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".

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WIRING DIAGRAM REFERENCE CHART

ECCS (Ignition system) ..... **EC SECTION**
AUTOMATIC TRANSAXLE CONTROL SYSTEM, SHIFT LOCK SYSTEM ..... **AT SECTION**
ANTI-LOCK BRAKE SYSTEM ..... **BR SECTION**
SRS "AIR BAG" ..... **RS SECTION**
HEATER AND AIR CONDITIONER ..... **HA SECTION**

Supplemental Restraint System (SRS) "AIR BAG"

The Supplemental Restraint System "Air Bag", used along with a seat belt, helps 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), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. 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.**
- **All SRS electrical connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS.**

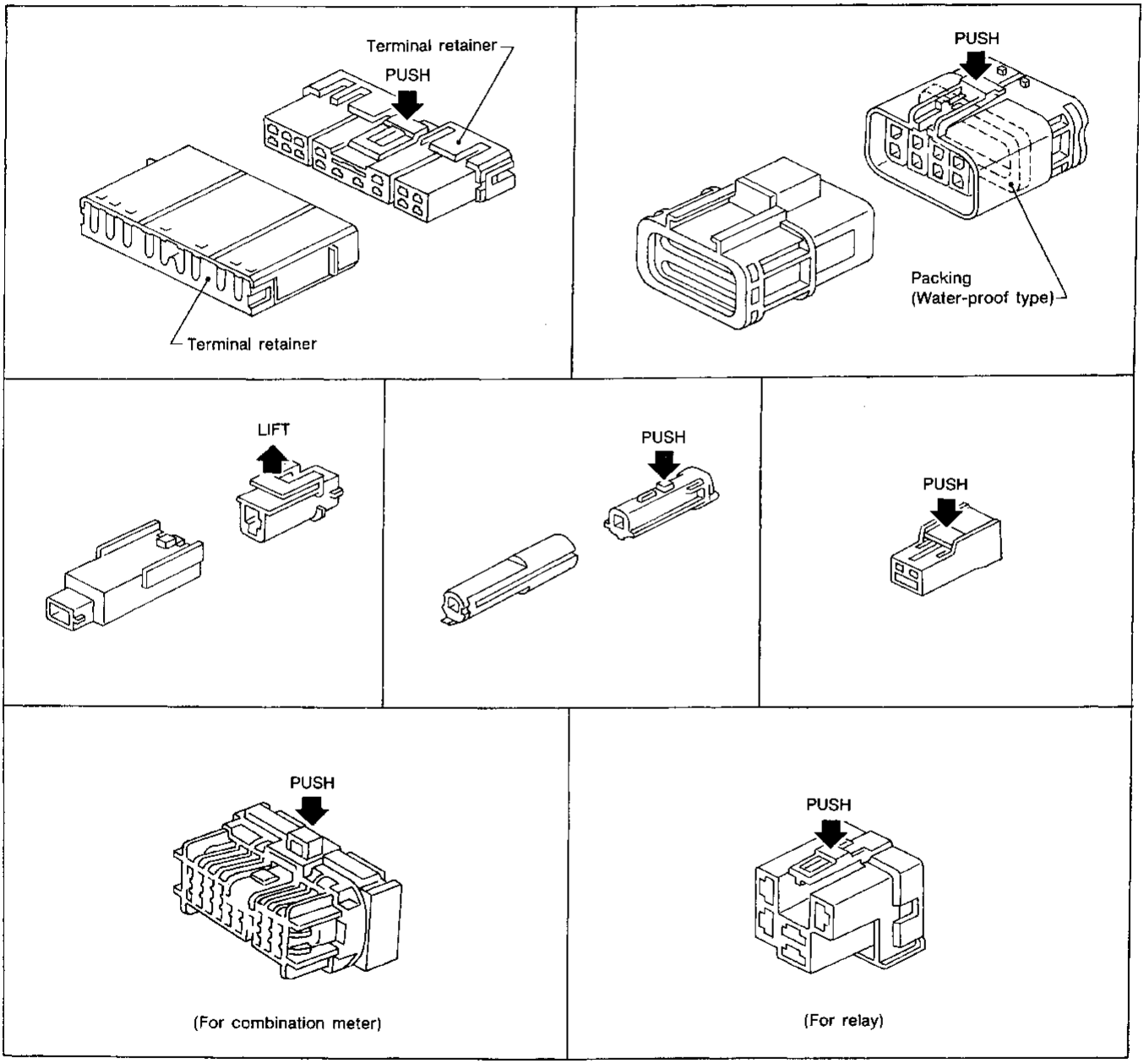
Description

HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental loosing or disconnection.
- The connector can be disconnected by pushing or lifting the locking section.

CAUTION:
Do not pull the harness when disconnecting the connector.

[Example]



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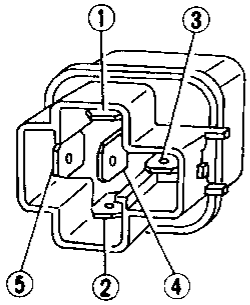
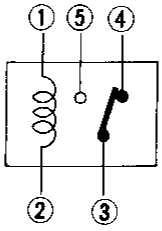
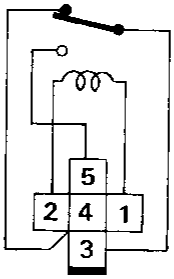
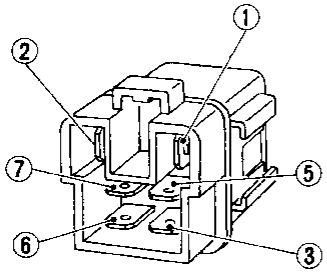
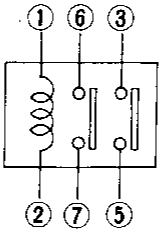
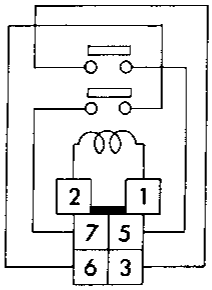
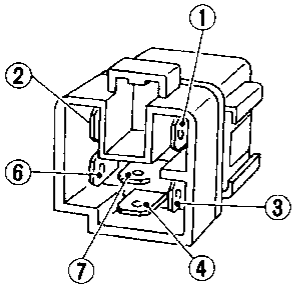
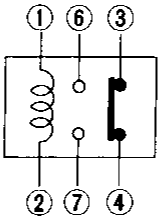
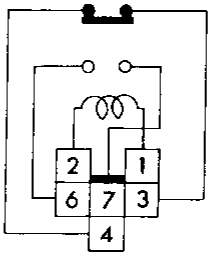
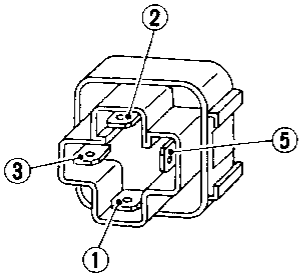
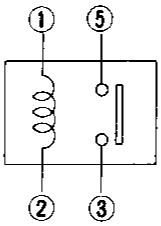
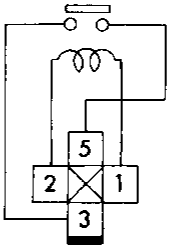
Description

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

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

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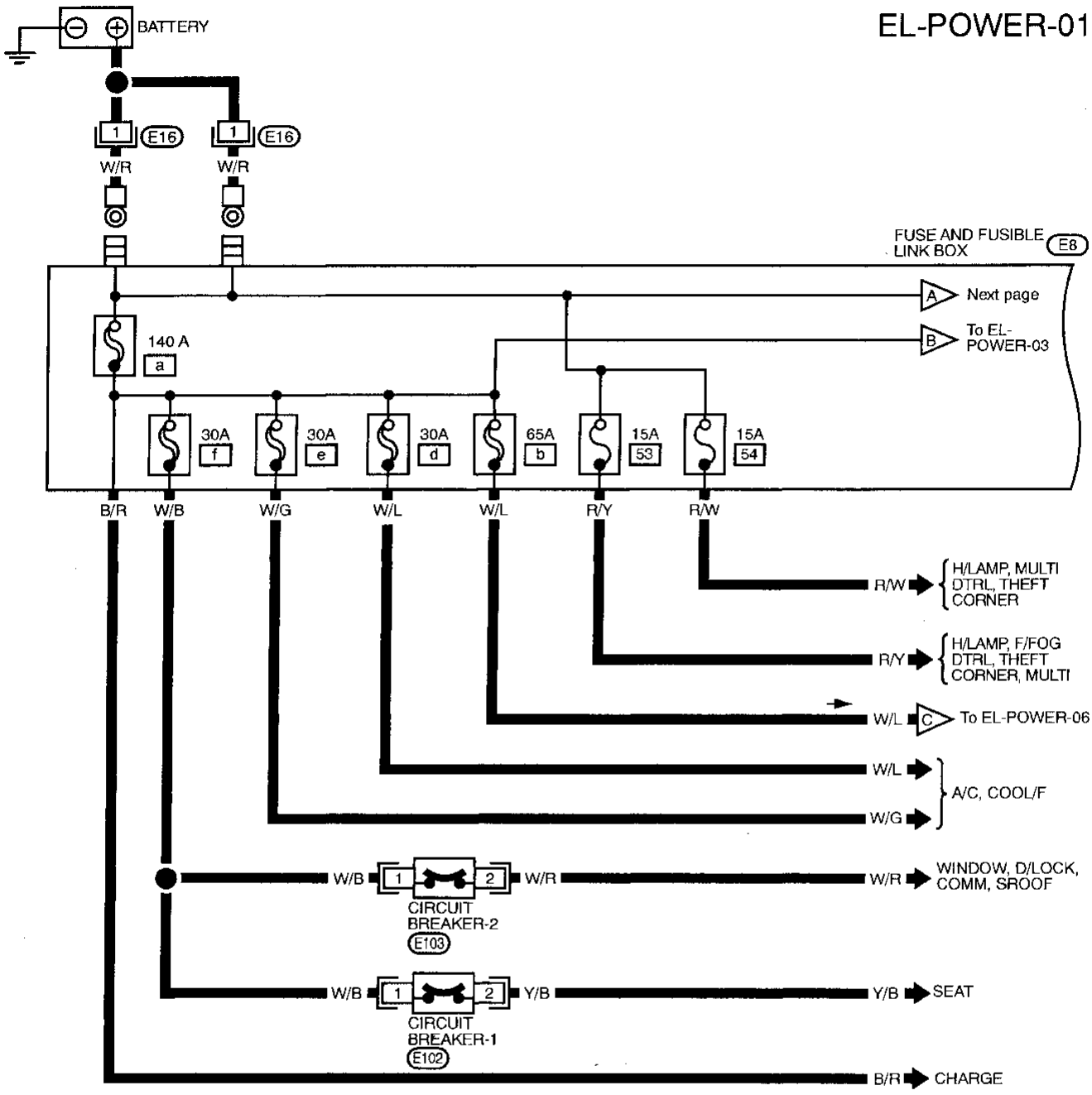
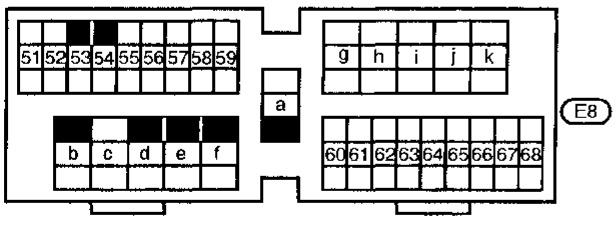
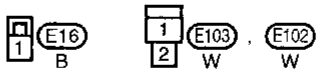
Wiring Diagram — POWER —







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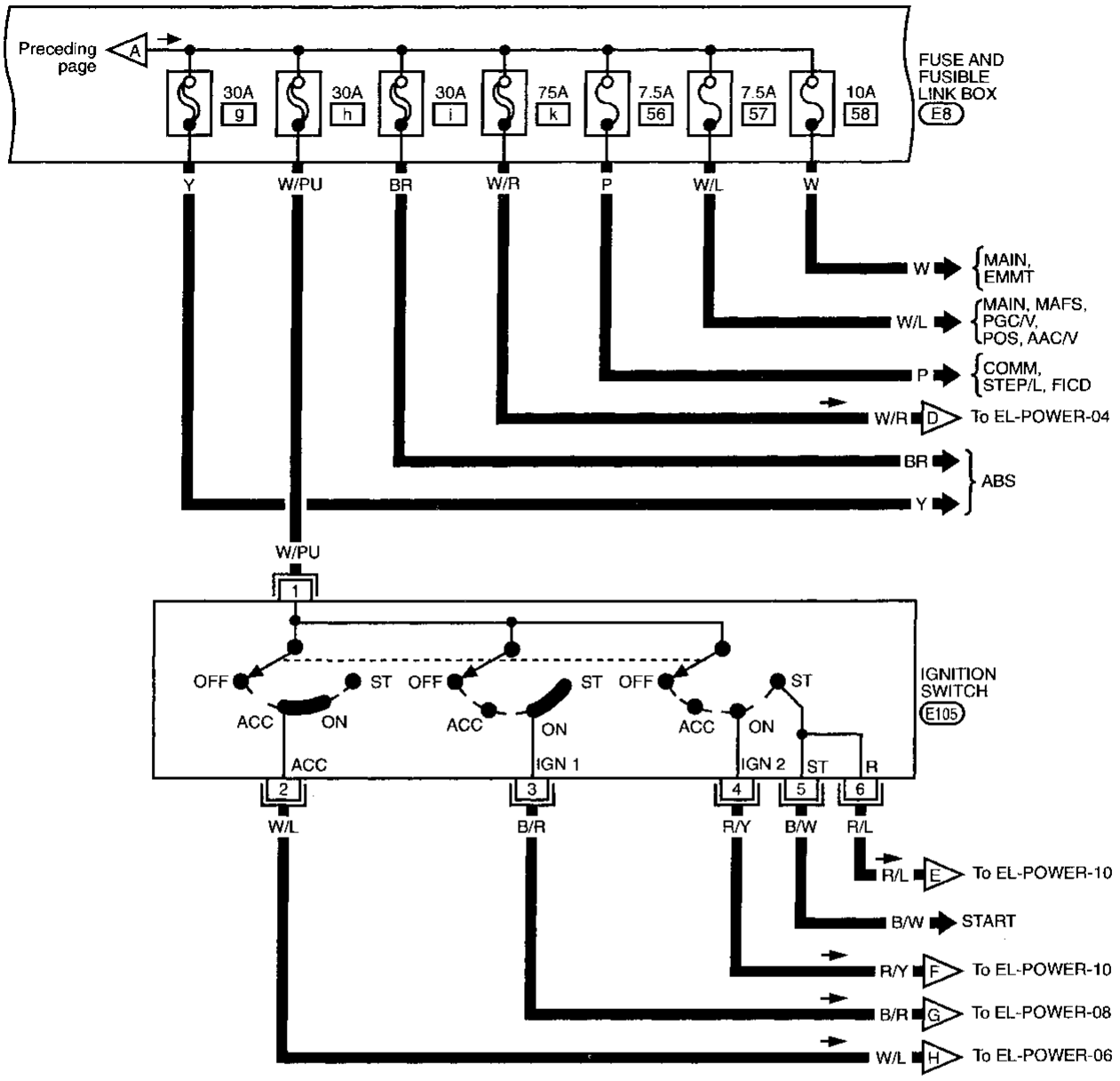
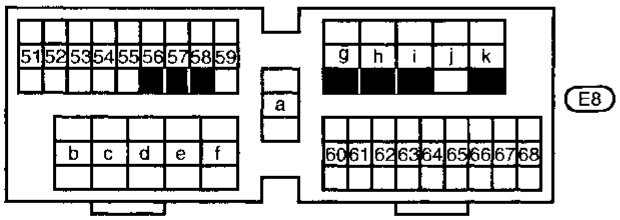
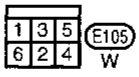
Wiring Diagram — POWER — (Cont'd)

EL-POWER-02







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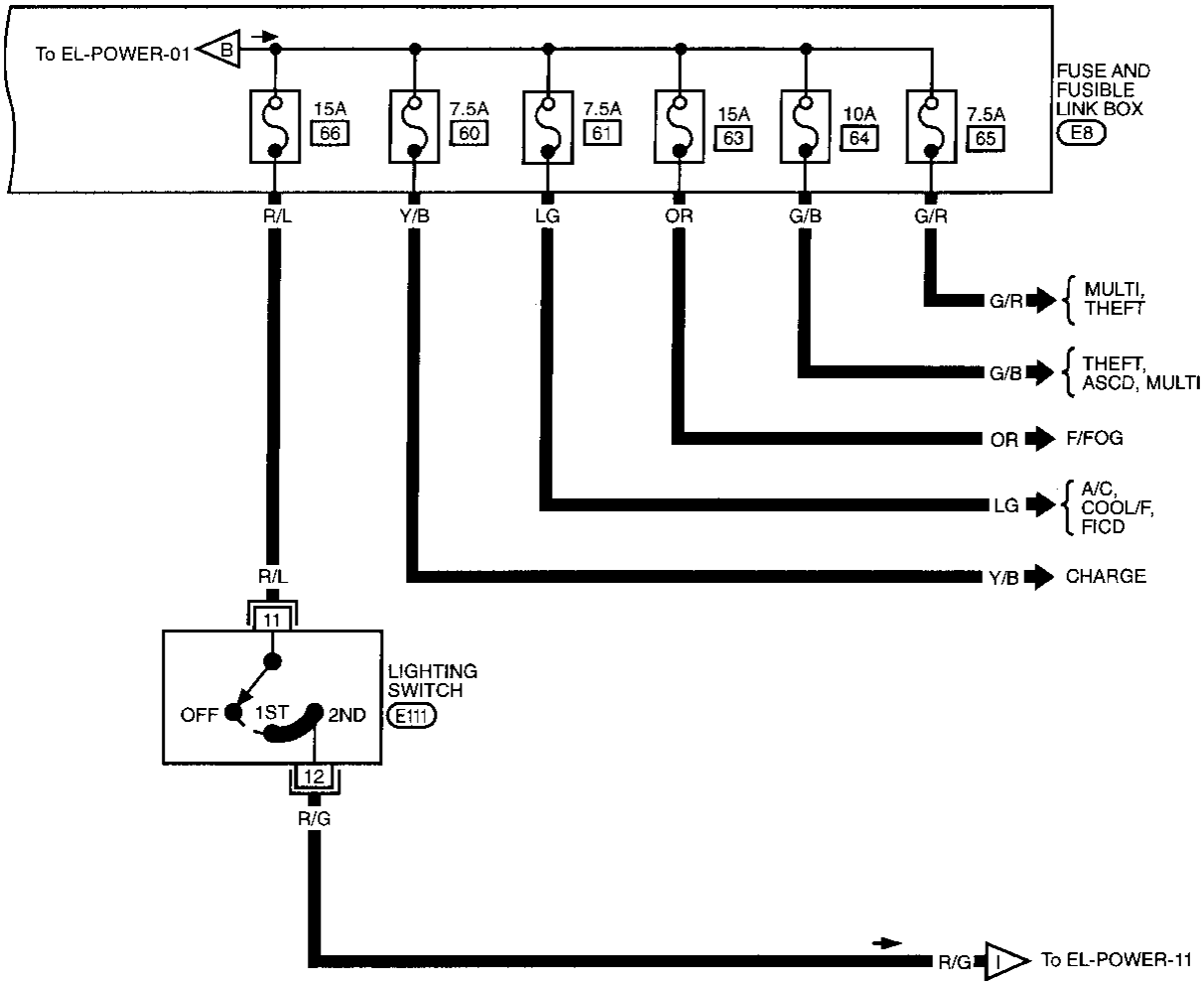
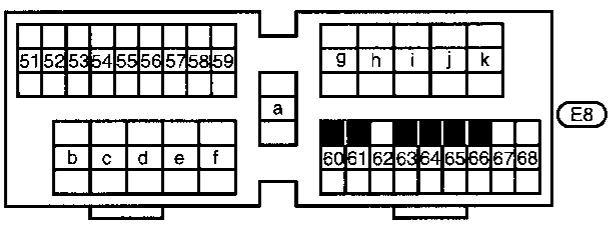
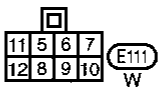
Wiring Diagram — POWER — (Cont'd)

EL-POWER-03







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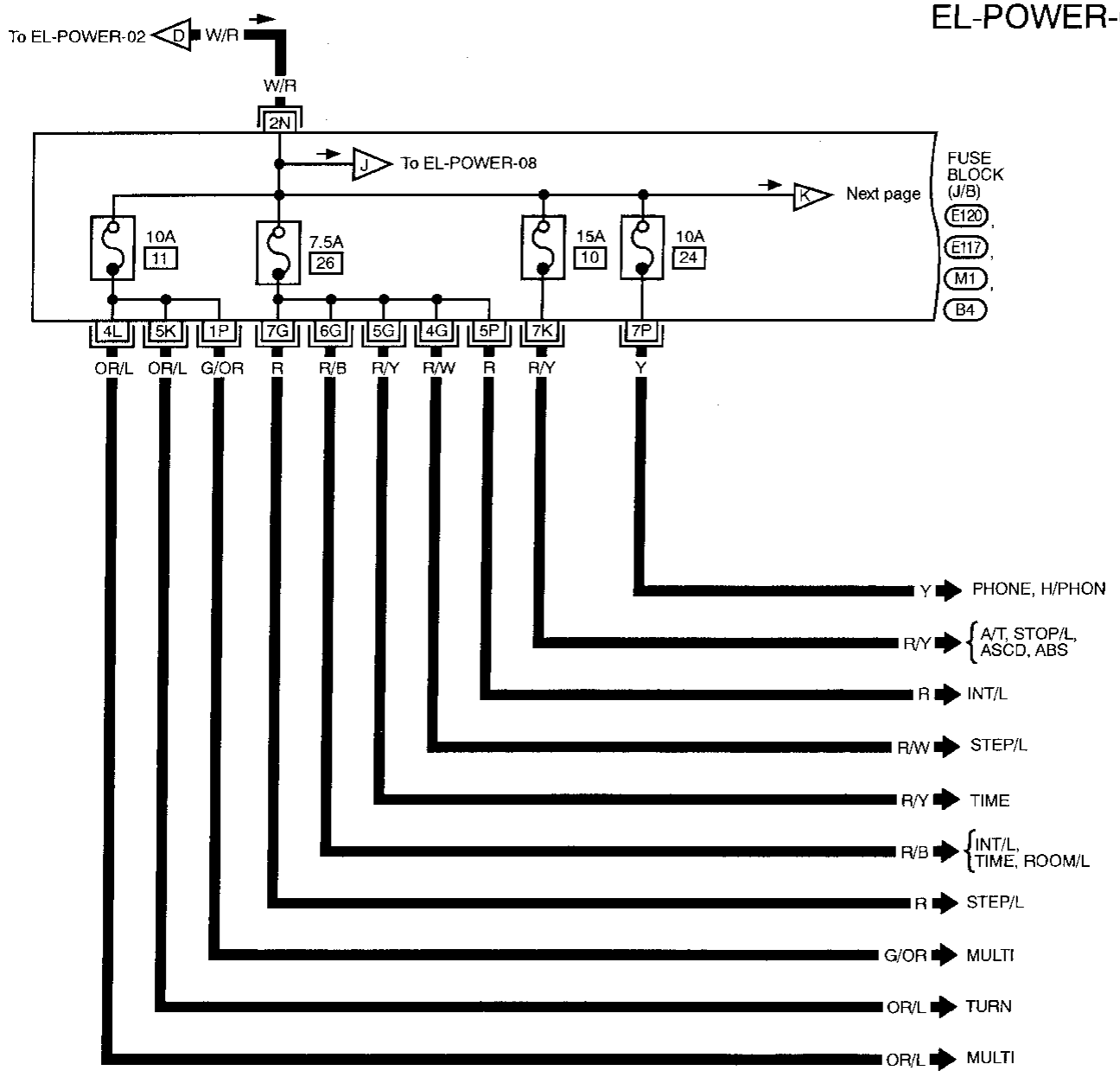
Wiring Diagram — POWER — (Cont'd)

EL-POWER-04



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Wiring Diagram — POWER — (Cont'd)

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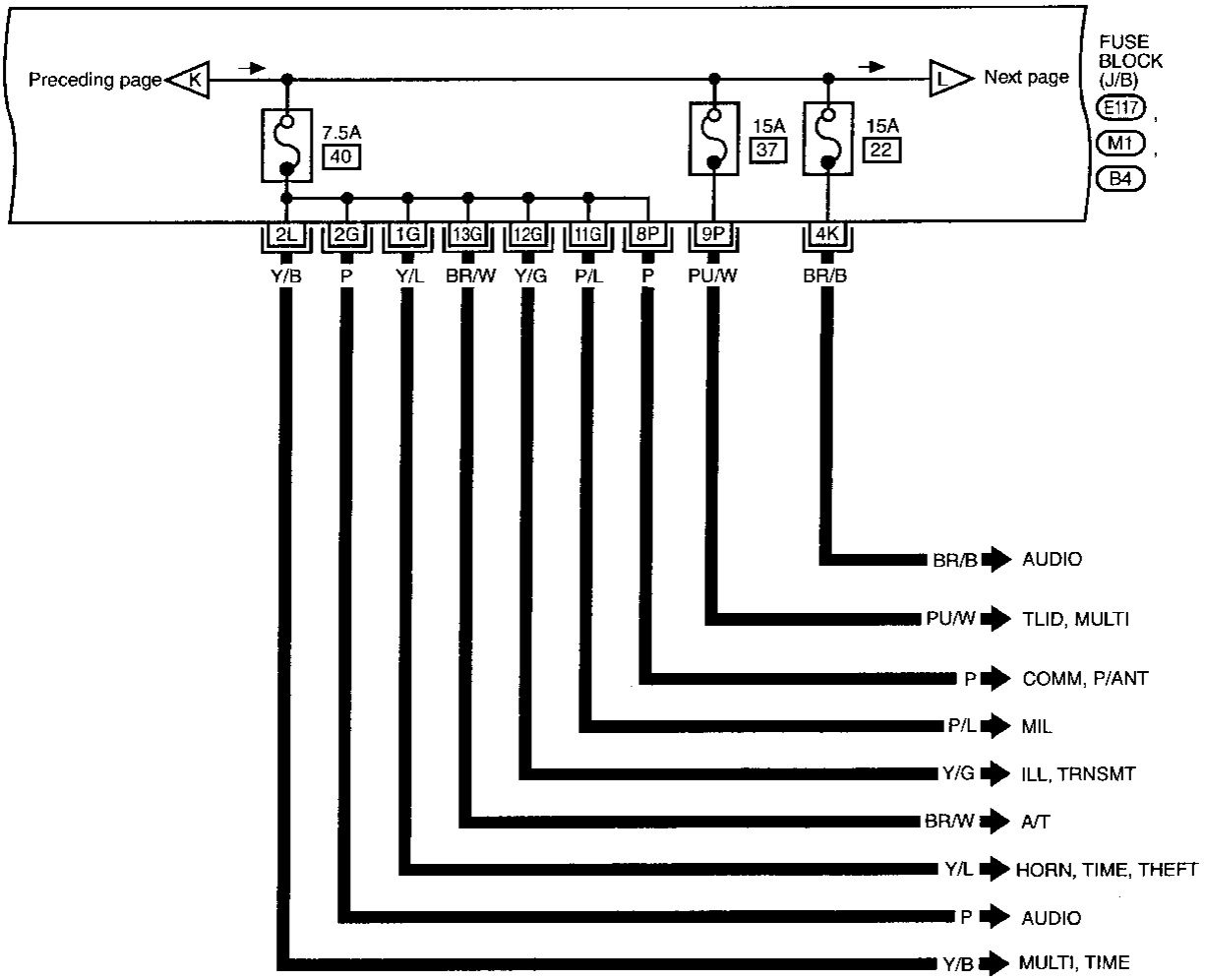

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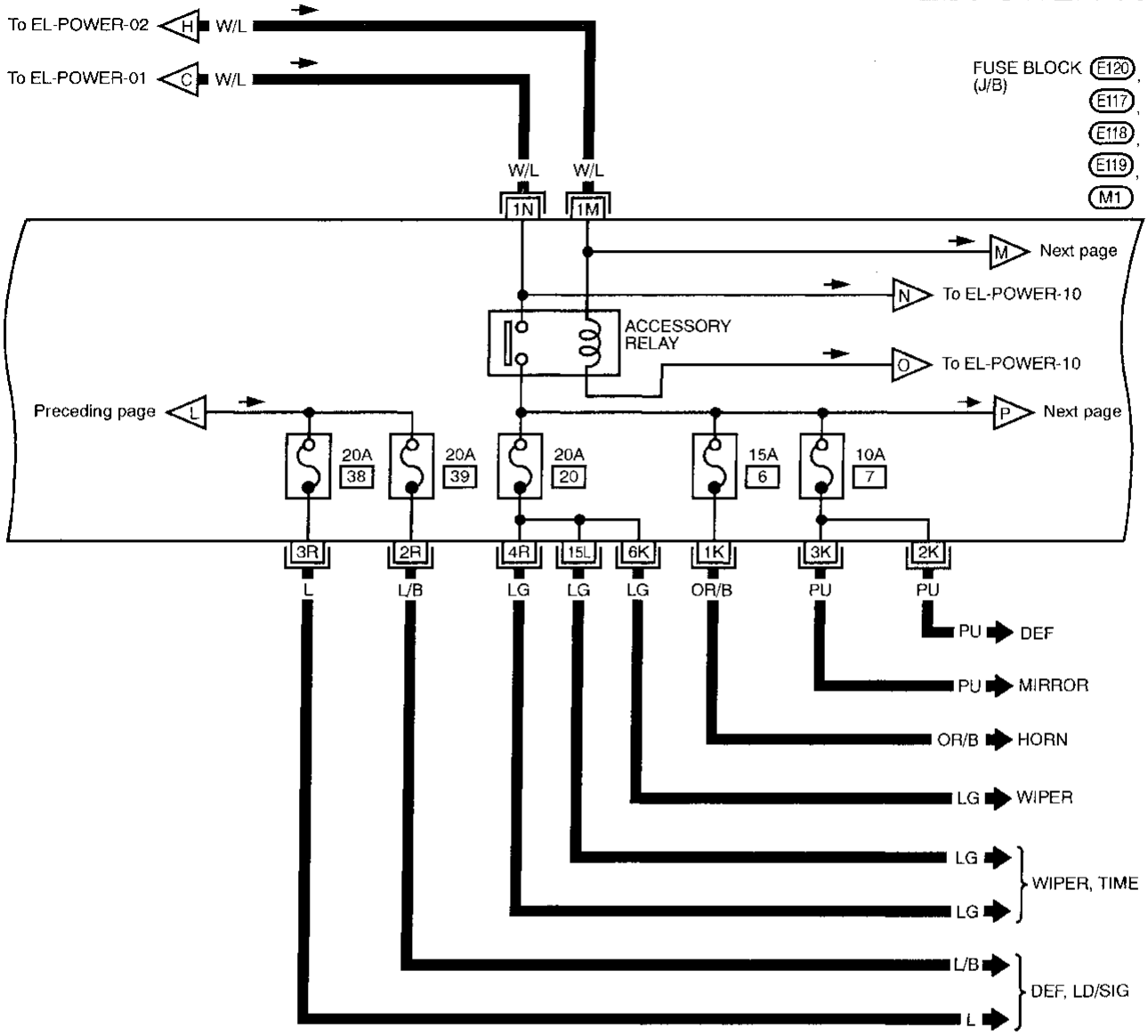
Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



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M1 , E117

E118

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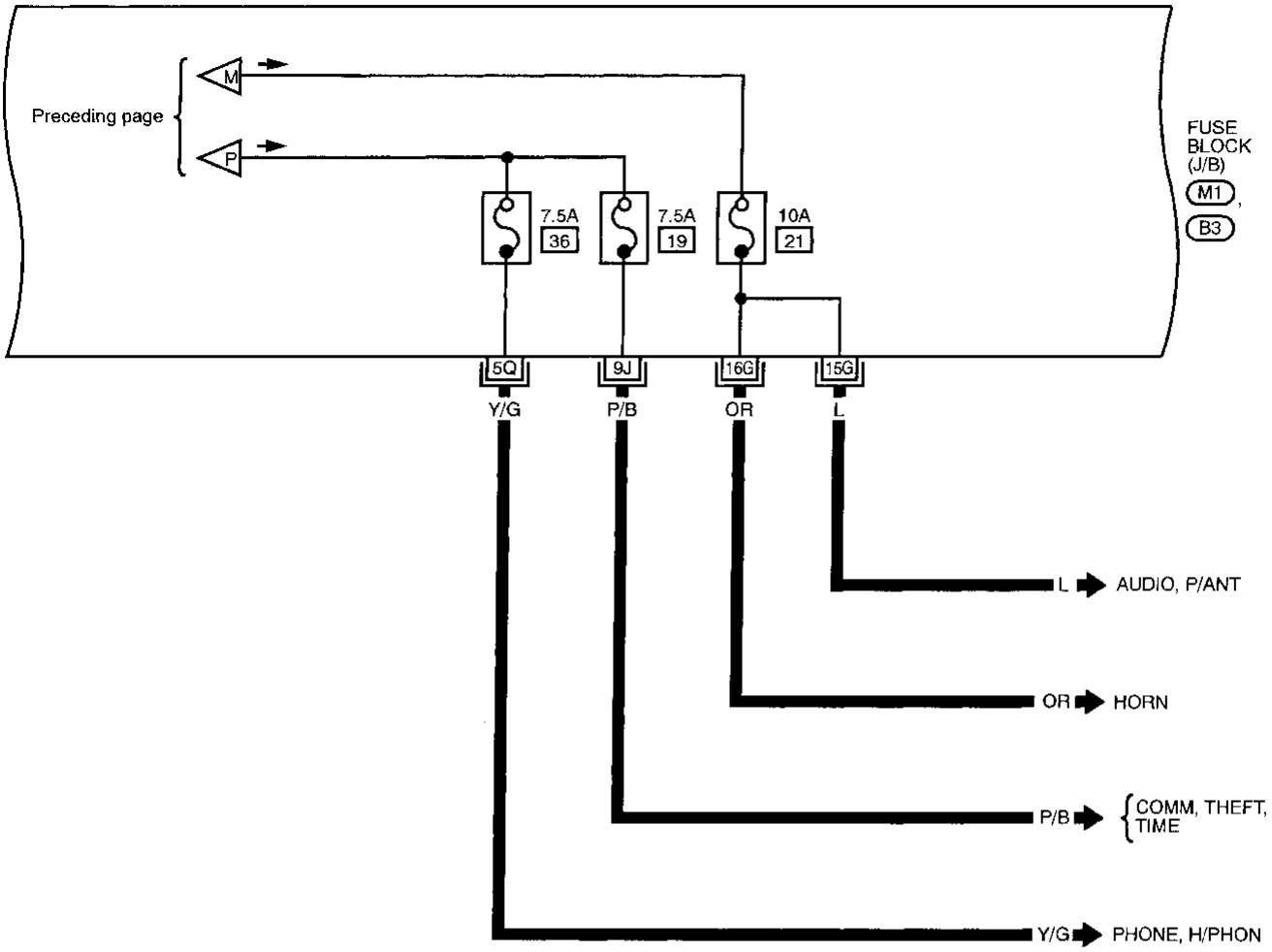
Wiring Diagram — POWER — (Cont'd)

EL-POWER-07



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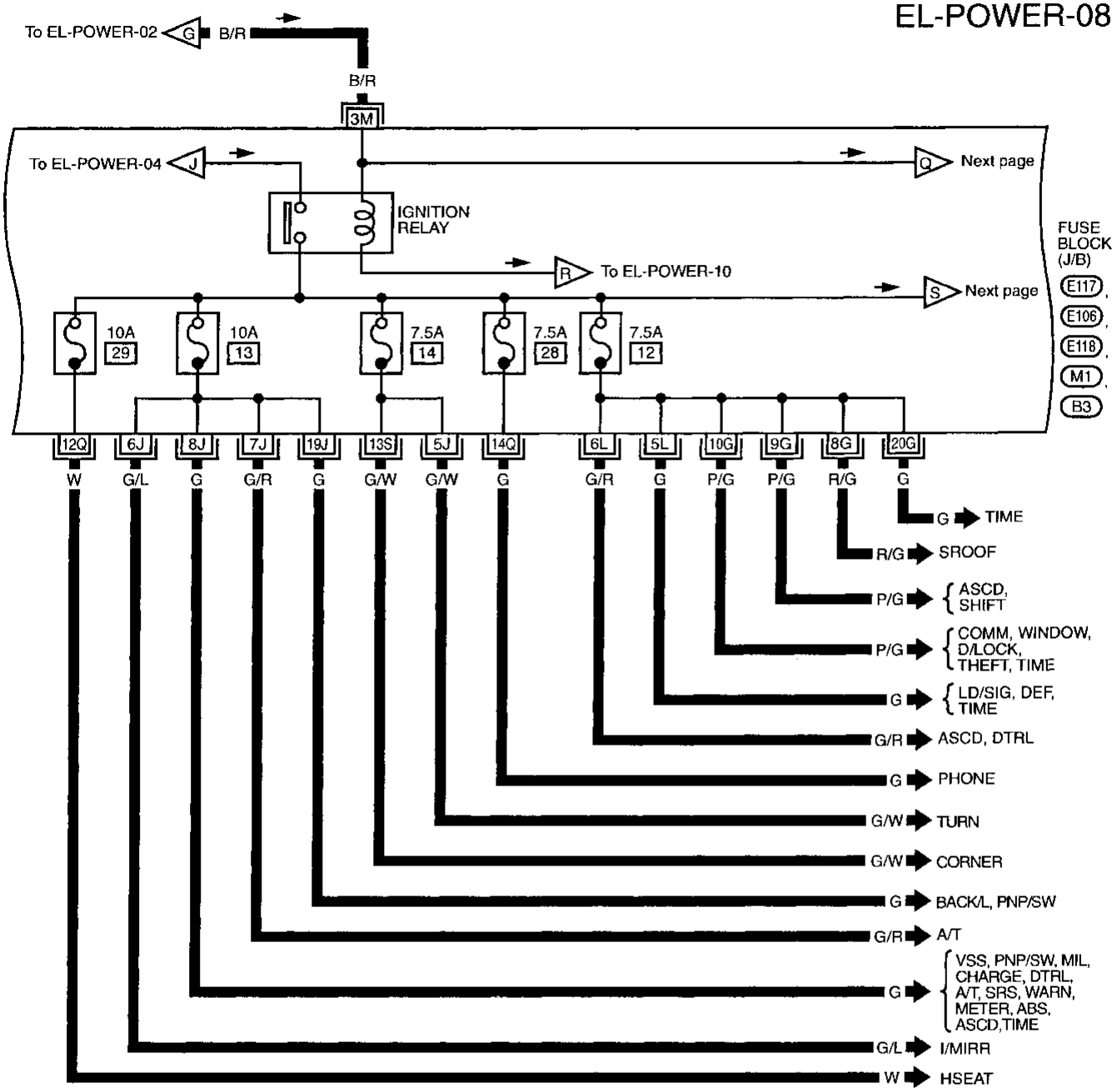
Wiring Diagram — POWER — (Cont'd)

EL-POWER-08



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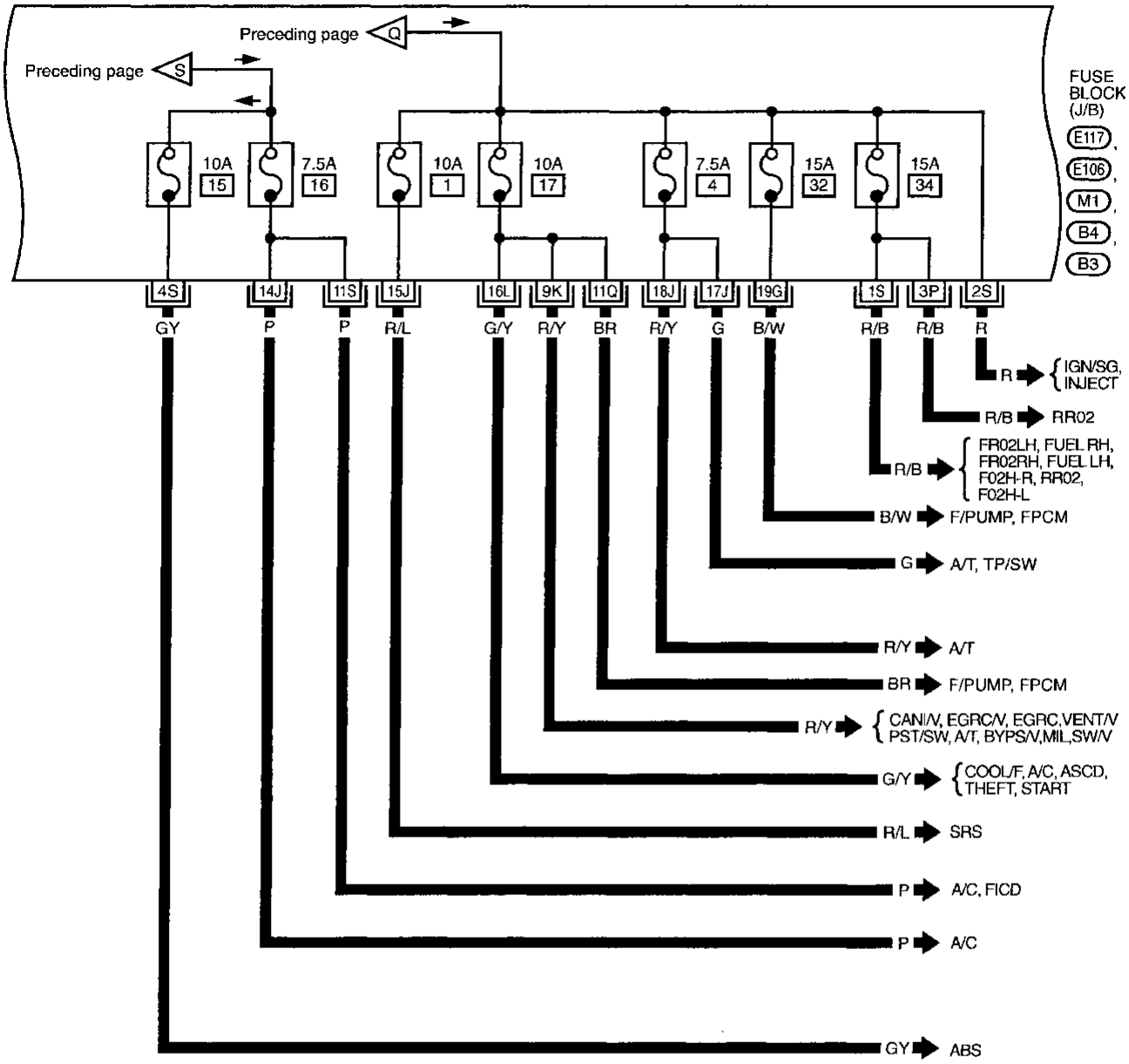
Wiring Diagram — POWER — (Cont'd)

EL-POWER-09



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B3, E106
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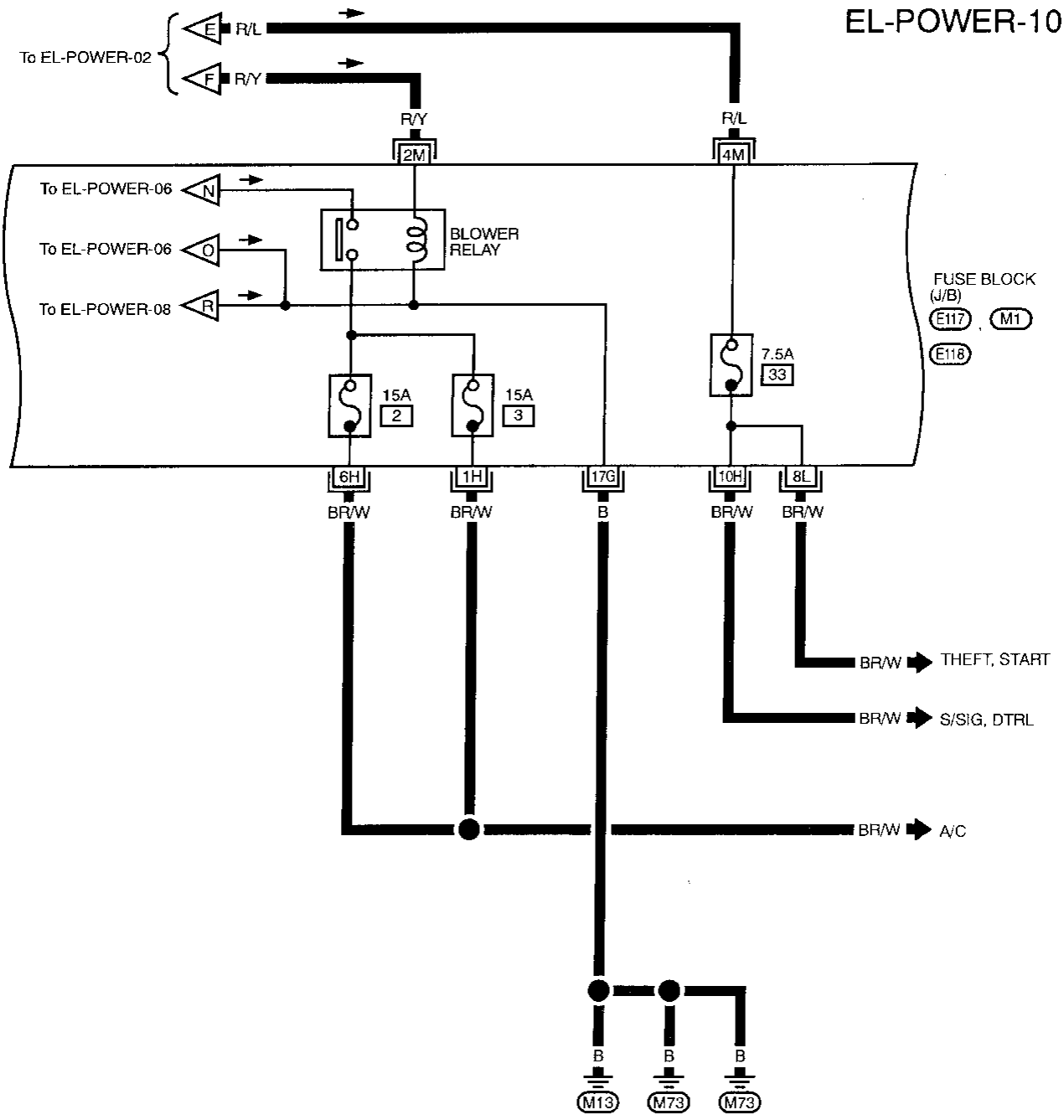
Wiring Diagram — POWER — (Cont'd)



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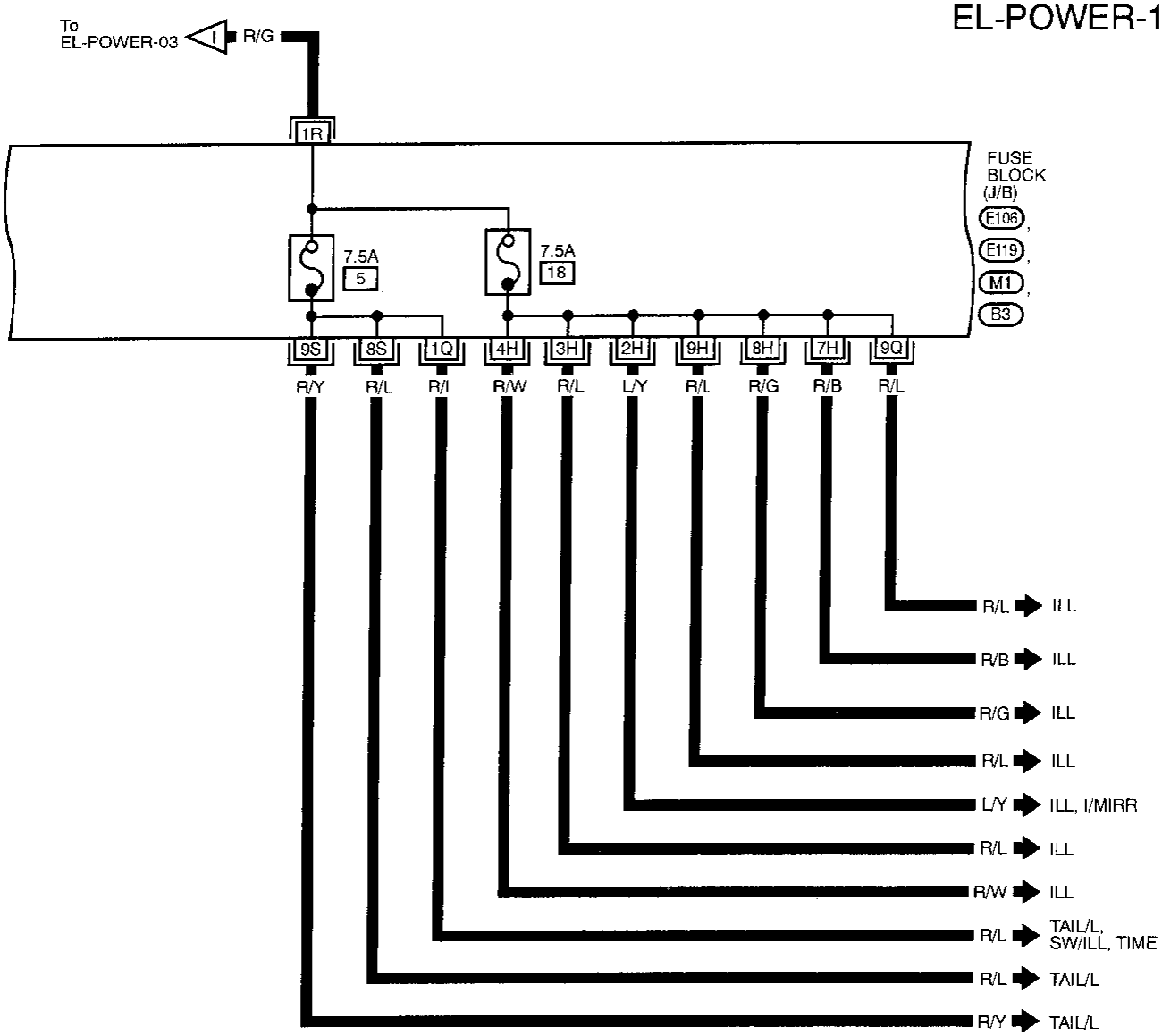
EL-POWER-11



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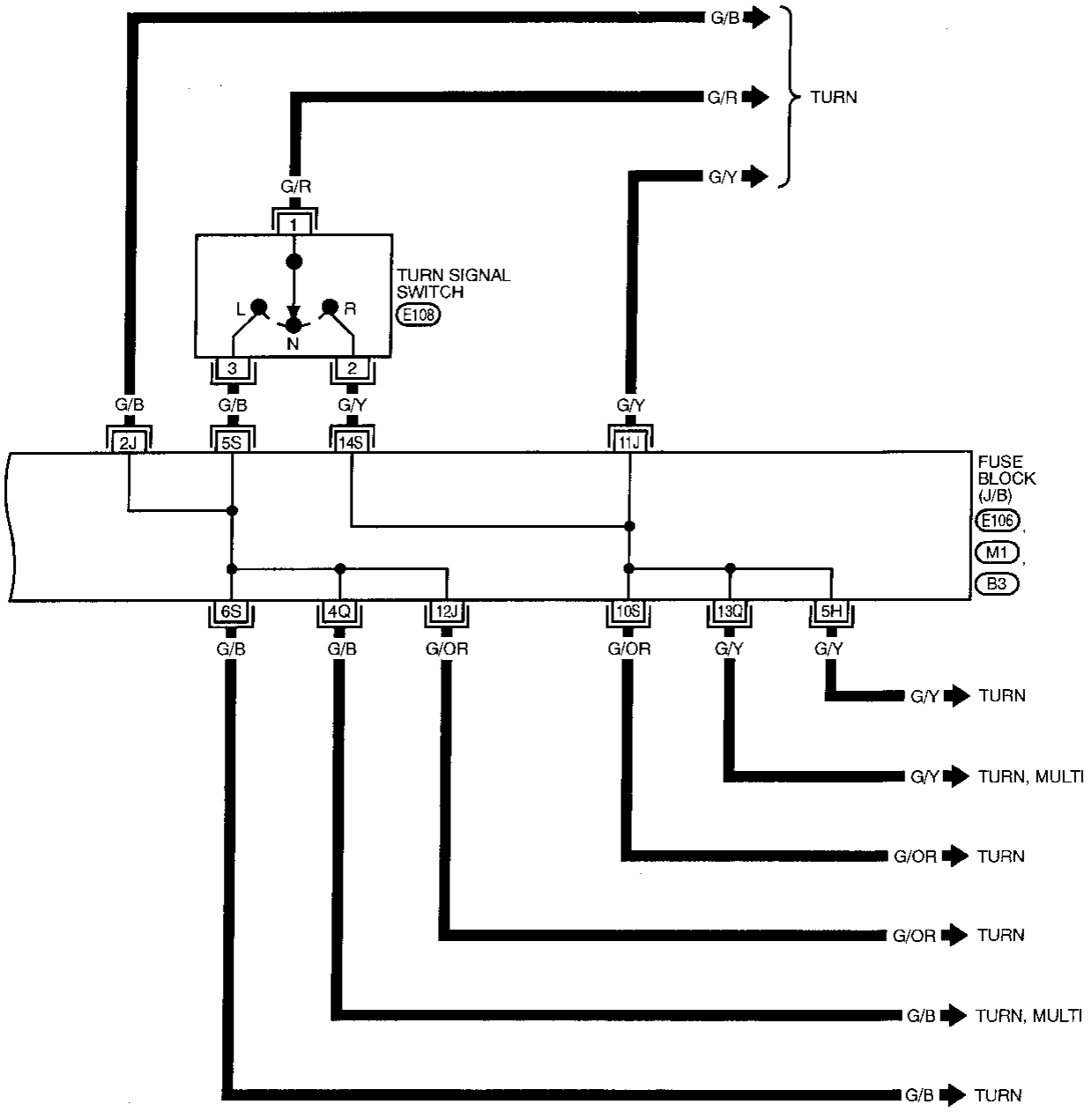
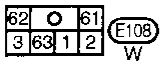
Wiring Diagram — POWER — (Cont'd)

EL-POWER-12





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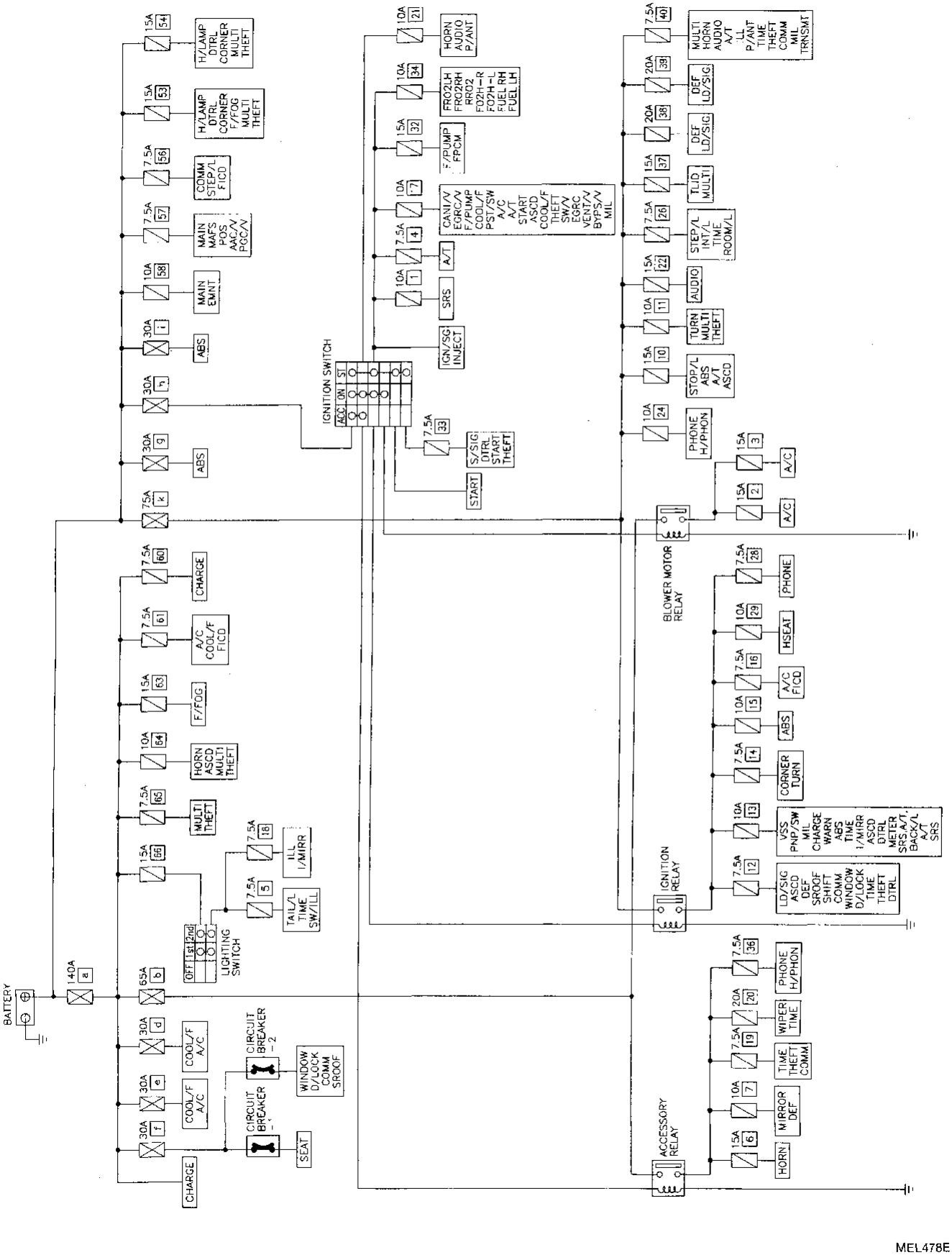
Schematic



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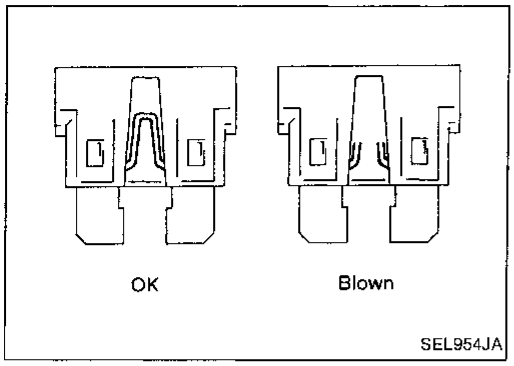
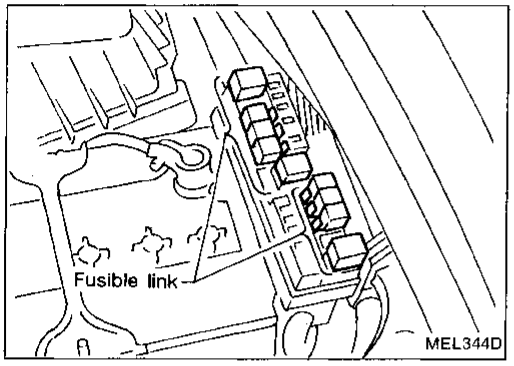


Fuse

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 clock 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 is melted, it is possible that a critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check these circuits and eliminate cause.
b. Never wrap outside of fusible link with vinyl tape.

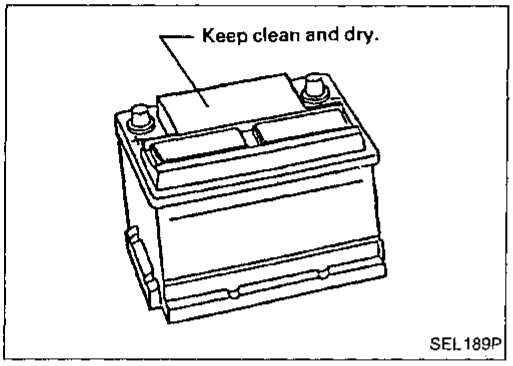
Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.

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.

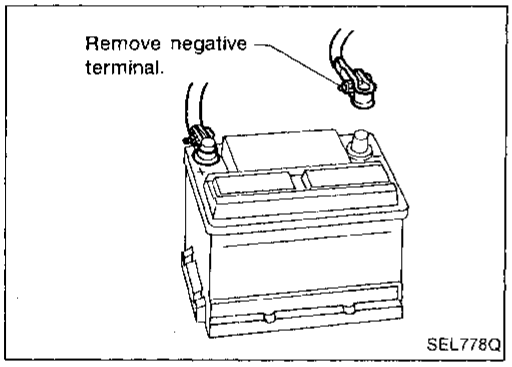


How to Handle Battery

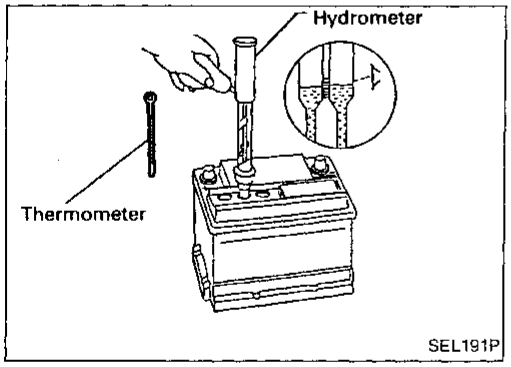
METHODS OF PREVENTING OVER-DISCHARGE

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 condition of the battery by checking the specific gravity of the electrolyte.

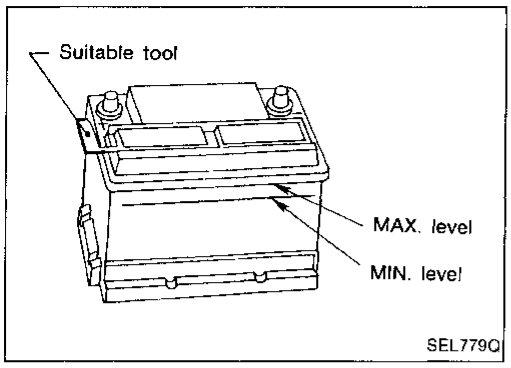
CHECKING ELECTROLYTE LEVEL

WARNING:

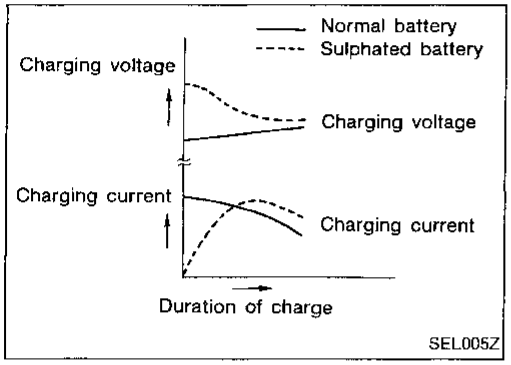
Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical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

Normally the battery does not require additional water. However, when the battery is used under severe conditions, adding distilled water may be necessary during the battery life.

How to Handle Battery (Cont'd)



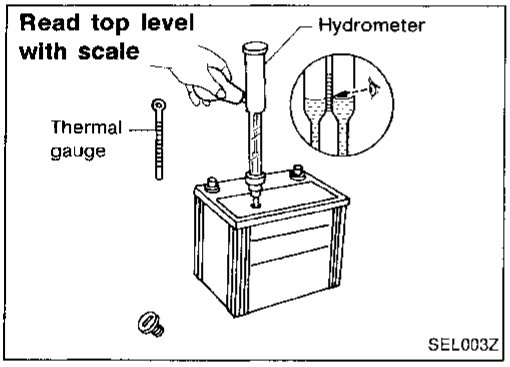
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

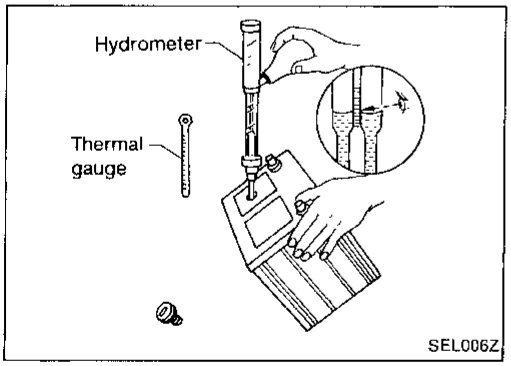
A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

To find if a battery has been "sulphated", pay attention to its voltage and current when charging it. As shown in the figure at left, if the battery has been "sulphated", less current and higher voltage may be observed in the initial stages of charging.



SPECIFIC GRAVITY CHECK

- Read hydrometer and thermometer indications at eye level.



- When the electrolyte level is too low, tilt battery case for easier measurement.

How to Handle Battery (Cont'd)

- 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

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.

How to Handle Battery (Cont'd)

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.**

MEMORY RESET

If the battery is disconnected or goes dead, the following items must be reset:

- Radio AM and FM preset
- Clock
- AUTO temperature setting trimmer

Service Data and Specifications (SDS)

Applied area	USA		Canada	USA non-California
	Standard	Option	Standard	Option
Type	55D23L	80D26L		65D26L
Capacity V-AH	12-60	12-65		12-65
Cold cranking current (For reference) A	356	582		413

System Description

M/T models for USA

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

With the ignition switch in the START position, power is supplied
- through terminal ⑤ of the ignition switch
- to clutch interlock relay terminal ③.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 17, located in the fuse block (J/B)]
- to theft warning relay terminal ①.

With the ignition switch in the START position, power is supplied
- through 7.5A fuse [No. 33, located in the fuse block (J/B)]
- to theft warning relay terminal ③.

If the theft warning system is not triggered, power is supplied
- through theft warning relay terminal ④
- to clutch interlock relay terminal ①.

When the clutch pedal is depressed, ground is supplied to clutch interlock relay terminal ② through the clutch interlock switch and body grounds (M13) and (M73).

The clutch interlock relay is energized and power is supplied
- from terminal ⑤ of the clutch interlock relay
- to terminal ① of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the clutch interlock relay is interrupted.

A/T models

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

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 17, located in the fuse block (J/B)]
- to theft warning relay terminal ①.

Also, with the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to inhibitor relay terminal ⑥.

If the theft warning system is not triggered, power is supplied
- through theft warning relay-1 terminal ④
- to inhibitor switch terminal ①
- through inhibitor relay terminal ①, with the selector lever in the P or N position
- to body grounds (F18) and (F19).

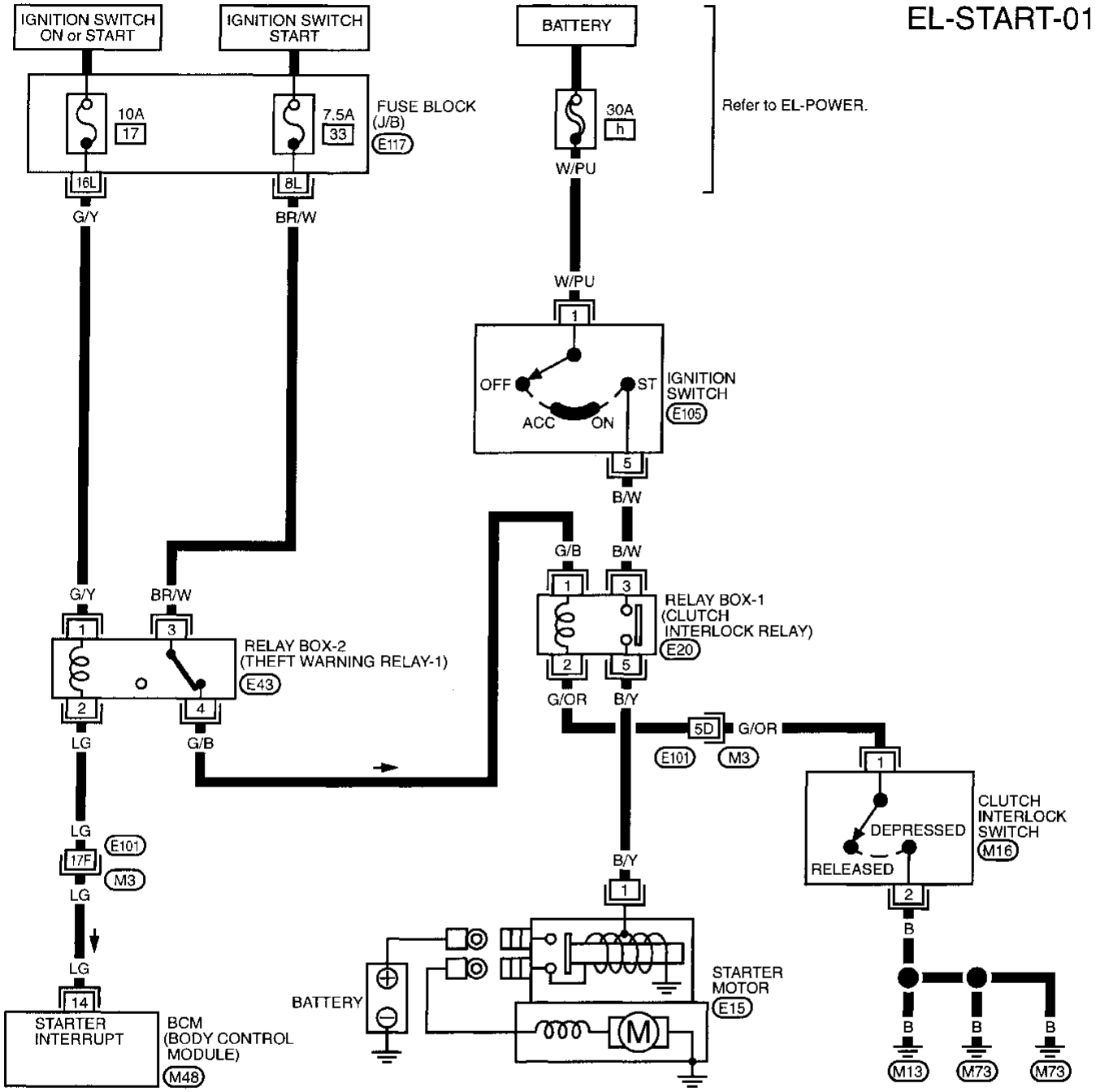
The inhibitor relay is energized and power is supplied
- from ignition switch terminal ⑤
- to terminal ① of the starter motor windings
- through inhibitor relay terminals ⑥ and ⑦.

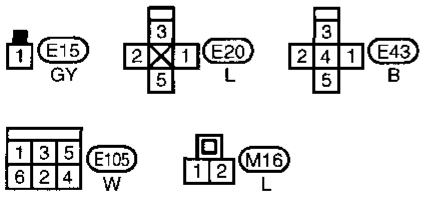
The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the inhibitor switch is interrupted.

Wiring Diagram — START —

M/T MODEL



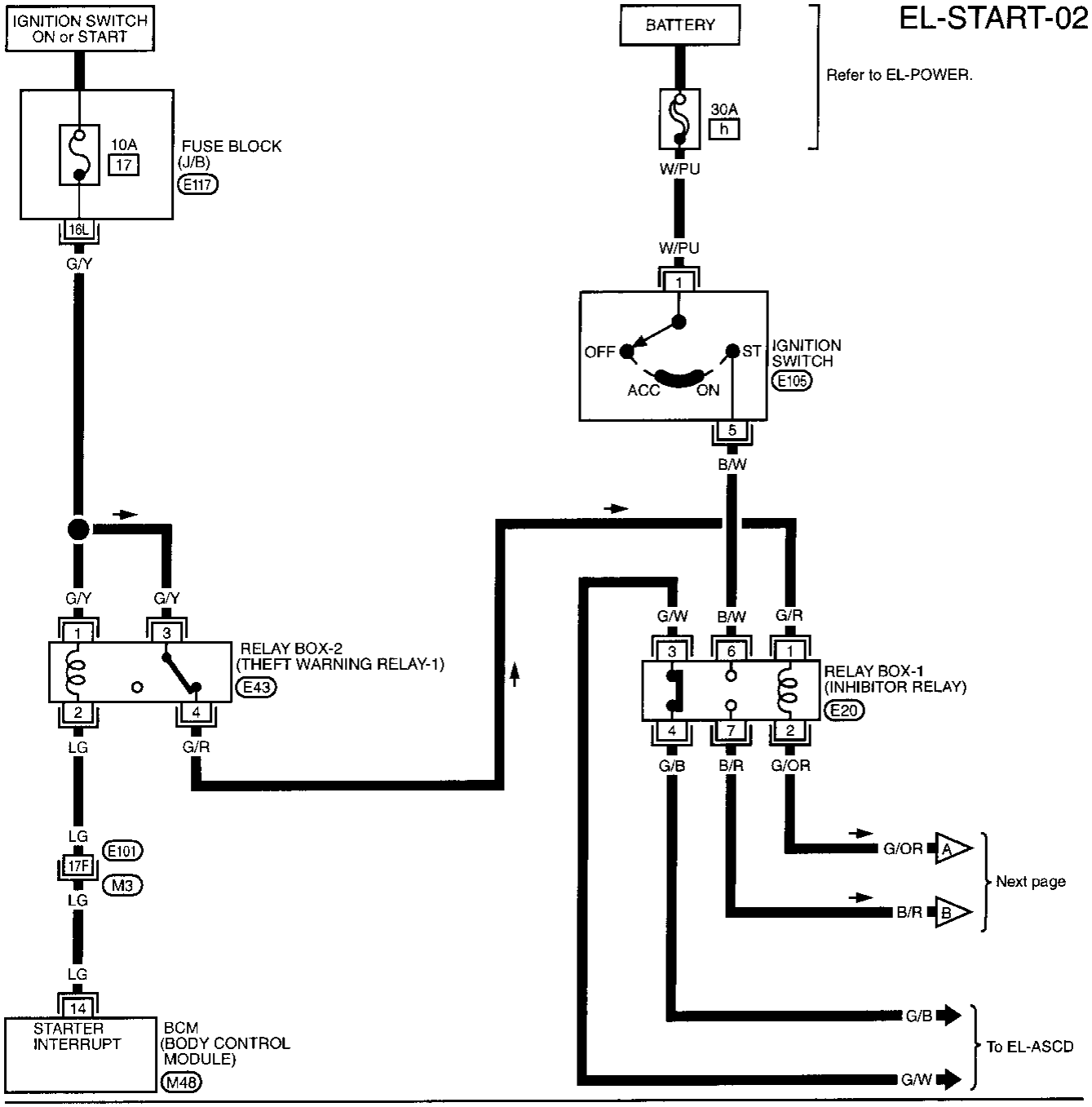


Refer to last page (Foldout page).
M3 , E101
E117
M48

MEL479E

Wiring Diagram — START — (Cont'd)

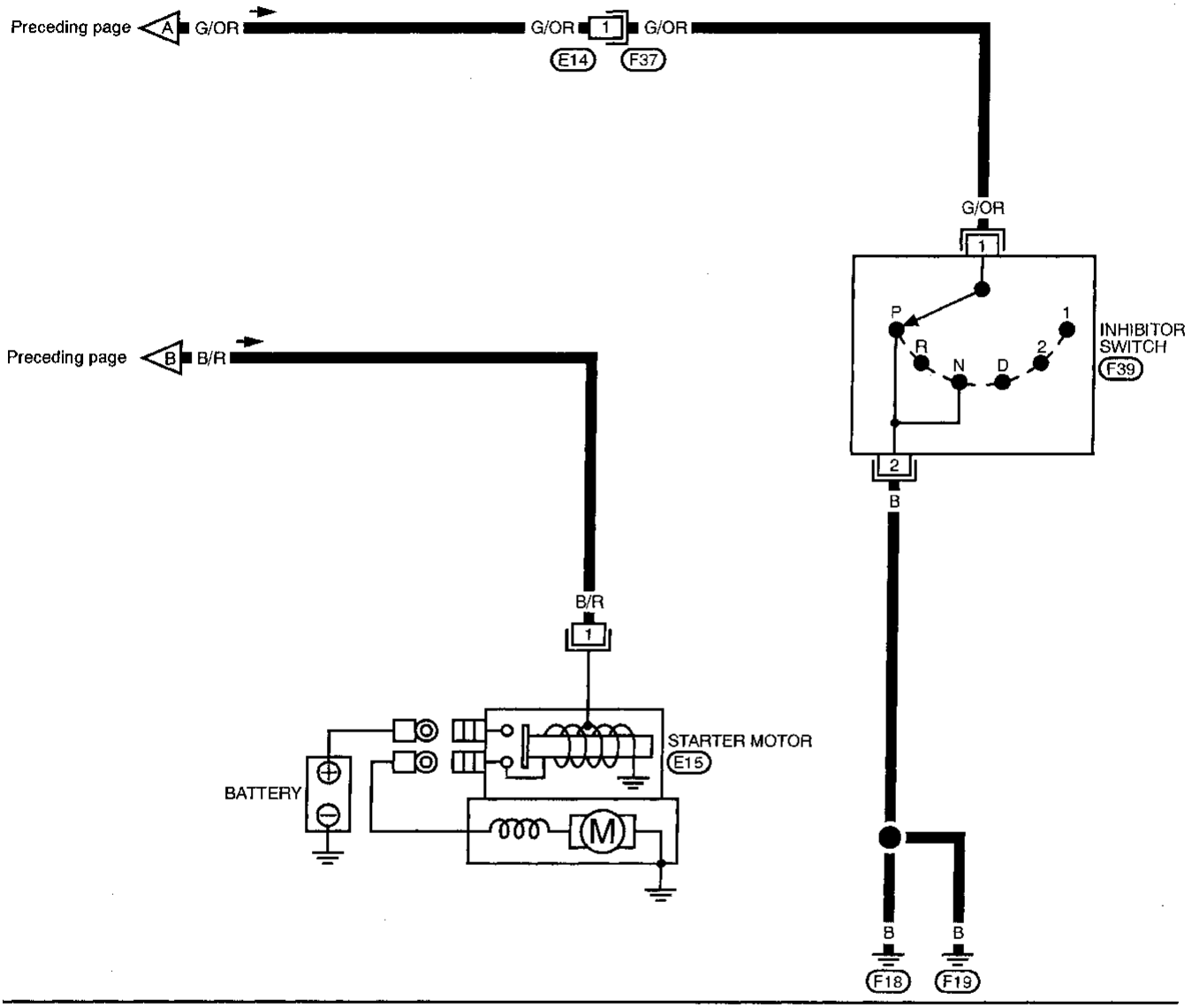
A/T MODEL

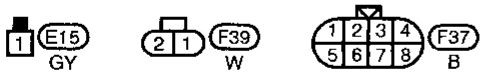


MEL480E

Wiring Diagram — START — (Cont'd)

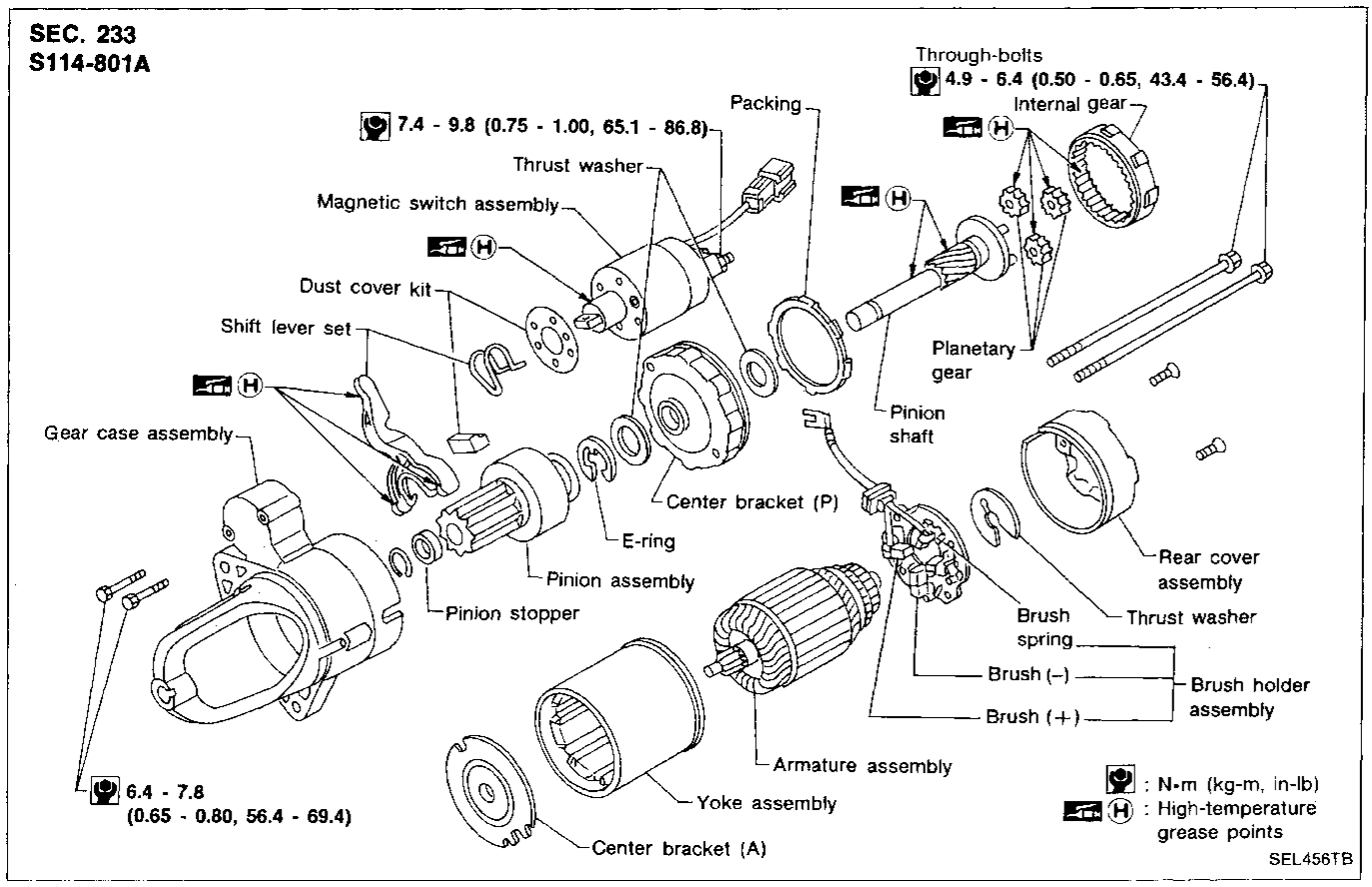
EL-START-03

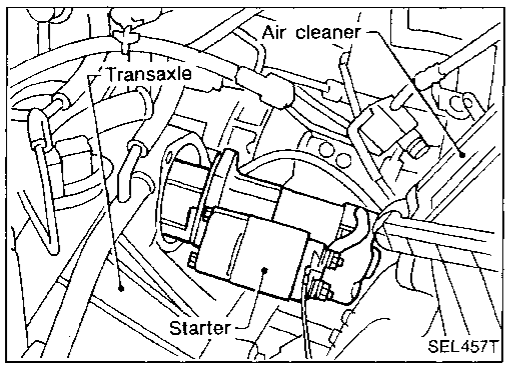


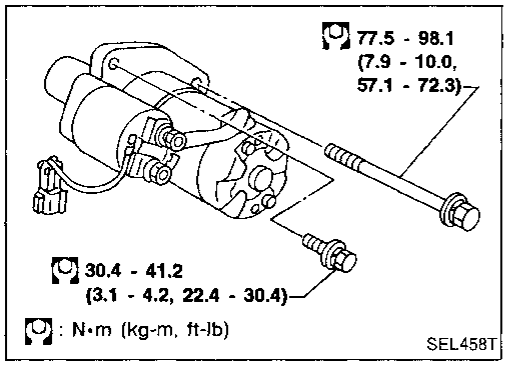


MEL481E

Construction







Removal and Installation

REMOVAL

1. Remove air duct assembly.
2. Disconnect starter harness.
3. Remove starter bolts (two).
4. Remove starter.

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		S114-801A
		HITACHI make
		Reduction gear type
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 90
Revolution	rpm	More than 2,700
Minimum diameter of commutator	mm (in)	28 (1.10)
Minimum length of brush	mm (in)	10.5 (0.413)
Brush spring tension	N (kg, lb)	12.7 - 17.7 (1.3 - 1.8, 2.9 - 4.0)
Clearance of bearing metal and armature shaft	mm (in)	Less than 0.2 (0.008)
Clearance between pinion front edge and pinion stopper	mm (in)	0.3 - 2.5 (0.012 - 0.098)

System Description

The alternator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. AC voltage is converted into DC voltage by the diode assembly in the alternator.
Power is supplied at all times to alternator terminal Ⓢ through:

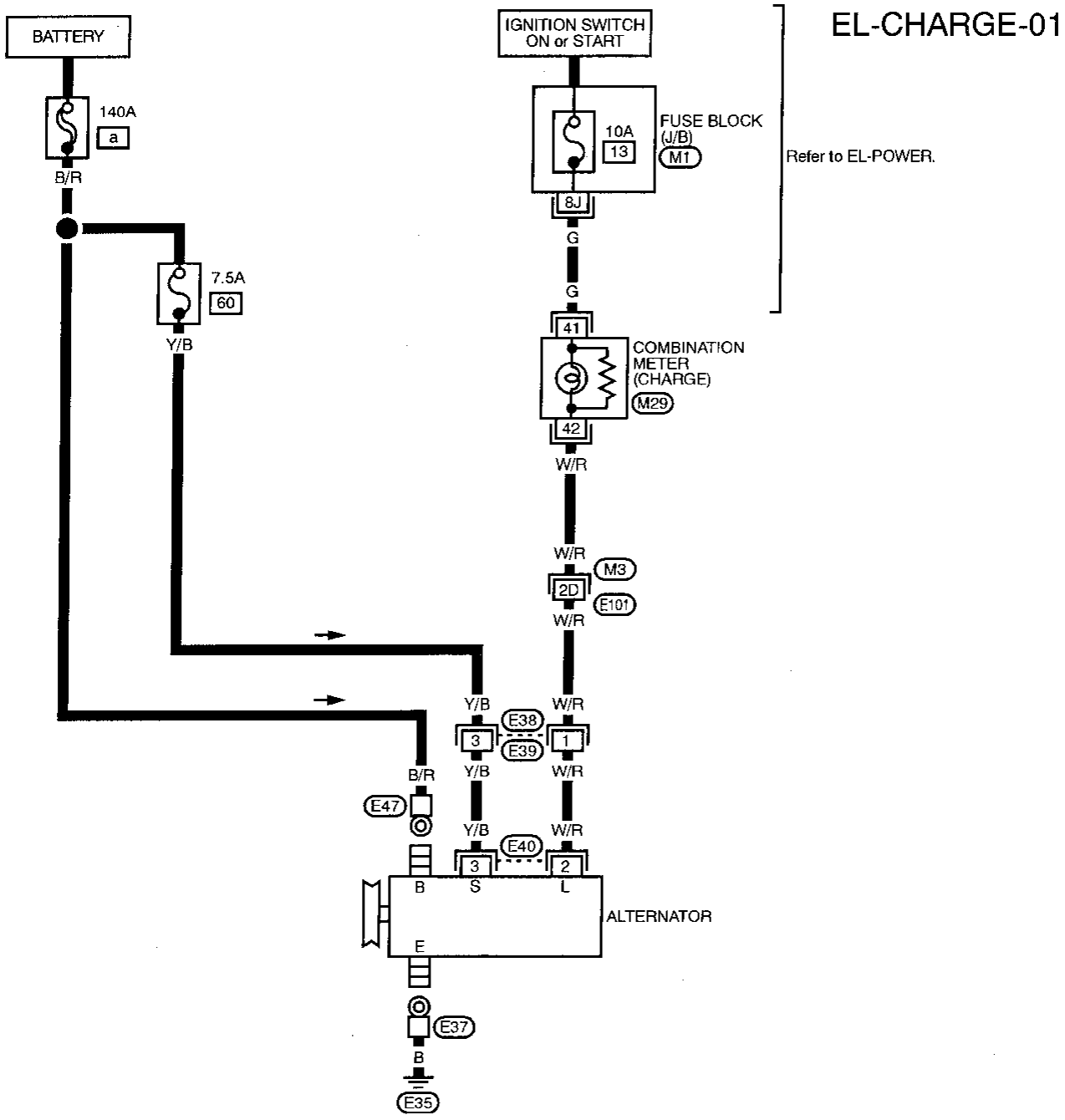
- 140A fusible link (letter [a], located in the fuse and fusible link box), and
- 7.5A fuse (No. [60], located in the fuse and fusible link box).

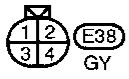
Voltage output through alternator terminal Ⓑ, is controlled by the IC regulator at terminal Ⓢ. The charging circuit is protected by the 140A fusible link.
Terminal Ⓔ of the alternator supplies ground through body ground (E35).
With the ignition switch in the ON or START position, power is supplied

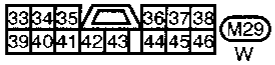
- through 10A fuse [No. [13], located in the fuse block (J/B)]
- to combination meter terminal ㊶ for the charge warning indicator.

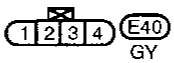
Ground is supplied to terminal ㊷ of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning indicator will illuminate. When the alternator is providing sufficient voltage, the ground is opened and the charge warning indicator will go off.
If the charge warning indicator illuminates with the engine running, a malfunction is indicated. Refer to "Trouble Diagnoses" (EL-34).

Wiring Diagram — CHARGE —





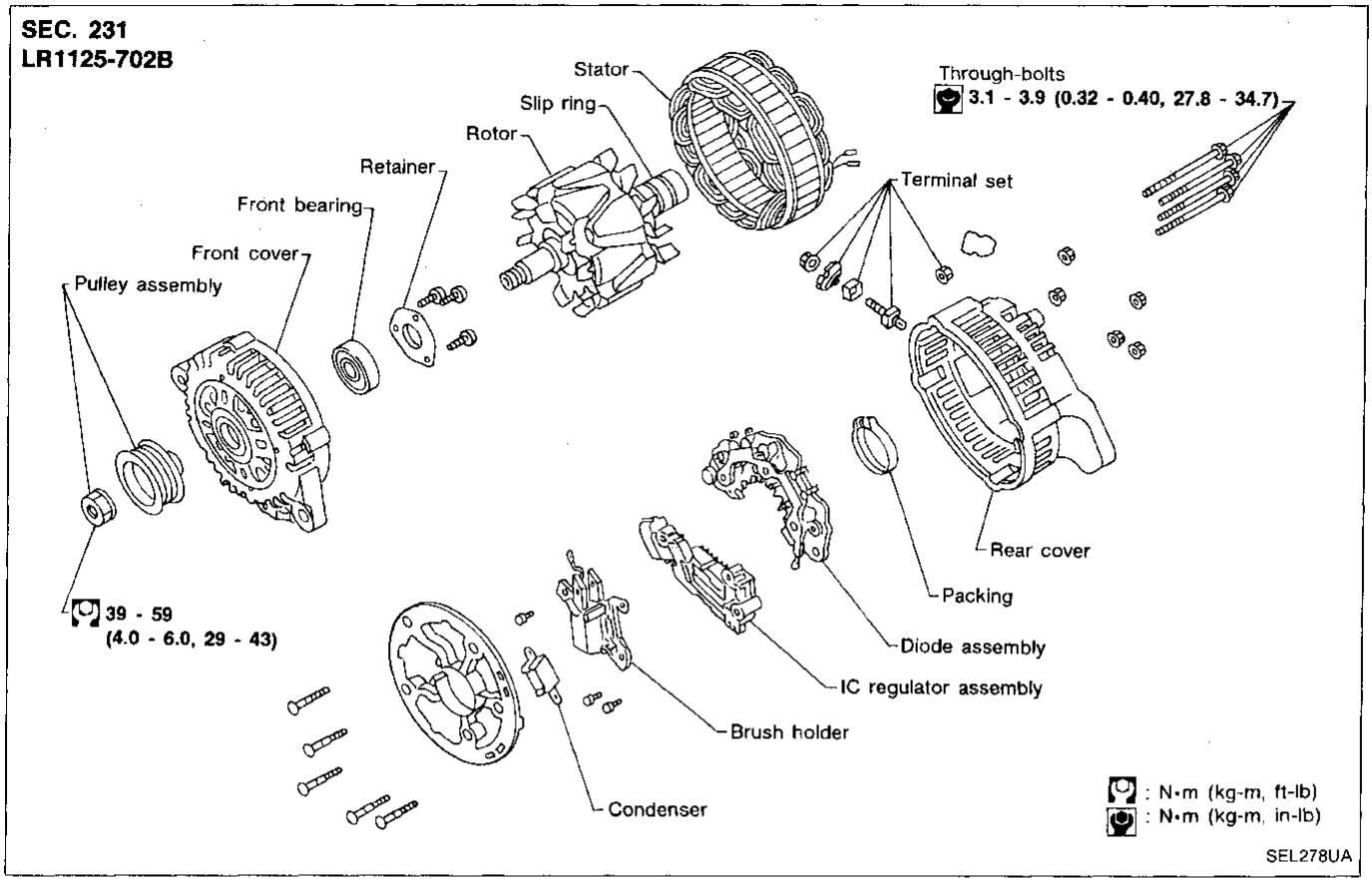


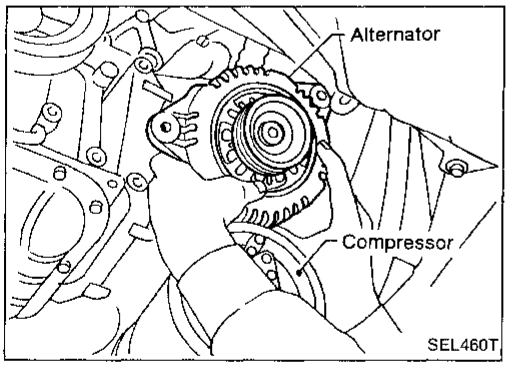


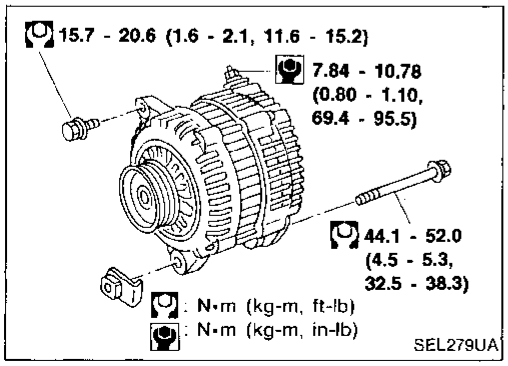
Refer to last page (Foldout page).
M3 , E101
M1

MEL482E

Construction







Removal and Installation

REMOVAL

1. Remove engine undercover RH.
2. Remove side inspection cover RH.
3. Loosen belt idler pulley.
4. Remove drive belt.
5. Remove A/C compressor mounting bolts (four).
6. Remove cooling fan and fan shroud.
7. Slide A/C compressor forward.
8. Disconnect alternator harness connector.
9. Remove alternator upper bolt and lower bolt.

INSTALLATION

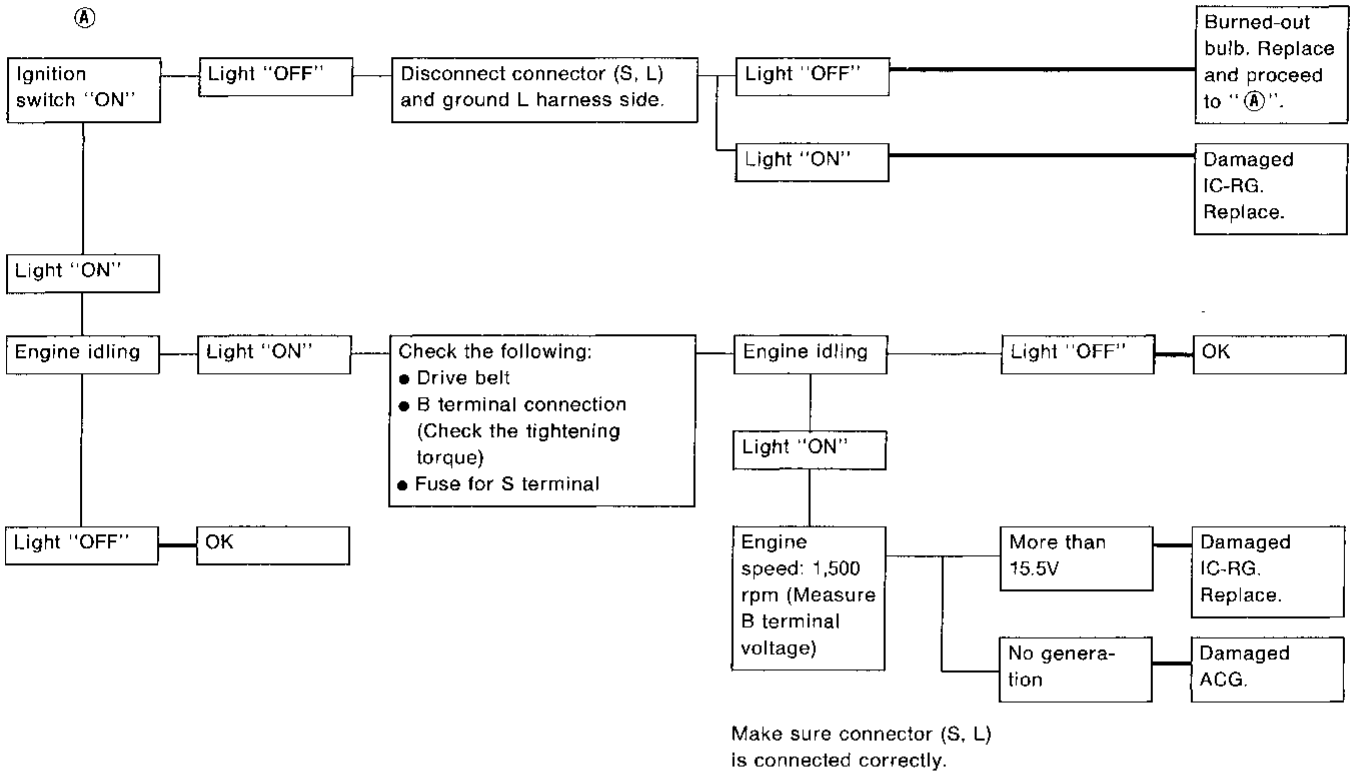
To install, reverse the removal procedure.

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.

WITH IC REGULATOR



Make sure connector (S, L) is connected correctly.

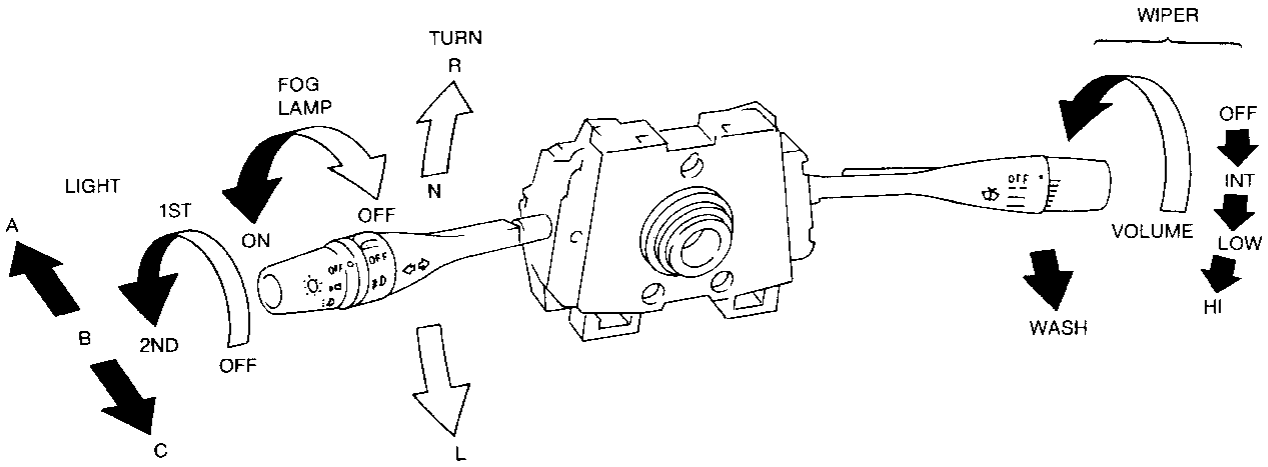
1) **Use fully charged battery.**
2) **Light : Charge warning light**
   ACG : Alternator parts except IC regulator
   IC-RG : IC regulator
   OK : IC-alternator is in good condition.
3) **When reaching "Damaged ACG", remove alternator from vehicle and disassembly, inspect and correct or replace faulty parts.**

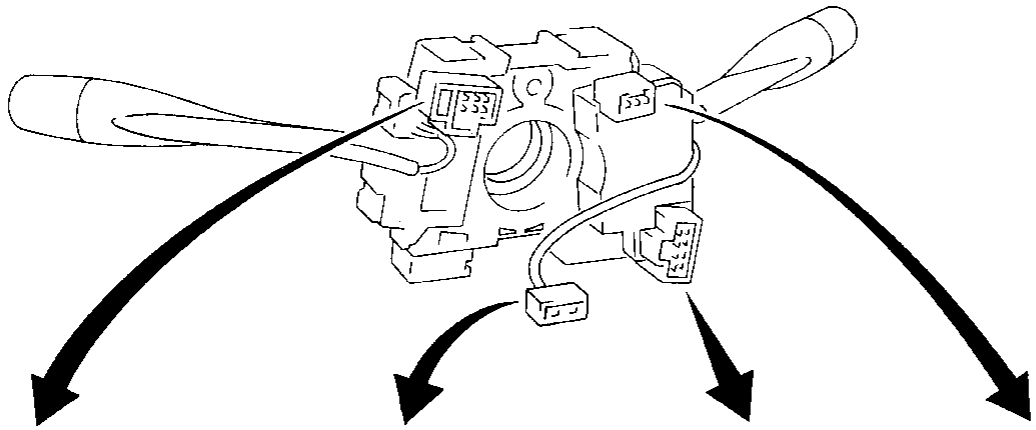
Service Data and Specifications (SDS)

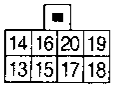
ALTERNATOR

Type		LR1125-702B
		HITACHI make
Nominal rating	V-A	12-125
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,100
Hot output current (When 13.5 volts is applied)	A/rpm	More than 36/1,300 More than 94/2,500 More than 123/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	More than 6.00 (0.2362)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)
Rotor (field coil) resistance	Ω	2.35

Combination Switch/Check

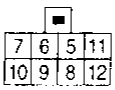






(Wiper)

(Front fog)



(Light)

Turn and cornering

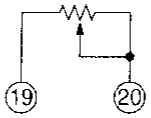
LIGHTING SWITCH

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

WIPER SWITCH

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

INTERMITTENT WIPER VOLUME



FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

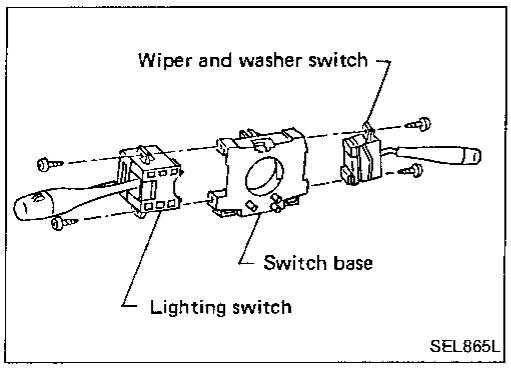
TURN SIGNAL LAMP SWITCH

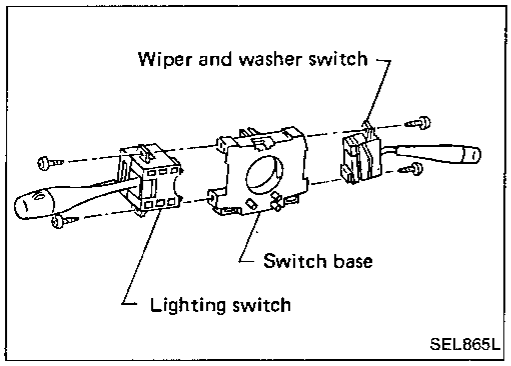
	L	N	R
1	○		○
2			○
3	○		

CORNERING LAMP SWITCH

	L	N	R
61	○		○
62			○
63	○		

MEL582E



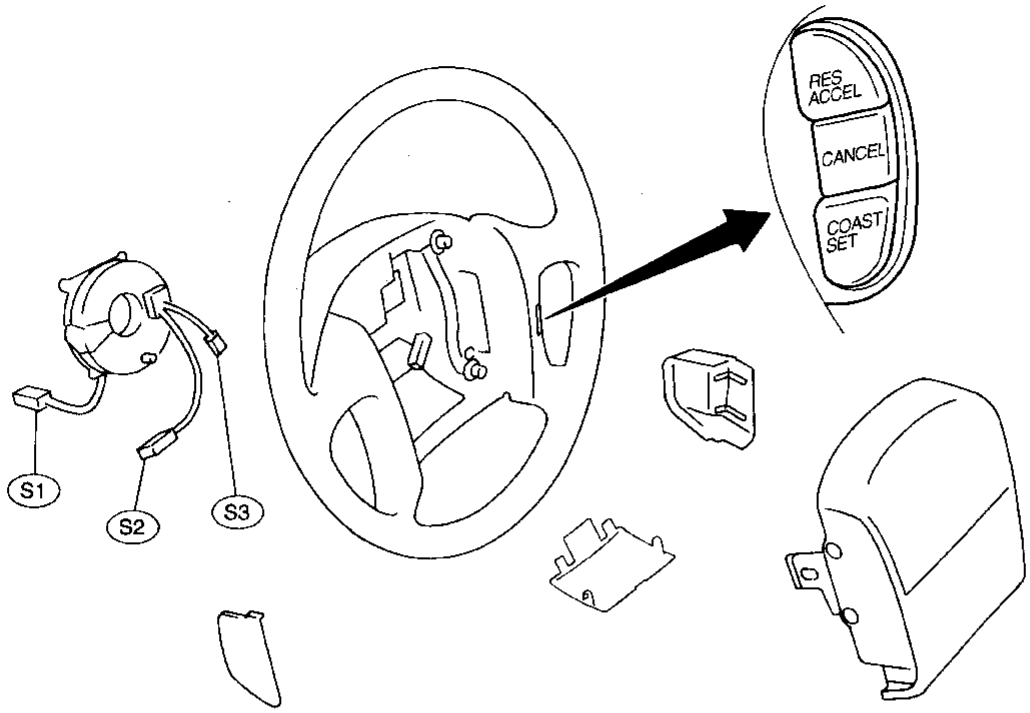


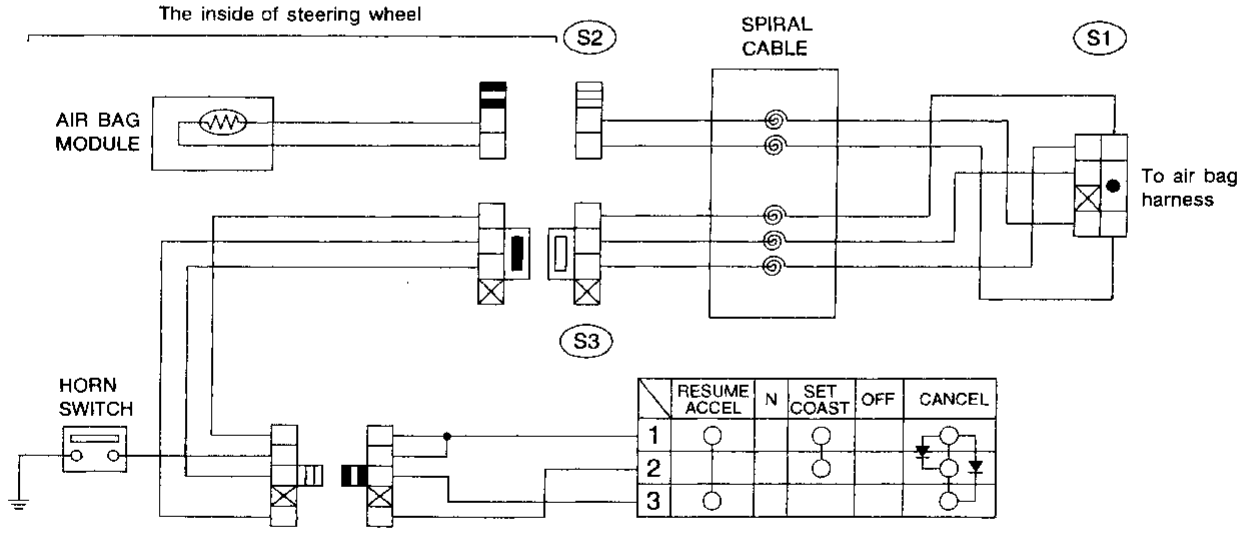
Combination Switch/Replacement

For removing/installing air bag module and spiral cable, refer to RS section.

- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screw.

Steering Switch/Check





MEL161E

System Description (For USA)

Power is supplied at all times
- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to lighting switch terminal ⑤, and
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to lighting switch terminal ⑧.

When the lighting switch is turned to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to terminal ② of the LH headlamp, and
- from lighting switch terminal ⑦
- to terminal ② of the RH headlamp.

Terminal ③ of each headlamp supplies ground through body grounds (E5) and (E30).
With power and ground supplied, the headlamps will illuminate.
When the lighting switch is placed in the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to terminal ① of the LH headlamp, and
- from lighting switch terminal ⑥
- to terminal ① of the RH headlamp, and
- to combination meter terminal ㉑ for the HIGH BEAM indicator.

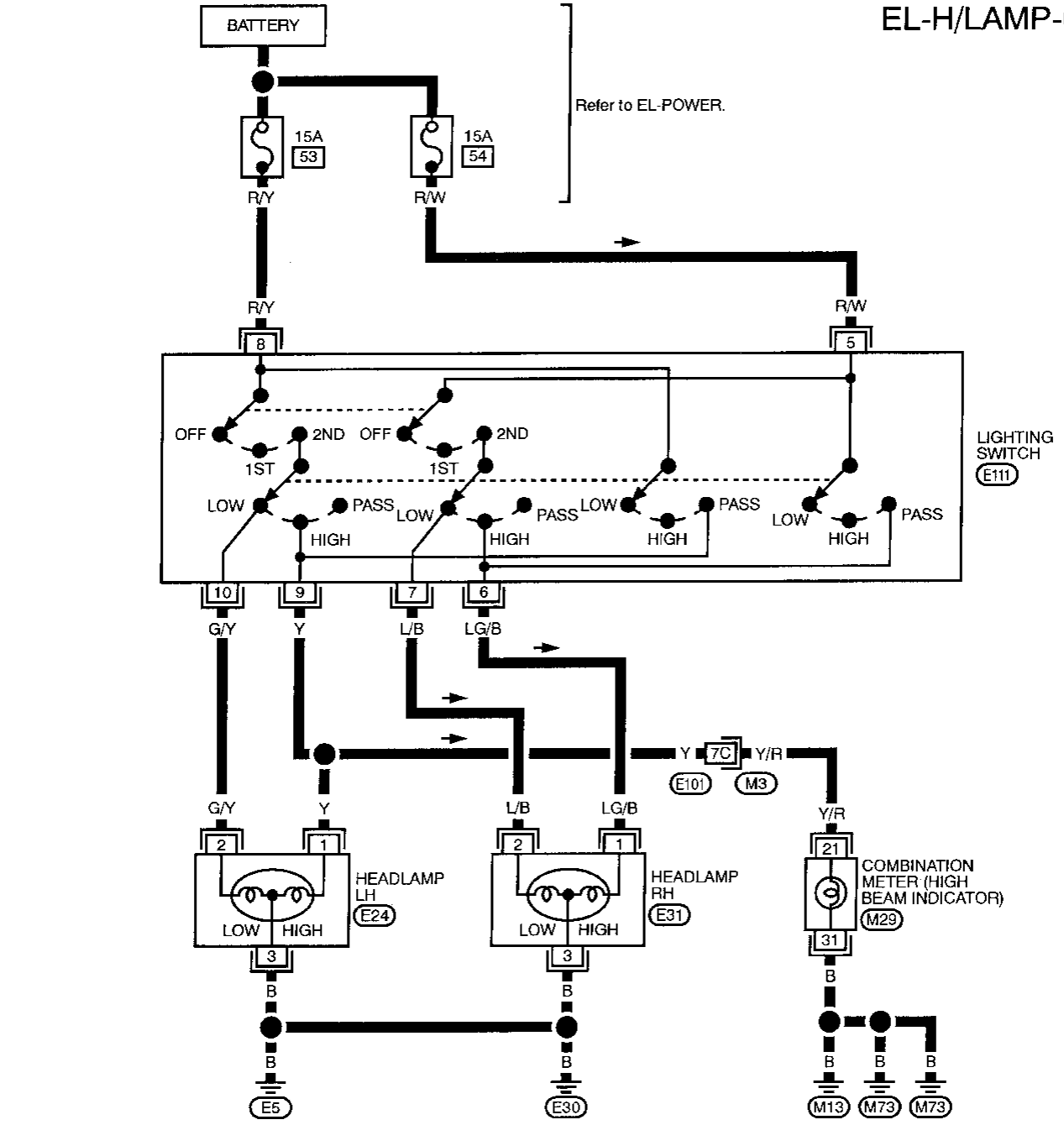
Ground is supplied to terminal ㉛ of the combination meter through body grounds (M13) and (M73).
With power and ground supplied, the high beams and the HIGH BEAM indicator illuminate.

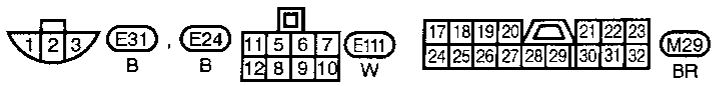
With theft warning system

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS" (EL-240).

Wiring Diagram — H/LAMP —

EL-H/LAMP-01





Refer to last page (Foldout page).
M3 , E101

MEL483E

Trouble Diagnoses

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. LH headlamp ground 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check LH headlamp ground. (Terminal ③) 3. Check 15A fuse (No. 53, located in fusible link). 4. Check lighting switch.
RH headlamps do not operate.	1. Bulb 2. RH headlamp ground 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check RH headlamp ground. (Terminal ③) 3. Check 15A fuse (No. 54, located in fusible link). 4. Check lighting switch.
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 Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check G/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in RH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check LG/B wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check L/B wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. High beam indicator ground 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check combination meter ground. (Terminal ㉛) 3. Check Y and Y/R wires between lighting switch and combination meter for an open circuit.

System Description (For Canada)

The headlamp system on vehicles for Canada contains a daytime light unit. The unit 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. After that, the daytime lights will continue to operate even when the parking brake is applied.

Power is supplied at all times
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to daytime light control unit terminal ③ and
- to lighting switch terminal ⑧.

Power is also supplied at all times
- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to daytime light control unit terminal ②,
- to lighting switch terminal ⑤ and

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to daytime light control unit terminal ⑫.

Ground is supplied to daytime light control unit terminal ⑤ through body grounds (M13) and (M73).

HEADLAMP OPERATION

Low beam operation

When the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to LH headlamp terminal ②.

Ground is supplied to LH headlamp terminal ③ through body grounds (E5) and (E30).

Also, when the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑦
- to RH headlamp terminal ②.

Ground is supplied to headlamp terminal ③ through body grounds (E5) and (E30) (through daytime light control unit).

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

High beam operation

When the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to LH headlamp terminal ①.

Also, when the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to daytime light control unit terminal ⑧
- through daytime light control unit terminal ⑥
- to RH headlamp terminal ①.

Ground is supplied in the same manner as low beam operation.

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

DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the OFF position, power is supplied
- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to headlamp RH terminal ①
- through headlamp RH terminal ③
- to daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑧
- to headlamp LH terminal ①.

Ground is supplied to headlamp LH terminal ③ through body grounds (E5) and (E30).

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

Operation (Daytime light system for Canada)

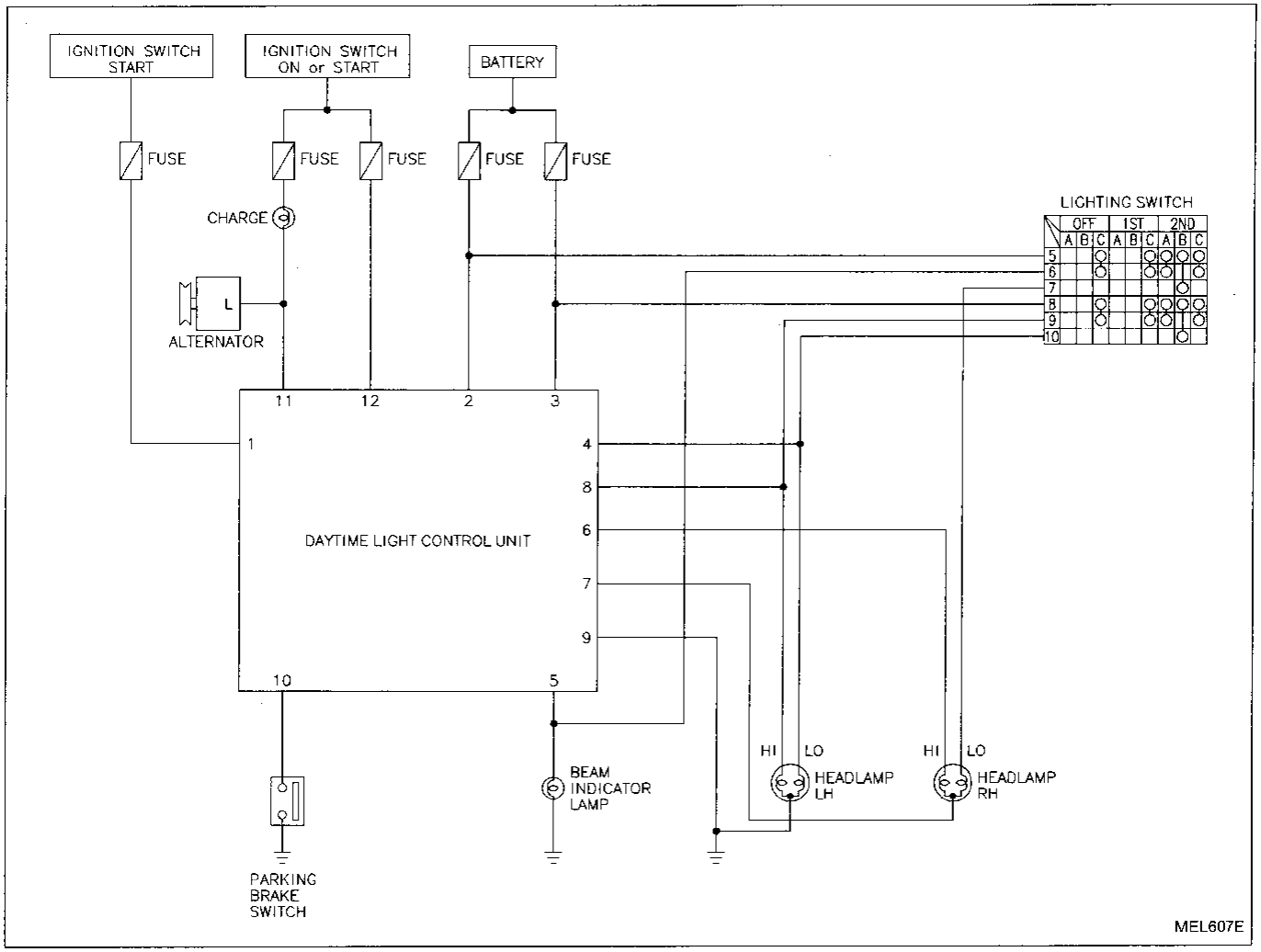
After starting the engine with the lighting switch in the "OFF" position or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

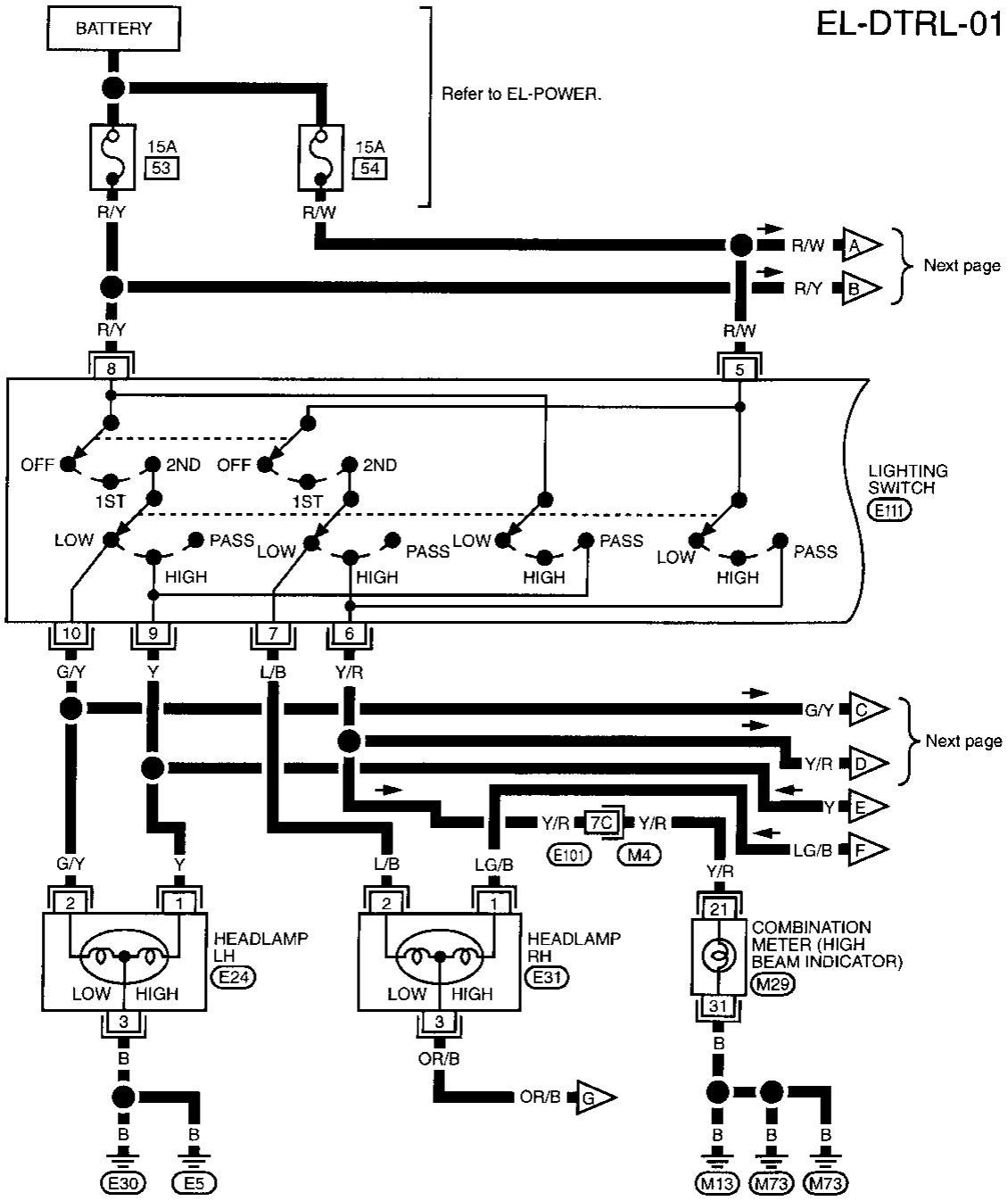
O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
* : When starting the engine with the parking brake released, the daytime lamp will come ON.
When starting the engine with the parking brake pulled, the daytime lamp won't come ON.

Schematic

FOR CANADA

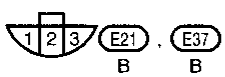


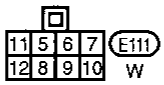
Wiring Diagram — DTRL —

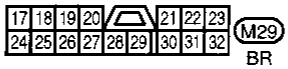


Refer to last page (Foldout page).

M4 , E101

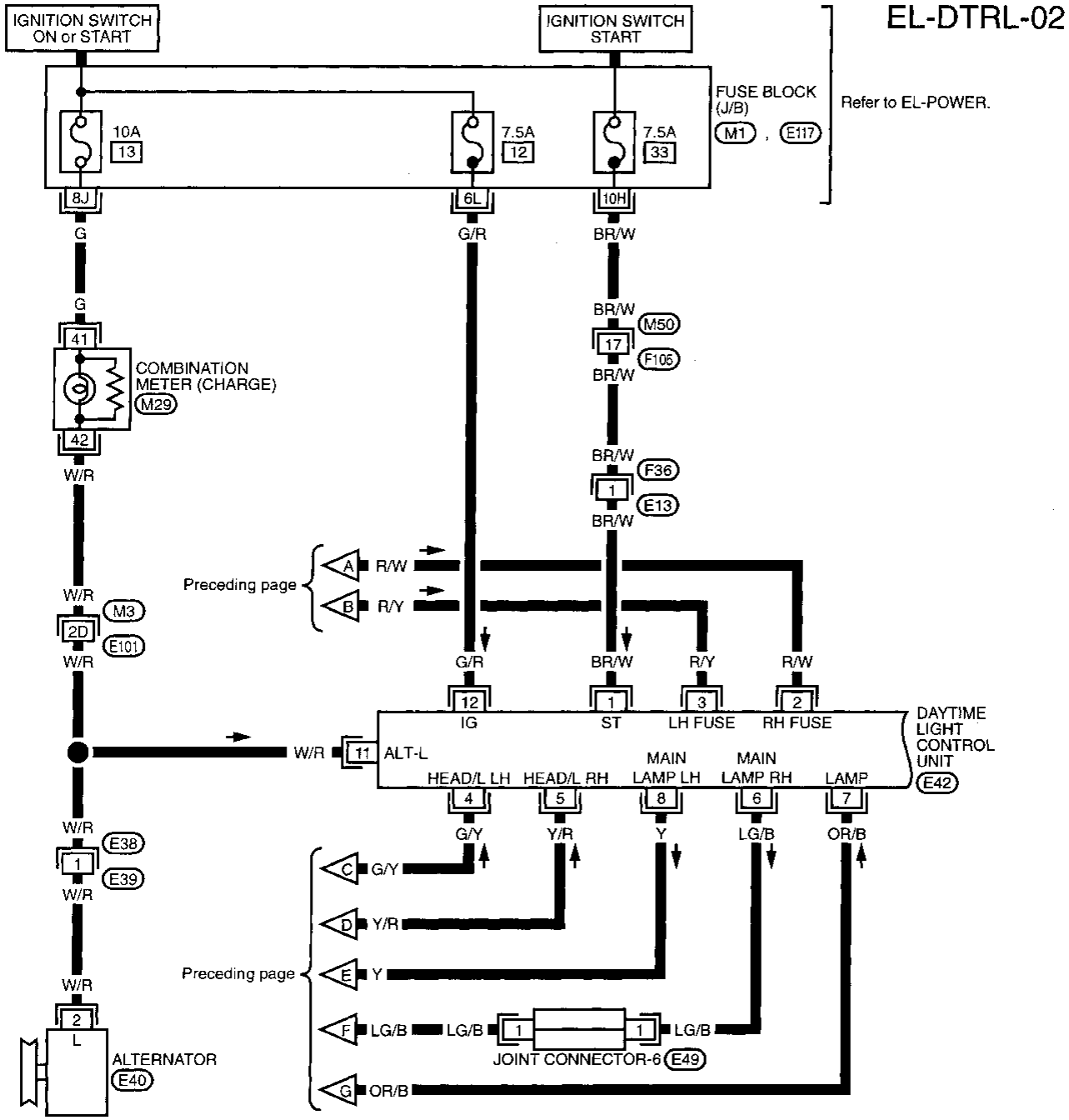






MEL484E

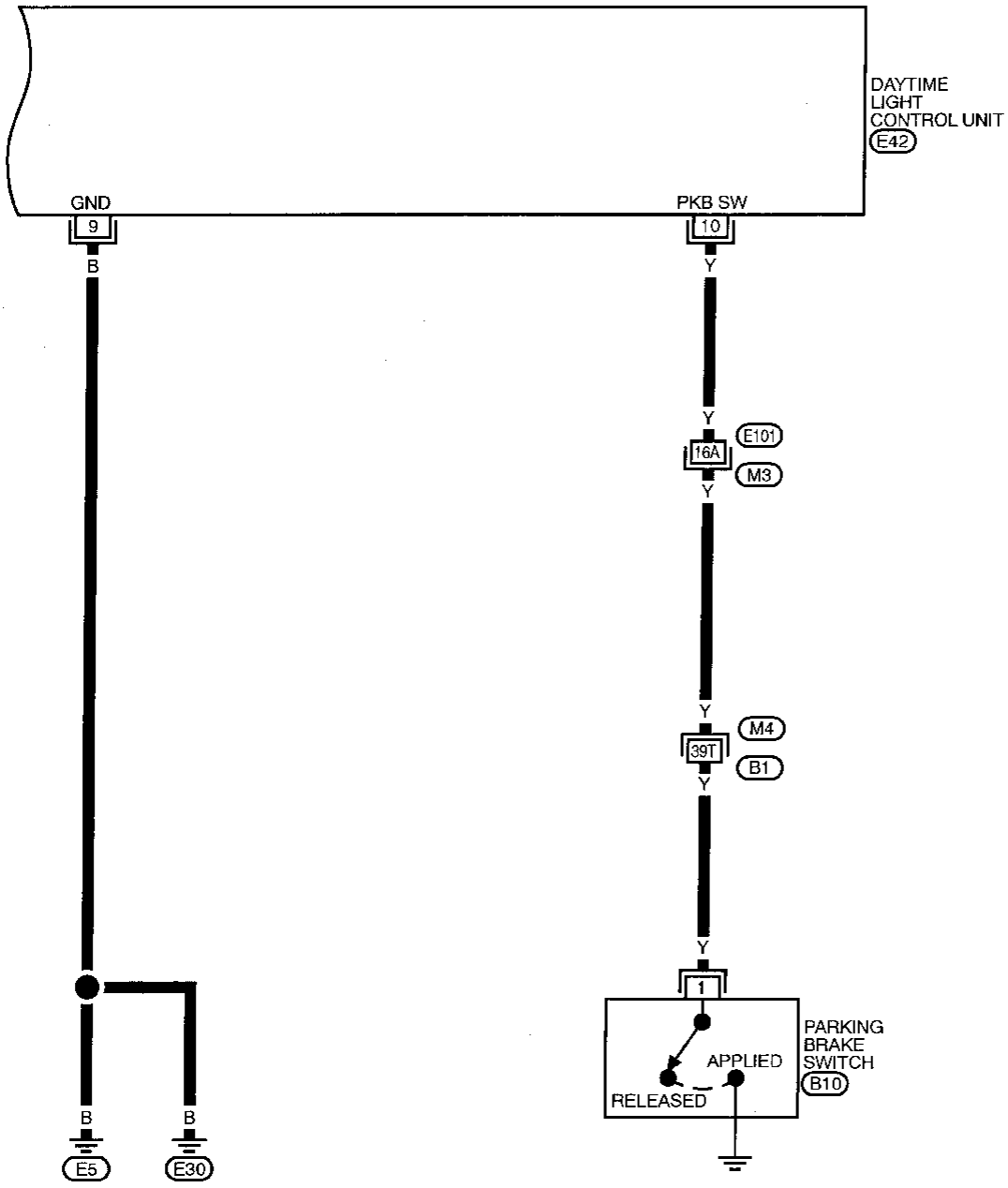
Wiring Diagram — DTRL — (Cont'd)

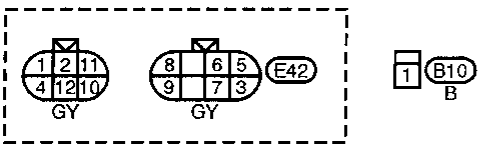


MEL485E

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03





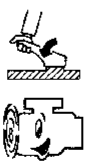
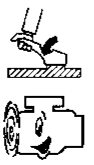
Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL486E

Trouble Diagnoses (Daytime Light)

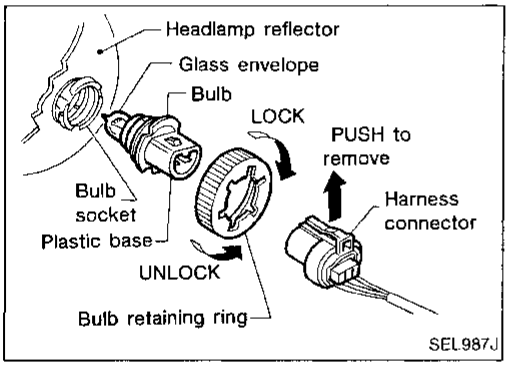
DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Item	Condition		Judgement standard
1	Start signal		When turning ignition switch to "ST"	Battery positive voltage
			When turning ignition switch to "ON" from "ST"	1V or less
			When turning ignition switch to "OFF"	1V or less
2	Power source		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "OFF"	Battery positive voltage
3	Power source		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "OFF"	Battery positive voltage
4	Lighting switch (Lo beam)		When turning lighting switch to "2ND" ("B")	Battery positive voltage
5	Lighting switch (Hi beam)		When turning lighting switch to "HIGH" ("A")	Battery positive voltage
			When turning lighting switch to "PASS" ("C")	Battery positive voltage
6	RH hi beam		When turning lighting switch to "HIGH" ("C")	Battery positive 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 positive voltage
7	RH headlamp control (ground)		When lighting switch is turned to "2ND" ("B")	1V or less
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
8	LH hi beam		When turning lighting switch to "HIGH" ("A")	Battery positive 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

Trouble Diagnoses (Daytime Light) (Cont'd)

Terminal No.	Item	Condition		Judgement standard
9	Ground		—	—
10	Parking brake switch		When parking brake is released	Battery positive voltage
			When parking brake is set	1.5V or less
11	Alternator		When turning ignition switch to "ON"	1V or less
			When engine is running	Battery positive voltage
			When turning ignition switch to "OFF"	1V or less
12	Power source		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "ST"	Battery positive voltage
			When turning ignition switch to "OFF"	1V or less



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 the bulb out of the headlamp reflector for a long period of time as dust, moisture, smoke, etc. may enter the headlamp body and affect the performance of the headlamp. Thus, the headlamp bulb should not be removed from the headlamp reflector until just before a replacement bulb is to be installed.**

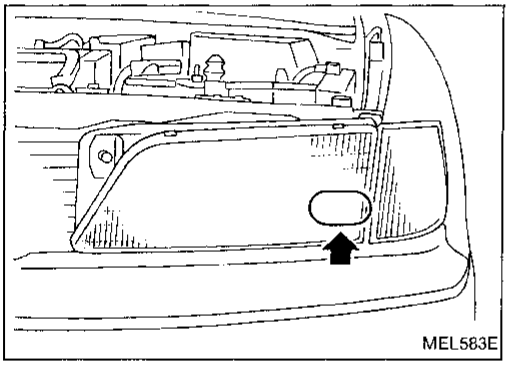
Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. For operating instructions of any aimer, it should be in good repair, calibrated and used according to respective operation manuals supplied with the unit.

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).**

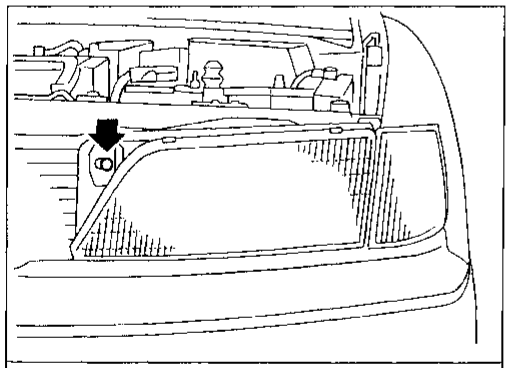


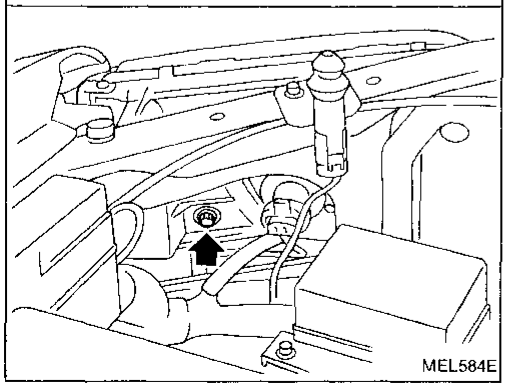
AIMER ADJUSTMENT MARK

When using a mechanical aimer, adjust adapter legs to the data marked on the headlamps.

Example:

4H 2V
- Vertical side: 2
- Horizontal side: 4



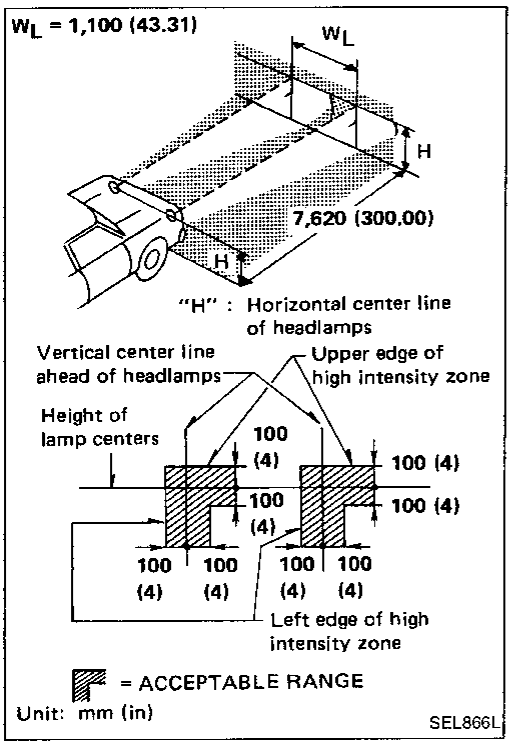


LOW BEAM

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

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

Aiming Adjustment (Cont'd)

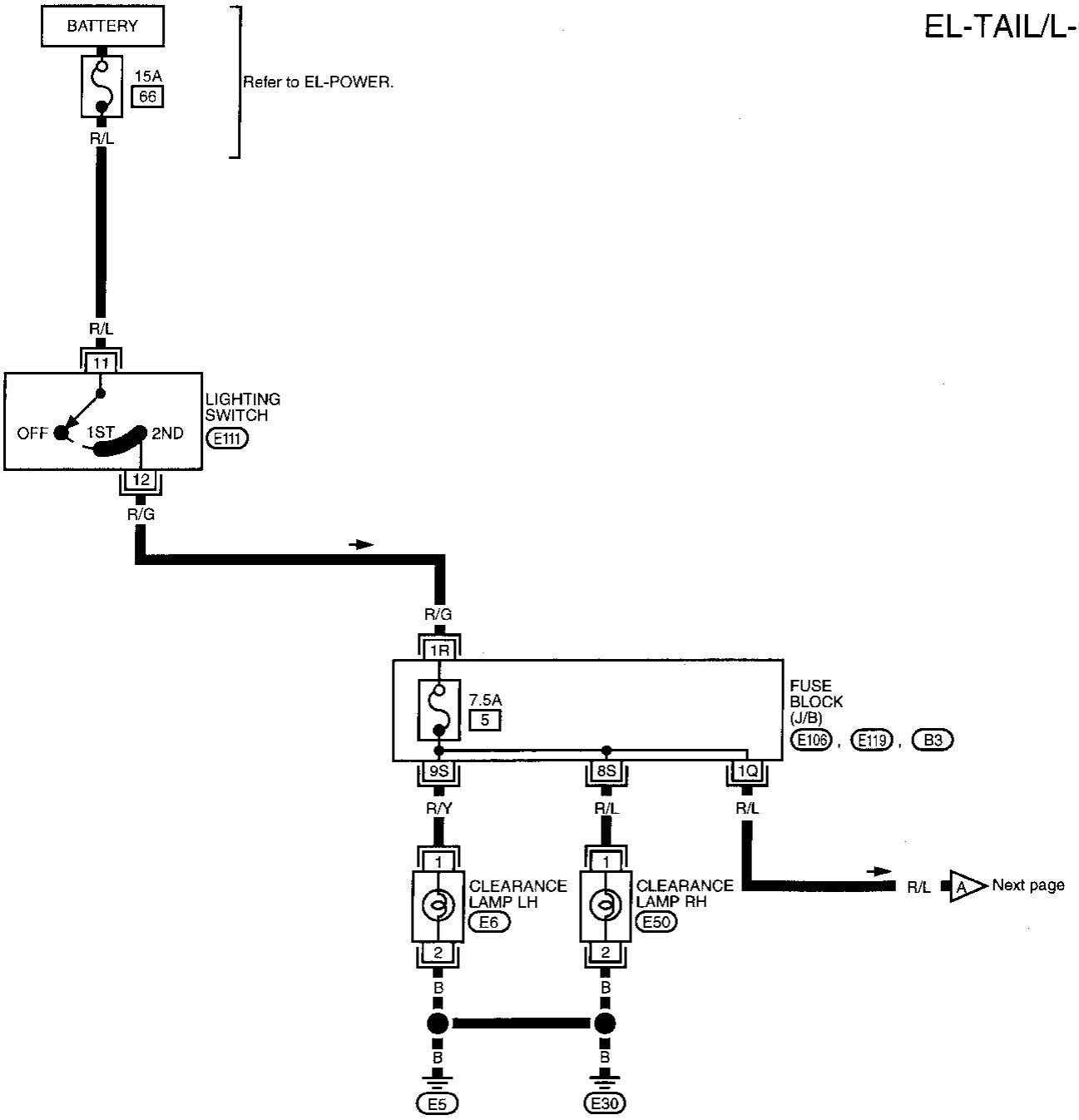


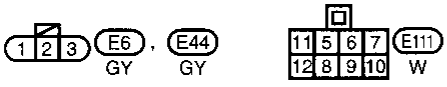
- **Upper edge and left edge of high intensity zone should be within the range shown at left. Adjust headlamps accordingly.**
- **Dotted lines in illustration show center of headlamp.**

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

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L —

EL-TAIL/L-01





Refer to last page (Foldout page).
B3 , E106
E119
E50

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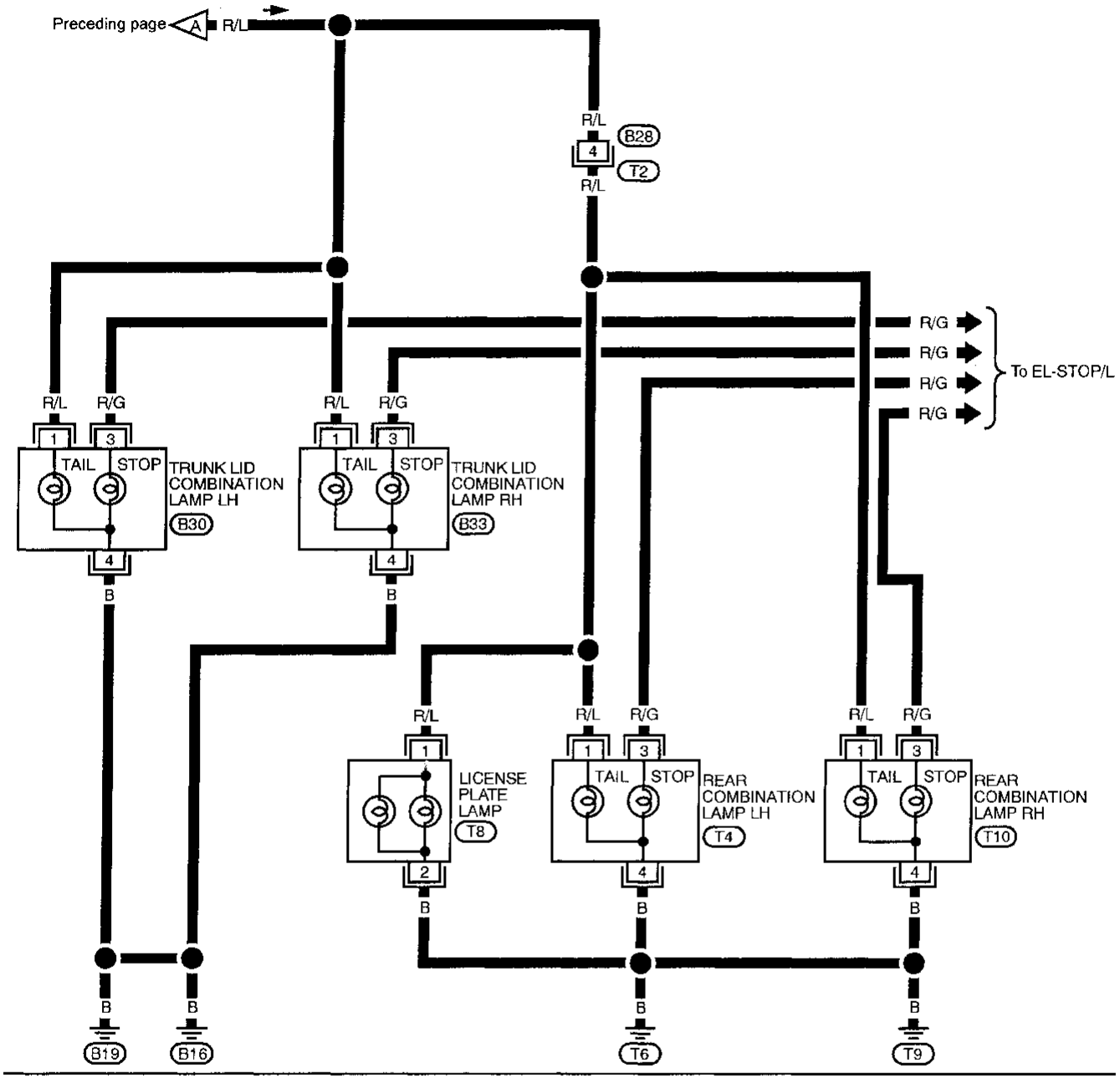
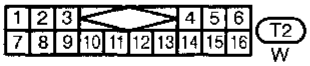
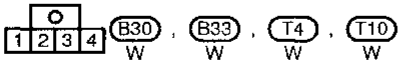
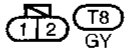
Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02









MEL488E

Turn Signal and Hazard Warning Lamps/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. 14, located in the fuse block (J/B)]
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal Ⓑ
- through terminal Ⓛ of the combination flasher unit and terminal ④ of the multi-remote control relay-2
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal Ⓔ through body grounds M13 and M73.

LH turn

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

- front turn signal lamp LH terminal ① [through fuse block (J/B) terminals 5S and 6S]
- rear combination lamp LH terminal ② [through fuse block (J/B) terminals 5S and 4Q] and
- combination meter terminal ㉜.

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds E5 and E30.
Ground is supplied to the rear combination lamp LH terminal ④ through body grounds T6 and T9.
Ground is supplied to combination meter terminal ㉛ through body grounds M13 and M73.
With power and grounds supplied, the combination flasher unit controls the flashing interval 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 turn signal lamp RH terminal ① [through fuse block (J/B) terminals 14S and 10S]
- rear combination lamp RH terminal ② [through fuse block (J/B) terminals 14S and 13Q] and
- combination meter terminal ⑲.

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds E5 and E30.
Ground is supplied to the rear combination lamp RH terminal ④ through body grounds T6 and T9.
Ground is supplied to combination meter terminal ㉛ through body grounds M13 and M73.
With power and ground supplied, the combination flasher unit controls the flashing interval of the RH turn signal lamps.

HAZARD LAMP OPERATION

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

- 10A fuse [No. 11, 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 Ⓑ
- through terminal Ⓛ of the combination flasher unit
- to hazard switch terminal ④.

Ground is supplied to the combination flasher unit terminal Ⓔ through body grounds M13 and M73.
Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ① [through fuse block (J/B) terminals 2J and 6S]
- rear combination lamp LH terminal ② [through fuse block (J/B) terminals 2J and 4Q] and
- combination meter terminal ㉜.

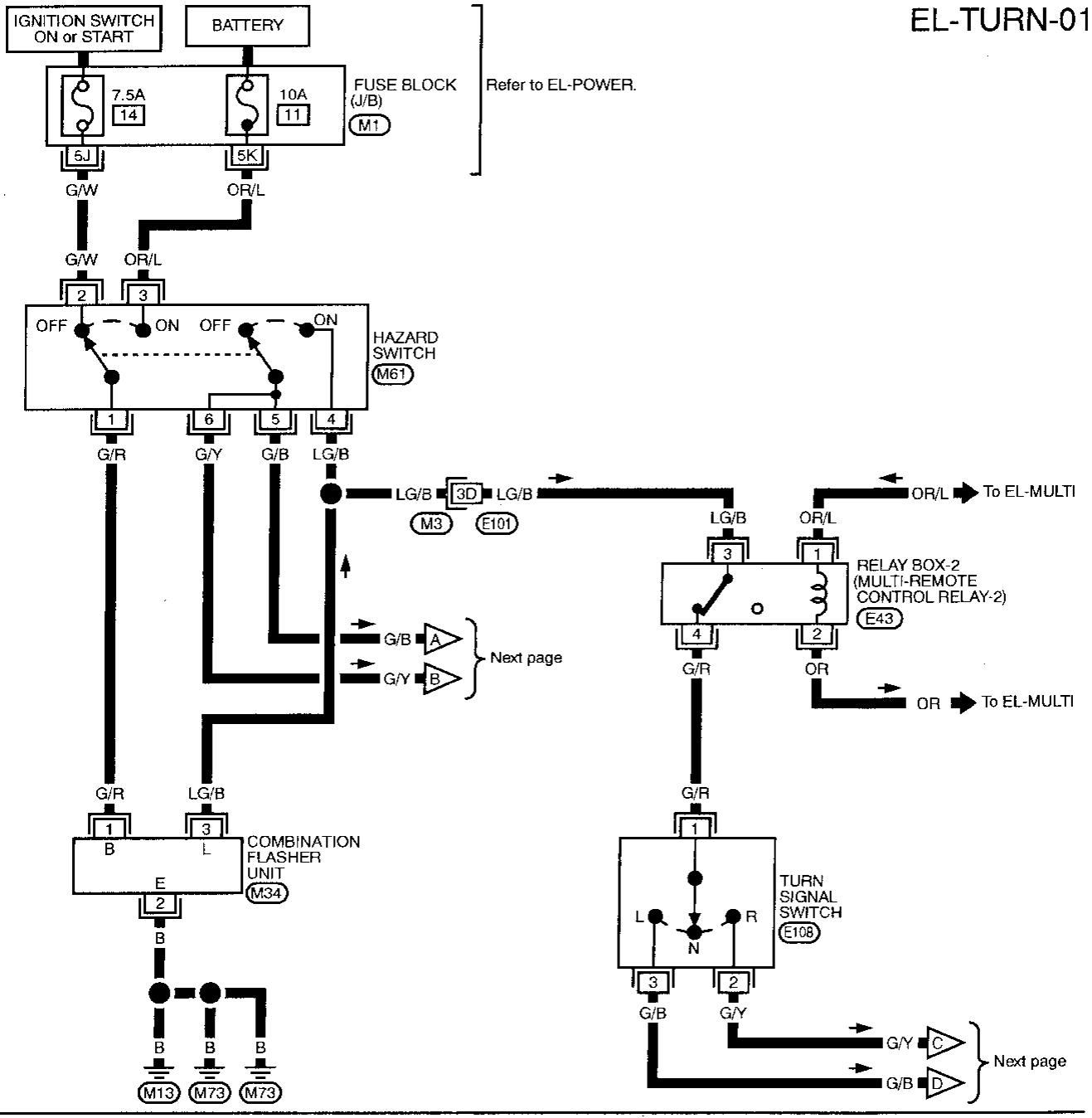
Power is also supplied through terminal ⑥ of the hazard switch to

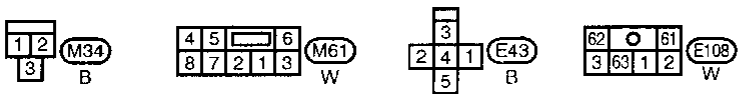
- front turn signal lamp RH terminal ① [through fuse block (J/B) terminals 11J and 10S]
- rear combination lamp RH terminal ② [through fuse block (J/B) terminals 11J and 13Q] and
- combination meter terminal ⑲ [through fuse block (J/B) terminals 11J and 5H].

Ground is supplied to terminal ② of the front turn signal lamps through body grounds E5 and E30.
Ground is supplied to terminal ④ of the rear combination lamps through body grounds T6 and T9.
Ground is supplied to combination meter terminal ㉛ through body grounds M13 and M73.
With power and ground supplied, the combination flasher unit controls the flashing interval of the hazard warning lamps.

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN —

EL-TURN-01



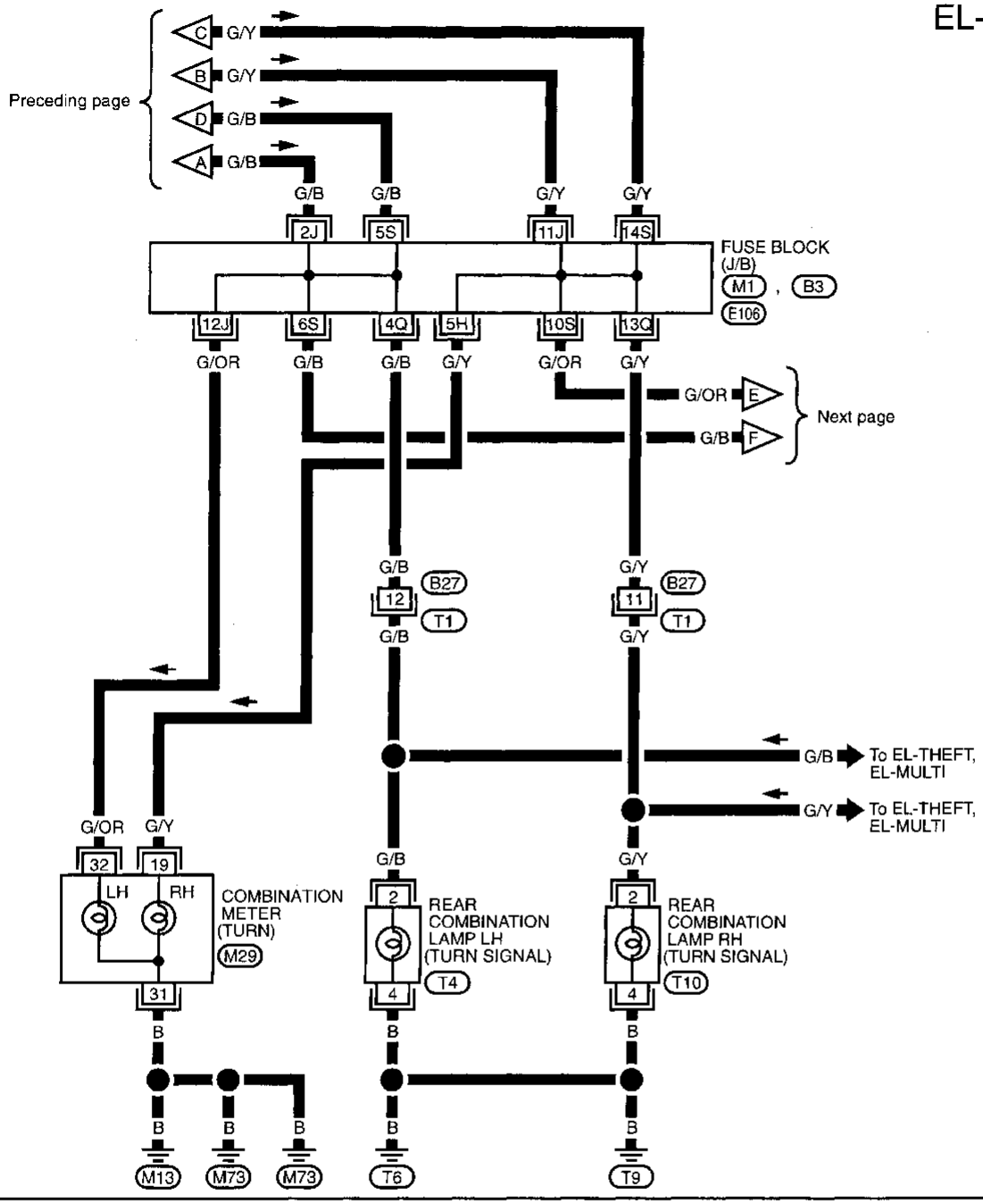


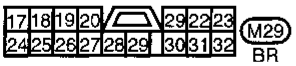
Refer to last page (Foldout page).
M3 , E101
M1

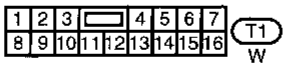
MEL489E

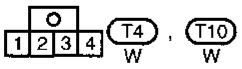
Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

EL-TURN-02









Refer to last page (Foldout page).

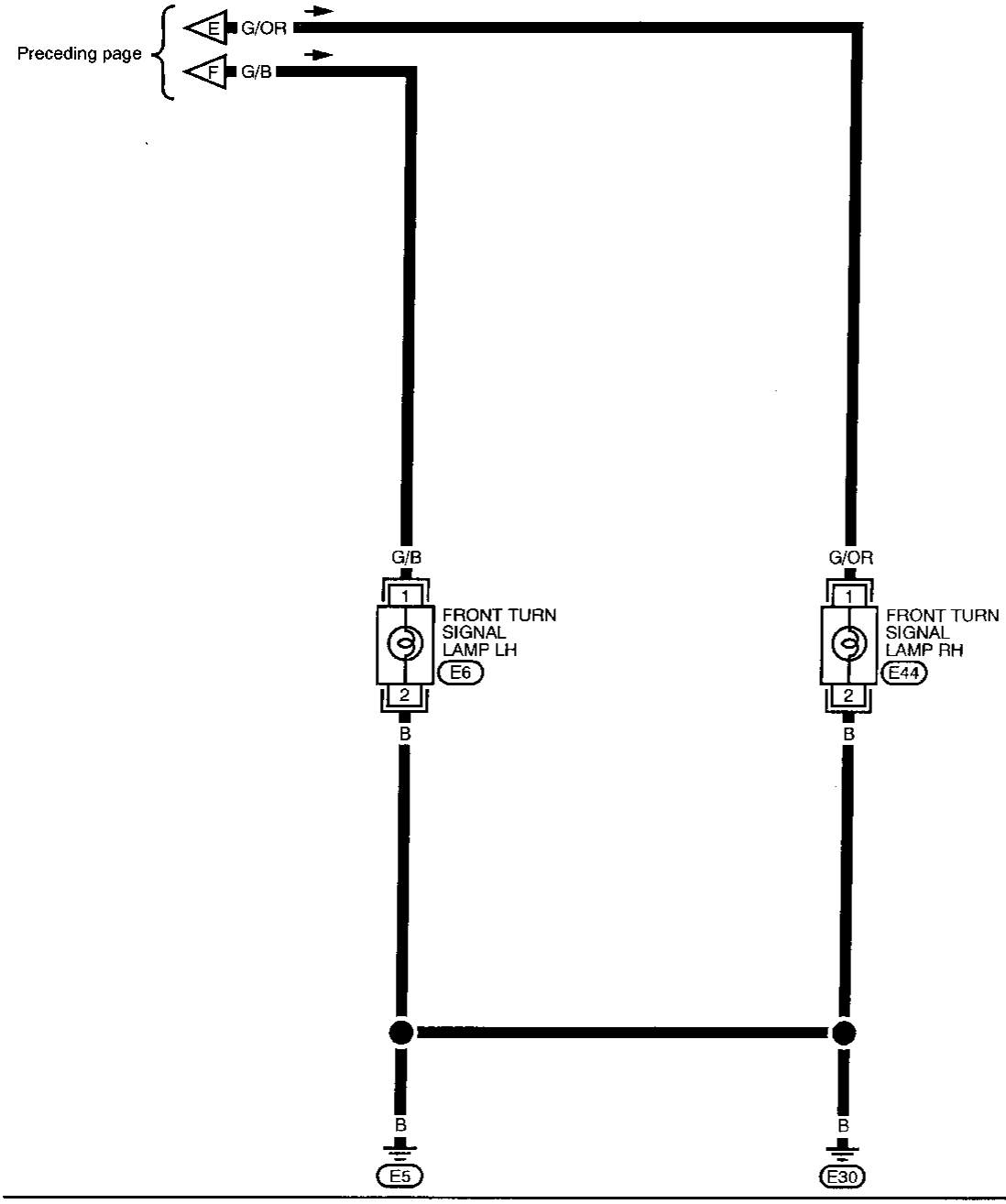
B3

M1 , E106

MEL490E

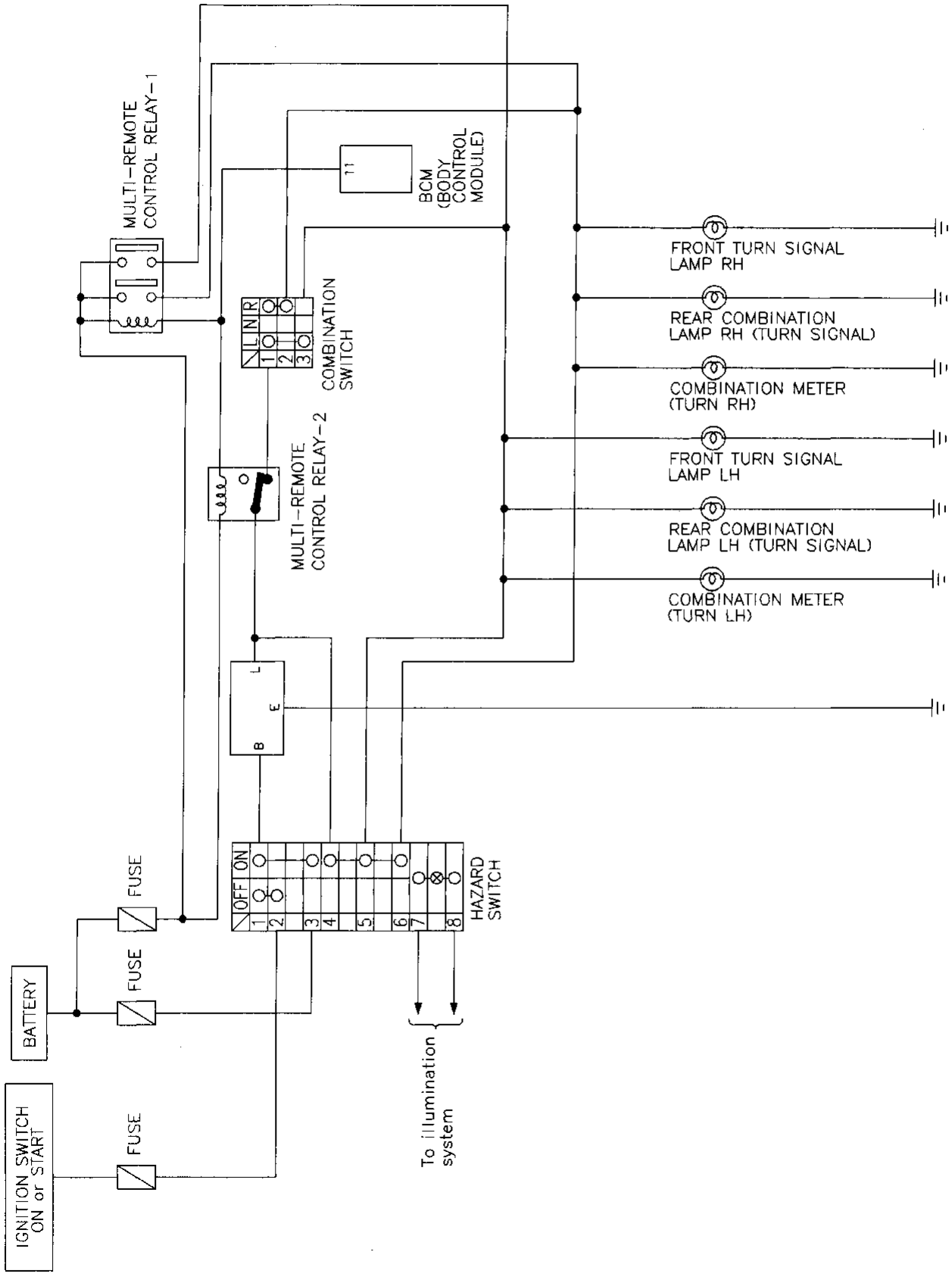
Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

EL-TURN-03



MEL491E

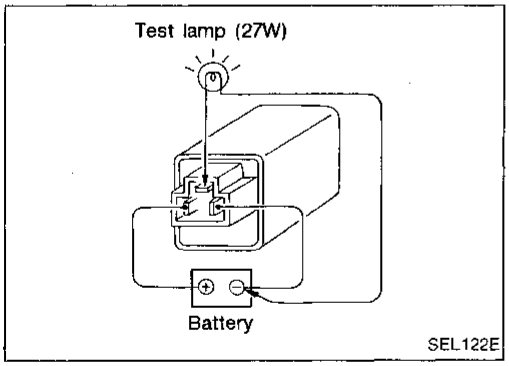
Turn Signal and Hazard Warning Lamps/ Schematic



MEL492E

Turn Signal and Hazard Warning Lamps/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. 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. 14, located in fuse block). 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 harness between combination flasher unit terminal ③ and turn signal switch terminal ① for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 11, located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check harness between combination flasher unit terminal ③ and hazard switch terminal ④ for open circuit.
Individual turn signal lamp or turn indicators do not operate.	1. Bulb 2. Grounds	1. Check bulb. 2. Check ground circuit for the bulb.

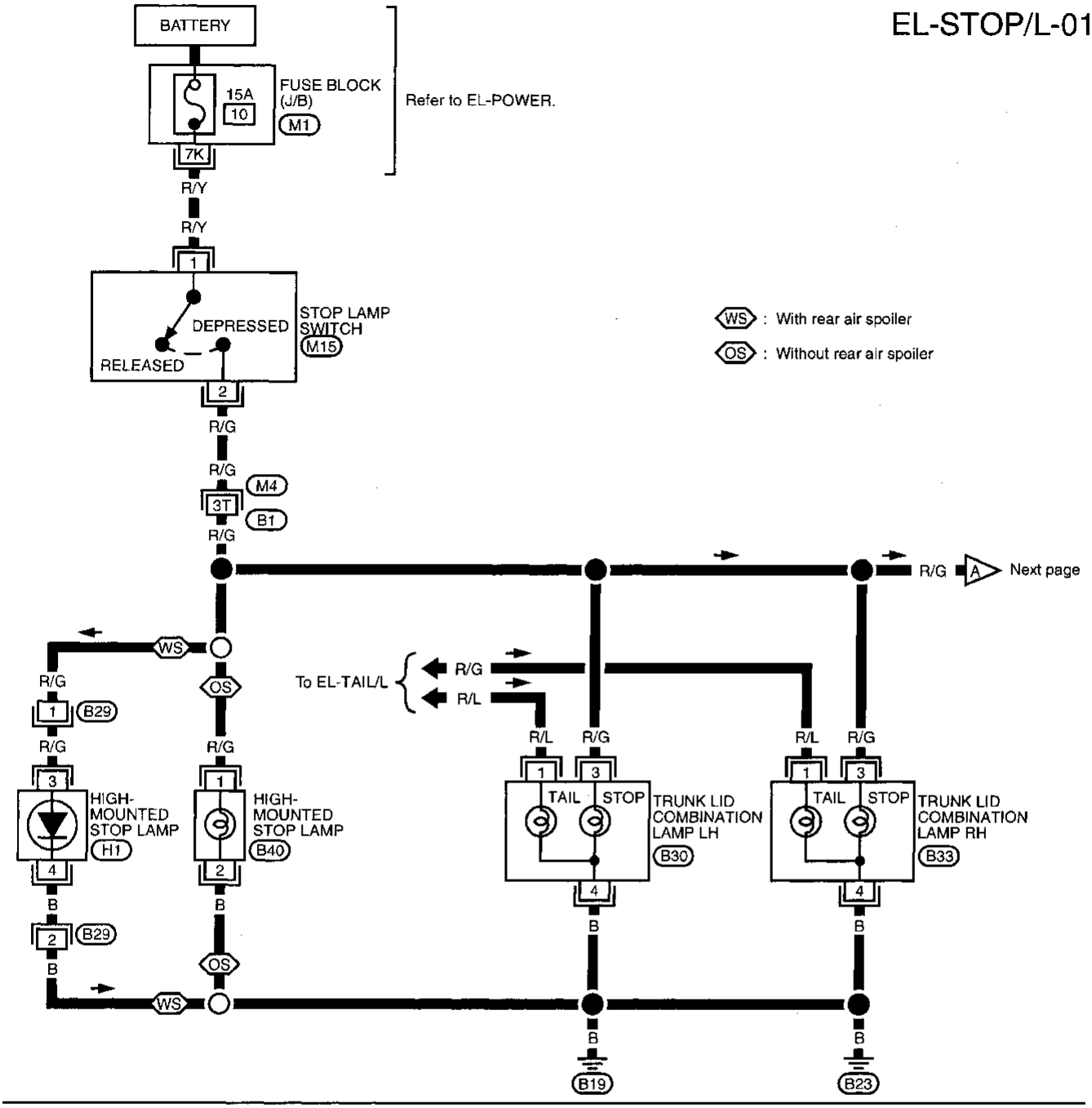


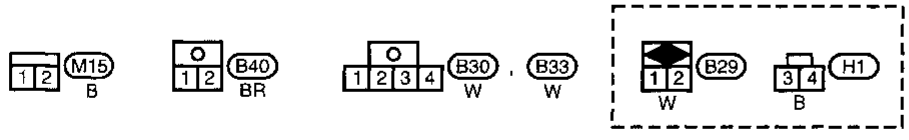
Combination Flasher Unit Check

- 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.

Stop Lamp/Wiring Diagram — STOP/L —

EL-STOP/L-01





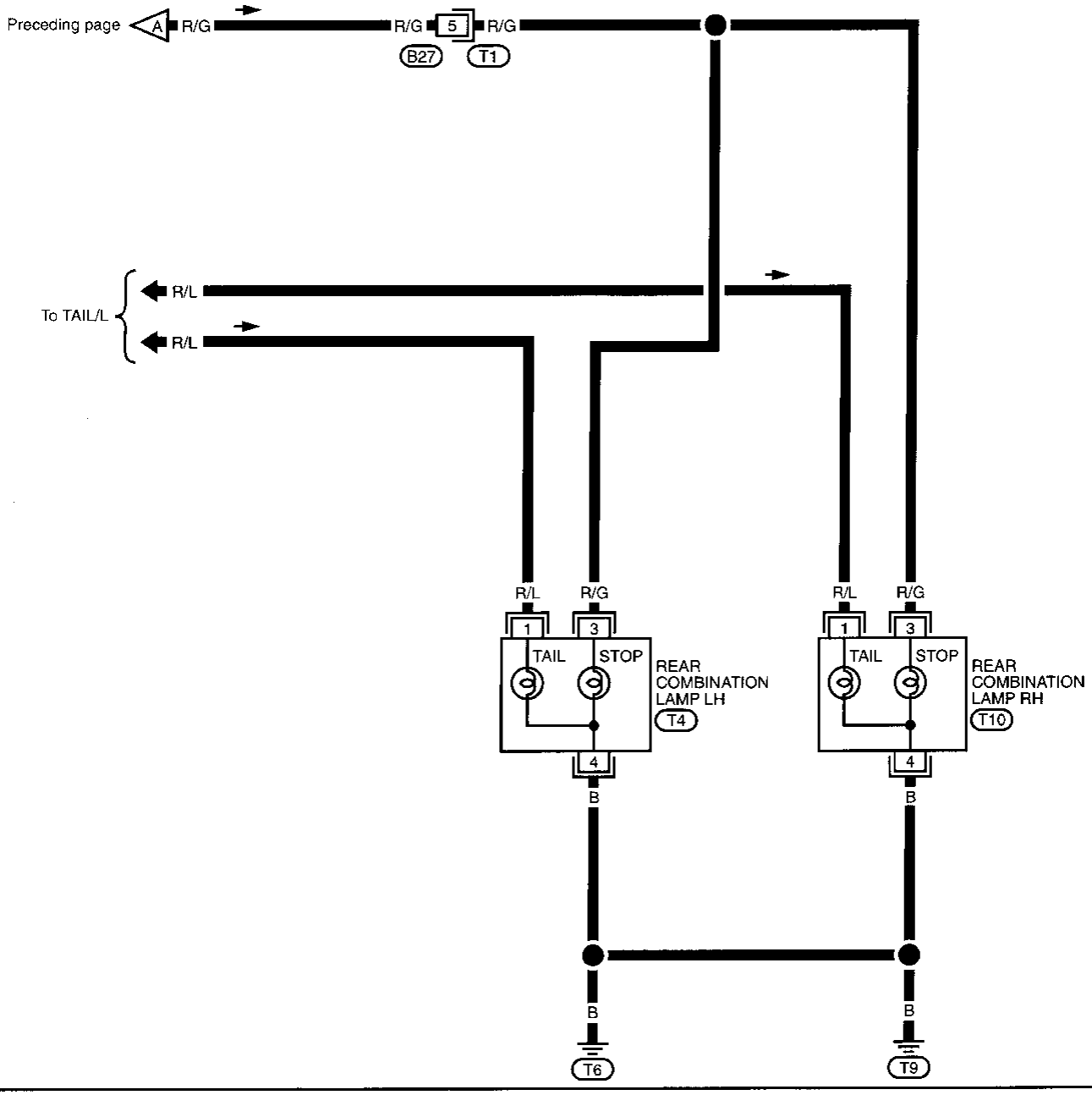
Refer to last page (Foldout page).
M4 , B1
M1

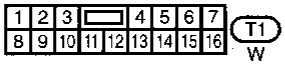
MEL493E

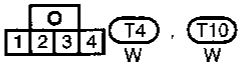
1197

Stop Lamp/Wiring Diagram — STOP/L — (Cont'd)

EL-STOP/L-02



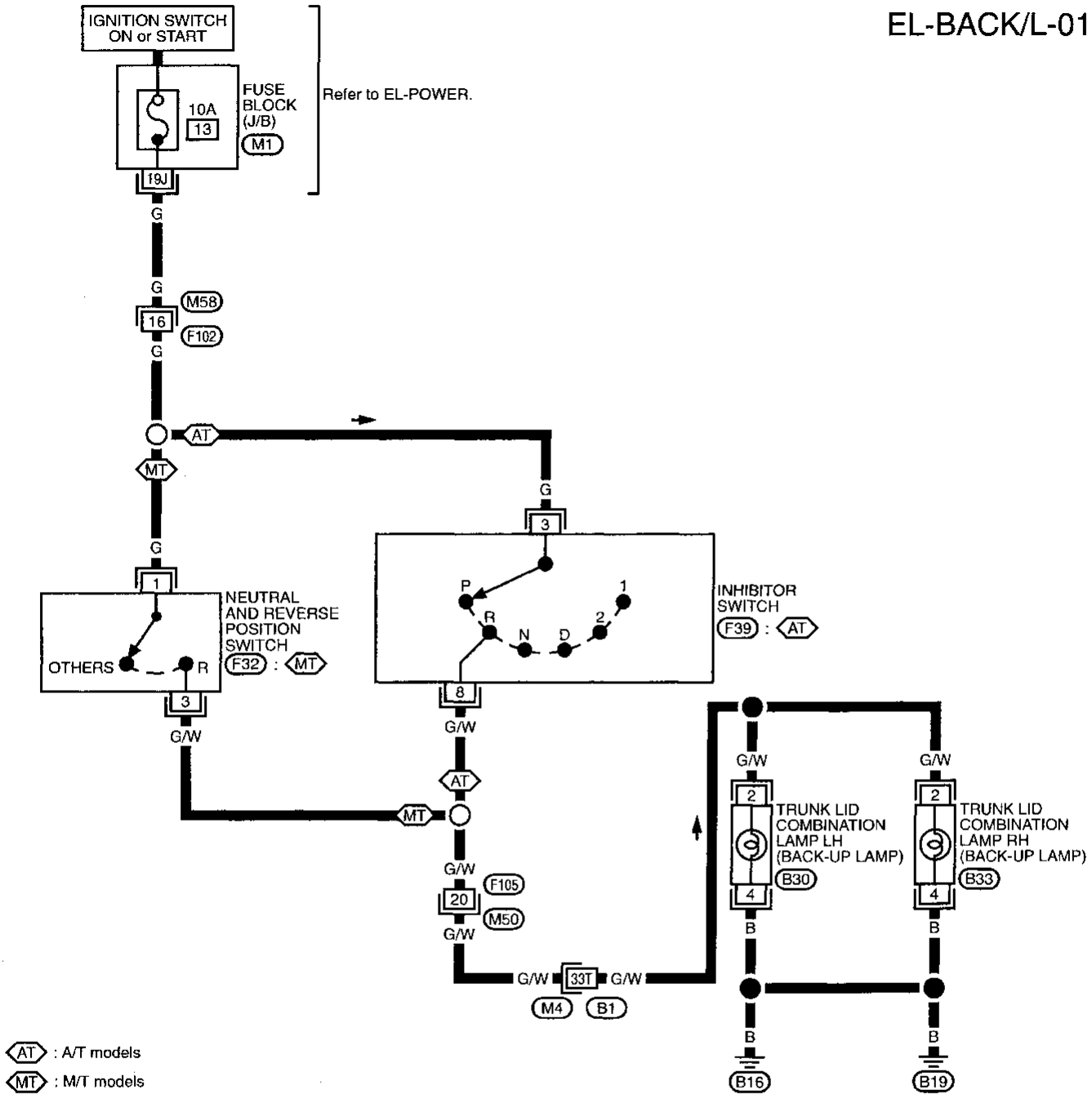


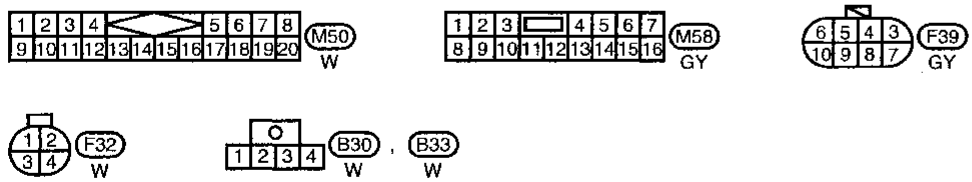


MEL494E

Back-up Lamp/Wiring Diagram — BACK/L —

EL-BACK/L-01





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M1 , B1
M4

MEL495E

Front Fog Lamp/System Description

Power is supplied at all times to front fog lamp relay terminal ③ through
- 15A fuse (No. 63, located in the fuse and fusible link box).

With the lighting switch in the 2ND and LOW ("B") position, power is supplied
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to lighting switch terminal ⑧
- through terminal ⑩ of the lighting switch
- to front fog lamp relay terminal ①.

Front fog lamp operation

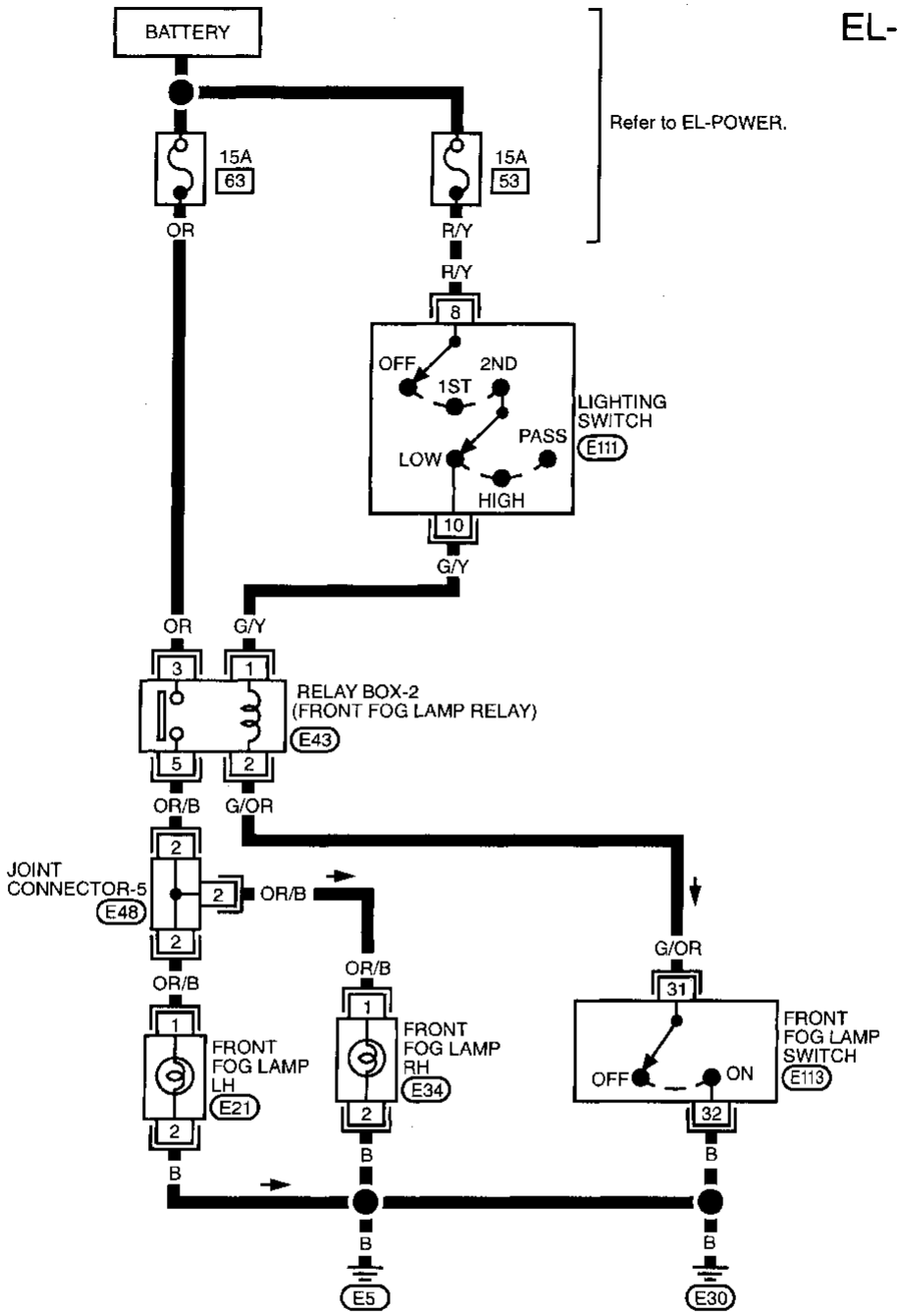
The lighting switch must be in the 2ND and LOW ("B") position for front fog lamp operation.
With the front fog lamp switch in the ON position
- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch and body grounds E5 and E30.

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

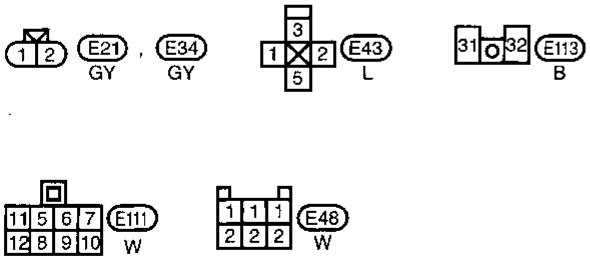
Ground is supplied to terminal ② of each front fog lamp through body grounds E5 and E30.
With power and ground supplied, the front fog lamps illuminate.

Front Fog Lamp/Wiring Diagram — F/FOG —

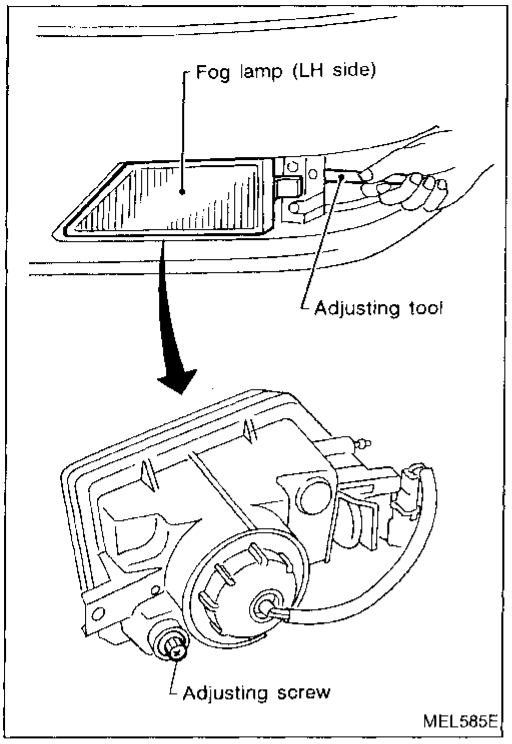
EL-F/FOG-01

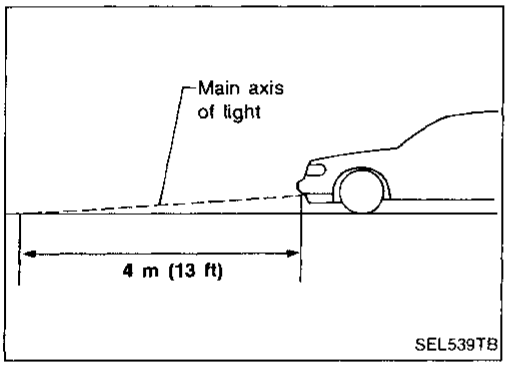


Refer to last page (Foldout page).
E48



MEL496E





Front Fog Lamp 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. 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 seat.

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

Check the distance between the vehicle and the ground point where the main axis of light of fog lamp reaches. Keep the distance within 4 m (13 ft).

Cornering Lamp/System Description

The lighting switch must be in the 2ND and LOW ("B") or HIGH ("A") position for the cornering lamps to operate.

Power is supplied at all times to terminal ⑧ of the lighting switch through

- 15A fuse (No. 53, located in the fuse and fusible link box).

With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal ③ through:

- 7.5A fuse [No. 14, located in the fuse block (J/B)].

Power is supplied to cornering lamp relay terminal ①

- through terminal ⑩ of the lighting switch in the LOW ("B") position or
- through terminal ⑥ of the lighting switch in the HIGH ("A") position.

Ground is supplied to cornering lamp relay terminal ① through body grounds E5 and E30.

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

Power is supplied

- from terminal ⑤ of the cornering lamp relay
- to cornering lamp switch terminal 61.

RH turn

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

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

Ground is supplied to terminal ② of cornering lamp RH through body grounds E5 and E30.

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

LH turn

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

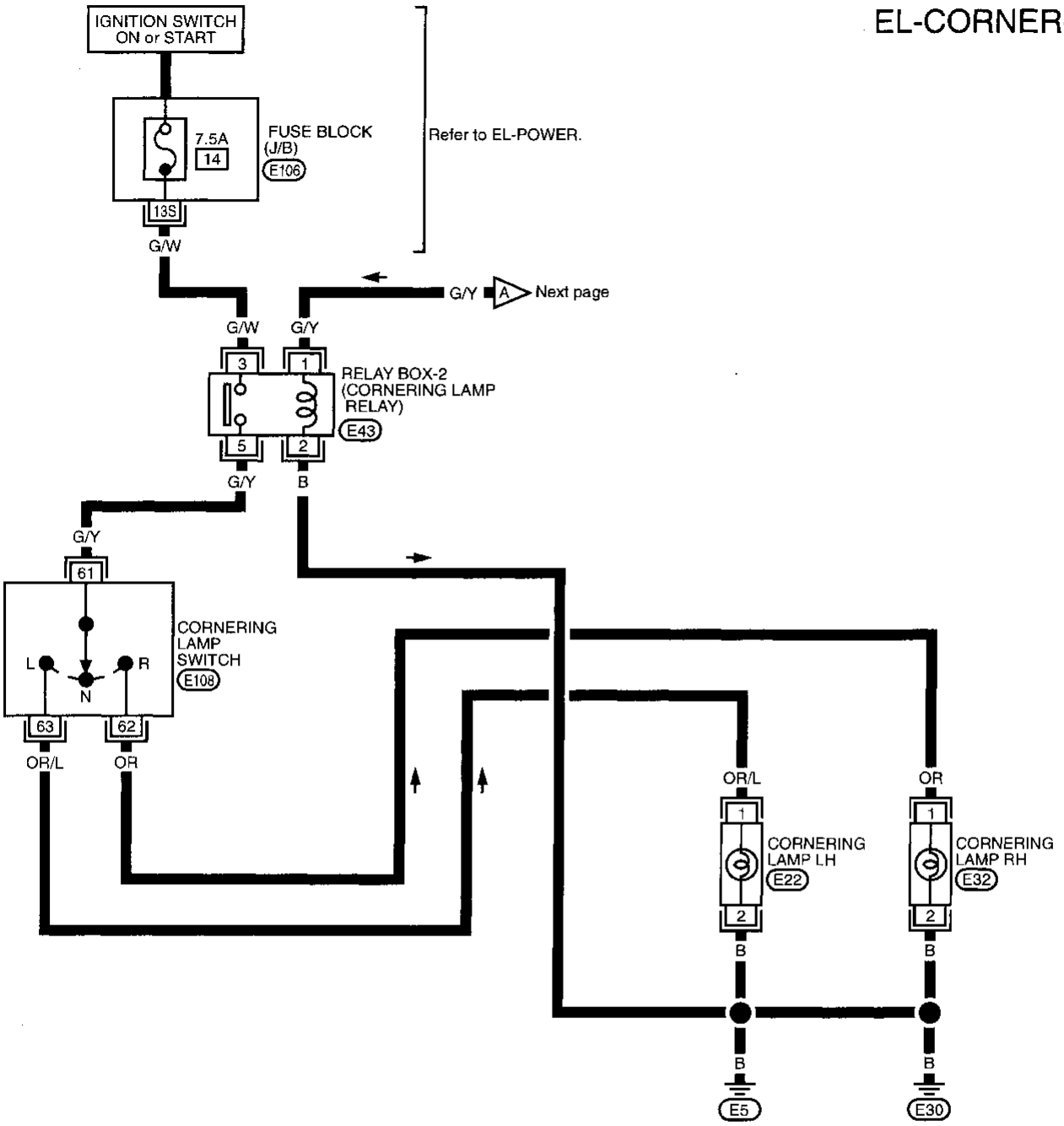
- from terminal 61 of the cornering lamp switch
- through terminal 63 of the cornering lamp switch
- to cornering lamp LH terminal ①.

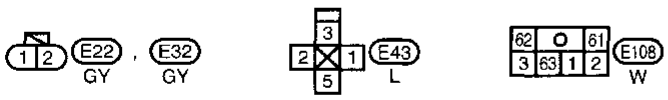
Ground is supplied to terminal ② of cornering lamp LH through body grounds E5 and E30.

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

Cornering Lamp/Wiring Diagram — CORNER —

EL-CORNER-01





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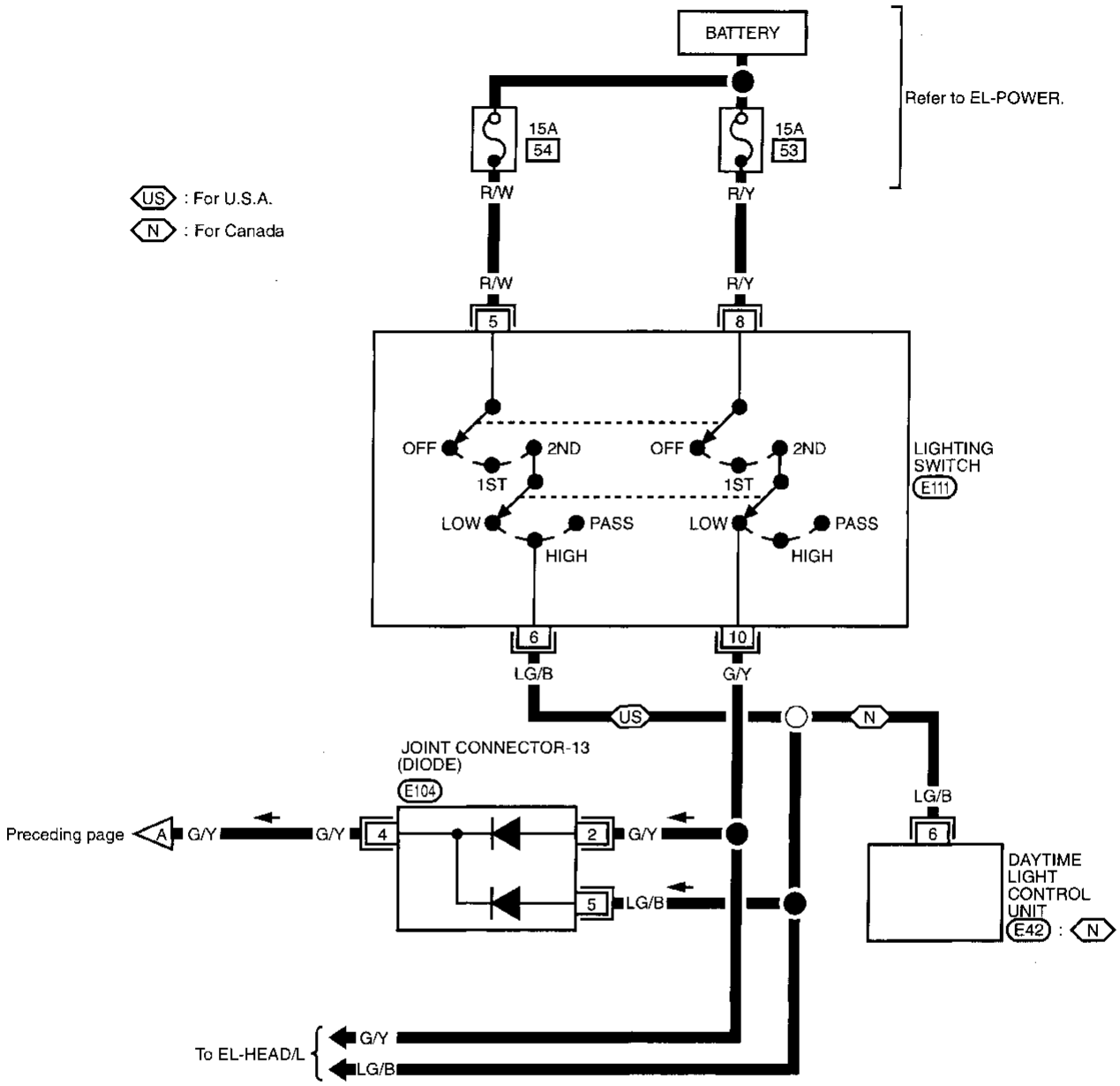
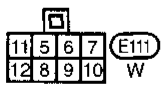
E106

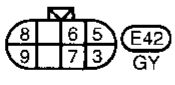
MEL497E

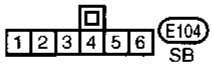
Cornering Lamp/Wiring Diagram — CORNER — (Cont'd)

EL-CORNER-02









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E104

MEL498E

Bulb Specifications

	Wattage (12 volt)
Headlamp (Semi-sealed beam)	
High/low	65/45 (HB1)
Front turn signal lamp	27
Front clearance lamp	5
Cornering lamp	27
Front fog lamp	55 (H3)
Rear combination lamp	
Turn signal	27
Stop/Tail	27/8
Back-up	27
License plate lamp	5
High-mounted stop lamp	27

Illumination/System Description

Power is supplied at all times
- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

The lighting switch must be in the 1ST or 2ND position for illumination.
Power is also supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to vanity mirror illumination terminal ①.

A variable resistor is built in the illumination control switch to control the amount of current to the illumination system.
The ashtray illumination, vanity mirror illumination and the glove box lamp are not controlled by the illumination control switch. The brightness of these lamps does not change.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Power terminal	Ground terminal
Combination meter	㊱	⑤ and ㊵
Push control unit	①	④
Illumination control switch	①	② and ③
Handsfree switch	Ⓛ	㉓
Audio	⑧	⑦
A/T device	④	③
Cigarette lighter	①	②
Hazard switch	⑦	⑧
ASCD main switch	⑤	⑥
Rear window defogger switch	⑤	⑥
Power window switch (Front LH/RH)	⑦ / ⑭	⑩ / ⑩
Ashtray	①	②
Glove box lamp	①	②
Clock	②	①
Vanity mirror	①	②

With the exception of the glove box lamp, vanity mirror illumination and the ashtray illumination, the ground for all of the components are controlled through terminals ② and ③ of the illumination control switch and body grounds (M13) and (M73).
When the glove box is open, glove box lamp terminal ① is grounded through the glove box lamp switch and body grounds (M13) and (M73).
The ashtray illumination terminal ② and vanity mirror illumination terminal ② are grounded directly through body grounds (M13) and (M73).
Vanity mirror will illuminate when cover of the vanity mirror is opened.

Spot and Trunk Room Lamps/System Description

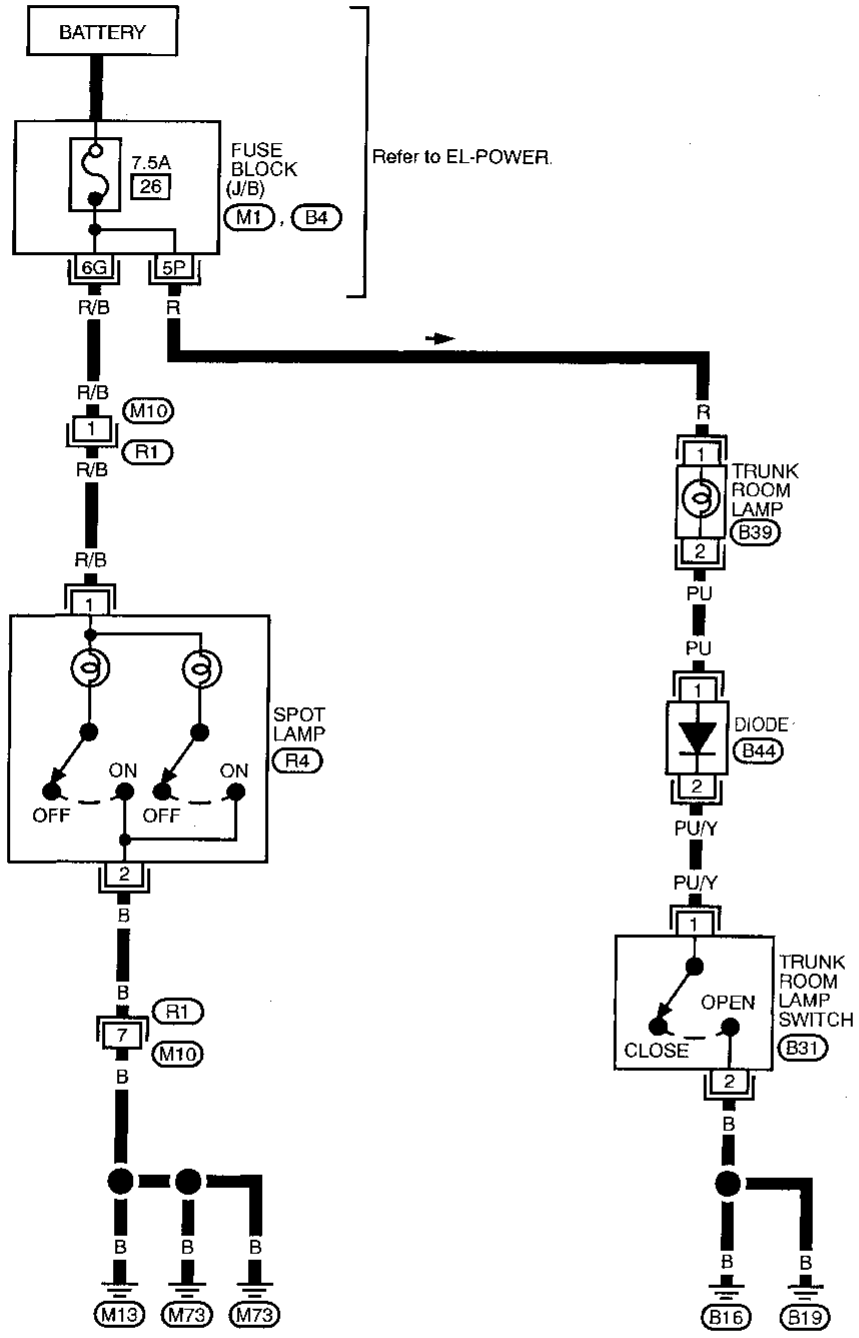
Power is supplied at all times
- through 7.5A fuse [No. 26, located in the fuse block (J/B)]
- to spot lamp terminal ①, and
- to trunk room lamp terminal ①.

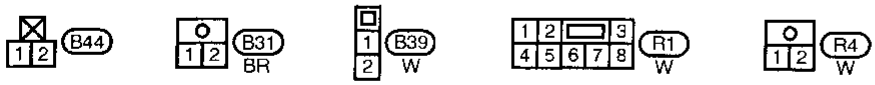
Ground is supplied when switch is OPEN
- to spot lamp terminal ②
- through body grounds (M13) and (M73).

Ground is supplied when trunk room lamp switch is OPEN
- to trunk room lamp terminal ②
- through body grounds (B16) and (B19).

Spot and Trunk Room Lamp/Wiring Diagram — INT/L —

EL-INT/L-01





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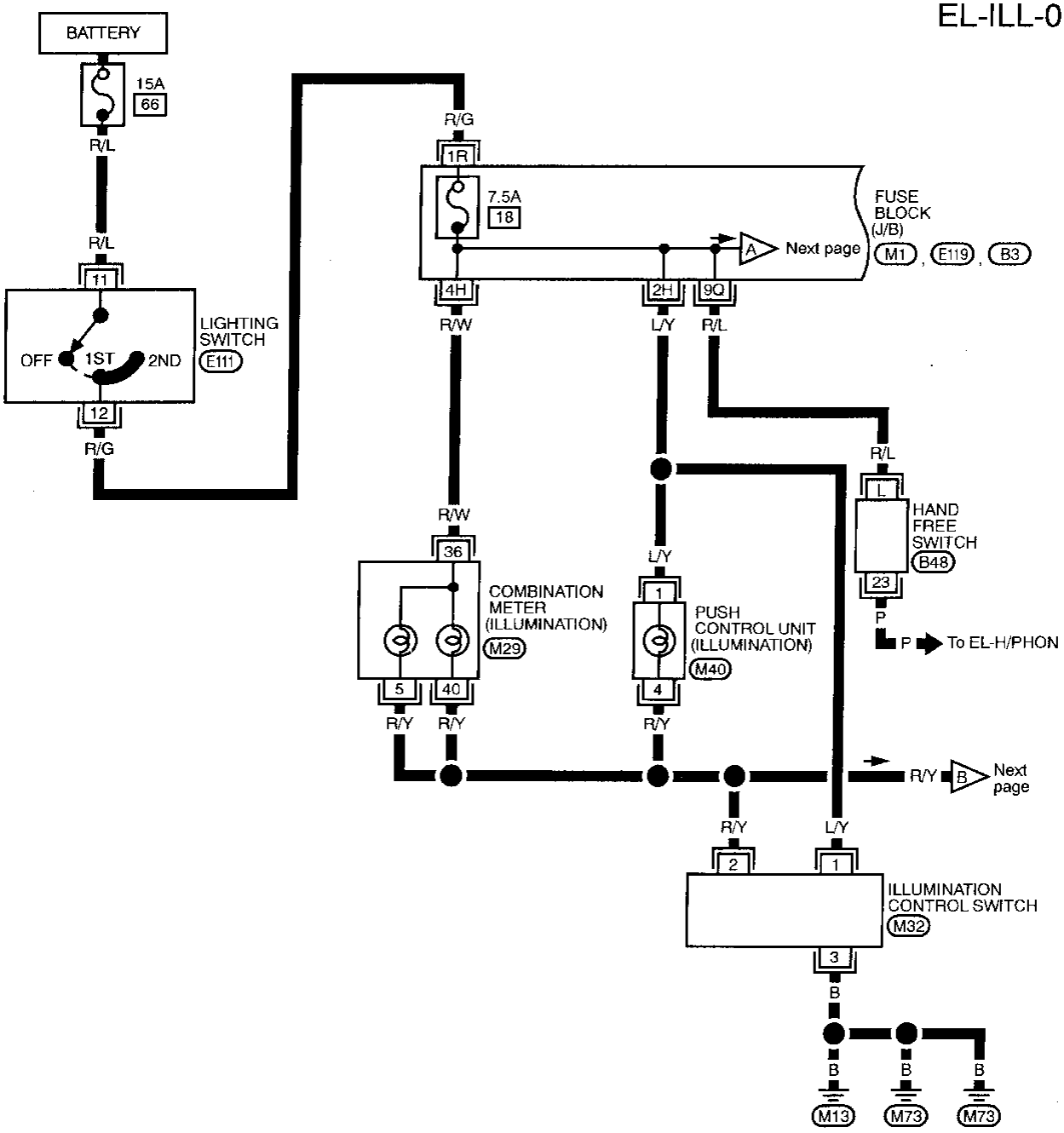
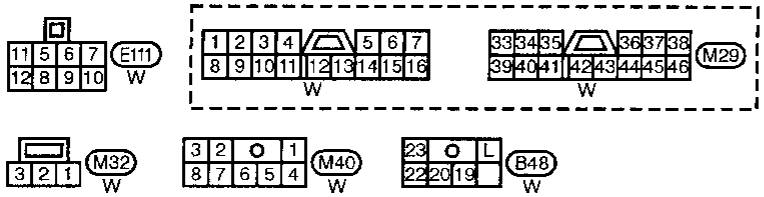
M1, B4

MEL499E

Illumination/Wiring Diagram — ILL —

EL-ILL-01





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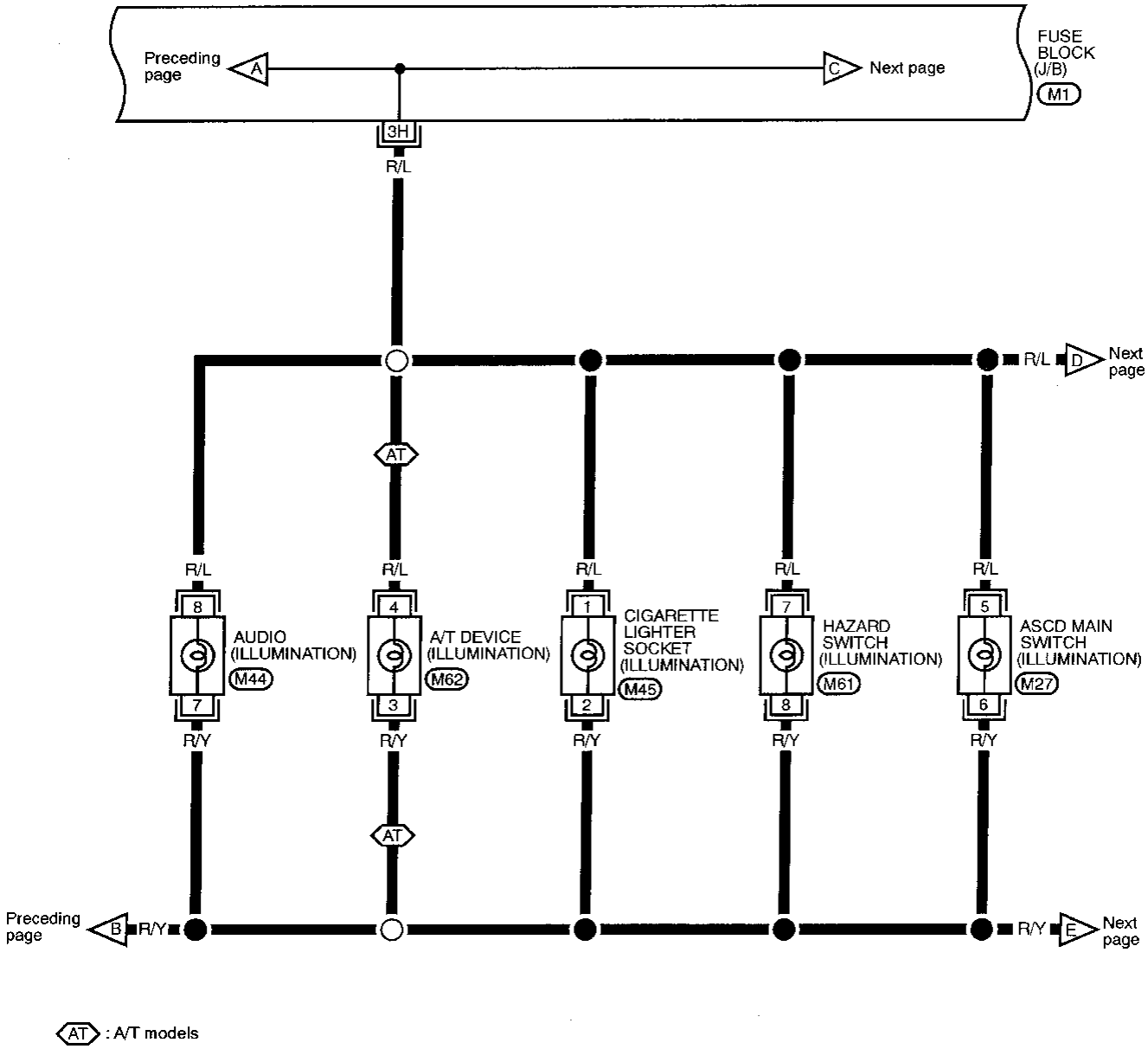
M1, E119
B3

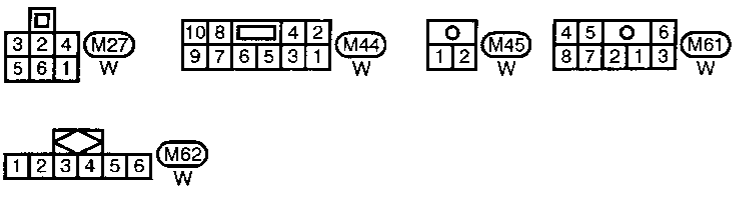
MEL501E

Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-02



AT : A/T models

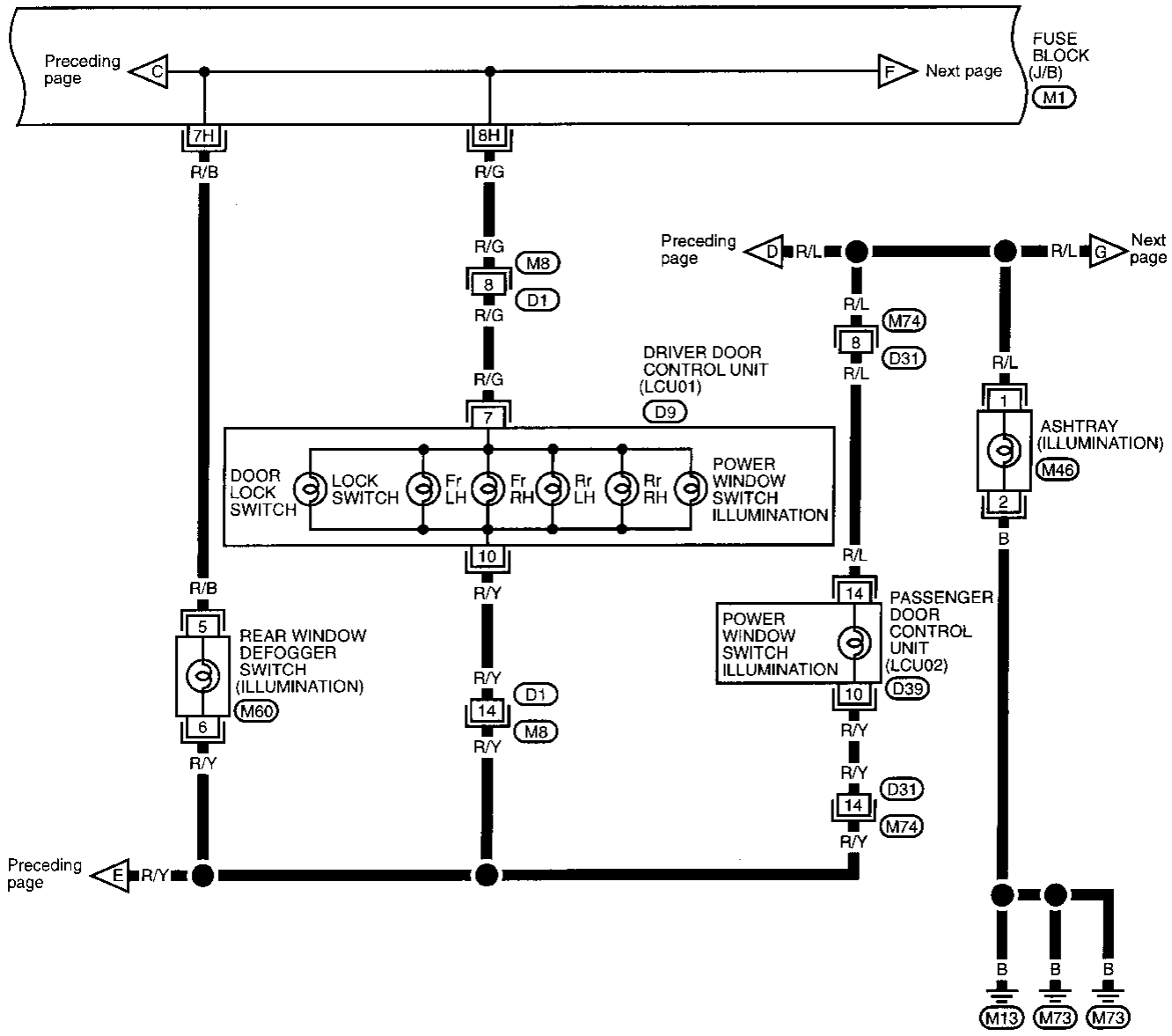


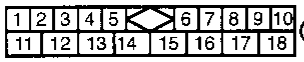
Refer to last page (Foldout page).
M1

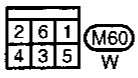
MEL502E

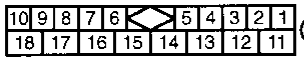
Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-03









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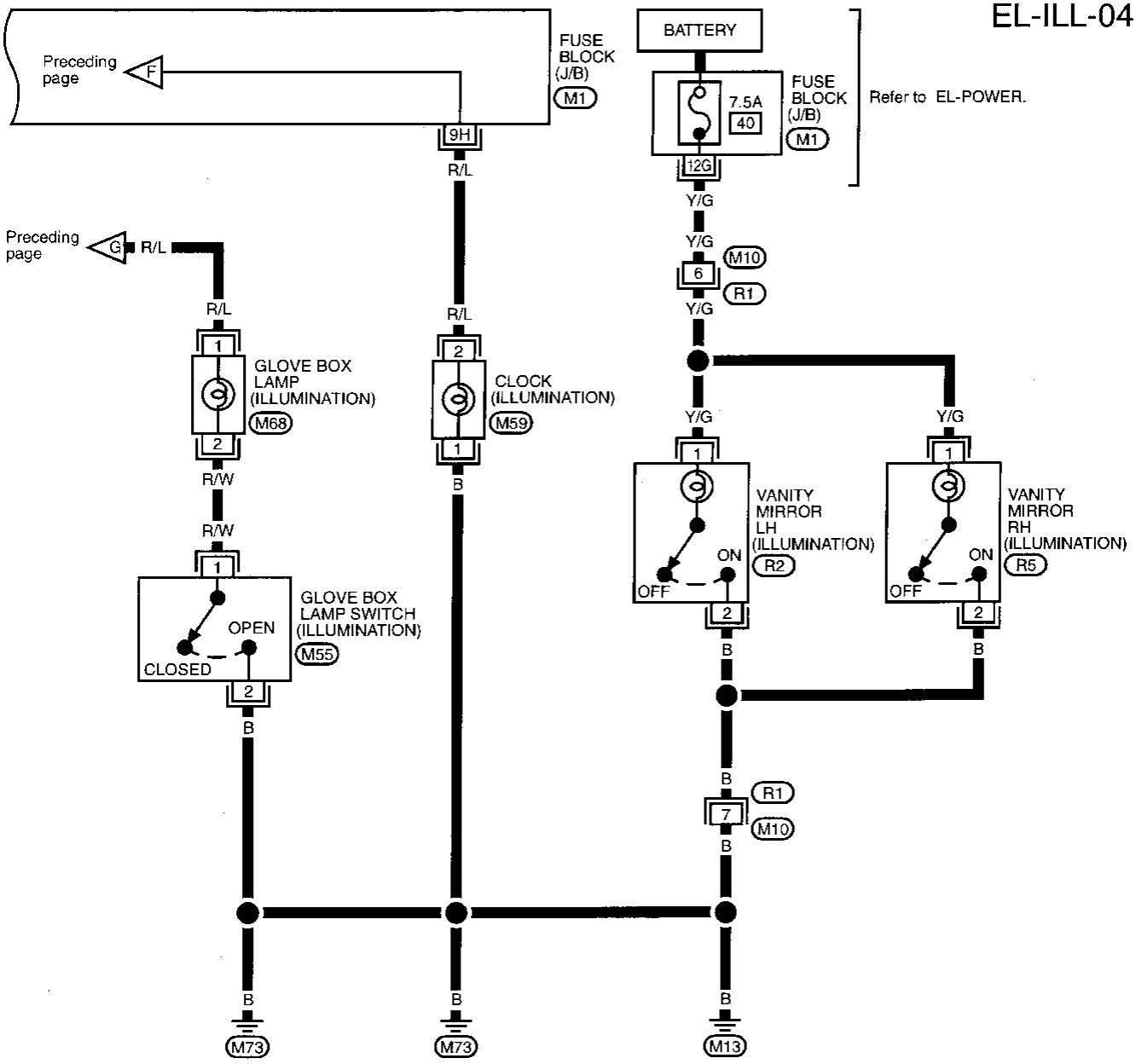
M1

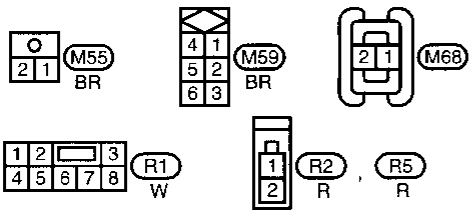
MEL503E

1211

Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-04





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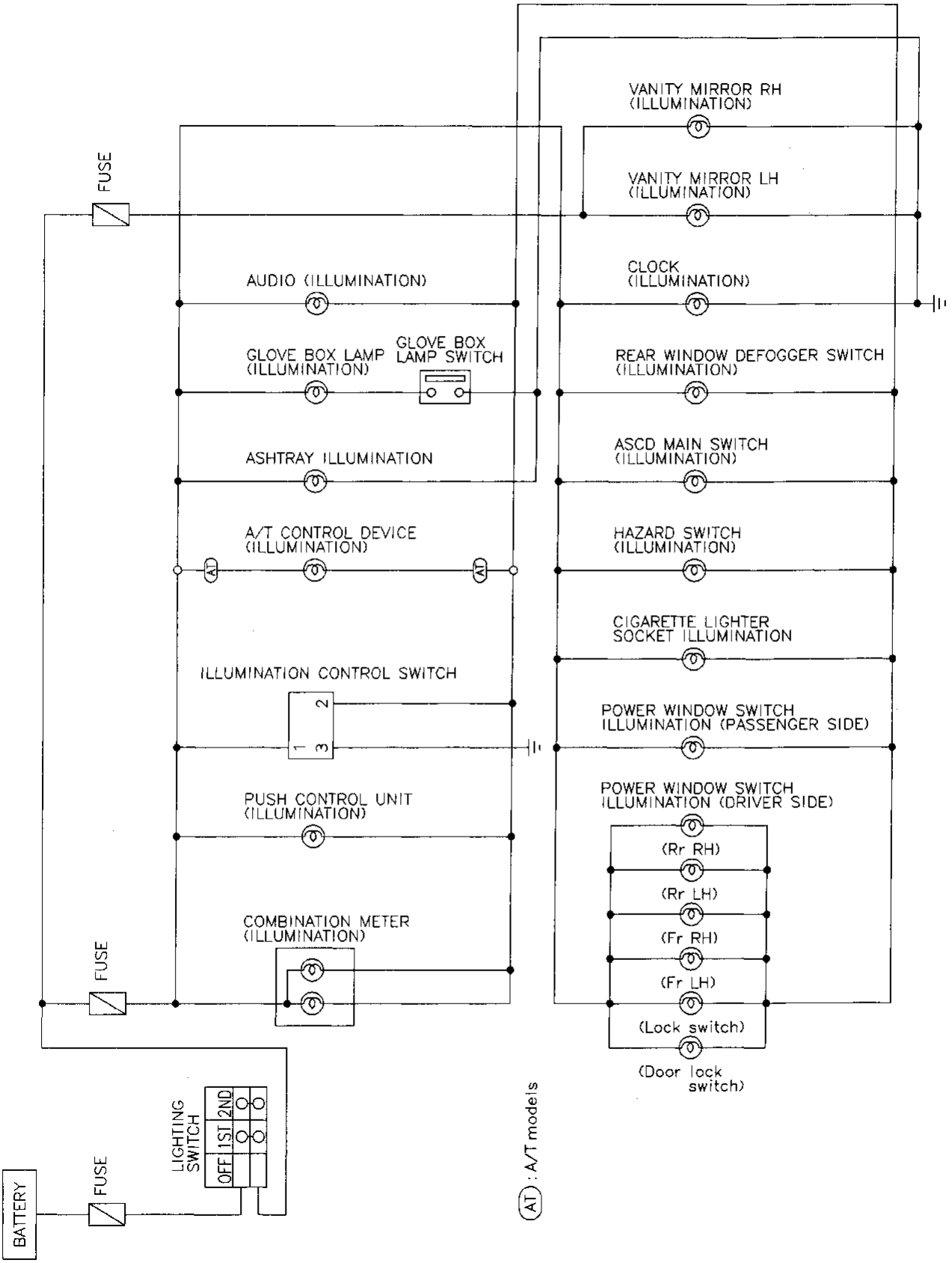
M1

MEL504E

Illumination/Schematic



MEL505E

Bulb Specifications

	Wattage (12 volt)
Interior lamp	10
Spot lamp	10
Step lamp	3.4
Trunk room lamp	3.4

System Description

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to combination meter terminal ㊶
- for the tachometer and
- for the fuel gauge and water temperature gauge.

Ground is supplied
- to combination meter terminals ㉛, ⑩ and ㊳
- through body grounds (M13) and (M73).

The reading on the water temperature gauge is based on the resistance change of the thermal transmitter.

A variable ground is supplied to terminal ㊲ of the combination meter for the water temperature gauge.

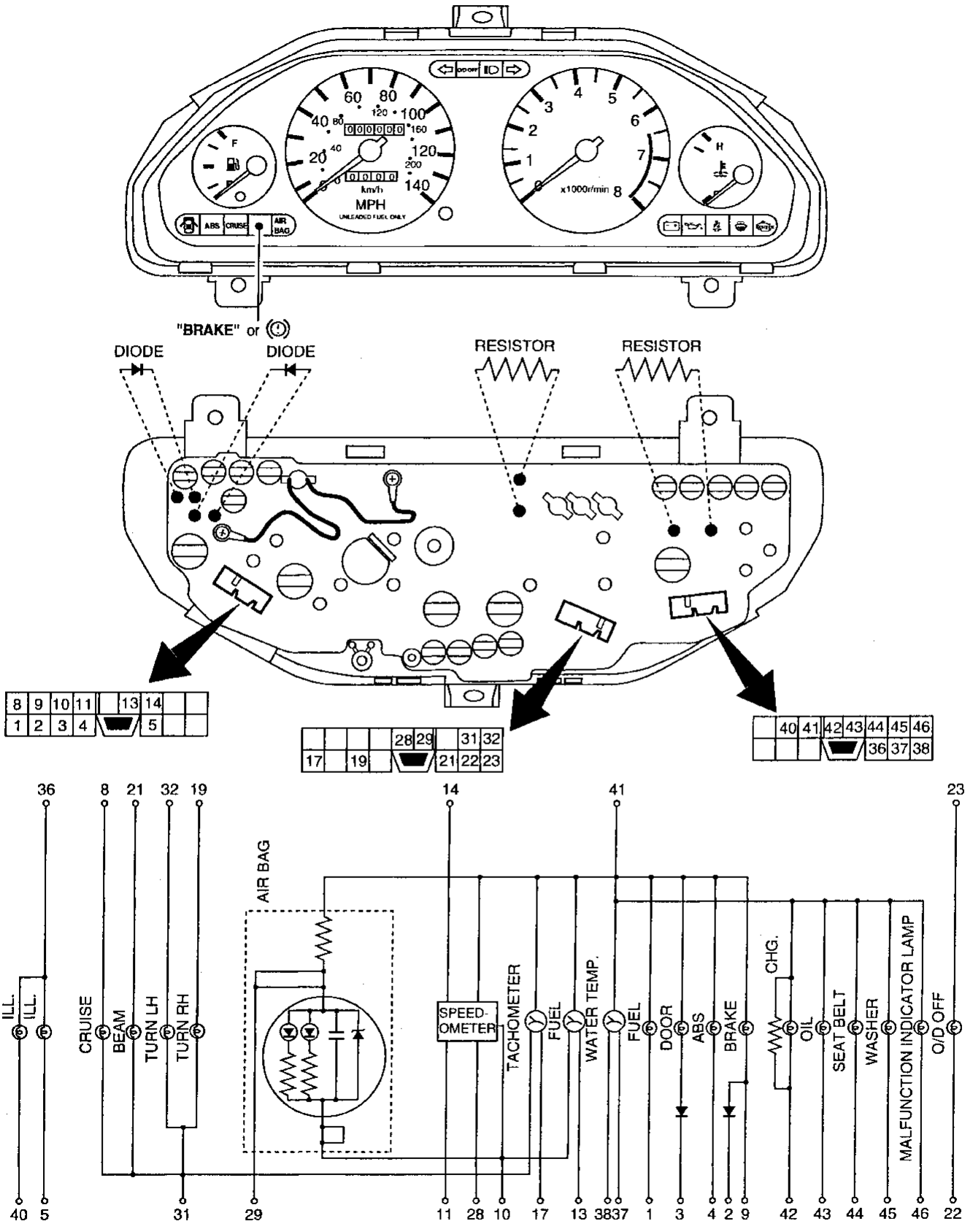
The tachometer is regulated by a signal
- from terminal ⑤ of the ECM (ECCS control module)
- to combination meter terminal ⑰ for the tachometer.

The fuel gauge is regulated by a variable ground signal supplied
- to combination meter terminal ⑬ for the fuel gauge
- from terminal ③ of the fuel tank gauge unit
- through terminal ② of the fuel tank gauge unit and
- through body grounds (B16) and (B19).

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer and the voltage is converted into the vehicle speed.

The voltage is supplied
- to combination meter terminals ⑪ and ㉘ for the speedometer
- from terminals ① and ② of the vehicle speed sensor.

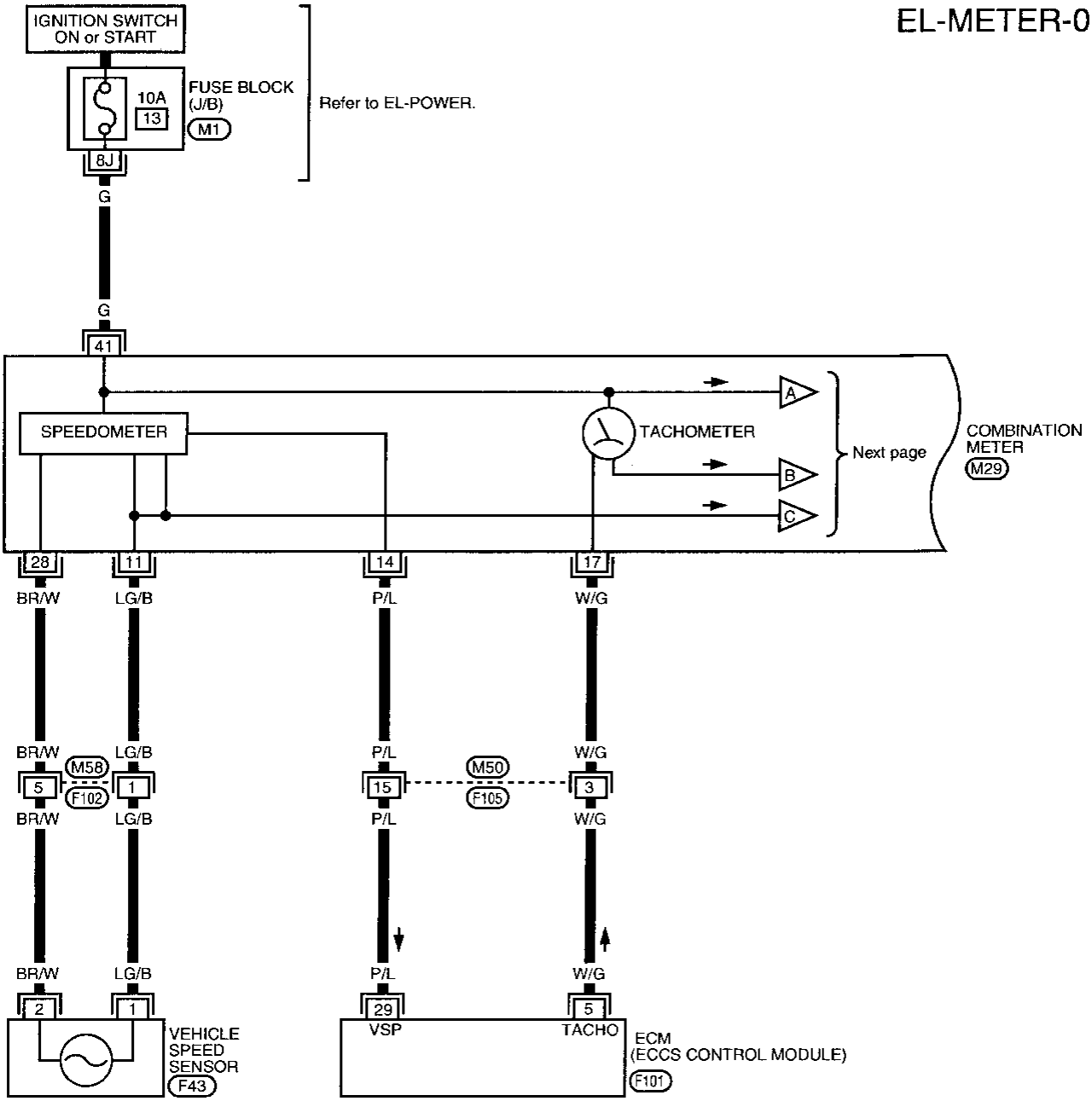
Combination Meter



MEL586E

Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER —

EL-METER-01



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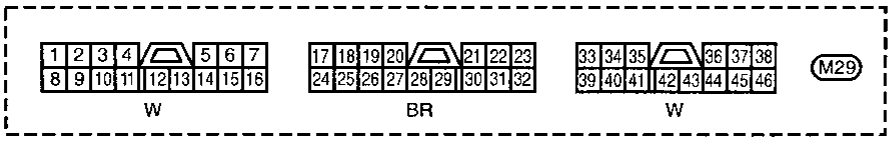
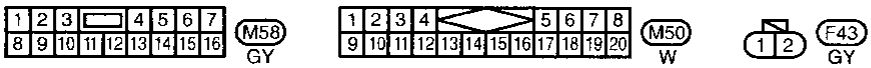
M1
F101

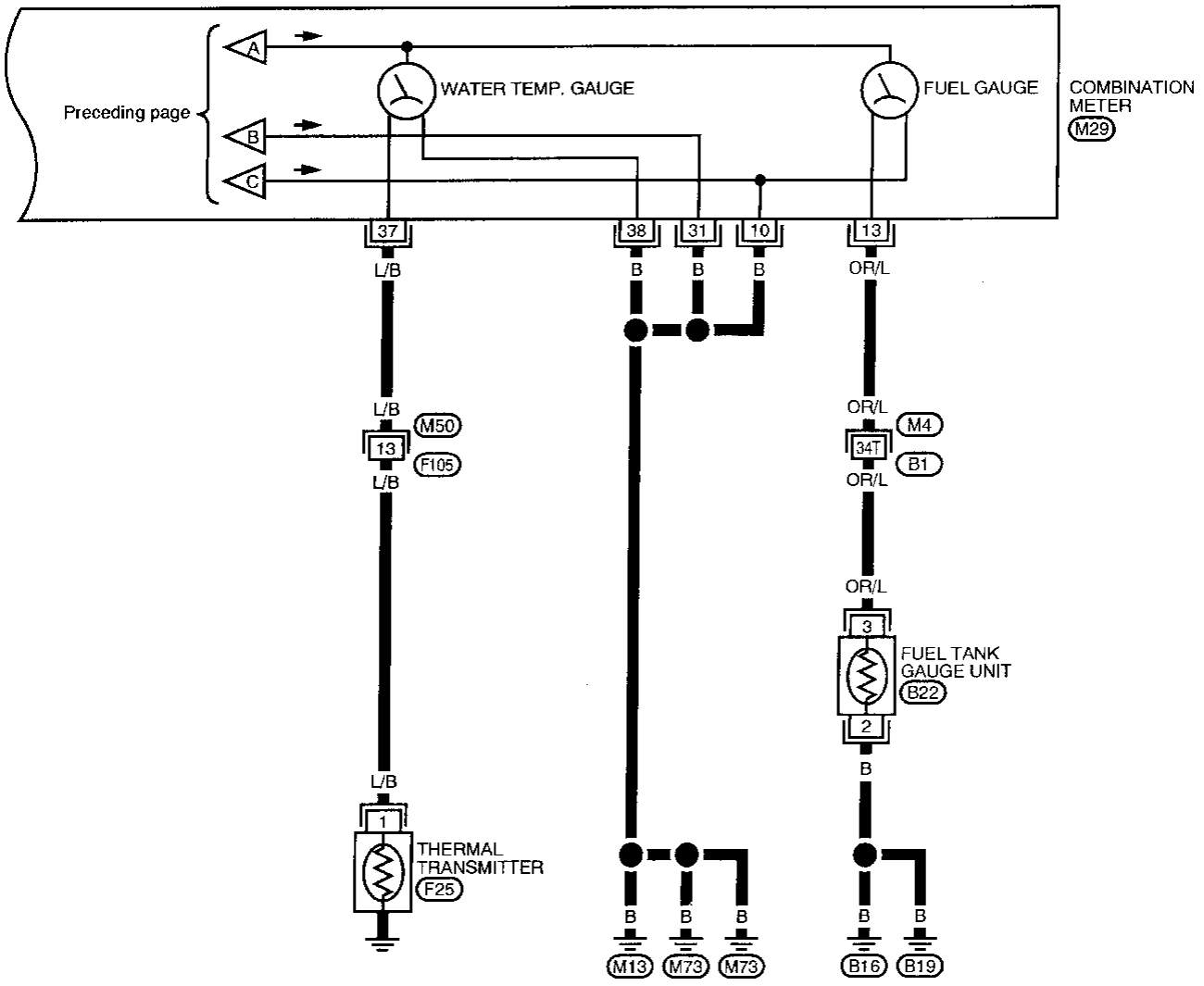




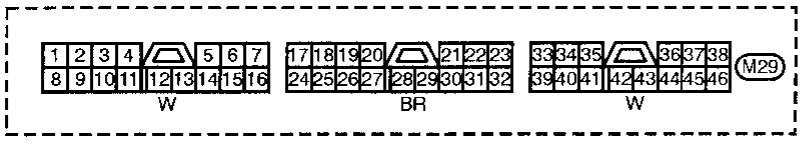
MEL506E

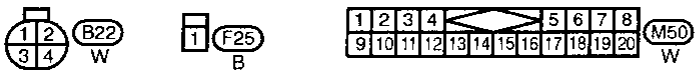
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER — (Cont'd)

EL-METER-02



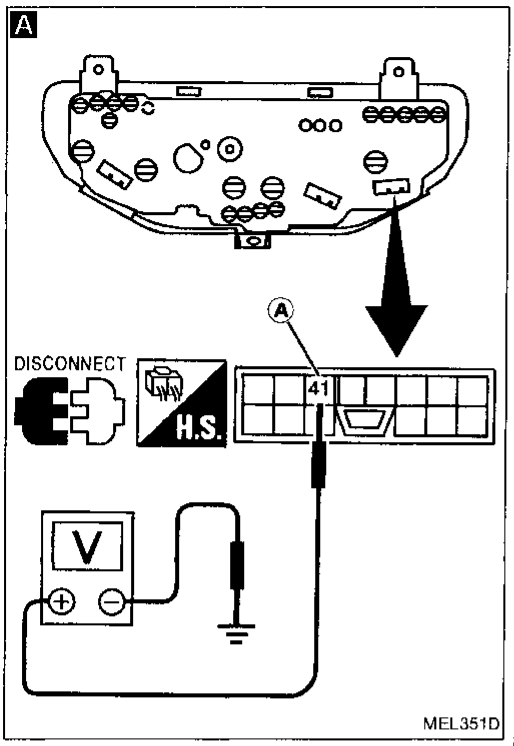
Refer to last page (Foldout page).
M4, B1

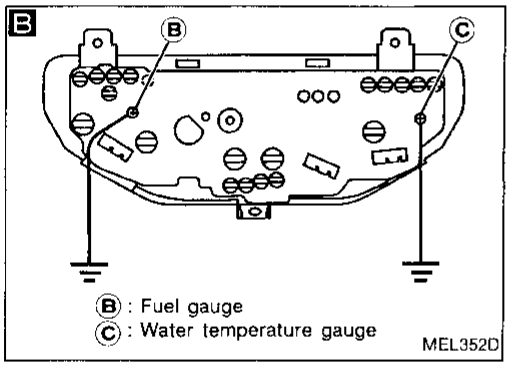


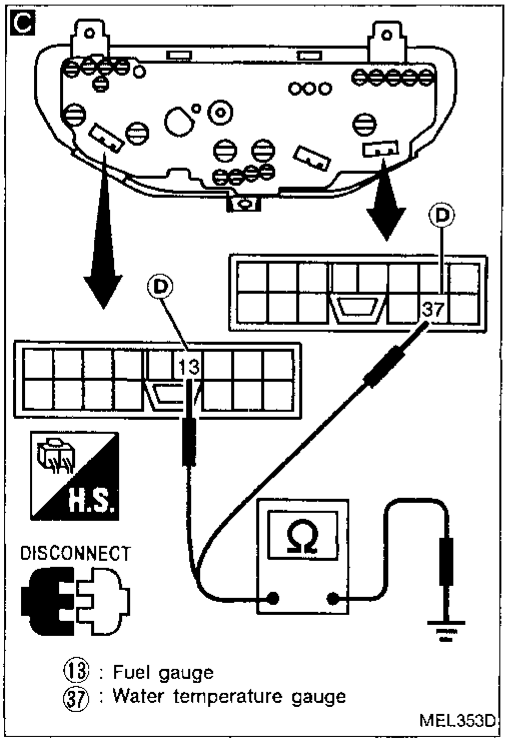


MEL507E

Inspection/Fuel Gauge and Water Temperature Gauge







INSPECTION START

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal Ⓐ and ground.
Battery voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

OK

B

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

C

Check harness continuity between component and combination meter Ⓓ.

NG → Repair or replace.

OK

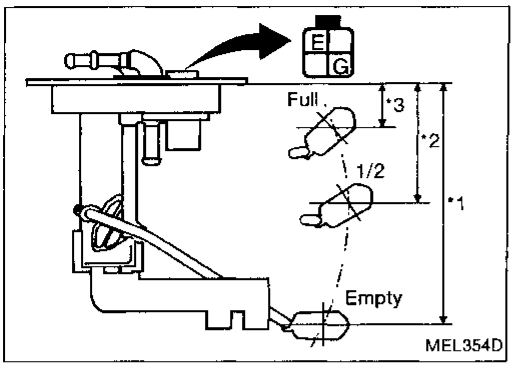
CHECK COMPONENT.
Check gauge units and harness.
Refer to "Fuel Tank Gauge Unit Check" (EL-82), "Thermal Transmitter Check" (EL-82).

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

OK

Reinstall any part removed.

INSPECTION END



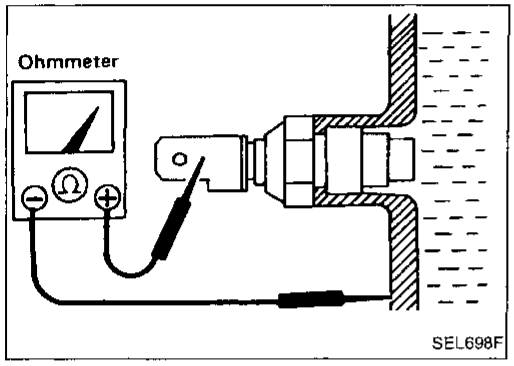
Fuel Tank Gauge Unit Check

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

Check the resistance between terminals Ⓖ and Ⓔ.

Ohmmeter (+)	Ohmmeter (−)	Float position	mm (in)		Resistance value (Ω)
G	E	*3	Full	32 (1.26)	Approx. 5 - 8
		*2	1/2	93 (3.66)	32 - 34
		*1	Empty	157 (6.18)	80 - 81

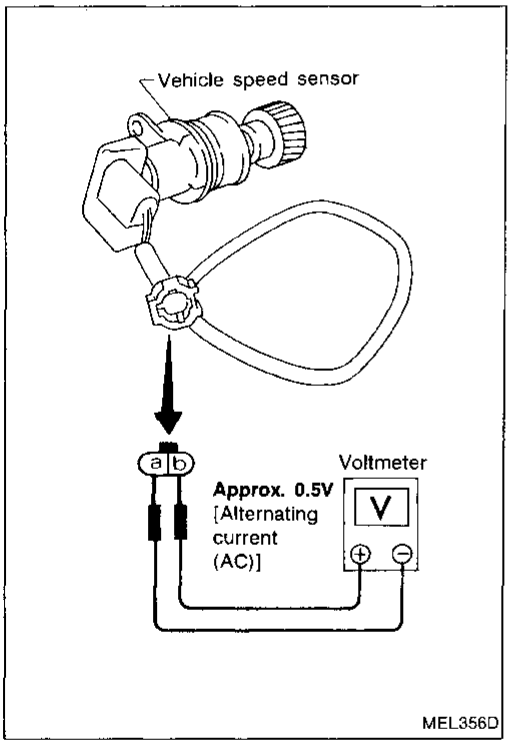
*1 and *3: When float rod is in contact with stopper.



Thermal Transmitter Check

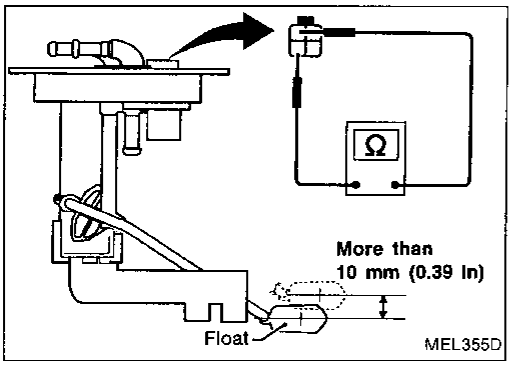
Check the resistance between the terminals of thermal transmitter and body ground.

Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90Ω
100°C (212°F)	Approx. 21 - 24Ω



Vehicle Speed Sensor Signal Check

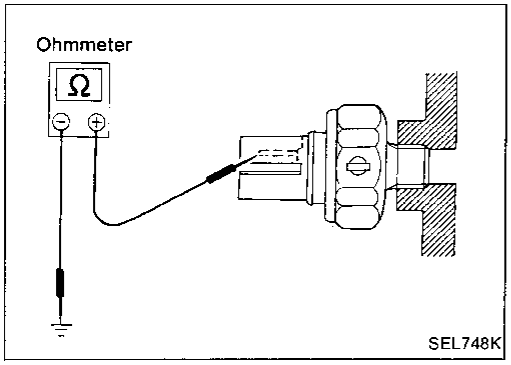
1. Remove vehicle speed sensor from transmission.
2. Turn vehicle speed sensor pinion quickly with fingers and measure voltage across ⓐ and ⓑ.



Fuel Warning Lamp Sensor Check

- Raise the float with fingers more than the distance shown in the figure at left. Make sure that continuity does not exist.

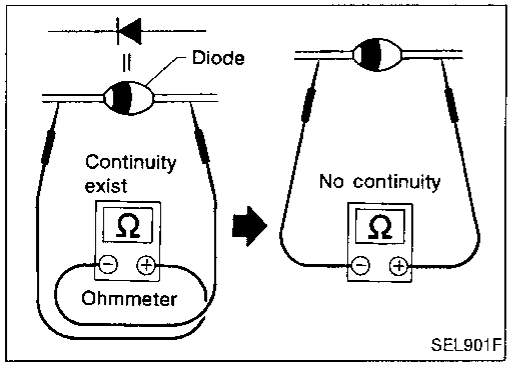
CAUTION:
Do not move the float beyond its mobile range.



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

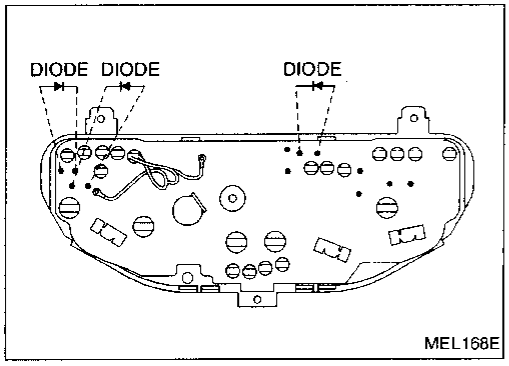
Check the continuity between the terminals of oil pressure switch and body ground.



Diode Check

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

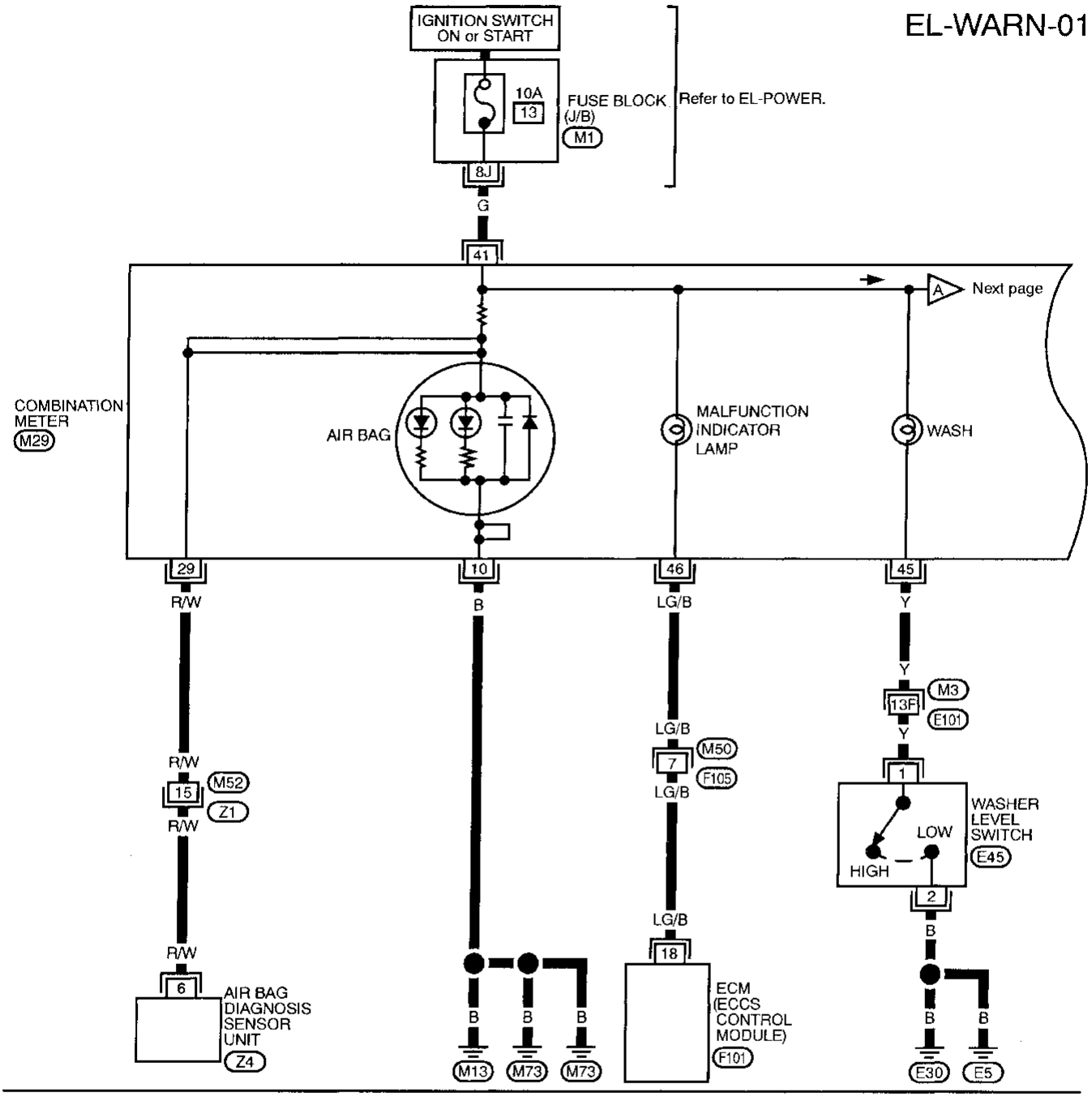
NOTE: Specifications may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual of your tester.

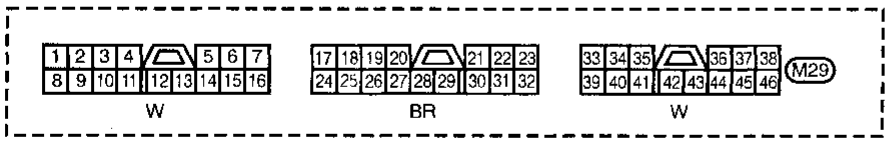


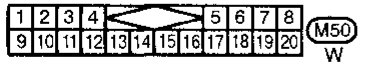
- Diodes for warning lamps are built into the combination meter printed circuit.

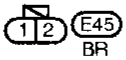
Refer to "Combination Meter" (EL-78).

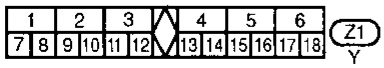
Wiring Diagram — WARN —











Refer to last page (Foldout page).

M3 , E101

M1

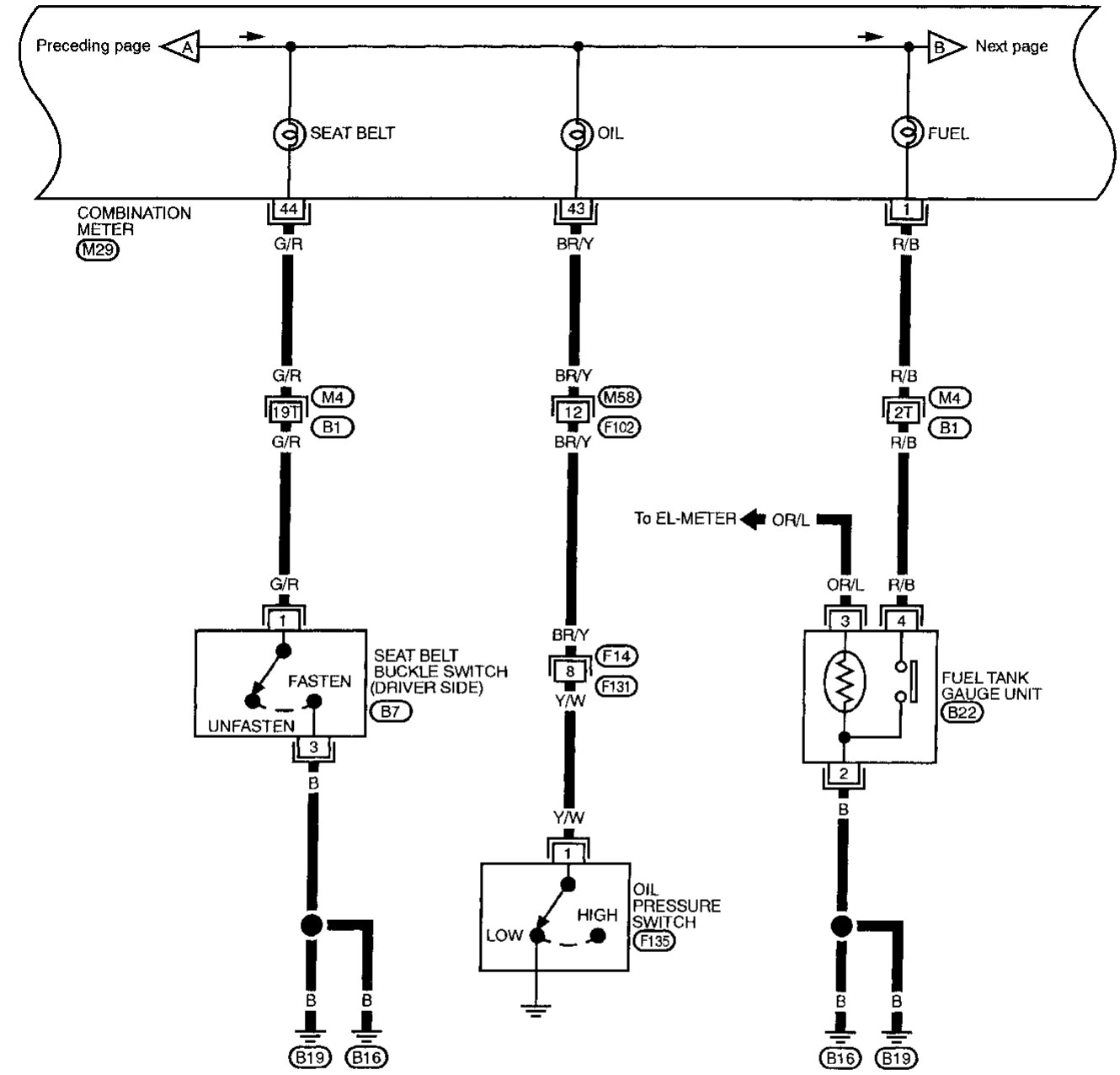
F101

Z4

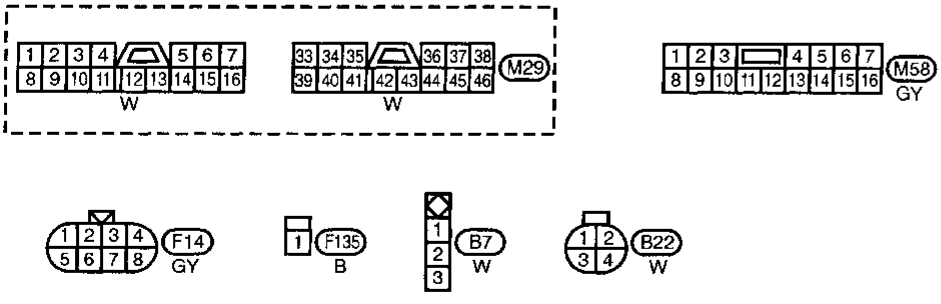
MEL508E

Wiring Diagram — WARN — (Cont'd)

EL-WARN-02



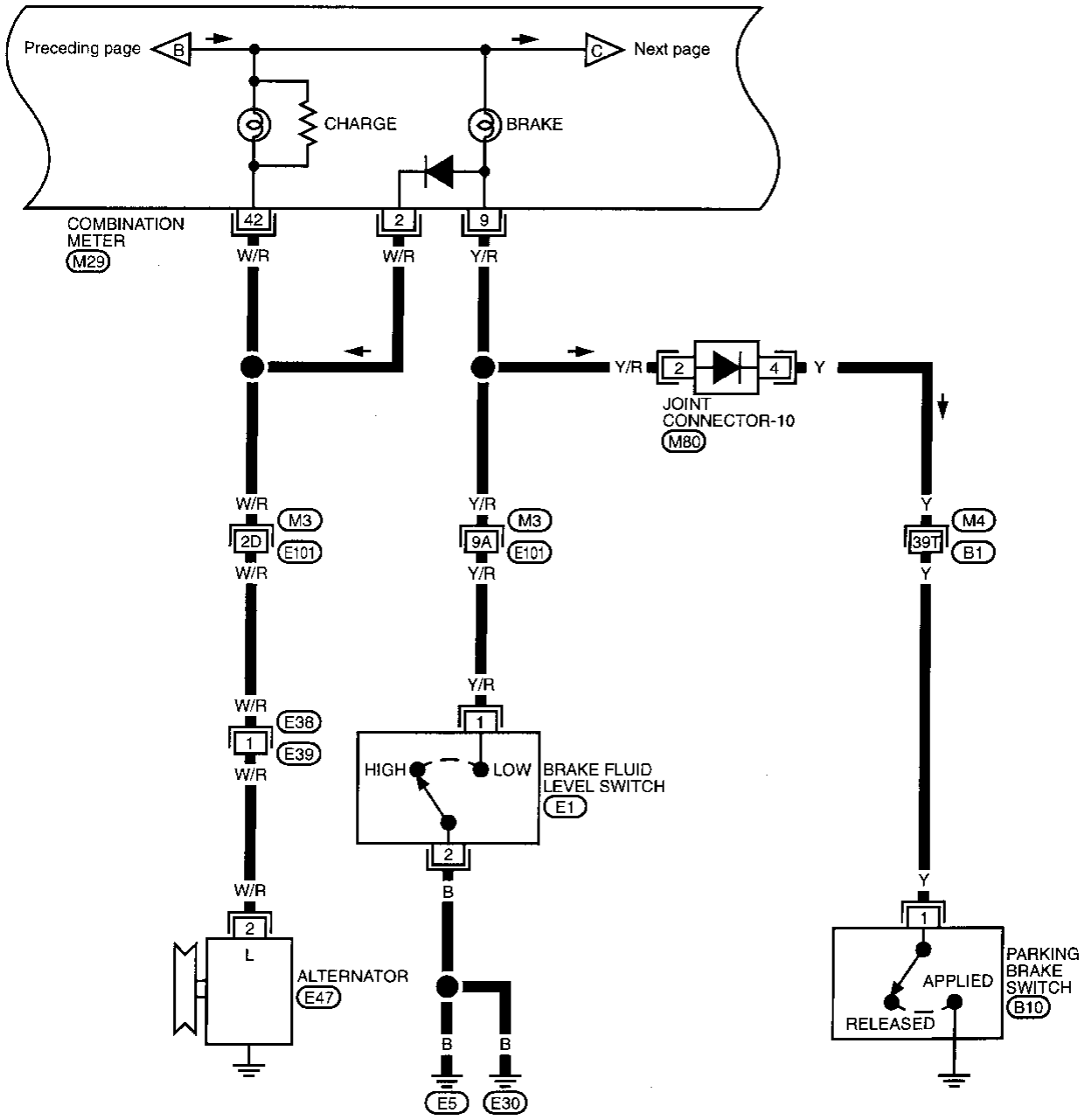
Refer to last page (Foldout page).
M4 , B1

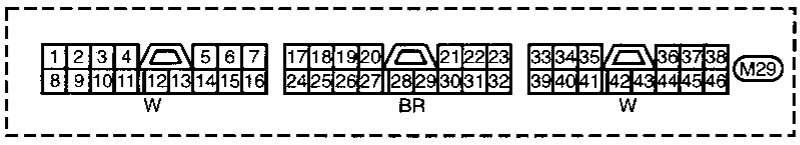


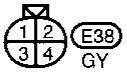
MEL509E

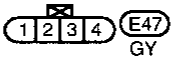
Wiring Diagram — WARN — (Cont'd)

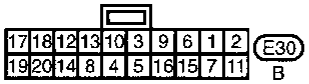
EL-WARN-03

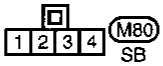












Refer to last page (Foldout page).

M3 , E101

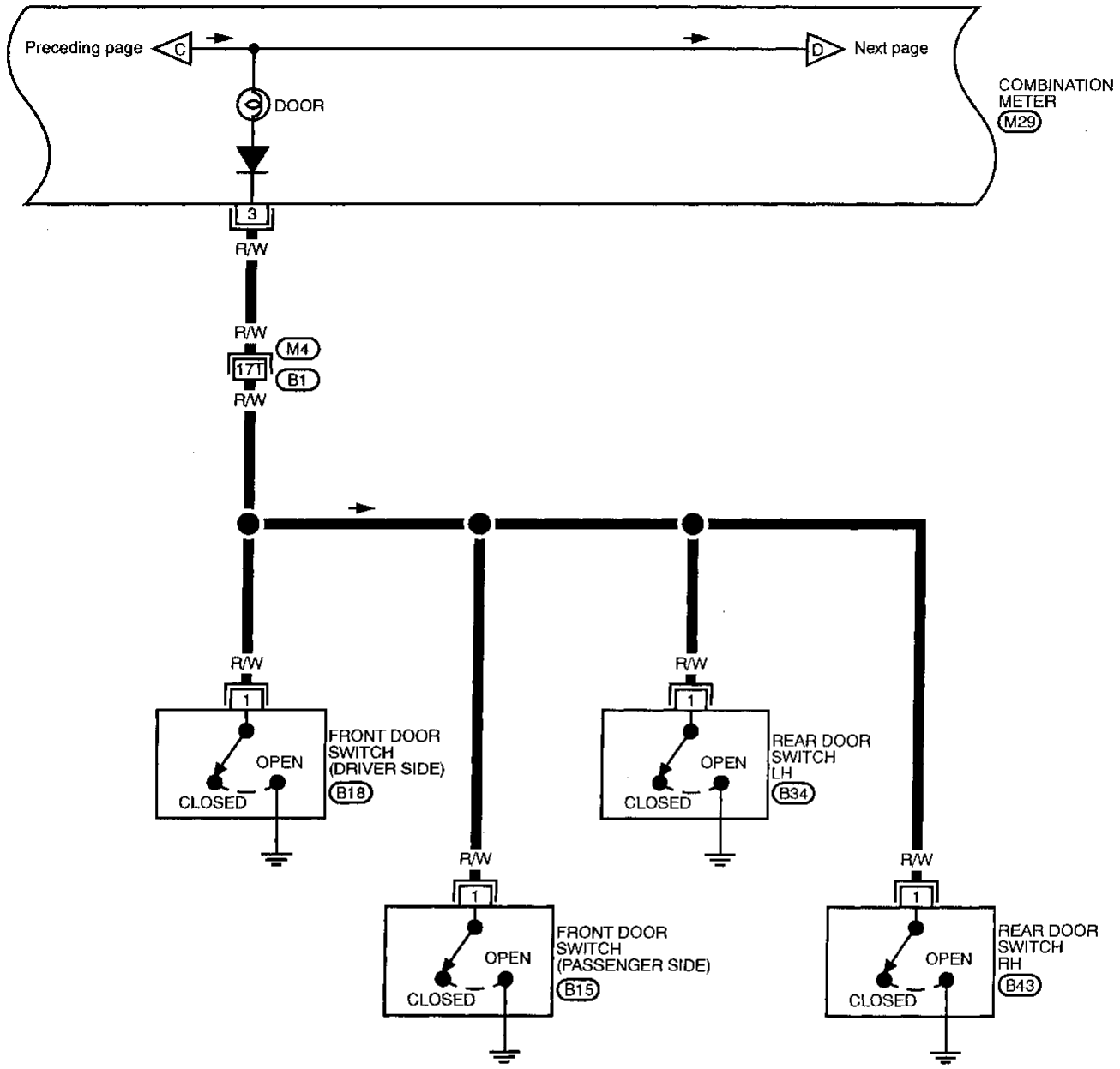
M4 , B1

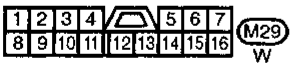
M80

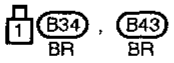
MEL510E

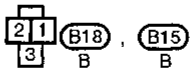
Wiring Diagram — WARN — (Cont'd)

EL-WARN-04







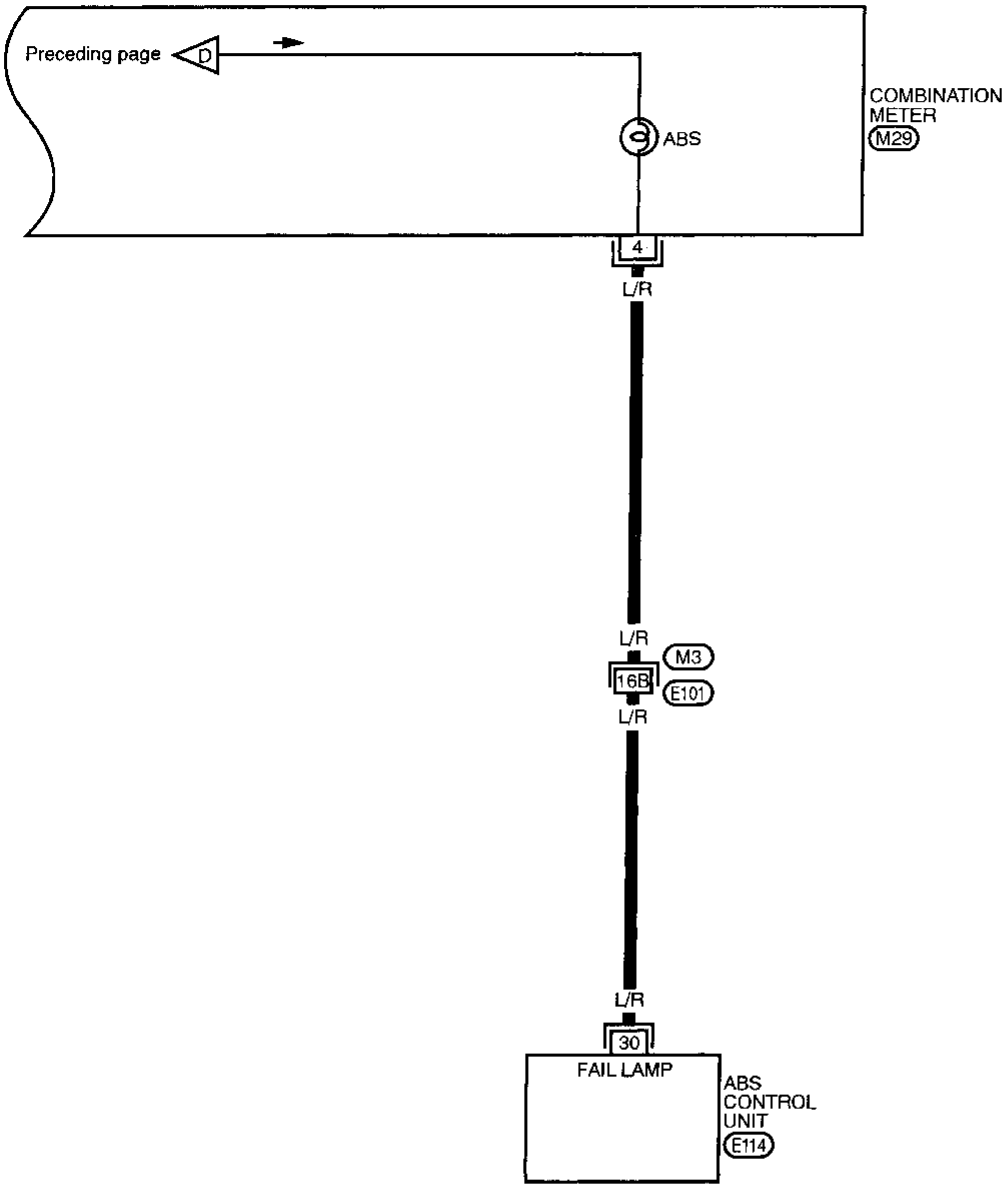


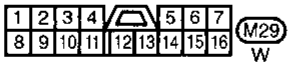
Refer to last page (Foldout page).
M4 , B1

MEL511E

Wiring Diagram — WARN — (Cont'd)

EL-WARN-05

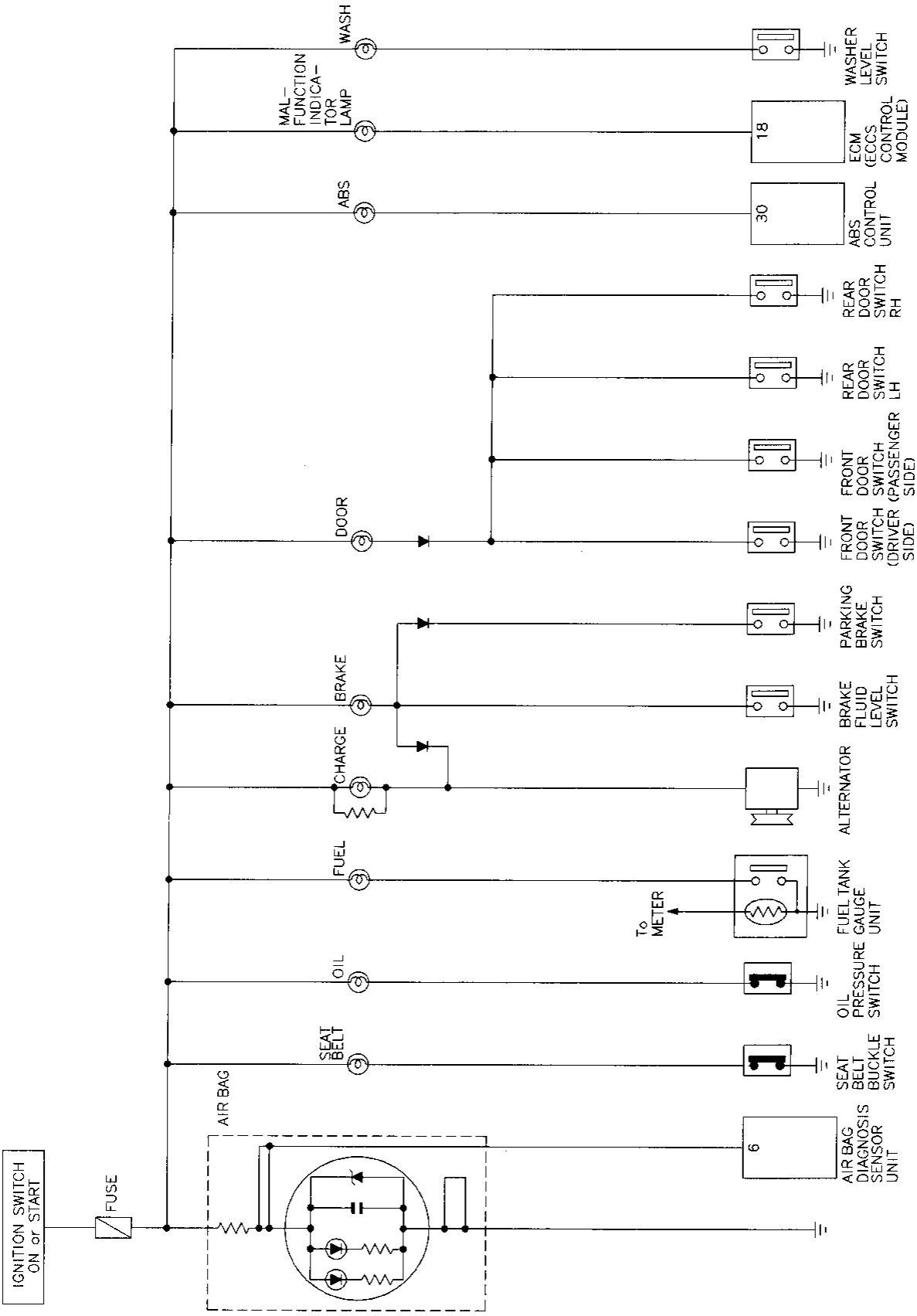




Refer to last page (Foldout page).
M3 , E101
E114

MEL512E

Schematic



MEL513E

System Description

WIPER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse [No. 20, located in the fuse block (J/B)]
- to front wiper motor terminal ④.

Low and high speed wiper operation

Ground is supplied to front wiper switch terminal ⑰ through body grounds E5 and E30.
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 ②.

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 ③.

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 ②, 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 ⑤
- through terminal ⑥ of the front wiper motor, and
- through body grounds M13 and M73.

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

Intermittent operation

Intermittent operation is controlled by the BCM.
When the front wiper switch is placed in the INT position, ground is supplied
- to BCM terminal ㉕
- from front wiper switch terminal ⑮
- through body grounds E5 and E30.

The desired interval time is input
- to BCM terminal ⑰
- from front wiper switch terminal ⑲.

Based on these two inputs, an intermittent ground is supplied
- to front wiper relay terminal ②
- from BCM terminal ⑩.

With power and ground supplied, the front wiper relay is activated.
When activated, an intermittent ground is supplied
- to front wiper motor terminal ②
- 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 E5 and E30.

Front wiper motor operates at desired low speeds with BCM terminal ㉕ grounded.

WASHER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse [No. 20, located in the fuse block (J/B)]
- to front washer motor terminal ①.

System Description (Cont'd)

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

- to washer motor terminal ②, and
- to BCM terminal ㉖
- from terminal ⑱ of the front wiper switch
- through terminal ⑰ of the front wiper switch, and
- through body grounds (E5) and (E30).

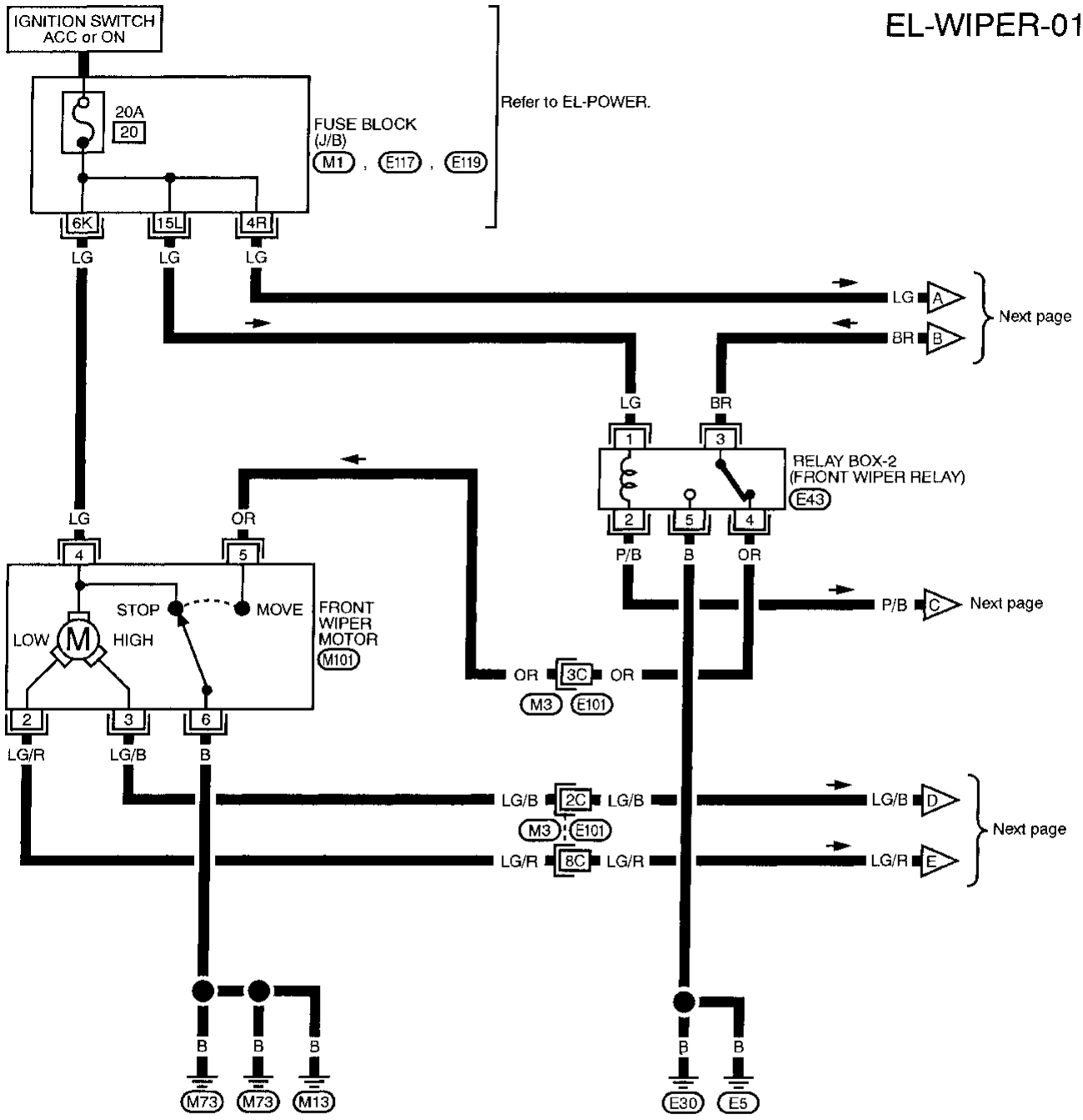
With power and ground supplied, the washer motor operates.

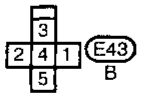
The front wiper motor operates at low speed for about 3 seconds. This feature is controlled by the BCM in the same manner as the intermittent operation.

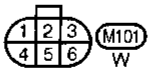
For further information, refer to "TIME CONTROL SYSTEM" (EL-226).

Front Wiper and Washer/Wiring Diagram — WIPER —

EL-WIPER-01







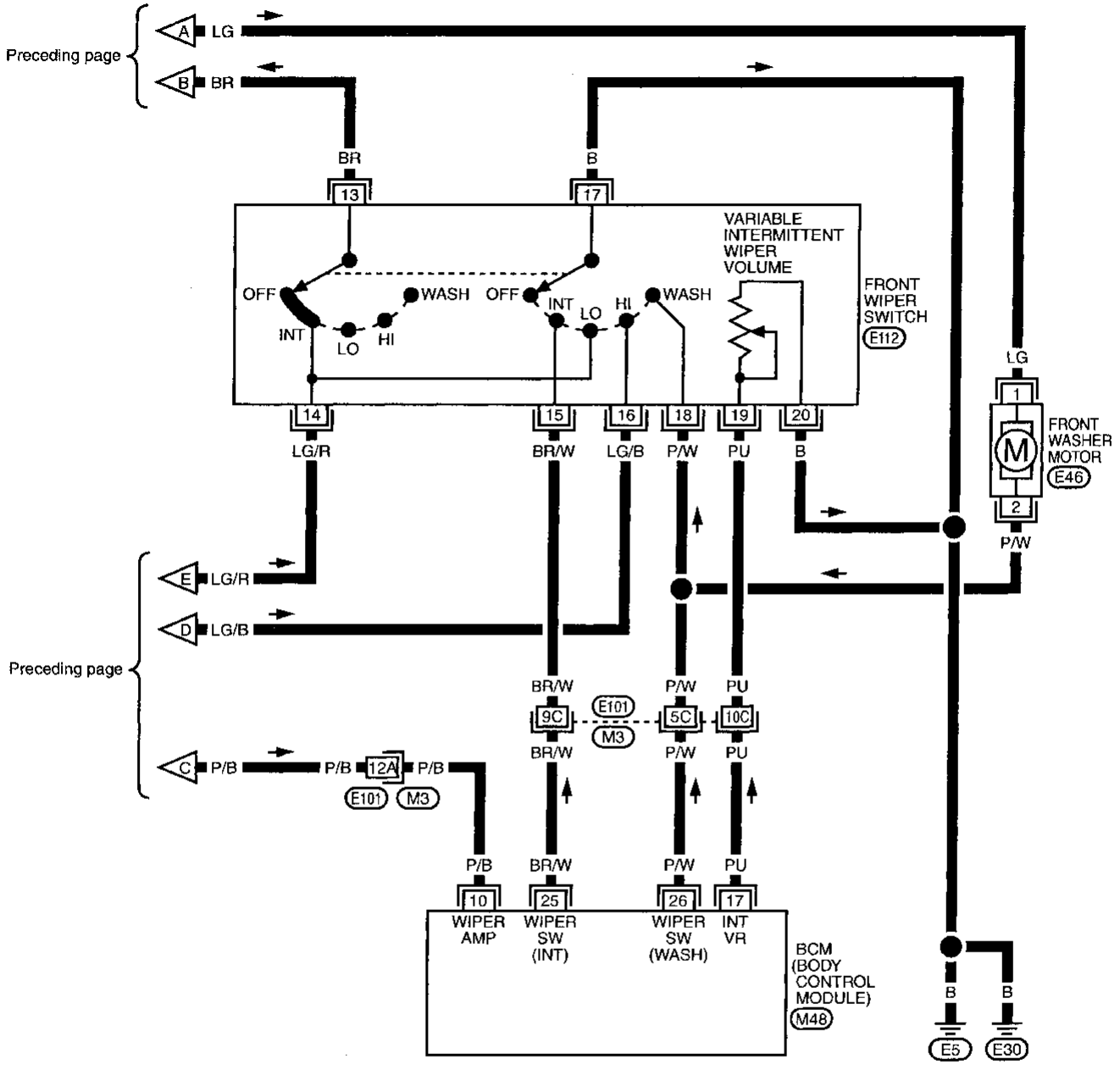
Refer to last page (Foldout page).

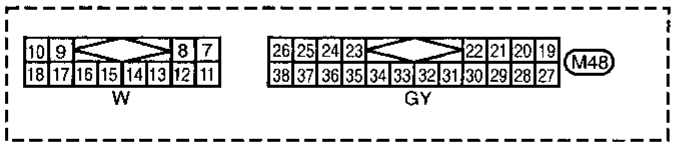
M1 , E101
M3 , E119
E117

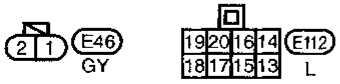
MEL514E

Front Wiper and Washer/Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-02







Refer to last page (Foldout page).
M3 , E101

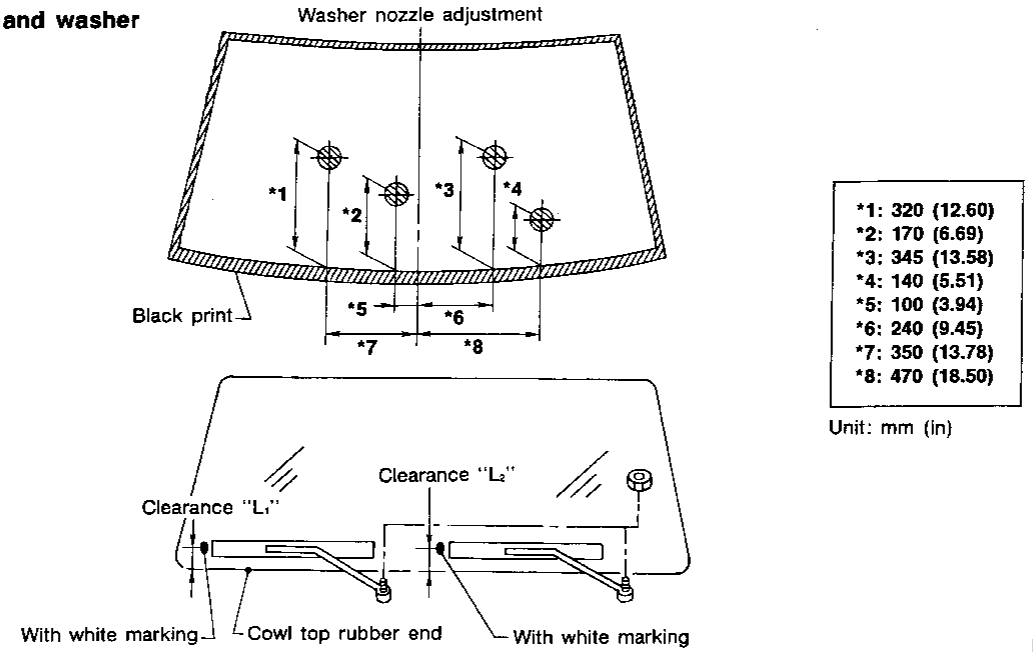
MEL515E

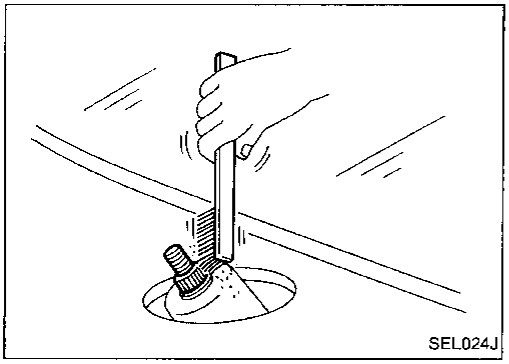
Installation

1. Turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface. Set the blade center to clearance "L_1" or "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": 40 - 56 mm (1.57 - 2.20 in)
   Clearance "L_2": 37 - 47 mm (1.46 - 1.85 in)

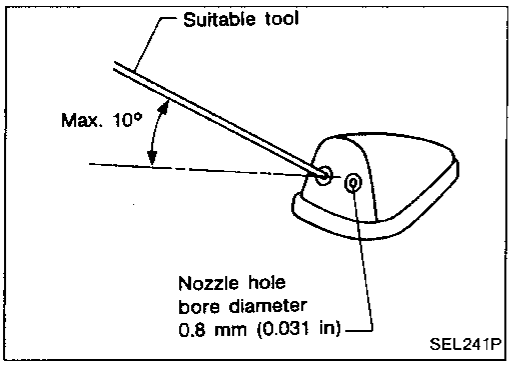
- Tighten windshield wiper arm nuts to specified torque.
  Windshield wiper:
  21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)

Windshield wiper and washer



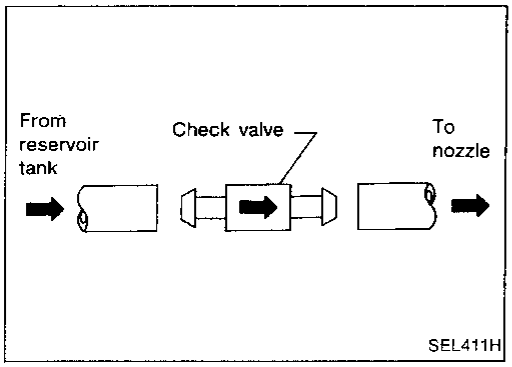


- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**



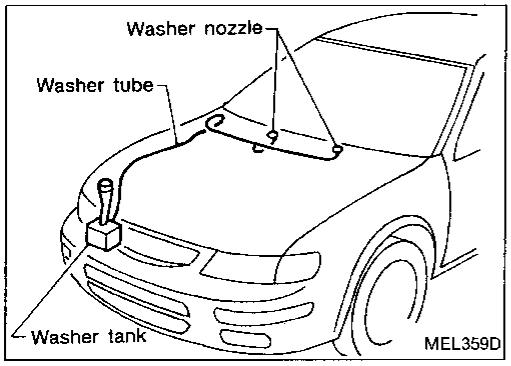
Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.
  Adjustable range: ±10°

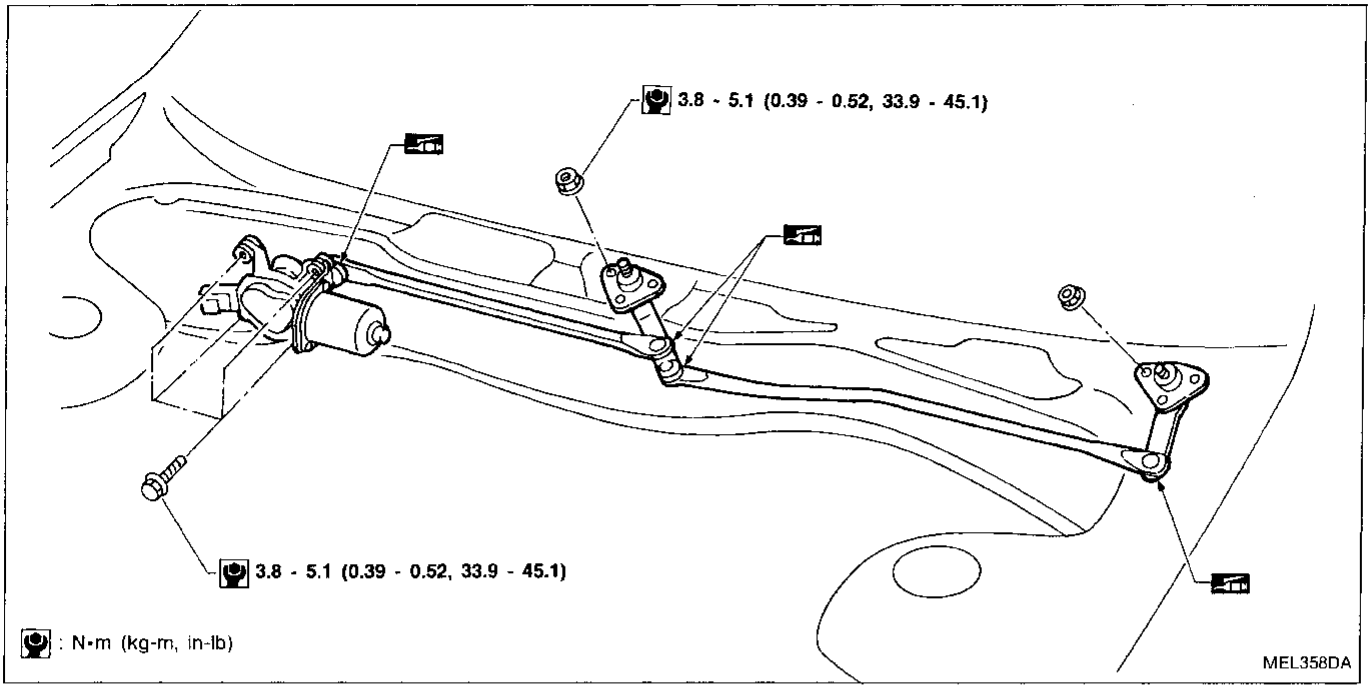


Check Valve

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.



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.

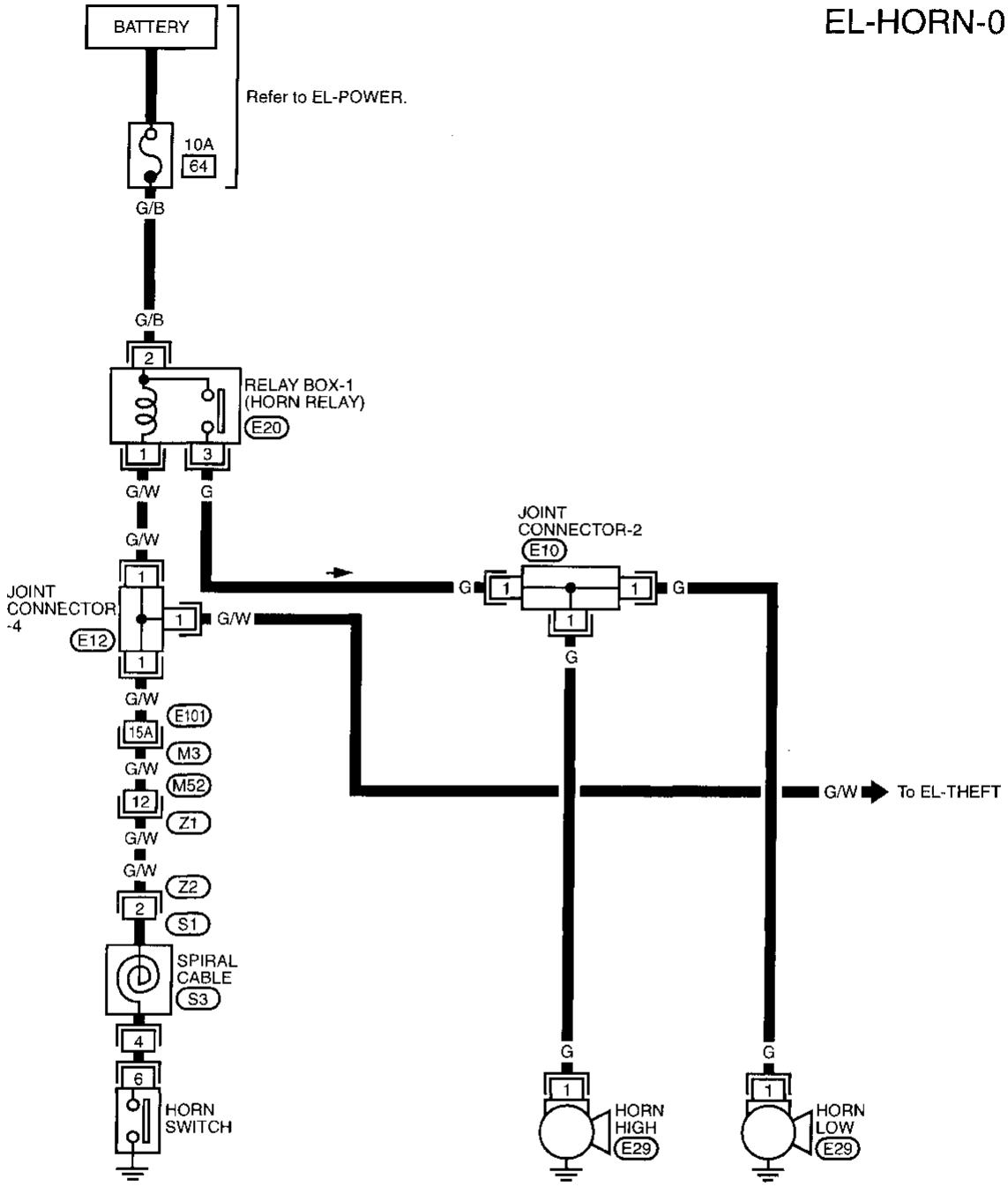
INSTALLATION

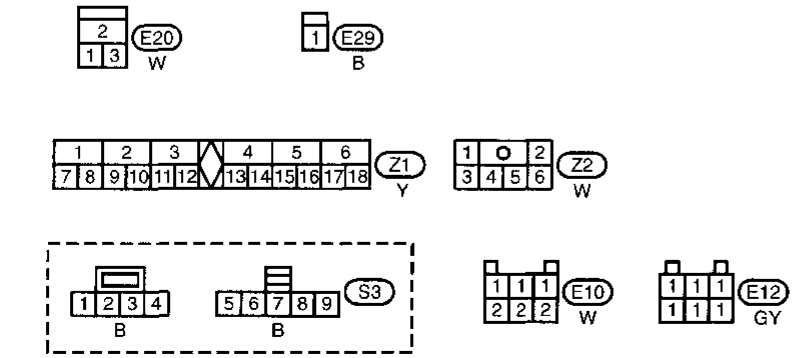
- Grease ball joint portion before installation.

Installation is in reverse order of removal.

Wiring Diagram — HORN —

EL-HORN-01

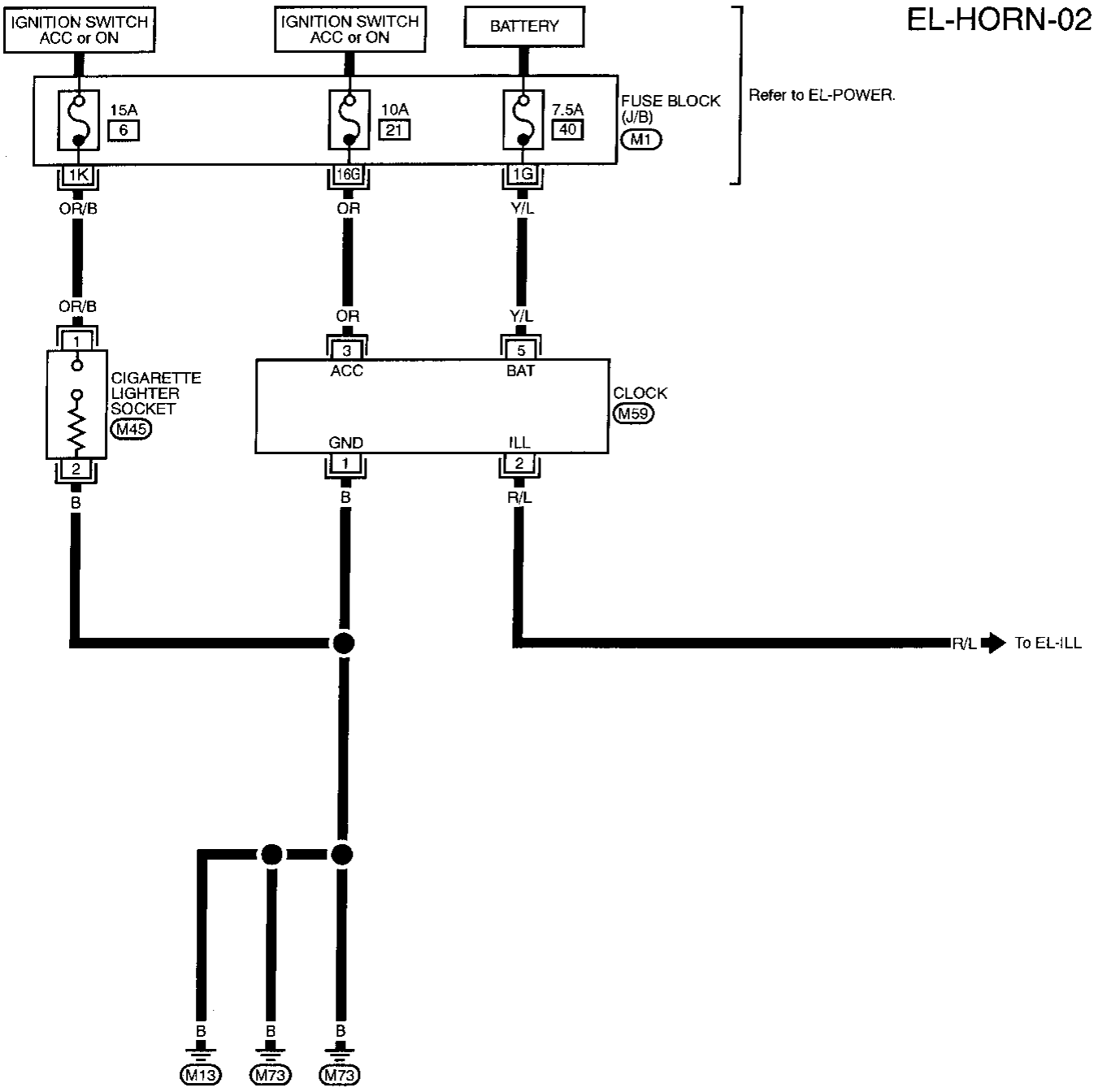


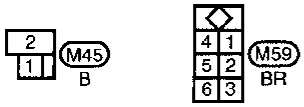


Refer to last page (Foldout page).
E10 , E12
M3 , E101

MEL516E

Wiring Diagram — HORN — (Cont'd)



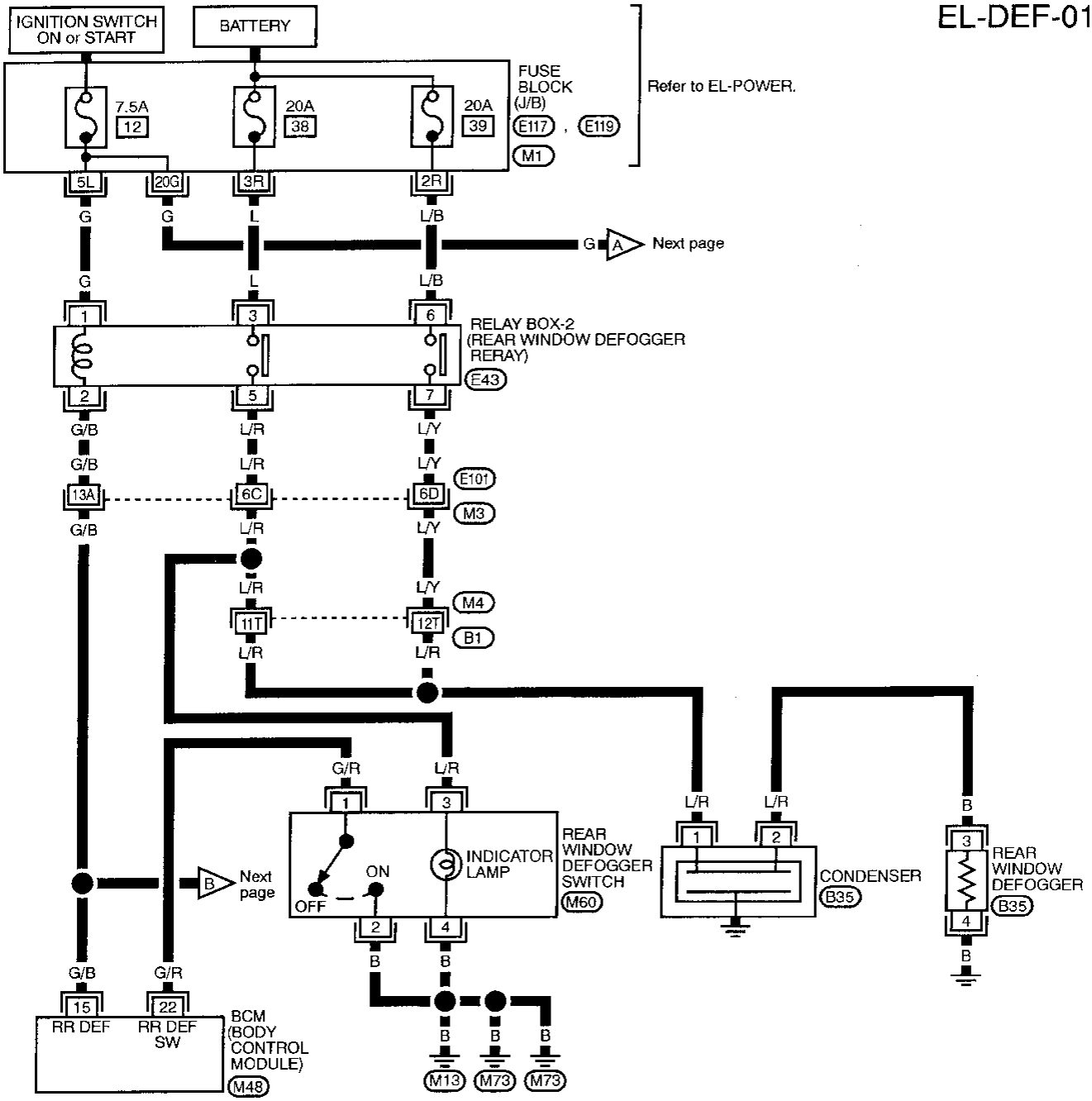


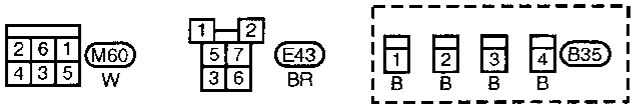
Refer to last page (Foldout page).
M1

MEL517E

Wiring Diagram — DEF —

EL-DEF-01





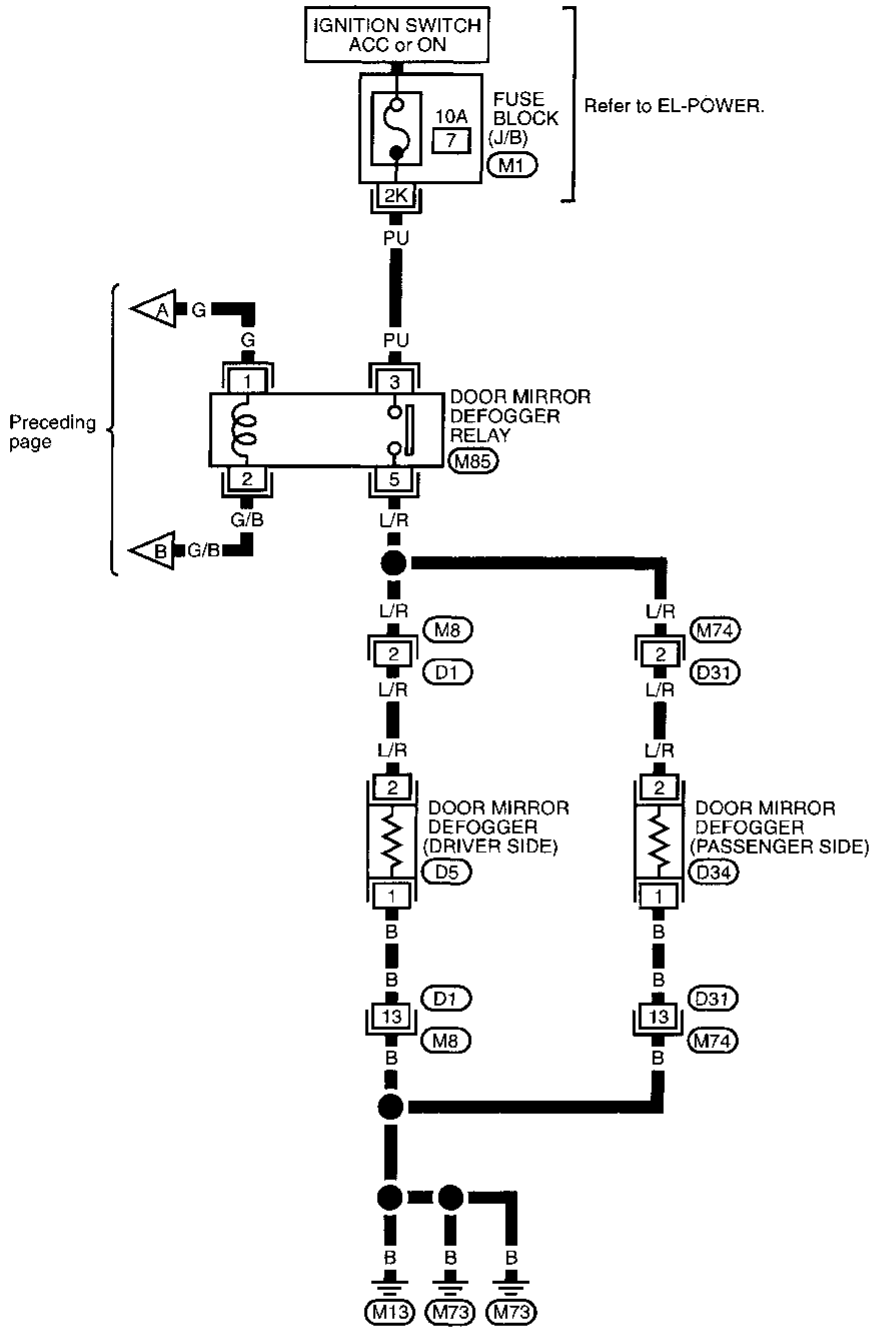
Refer to last page (Foldout page).

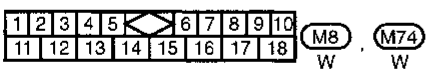
M3 , E101
M4 , B1
M48 , M1
E117
E119

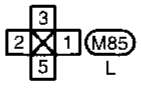
MEL518E

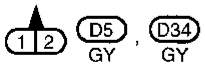
Wiring Diagram — DEF — (Cont'd)

EL-DEF-02



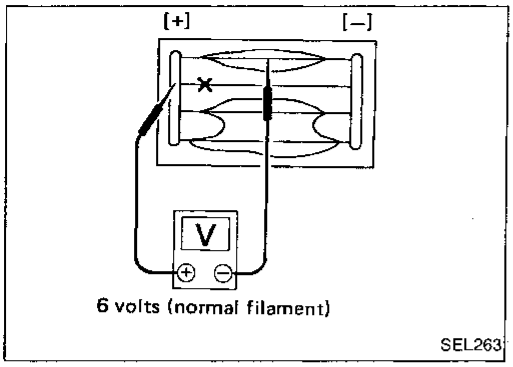






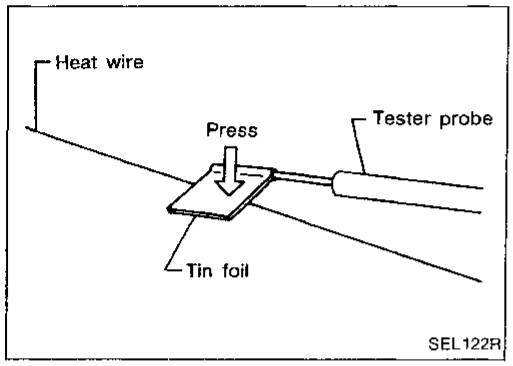
Refer to last page (Foldout page).
M1

MEL519E

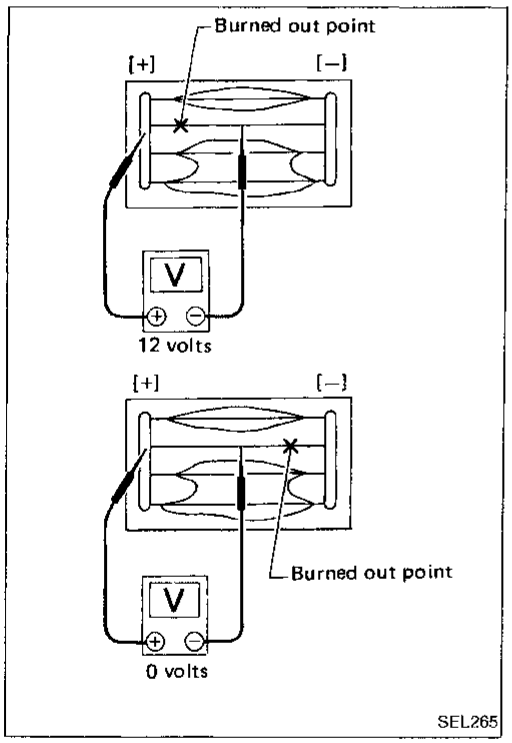


Filament Check

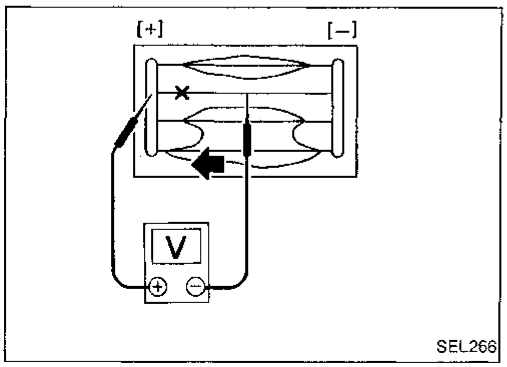
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **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.

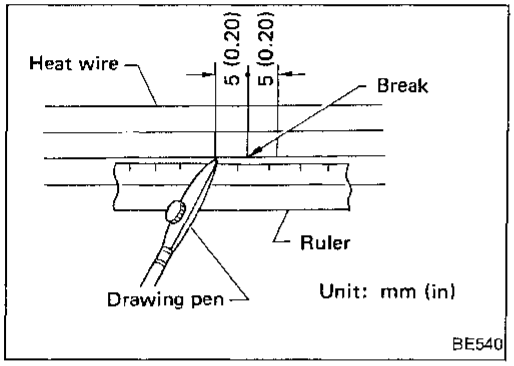


3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

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



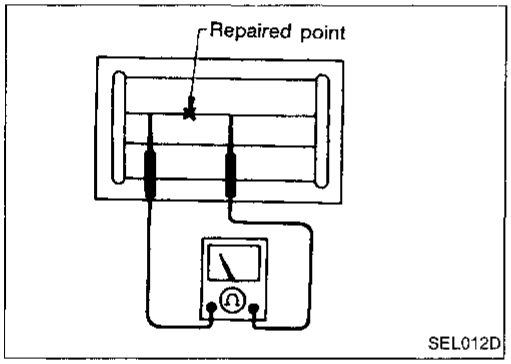
REPAIRING PROCEDURE

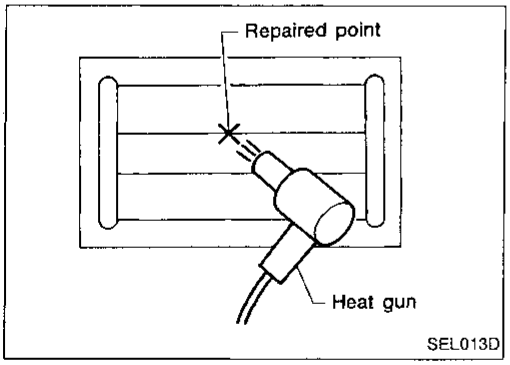
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

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.

Audio/System Description

Refer to Owner's Manual for audio system operating instructions.

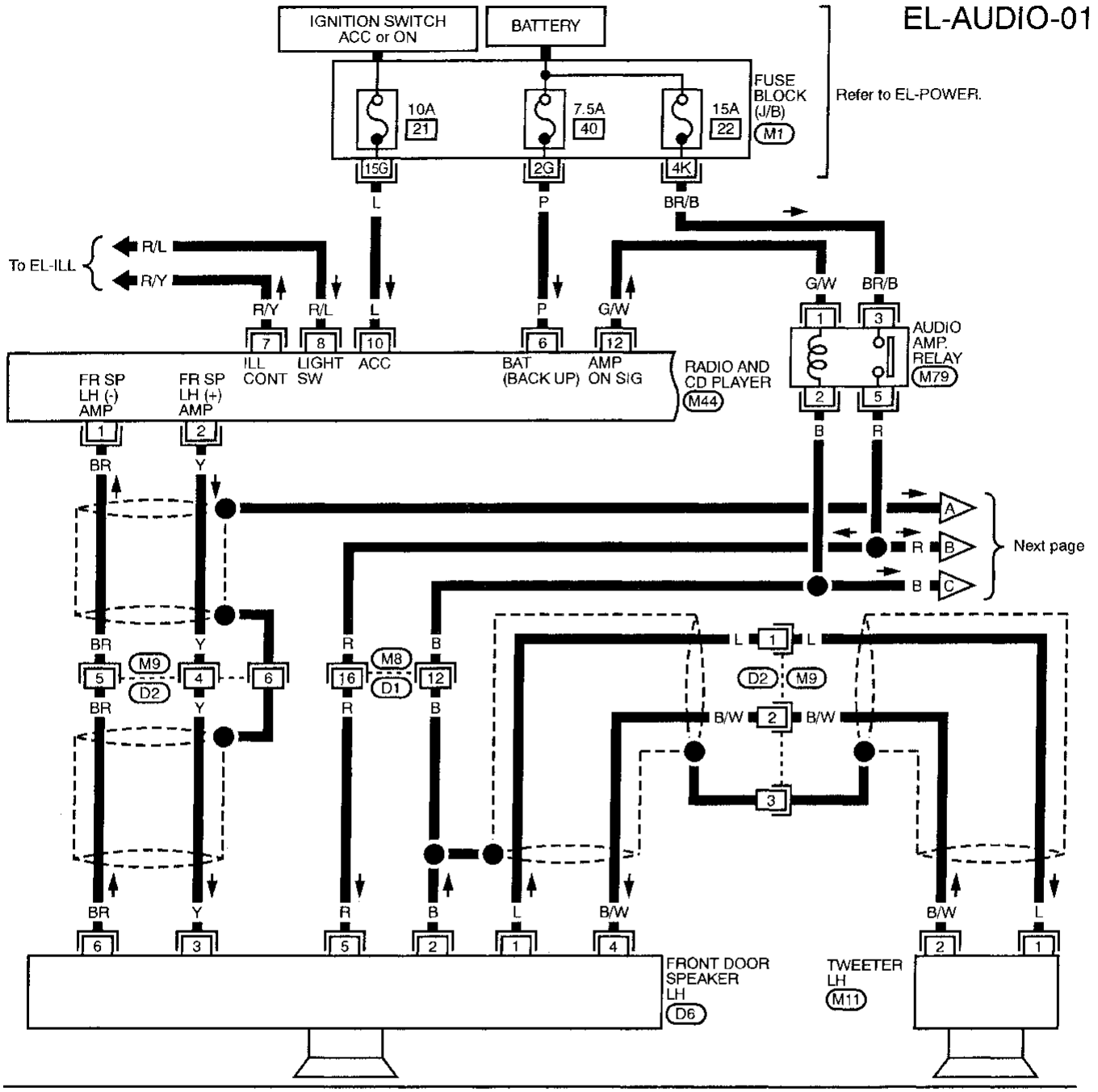
Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to radio and CD player terminal ⑥.

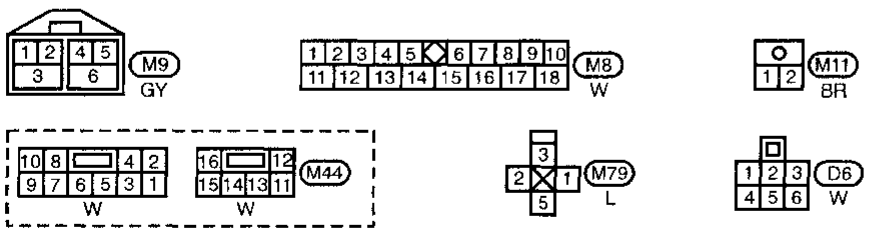
With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to radio and CD player terminal ⑩.

Ground is supplied through the case of the radio.
Also, radio and CD player terminal ⑫ is grounded to body grounds (M13) and (M73) through audio amp. relay terminals ① and ②.
Power is supplied at all times
- through 15A fuse [No. 22, located in the fuse block (J/B)]
- to front door speaker LH terminal ⑤
- to front door speaker RH terminal ⑤ and
- to rear speaker LH terminal ③ and RH terminal ③.

When the radio POWER button is pressed, audio signals are supplied
- through radio and CD player terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to terminals ③ and ⑥ of the LH and RH front speakers and terminals ② and ④ of the LH and RH rear speakers
- to LH and RH tweeters through terminals ① and ② of the front and rear speakers.

Audio/Wiring Diagram — AUDIO —

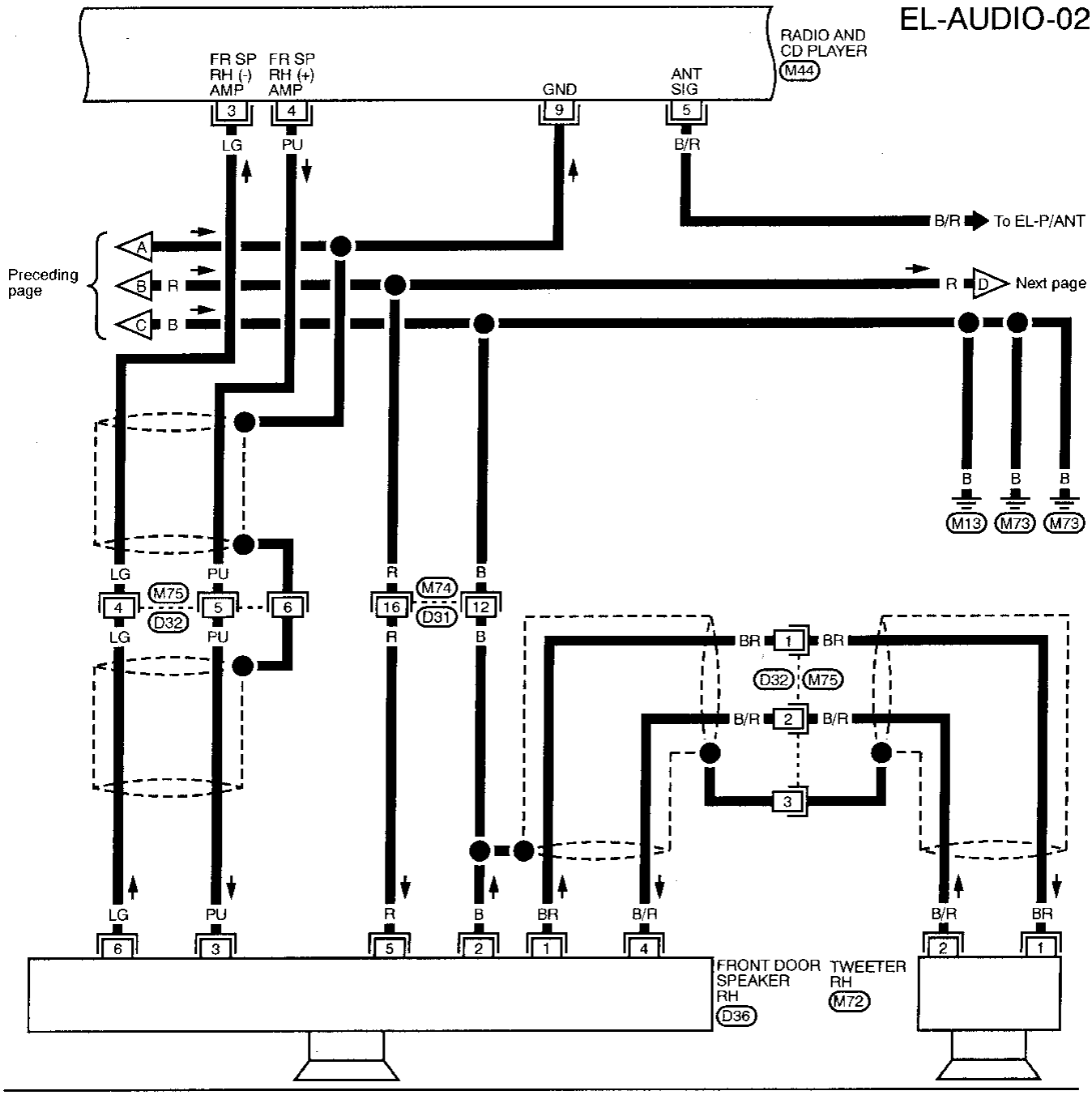




Refer to last page (Foldout page).
M1

MEL520E

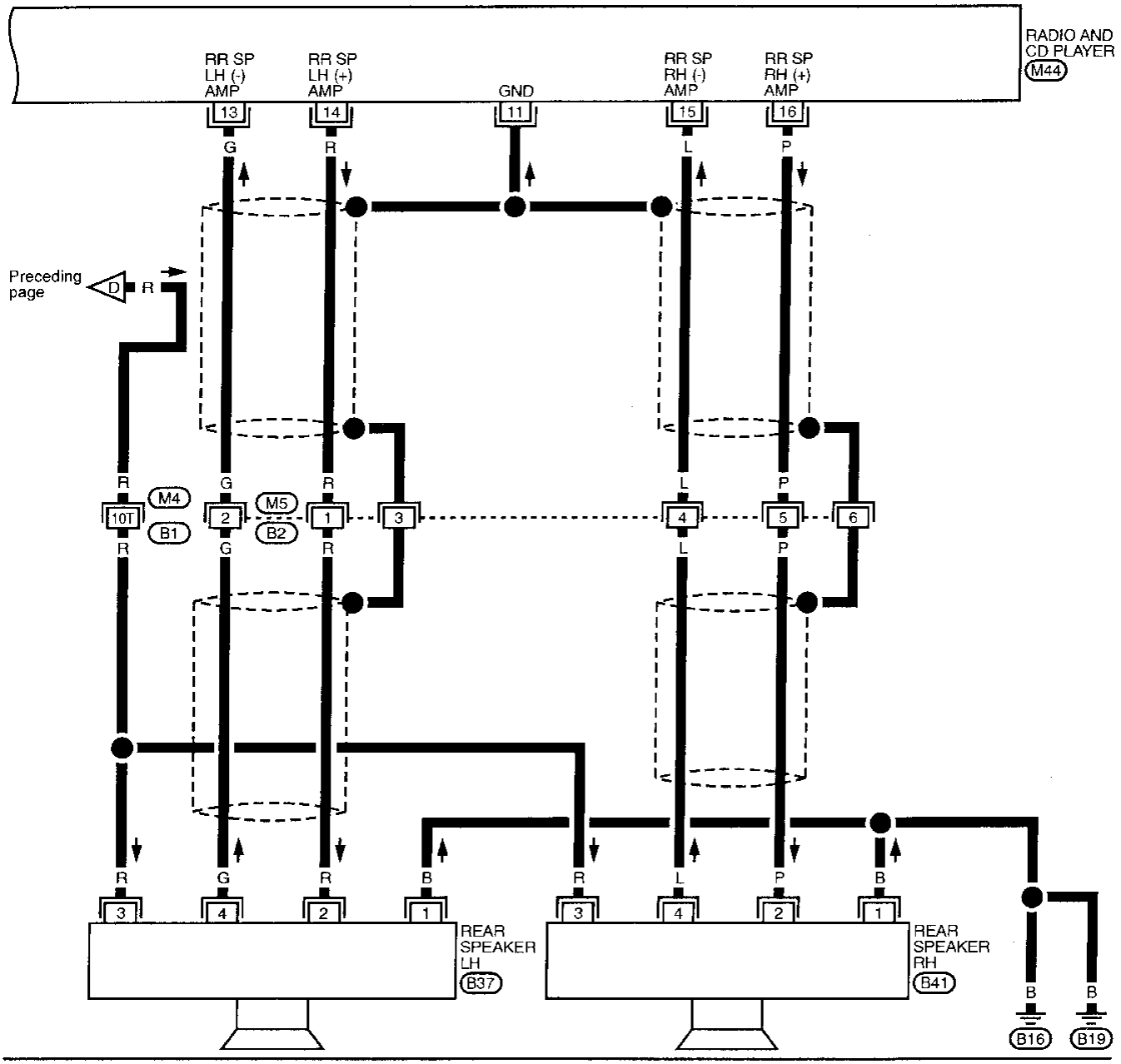
Audio/Wiring Diagram — AUDIO — (Cont'd)

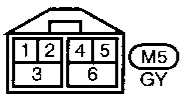


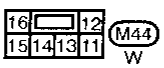
MEL521E

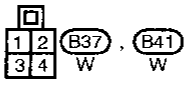
Audio/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03





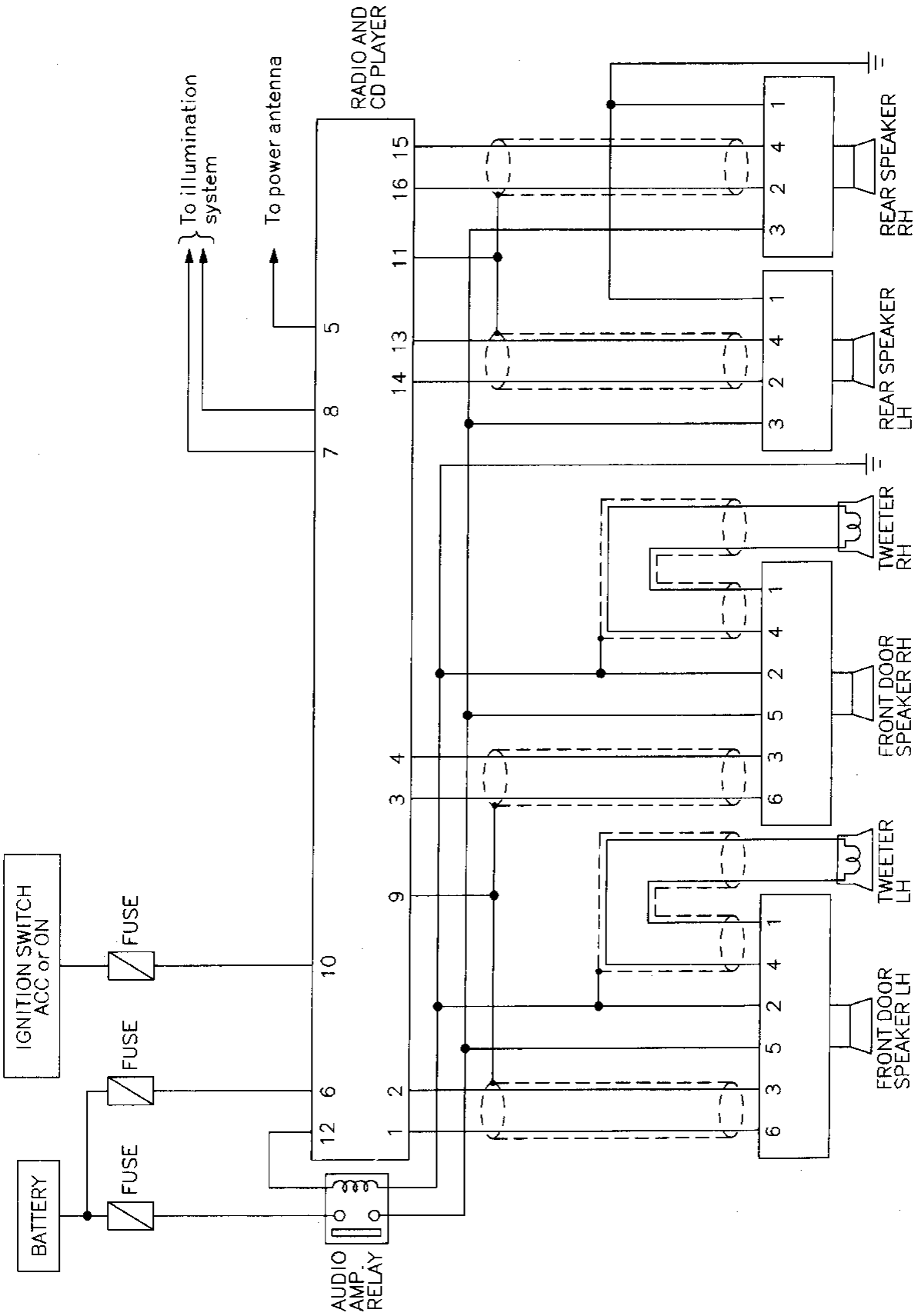




Refer to last page (Foldout page).
M4 , B1

MEL522E

Schematic



MEL670E

Power Antenna/System Description

Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to power antenna timer and motor terminal ③.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to radio and CD player terminal ⑩.

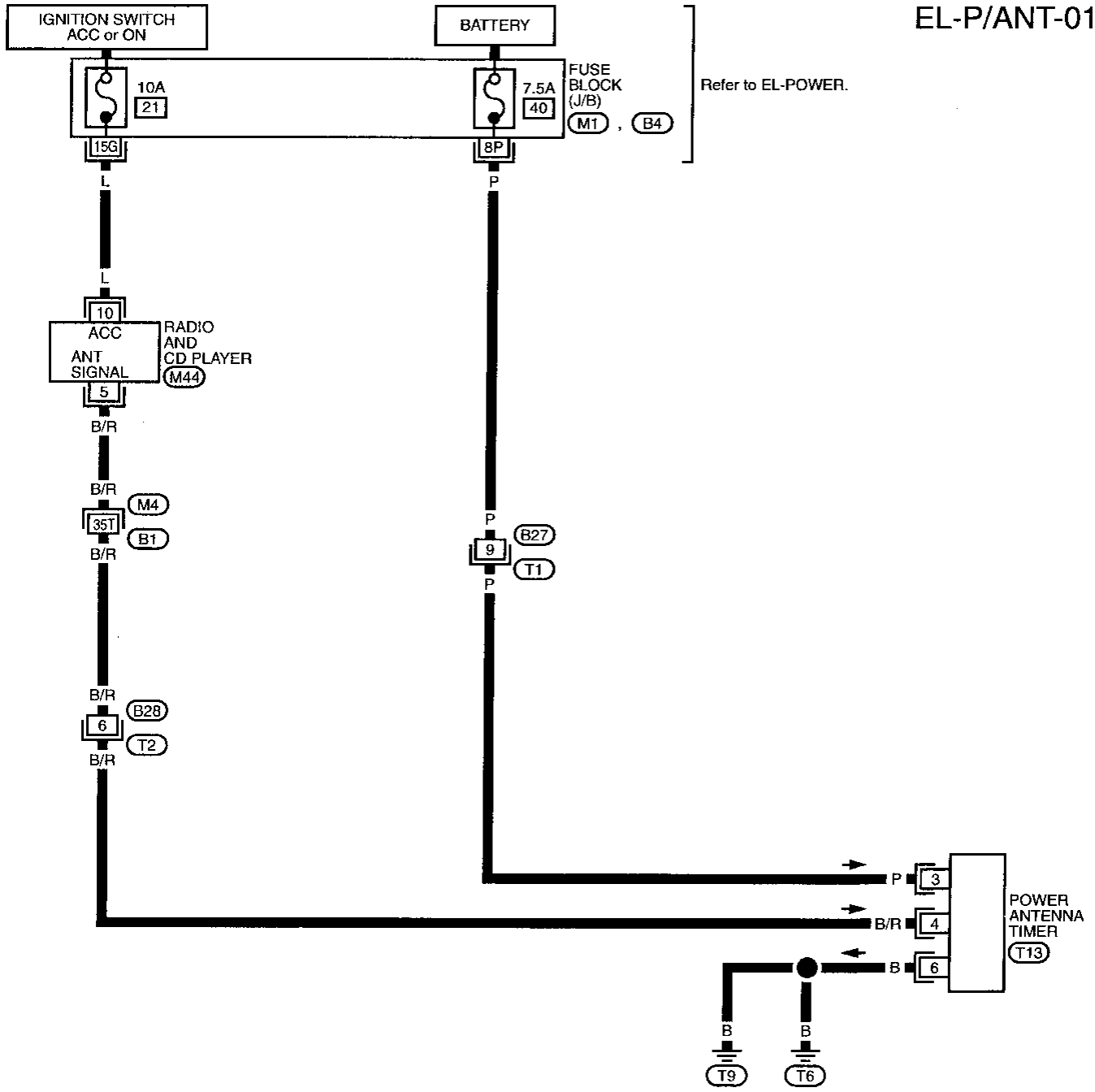
Ground is supplied to the power antenna timer and motor through body grounds T6 and T9.
When the radio is turned to the ON position, battery voltage is supplied
- through radio and CD player terminal ⑤
- to power antenna timer and motor terminal ④.

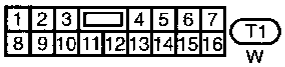
When battery voltage is supplied to the power antenna timer and motor terminal ④, power supplied to the power antenna timer and motor terminal ③ drives the motor.
The antenna rises and is held in the extended position.
When the radio is turned to the OFF position, battery voltage is interrupted
- from radio and CD player terminal ⑤
- to power antenna terminal ④.

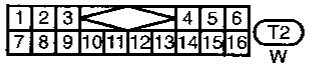
The antenna retracts.

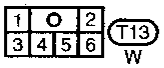
Power Antenna/Wiring Diagram — P/ANT —

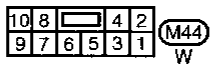
EL-P/ANT-01











Refer to last page (Foldout page).

M4 , B1

M1 , B4

MEL524E

Trouble Diagnoses

RADIO

Symptom	Possible causes	Repair order
Radio is inoperative (no digital display and no sound from speakers).	1. 10A fuse	1. Check 10A fuse (No. 21, located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ⑩ of radio.
	2. Poor radio case ground	2. Check radio case ground.
	3. Radio	3. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 7.5A fuse	1. Check 7.5A fuse (No. 40, located in fuse block). Verify battery positive voltage is present at terminal ⑥ of radio.
	2. Radio	2. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna	1. Check antenna.
	2. Poor radio ground	2. Check radio ground.
	3. Radio	3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna	1. Check antenna.
	2. Radio	2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground	1. Check radio ground.
	2. Loose or missing ground bonding straps	2. Check ground bonding straps.
	3. Ignition condenser or rear window defogger noise suppressor condenser	3. Replace ignition condenser or rear window defogger noise suppressor condenser.
	4. Alternator	4. Check alternator.
	5. Ignition coil or secondary wiring	5. Check ignition coil and secondary wiring.
	6. Radio	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	1. Check radio ground.
	2. Antenna	2. Check antenna.
	3. Accessory ground	3. Check accessory ground.
	4. Faulty accessory	4. Replace accessory.

BOSE SYSTEM

Symptom	Possible causes	Repair order
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse	1. Check 15A fuse (No. 22, located in fuse block). Verify battery positive voltage is present at terminal ③ of audio amp. relay.
	2. Audio amp. relay	2. Check audio amp. relay.
	3. Audio amp. relay ground	3. Check audio amp. relay ground (Terminal ②).
	4. Amp. ON signal	4. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ① of audio amp. relay.
	5. Radio output	5. Check radio output voltage.
	6. Radio	6. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker ground	1. Check speaker ground (Terminal ⑥⓪: FR LH, ⑥⑥: FR RH, ⑦②: RR LH, ⑦⑥: RR RH).
	2. Power supply	2. Check power supply for speaker.
	3. Radio output	3. Check radio output voltage for amp.
	4. Speaker	4. Replace speaker.

Trouble Diagnoses (Cont'd)

POWER ANTENNA

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse	1. Check 7.5A fuse (No. 40, located in fuse block). Verify that battery positive voltage is present at terminal ⑥ of power antenna timer and motor.
	2. 10A fuse	2. Check 10A fuse (No. 21, located in fuse block). Turn ignition switch ON and verify that battery positive voltage is present at terminal ⑩ of radio.
	3. Radio signal	3. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna timer.
	4. Power antenna timer ground	4. Check power antenna timer ground (Terminal ②).
	5. Power antenna timer and motor	5. Check power antenna timer and motor.

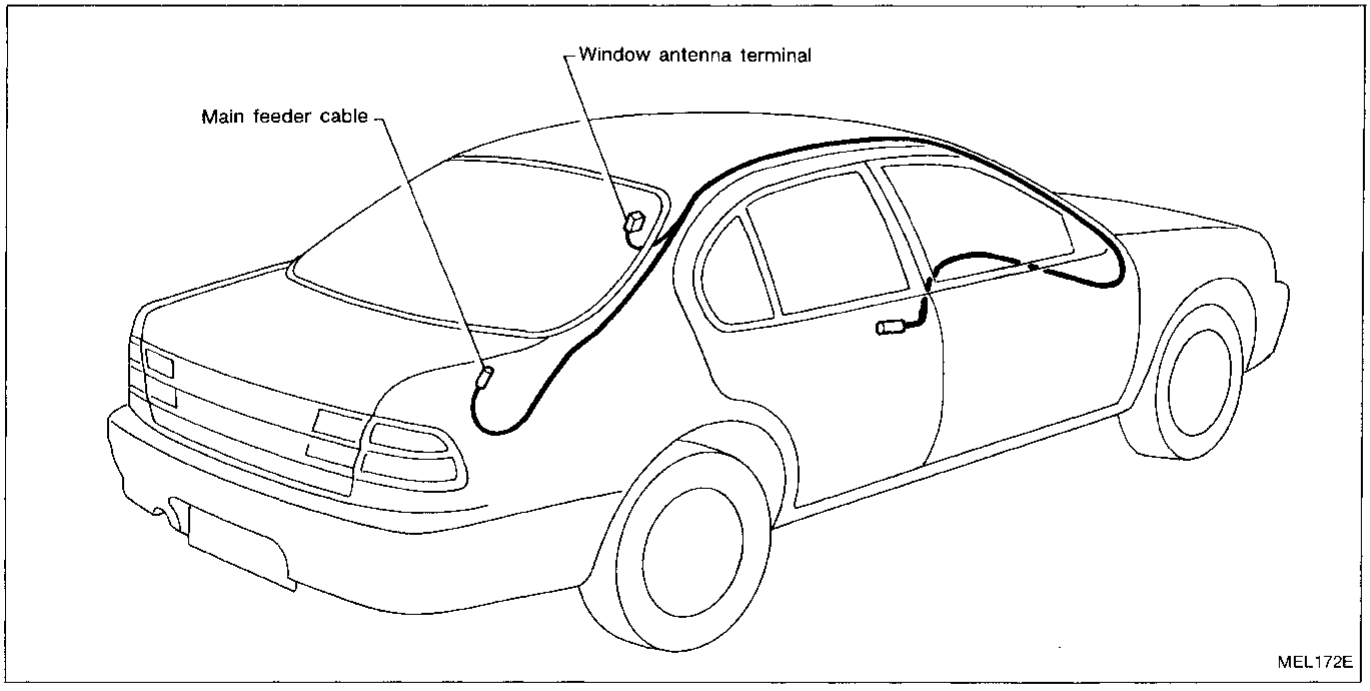
ANTENNA INSPECTION

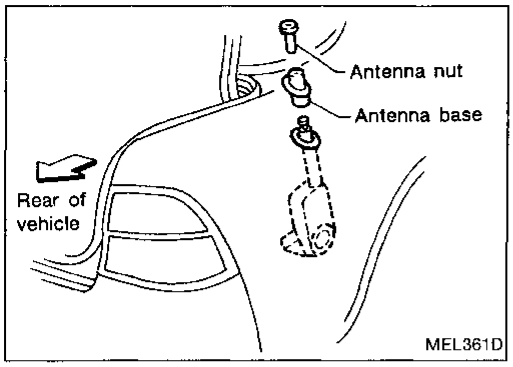
1. Using a jumper wire, clip an auxiliary ground between antenna and body.
- If reception improves, check antenna ground (at body surface).
- If reception does not improve, check main feeder cable for short circuit or open circuit.

RADIO INSPECTION

All voltage inspections are made with:
- Ignition switch ON or ACC
- Radio ON
- Radio and speakers connected (If radio or speaker is removed for inspection, supply a ground to the case using a jumper wire.)

Location of Antenna

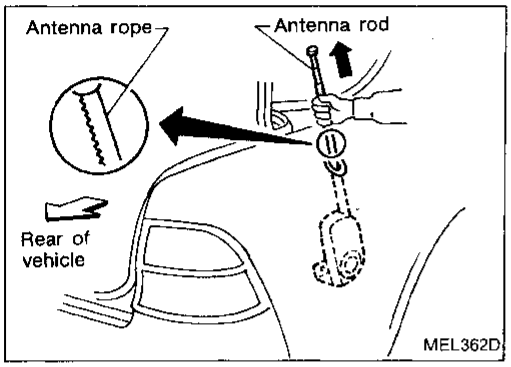




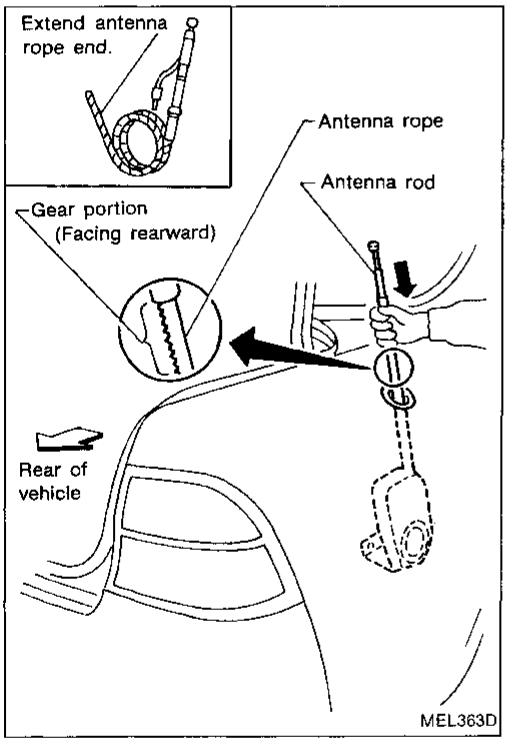
Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.

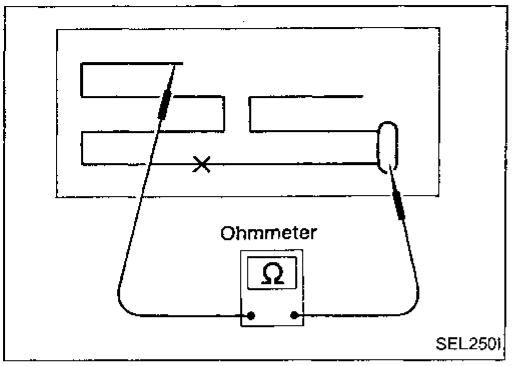


2. Withdraw antenna rod while raising it by operating antenna motor.



INSTALLATION

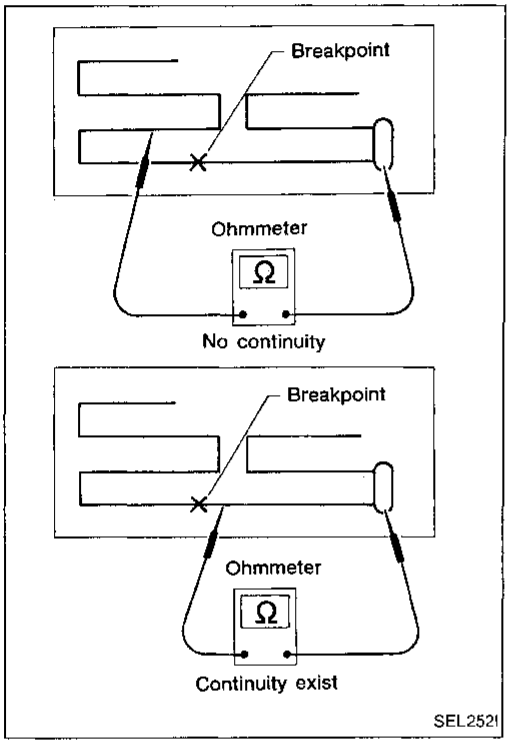
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by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



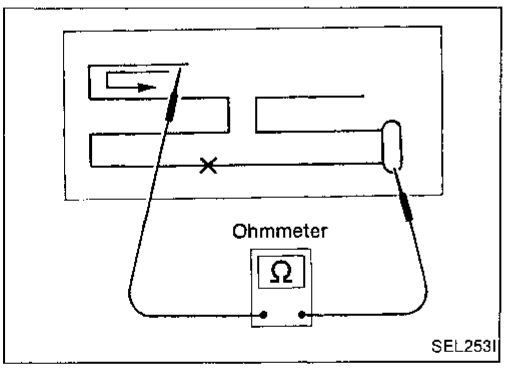
Window Antenna Repair

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.

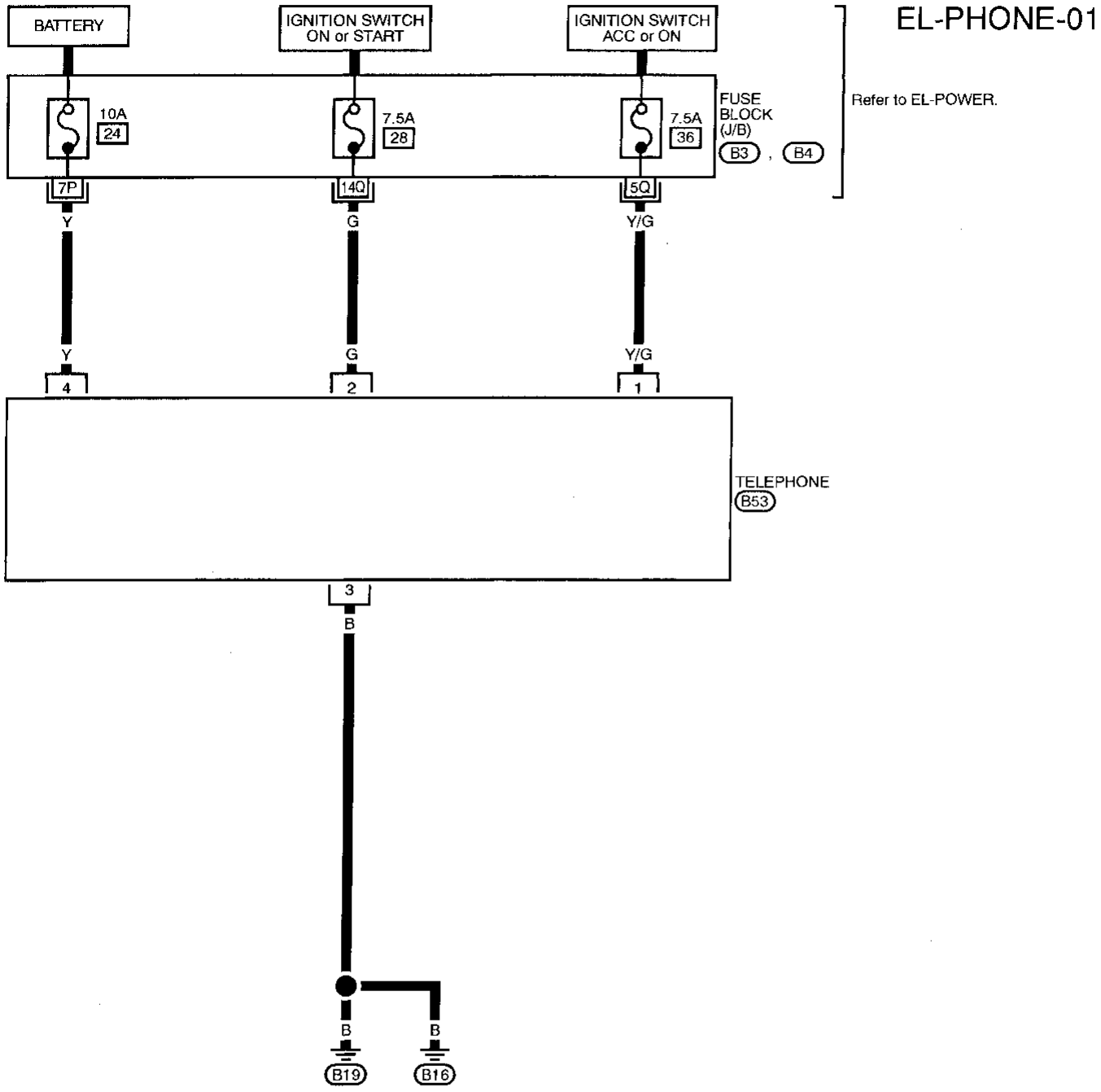


3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

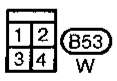
ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-101).

Telephone Pre Wire/Wiring Diagram
— PHONE —



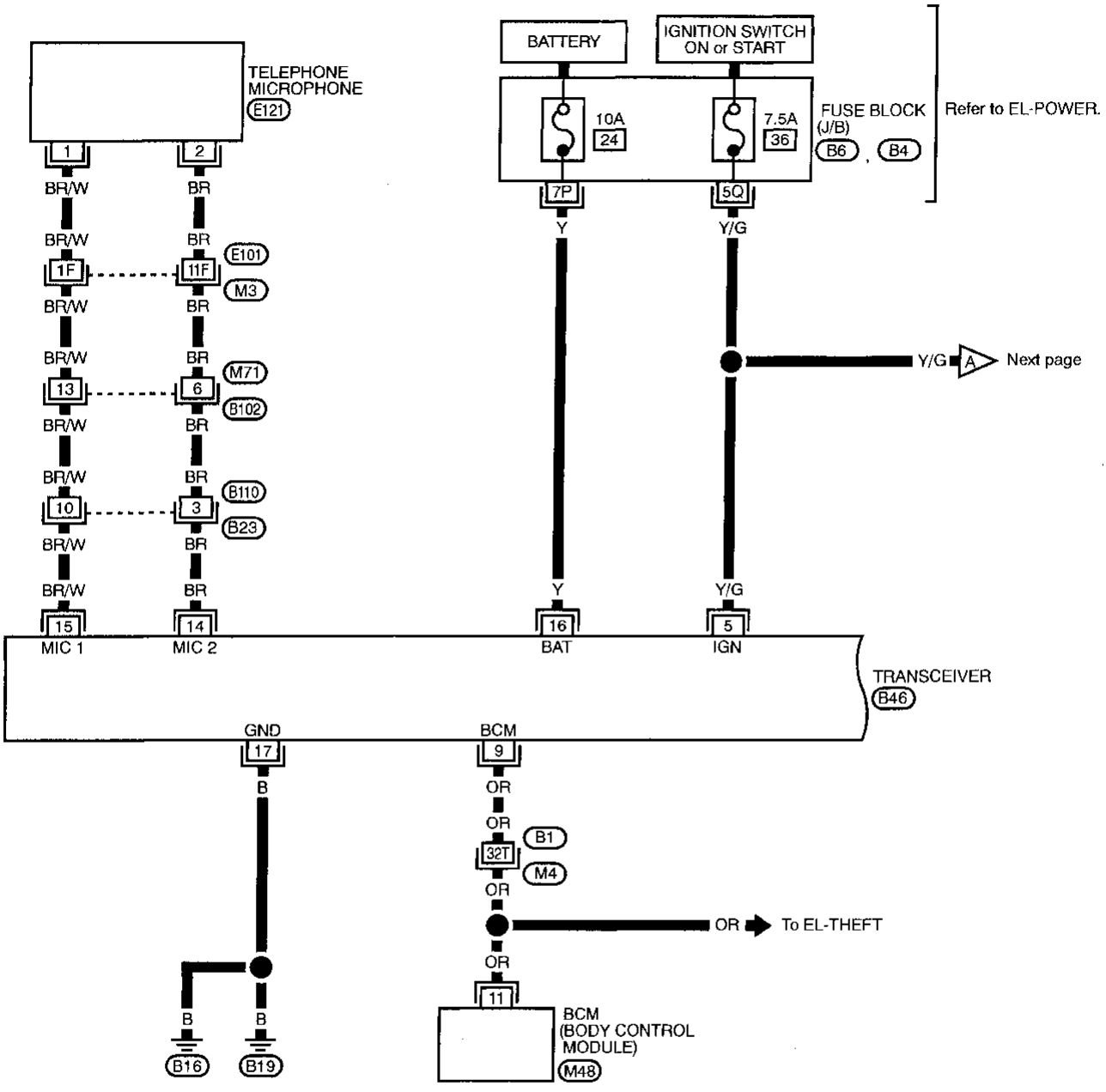
Refer to last page (Foldout page).
B3 , B4

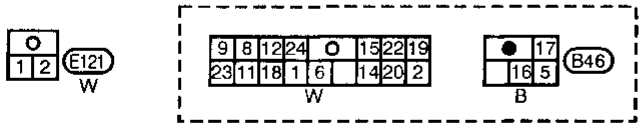


MEL525E

Handsfree Telephone/Wiring Diagram
— H/PHON —

EL-H/PHON-01





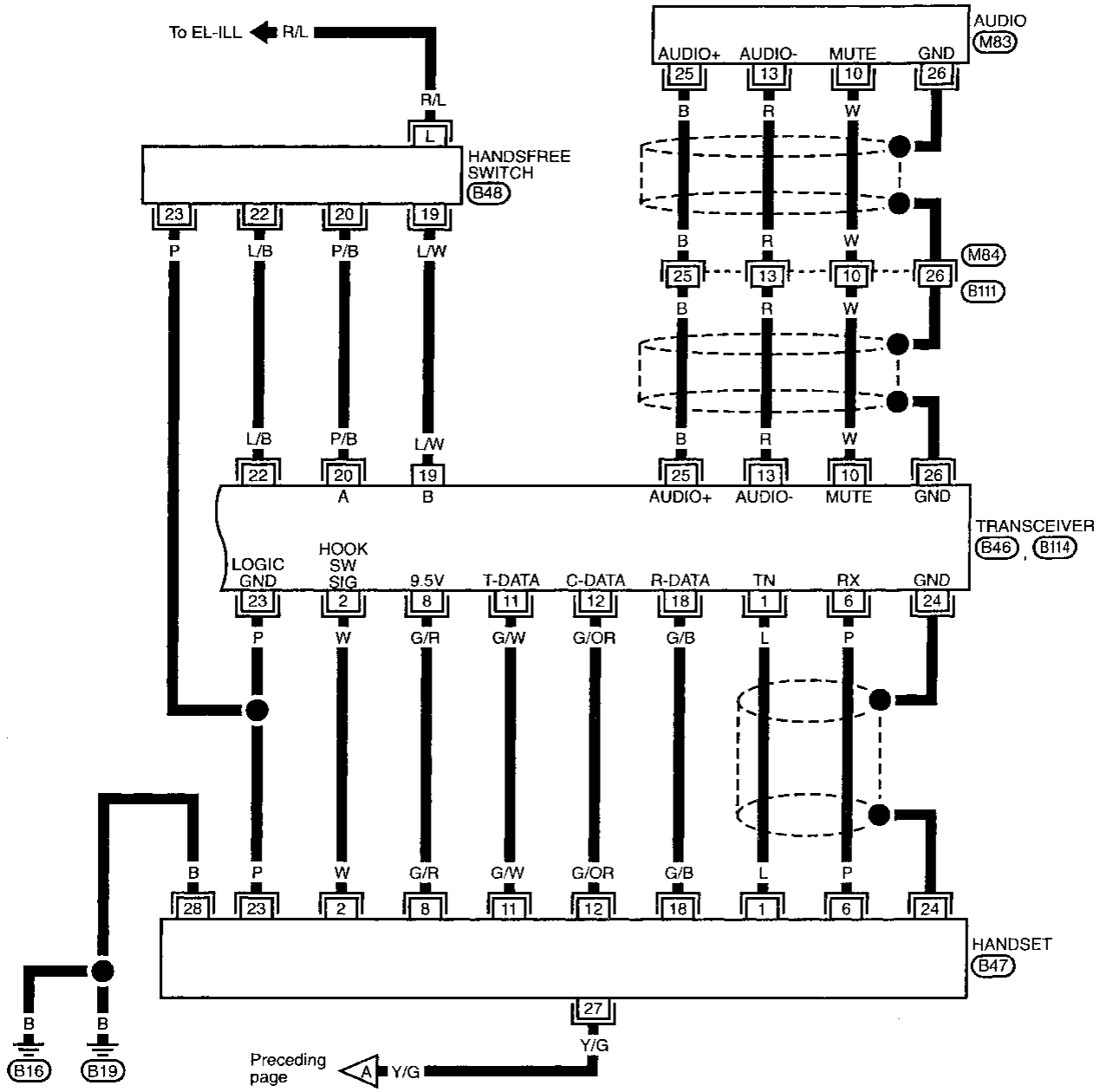
Refer to last page (Foldout page).

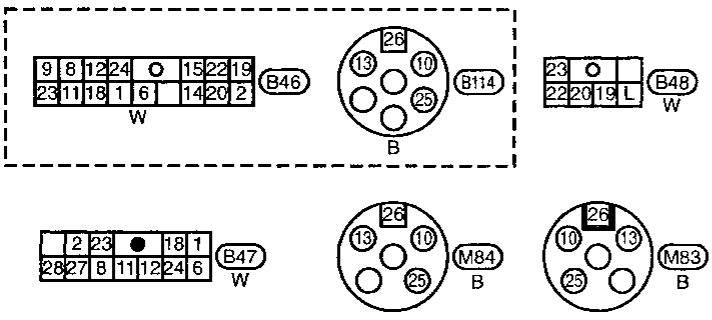
M3 , E101
M48 , M4
B6 , B1
B4

MEL526E

Handsfree Telephone/Wiring Diagram — H/PHON — (Cont'd)

EL-H/PHON-02

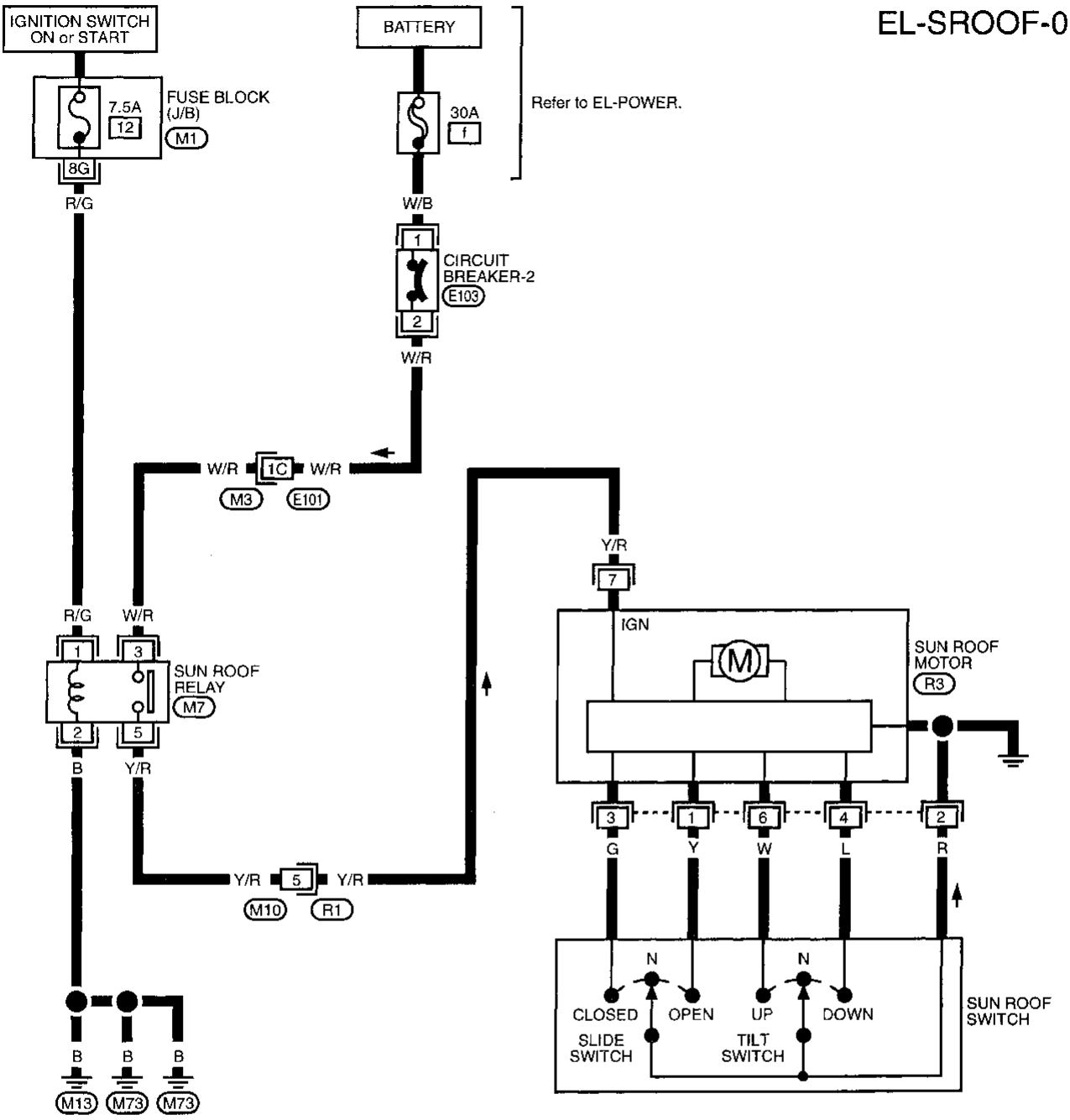


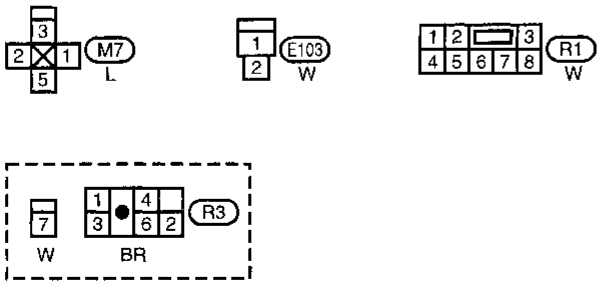


MEL527E

Sun Roof/Wiring Diagram — SROOF —

EL-SROOF-01



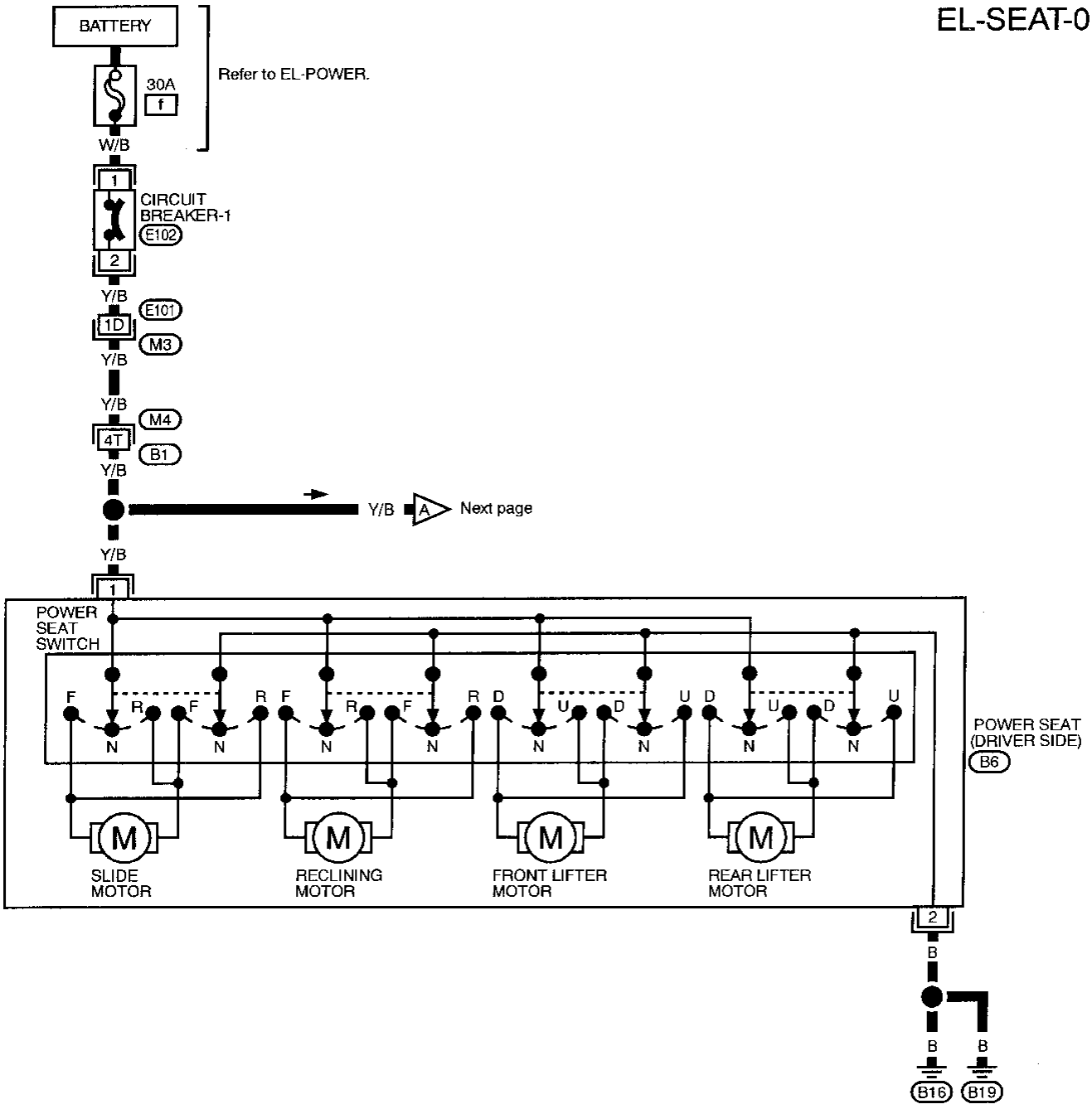


Refer to last page (Foldout page).
M1 , E101
M3

MEL528E

Power Seat/Wiring Diagram — SEAT —

EL-SEAT-01

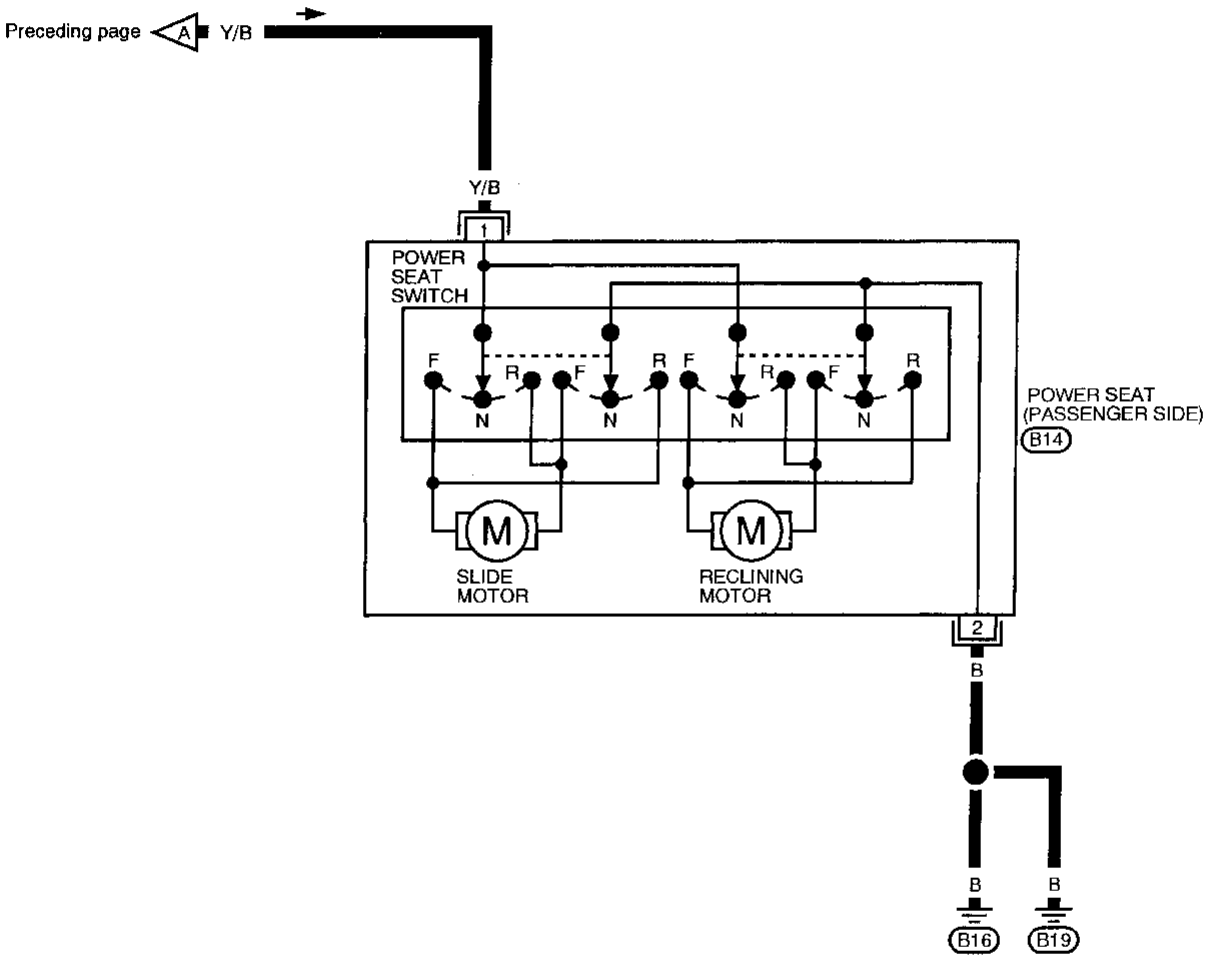


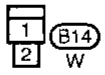
1 2 E102 W , B6 W

Refer to last page (Foldout page).
M3 , M101
M4 , B1

MEL529E

EL-SEAT-02



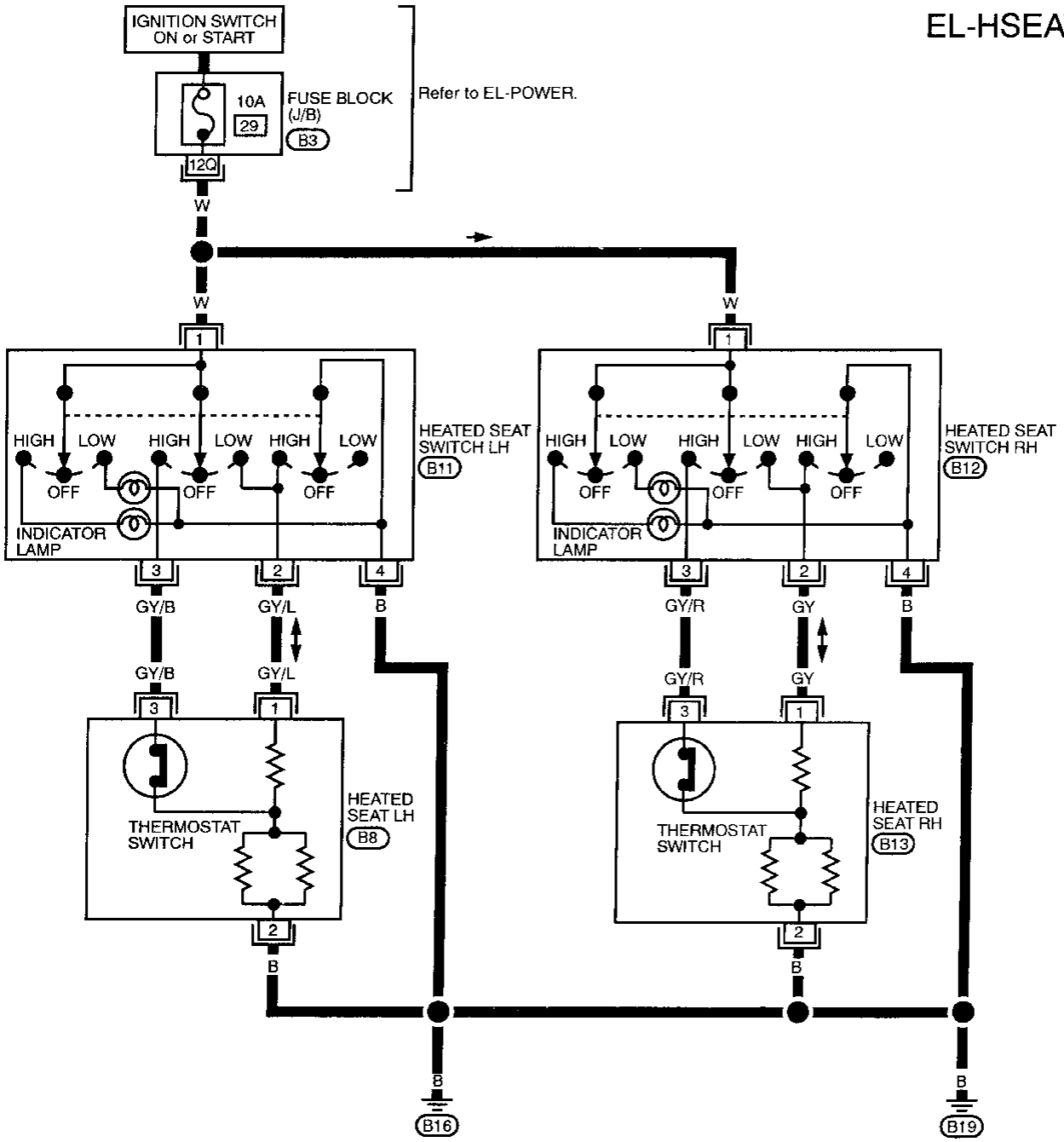


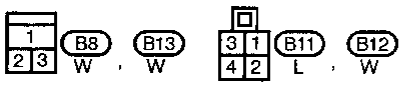
MEL530E

1257

Heated Seat/Wiring Diagram — HSEAT —

EL-HSEAT-01





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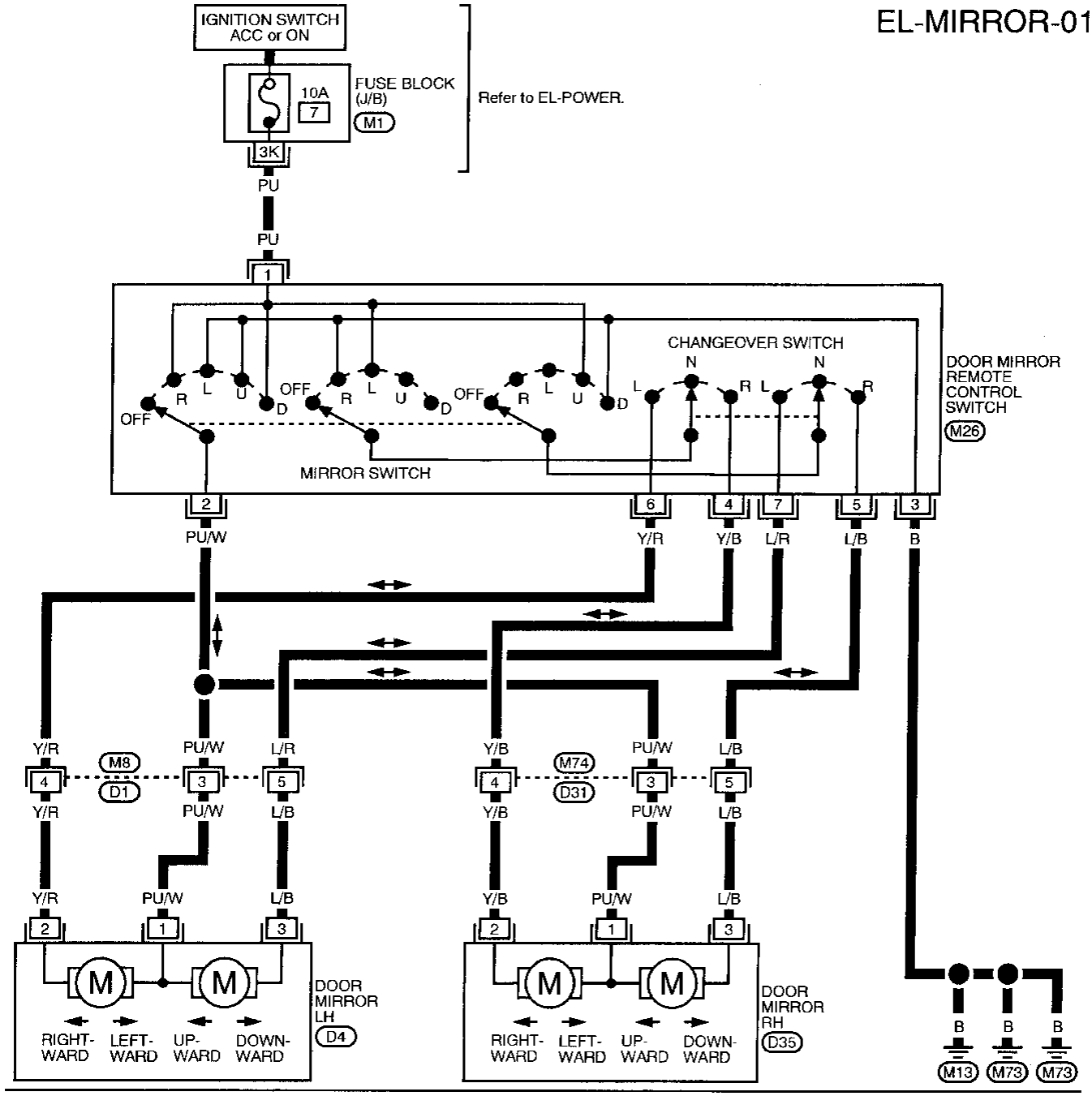
B3

MEL531E

Wiring Diagram — MIRROR —

EL-MIRROR-01



Refer to last page (Foldout page).
M1

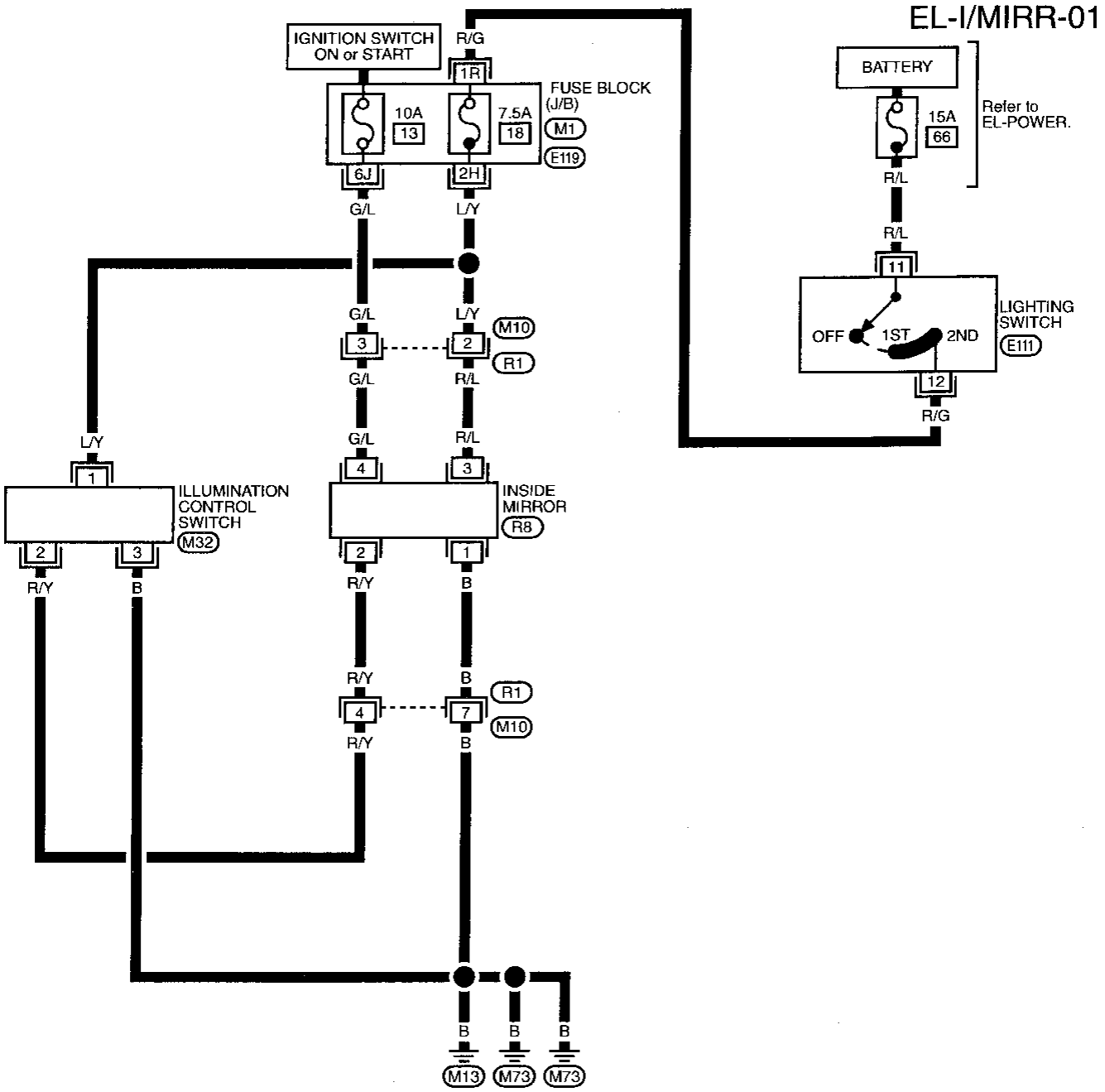
M8 W, M74 W

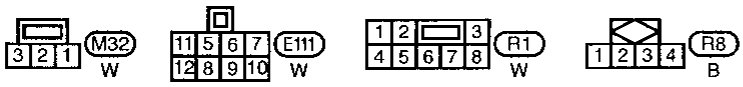
M26 GY

D4 BR, D35 BR

MEL532E

Auto Anti-dazzling Inside Mirror/Wiring Diagram — I/MIRR —





Refer to last page (Foldout page).

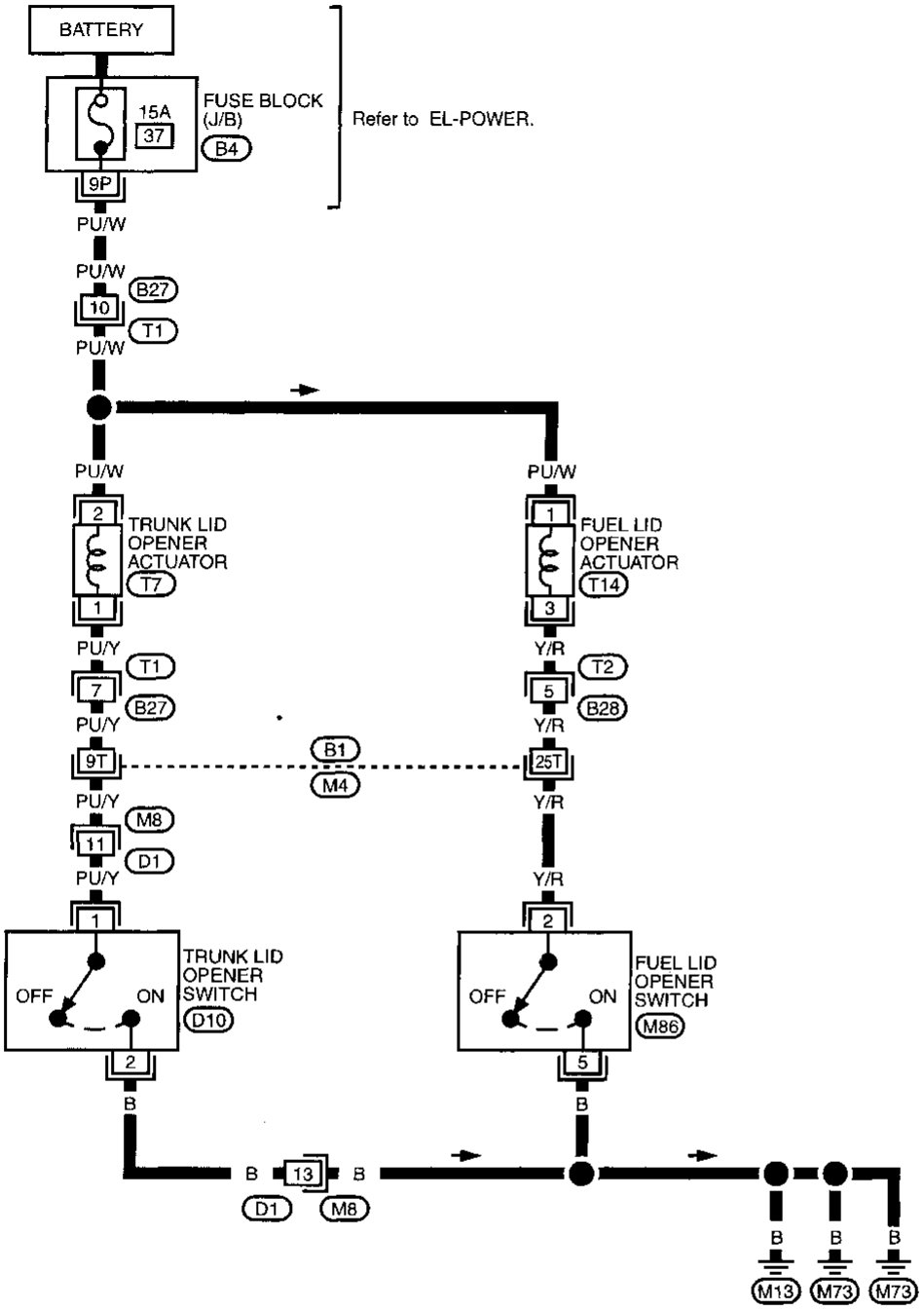
M1

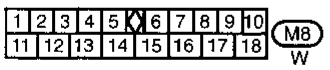
E119

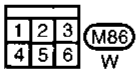
MEL533E

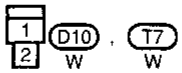
Wiring Diagram — TLID —

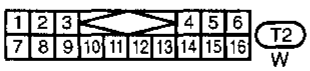
EL-TLID-01







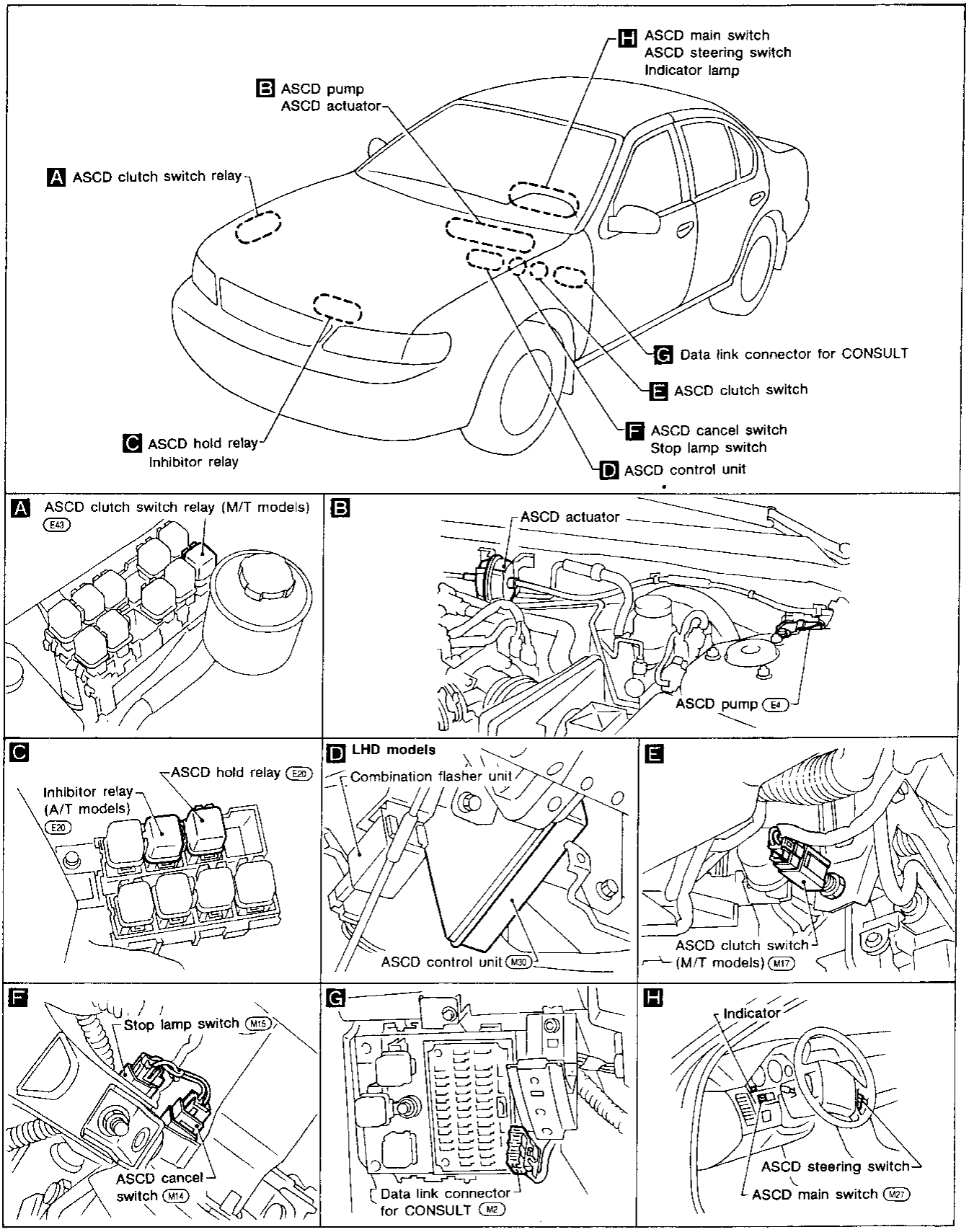




Refer to last page (Foldout page).
M4 , B1
B4

MEL534E

Component Parts and Harness Connector Location



MEL587E

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. 12 , located in the fuse block (J/B)]
- to ASCD main switch terminal ① and
- to ASCD hold relay terminal ⑤ and ASCD clutch switch relay terminal ① (M/T models).

When ASCD main switch is in the ON position, power is supplied
- from terminal ② of the ASCD main switch
- to ASCD control unit terminal ④ and
- from terminal ③ of the ASCD main switch
- to ASCD hold relay terminal ①.

Ground is supplied
- to ASCD hold relay terminal ②
- through body grounds E5 and E30.

With power and ground supplied, the ASCD hold relay is activated, and power is supplied
- from terminal ③ of the ASCD hold relay
- to ASCD clutch switch relay terminal ⑥ (M/T models) or
- to ASCD hold relay terminal ③ (A/T models).

Power remains supplied also to ASCD control unit terminal ④ when the ASCD main switch is released to the N (neutral) position.
Ground is supplied
- to ASCD control unit terminal ③
- through body grounds M13 and M73.

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
- inhibitor relay (A/T models)
- ASCD clutch switch (M/T models) and
- ASCD cancel switch.

A vehicle speed input is supplied
- from terminal ⑭ of the combination meter
- to ASCD control unit terminal ⑦

Power is supplied at all times
- to stop lamp switch terminal ①
- through 15A fuse [No. 10 , located in the fuse block (J/B)].

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 10A fuse (No. 64 , located in the fuse and fusible link box)
- to horn relay terminal ②
- through terminal ① of the horn relay
- to ASCD steering switch terminal ㉑.

When the SET/COAST switch is depressed, power is supplied
- from terminal ㉒ of the ASCD steering switch
- to ASCD control unit terminal ②.

When the RESUME/ACCEL switch is depressed, power is supplied
- from terminal ㉓ of the ASCD steering switch
- to ASCD control unit terminal ①.

When the ASCD 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 ①.

Power is interrupted when
- the shift lever is placed in P or N (A/T models)
- the clutch pedal is depressed (M/T models) or

System Description (Cont'd)

- the brake pedal is depressed.

Outputs

The ASCD actuator controls the throttle drum via the ASCD wire based on inputs from the ASCD control unit. The ASCD actuator 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 ⑧ and
- to A/T control unit terminal ㊲ (A/T models).

Ground is supplied
- to combination meter terminal ㉛
- through body grounds (M13) and (M73).

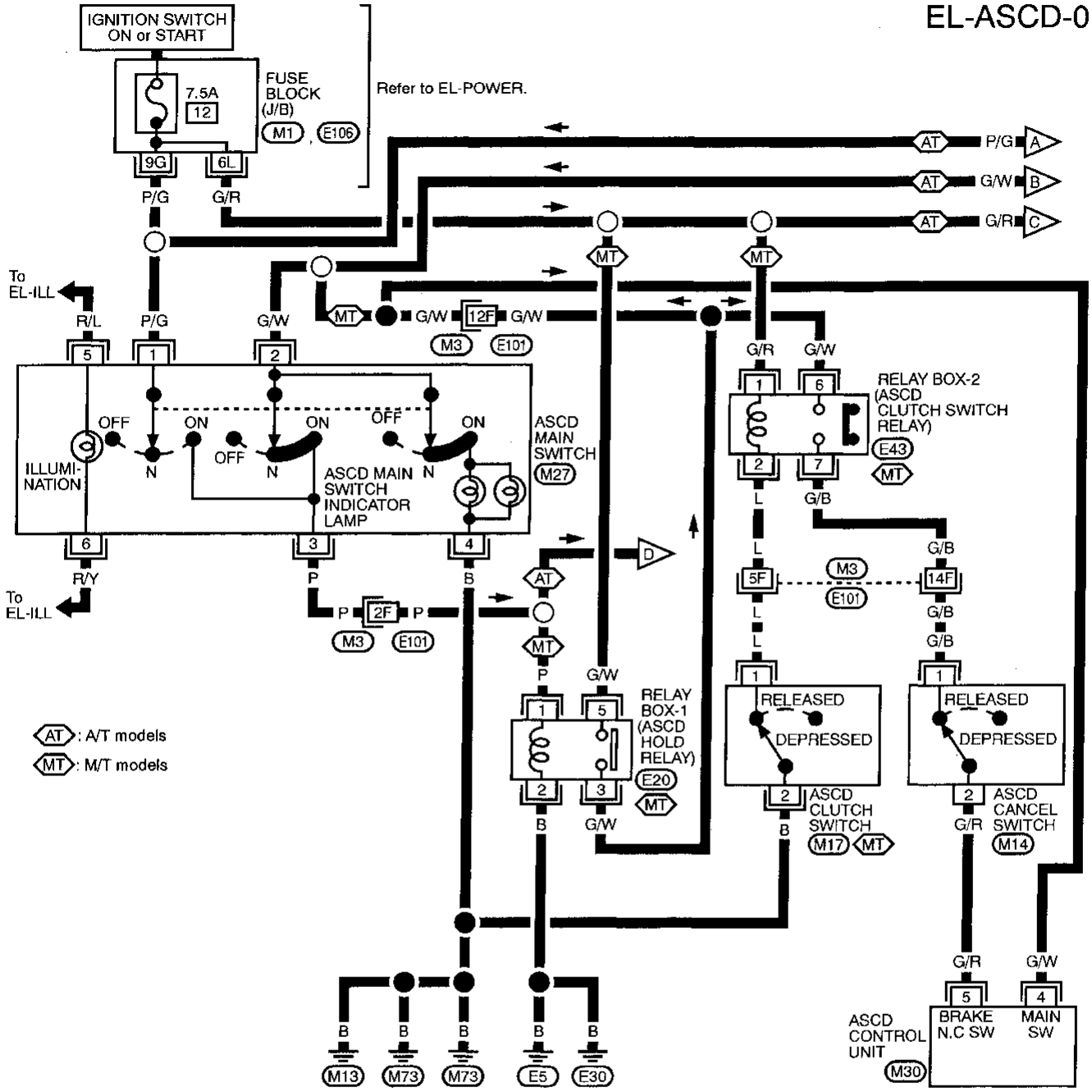
With power and ground supplied, the CRUISE indicator illuminates.

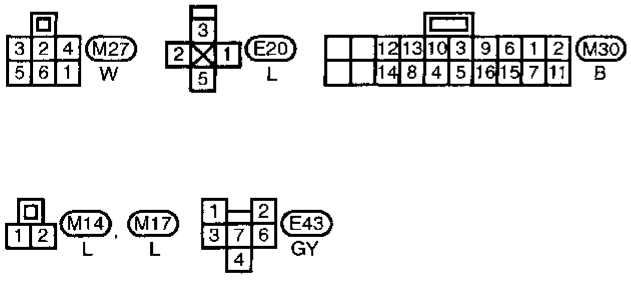
When the RESUME/ACCEL button is depressed on A/T models, a signal is sent
- from terminal ⑫ of the ASCD control unit
- to A/T control unit terminal ㊵.

When this occurs, the A/T control unit cancels overdrive.

Wiring Diagram — ASCD —

EL-ASCD-01

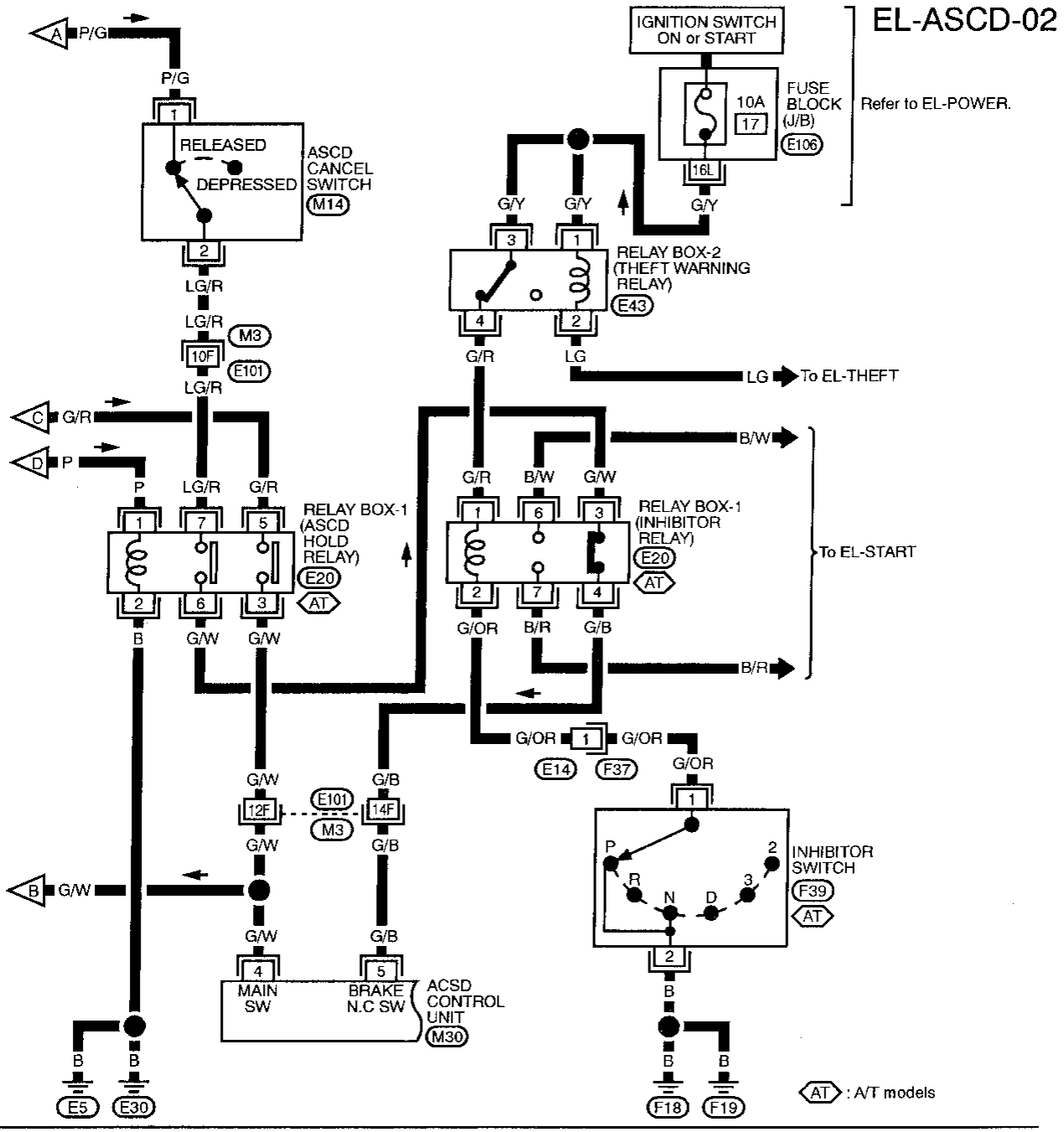


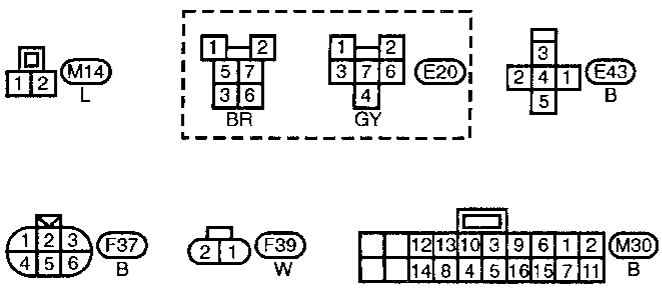


Refer to last page (Foldout page).
M1, M3
E101, E106

MEL535E

Wiring Diagram — ASCD — (Cont'd)





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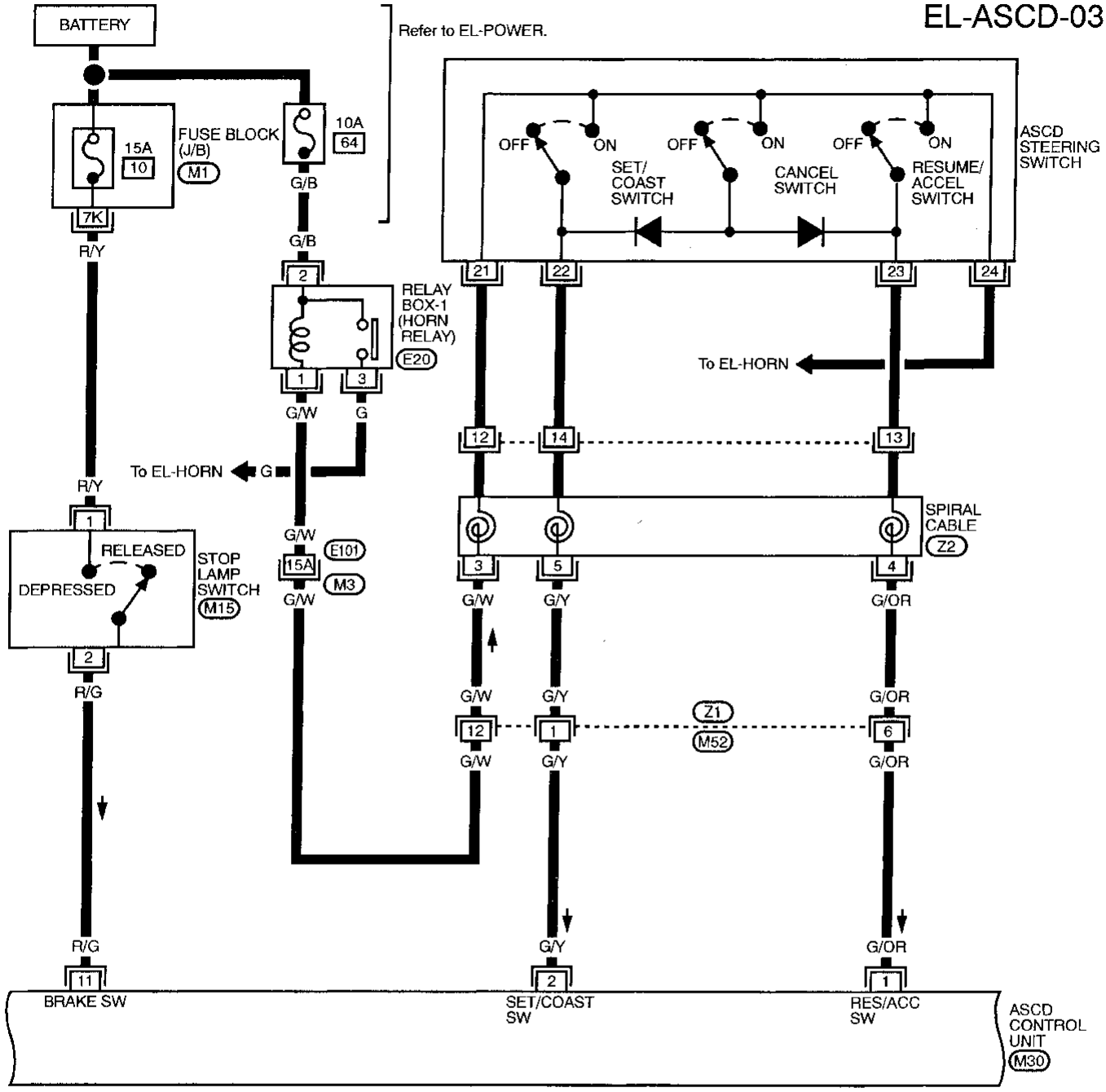
M1 , M3

E101 , E106

MEL536E

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03



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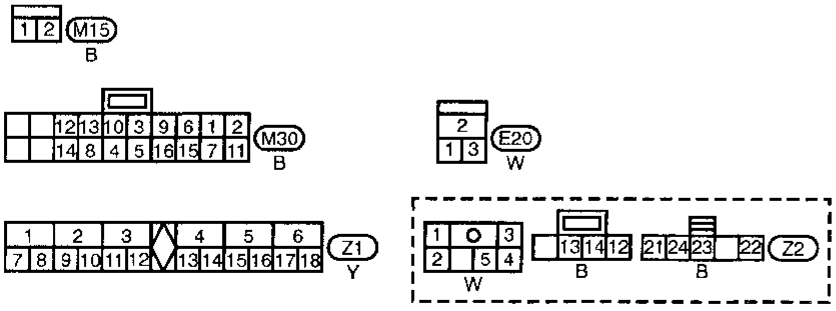
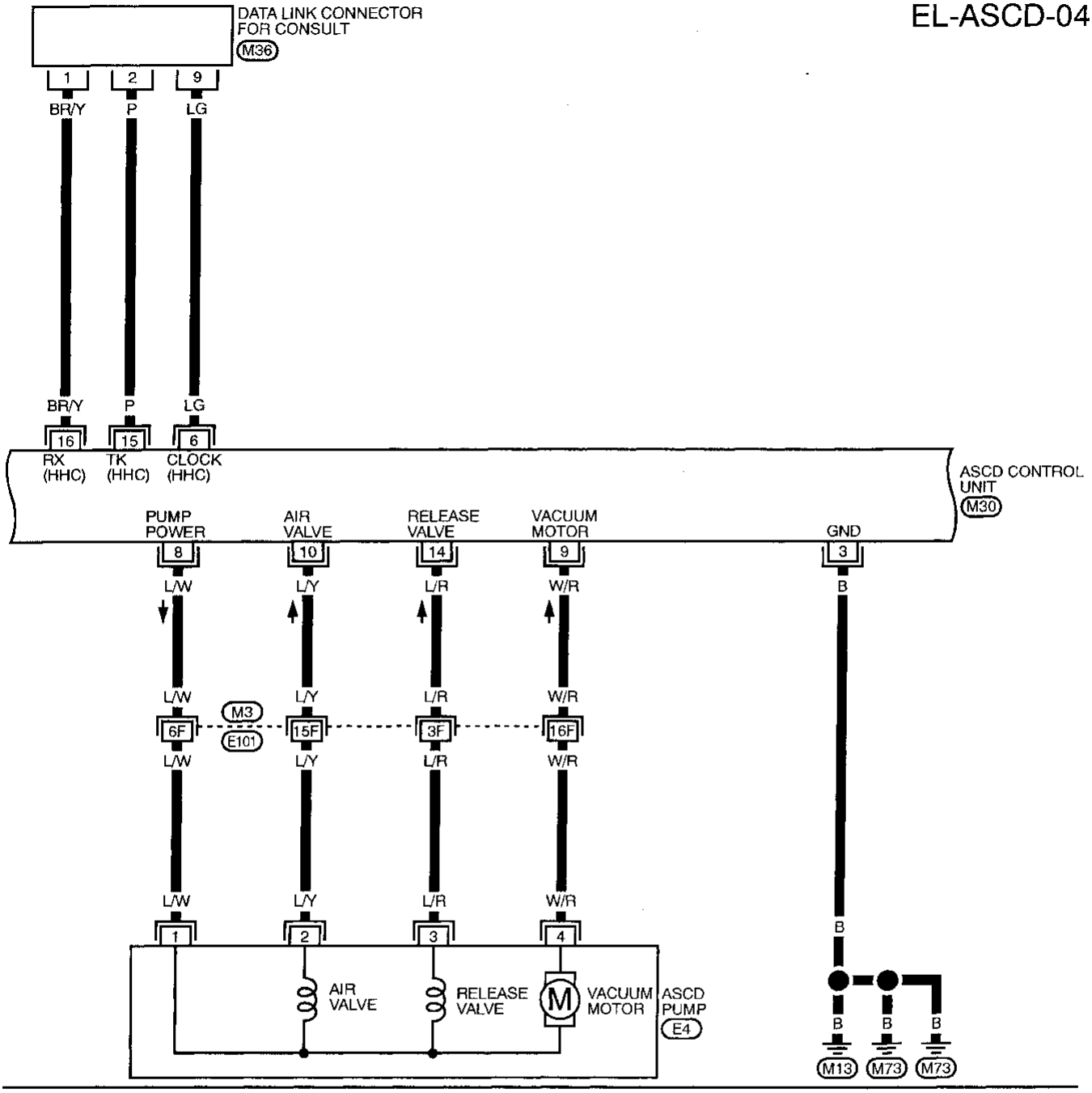
M3 , E101
M1

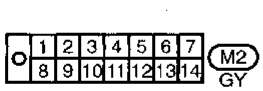


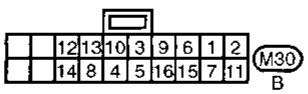
MEL537E

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-04







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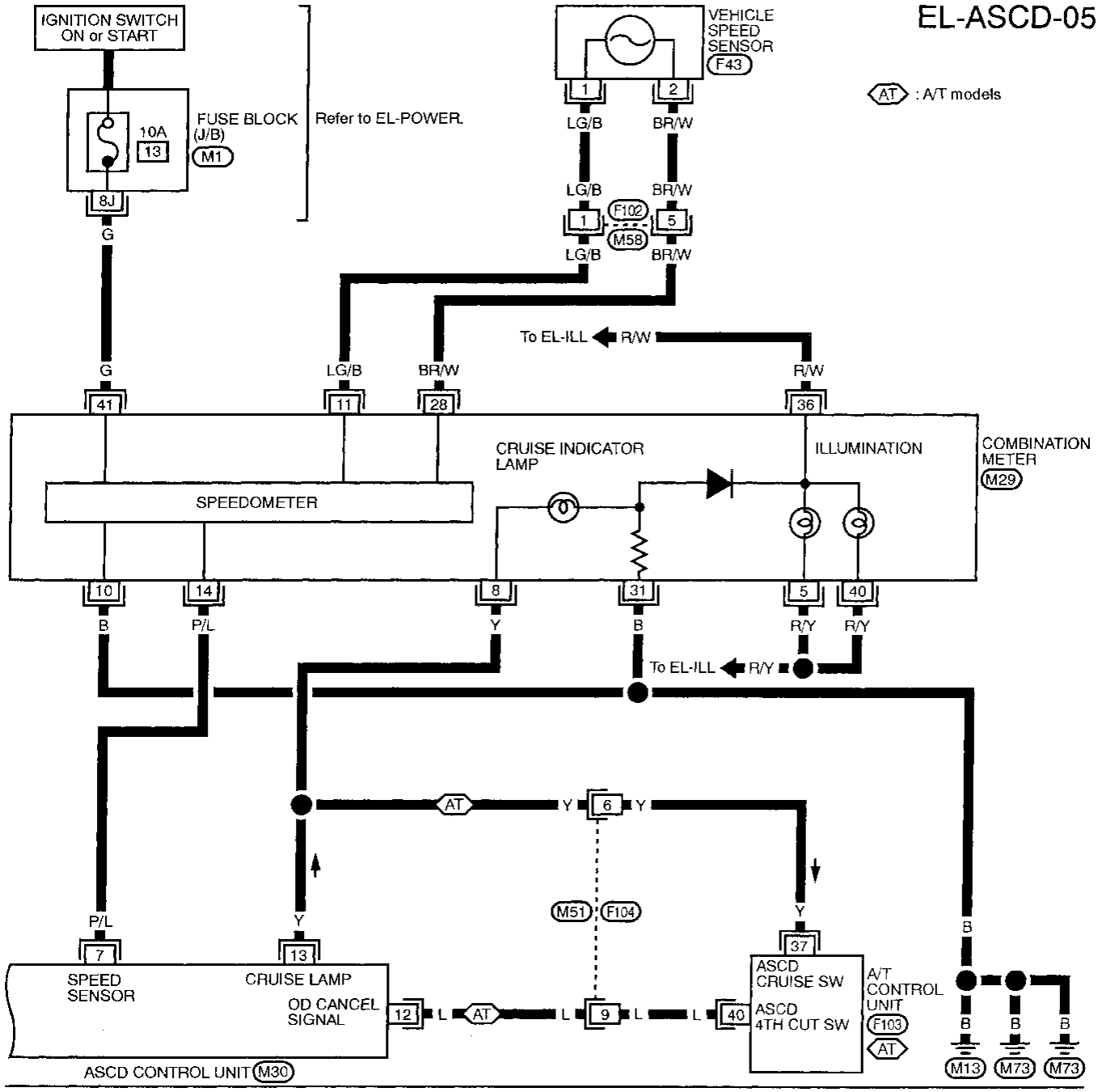
M3 , E101

MEL538E

Wiring Diagram — ASCD — (Cont'd)



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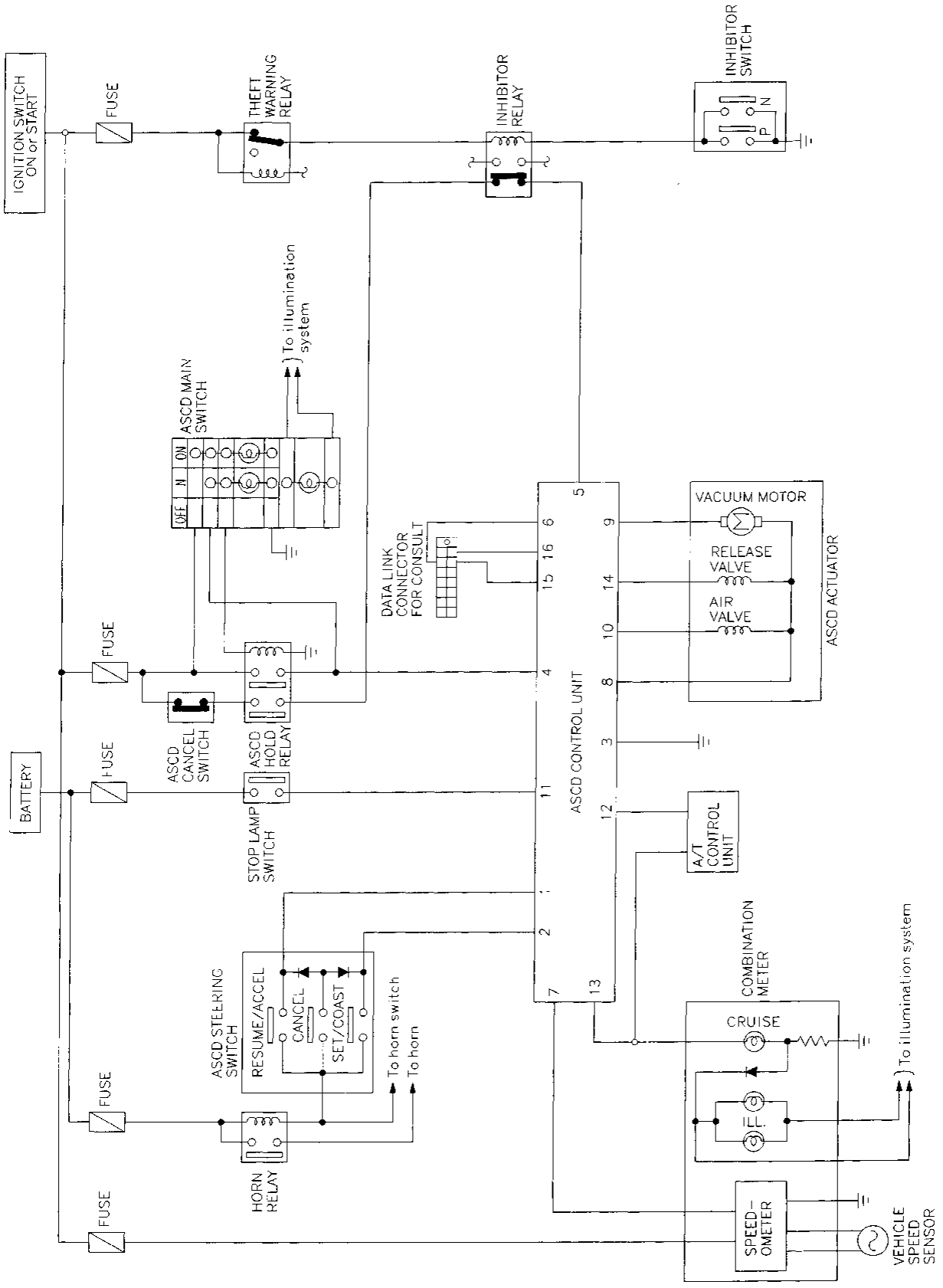
M1
F103

MEL539E

Schematic

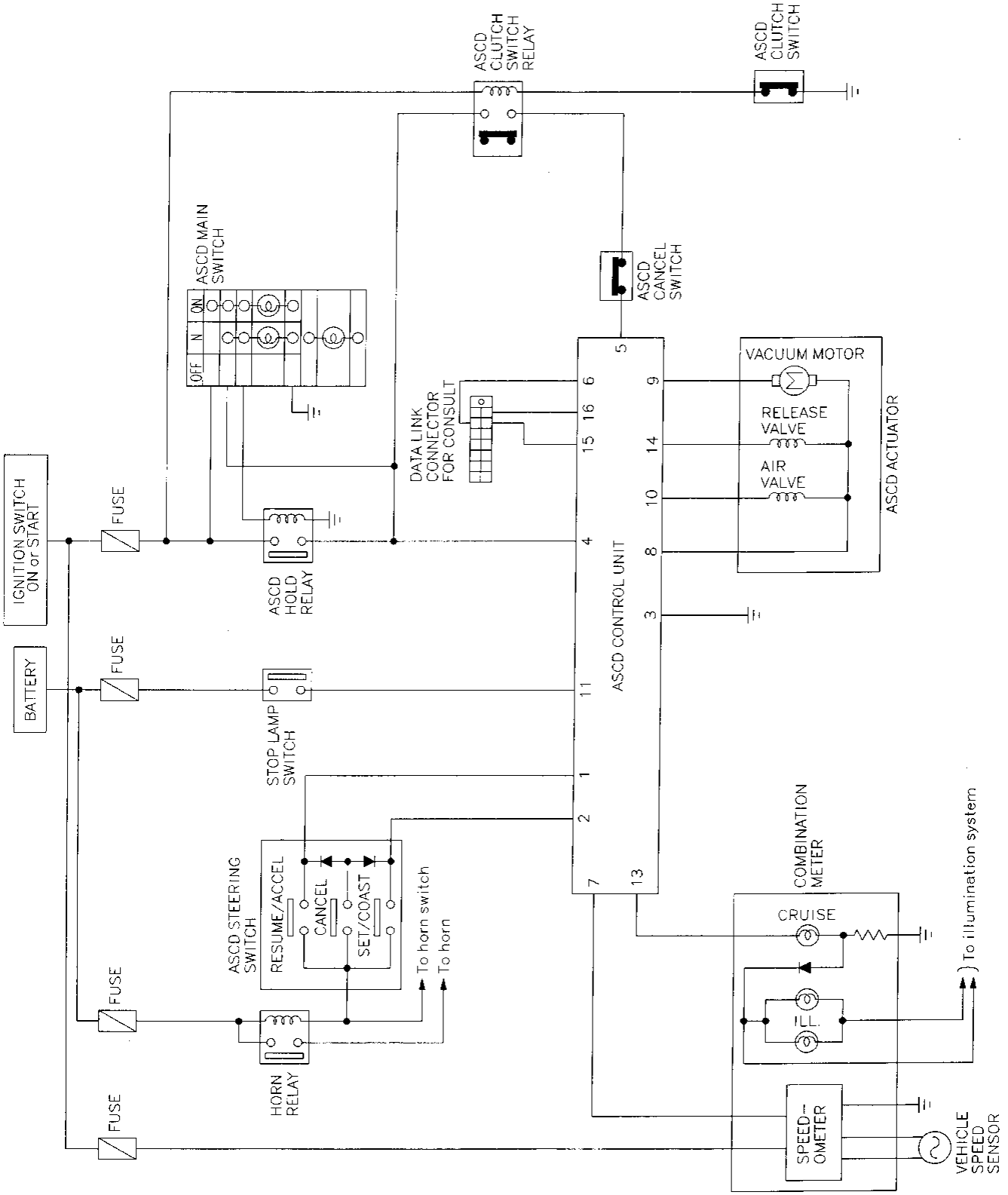
A/T MODELS



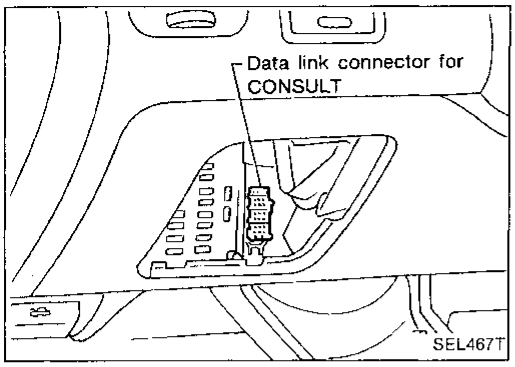
MEL540E

Schematic (Cont'd)

M/T MODELS



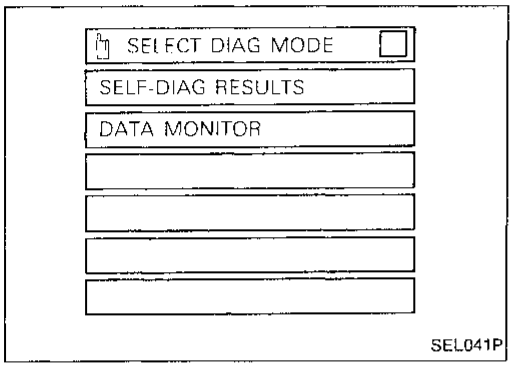
MEL581E



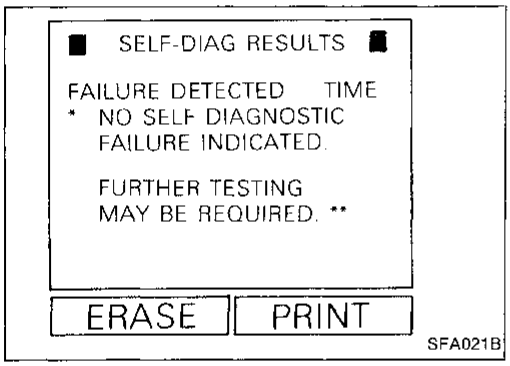
Trouble Diagnoses

CONSULT

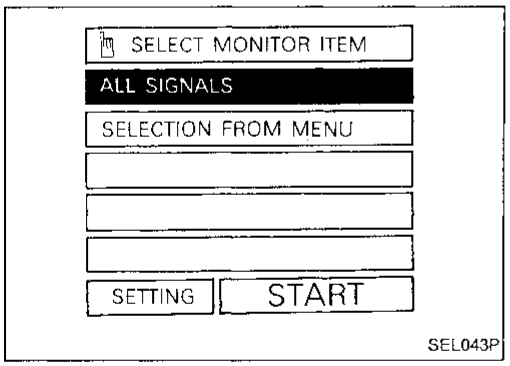
1. Turn off ignition switch.
2. Connect "CONSULT" to Data link connector.



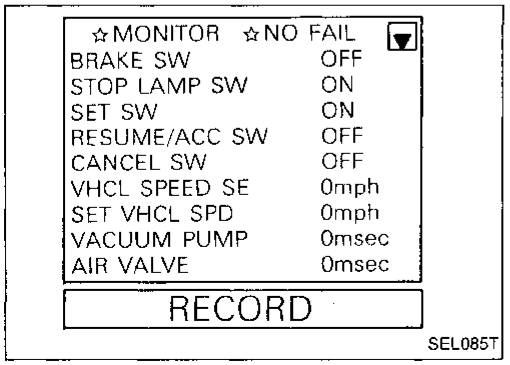
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- 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.

Trouble Diagnoses (Cont'd)

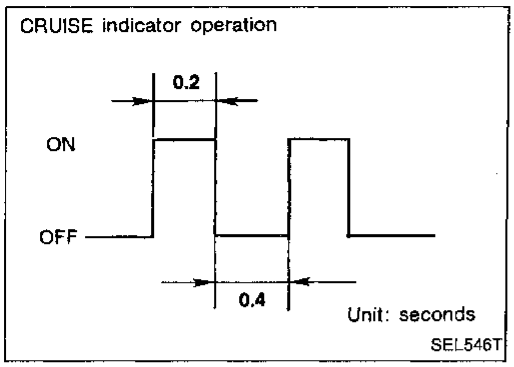
Self-diagnostic results

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 valves is open. (An abnormally high voltage is entered.)	Diagnostic procedure 7 (EL-144)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.	Diagnostic procedure 7 (EL-144)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-144)
VHCL SP·S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.	Diagnostic procedure 6 (EL-143)
CONTROL UNIT	• The ASCD control unit is malfunctioning.	Replace ASCD control unit.
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-144)
BRAKE SW/STOP/L SW	• The brake switch or stop lamp switch is malfunctioning.	Diagnostic procedure 4 (EL-141)

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.

Trouble Diagnoses (Cont'd)



FAIL-SAFE SYSTEM

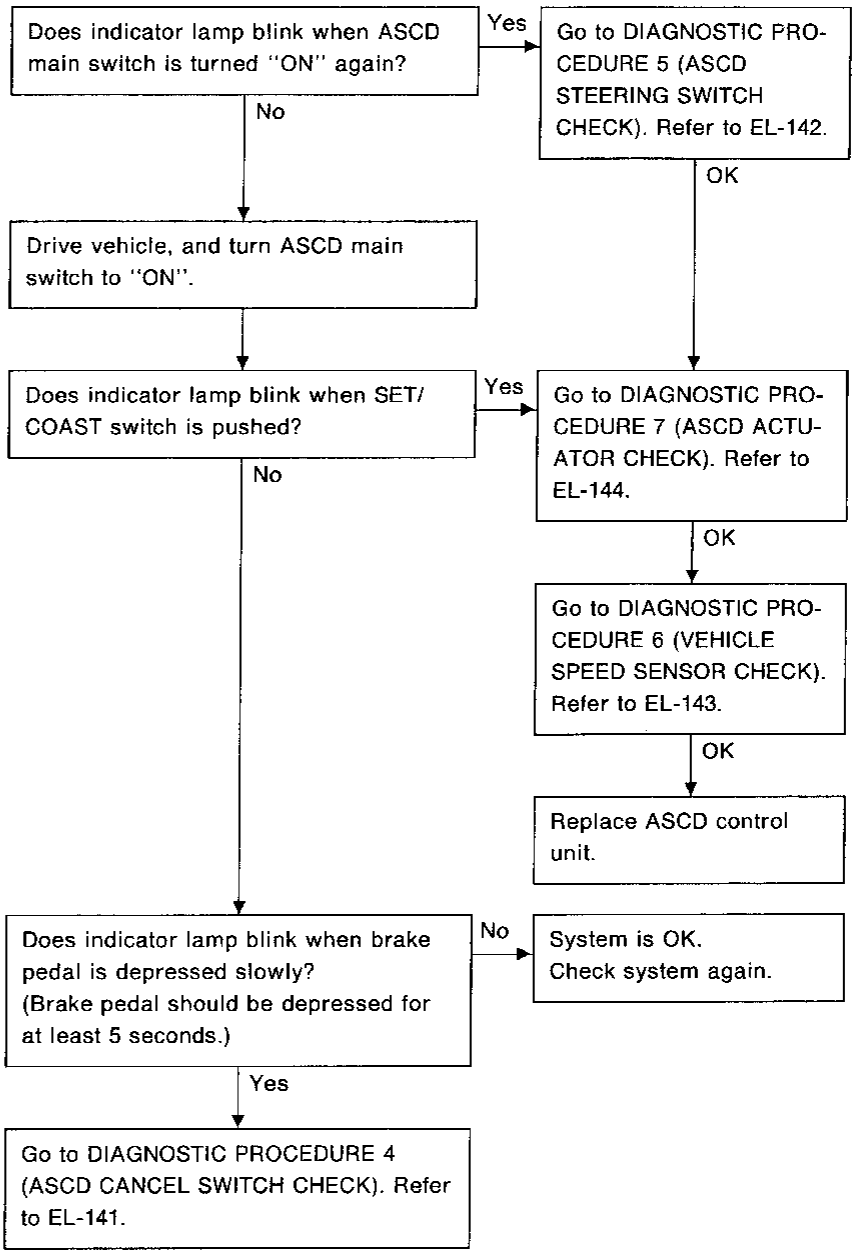
When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE indicator in the combination meter will then flash.

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 cancel switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is not canceled.

Trouble Diagnoses (Cont'd)

Fail-safe system check



Trouble Diagnoses (Cont'd)

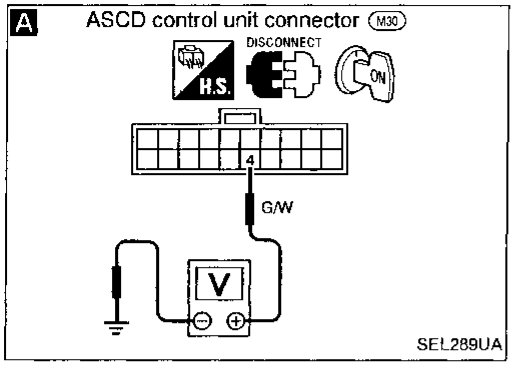
SYMPTOM CHART

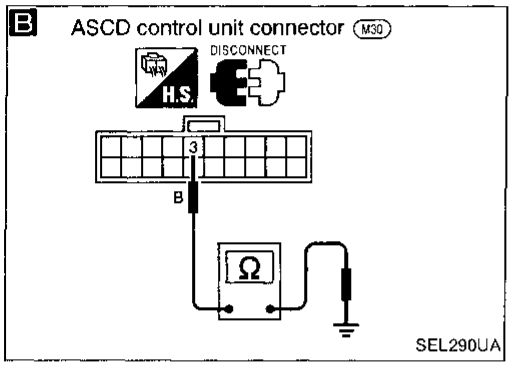
PROCEDURE	—		Diagnostic procedure							
REFERENCE PAGE	EL-134	EL-137	EL-139	EL-139	EL-140	EL-141	EL-142	EL-143	EL-144	EL-145
SYMPTOM	Self-diagnosis in CONSULT	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD CANCEL SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD ACTUATOR CHECK)	DIAGNOSTIC PROCEDURE 8 (VACUUM HOSE AND ACCEL WIRE CHECK)
ASCD cannot be set.	X	X	X	X	X	X	X	X	X	X
Steering CANCEL switch will not operate.	X						X			
Steering ACCEL switch will not operate.	X						X			
Steering RESUME switch will not operate.	X						X			
Large difference between set speed and actual vehicle speed.	X	X	X			X	X	X	X	X
Deceleration is greatest immediately after ASCD has been set.	X	X	X			X	X	X	X	X
"CRUISE" indicator lamp blinks. (It indicates that system is in fail-safe.)	X	X	X			X	X	X	X	
Engine hunts.	X	X	X			X	X	X	X	X

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 terminals ④ and body ground.
   Battery voltage should exist.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-140.

OK ↓

B

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

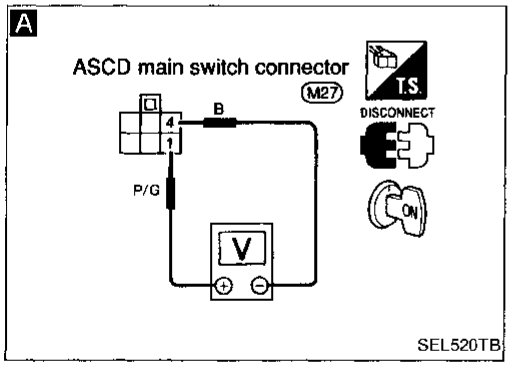
NG → Repair harness.

OK ↓

Go to next procedure.

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.

NG → Check the following.
- 7.5A fuse (No. 12, located in the fuse block)
- Harness for open or short between fuse and ASCD main switch.

OK ↓

Check ASCD main switch. Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-146).

NG → Replace ASCD main switch.

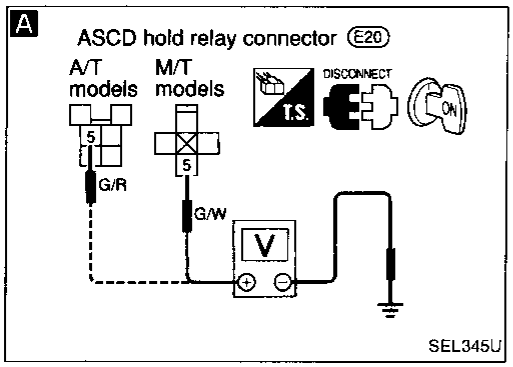
OK ↓

Go to next procedure.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CIRCUIT CHECK)

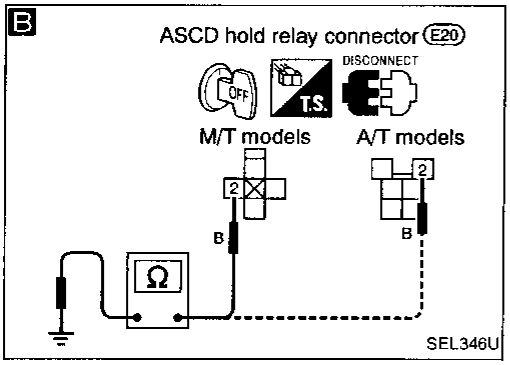


A

CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY.
1. Disconnect ASCD hold relay
2. Do approx. 12 volts exist between ASCD hold relay harness terminal ⑤ and body ground?

No → Check 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 harness terminal ② and body ground?

No → Repair harness.

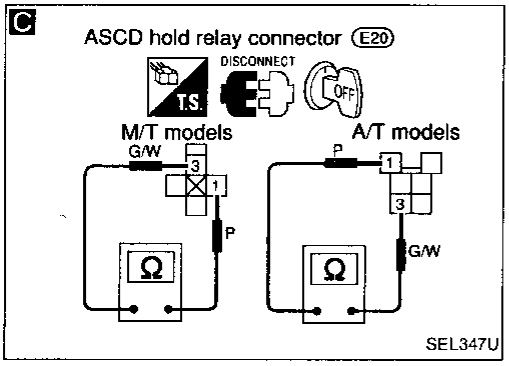
Yes

C

CHECK ASCD HOLD RELAY CIRCUIT.
Does continuity exist between ASCD hold relay harness terminals ③ and ①?

Yes → Check ASCD hold relay.

No



CHECK ASCD MAIN SWITCH.
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-146).

NG → Replace ASCD main switch.

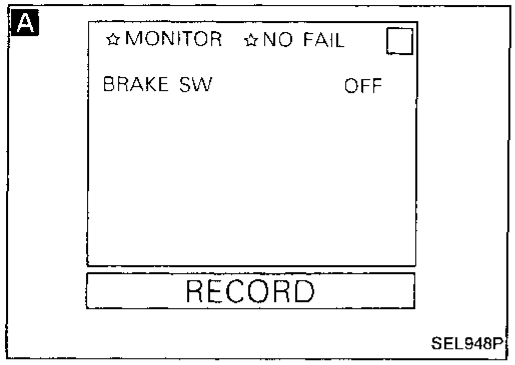
OK

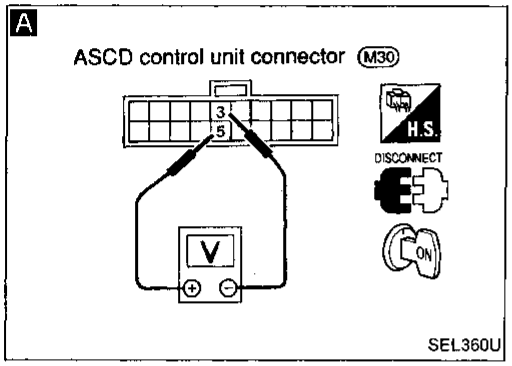
Go to next procedure.

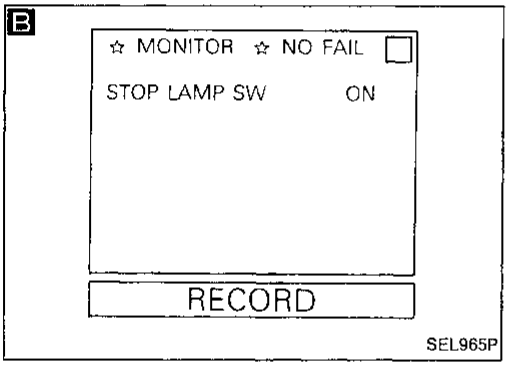
Trouble Diagnoses (Cont'd)

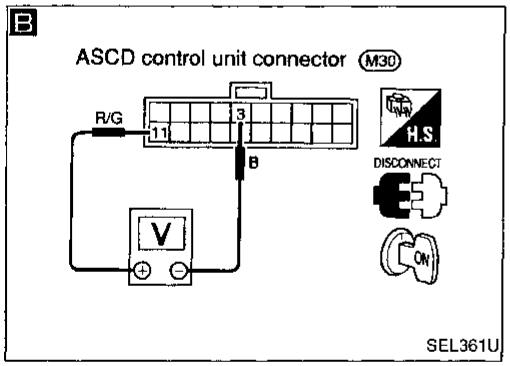
DIAGNOSTIC PROCEDURE 4

(ASCD CANCEL SWITCH CHECK)









A

CHECK CUT-OFF CIRCUIT FOR ASCD CONTROL UNIT.

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

When brake pedal or clutch pedal (M/T) is depressed or A/T shift lever (A/T) is in "N" or "P" range:

BRAKE SW OFF

When both brake pedal and clutch pedal (M/T) are released and A/T shift lever (A/T) is not in "N" or "P" range:

BRAKE SW ON

NG → CHECK THE FOLLOWING.
- ASCD cancel switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-147).
- ASCD clutch switch (M/T model)
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-147).
- Inhibitor switch (A/T model)
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-147).
- ASCD hold relay (A/T model)
- Harness for open or short

OR

1. Disconnect control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch "ON".
4. Measure voltage between control unit connector terminals ⑤ and ③. When brake pedal or clutch pedal (M/T) is depressed or A/T shift lever (A/T) is in "N" or "P" range:

Approx. 0V

When both brake pedal and clutch pedal (M/T) are released and A/T shift lever (A/T) is not in "N" or "P" range:

Battery voltage should exist.

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.
- Harness for open or short between ASCD control unit and stop lamp switch.
- Fuse
- Stop lamp switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-147).

OR

1. Disconnect control unit connector.
2. Check voltage between control unit harness terminals ⑪ and ③.

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

OK ↓

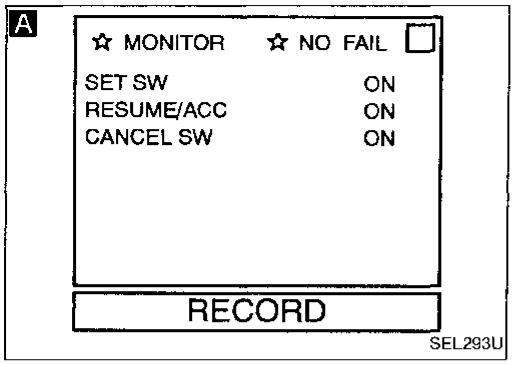
ASCD cancel switch is OK.

Trouble Diagnoses (Cont'd)

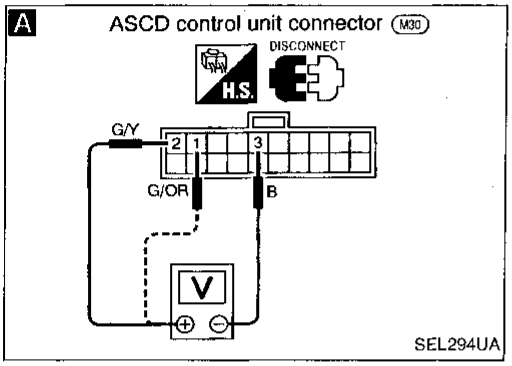
DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)

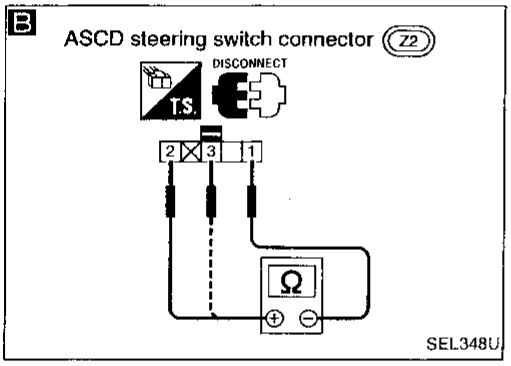
A



A



B



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 harness terminals.

	Terminal No.		Switch condition	
	⊕	⊖	Pressed	Released
SET/ COAST SW	②	③	12V	0V
RESUME/ ACC SW	①	③	12V	0V
CANCEL SW	②	③	6V	0V
	①	③	6V	0V

NG ↓

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

NG → Check the following.
- 10A fuse (No. 64, located in the relay box)
- Horn relay
- Harness for open or short

OK ↓

B

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

NG → Replace ASCD steering switch.

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

OK ↓

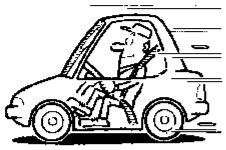
Check harness for open or short between ASCD steering switch and ASCD control unit.

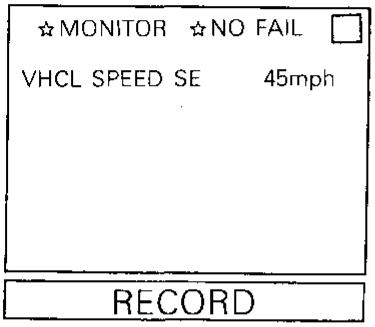
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)

A





SEL084T

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 front of vehicle.
2. Disconnect control unit connector.
3. Connect voltmeter between control unit harness terminals ⑦ and ③.
4. Slowly turn front wheel.
5. Check deflection of voltmeter pointer.

NG ↓

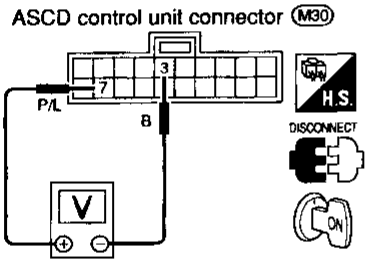
Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-82.

Yes ↓

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ⑭.

A



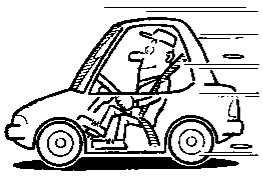
SEL525TB

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(ASCD ACTUATOR CHECK)

A



☆ MONITOR ☆ NO FAIL

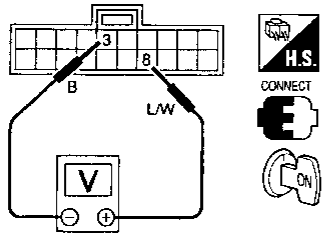
PW SUP-VALVE ON

RECORD

SEL860R

A

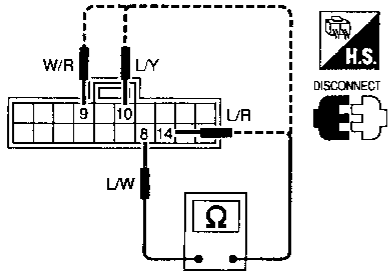
ASCD control unit connector (M30)



SEL526T

B

ASCD control unit connector (M30)



SEL527T

A

CHECK OUTPUT FOR ASCD ACTUATOR/ASCD PUMP.

1. Read out "PW SUP-VALVE" in "Data monitor" mode while driving.
   PW SUP-VALVE:
   ON (When ASCD is operating.)
   OFF (When ASCD is not operating.)

OR

1. Turn ignition switch ON.
2. Check voltage between control unit harness terminals ⑧ and ③.
   Voltage is 0V.

NG → Replace ASCD control unit.

OK ↓

B

1. Disconnect ASCD control unit connector.
2. Measure resistance between control unit harness terminals ⑧ and ⑨, ⑩, ⑭.

Terminals		Resistance [Ω]
⑧	⑨	Approx. 8 - 45
	⑩	Approx. 65
	⑭	Approx. 65

OK → ASCD actuator is OK.

NG ↓

CHECK ASCD ACTUATOR.
Refer to "Electrical Components Inspection" (EL-146).

OK → Check harness for open or short between ASCD actuator and ASCD control unit.

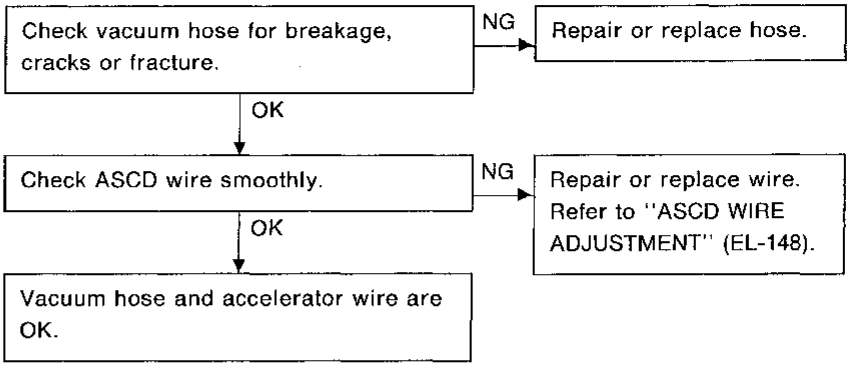
NG ↓

Replace ASCD actuator.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(VACUUM HOSE AND ACCEL WIRE CHECK)

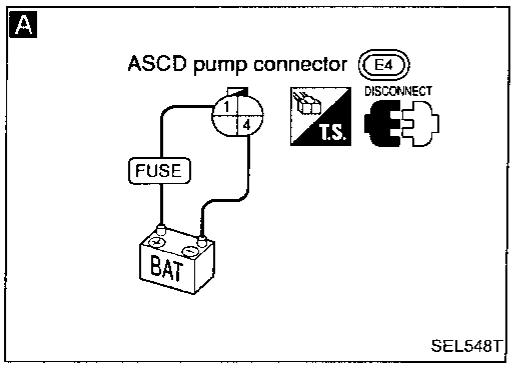


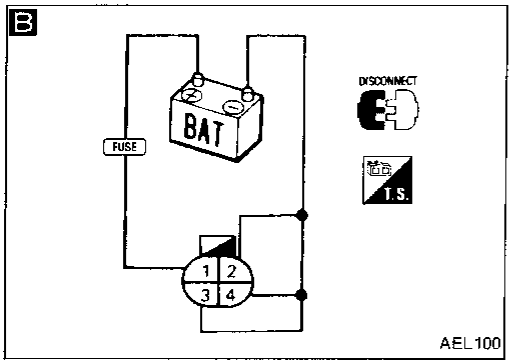
Trouble Diagnoses (Cont'd)

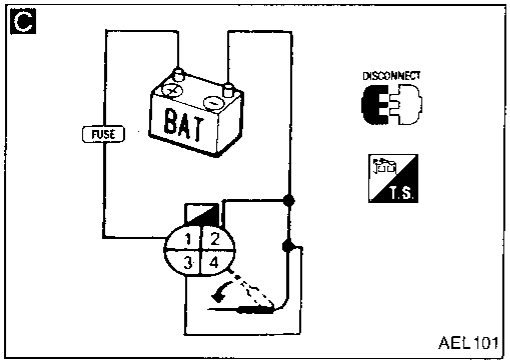
ELECTRICAL COMPONENTS INSPECTION

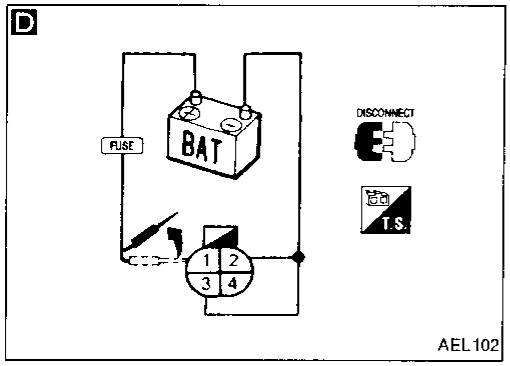
ASCD actuator/ASCD pump

1. Disconnect ASCD pump connector.
2. Check ASCD actuator/ASCD pump operations as shown.









A

Does motor start when 12V DC is applied across ① and ④?

No → Replace ASCD pump.

Yes ↓

B

Is ASCD wire pulled when 12V DC is applied across ①, ②, ③ and ④?

No → Disconnect vacuum hose from ASCD actuator and check for presence of vacuum pressure at ASCD pump.

NG → Replace ASCD actuator.

OK

Yes ↓

C

Does ASCD wire return to original position 50 to 60 seconds after disconnecting lead from ④?

Yes → Replace ASCD pump.

No ↓

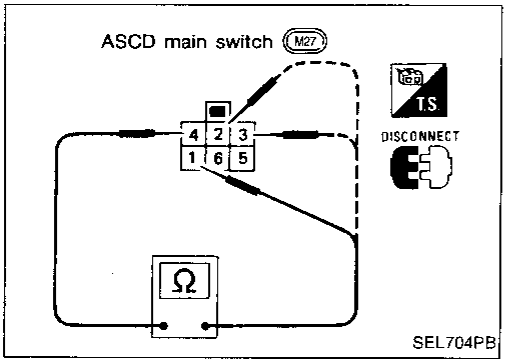
D

Disconnect lead from ①. Does ASCD wire return immediately?

No → Replace ASCD pump.

Yes ↓

ASCD actuator/ASCD pump are OK.

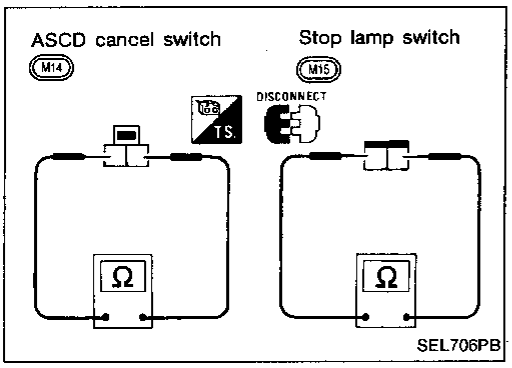


ASCD main switch

Check continuity between terminals by pushing switch to each position.

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

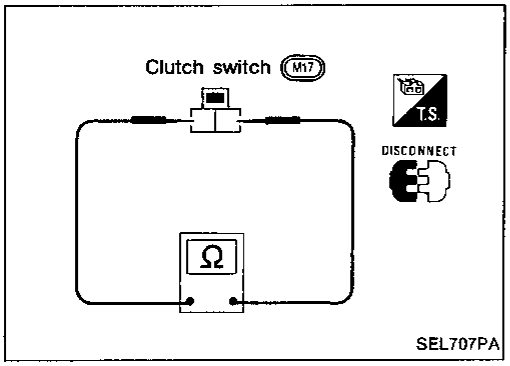
Trouble Diagnoses (Cont'd)



ASCD cancel switch and stop lamp switch

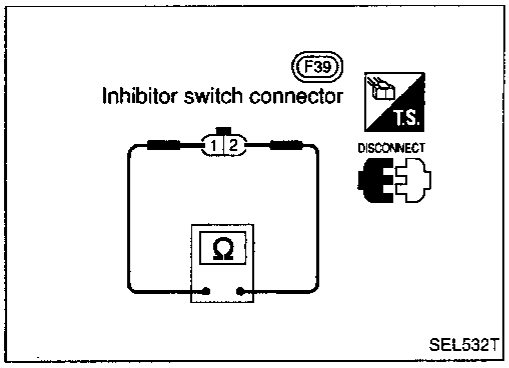
Condition	Continuity	
	ASCD cancel switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

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



Clutch switch (For M/T models)

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

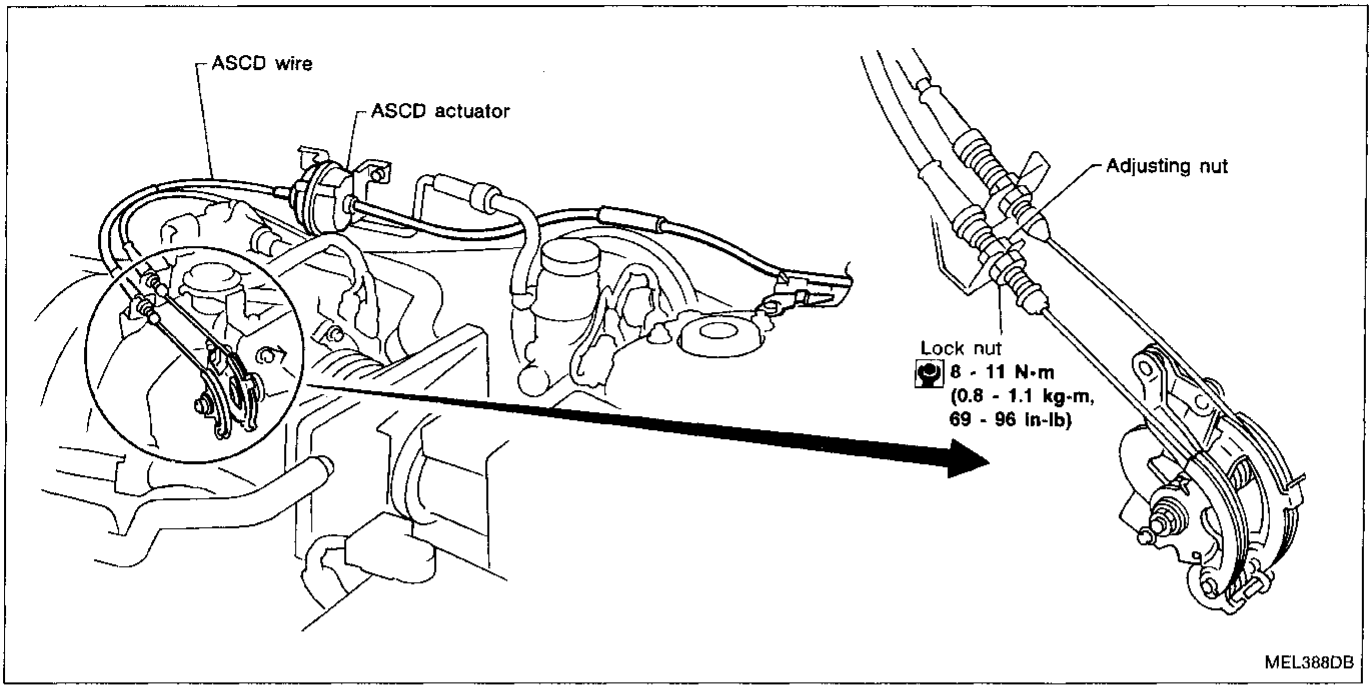


Inhibitor switch (For A/T models)

Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is not "N" or "P"	No

Trouble Diagnoses (Cont'd)

ASCD WIRE ADJUSTMENT



CAUTION:

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

Adjust the tension of ASCD wire in the following manner.

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

Overall Description

OUTLINE

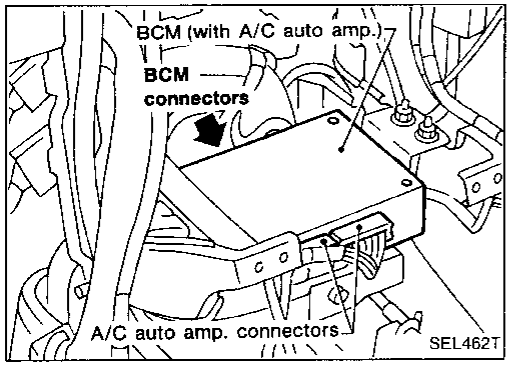
The In-Vehicle Multiplexing System, IVMS (LAN system), consists of a BCM (Body Control Module) and five LCUs (Local Control Units). Some switches and electrical loads are connected to each LCU. Some electrical systems are directly connected to the BCM. Control of each LCU, (which is provided by a switch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

Refer to the System Diagram (EL-152).

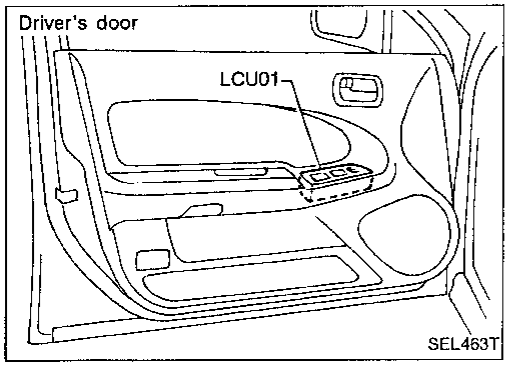
BCM (Body Control Module)

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.

The BCM is described as a "control assembly (for IVMS)" in the Parts Catalog.



The auto amp. for auto air conditioner, if equipped, is built into the BCM. The BCM connectors are located on the front side of the BCM. Do not be confused with the auto amp. connectors on the rear side of the BCM.
NOTE: The auto amp. function has nothing to do with the IVMS.



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.

Overall Description (Cont'd)

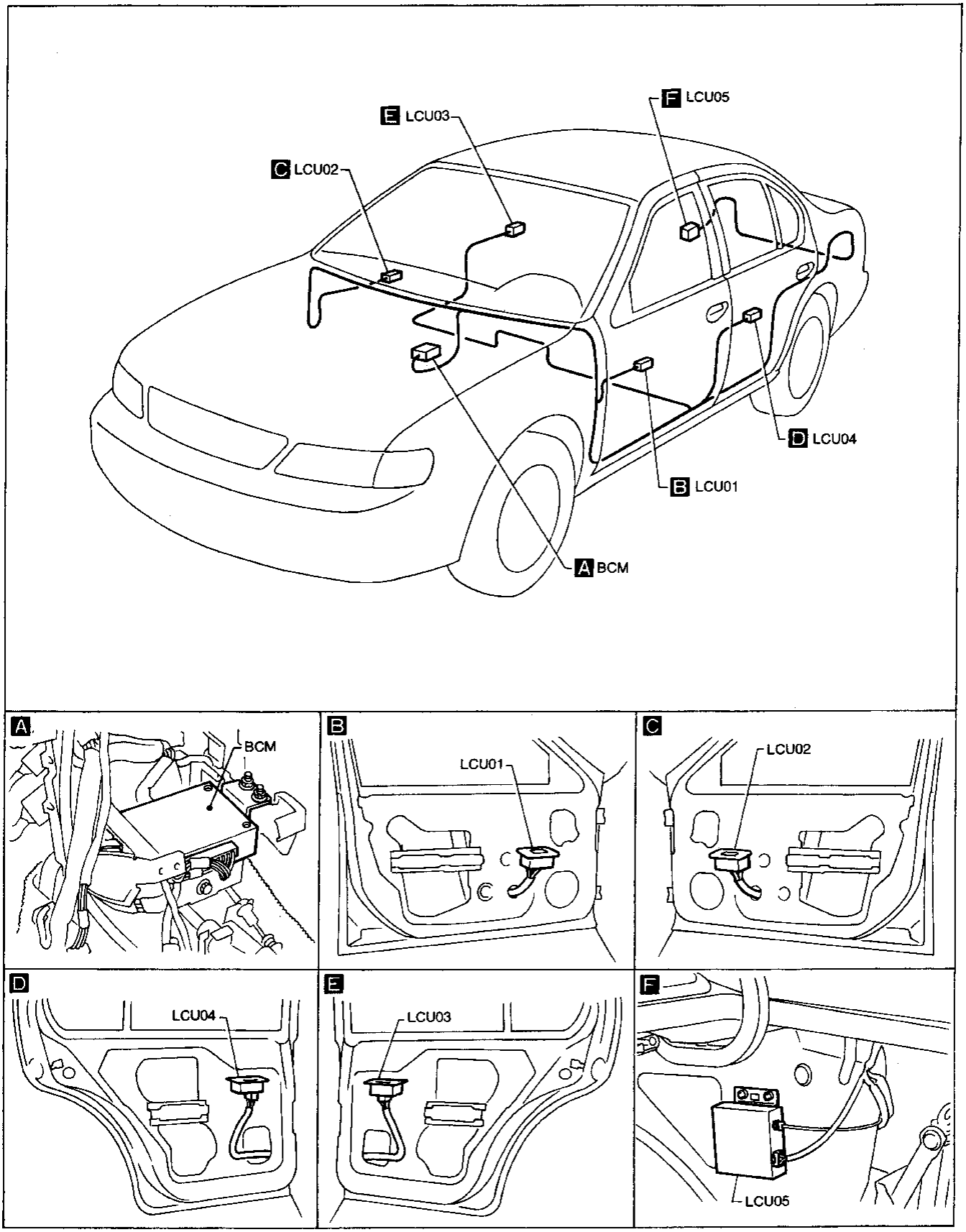
CONTROLLED SYSTEMS

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

- Power window
- Power door lock
- Time control system
  - — Intermittent wiper
  - — Rear window defogger timer
  - — Ignition key warning
  - — Light warning
  - — Seat belt warning
  - — Battery saver
- Step lamps
- Multi-remote control system
- Illumination
- Theft warning system
- Interior lamp and ignition keyhole illumination
- Trouble-diagnosing system
  - — with CONSULT
  - — ON-BOARD

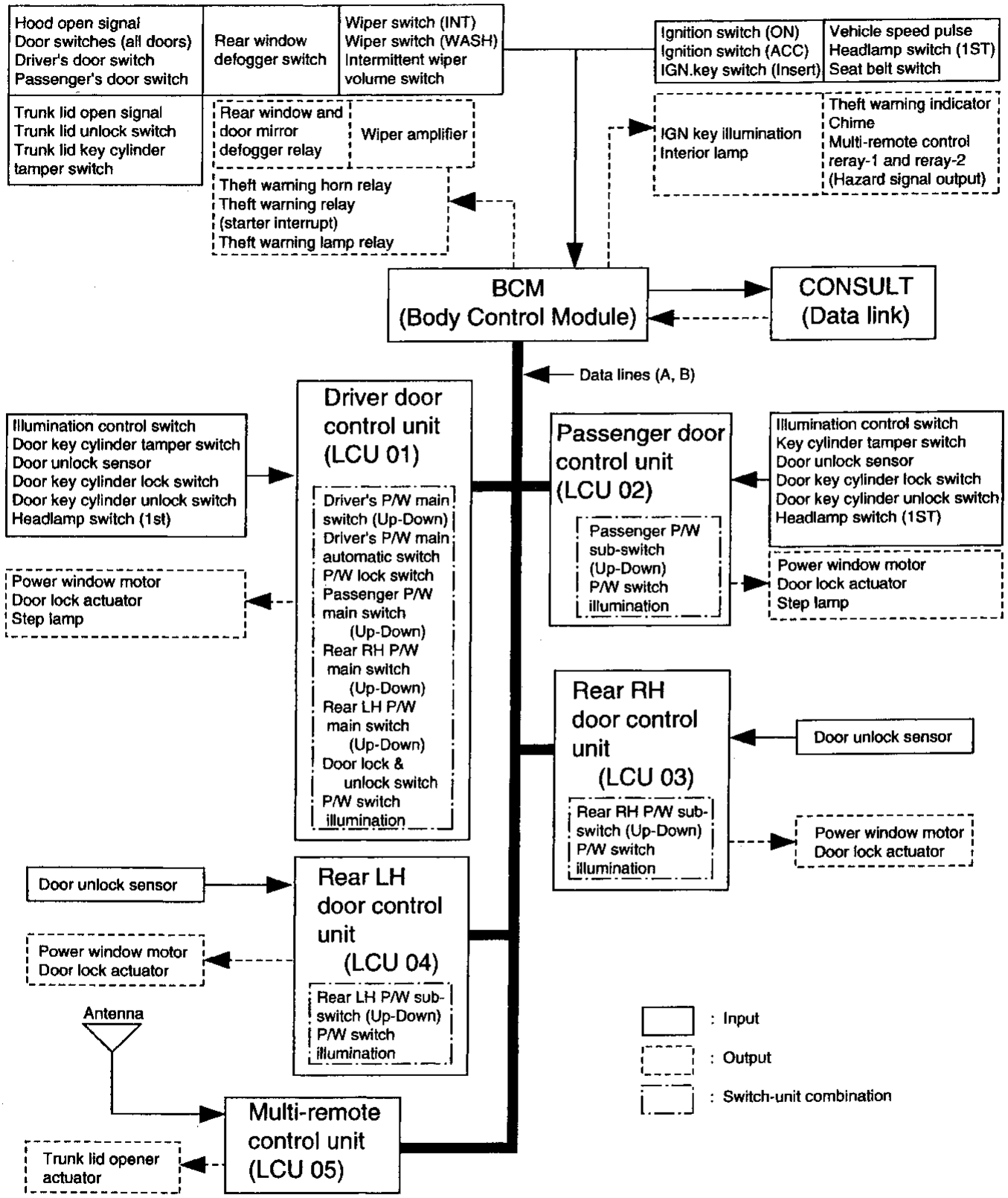
Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to "Sleep/Wake-up Control" (EL-153).

Component Parts Location



MEL177EA

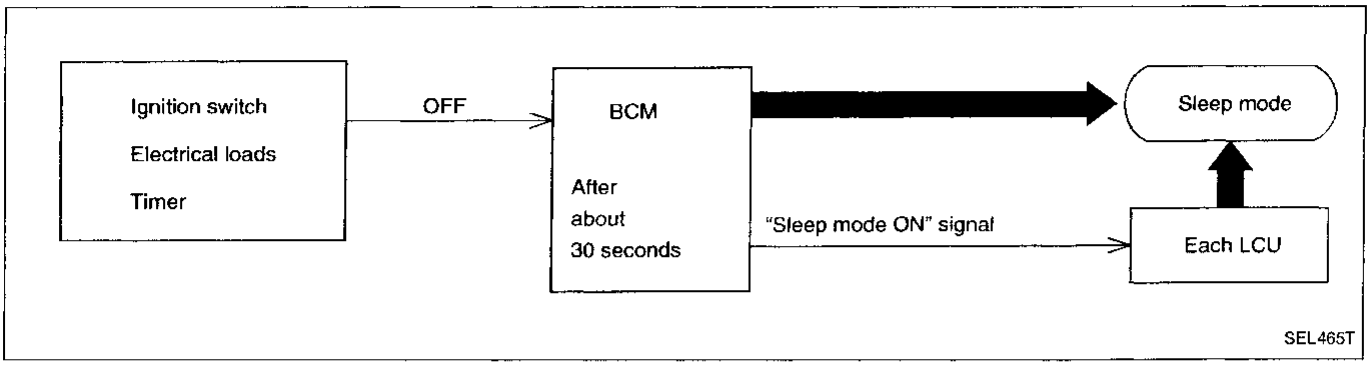
System Diagram



SEL325U

Sleep/Wake-up Control

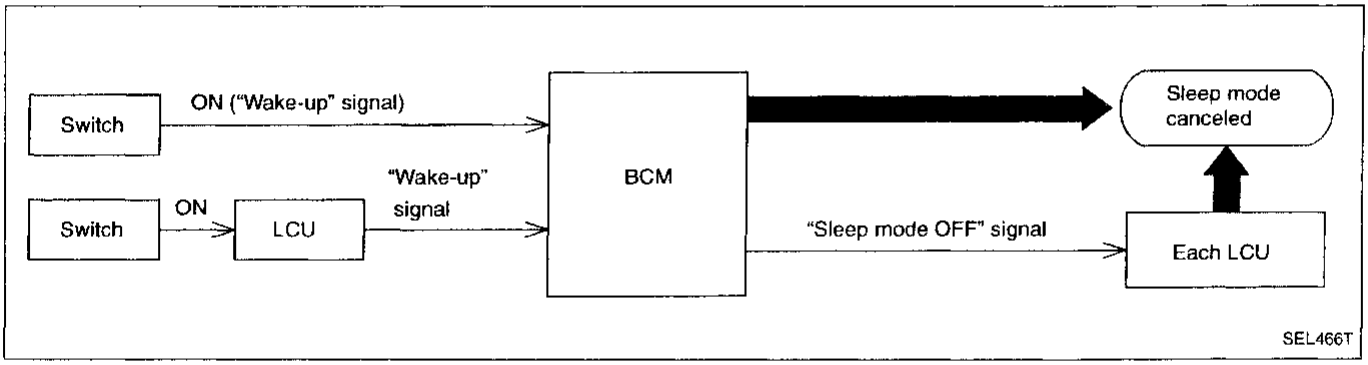
SLEEP CONTROL



"Sleep" control prevents unnecessary power consumption. About 30 seconds after the following conditions are met, the BCM suspends the communication between itself and all LCUs. The whole IVMS system is set in the "sleep" mode.

- Ignition switch "OFF"
- All electrical loads (in the IVMS) "OFF" (except the security indicator lamp)
- Timer "OFF"

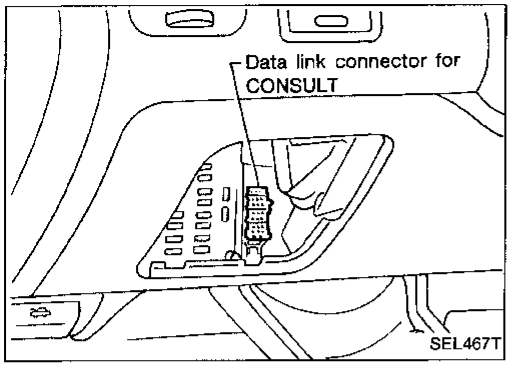
WAKE-UP CONTROL



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)
- Trunk lid unlock switch
- Trunk lid key cylinder tamper switch
- Trunk room lamp switch
- Hood switch
- Door unlock sensors (all doors)
- Door key cylinder tamper switches (front doors)
- Door key cylinder lock switches and unlock switches (front doors)

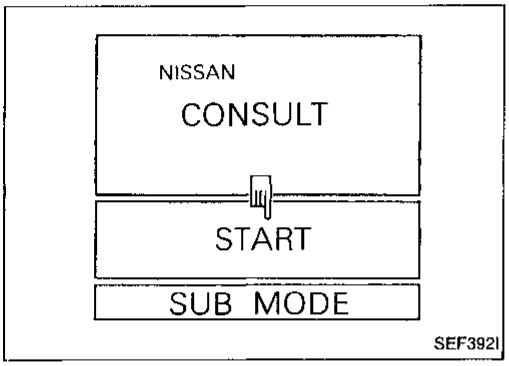
* Also, when key is pulled out of ignition (ignition key switch is turned from ON to OFF), the "sleep" mode is canceled.



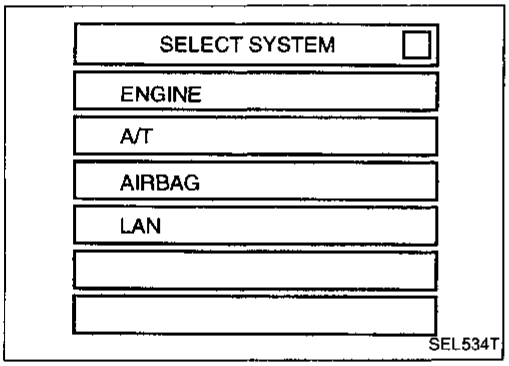
Consult

CONSULT INSPECTION PROCEDURE

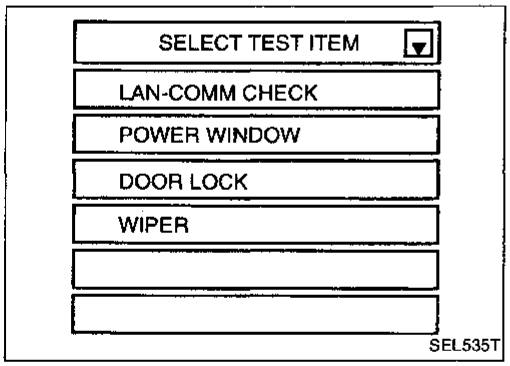
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



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



5. Touch "LAN".



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

For further information, read the CONSULT Operation Manual.

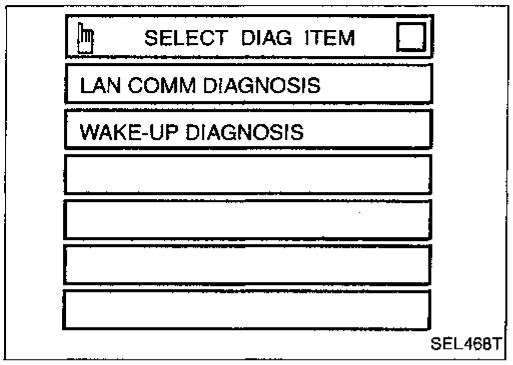
Consult (Cont'd)

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	MODE				
		LAN COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	SELF-DIAG-NOSTIC RESULTS	DATA MONI-TOR	ACTIVE TEST
LAN-COMM CHECK	IVMS (LAN) communication and wake-up function	X	X			
POWER WINDOW	Power window				X	X
DOOR LOCK	Power door lock			X	X	X
WIPER	Wiper and washer				X	X
REAR DEFOGGER	Rear window defogger				X	X
IGN KEY WARN ALM	Ignition key warning chime				X	X
LIGHT WARN ALM	Light warning chime				X	X
ROOM LAMP TIMER	Interior lamp timer				X	X
SEAT BELT TIMER	Seat belt timer				X	X
THEFT WARNING SYS-TEM	Theft warning system				X	X
STEP LAMP	Step lamps				X	X
ILLUM LAMP	Interior lamp				X	X
MULTI-REMOTE CONT SYS	Multi-remote control				X	X

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

Consult (Cont'd)



IVMS COMMUNICATION DIAGNOSIS

INSPECTION START

PERFORM LAN COMMUNICATION DIAGNOSIS.
1. Touch "LAN COMM DIAGNOSIS" in "LAN-COMM CHECK".
2. Touch "START" for "LAN COMM DIAGNOSIS".

OK → INSPECTION END

NG

According to the following table, repair the circuit.

ERASE DIAGNOSTIC RESULTS MEMORY
1. Turn ignition switch "ON".
2. Perform "LAN COMM DIAGNOSIS" in "LAN-COMM CHECK".
3. Erase diagnostic results memory. (Touch "ERASE".)

INSPECTION END

DIAGNOSTIC CHART

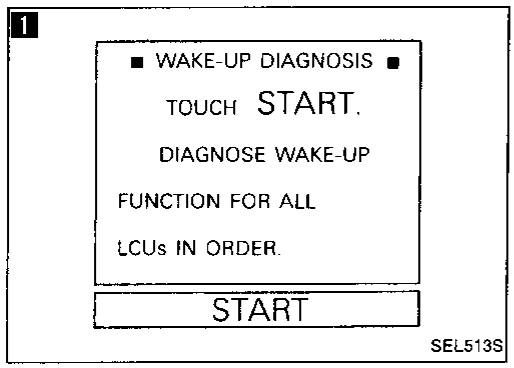
Diagnostic item	Diagnostic explanation	Number of malfunctioning LCUs	Expected cause	Service procedure
[COMM FAIL] (Communication malfunctioning)	A communication signal is sent from the BCM to all LCUs. LCUs return a signal to the BCM as they receive the signal above. The signals sent from the BCM and returned from LCUs should be the same. If they are different, LCUs and/or communication between the BCM and LCUs are malfunctioning.	One	1. Poor connection at LCU connector 2. Open or short circuit in the data lines A and/or B 3. Ground circuit of the LCU open 4. Malfunctioning LCU	1. Check for connector looseness. 2. Check continuity of the data line circuits between the LCU in question and harness-to-harness connector. 3. Check ground circuit of the LCU in question. 4. Replace the LCU in question.
		All	1. Open or short circuit in the data lines. 2. Malfunctioning BCM	1. Check continuity of the data line circuits between the BCM and harness-to-harness connector. 2. Replace the BCM.
[A-LINE NO RESPONSE]* (Communication via data line A not responded)	A communication signal is sent from the BCM to LCUs via data lines A and B. LCUs return the signal via the data line A. If the signal does not return, the data line A is malfunctioning.	One	1. Poor connection in the data line A at the LCU connector 2. Open circuit in the data line A 3. Malfunctioning LCU	1. Check for connector looseness. 2. Check continuity of the data line A circuit between the LCU in question and harness-to-harness connector. 3. Replace the LCU in question.
		Two or more	1. Poor connections at LCU connectors or harness-to-harness connectors 2. Open circuit in the data line A	1. Check for connector looseness. 2. Check continuity of the data line A circuit for the LCUs in question.
		All	1. Short circuit in the data line A with ground 2. Poor connection in the data line A at the BCM connectors 3. Open circuit in the data line A between the BCM and harness-to-harness connector 4. Malfunctioning BCM	1. Check continuity between data line A terminal of BCM connectors and ground. 2. Check for connector looseness. 3. Check continuity of the data line A circuit for the BCM. 4. Replace BCM.
[B-LINE NO RESPONSE]* (Communication via data line B not responded)	A communication signal is sent from the BCM to LCUs via data lines A and B. LCUs return the signal via the data line B. If the signal does not return, the data line B is malfunctioning.	One	1. Poor connection in the data line B at the LCU connector 2. Open circuit in the data line B 3. Malfunctioning LCU	1. Check for connector looseness. 2. Check continuity of the data line B circuit between the LCU in question and harness-to-harness connector. 3. Replace the LCU in question.
		Two or more	1. Poor connection at LCU connectors or harness-to-harness connectors 2. Open circuit in the data line B	1. Check for connector looseness. 2. Check continuity of the data line B circuit for the LCUs in question.
		All	1. Short circuit in the data line B with ground 2. Poor connection in the data line B at the BCM connectors 3. Open circuit in the data line B between the BCM and harness-to-harness connector 4. Malfunctioning BCM	1. Check continuity between data line B terminal of the BCM connectors and ground. 2. Check for connector looseness. 3. Check continuity of the data line B circuit for the BCM. 4. Replace BCM.

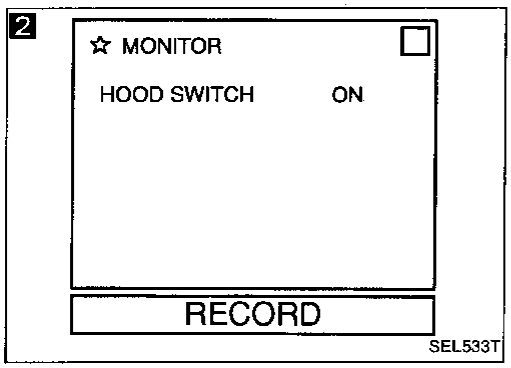
*: There may be cases that a malfunction is detected in one of the two data lines but all systems in the IVMS (such as power window or power door lock) are functioning correctly. In such cases, it is not essential to repair the malfunctioning data line. This is because communication is still accomplished via the other data line that is functioning.

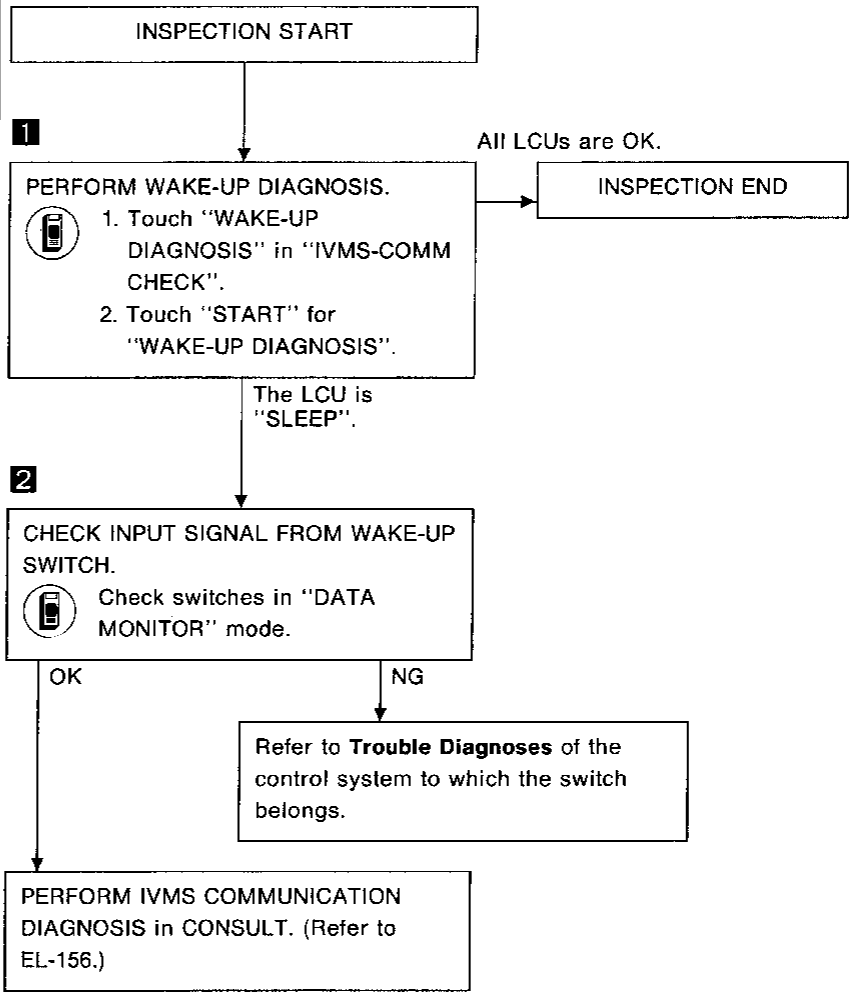
Diagnostic item	Diagnostic explanation	Number of malfunctioning LCUs	Expected cause	Service procedure
[A-LINE NO RESPONSE] [B-LINE NO RESPONSE] (Communication via data lines A and B not responded)	A communication signal is sent from the BCM to LCUs via data lines A and B. LCUs return the signal via the data lines A and B. If the signal does not return, the data lines A and B are malfunctioning.	One	1. Open circuit in the power source for the LCU in question. 2. Poor connection at LCU connector 3. Open circuit in the data lines A and B 4. Open circuit in LCU ground 5. Malfunctioning LCU	1. Check fuse, fusible link, circuit breaker or harness. 2. Check for connector looseness. 3. Check continuity of each data line between the LCU in question and harness-to-harness connectors. 4. Check ground circuit of the LCU in question. 5. Replace the LCU in question.
		Two or more	1. Open circuit in the power source for the LCUs in question 2. Poor connection at LCU connectors or harness-to-harness connectors 3. Open circuit in the data lines A and B 4. Malfunctioning LCUs	1. Check fuse, fusible link, circuit breaker or harness. 2. Check for connector looseness. 3. Check continuity of each data line between the LCUs in question and harness-to-harness connectors. 4. Replace the LCUs in question.
		All	1. Short circuit between data lines A and B 2. Short circuits in the data lines A and B with ground 3. Poor connection at the BCM connectors 4. Open circuit in the data lines A and B between the BCM and harness-to-harness connectors 5. Malfunctioning BCM	1. Check continuity between data lines A and B. 2. Check continuity between data line terminals of the BCM connectors and ground. 3. Check for connector looseness. 4. Check continuity of each data line between the BCM and harness-to-harness connectors. 5. Replace the BCM.
[COMM FAIL] [A-LINE NO RESPONSE] [B-LINE NO RESPONSE]	All malfunctions indicated above are evident.	One	1. Open circuit in LCU ground	1. Check ground circuit of the LCU in question.
		Two or more	1. Open circuits in LCU grounds	1. Check ground circuits of the LCUs in question.
		All	1. Malfunctioning BCM	1. Replace BCM.

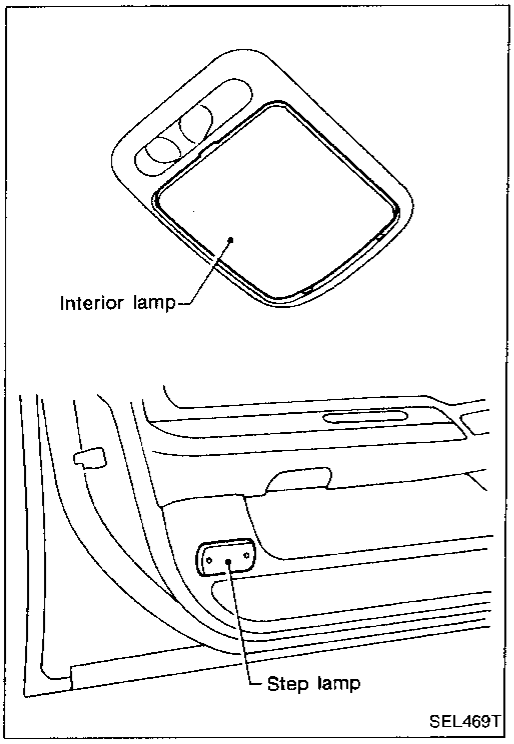
Consult (Cont'd)

WAKE-UP DIAGNOSIS









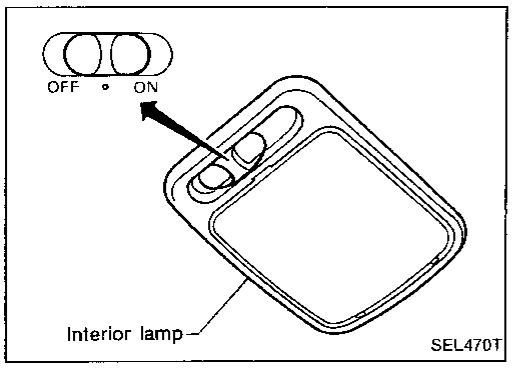
On-board Diagnosis

ON-BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

The interior lamp and step lamps (front seats) act as the indicators for the on-board diagnosis. These lamps blink simultaneously in response to diagnostic results.

ON-BOARD DIAGNOSTIC FUNCTION

Mode	Function		Refer page
Mode I	IVMS communication diagnosis	Diagnosing any abnormality or inability of communication between BCM and LCUs (both data lines A and B).	EL-161
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	EL-163
Mode III	Power door lock self-diagnosis	—	EL-201
Mode IV	Power window operation	Operation of driver side window	EL-186



On-board Diagnosis — Mode I (IVMS communication diagnosis)

HOW TO PERFORM MODE I

Condition
- Ignition switch: OFF
- **Headlamp switch: OFF**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp: Center "○" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" 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".

↓

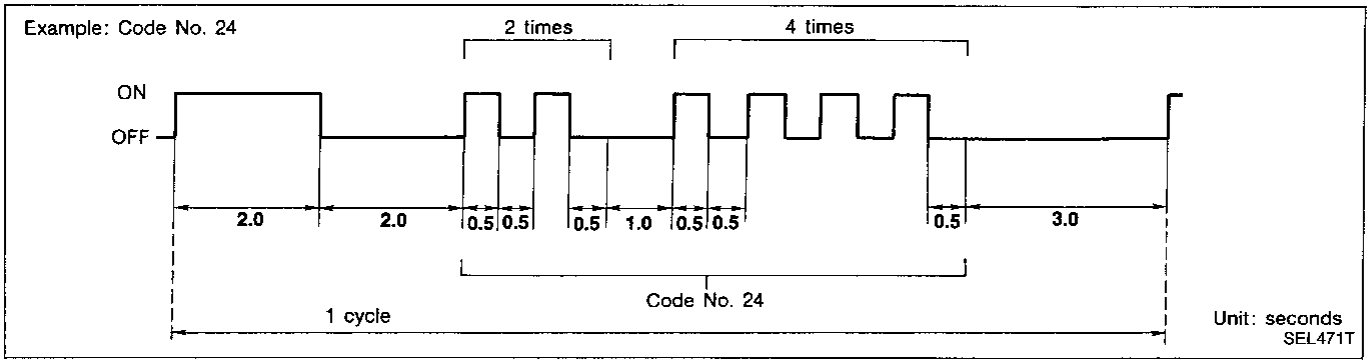
DIAGNOSIS END*

*: 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

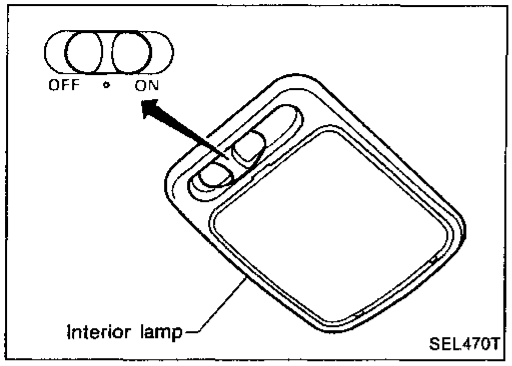
In this mode, a malfunction code is indicated by the number of flashes from the interior lamp and front step lamps as shown below:



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". The self-diagnostic results will remain in the BCM memory.

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-157).
25		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-157).
26		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-157).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-157).
35		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-157).
36		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-157).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-157).
42		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-157).
43		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-157).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-157).
45		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-157).
46		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-157).
54	Multi-remote control unit (LCU05)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-157).
55		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-157).
56		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-157).
11	No malfunction		—



On-board Diagnosis — Mode II (Switch monitor)

HOW TO PERFORM MODE II

Condition
- Ignition switch: OFF
- **Headlamp switch: OFF**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp: Center "○" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" 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 ignition switch "OFF".

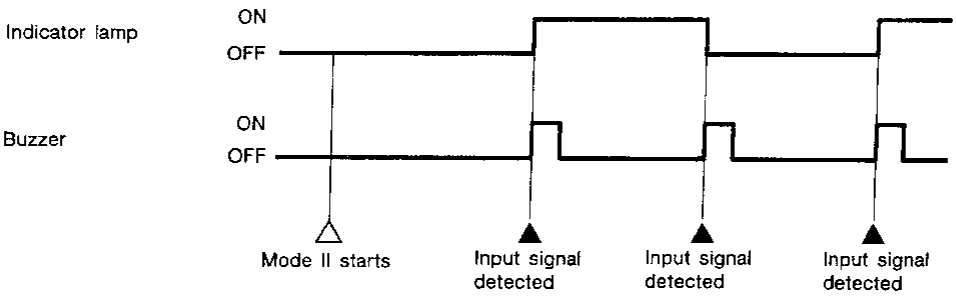
↓

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 interior lamp and front step lamps with buzzer.

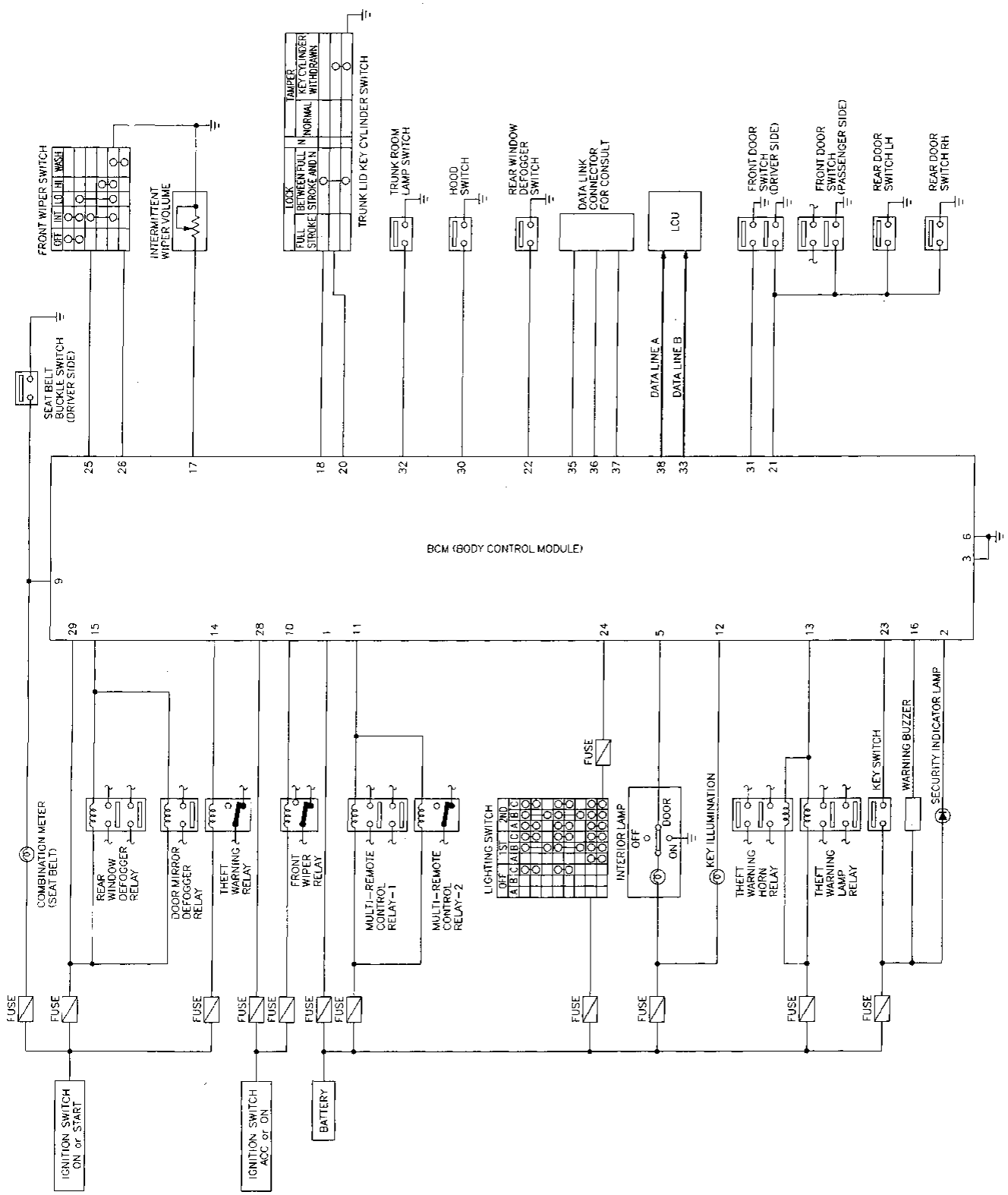


Switch monitor item

BCM	• Hood switch • Trunk room lamp switch • Trunk lid key cylinder tamper switch • Trunk lid unlock switch • Door switches • Headlamp switch (1st) • Wiper switch (INT) • Wiper switch (WASH) • Door switch (driver's side) • Door switch (passenger side) • Seat belt buckle switch
LCU 01	• Power window lock switch • Power window main switches (UP/DOWN) • Power window automatic switch • Illumination control switch • Door lock & unlock switch (LOCK/UNLOCK) • Door key cylinder switch • Key cylinder tamper switch
LCU 02	• Door key cylinder switch • Key cylinder tamper switch • Door unlock sensor • Passenger power window sub-switch (UP/DOWN)
LCU 03	• Power window sub-switch (Rear RH) (UP/DOWN)
LCU 04	• Power window sub-switch (Rear LH) (UP/DOWN)
LCU 05	• Door lock button • Door unlock button • Interior lamp button • Trunk lid opener button
	Operated by multi-remote controller

Body Control Module (BCM)

CIRCUIT DIAGRAM



MEL541E

Body Control Module (BCM) (Cont'd)

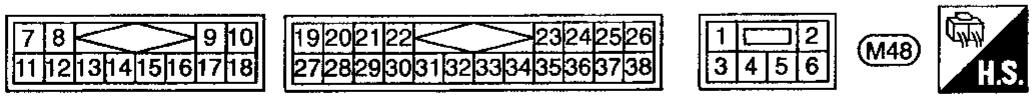
INPUT/OUTPUT OPERATION SIGNAL

Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Power source	—	—		12
2	Theft warning indicator	O	Theft warning control	Illuminated	0
				Turned off	12
3	Ground	—	—		—
4	—	—	—		—
5	Interior lamp	O	ON (Illuminated)		0
			OFF		12
6	Ground	—	—		—
7	—	—	—		—
8					
9	Seat belt switch	I	When the seat belt is fastened		5
			When the seat belt is not fastened		0
10	Wiper amplifier (ON signal)	O	Ignition switch "ACC" or "ON" Wiper switch	ON	0
				OFF	12
11	Hazard	O	Flasher lamp	ON	0
				OFF	12
12	Ignition keyhole illumination	O	ON		0
			OFF		12
13	Theft warning horn relays and theft warning lamp relay	O	ON		0
			OFF		12
14	Theft warning relay	O	Theft warning control	ON	0
				OFF	12
15	Defogger relay	O	Ignition switch "ON" Time control	ON	0
				OFF	12
16	Buzzer	O	ON		0
			OFF		12
17	Intermittent wiper volume switch	I	Intermittent time	Max. (20 sec)	3.6
				Min. (2 sec)	0
18	Trunk lid unlock switch	I	Unlocked (ON)		0
			Neutral (OFF)		5
19	Passenger's door switch	I	ON (Open)		0
			OFF (Closed)		12
20	Trunk lid tamper switch	I	ON		0
			OFF		5

Body Control Module (BCM) (Cont'd)

Terminal No.	Connections		INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
21	Door switches (All doors)		I	Door switch	ON (Open)	0
					OFF (Closed)	12
22	Rear window defogger switch		I	ON		0
				OFF		5
23	Ignition key switch (Insert)		I	IGN key removed from ignition key cylinder (OFF)		0
				IGN key inserted into ignition key cylinder (ON)		12
24	Headlamp switch (1ST)		I	1ST, 2ND positions: ON		12
				OFF		0
25	Wiper switch (Intermittent)		I	INT		0
				OFF		12
26	Wiper switch (Wash)		I	Ignition switch "ACC" or "ON"	WASH	0
					OFF	12
27	Vehicle speed pulse		I	Pulse		0 - 5
28	Ignition switch (ACC)		I	Ignition switch "ACC"		12
29	Ignition switch (ON)		I	Ignition switch "ON"		12
30	Hood switch		I	Open (ON)		0
				Closed (OFF)		5
31	Driver's door switch		I	Open (ON)		0
				Closed (OFF)		12
32	Trunk lid open signal		I	Open (ON)		0
				Closed (OFF)		12
33	Data line (B)		I/O	—		—
34	CONSULT	On-board diagnostic results	—	—		—
35		TX signal	—	—		—
36		RX signal	—	—		—
37		CLK signal	—	—		—
38	Data line (A)		I/O	—		—

BCM (BODY CONTROL MODULE)

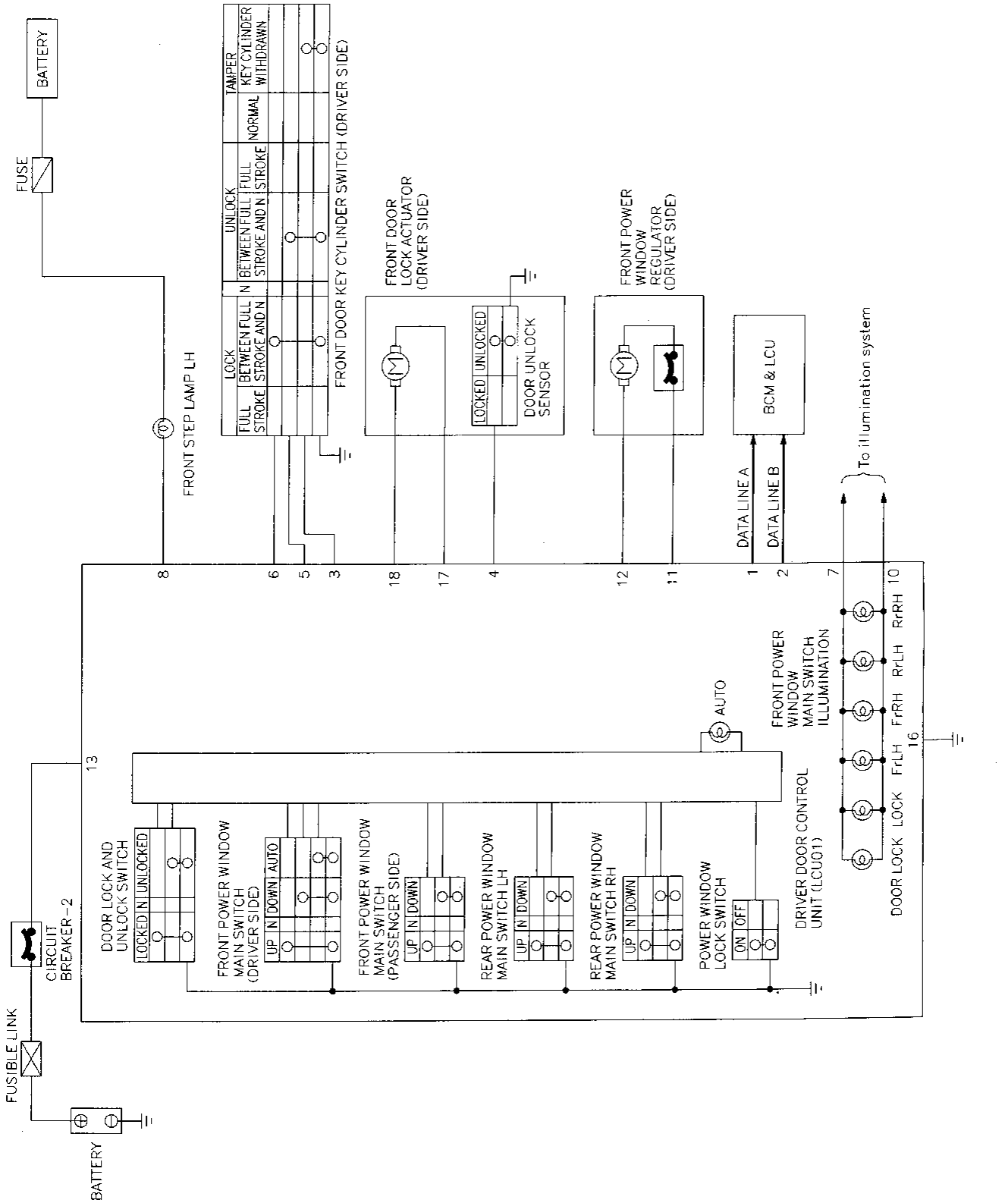


SEL315U

Local Control Units (LCUs)

CIRCUIT DIAGRAM

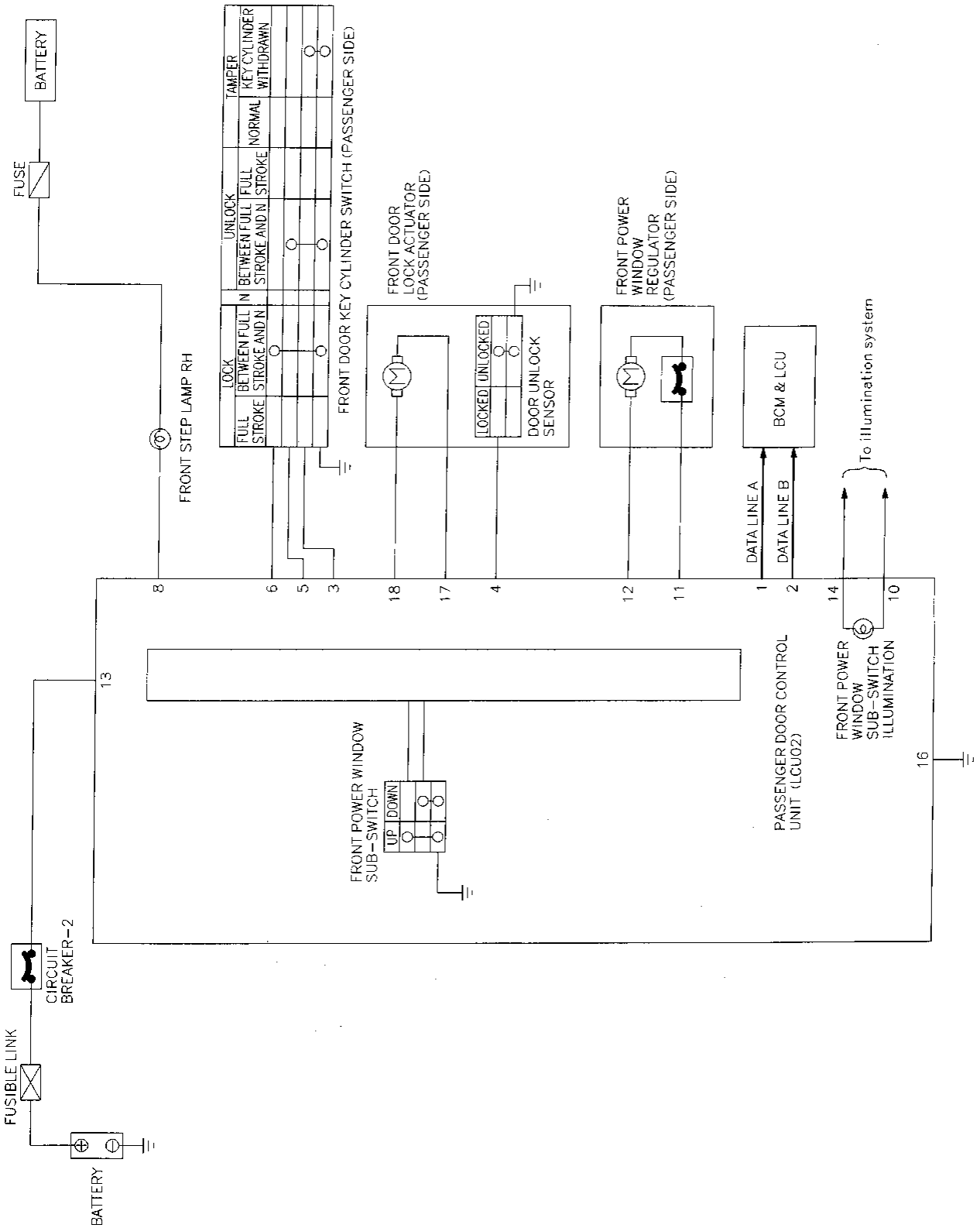
Driver door control unit (LCU01)



MEL542E

Local Control Units (LCUs) (Cont'd)

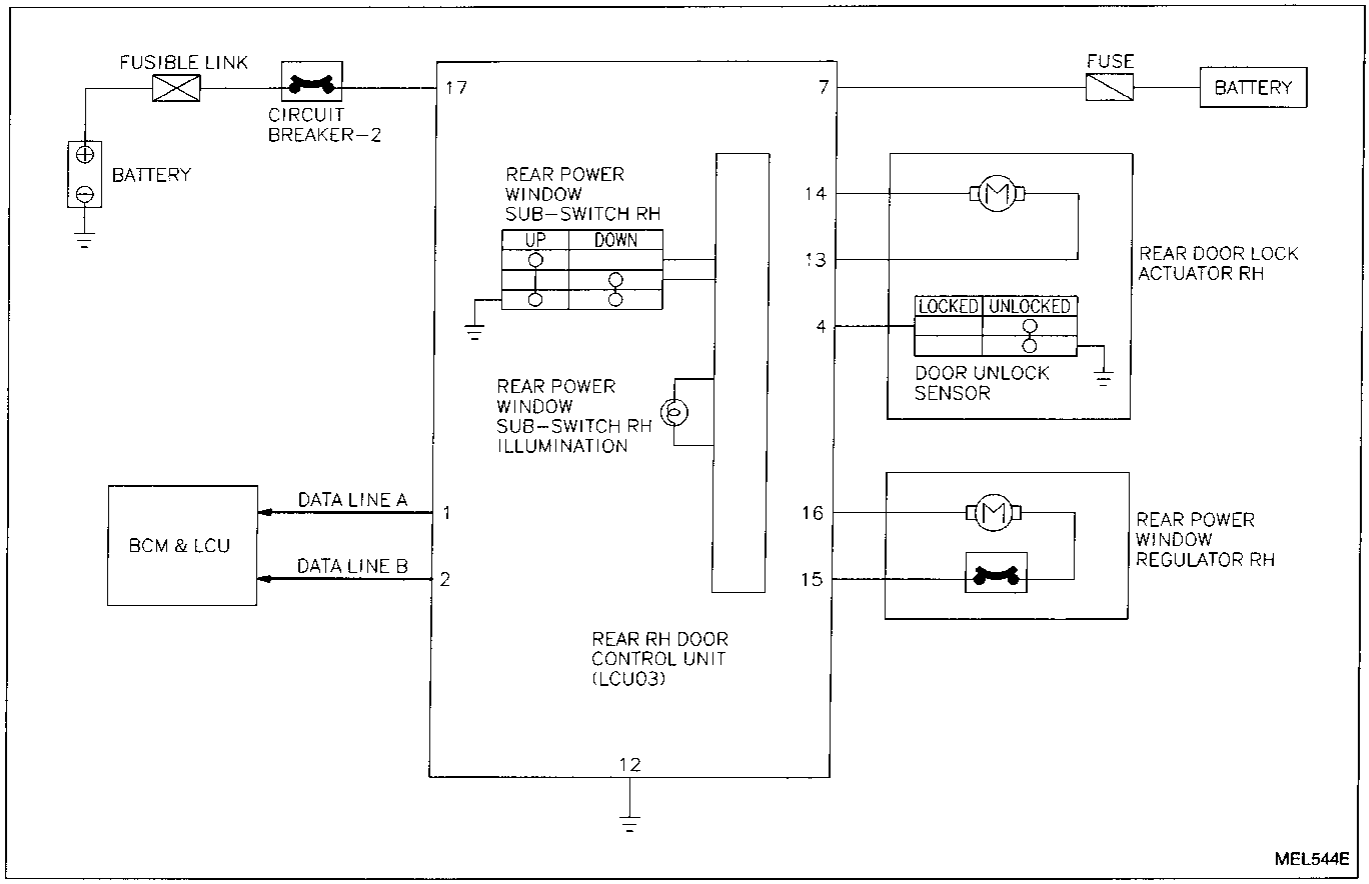
Passenger door control unit (LCU02)



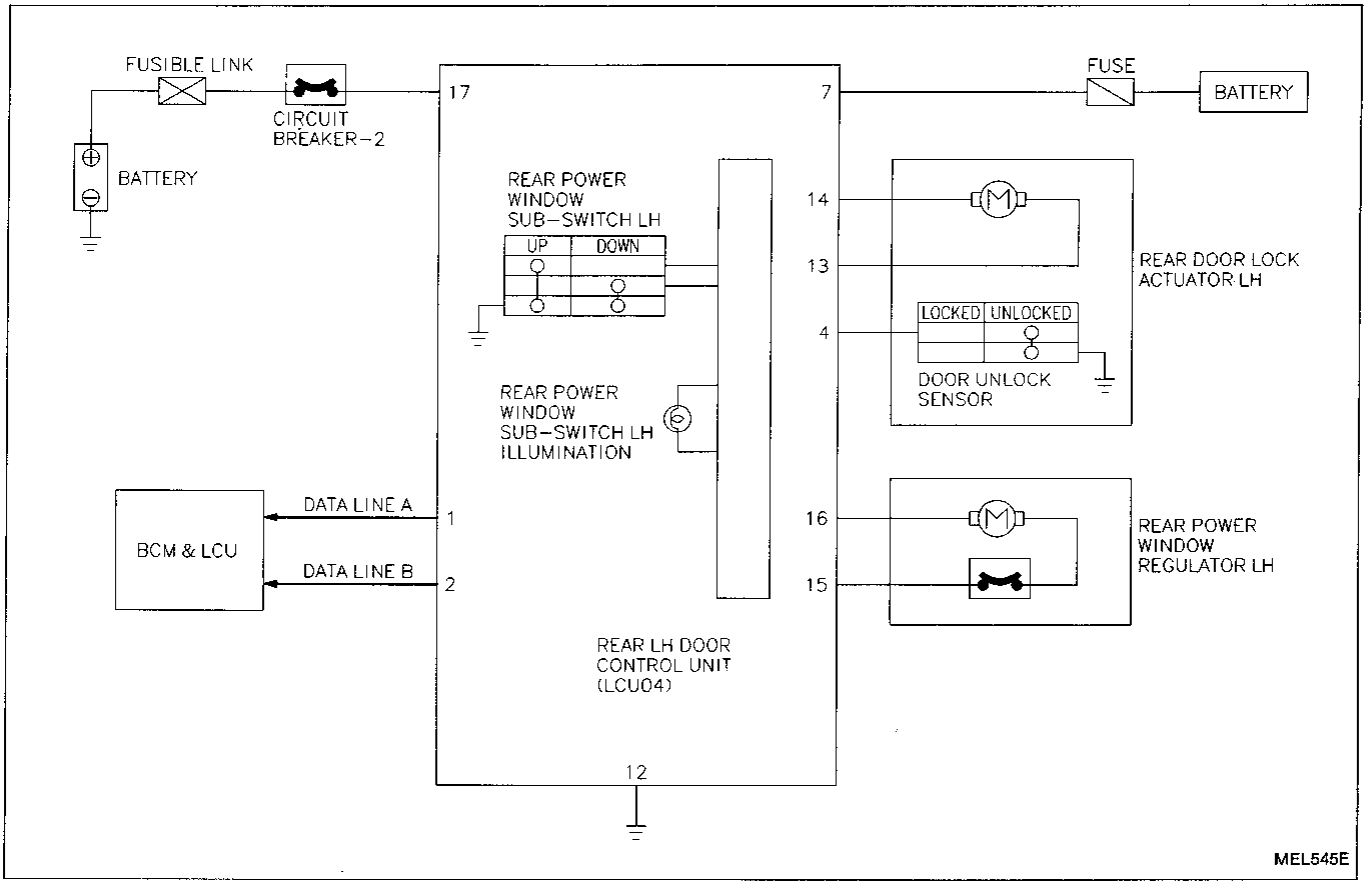
MEL543E

Local Control Units (LCUs) (Cont'd)

Rear RH door control unit (LCU03)

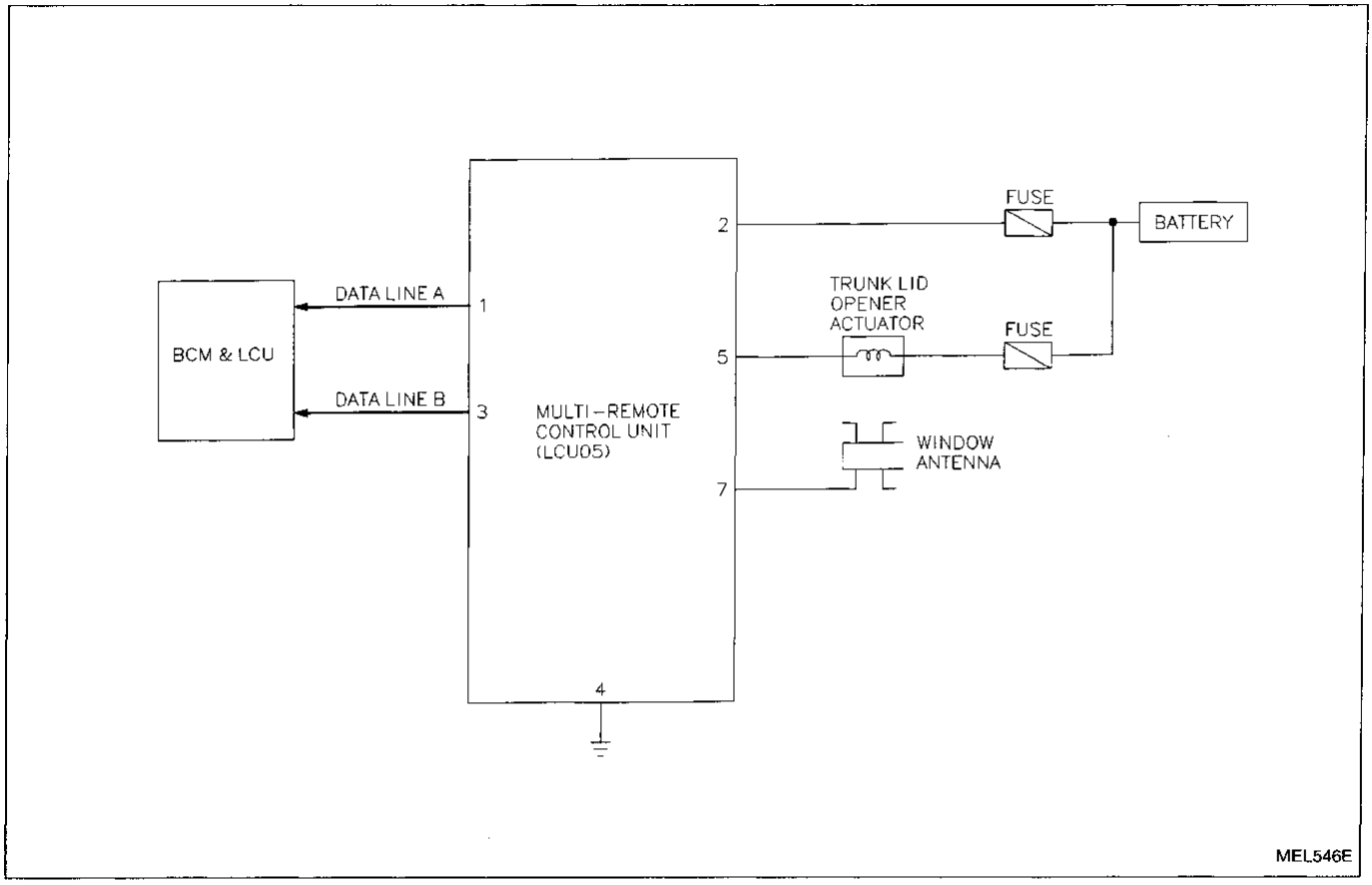


Rear LH door control unit (LCU04)



Local Control Units (LCUs) (Cont'd)

Multi-remote control unit (LCU05)

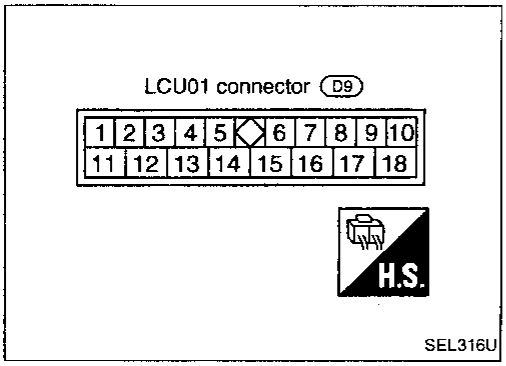


Local Control Units (LCUs)

INPUT/OUTPUT OPERATION SIGNAL

Driver door control unit (LCU01)

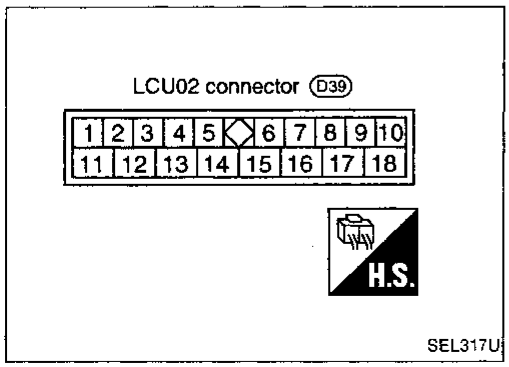
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Data line (A)	I/O	—		—
2	Data line (B)	I/O	—		—
3	Door key cylinder tamper switch	I	ON (Key cylinder removed)		0
			OFF (Key cylinder installed)		12
4	Door unlock sensor	I	Unlocked (ON)		0
			Locked (OFF)		5
5	Door key cylinder unlock switch	I	Unlocked (ON)		0
			Locked (OFF)		12
6	Door key cylinder lock switch	I	Locked (ON)		0
			Unlocked (OFF)		12
7	Headlamp switch (1st)	I	1st, 2nd: ON		12
			OFF		0
8	Step lamp	O	ON		0
			OFF		12
9	—	—	—		—
10	Illumination control signal	I	Headlamp switch "1st" Brightened - Darkened		0 - 12
11	Power window motor (P/W) — Up	O	Ignition switch "ON" Driver's P/W switch	Up	12
				Free	0
12	Power window motor (P/W) — Down	O	Ignition switch "ON" Driver's P/W switch	Down	12
				Free	0
13	Power source (C/B)	—	—		12
14	—	—	—		—
15	—	—	—		—
16	Ground	—	—		—
17	Door lock motor — Lock	O	Door lock & unlock switch	Locked	12
				Free	0
18	Door lock motor — Unlock	O	Door lock & unlock switch	Unlocked	12
				Free	0



Local Control Units (LCUs) (Cont'd)

Passenger door control unit (LCU02)

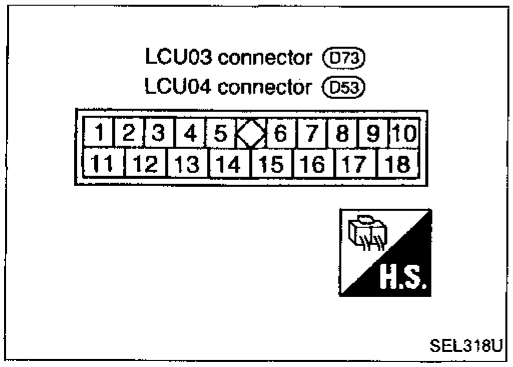
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Data line (A)	I/O	—		—
2	Data line (B)	I/O	—		—
3	Door key cylinder tamper switch	I	ON		0
			OFF		12
4	Door unlock sensor	I	Unlocked (ON)		0
			Locked (OFF)		5
5	Door key cylinder unlock switch	I	Unlocked (ON)		0
			Neutral (OFF)		12
6	Door key cylinder lock switch	I	Locked (ON)		0
			Neutral (OFF)		12
7	Power source (FUSE)	—	—		12
8	Step lamp	O	ON		0
			OFF		12
9	—	—	—		—
10	Illumination control signal	I	Headlamp switch "1st" Brightened - Darkened		0 - 12
11	Power window motor (P/W) — Up	O	Ignition switch "ON" Passenger's P/W switch	Up	12
				Free	0
12	Power window motor (P/W) — Down	O	Ignition switch "ON" Passenger's P/W switch	Down	12
				Free	0
13	Power source (C/B)	—	—		12
14	Headlamp switch (1st)	I	1st, 2nd: ON		12
			OFF		0
15	—	—	—		—
16	Ground	—	—		—
17	Door lock motor — Lock	O	Door lock & unlock switch	Locked	12
				Free	0
18	Door lock motor — Unlock	O	Door lock & unlock switch	Unlocked	12
				Free	0



Local Control Units (LCUs) (Cont'd)

Rear RH door control unit (LCU03) and rear LH door control unit (LCU04)

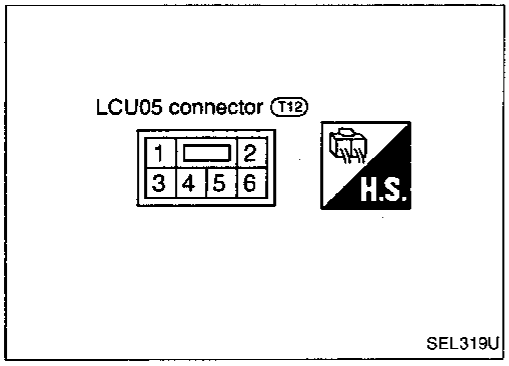
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Data line (A)	I/O	—		—
2	Data line (B)	I/O	—		—
3	—	—	—		—
4	Door unlock sensor	I	Unlocked (ON)		0
			Locked (OFF)		5
5	—	—	—		—
6	—	—	—		—
7	Power source (FUSE)	—	—		12
8	—	—	—		—
9	—	—	—		—
10	—	—	—		—
11	—	—	—		—
12	Ground	—	—		—
13	Door lock motor — Lock	O	Door lock & unlock switch	Locked	12
				Free	0
14	Door lock motor — Unlock	O	Door lock & unlock switch	Unlocked	12
				Free	0
15	Power window motor (P/W) — Up	O	Ignition switch "ON" Rear P/W switch	Up	12
				Free	0
16	Power window motor (P/W) — Down	O	Ignition switch "ON" Rear P/W switch	Down	12
				Free	0
17	Power source (C/B)	—	—		12
18	—	—	—		—



Local Control Units (LCUs) (Cont'd)

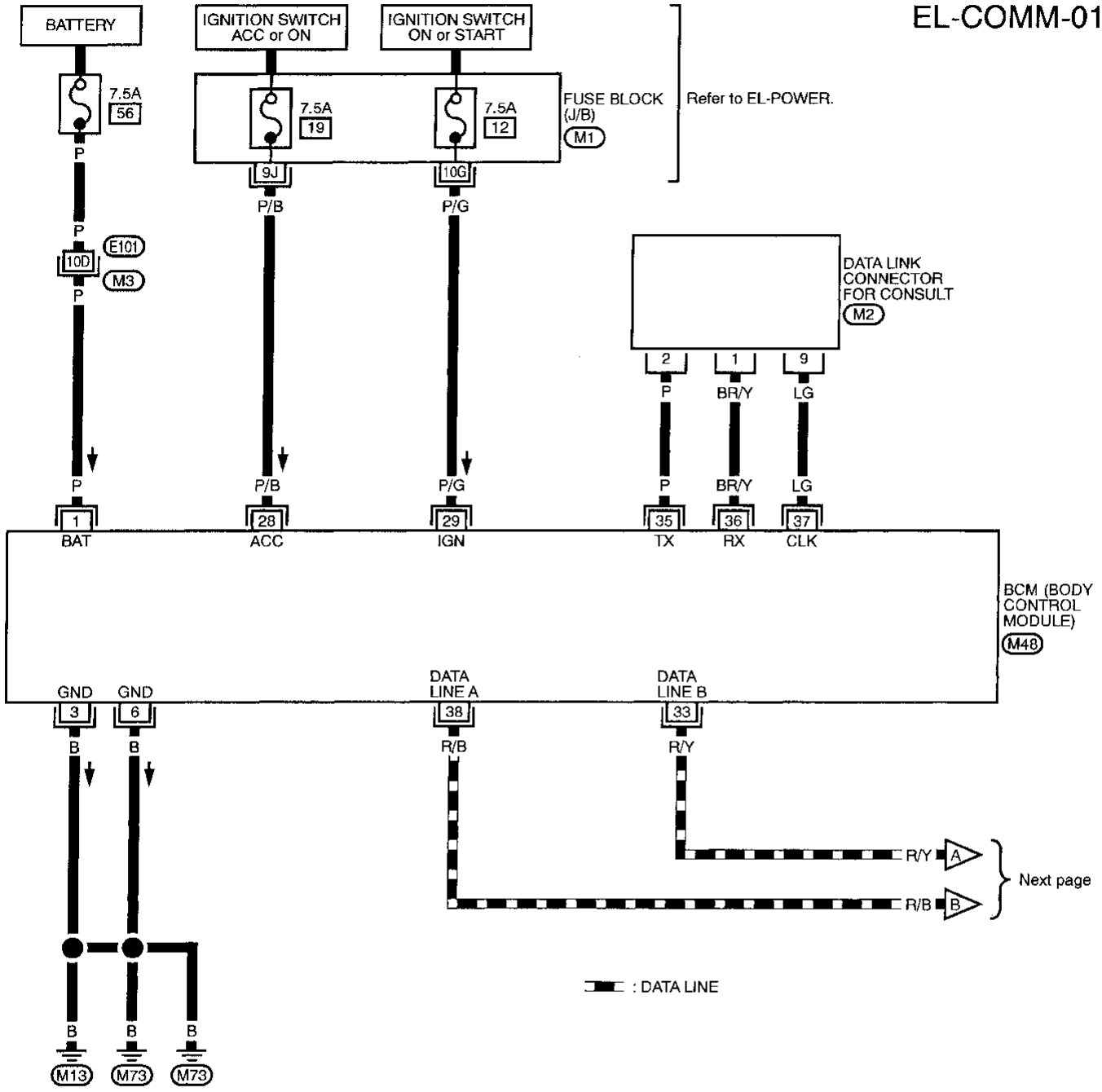
Multi-remote control unit (LCU05)

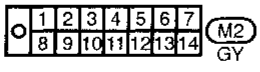
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition	Voltage (V) (Approximate values)
1	Data line (A)	I/O	—	—
2	Power source	—	—	12
3	Data line (B)	I/O	—	—
4	Ground	—	—	—
5	Trunk lid opener actuator	O	Open	0
			OFF	12
6	—	—	—	—



Main Power Supply, Ground and Communication Circuits/Wiring Diagram — COMM —

EL-COMM-01





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M1 , E101

M3

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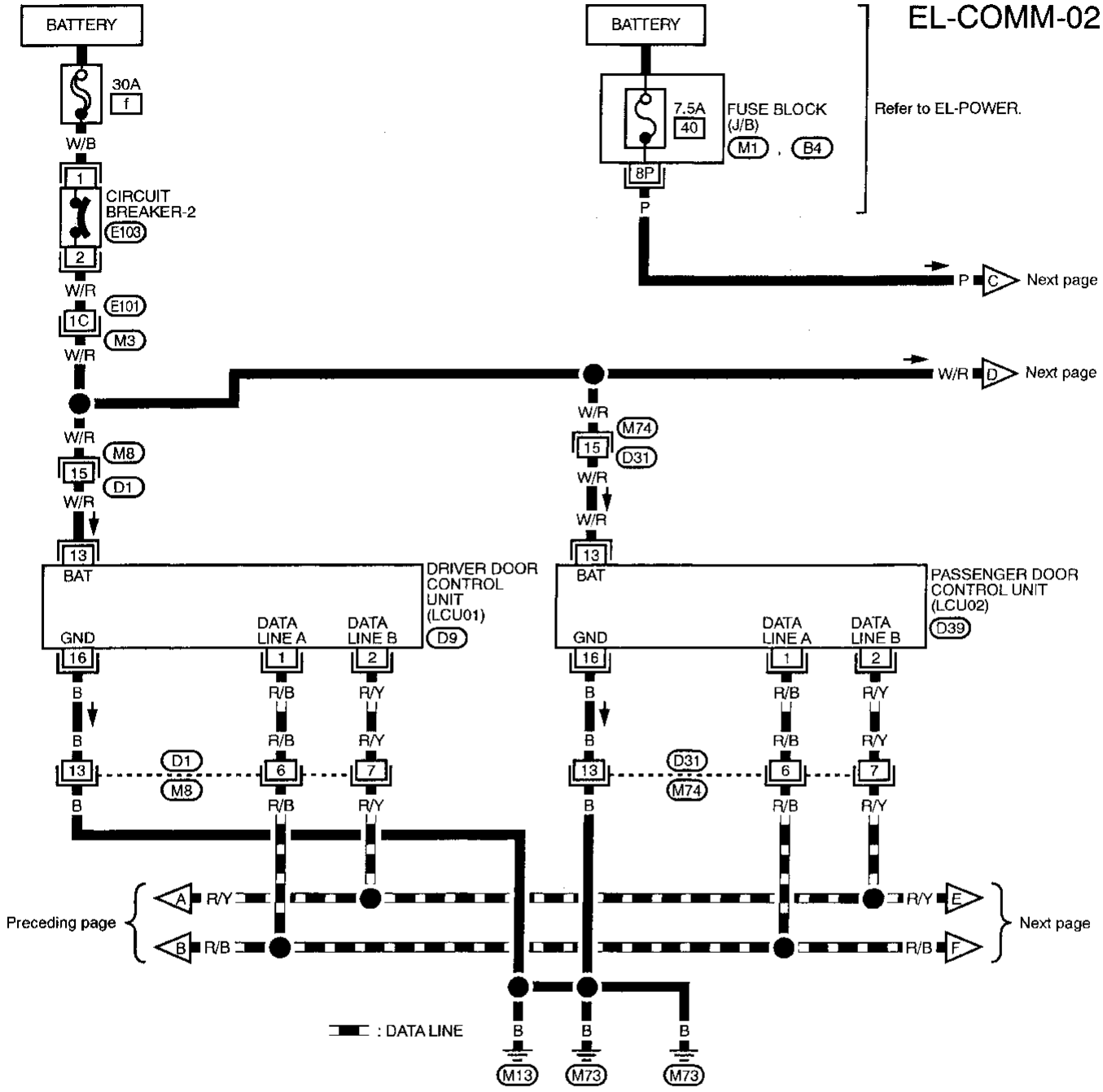
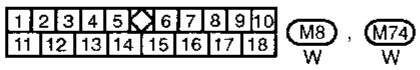
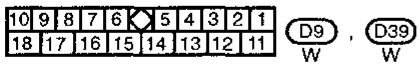
Main Power Supply, Ground and Communication Circuits/Wiring Diagram — COMM — (Cont'd)







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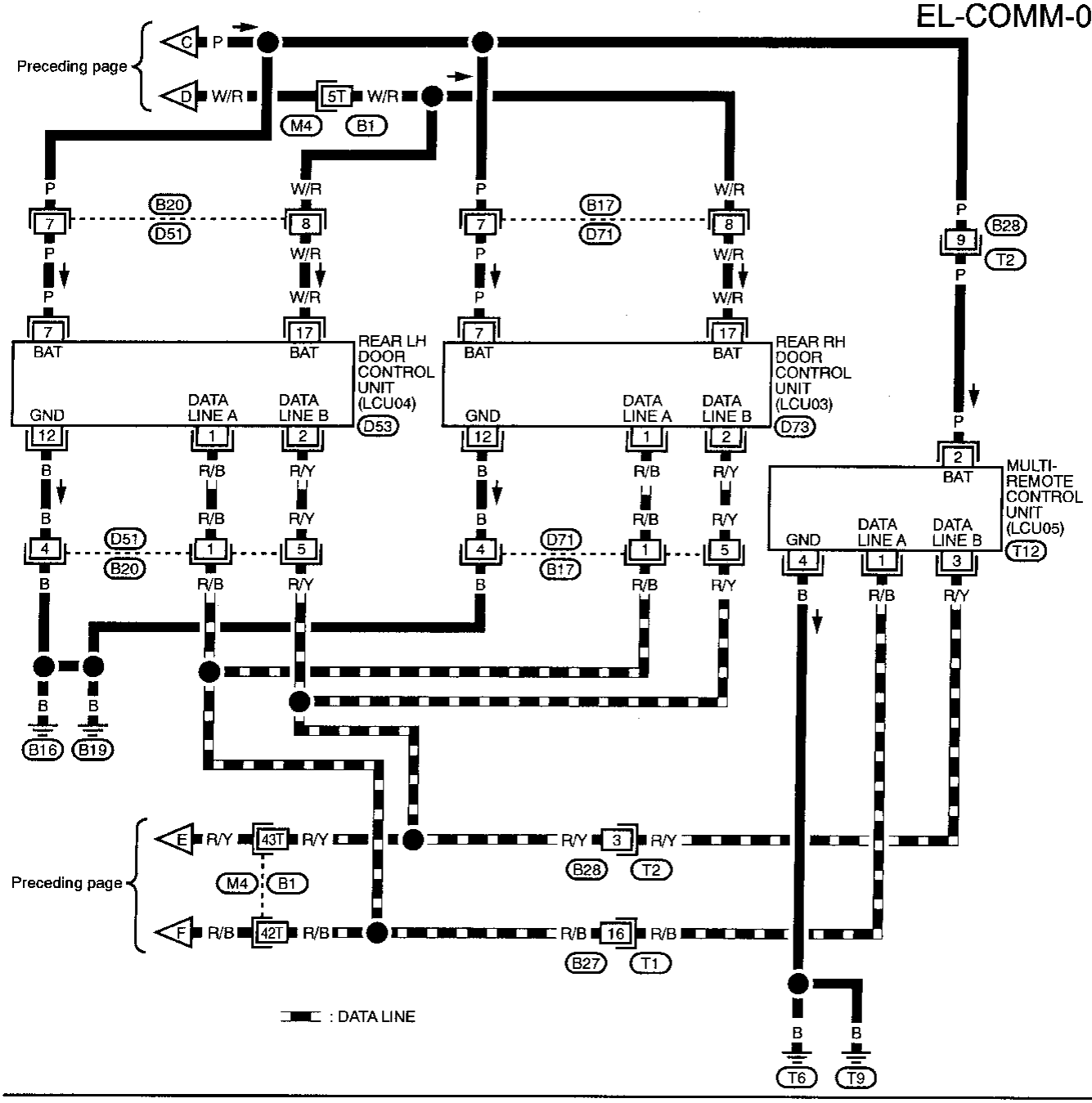
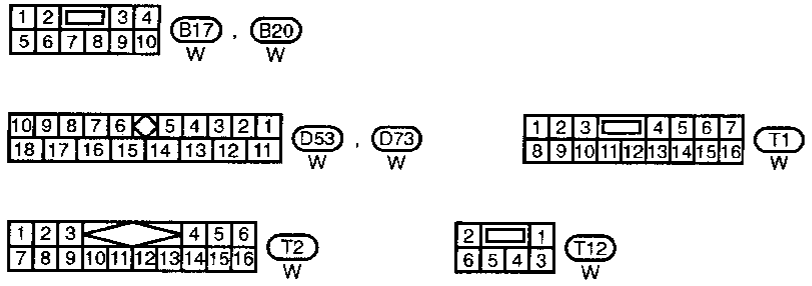
M3 , E101
M1
B4

MEL548E

Main Power Supply, Ground and Communication Circuits/Wiring Diagram — COMM — (Cont'd)

EL-COMM-03





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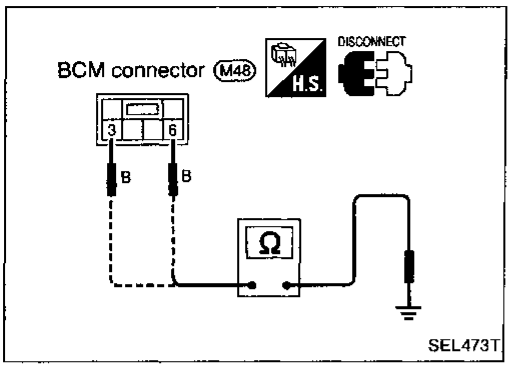
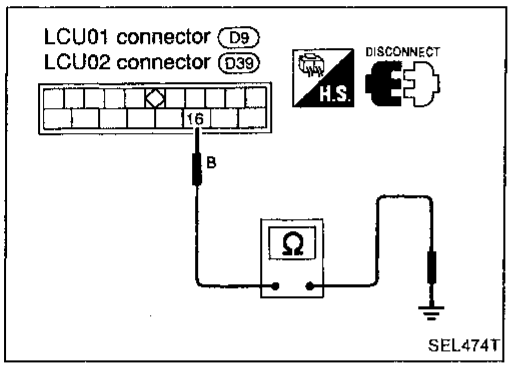
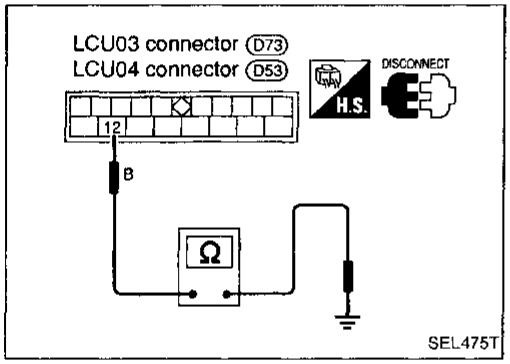
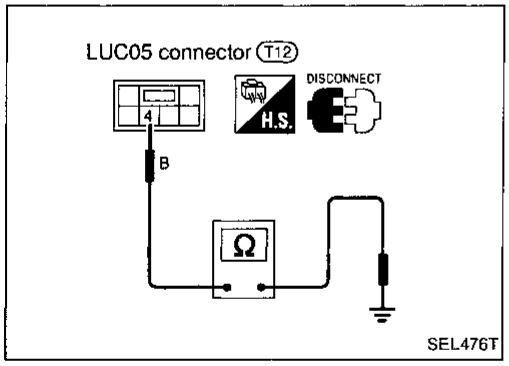
M4 , B1

MEL549E









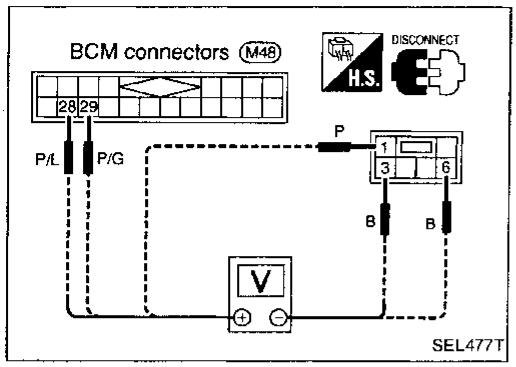
Power Supply and Ground Circuit Check

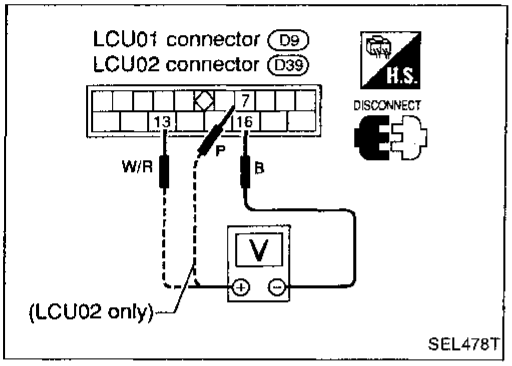
GROUND CIRCUIT CHECK

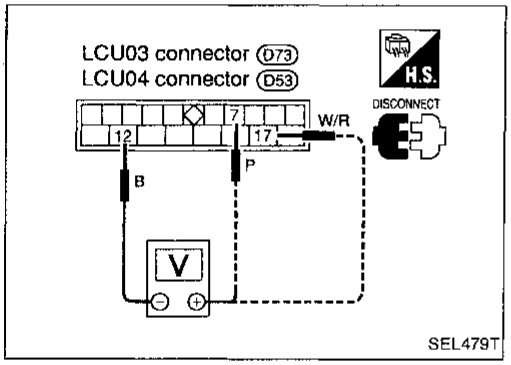
Control unit	Terminals	Continuity
BCM	③ - Ground	Yes
	⑥ - Ground	
LCU01	⑯ - Ground	
LCU02		
LCU03	⑫ - Ground	
LCU04		
LCU05	④ - Ground	

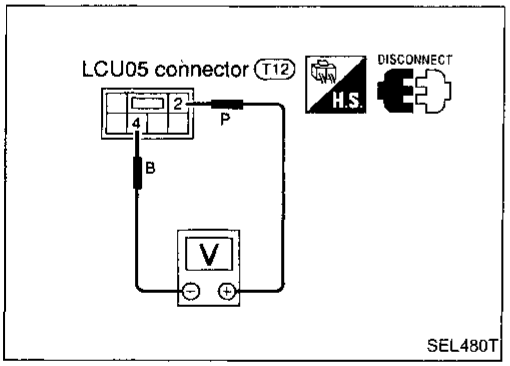
Power Supply and Ground Circuit Check (Cont'd)

POWER SUPPLY CIRCUIT CHECK









Control unit	Terminals	Ignition switch position			
		OFF	ACC	ON	START
BCM*	① - ③, ⑥	Battery voltage			
	㉘ - ③, ⑥	Approx. 0V	Battery voltage		Approx. 0V
	㉙ - ③, ⑥	Approx. 0V		Battery voltage	
LCU01	⑬ - ⑯	Battery voltage			
LCU02	⑬ - ⑯	Battery voltage			
	⑦ - ⑯	Battery voltage			
LCU03 and LCU04	⑦ - ⑫	Battery voltage			
	⑰ - ⑫	Battery voltage			
LCU05	② - ④	Battery voltage			

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

System Description

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

- from 7.5A fuse [No. 12 , located in the fuse block (J/B)]
- to BCM terminal 29 .

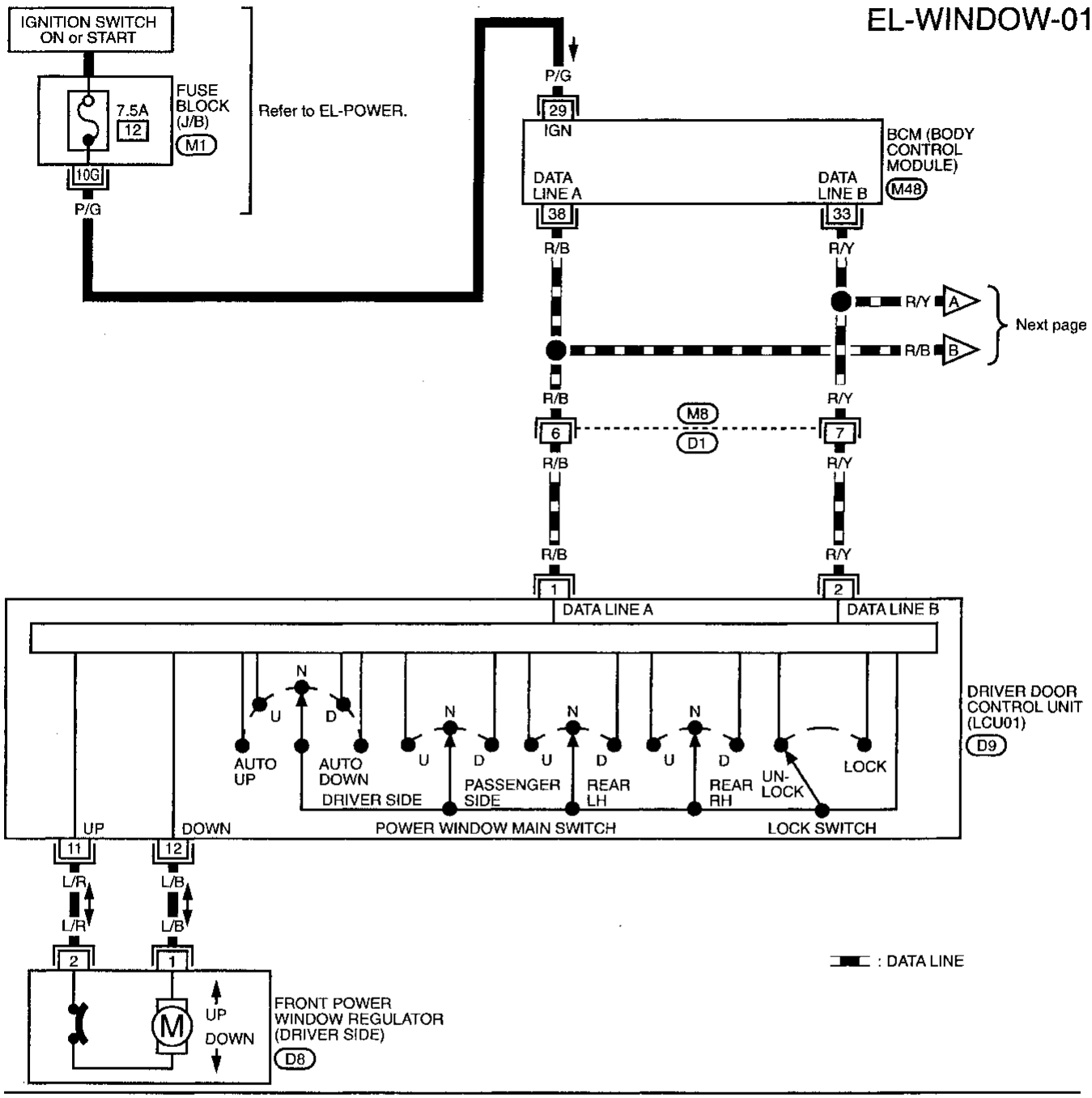
Driver door control unit (LCU01) terminals ① and ② are connected to BCM terminals 38 and 33 as DATA LINES A and B. Also, driver door control unit terminals 11 and 12 are connected to driver's side power window regulator terminals ② and ① respectively.

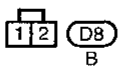
Rear LH door control unit (LCU04) and rear RH door control unit (LCU03) terminals ① and ② are connected to BCM terminals 38 and 33 as DATA LINES A and B. Also, rear LH and RH door control unit terminals 15 and 16 are connected to rear power window regulator LH and RH terminals ② and ① respectively.

Passenger door control unit (LCU02) terminals ① and ② are connected to BCM terminals 38 and 33 as DATA LINES A and B. Also, passenger door control unit terminals 11 and 12 are connected to driver's side power window regulator terminals ② and ① respectively.

When a power window switch is pushed, a signal is sent to BCM as DATA LINES. BCM sends a signal to all door control units and all door control units supply power and ground to all power window regulators.

Wiring Diagram — WINDOW —





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M1
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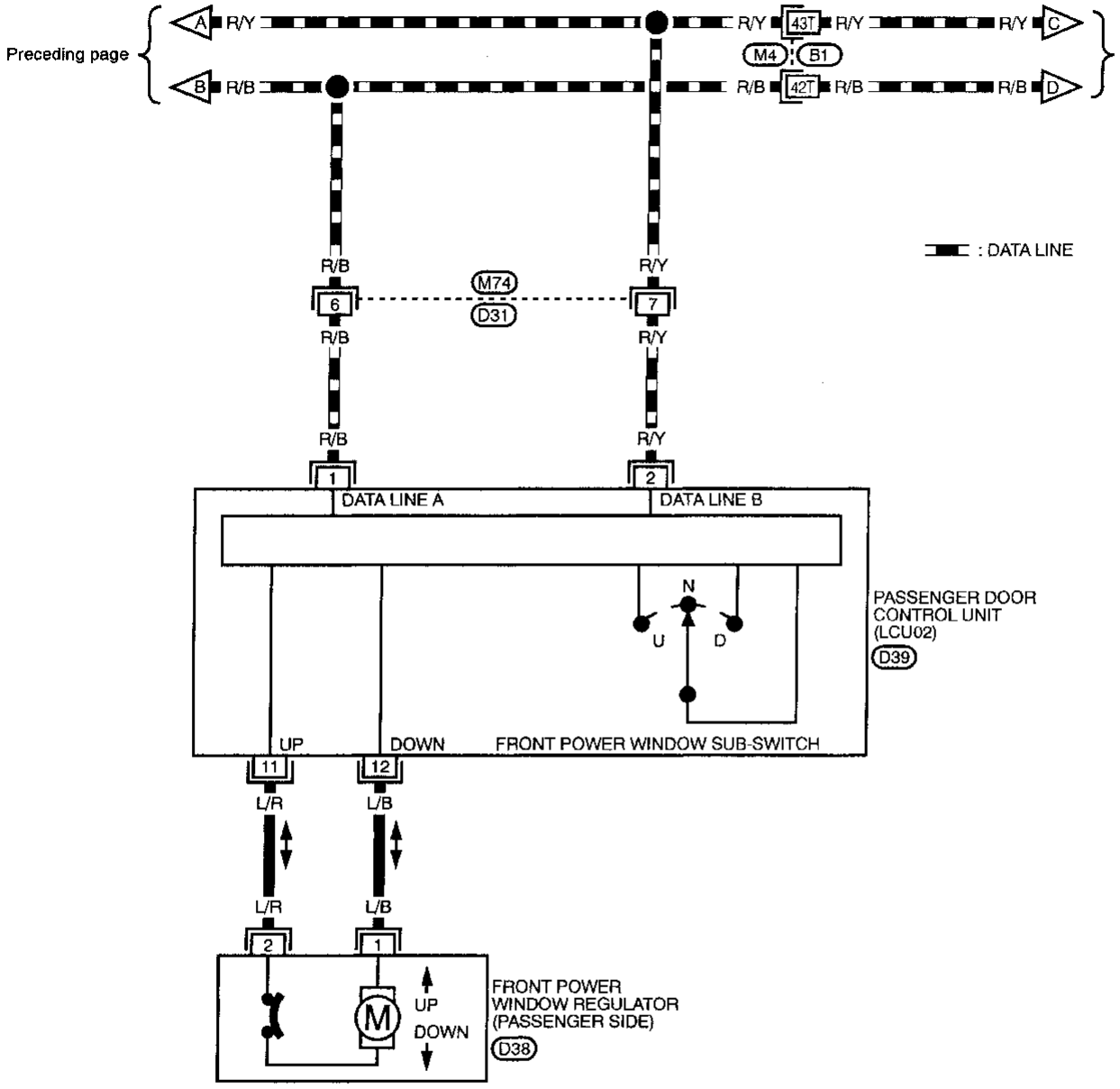
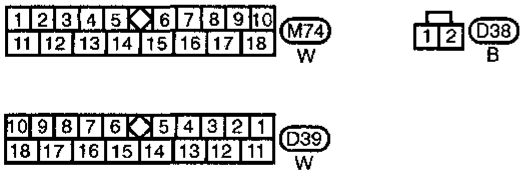
Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02





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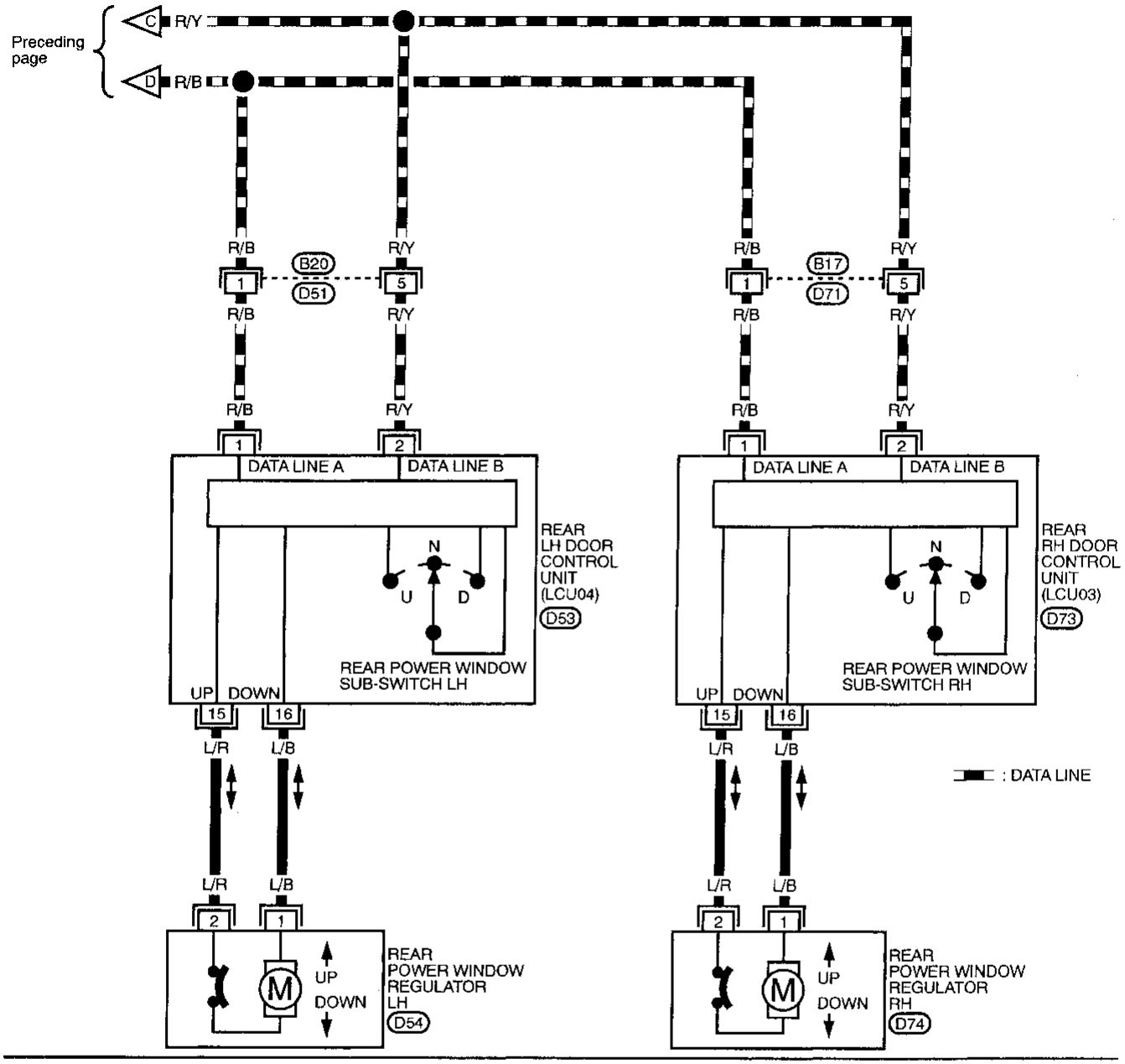
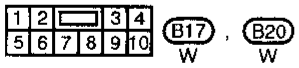
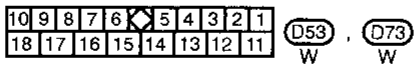
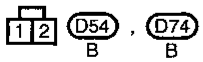
Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03



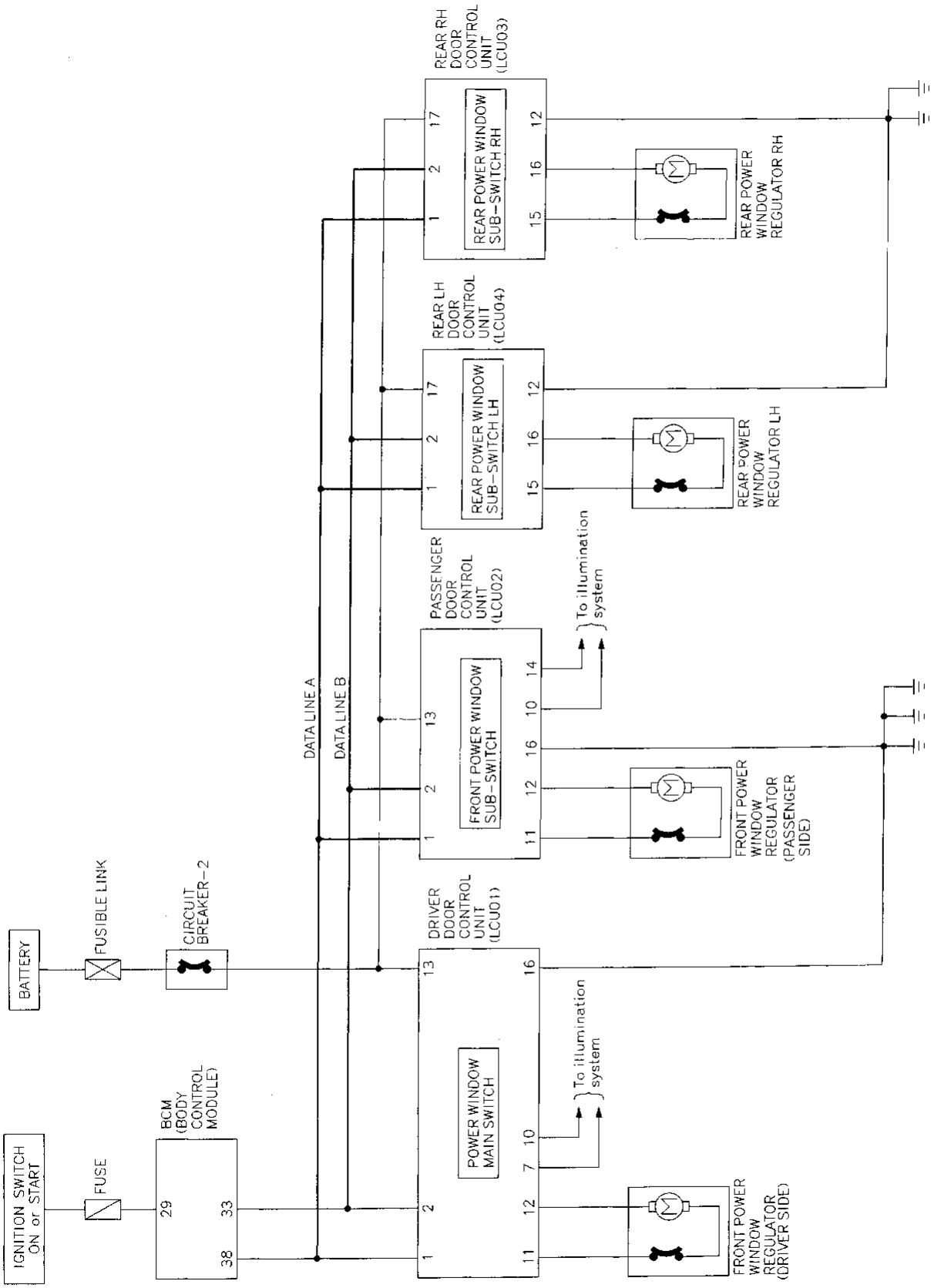






MEL552E

Schematic



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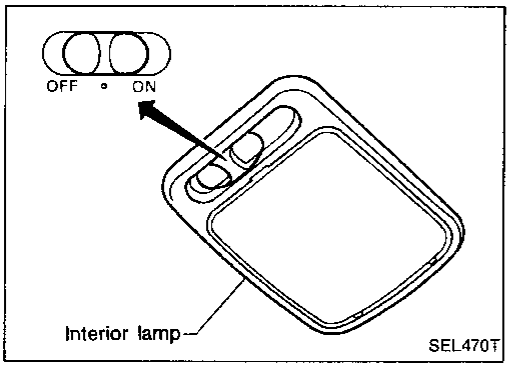


On-board Diagnosis — Mode IV (Driver power window operation)

HOW TO PERFORM MODE IV

Condition
- Ignition switch: OFF
- **Headlamp switch: 1st**
- Rear window defogger switch: OFF
- Front LH window: Closed
- Doors: Closed
- Interior lamp: Center "○" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" 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".

↓

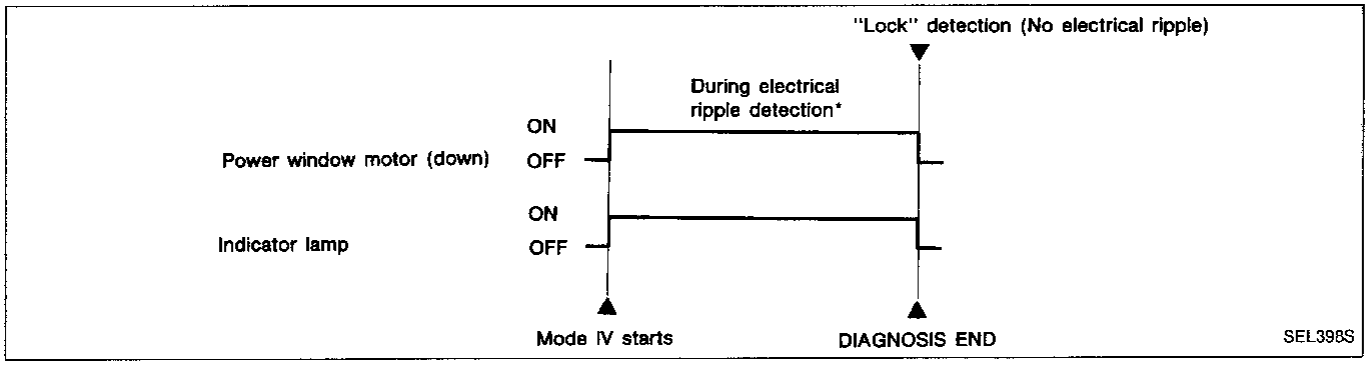
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

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

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

DESCRIPTION

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



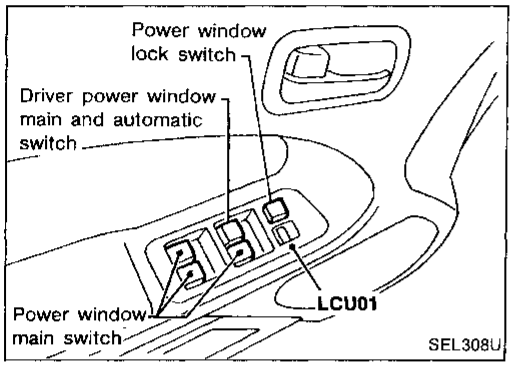
NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor (DOWN) stops and diagnosis ends.

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

Trouble Diagnoses

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 all the way. To stop the window, pull up then release the switch.

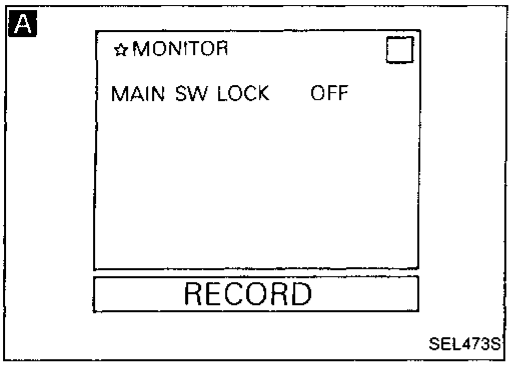


SYMPTOM CHART

PROCEDURE	IVMS communication diagnosis		Power supply and ground circuit check		Diagnostic procedure			
REFERENCE PAGE	EL-156	EL-161	EL-179	EL-180	EL-189	EL-189	EL-190	EL-191
SYMPTOM	CONSULT	On-board diagnosis (Mode I)	Ground circuit check	Power supply circuit check	Procedure 1 (Power window lock switch)	Procedure 2 (Power window main switch)	Procedure 3 (Power window sub-switch)	Procedure 4 (Power window regulator)
One or more of the sub-switches do not function.	X	X	X	X			X	X
One or more of the main switches on driver's door trim do not function (including automatic switch).	X	X	X	X		X		X
Power window lock switch on main switch does not lock and/or unlock all windows.	X	X	X	X	X			
All power window main switches and sub-switches do not function.	X	X	X	X	X	X	X	X

Perform "IVMS Communication Diagnosis", "Power Supply and Ground Circuit Check" before starting with power window diagnostic procedure.

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1 — Power window lock switch

CHECK POWER WINDOW LOCK SWITCH CIRCUIT.

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.

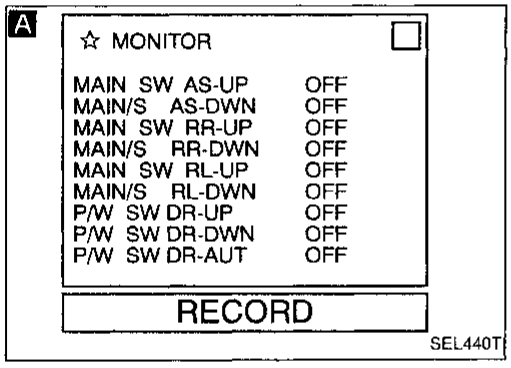
OR

ON-BOARD

Check power window lock switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses, EL-163.)

OK ↓

Power window lock switch is OK.



DIAGNOSTIC PROCEDURE 2 — Power window main switch (Driver side, Passenger side, Rear LH, RH)

CHECK DRIVER'S DOOR TRIM POWER WINDOW MAIN SWITCH CIRCUIT FOR MALFUNCTIONING PORTION.

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

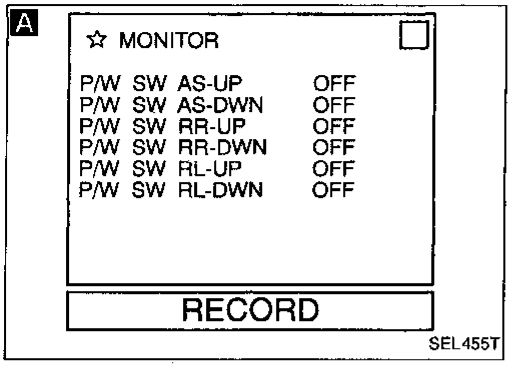
Check power window main switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses, EL-163.)

OK ↓

Power window main switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 — Power window sub-switch (Passenger side, Rear LH, RH)



CHECK POWER WINDOW SUB-SWITCH CIRCUIT FOR MALFUNCTIONING PORTION.

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 Diagnoses, EL-163.)

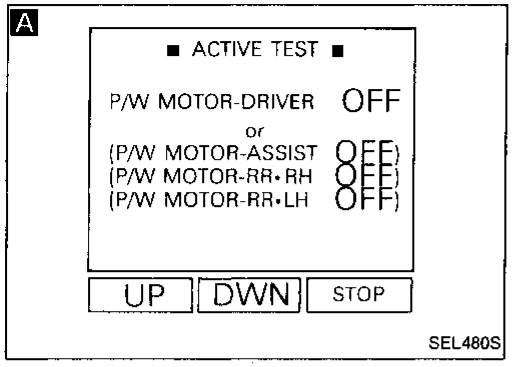
OK ↓

Power window sub-switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 — Power window regulator

A



CHECK POWER WINDOW REGULATOR CIRCUIT.

CONSULT

See "P/W MOTOR" in ACTIVE TEST mode.
Perform operation shown on display.
Power window motor should operate.

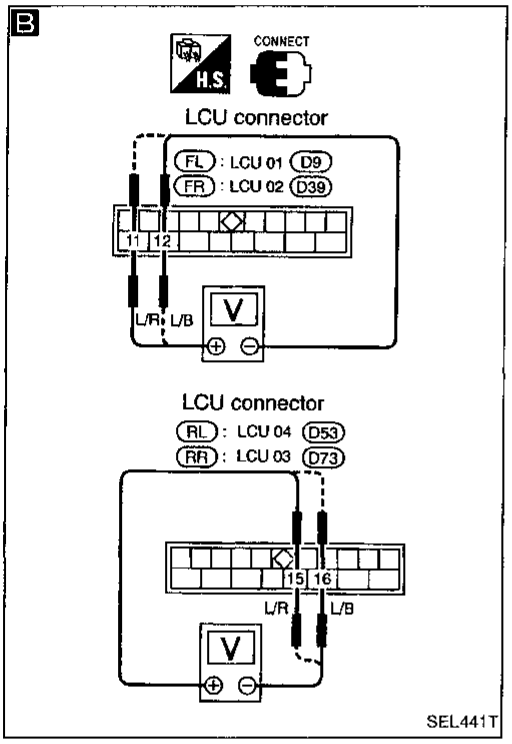
OR

ON-BOARD
(for driver window)
Check driver power window operation in driver power window operation (Mode IV).
(Refer to On-board Diagnoses, EL-186.)
NOTE (except for driver window):
If CONSULT is not available, start with the diagnostic procedure B .

OK → Power window regulator is OK.

NG ↓

B



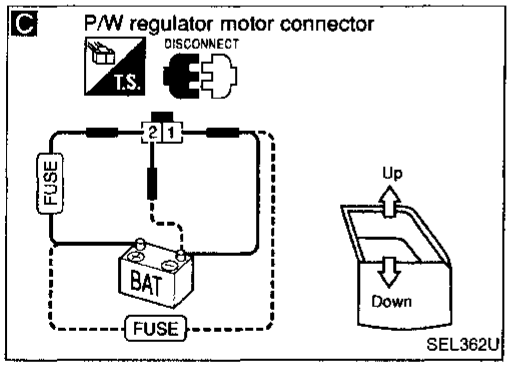
Check voltage between LCU connector terminals ⑪ and ⑫, or/and ⑮ and ⑯.

Operation		Terminals ⊕	Terminals ⊖	Voltage
Front (LCU01, LCU02)	Down	⑫	⑪	Battery voltage
	Up	⑪	⑫	
Rear (LCU03, LCU04)	Down	⑯	⑮	
	Up	⑮	⑯	

NG → Replace LCU for malfunctioning portion.

OK ↓

C



Check power window motor operation.

Terminals ⊕	Terminals ⊖	Operation
①	②	Downward
②	①	Upward

NG → Replace power window motor.

OK ↓

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

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to key switch terminal ①.

Power is supplied to BCM terminal ㉓ through key switch terminal ② when key switch is in ON position (ignition key is inserted in the key cylinder).
With the ignition switch in ON or START position, power is also supplied
- through 7.5A fuse [No. 12 , located in the fuse block (J/B)]
- to BCM terminal ㉙.

BCM terminal ㊳ is connected to driver door control unit (LCU01) terminal ①, passenger door control unit (LCU02) terminal ①, rear LH door control unit (LCU04) terminal ① and rear RH door control unit (LCU03) terminal ① by DATA LINE A.
Also, BCM terminal ㉝ is connected to driver door control unit (LCU01) terminal ②, passenger door control unit (LCU02) terminal ②, rear LH door control unit (LCU04) terminal ② and rear RH door control unit (LCU03) terminal ② by DATA LINE B.
Ground is supplied
- to BCM terminal ㉛ or ⑲
- from front LH or RH door switch terminal ②
- through front LH or RH door switch terminal ③ when door switch is in OPEN position and
- through body grounds (B16) and (B19).

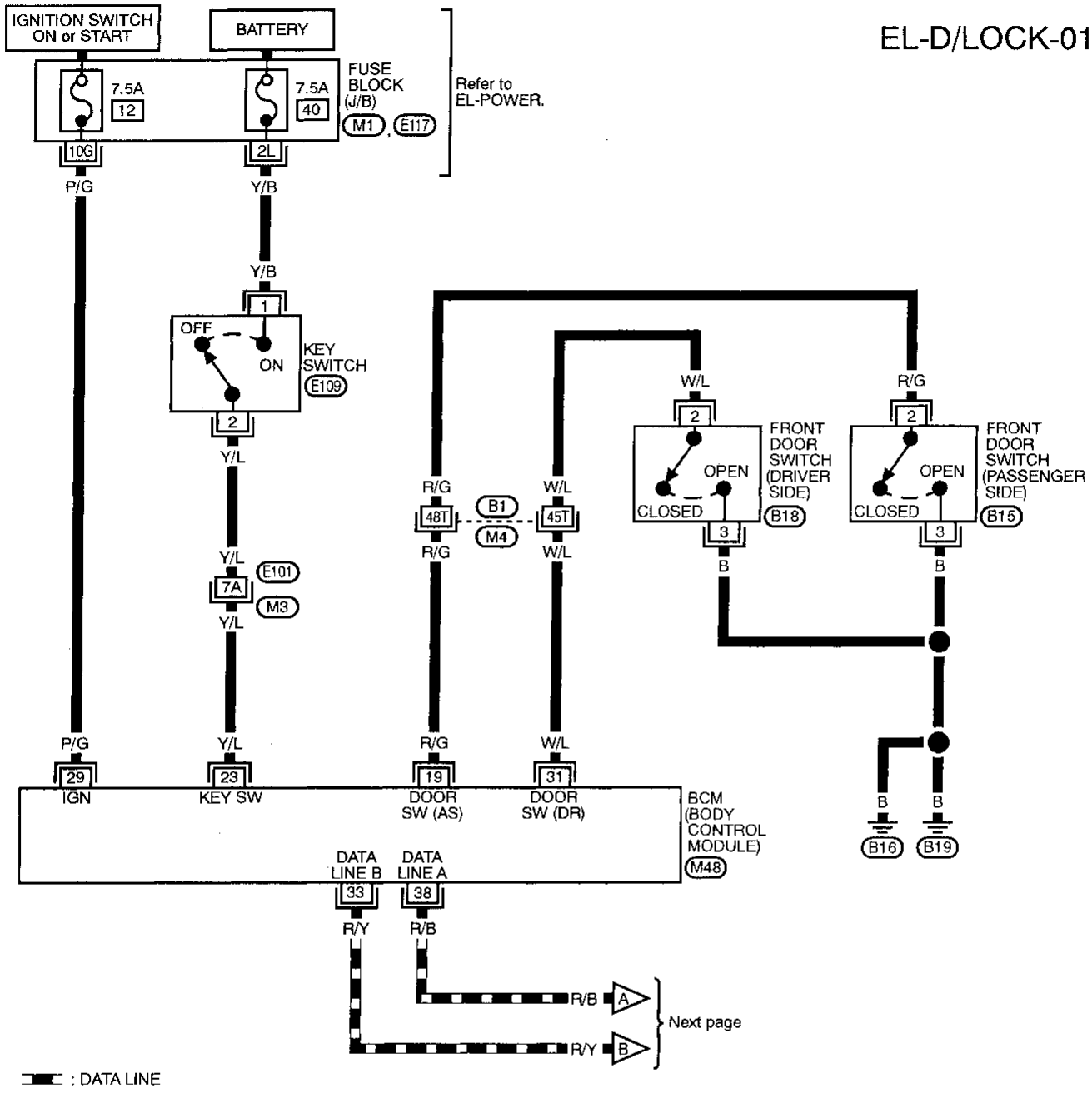
Ground is supplied
- to driver door control unit (LCU01) terminals ⑥, ⑤ or ④
- from front LH door key cylinder switch terminals ① or ②, or door unlock sensor (in the front LH door lock actuator) terminal ② when door key cylinder is in BETWEEN FULL STROKE AND N position
- through front LH door key cylinder switch terminal ④ or front LH door lock actuator terminal ④ and
- through body grounds (M13) and (M73).

Ground is supplied
- to rear LH door control unit (LCU04) or RH (LCU03) terminals ④, ⑬ or ⑭
- from door unlock sensor (in the rear LH or RH door lock actuator) terminal ② when door lock is in UNLOCKED position
- through rear LH or RH door lock actuator terminal ④ and
- through body grounds (B16) and (B19).

Ground is supplied
- to passenger door control unit (LCU02) terminals ⑥, ⑤ or ④
- from front RH door key cylinder switch terminals ① or ②, or door unlock sensor (in the front RH door lock actuator) terminal ② when door key cylinder is in BETWEEN FULL STROKE AND N position
- through front RH door key cylinder switch terminal ④ or front RH door lock actuator terminal ④ and
- through body grounds (M13) and (M73).

Wiring Diagram — D/LOCK —

EL-D/LOCK-01



E109 W

B18 B , B15 B

Refer to last page (Foldout page).

M1 , E117

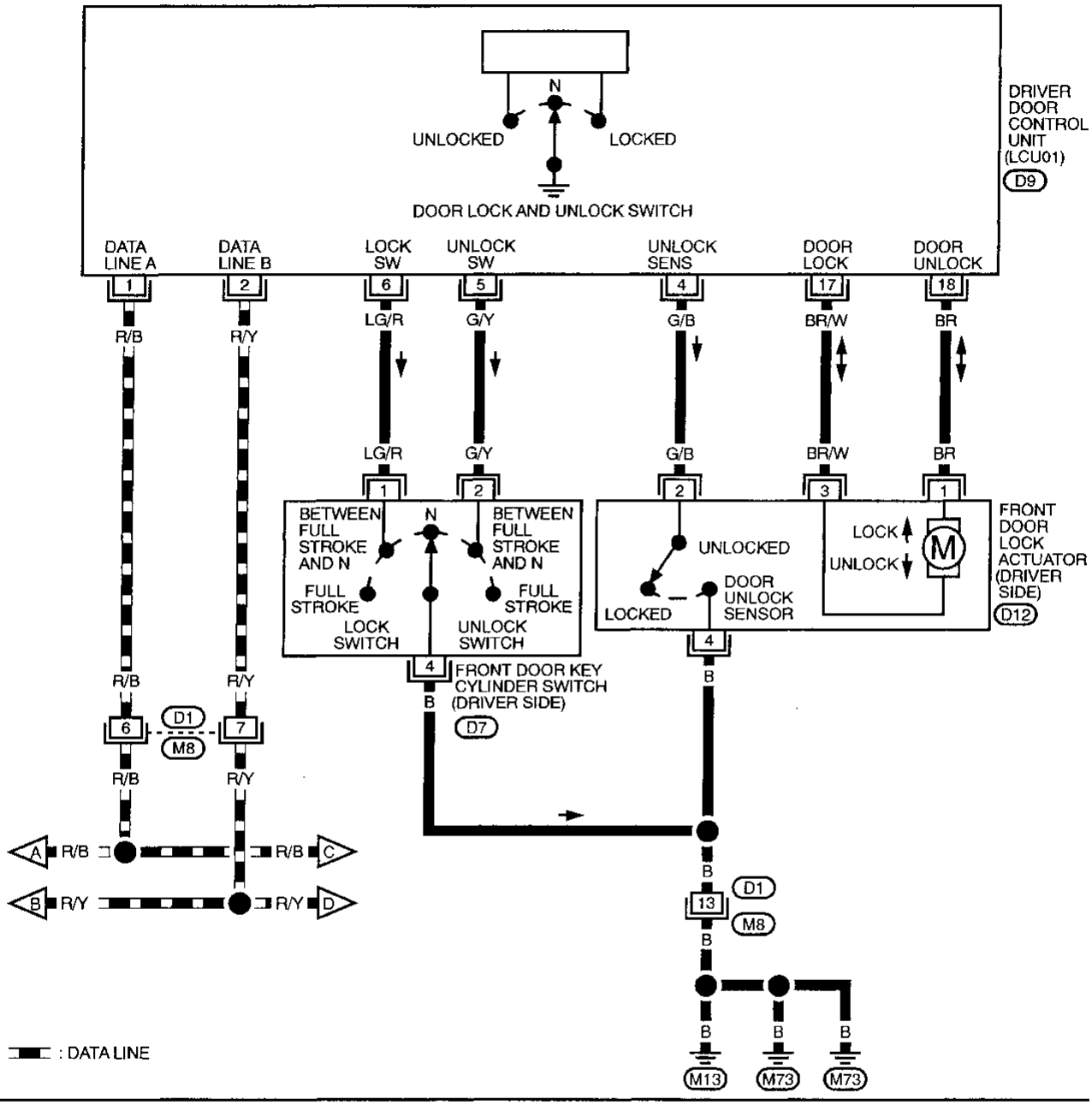
B1 , M4

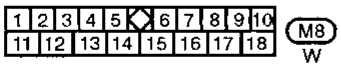
E101 , M3

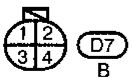
MEL554E

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02



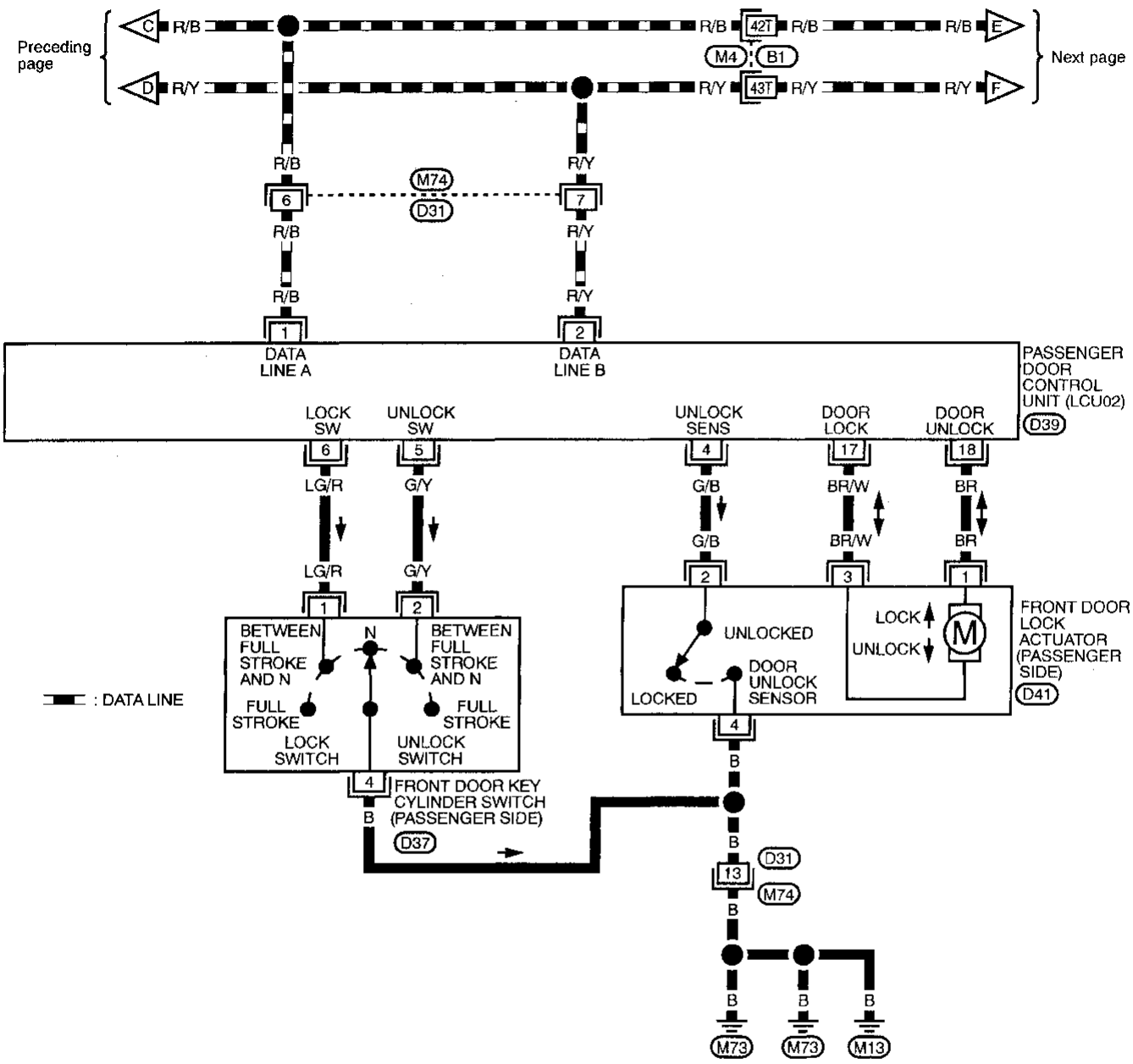


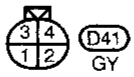


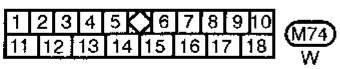
MEL555E

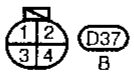
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-03







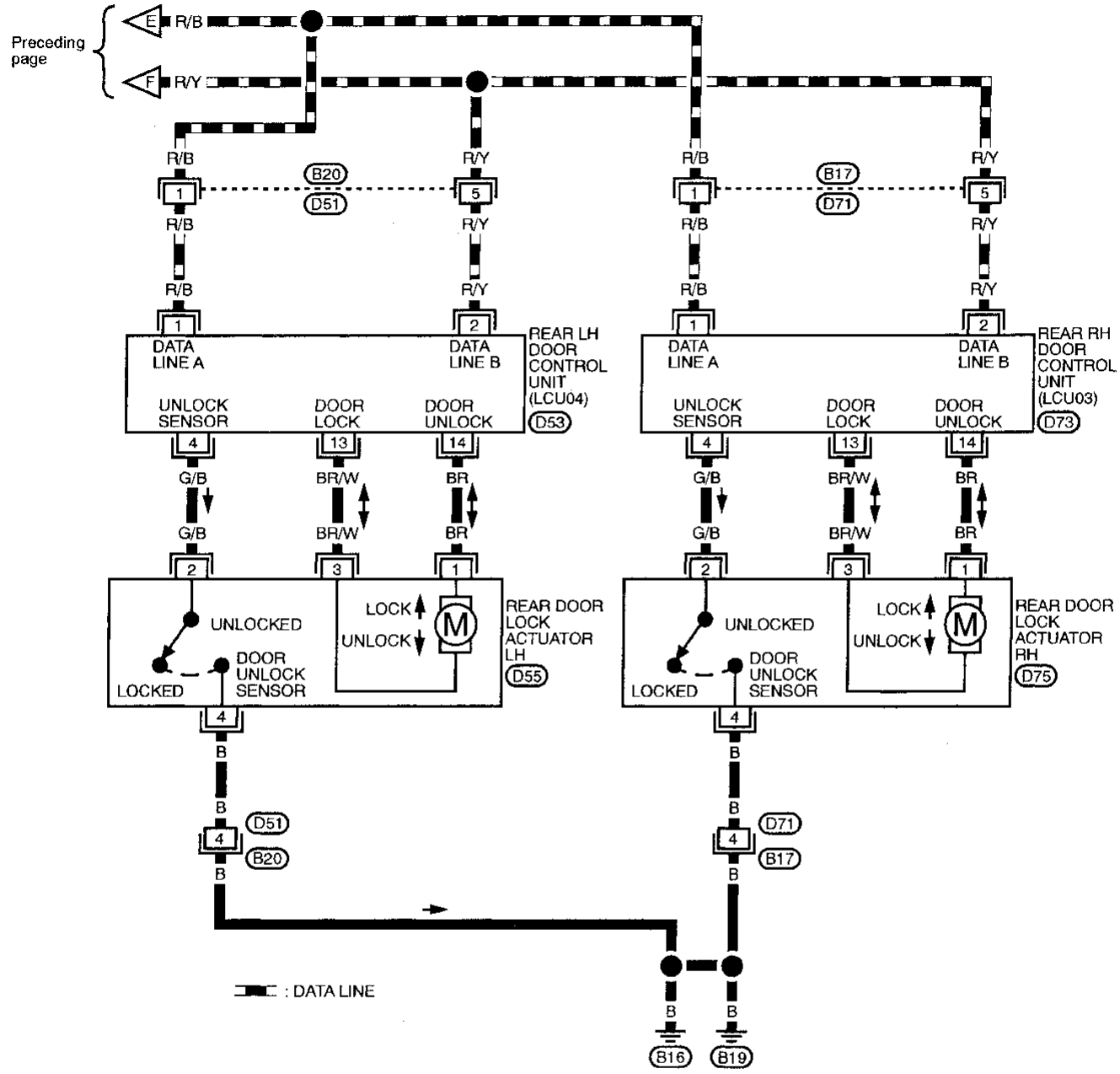


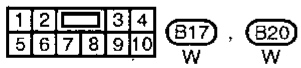
Refer to last page (Foldout page).
M4 , B1

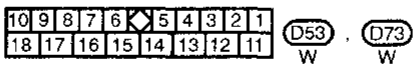
MEL556E

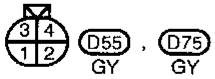
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-04



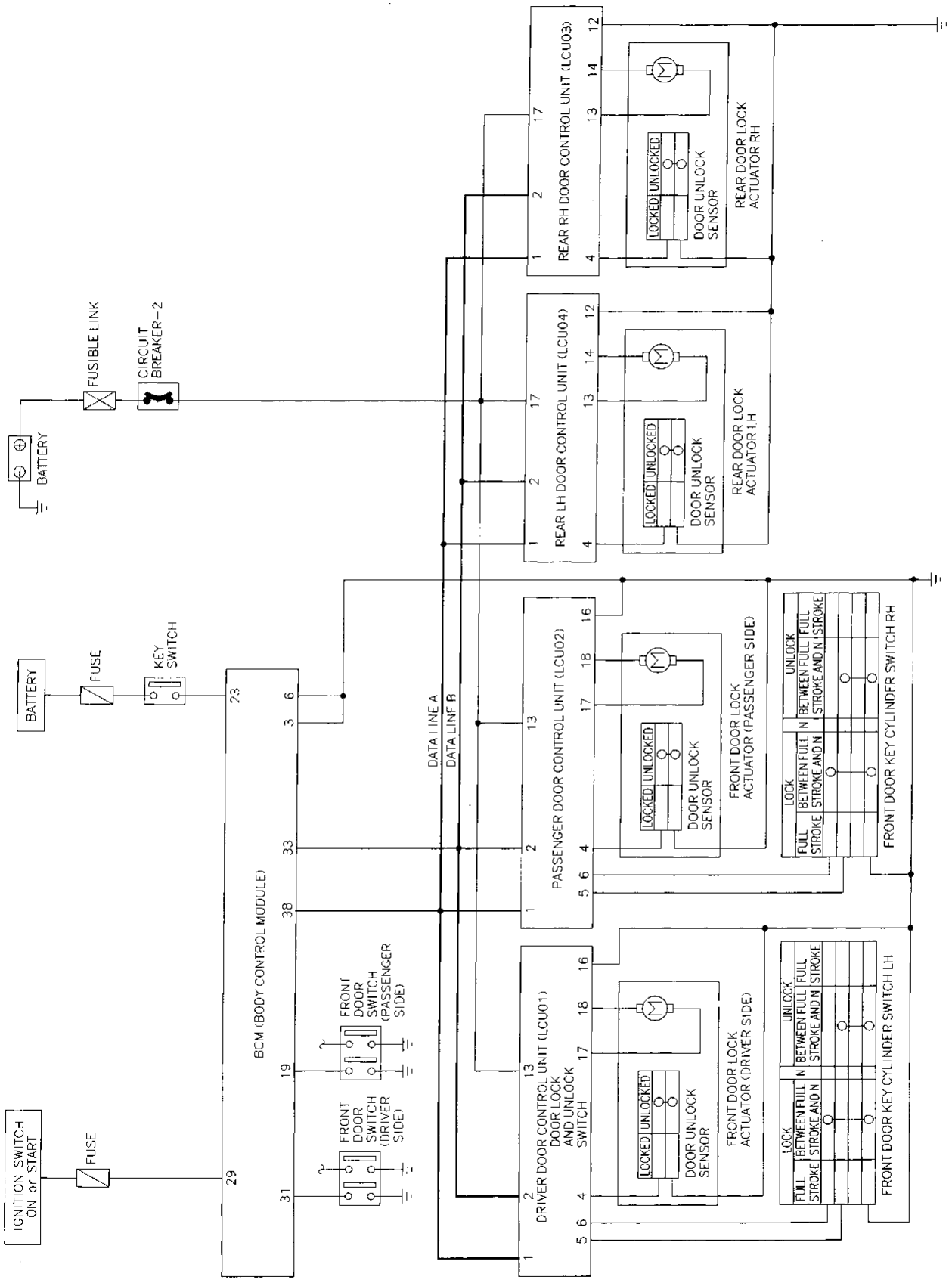




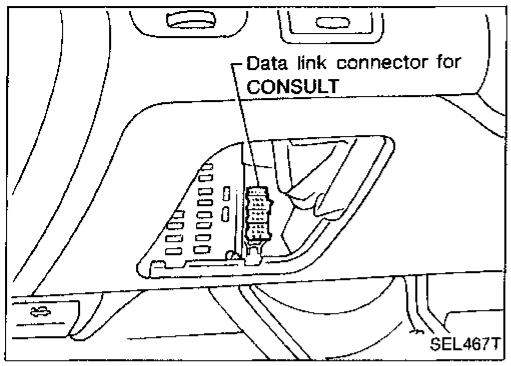


MEL557E

Schematic



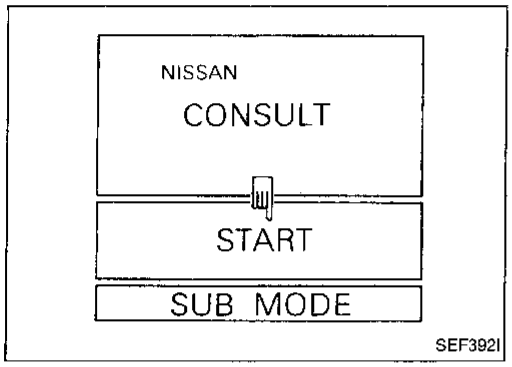
MEL558E



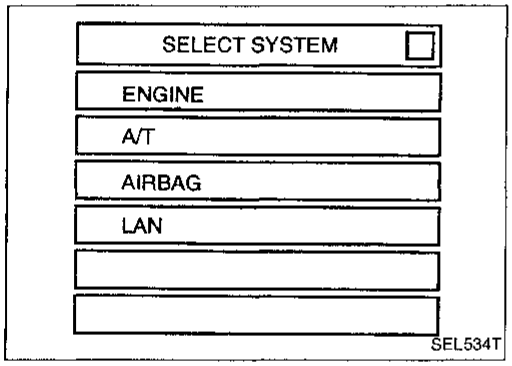
Consult

CONSULT INSPECTION PROCEDURE

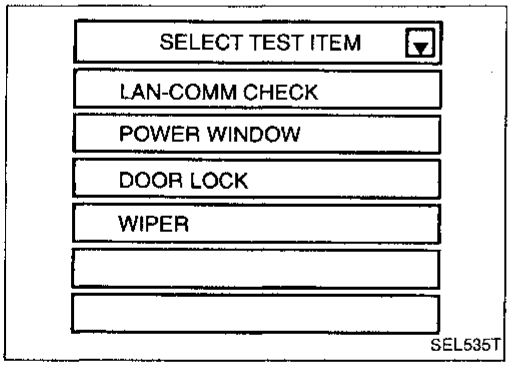
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



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



5. Touch "LAN".



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

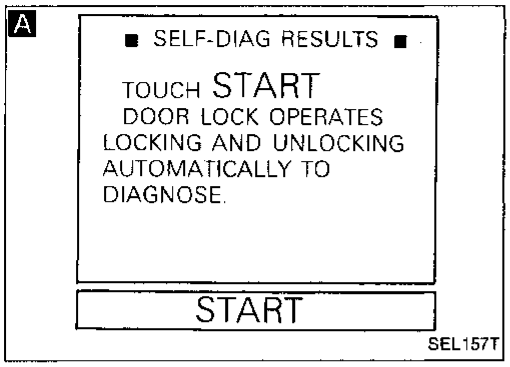
For further information, read the CONSULT Operation Manual.

Consult (Cont'd)

POWER DOOR LOCK — Self-diagnostic results

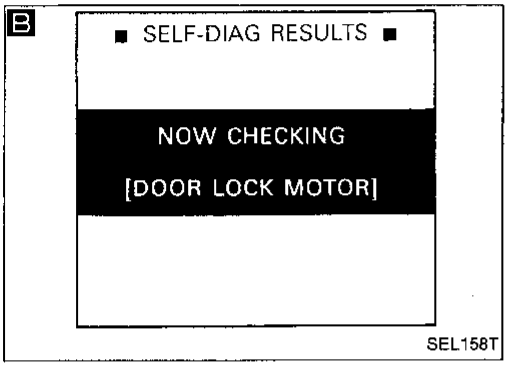
Diagnostic procedure

A



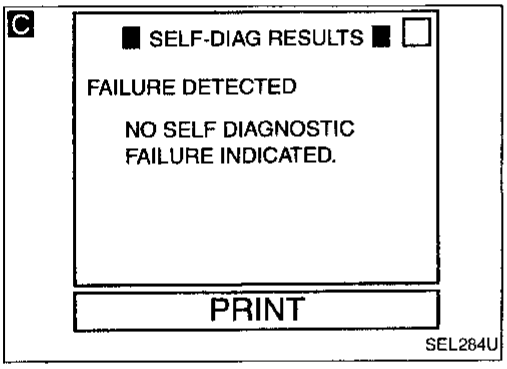
1) Choose "**DOOR LOCK**" in SELECT TEST ITEM.
2) Touch "**SELF-DIAG RESULTS**" of SELECT DIAG mode.
3) Touch "**START**".

B



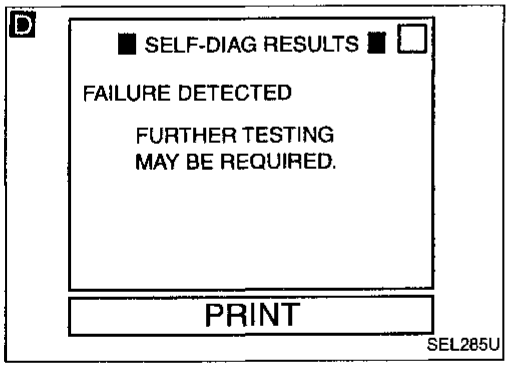
Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.

C D



Diagnostic contents are as shown in the figure at left.
C : When no malfunction is detected
D : When malfunction is detected
A summary of diagnostic results is given in the following chart.

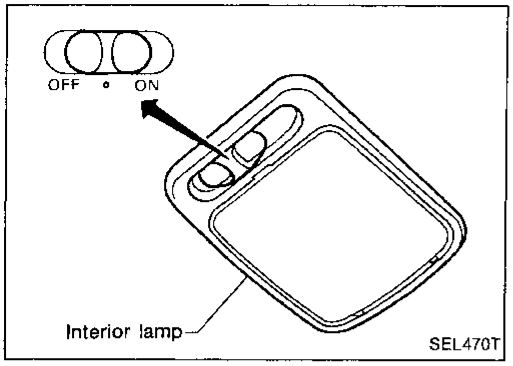
D



Consult (Cont'd)

Power door lock result list

Diagnostic item	Explanation	Repair order
*NO SELF DIAGNOSTIC FAILURE INDICATED/FURTHER TESTING MAY BE REQUIRED.**	Normal The door lock system is in good order.	—
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock motor is malfunctioning.	1. Visually check the wiring harness connections. 2. Diagnose the door lock motor circuit referring to the DIAGNOSTIC PROCEDURES of "POWER DOOR LOCK — IVMS" (EL-203).
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock motor is malfunctioning.	
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock motor is malfunctioning.	
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock motor is malfunctioning.	



On-board Diagnosis — Mode III (Power door lock operation)

HOW TO PERFORM MODE III

Condition
- Ignition switch: OFF
- **Headlamp switch: 1st**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp: Center "○" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" 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".

↓

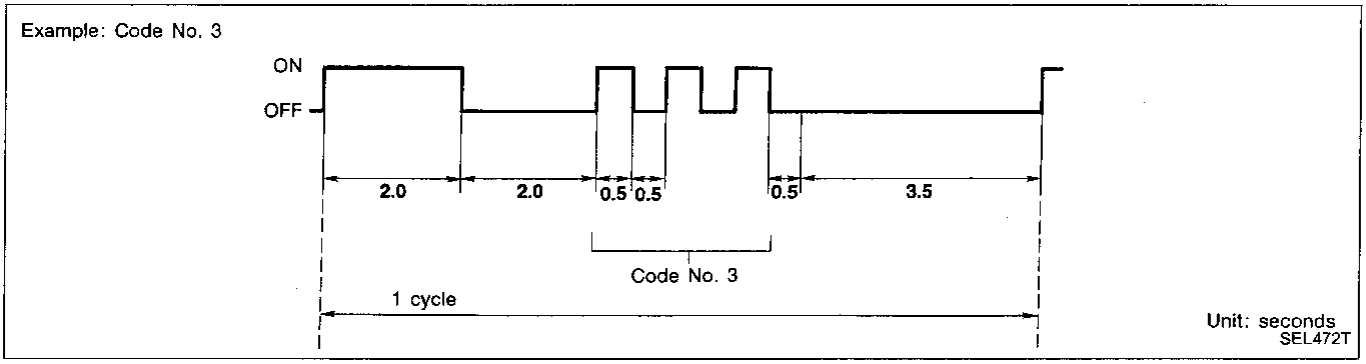
DIAGNOSIS END* **(Be sure to turn off the lighting switch.)**

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

On-board Diagnosis — Mode III (Power door lock operation) (Cont'd)

DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the interior lamp and front 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".

The self-diagnostic results will remain in the BCM memory.

Malfunction code table

Code No.	Detected items	Repair order
1	Driver door lock motor circuit	1. Visually check the wiring harness connections. 2. Diagnose the door lock motor circuit referring to the DIAGNOSTIC PROCEDURES of "POWER DOOR LOCK — IVMS" (EL-203).
2	Passenger door lock motor circuit	
3	Rear RH door lock motor circuit	
4	Rear LH door lock motor circuit	
9	No malfunction in the above circuit	—

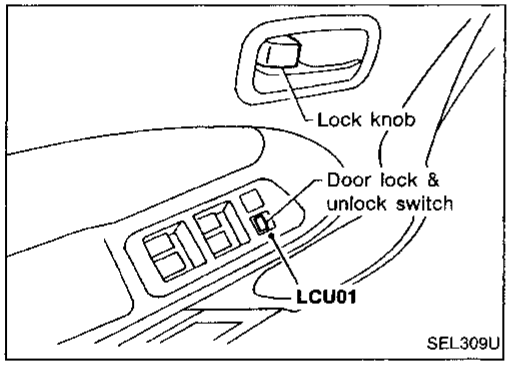
Trouble Diagnoses

OPERATIVE CONDITION

- 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.
- 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.

However, if the ignition key is in the steering 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. — (KEY REMINDER DOOR SYSTEM)
If any of the following symptoms occur, key reminder door system is malfunctioning.

- With ignition key removed from the steering key cylinder and all doors closed, operating the lock & unlock switch or lock knob on the front LH or RH door trim unlocks all doors the instant they are locked.
- With ignition key inserted into the steering key cylinder and front LH or RH door opened, operating the lock & unlock switch or lock knob on the front LH or RH door trim to "Lock" does not unlock all doors.



Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	IVMS communication diagnosis		Power supply and ground circuit check		Self-diagnosis		Diagnostic procedure					
REFERENCE PAGE	EL-156	EL-161	EL-179	EL-180	EL-199	EL-201	EL-205	EL-206	EL-206	EL-207	EL-208	EL-209
SYMPTOM	CONSULT	On-board diagnosis (Mode I)	Ground circuit check	Power supply circuit check	CONSULT	On-board diagnosis (Mode III)	Procedure 1 (Door switch)	Procedure 2 (IGN key switch)	Procedure 3 (Lock & unlock switch)	Procedure 4 (Door key cylinder switch)	Procedure 5 (Door unlock sensor)	Procedure 6 (Door lock actuator)
Key reminder door system does not operate properly.	X	X	X	X	X	X	X	X			X	X
One or more doors are not locked and/or unlocked	X	X	X	X	X	X					X	X
Lock & unlock switch does not operate.	X	X	X	X	X	X			X			
None of the doors lock/ unlock when operating door key cylinder switch.	X	X	X	X	X	X				X		
None of the doors lock when operating front door knob lock switch.	X	X	X	X	X	X					X	

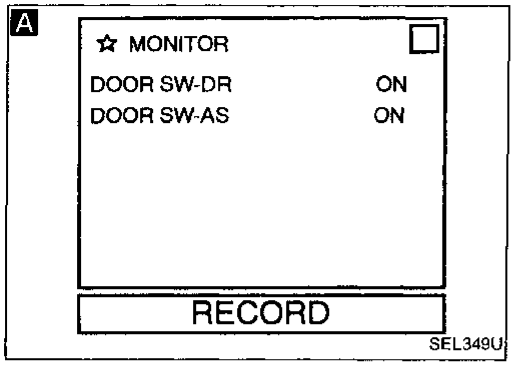
Perform "IVMS Communication Diagnosis", "Power Supply and Ground Circuit Check" before starting with power door lock diagnostic procedure.

The following ABBREVIATIONS are used in this Trouble Diagnoses.
(FL): Front LH
(FR): Front RH
(RL): Rear LH
(RR): Rear RH

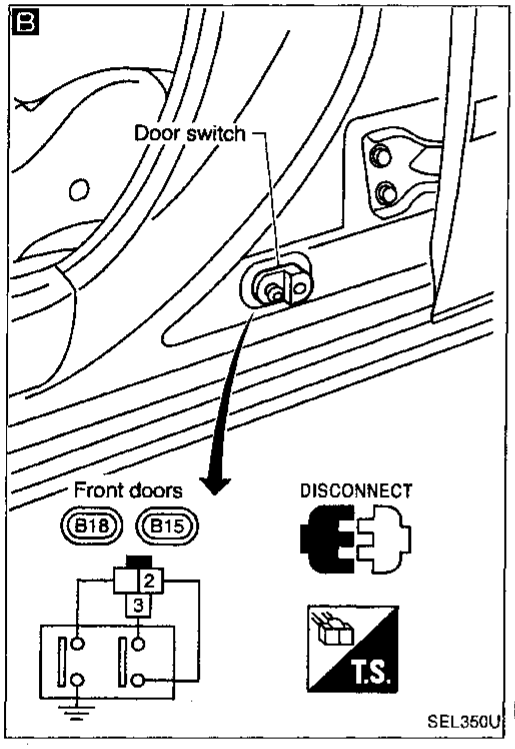
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1 — Door switch

A



B



A

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SWITCH" in "Data Monitor" mode.

When all doors are closed:
DOOR SWITCH OFF

When at least one door is open:
DOOR SWITCH ON

NG → Door switch is OK.

— OR —

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-163.

OK ↓

B

CHECK DOOR SWITCH.

Check continuity between terminal and switch body.

	Terminals	Condition	Continuity
Driver and passenger door switches	② - ③	Pressed	No
		Released	Yes

NG → Replace door switch.

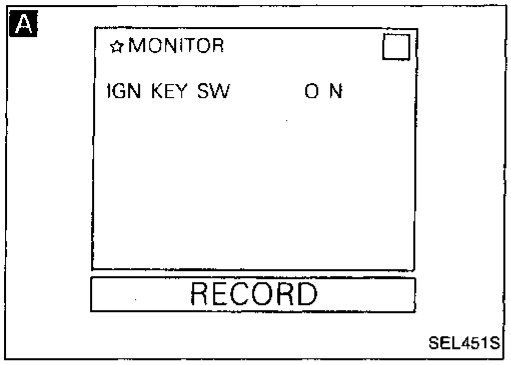
OK ↓

Check harness for open or short between door switch and BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2 — Ignition key switch

A



CHECK KEY SWITCH CIRCUIT.

A CONSULT

See "IGN KEY SW" in DATA MONITOR mode.

"IGN KEY SW" should be "ON" when IGN key is inserted in steering key cylinder.

OK → Ignition key switch is OK.

OR

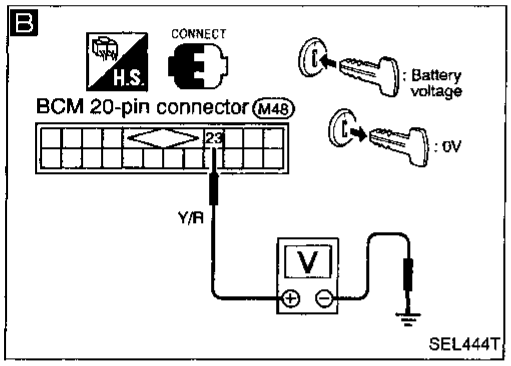
B TESTER

Check voltage when key is inserted in steering key cylinder.

Battery voltage should exist.

NG

B



C

Check voltage of key switch connector terminal ② when key is inserted in steering key cylinder.

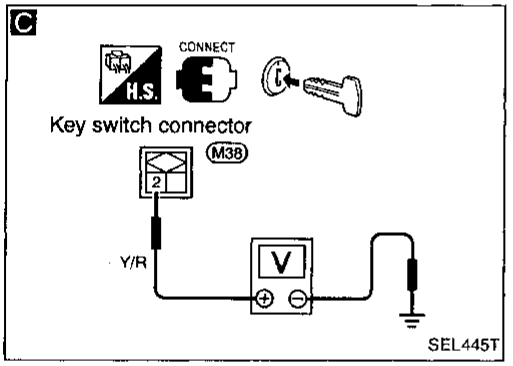
Battery voltage should exist.

OK → Repair harness between key switch and BCM connector.

NG

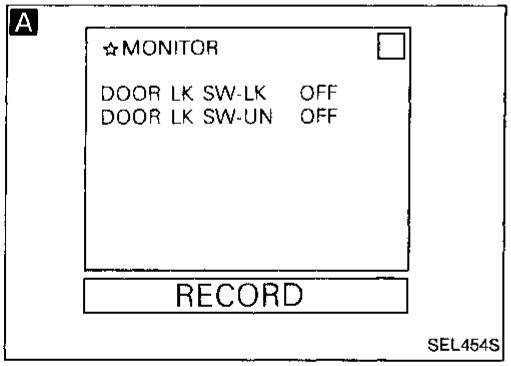
Check key switch unit and fuse circuit.

C



DIAGNOSTIC PROCEDURE 3 — Lock & unlock switch

A



CHECK DOOR LOCK & UNLOCK SWITCH CIRCUIT.

A CONSULT

See "DOOR LK SW-LK or UN" in DATA MONITOR mode.

These signals should be "ON" when door lock switch was operated.

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 Diagnoses, EL-163.)

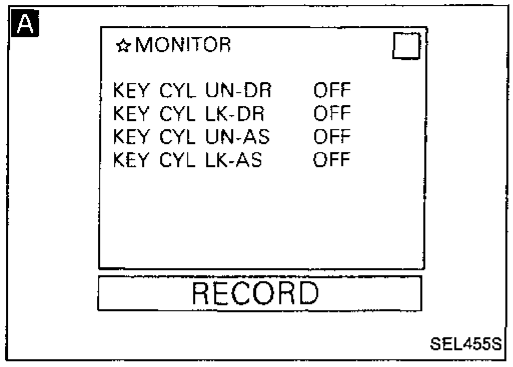
NG

Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 — Door key cylinder switch

A



CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.
These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.
If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.
(Refer to CONSULT OPERATION MANUAL.)

OK → Door key cylinder switch is OK.

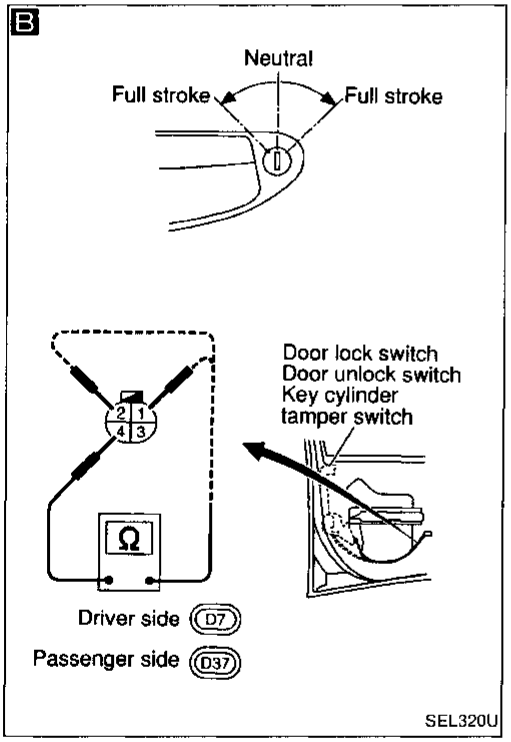
OR

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnoses, EL-163.)

NG

B



B

CHECK DOOR KEY CYLINDER SWITCH.

NG → Replace door key cylinder switch.

Terminals	Condition	Continuity
① - ④	Neutral	No
	Between locked and neutral	Yes
	Locked	No
② - ④	Neutral	No
	Unlocked	Yes

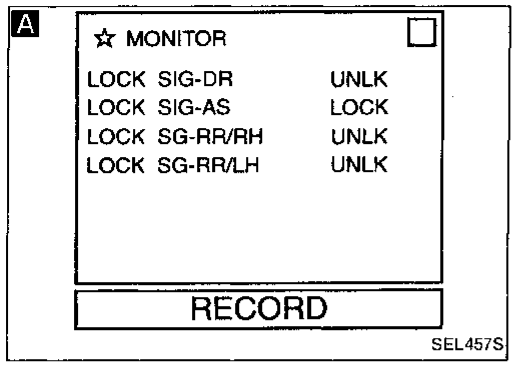
OK

Check harness for open or short between door key cylinder switch and LCU01/02.

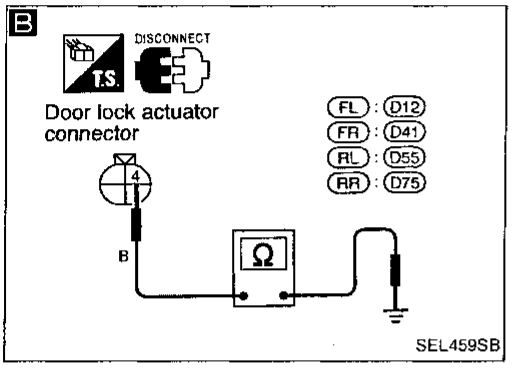
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5 — Door unlock sensor

A



B



CHECK DOOR LOCK KNOB SWITCH CIRCUITS.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

"LOCK SIG SW" should be "LOCK" when lock knob was locked.

OK → Door unlock sensor is OK.

OR

ON-BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnoses, EL-163.)

NG

1) Disconnect LCU connector and door lock actuator connector.
2) Check harness for open or short between LCU connector terminal ④ and door lock actuator connector terminal ②.

NG → Repair harness.

OK

B

CHECK GROUND CIRCUIT FOR FRONT LH OR RH LOCK KNOB SWITCH.

Check harness continuity between door lock actuator connector harness terminal ④ and body ground.

Continuity should exist.

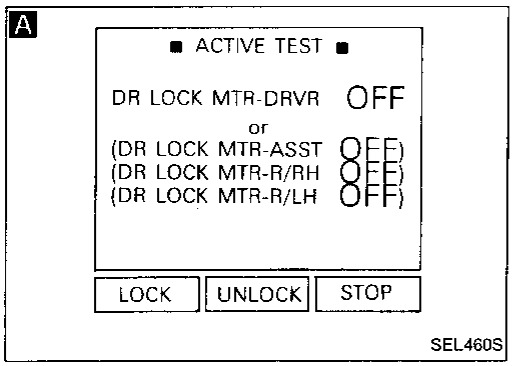
NG → Repair ground harness.

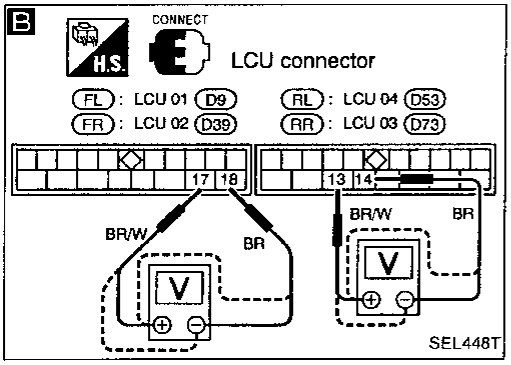
OK

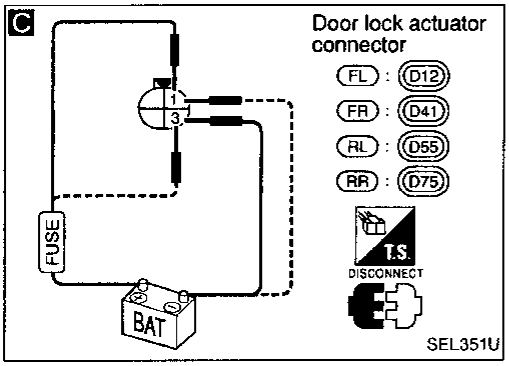
Replace front door lock actuator.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6 — Door lock actuator







A

CHECK DOOR LOCK MOTOR OPERATION.

CONSULT

See "DR LOCK MTR" in ACTIVE TEST mode.
Perform operation shown on display.
Door lock motor should operate.
NOTE:
If CONSULT is not available, start with the diagnostic procedure B .

OK → Door lock actuator is OK.

NG ↓

B

Check voltage between LCU connector terminals ⑰ and ⑱, or/and ⑬ and ⑭.

NG → Replace LCU for malfunctioning portion.

Door lock operation		Terminals ⊕	Terminals ⊖	Voltage
Front (FL, FR)	Lock	⑰	⑱	Battery voltage
	Unlock	⑱	⑰	
Rear (RL, RR)	Lock	⑬	⑭	
	Unlock	⑭	⑬	

OK ↓

C

CHECK DOOR LOCK ACTUATOR.

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.

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times
- through 10A fuse [No. 11 , located in the fuse block (J/B)]
- to multi-remote control relay-1 terminals ①, ③ and ⑥, and multi-remote control relay-2 terminal ①.

Terminals ② of multi-remote control relay-1 and relay-2 are connected to BCM terminal ⑪.
Power is supplied at all times
- through 7.5A fuse (No. 65 , located in the fuse and fusible link box)
- to theft warning horn relay terminal ①.

Theft warning horn relay terminal ② is connected to BCM terminal ⑬.
Power is supplied at all times
- through 15A fuse [No. 37 , located in the fuse block (J/B)]
- to trunk lid opener actuator terminal ②.

Trunk lid opener actuator terminal ① is connected to multi-remote control unit terminal ⑤
BCM is connected to Multi-remote control unit, driver door control unit, passenger door control unit, rear LH door control unit and rear RH door control unit as DATA LINES A and B.
Power is supplied at all times
- through 7.5A fuse [No. 40 , located in the fuse block (J/B)]
- to key switch terminal ①.

When the key switch is in ON position (ignition key is inserted in key cylinder), power is supplied
- through key switch terminal ②
- to BCM terminal ㉓.

When any of the four door switches is in OPEN position, ground is supplied
- to BCM terminal ㉑
- through door switches body grounds.

When the driver side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied
- to driver door control unit (LCU01) terminal ④
- through driver side door lock actuator (door unlock sensor) terminal ②
- to driver side door lock actuator (door unlock sensor) terminal ④
- through body grounds (M13) and (M73).

When the passenger side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied
- to passenger door control unit (LCU02) terminal ④
- through passenger side door lock actuator (door unlock sensor) terminal ②
- to passenger side door lock actuator (door unlock sensor) terminal ④
- through body grounds (M13) and (M73).

When the rear door lock actuator LH and/or RH (door unlock sensor) is in UNLOCKED position, ground is supplied
- to rear LH and/or RH door control unit terminal ④
- through rear door lock actuator LH (door unlock sensor) terminal ② and/or
- through rear door lock actuator RH (door unlock sensor) terminal ②
- to rear door lock actuator LH (door unlock sensor) terminal ④ and/or
- to rear door lock actuator RH (door unlock sensor) terminal ④
- through body grounds (B16) and (B19).

Remote controller signal input
- through window antenna
- to multi-remote control unit (LCU05) terminal ⑦.

System Description (Cont'd)

The multi-remote control system controls operation of the

- power window
- power door lock
- trunk lid opener
- panic alarm
- hazard reminder

OPERATING PROCEDURE

Multi-remote control unit can receive signals from remote controller when key switch is in OFF position (key not in cylinder). And it sends the signals to BCM and LCUs as DATA LINES A and B.

Power door lock operation

Multi-remote control unit is connected to BCM, driver door control unit, passenger door control unit and rear LH/RH door control units as DATA LINES A and B.

- Key switch OFF signal (ignition 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, multi-remote control unit receives a LOCK signal from remote controller. Multi-remote control unit will then send a LOCK signal

- from its terminals ① and ③ (DATA LINES A and B)
- to each door control unit terminal ① and ②

When multi-remote control unit (LCU05) receives a LOCK signal, ground is supplied

- to multi-remote control relays-1 and -2 terminal ②
- through BCM terminal ⑪.

Multi-remote control relays are now energized and door lock actuators lock all doors. (Hazard warning lamps flash twice as a reminder — **HAZARD REMINDER.**)

When an UNLOCK signal is sent from remote controller, door lock actuators unlock all doors.

For detailed description, refer to "POWER DOOR LOCK — IVMS" (EL-192).

Trunk lid opener operation

Ground is supplied

- to trunk lid opener actuator terminal ①
- through multi-remote control unit.

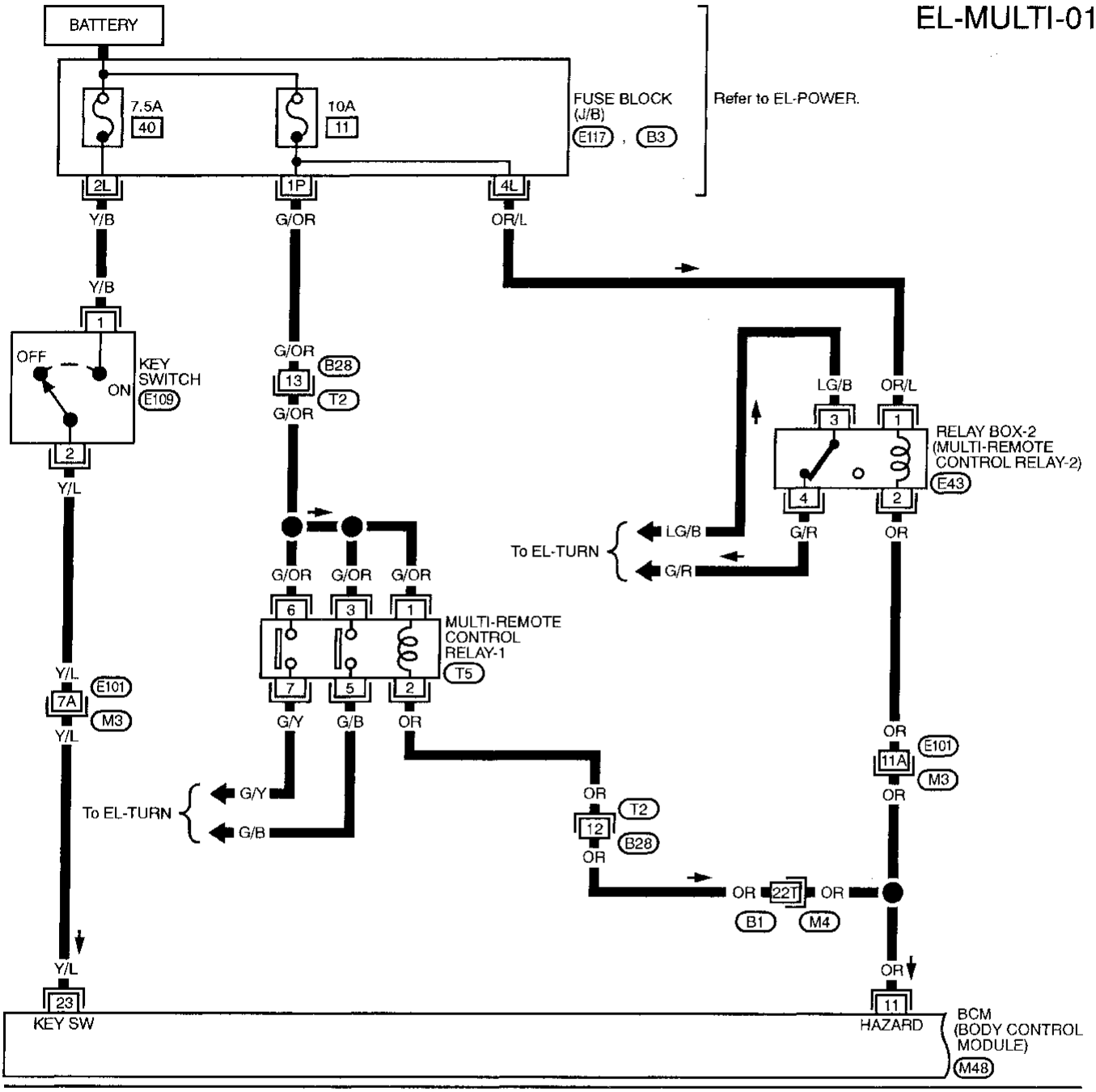
When power and ground are supplied, trunk lid opener actuator opens trunk lid.

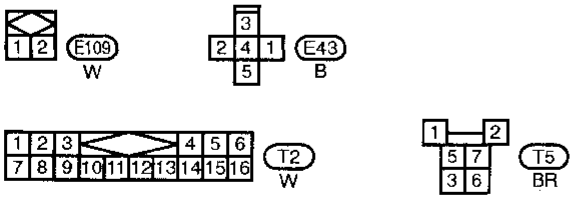
Panic alarm operation

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-240).

Wiring Diagram — MULTI —



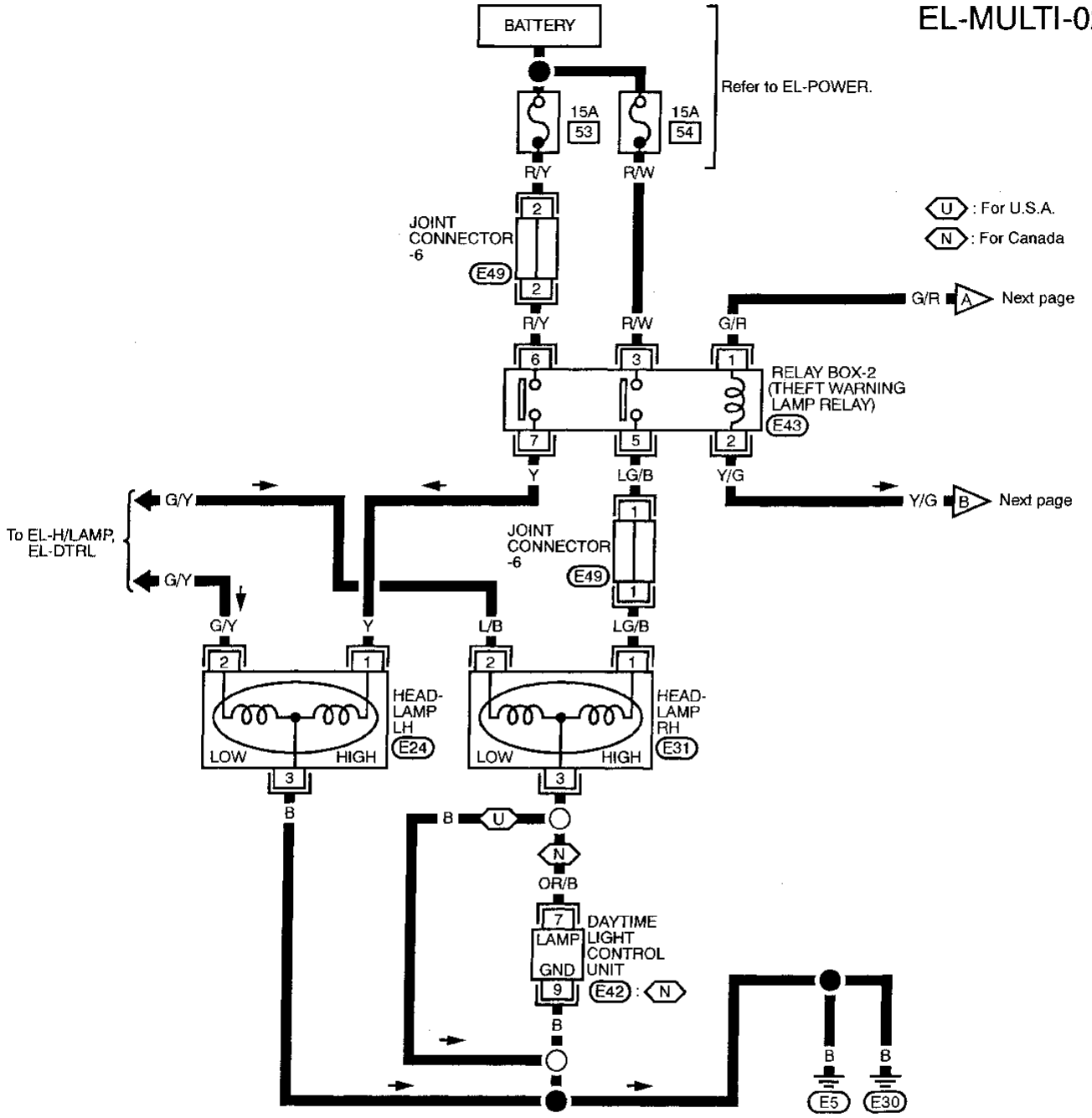


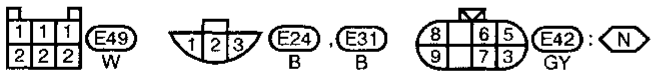
Refer to last page (Foldout page).
M3 , E101 , E117
M4 , B1
M1
M48
B3

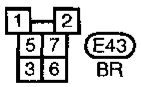
MEL559E

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02





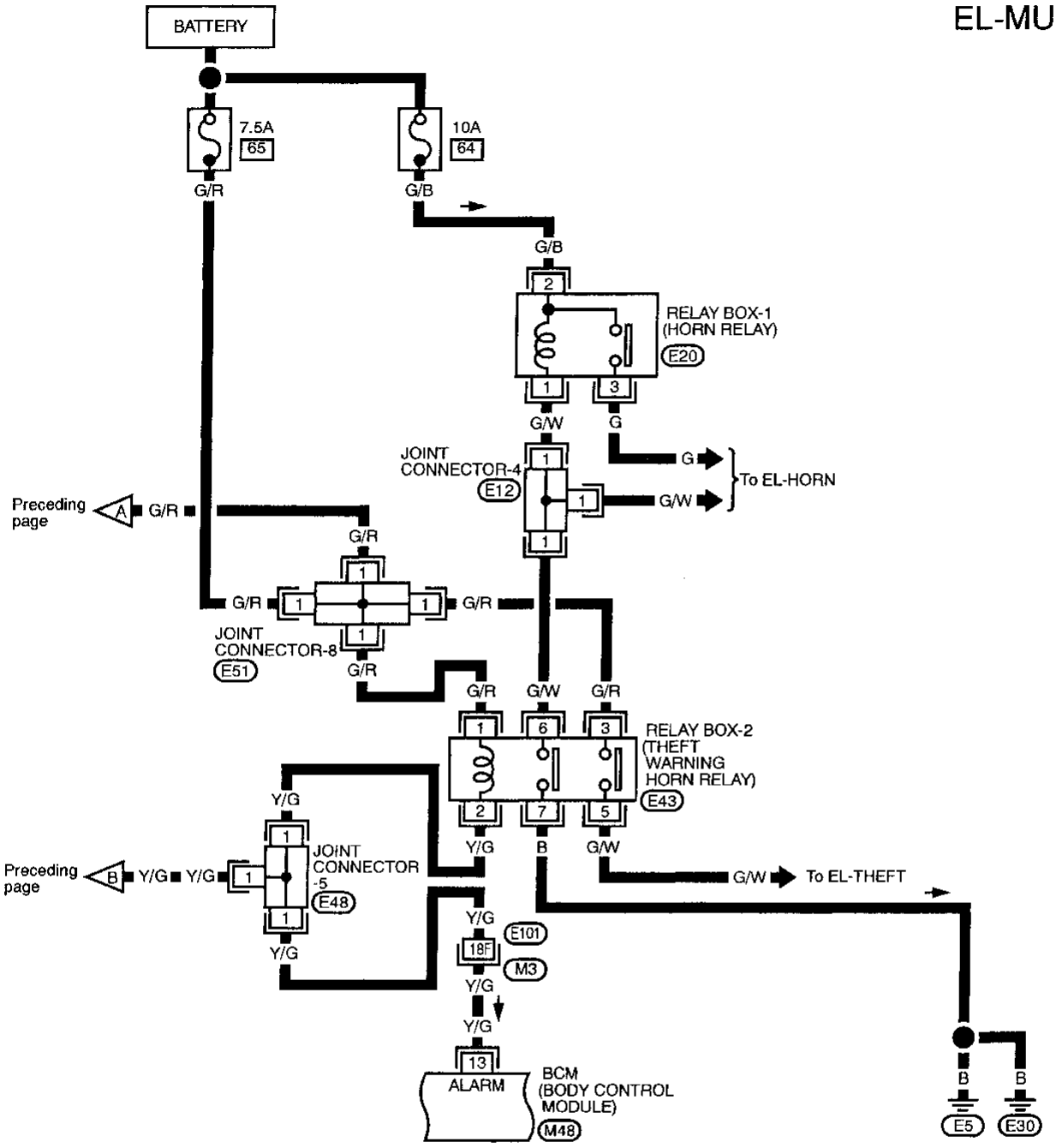


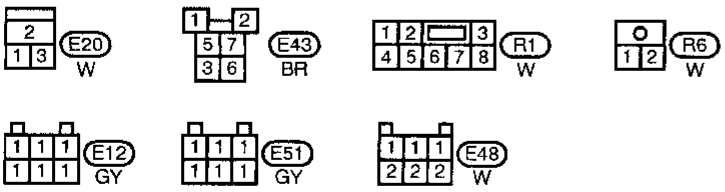
Refer to last page (Foldout page).
E49

MEL612E

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03





Refer to last page (Foldout page).

M3 , E101

M1

M48

E12

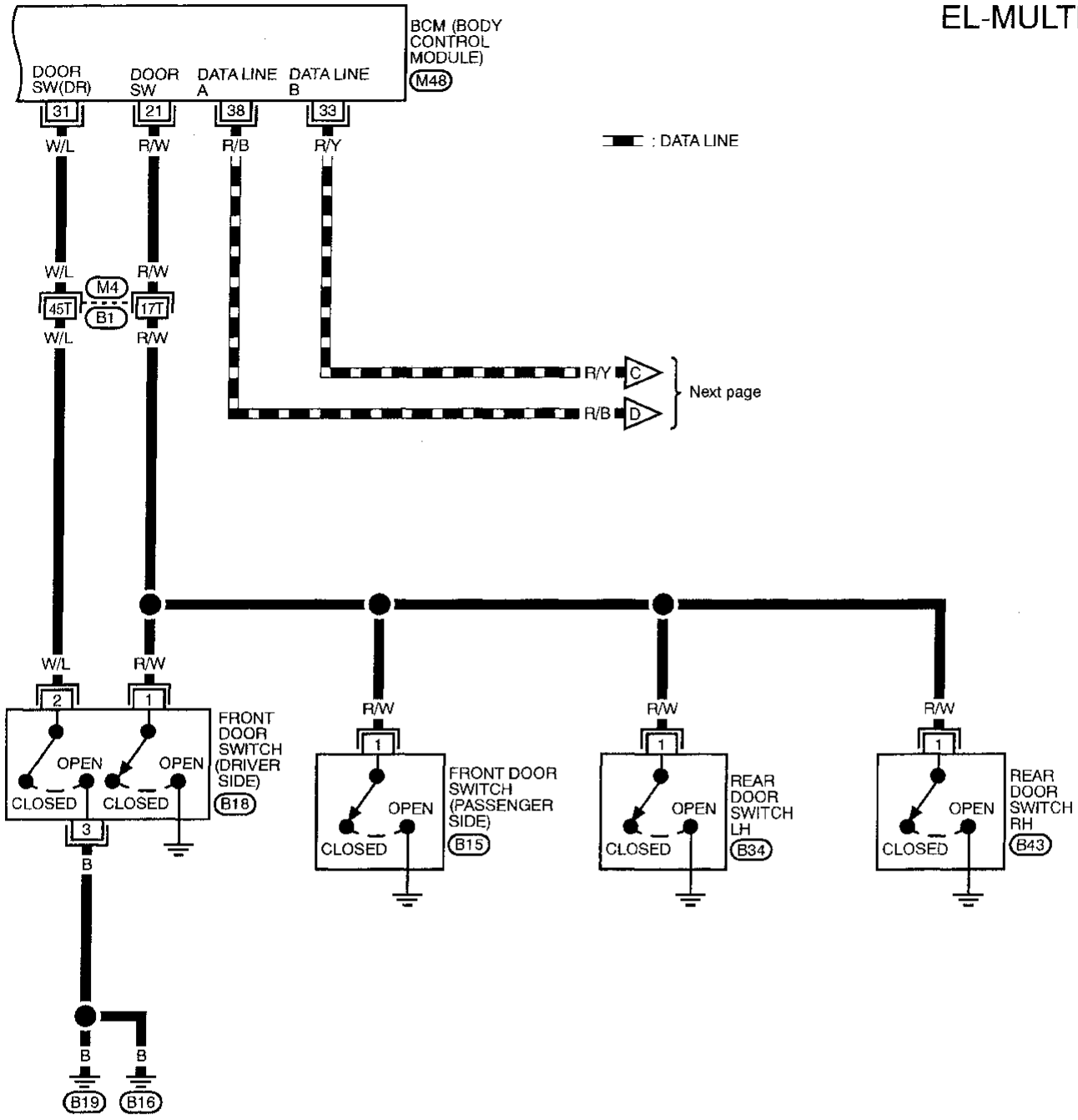
E51

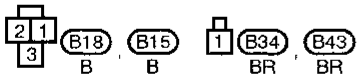
E48

MEL560E

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04



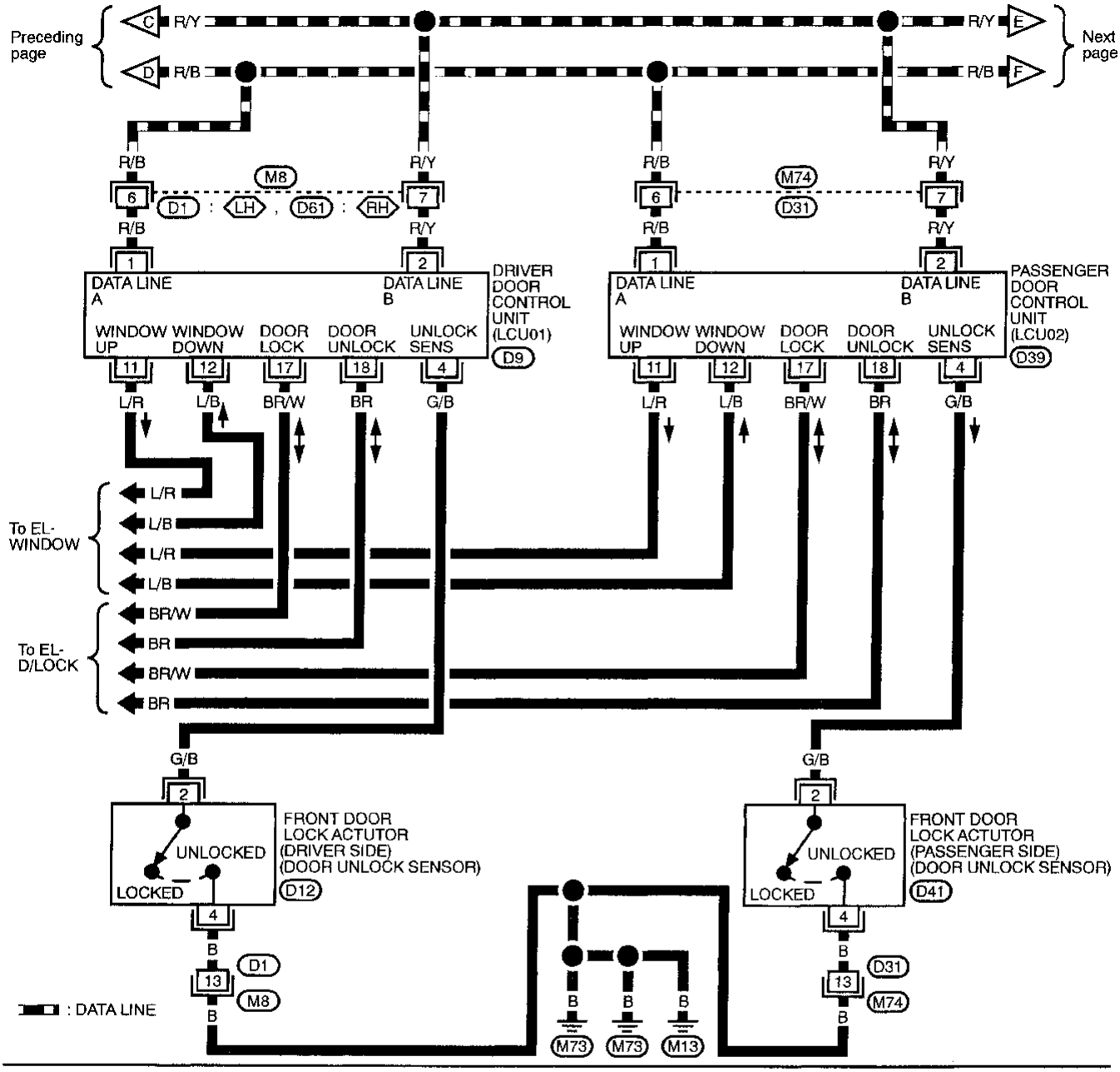


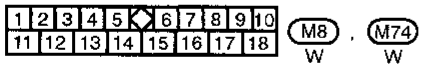
Refer to last page (Foldout page).
M4, B1
M48

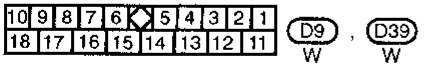
MEL561E

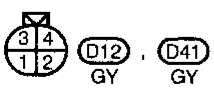
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-05





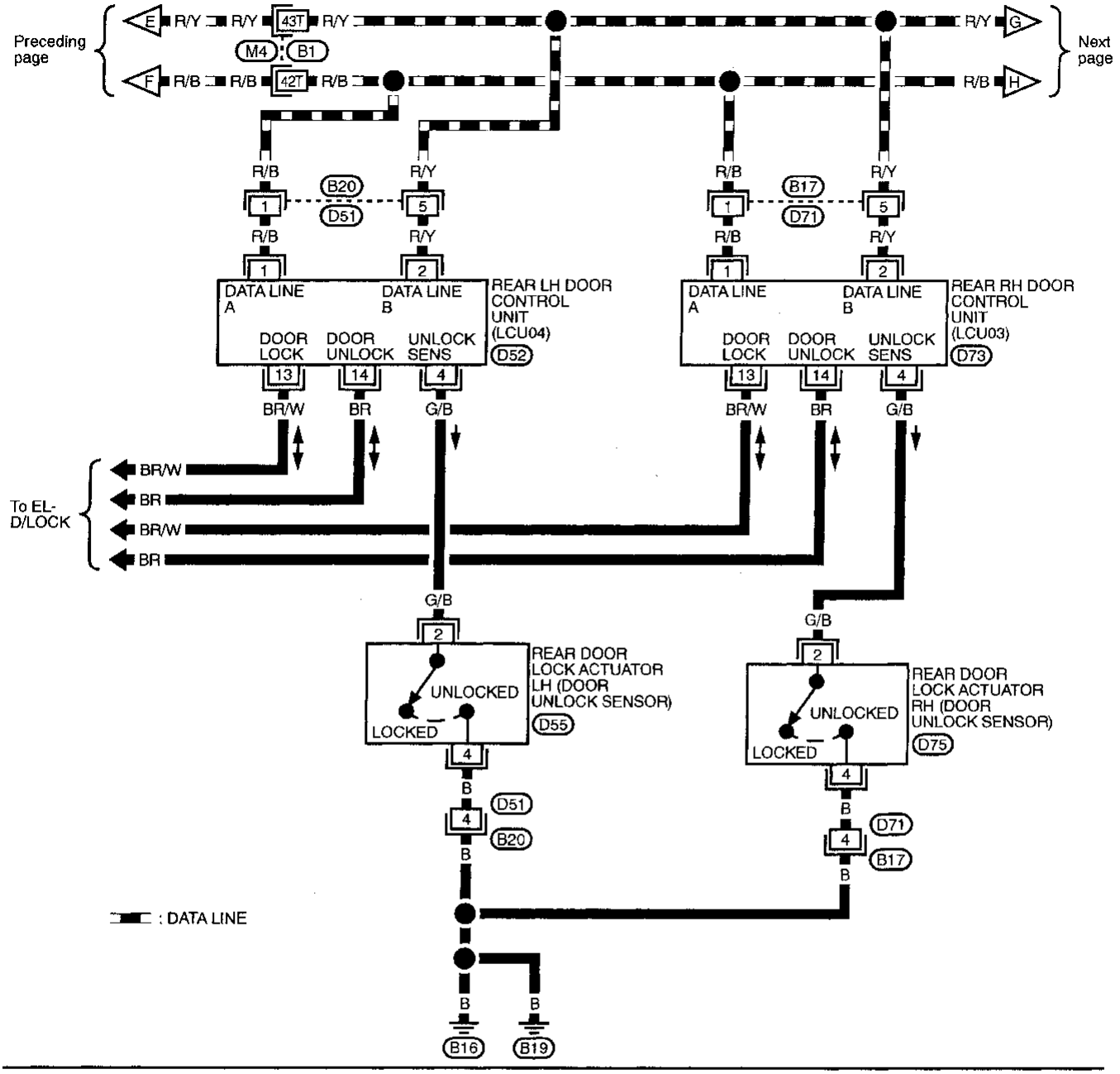


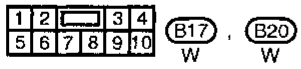


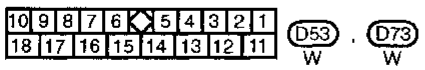
MEL562E

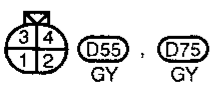
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-06





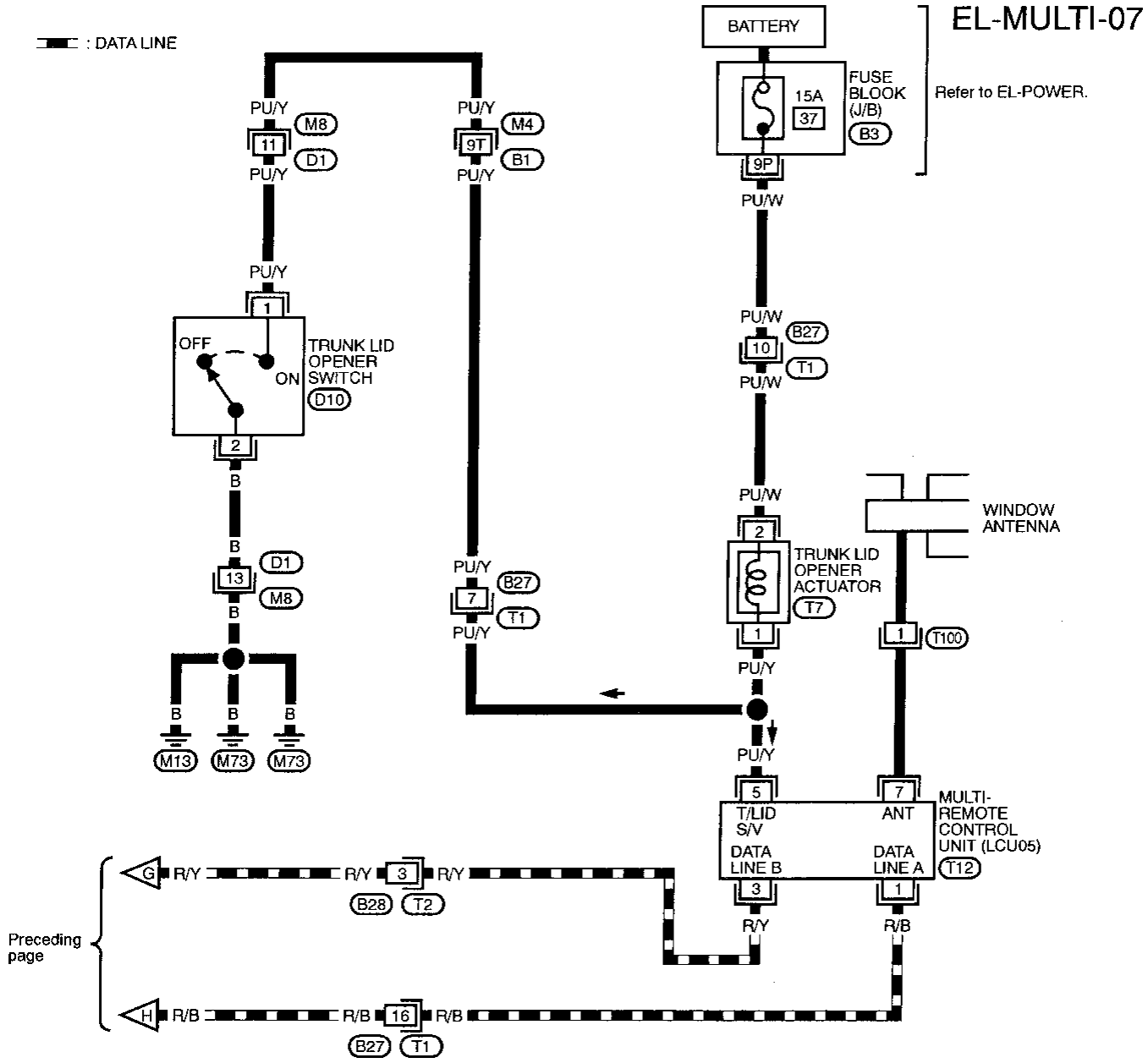


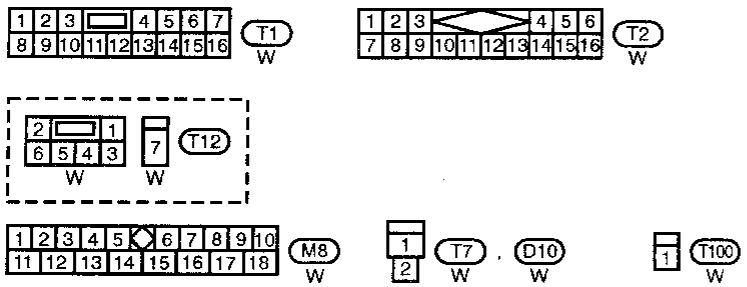


Refer to last page (Foldout page).
M4, B1

MEL563E

Wiring Diagram — MULTI — (Cont'd)

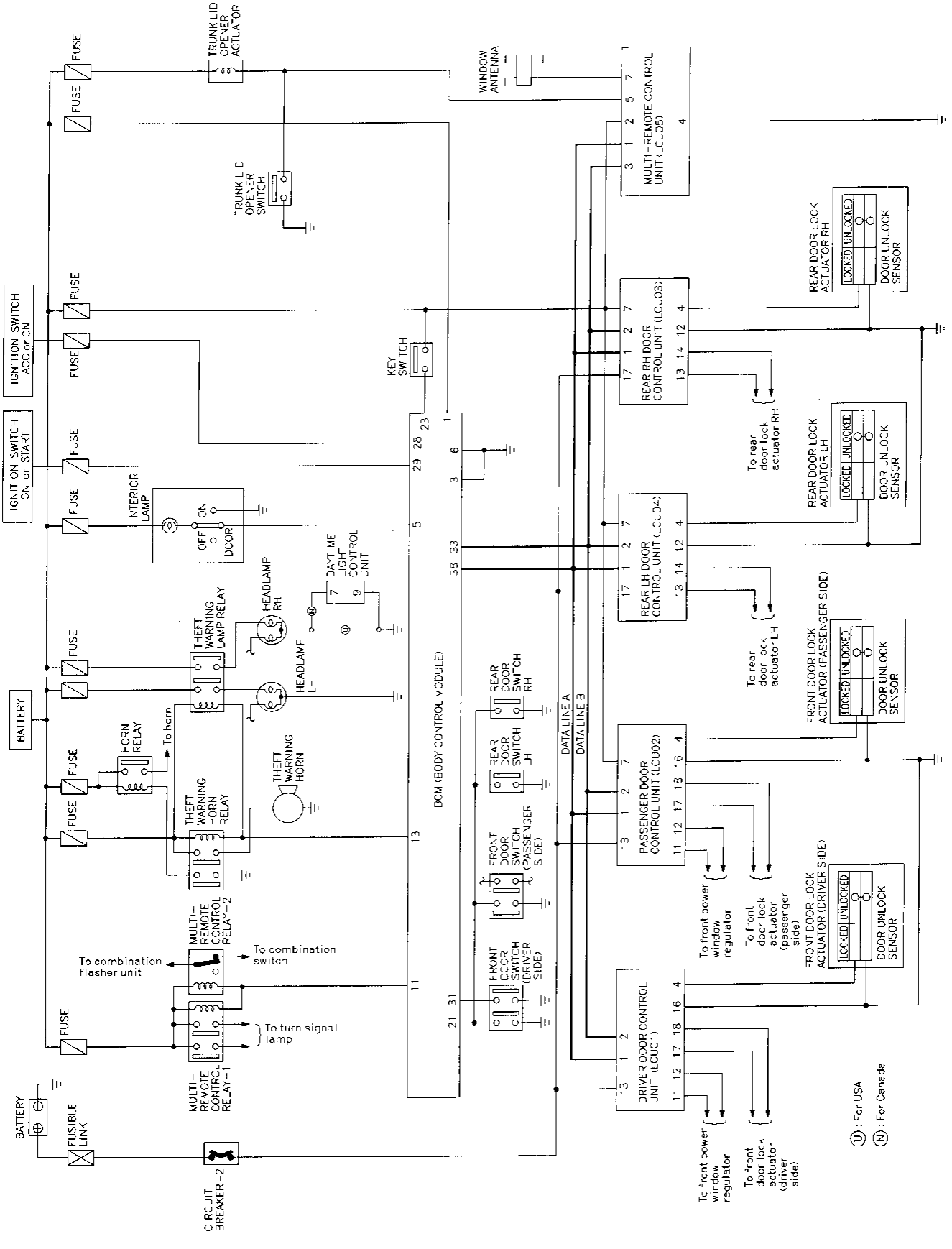




Refer to last page (Foldout page).
M4 , B1
B3

MEL564E

Schematic



MEL565E

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	IVMS communication diagnosis		Power supply and ground circuit check		Diagnostic procedure							
REFERENCE PAGE	EL-156	EL-161	EL-179	EL-180	EL-221	EL-222	EL-223	EL-223	EL-224	EL-203	EL-246	EL-188
SYMPTOM	CONSULT	On-board diagnosis (Mode II)	Ground circuit check	Power supply circuit check	Diagnostic procedure 1	Diagnostic procedure 2	Diagnostic procedure 3	Diagnostic procedure 4	Diagnostic procedure 5	Check "POWER DOOR LOCK" system.	Check "THEFT WARNING" system.	Check "POWER WINDOW" system.
All functions of remote control system do not function.	X	X	X	X	X	X						
Door lock or unlock does not function.	X	X	X	X						X		
Panic alarm does not activate when panic alarm button is continuously pressed for more than 1.5 seconds.	X	X	X	X							X	
Front power windows do not lower when door lock button is continuously pressed for more than 1.5 seconds.	X	X	X	X								X
Trunk lid does not open when trunk open button is continuously pressed more than 0.5 seconds.	X	X	X	X			X	X				
Hazard reminder does not activate.									X			

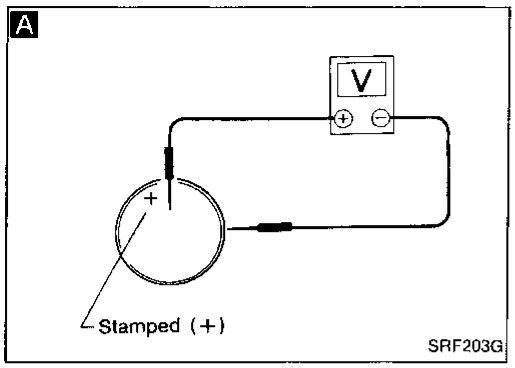
Perform "IVMS Communication Diagnosis", "Power Supply and Ground Circuit Check" before starting with multi-remote control system diagnostic procedure.

Note: The multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

A



A

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

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	3V or more

NG → Replace battery.

OK ↓

Enter the Identity (ID) code of another remote controller and recheck operation to see if the trouble is indicated. (Refer to Replacing Remote Controller, EL-225.)

NG → Go to DIAGNOSTIC PROCEDURE 2 (EL-222).

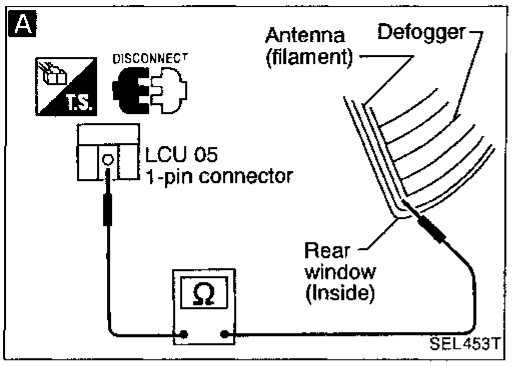
OK ↓

Replace the multi-remote controller.

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

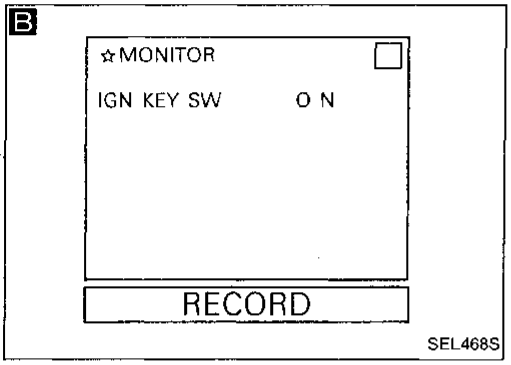


A

CHECK ANTENNA CIRCUIT.
1) Disconnect 1-pin connector from LCU05.
2) Remove rear pillar finisher.
3) Check continuity between the terminal center and filament on the rear window.
Continuity should exist.

NG → Repair antenna circuit. Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-101).

OK ↓



CHECK IGNITION KEY SWITCH CIRCUIT.

B CONSULT

See "IGN KEY SW" in DATA MONITOR mode.
"IGN KEY SW" should be "ON" when IGN key is inserted in steering key cylinder.

NG → Check and repair ignition key switch circuit.

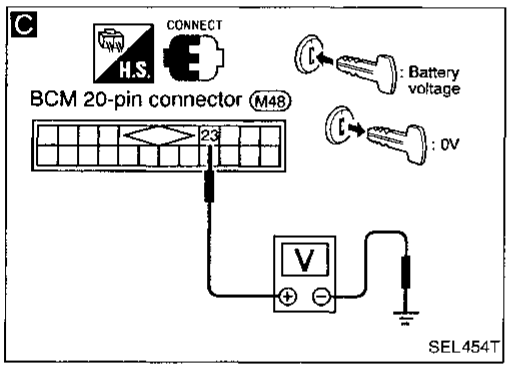
OR

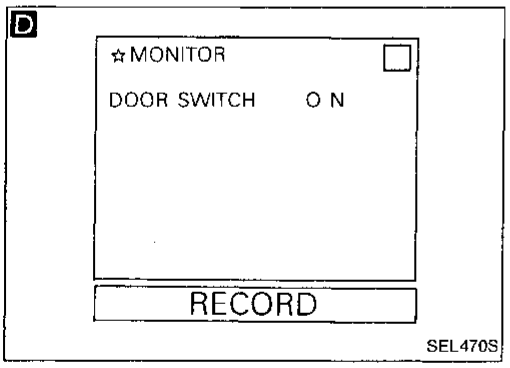
C TESTER

Check voltage when key is inserted in steering key cylinder.
Battery voltage should exist.

Condition	Voltage
Key inserted	Battery voltage
Key not inserted	0V

OK ↓





CHECK DOOR SWITCH CIRCUIT.

D CONSULT

See "DOOR SWITCH" in DATA MONITOR mode.
If all doors are closed, "DOOR SWITCH" should be "OFF".

NG → Check and repair door switch circuit.

OR

ON-BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-163.)

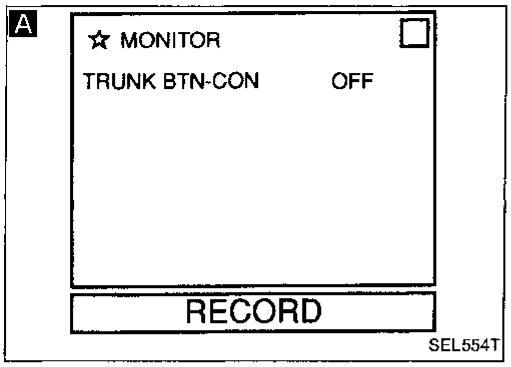
OK ↓

Check IVMS communication (EL-156 or EL-161) again.

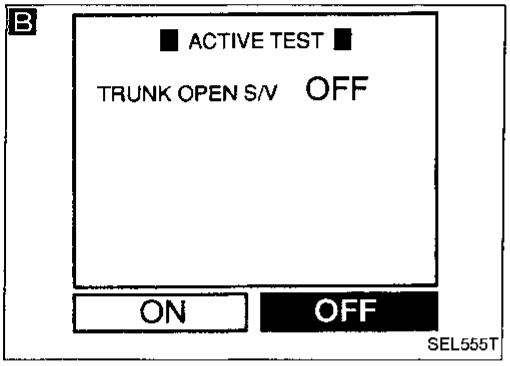
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

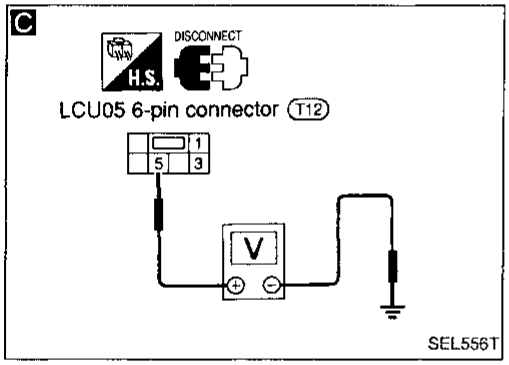
A



B



C



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

See Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-163).

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 → Check IVMS communication again. Refer to EL-156.

OK → Replace LCU05.

OR

C TESTER

Check voltage between LCU05 6-pin connector terminal ⑤ and ground.

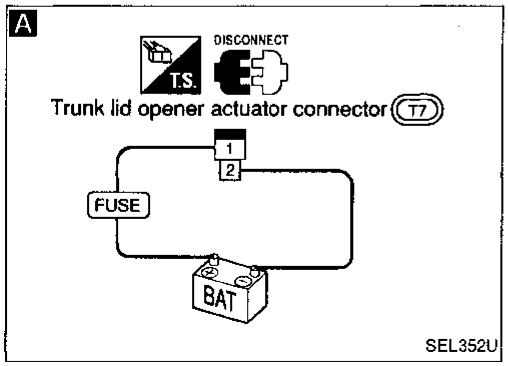
Battery voltage should exist.

NG ↓

Repair harness between LCU05 and trunk lid opener actuator.

DIAGNOSTIC PROCEDURE 4

A



Check to see if trunk lid opens when 12V DC is applied across trunk lid opener actuator connector terminals ① and ②.

NG → Replace trunk lid opener actuator.

OK ↓

Check and repair harness.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

Perform "HAZARD" in ACTIVE TEST mode.
Check operation of hazard lamps.
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Hazard reminder is OK.

NG ↓

Check multi-remote control relay-1 and relay-2.

NG → Replace.

OK ↓

A

CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY-1.
1. Disconnect multi-remote control relay-1 connector.
2. Measure voltage between terminal ① and body ground.
Positive battery voltage should exist.

NG → Check the following.
- 10A fuse (No. 11, located in the fuse block)
- Harness for open or short

OK ↓

B

CHECK THEFT WARNING RELAY-1 CIRCUIT.
1. Disconnect theft warning relay-1 connector.
2. Measure voltage between terminals ③ and ⑤.
Positive battery voltage should exist.
3. Measure voltage between terminals ⑥ and ⑦.
Positive battery voltage should exist.

NG → Check harness for open or short.

OK ↓

C

CHECK HAZARD REMINDER OUTPUT CIRCUIT.
1. Disconnect BCM connectors.
2. Measure voltage between BCM terminals ⑪ and ③ or ⑥.
Positive battery voltage should exist.

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

OK ↓

Perform IVMS communication diagnosis again (EL-156 or EL-161).

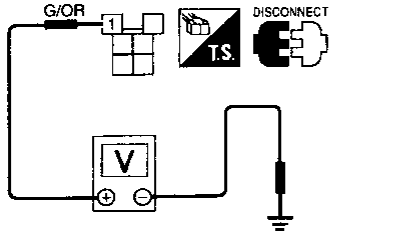
OK → Hazard reminder is OK.

NG ↓

Replace BCM.

A

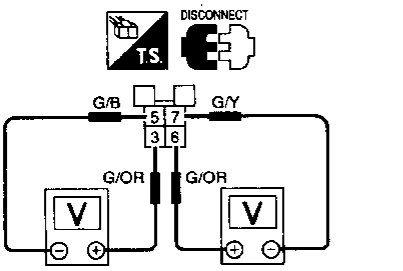
Multi-remote control relay-1 connector (T5)



SEL363U

B

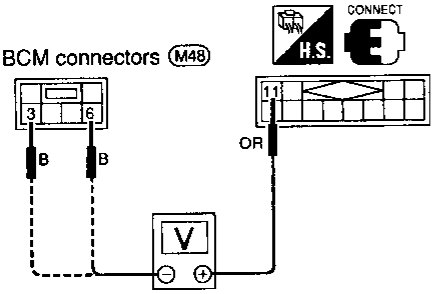
Multi-remote control relay-1 connector (T5)



SEL364U

C

BCM connectors (M48)



SEL353U

Replacing Remote Controller or Multi-Remote Control Unit (LCU05)

Enter the identity (ID) code manually when:

- **remote controller or multi-remote control unit LCU05 is replaced.**
- **an additional remote controller is activated.**

ID Code Entry Procedure

To enter the ID code, follow this procedure.

"Setting mode":

(1) Close and lock all doors.
(2) Insert and remove the key from the ignition more than six times within 10 seconds. (The hazard warning lamp will then flash twice.)

- **At this time, the original ID codes are eliminated.**

ID code entry:

(3) Turn ignition key to "ACC" position.
(4) Push lock button on the new remote controller once (for example, if door is locked using the remote controller during this ID code entry enable state, a new ID code can be entered).

- **At this time, the new ID code is entered. (The hazard warning lamp will then flash twice.)**

Additional ID code entry

(5) If you need to activate additional remote controllers, unlock the driver's door, then lock again with door lock knob.
(6) Push lock button on the additional new remote controller once.
(7) This ID code entry enable state and setting mode remain until the driver's door is opened.

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 hazard warning lamps will flash twice but the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**
- **Any ID codes entered after termination of the "setting mode" will not be accepted. Additionally remote control signals will be inhibited when an ID code has not been entered during the "setting" mode.**

System Description

FUNCTION

- The IVMS has the following time control functions.

Item	Details of control
Intermittent wiper control	Regulates intermittent time approximately from 2 to 21 seconds depending on the intermittent wiping time setting.
Washer and wiper combination control	Operates wiper when washer switch is turned "ON" for at least 0.3 seconds.
Light warning buzzer timer	Sounds warning buzzer when driver's door is opened with light switch in the 1st or 2nd position and ignition switch "OFF".
Ignition key warning buzzer timer	Sounds warning buzzer when driver's door is opened with key in ignition.
Seat belt warning buzzer timer	Sounds warning buzzer for about 6 seconds if ignition switch is turned "ON" when driver's seat belt is unfastened.
Rear window defogger timer	Turn off rear window defogger and door mirror heater, if equipped, about 15 minutes after the rear window defogger switch is turned "ON".
Battery saver	Shuts off interior lamp, step lamps and ignition keyhole illumination in 30 minutes if any door is left open when ignition switch is "OFF". The battery saver will reset if ignition switch is cycled or any door is opened or closed.

INTERMITTENT WIPER CONTROL

Intermittent operation

Intermittent operation can be set variable by turning the intermittent wiper volume knob. The wiper motor then operates the wiper at low speed at a set interval of about 1 to 20 seconds. This function is controlled by the BCM.
Ground is supplied from body grounds (E5) and (E30) to front wiper switch terminals ⑰ and ⑳.
When the wiper switch is placed in the INT position, ground is supplied

- to BCM terminal ㉕
- from wiper switch terminal ⑮

The desired interval time is input

- to BCM terminal ⑰
- from wiper switch terminal ⑲.

For further information, refer to "WIPER AND WASHER" (EL-92).

Washer and wiper combination operation

Operates wiper when washer switch is turned "ON" for at least 0.3 seconds.
Power is supplied at ignition switch ACC or ON

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

Ground is supplied from body grounds (E5) and (E30).
When wiper switch is placed in the WASH position, ground is supplied

- to BCM terminal ㉖
- from wiper switch terminal ⑱.

Then ground is supplied from BCM terminal ⑩ to wiper relay terminal ② to operate wiper.

REAR WINDOW DEFOGGER TIMER

The rear window defogger and door mirror defogger system are controlled by the BCM.
With the ignition switch in the ON or START position, power is supplied

- to the rear window defogger relay terminal ①,
- to the door mirror defogger relay terminal ① and
- to BCM terminal ㉙
- through 7.5A fuse [No. 12, located in the fuse block (J/B)].

Ground is supplied to terminal ② of the rear window defogger switch through body grounds (M13) and (M73).

System Description (Cont'd)

When the rear window defogger switch is ON, ground is supplied
- through terminal ① of the rear window defogger switch
- to BCM terminal ㉒.

Terminal ⑮ of the BCM then supplies ground to the rear window defogger relay terminal ② and the door mirror defogger relay terminal ②.
With power and ground supplied, the rear window defogger relay and the door mirror defogger relay are energized to operate rear window defogger and door mirror defogger for about 15 minutes.
For further information, refer to "REAR WINDOW DEFOGGER" (EL-99).

IGNITION KEY WARNING BUZZER TIMER

Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to warning buzzer terminal ①, and
- key switch terminal ①.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to BCM terminal ㉙.

Ground is supplied to BCM terminal ㉛ through front driver's side door switch LH terminals ② and ③ when switch is in OPEN position from body grounds (B16) and (B19).
With the key in the ignition switch in the ACC or OFF position, and the driver's door OPEN, the warning buzzer will sound.

LIGHT WARNING BUZZER TIMER

Power is supplied at all times
- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to warning buzzer terminal ①.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to BCM terminal ㉙.

Ground is supplied to BCM terminal ㉛ through front driver's side door switch LH terminals ② and ③ when switch is in OPEN position from body grounds (B16) and (B19).
With the ignition switch in the ACC or OFF position, the driver's door OPEN, and the lighting switch in the 1ST or 2ND position, the warning buzzer will sound.

SEAT BELT WARNING BUZZER TIMER

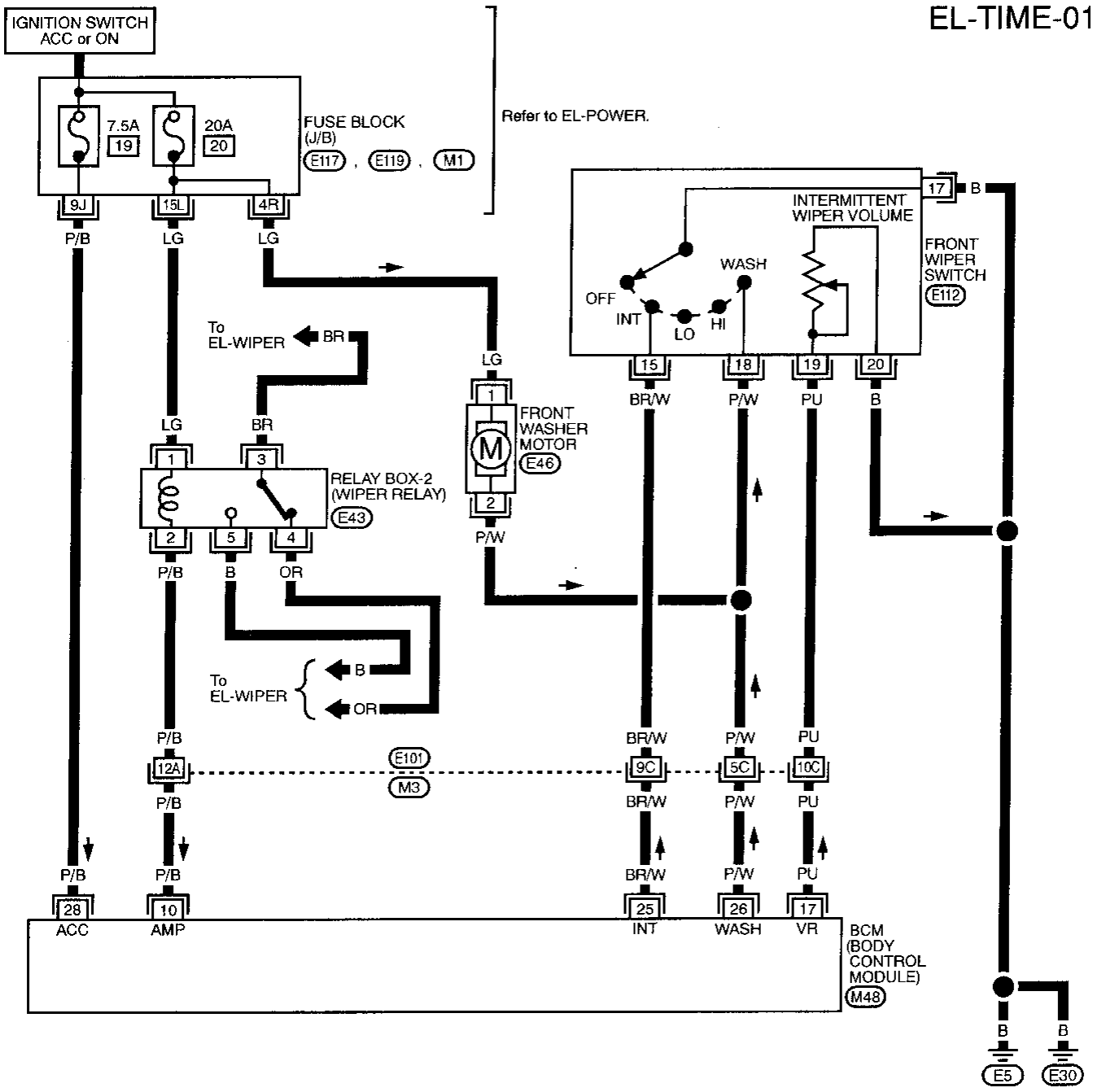
Power is supplied at all times
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to warning buzzer terminal ①.

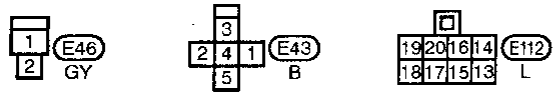
With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to BCM terminal ㉙.

Ground is supplied to BCM terminal ⑨ through seat belt buckle switch terminals ① and ③, when seat belt buckle switch is in UNFASTENED position, and body grounds (B16) and (B19).
This warning buzzer sounds for about 6 seconds
- when ignition switch is turned from OFF to ON and seat belt is unfastened (seat belt buckle switch ON).

Wiring Diagram — TIME —

INTERMITTENT WIPER CONTROL





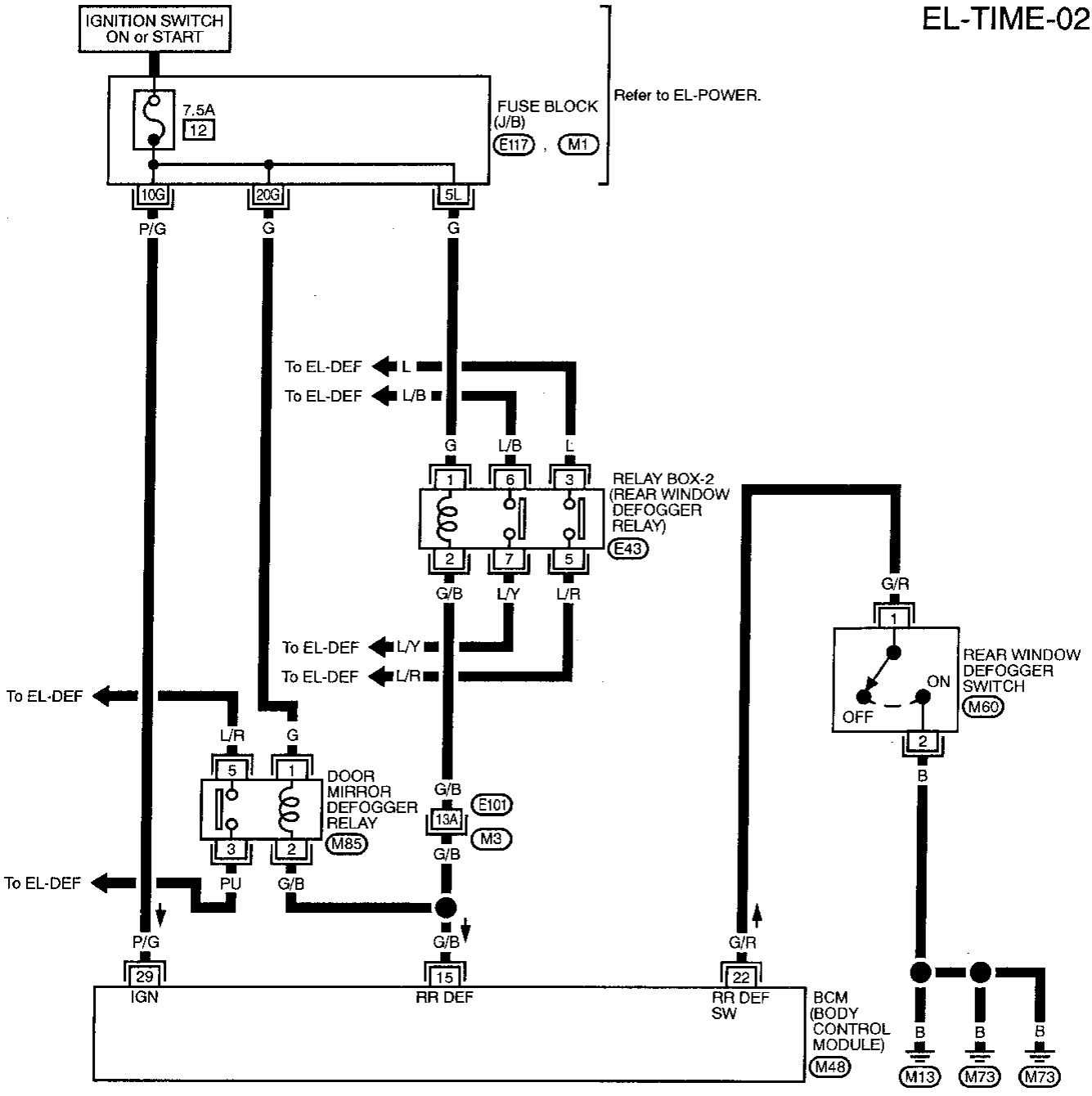
Refer to last page (Foldout page).
M3, E101
M1
M48
E117
E119

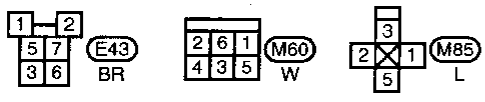
MEL566E

Wiring Diagram — TIME — (Cont'd)

REAR WINDOW DEFOGGER TIMER CONTROL

EL-TIME-02





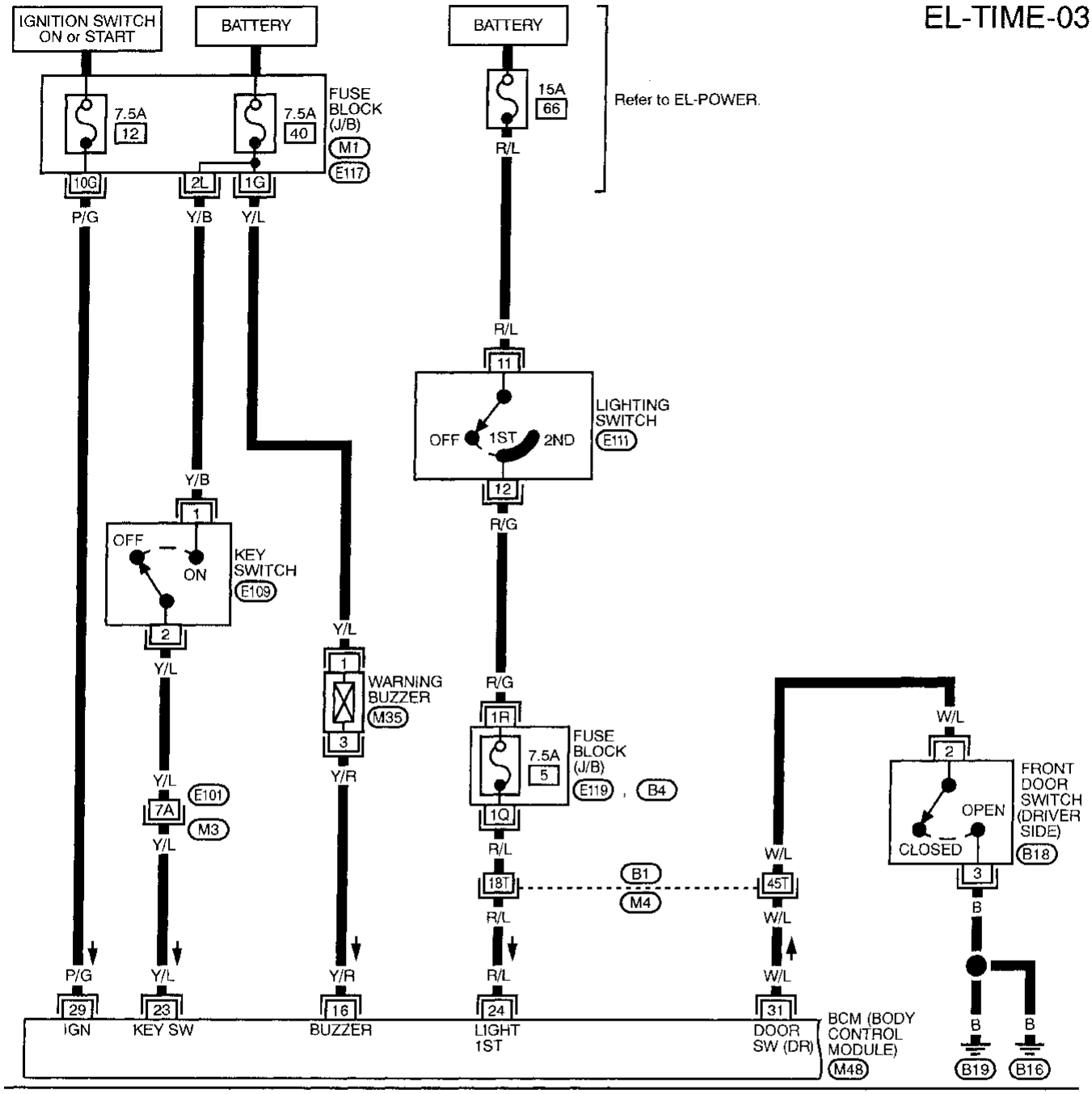
Refer to last page (Foldout page).
M3 , E101
M1
M48
E117

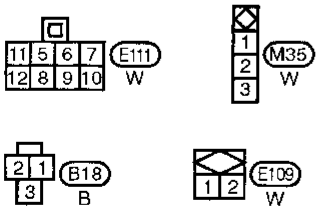
MEL567E

Wiring Diagram — TIME — (Cont'd)

IGNITION KEY, LIGHT AND SEAT BELT WARNING CONTROL

EL-TIME-03





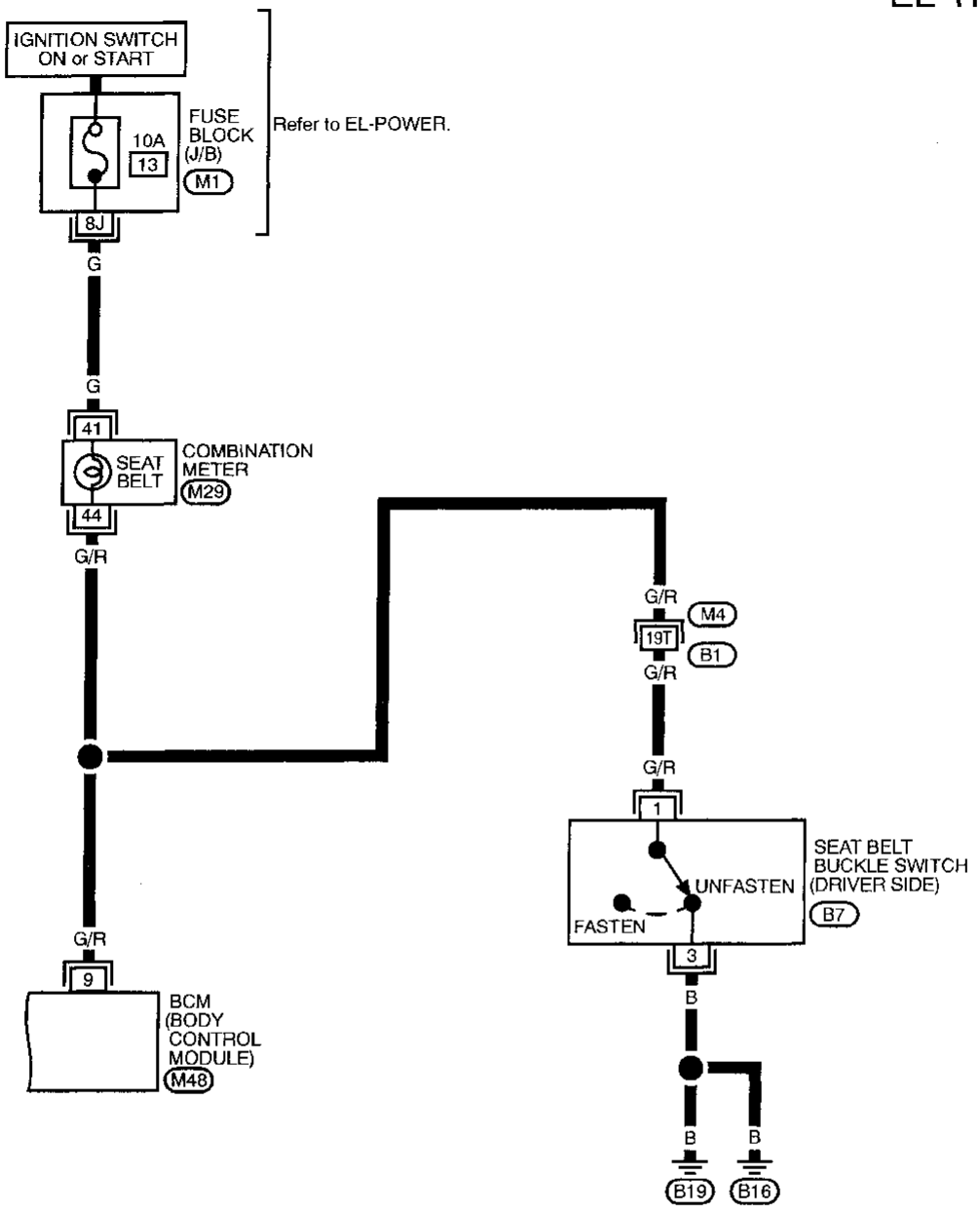
Refer to last page (Foldout page).

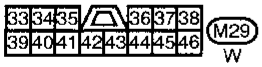
M4 , B1
M3 , E101
M1 , M48
B4 , E119
E117

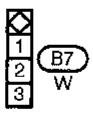
MEL568E

Wiring Diagram — TIME — (Cont'd)

EL-TIME-04







Refer to last page (Foldout page).
M4 , B1
M1
M48

MEL569E

Trouble Diagnoses

- Perform "Power Supply and Ground Circuit Check" as necessary before starting Diagnostic Procedures.

SYMPTOM CHART

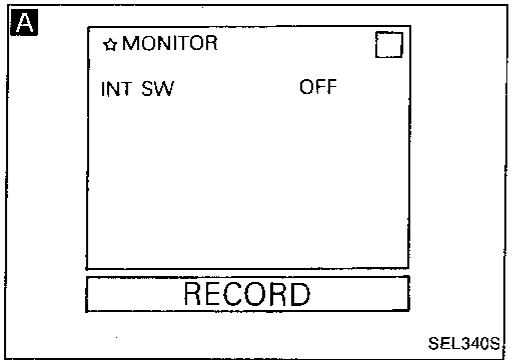
PROCEDURE		Power supply and ground circuit check		Diagnostic Procedure							
REFERENCE PAGE		EL-179	EL-180	EL-233	EL-234	EL-235	EL-236	EL-236	EL-237	EL-238	EL-239
SYMPTOM		Ground circuit check	Power supply circuit check	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8
Wiper & washer	Intermittent wiper does not operate.	BCM	BCM	X							
	Intermittent time of wiper cannot be adjusted.	BCM	BCM		X						
	Wiper and washer activate individually but not in combination.	BCM	BCM			X					
Warning	Light warning chime does not activate.	BCM	BCM				X			X	
	Ignition key warning chime does not activate.	BCM	BCM					X		X	
	Seat belt warning chime does not activate.	BCM	BCM						X	X	
Rear defogger	Rear defogger does not activate, or go off after activating.	BCM	BCM								X

Trouble Diagnoses (Cont'd)

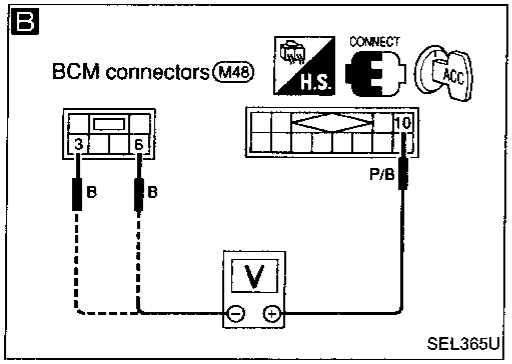
DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A



B



A

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.
- Wiper switch (Refer to "COMBINATION SWITCH", EL-36.)
- Harness for open or short between BCM and wiper switch

— OR —

Perform On-board diagnosis — Mode II (switch monitor) for wiper switch (INT). Refer to EL-163.

OK ↓

Check wiper relay. → NG → Replace wiper relay.

OK ↓

B

INTERMITTENT OPERATION CHECK
1. Turn ignition switch to "ACC" or "ON".
2. Measure voltage between BCM terminals ⑩ and ③ or ⑥ under the following condition.

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0V to battery voltage every 2 to 21 seconds depending on intermittent wiper volume setting.

NG → Replace BCM.

OK ↓

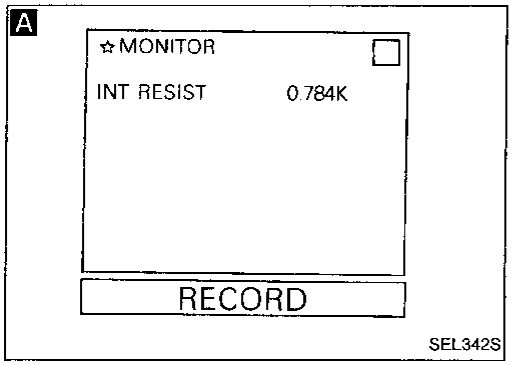
Check wiper relay circuit.

Trouble Diagnoses (Cont'd)

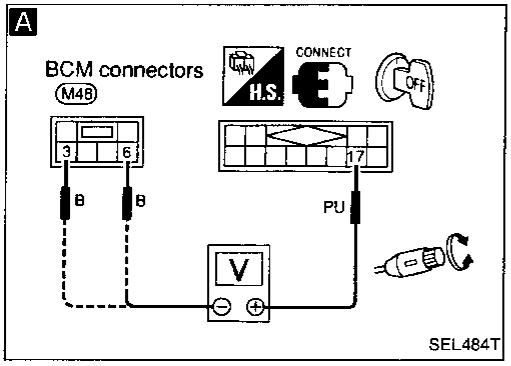
DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



A



A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK

See "INT RESIST" in "Data monitor" mode while turning intermittent wiper volume.

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

OR

Measure voltage between BCM terminals ⑰ and ③ or ⑥ while turning intermittent wiper volume.

Position of wiper knob	Voltage [V]
Short interval	0
Long interval	Approx. 3.6

OK → Replace BCM.

NG

Check intermittent wiper volume. Refer to "COMBINATION SWITCH". (EL-36)

NG → Replace intermittent wiper volume.

OK

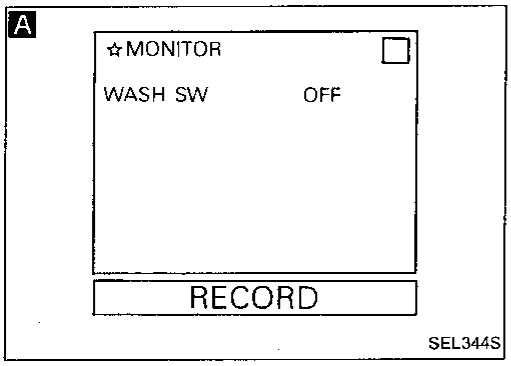
Check the following.

- 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.



A

See "WASH SW" in "Data monitor" mode.
When washer switch is ON:
WASH SW ON
When washer switch is OFF:
WASH SW OFF

NG → Check the following.
- Wiper switch (Refer to "COMBINATION SWITCH", EL-36.)
- Harness for open or short between BCM and wiper switch

— OR —

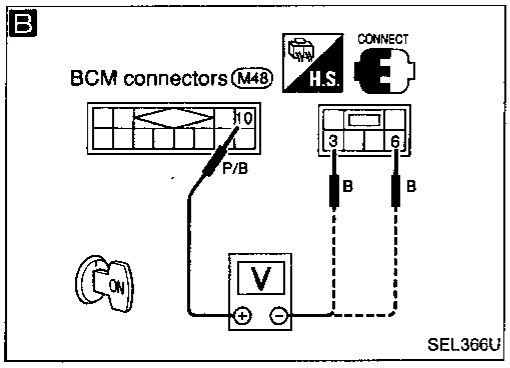
Perform On-board diagnosis — Mode II (switch monitor) for wiper switch (WASH). Refer to EL-163.

OK ↓

Check wiper relay. → NG → Replace wiper relay.

OK ↓

B



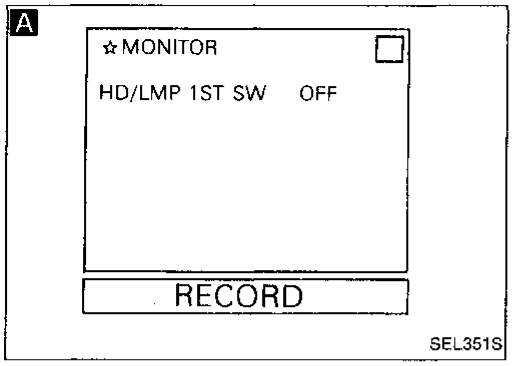
WIPER RELAY OUTPUT SIGNAL CHECK
1. Turn ignition switch to "ON".
2. Measure voltage between BCM terminals ⑩ and ③ or ⑥ right after turning washer switch ON and OFF.
0V for approx. 3 seconds after washer has operated.

NG → Replace BCM.

OK ↓

Check wiper relay circuit.

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 4

SYMPTOM: Light warning buzzer does not activate.

A

LIGHTING SWITCH INPUT SIGNAL CHECK

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

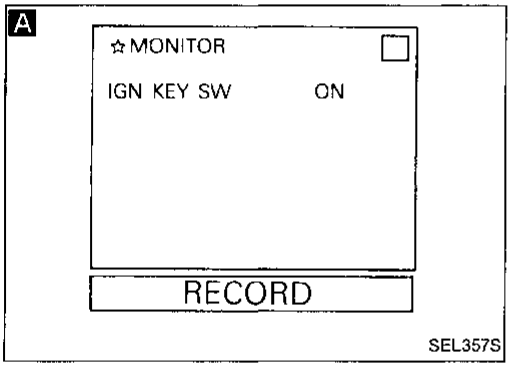
OR

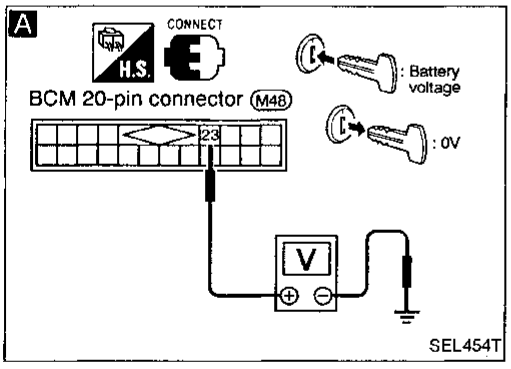
Perform On-board diagnosis — Mode II (Switch monitor) for light switch. Refer to EL-163.

NG → Check the following.
- 7.5A fuse (No. 5, located in the fuse block)
- Harness between fuse and BCM.

OK ↓

Go to Procedure 7.





DIAGNOSTIC PROCEDURE 5

SYMPTOM: Ignition key warning buzzer does not activate.

A

IGNITION KEY SWITCH INPUT SIGNAL CHECK

See "IGN KEY SW" in "Data Monitor" mode.
When key is in ignition:
IGN KEY SW ON
When key is out of ignition:
IGN KEY SW OFF

OR

Check voltage between BCM terminal 23 and body ground.

Condition of key switch	Voltage [V]
Key in ignition	Battery voltage
Key out of ignition	0

NG → Check ignition key switch.
- OK → Check harness for open or short.
- NG → Replace ignition key switch.

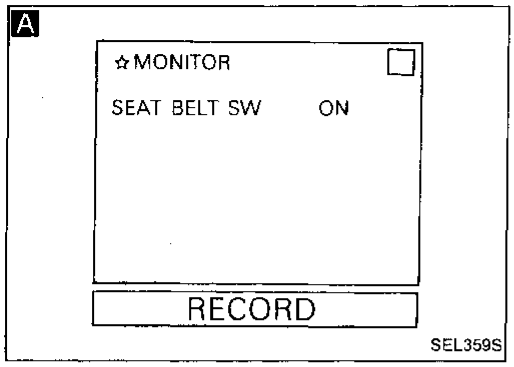
OK ↓

Go to Procedure 7.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: Seat belt warning buzzer does not activate.



A

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

NG → Check the following.
- Seat belt buckle switch
- Seat belt buckle switch ground circuit
- Harness for open or short between BCM and seat belt buckle switch

OR

Perform On-board diagnosis — Mode II (switch monitor) for seat belt buckle switch. Refer to EL-163.

OK ↓

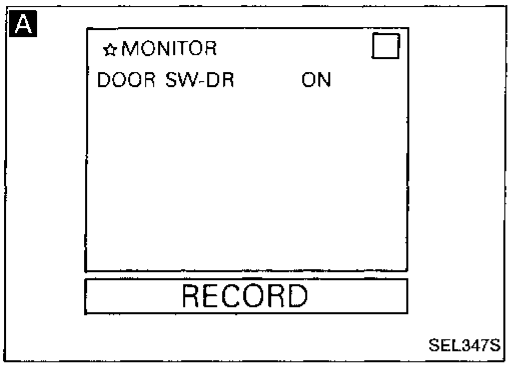
Go to procedure 7.

Trouble Diagnoses (Cont'd)

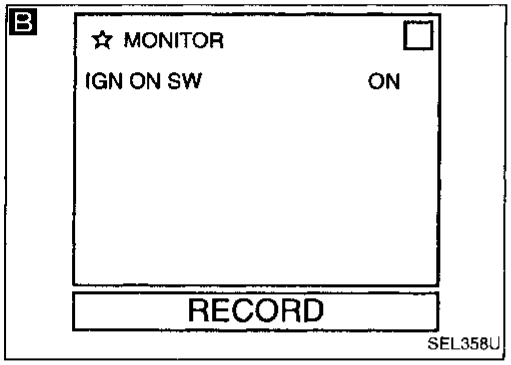
DIAGNOSTIC PROCEDURE 7

SYMPTOM: Light warning/ignition key warning buzzer does not activate.

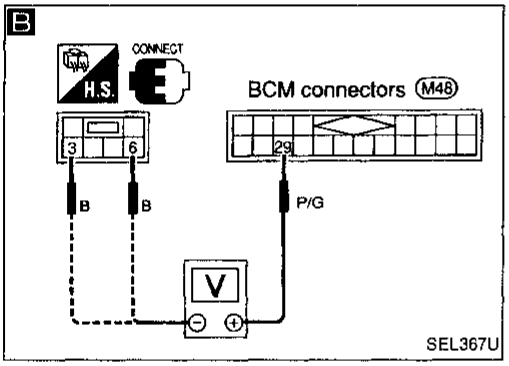
A



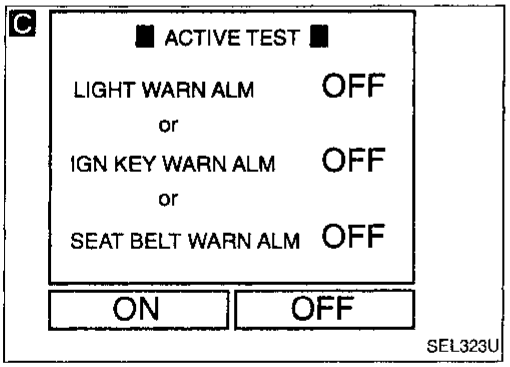
B



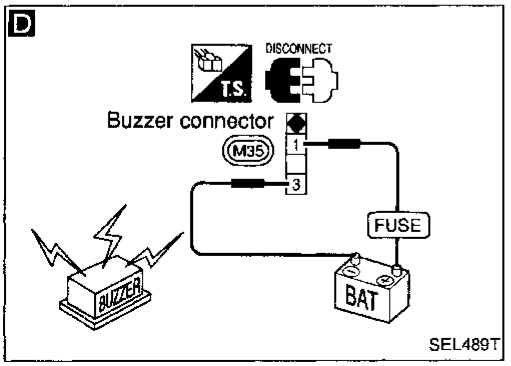
B



C



D



A

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 circuit
- Harness for open or short between driver door switch and BCM

OR

Perform On-board diagnosis — Mode II (switch monitor) for door switch (driver side). Refer to EL-163.

OK ↓

B

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. 12, located in the fuse block)
- Harness for open or short between fuse and BCM

OR

Measure voltage between BCM terminal ㉙ and ③ or ⑥.

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

OK ↓

C

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

OK → System is OK.

NG ↓

D

BUZZER OPERATION CHECK
1. Disconnect buzzer connector.
2. Connect battery to buzzer and check buzzer operation.

NG → Replace buzzer.

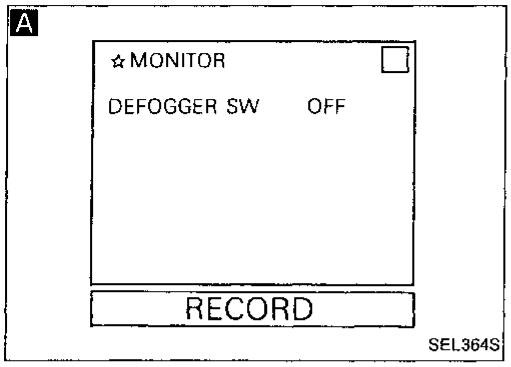
OK ↓

Check the following.
- 7.5A fuse (No. 40 located in the fuse block)
- Harness for open or short between buzzer and BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: Rear window defogger (and door mirror heater) do not activate or do not turn off after activating.

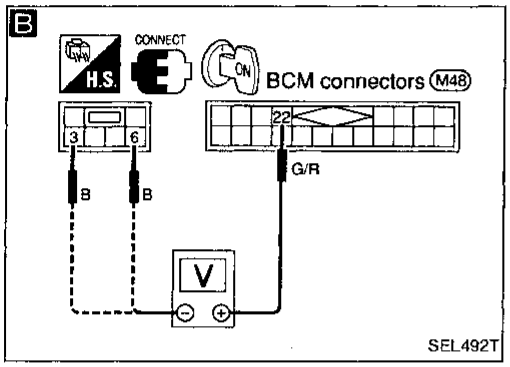


A

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
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Go to **C** below.

NG ↓



B

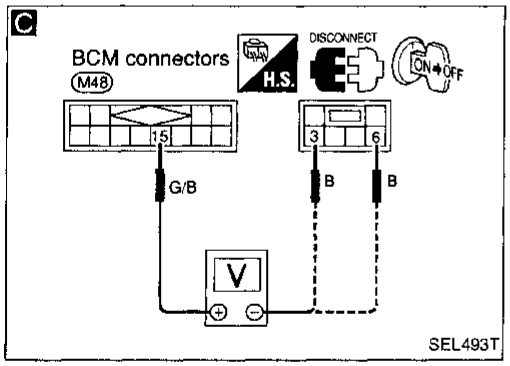
REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK
1. Turn ignition switch ON.
2. Measure voltage between BCM terminals ㉒ and ③ or ⑥.

Condition of defogger switch	Voltage [V]
ON	0
OFF	Approx. 5

NG → Check rear window defogger switch.

- OK → Check harness for open or short between BCM and rear window defogger switch and rear window defogger switch ground circuit.
  - OK → Replace BCM.
  - NG → Repair harness.
- NG → Replace rear window defogger switch.

OK ↓



C

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK
1. Disconnect BCM connectors.
2. Measure voltage between BCM terminals ⑮ and ③ or ⑥.

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

OK → Replace BCM.

NG ↓

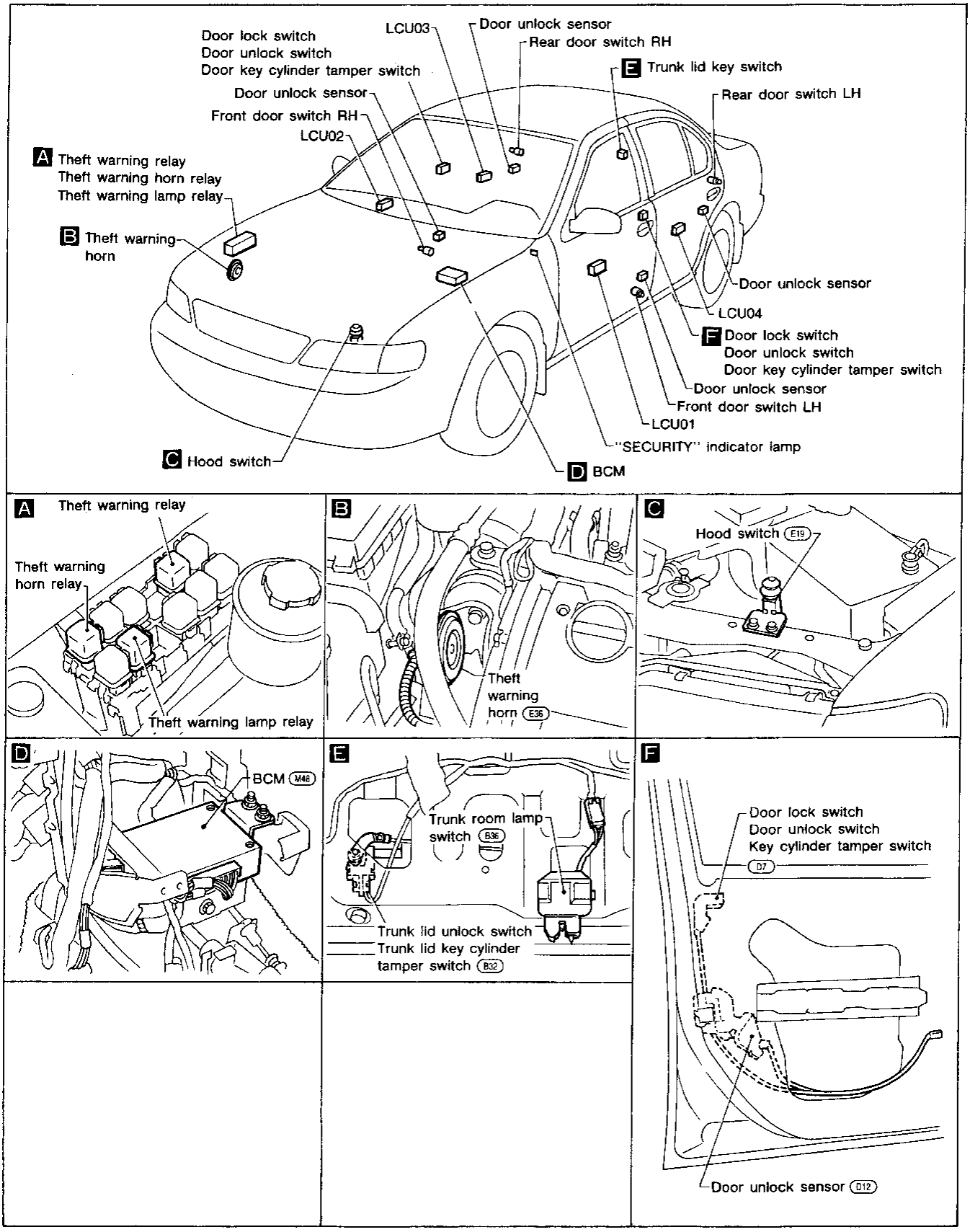
Check rear window defogger relay (and door mirror defogger) relay.

NG → Replace relay(s).

OK ↓

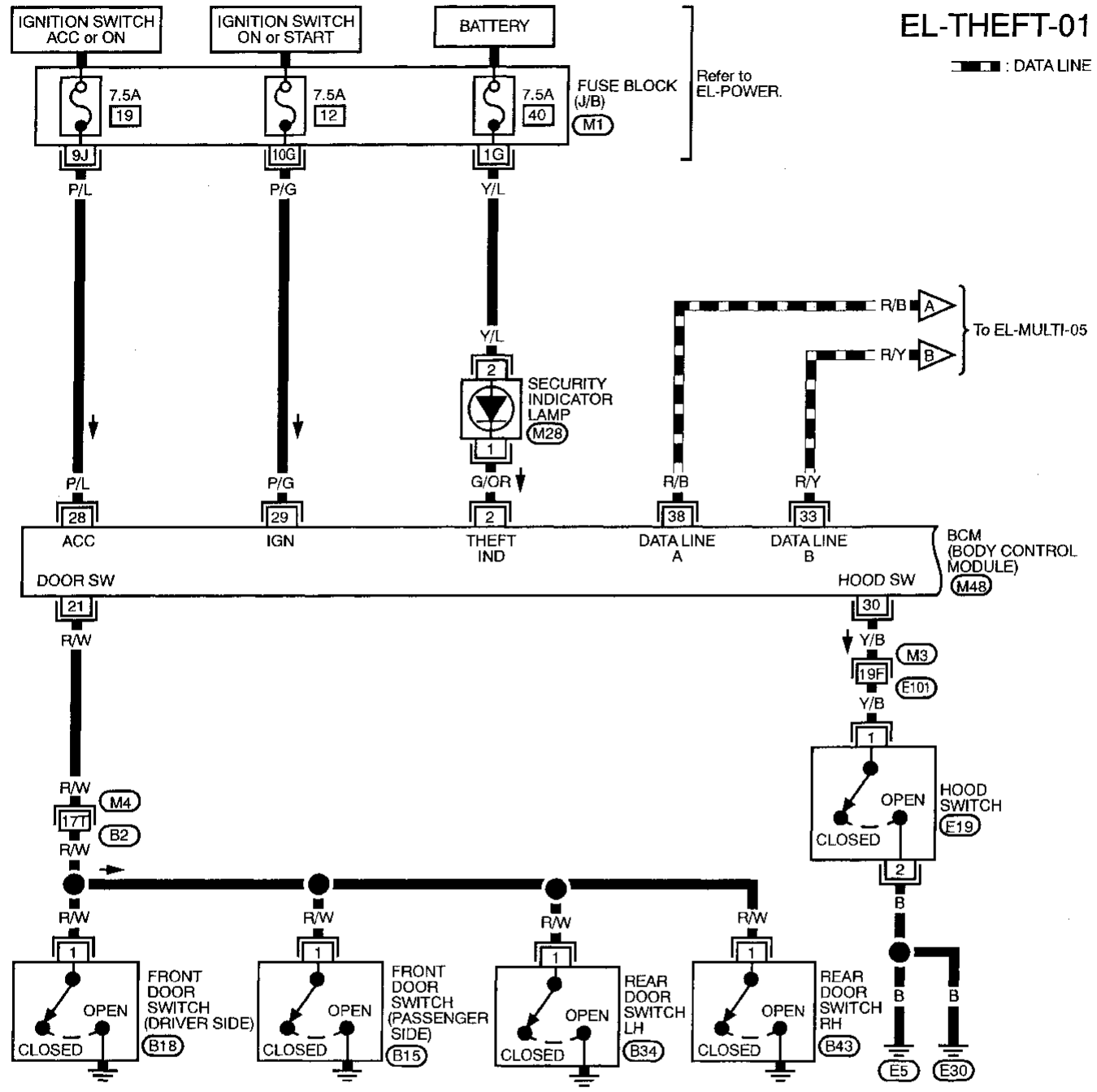
Check rear window defogger circuit. (Refer to "REAR WINDOW DEFOGGER", EL-99.) And/or check door mirror defogger circuit.

Component Parts and Harness Connector Location



MEL588E

Wiring Diagram — THEFT —



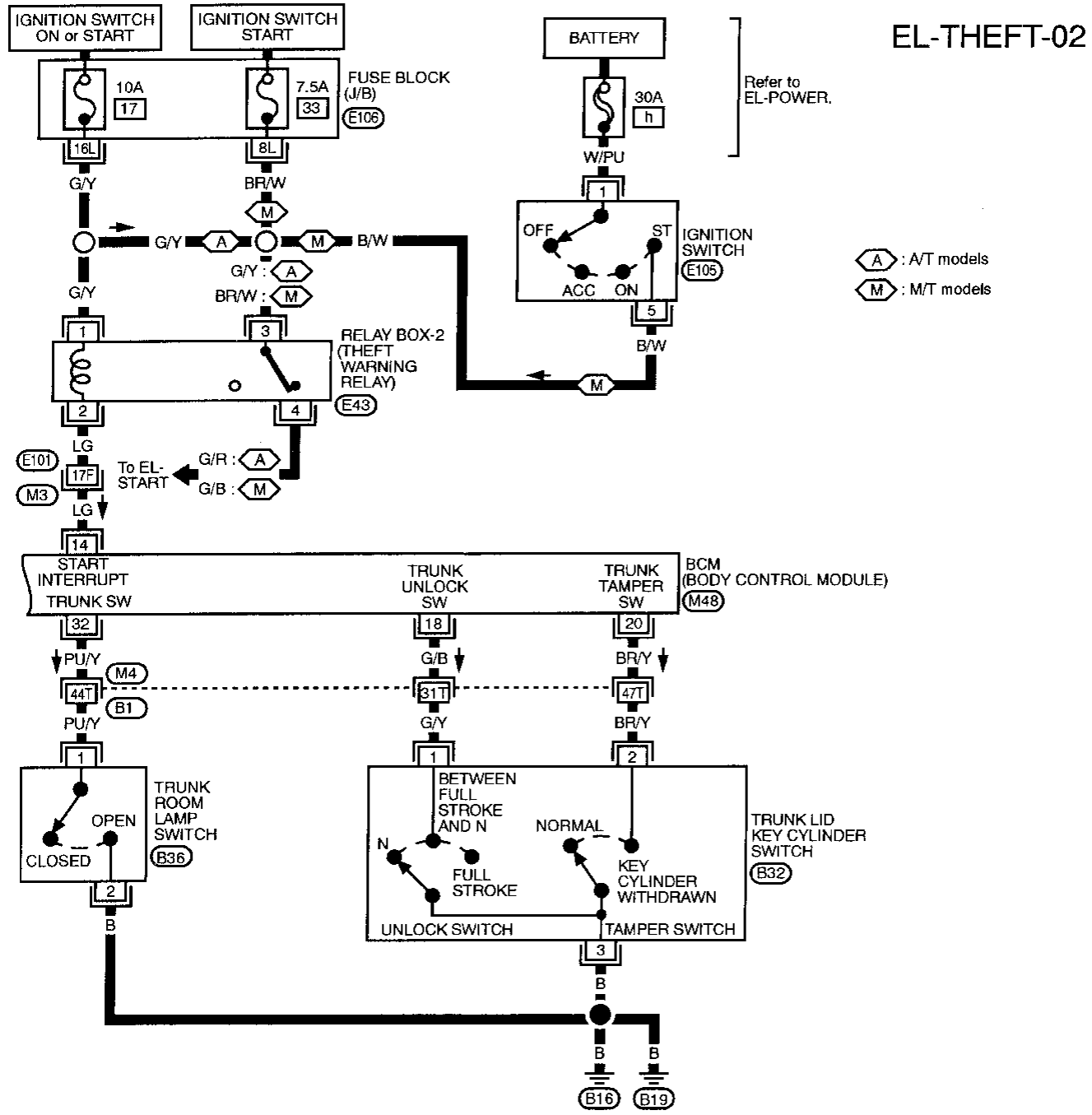
M28 W · E19 W · B15 B, B18 B · B34 BR, B43 BR

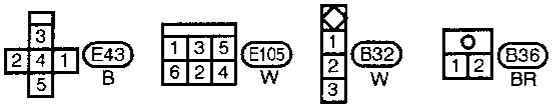
Refer to last page (Foldout page).

M3, E101
M4, B2
M1, M48

MEL572E

Wiring Diagram — THEFT — (Cont'd)





Refer to last page (Foldout page).

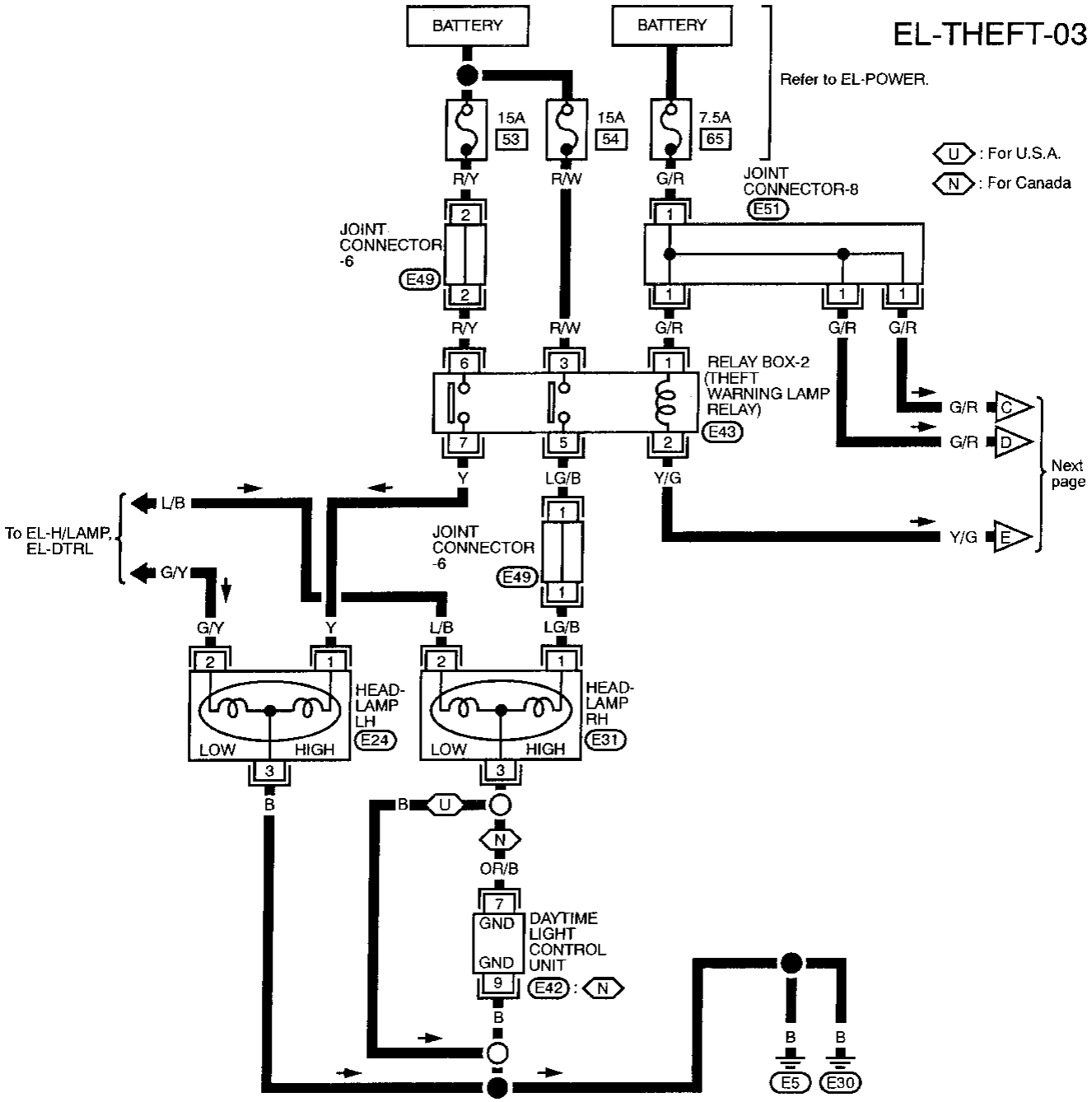
M3 , E101

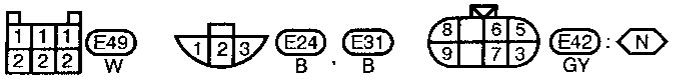
M4 , B1

E106 , M48

MEL573E

Wiring Diagram — THEFT — (Cont'd)





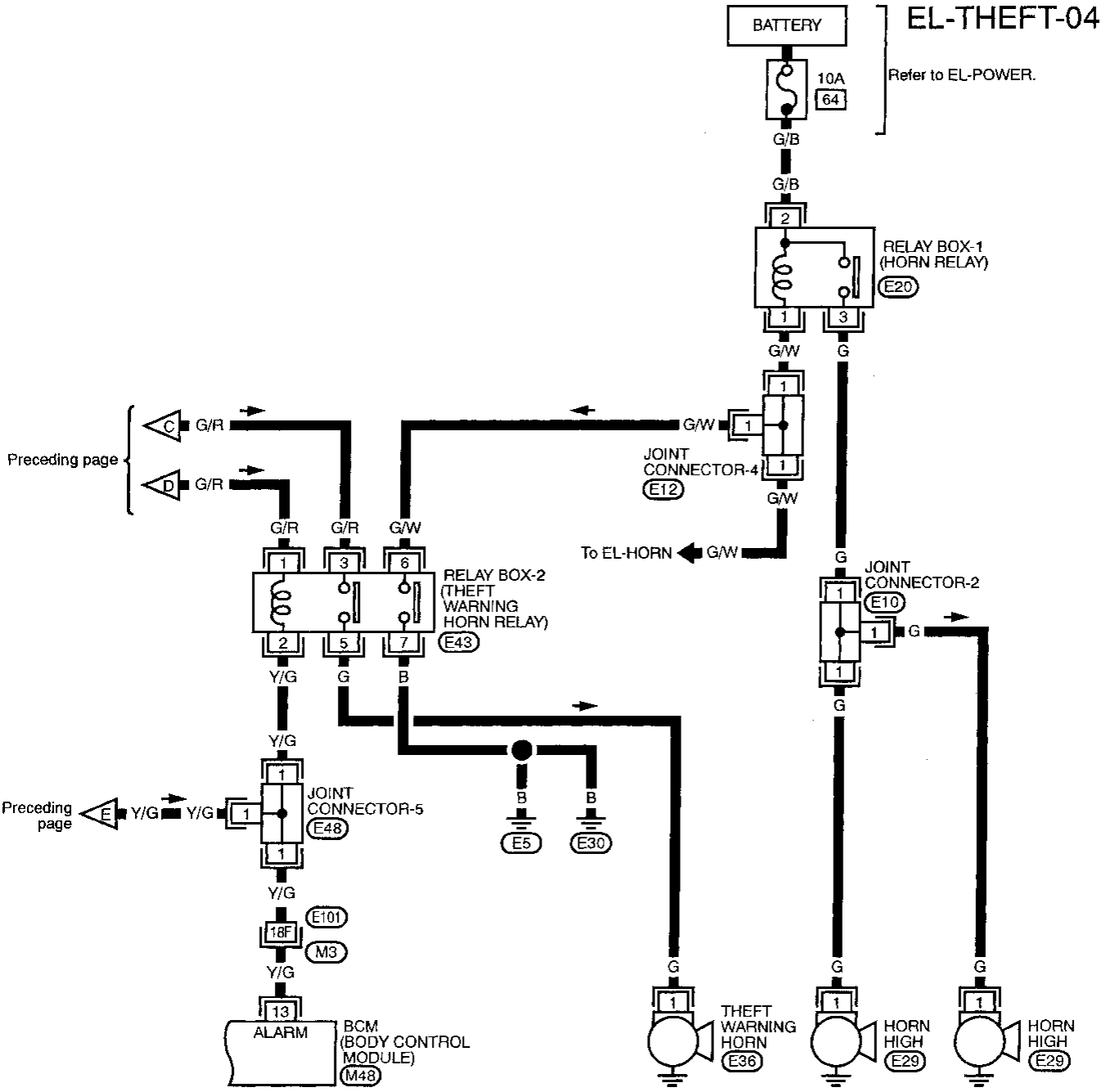
Refer to last page (Foldout page).

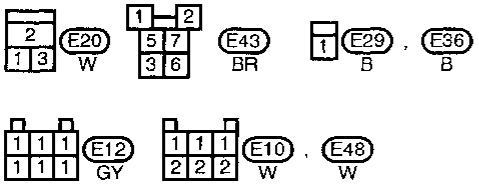
E49

E51

MEL574E

Wiring Diagram — THEFT — (Cont'd)





Refer to last page (Foldout page).

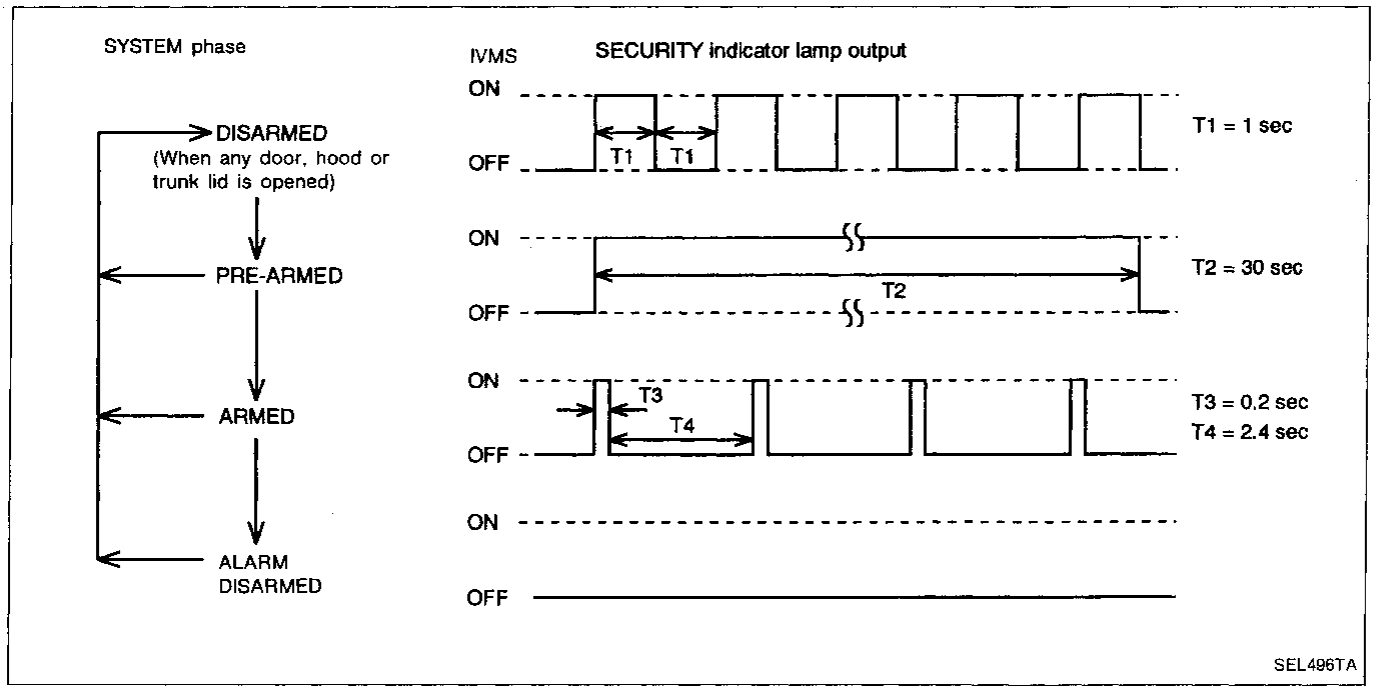
M3 , E101
M48 , E10
M12 , E48

MEL575E

Trouble Diagnoses

DESCRIPTION

1. Operation flow



2. Setting the theft warning system

Initial condition

(1) Close all doors.
(2) Close hood and trunk lid.
(3) Pull key out of ignition.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or trunk lid is opened. The security indicator lamp blinks every second.

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 control. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set). (The security indicator lamp blinks every 2.4 seconds.)

3. Canceling the set theft warning system

When the following (a) or (b) operation is performed, the armed phase is canceled.
(a) Unlock the doors or the trunk lid with the key.
(b) Unlock the doors or the trunk lid with the multi-remote controller.

4. Activating the alarm operation of the theft warning system

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.4 seconds.)
When any of the following operations (a), (b) and (c) is performed, the system sounds the horns and flashes the headlamps for about 2.5 minutes. (At the same time, the system disconnects the starting system circuit.) The starting system is kept dead even after the alarm turns off.
(a) Open the engine hood or trunk lid using the hood or trunk lid opener.
(b) Unlock any door without key or multi remote controller.
(c) Pull out the key cylinder from either front door or the trunk lid.

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE		IVMS communication diagnosis		Power supply and ground circuit check		Diagnostic procedure								—
REFERENCE PAGE		EL-156	EL-161	EL-179	EL-180	EL-247	EL-249	EL-250	EL-251	EL-252	EL-253	EL-254	EL-255	EL-220
SYMPTOM		CONSULT	On-board diagnosis (Mode I)	Ground circuit check	Power supply circuit check	Diagnostic Procedure 1 (Door open and tamper switch signal 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 (Theft warning horn alarm check)	Diagnostic Procedure 6 (Headlamp alarm check)	Diagnostic Procedure 7 (Starter interrupt system check)	Diagnostic Procedure 8 (Trunk lid key unlock signal check)	Check "MULTI-REMOTE CONTROL" system.
Theft warning indicator does not turn "ON" or blinking.		X	X	X	X		X							
Theft warning system cannot be set by	All items	X	X	X	X	X		X						
	Door out side key	X	X	X	X				X					
	Multi-remote control	X	X	X	X									X
Theft warning system does not activate.	All function	X	X	X	X	X								
	Horn alarm	X	X	X	X					X				
	Turn lamp	X	X	X	X						X			
	Starter interrupt	X	X	X	X							X		
Theft warning system cannot be canceled by	Door out side key	X	X	X	X				X					
	Trunk lid key	X	X	X	X								X	
	Multi-remote control	X	X	X	X									X

Perform "IVMS Communication Diagnosis", "Power Supply and Ground Circuit Check" before starting with theft warning system diagnostic procedure.

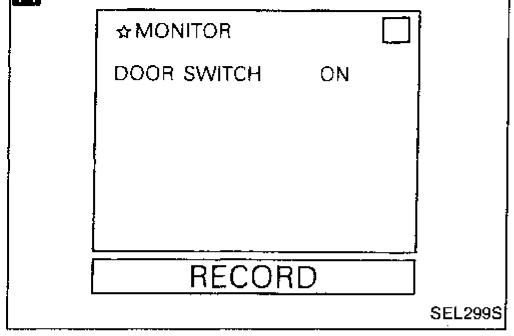
X : Applicable

Trouble Diagnoses (Cont'd)

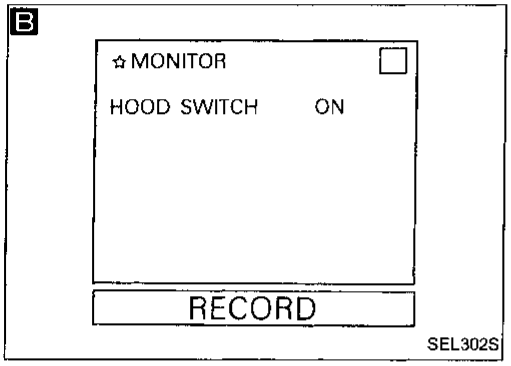
DIAGNOSTIC PROCEDURE 1

(Door open and tamper switch signal check)

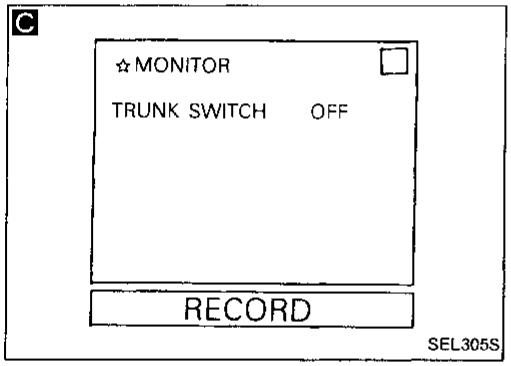
A



B



C



A

DOOR SWITCH INPUT SIGNAL CHECK

See "DOOR SWITCH" in "Data Monitor" mode.

When all doors are closed:
DOOR SWITCH OFF

When at least one door is open:
DOOR SWITCH ON

OR

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-163.

NG → Check the following.
- All door switches
  Refer to "Electrical Components Inspection". (EL-256)
- Harness for open or short between door switch and BCM
- Door switch case ground

OK ↓

B

HOOD SWITCH INPUT SIGNAL CHECK

See "HOOD SWITCH" in "Data Monitor" mode.

When hood is open:
HOOD SWITCH ON

When hood is closed:
HOOD SWITCH OFF

OR

Perform On-board diagnosis — Mode II (switch monitor) for hood switch. Refer to EL-163.

NG → Check the following.
- Hood switch
  Refer to "Electrical Components Inspection". (EL-256)
- Harness for open or short between hood switch and BCM
- Hood switch ground circuit

OK ↓

C

TRUNK ROOM LAMP SWITCH INPUT SIGNAL CHECK

See "TRUNK SWITCH" in "Data Monitor" mode.

When trunk lid is open:
TRUNK SWITCH ON

When trunk lid is closed:
TRUNK SWITCH OFF

OR

Perform On-board diagnosis — Mode II (switch monitor) for trunk room lamp switch. Refer to EL-163.

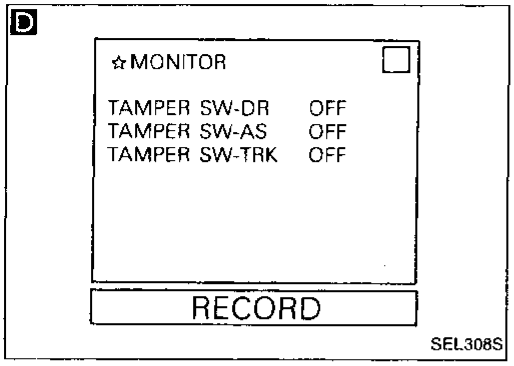
NG → Check the following.
- Trunk room lamp switch
  Refer to "Electrical Components Inspection". (EL-256)
- Harness for open or short between trunk room lamp switch and BCM
- Trunk room lamp switch ground circuit

OK ↓

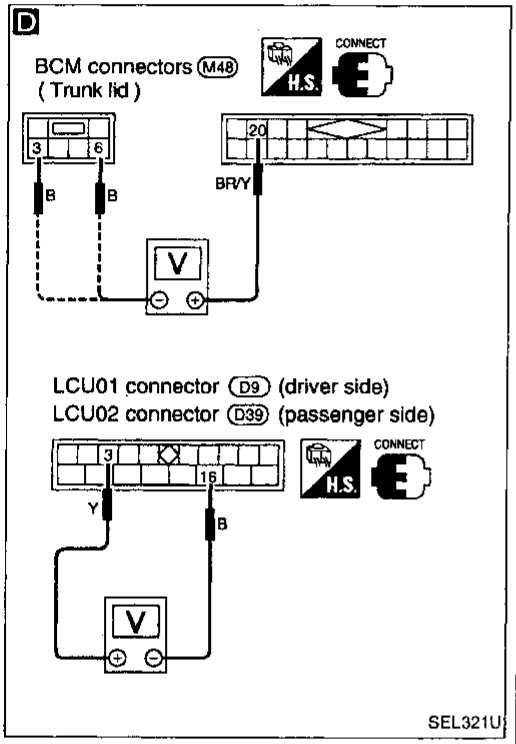
Ⓐ

Trouble Diagnoses (Cont'd)

D



D



Ⓐ

D

KEY CYLINDER TAMPER SWITCH INPUT SIGNAL CHECK

See "TAMPER SW" in "Data Monitor" mode.

When driver side key cylinder is removed,

TAMPER SW-DR ON

When driver side key cylinder is installed,

TAMPER SW-DR OFF

When passenger side key cylinder is removed,

TAMPER SW-AS ON

When passenger side key cylinder is installed,

TAMPER SW-AS OFF

When trunk lid key cylinder is removed,

TAMPER SW-TRK ON

When trunk lid key cylinder is installed,

TAMPER SW-TRK OFF

NG → Check the following.
- Key cylinder tamper switch in question. Refer to "Electrical Components Inspection" (EL-257).
- Harness for open or short between tamper switch and BCM/LCU
- Tamper switch ground circuit

OR

Measure voltage between BCM terminals ⑳ and ③ or ⑥ (trunk lid), LCU01 terminals ③ and ⑯ (driver side), and LCU02 terminals ③ and ⑯ (passenger side).

Condition		Voltage [V]
Key cylinder removed		0
Key cylinder installed	Front doors	Approx. 12
	Trunk lid	Approx. 5

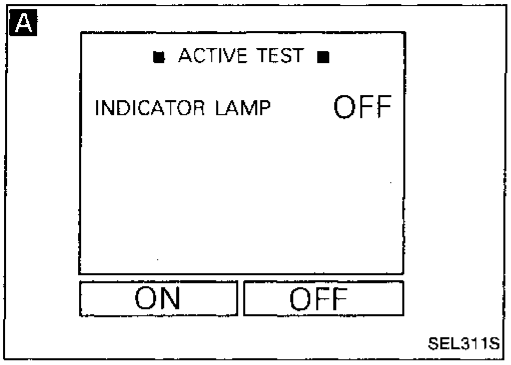
OK

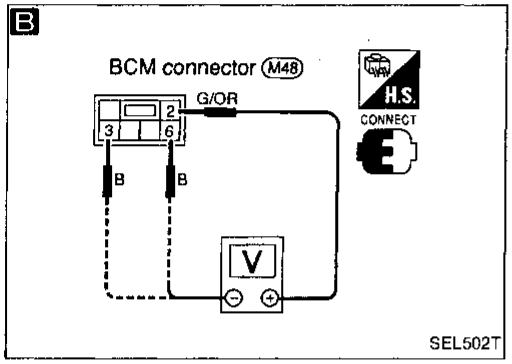
Door open and tamper switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Security indicator lamp check)





A

Perform "INDICATOR LAMP" in "Active Test" mode.
Check indicator lamp operation.
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Indicator lamp is OK.

NG

Check indicator lamp. NG → Replace indicator lamp.

OK

B

INDICATOR LAMP OUTPUT SIGNAL CHECK
1. Open at least one door.
2. Check voltage between BCM terminals ② and ③ or ⑥.
Pointer of voltmeter should deflect intermittently.

OK → Indicator lamp is OK.

NG

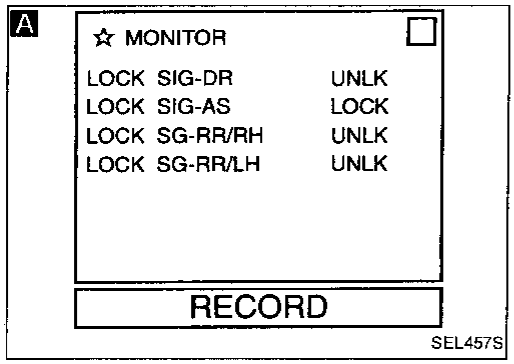
Check the following.
- 7.5A fuse (No. 40, located in the fuse block)
- Harness for open or short between BCM and security indicator lamp

Trouble Diagnoses (Cont'd)

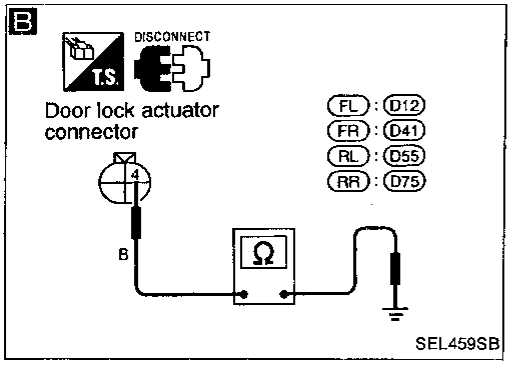
DIAGNOSTIC PROCEDURE 3

(Door unlock sensor check)

A



B



CHECK DOOR LOCK KNOB SWITCH CIRCUITS.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

"LOCK SIG SW" should be "LOCK" when lock knob was locked.

OK → Door unlock sensor is OK.

OR

ON-BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-163.)

NG ↓

1) Disconnect LCU connector and door lock actuator connector.
2) Check harness for open or short between LCU connector terminal ④ and door lock actuator connector terminal ②.

NG → Repair harness.

OK ↓

B

CHECK GROUND CIRCUIT FOR FRONT LH OR RH LOCK KNOB SWITCH.
Check harness continuity between door lock actuator connector harness terminal ④ and body ground.
Continuity should exist.

NG → Repair ground harness.

OK ↓

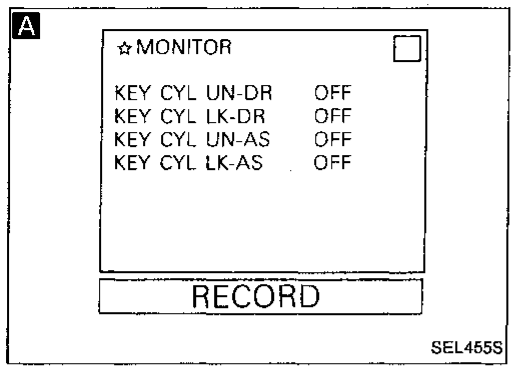
Replace front door lock actuator.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)

A



CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.
These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.
If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.
(Refer to CONSULT OPERATION MANUAL.)

OK → Door key cylinder switch is OK.

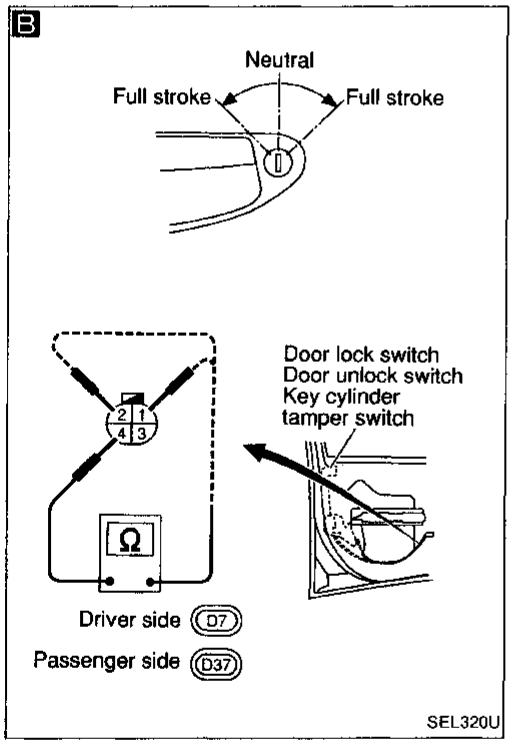
OR

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-163.)

NG ↓

B



B

CHECK DOOR KEY CYLINDER SWITCH.

Terminals	Condition	Continuity
① - ④	Neutral	No
	Between locked and neutral	Yes
	Locked	No
② - ④	Neutral	No
	Unlocked	Yes

NG → Replace door key cylinder switch.

OK ↓

Check harness for open or short between door key cylinder switch and LCU01/02.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Theft warning horn alarm check)

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

OK → Horn alarm is OK.

NG ↓

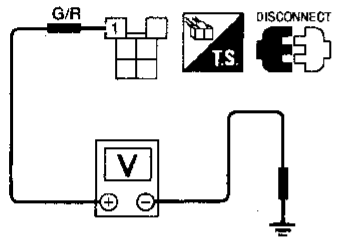
Check theft warning horn relay.

NG → Replace.

OK ↓

A

Theft warning horn relay connector (E43)



SEL368U

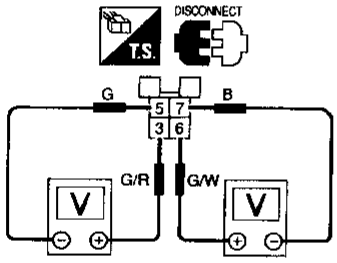
CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAY.
1. Disconnect theft warning horn relay connector.
2. Measure voltage between terminal ① and body ground.
Positive battery voltage should exist.

NG → Check 7.5A fuse (No. 65, located in the fusible link box)

OK ↓

B

Theft warning horn relay connector (E43)



SEL369U

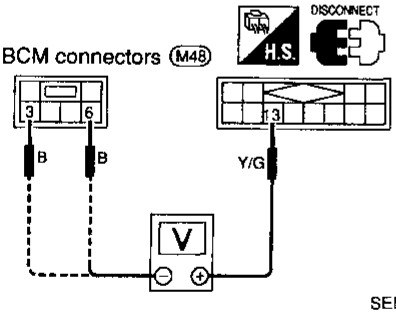
CHECK THEFT WARNING HORN CIRCUIT.
1. Disconnect theft warning horn relay connector.
2. Measure voltage between terminals ③ and ⑤.
Positive battery voltage should exist.
3. Measure voltage between terminals ⑥ and ⑦.
Positive battery voltage should exist.

NG → Check the following.
- Harness for open or short
- Theft warning horn and theft warning horn relay ground

OK ↓

C

BCM connectors (M48)



SEL370U

CHECK ALARM OUTPUT CIRCUIT.
1. Disconnect BCM connectors.
2. Measure voltage between BCM terminals ⑬ and ③ or ⑥.
Positive battery voltage should exist.

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

OK ↓

Perform IVMS communication diagnosis again (EL-156 or EL-161).

OK → Horn alarm is OK.

NG ↓

Replace BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Headlamp alarm check)

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

OK → Headlamp alarm is OK.

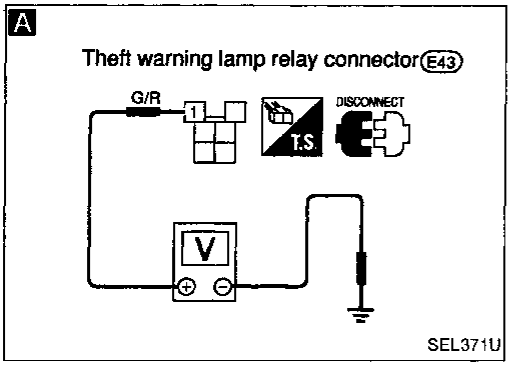
NG ↓

Check theft warning lamp relay.

NG → Replace.

OK ↓

A

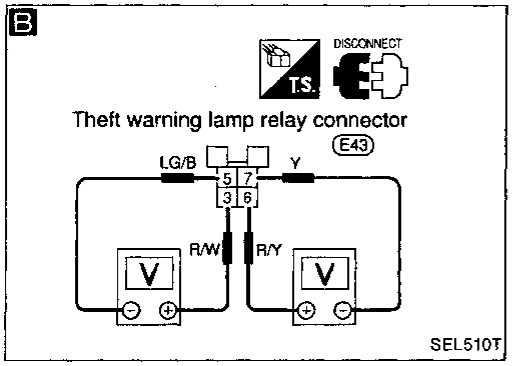


CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY.
1. Disconnect theft warning lamp relay connector.
2. Measure voltage between terminal ① and body ground.
Positive battery voltage should exist.

NG → Check 7.5A fuse (No. 65, located in fusible link box).

OK ↓

B

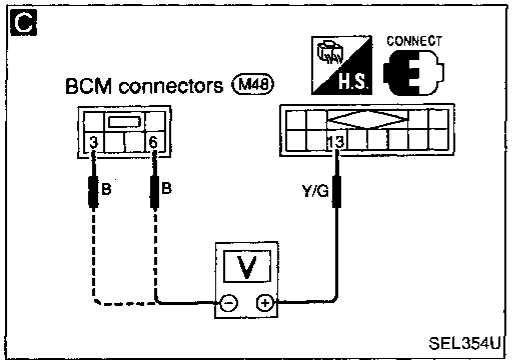


CHECK THEFT WARNING LAMP RELAY CIRCUIT.
1. Disconnect theft warning lamp relay connector.
2. Measure voltage between terminals ③ and ⑤.
Positive battery voltage should exist.
3. Measure voltage between terminals ⑥ and ⑦.
Positive battery voltage should exist.

NG → Check harness for open or short.

OK ↓

C



CHECK ALARM OUTPUT CIRCUIT.
1. Disconnect BCM connectors.
2. Measure voltage between BCM terminals ⑬ and ③ or ⑥.
Positive battery voltage should exist.

NG → Check harness for open or short between theft warning lamp relay and BCM.

OK ↓

Perform IVMS communication diagnosis again (EL-156 or EL-161).

OK → Headlamp alarm is OK.

NG ↓

Replace BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(Starter interrupt system check)

Perform "INTERRUPT RELAY" in ACTIVE TEST mode.
Check theft warning relay operation.
(Listen for relay operating sound.)
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Starter interrupt system is OK.

NG ↓

Check theft warning relay.

NG → Replace.

OK ↓

A

CHECK STARTER INTERRUPT CIRCUIT.
1. Disconnect BCM connectors.
2. Measure voltage between BCM terminals ⑭ and ③ and ⑥.

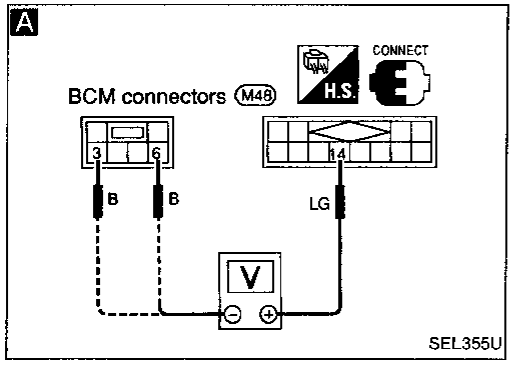
Condition of ignition switch	Voltage [V]
ON	Approx. 12
OFF	0

NG → Check 10A fuse (No. 17, located in fuse block).

OK ↓

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

A

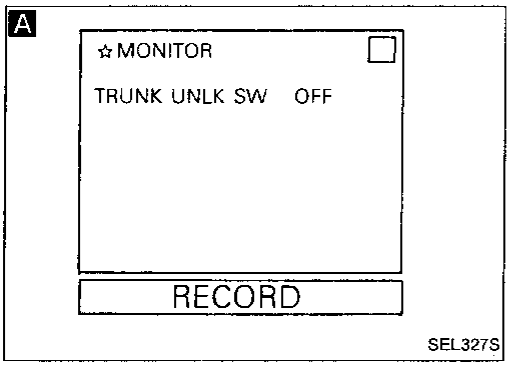


Trouble Diagnoses (Cont'd)

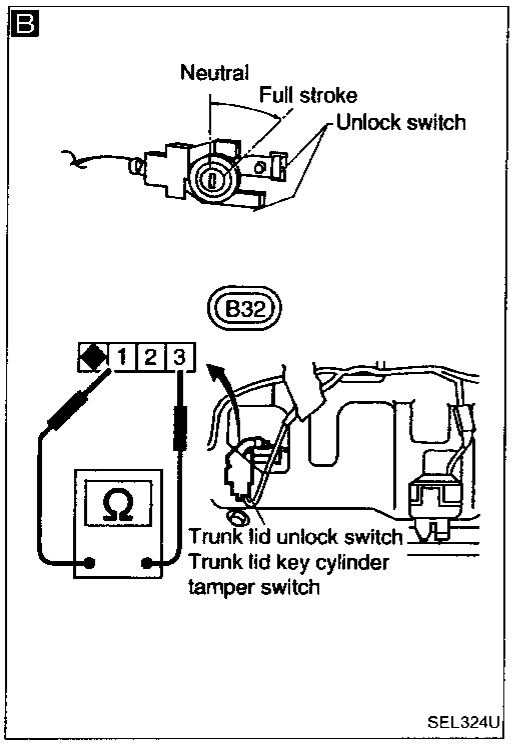
DIAGNOSTIC PROCEDURE 8

(Trunk lid key unlock signal check)

A



B



A

See "TRUNK UNLK SW" in DATA MONITOR mode.
When key in key cylinder is at "NEUTRAL" or "UNLOCK" (full stroke) position,
TRUNK UNLK SW OFF
When key is between "NEUTRAL" and "UNLOCK" position,
TRUNK UNLK SW ON

OK → Trunk lid key unlock switch is OK.

OR

Perform On-board diagnosis — Mode II (switch monitor) for trunk lid unlock switch. Refer to EL-163.

NG ↓

B

CHECK TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH).

NG → Replace trunk lid key unlock switch.

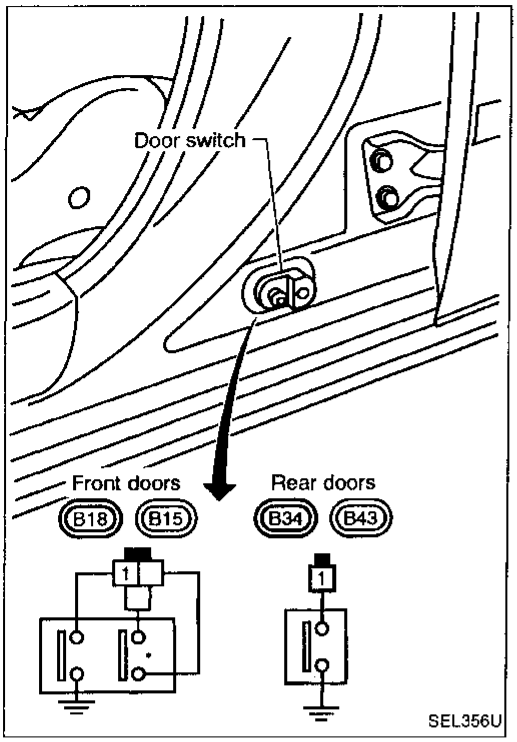
Terminals	Condition	Continuity
① - ③	Neutral	No
	Between unlocked and neutral	Yes
	Unlocked	No

OK ↓

Check harness for open or short between trunk lid key cylinder switch and BCM.

Trouble Diagnoses (Cont'd)

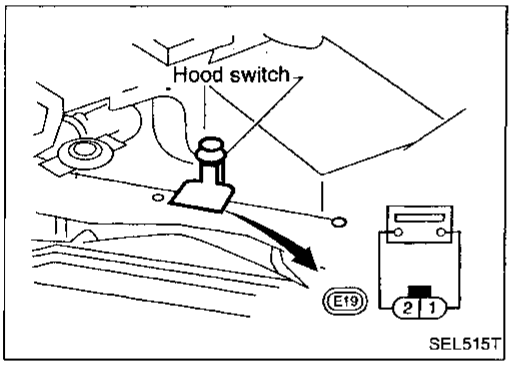
ELECTRICAL COMPONENTS INSPECTION



Door switches

Check continuity between terminal and switch body.

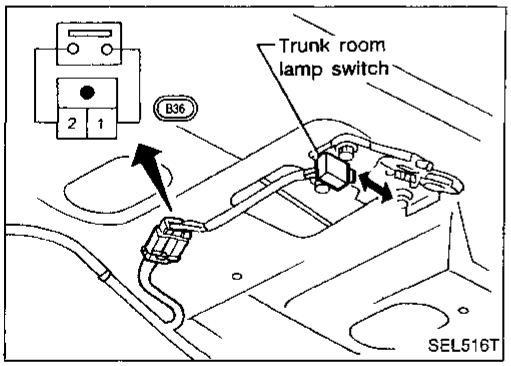
	Terminals	Condition	Continuity
Front door switches	① - switch body	Pressed	No
		Released	Yes
Rear door switches	① - switch body	Pressed	No
		Released	Yes



Hood switch

Check continuity between terminals.

Terminals	Condition	Continuity
① - ②	Pressed	No
	Released	Yes

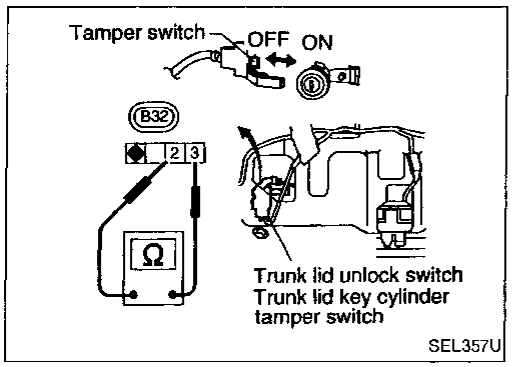


Trunk room lamp switch

Check continuity between terminals.

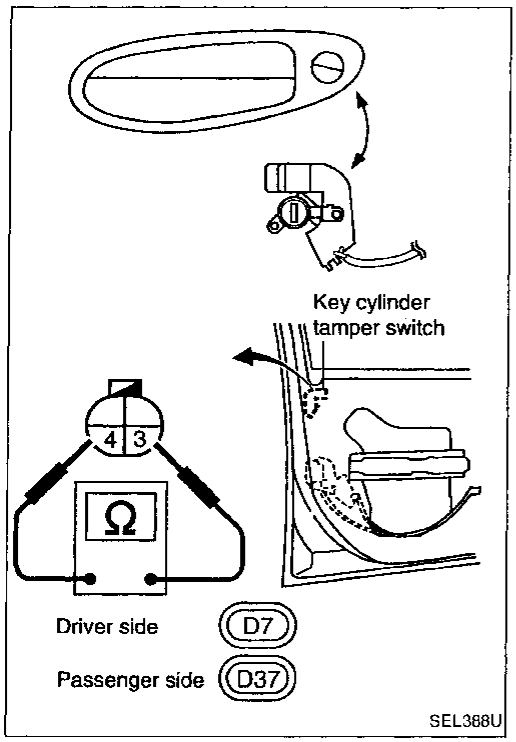
Terminals	Condition	Continuity
① - ②	Pressed	Yes
	Released	No

Trouble Diagnoses (Cont'd)



Trunk lid key cylinder tamper switch

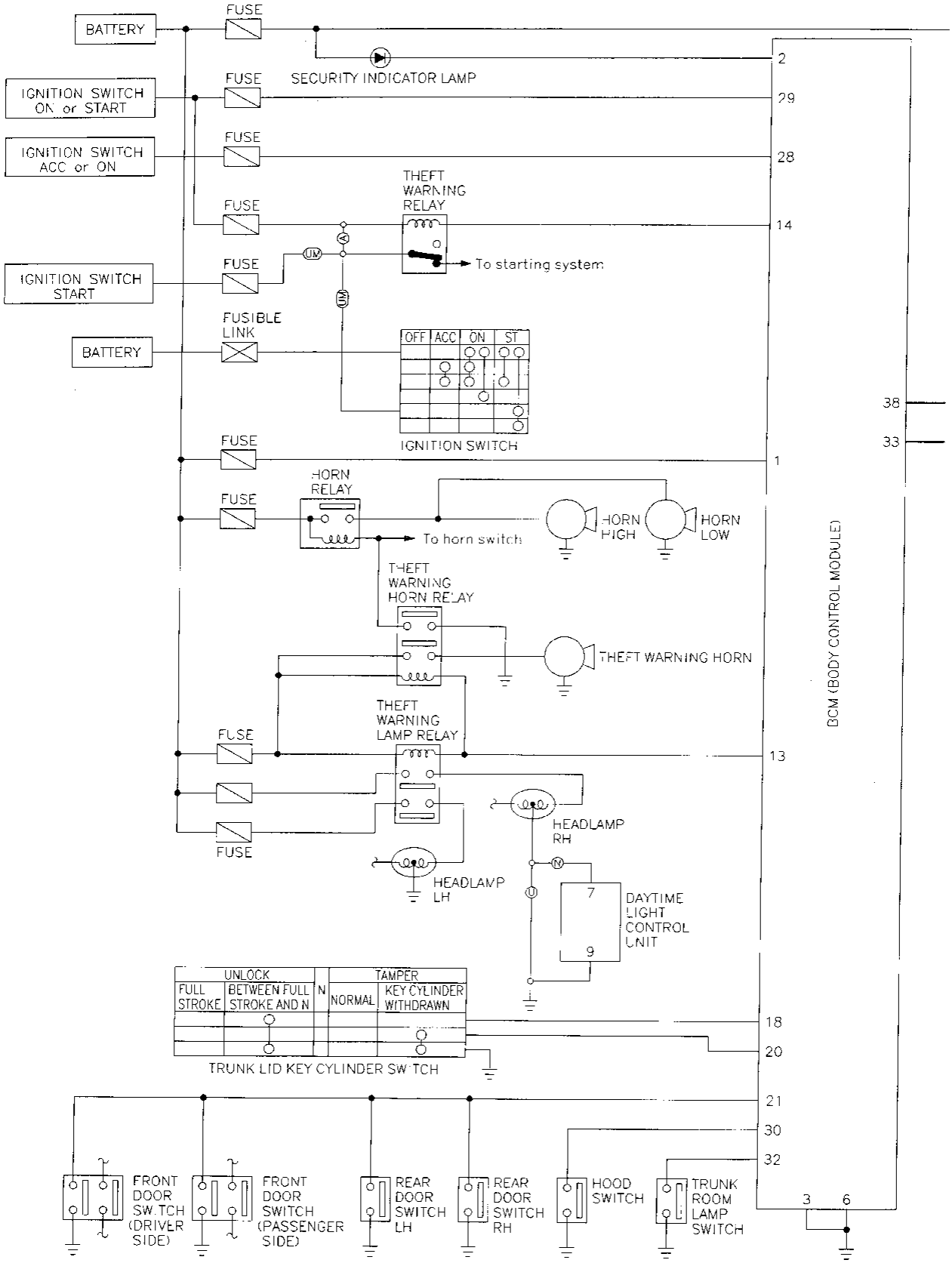
	Terminals	Condition	Continuity
Tamper switch	② - ③	Key cylinder installed	No
		Key cylinder removed	Yes



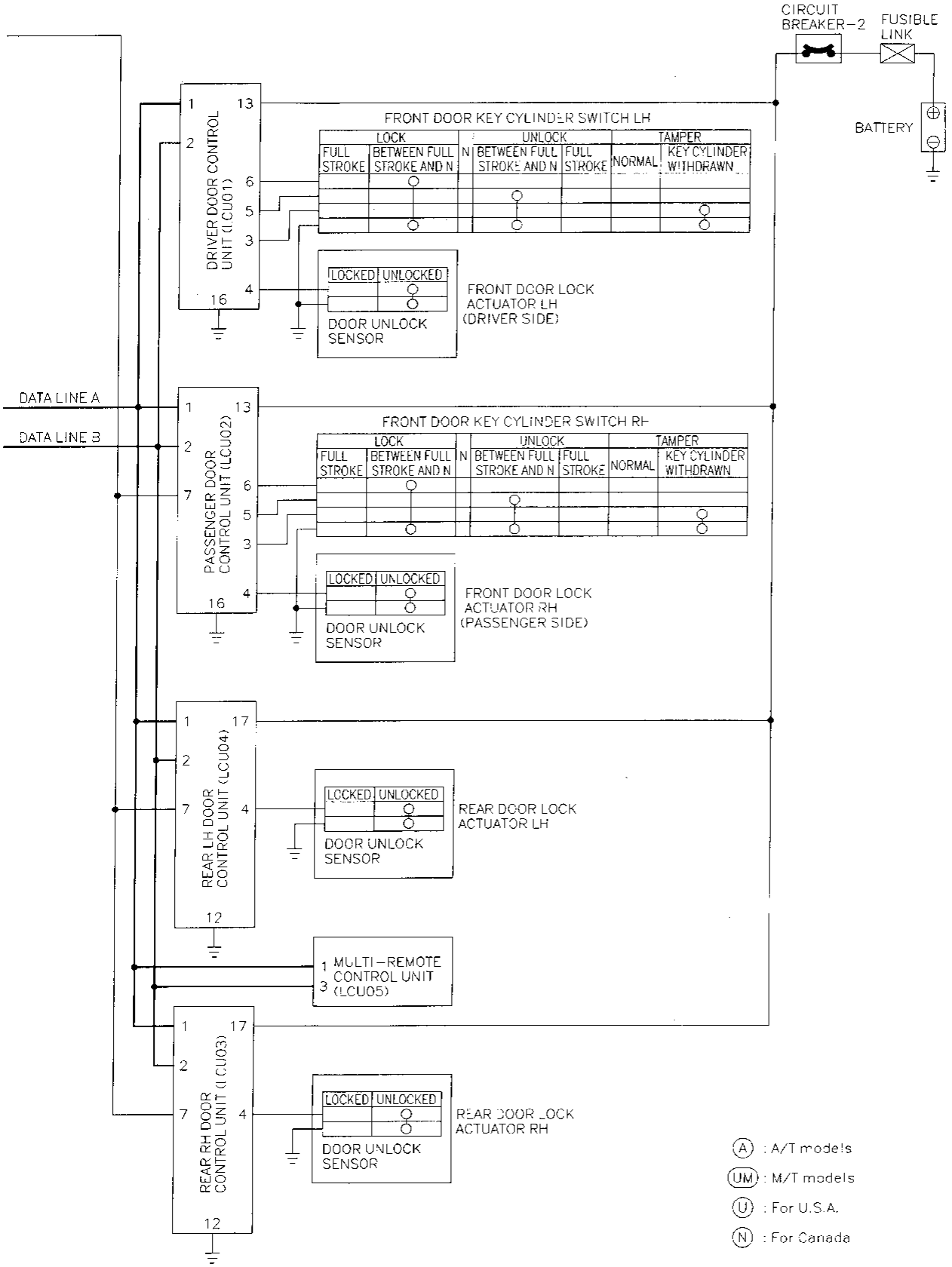
Door key cylinder tamper switch

	Terminals	Condition	Continuity
Tamper switch	③ - ④	Key cylinder installed	No
		Key cylinder removed	Yes

Schematic


BATTERY
FUSE
SECURITY INDICATOR LAMP
IGNITION SWITCH ON or START
IGNITION SWITCH ACC or ON
IGNITION SWITCH START
FUSIBLE LINK
THEFT WARNING RELAY
To starting system
OFF ACC ON ST
IGNITION SWITCH
HORN RELAY
To horn switch
HORN HIGH
HORN LOW
THEFT WARNING HORN RELAY
THEFT WARNING HORN
THEFT WARNING LAMP RELAY
HEADLAMP RH
HEADLAMP LH
DAYTIME LIGHT CONTROL UNIT
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
TAMPER
NORMAL
KEY CYLINDER WITHDRAWN
TRUNK LID KEY CYLINDER SWITCH
FRONT DOOR SWITCH (DRIVER SIDE)
FRONT DOOR SWITCH (PASSENGER SIDE)
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
HOOD SWITCH
TRUNK ROOM LAMP SWITCH
BCM (BODY CONTROL MODULE)
2
29
28
14
1
38
33
13
18
20
21
30
32
3
6
7
9

Schematic (Cont'd)



MEL576E

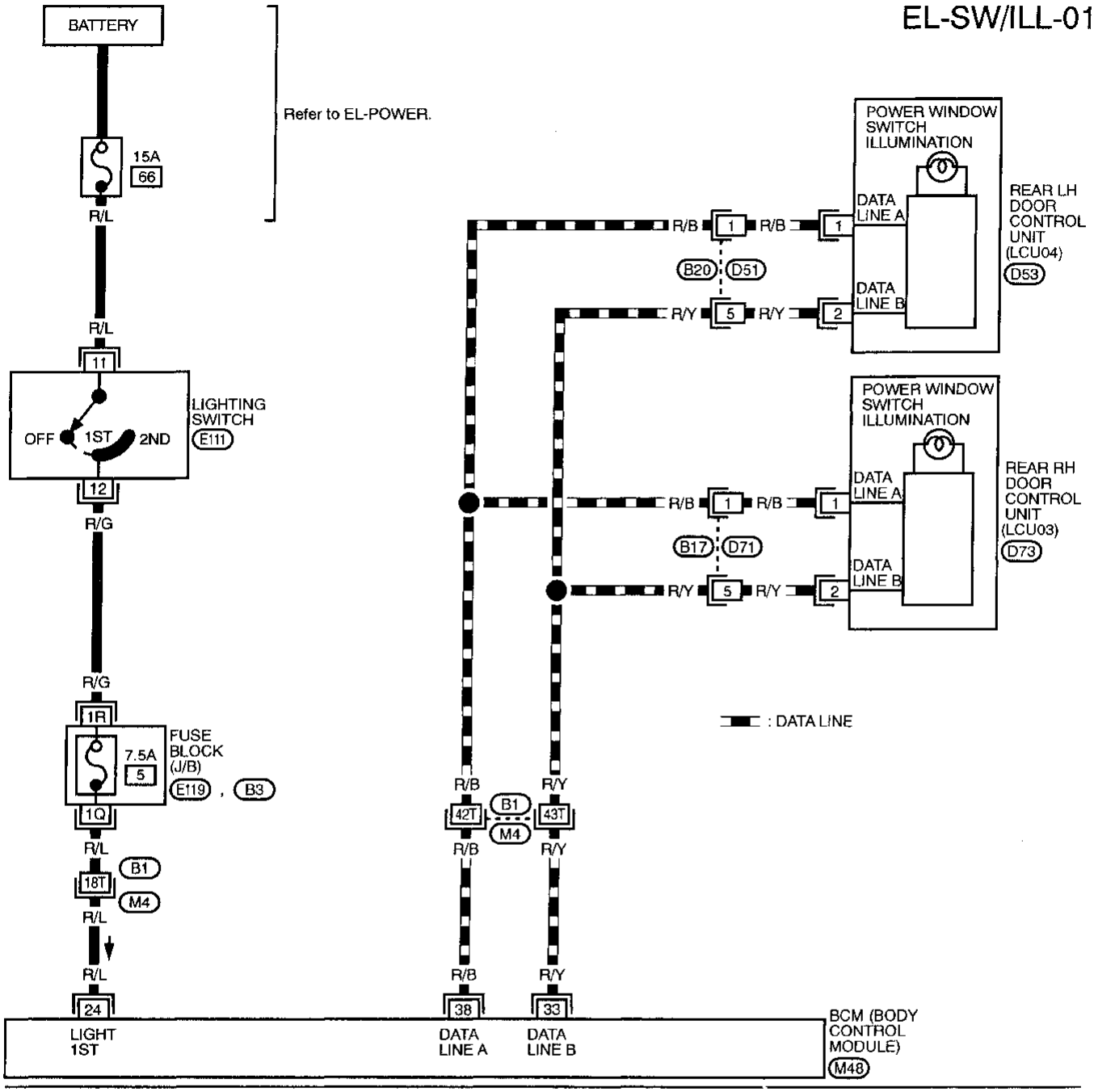
System Description

Power is supplied at all times
- to lighting switch terminal ⑪
- through 15A fuse (No. 66, located in the fuse and fusible link box).

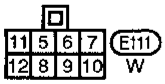
With the lighting switch in the 1ST or 2ND position, power is supplied
- to BCM terminal ㉔
- through lighting switch terminal ⑫ and
- 7.5A fuse [No. 5, located in the fuse block (J/B)].

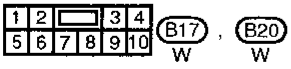
Terminals ① and ② of the power window switch illumination (located in the rear LH and RH door control units) are connected to BCM terminals ㊳ and ㉝ as DATA LINES A and B respectively.
When power is supplied to BCM terminal ㉔, BCM sends a signal to rear LH and RH door control units to turn on power window switch illumination. Power and ground are supplied to power window switch illumination, then power window switch illumination turns on.

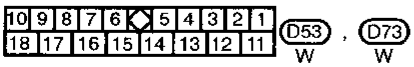
Wiring Diagram — SW/ILL —



Refer to last page (Foldout page).
M4 , B1
M48
E119
B3







MEL577E

Trouble Diagnoses

Perform "IVMS Communication Diagnosis" (EL-156 or EL-161) and "Power Supply and Ground Circuit Check" (EL-179) before starting with the following chart.

Symptom	Possible cause	Repair order
Power window switch illumination does not illuminate when lighting switch is turned to 1st or 2nd.*	1. 7.5A fuse	1. Check 7.5A fuse (No. 5 , located in fuse block).
	2. Open in lighting switch circuit	2. Check harness for open or short between 7.5A fuse and BCM.
	3. LCU	3. Replace LCU.
	4. BCM	4. Replace BCM.

* CONSULT (data monitor and/or active test) may also be used to confirm the cause of malfunction.

System Description

INTERIOR LAMP, IGNITION KEYHOLE ILLUMINATION TIMER CONTROL

Function

Interior lamp timer keeps interior lamp and ignition keyhole illuminated for about 30 seconds when:
- driver's door is unlocked while key is out of ignition,
- key is pulled out of ignition while driver's door is closed, and
- key is pulled out of ignition and driver's door is opened and then closed.

The timer is cancelled, and interior lamp and ignition keyhole illumination turn off when:
- driver's door is locked, or
- ignition switch is turned "ON".

Power supply and ground

Power is supplied at all times
- through 7.5A fuse [No. 26 , located in the fuse block (J/B)]
- to interior lamp terminal ①,
- to ignition keyhole illumination terminal ①.

Power is also supplied at all times
- through 7.5A fuse [No. 40 , located in the fuse block (J/B)]
- to key switch terminal ①.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12 , located in the fuse block (J/B)]
- to BCM terminal ㉙.

Driver door control unit (LCU01) terminal ① is connected to BCM terminal ㊳ by DATA LINE A. Also, driver door control unit terminal ② is connected to BCM terminal ㉝ by DATA LINE B.

Ground is supplied to driver door control unit terminal ④
- through front driver's side door lock actuator (unlock sensor) terminals ② and ④ when front door lock actuator is in UNLOCK position
- through body grounds (M13) and (M73).

Timer operation

Driver's door is unlocked, driver's door is opened and then closed or key is withdrawn from ignition key cylinder.

Ground is then supplied to interior lamp terminal ② and ignition key hole illumination terminal ② to illuminate.

While timer is activated, ignition switch is turned ON or driver's door is locked. Timer will then be canceled.

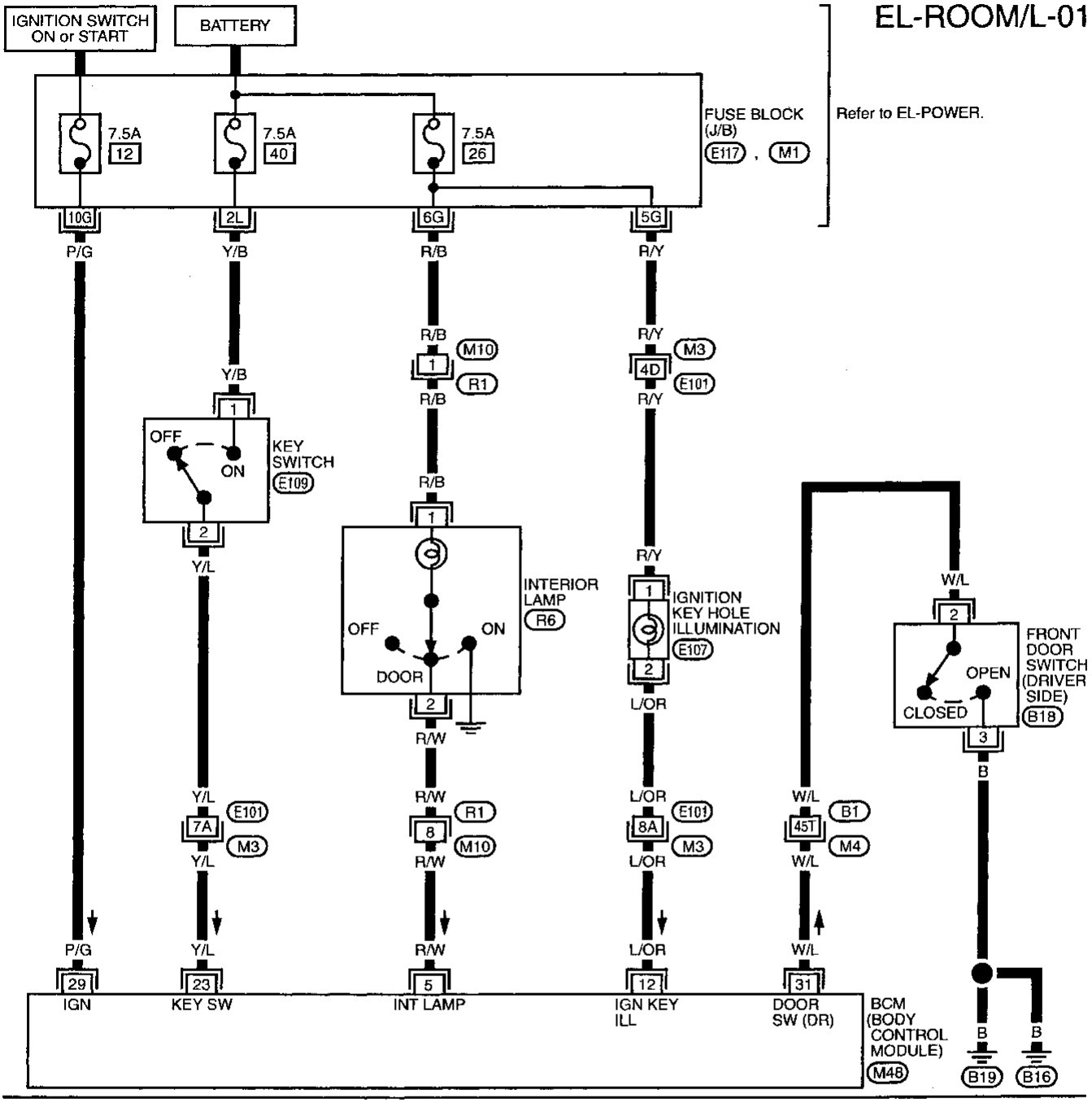
INTERIOR LAMP ON-OFF CONTROL

Power is supplied at all times
- through 7.5A fuse [No. 26 , located in the fuse block (J/B)]
- to interior lamp terminal ①.

BCM terminal ㉑ is grounded when any door switch is in OPEN position.

When the front driver side door switch, front passenger side door switch, rear LH door switch or rear RH door switch is in OPEN position, interior lamp turns on.

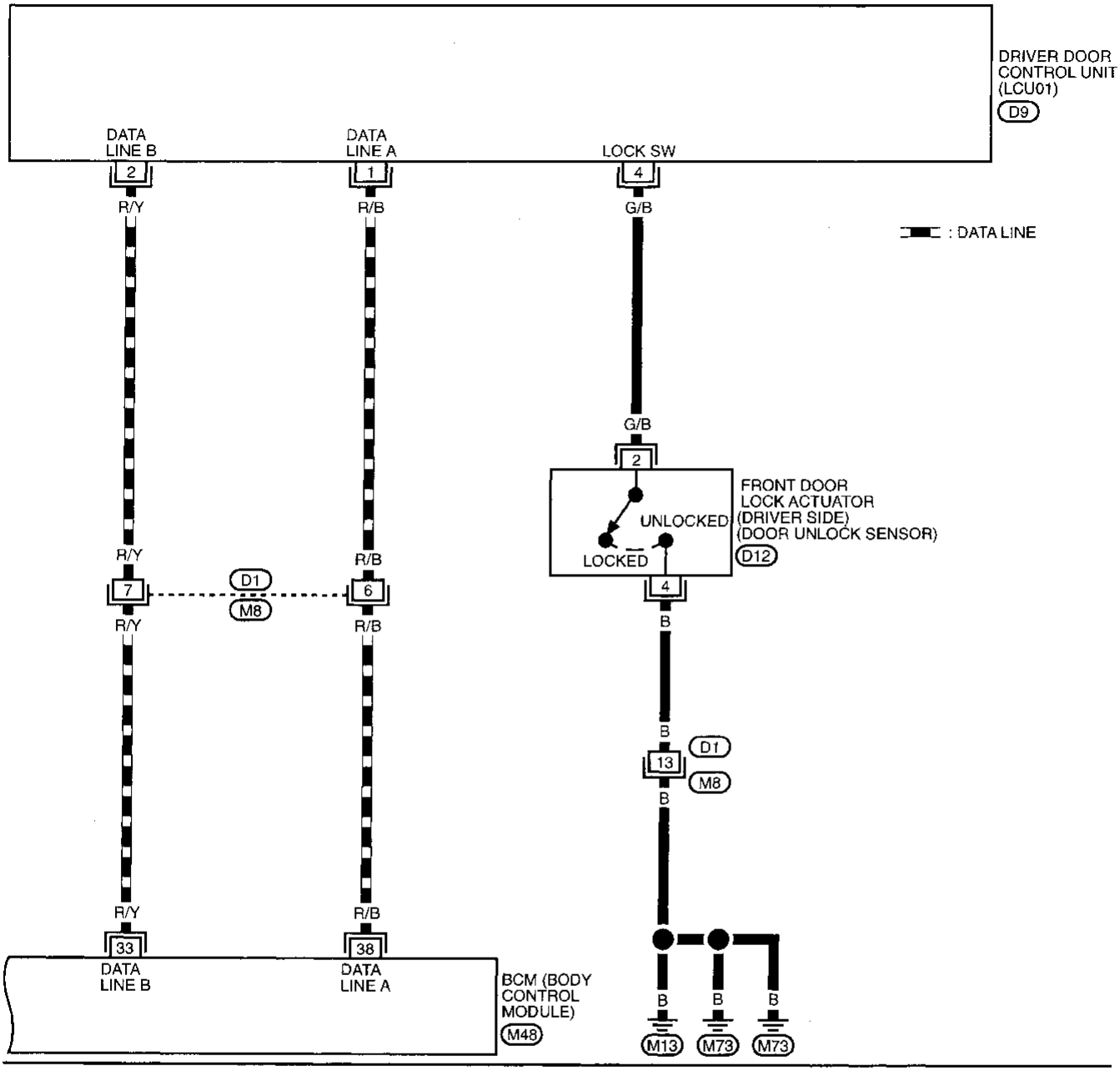
Wiring Diagram — ROOM/L —



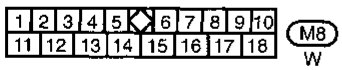
MEL570E

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-02



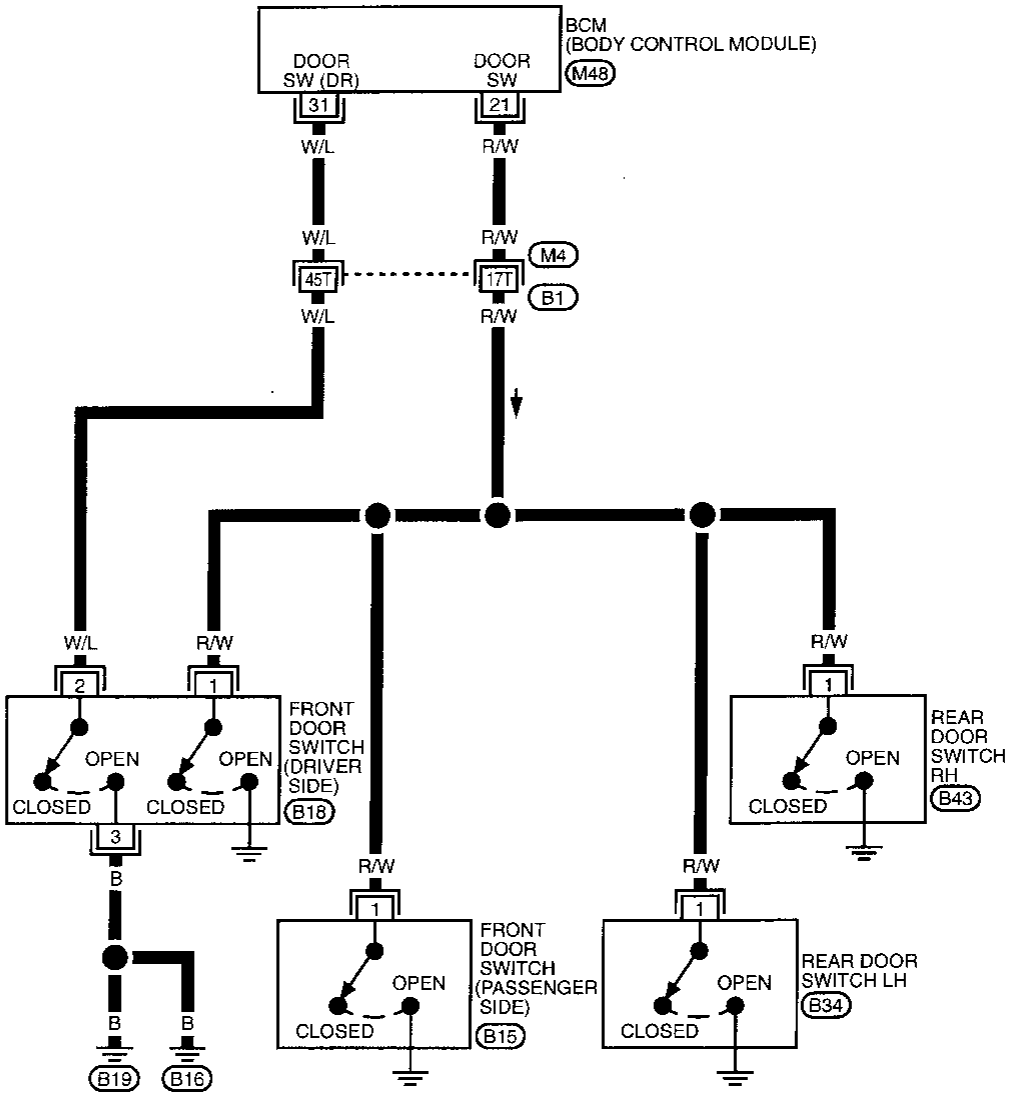
Refer to last page (Foldout page).
M48

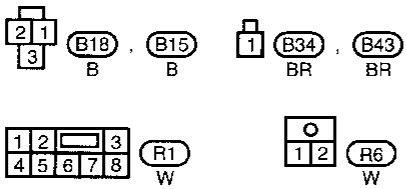


MEL571E

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-03





Refer to last page (Foldout page).

M4 , B1

M1

M48

MEL578E

Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Interior lamp does not illuminate/does not turn off when door is opened/closed.

Does interior lamp illuminate manually? — NG → Check the following.
- Bulb
- 7.5A fuse (No. 26, located in the fuse block)
- Interior lamp switch

OK ↓

A

DOOR SWITCH INPUT SIGNAL CHECK — NG → Check the following.
- All door switches
- Harness for open or short between door switch and BCM

See "DOOR SWITCH" in "Data Monitor" mode.
When all doors are closed:
DOOR SWITCH OFF
When at least one door is open:
DOOR SWITCH ON

OR

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-163.

OK ↓

B

INTERIOR LAMP SIGNAL CHECK — NG → Check harness for open or short between BCM and interior lamp.

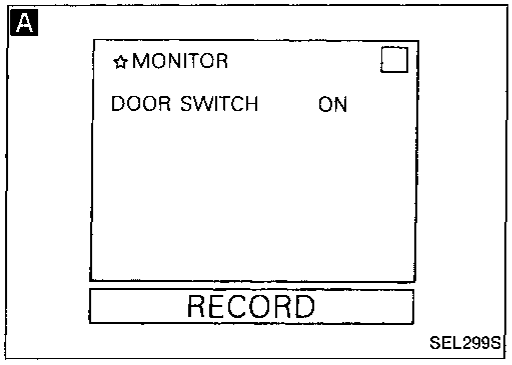
Measure voltage between BCM terminals ⑤ and ③ or ⑥.

Condition of interior lamp switch	Voltage (V)
Door	Approx. 12
OFF/ON	0

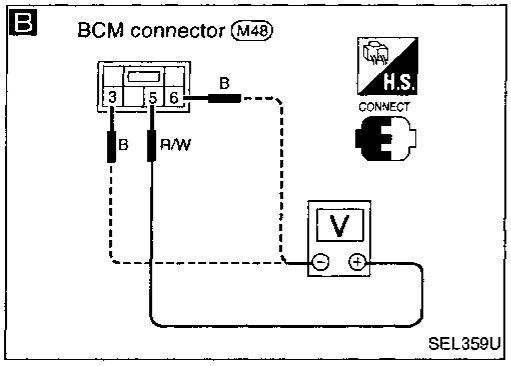
OK ↓

Replace BCM.

A



B

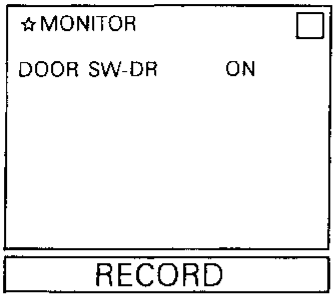


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

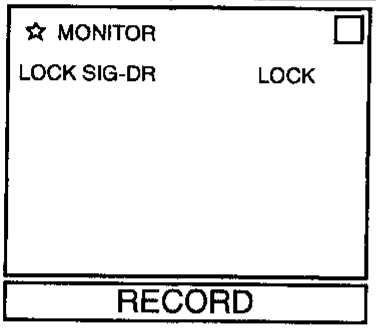
SYMPTOM: Interior lamp timer does not operate/does not cancel when driver's door is locked/ignition switch is turned ON.

A



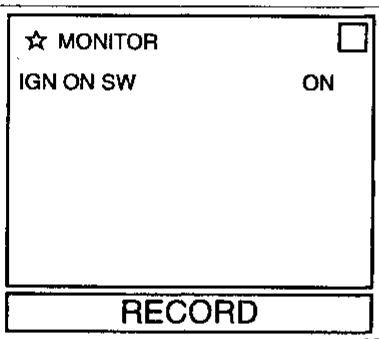
SEL366S

B



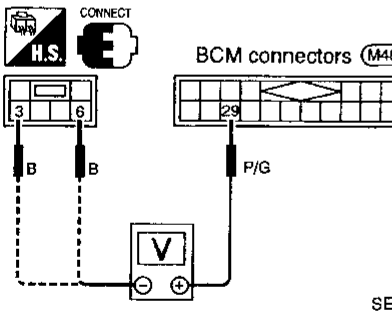
SEL494T

C



SEL358U

C



SEL322U

A

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
- Harness for open or short between door switch and BCM

OR

Perform On-board diagnosis — Mode II (switch monitor) for door switch (driver side). Refer to EL-163.

OK ↓

B

See "LOCK SIG-DR" in "Data Monitor" mode.
When driver's door is locked:
LOCK SIG-DR LOCK
When driver's door is unlocked:
LOCK SIG-DR UNLK

OK → Check the following.
- Driver door unlock sensor
- Driver door unlock sensor ground
- Harness for open or short between door unlock sensor and LCU

OR

Perform On-board diagnosis — Mode II (switch monitor) for door lock switch (driver side). Refer to EL-163.

NG ↓

C

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. 12, located in the fuse block)
- Harness for open or short between fuse and BCM

OR

Measure voltage between BCM terminals ㉙ and ③ or ⑥.

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

OK ↓

Replace BCM.

System Description

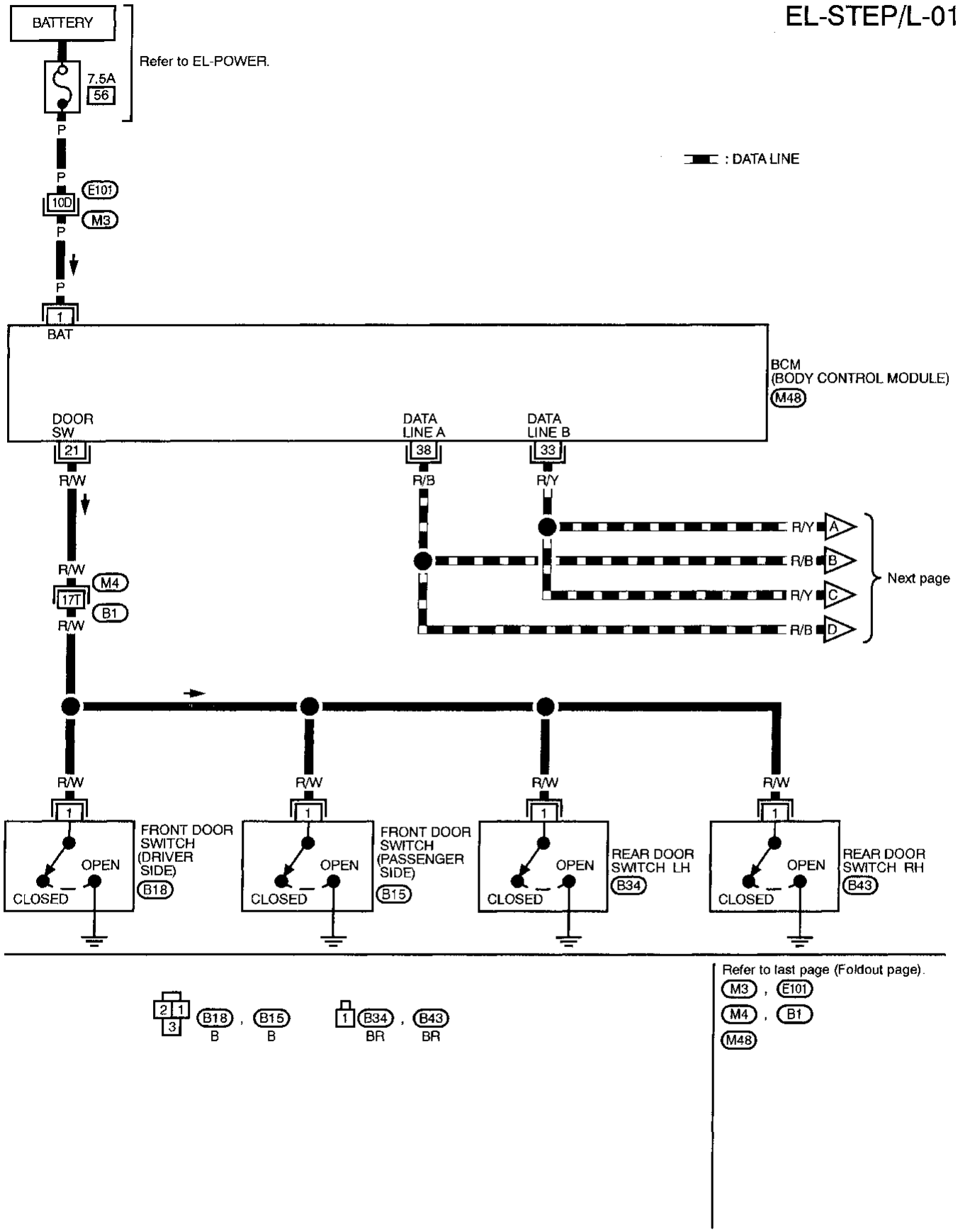
Power is supplied at all times
- to BCM terminal ①
- through 7.5A fuse (No. 56 , located in the fuse and fusible link box).

Power is supplied at all times
- to front step lamp LH and RH terminals ①
- through 7.5A fuse [No. 26 , located in the fuse block (J/B)].

Ground is supplied to terminal ⑯ of LCU01 and LCU02 through body grounds (M13) and (M73).
Terminal ① of LCU01 and LCU02 and terminal ㊳ of BCM are connected as DATA LINE A. Terminal ② of LCU01 and LCU02 and terminal ㊸ of BCM are connected by DATA LINE B.
BCM terminal ㉑ is grounded when any door switch is in OPEN position.
When the driver door switch, passenger door switch, rear RH door switch, or rear LH door switch is in OPEN position, BCM sends a signal to driver and passenger door control units to turn on front LH and RH step lamps.
With power and ground supplied, front step lamps turn on.

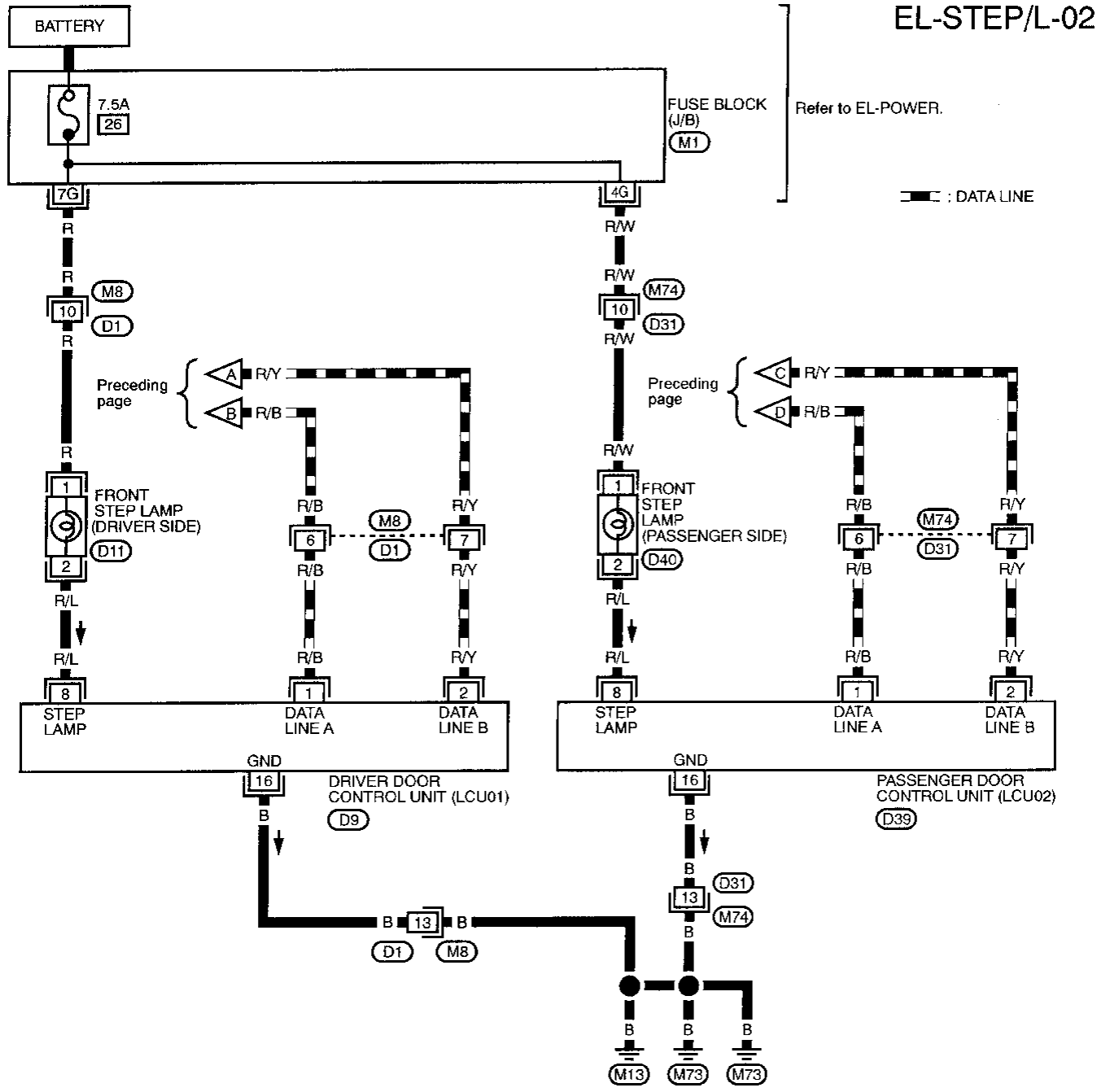
Wiring Diagram — STEP/L —

EL-STEP/L-01

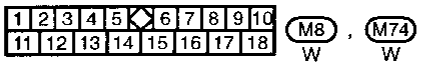


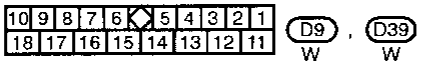
MEL579E

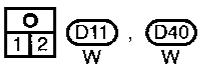
Wiring Diagram — STEP/L — (Cont'd)



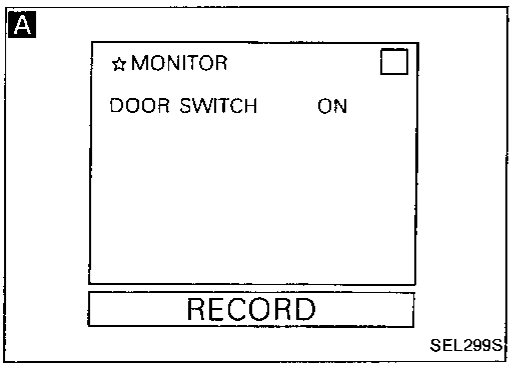
Refer to last page (Foldout page).
M1







MEL580E



Trouble Diagnoses

DIAGNOSTIC PROCEDURE

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

Check step lamp bulb. — NG → Replace bulb.

OK ↓

Check 7.5A fuse (No. 26, located in the fuse block). — NG → Replace fuse and check harness for open or short.

OK ↓

A

DOOR SWITCH INPUT SIGNAL CHECK — NG → Check the following.
- All door switches
- Harness for open or short between door switch and BCM

See "DOOR SWITCH" in "Data Monitor" mode.
When all doors are closed:
DOOR SWITCH OFF
When at least one door is open:
DOOR SWITCH ON

OR

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-163.

OK ↓

CHECK LCU AND BCM. — NG → Check and repair LCU and BCM in order of items listed in DIAGNOSTIC CHART (EL-157) or Malfunction code table (EL-162).
Perform "IVMS Communication Diagnosis". Refer to EL-156 or EL-161.

OK ↓

Check harness for open or short between step lamp and LCU.

System Description

Refer to Owner's Manual for Integrated HomeLink™ Transmitter operating instructions.

POWER SUPPLY AND GROUND

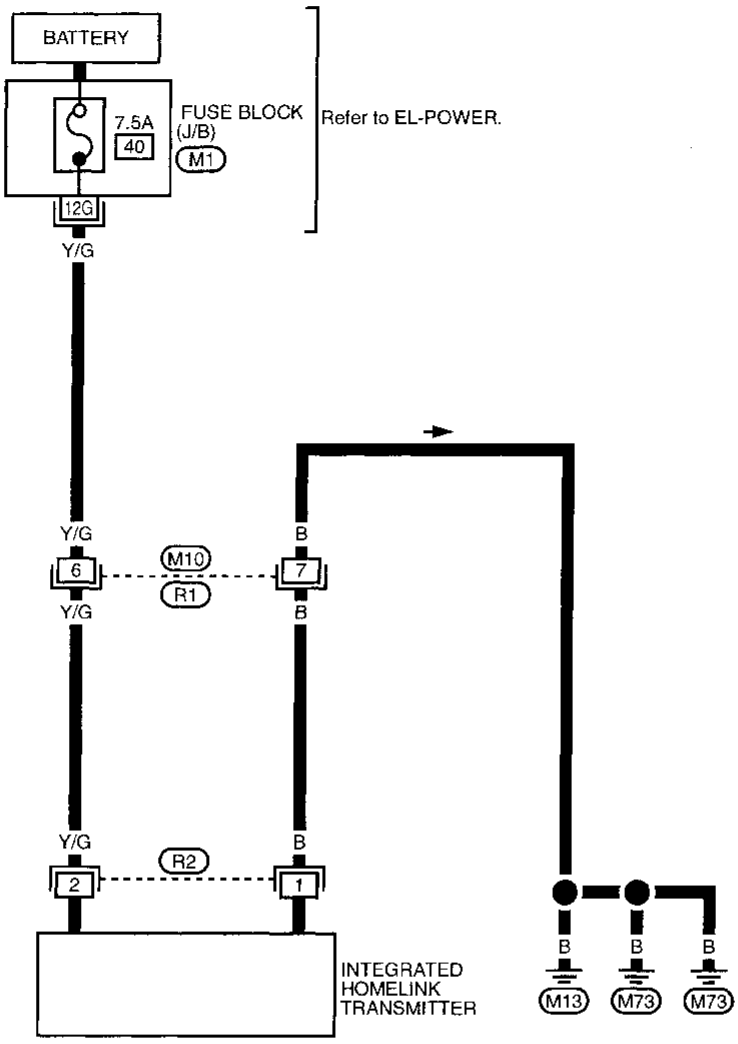
Power is supplied at all times

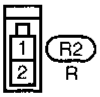
- through 7.5A fuse [No. 40 , located in the fuse block (J/B)]
- to Transmitter terminal ②.

Ground is supplied to terminal ① of Transmitter through body grounds (M13) and (M73).

Wiring Diagram — TRNSMT —

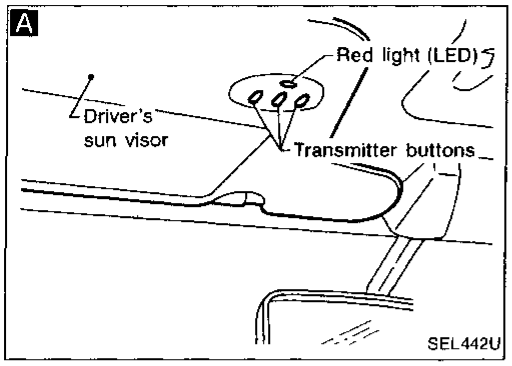
EL-TRNSMT-01

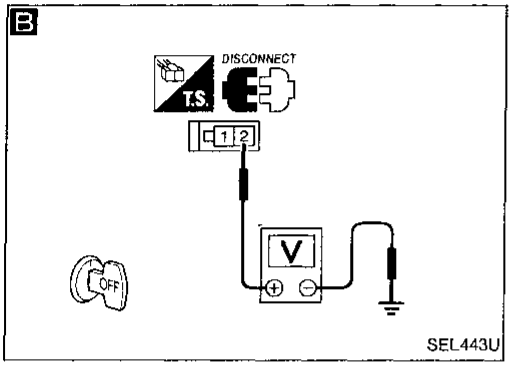


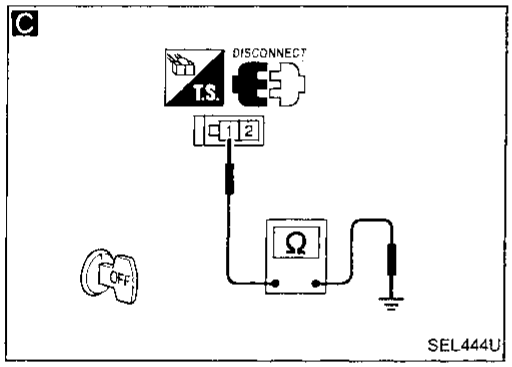


Refer to last page (Foldout page).
M1

MEL608E







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 ② and ground.
   Voltage: Battery voltage

NG → Check fuse (7.5A) and repair harness.

OK ↓

C

GROUND CIRCUIT CHECK.
Check continuity between terminal ① and body ground.
Continuity should exist.

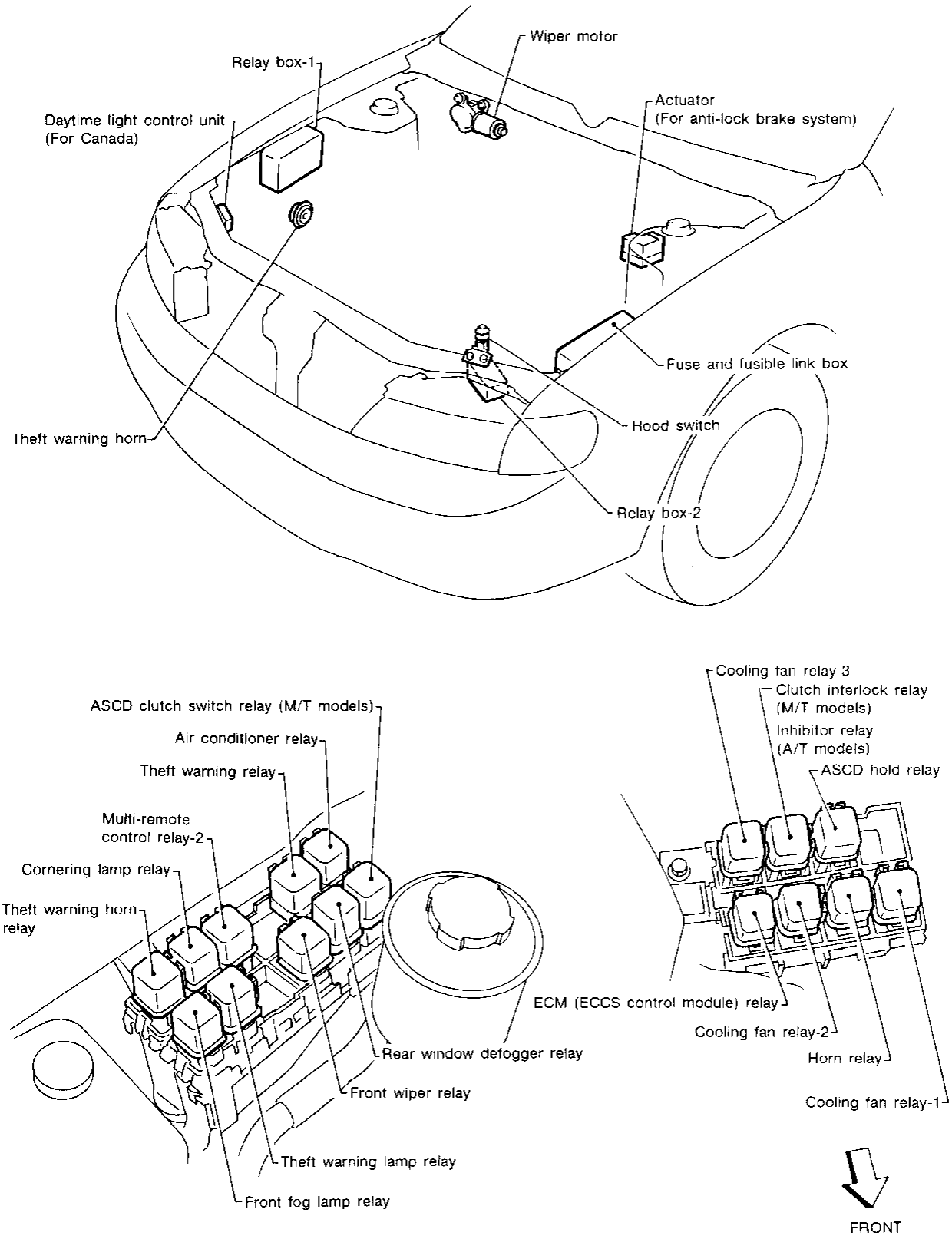
NG → Repair harness.

OK ↓

Replace transmitter with sunvisor assembly.

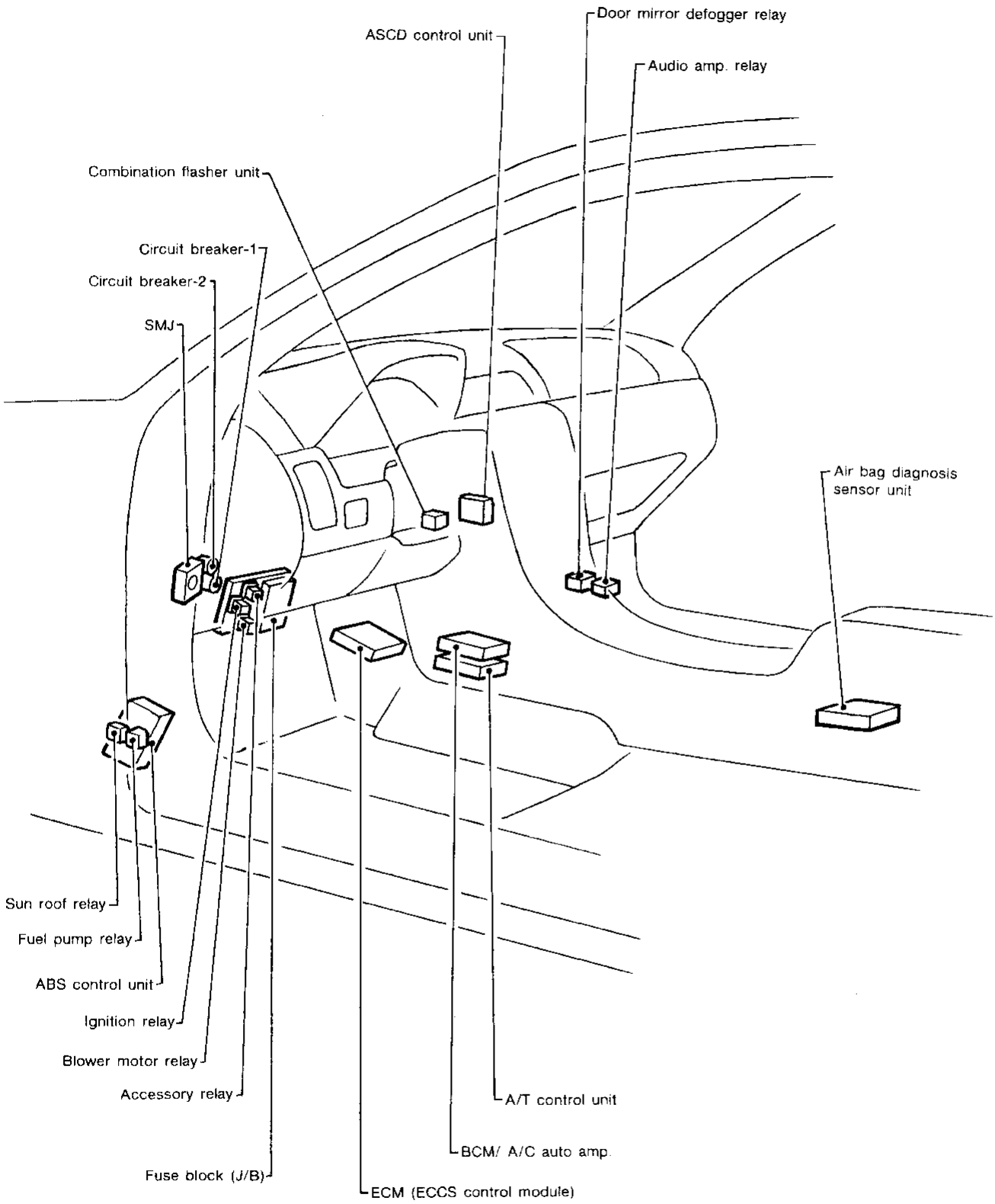
*For details, refer to Technical Service Bulletin.

Engine Compartment



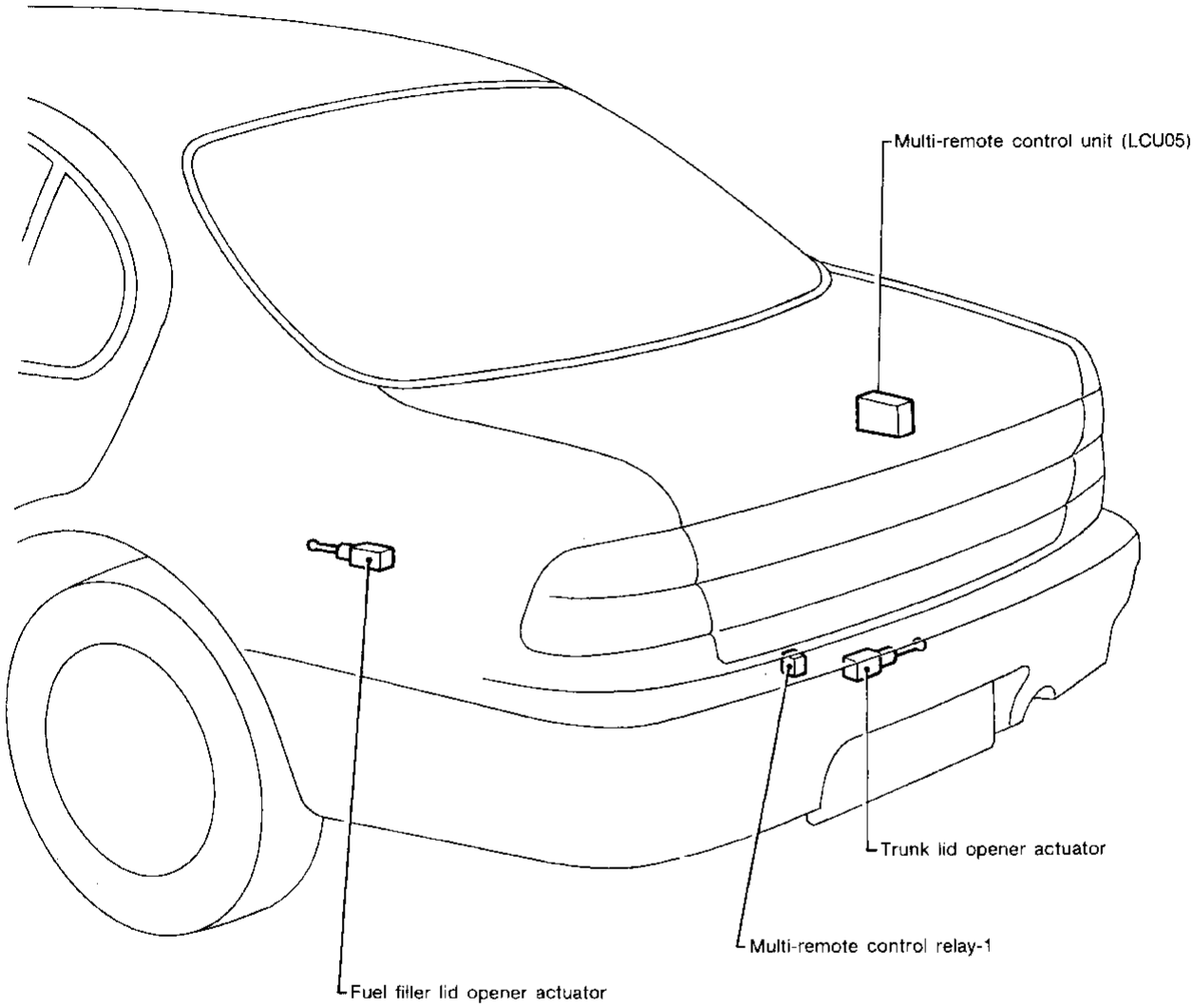
MEL589E

Passenger Compartment



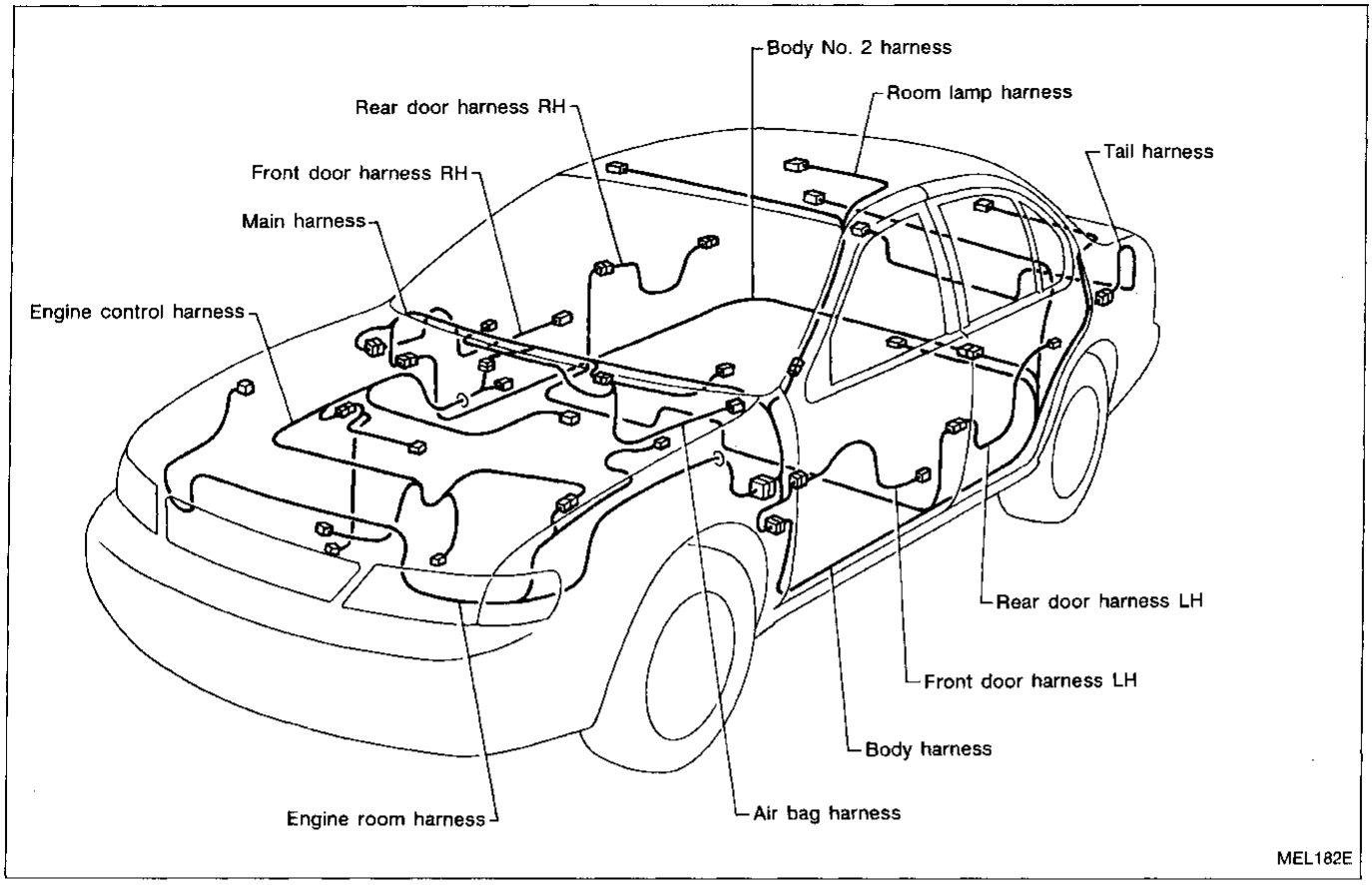
MEL590E

Luggage Compartment



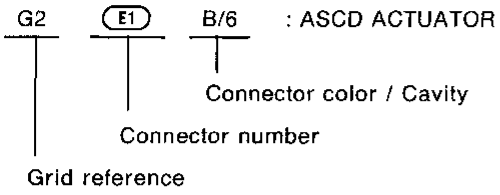
MEL591E

Outline


Body No. 2 harness
Room lamp harness
Rear door harness RH
Tail harness
Front door harness RH
Main harness
Engine control harness
Rear door harness LH
Front door harness LH
Body harness
Engine room harness
Air bag harness
MEL182E

How to Read Harness Layout

Example:



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Engine Room Harness (Engine Compartment)
- Main Harness
- Engine Control Harness
- Body Harness

To use the grid reference

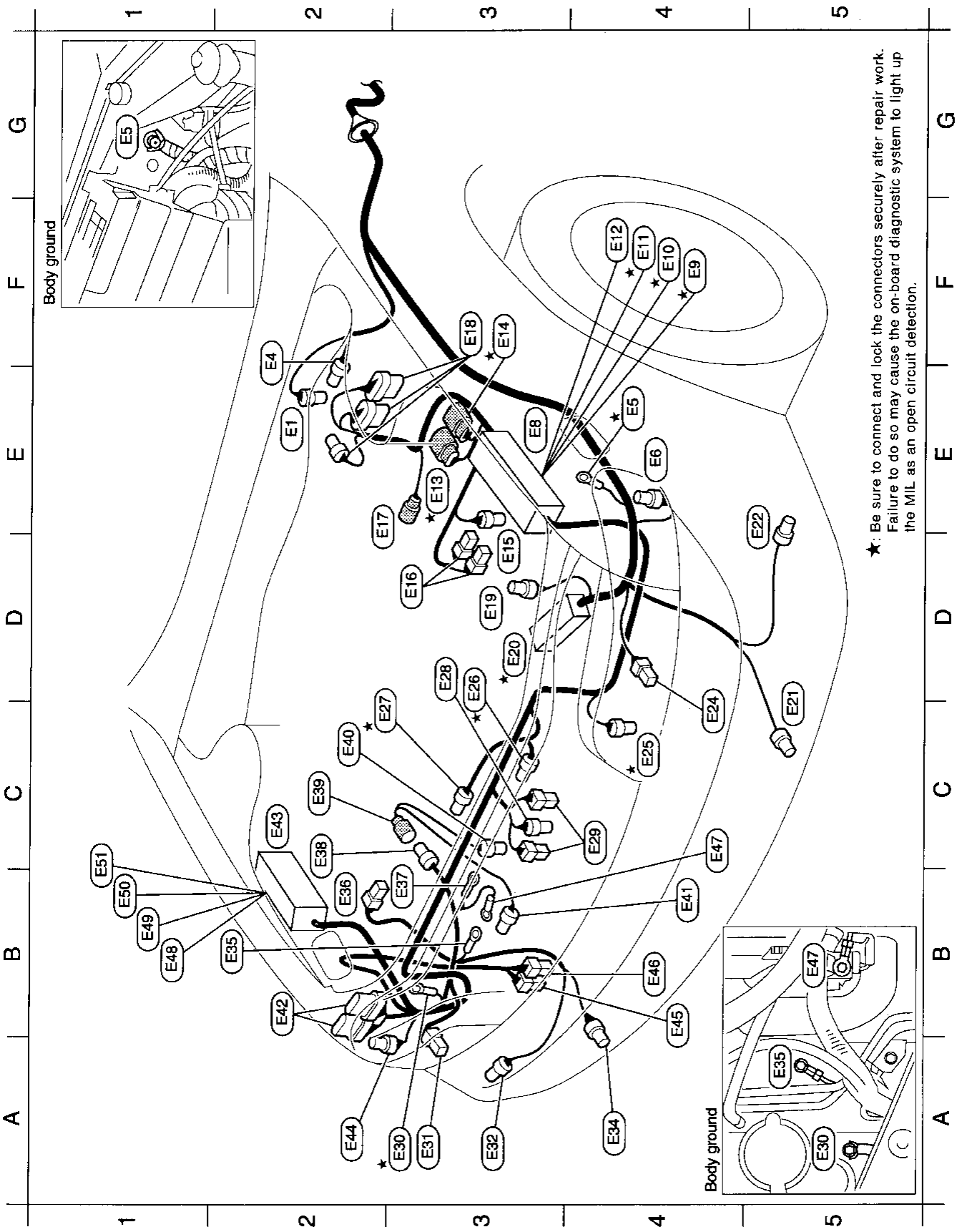
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

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

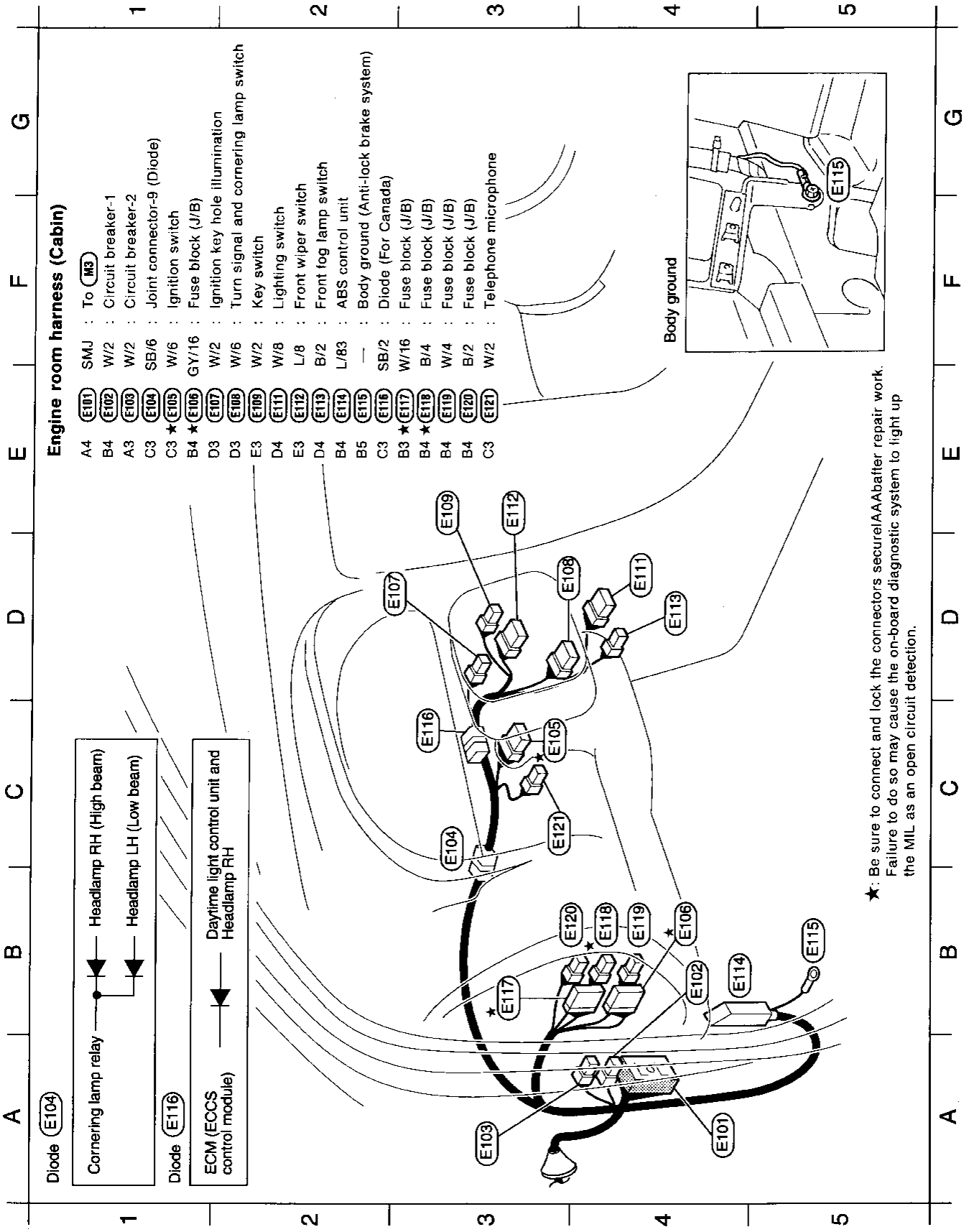


Engine room harness (Engine room)

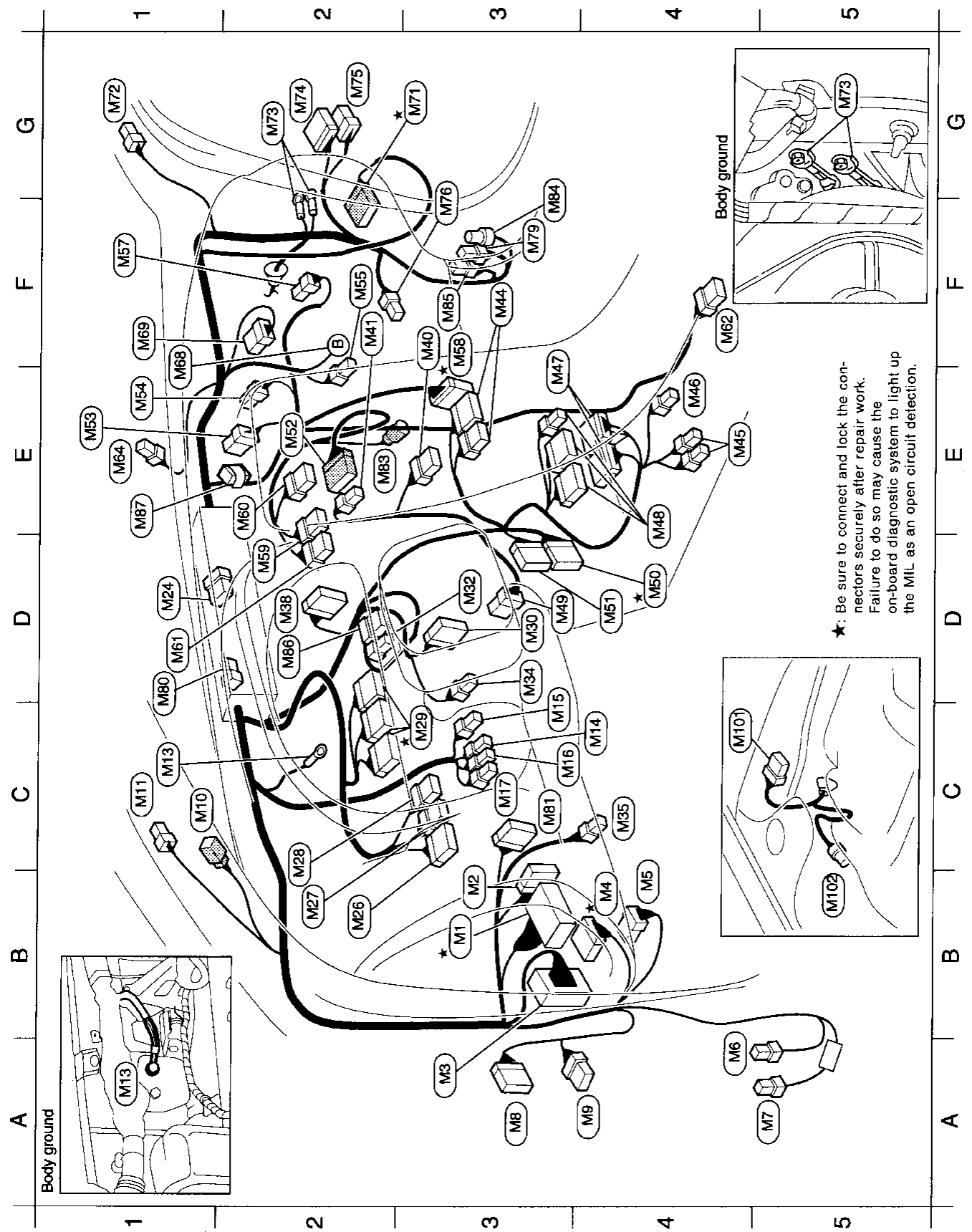
E2	E1	GY/2	:	Brake fluid level switch
E2	E4	GY/4	:	ASCD pump
E4 ★	E5	—	:	Body ground
E4	E6	GY/3	:	Clearance lamp and Front turn signal lamp LH
E3	E8	—	:	Fuse and fusible link box
F4 ★	E9	W/6	:	Joint connector-1
F4 ★	E10	W/6	:	Joint connector-2
F4 ★	E11	Y16	:	Joint connector-3
F4	E12	GY/16	:	Joint connector-4
E3 ★	E13	BR/8	:	To F36
F3 ★	E14	B/8	:	To F37
D3	E15	GY/1	:	Starter motor
D3	E16	B/1	:	Battery
		B/1		
E2	E17	BR/2	:	Front wheel sensor LH (Anti-lock brake system)
F3	E18	W/2	:	ABS control actuator
		B/6		
		GY/8		
D3	E19	W/2	:	Hood switch (Theft warning system)
D3 ★	E20	—	:	Relay box-2
C5	E21	GY/2	:	Front fog lamp LH
E5	E22	GY/2	:	Cornering lamp LH
C4	E24	B/3	:	Headlamp LH
C4 ★	E25	B/4	:	Triple-pressure switch
D3 ★	E26	GY/4	:	Cooling fan motor-1
C2 ★	E27	GY/4	:	Cooling fan motor-2
D3	E28	B/2	:	Ambient sensor
C4	E29	B/1	:	Horn
		B/1		
A3 ★	E30	—	:	Body ground
A3	E31	B/3	:	Headlamp RH
A3	E32	GY/2	:	Cornering lamp RH
A4	E34	GY/2	:	Front fog lamp RH
B2	E35	—	:	Body ground
B2	E36	B/1	:	Theft warning horn
B3	E37	—	:	Alternator
C2	E38	GY/4	:	To E39
C2	E39	GY/4	:	To E38
C2	E40	GY/4	:	Alternator
B4	E41	B/1	:	Compressor (A/C)
B2	E42	GY/8	:	Daytime light control unit (For Canada)
		GY/6		
C2	E43	—	:	Relay box-1
A2	E44	GY/3	:	Clearance lamp and Front turn signal lamp RH
B4	E45	BR/2	:	Washer level switch
B4	E46	GY/2	:	Front washer motor
C4	E47	—	:	Alternator
B1	E48	W/6	:	Joint connector-5
B1	E49	W/6	:	Joint connector-6
B1	E50	W/6	:	Joint connector-7
C1	E51	GY/6	:	Joint connector-8

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

Engine Room Harness (Cont'd)

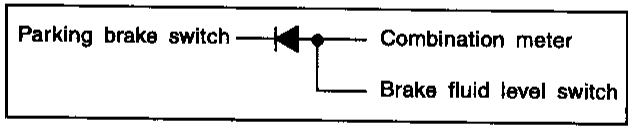


Main Harness

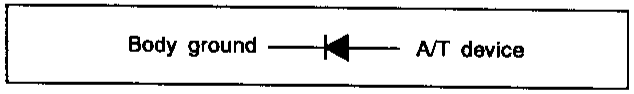


B3	★M1	—	:	Fuse block (J/B)
B3	M2	GY/14	:	Data link connector for CONSULT
A3	M3	SMJ	:	To E101
B4	★M4	W/48	:	To B1
B4	M5	GY/6	:	To B2
A4	M6	L/4	:	Fuel pump relay
A5	M7	L/4	:	Sun roof relay (With yellow tape)
A3	M8	W/18	:	To D1
A4	M9	GY/6	:	To D2
C1	M10	W/8	:	To R1
C1	M11	BR/2	:	Tweeter LH
C1	M13	—	:	Body ground
C4	M14	L/2	:	ASCD cancel switch
C3	M15	B/2	:	Stop lamp switch
C3	M16	L/2	:	Clutch interlock switch
C3	M17	L/2	:	ASCD clutch switch (For M/T models)
D1	M24	SB/6	:	Joint connector-9 (Diode)
B2	M26	GY/12	:	Door mirror remote control switch
B2	M27	W/6	:	ASCD main switch
C2	M28	W/4	:	Security indicator lamp
C3	★M29	W/16	:	Combination meter
		BR/16		
		W/14		
D3	M30	B/20	:	ASCD control unit
D3	M32	W/3	:	Illumination control switch
D3	M34	B/3	:	Combination flasher unit
C4	M35	W/3	:	Warning buzzer
D2	M38	BR/10	:	Mode door motor
F3	M40	W/8	:	Push control unit
F2	M41	W/2	:	In-vehicle sensor
F3	M44	W/6	:	Audio
		W/10		
E4	M45	B/2	:	Cigarette lighter socket
		W/2		
E4	M46	W/2	:	Ashtray illumination
E3	M47	W/16	:	A/C auto amp. (In BCM)
		W/20		
E4	M48	GY/20	:	BCM (Body control module)
		W/12		
		W/6		
D3	M49	B/6	:	Air mix door motor
D4	★M50	W/20	:	To F105
D4	M51	W/12	:	To F104
E2	M52	Y/18	:	To Z1
E1	M53	B/6	:	Bi-level actuator
E1	M54	W/3	:	Intake sensor
F2	M55	BR/2	:	Glove box lamp switch
F1	M57	W/4	:	Fan control amp.
F3	★M58	GY/16	:	To F102
D2	M59	BR/6	:	Clock
E2	M60	W/6	:	Rear window defogger switch
D1	M61	W/8	:	Hazard switch
F4	M62	W/6	:	A/T device
E1	M64	B/2	:	Sunload sensor
F1	M68	Bulb	:	Glove box lamp
F1	M69	W/8	:	Intake door motor
G3	★M71	GY/16	:	To B102
G1	M72	BR/2	:	Tweeter RH
G2	M73	—	:	Body ground
G2	M74	W/18	:	To D31
G2	M75	GY/6	:	To D32
F3	M76	W/2	:	Blower motor
F3	M79	L/4	:	Audio amp. relay
D1	M80	SB/4	:	Joint connector-10 (Diode)
C3	M81	W/16	:	Data link connector for GST
E2	M83	DIN6	:	Audio
F3	M84	DIN5	:	To B111
F3	M85	L/4	:	Door mirror defogger relay
D2	M86	W/6	:	Fuel lid opener switch
E1	M87	B/2	:	Diode (For A/T models)
C4	M101	W/6	:	Front wiper motor
B5	M102	GY/2	:	Front wheel sensor RH (Anti-lock brake system)

Diode M80

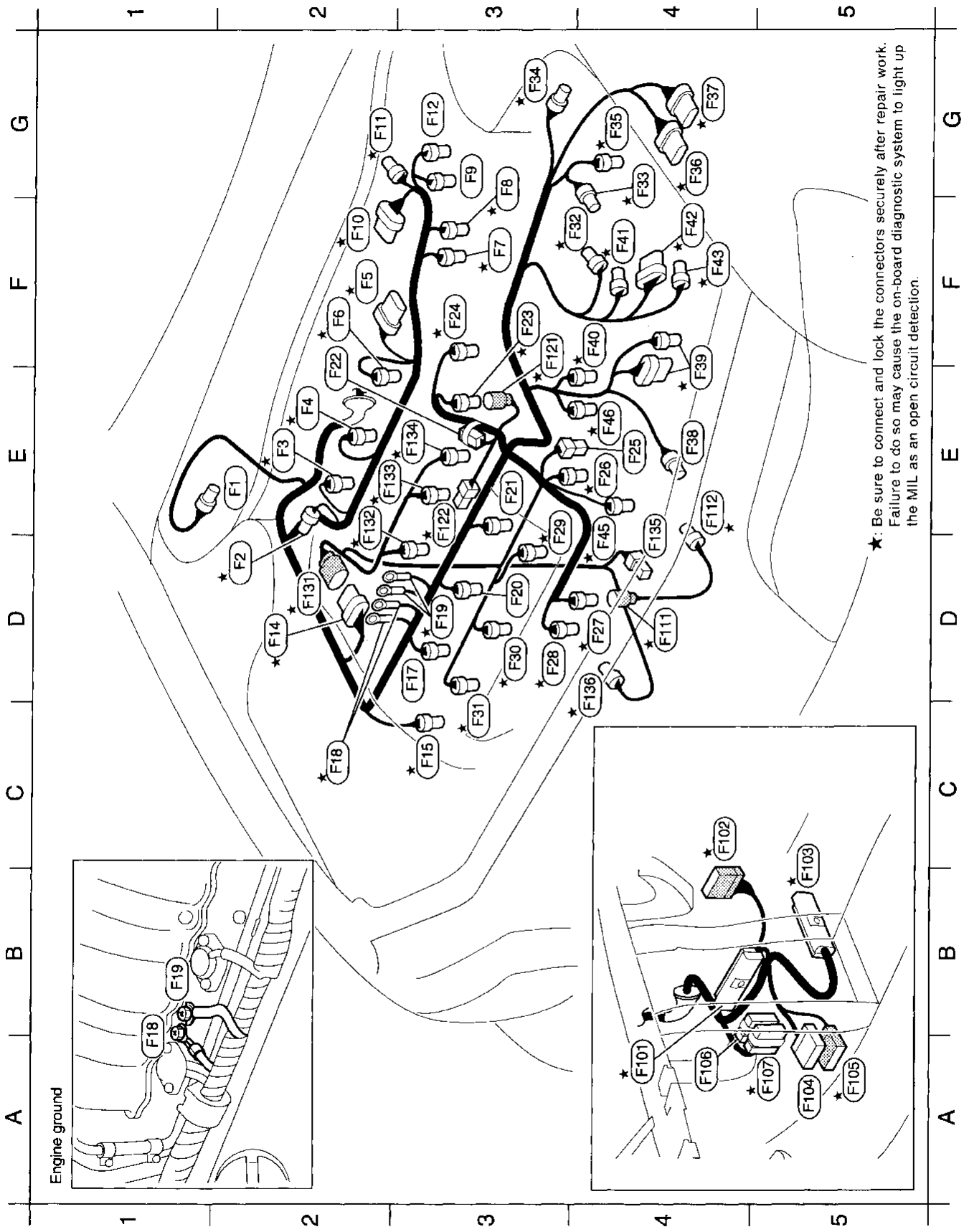


Diode M87



★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

Engine Control Harness



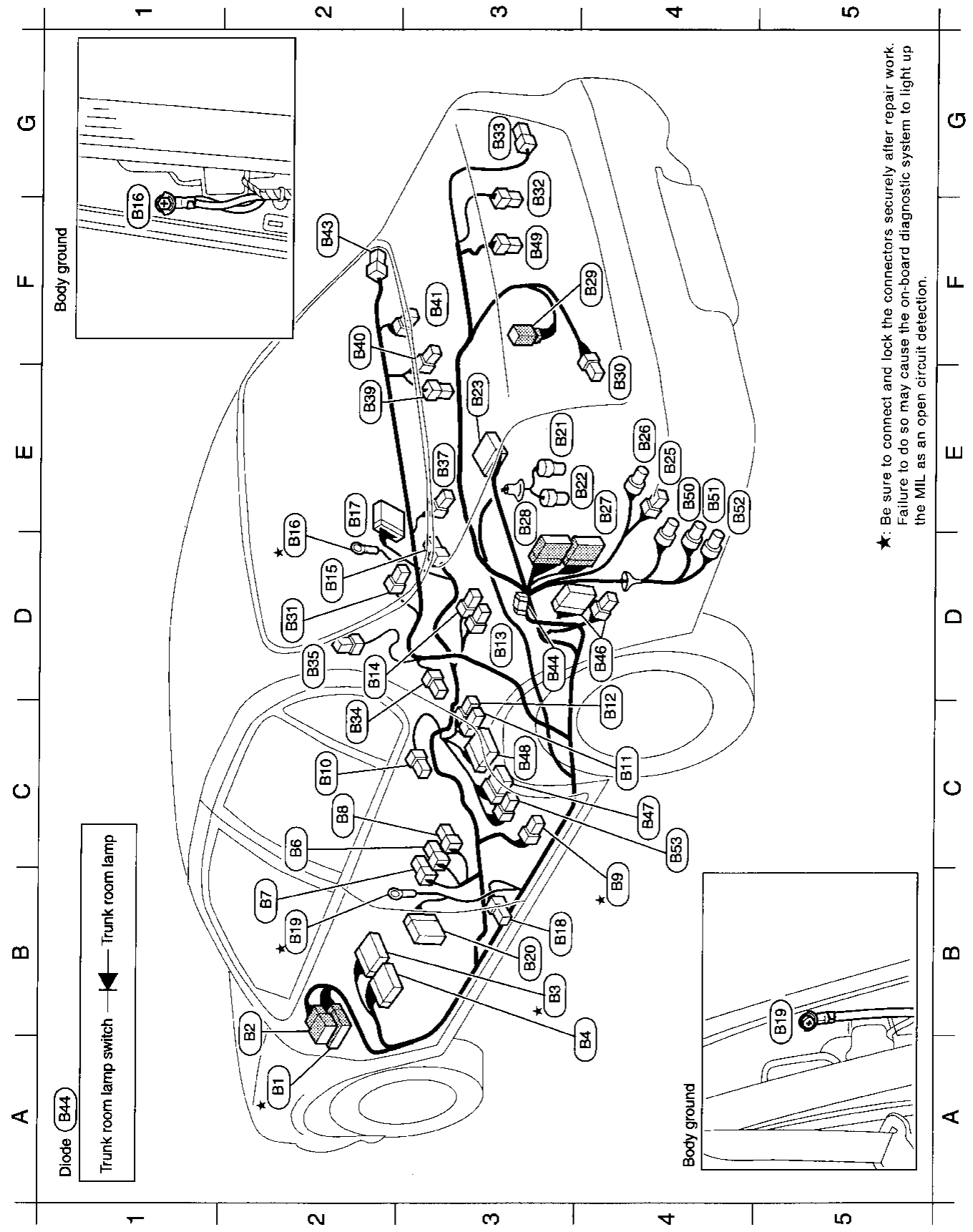
Engine Control Harness (Cont'd)

E2 (F1) GY/2 : Power steering oil pressure switch
D2 ★(F2) W/3 : Front heated oxygen sensor RH
E2 ★(F3) GY/3 : Ignition coil No. 1
E2 ★(F4) GY/3 : Ignition coil No. 3
F2 ★(F5) W/6 : EVAP canister purge volume control valve
F2 ★(F6) GY/3 : Ignition coil No. 5
F3 ★(F7) GY/3 : Throttle position switch
G3 ★(F8) BR/3 : Throttle position sensor
G3 (F9) R/2 : IACV-FICD solenoid valve-2
F2 ★(F10) W/6 : IACV-AAC valve
G2 ★(F11) BR/2 : EGR temperature sensor
G3 (F12) PU/2 : IACV-FICD solenoid valve-1
D2 ★(F14) GY/8 : To (F131)
C3 ★(F15) GY/2 : Camshaft position sensor (PHASE)
D3 (F17) B/2 : Injector No. 2
C2 ★(F18) — : Engine ground
D3 ★(F19) — : Engine ground
D3 (F20) B/2 : Injector No. 4
E3 (F21) B/2 : Injector No. 6
F2 (F22) GY/2 : Condenser
F3 ★(F23) B/2 : To (F121)
F3 ★(F24) G/2 : EGRC-solenoid valve (For California)
EGR valve and canister control solenoid valve (For non-California)
E4 (F25) B/1 : Thermal transmitter
E4 ★(F26) GY/2 : Engine coolant temperature sensor
D4 ★(F27) B/4 : To (F111)
D3 ★(F28) W/3 : Front heated oxygen sensor LH
E3 ★(F29) GY/3 : Ignition coil No. 6
D3 ★(F30) GY/3 : Ignition coil No. 4
C3 ★(F31) GY/3 : Ignition coil No. 2
F4 ★(F32) W/4 : Neutral and reverse position switch (For M/T models)
G4 ★(F33) GY/3 : Mass air flow sensor
G3 ★(F34) W/2 : Intake air temperature sensor
G4 ★(F35) GY/2 : Dropping resistor (For A/T models)
G4 ★(F36) BR/8 : To (E13)
G4 ★(F37) B/8 : To (E14)
E4 (F38) BR/3 : Front engine mounting (For A/T models)
F4 ★(F39) GY/8 : Inhibitor switch (For A/T models)
W/2
F4 ★(F40) B/2 : EVAP canister purge control solenoid valve
F4 ★(F41) GY/3 : Revolution sensor (For A/T models)
F4 ★(F42) BR/8 : Terminal cord assembly (For A/T models)
F4 ★(F43) GY/2 : Vehicle speed sensor
D4 ★(F45) GY/3 : Absolute pressure sensor
E4 ★(F46) BR/2 : MAP/BARO switch solenoid valve
A4 ★(F101) GY/104 : ECM (ECCS control module)
C4 ★(F102) GY/16 : To (M58)
C5 ★(F103) L/48 : A/T control unit
A5 (F104) W/12 : To (M51)
A5 ★(F105) W/20 : to (M50)
A4 (F106) GY/6 : Joint connector-11
A5 ★(F107) L/12 : Joint connector-12
D4 ★(F111) B/4 : To (F27)
E4 ★(F112) GY/3 : Crankshaft position sensor (POS)
F3 ★(F121) B/2 : To (F23)
E3 ★(F122) B/2 : Knock sensor
D2 ★(F131) GY/8 : To (F14)
E2 ★(F132) B/2 : Injector No. 1
E2 ★(F133) B/2 : Injector No. 3
E3 ★(F134) B/2 : Injector No. 5
D4 (F135) B/1 : Oil pressure switch
D4 ★(F136) GY/2 : Crankshaft position sensor (REF)

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

MEL594E

Body Harness



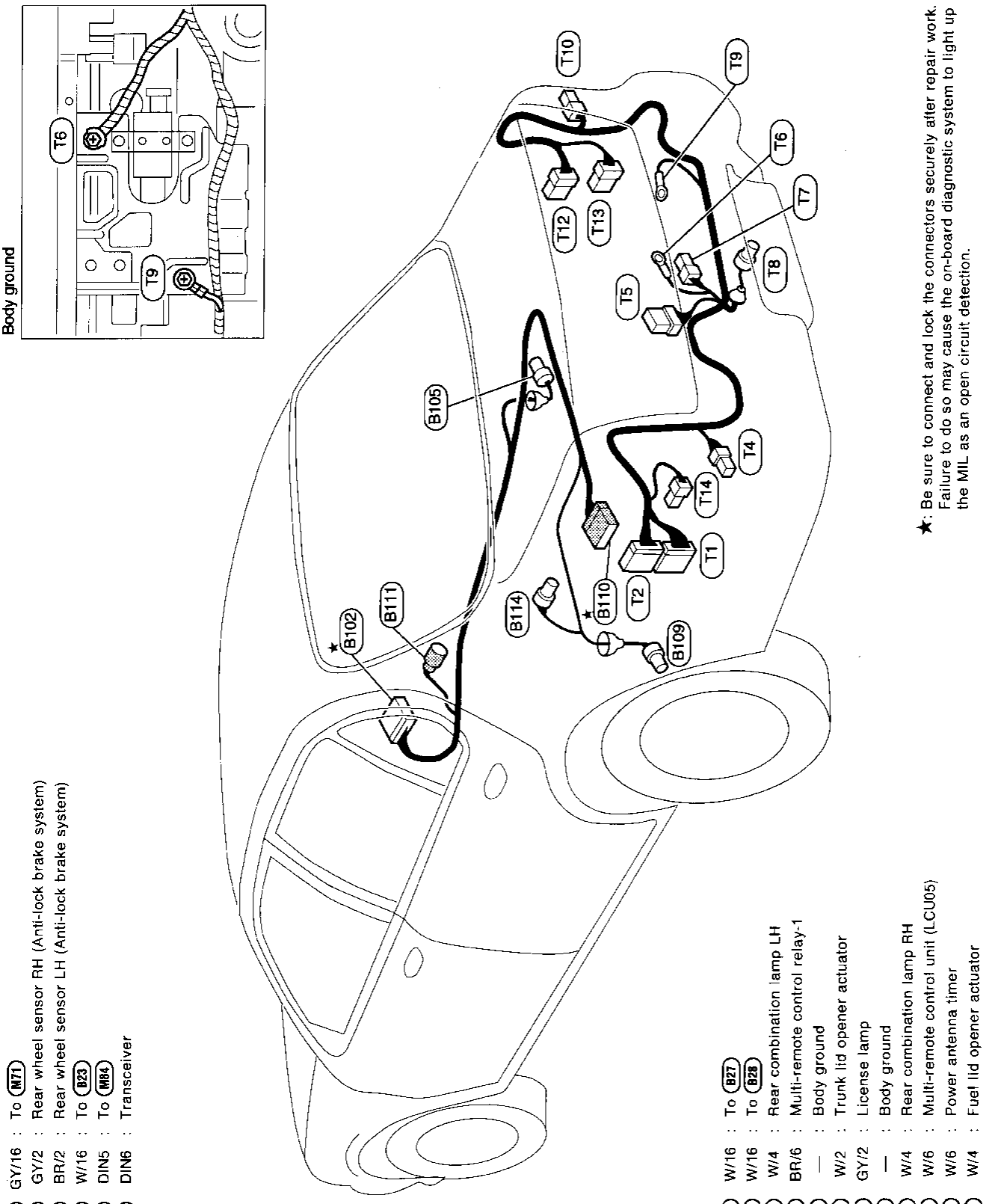
Body Harness (Cont'd)

A2 ★	B1	W/48	: To M4	E3	B28	W/16	: To T2
B2	B2	GY/6	: To M5	F4	B29	W/2	: To high-mounted stop lamp sub-harness (Models equipped with rear air spoiler)
B3 ★	B3	BR/16	: Fuse block (J/B)				
A4	B4	W/12	: Fuse block (J/B)	E4	B30	W/4	: Trunk lid combination lamp LH
C2	B6	W/2	: To power seat harness LH	D2	B31	BR/2	: Not used
B2	B7	W/3	: Seat belt buckle switch	G3	B32	W/3	: Trunk lid key cylinder switch
C2	B8	W/3	: Heated seat LH	G3	B33	W/4	: Trunk lid combination lamp RH
B4 ★	B9	BR/3	: Rear heated oxygen sensor	C2	B34	BR/1	: Rear door switch LH
C2	B10	B/1	: Parking brake switch	D2	B35	B/1	: Rear window defogger
C4	B11	L/4	: Heated seat switch LH	E3	B37	W/4	: Rear speaker LH
C4	B12	W/4	: Heated seat switch RH	E2	B39	W/2	: Trunk room lamp
D3	B13	W/3	: Heated seat RH	F2	B40	W/2	: High-mounted stop lamp (Models without rear air spoiler)
D2	B14	W/2	: To power seat harness RH				
D2	B15	B/3	: Front door switch RH	F3	B41	W/4	: Rear speaker RH
D2 ★	B16	—	: Body ground	F2	B43	BR/1	: Rear door switch RH
E2	B17	W/10	: To D71	D3	B44	SB/2	: Diode
B3	B18	B/3	: Front door switch LH	D4	B46	W/16	: Transceiver
B2 ★	B19	—	: Body ground			B/4	
B3	B20	W/10	: To D51	C4	B47	W/12	: Handset
E3	B21	W/2	: Fuel pump	C3	B48	W/6	: Hand free switch
E4 ★	B22	W/4	: Fuel tank gauge unit	F3	B49	B/2	: Trunk room lamp switch
E3 ★	B23	W/16	: To B110	E4 ★	B50	B/2	: EVAP canister vent control valve
E4 ★	B25	W/4	: Fuel pump control module	E4 ★	B51	G/2	: Vacuum cut valve bypass valve
E4 ★	B26	B/2	: Dropping resistor	E4 ★	B52	GY/3	: EVAP control system pressure sensor
E4	B27	W/16	: To T1	C4	B53	W/4	: Telephone pre-wire

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

MEL595E

Body No. 2 Harness and Tail Harness



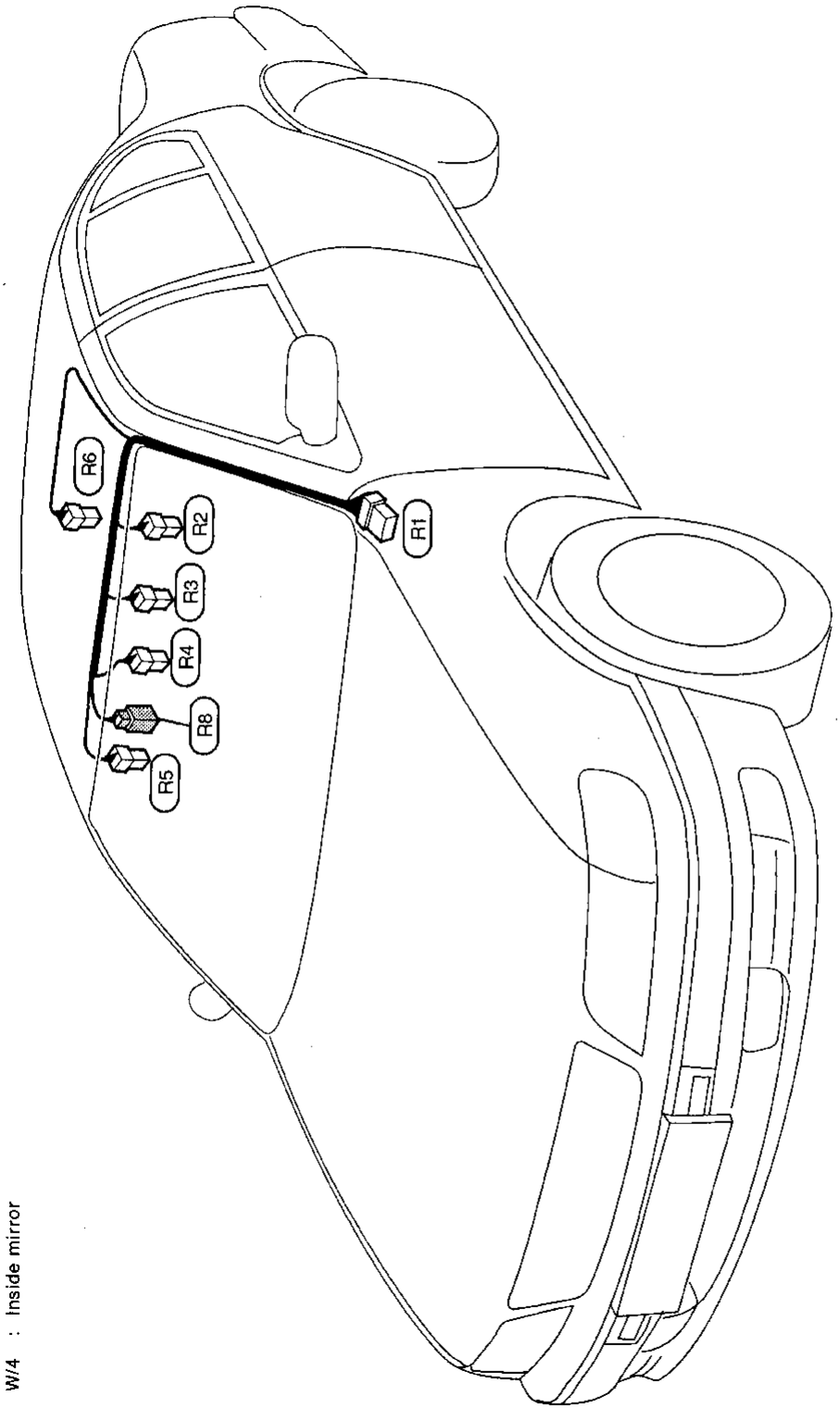
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

★B102	GY/16	To M71
B105	GY/2	Rear wheel sensor RH (Anti-lock brake system)
B109	BR/2	Rear wheel sensor LH (Anti-lock brake system)
★B110	W/16	To B23
B111	DIN5	To M84
B114	DIN6	Transceiver

T1	W/16	To B27
T2	W/16	To B28
T4	W/4	Rear combination lamp LH
T5	BR/6	Multi-remote control relay-1
T6	—	Body ground
T7	W/2	Trunk lid opener actuator
T8	GY/2	License lamp
T9	—	Body ground
T10	W/4	Rear combination lamp RH
T12	W/6	Multi-remote control unit (LCU05)
T13	W/6	Power antenna timer
T14	W/4	Fuel lid opener actuator

MEL596E

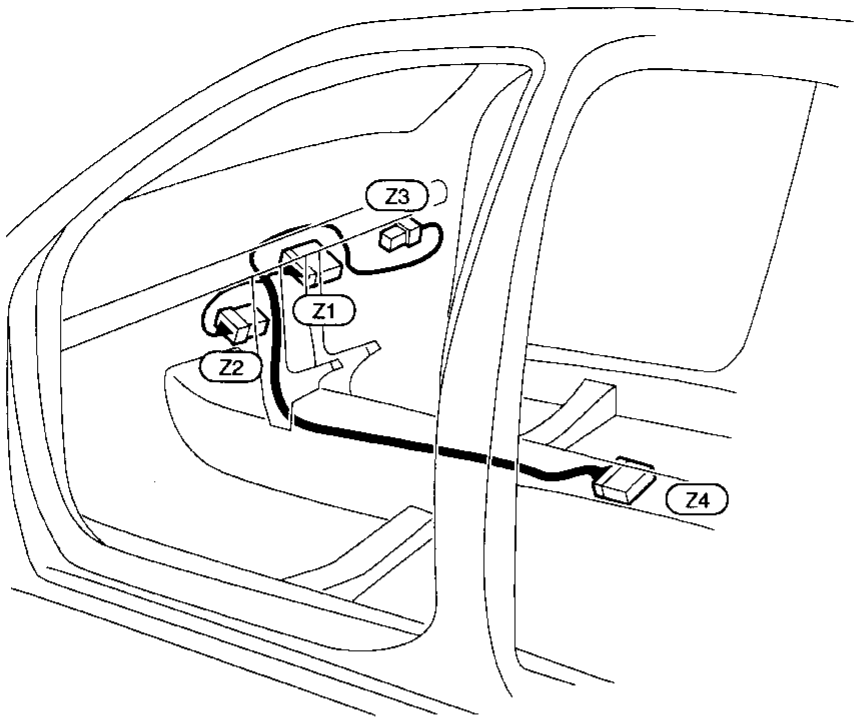
Room Lamp Harness



R1	W/8	To M10
R2	R/2	Vanity mirror illumination LH
R3	W/1	Sun roof motor
R4	W/2	Spot lamp
R5	R/2	Vanity mirror illumination RH
R6	W/2	Interior lamp
R8	W/4	Inside mirror

MEL597E

Air Bag Harness



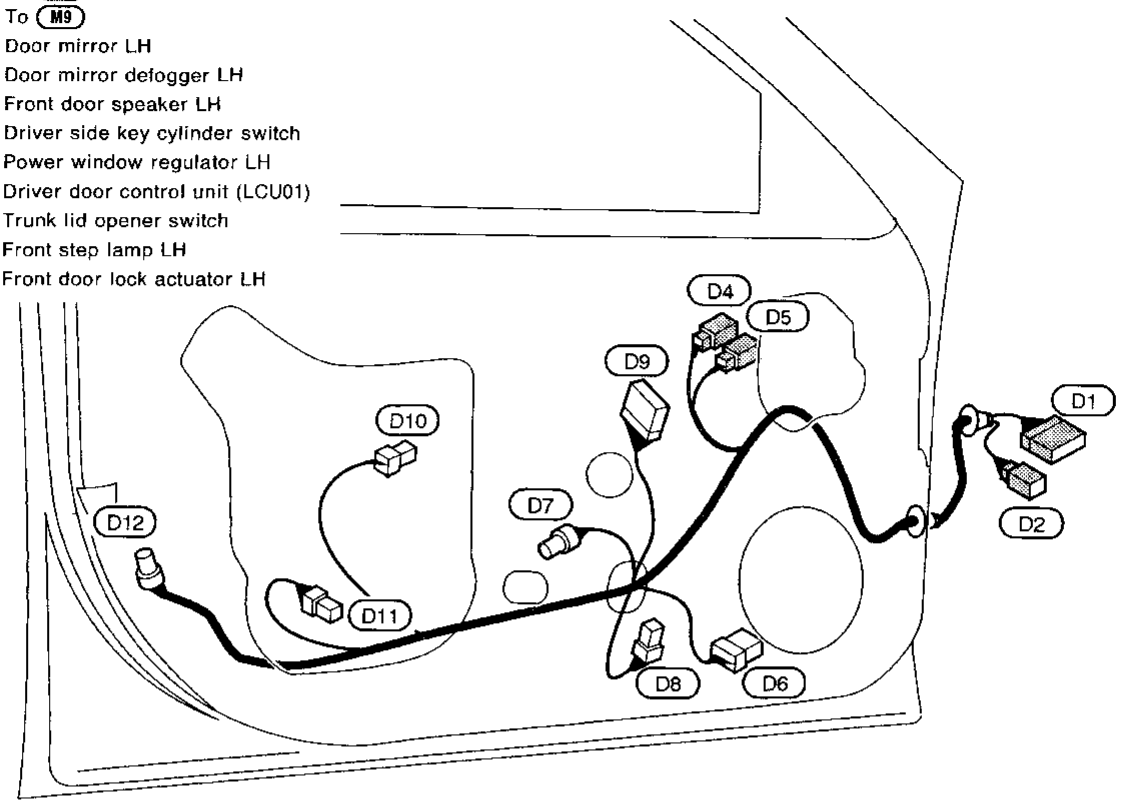
Z1 Y/18 : To M52
Z2 W/6 : ASCD steering switch, horn switch and air bag module (Driver side)
Z3 W/2 : Air bag module (Passenger side)
Z4 Y/22 : Air bag diagnosis sensor unit

MEL195EA

FRONT

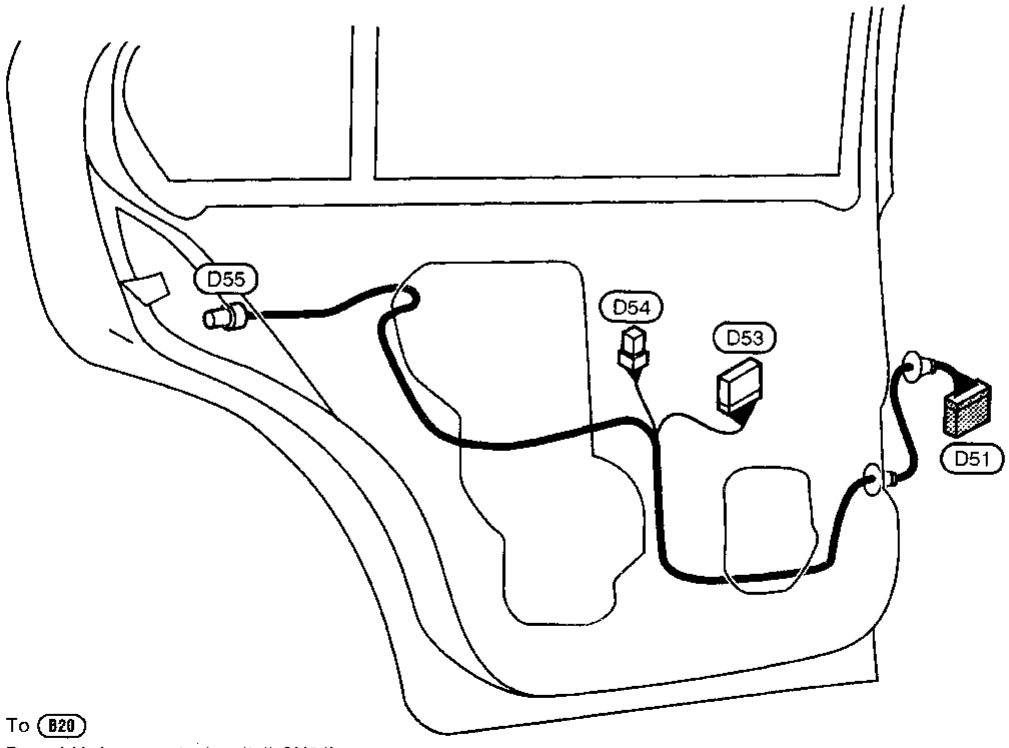
Front Door Harness (LH side)

(D1) W/18 : To (M8)
(D2) GY/2 : To (M9)
(D4) BR/3 : Door mirror LH
(D5) GY/2 : Door mirror defogger LH
(D6) W/6 : Front door speaker LH
(D7) B/4 : Driver side key cylinder switch
(D8) B/2 : Power window regulator LH
(D9) W/18 : Driver door control unit (LCU01)
(D10) W/2 : Trunk lid opener switch
(D11) W/2 : Front step lamp LH
(D12) GY/4 : Front door lock actuator LH



MEL598E

REAR

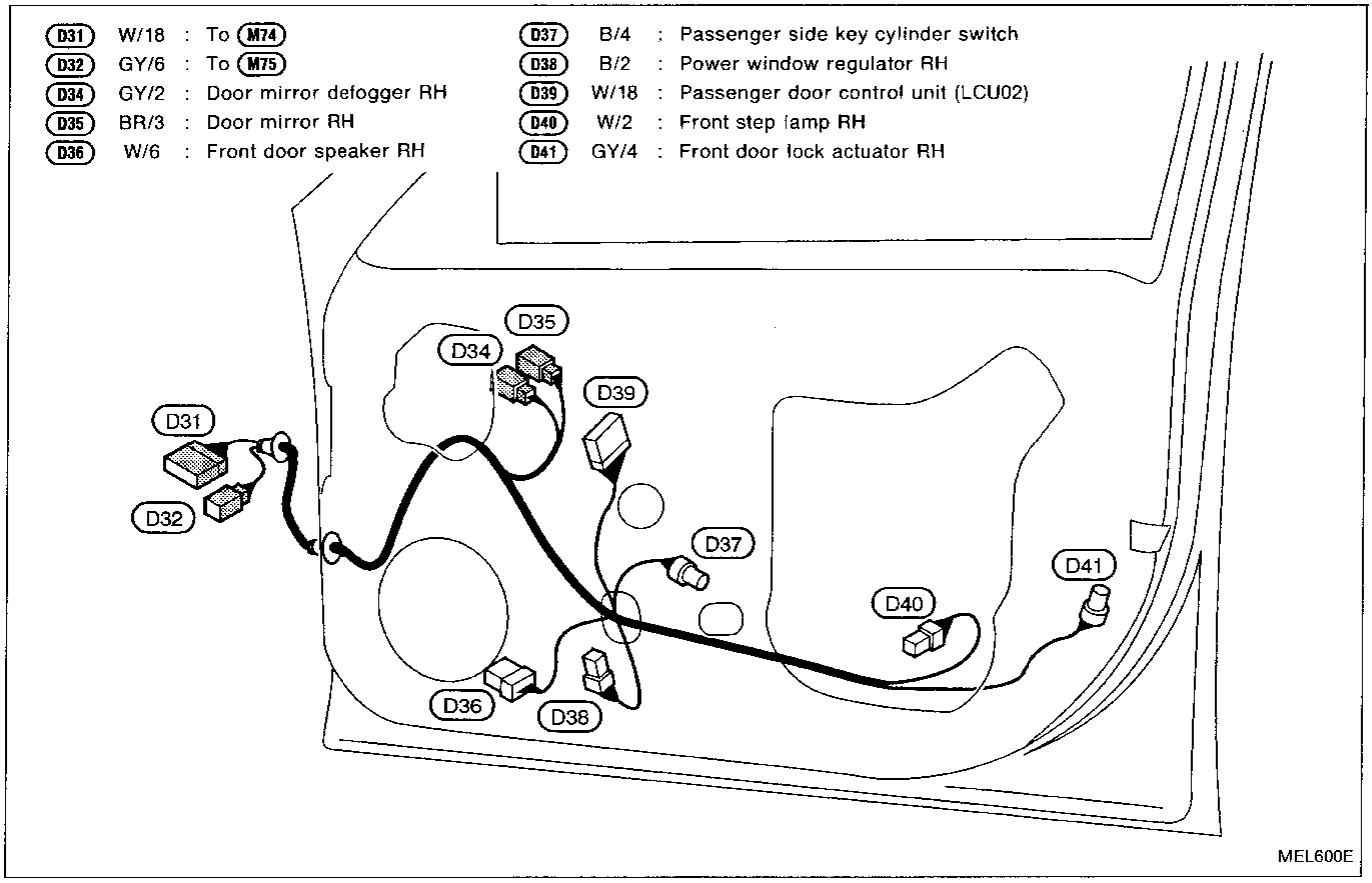


(D51) W/10 : To (B20)
(D53) W/18 : Rear LH door control unit (LCU04)
(D54) B/2 : Rear door power window regulator LH
(D55) GY/4 : Rear door lock actuator LH

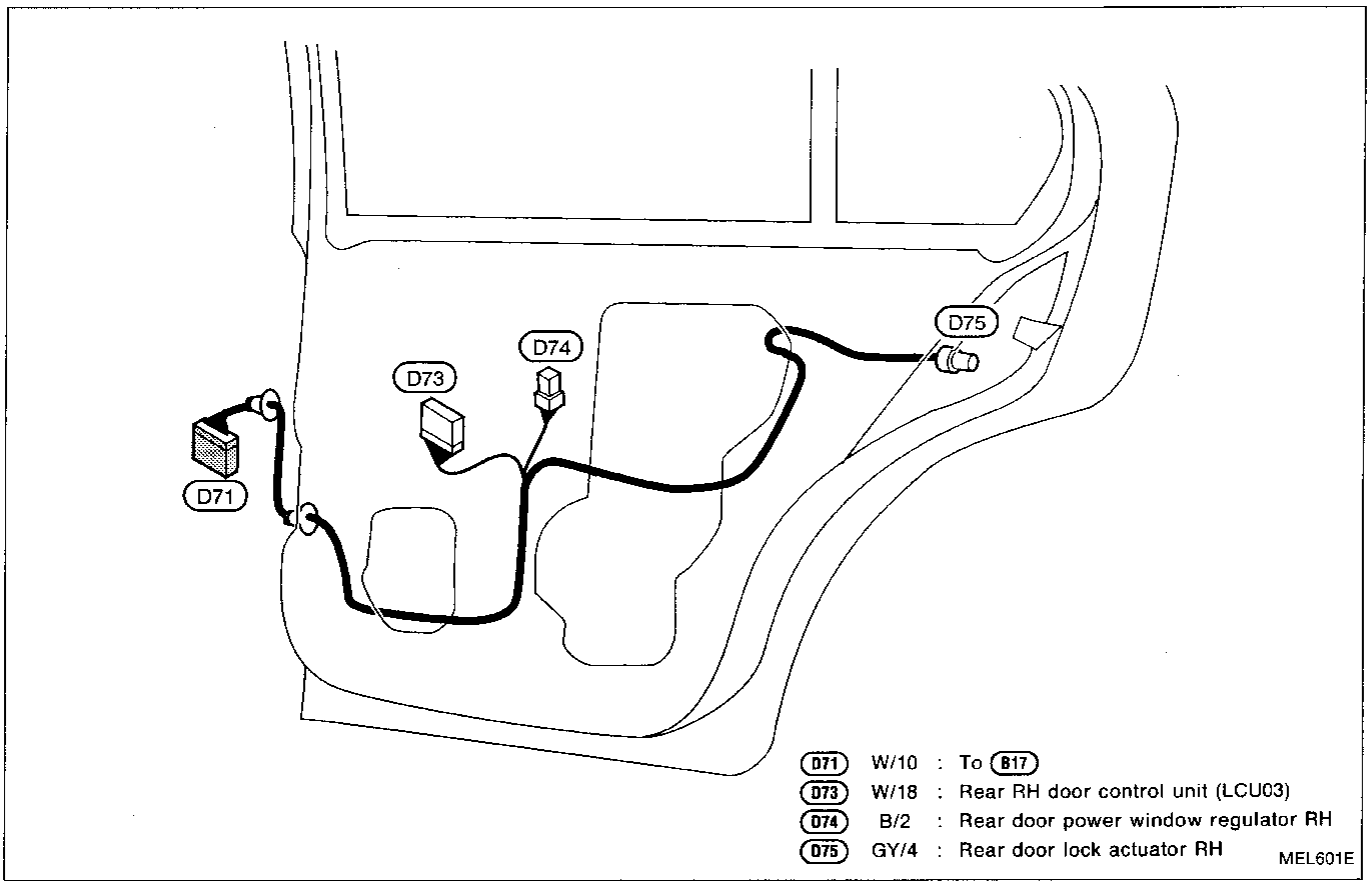
MEL599E

FRONT

Front Door Harness (RH side)



REAR



EARTH	CONNECT TO	CONN. NO.	CELL CORD
E5/E30	ABS CONTROL ACTUATOR	E18	BR-ABS
	ASCD HOLD RELAY	E20	EL-ASCD
	BRAKE FLUID LEVEL SWITCH	E1	EL-WARN
	CLEARANCE LAMP LH	E6	EL-TAIL/L
	CLEARANCE LAMP RH	E44	EL-TAIL/L
	COOLING FAN MOTOR-1	E26	EC-COOL/F HA-A/C, A
	COOLING FAN MOTOR-2	E27	EC-COOL/F HA-A/C, A
	COOLING FAN RELAY-2	E20	EC-COOL/F HA-A/C, A
	COOLING FAN RELAY-3	E20	EC-COOL/F HA-A/C, A
	CORNERING LAMP LH	E22	EL-CORNER
	CORNERING LAMP RH	E32	EL-CORNER
	CORNERING LAMP RELAY	E43	EL-CORNER
	DAYTIME LIGHT CONTROL UNIT	E42	EL-DTRL
	FRONT FOG LAMP LH	E21	EL-F/FOG
	FRONT FOG LAMP RH	E34	EL-F/FOG
	FRONT FOG LAMP SWITCH	E113	EL-F/FOG
	FRONT TURN SIGNAL LAMP LH	E6	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E44	EL-TURN
	FRONT WIPER SWITCH	E112	EL-WIPER EL-TIME
	HEADLAMP LH	E24	EL/H/LAMP EL-DTRL EL-THEFT
	HEADLAMP RH	E31	EL-H/LAMP EL-THEFT
	HOOD SWITCH	E19	EL-THEFT
	THEFT WARNING HORN RELAY	E43	EL-MULTI EL-THEFT
	TRIPLE-PRESSURE SWITCH	E25	EC-COOL/F HA-A/C, A
	WASHER LEVEL SWITCH	E45	EL-WARN
	FRONT WIPER RELAY	E43	EL-WIPER
	A/C AUTO AMP (In BCM)	M47	HA-AC, A
E35	ALTERNATOR	E37	EL-CHARGE
E115	SHIELD WIRE (FRONT LH WHEEL SENSOR)	E17	BR-ABS
	SHIELD WIRE (FRONT RH WHEEL SENSOR)	M102	BR-ABS
	SHIELD WIRE (REAR LH WHEEL SENSOR)	B109	BR-ABS
	SHIELD WIRE (REAR RH WHEEL SENSOR)	B105	BR-ABS
M13/M73	ABS CONTROL UNIT	E114	BR-ABS
	A/T DEVICE (OD CONTROL SWITCH)	M62	AT-A/T
	A/T DEVICE (PARK POSITION SWITCH)	M62	AT-SHIFT
	A/T DEVICE (SHIFT LOCK SOLENOID)	M62	AT-SHIFT
	ACCESSORY RELAY	M1	EL-POWER
	ASCD CLUTCH SWITCH	M17	EL-ASCD
	ASCD CONTROL UNIT	M30	EL-ASCD
	ASCD MAIN SWITCH	M27	EL-ASCD
	ASHTRAY ILLUMINATION	M46	EL-ILL

EARTH	CONNECT TO	CONN. NO.	CELL CORD
M13/M73	AUDIO AMP RELAY	M79	EL-AUDIO
	BCM (BODY CONTROL MODULE)	M48	EL-COMM
	BLOWER RELAY	M1	EL-POWER
	CIGARETTE LIGHTER SOCKET	M45	EL-HORN
	CLOCK	M59	EL-HORN
	CLOCK (ILLUMINATION)	M59	EL-ILL
	CLUTCH INTERLOCK SWITCH	M16	EL-START
	COMBINATION FLASHER UNIT	M34	EL-TURN
	COMBINATION METER (AIR BAG)	M29	RS-SRS EL-WARN
	COMBINATION METER (BUZZER)	M29	EL-METER
	COMBINATION METER (CRUISE INDICATOR LAMP)	M29	EL-ASCD EL-WARN
	COMBINATION METER (FUEL GAUGE)	M29	EL-METER
	COMBINATION METER (HIGH BEAM INDICATOR)	M29	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M29	AT-A/T EL-METER EL-ASCD
	COMBINATION METER (TACHOMETER)	M29	EL-METER
	COMBINATION METER (TURN)	M29	EL-TURN
	COMBINATION METER (WATER TEMP GAUGE)	M29	EL-METER
	DATA LINK CONNECTOR FOR CONSULT	M2	EC-MIL AT-A/T BR-ABS RS-SRS EL-COMM
	DATA LINK CONNECTOR FOR GST	M81	EC-MIL
	DOOR MIRROR REMOTE CONTROL SWITCH	M26	EL-MIRROR
	FAN CONTROL AMP.	M57	HA-AC, A
	FRONT WIPER MOTOR	M101	EL-WIPER
	FUEL FILLER LID OPENER SWITCH	M86	EL-TLID
	GLOVE BOX LAMP SWITCH	M55	EL-ILL
	IGNITION RELAY	M1	EL-POWER
	ILLUMINATION CONTROL SWITCH	M32	EL-ILL EL-I/MIRROR
	INTAKE DOOR MOTOR	M69	HA-A/C, A
	MODE DOOR MOTOR	M38	HA-A/C, A
	PUSH CONTROL UNIT	M40	HA-A/C, A
	REAR WINDOW DEFOGGER SWITCH	M60	EL-DEF EL-TIME
	REAR WINDOW DEFOGGER SWITCH (INDICATOR LAMP)	M60	EL-DEF
	SUN ROOF RELAY	M7	EL-SROOF
	IACV-FICD SOLENOID VALVE-2	F9	EC-FICD
	DOOR MIRROR DEFOGGER LH	D5	EL-DEF
	DOOR MIRROR DEFOGGER RH	D34	EL-DEF
	DRIVER DOOR CONTROL UNIT (LCU01)	D9	EL-COMM EL-STEP/L
	DRIVER SIDE KEY CYLINDER SWITCH	D7	EL-THEFT
	PASSENGER SIDE KEY CYLINDER SWITCH	D37	EL-THEFT

EARTH	CONNECT TO	CONN. NO.	CELL CORD
M13/M73	FRONT DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D12	EL-D/LOCK EL-THEFT EL-TIME EL-MULTI
	FRONT DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D41	EL-D/LOCK EL-THEFT EL-MULTI
	FRONT DOOR SPEAKER LH	D6	EL-AUDIO
	FRONT DOOR SPEAKER RH	D36	EL-AUDIO
	PASSENGER DOOR CONTROL UNIT (LCU02)	D39	EL-COMM EL-STEP/L
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER LH)	M11, D6	EL-AUDIO
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER RH)	D36, D36	EL-AUDIO
	TRUNK LID OPENER SWITCH	D10	EL-TLID EL-MULTI
	SPOT LAMP	R4	EL-INT/L
	INTEGRATED HOMELINK™ TRANSMITTER	R2	EL-TRNSMT
	VANITY MIRROR ILLUMINATION LH	R2	EL-ILL
	VANITY MIRROR ILLUMINATION RH	R5	EL-ILL
	INSIDE MIRROR	R8	EL-I/MIRROR
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
F18/F19	A/T CONTROL UNIT	F103	AT-A/T
	CONDENSER	F22	EC-IGN/SG
	ECM (ECCS CONTROL MODULE)	F101	EC-MAIN AT-A/T
	IACV-FICD SOLENOID VALVE-1	F12	EC-FICD
	IGNITION COIL NO. 1	F3	EC-IGN/SG
	IGNITION COIL NO. 2	F31	EC-IGN/SG
	IGNITION COIL NO. 3	F4	EC-IGN/SG
	IGNITION COIL NO. 4	F30	EC-IGN/SG
	IGNITION COIL NO. 5	F6	EC-IGN/SG
	IGNITION COIL NO. 6	F29	EC-IGN/SG
	INHIBITOR SWITCH	F39	EL-START EL-ASCD
	NEUTRAL POSITION SWITCH	F32	EC-PNP/SW
	POWER STEERING OIL PRESSURE SWITCH	F1	EC-PST/SW
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (PHASE)]	F15	EC-PHASE
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (POS)]	F112	EC-POS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (REF)]	F136	EC-REF
	SHIELD WIRE FRONT HEATED OXYGEN SENSOR LH	F28	EC-FRO2LH EC-FUELLH EC-F02H-L
	SHIELD WIRE FRONT HEATED OXYGEN SENSOR RH	F2	EC-FRO2RH EC-FUELRH EC-F02H-R
	SHIELD WIRE (KNOCK SENSOR)	F122	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F33	EC-MAFS
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS, AT-A/T

EARTH	CONNECT TO	CONN. NO.	CELL CORD
F18/F19	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	F45	EC-AP/SEN
	DATA LINK CONNECTOR FOR GST	M81	EC-MIL
	FUEL PUMP (Non-California)	B21	EC-F/PUMP
	SHIELD WIRE (FUEL TANK PRESSURE SENSOR)	B52	EC-PRE/SE
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR)	B9	EC-RR02
B16/B19	DROPPING RESISTOR (For California)	B26	EC-F/PUMP
	FRONT DOOR SWITCH LH	B18	EL-MULTI EL-TIME RS-SRS EL-ROOM/L EL-D/LOCK EL-WINDOW
	FRONT DOOR SWITCH RH	B15	EL-D/LOCK
	FUEL TANK GAUGE UNIT	B22	EL-METER EL-WARN EC-FTS
	FUEL PUMP CONTROL MODULE (For California)	B25	EC-FPCM EC-F/PUMP
	HANDSET	B47	EL-H/PHON
	HEATED SEAT SWITCH LH	B11	EL-HSEAT
	HEATED SEAT SWITCH RH	B12	EL-HSEAT
	HEATED SEAT LH	B8	EL-HSEAT
	HEATED SEAT RH	B13	EL-HSEAT
	TELEPHONE (TELEPHONE PRE WIRE)	B53	EC-PHONE
T6/T9	HIGH-MOUNTED STOP LAMP (With rear air spoiler)	B29	EL-STOP/L
	HIGH-MOUNTED STOP LAMP (Without rear air spoiler)	B40	EL-STOP/L
	POWER SEAT LH	B6	EL-SEAT
	POWER SEAT RH	B14	EL-SEAT
	REAR SPEAKER LH	B37	EL-AUDIO
	REAR SPEAKER RH	B41	EL-AUDIO
	SEAT BELT BUCKLE SWITCH	B7	EL-WARN EL-TIME
	TELEPHONE PRE-WIRE	B53	EL-PHONE
	TRANSCEIVER	B46	EL-H/F PHONE
	TRUNK LID COMBINATION LAMP LH	B30	EL-TAIL/L EL-STOP/L EL-BACK/L
	TRUNK LID COMBINATION LAMP RH	B33	EL-TAIL/L EL-STOP/L EL-BACK/L
	TRUNK LID KEY CYLINDER SWITCH	B32	EL-THEFT
	TRUNK ROOM LAMP SWITCH	B49	EL-INT/L EL-THEFT
	REAR LH DOOR CONTROL UNIT (LCU04)	D53	EL-CONN
	REAR DOOR LOCK ACTUATOR LH	D55	EL-D/LOCK EL-MULTI EL-THEFT
	REAR RH DOOR CONTROL UNIT (LCU03)	D73	EL-COMM
	REAR DOOR LOCK ACTUATOR RH	D75	EL-D/LOCK EL-MULTI EL-THEFT
	HEATED SEAT SWITCH RH	B12	EL-HSEAT
	REAR WINDOW DEFOGGER	B35	EL-DEF
	MULTI-REMOTE CONTROL UNIT (LCU05)	T12	EL-COMM

EARTH	CONNECT TO	CONN. NO.	CELL CORD
T6/T9	POWER ANTENNA TIMER	T13	EL-P/ANT
	REAR COMBINATION LAMP LH	T4	EL-TAIL/L EL-STOP/L EL-TURN
	REAR COMBINATION LAMP RH	T10	EL-TAIL/L EL-STOP/L EL-TURN