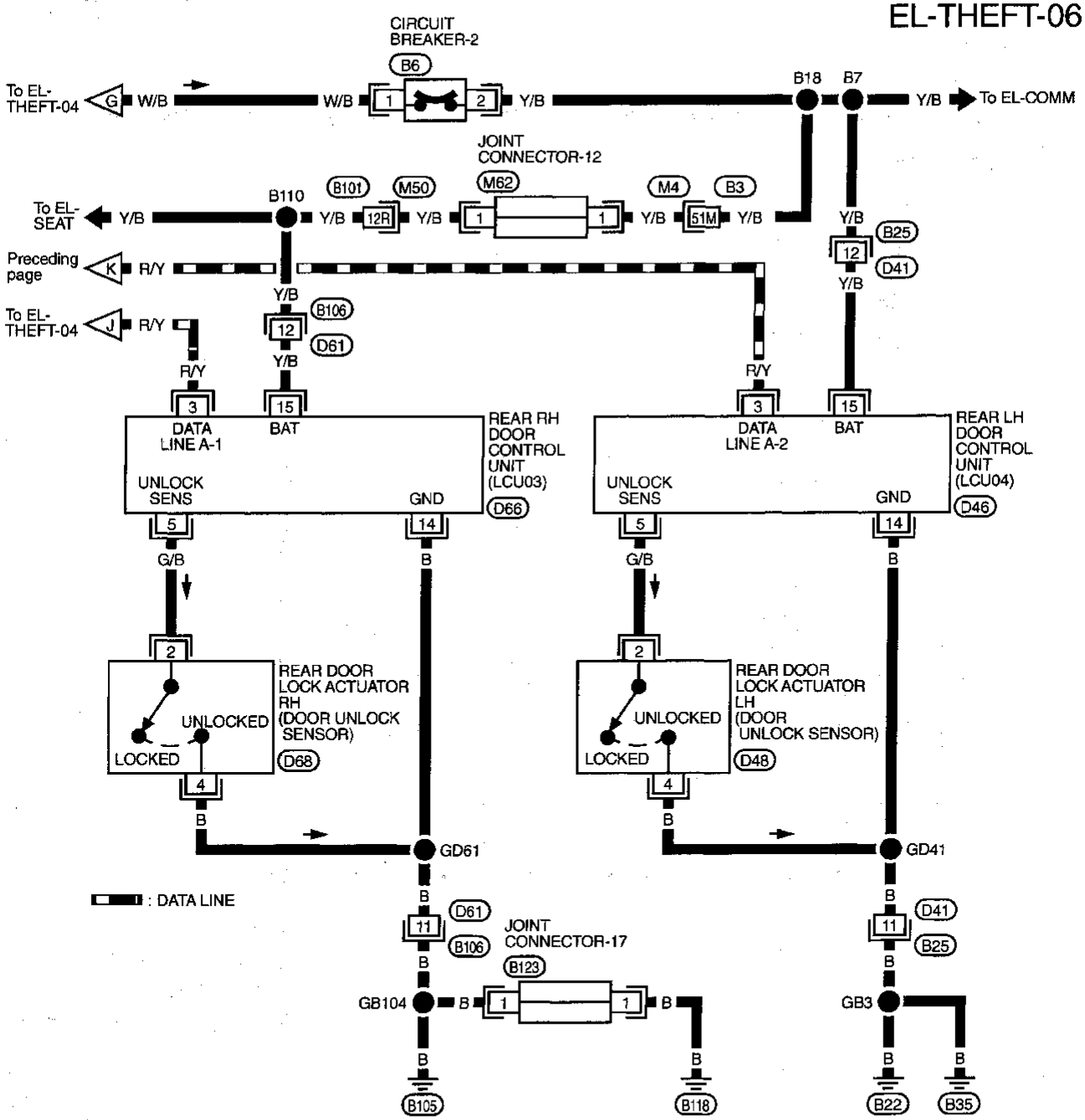
M48, D21

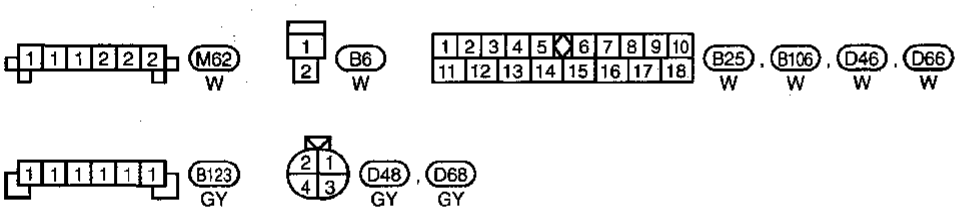
TEL244A

1771

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-06



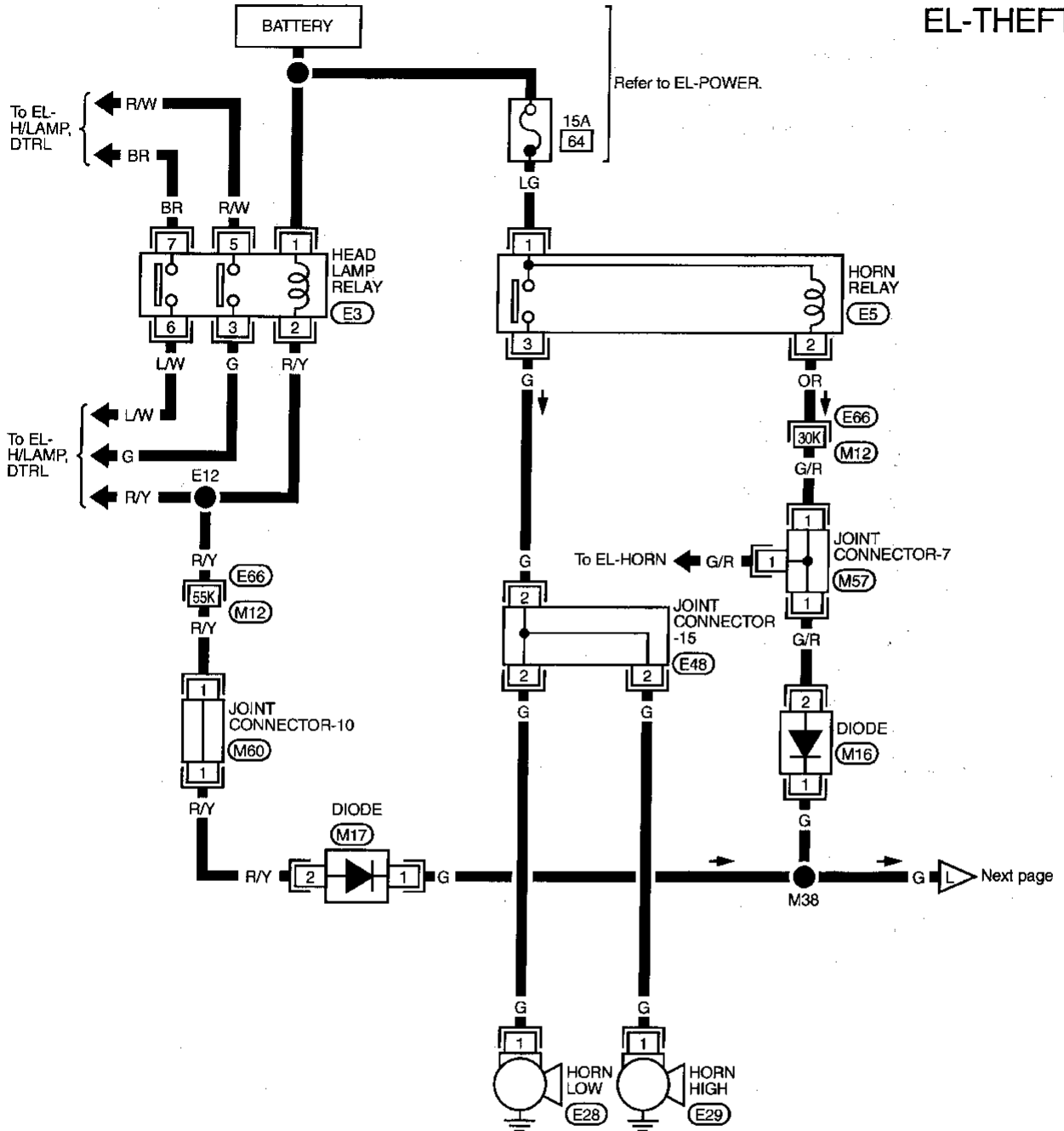


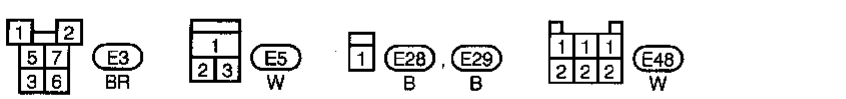
Refer to last page (Foldout page).
M4, B3
M50, B101

TEL886

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-07

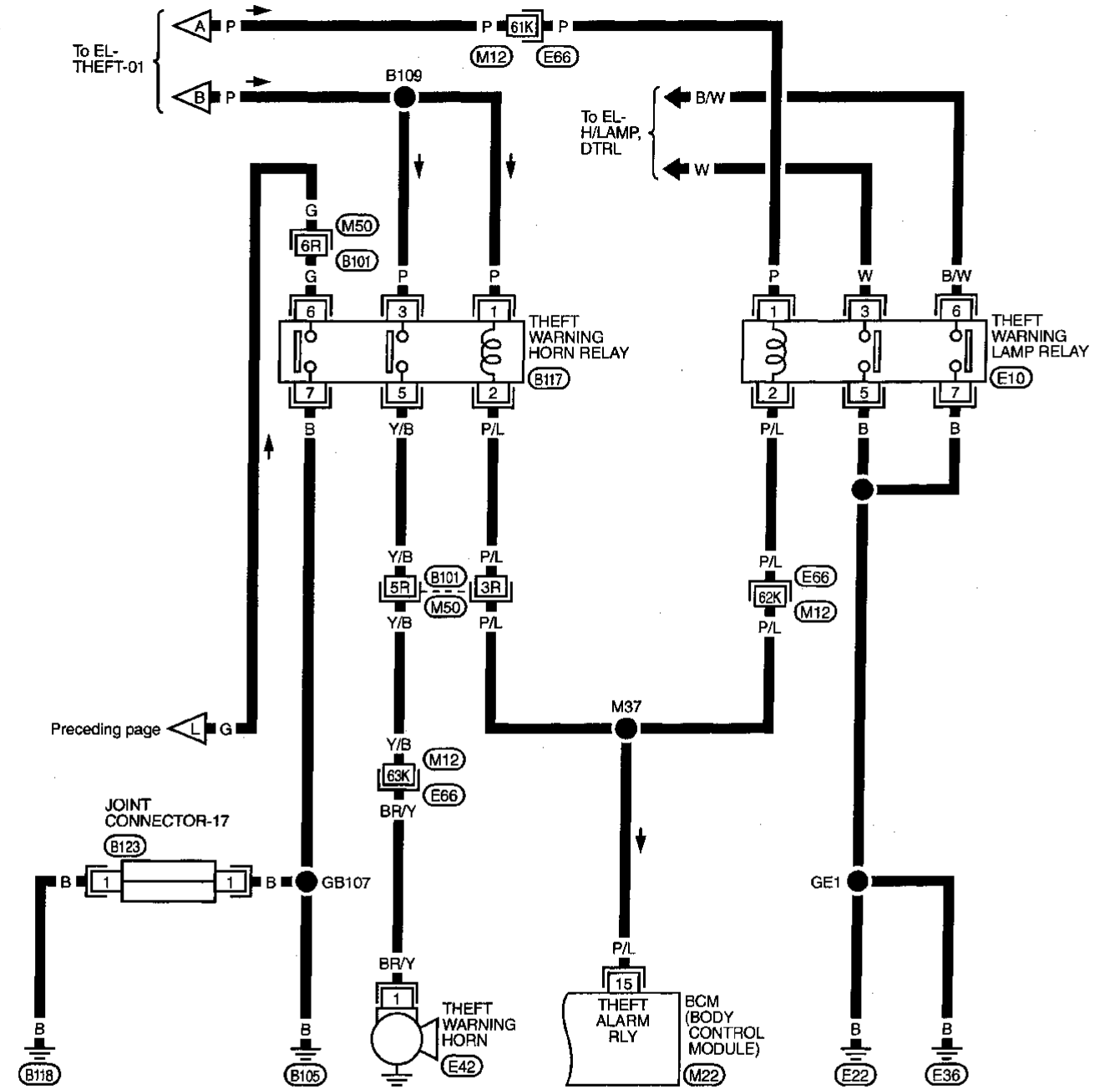


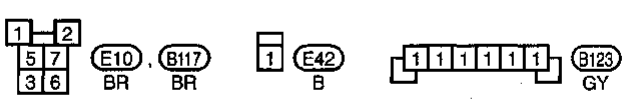


Refer to last page (Foldout page).
E66, M12

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-08





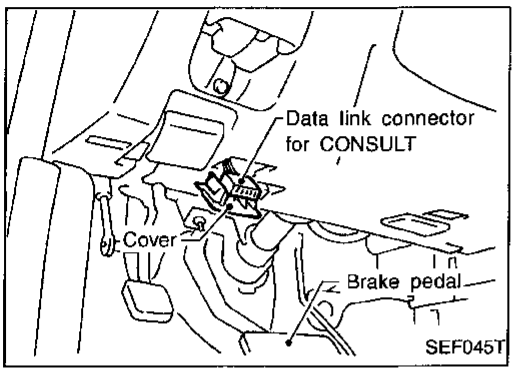
Refer to last page (Foldout page).

E66, M12

M50, B101

M22

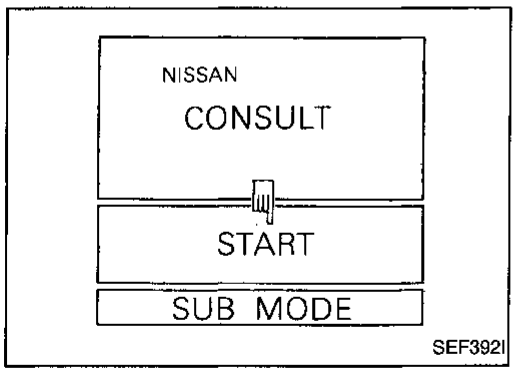
TEL231A



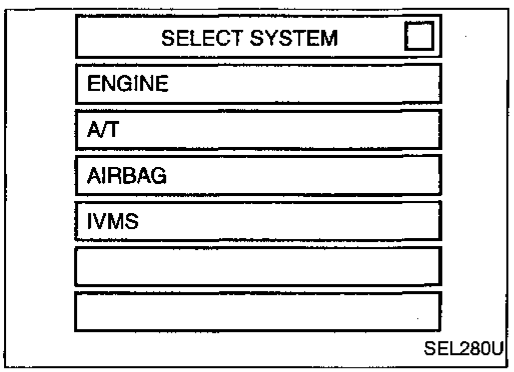
CONSULT

CONSULT INSPECTION PROCEDURE

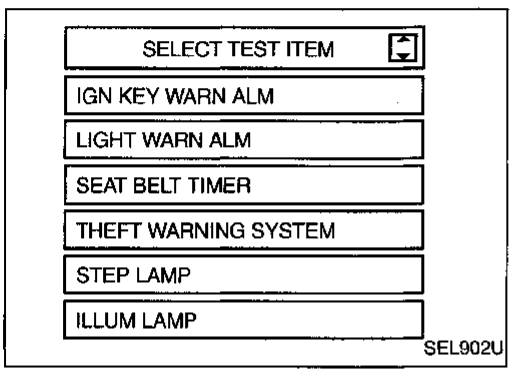
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



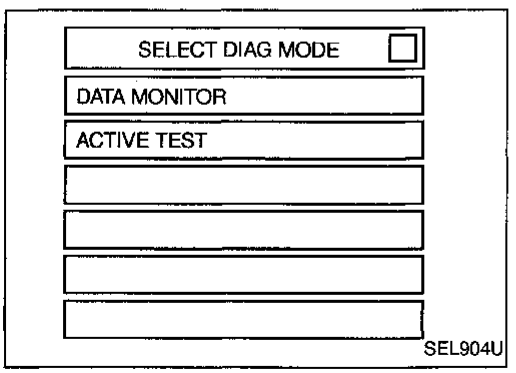
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



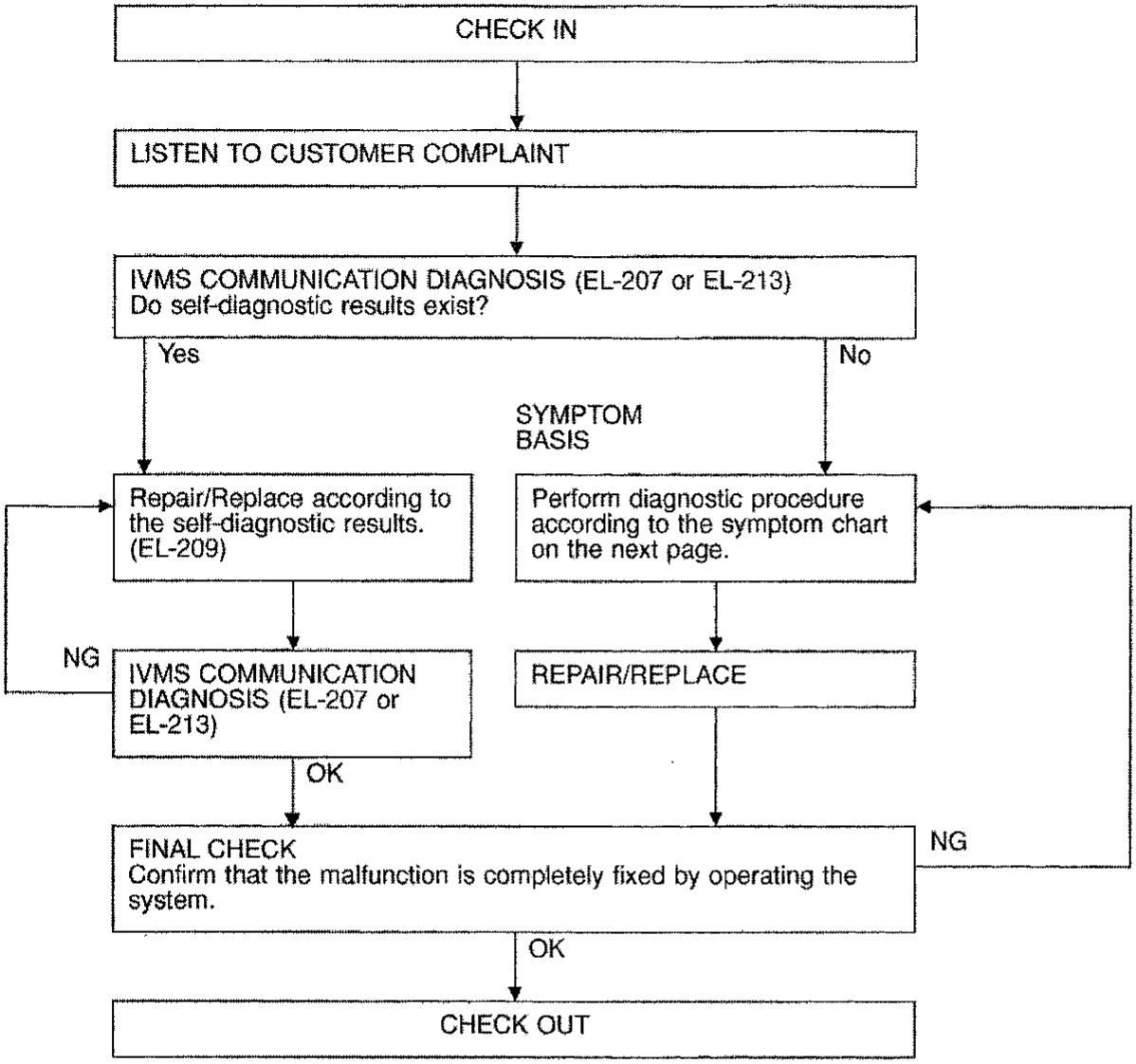
6. Touch "THEFT WARNING SYSTEM".



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

Trouble Diagnoses

WORK FLOW



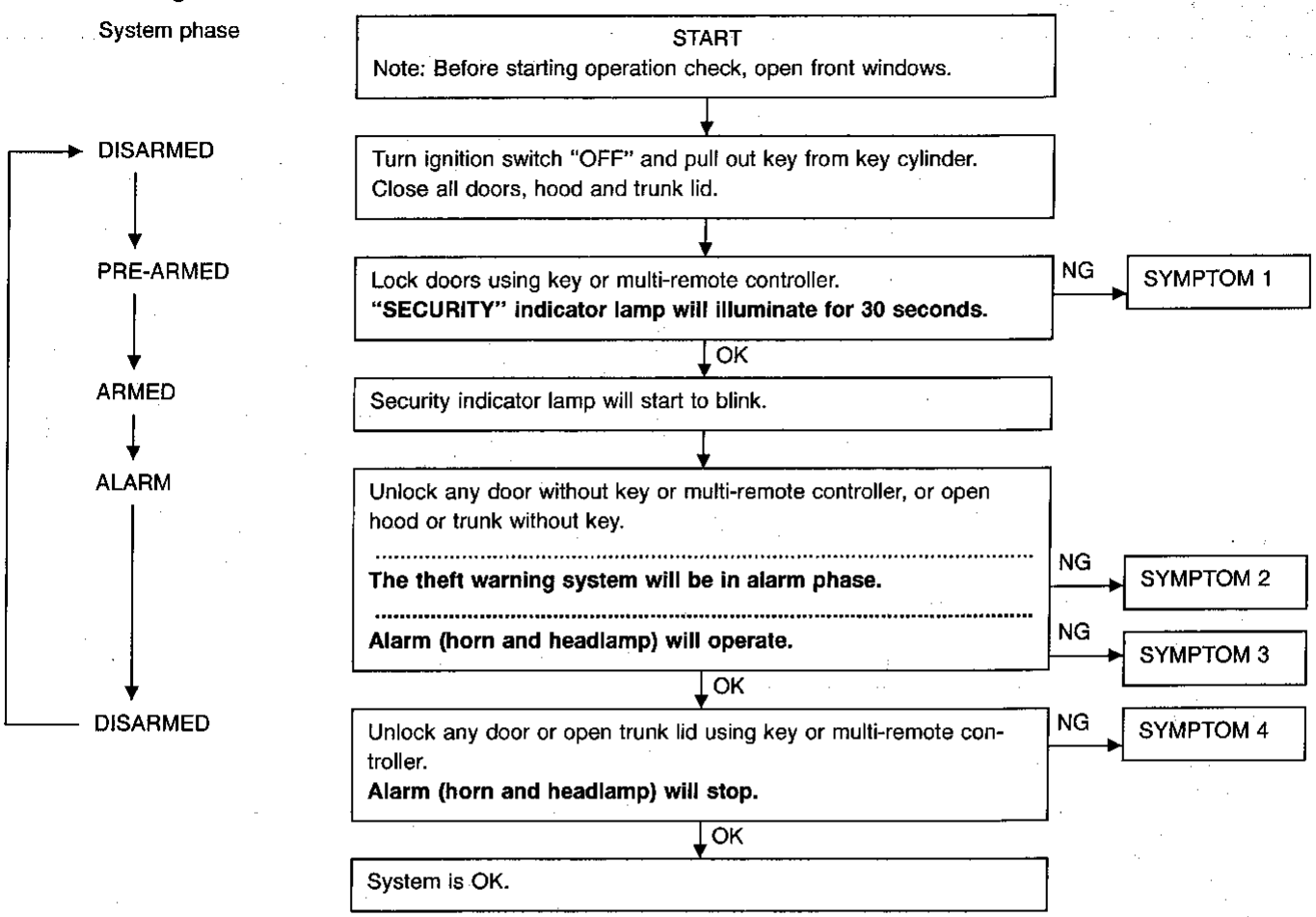
NOTICE:

- **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 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 (Refer to EL-207.) 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

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



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

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-343.

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

SYMPTOM CHART

PROCEDURE			—		Diagnostic procedure							—	
REFERENCE PAGE			EL-343	EL-224	EL-345	EL-348	EL-349	EL-350	EL-352	EL-353	EL-354	EL-280	EL-208
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	

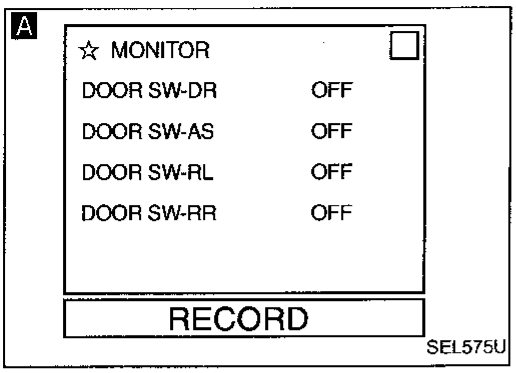
X : Applicable
*1: Make sure the system is in the armed phase.

Trouble Diagnoses (Cont'd)

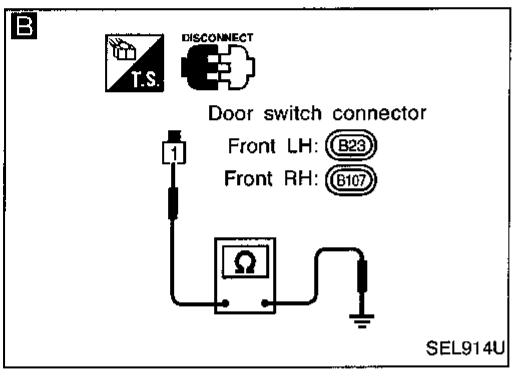
DIAGNOSTIC PROCEDURE 1-(1)

(Door switch check)

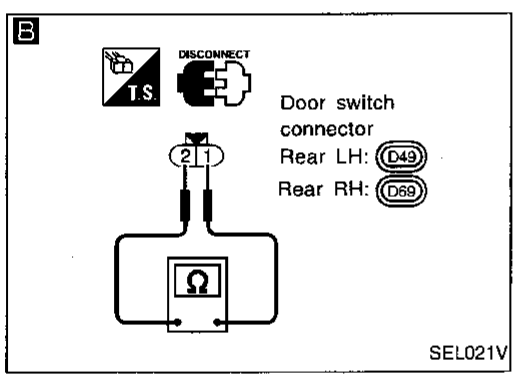
A



B



B



CHECK DOOR SWITCH INPUT SIGNAL.

A CONSULT

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

OK → Door switch is OK.

— OR —

ON-BOARD

Check all door switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-334.

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

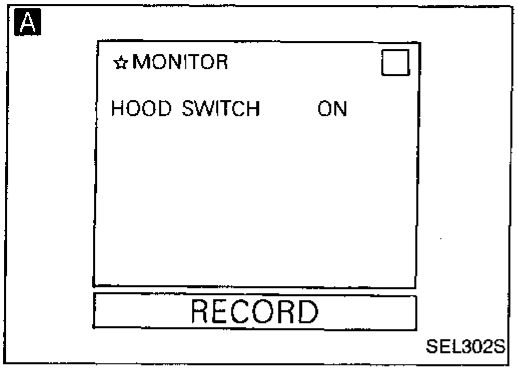
NG → Replace door switch.

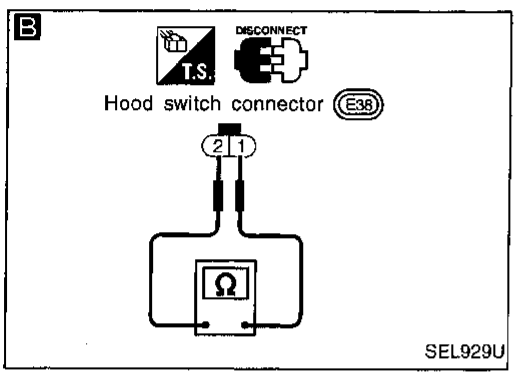
OK ↓

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)





CHECK HOOD SWITCH INPUT SIGNAL.

A CONSULT

See "HOOD SWITCH" in DATA MONITOR mode.
When hood is open:
HOOD SWITCH ON
When hood is closed:
HOOD SWITCH OFF

OK → Hood switch is OK.

OR

ON-BOARD

Check hood switch in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-335.

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.

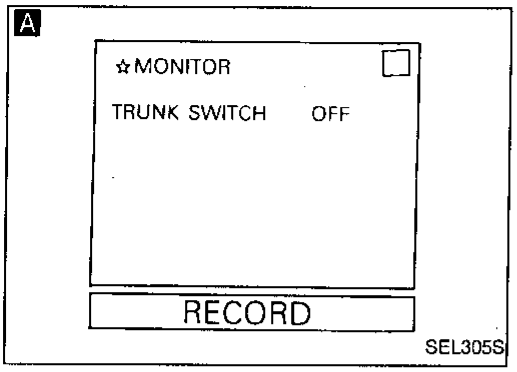
OK ↓

Check the following.
- Hood switch ground circuit
- Harness for open or short between BCM and hood switch

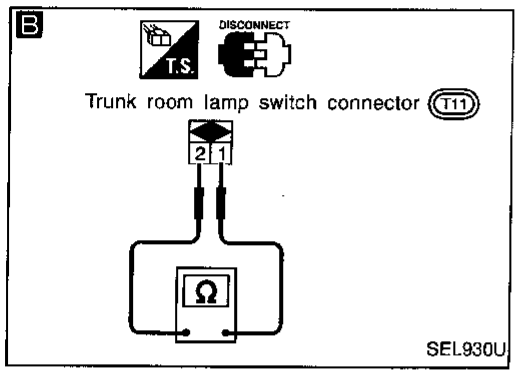
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(3)
(Trunk room lamp switch check)

A



B



CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL.

A CONSULT

See "TRUNK SWITCH" in DATA MONITOR mode.
When trunk lid is open:
TRUNK SWITCH ON
When trunk lid is closed:
TRUNK SWITCH OFF

OK → Trunk room lamp switch is OK.

OR

ON-BOARD

Check trunk room lamp switch in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-215.)

Refer to wiring diagram in EL-335.

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.

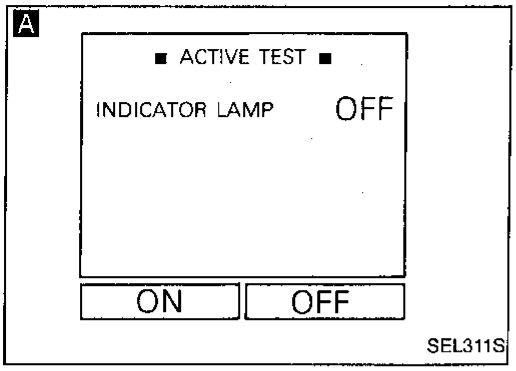
OK ↓

Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short between BCM and trunk room lamp switch

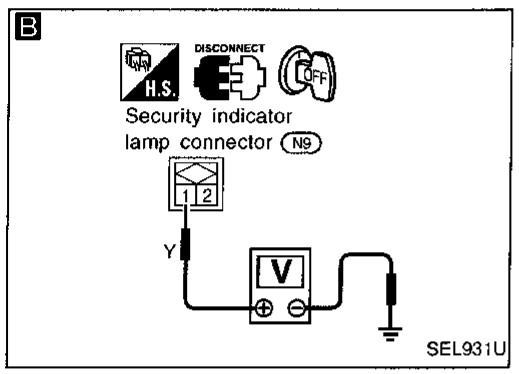
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2
(Security indicator lamp check)

A



B



A

INDICATOR LAMP ACTIVE TEST
CONSULT

See "INDICATOR LAMP" in ACTIVE TEST mode.
Perform operation shown on display.
Indicator lamp should illuminate.
Note: If CONSULT 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-334.

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 ↓

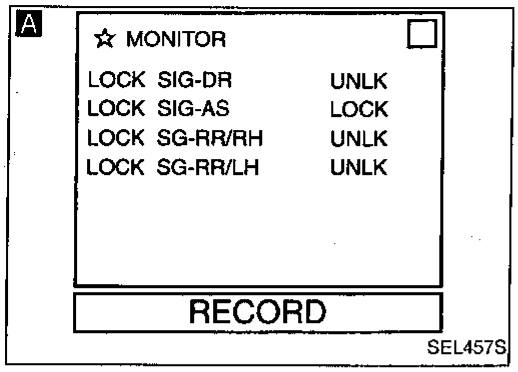
Check harness for open or short between security indicator lamp and BCM.

Trouble Diagnoses (Cont'd)

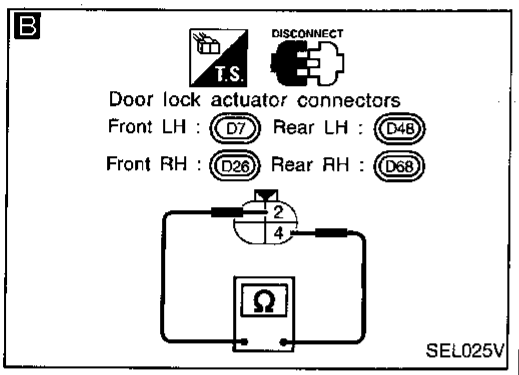
DIAGNOSTIC PROCEDURE 3

(Door unlock sensor check)

A



B



CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OK → Door unlock sensor is OK.

OR

ON-BOARD

Check door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses, EL-215.)

Refer to wiring diagram in EL-336, 337 or 338.

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.

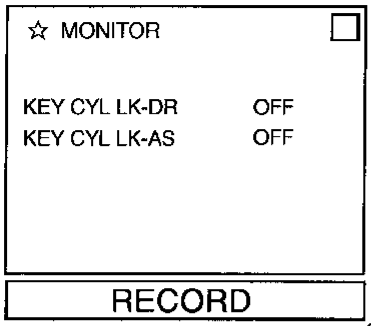
OK

Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

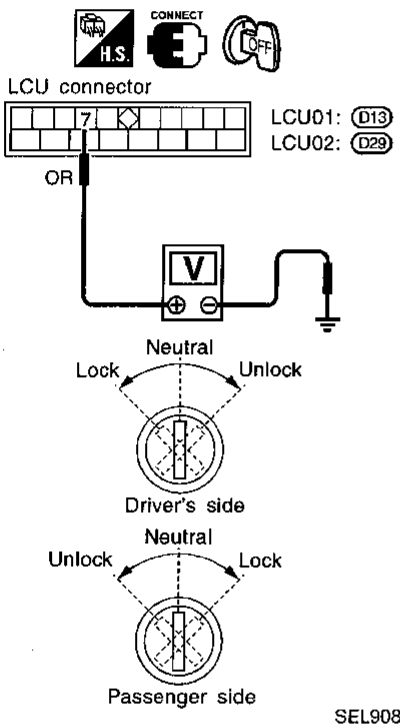
DIAGNOSTIC PROCEDURE 4-(1)
(Door key cylinder lock switch check)

A



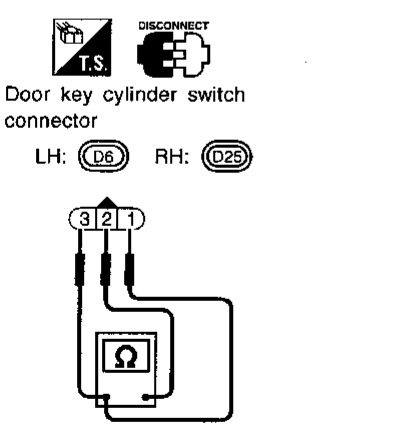
SEL910U

B



SEL908U

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

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.

OK → Door key cylinder switch (lock) is OK.

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-336 or 337.

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 ↓

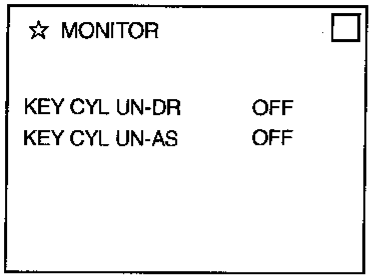
Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between LCU and door key cylinder switch

Trouble Diagnoses (Cont'd)

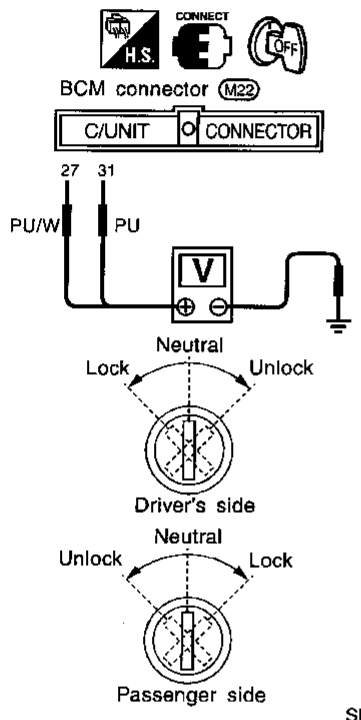
DIAGNOSTIC PROCEDURE 4-(2)
(Door key cylinder unlock switch check)

A



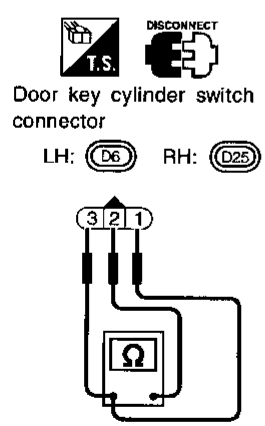
SEL911U

B



SEL259V

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

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.

OK → Door key cylinder switch (unlock) is OK.

— 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-333.

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.

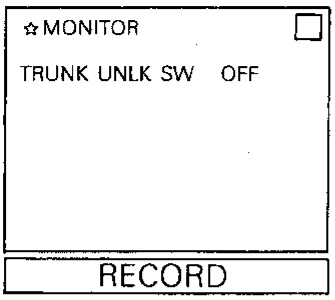
- Door key cylinder switch ground circuit
- Harness for open or short between BCM and door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

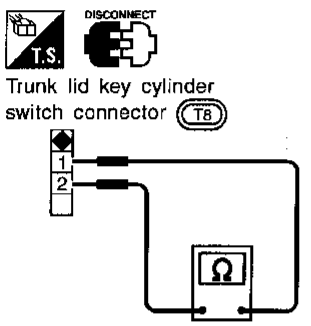
(Trunk lid key unlock signal check)

A



SEL327S

B



SEL932U

CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL).

A CONSULT

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-215.)

Refer to wiring diagram in EL-335.

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	No

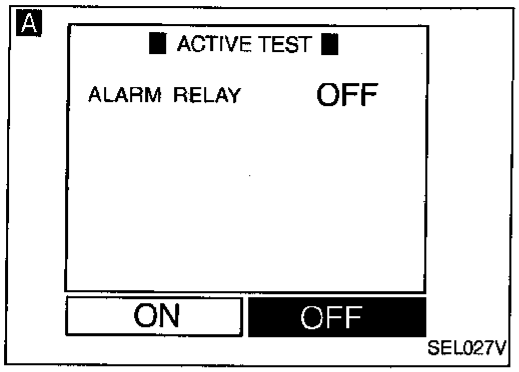
NG → Replace trunk lid key cylinder switch.

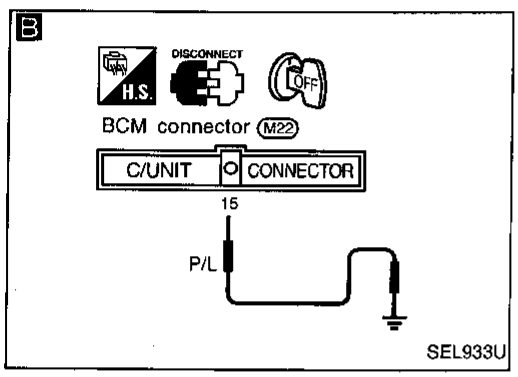
OK

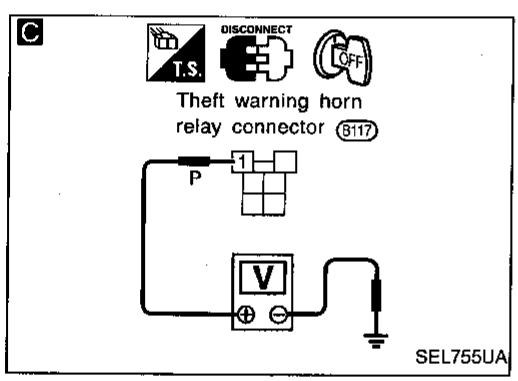
Check the following.
- Trunk lid key cylinder switch ground circuit
- Harness for open or short between trunk lid key cylinder switch and BCM

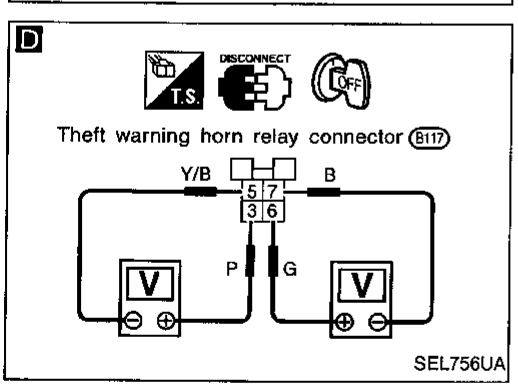
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6
(Theft warning horn alarm check)









CHECK THEFT WARNING HORN ALARM OPERATION.

A CONSULT

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-340.

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.

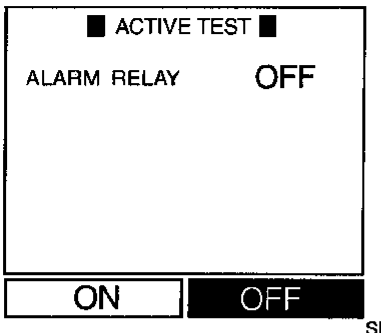
OK →

Check harness for open or short between theft warning horn relay and BCM.

Trouble Diagnoses (Cont'd)

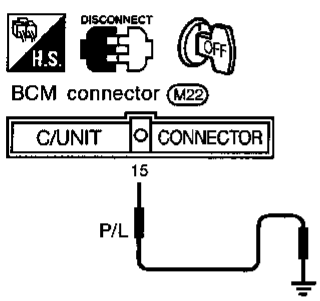
DIAGNOSTIC PROCEDURE 7
(Theft warning headlamp alarm check)

A



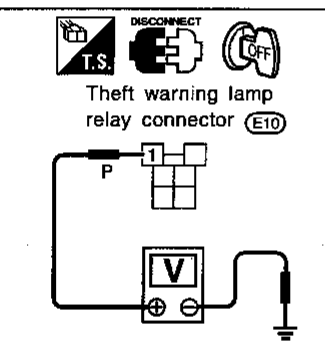
SEL027V

B



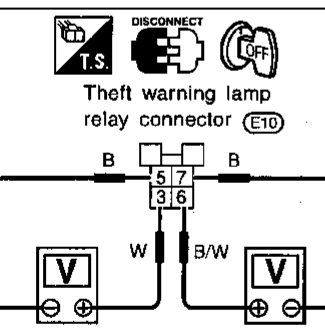
SEL933U

C



SEL757UA

D



SEL758UA

CHECK THEFT WARNING HEADLAMP ALARM OPERATION.

A CONSULT

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-340.

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.

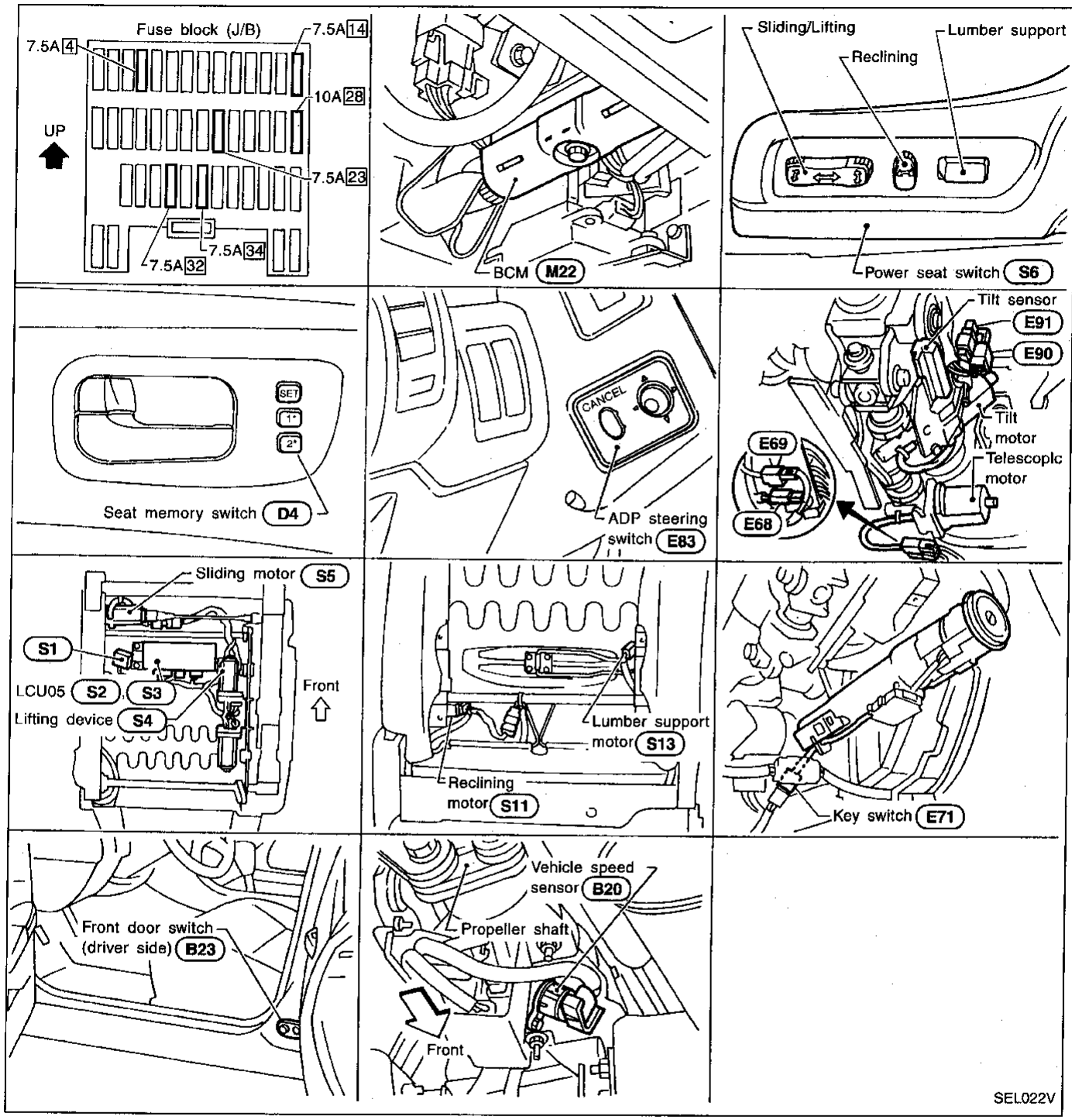
1. Disconnect theft warning lamp relay connector.
2. Turn lighting switch to 2nd position.
3. Check voltage between terminals ③ and ⑤.
   Battery voltage should exist.
4. Check voltage between terminals ⑥ and ⑦.
   Battery voltage should exist.

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



System Description

OPERATIVE CONDITION

The drive position 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, 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 and with manual set operations.

↓ Ignition switch "ON".

	Indicator LEDs
Touch set switch.	(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.

	Indicator LEDs
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.)	(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.

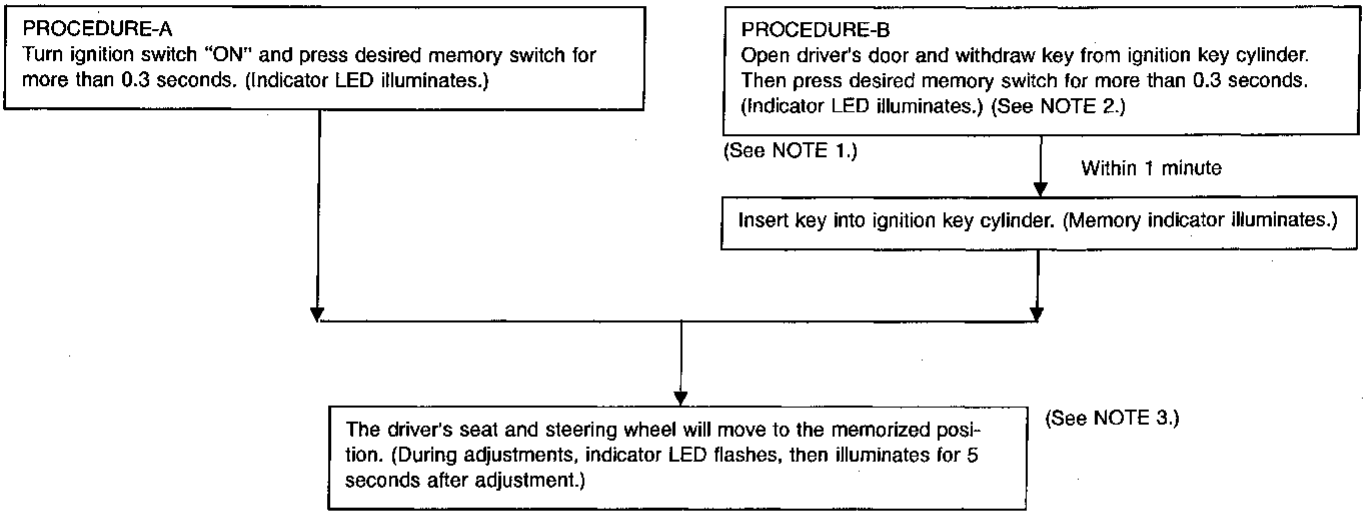
↓

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



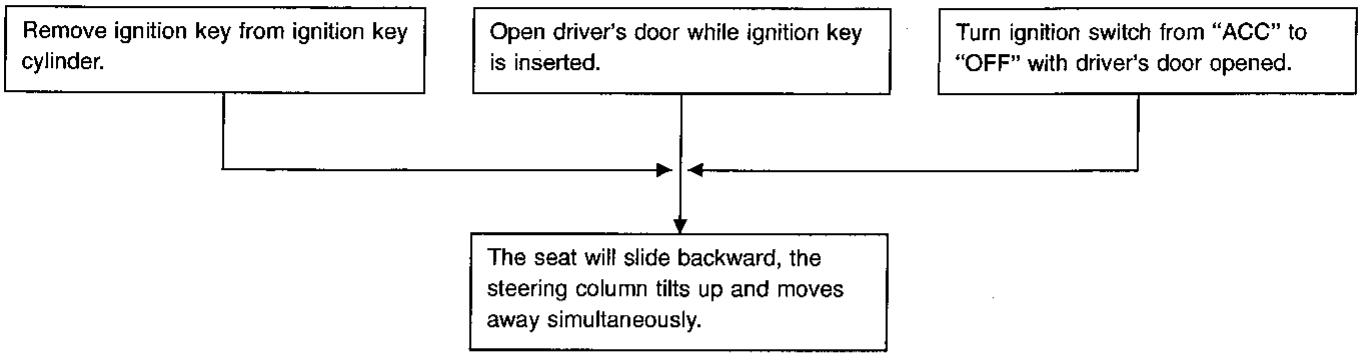
NOTES: (1) Do not keep cancel switch pressed as it will not operate.
(2) Automatic exiting setting will be performed.
(3) The driver's seat position and steering adjustment (see the following Table) operate simultaneously in the order of priority.

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)

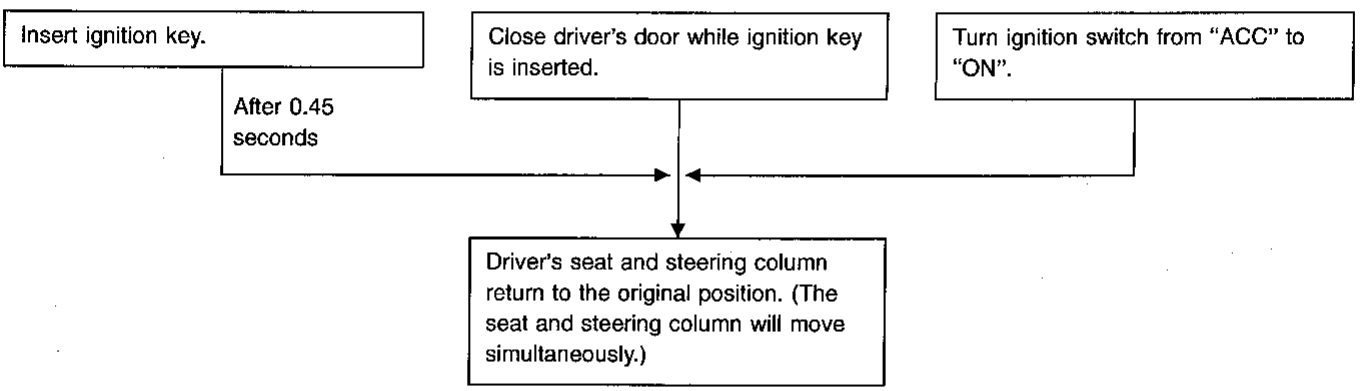
AUTOMATIC EXITING SETTING

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.

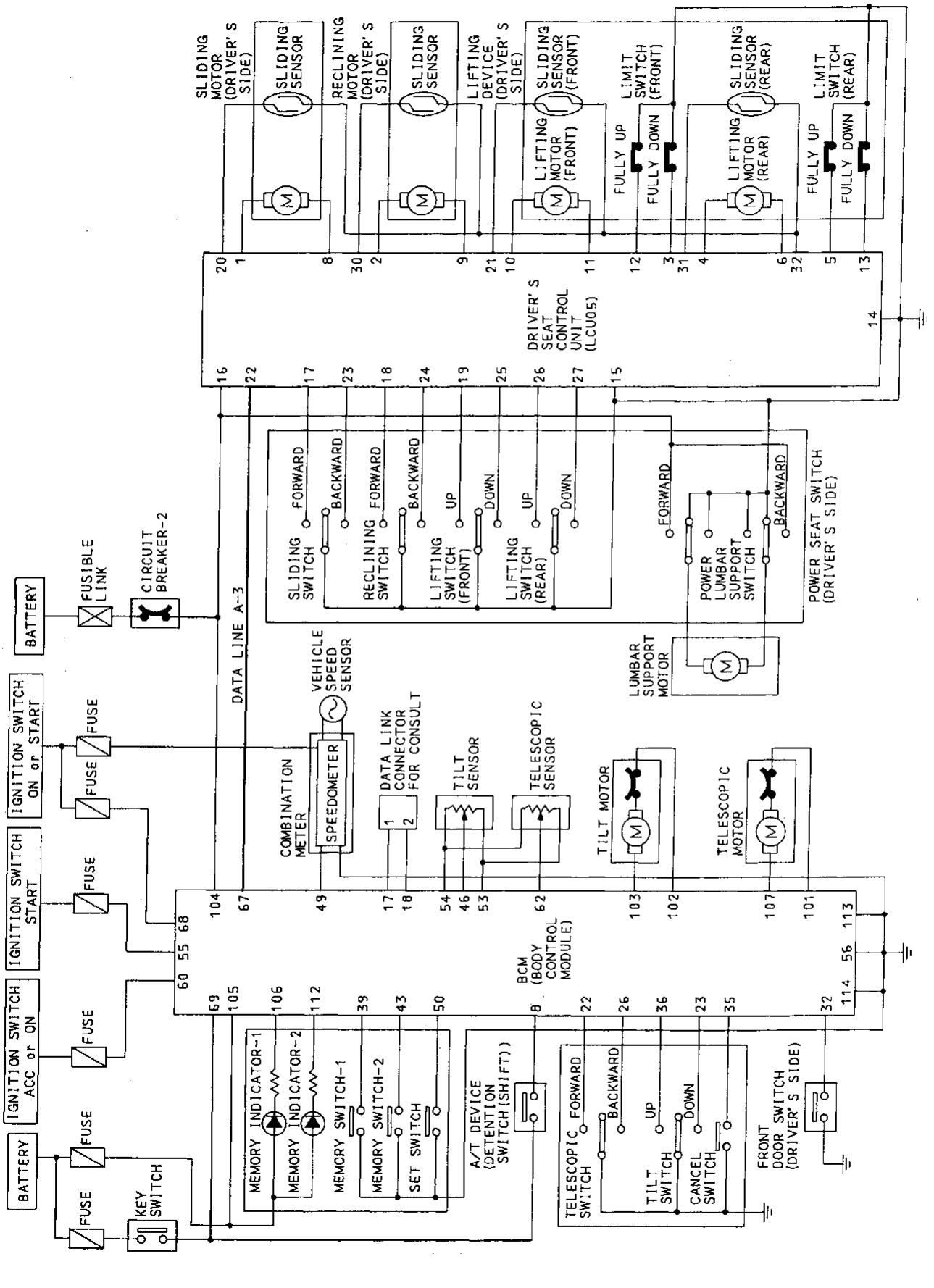


AUTOMATIC SET RETURN

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

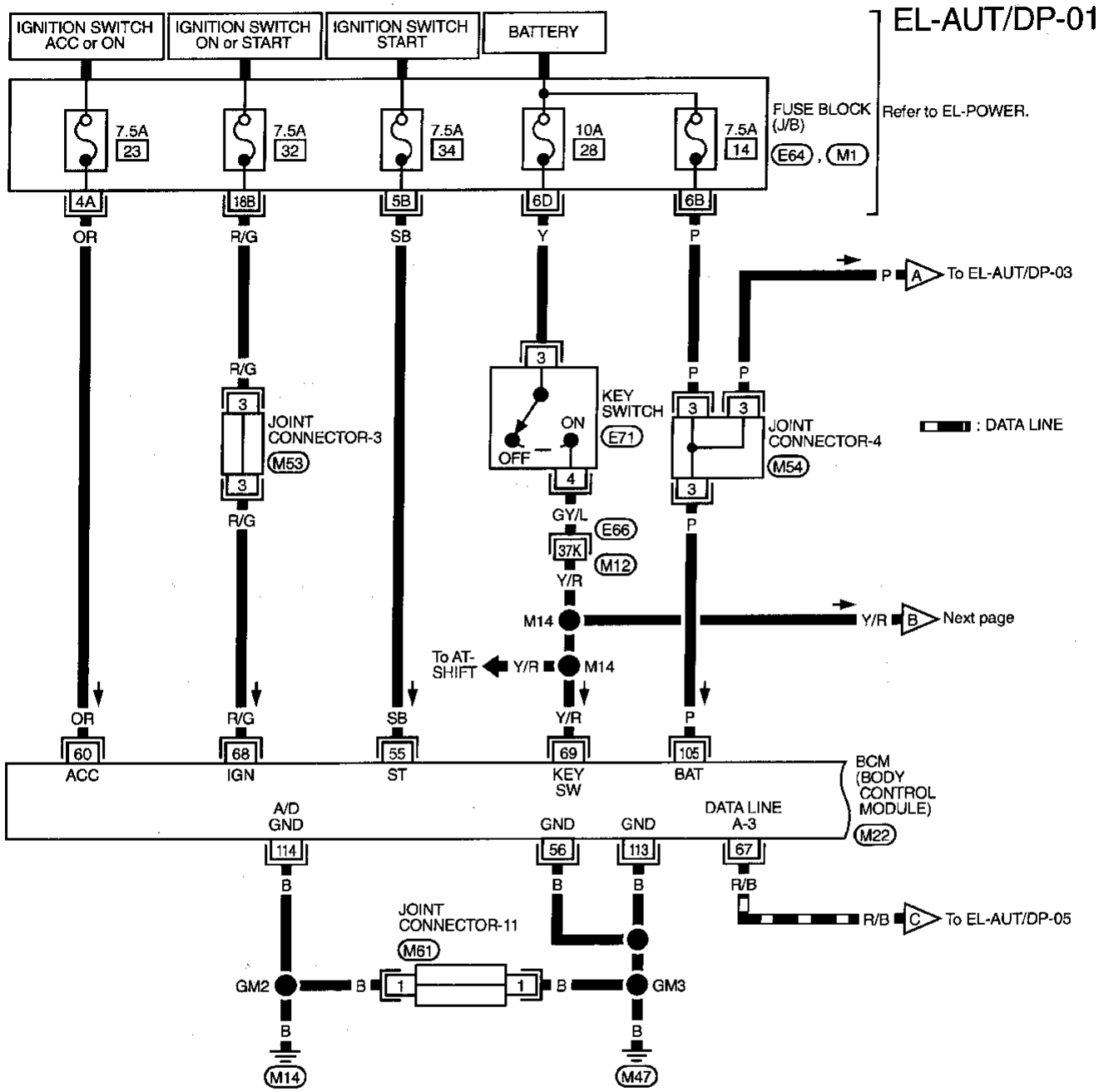


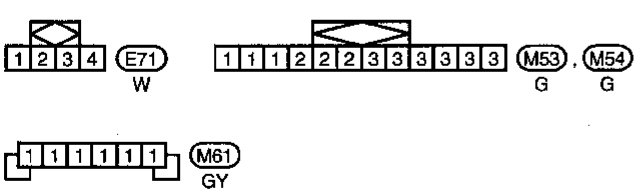
Schematic



TEL868

Wiring Diagram — AUT/DP —





Refer to last page (Foldout page).

E66 , M12

E64

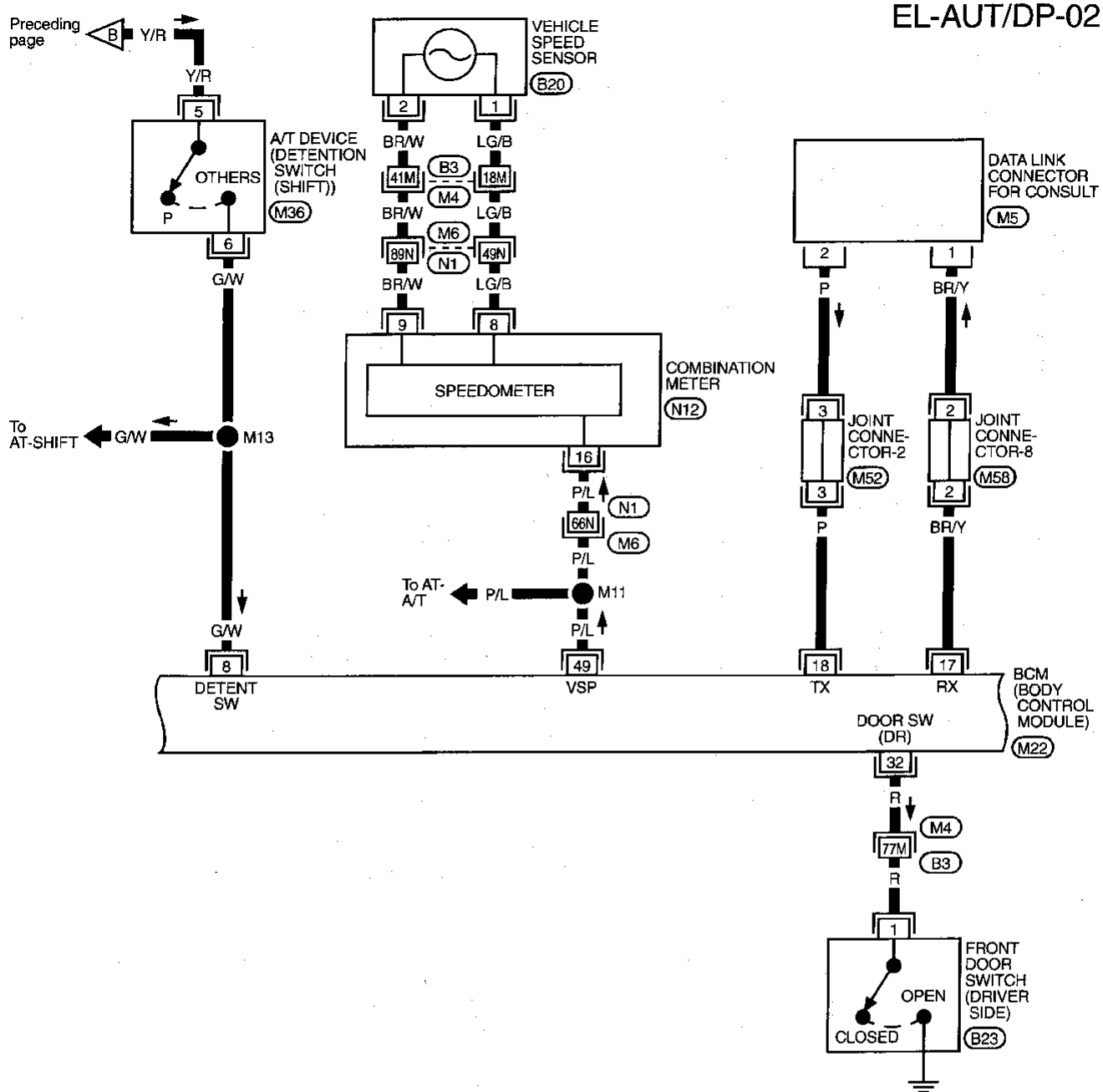
M1

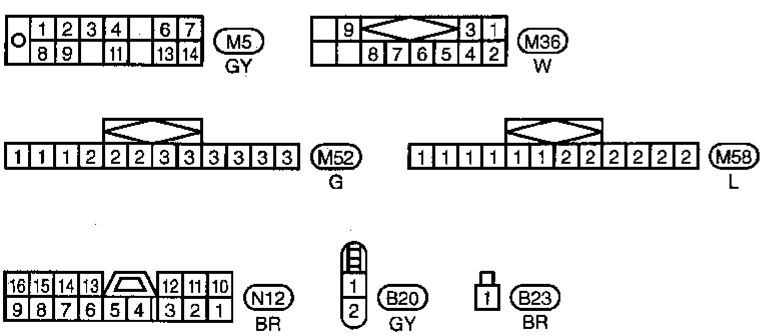
M22

TEL393A

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-02





Refer to last page (Foldout page).

M4, B3

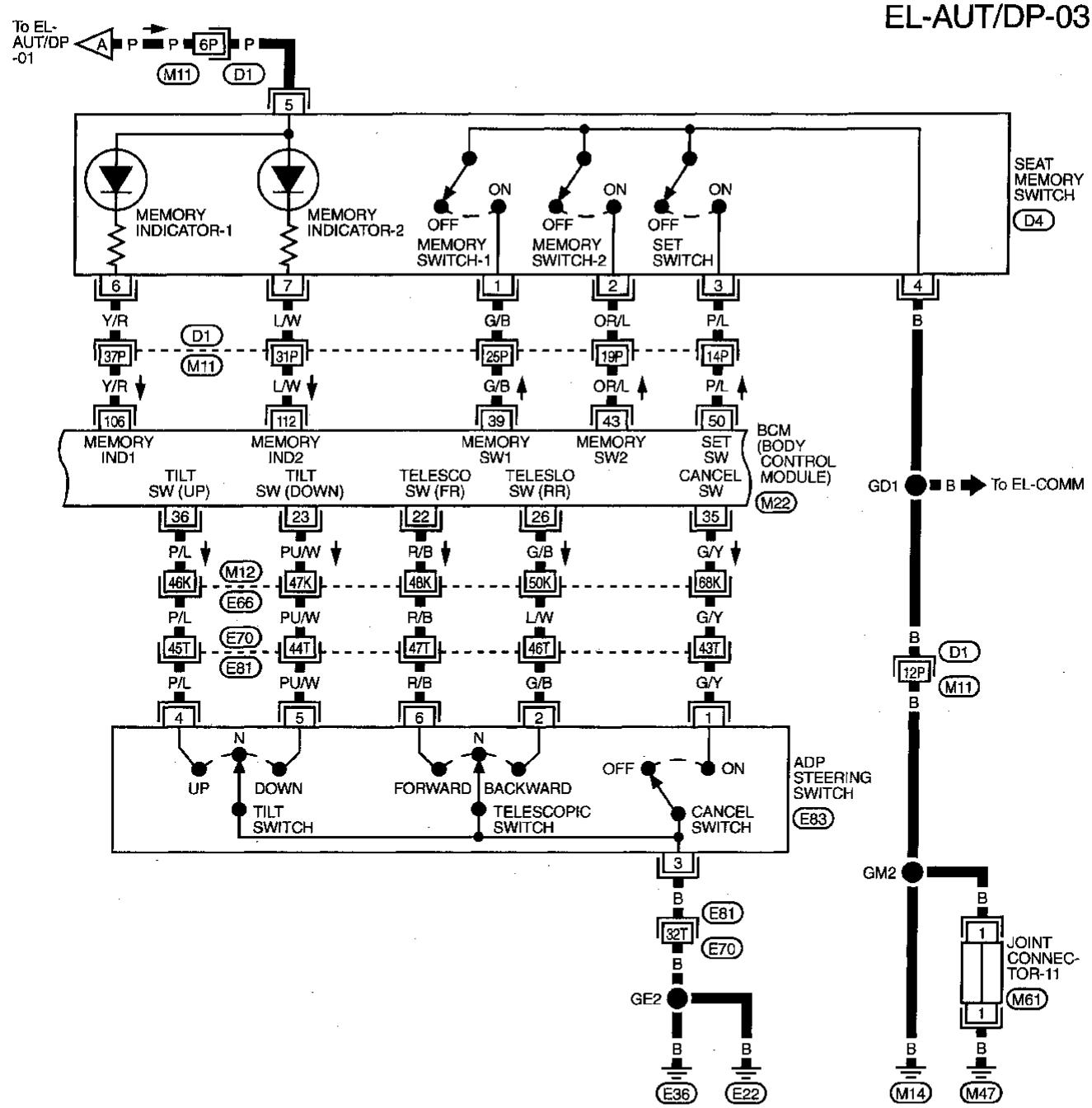
M6, N1

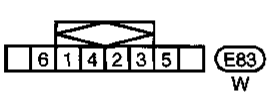
M22

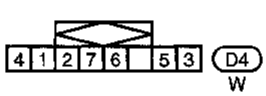
TEL394A

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-03







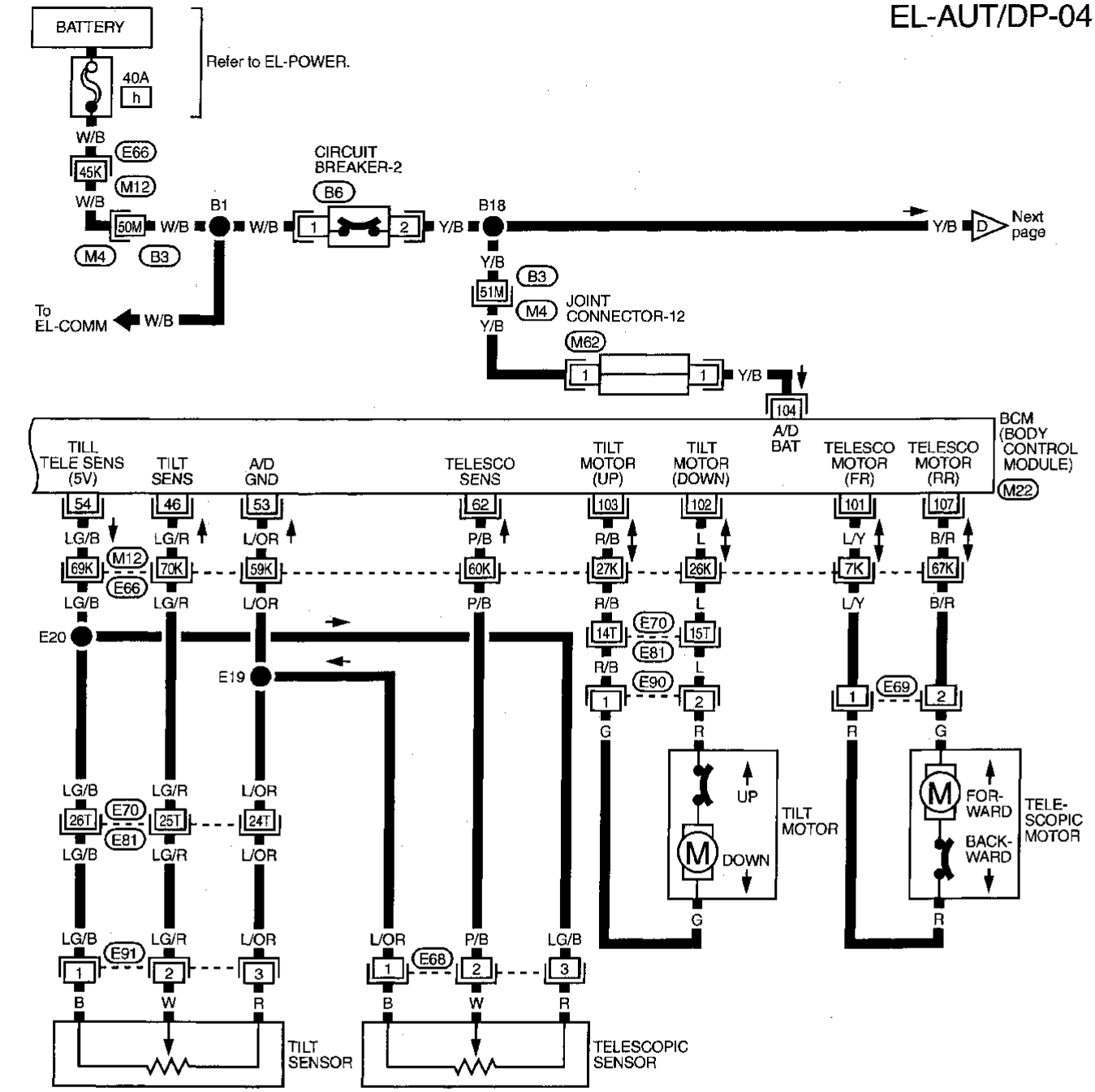
Refer to last page (Foldout page).

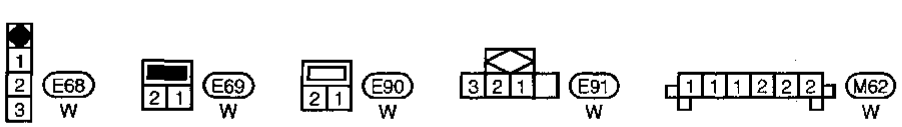
E66, M12
E70, E81
M11, D1
M22

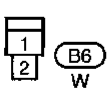
TEL395A

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-04





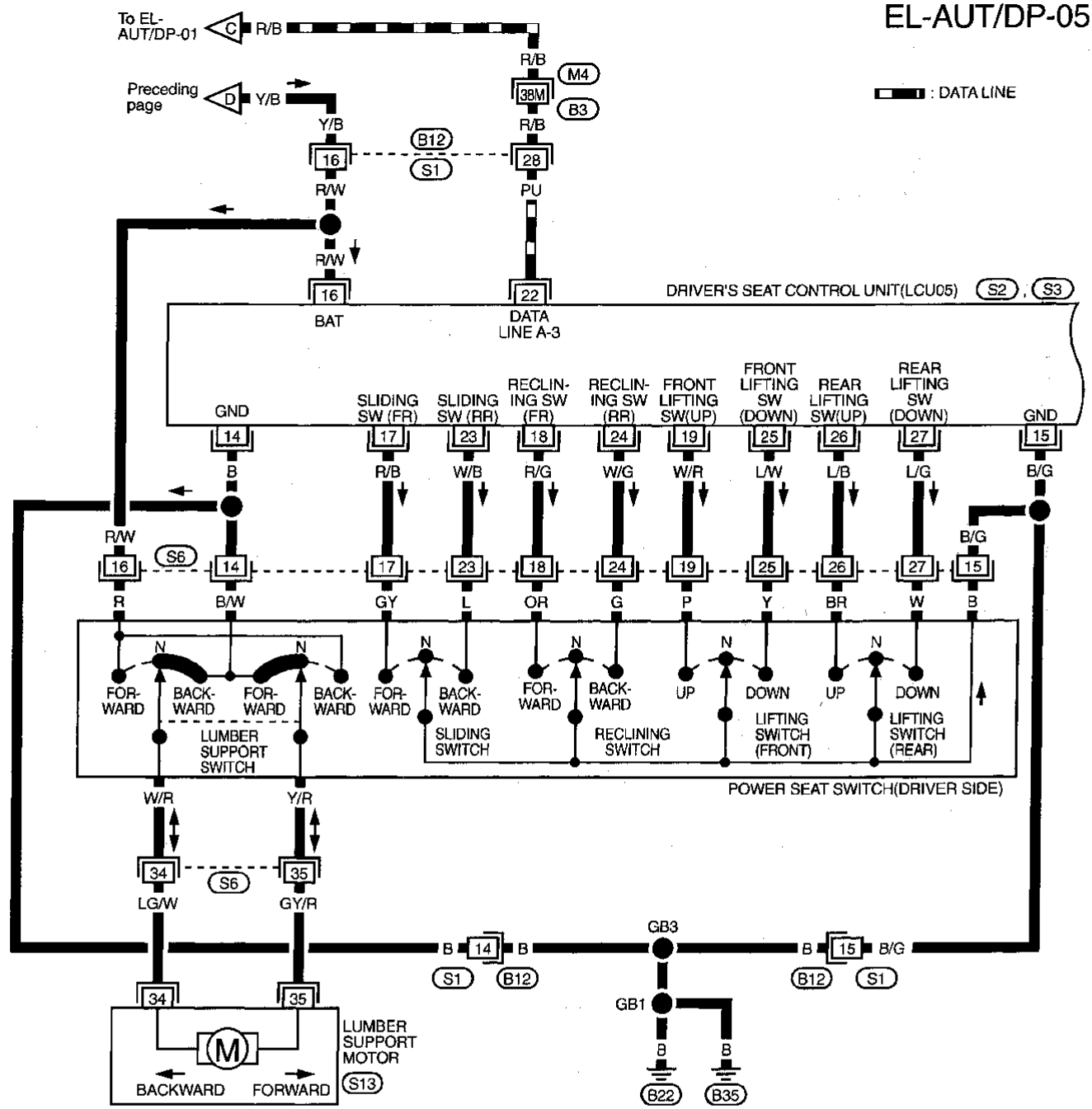


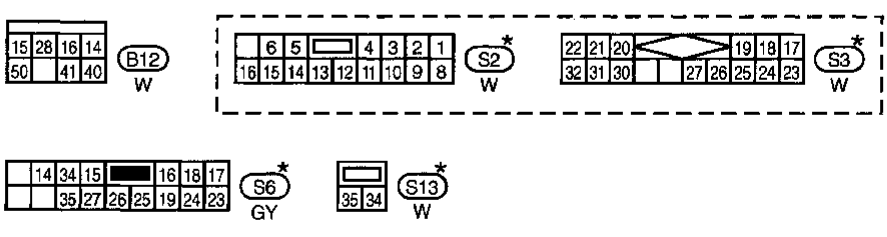
Refer to last page (Foldout page).

E66, M12
E70, E81
M4, B3
M22

TEL396A

Wiring Diagram — AUT/DP — (Cont'd)





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

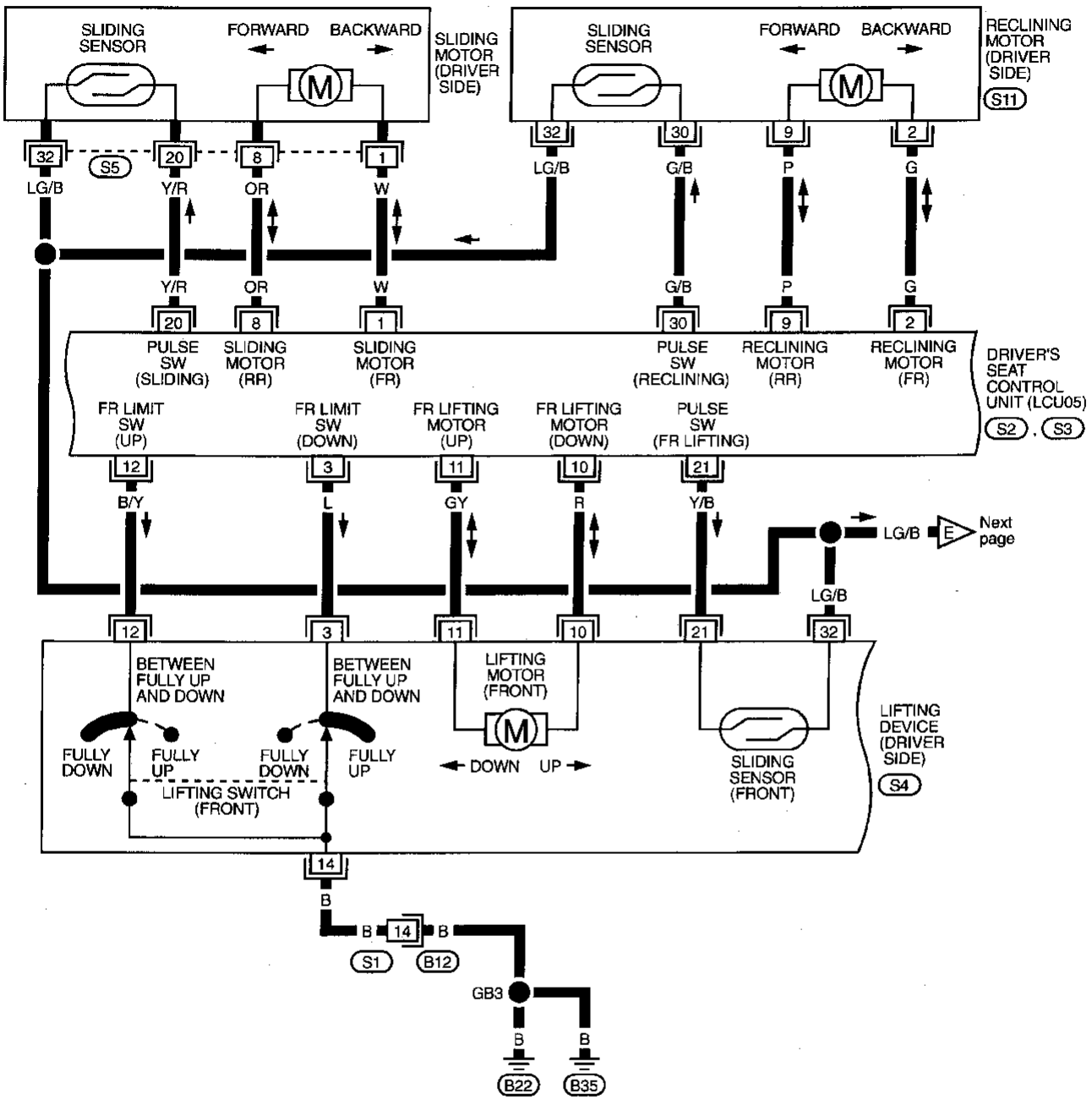
*: This connector is not shown in "HARNESS LAYOUT", EL section.

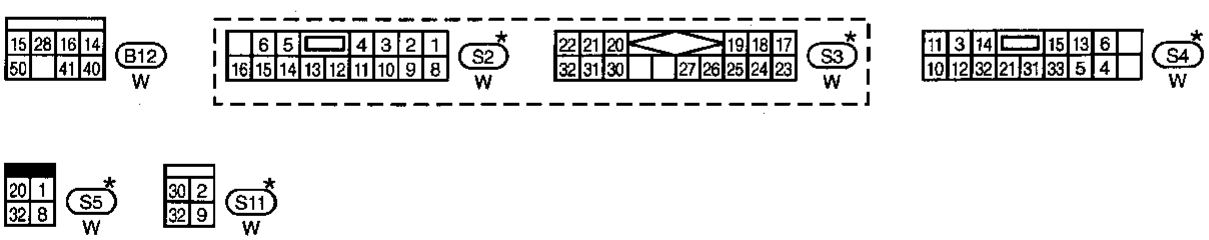
TEL397A

1799

Wiring Diagram — AUT/DP — (Cont'd)

EL-AUT/DP-06



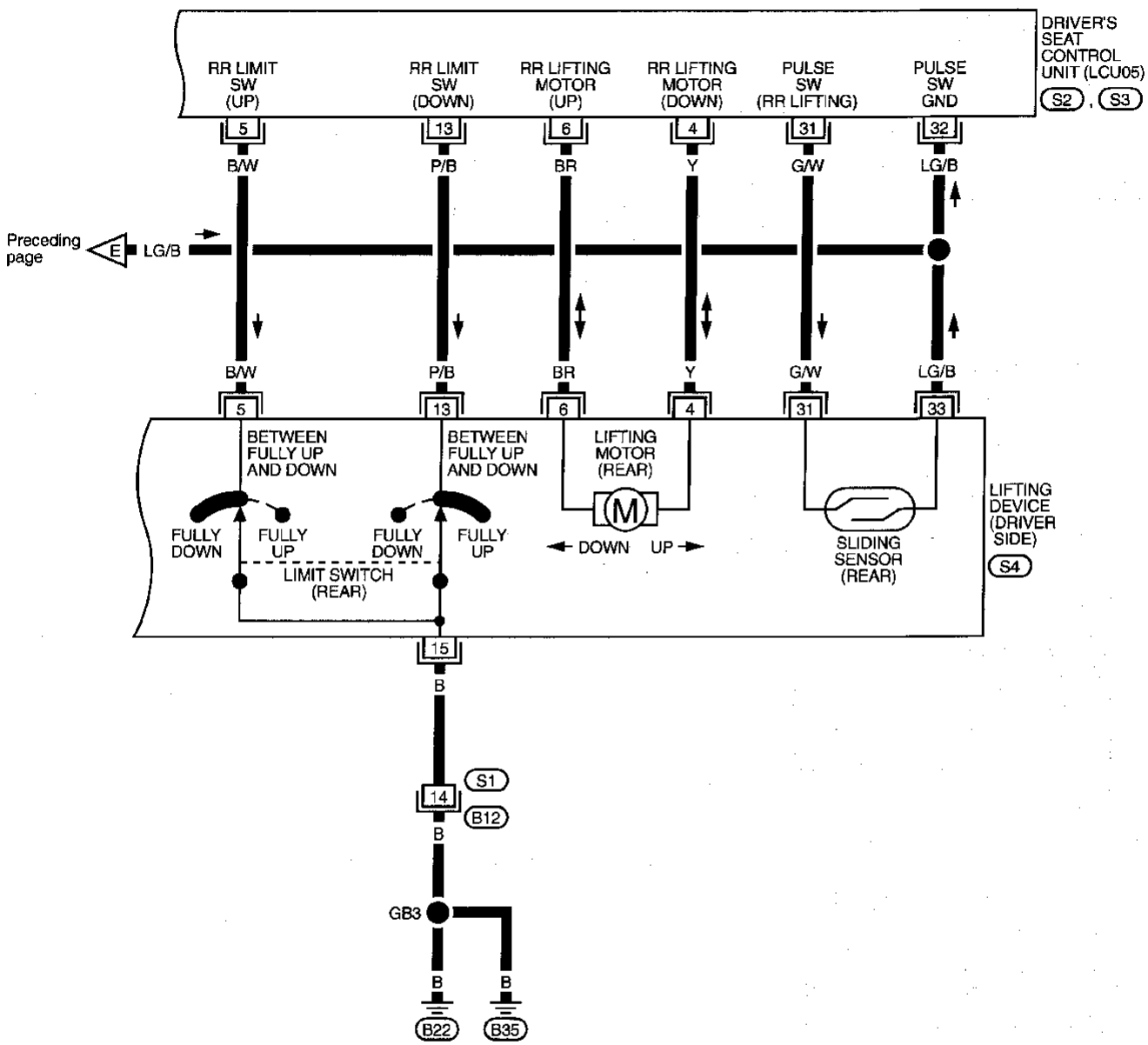


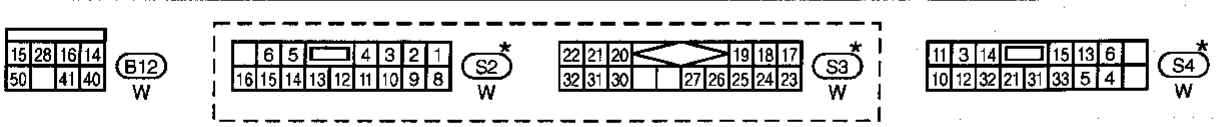
*: This connector is not shown in "HARNESS LAYOUT", EL section.

TEL398A

Wiring Diagram — AUT/DP — (Cont'd)

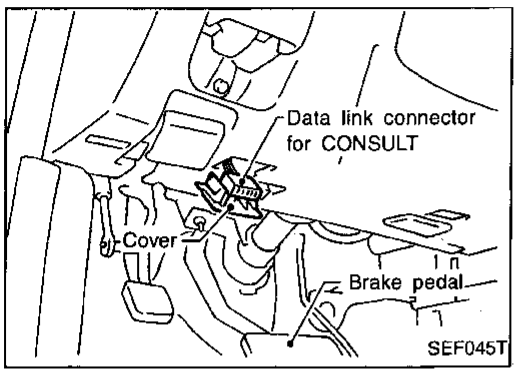
EL-AUT/DP-07





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

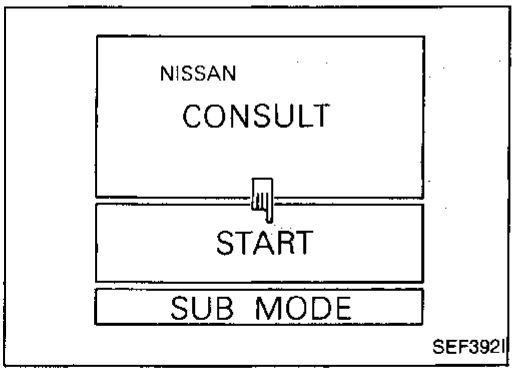
TEL399A



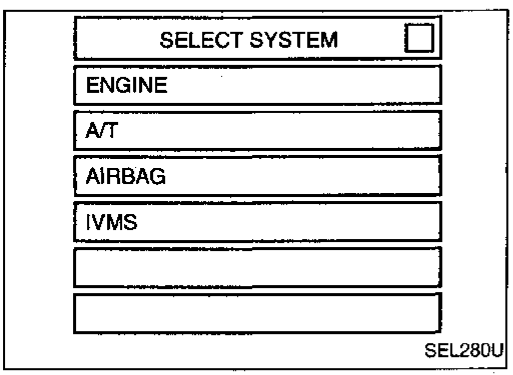
CONSULT

CONSULT INSPECTION PROCEDURE

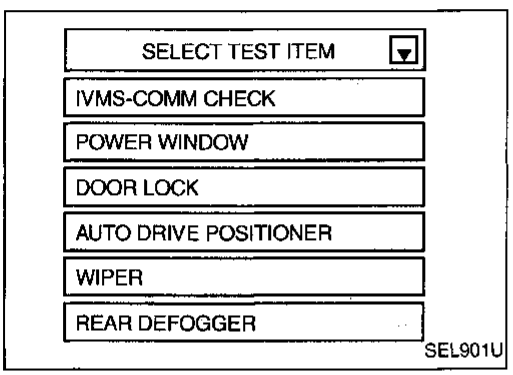
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



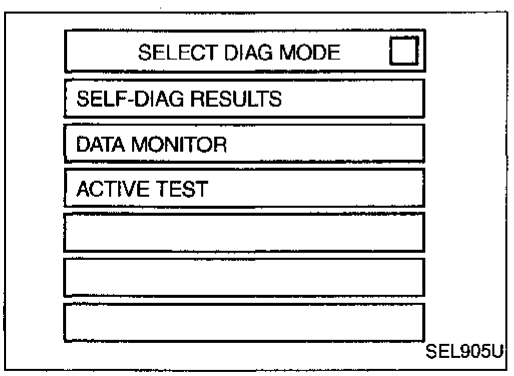
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "AUTO DRIVE POSITIONER".

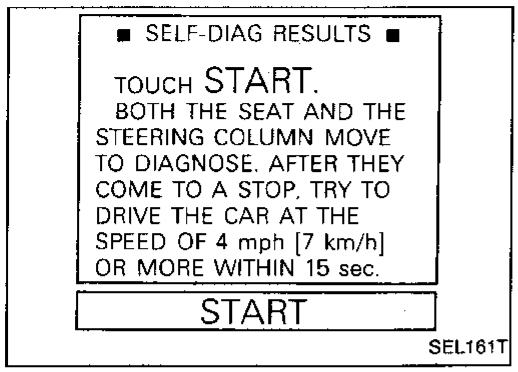


- DATA MONITOR, ACTIVE TEST, and SELF-DIAGNOSIS are available for the automatic drive positioner.

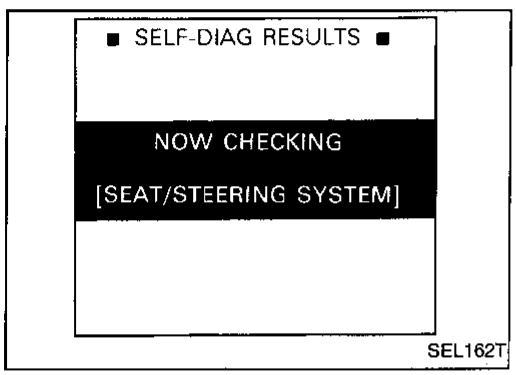
CONSULT (Cont'd)

HOW TO PERFORM SELF-DIAGNOSIS

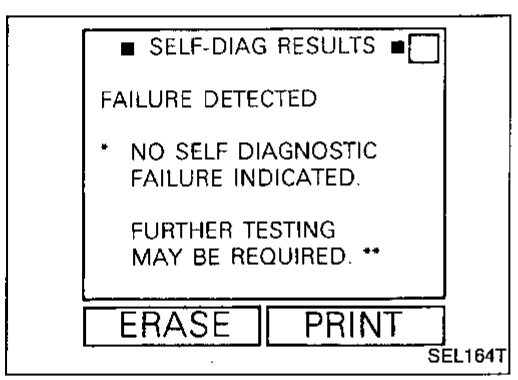
1. Choose "AUTO DRIVE POSITIONER" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



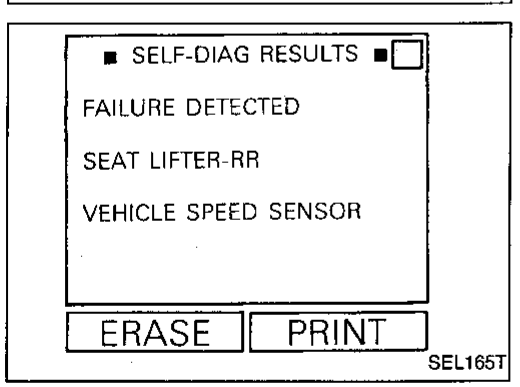
4. Seats and steering automatically move, and self-diagnosis will start.
5. Within 15 seconds after seat and steering come to a stop, drive the vehicle at speeds greater than 7 km/h (4 MPH) to diagnose the vehicle speed sensor.
6. After completing self-diagnosis, diagnostic results appear on the display.



- When no malfunction is detected.



- 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".

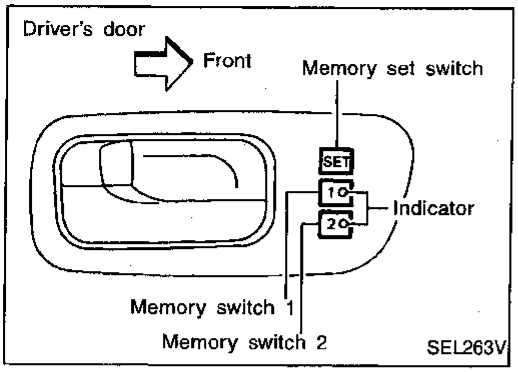
CONSULT (Cont'd)

SELF DIAGNOSTIC RESULT LIST

Diagnostic item	Explanation	Diagnostic procedure	Reference page
*NO SELF DIAGNOSTIC FAILURE INDICATED/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-382 EL-388
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-383 EL-389
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-384 EL-390
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-385 EL-391
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-381 EL-387
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-380 EL-386
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-396
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-396

CONSULT (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-381
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-380



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.

↓

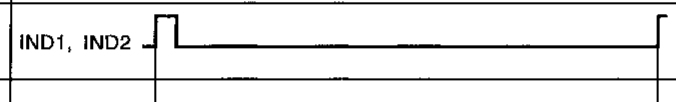
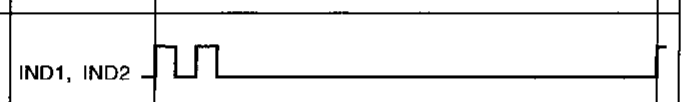
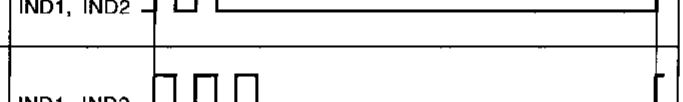
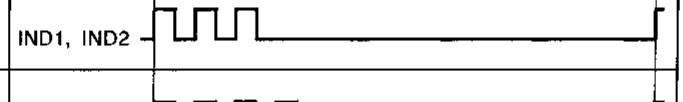
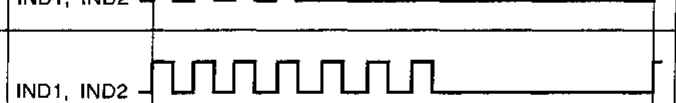
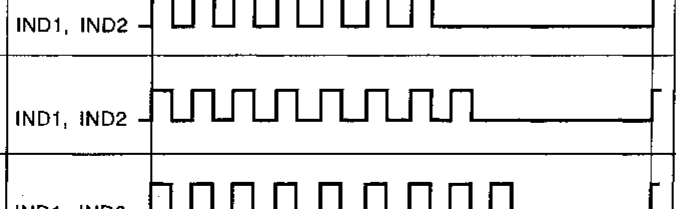
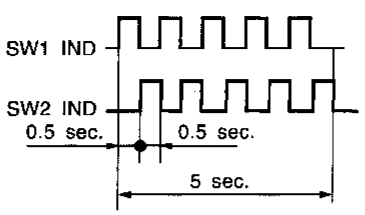
DIAGNOSIS END*2

*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.

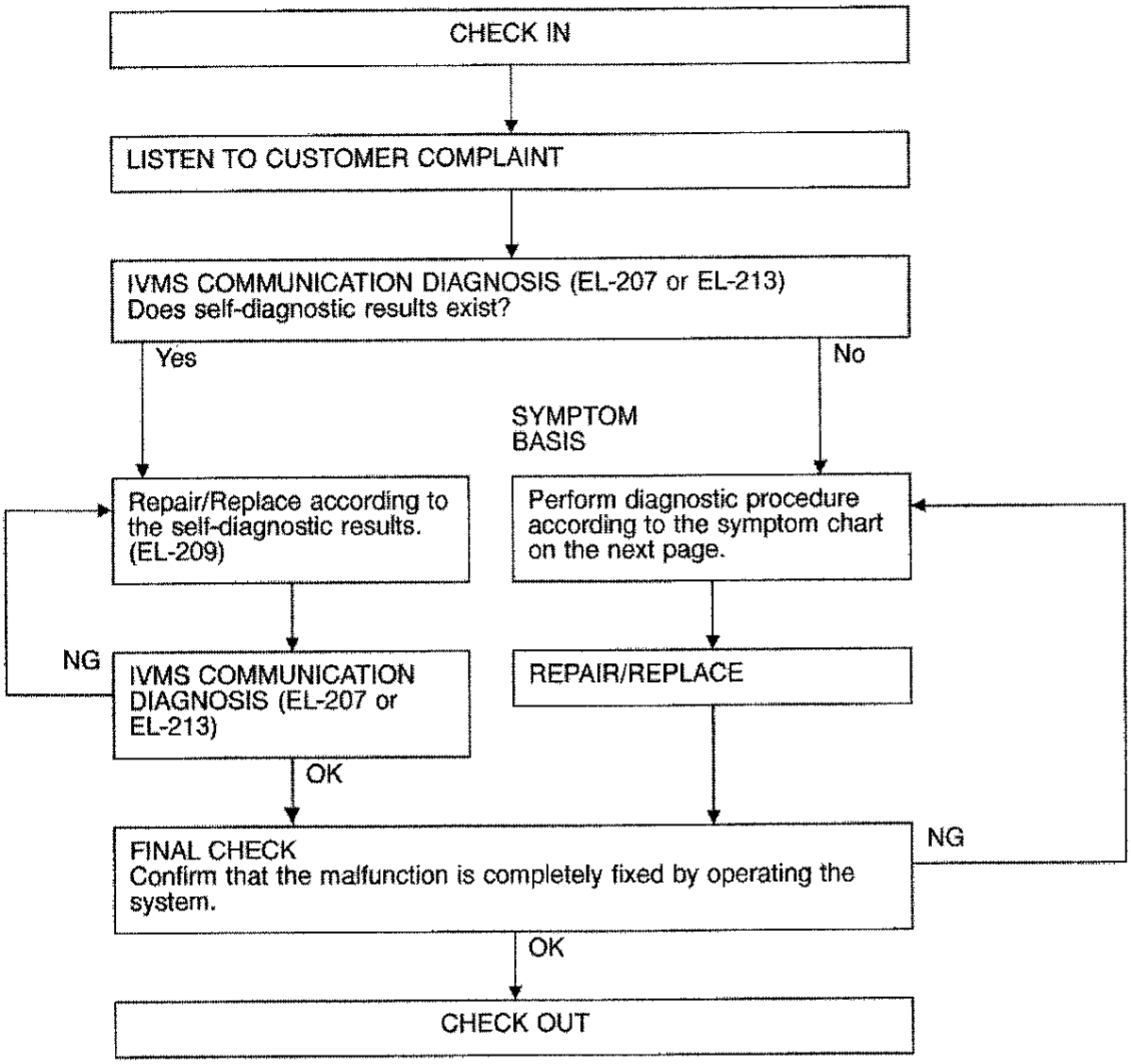
Code No.	Detected items	Indication of seat memory switches 1 and 2	Explanation
1	Seat sliding		While the seat motors are moving for 2.5 seconds, if the number of seat sliding/reclining/lifting sensor pulses changes 2 times or less, the seat device is determined to be malfunctioning.
2	Seat reclining		
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		—

SEL015VA

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-382 EL-388	7	Steering telescopic	PROCEDURE 4 (Telescopic sensor check) PROCEDURE 10 (Telescopic motor check)	EL-381 EL-387
2	Seat reclining	PROCEDURE 6 (Reclining sensor check) PROCEDURE 12 (Reclining motor check)	EL-383 EL-389	8	Steering tilt	PROCEDURE 3 (Tilt sensor check) PROCEDURE 9 (Tilt motor check)	EL-380 EL-386
3	Seat lifting front	PROCEDURE 7 [Lifting sensor (front) check] PROCEDURE 13 [Lifting motor (front) check]	EL-384 EL-390	9	Vehicle speed sensor	PROCEDURE 19 (Vehicle speed sensor check)	EL-396
4	Seat lifting rear	PROCEDURE 8 [Lifting sensor (rear) check] PROCEDURE 14 [Lifting motor (rear) check]	EL-385 EL-391				

Trouble Diagnoses

WORK FLOW

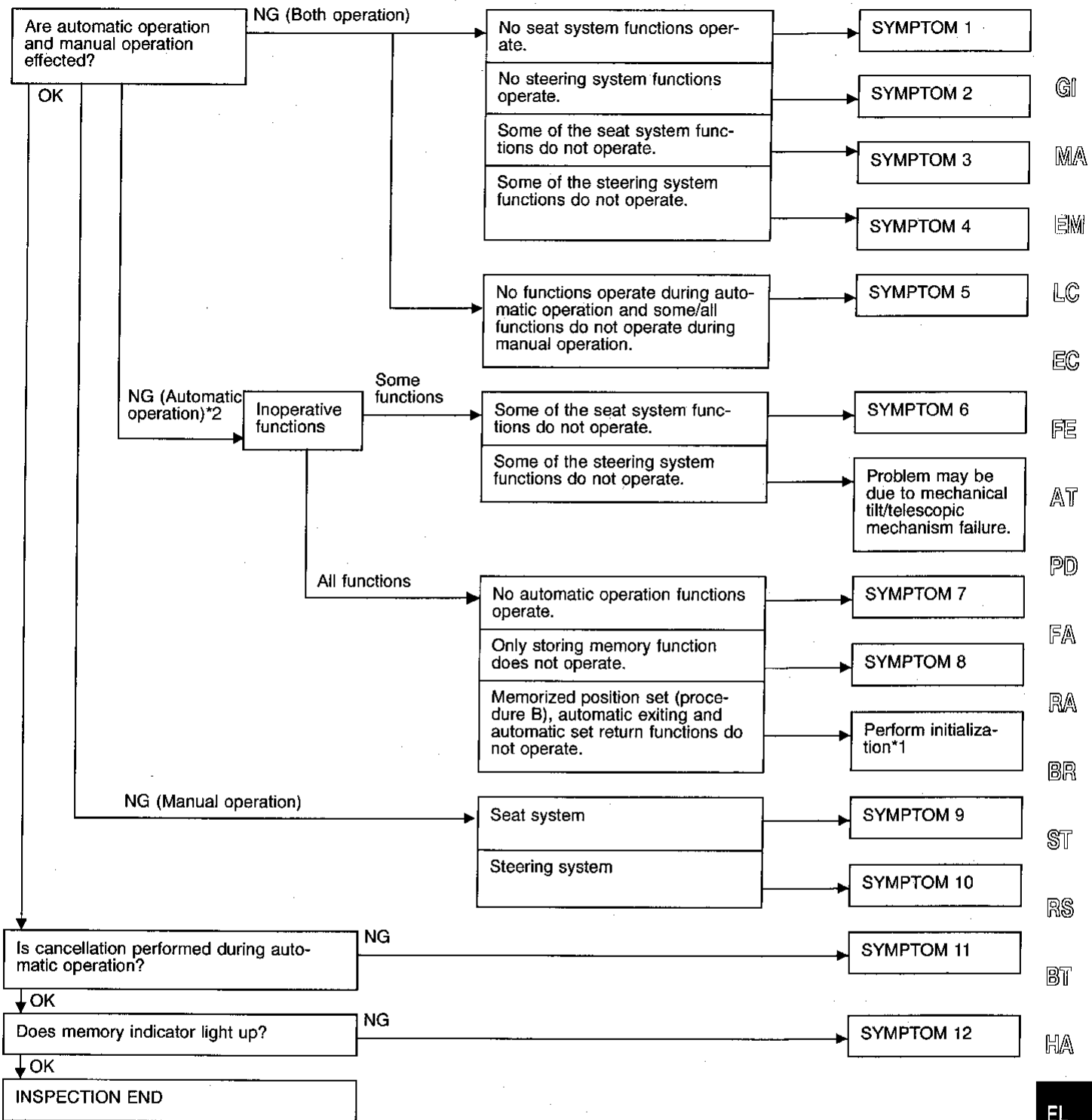


NOTICE:

- **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 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 (Refer to EL-207.) 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-375. Symptom numbers in the symptom chart correspond with those of preliminary check.

SYMPTOM CHART

PROCEDURE			Self-diagnosis		Diagnostic procedure									
REFERENCE PAGE			EL-369	EL-372	EL-378	EL-378	EL-380	EL-381	EL-382	EL-383	EL-384	EL-385	EL-386	EL-387
SYMPTOM			CONSULT	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.													

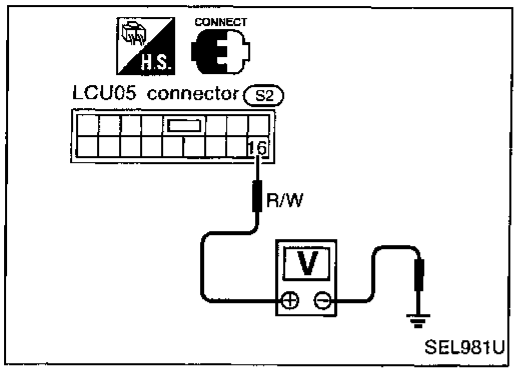
X: Applicable

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-388	EL-389	EL-390	EL-391	EL-392	EL-393	EL-394	EL-395	EL-396	EL-398	EL-399	EL-399	EL-208
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)

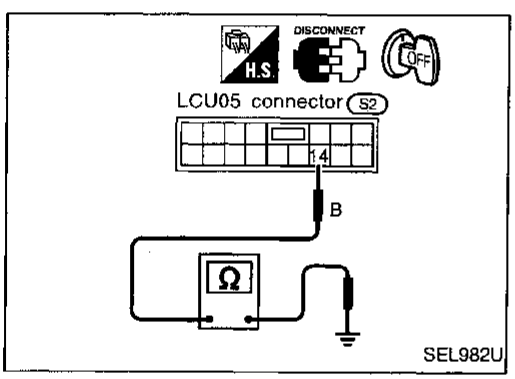
Power supply circuit check

Check voltage between LCU05 terminal ⑯ and ground.
(Refer to wiring diagram in EL-365.)

Terminals	Ignition switch position			
	OFF	ACC	ON	START
⑯ - Ground	Battery voltage			

If NG, check the following.

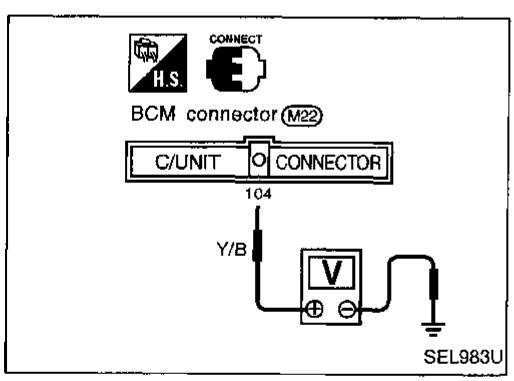
- Circuit breaker-2
- Harness for open or short between circuit breaker-2 and LCU05



Ground circuit check

Check continuity between LCU05 terminal ⑭ and ground.
(Refer to wiring diagram in EL-365.)

Terminals	Continuity
⑭ - Ground	Yes



DIAGNOSTIC PROCEDURE 2
(Power supply and ground circuit for tilt/telescopic motor)

Power supply circuit check

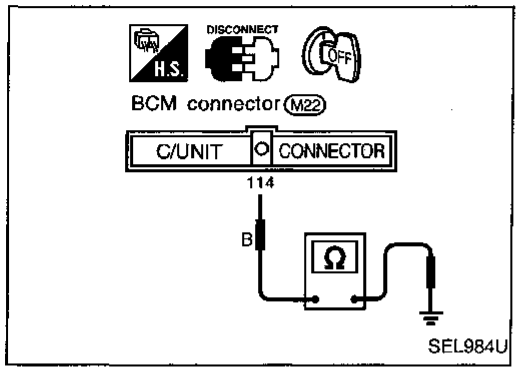
Check voltage between BCM terminal ⑩④ and ground.
(Refer to wiring diagram in EL-364.)

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

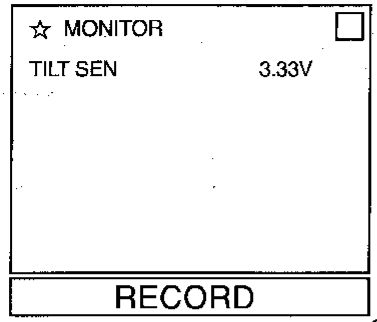
Check continuity between BCM terminal (114) and ground.
(Refer to wiring diagram in EL-361.)

Terminals	Continuity
(114) - Ground	Yes

Trouble Diagnoses (Cont'd)

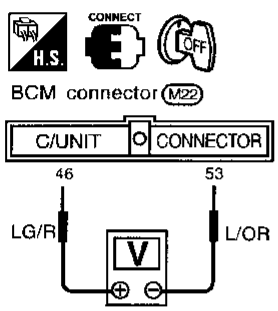
DIAGNOSTIC PROCEDURE 3
(Tilt sensor check)

A



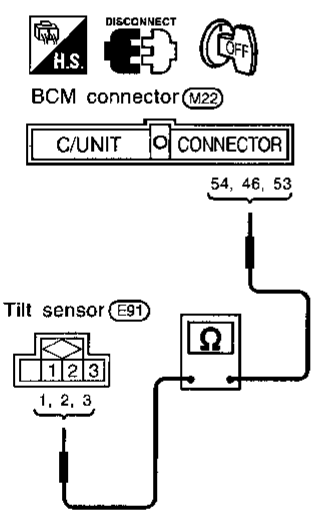
SEL985U

B



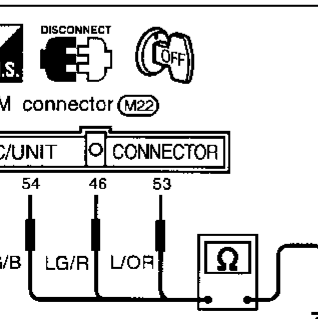
SEL986U

C



SEL987U

D



SEL988U

CHECK TILT SENSOR INPUT SIGNAL.

A CONSULT

See "TILT SEN" in DATA MONITOR mode.
Steering column in the uppermost position:
Approx. 2V
Steering column in the lowermost position:
Approx. 4V

OK → Tilt sensor is OK.

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-364.

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.

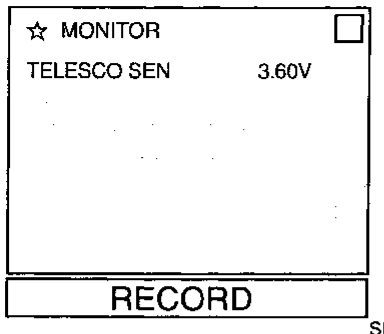
OK ↓

Replace tilt sensor.

Trouble Diagnoses (Cont'd)

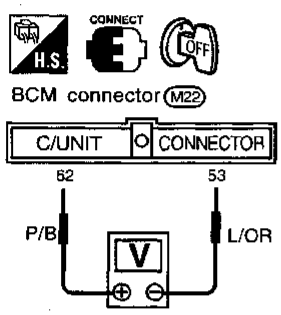
DIAGNOSTIC PROCEDURE 4
(Telescopic sensor check)

A



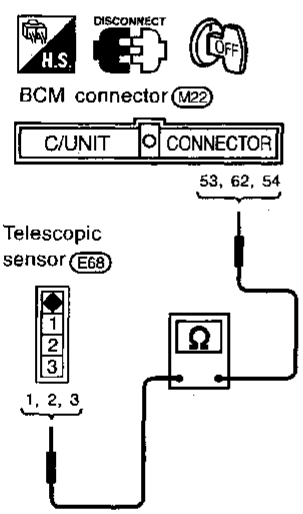
SEL989U

B



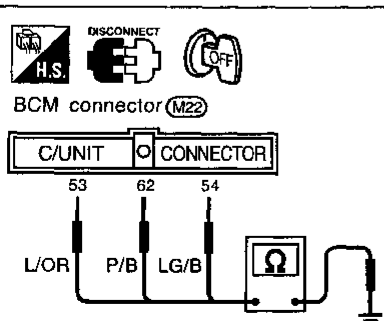
SEL990U

C



SEL991U

D



SEL992U

CHECK TELESCOPIC SENSOR INPUT SIGNAL.

A CONSULT

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

OK → Telescopic sensor is OK.

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-364.

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.

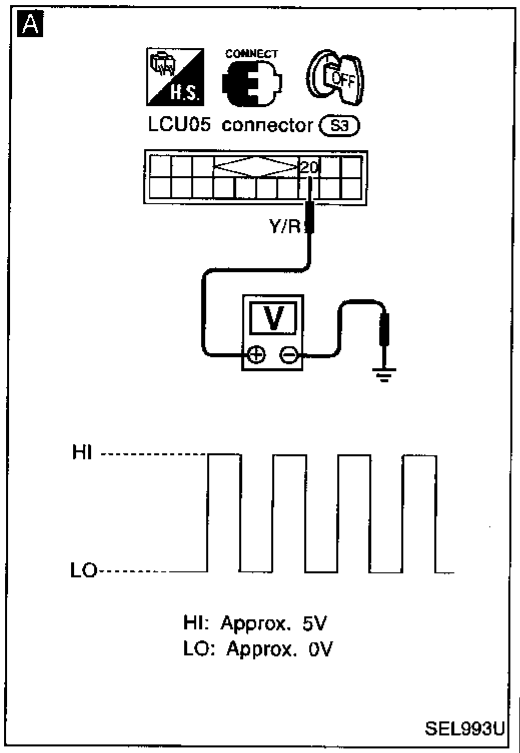
OK ↓

Replace telescopic sensor.

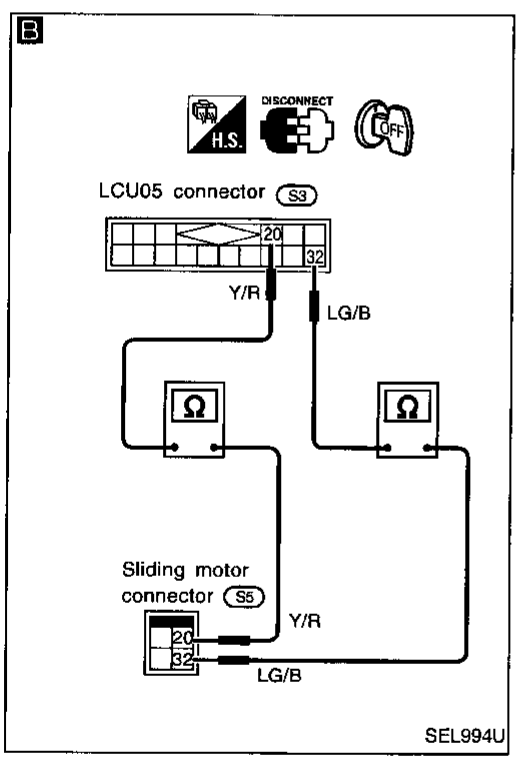
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5
(Sliding sensor check)

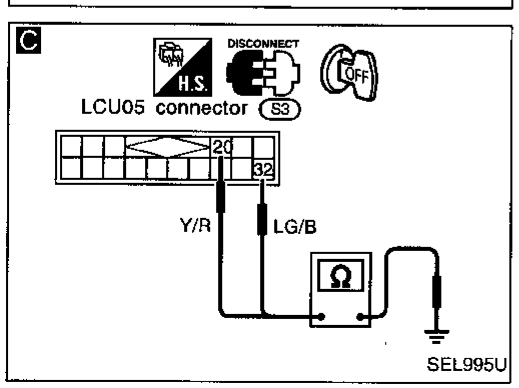
A



B



C



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-366.

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.

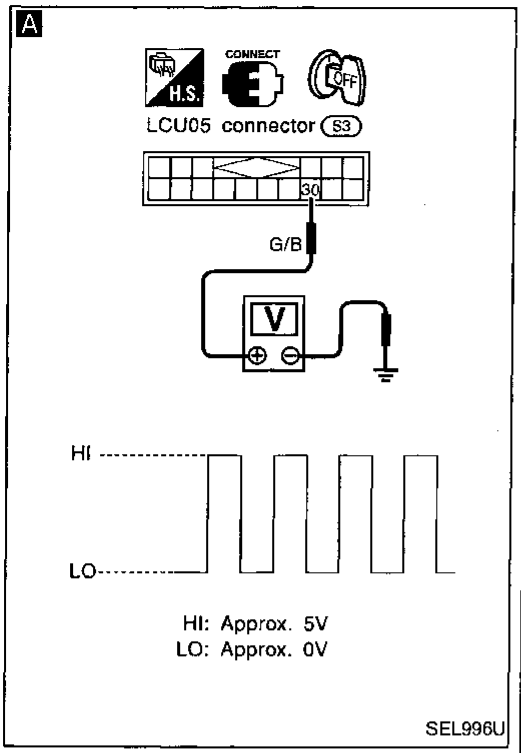
OK ↓

Replace sliding sensor.

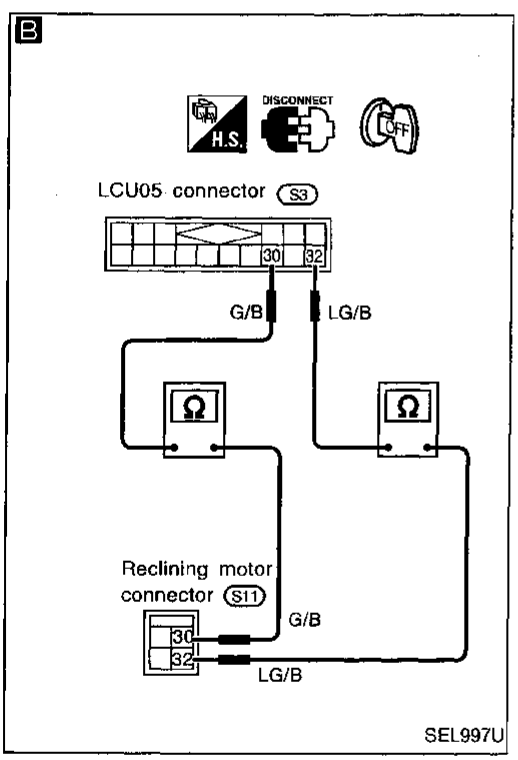
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6
(Reclining sensor check)

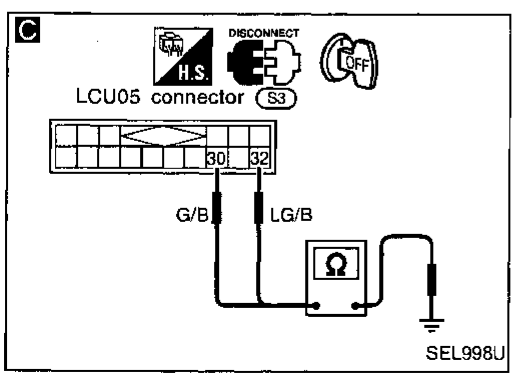
A



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-366.

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.

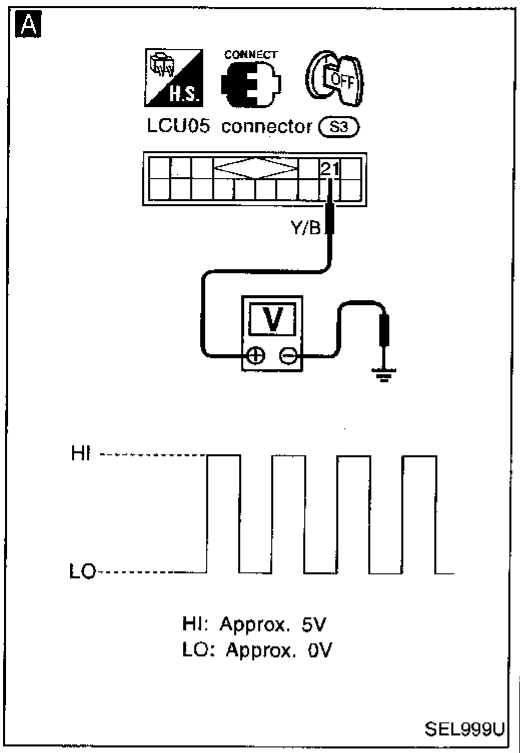
OK ↓

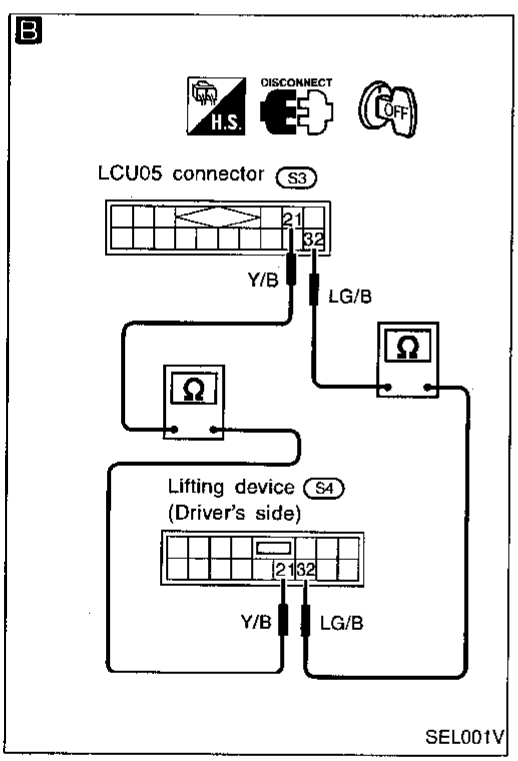
Replace reclining sensor.

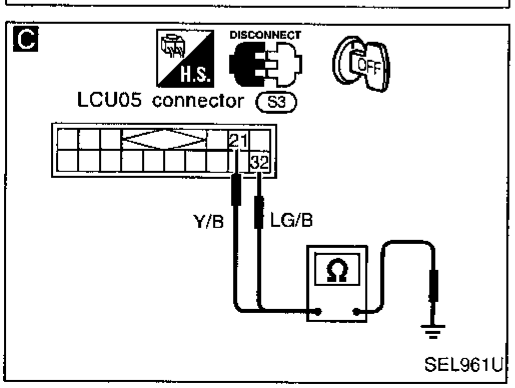
GI MA EM LC EC FE AT PD FA RA BR ST RS BT HA EL IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7
[Lifting sensor (front) check]







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-366.

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.

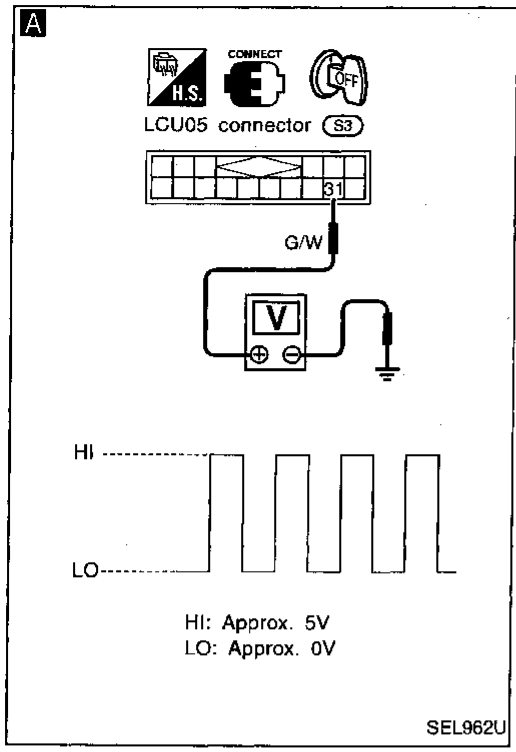
OK ↓

Replace lifting sensor (front).

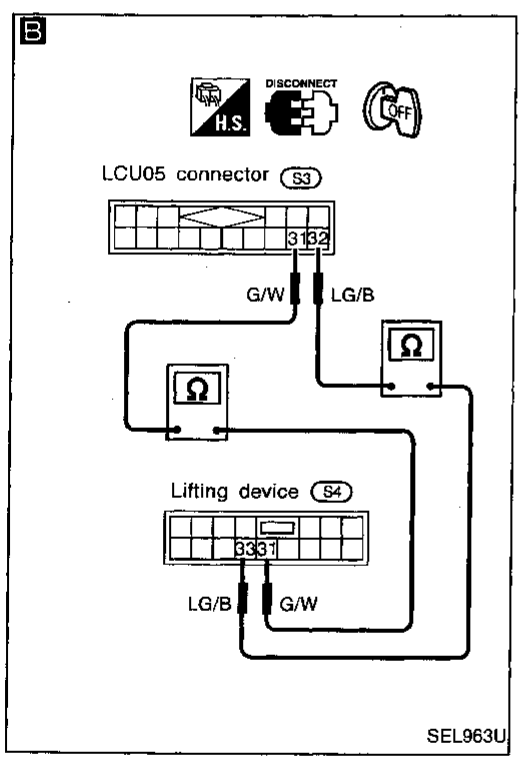
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8
[Lifting sensor (rear) check]

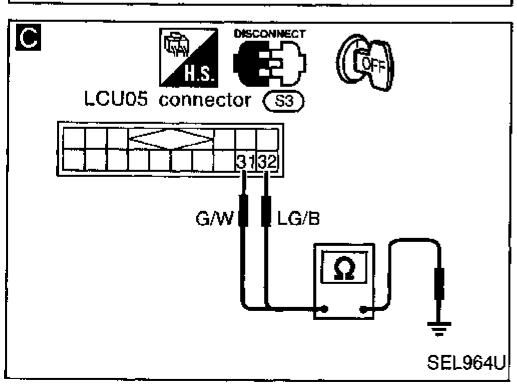
A



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-367.

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.

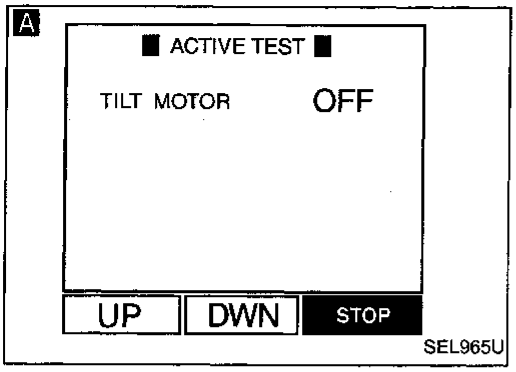
OK ↓

Replace lifting sensor (rear).

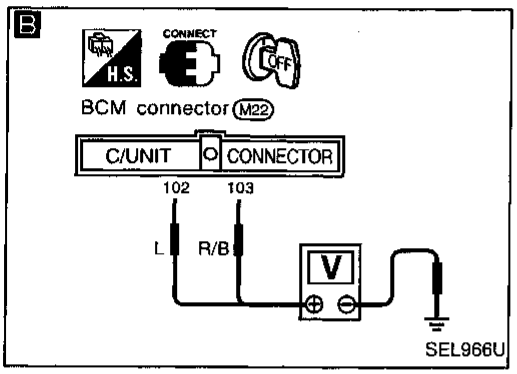
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 9
(Tilt motor check)

A



B



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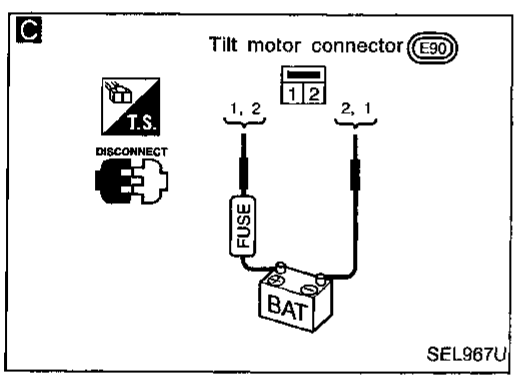


A

TILT MOTOR ACTIVE TEST
CONSULT

See "TILT MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Tilt motor should operate.
Note: If CONSULT 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-364.

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.

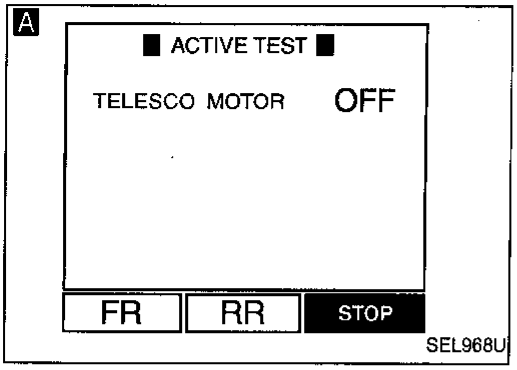
OK ↓

Check harness for operation between BCM and tilt motor.

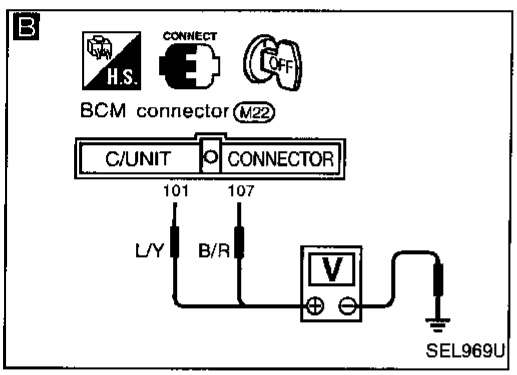
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 10 (Telescopic motor check)

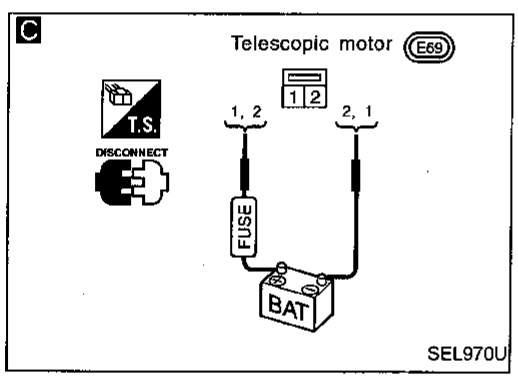
A



B



C



A

TELESCOPIC MOTOR ACTIVE TEST
CONSULT

See "TELESCO MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Telescopic motor should operate.
Note: If CONSULT 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-364.

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.

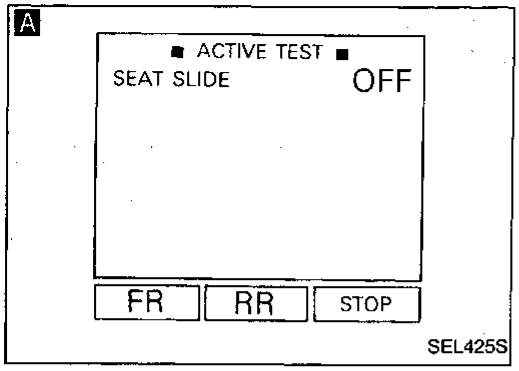
OK ↓

Check harness for operation between BCM and telescopic motor.

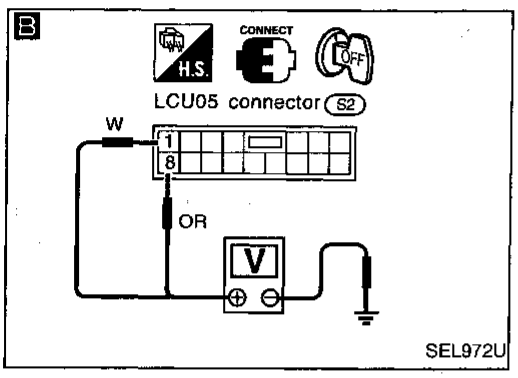
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 11 (Sliding motor check)

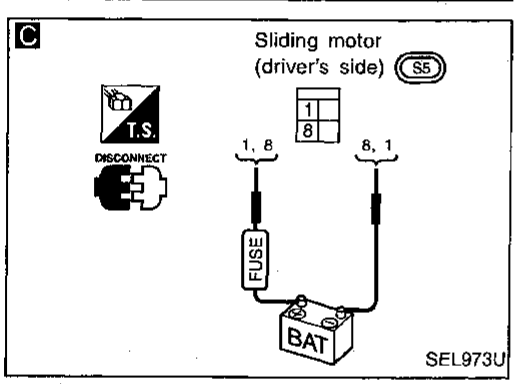
A



B



C



A

SLIDING MOTOR ACTIVE TEST
CONSULT

See "SEAT MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Sliding motor should operate.
Note: If CONSULT 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-366.

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

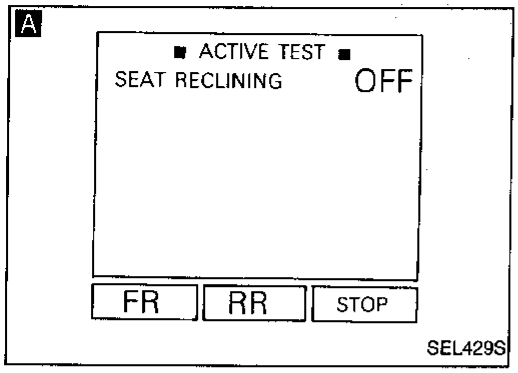
NG → Replace sliding motor.

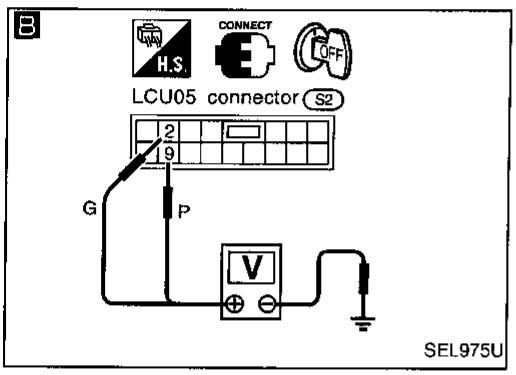
OK ↓

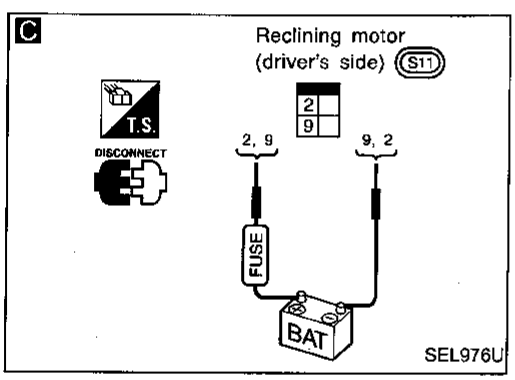
Check harness for operation between LCU05 and sliding motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 12
(Reclining motor check)







A

RECLINING MOTOR ACTIVE TEST
CONSULT

See "SEAT RECLINING" in ACTIVE TEST mode.
Perform operation shown on display.
Reclining motor should operate.
Note: If CONSULT 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-366.

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.

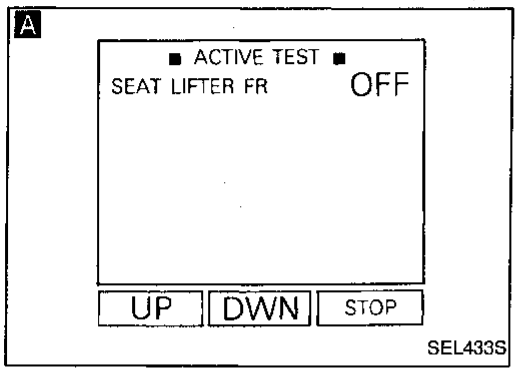
OK ↓

Check harness for operation between LCU05 and reclining motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 13
[Lifting motor (Front) check]

A



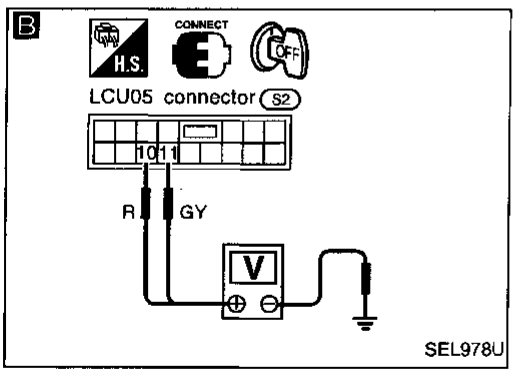
LIFTING MOTOR (FRONT) ACTIVE TEST
CONSULT

See "SEAT LIFTER FR" in ACTIVE TEST mode.
Perform operation shown on display.
Lifting motor (front) should operate.
Note: If CONSULT 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.

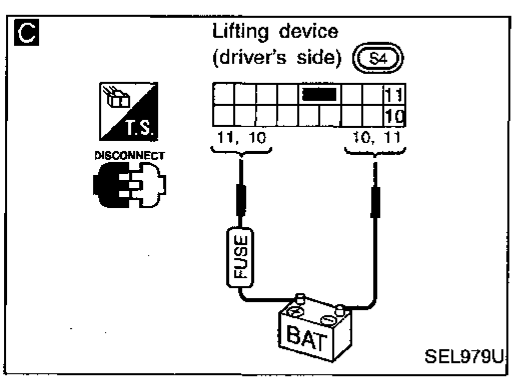
Condition of lifting switch (front)	Terminals ⊕	Terminals ⊖	Voltage [V]
Up	⑪	ground	Approx. 12
Down	⑩	ground	Approx. 12

Refer to wiring diagram in EL-366.

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).

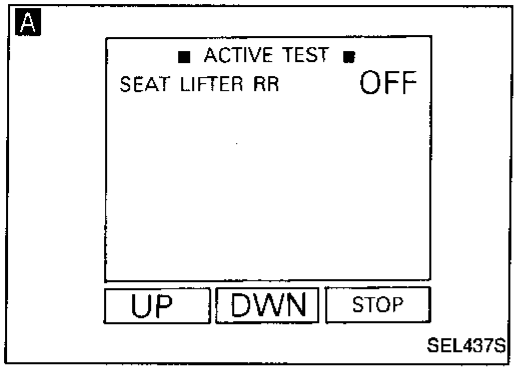
OK ↓

Check harness for operation between LCU05 and lifting motor (front).

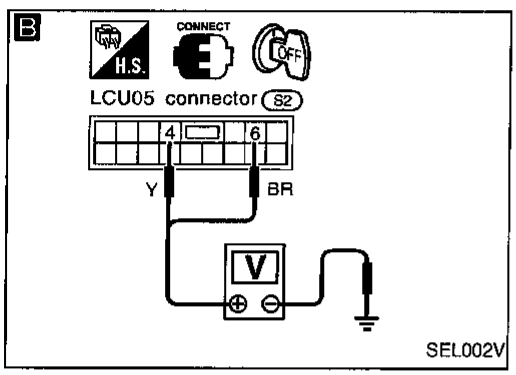
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 14
[Lifting motor (Rear) check]

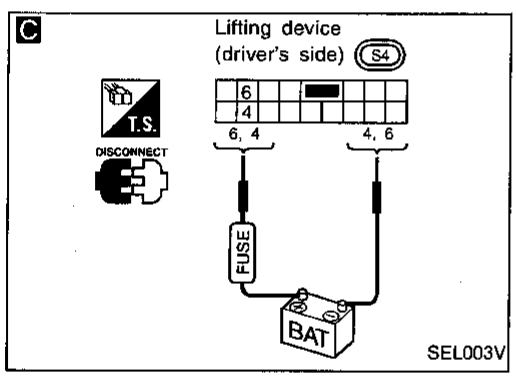
A



B



C



A

LIFTING MOTOR (REAR) ACTIVE TEST
CONSULT

See "SEAT LIFTER RR" in ACTIVE TEST mode.
Perform operation shown on display.
Lifting motor (rear) should operate.
Note: If CONSULT 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-367.

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).

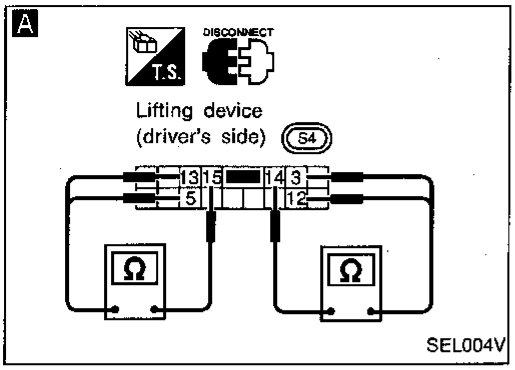
OK ↓

Check harness for operation between LCU05 and lifting motor (rear).

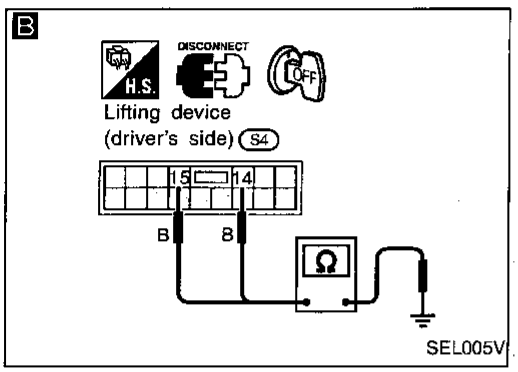
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 15
(Lifting limit switch check)

A



B



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-366 or 367.

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.

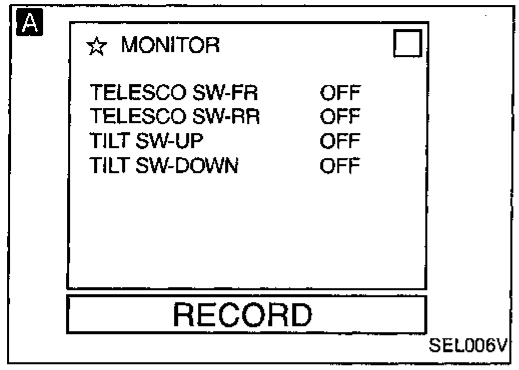
OK ↓

Check harness for open or short between LCU05 and limit switch.

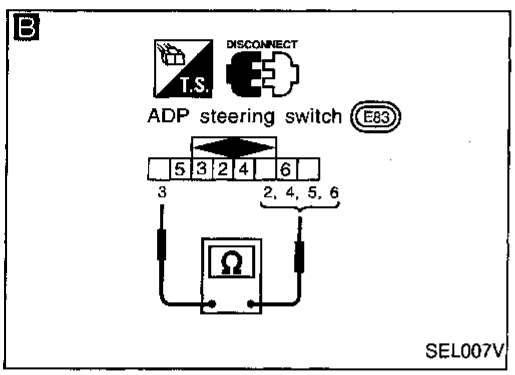
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 16
(Tilt/telescopic switch check)

A



B



CHECK TILT/TELESCOPIC SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

Refer to wiring diagram in EL-363.

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.

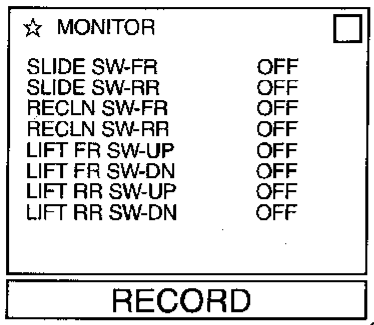
OK ↓

Check the following.
- Ground circuit for ADP steering switch
- Harness for open or short between BCM and ADP steering switch

Trouble Diagnoses (Cont'd)

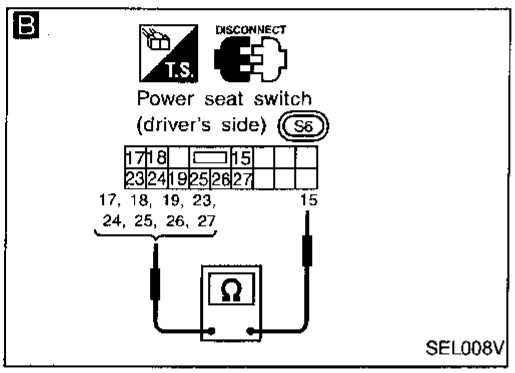
DIAGNOSTIC PROCEDURE 17
(Power seat switch check)

A



SEL009V

B



SEL008V

CHECK POWER SEAT SWITCH INPUT SIGNAL.

A CONSULT

See "SLIDE SW, RECLN SW, LIFT FR, RR" in DATA MONITOR mode.

These switches should change from "OFF" to "ON" when switch is operated.

OK → Power seat switch is OK.

OR

ON-BOARD

Check each power seat switch operation in switch monitor (Mode II) mode.
(Refer to On-board diagnosis EL-215.)

Refer to wiring diagram in EL-365.

NG ↓

B

CHECK POWER SEAT SWITCH.

1. Disconnect power seat switch connector.
2. Check continuity between power seat switch terminals.

NG → Replace power seat switch.

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	○								○

OK ↓

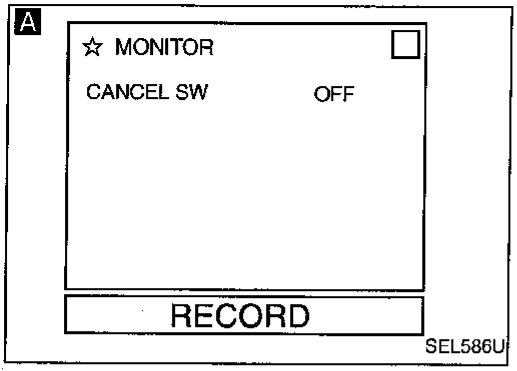
Check the following.

- Ground circuit for power seat switch
- Harness for open or short between LCU05 and power seat switch

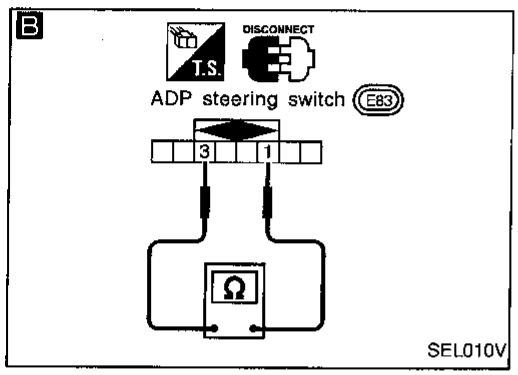
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 18
(Cancel switch check)

A



B



CHECK CANCEL SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

Refer to wiring diagram in EL-363.

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

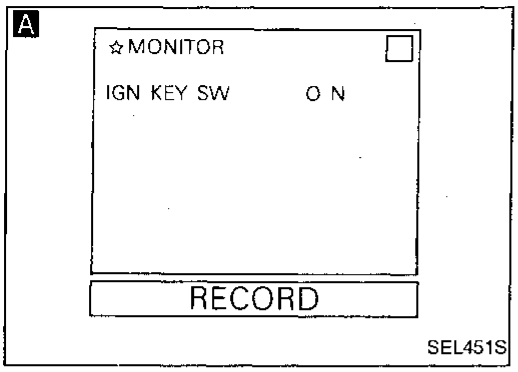
NG → Replace ADP steering switch.

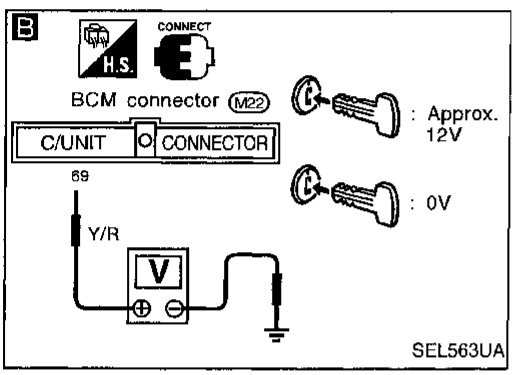
OK ↓

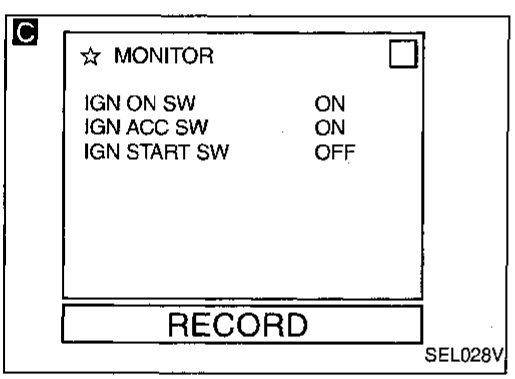
Check the following.
- Ground circuit for ADP steering switch
- Harness for open or short between BCM and ADP steering switch

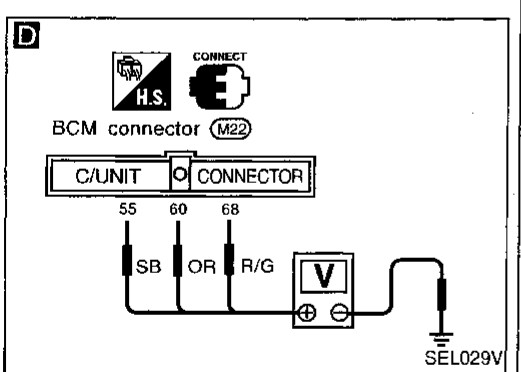
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 19
(Key, detention, door switch and vehicle speed sensor check)









CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

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-361.

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

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-361.

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

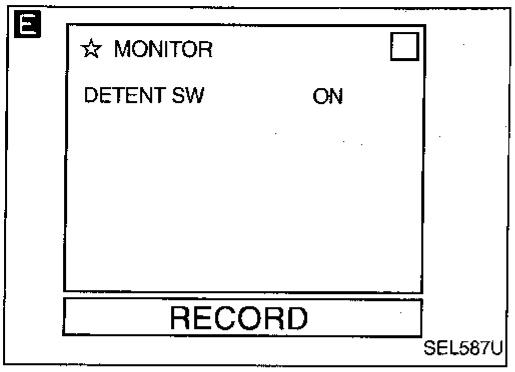
OK ↓

Ⓐ

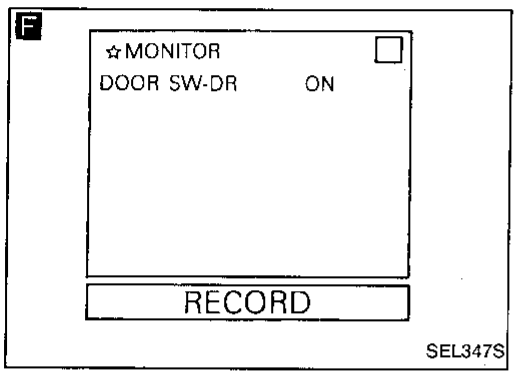
(Go to next page.)

Trouble Diagnoses (Cont'd)

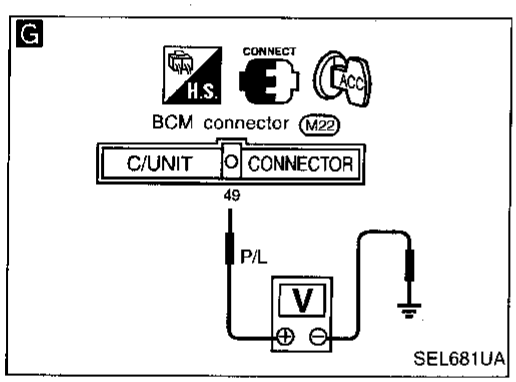
E



F



G



Ⓐ

CHECK DETENTION SWITCH INPUT SIGNAL.

E CONSULT

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-215.)

Refer to wiring diagram in EL-362.

OK ↓

CHECK DRIVER DOOR SWITCH INPUT SIGNAL.

F CONSULT

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-215.)

Refer to wiring diagram in EL-362.

OK ↓

CHECK VEHICLE SPEED SENSOR.
Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit.
Refer to EL-92.

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-362.

NG → Replace BCM.

OK ↓

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

NG → Repair harness.

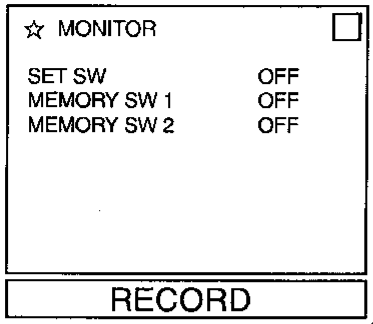
OK ↓

INSPECTION END

Trouble Diagnoses (Cont'd)

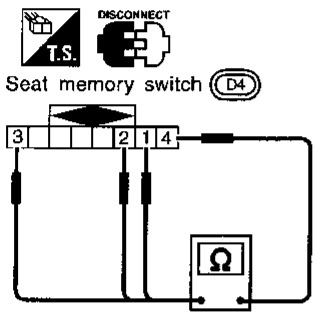
DIAGNOSTIC PROCEDURE 20
(Seat memory switch check)

A



SEL011V

B



SEL012V

CHECK SEAT MEMORY SWITCH INPUT SIGNAL.

A CONSULT

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-215.)

Refer to wiring diagram in EL-363.

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.

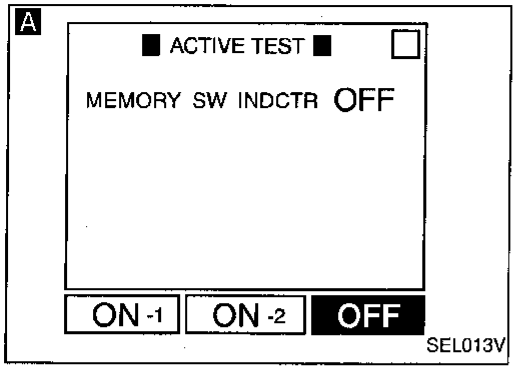
OK

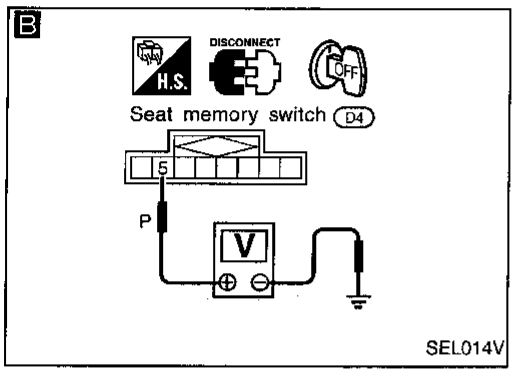
Check the following.

- 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

INDICATOR ACTIVE TEST
CONSULT

See "MEMORY SW INDCTR" in ACTIVE TEST mode.
Perform operation shown on display.
Indicator lamp should illuminate.
Note: If CONSULT 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-363.

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 ↓

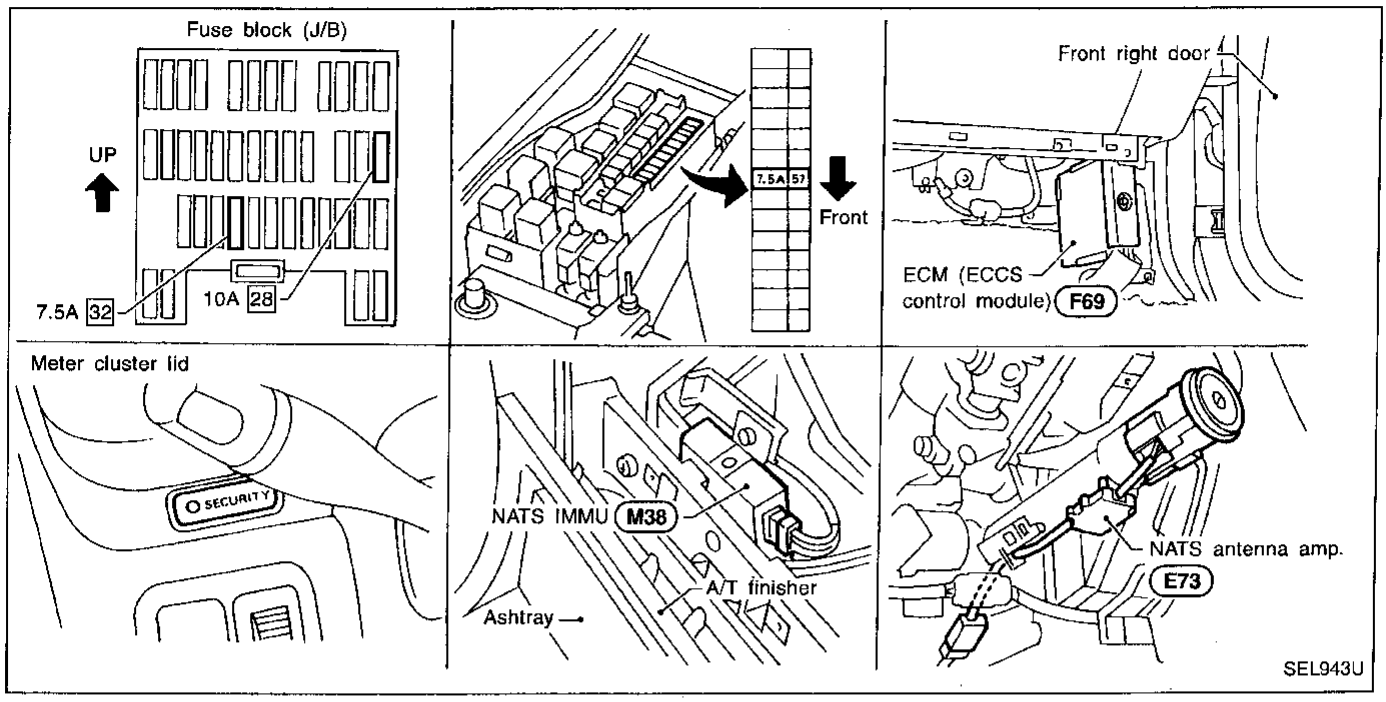
Check harness for open or short between BCM and seat memory switch.

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-365.

Component Parts and Harness Connector Location



System Description

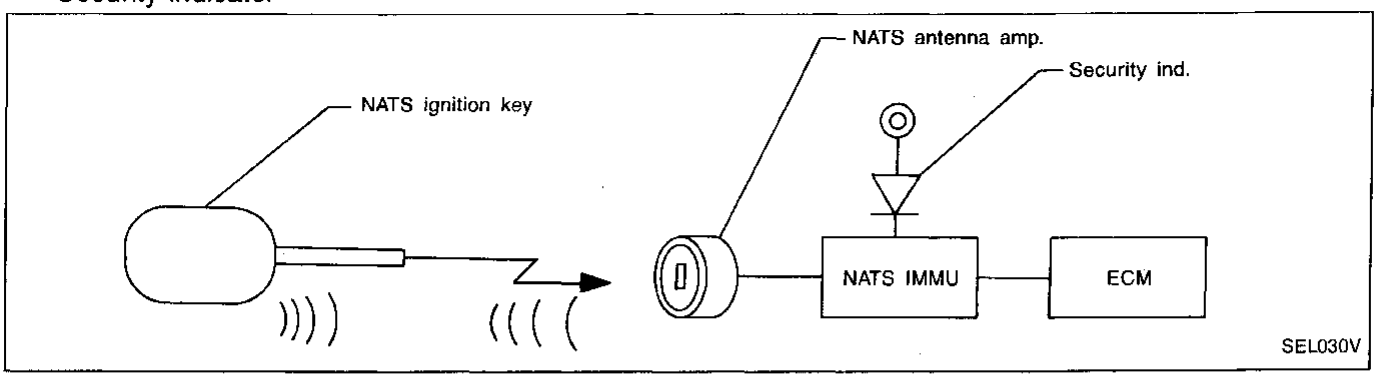
NATS (Nissan Anti-Theft System) has the following immobilizer functions:

- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS. That is to say, NATS will immobilize the engine if someone tries to start it without the registered key of NATS.
- All of the originally supplied ignition key IDs (except for card plate key) have been NATS registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The security indicator blinks when the ignition switch is in "OFF" or "ACC" position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the security indicator lamp lights up while ignition key is in the "ON" position.
- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT hardware and CONSULT NATS software.
  When NATS initialization has been completed, the ID of the inserted ignition key is automatically NATS registered. Then, if necessary, additional registration of other NATS ignition key IDs can be carried out.
  Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of Security Indicator Lamp) or registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner.**

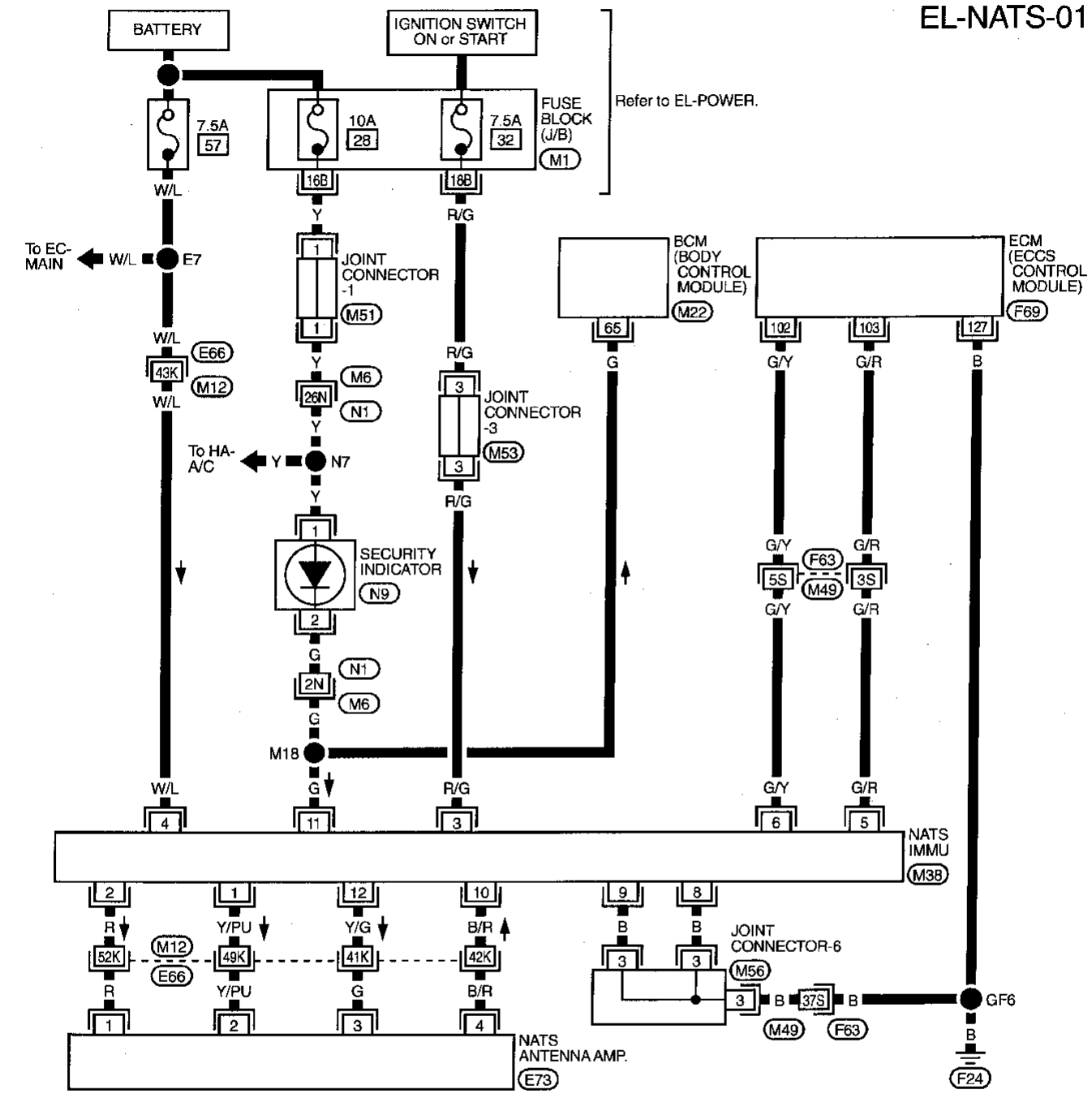
System Composition

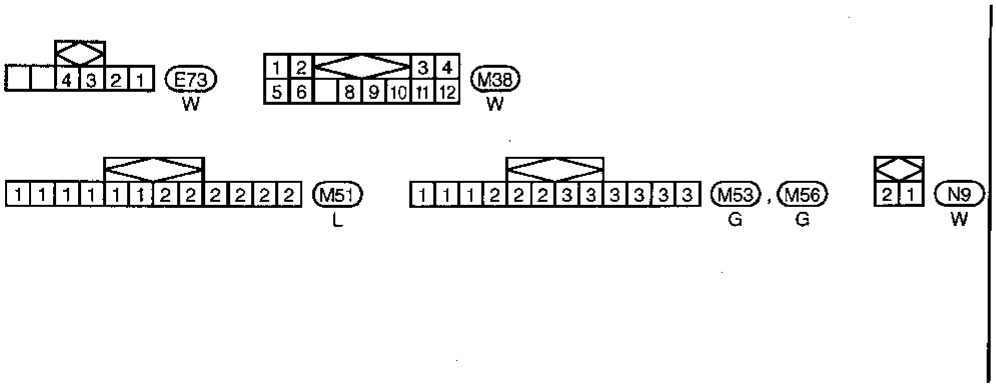
The immobilizer function of the NATS consists of the following:

- NATS ignition key
- NATS antenna amp. located in the ignition key cylinder
- NATS immobilizer control unit (NATS IMMU)
- Engine control module (ECM)
- Security indicator

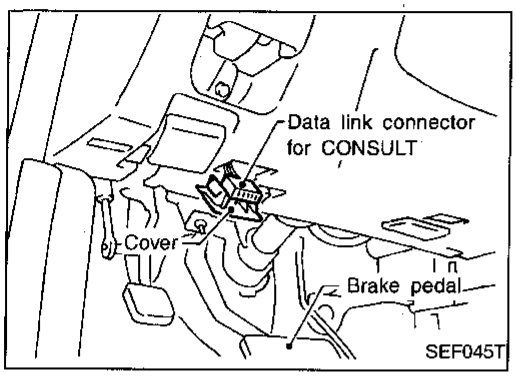


Wiring Diagram — NATS —





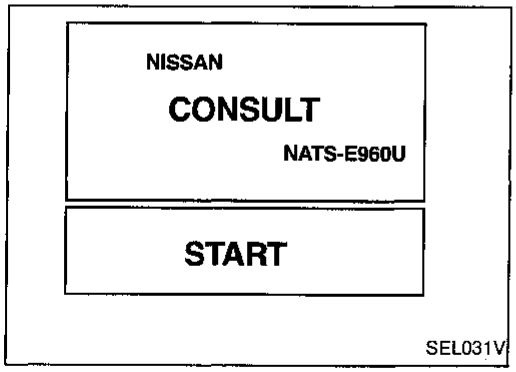
TEL233A



CONSULT

CONSULT INSPECTION PROCEDURE

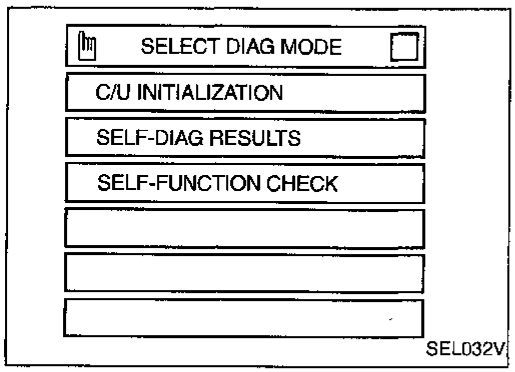
1. Turn off ignition switch.
2. Connect "CONSULT" to Data link connector for CONSULT.



3. Insert NATS program card into CONSULT.

◆: Program card
NATS-E960U

4. Turn on ignition switch.
5. Touch "START".



6. Perform each diagnostic test mode according to each service procedure.

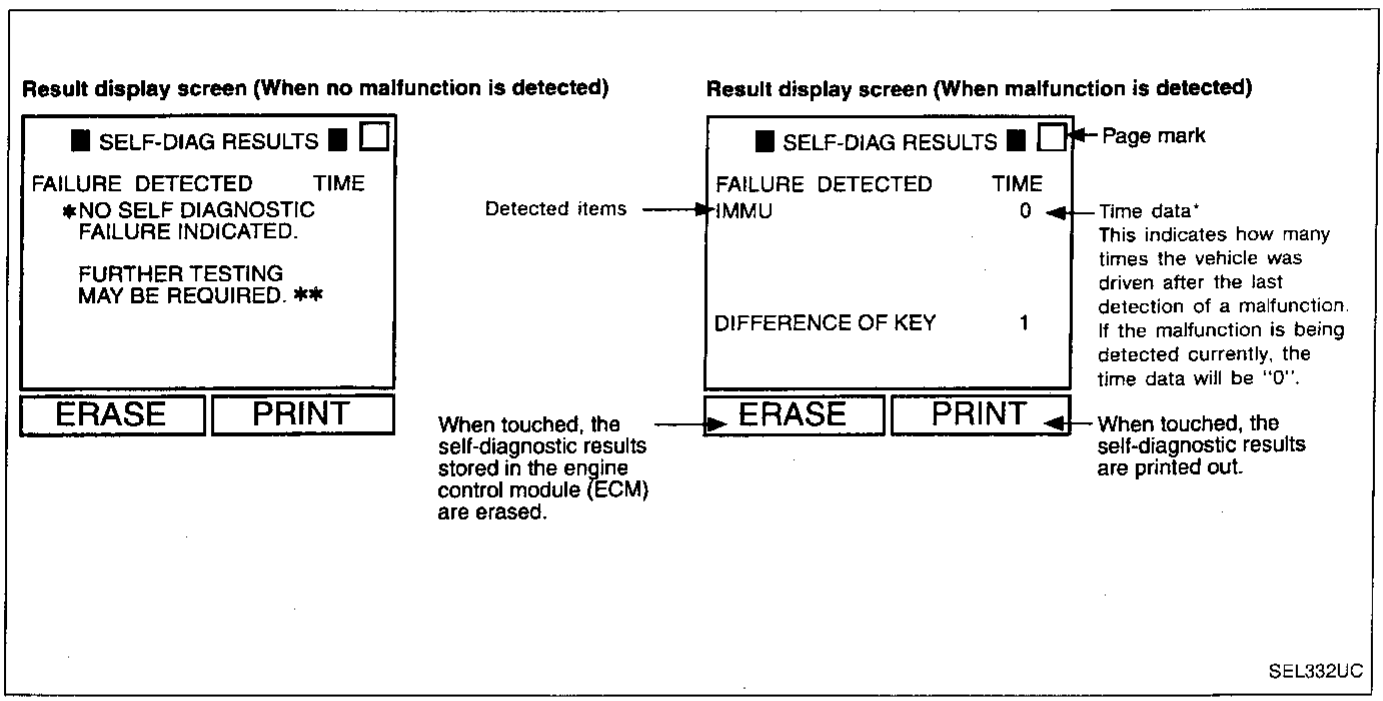
For further information, see the CONSULT Operation Manual, NATS.

CONSULT (Cont'd)

CONSULT DIAGNOSTIC TEST MODE FUNCTION

CONSULT DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [NATS ignition key/IMMU/ECM]
SELF-FUNCTION CHECK	ECM checks its own NATS communication interface by itself.
SELF-DIAGNOSTIC RESULTS	Detected items (screen terms) are as shown in the chart below.

HOW TO READ SELF-DIAGNOSTIC RESULTS



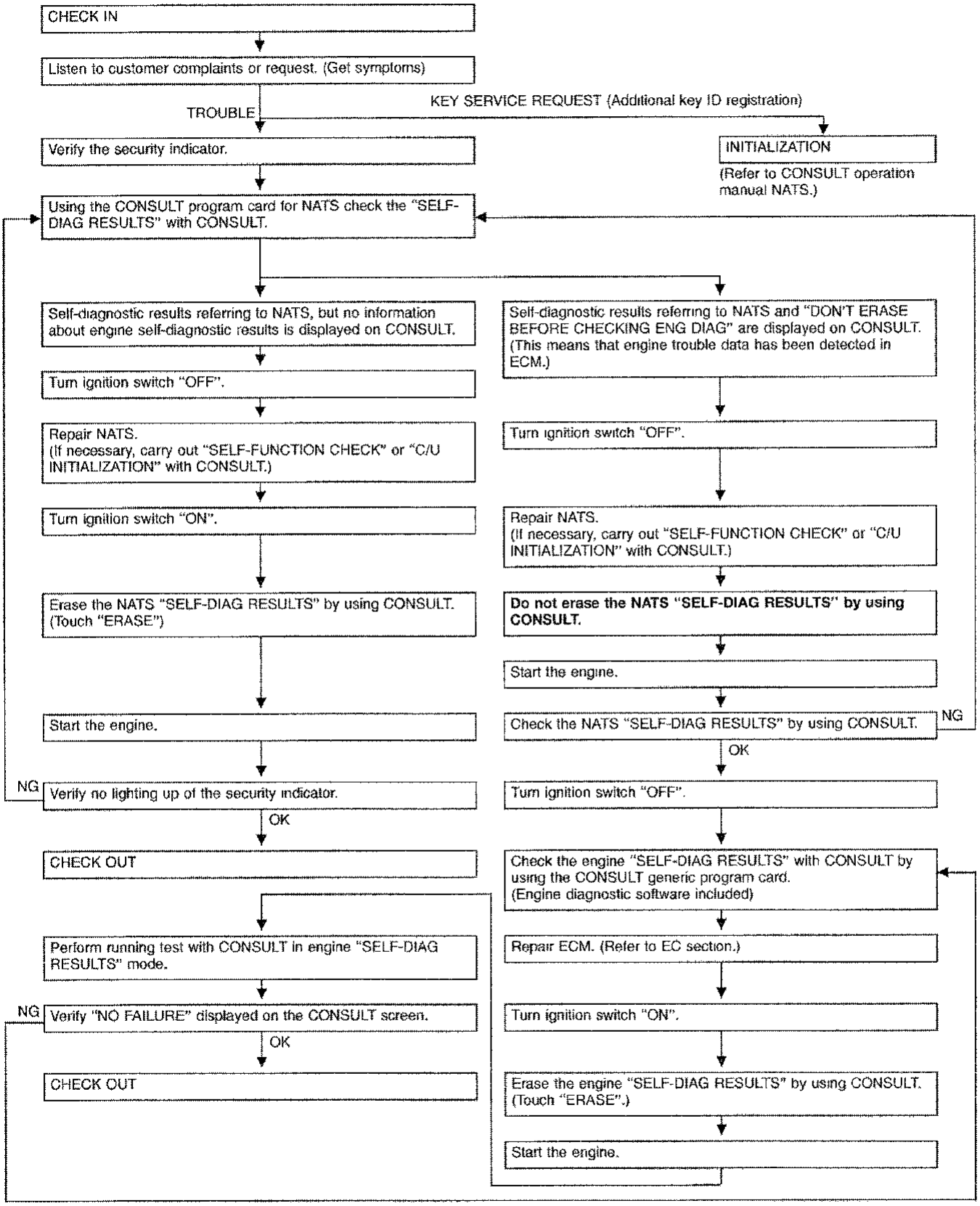
* If trip number is more than 1, MIL does not blink.

SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-408
ECM	ECM is malfunctioning.	EL-408
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU.	EL-409
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-411
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal.	EL-412
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-414
ELECTRONIC NOISE	Noise (interference) interfered into NATS communication lines during communicating.	EL-415
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM.	EL-405
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, NATS will shift the mode to one which prevents the engine from being started.	EL-417

Trouble Diagnoses

WORK FLOW



SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine will start.	IMMU	PROCEDURE 1 (EL-408)	IMMU	A
	ECM	PROCEDURE 2 (EL-408)	ECM	B
• Security indicator lighting up* • Engine hard to start	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-409)	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-411)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-412)	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 NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

Trouble Diagnoses (Cont'd)

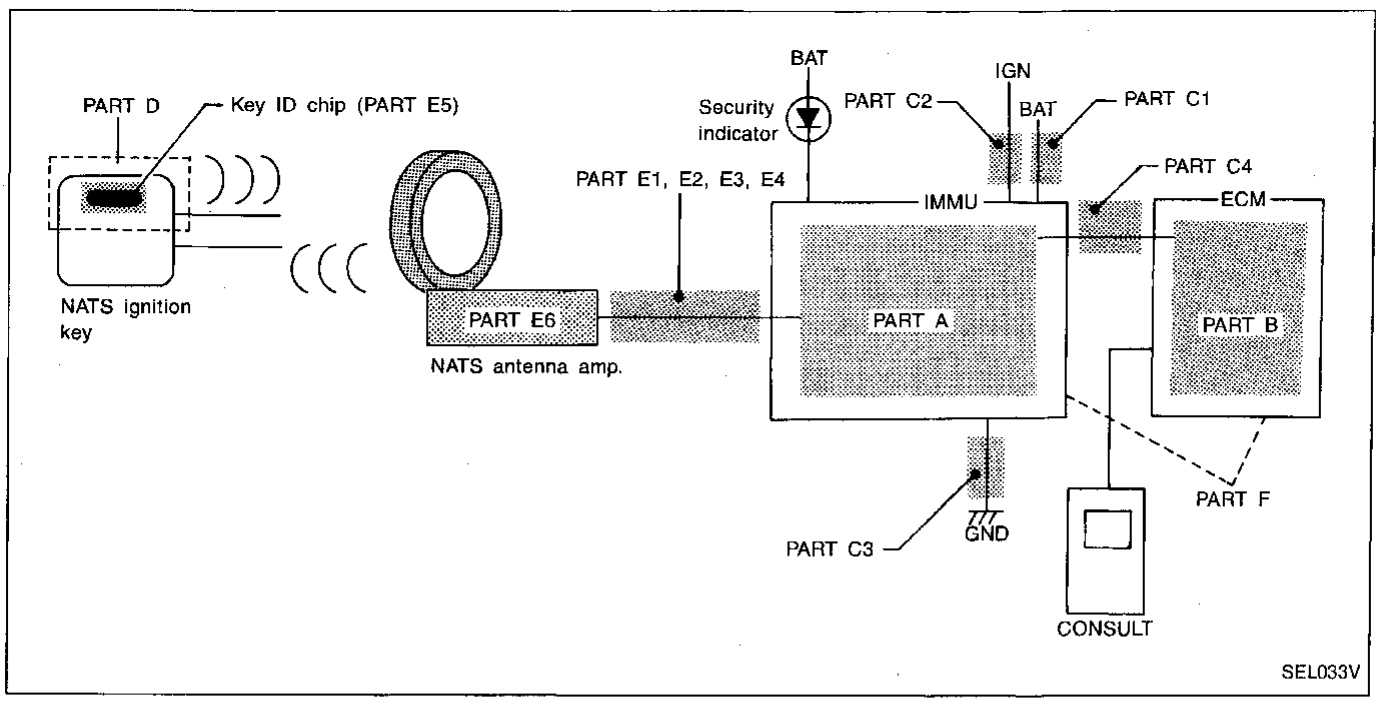
SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine hard to start	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-414)	System initialisation has not yet been completed.	F
			ECM	F
	ELECTRONIC NOISE	PROCEDURE 7 (EL-415)	Noise interference in communication line	—
	LOCK MODE	PROCEDURE 9 (EL-417)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-405)	Engine trouble data and NATS trouble data have been detected in ECM	—

*: When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

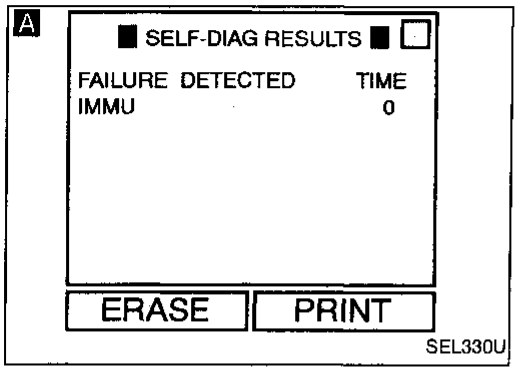
SYMPTOM MATRIX CHART 2 (Non self-diagnosis related item)

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 8 (EL-416)	Security ind.
		Open circuit between Fuse and NATS IMMU
		Continuation of initialization mode
		NATS IMMU

DIAGNOSTIC SYSTEM DIAGRAM



Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:
"IMMU" displayed on CONSULT screen

A

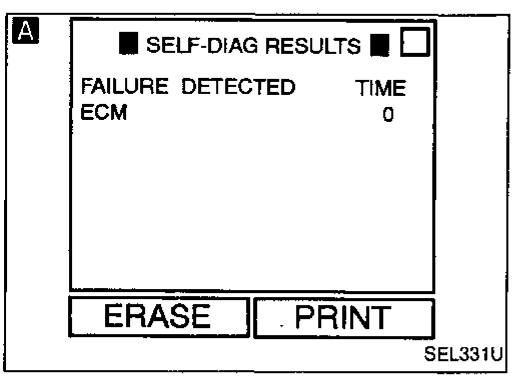
Confirm SELF-DIAGNOSTIC RESULTS "IMMU" displayed on CONSULT screen.
Ref. part No.* A.

Yes

Replace IMMU.

Perform initialisation with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

* Ref. part No.: reference part No. of Diagnostic System Diagram on EL-407.



DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:
"ECM" displayed on CONSULT screen

A

Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT screen.
Ref. part No. B.

Replace ECM.

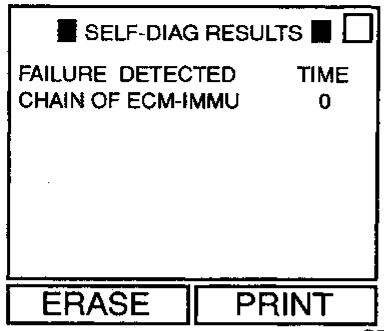
Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

Trouble Diagnoses (Cont'd)

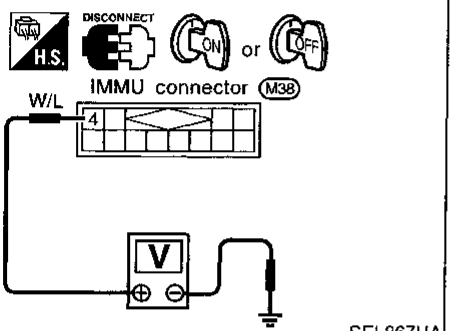
DIAGNOSTIC PROCEDURE 3

Self-diagnostic results:
"CHAIN OF ECM-IMMU" displayed on CONSULT screen

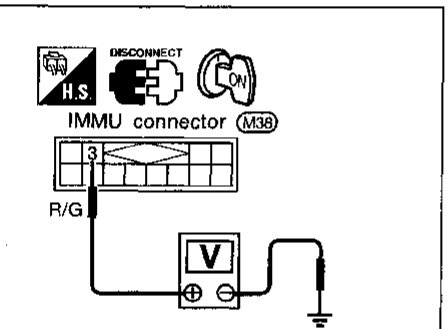
A



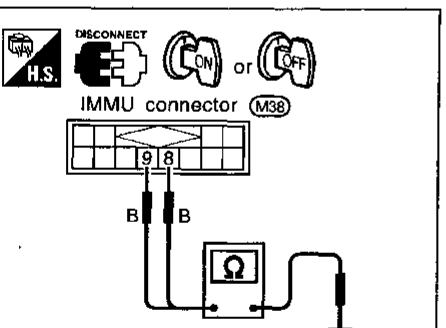
B



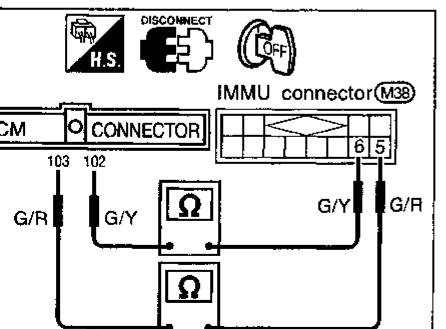
C



D



E



A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF ECM-IMMU" displayed on CONSULT screen.

OK ↓

B

Check voltage between terminal ④ of IMMU and ground with CONSULT or tester.
Voltage: Battery voltage

NG → Check the following:
- 7.5A fuse [No. 57, located in the fuse block (J/B)]
- 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 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.

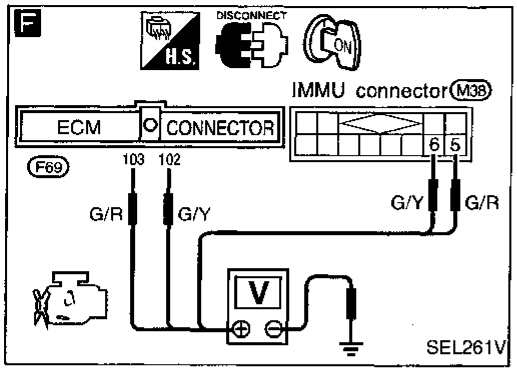
NG → Communication line is open circuit.
Repair harness or connectors.
Ref. part No. C4

OK ↓

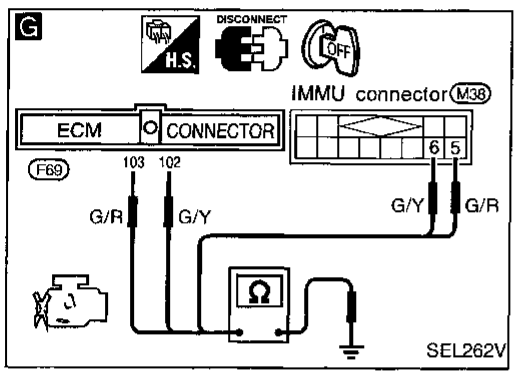
Ⓐ

Trouble Diagnoses (Cont'd)

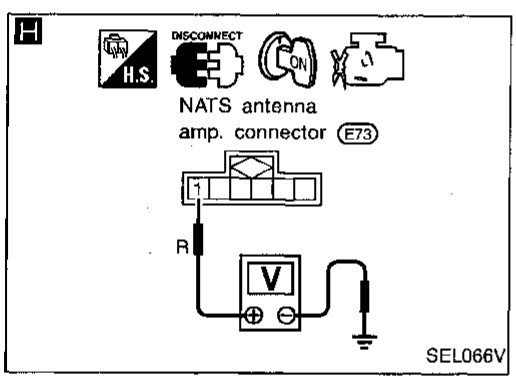
F



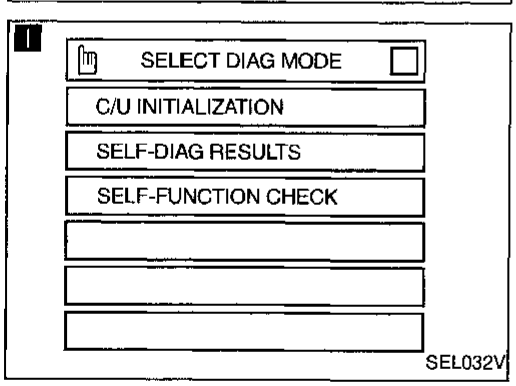
G



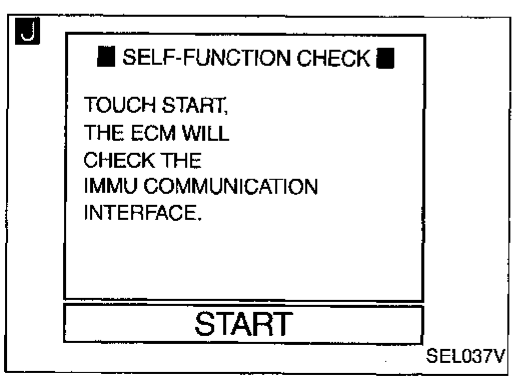
H



I



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 NATS ANTENNA AMP. CIRCUIT.
1. Disconnect NATS antenna amp. connector.
2. Turn ignition switch "ON".
3. Check voltage between antenna amp. terminal ① and ground.
   Voltage:
   6 sec. after turning ignition switch "ON"
   Approx. 4.7V

NG → 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 "SELECT DIAG MODE" screen.

J

Touch "START". ECM will then check its communication interface by itself.

NG → **K** (See next page.)
ECM is malfunctioning.
Replace ECM.
Ref. part No. B

OK → **L** (See next page.)

Perform initialisation with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".

Ⓑ

Trouble Diagnoses (Cont'd)

K

SELF-FUNCTION CHECK

ECM's IMMU COMMUNICATION INTERFACE

*** *** NG *** ***

PRINT

SEL342U

L

SELF-FUNCTION CHECK

ECM's IMMU COMMUNICATION INTERFACE

*** *** OK *** ***

PRINT

SEL343U

A

SELF-DIAG RESULTS

FAILURE DETECTED TIME
DIFFERENCE OF KEY 0

ERASE PRINT

SEL344U

B

C/U INITIALIZATION

INITIALIZATION

STOPPED or FAILED

TURN IGN KEY SW "OFF" AND "ON", AFTER CONFIRMING SELF-DIAG RESULTS, PERFORM C/U INITIALIZATION AGAIN.

SEL038V

Ⓑ

IMMU is malfunctioning.
Replace IMMU.
Ref. part No. A

Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT screen

A

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT screen.

OK

Perform initialization with CONSULT.
Re-register all NATS ignition key IDs.
For the operation of initialization, refer to "CONSULT operation manual NATS".

Initialization with CONSULT incomplete or failed → B

IMMU is malfunctioning.
Replace IMMU.
Ref. part No. A

Initialization completed

Start engine.

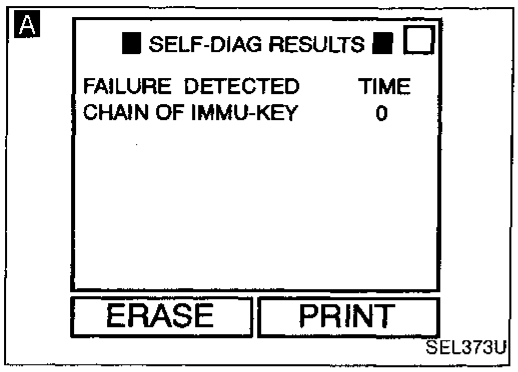
END
(Ignition key ID was unregistered.)
Ref. part No. D

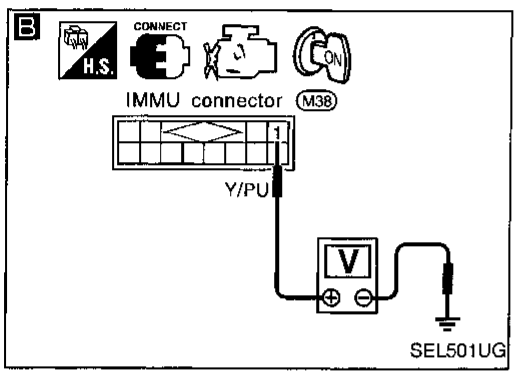
Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

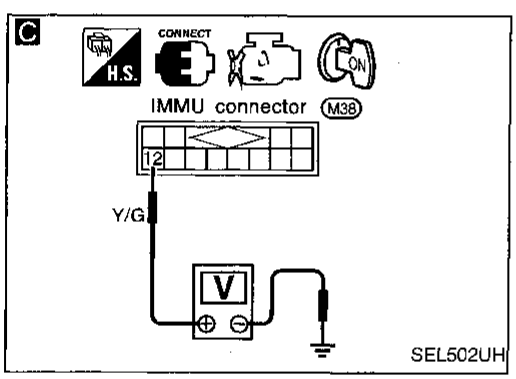
Trouble Diagnoses (Cont'd)

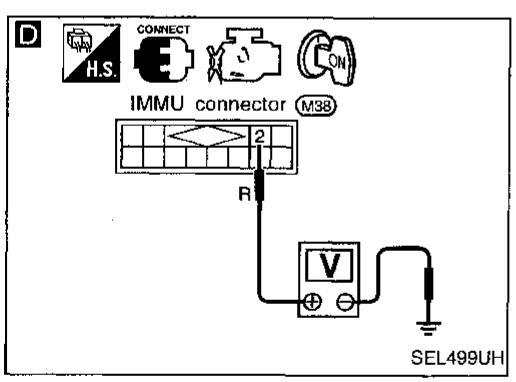
DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT screen









A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT screen.

OK ↓

Perform initialization with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".

CHECK NATS IGNITION KEY ID CHIP.
Start engine with another registered NATS ignition key.

Start OK → Ignition key ID chip was malfunctioning. Replace the ignition key. **Ref. part No. E5**

Start NG ↓

CHECK NATS ANTENNA AMP. INSTALLATION.
Refer to "How to Replace NATS Antenna Amp." in EL-418.

NG → Reinstall NATS antenna amp. correctly.

OK ↓

B

CHECK IMMU FUNCTION 1.
1. Connect IMMU connector and NATS antenna amp. connector.
2. Check voltage between IMMU terminal ① and ground.

Voltage

Time (After turning ignition switch "ON".)	Voltage [V]
For approx. 0.5 sec.	Approx. 2.3 - 5
After 1 sec.	0

NG → Replace IMMU. **Ref. part No. A**

OK ↓

C

CHECK IMMU FUNCTION 2.
1. Disconnect NATS antenna amp. connector.
2. Turn ignition switch "ON".
3. Check voltage between IMMU terminal ⑫ and ground.
   Voltage:
   6 sec. after turning ignition switch "ON"
   Approx. 4.5 - 5V

NG → Replace IMMU. **Ref. part No. A**

Perform initialization with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".

OK ↓

D

CHECK IMMU OUTPUT VOLTAGE.
1. Turn the ignition switch "ON".
2. Check voltage between IMMU terminal ② and ground.

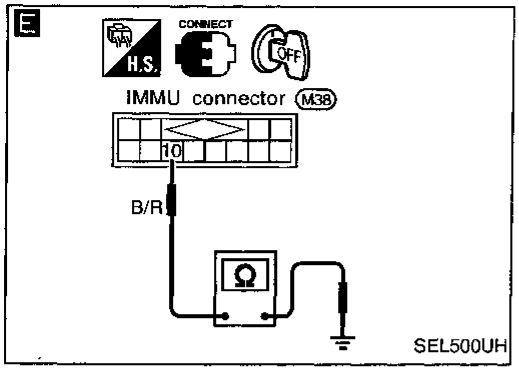
Voltage:
6 sec. after turning ignition switch "ON"
Approx. 4.7V

NG → Replace IMMU. **Ref. part No. A**

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)



Ⓐ

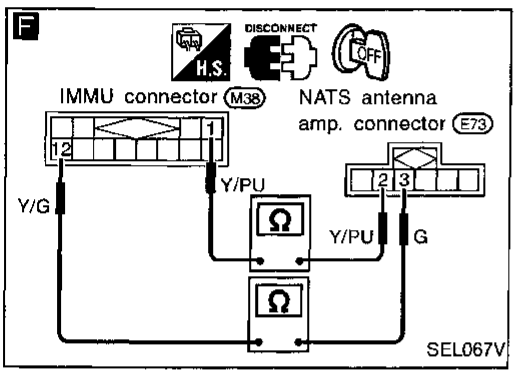
E

CHECK IMMU GROUND CIRCUIT.
1. Turn the ignition switch "OFF".
2. Connect IMMU connector.
3. Check continuity between IMMU terminal ⑩ and ground.

Continuity should exist.

NG → Replace IMMU. **Ref. part No. A**

OK ↓



F

CHECK ANTENNA AMP. CIRCUIT.
1. Disconnect IMMU connector and NATS antenna amp. connector.
2. Check continuity between the following IMMU terminals and NATS antenna amp. terminals.

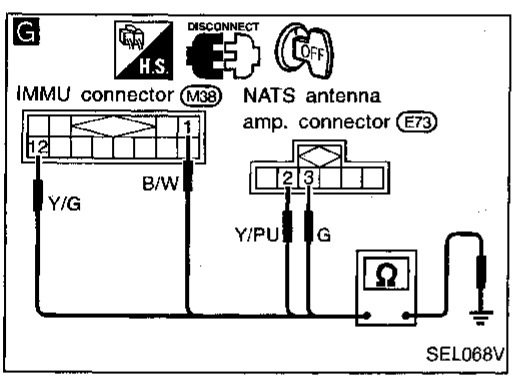
IMMU terminal	NATS antenna amp. terminal	Ref. part No.
⑫	③	E1
①	②	E2

Continuity should exist.

NG → Communication line is open circuit. Repair harness or connectors.

Perform initialization with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".

OK ↓



G

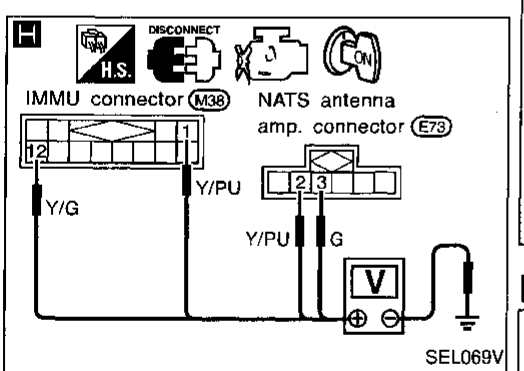
Check continuity between the following terminals and ground.

IMMU terminal	NATS antenna amp. terminal	Ref. part No.
⑫	③	E1
①	②	E2

Continuity should not exist.

NG → Communication line is short-circuited with ground line. Repair harness or connectors.

OK ↓



H

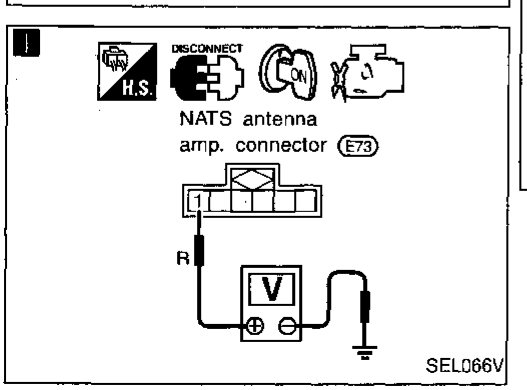
Check voltage between the following terminals and ground.

IMMU terminal	NATS antenna amp. terminal	Ref. part No.
⑫	③	E1
①	②	E2

Voltage: 0V

NG → Communication line is short-circuited with battery voltage line or ignition switch "ON" line. Repair harness or connectors.

OK ↓



I

CHECK ANTENNA AMP. POWER SOURCE CIRCUIT.
1. Connect IMMU connector.
2. Check voltage between NATS antenna amp. terminal ① and ground.

Voltage:
6 sec. after turning ignition switch "ON"
Approx. 4.7V

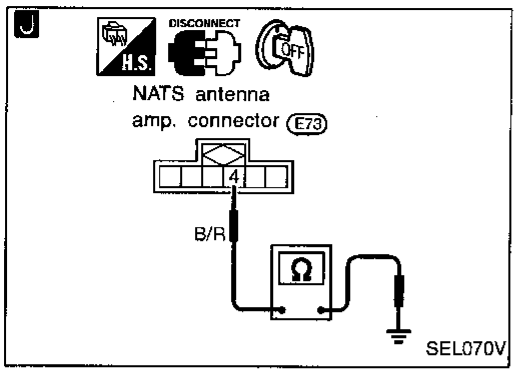
NG → Power source line is open circuit. Repair harness or connector. **Ref. part No. E3**

OK ↓

Ⓑ

GI MA EM LC EC FE AT PD FA RA BR ST RS BT HA EL IDX

Trouble Diagnoses (Cont'd)



Ⓑ

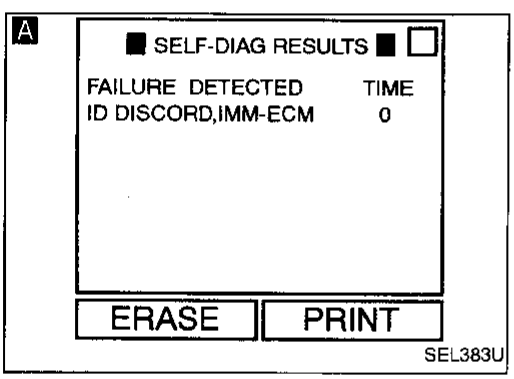
J

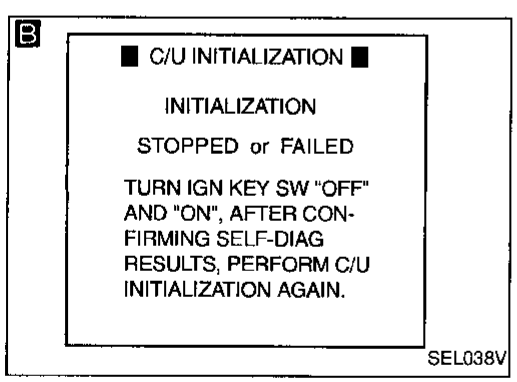
CHECK ANTENNA AMP. GROUND LINE CIRCUIT.
1. Turn ignition switch "OFF".
2. Check continuity between NATS antenna amp. terminal ④ and ground.
Continuity should exist.

NG → NATS antenna amp. ground line is open circuit. Check harness continuity between IMMU terminal ⑩ and NATS antenna amp. terminal ④.
If NG, repair harness or connectors.
Ref. part No. E4

OK ↓

NATS antenna amp. is malfunctioning. Replace NATS antenna amp. Refer to EL-418.
Ref. part No. E6





DIAGNOSTIC PROCEDURE 6

Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT screen

A

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM*" displayed on CONSULT screen.

* "ID DISCORD, IMM-ECM": Registered ID of IMMU is in discord with that of ECM.

↓

Perform initialization with CONSULT.
Re-register all NATS ignition key IDs.
For the operation of initialization, refer to "CONSULT operation manual NATS".

Initialization with CONSULT incomplete or failed → B

B

ECM is malfunctioning.
Replace ECM.
Ref. part No. F

↓

Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

Initialization completed ↓

Start engine.

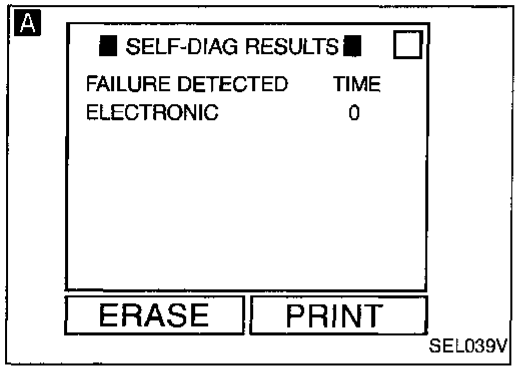
↓

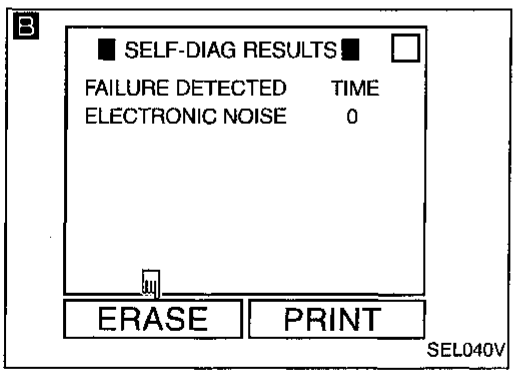
END
Ref. part No. F

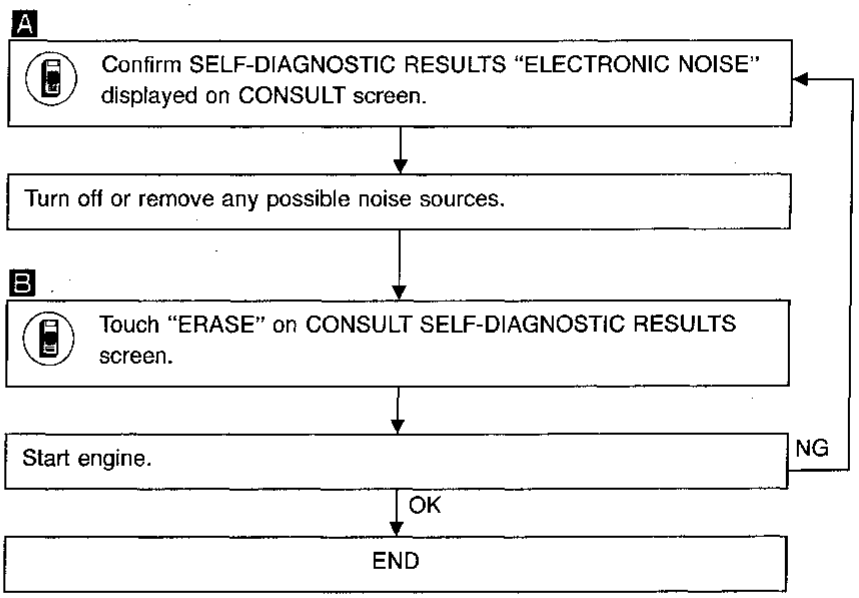
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

Self-diagnostic results:
"ELECTRONIC NOISE" displayed on CONSULT screen







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 ↓

NATS INITIALIZATION
1) Install the 10A fuse.
2) Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

↓
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 NATS IMMU FUNCTION.
1. Connect NATS IMMU connector.
2. Disconnect security ind. connector.
3. Check continuity between NATS IMMU terminal ⑪ and ground.
Continuity should exist intermittently.

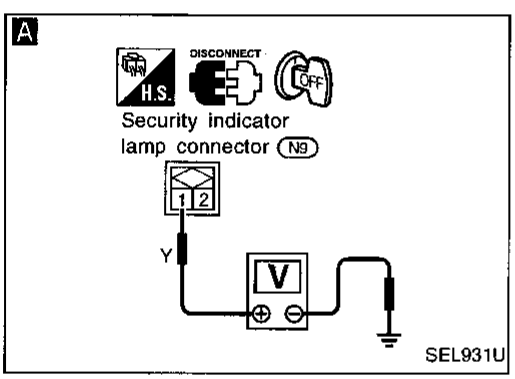
NG → NATS IMMU is malfunctioning. Replace IMMU.

Perform initialization with CONSULT.
For the operation of initialization, refer to "CONSULT operation manual NATS".

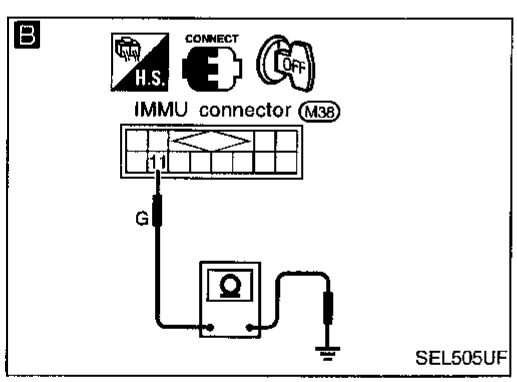
OK ↓

Check harness for open or short between security indicator and NATS IMMU.

A



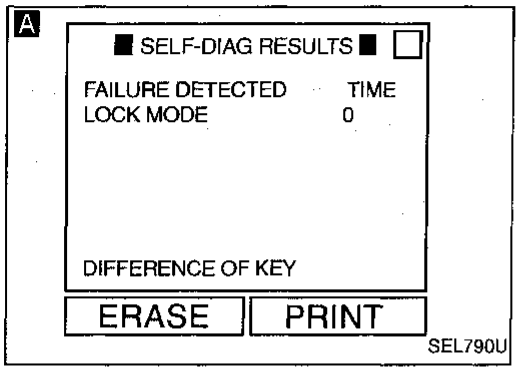
B

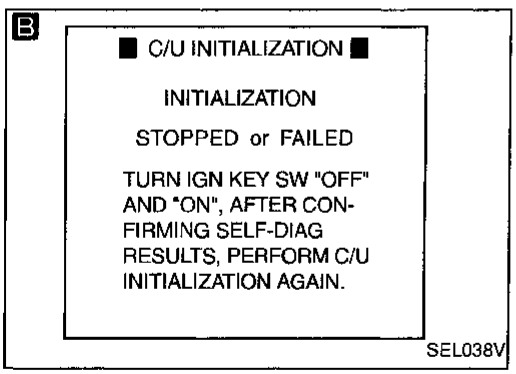


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 9

Self-diagnostic results: "LOCK MODE" displayed on CONSULT screen





A

Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT 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 NATS ANTENNA AMP. INSTALLATION. Refer to "How to Replace NATS Antenna Amp." in EL-418.

NG → Reinstall NATS antenna amp. correctly.

OK

PERFORM INITIALISATION
Perform initialisation with CONSULT. For the initialisation procedure, refer to "CONSULT operation manual NATS V2.0".

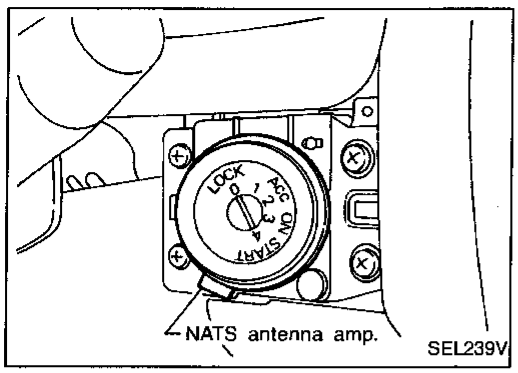
Can the system be initialized?

Note: If the initialisation is incompleted or failed, CONSULT shows B message on the screen.

Yes → System is OK.

No

Go to DIAGNOSTIC PROCEDURE 5, EL-412 to check "CHAIN OF IMMU-KEY".

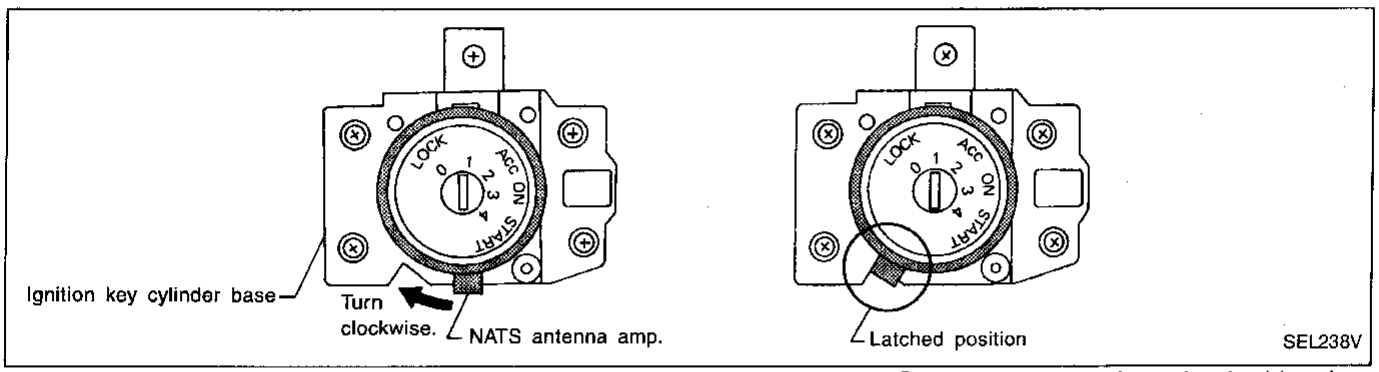


How to Replace NATS Antenna Amp.

NOTE:

- **If NATS antenna amp. is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".**
- **Initialization is not necessary only when NATS antenna amp. is replaced with a new one.**

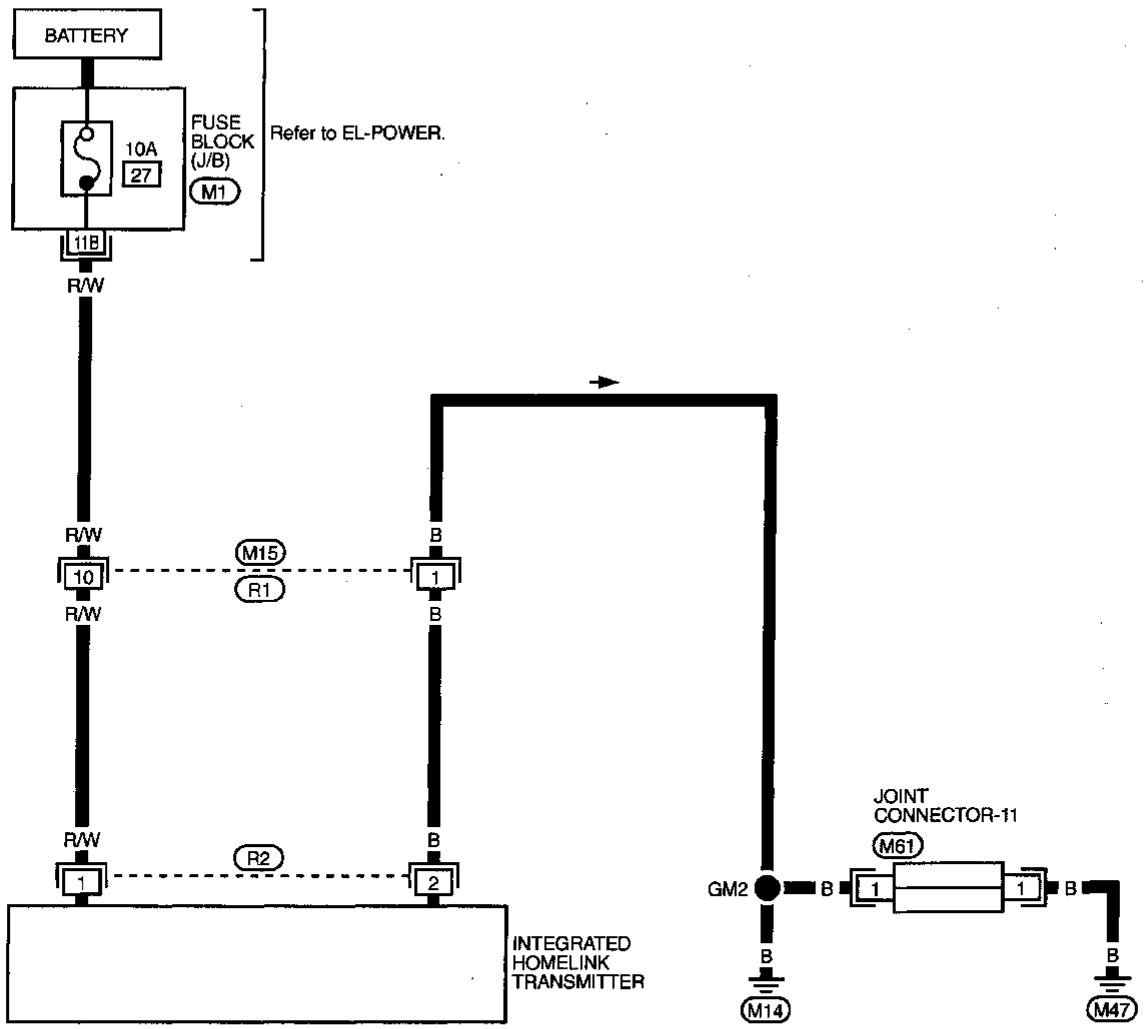
INSTALLATION

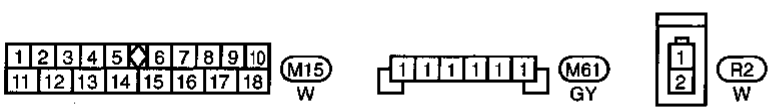


- After inserting the NATS antenna amp. into the ignition key cylinder, check if the NATS antenna amp. is set in the latched position as shown in the above illustration.

Wiring Diagram — TRNSMT —

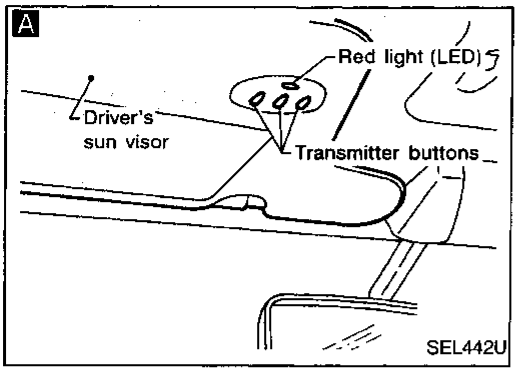
EL-TRNSMT-01

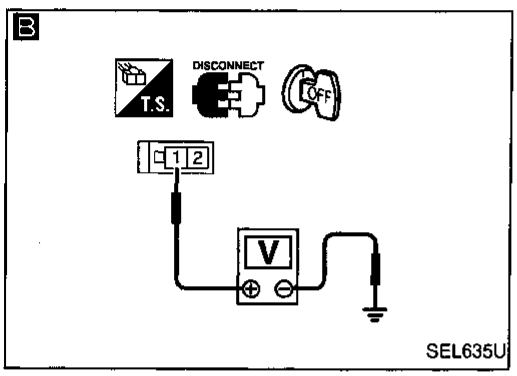


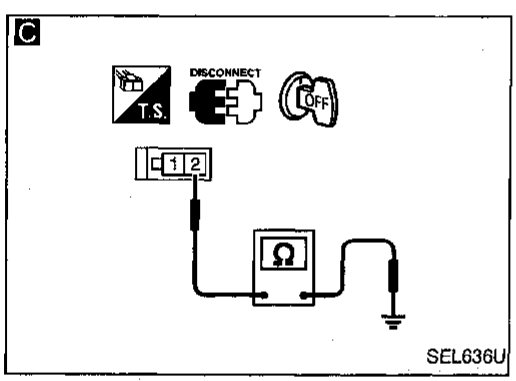


Refer to last page (Foldout page).
M1

TEL892







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*.

- 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.

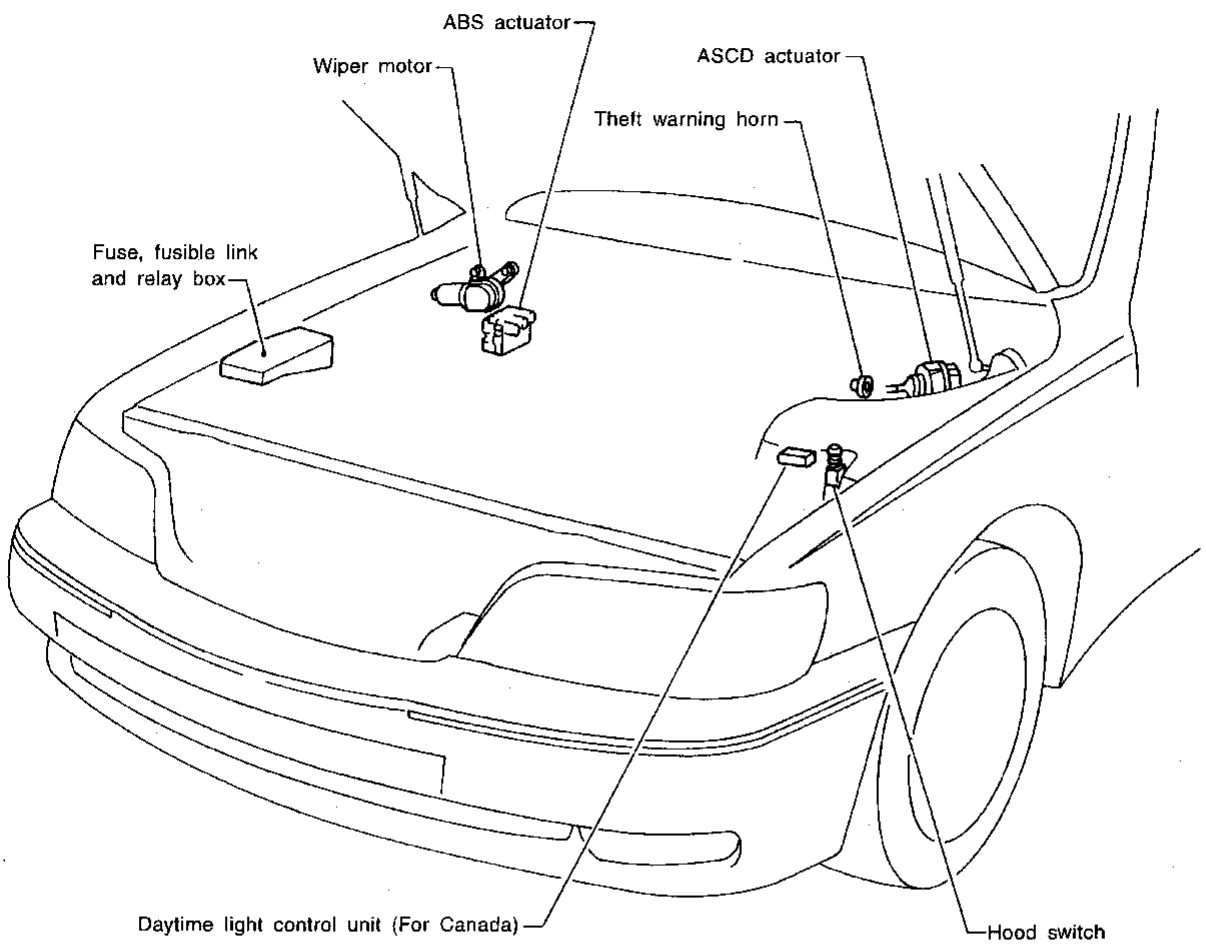
NG → Repair harness.

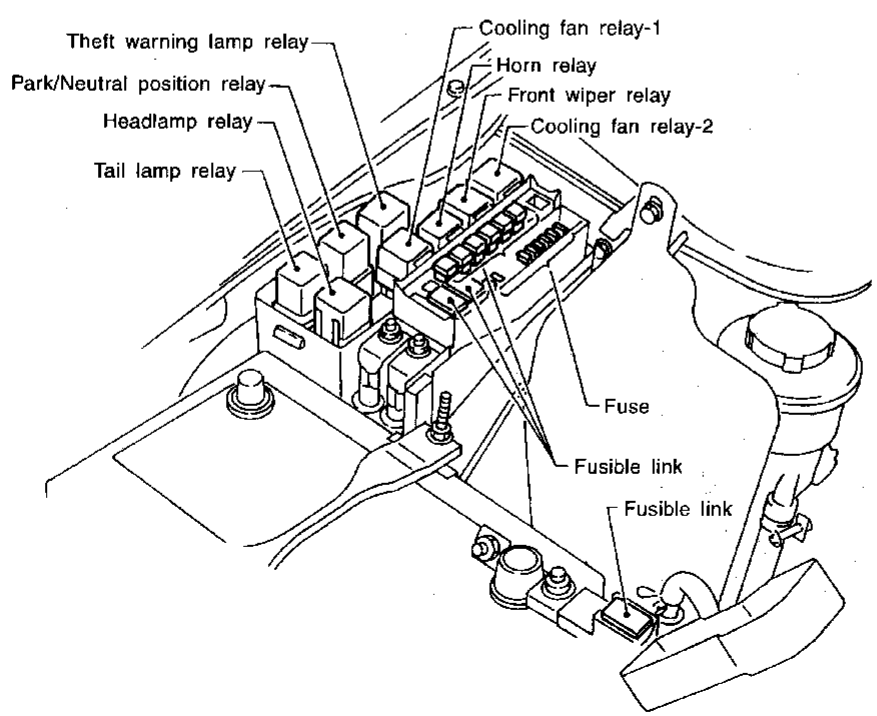
OK →

Replace transmitter with sunvisor assembly.

*For details, refer to Technical Service Bulletin.

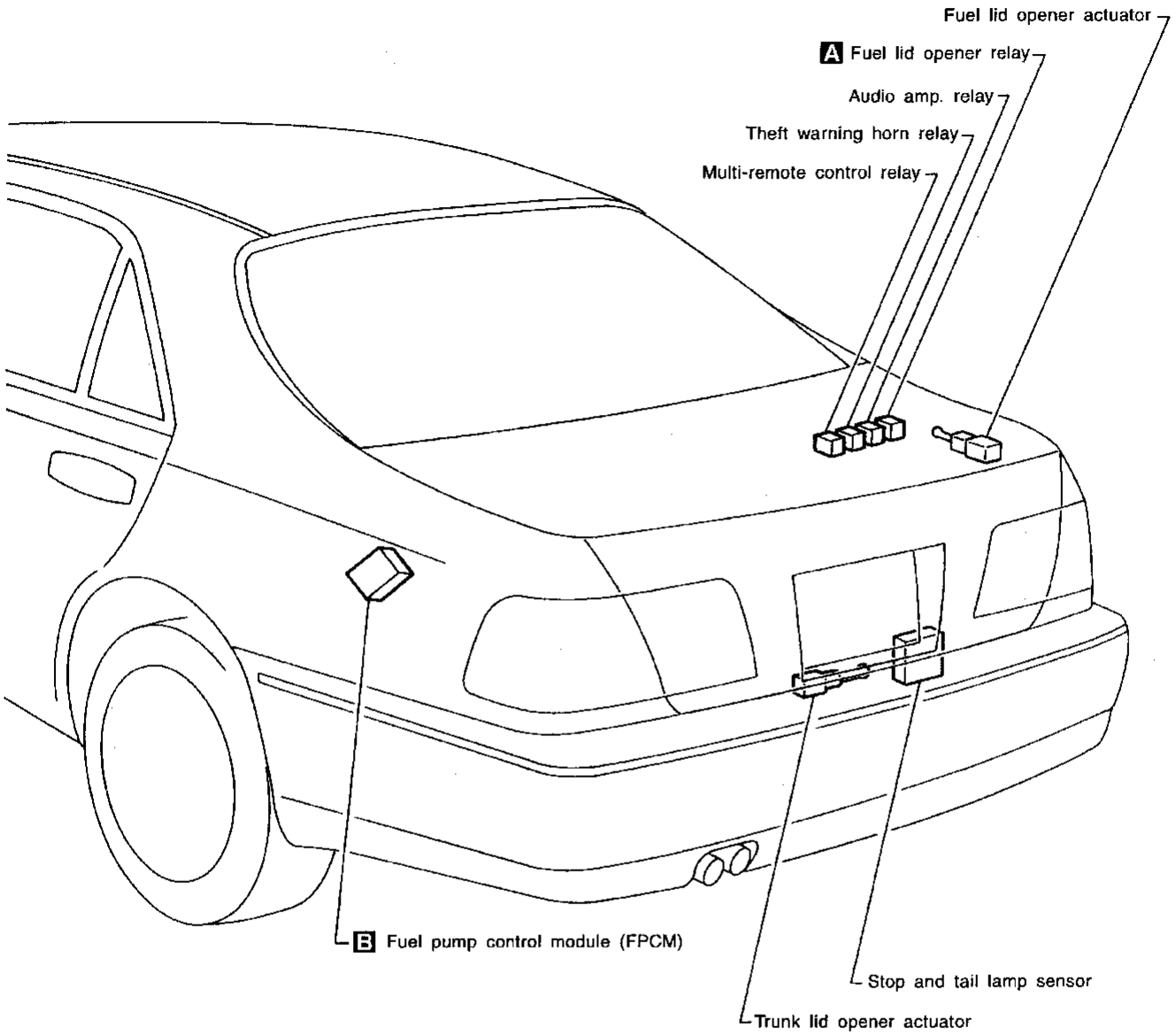
Engine Compartment

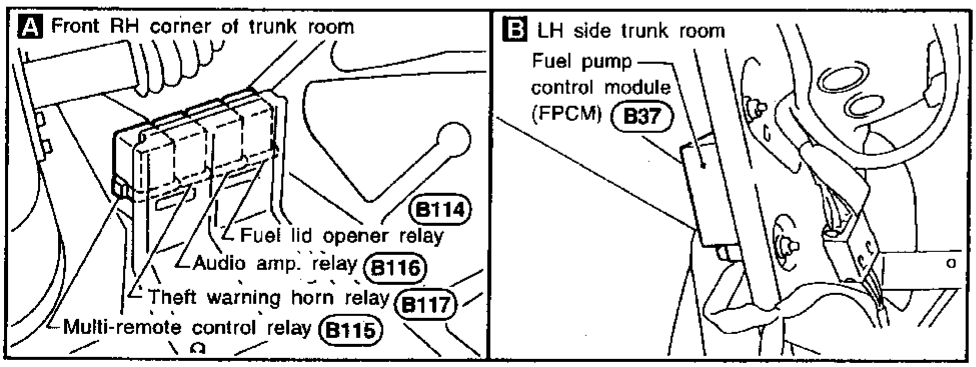




CEL435

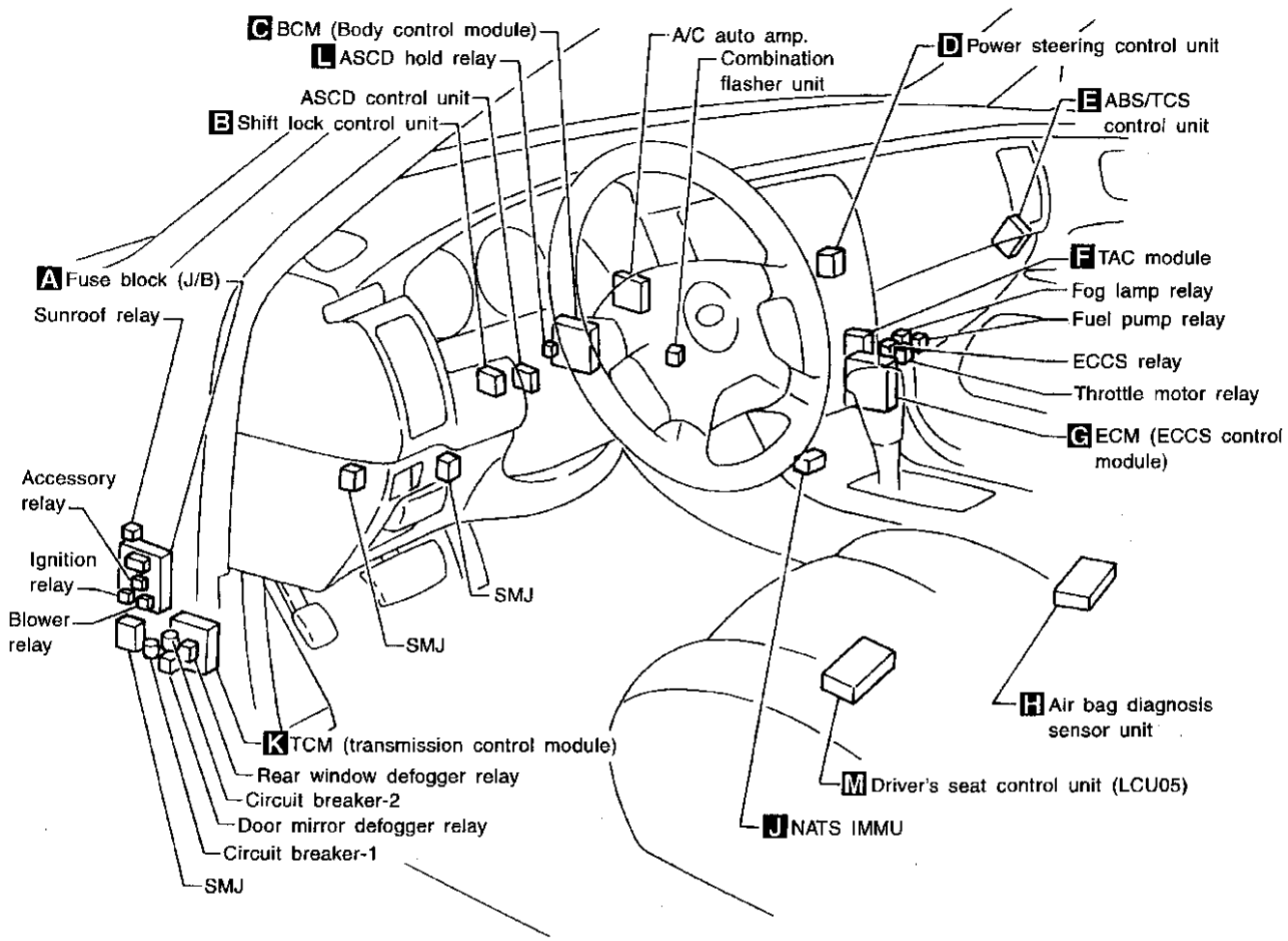
Luggage Compartment



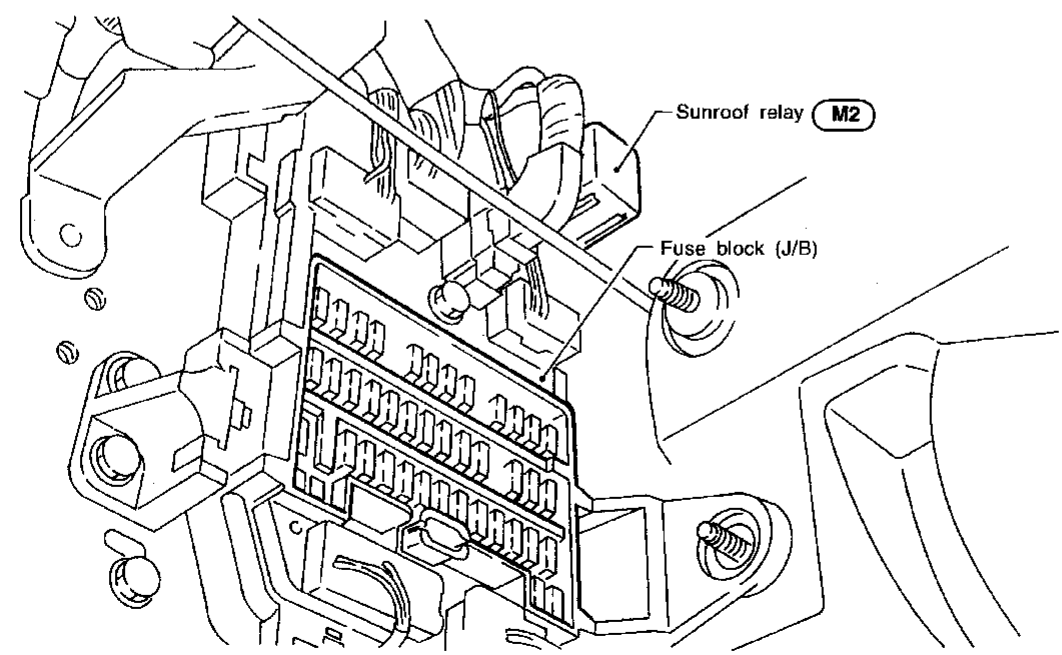


CEL438-A

Passenger Compartment

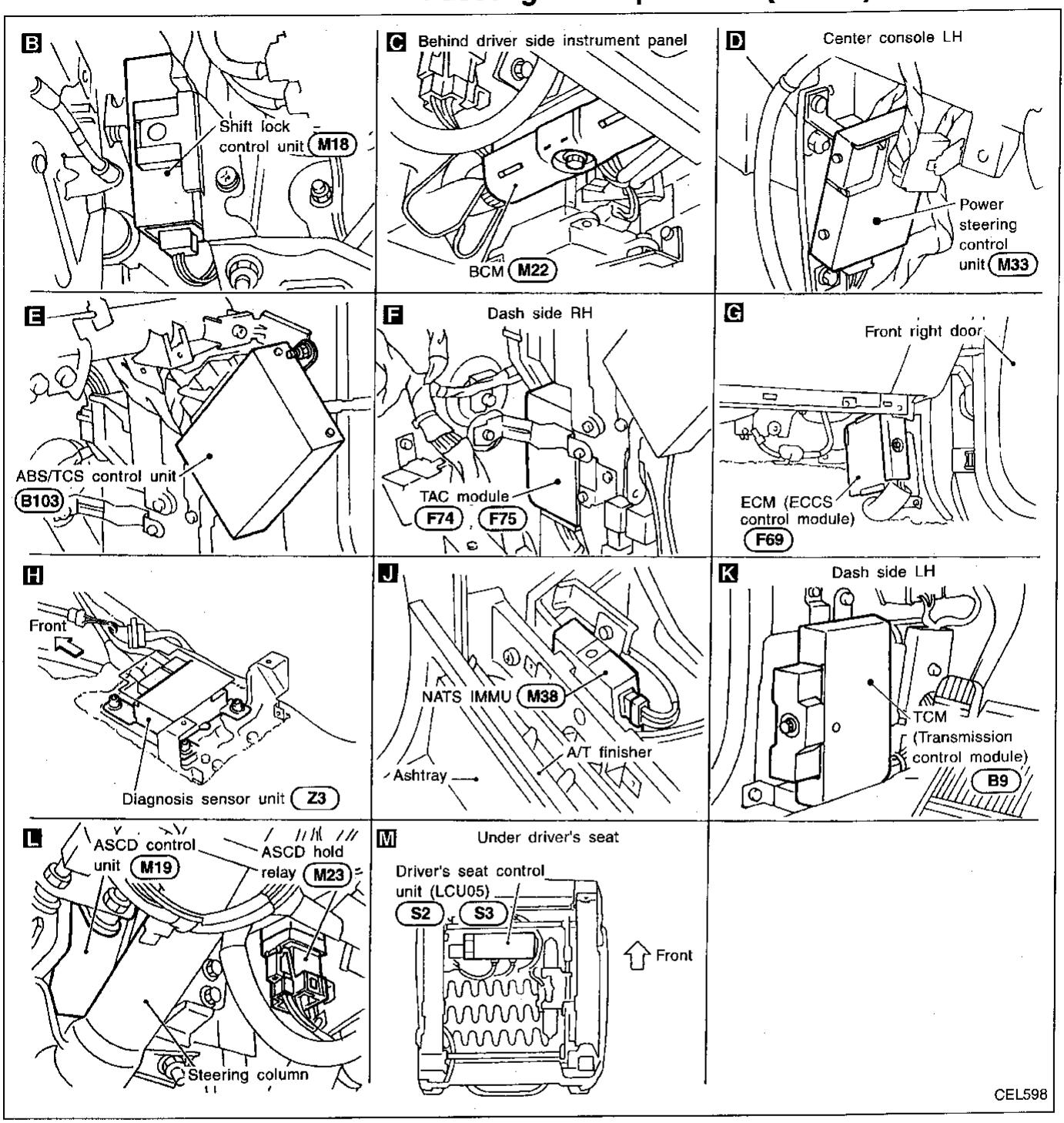


A Instrument panel LH side



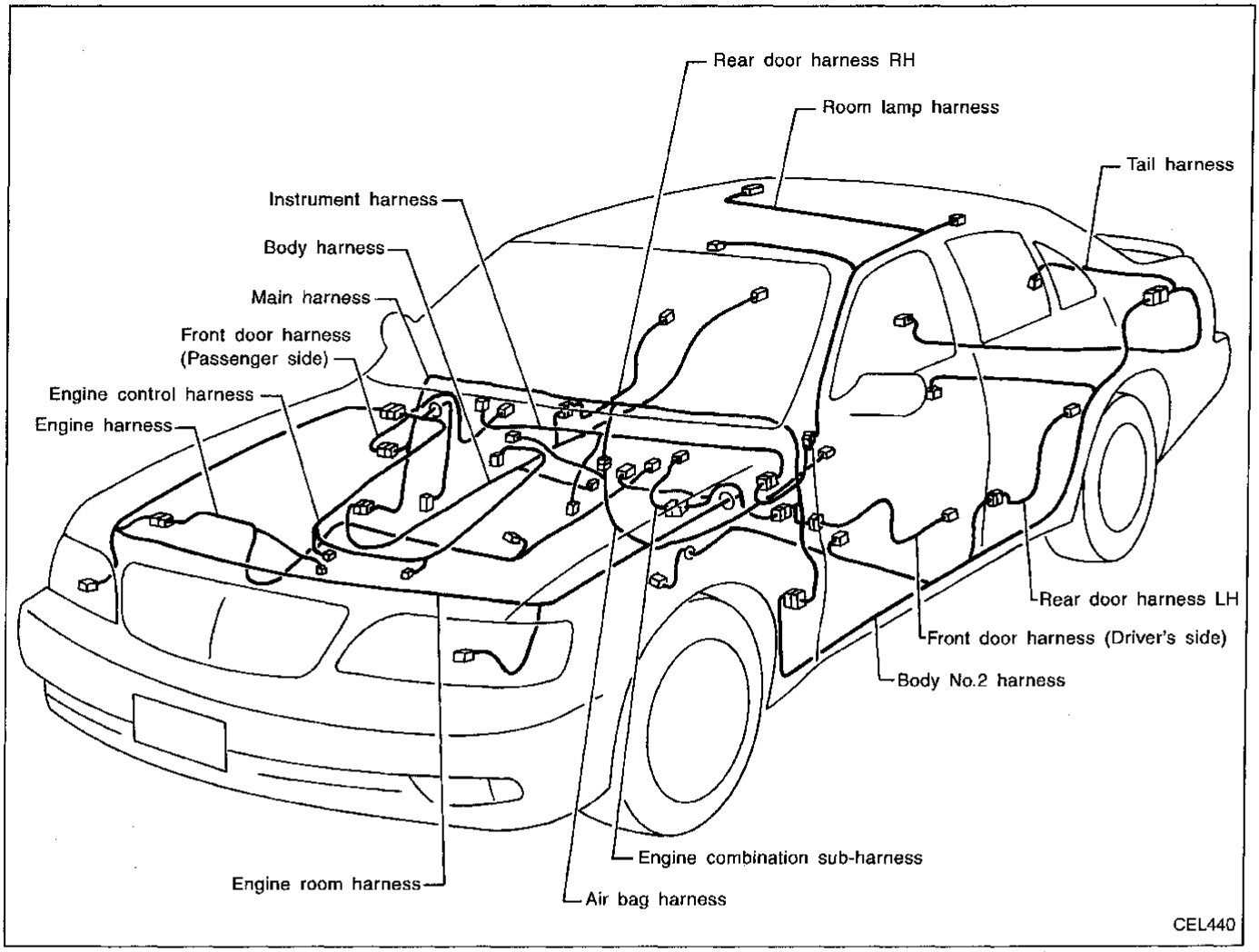
CEL436-A

Passenger Compartment (Cont'd)



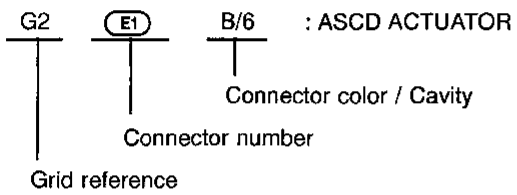
NOTE

Outline


Rear door harness RH
Room lamp harness
Tail harness
Instrument harness
Body harness
Main harness
Front door harness
(Passenger side)
Engine control harness
Engine harness
Rear door harness LH
Front door harness (Driver's side)
Body No.2 harness
Engine combination sub-harness
Engine room harness
Air bag harness
CEL440

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

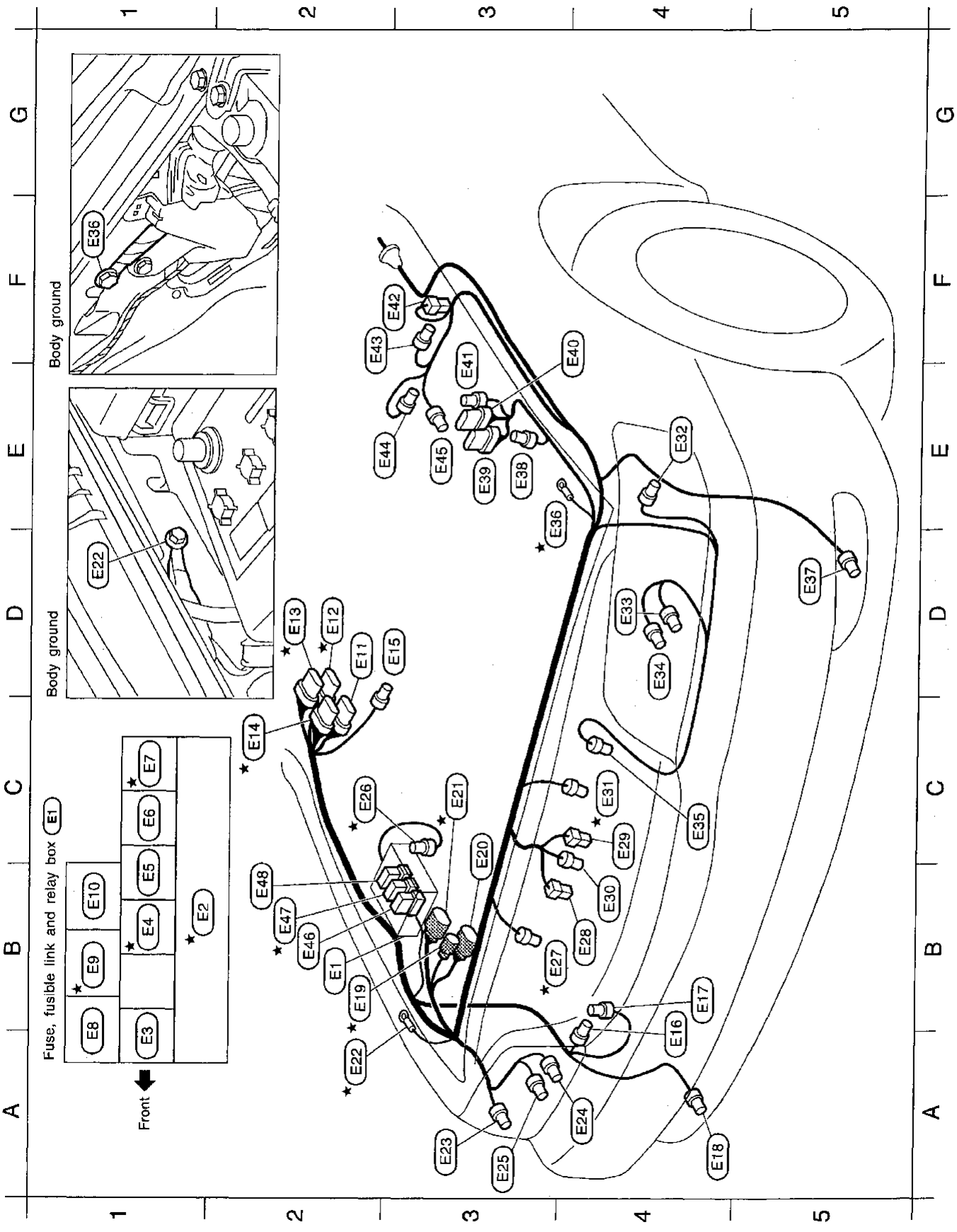
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

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



CEL441

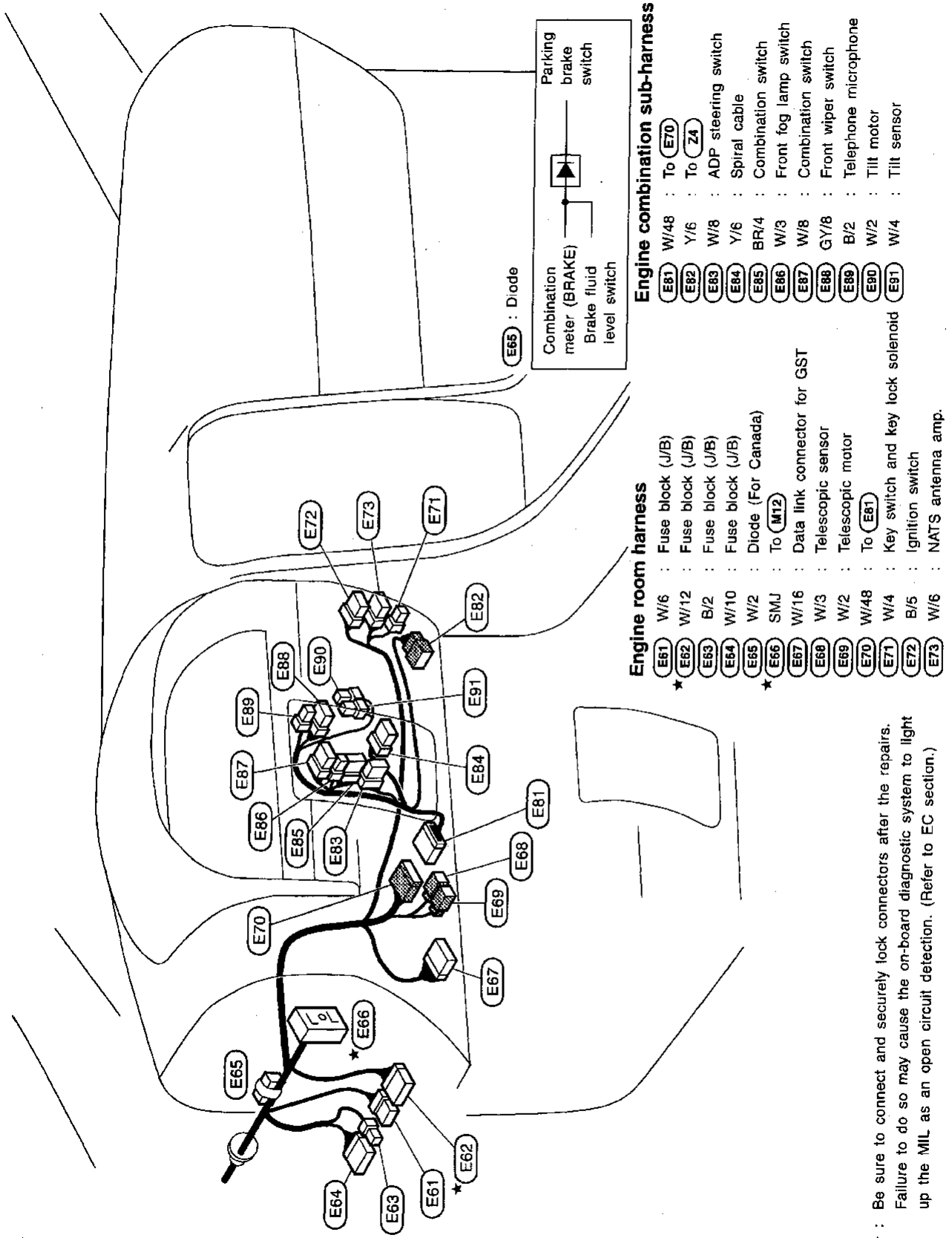
Engine Room Harness (Cont'd)

B2	E1	–	: Fuse, fusible link and relay box
B1★	E2	–	: Fuse, fusible link and relay box
B1	E3	BR/6	: Headlamp relay
B1★	E4	L/4	: Cooling fan relay-1
B1	E5	W/3	: Horn relay
C1	E6	B/5	: Front wiper relay
C1★	E7	L/4	: Cooling fan relay-2
B1	E8	GY/6	: Tail lamp relay
B1★	E9	GY/6	: Park/Neutral position relay
B1	E10	BR/6	: Theft warning lamp 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 relay unit
A4	E16	GY/2	: Front washer motor
B4	E17	BR/2	: Washer level switch
A4	E18	GY/2	: Front fog lamp RH
B2★	E19	B/6	: To E102
C3	E20	GY/1	: To E103
C3★	E21	GY/8	: To E101
A2	E22	–	: Body ground
A3	E23	BR/3	: Front combination lamp RH
A4	E24	B/3	: Headlamp RH (For U.S.A.)
A3	E25	B/3	: Headlamp RH (For Canada)
C2★	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
D4	E33	B/3	: Headlamp LH (For Canada)
D4	E34	B/3	: Headlamp LH (For U.S.A.)
C4	E35	B/4	: Triple-pressure switch
E3	E36	–	: Body ground
D5	E37	GY/2	: Front fog lamp LH
E3	E38	GY/2	: Hood switch
E3	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★	E47	W/6	: Joint connector-14
B2	E48	W/6	: Joint connector-15

★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

CEL442

Engine Room Harness (Cont'd)



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 for GST
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	NATS antenna amp.

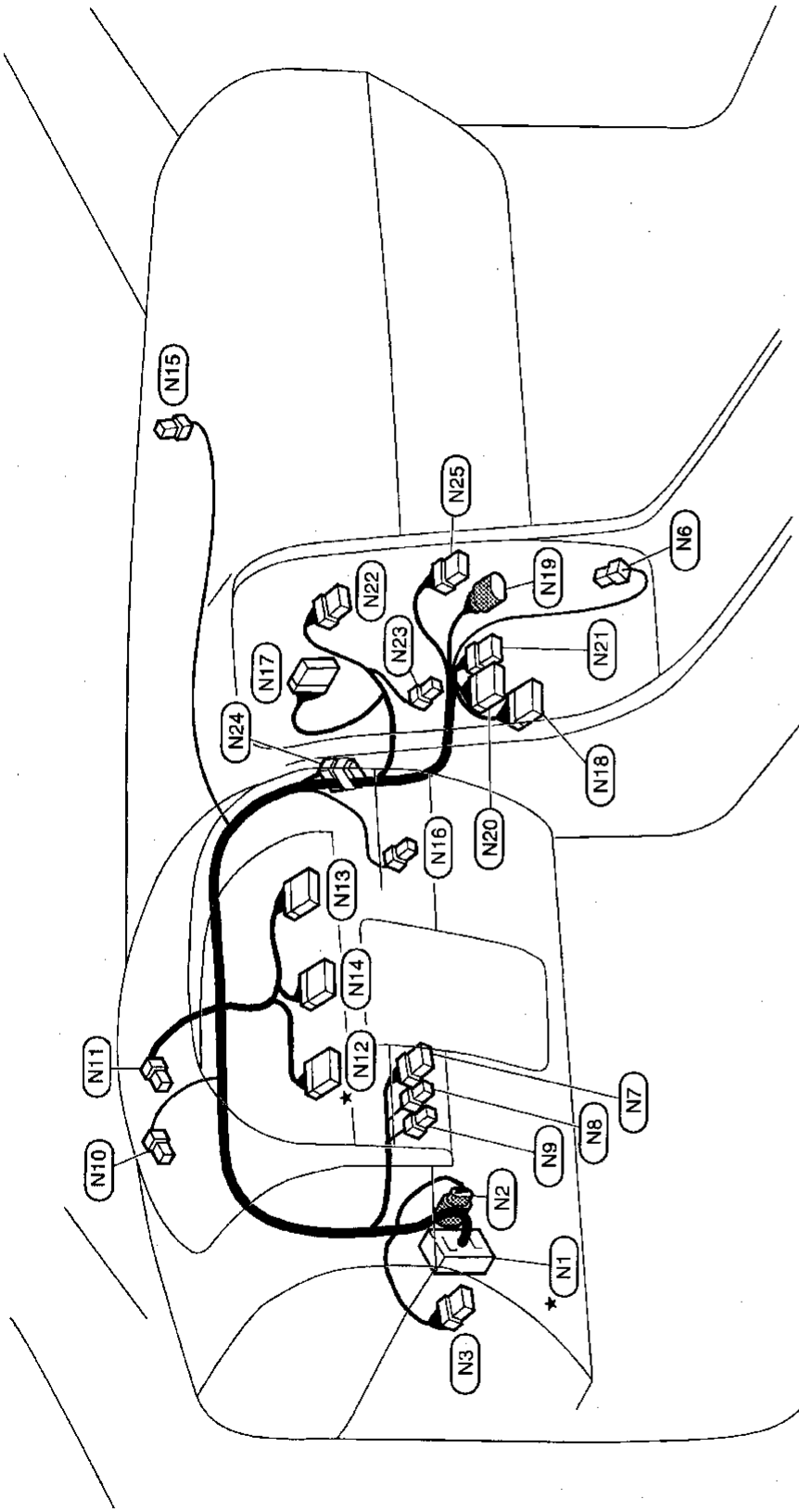
Engine combination sub-harness

E81	W/48	To E70
E82	Y/6	To Z4
E83	W/8	ADP steering switch
E84	Y/6	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
E89	B/2	Telephone microphone
E90	W/2	Tilt motor
E91	W/4	Tilt sensor

★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

CEL443

Instrument Harness

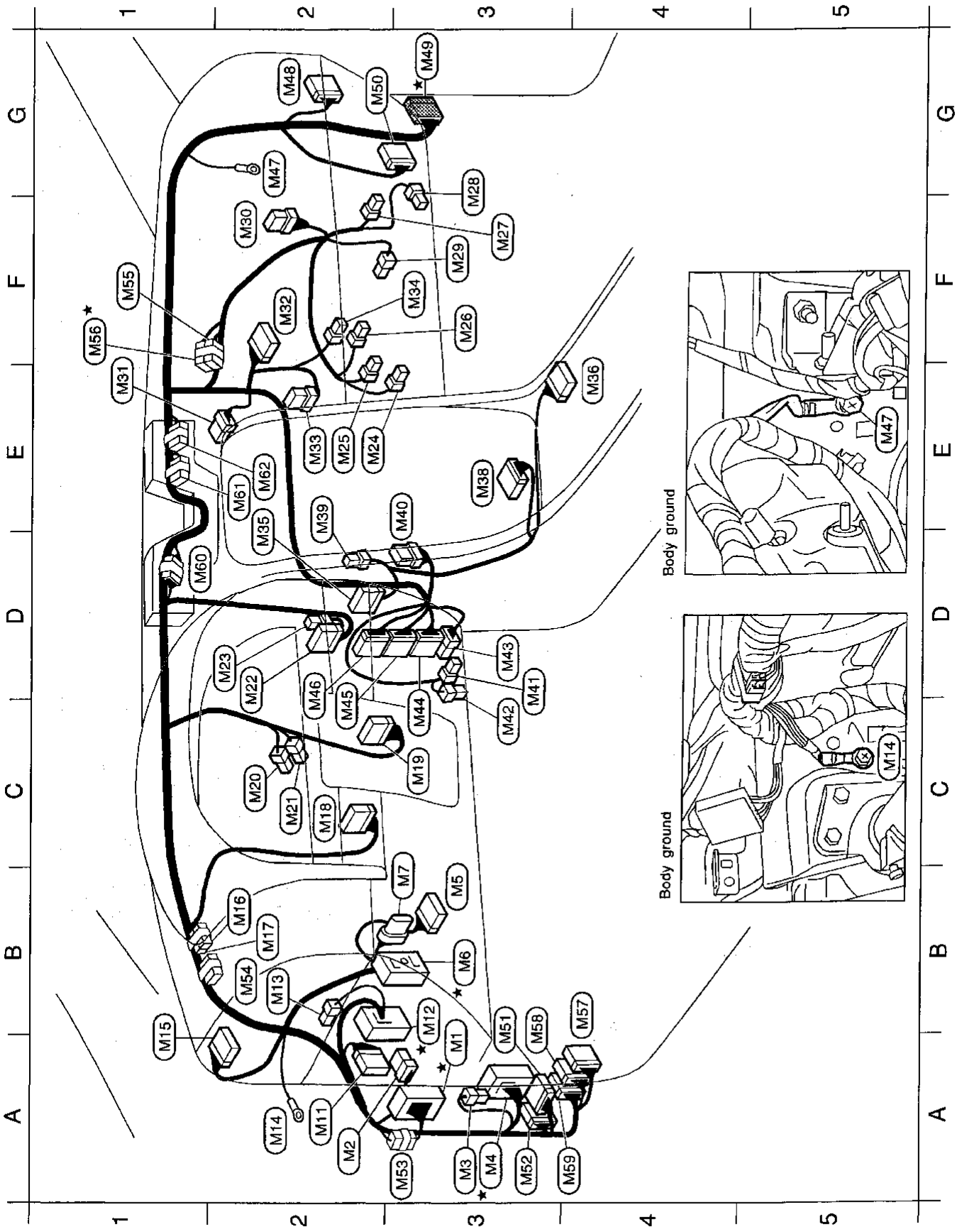


★	N1	SMJ	To M6
	N2	B/6	To M7
	N3	W/6	ASCD main switch
	N6	W/3	Front cigarette lighter
	N7	W/6	TCS switch
	N8	W/4	Illumination time control switch
	N9	W/2	Security indicator
	N10	W/3	Warning chime
	N11	W/4	Optical sensor
★	N12	BR/16	Combination meter
	N13	W/14	Combination meter
	N14	W/16	Combination meter
	N15	B/2	Sunload sensor
	N16	W/2	Ignition key hole illumination
	N17	W/12	A/C control unit
	N18	W/12	Radio
	N19	B/6	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

★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

CEL446

Main Harness



CEL444

Main Harness (Cont'd)

A3★	M1	SMJ	: Fuse block (J/B)	E1	M31	B/6	: Bi-level door motor
A2	M2	L/4	: Sunroof relay	F2	M32	W/20	: To Z1
A3	M3	B/6	: To B4	E2	M33	W/8	: Power steering control unit
A3★	M4	SMJ	: To B3	F3	M34	W/3	: Intake sensor
B3	M5	GY/14	: Data link connector for CONSULT	D2	M35	BR/10	: Mode door motor
B3★	M6	SMJ	: To N1	E4	M36	W/12	: A/T device
B3	M7	B/6	: To N2	E3	M38	W/12	: NATS IMMU
A2	M11	W/40	: To D1	E2	M39	B/3	: Combination flasher unit
B3★	M12	SMJ	: To E66	E3	M40	B/6	: Rear vent door motor
B2	M13	B/1	: Parking brake switch	D3	M41	W/2	: In-vehicle sensor
A2	M14	–	: Body ground	C3	M42	B/2	: Footwell lamp (Driver's side)
A1	M15	W/18	: To R1	D3	M43	B/6	: Air mix door motor
B2	M16	W/2	: Diode	C3	M44	W/20	: A/C auto amp.
B2	M17	W/2	: Diode	C2	M45	W/16	: A/C auto amp.
C2	M18	W/12	: Shift lock control unit	D2	M46	GY/20	: A/C auto amp.
C3	M19	B/20	: ASCD control unit	G2	M47	–	: Body ground
C2	M20	B/2	: Stop lamp switch	G2	M48	W/40	: To D21
C2	M21	L/2	: ASCD brake switch	G3★	M49	W/48	: To F63
D2	M22	SMJ	: BCM (Body control module)	G2	M50	W/48	: To B101
D2	M23	L/4	: ASCD hold relay	B3	M51	L/12	: Joint connector-1
E2	M24	W/2	: Trunk lid opener cancel switch	A3	M52	G/12	: Joint connector-2
E2	M25	BR/2	: Glove box lamp switch	A3	M53	G/12	: Joint connector-3
F3	M26	W/2	: Glove box lamp	B2	M54	G/12	: Joint connector-4
F3	M27	W/2	: Blower motor	F1	M55	B/12	: Joint connector-5
G3	M28	B/2	: Footwell lamp (Passenger side)	F1★	M56	G/12	: Joint connector-6
F3	M29	W/4	: Fan control amp.	B4	M57	G/12	: Joint connector-7
F2	M30	W/8	: Intake door motor	B3	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

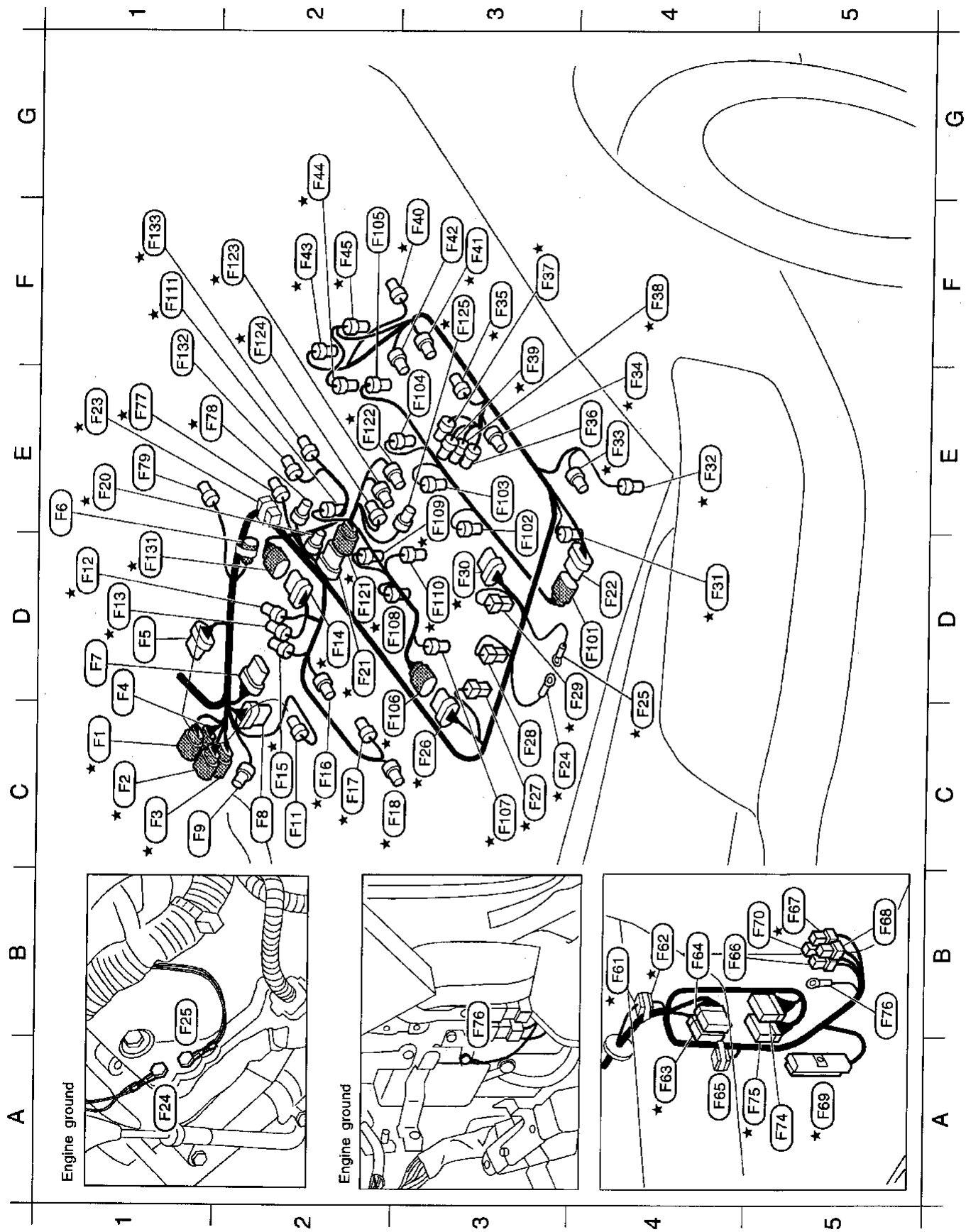
M16 : Diode

M17 : Diode

★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

CEL445

Engine Control Harness



CEL599

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
E1 (F6) GY/1 : Check connector
D1 (F7) B/8 : ABS relay unit
C2 (F8) B/6 : 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)
E1★(F20) B/2 : EGR valve & EVAP canister purge control solenoid valve
D2★(F21) GY/8 : To (F121)
D4 (F22) GY/6 : To (F101)
E1 (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 switch
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
B4★(F61) W/1 : To (F62)
B4★(F62) W/1 : To (F61)
A4★(F63) W/48 : To (M49)
B4 (F64) W/30 : To (B102)
A4 (F65) GY/2 : Resistor
B4★(F66) L/4 : ECCS relay
B5★(F67) L/4 : Fuel pump relay
B5 (F68) L/4 : Throttle motor relay
A5★(F69) SMJ : ECM (ECCS control module)
B5 (F70) L/4 : Fog lamp relay
A5 (F74) B/16 : TAC module
A5★(F75) B/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

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

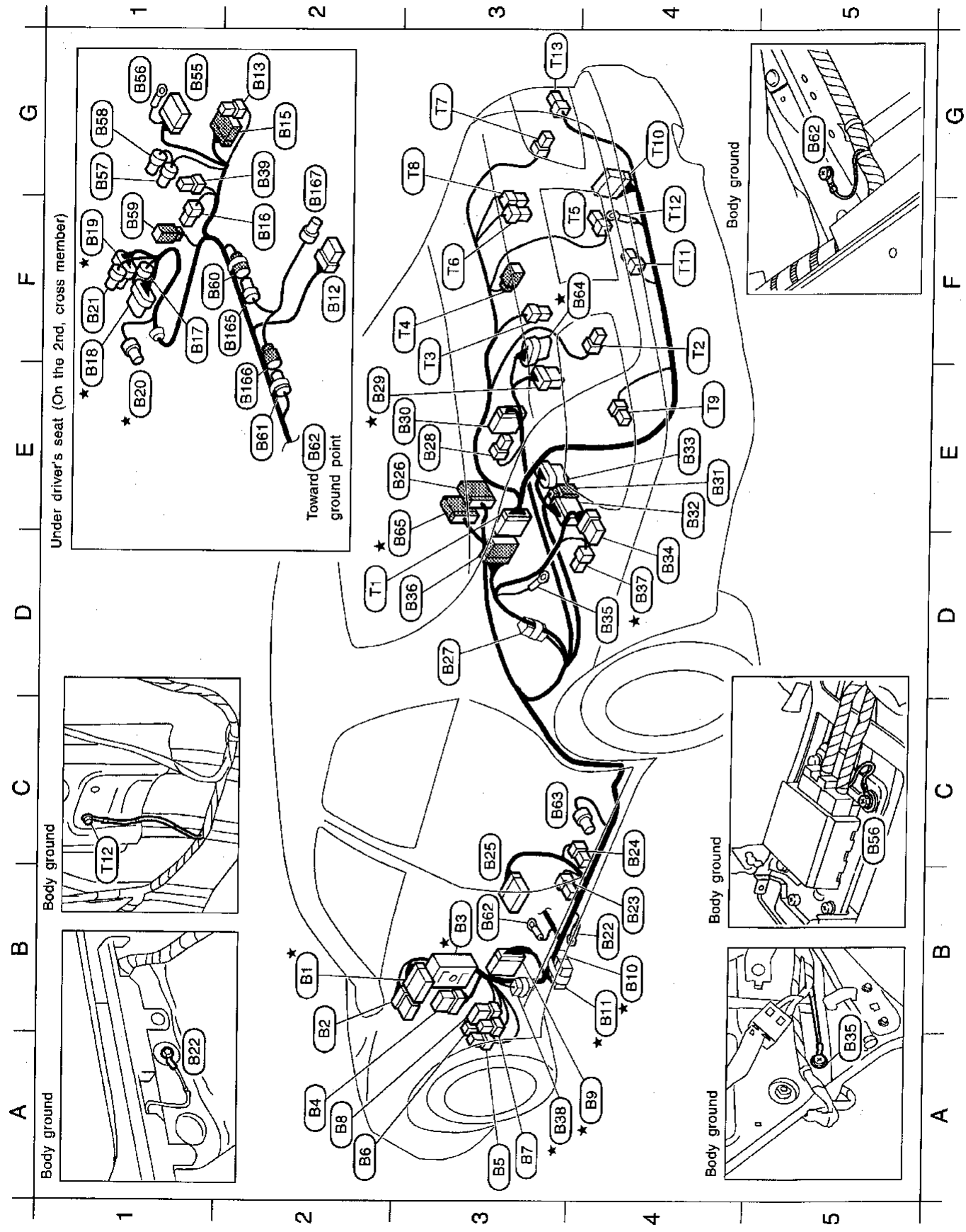
D2★(F121) GY/8 : To (F21)
E2★(F122) B/2 : Knock sensor LH
F2★(F123) B/2 : Knock sensor RH
F2★(F124) BR/2 : MAP/BARO switch solenoid valve
F3★(F125) B/2 : EGRC-solenoid valve

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 securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

Body Harness and Tail Harness



CEL601

Body harness

B2★	B1	W/16	:	Fuse block (J/B)
B2	B2	W/6	:	Fuse block (J/B)
B3★	B3	SMJ	:	To M4
A2	B4	B/6	:	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 side)
F1★	B17	GY/3	:	Revolution sensor
E1★	B18	BR/8	:	A/T solenoid valve
F1★	B19	GY/8	:	Inhibitor 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	BR/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
E3	B30	GY/26	:	BOSE speaker amp.
E4	B31	B/4	:	Receiver
E4	B32	W/16	:	Receiver
E4	B33	B/6	:	Receiver
D4	B34	W/6	:	Power antenna timer and motor
D4	B35	–	:	Body ground
D3	B36	W/12	:	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	B57	W/2	:	To B176
G1	B58	GY/4	:	To B175
F1	B59	B/1	:	To B177
F1	B60	B/2	:	To B165
E2	B61	W/2	:	To B166
E2	B62	–	:	Body ground
C3	B63	GY/2	:	Satellite sensor LH
F3★	B64	GY/8	:	To C14
E3★	B65	W/12	:	To B178

Side air bag module sub-harness LH

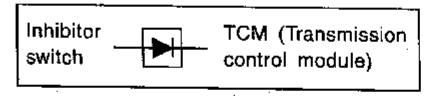
(This sub-harness is taped to fix to the body harness.)

F2	B165	B/2	:	To B60
E2	B166	W/2	:	To B61
G2	B167	W/2	:	Side air bag module LH

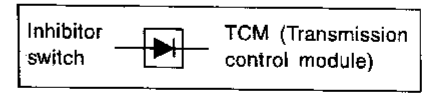
Tail harness

D2	T1	W/12	:	To B36
F4	T2	W/4	:	Rear combination lamp LH (Trunk lid)
F3★	T3	W/2	:	License lamp LH
F3	T4	W/2	:	High-mounted stop lamp (Models with rear air spoiler)
F3	T5	B/2	:	Trunk lid opener actuator
F3	T6	W/2	:	License lamp RH
G3	T7	W/4	:	Rear combination lamp RH (Trunk lid)
G3	T8	W/3	:	Trunk lid key cylinder switch (Unlock switch)
E4	T9	W/4	:	Rear combination lamp LH (Fender)
G4	T10	W/12	:	Stop and Tail lamp sensor
F4	T11	W/2	:	Trunk room lamp switch
F4	T12	–	:	Body ground
G3	T13	W/4	:	Rear combination lamp RH (Fender)

B10 : Diode

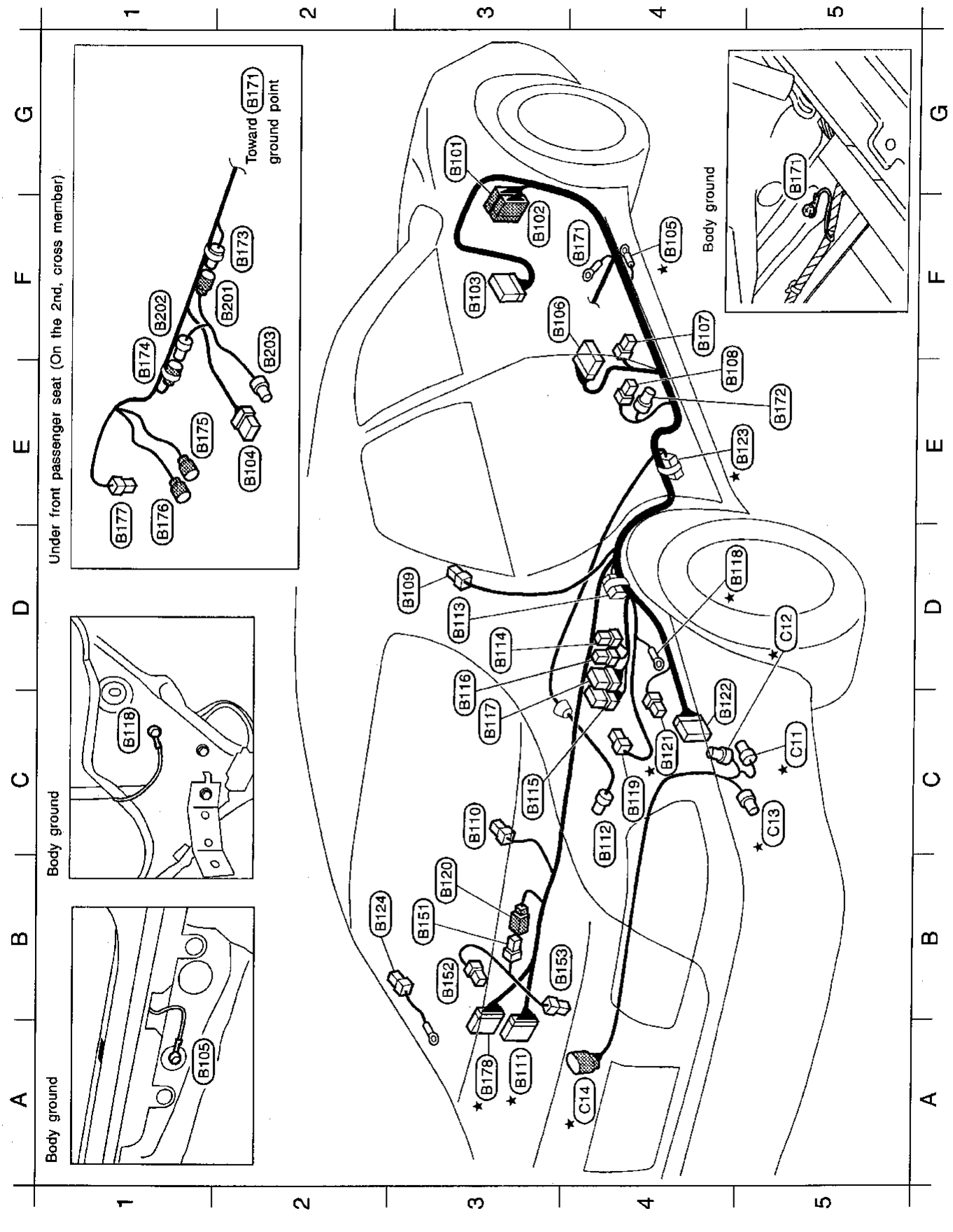


B11 : Diode



★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

Body No. 2 Harness



CEL603

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	BR/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
D5★	B118	–	:	Body ground
C4	B119	BR/2	:	Fuel lid opener actuator
B3	B120	GY/4	:	To B151
C4★	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	GY/2	:	Satellite sensor RH
F2	B173	W/2	:	To B201
E1	B174	B/2	:	To B202
E1	B175	GY/4	:	To B58
D1	B176	W/2	:	To B57
D1	B177	B/1	:	To B59
A3★	B178	W/12	:	To B65

Body No. 2 sub-harness

B3	B151	GY/4	:	To B120
B3	B152	W/2	:	High-mounted stop lamp (Models with rear air spoiler)
B4	B153	W/2	:	Trunk room lamp

Side air bag module sub-harness RH

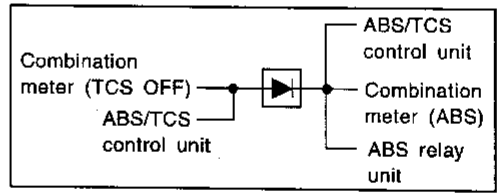
(This sub-harness is taped to fix to the body No. 2 harness.)

F2	B201	W/2	:	To B173
F1	B202	B/2	:	To B174
F2	B203	W/2	:	Side air bag module RH

Chassis sub-harness

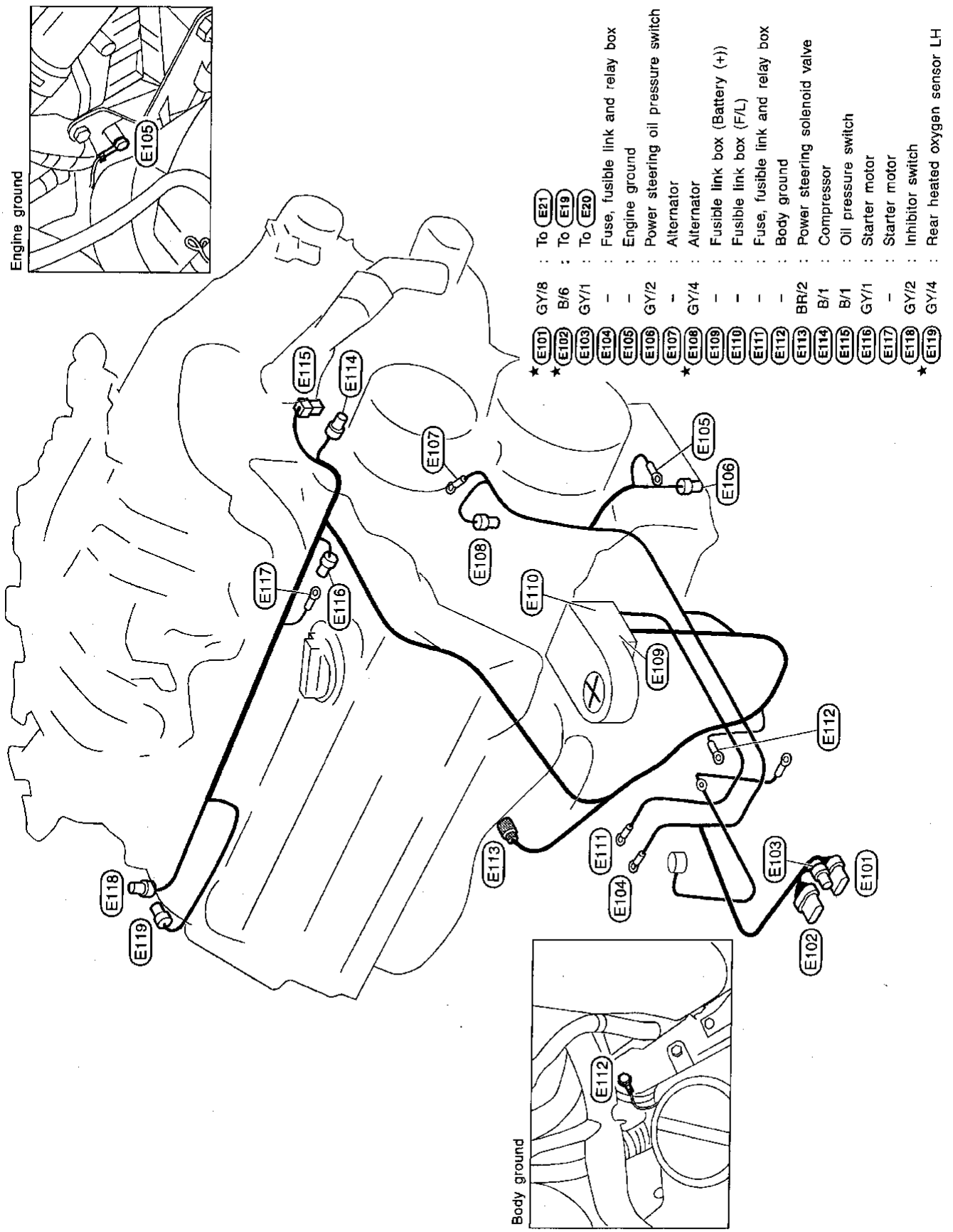
C5★	C11	GY/3	:	EVAP control system pressure sensor
D5★	C12	G/2	:	Vacuum cut valve bypass valve
C5★	C13	B/2	:	EVAP canister vent control valve
A4★	C14	GY/8	:	To B64

B113 : Diode



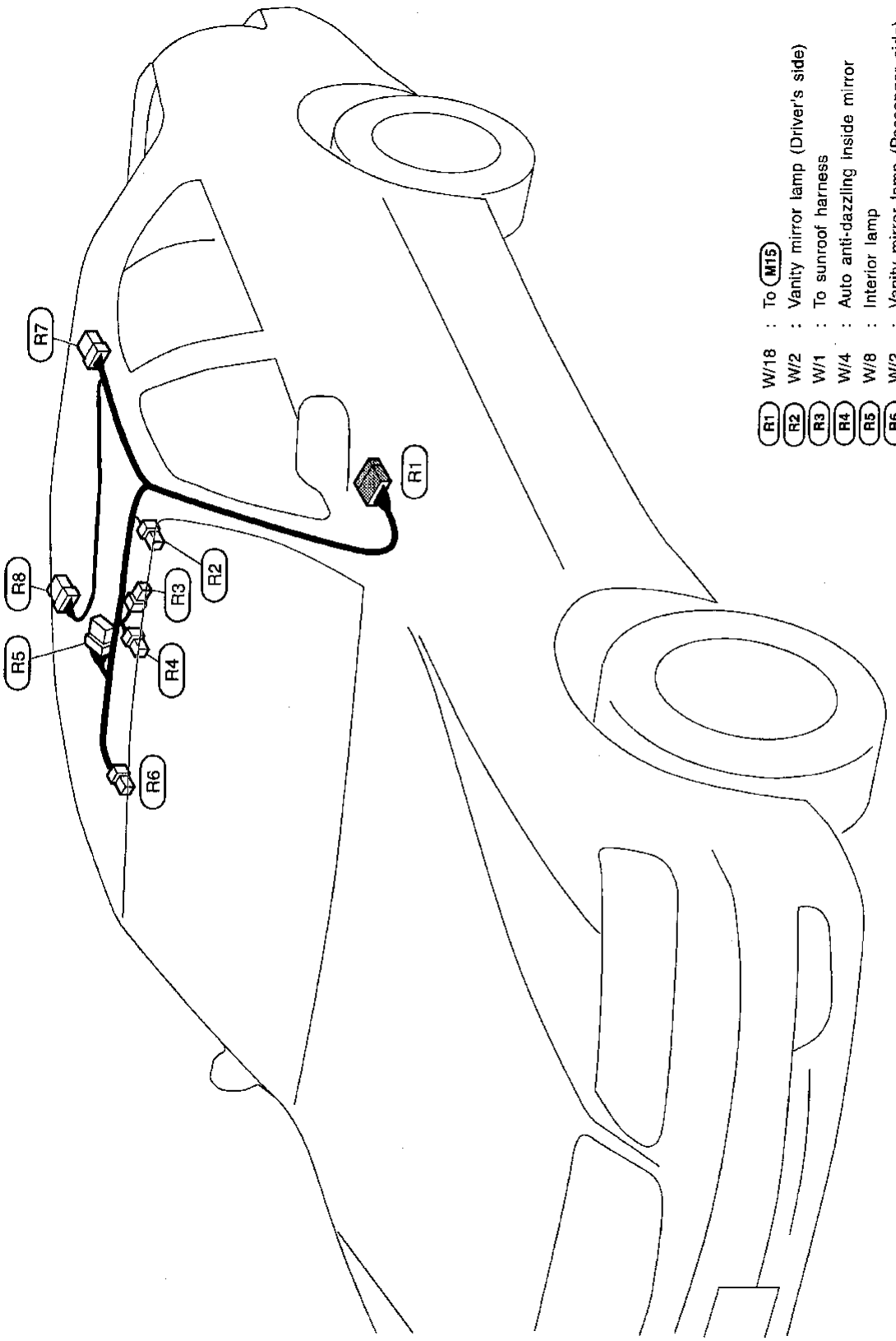
★ : Be sure to connect and securely lock connectors after the repairs. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection. (Refer to EC section.)

Engine Harness



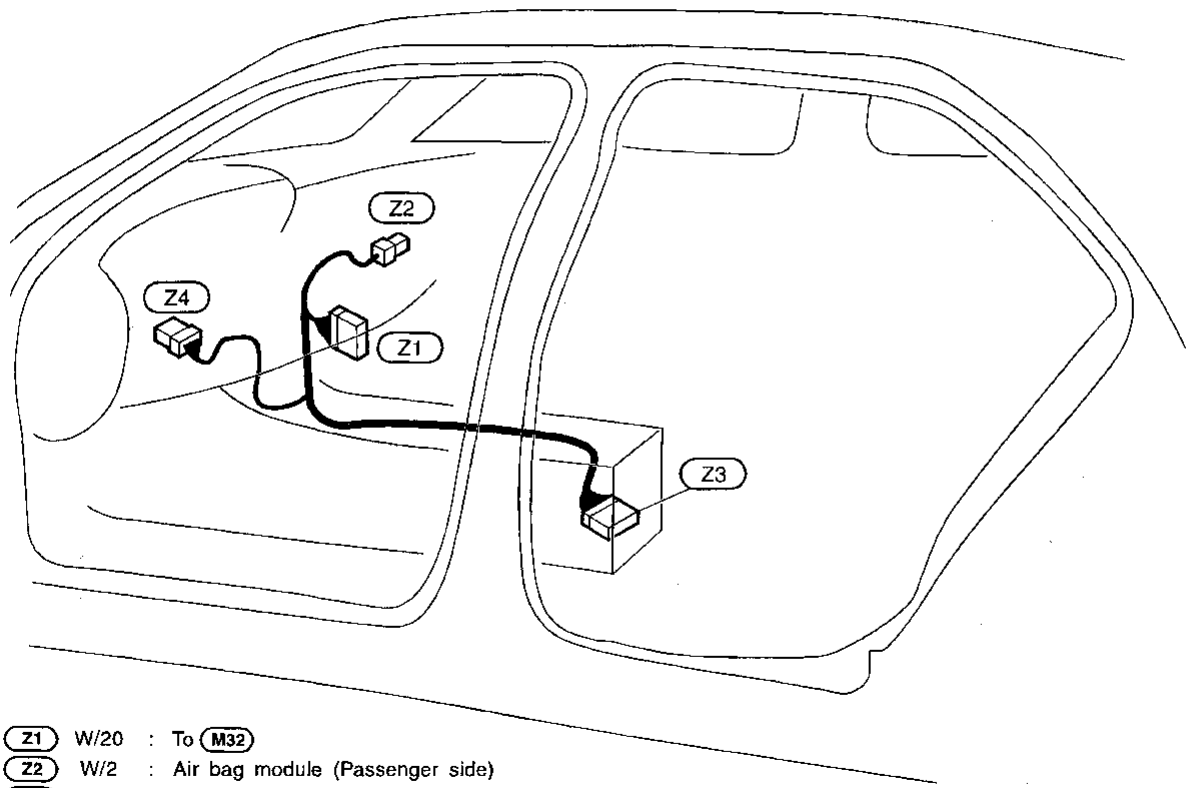
CEL449

Room Lamp Harness



CEL454

Air Bag Harness



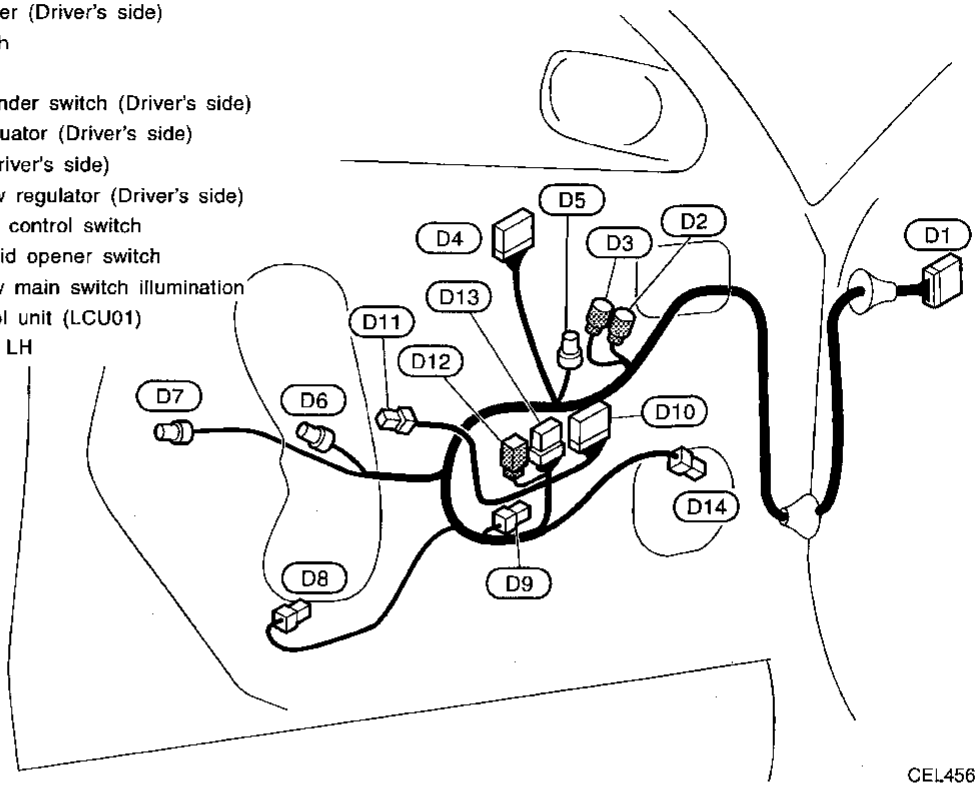
Z1 W/20 : To M32
Z2 W/2 : Air bag module (Passenger side)
Z3 Y/22 : Air bag diagnosis sensor unit
Z4 Y/6 : To E82

CEL455

DRIVER SIDE

Front Door Harness

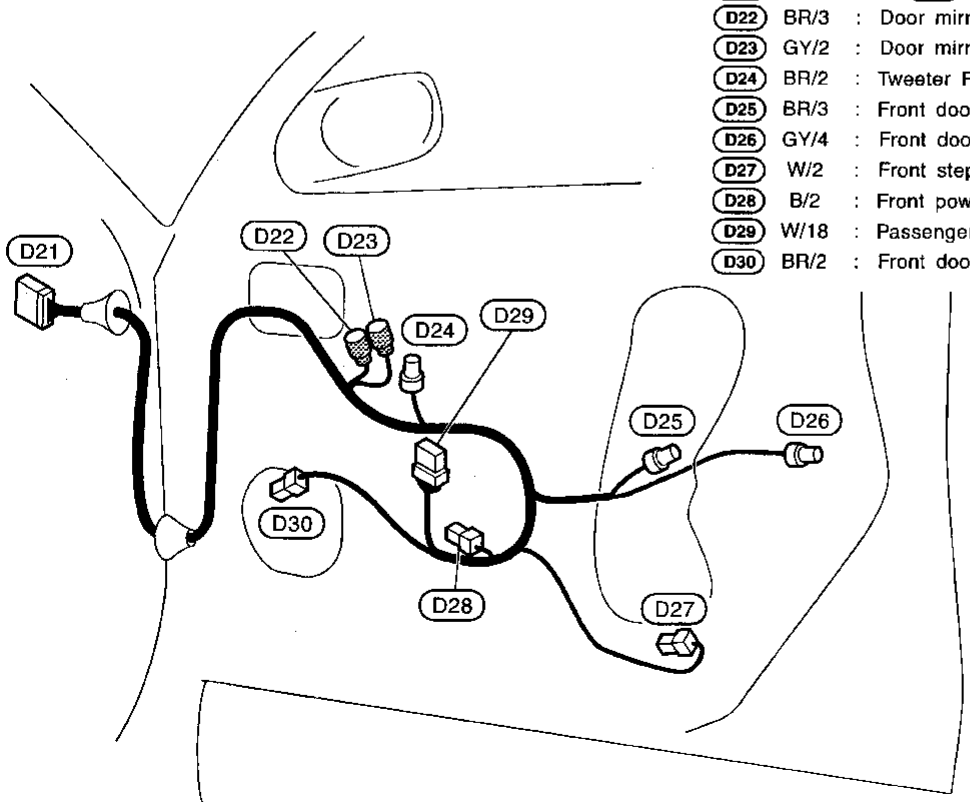
(D1) W/40 : To (M11)
(D2) BR/3 : Door mirror actuator (Driver's side)
(D3) GY/2 : Door mirror defogger (Driver's side)
(D4) W/8 : Seat memory switch
(D5) BR/2 : Tweeter LH
(D6) BR/3 : Front door key cylinder switch (Driver's side)
(D7) GY/4 : Front door lock actuator (Driver's side)
(D8) W/2 : Front 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



CEL456

PASSENGER SIDE

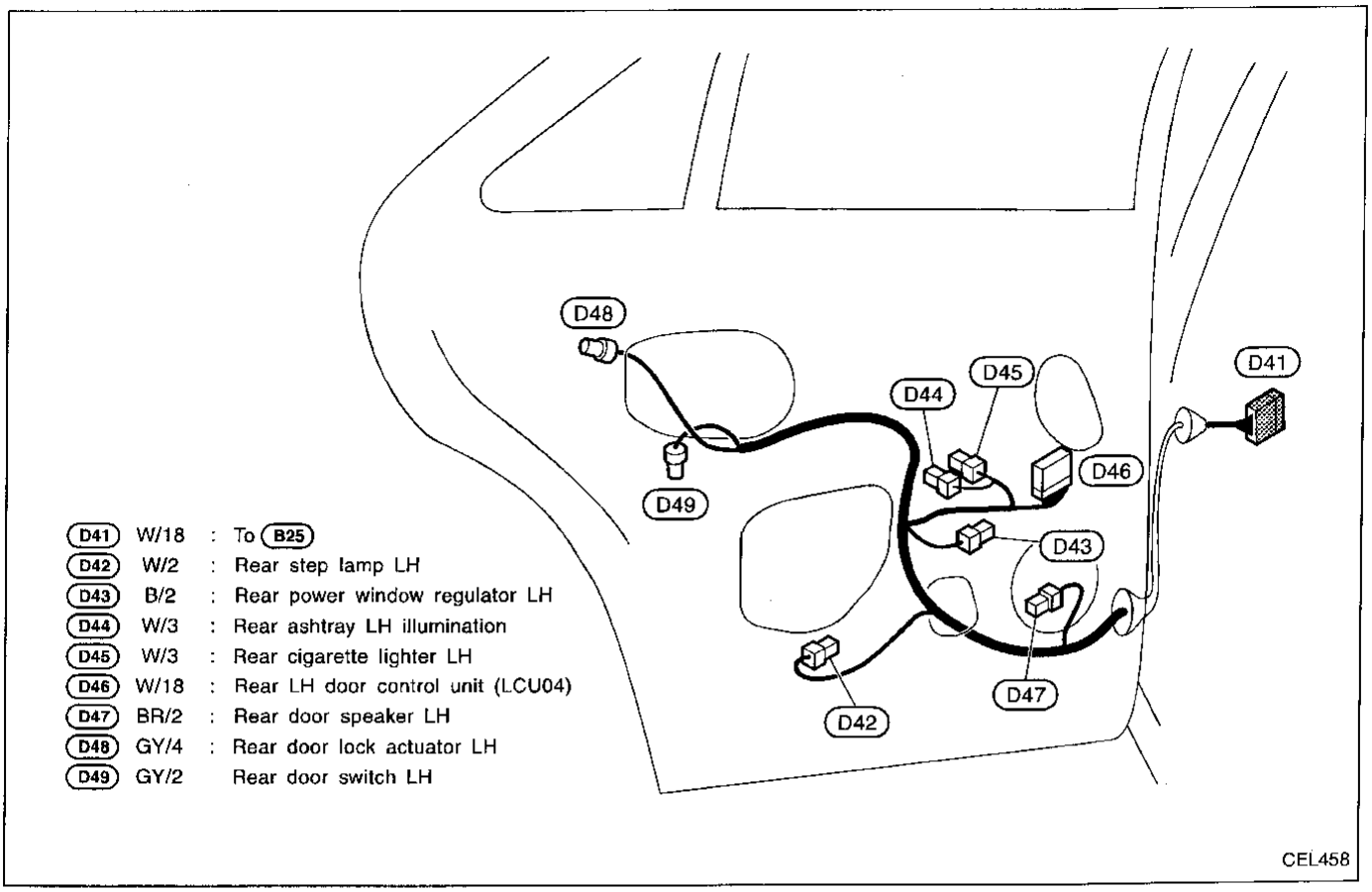
(D21) W/40 : To (M48)
(D22) BR/3 : Door mirror actuator (Passenger side)
(D23) GY/2 : Door mirror defogger (Passenger side)
(D24) BR/2 : Tweeter RH
(D25) BR/3 : Front door key cylinder switch (Passenger side)
(D26) GY/4 : Front door lock actuator (Passenger side)
(D27) W/2 : Front step lamp (Passenger 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



CEL457

LH SIDE

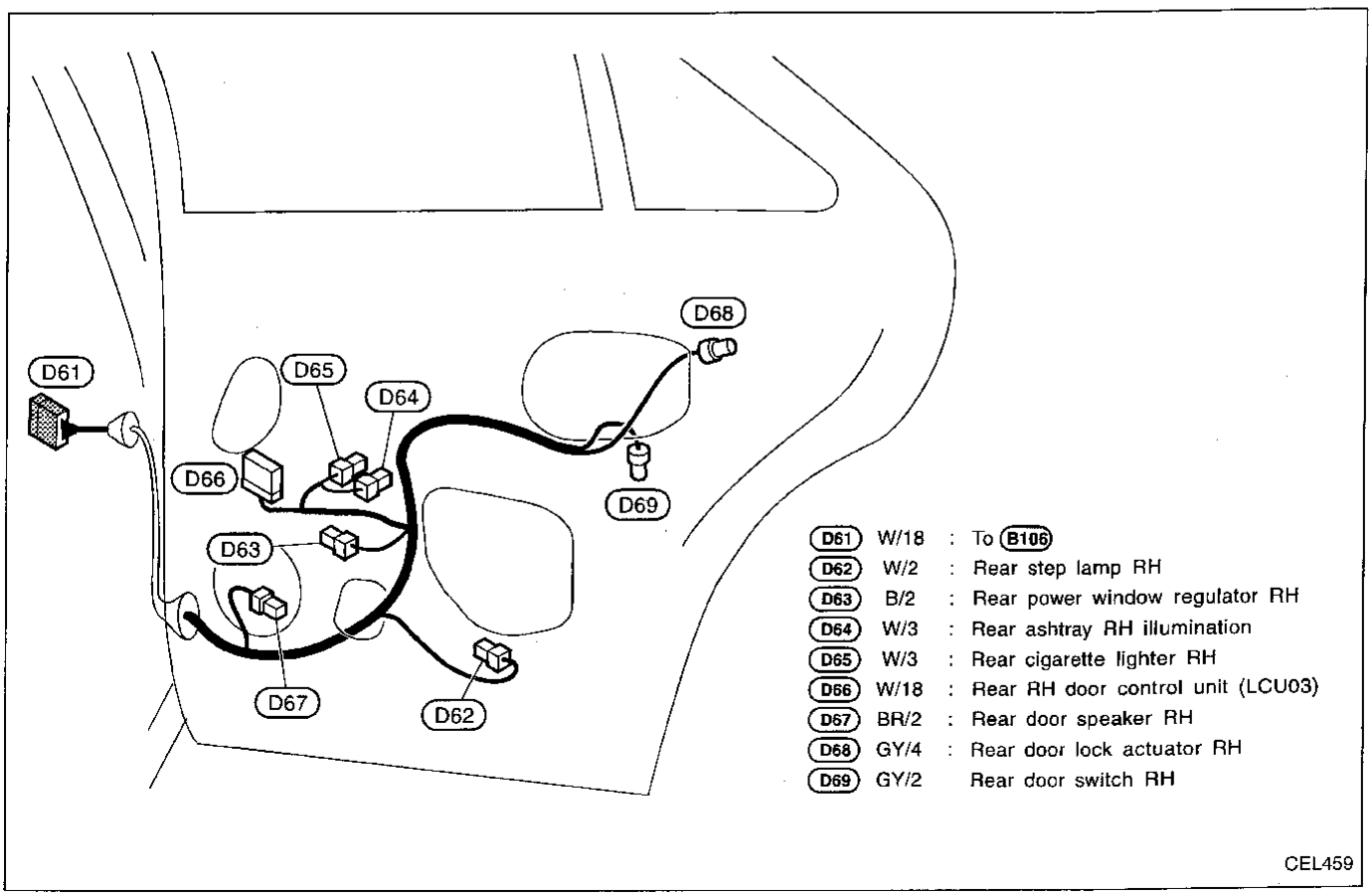
Rear Door Harness



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

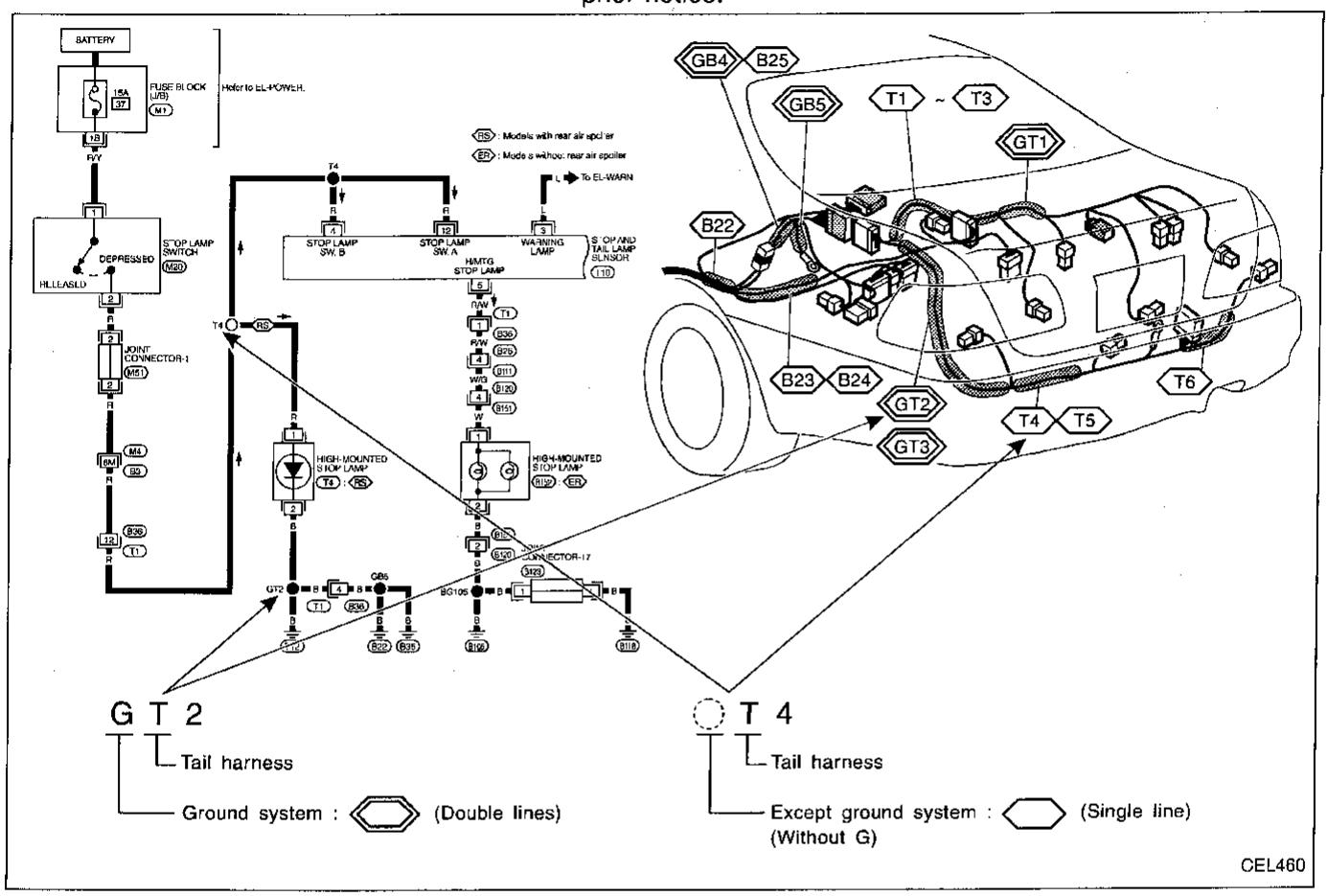


D61	W/18	:	To B106
D62	W/2	:	Rear step lamp RH
D63	B/2	:	Rear power window regulator RH
D64	W/3	:	Rear ashtray RH illumination
D65	W/3	:	Rear cigarette lighter RH
D66	W/18	:	Rear RH door control unit (LCU03)
D67	BR/2	:	Rear door speaker RH
D68	GY/4	:	Rear door lock actuator RH
D69	GY/2		Rear door switch RH

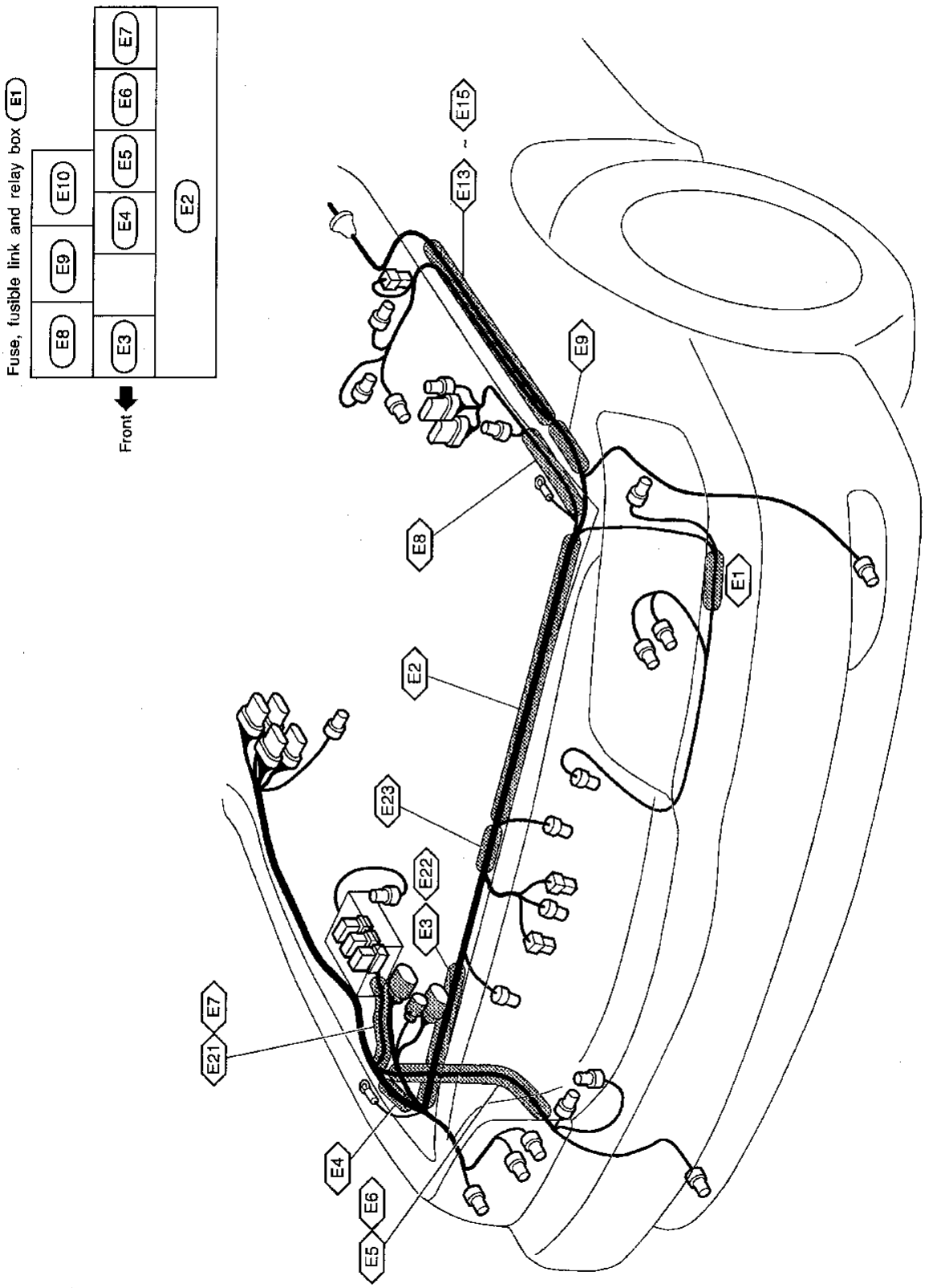
CEL459

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.

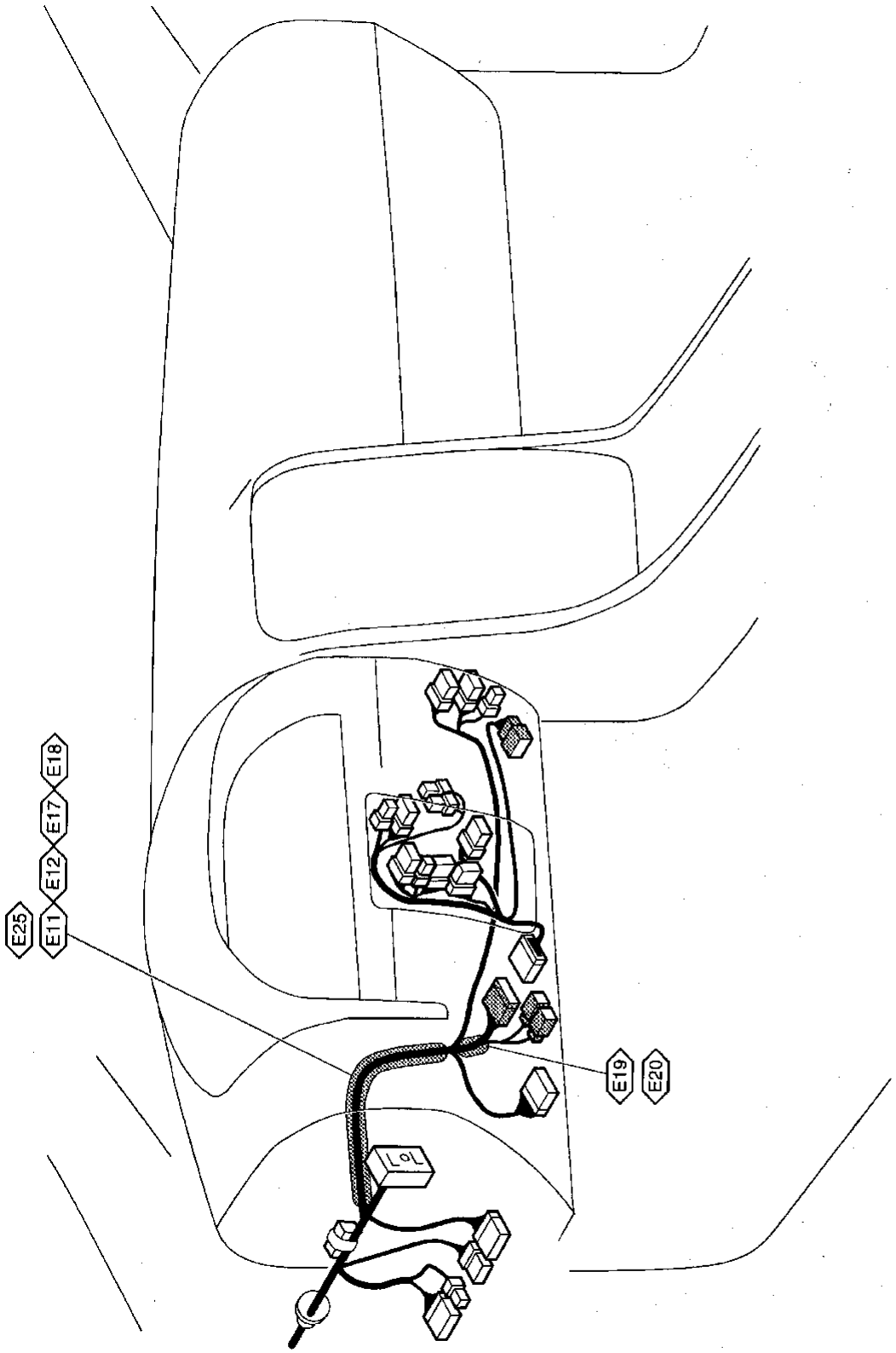


Engine Room Harness



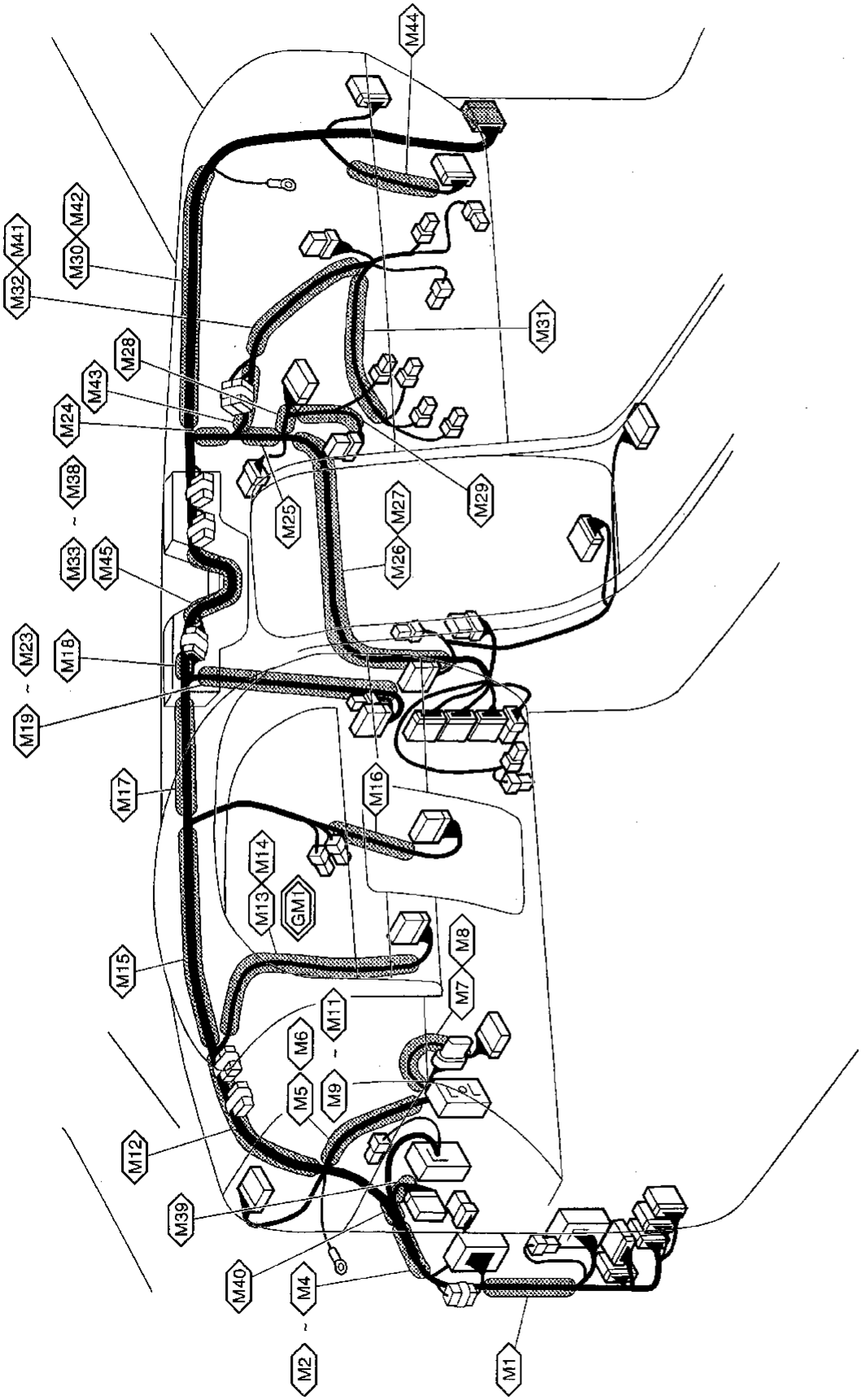
CEL605

Engine Room Harness (Cont'd)



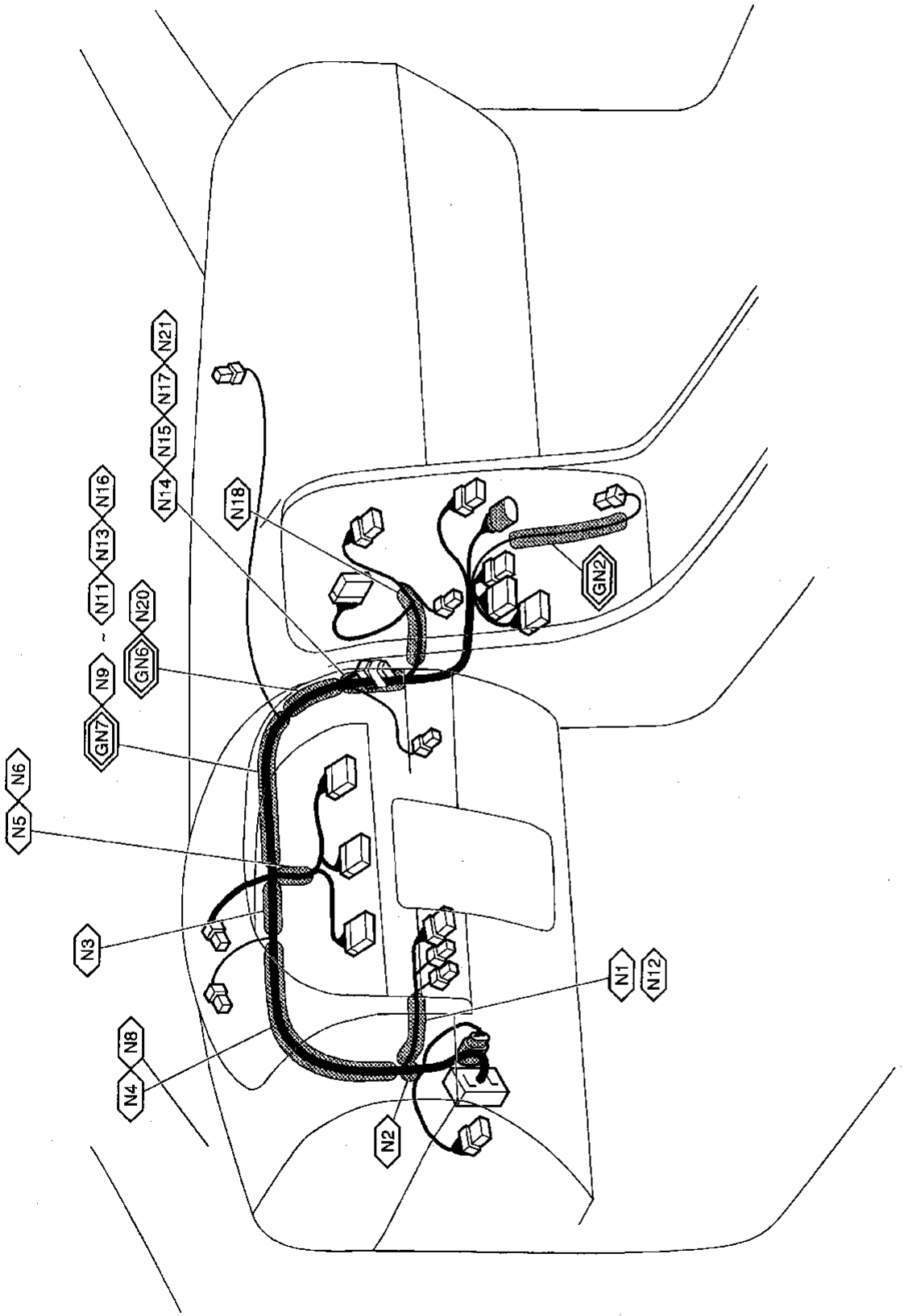
CEL606

Main Harness



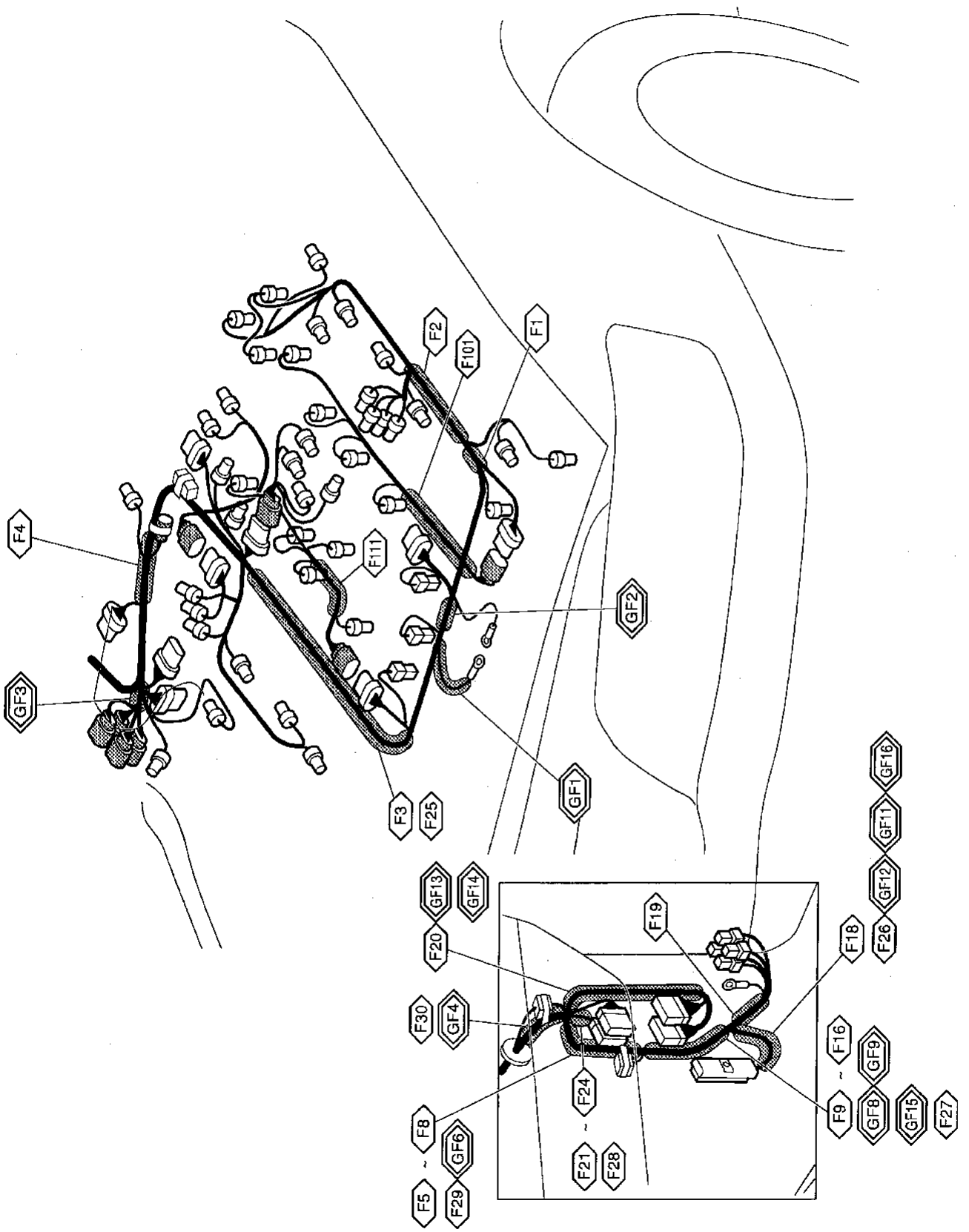
CEL463

Instrument Harness



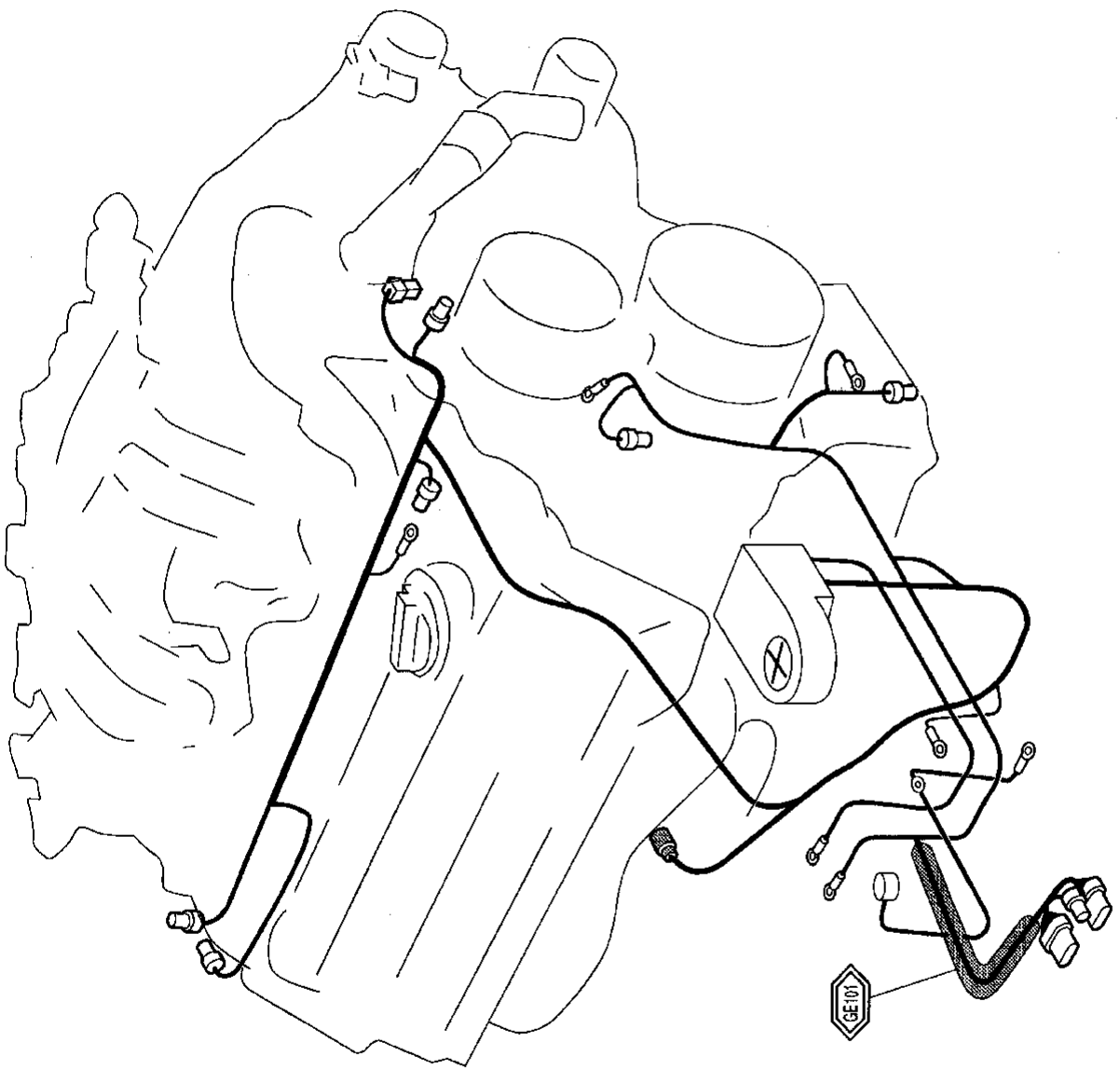
CEL607

Engine Control Harness



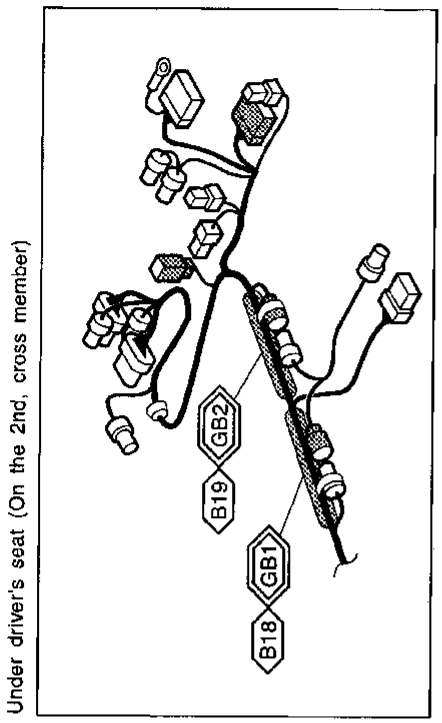
CEL608

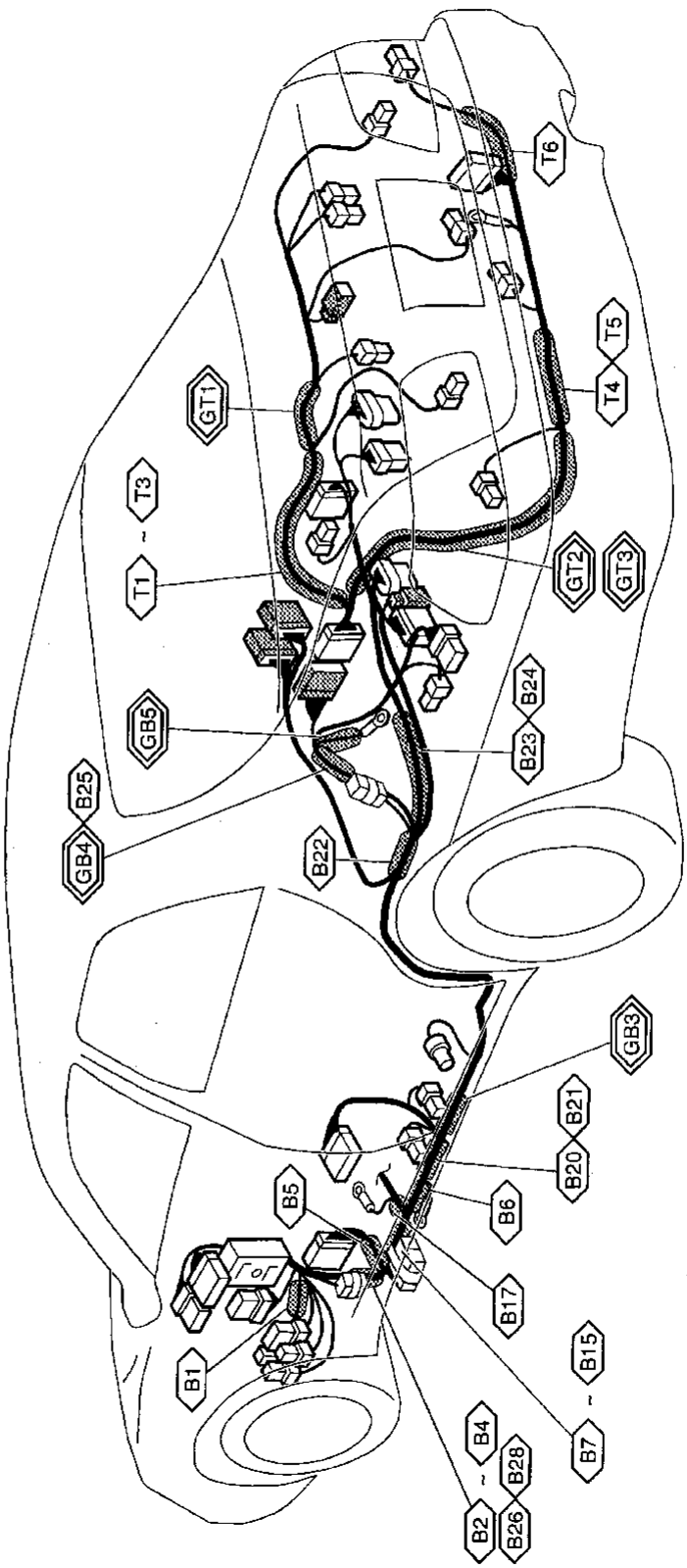
Engine Harness



CEL466

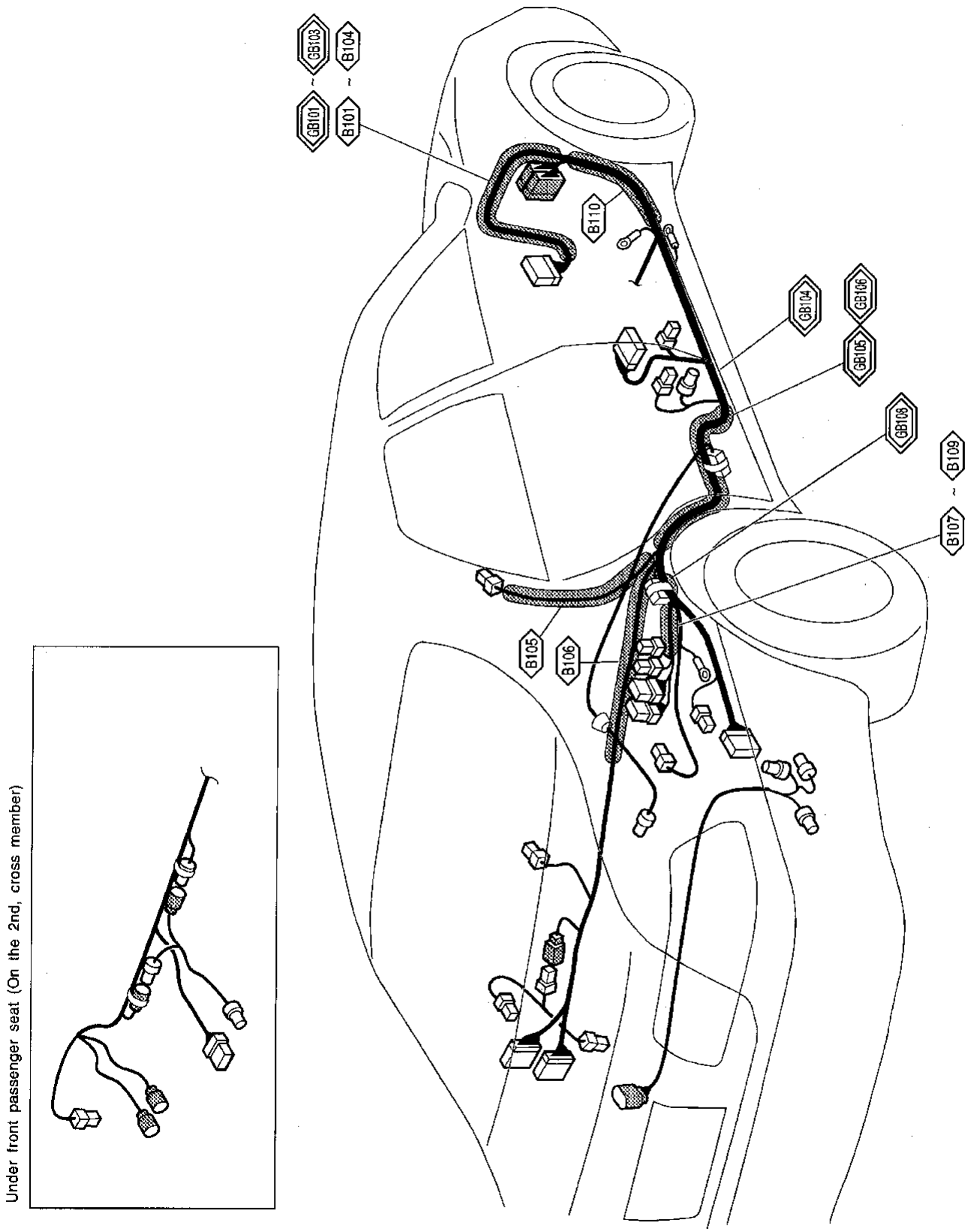
Body Harness and Tail Harness





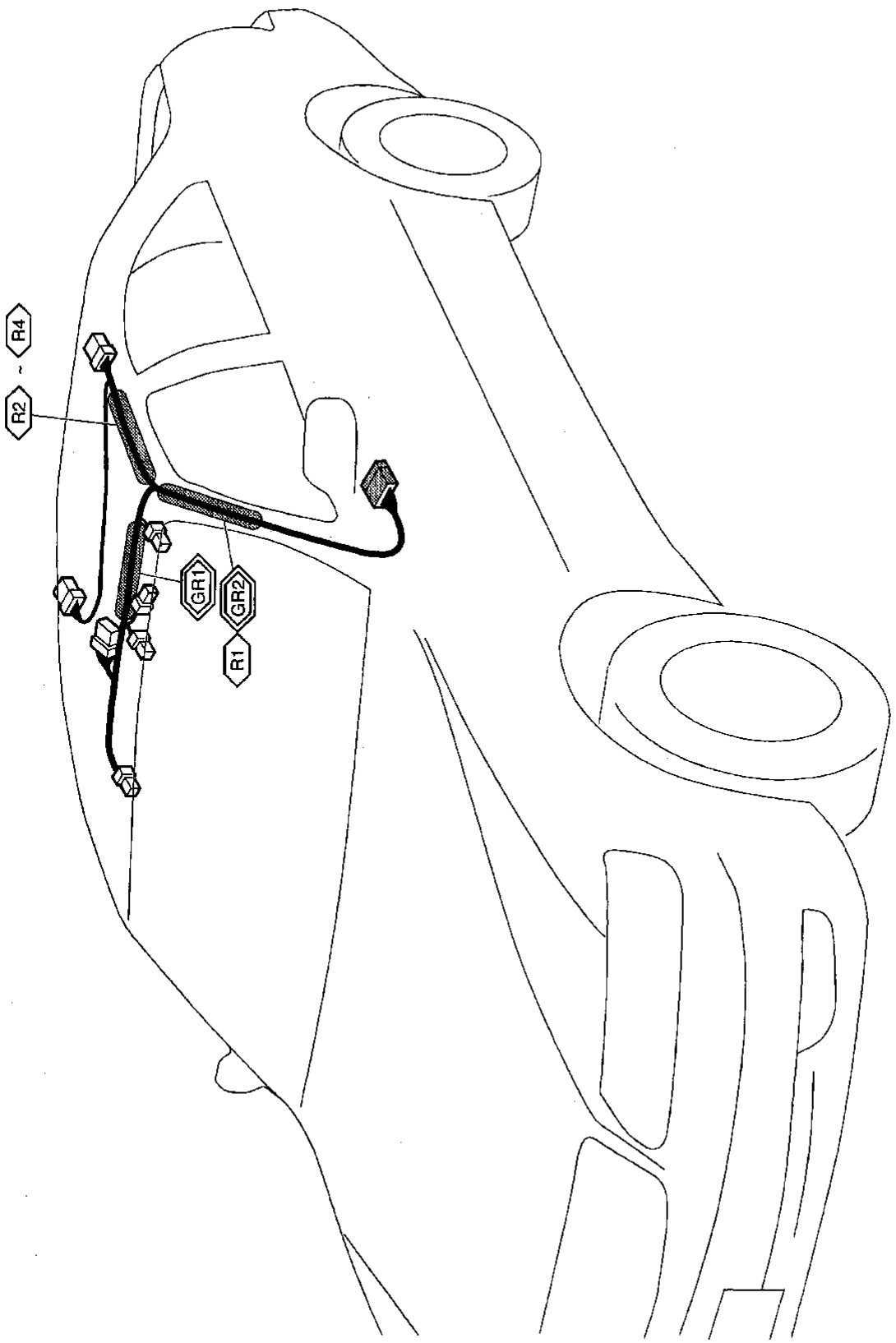
CEL609

Body No. 2 Harness



CEL610

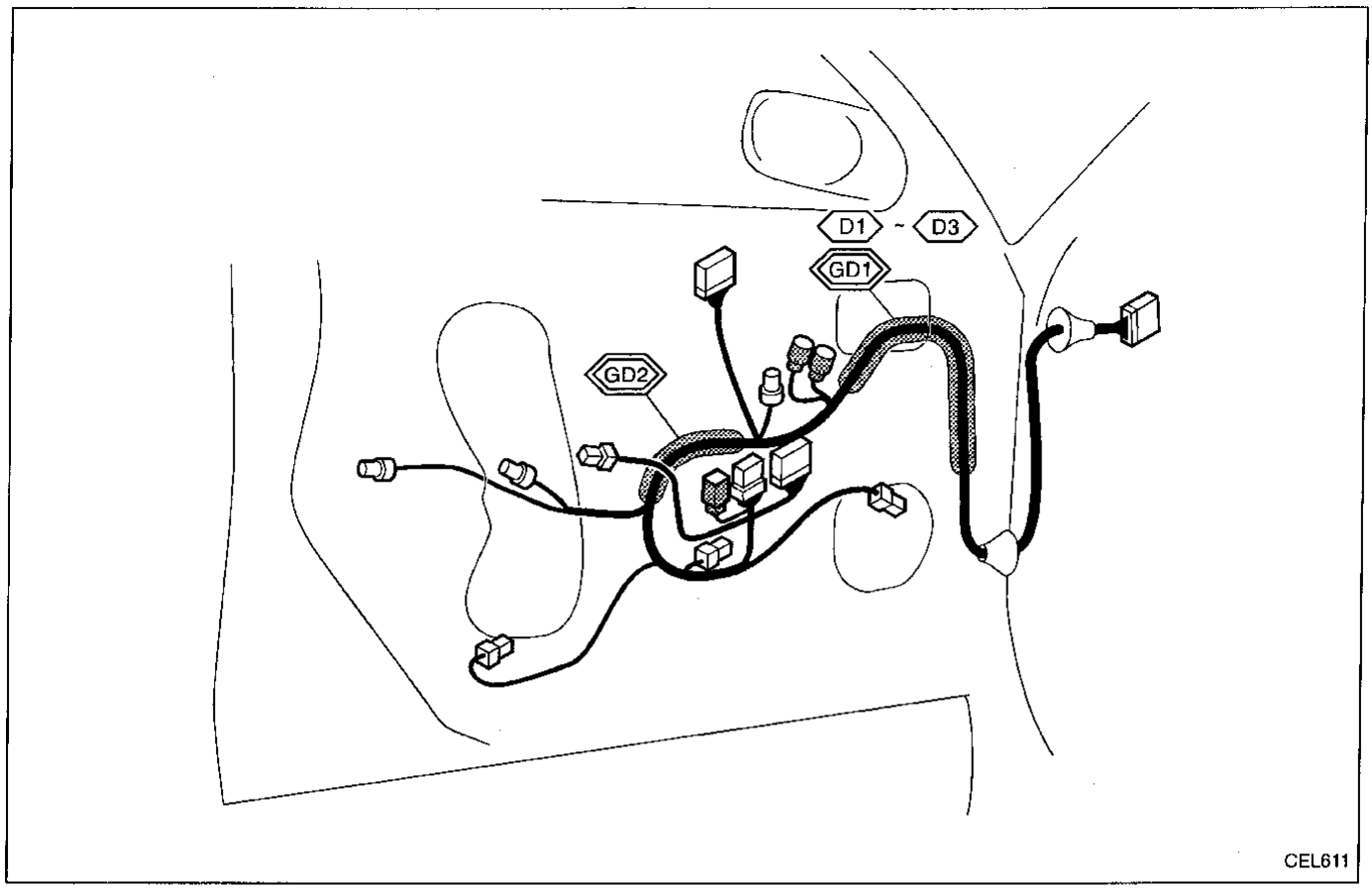
Room Lamp Harness



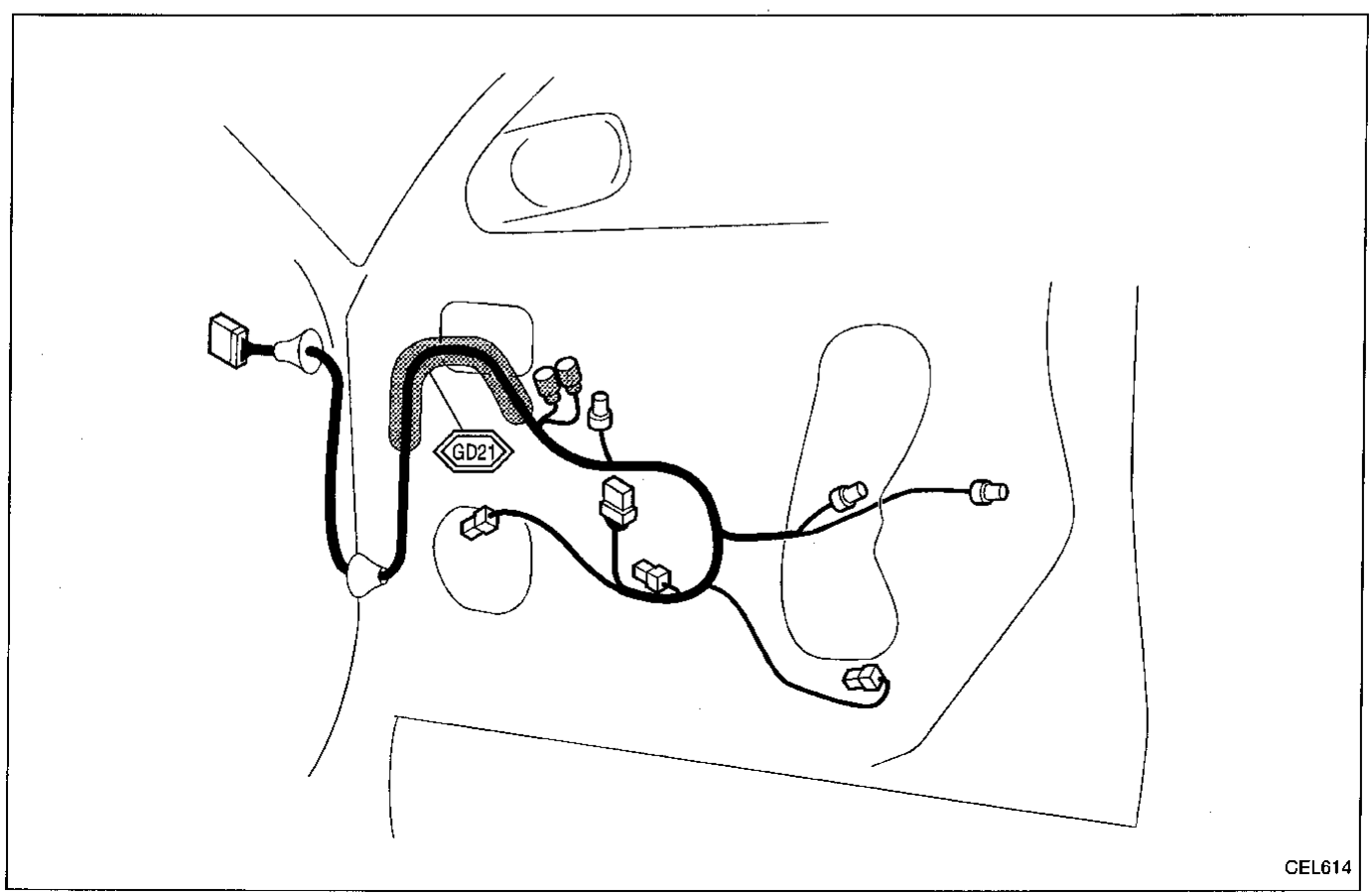
CEL469

DRIVER SIDE

Front Door Harness

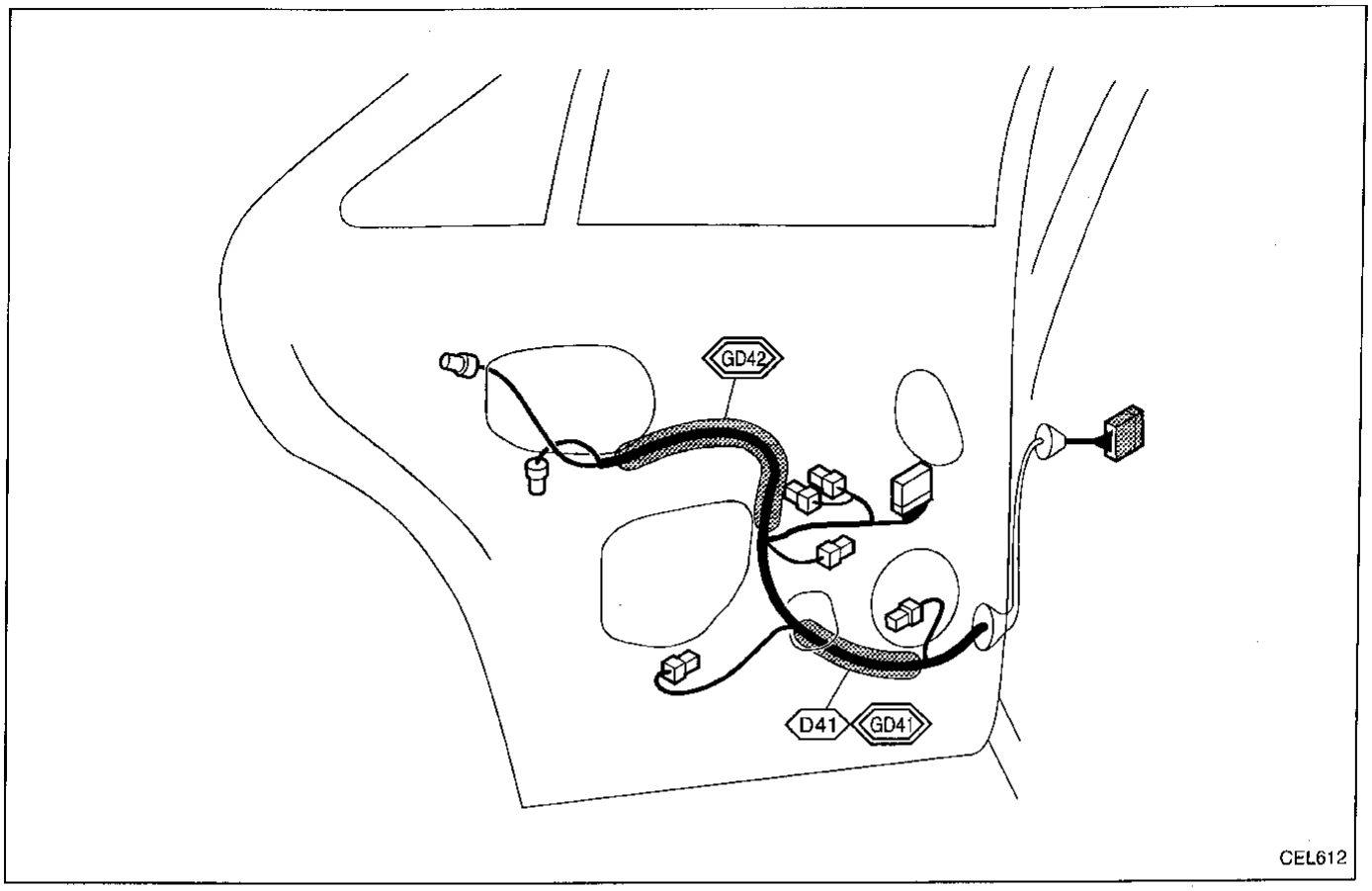


PASSENGER SIDE

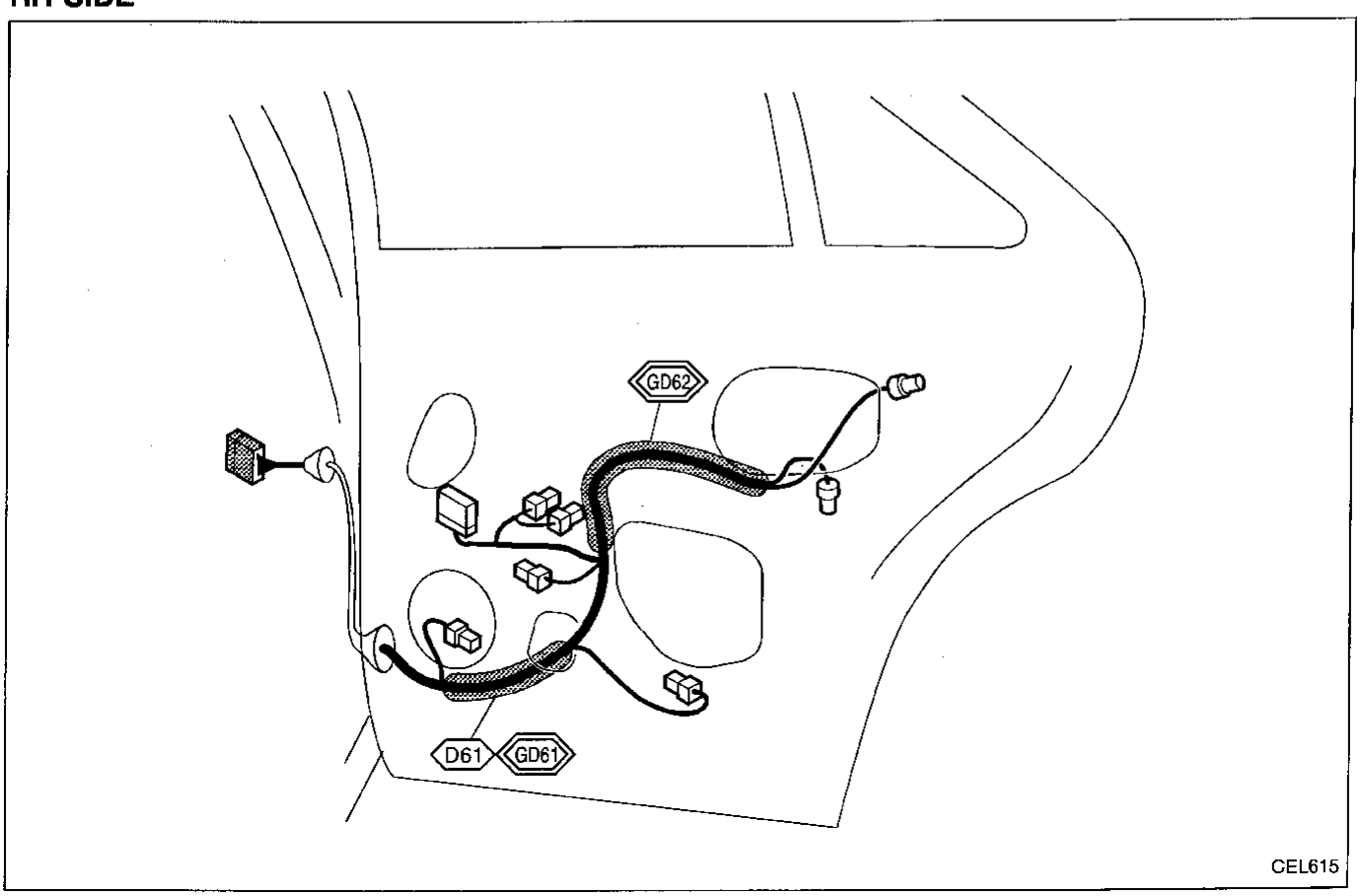


Rear Door Harness

LH SIDE



RH SIDE



Headlamp

Item	Wattage (W)
High/Low	60/55 (HBZ)

Exterior Lamp

Item	Wattage (W)
Front fog lamp	55
Front combination lamp	
Parking/Turn signal lamp	8/27
Rear combination lamp	
Turn signal lamp	21
Stop/Tail lamp	21/5
Tail lamp (Trunk lid side)	5
Back-up lamp	21
License lamp	5
High-mounted stop lamp (Models with rear air spoiler)	3.8
High-mounted stop lamp (Models without rear air spoiler)	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
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	Automatic Transmission
AT/IND	EL	A/T Indicator
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
CKPS	EC	Crankshaft Position Sensor (OBD)
CMPS	EC	Camshaft Position Sensor
COMM	EL	LAN — 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 System 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
F/PUMP	EC	Fuel Pump Control
FRO2LH	EC	Front Heated Oxygen Sensor (Front HO2S) (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor (Front HO2S) (Right Bank)
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/LAMP	EL	Headlamp - Without Daytime Light System
HORN	EL	Horn, Cigarette Lighter and Clock
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	Interior, Spot 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-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
PGC/V	EC	EVAP Canister Purge Control Solenoid Valve
PHONE	EL	Telephone
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing

Code	Section	Wiring Diagram Name
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
ROOM/L	EL	Interior Lamp Control — 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
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
STOP/L	EL	Stop lamp
STPS	EC	Secondary Throttle Position Sensor

Code	Section	Wiring Diagram Name
SW/ILL	EL	Illumination — IVMS
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License, Tail and Stop Lamps
TCS	EC, 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