ELECTRICAL SYSTEM

SECTION EL

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

When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES" and "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT".

CONTENTS

CONTENTS (Cont'd)

CONTENTS (Cont'd)

WIRING DIAGRAM REFERENCE CHART

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 NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses are covered with yellow insulation either just before the harness connectors or for the complete harness, for easy identification.**

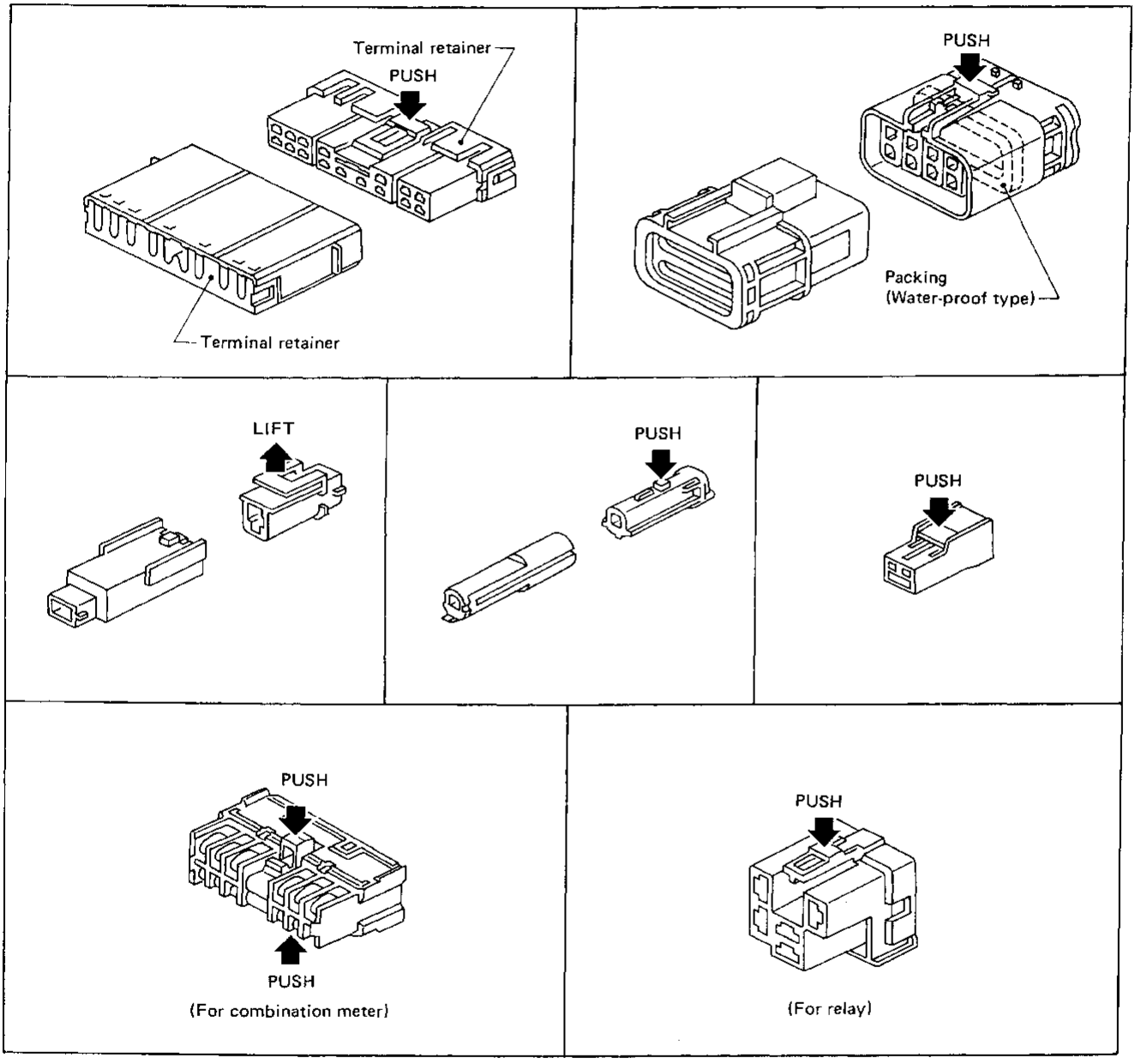
Description

HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental looseness 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]

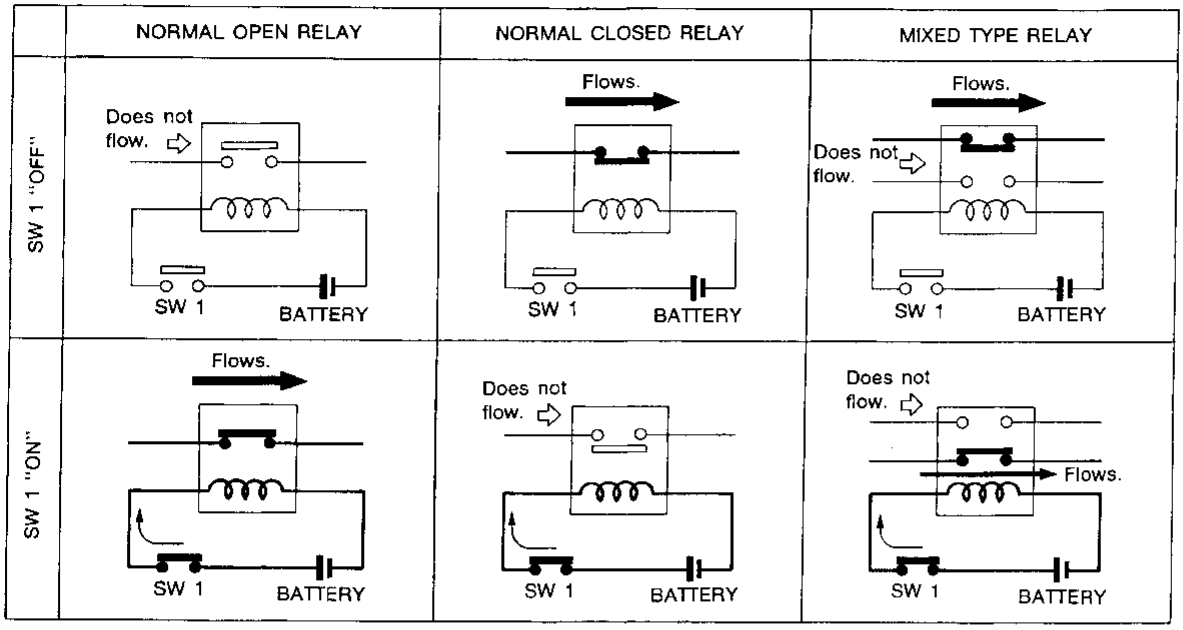


SEL769D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

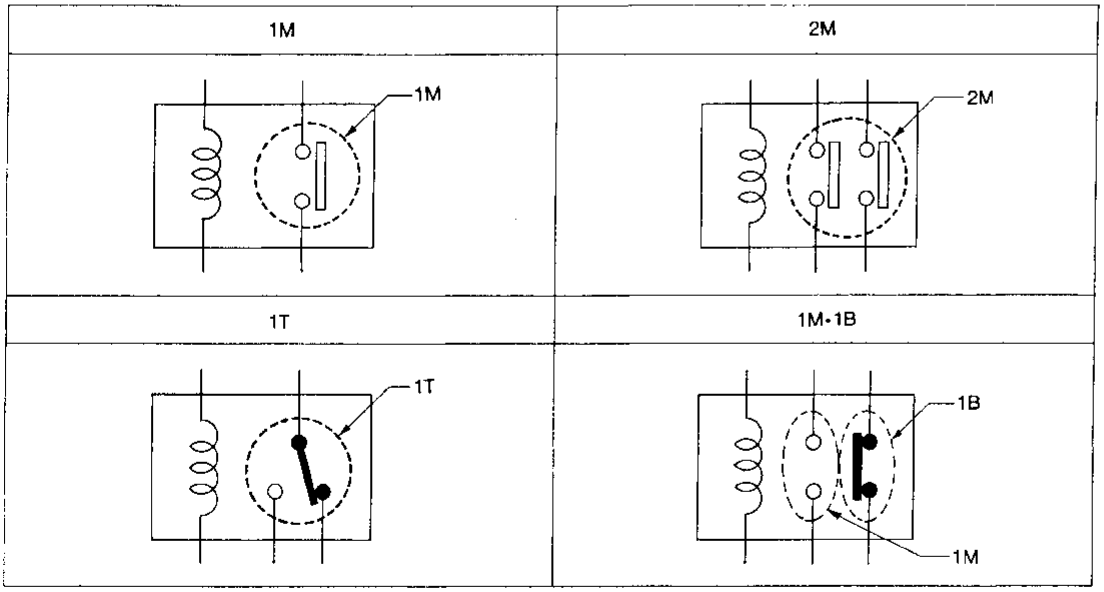
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



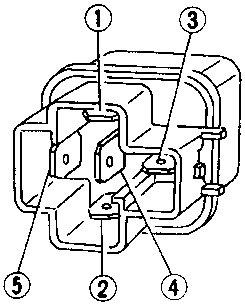
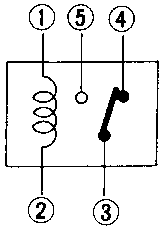
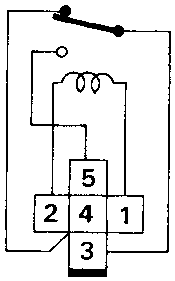
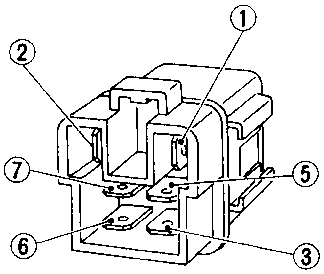
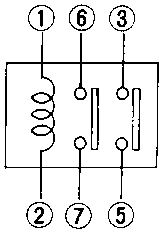
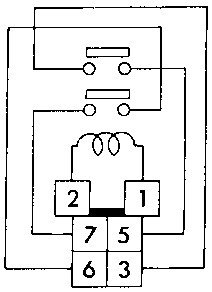
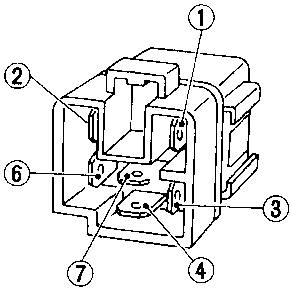
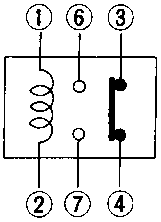
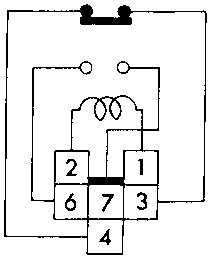
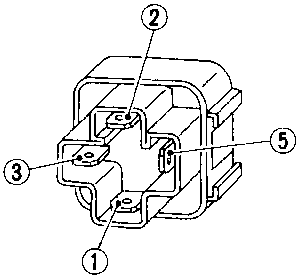
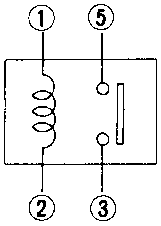
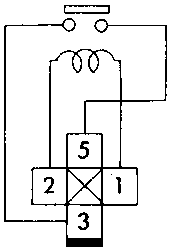
SEL881H

TYPE OF STANDARDIZED RELAYS

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



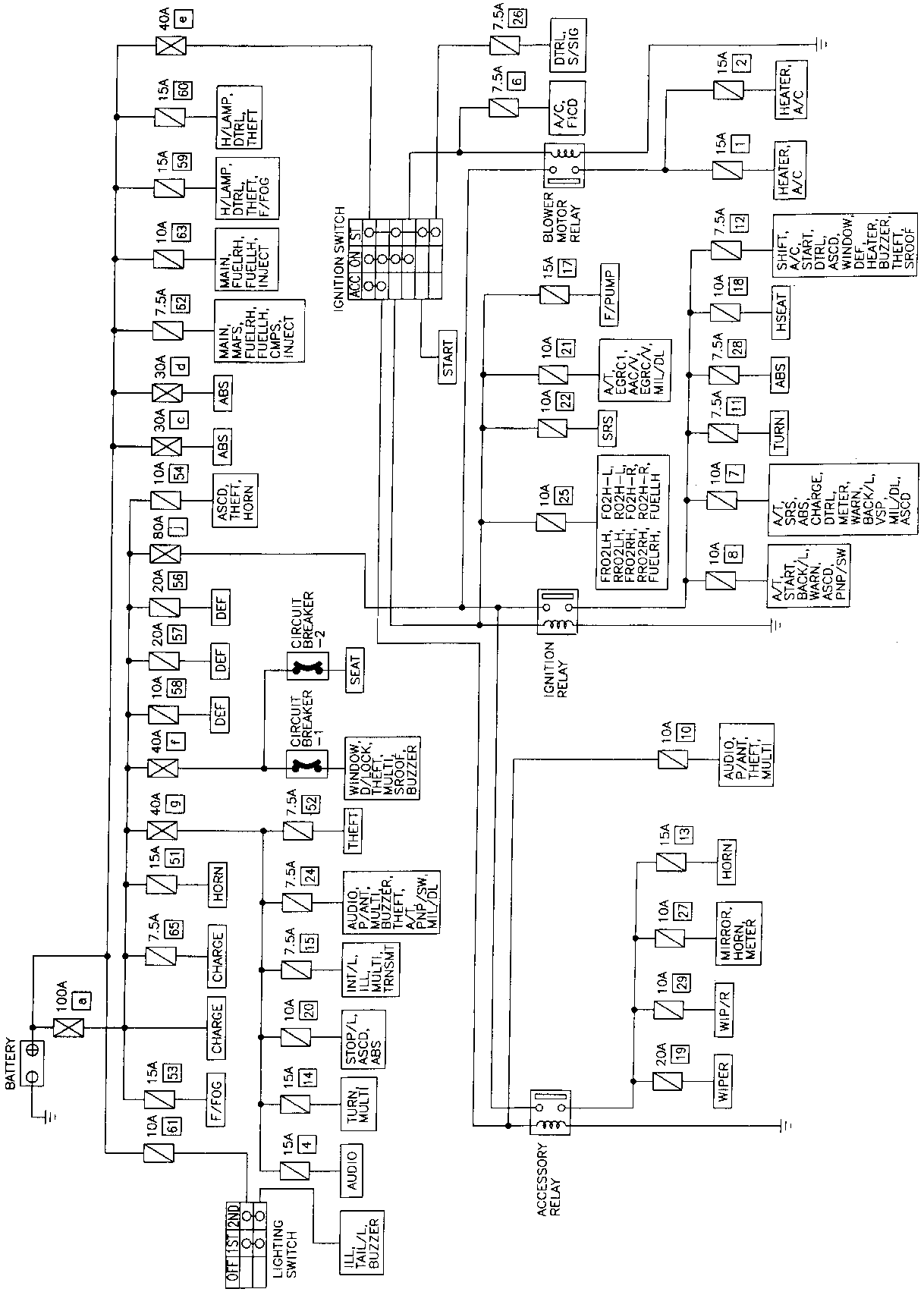
SEL882H

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

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

SEL661TA

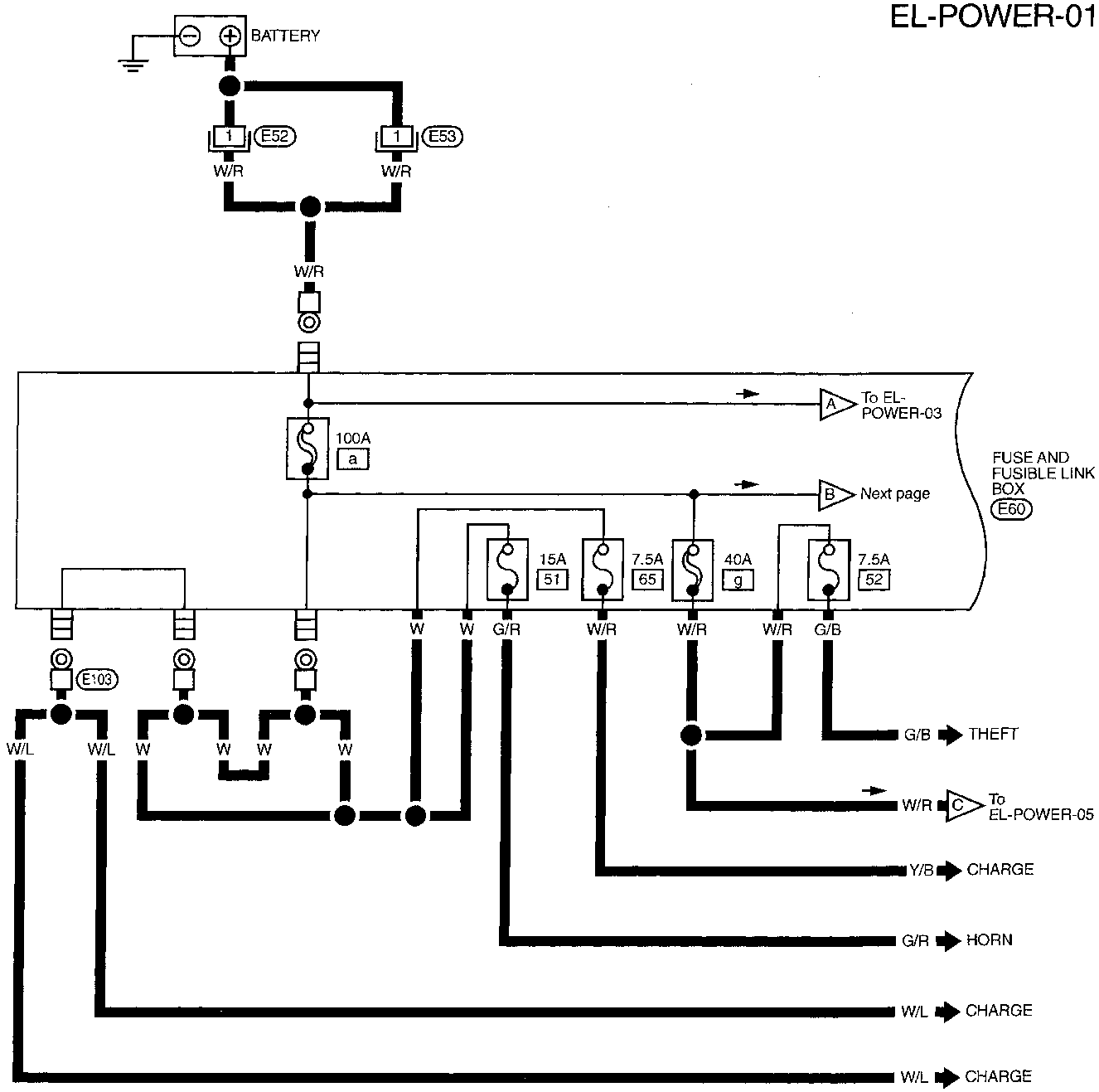
Schematic

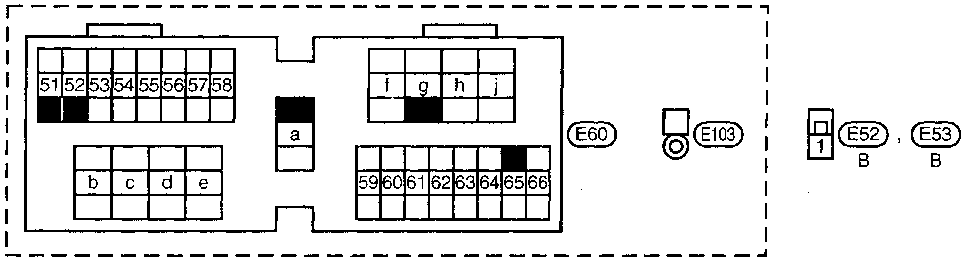


MEL001H

Wiring Diagram — POWER —

EL-POWER-01

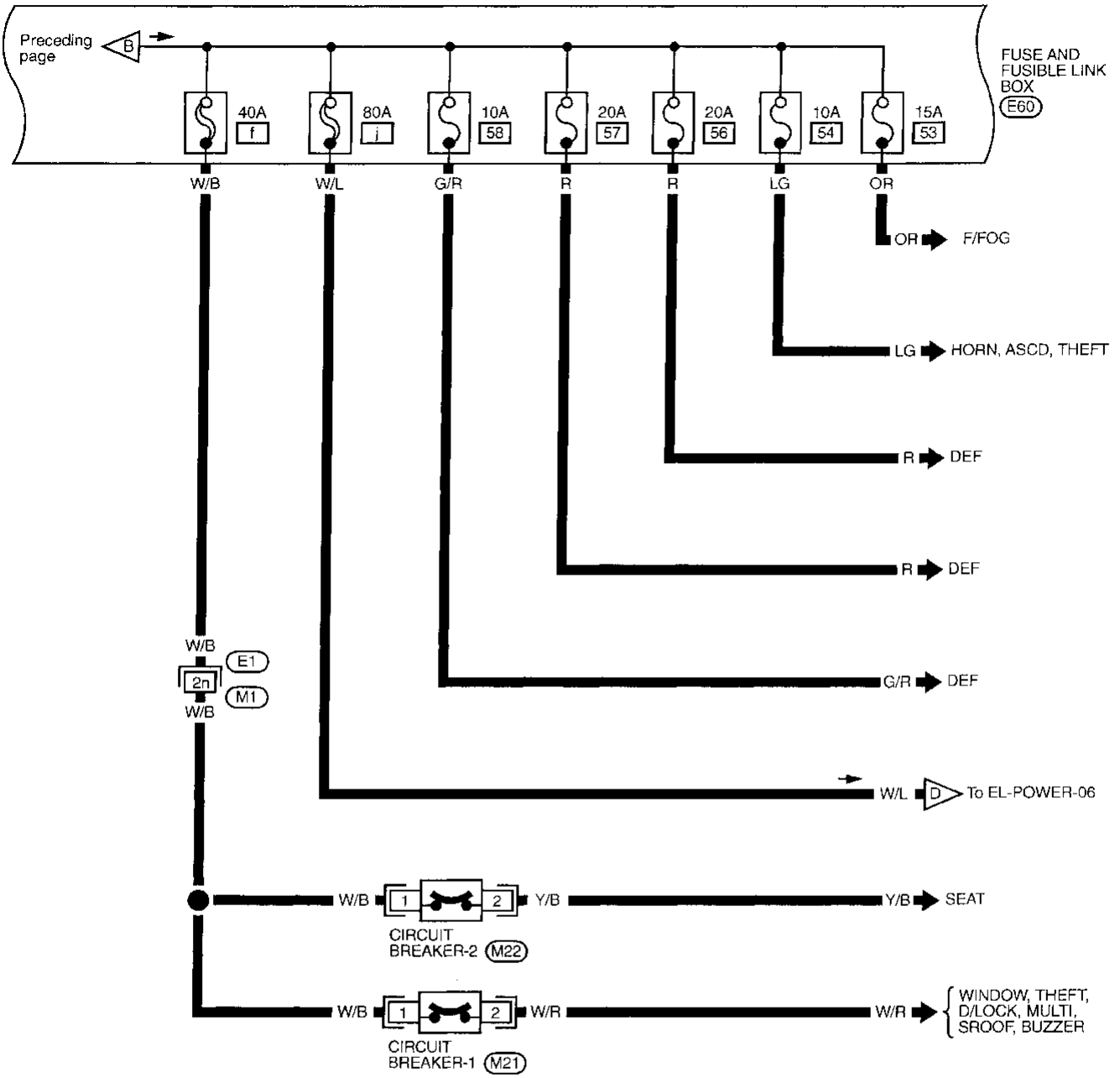


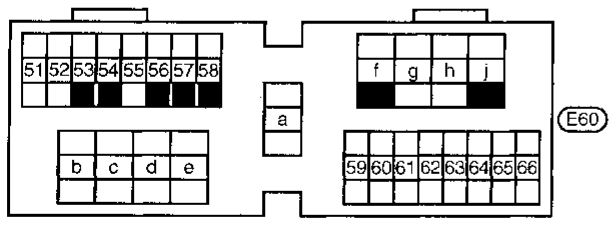


MEL727G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02



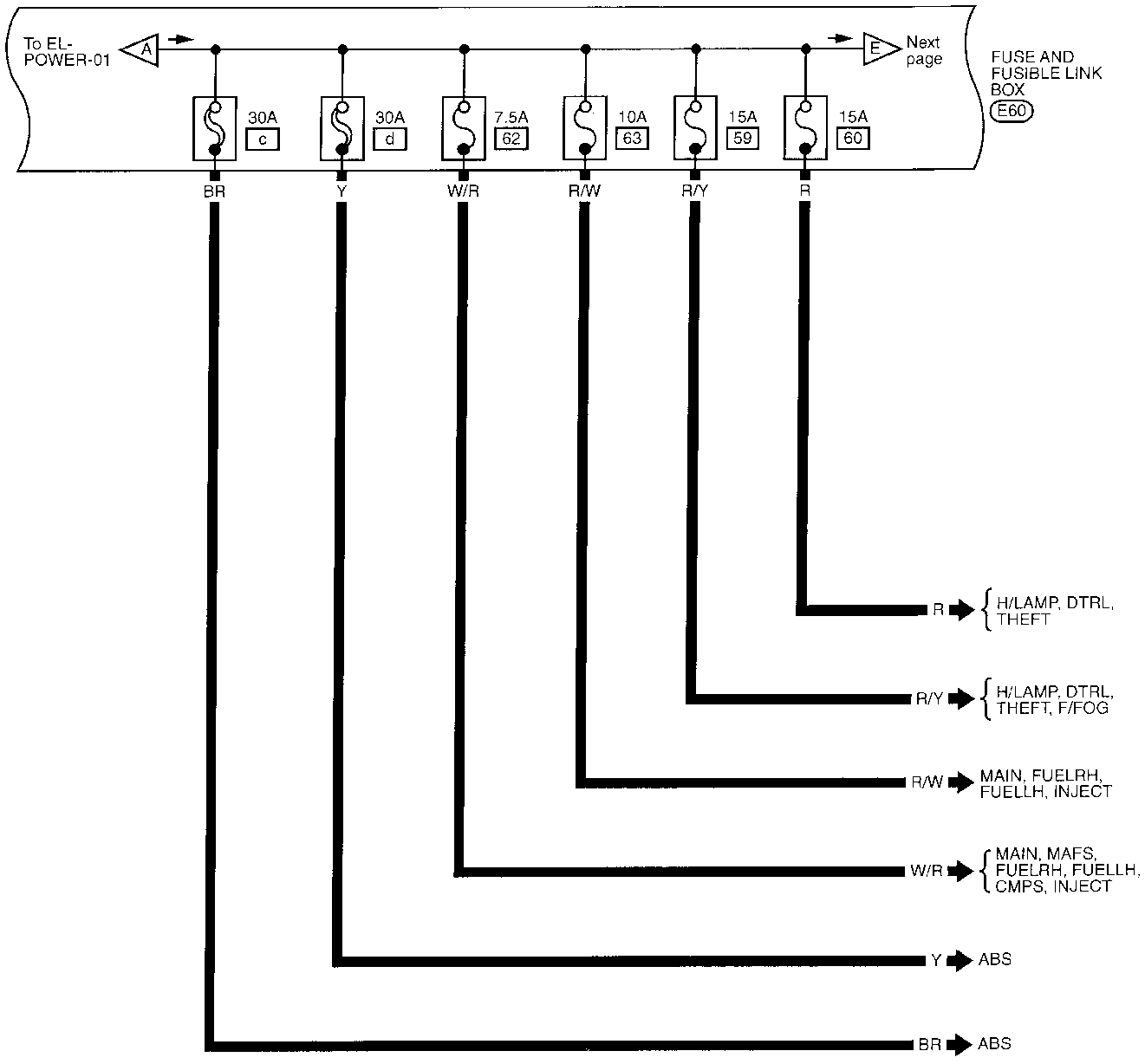


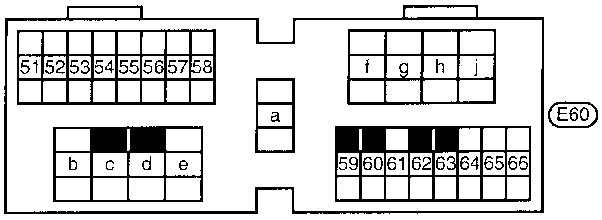
Refer to last page (Foldout page).
E1 , M1

MEL728G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03

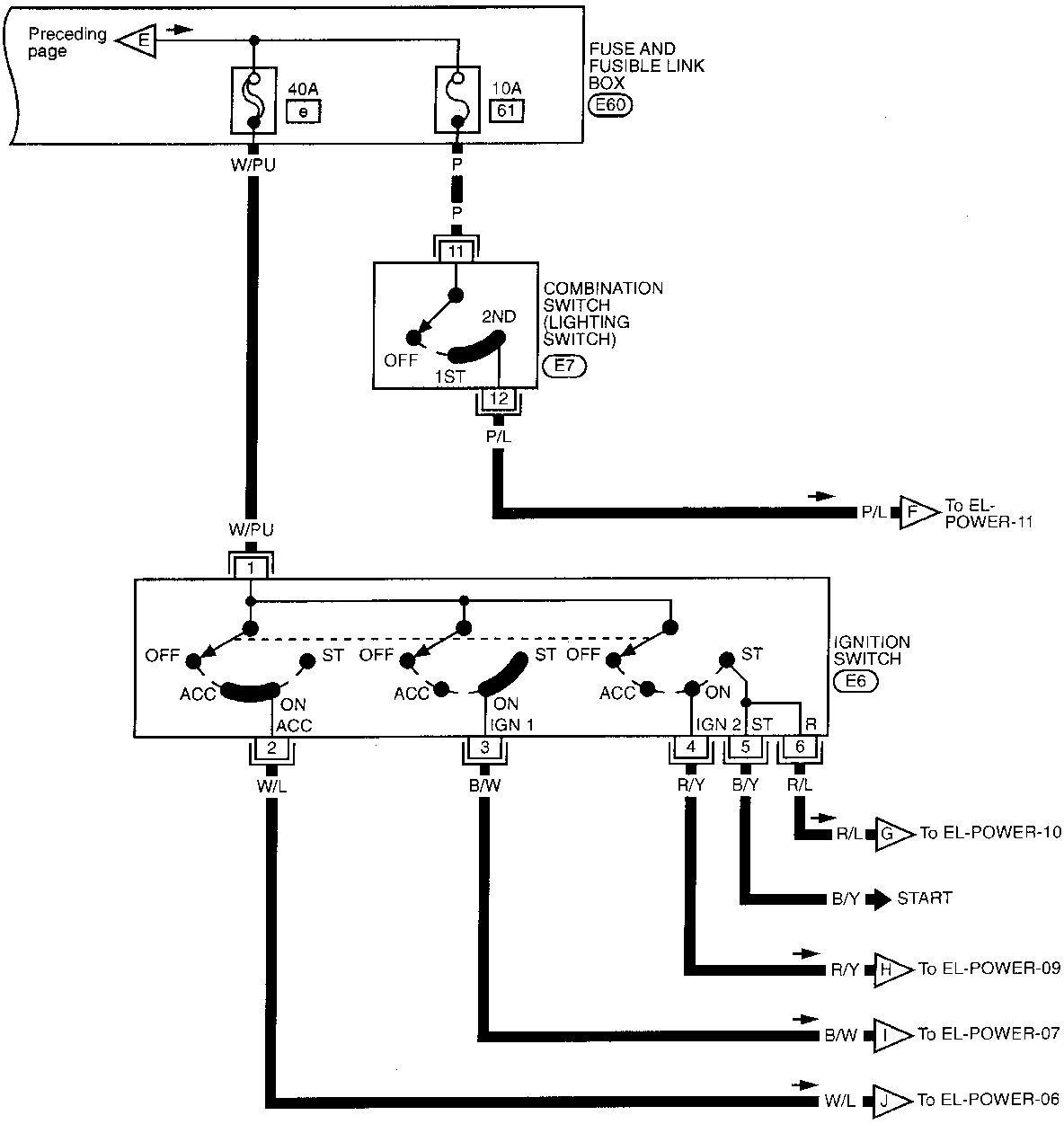


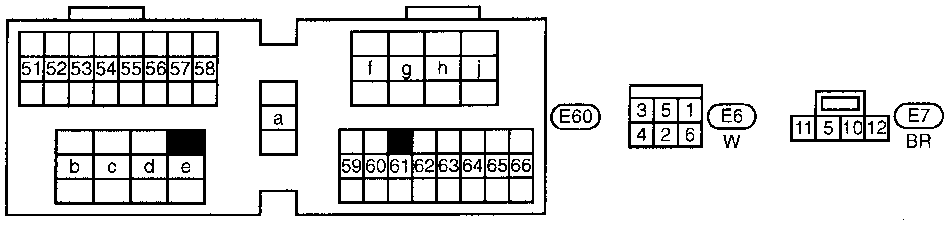


MEL729G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-04

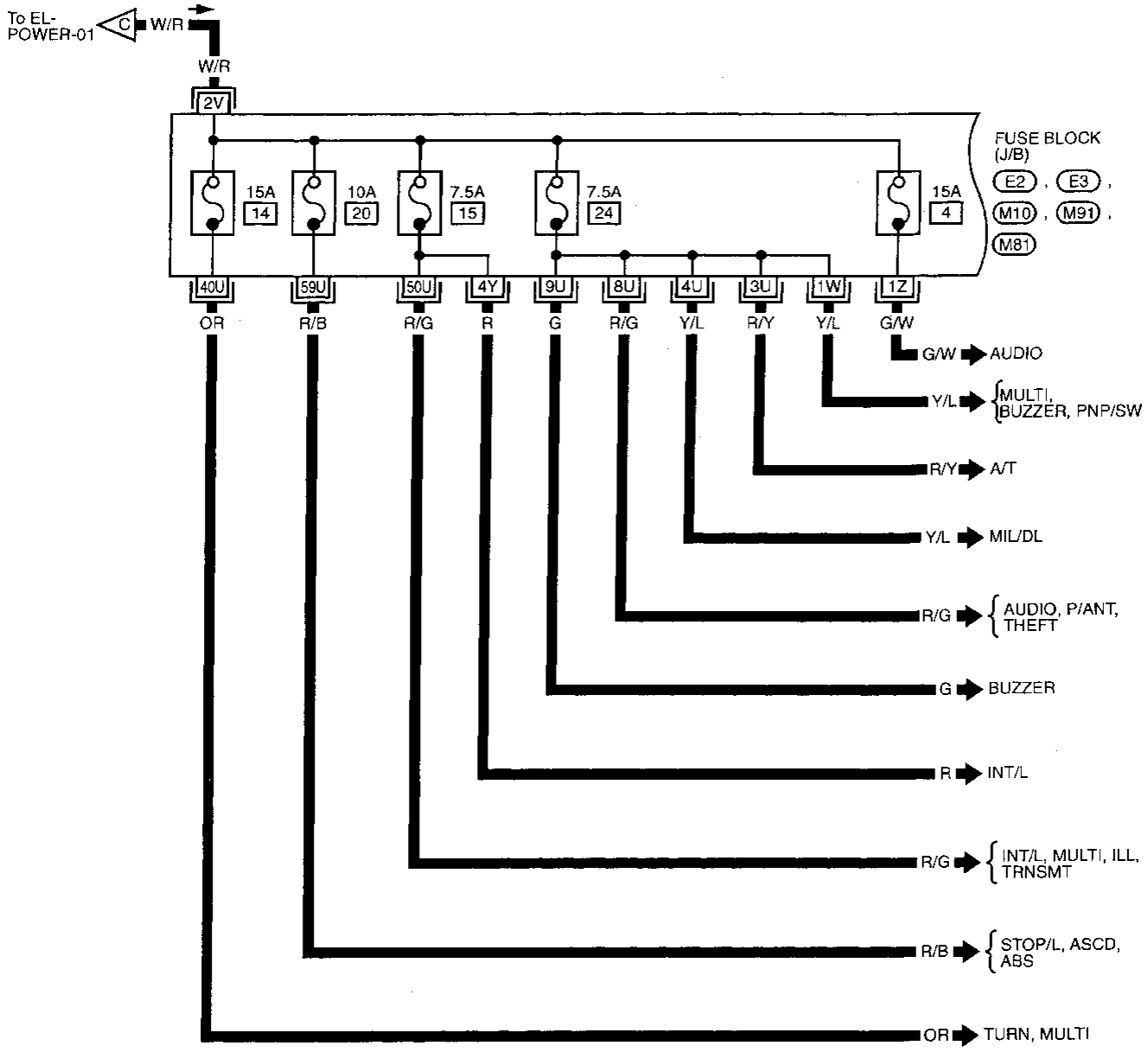




MEL526F

Wiring Diagram — POWER — (Cont'd)

EL-POWER-05



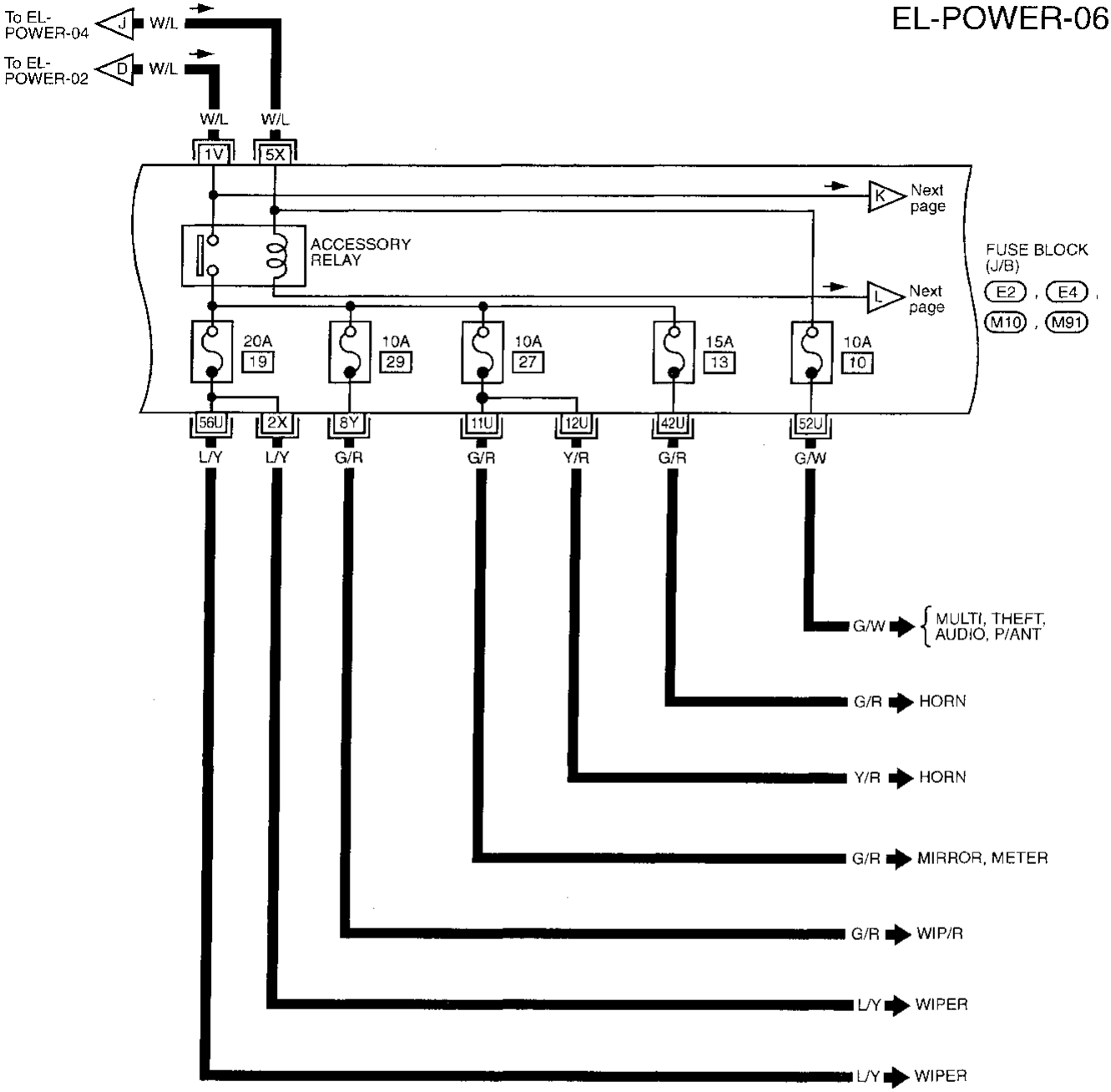
Refer to last page (Foldout page).

E2
E3
M10
M81
M91

MEL730G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



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E2

E4

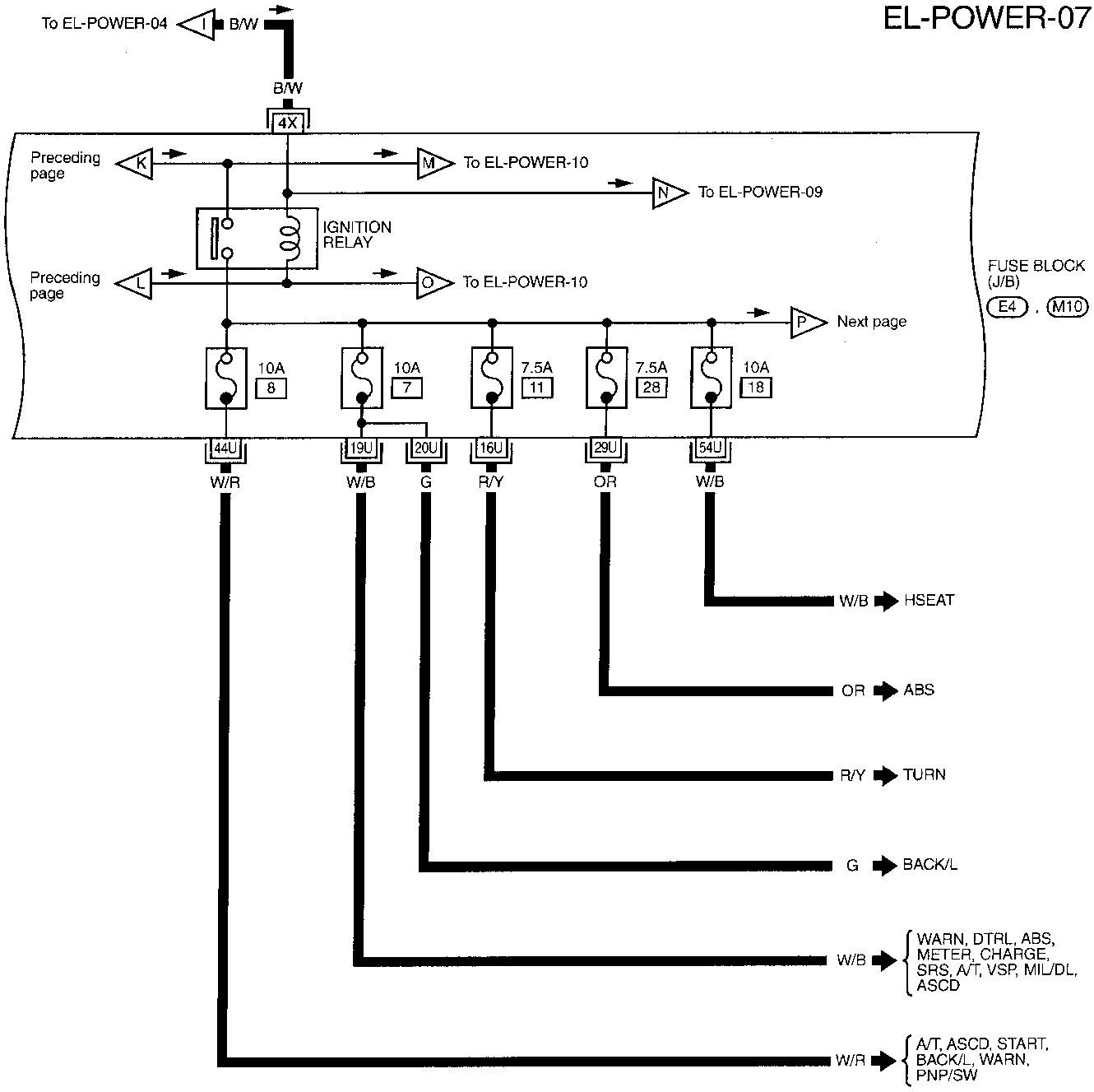
M10

M91

MEL731G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

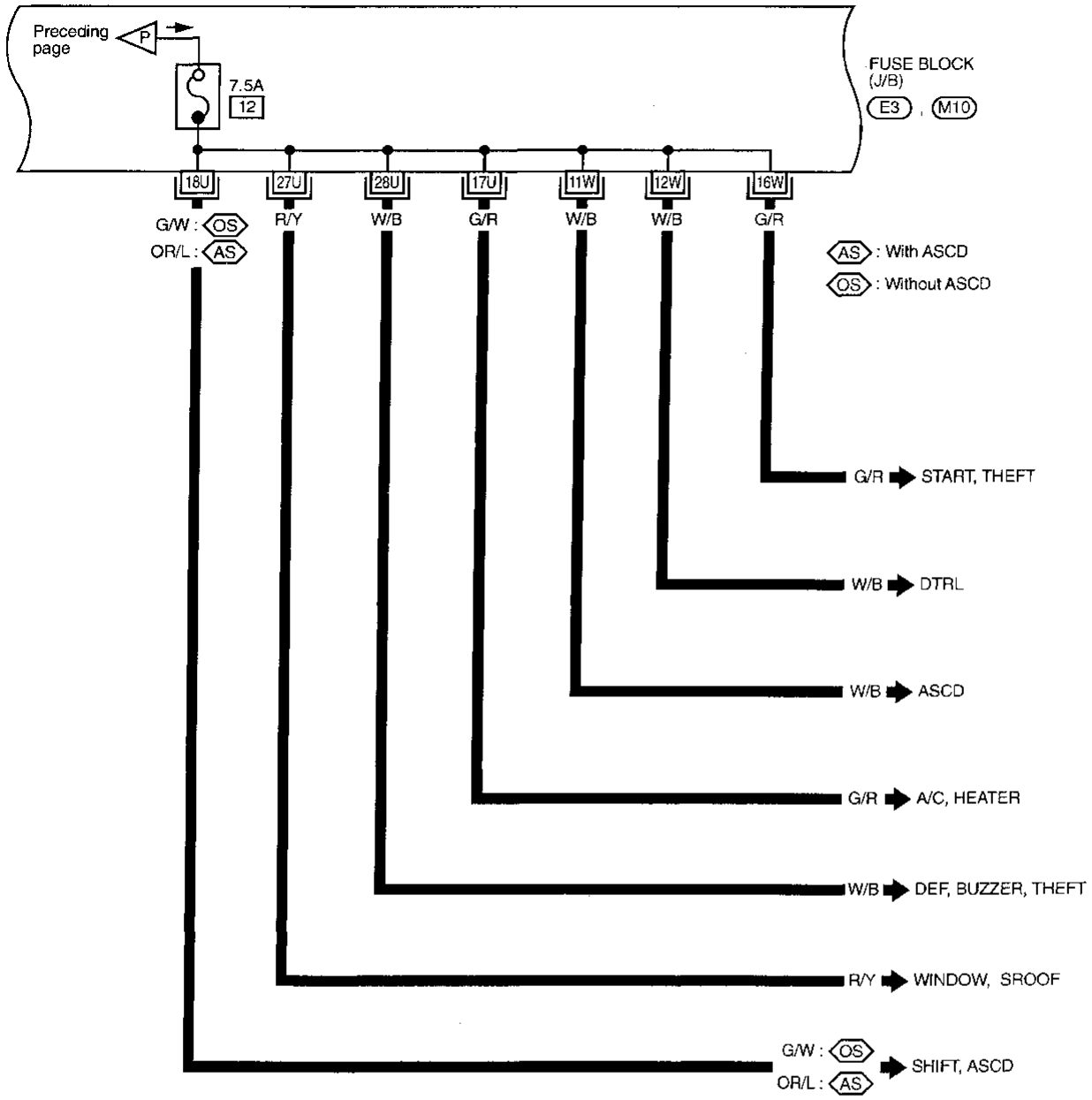


Refer to last page (Foldout page).
E4
M10

MEL732G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-08

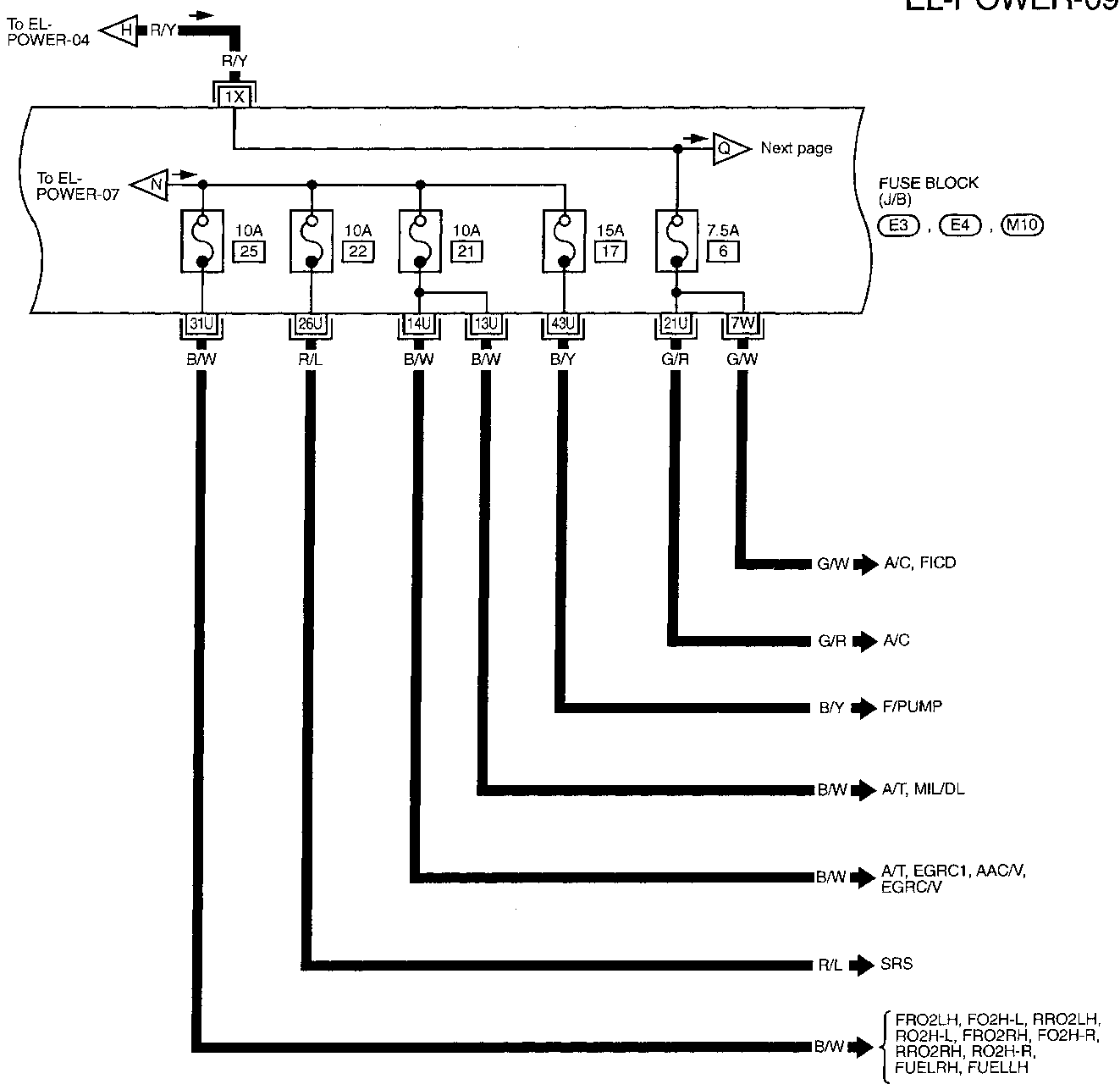


Refer to last page (Foldout page).
E3
M10

MEL733G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-09



Refer to last page (Foldout page).

E3

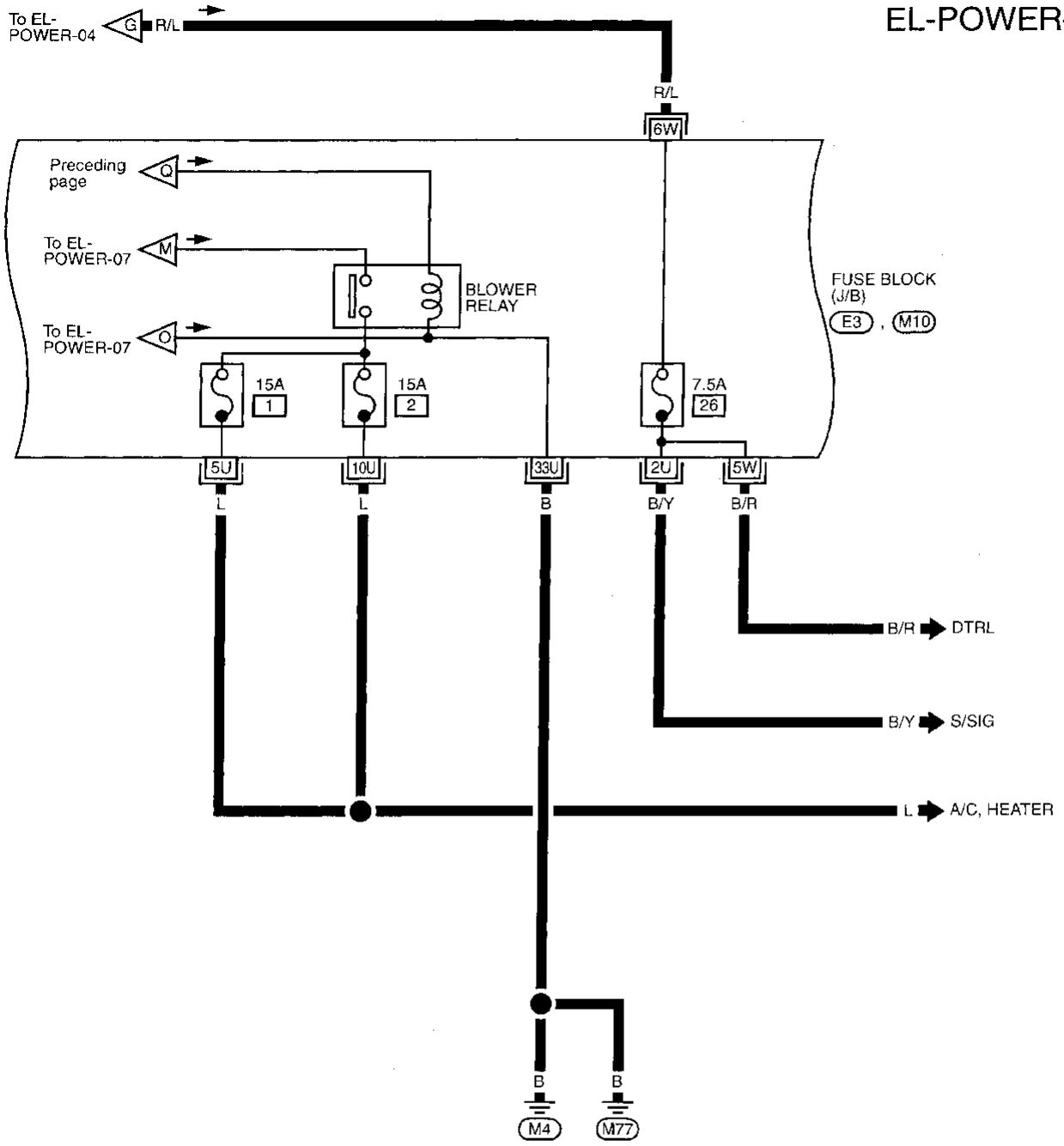
E4

M10

MEL734G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-10

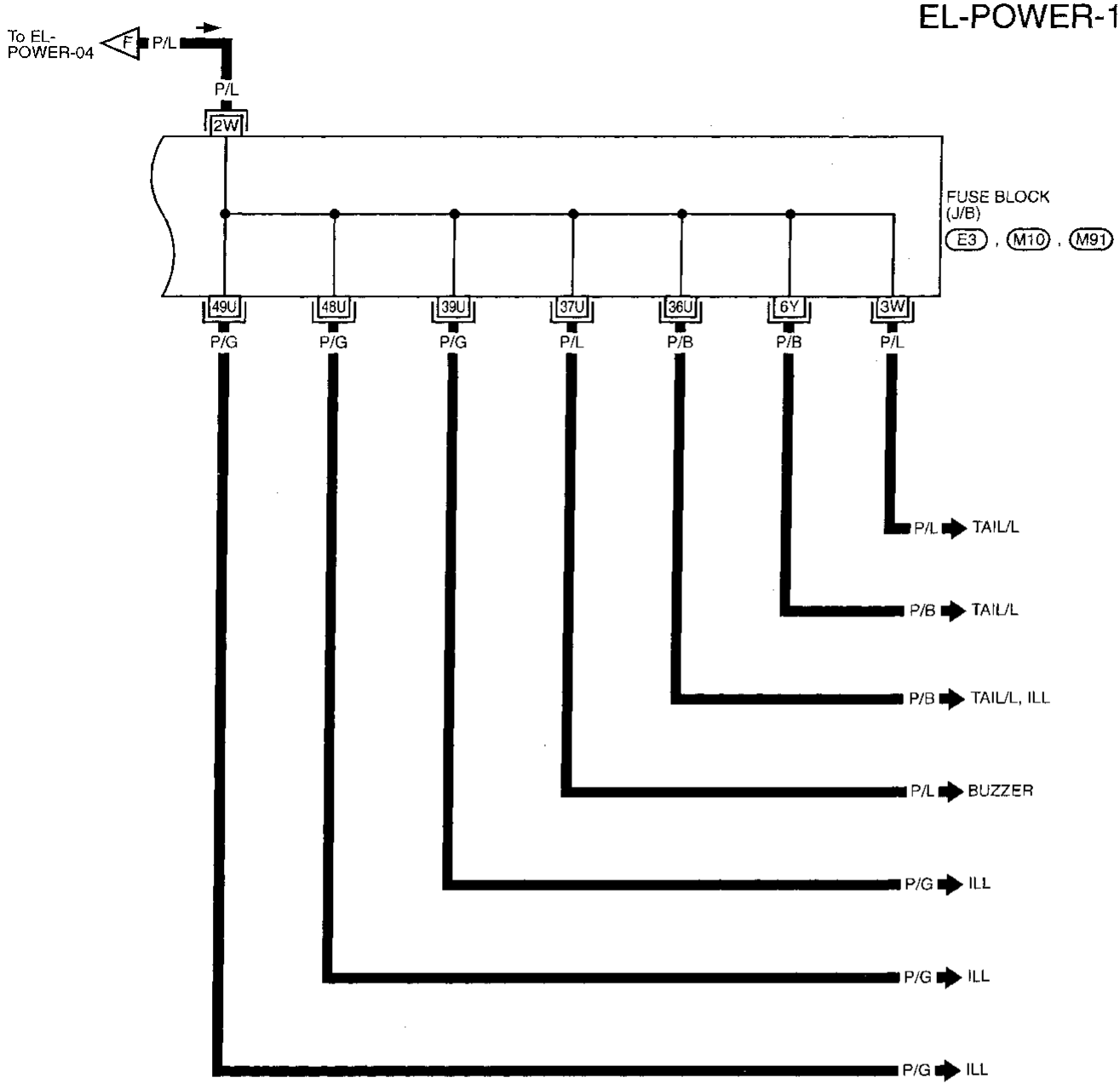


Refer to last page (Foldout page).
E3
M10

MEL735G

Wiring Diagram — POWER — (Cont'd)

EL-POWER-11



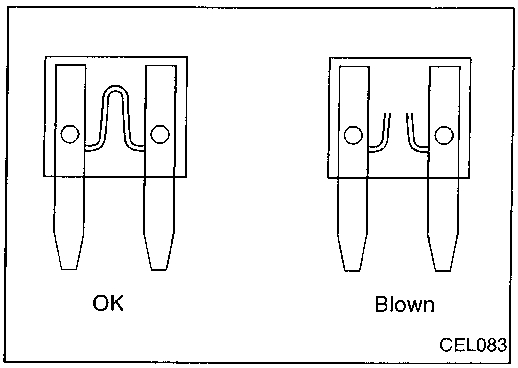
Refer to last page (Foldout page).

E3

M10

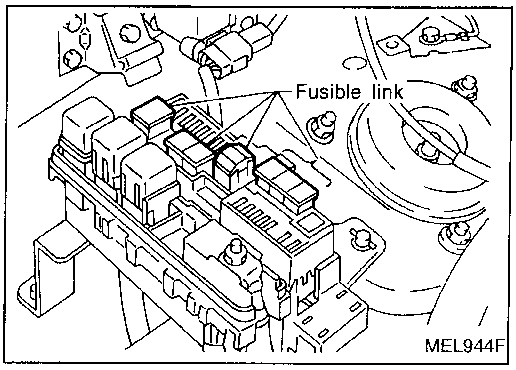
M91

MEL736G



Fuse

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

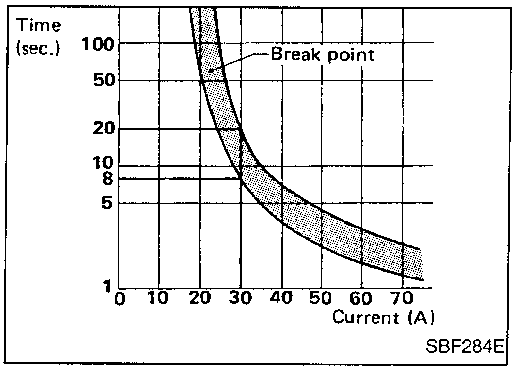


Fusible Link

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

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



Circuit Breaker Inspection

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

Circuit breakers are used in the following systems.

- Warning buzzer
- Power window & power door lock
- Power sunroof
- Power seat
- Multi-remote control system
- Theft warning system

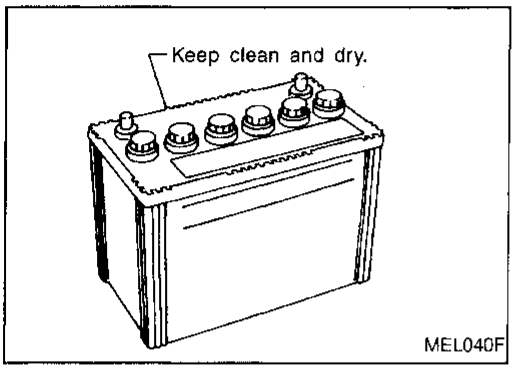
EARTH	CONNECT TO	CONN. NO.	CELL CODE
M4/M66	A/C MODE SWITCH	M39	HA-A/C, A
	ASCD CONTROL UNIT	M3	EL-ASCD
	ASCD MAIN SWITCH	M18	EL-ASCD
	CLUTCH INTERLOCK SWITCH	M28	EL-START
	COMBINATION FLASHER UNIT	M15	EL-TURN
	DOOR MIRROR REMOTE CONTROL SWITCH	M17	EL-MIRROR
	FAN SWITCH	M43	EC-AC/SIG HA-HEATER
	POWER ANTENNA	M69	EL-P/ANT
	POWER WINDOW RELAY	M23	EL-SROOF EL-WINDOW
	REAR WIPER SWITCH	M50	EL-WIP/R
	REAR WINDOW DEFOGGER SWITCH	M36	EL-DEF
	RECIRCULATION SWITCH	M42	HA-HEATER HA-A/C, M HA-A/C, A
	DOOR LOCK AND UNLOCK SWITCH RH	D38	EL-D/LOCK
	DOOR MIRROR DEFOGGER LH (Models without power window)	D1	EL-DEF
	DOOR MIRROR DEFOGGER RH	D31	EL-DEF
	FRONT DOOR KEY CYLINDER SWITCH RH	D39	EL-THEFT
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
M4/M77	ABS ACTUATOR	M74	BR-ABS
	A/C AUTO AMP.	M40	HA-A/C, A
	COMBINATION METER (AIR BAG)	M26	RS-SRS EL-WARN
	COMBINATION METER (CRUISE INDICATOR)	M26	EL-WARN EL-ASCD
	COMBINATION METER (FUEL GAUGE)	M25	EL-METER
	COMBINATION METER (4WD INDICATOR)	M26	EL-WARN
	COMBINATION METER (HIGH BEAM INDICATOR)	M26	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M25	EC-VSS AT-A/T EL-METER EL-ASCD
	COMBINATION METER (TACHOMETER)	M26	AT-A/T EL-METER
	COMBINATION METER (TURN SIGNAL)	M26	EL-TURN
	COMBINATION METER (WATER TEMPERATURE GAUGE)	M25	EL-METER
	CIGARETTE LIGHTER SOCKET	M56	EL-HORN
	DATA LINK CONNECTOR FOR CONSULT	M11	EC-MIL/DL AT-A/T
	DATA LINK CONNECTOR FOR GST	M9	EC-MIL/DL
	FAN CONTROL AMP.	M60	HA-A/C, A
	FAN SWITCH	M43	HA-A/C, M HA-A/C, A
	FRONT WIPER AMP.	M79	EL-WIPER
	FRONT WIPER MOTOR	M78	EL-WIPER
	FUSE BLOCK (BLOWER MOTOR RELAY)	M10	EL-POWER
	HEATED SEAT SWITCH LH	M52	EL-HSEAT
	HEATED SEAT SWITCH RH	M53	EL-HSEAT
	ILLUMINATION CONTROL SWITCH	M19	EL-ILL
	SMART ENTRANCE CONTROL UNIT	M16	EL-BUZZER EL-D/LOCK EL-MULTI EL-THEFT
	COMPASS AND THERMOMETER	R4	EL-ILL EL-METER
	INTEGRATED HOMELINK™ TRANSMITTER	R5	EL-TRNSMT
	SPOT LAMP	R6	EL-INT/L
	VANITY MIRROR LH (ILLUMINATION)	R5	EL-ILL
	VANITY MIRROR RH (ILLUMINATION)	R3	EL-ILL
	DOOR MIRROR DEFOGGER LH (Models with power window)	D1	EL-DEF
	FRONT DOOR KEY CYLINDER SWITCH LH	D9	EL-THEFT
	FRONT DOOR LOCK ACTUATOR LH	D7	EL-D/LOCK EL-MULTI EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH	D37	EL-D/LOCK EL-MULTI EL-THEFT

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M4/M77	POWER WINDOW MAIN SWITCH	D6	EL-WINDOW EL-D/LOCK
	ABS CONTROL UNIT	M54 M95	BR-ABS
	SHIELD WIRE (FRONT WHEEL SENSOR LH)	E14	BR-ABS
	SHIELD WIRE (FRONT WHEEL SENSOR RH)	E51	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR LH)	B69	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR RH)	B8	BR-ABS
E13/E41	AMBIENT AIR TEMPERATURE SWITCH	E34	EC-FICD HA-A/C, M HA-A/C, A
	ASCD HOLD RELAY	E22	EL-ASCD
	ATP RELAY	E86	EL-WARN
	BRAKE FLUID LEVEL SWITCH	E28	EL-WARN
	DAYTIME LIGHT CONTROL UNIT	E45	EL-DTRL
	FRONT FOG LAMP LH	E61	EL-F/FOG
	FRONT FOG LAMP RH	E62	EL-F/FOG
	FRONT FOG LAMP SWITCH	E63	EL-F/FOG
	FRONT TURN SIGNAL LAMP LH	E30	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E39	EL-TURN
	FRONT WASHER MOTOR	E44	EL-WIPER
	FRONT WIPER SWITCH	E9	EL-WIPER
	HEADLAMP LH	E29	EL-H/LAMP EL-THEFT
	HEADLAMP RH	E38	EL-H/LAMP EL-DTRL EL-THEFT
	HOOD SWITCH	E31	EL-THEFT
	INHIBITOR RELAY	E56	EL-PNP/SW EL-START
	PARKING LAMP LH	E12	EL-TAIL/L
	PARKING LAMP RH	E40	EL-TAIL/L
	PARK/NEUTRAL POSITION SWITCH	E24	EL-ASCD
	POWER SOCKET RELAY	E21	EL-HORN
	THEFT WARNING HORN RELAY	E23	EL-THEFT
	WASHER LEVEL SWITCH	E24	EL-WARN
E101	ALTERNATOR	E105 E106 E107	EL-CHARGE
	POWER STEERING OIL PRESSURE SWITCH	E110	EC-PST/SW
F20/F25	A/T CONTROL UNIT	M13	AT-A/T
	DATA LINK CONNECTOR FOR GST	M9	EC-MIL/DL
	CONDENSER	F19	EC-IGN/SG
	CRANKSHAFT POSITION SENSOR (OBD)	F110	EC-CKPS
	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F7	EC-CMPS
	DISTRIBUTOR (IGNITION)	F7	EC-IGN/SG
	ECM (ECCS CONTROL MODULE)	F24	EC-MAIN
	EVAP CONTROL SYSTEM PRESSURE SENSOR	B102	EC-PRE/SE
	REAR HEATED OXYGEN SENSOR LH	F3	EC-RRO2LH EC-RO2H-L
	REAR HEATED OXYGEN SENSOR RH	F1	EC-RRO2RH EC-RO2H-R
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	E88	EC-AP/SEN
	SHIELD WIRE (CAMSHAFT POSITION SENSOR)	F7	EC-CMPS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (OBD)]	F110	EC-CKPS
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	B102	EC-PRE/SE
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR LH)	F4	EC-FRO2LH EC-FO2H-L EC-FUELLH
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR RH)	F2	EC-FRO2RH EC-FO2H-R EC-FUELRH
	SHIELD WIRE (KNOCK SENSOR)	F102	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F10	EC-MAFS

EARTH	CONNECT TO	CONN. NO.	CELL CODE
F20/F25	SHIELD WIRE (REAR HEATED OXYGEN SENSOR LH)	F3	EC-RRO2LH EC-RO2H-L
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR RH)	F1	EC-RRO2RH EC-RO2H-R
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS AT-A/T
B11/B22/D210	FUEL PUMP	B13	EC-F/PUMP
	FUEL TANK GAUGE UNIT	B12	EC-TFTS EL-METER EL-WARN
	FRONT DOOR SWITCH LH	B9	RS-SRS EL-BUZZER EL-THEFT
	HEATED SEAT LH	B5	EL-HSEAT
	POWER SEAT LH	B7	EL-SEAT
	POWER SOCKET	B41	EL-HORN
	REAR COMBINATION LAMP LH (BACK-UP LAMP LH)	B26	EL-BACK/L
	REAR COMBINATION LAMP LH (REAR TURN SIGNAL LAMP LH)	B26	EL-TURN
	REAR COMBINATION LAMP LH (STOP LAMP LH)	B26	EL-STOP/L
	REAR COMBINATION LAMP LH (TAIL LAMP LH)	B26	EL-TAIL/L
	REAR WIPER AMP.	B14	EL-WIP/R
	SEAT BELT BUCKLE SWITCH	B6	EL-WARN EL-BUZZER
	SPEAKER AMP.	B20	EL-AUDIO
	BACK DOOR KEY CYLINDER SWITCH	D201	EL-THEFT
	BACK DOOR SWITCH	D208	EL-INT/L EL-MULTI EL-THEFT
	GLASS HATCH SWITCH	D209	EL-WIP/R
	HIGH-MOUNTED STOP LAMP	D302	EL-STOP/L
	LICENSE PLATE LAMP (Models with spare tire carrier)	D203	EL-TAIL/L
	LICENSE PLATE LAMP LH (Models without spare tire carrier)	D202	EL-TAIL/L
	LICENSE PLATE LAMP RH (Models without spare tire carrier)	D211	EL-TAIL/L
	LUGGAGE ROOM LAMP	D103	EL-INT/L
	REAR DOOR LOCK ACTUATOR LH	D54	EL-D/LOCK EL-MULTI EL-THEFT
	REAR WIPER MOTOR	D212	EL-WIP/R
B55/B75	A/T DEVICE (PARK POSITION SWITCH and OVERDRIVE CONTROL SWITCH)	B59	AT-SHIFT AT-A/T
	ASHTRAY (ILLUMINATION)	B60 B76	EL-ILL
	HEATED SEAT RH	B56	EL-HSEAT
	NEUTRAL POSITION SWITCH	B203	EC-PNP/SW
	REAR COMBINATION LAMP RH (BACK-UP LAMP RH)	B74	EL-BACK/L
	REAR COMBINATION LAMP RH (REAR TURN SIGNAL LAMP RH)	B74	EL-TURN
	REAR COMBINATION LAMP RH (STOP LAMP RH)	B74	EL-STOP/L
	REAR COMBINATION LAMP RH (TAIL LAMP RH)	B74	EL-TAIL/L
	POWER SEAT RH	B57	EL-SEAT
	TIRE CARRIER SWITCH	B301	EL-WARN
	REAR DOOR LOCK ACTUATOR RH	D74	EL-D/LOCK EL-MULTI EL-THEFT

CAUTION:

a. If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.
b. After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.
c. Never add distilled water through the hole used to check specific gravity.

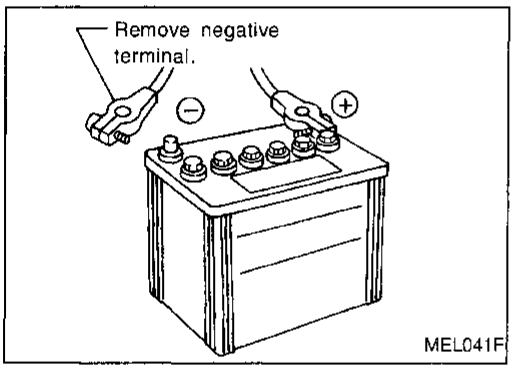


How to Handle Battery

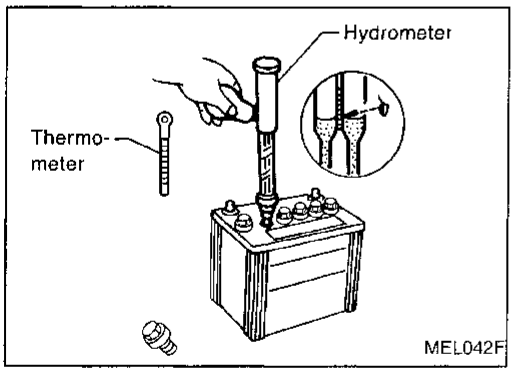
METHODS OF PREVENTING OVER-DISCHARGE

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

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



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



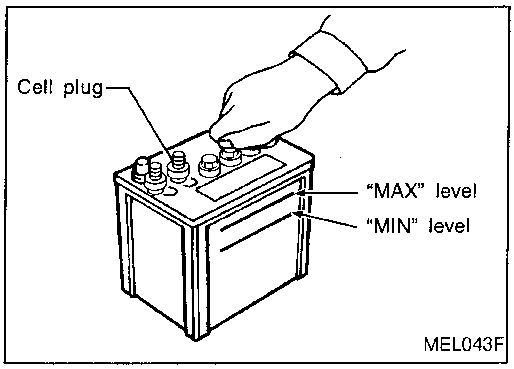
- Check the charge condition of the battery.
  Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

CHECKING ELECTROLYTE LEVEL

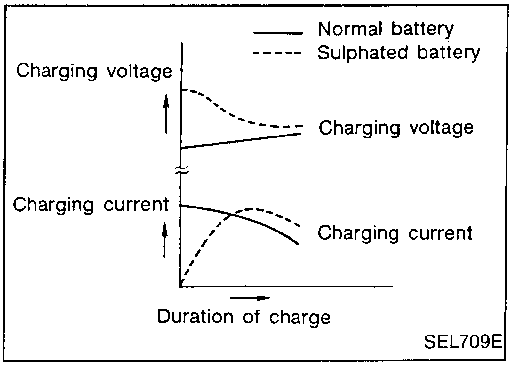
WARNING:

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

How to Handle Battery (Cont'd)

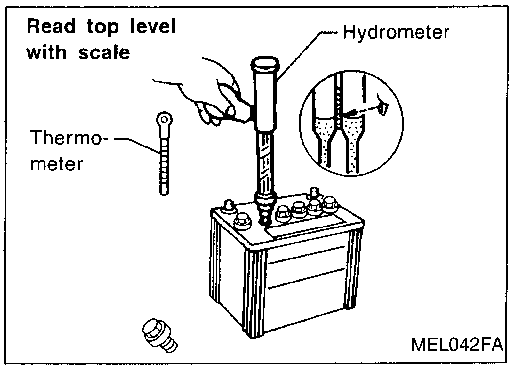


- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

A battery will be completely discharged if it is left unattended for a long time and the specific gravity will become less than 1.100. This may result in sulphation on the cell plates.
To determine if a battery has been "sulphated", note its voltage and current when charging it. As shown in the figure, less current and higher voltage are observed in the initial stage of charging sulphated batteries.
A sulphated battery may sometimes be brought back into service by means of a long, slow charge, 12 hours or more, followed by a battery capacity test.



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.

How to Handle Battery (Cont'd)

2. Use the chart below to correct your hydrometer reading according to electrolyte temperature.

Hydrometer temperature correction

Battery electrolyte temperature °C (°F)	Add to specific gravity reading
71 (160)	0.032
66 (150)	0.028
60 (140)	0.024
54 (129)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	–0.004
16 (60)	–0.008
10 (50)	–0.012
4 (39)	–0.016
–1 (30)	–0.020
–7 (20)	–0.024
–12 (10)	–0.028
–18 (0)	–0.032

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

How to Handle Battery (Cont'd)

Do not charge at more than 50 ampere rate.

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

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

Service Data and Specifications (SDS)

Applied area		USA		Canada
		Standard	Option	Standard
Type		55D23R	75D31R	
Capacity	V-AH	12-60	12-70	
Cold cranking current (For reference value)	A	356	447	

System Description

M/T MODELS

Power is supplied at all times
- to ignition switch terminal ①
- through 40A fusible link (letter [e], located in the fuse and fusible link box).

With the ignition switch in the START position, power is supplied
- to clutch interlock relay terminal ②
- through 7.5A fuse [No. [12], located in the fuse block (J/B)].

For models with theft warning system

With the ignition switch in the ON or START position, power is supplied
- to theft warning relay terminal ①
- through 7.5A fuse [No. [12], located in the fuse block (J/B)].
- to clutch interlock relay terminal ③
- through ignition switch terminal ⑤ .

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and ground to the clutch interlock relay terminal ① is interrupted.
When the theft warning system is not operating, ground is supplied
- through theft warning relay terminal ③
- to clutch interlock relay terminal ① .

For models without theft warning system

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

Ground is supplied to clutch interlock relay terminal ① , when the clutch pedal is depressed through the clutch interlock switch and body grounds (M4) and (M66).
The clutch interlock relay is energized and power is supplied
- from terminal ⑤ of the clutch interlock relay
- to terminal ② 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 engine block. With power and ground supplied, cranking occurs and the engine starts.

System Description (Cont'd)

A/T MODELS

Power is supplied at all times
- to ignition switch terminal ①
- through 40A fusible link (letter e, located in the fuse and fusible link box).

With the ignition switch in the ON or START position, power is supplied
- to inhibitor switch terminal ② .
- through 10A fuse [No. 8, located in the fuse block (J/B)].

Ground is supplied
- to inhibitor relay terminal ②
- through body grounds E13 and E41

Models with theft warning system

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 theft warning relay terminal ① .

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the inhibitor relay terminal ① is interrupted.

When the theft warning system is not operating, power is supplied with ignition switch in the START position
- through inhibitor switch terminal ① ,
- to theft warning relay terminal ③ ,
- through theft warning relay terminal ④ ,
- to inhibitor relay terminal ① , with the selector lever in the P or N position.

Then inhibitor relay is energized and power is supplied
- through ignition switch terminal ⑤ ,
- to inhibitor relay terminal ③ ,
- through inhibitor relay terminal ⑤ ,
- to terminal ② of the starter motor windings.

Models without theft warning system

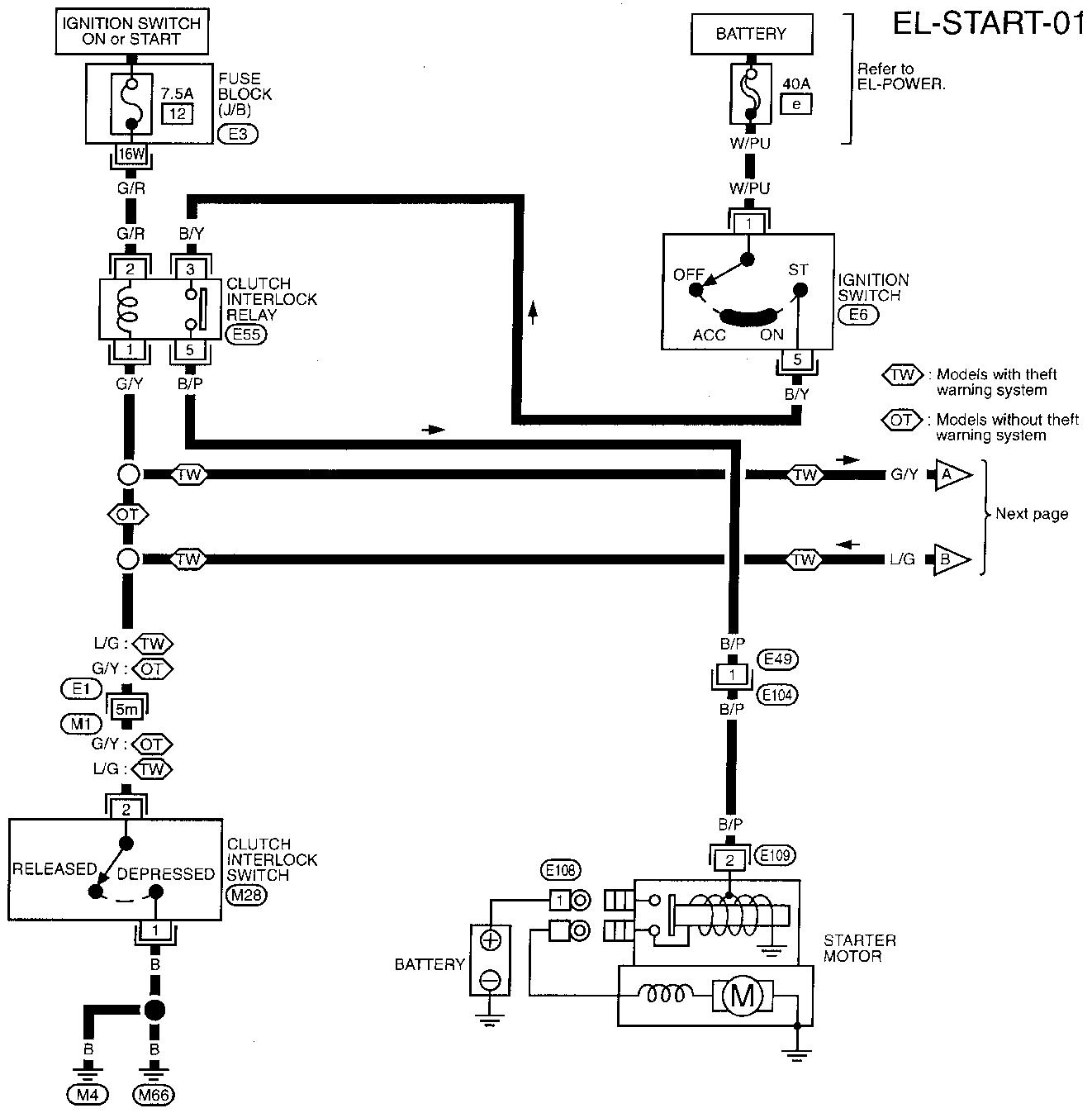
With the ignition switch in the START position, power is supplied
- through inhibitor switch terminal ① ,
- to inhibitor relay terminal ① , with selector lever in the P or N position.

Then inhibitor relay is energized and power is supplied
- from ignition switch terminal ⑤
- to inhibitor relay terminal ③
- through inhibitor relay terminal ⑤
- to terminal ② of the starter motor windings.

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

Wiring Diagram — START —

M/T MODELS

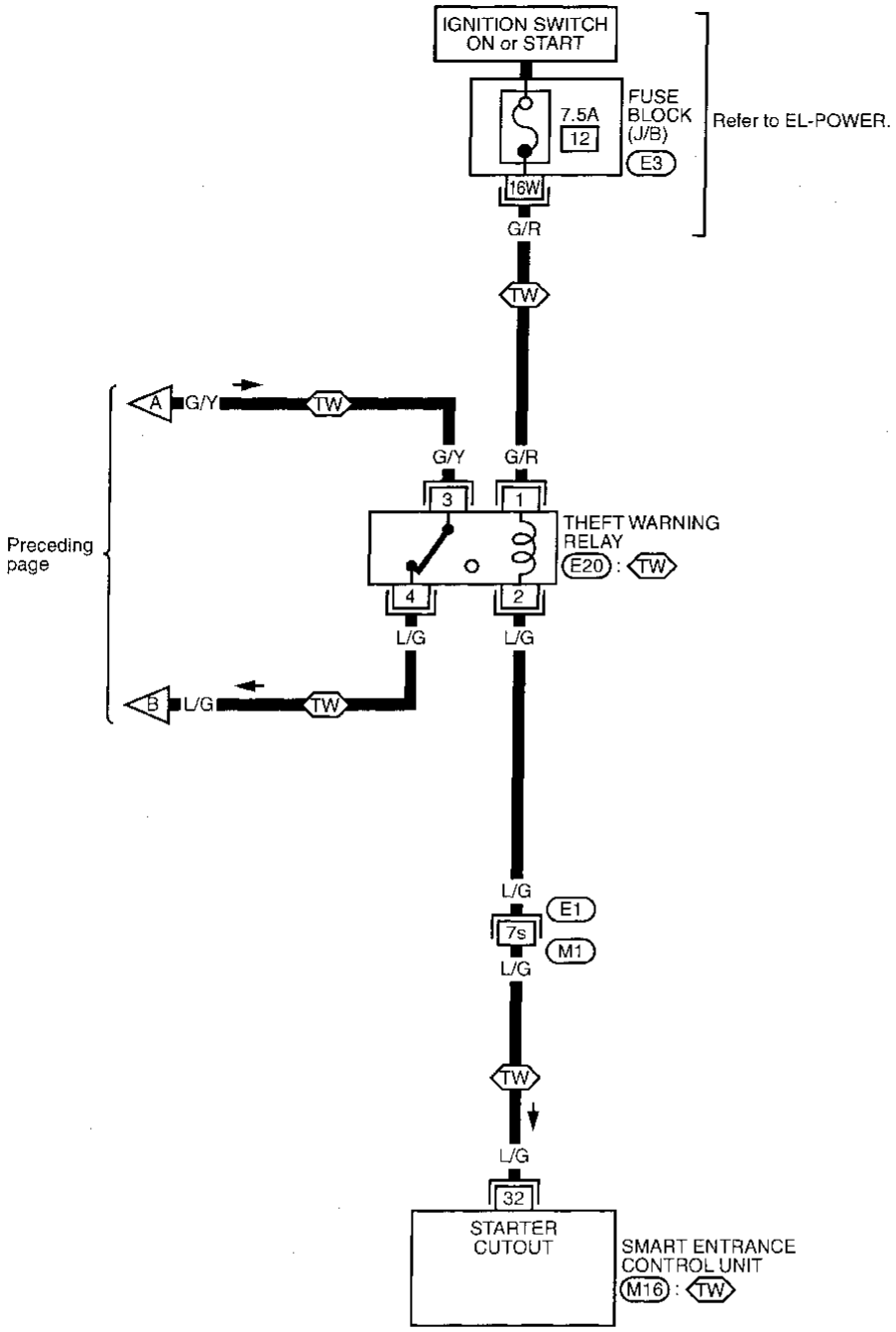


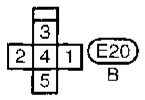
Refer to last page (Foldout page).
E1 , M1
E3

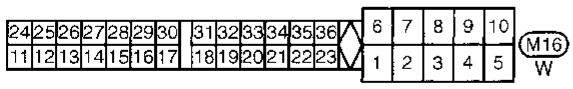
MEL737G

Wiring Diagram — START — (Cont'd)

EL-START-02





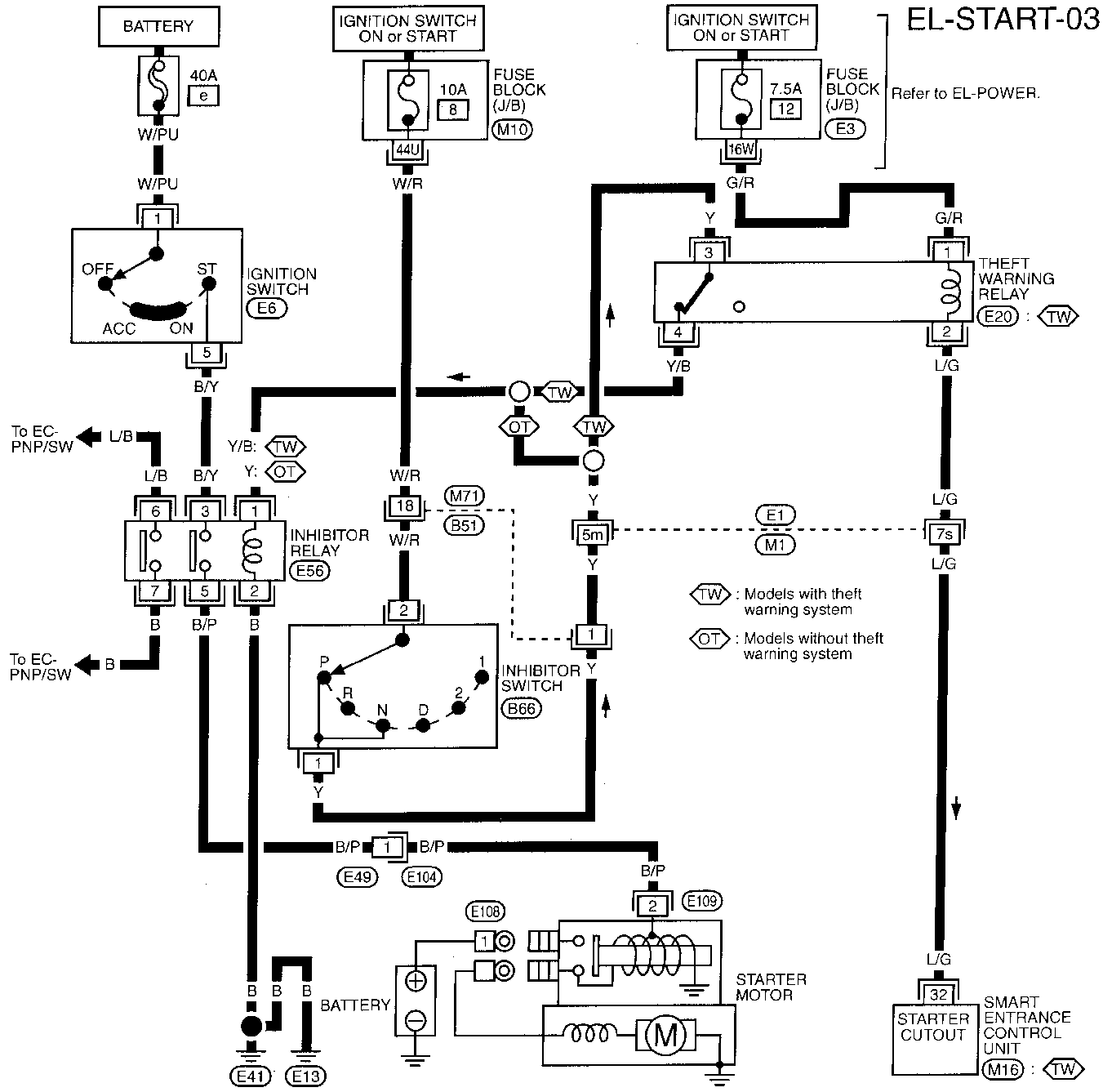


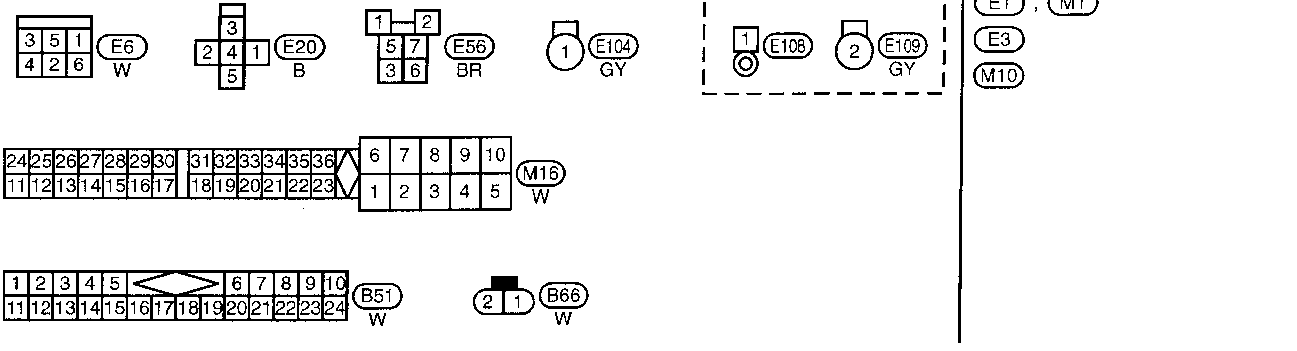
Refer to last page (Foldout page).
E1 , M1
E3

MEL738G

Wiring Diagram — START — (Cont'd)

A/T MODELS

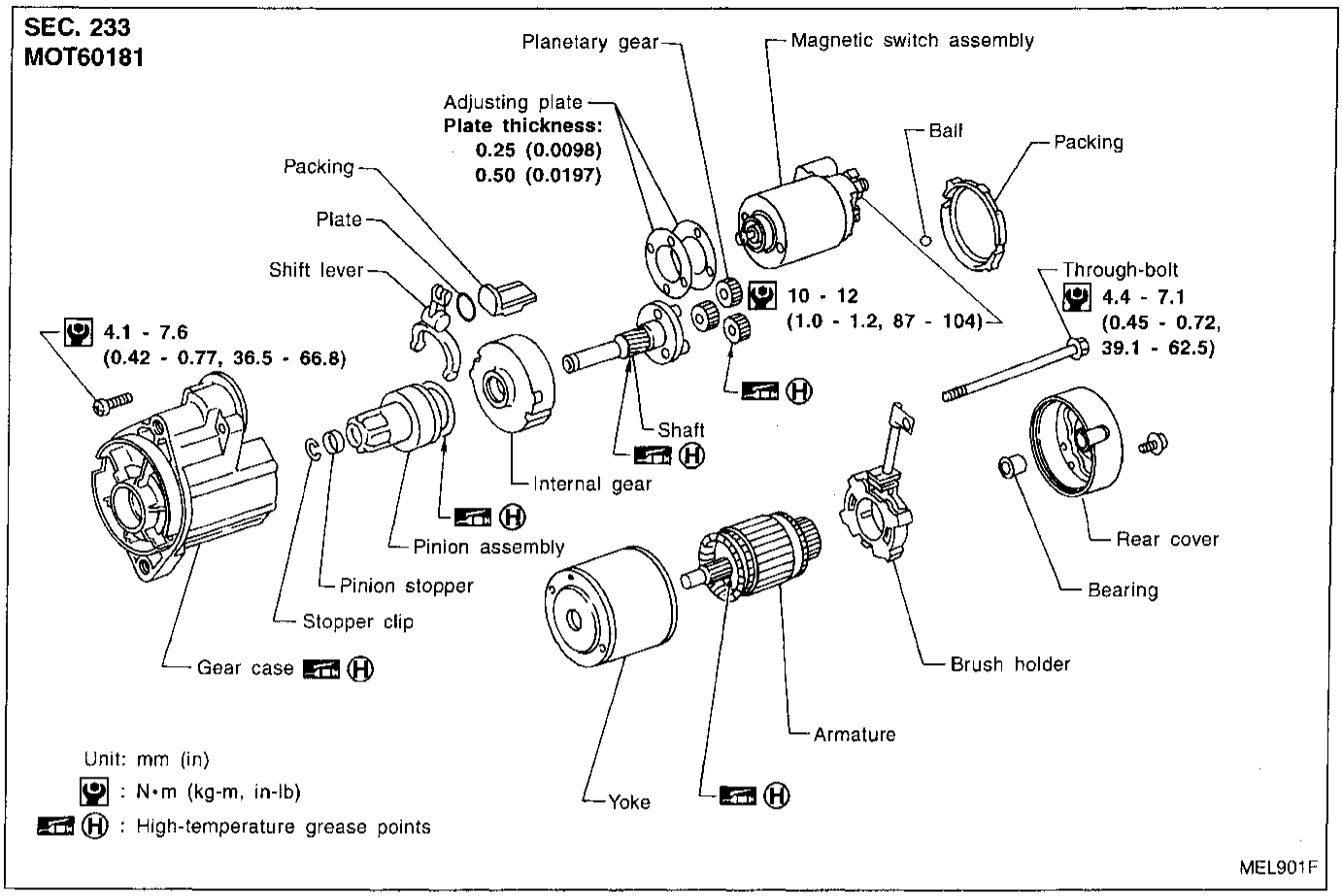


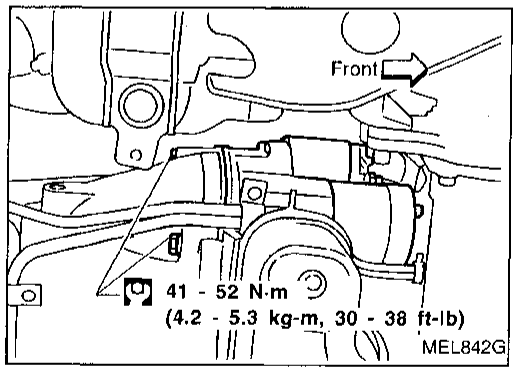


Refer to last page (Foldout page).
E1 , M1
E3
M10

MEL739G

Construction





Removal and Installation

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		MOT60181 MITSUBISHI make Reduction gear type
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 90
Revolution	rpm	More than 2,500
Minimum diameter of commutator	mm (in)	28.8 (1.134)
Minimum length of brush	mm (in)	7.0 (0.276)
Brush spring tension	N (kg, lb)	11.778 - 23.537 (1.201 - 2.400, 2.648 - 5.292)
Clearance between pinion front edge and pinion stopper	mm (in)	—

System Description

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

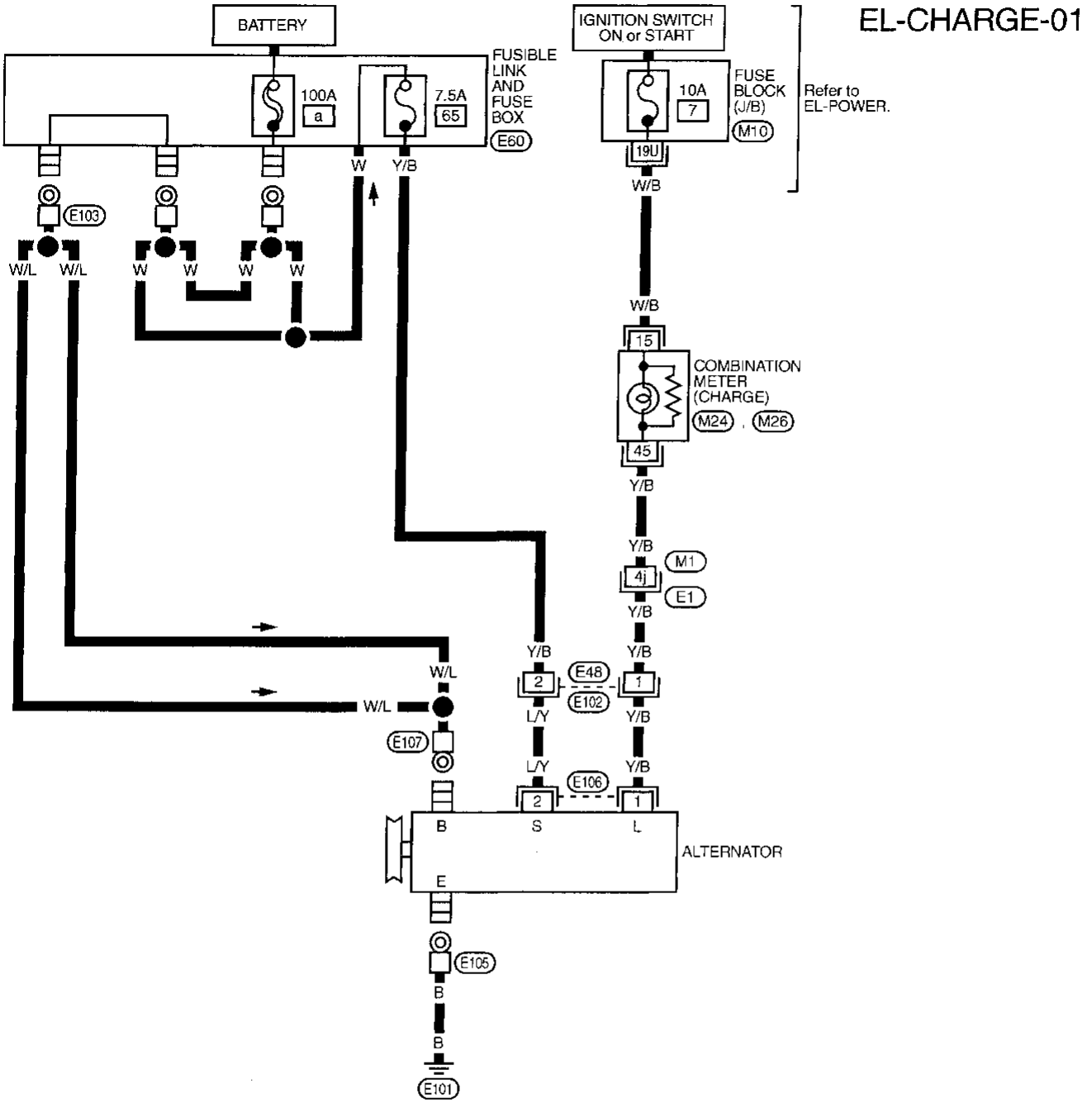
- 100A fusible link (letter [a], located in the fuse and fusible link box), and
- 7.5A fuse (No. [65], located in the fuse and fusible link box).

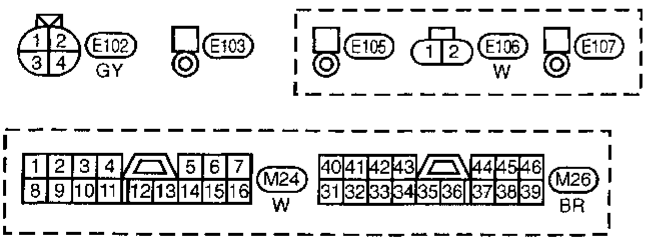
Terminal Ⓑ supplies power to charge the battery and operate the vehicle's electrical system. Output voltage is controlled by the IC regulator at terminal Ⓢ detecting the input voltage. The charging circuit is protected by the 100A fusible link.
Terminal Ⓔ of the alternator supplies ground through body ground (E101).
With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. [7], located in the fuse block (J/B)]
- to combination meter terminal ⑮ for the charge warning lamp.

Ground is supplied to terminal ㊺ of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning lamp will illuminate. When the alternator is providing sufficient voltage with the engine running, the ground is opened and the charge warning lamp will go off.
If the charge warning lamp illuminates with the engine running, a fault is indicated.

Wiring Diagram — CHARGE —





Refer to last page (Foldout page).
E1 , M1
E60
M10

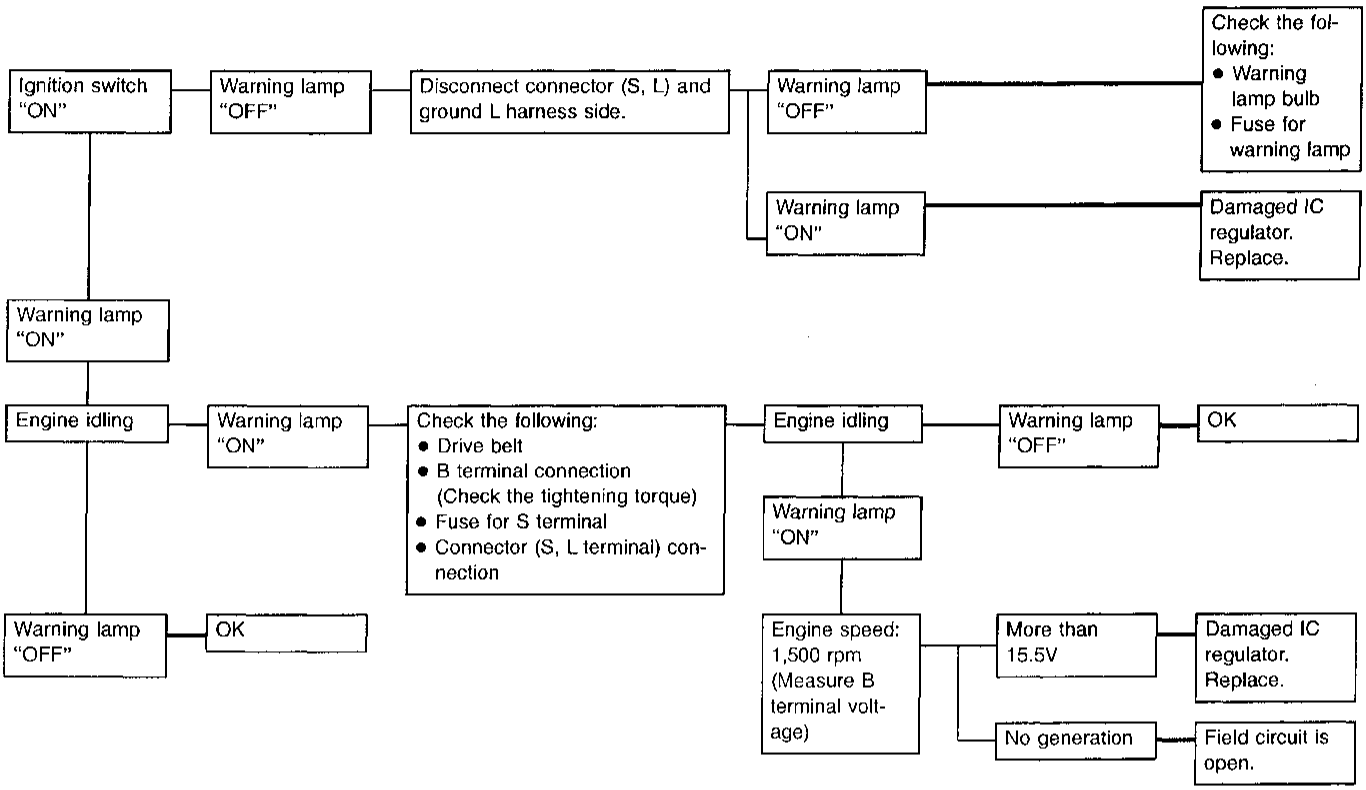
MEL740G

Trouble Diagnoses

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

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

WITH IC REGULATOR



Warning lamp: "CHARGE" warning lamp in combination meter

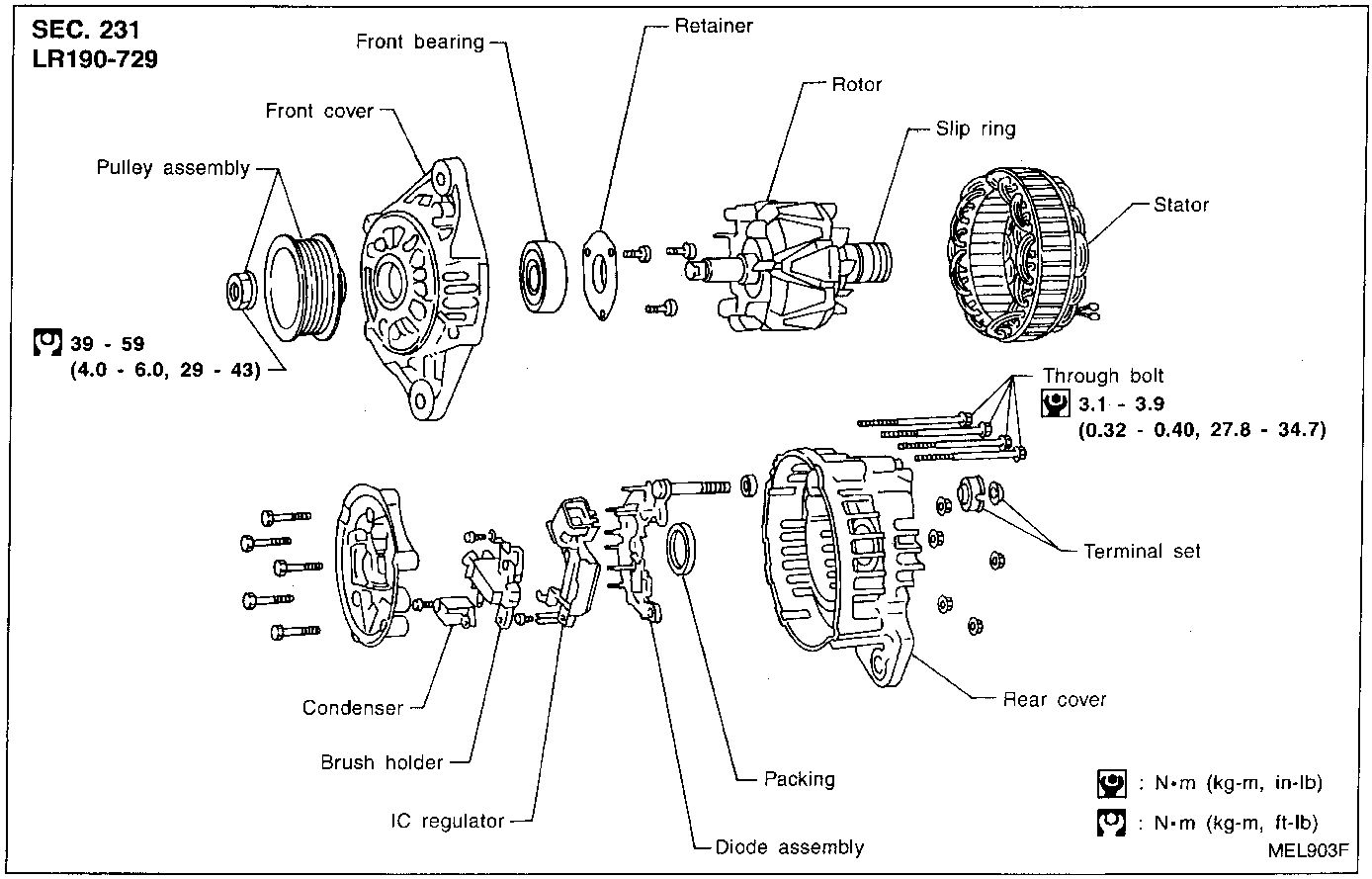
★: **When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.**

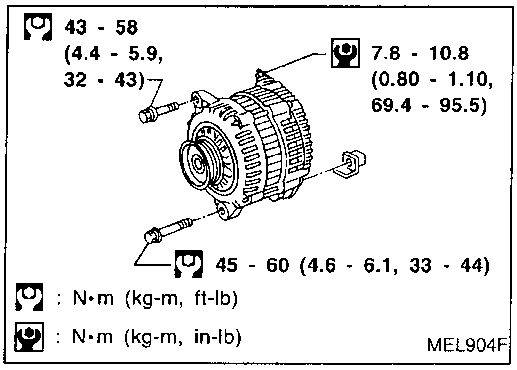
MALFUNCTION INDICATOR

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

- B terminal is disconnected.
- S terminal is disconnected or related circuit is open.
- Field circuit is open.
- Excessive voltage is produced.

Construction





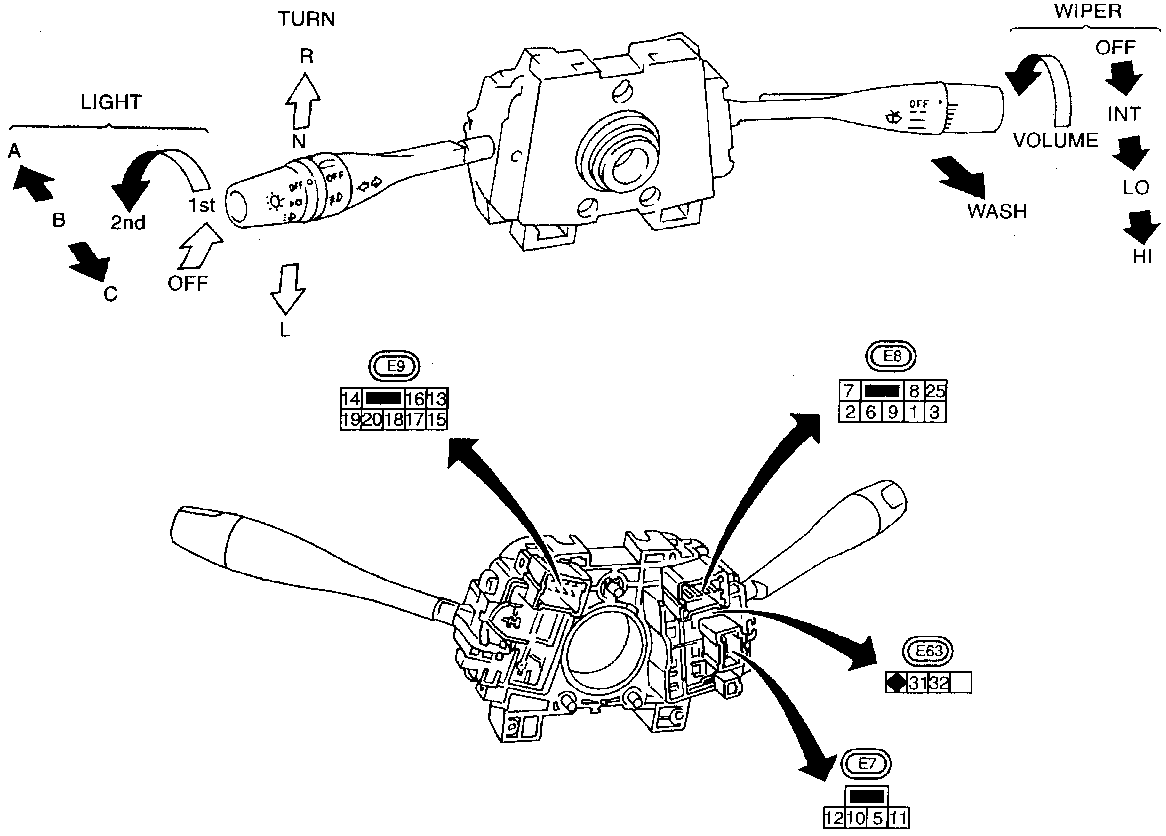
Removal and Installation

Service Data and Specifications (SDS)

ALTERNATOR

Type		LR190-729 HITACHI make
Nominal rating	V-A	12-90
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current (When 13.5 volts is applied)	A/rpm	More than 23/1,300 More than 65/2,500 More than 87/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.471 - 3.432 (150 - 350, 5.29 - 12.34)
Slip ring minimum outer diameter	mm (in)	26.0 (1.024)

Combination Switch/Check



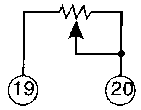
LIGHTING SWITCH

	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					○

VARIABLE INTERMITTENT WIPER VOLUME



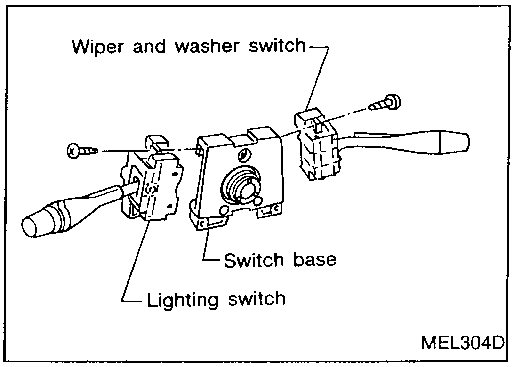
FOG LAMP SWITCH

	OFF	ON
31		○
32		○

	L	N	R
1	○		○
2	○		
3	○		

TURN SIGNAL SWITCH

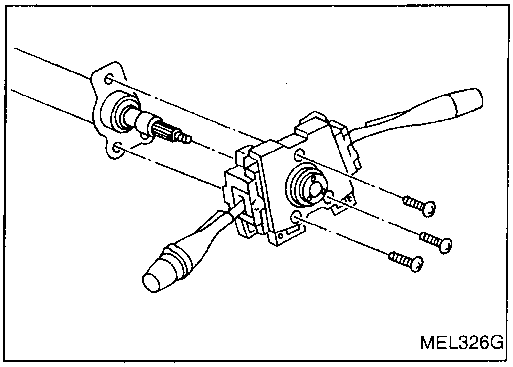
MEL837G



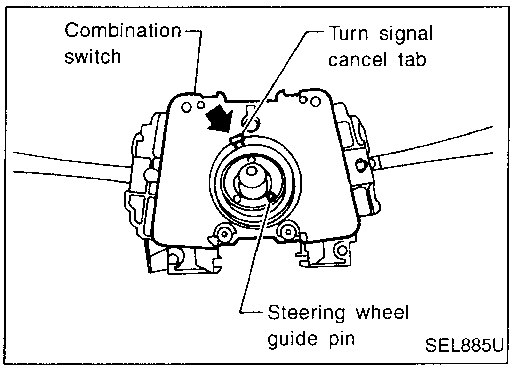
Replacement

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

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

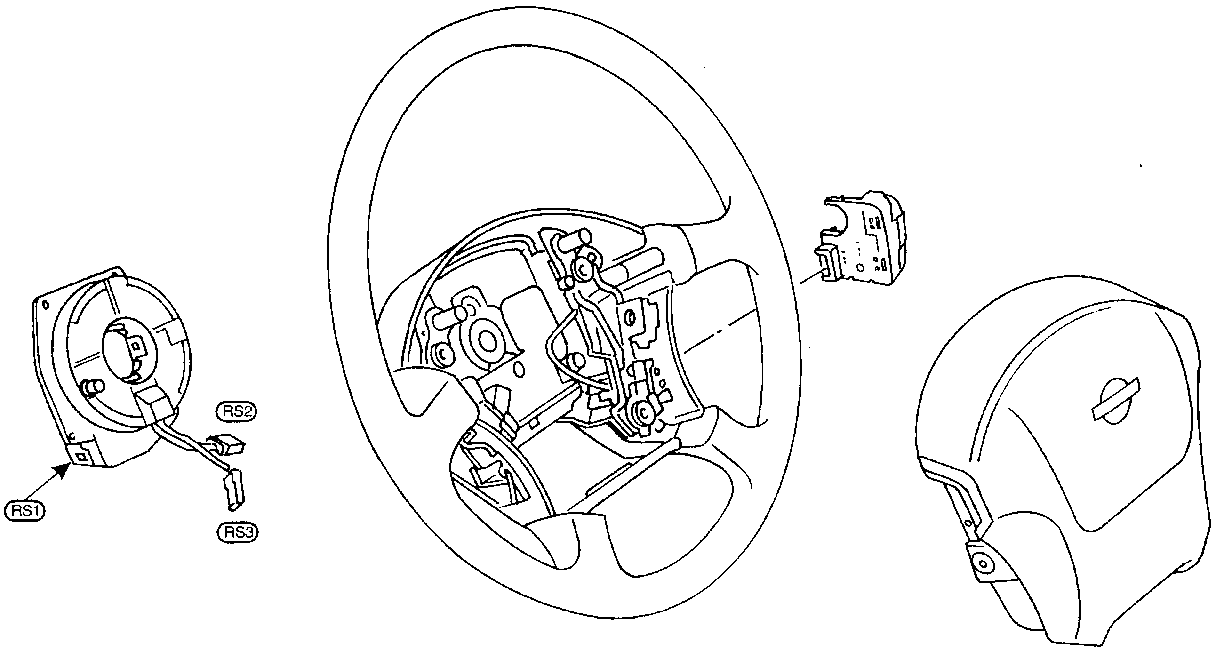


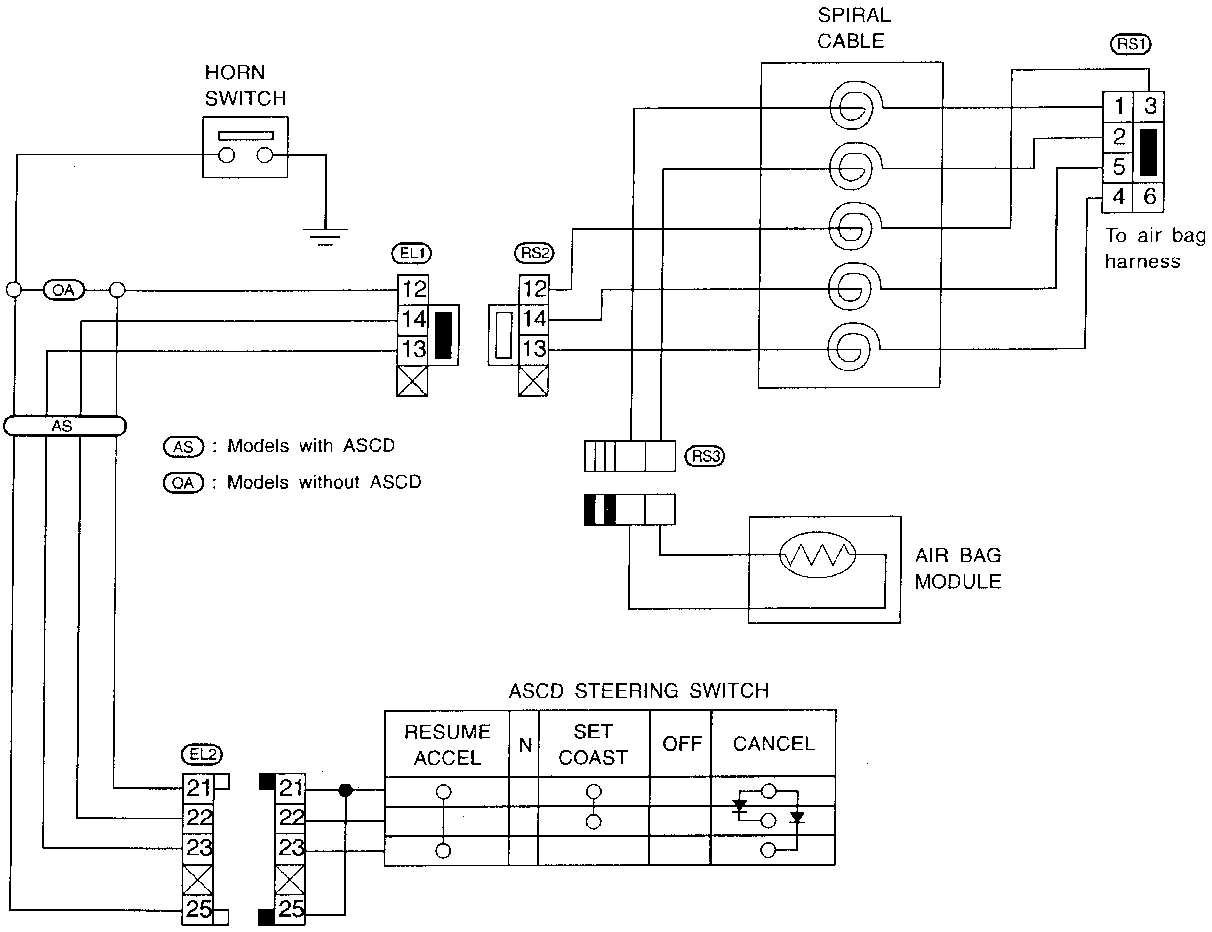
- To remove combination switch base, remove base attaching screw.



- Before installing the steering wheel, align the turn signal cancel tab with the notch of combination switch.

Steering Switch/Check





MEL838G

System Description (For USA)

The headlamps are controlled by the lighting switch which is built into the combination switch.
Power is supplied at all times

- to lighting switch terminal ⑤
- through 15A fuse (No. 59 , located in the fuse and fusible link box), and
- to lighting switch terminal ⑧
- through 15A fuse (No. 60 , located in the fuse and fusible link box).

Low beam operation

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

- from lighting switch terminal ⑩
- to terminal 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 E13 and E41.
With power and ground supplied, the headlamp(s) will illuminate.

High beam operation/flash-to-pass operation

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

- from lighting switch terminal ⑥
- to terminal ① of each RH headlamp, and
- from lighting switch terminal ⑨
- to terminal ① of each LH headlamp, and
- to combination meter terminal ㊸ for the high beam indicator.

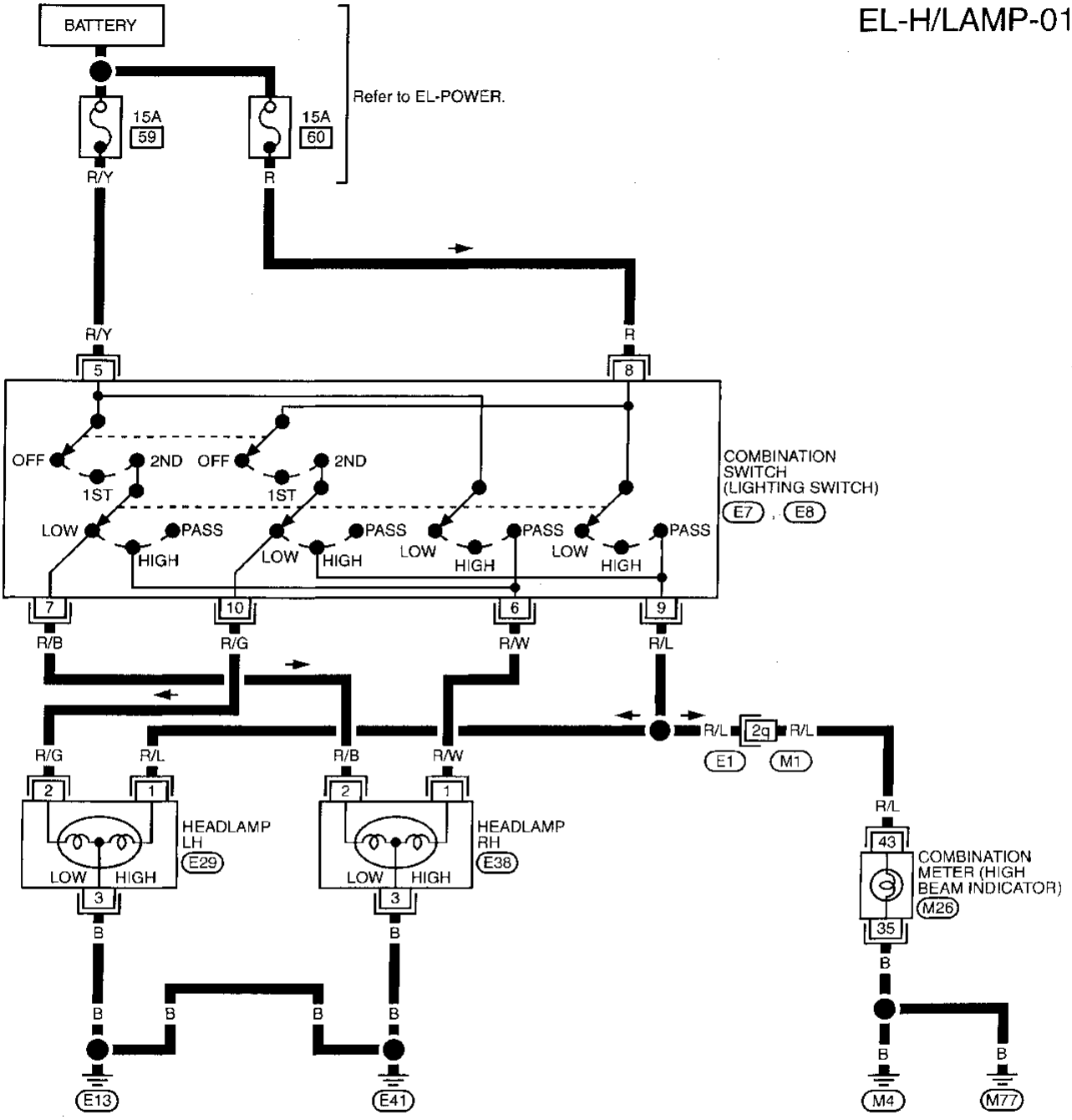
Ground is supplied to terminal ㉟ of the combination meter through body grounds M4 and M77.
Terminal ③ of each headlamp supplies ground through body grounds E13 and E41.
With power and ground supplied, the high beams and the high beam indicator illuminate.

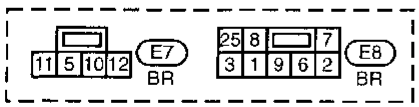
Theft warning system

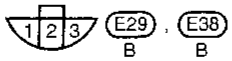
The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-215).

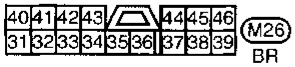
Wiring Diagram (For USA) — H/LAMP —

EL-H/LAMP-01









Refer to last page (Foldout page).
E1 , M1

MEL741G

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. Grounds (E13) and (E41) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E13) and (E41). 3. Check 15A fuse (No. 60, located in fuse and fusible link box). Verify battery positive voltage is present at terminal ⑧ of lighting switch. 4. Check lighting switch.
RH headlamps do not operate.	1. Bulb 2. Grounds (E13) and (E41) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E13) and (E41). 3. Check 15A fuse (No. 59, located in fuse and fusible link box). Verify battery positive voltage is present at terminal ⑤ of lighting switch. 4. Check lighting switch.
LH high beams do not operate, but LH low beam operates.	1. Bulbs 2. Open in LH high beams circuit 3. Lighting switch	1. Check bulbs. 2. Check R/L wire between lighting switch and LH headlamps 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 R/G wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beams do not operate, but RH low beam operates.	1. Bulbs 2. Open in RH high beams circuit 3. Lighting switch.	1. Check bulbs. 2. Check R/W wire between lighting switch and RH headlamps 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 R/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. Grounds (M4) and (M77) 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check grounds (M4) and (M77). 3. Check R/L wire between lighting switch and combination meter for an open circuit.

Daytime Light System/System Description (For Canada)

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

Power is supplied at all times
- through 15A fuse (No. 60 , 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. 59 , located in the fuse and fusible link box)
- to daytime light control unit terminal ② and
- to lighting switch terminal ⑤ .

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 .

With the ignition switch in the START position, power is supplied
- through 7.5A fuse [No. 26 , located in the fuse block (J/B)]
- to daytime light control unit terminal ① .

Ground is supplied to daytime light control unit terminal ⑨ through body grounds E13 and E41 .

HEADLAMP OPERATION

Low beam operation

When the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied
- from lighting switch terminal ⑦
- to RH headlamp terminal ②
- to daytime light control unit terminal ④ .

Ground is supplied to RH headlamp terminal ③ through body grounds E13 and E41 .

Also, when the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to LH headlamp terminal ② .

Ground is supplied
- to LH headlamp terminal ③
- from daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑨
- through body grounds E13 and E41 .

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

High beam operation/flash-to-pass operation

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position, power is supplied
- from lighting switch terminal ⑥
- to terminal ① of RH headlamp.

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position, power is supplied
- from lighting switch terminal ⑨
- to daytime light control terminal ⑤
- to combination meter terminal ㊸ for the high beam indicator
- through daytime light control terminal ⑥
- to terminal ① of LH headlamp.

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

Ground is supplied to terminal ㉟ of the combination meter through body grounds M4 and M77 .

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

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

DAYTIME LIGHT OPERATION

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

- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to terminal ① of LH headlamp
- through terminal ③ of LH headlamp
- to daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑧
- to terminal ① of RH headlamp.

Ground is supplied to terminal ③ of RH headlamp through body grounds (E13) and (E41).
Because the high beam headlamps are now wired in series, they operate at half illumination.

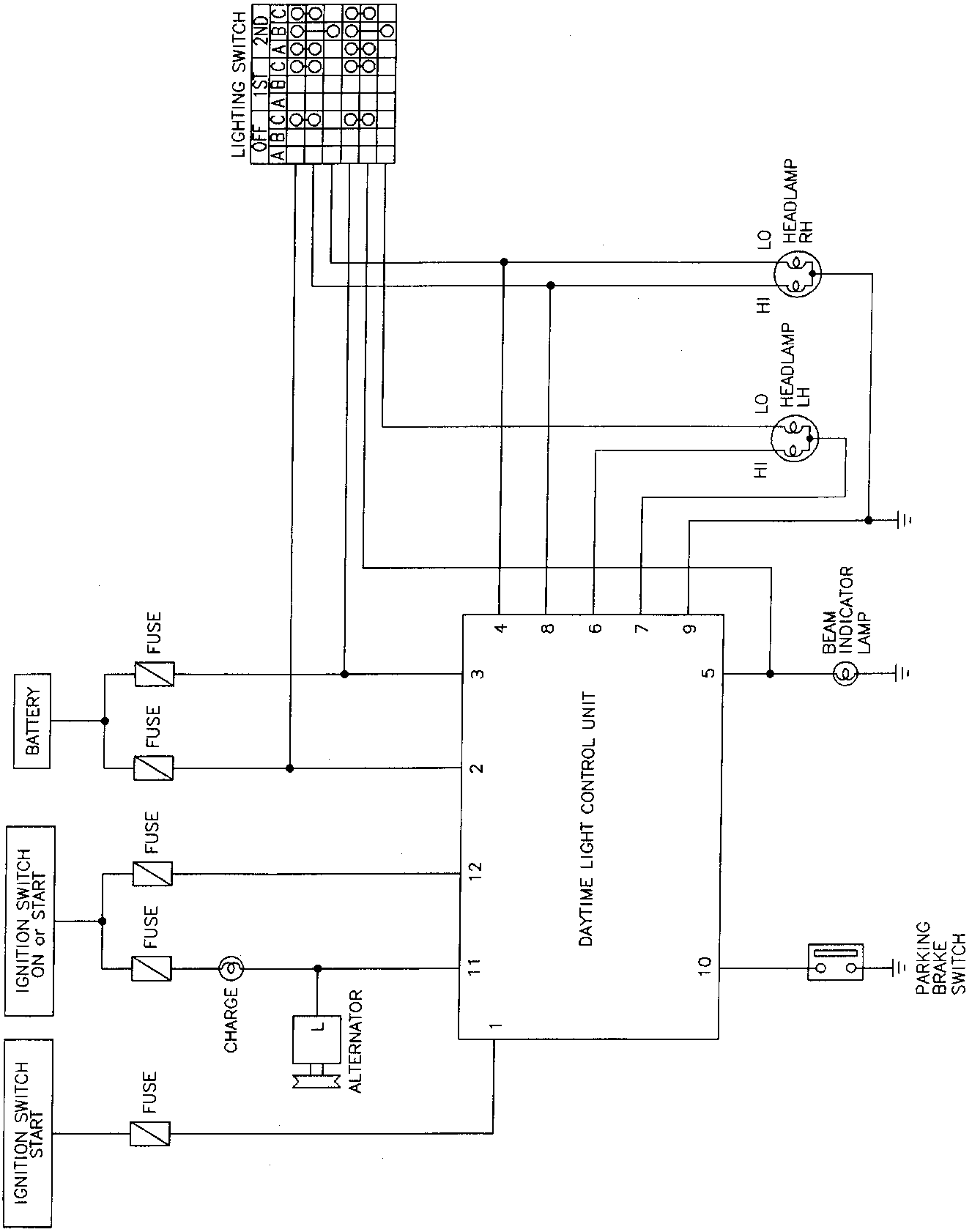
Operation (Daytime light system for Canada)

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

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

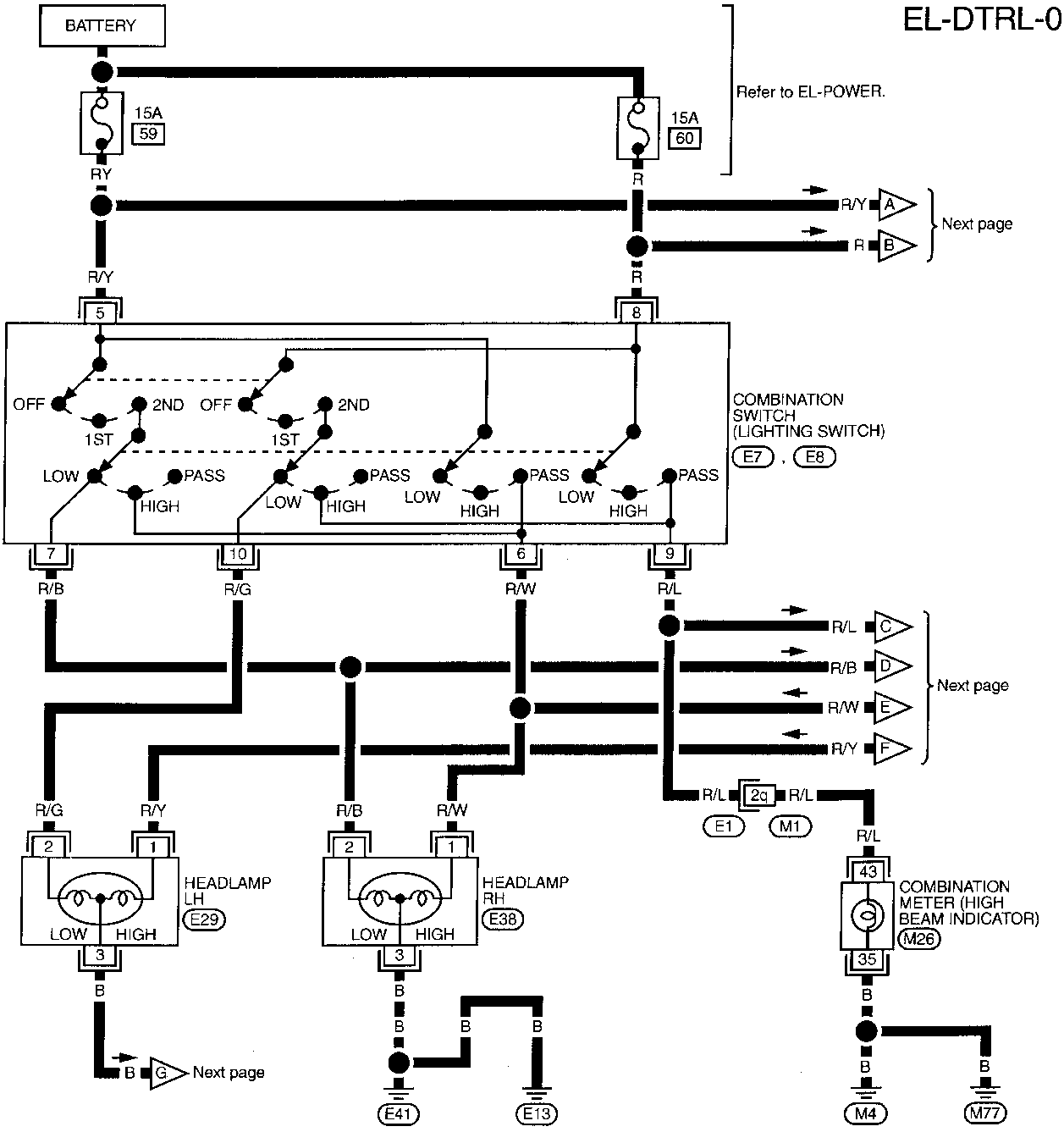
○ : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
□ : Added functions
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won't come ON.

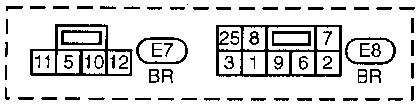
Schematic (For Canada)

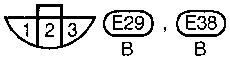


MEL544F

Wiring Diagram (For Canada) — DTRL —







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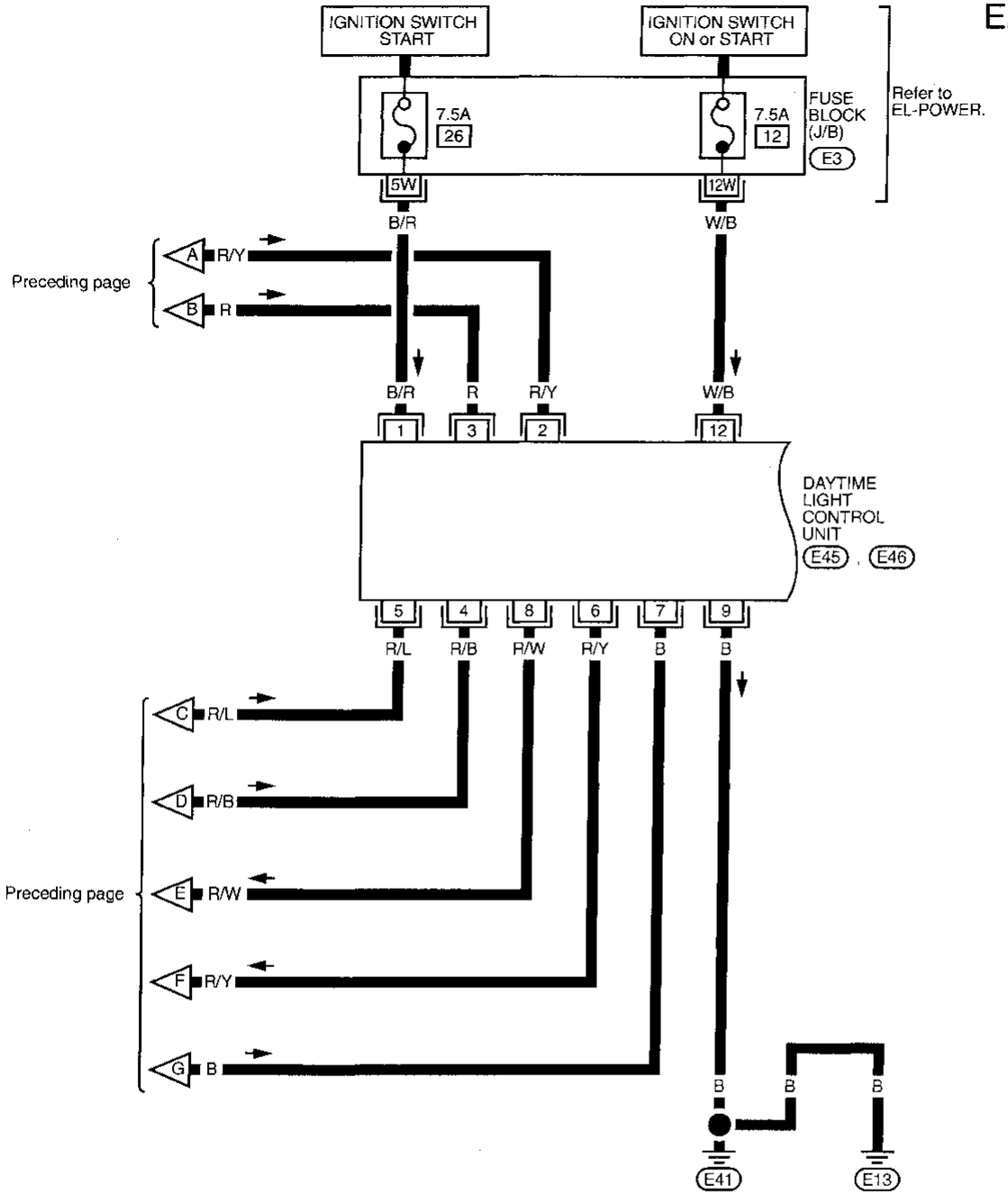
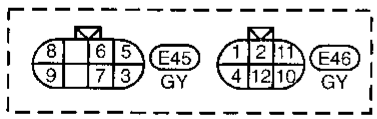
E1 , M1

MEL742G

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

EL-DTRL-02





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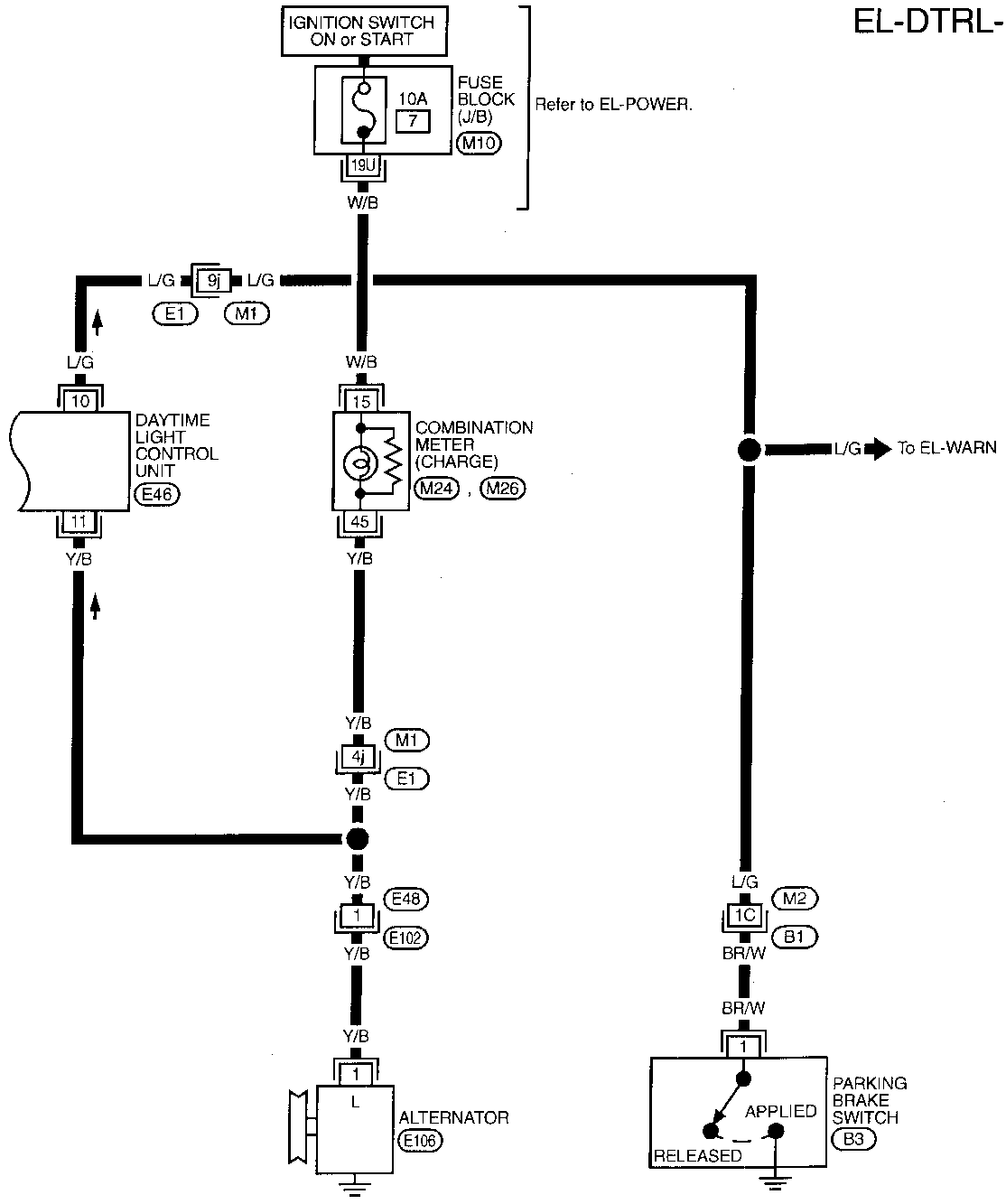
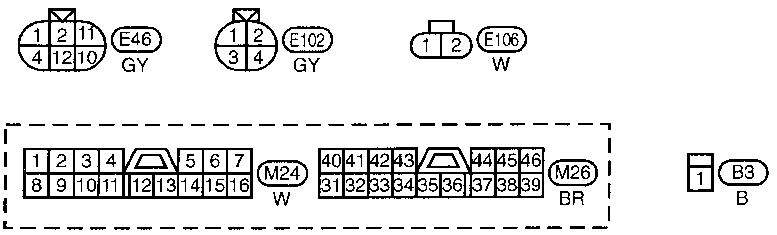
E3

MEL542F

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

EL-DTRL-03





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E1 , M1

M2 , B1

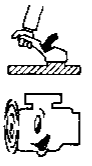
M10

MEL743G

Trouble Diagnoses (For Canada)

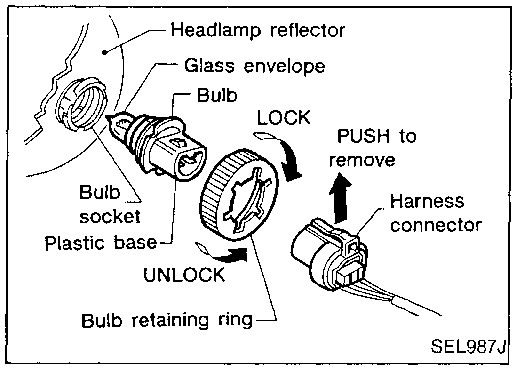
DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(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 "HEAD" (2nd position)	Battery positive voltage
5	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM"	Battery positive voltage
			When turning lighting switch to "FLASH TO PASS"	Battery positive voltage
6	LH hi beam		When turning lighting switch to "HI BEAM"	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	LH headlamp control (ground)		When lighting switch is turned to "HEAD"	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	RH hi beam		When turning lighting switch to "HI BEAM"	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 (For Canada) (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 headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.**

Bulb Specifications

Item	Wattage (W)
Headlamp (Semi-sealed beam) High/Low	65/45 (HB1)

Aiming Adjustment

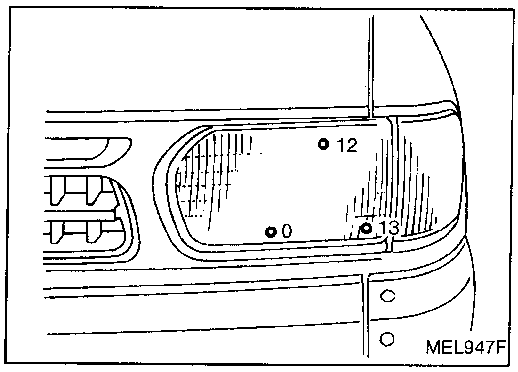
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.

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

Aiming Adjustment (Cont'd)

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).

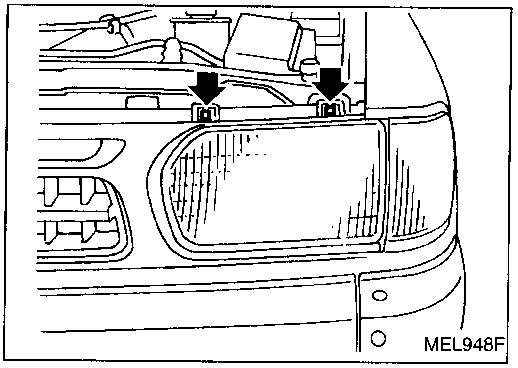


AIMER ADJUSTMENT MARK

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

Adjustment value for mechanical aimer

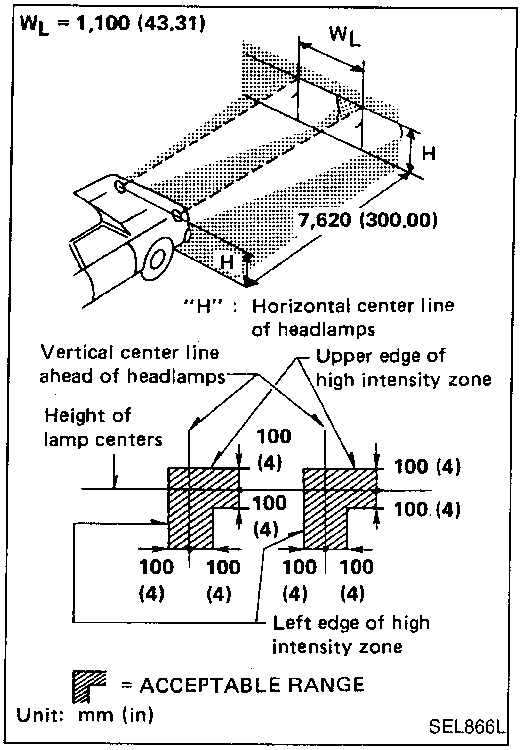
	Mechanical aimer level
Horizontal side	–4 to 4
Vertical side	–4 to 4



LOW BEAM

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

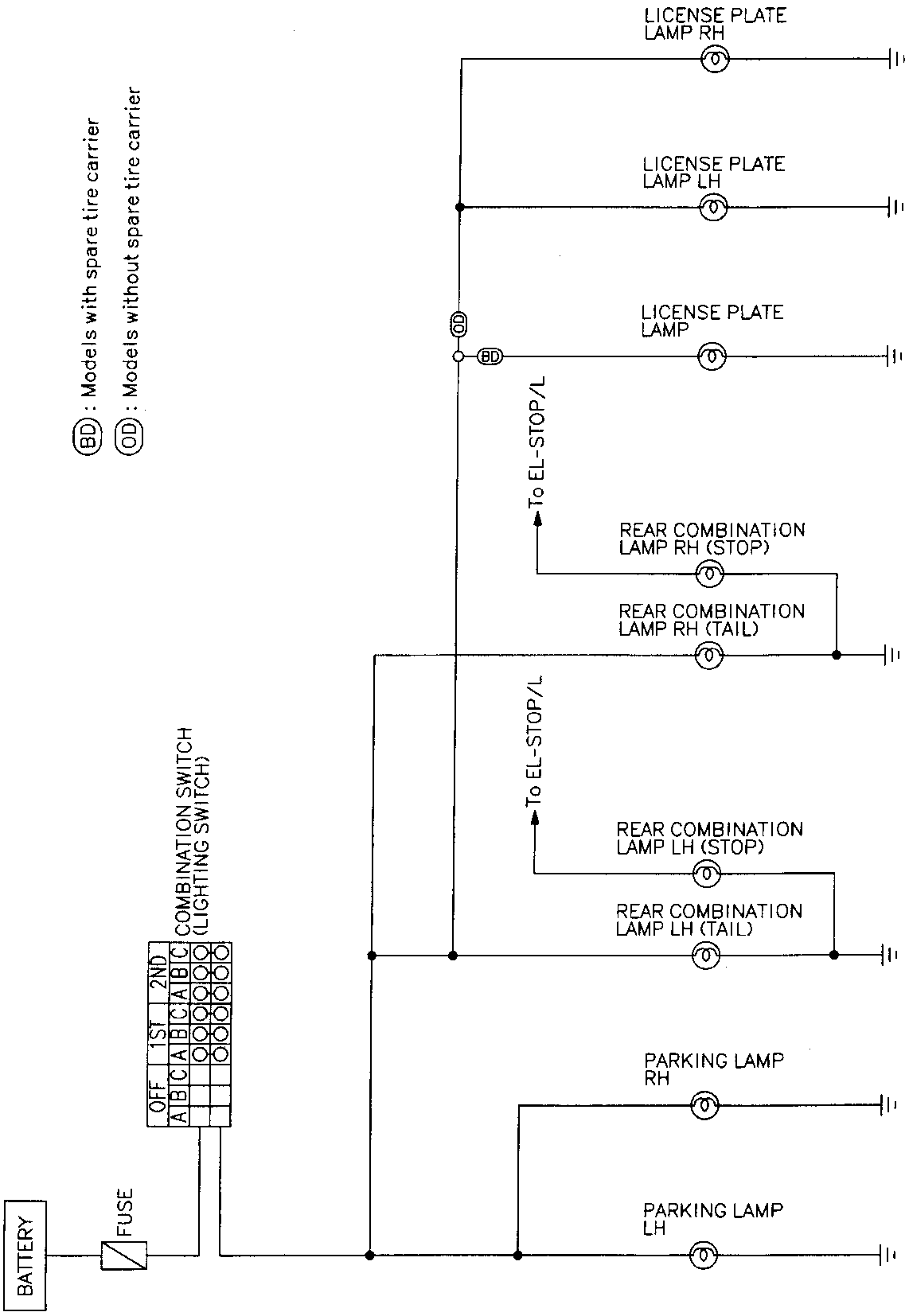
- **First tighten the adjusting screw all the way and then make adjustment by loosening the screw.**



- **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

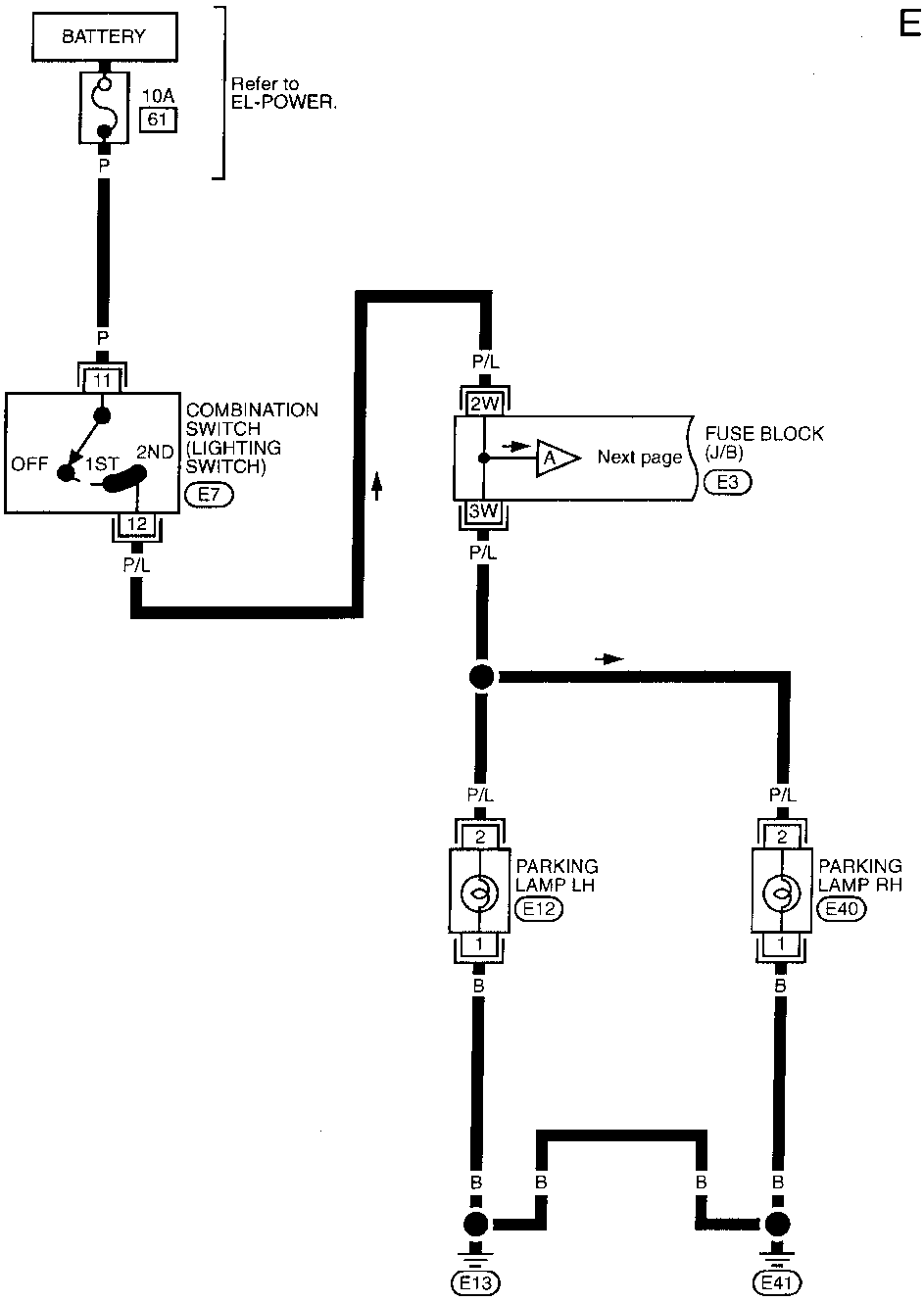
Parking, License and Tail Lamps/Schematic



MEL744G

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

EL-TAIL/L-01



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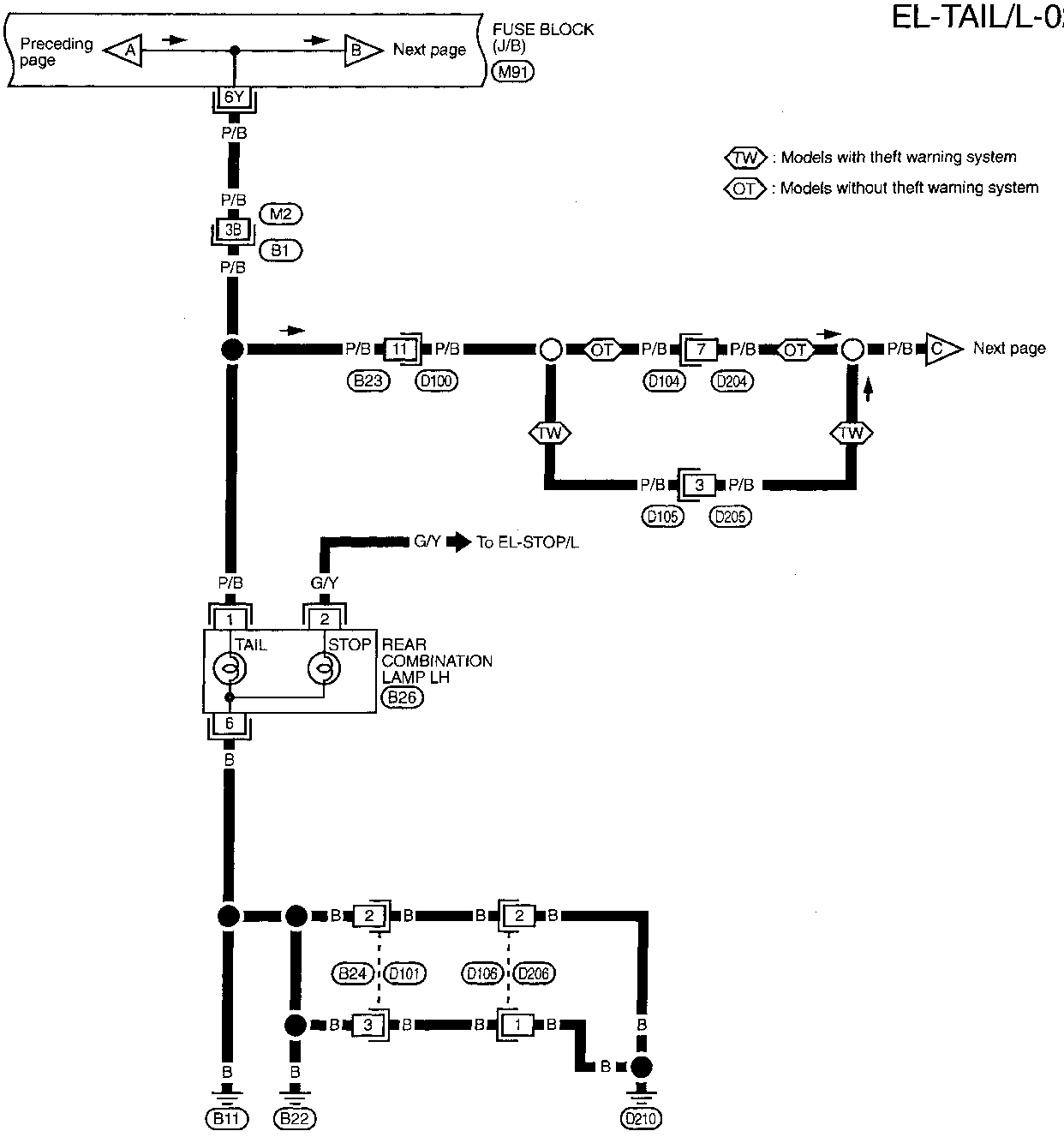
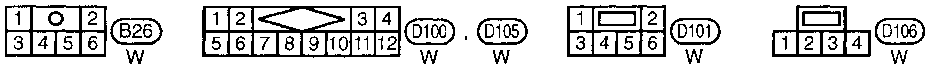
E3

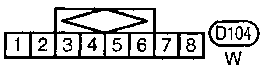
MEL745G

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

EL-TAIL/L-02







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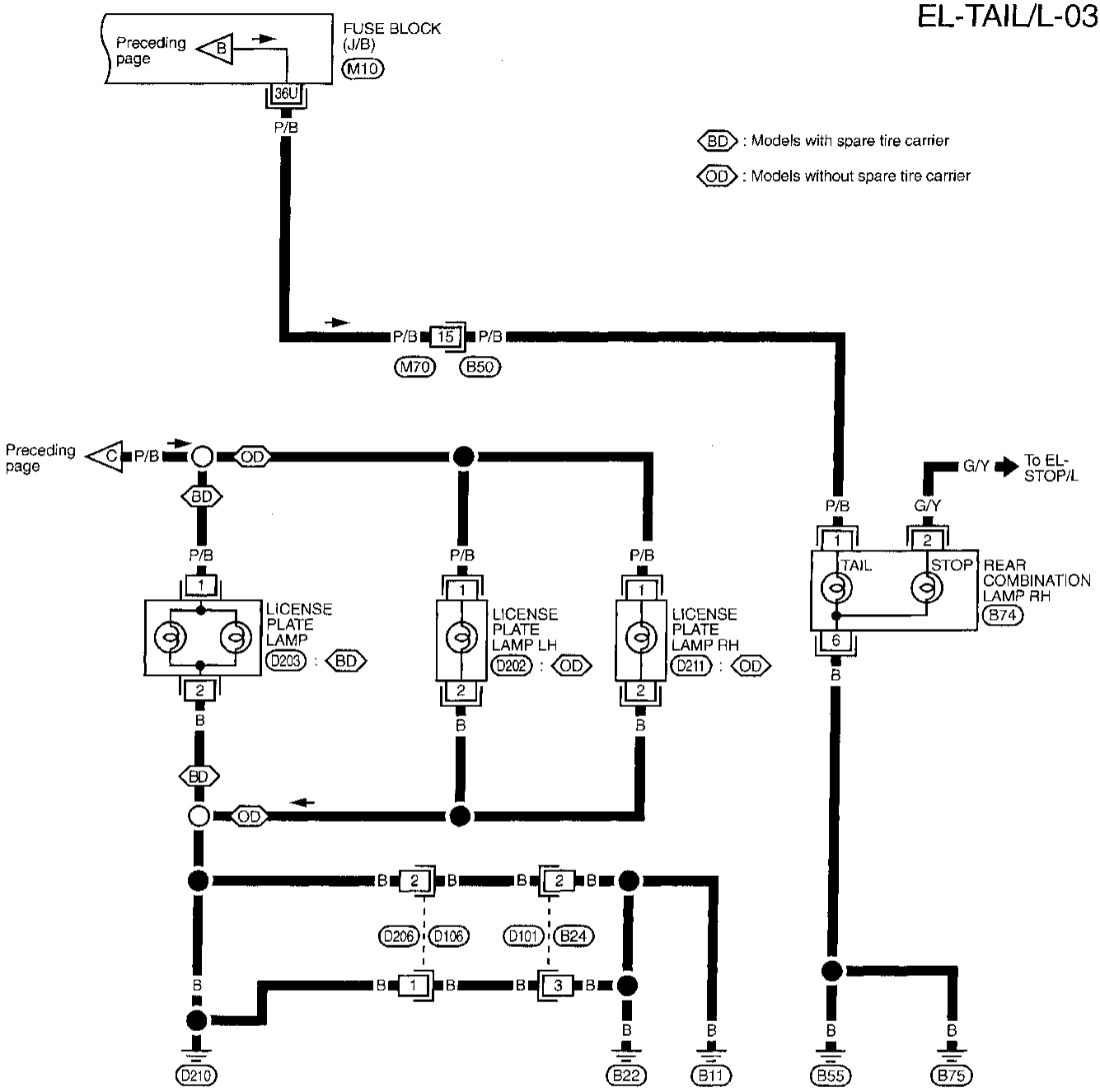
M91

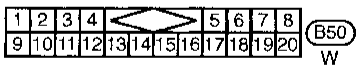
M2 , B1

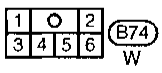
MEL746G

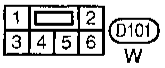
Parking, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

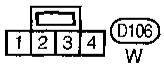
EL-TAIL/L-03

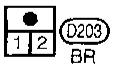


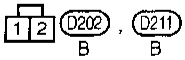












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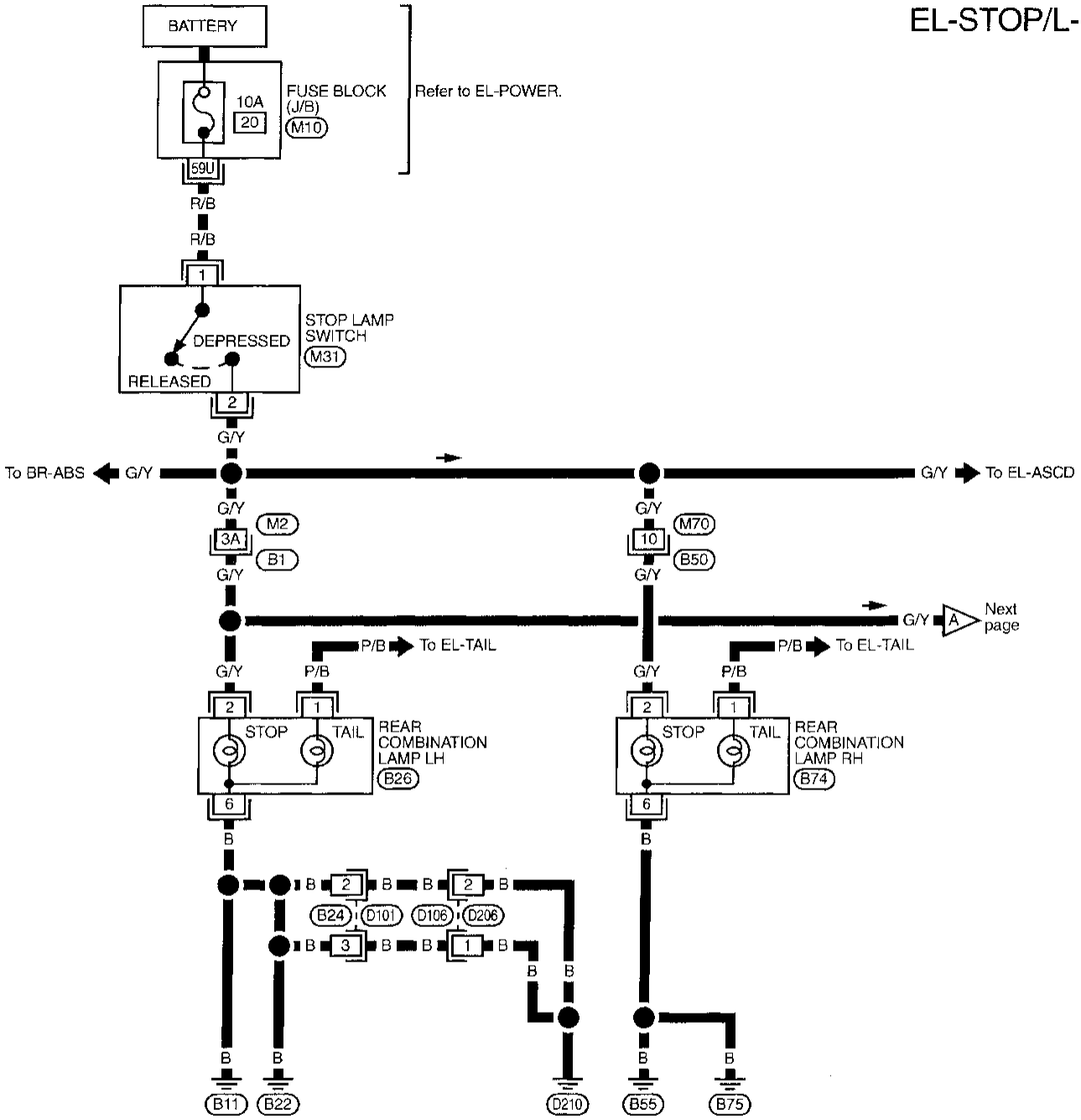
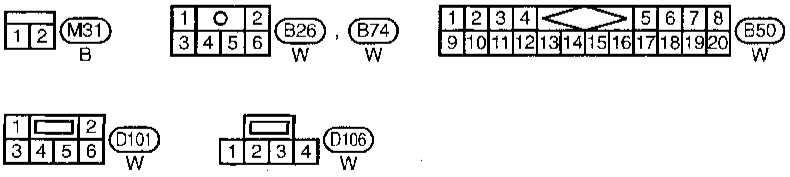
M10

MEL747G

Stop Lamp/Wiring Diagram — STOP/L —

EL-STOP/L-01





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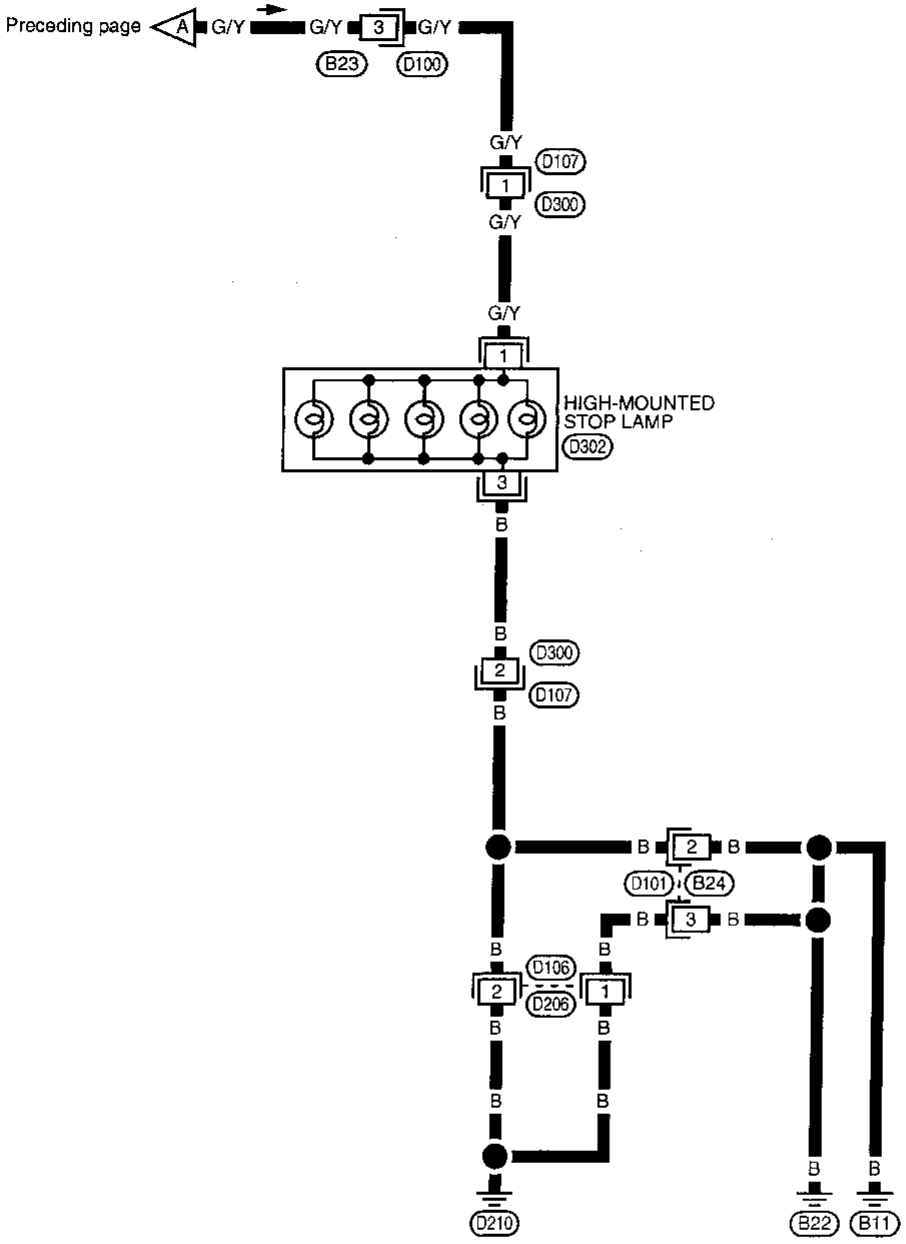
M2 , B1

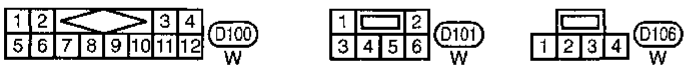
M10

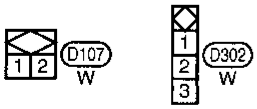
MEL748G

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

EL-STOP/L-02





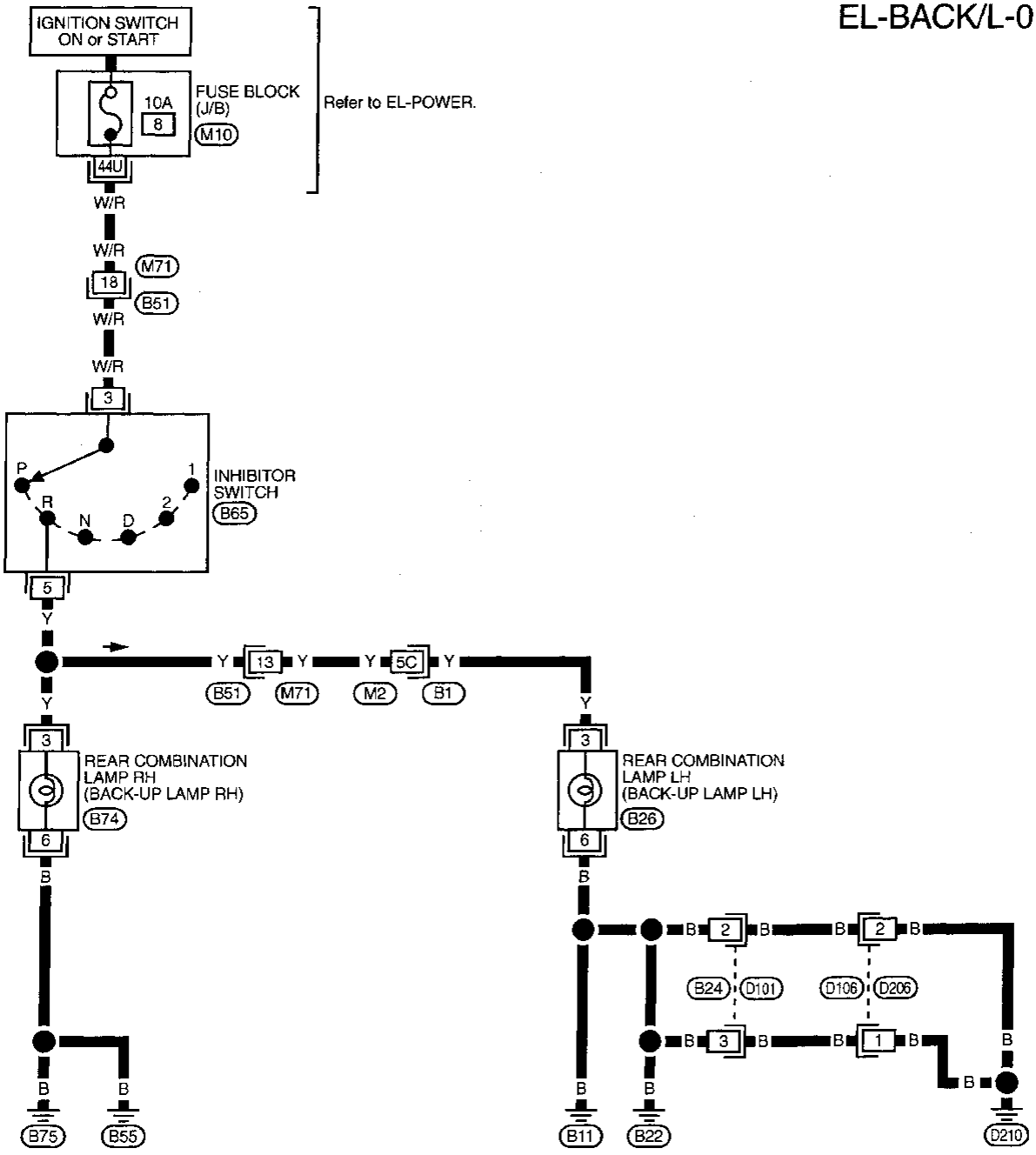


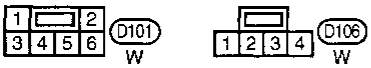
MEL550F

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

A/T MODELS

EL-BACK/L-01





Refer to last page (Foldout page).

M2 , B1

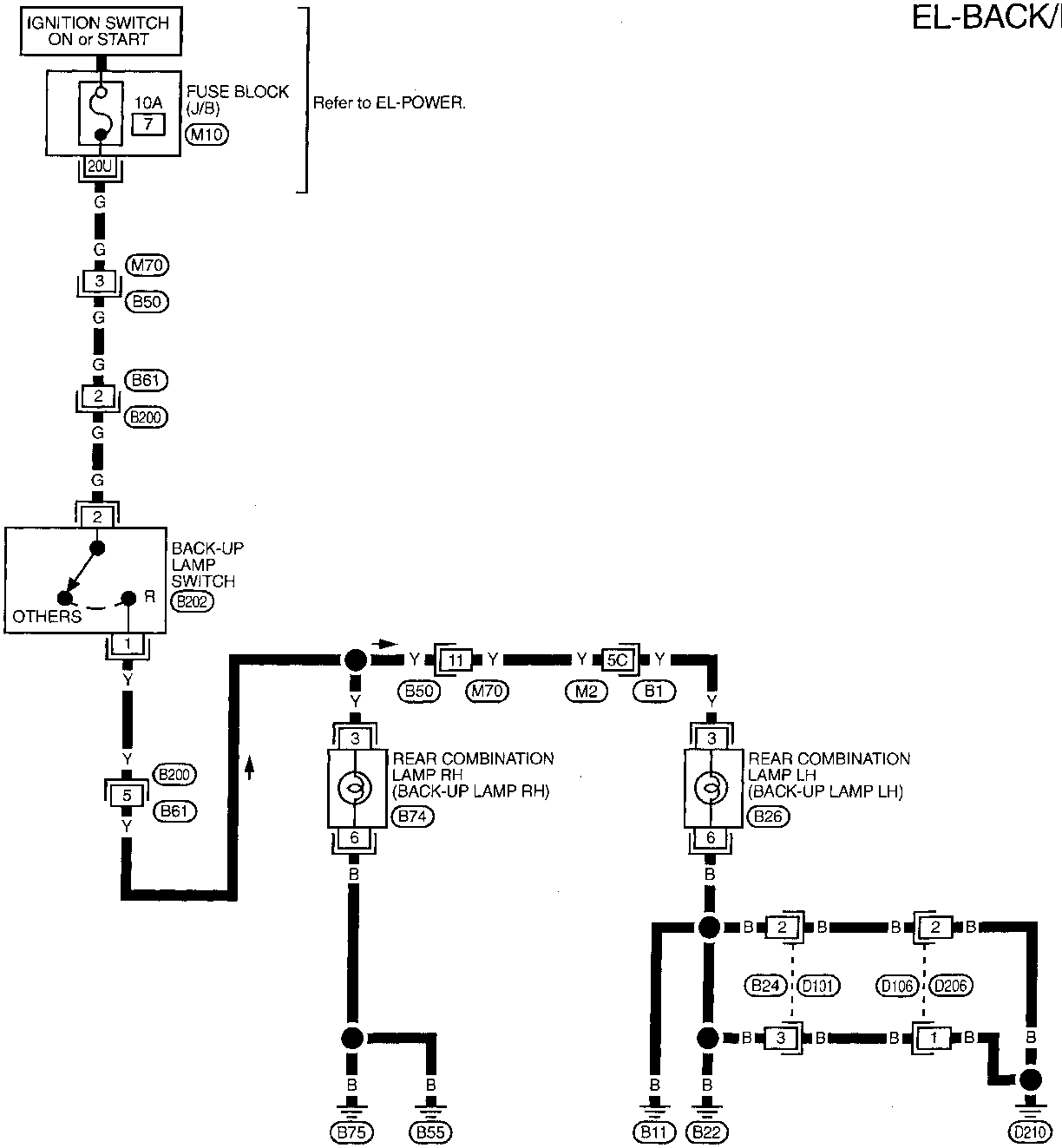
M10

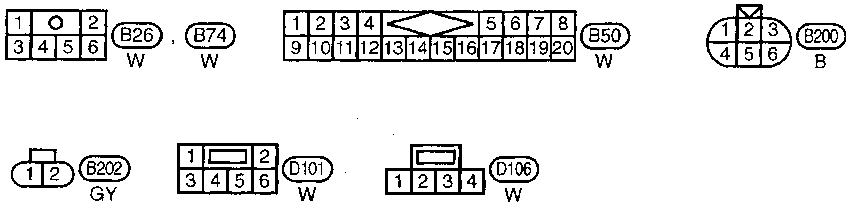
MEL749G

Back-up Lamp/Wiring Diagram — BACK/L — (Cont'd)

M/T MODELS

EL-BACK/L-02





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M2 , B1

M10

MEL750G

Front Fog Lamp/System Description

Power is supplied at all times to fog lamp relay terminal ③ through:
- 15A fuse (No. 53 , located in the fuse and fusible link box)

With the lighting switch in the 2ND position and LOW ("B") position, power is supplied
- through 15A fuse (No. 59 , located in the fuse and fusible link box)
- to lighting switch terminal ⑤
- through terminal ⑦ of the lighting switch
- to fog lamp relay terminal ①.

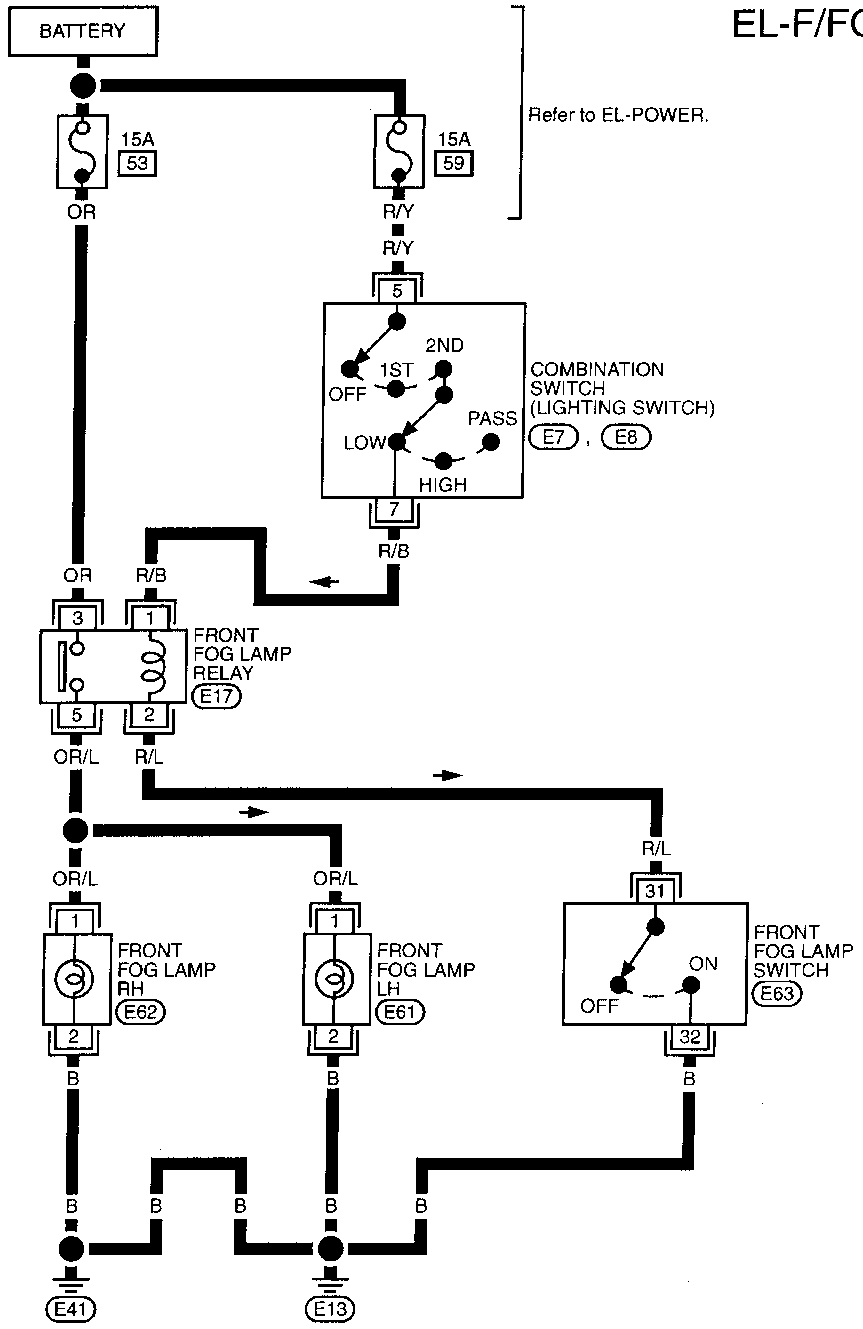
Fog lamp operation

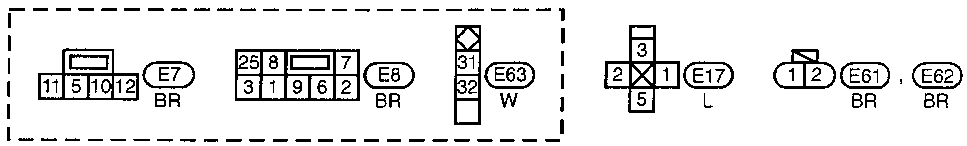
The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW ("B") position for fog lamp operation.
With the fog lamp switch in the ON position:
- ground is supplied to fog lamp relay terminal ② through the fog lamp switch and body grounds E13 and E41.

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

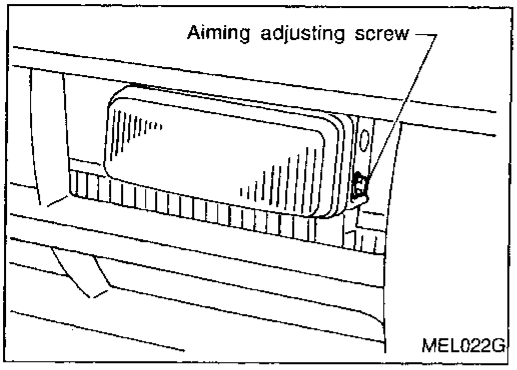
Ground is supplied to terminal ② of each fog lamp through body grounds E13 and E41.
With power and ground supplied, the fog lamps illuminate.

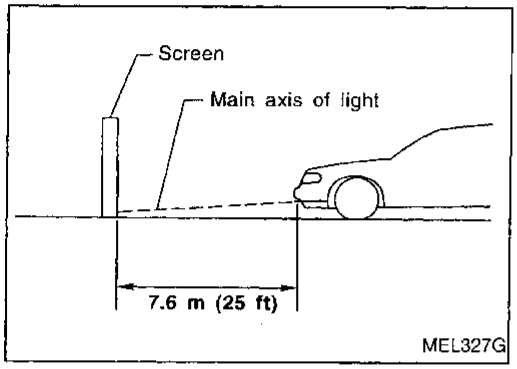
Front Fog Lamp/Wiring Diagram — F/FOG —

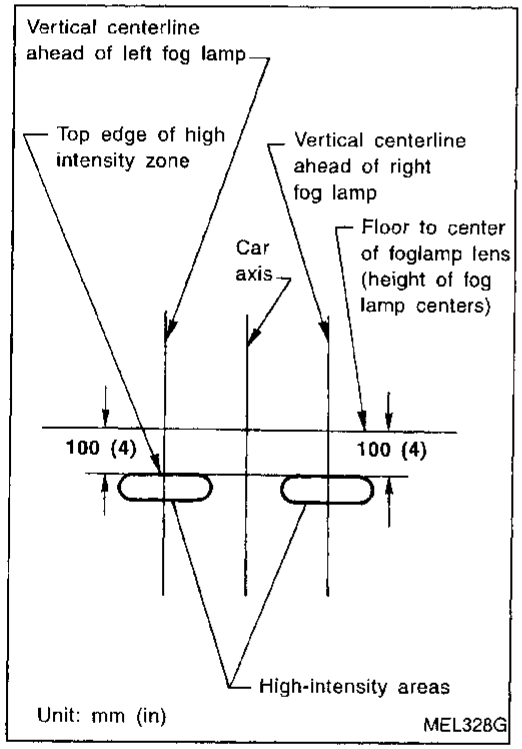




MEL751G







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's seat.

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

Loosen the front fog lamp bolts and adjust the vertical aiming by moving the front fog lamp assembly.

1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.
3. Adjust front fog lamps so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.

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

4. Tighten the front fog lamp bolts.

Bulb Specifications

Item	Wattage (W)
Front fog lamp	55

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. 11], located in the fuse block (J/B)]
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ①
- through terminal ③ of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ② through body grounds M4 and M66.

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 ②
- combination meter terminal ⑬
- rear combination lamp LH terminal ⑤.

Ground is supplied to the front turn signal lamp LH terminal ① through body grounds E13 and E41.
Ground is supplied to the rear combination lamp LH terminal ⑥ through body grounds B11, B22 and D210.
Ground is supplied to combination meter terminal ㉟ through body grounds M4 and M77.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH turn

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

- front turn signal lamp RH terminal ②
- combination meter terminal ㊶
- rear combination lamp RH terminal ⑤.

Ground is supplied to the front turn signal lamp RH terminal ① through body grounds E13 and E41.
Ground is supplied to the rear combination lamp RH terminal ⑥ through body grounds B55 and B75.
Ground is supplied to combination meter terminal ㉟ through body grounds M4 and M77.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

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

- 15A fuse [No. 14], located in the fuse block (J/B)].

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

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

Ground is supplied to combination flasher unit terminal ② through body grounds M4 and M66.
Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ②
- combination meter terminal ⑬
- rear combination lamp LH terminal ⑤.

Power is supplied through terminal ⑥ of the hazard switch to

- front turn signal lamp RH terminal ②
- combination meter terminal ㊶
- rear combination lamp RH terminal ⑤.

Ground is supplied to terminal ① of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal ⑥ of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal ⑥ of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal ㉟ through body grounds M4 and M77.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

Turn Signal and Hazard Warning Lamps/ System Description (Cont'd)

WITH MULTI-REMOTE CONTROL SYSTEM

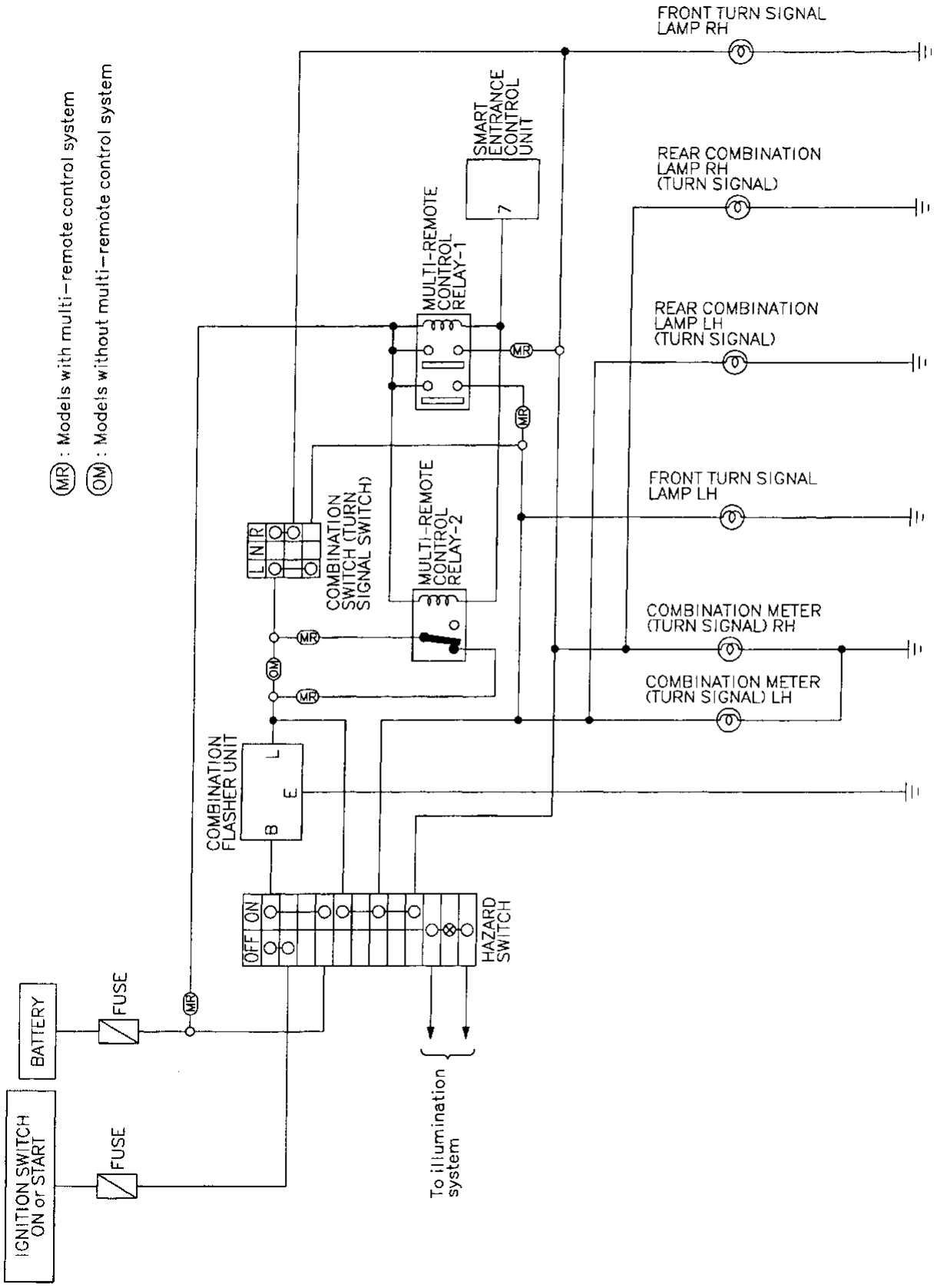
Power is supplied at all times
- through 15A fuse [No. 14, located in the fuse block (J/B)]
- to multi-remote control relay-1 terminals ①, ③ and ⑥.

Ground is supplied to multi-remote control relay-1 terminal ②, when the multi-remote control system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM", EL-199.
The multi-remote control relay-1 is energized.
Power is supplied through terminal ⑦ of the multi-remote control relay-1
- to front turn signal lamp LH terminal ②
- to combination meter terminal ⑬
- to rear combination lamp LH terminal ⑤.

Power is supplied through terminal ⑤ of the multi-remote control relay-1
- to front turn signal lamp RH terminal ②
- to combination meter terminal ㊶
- to rear combination lamp RH terminal ⑤.

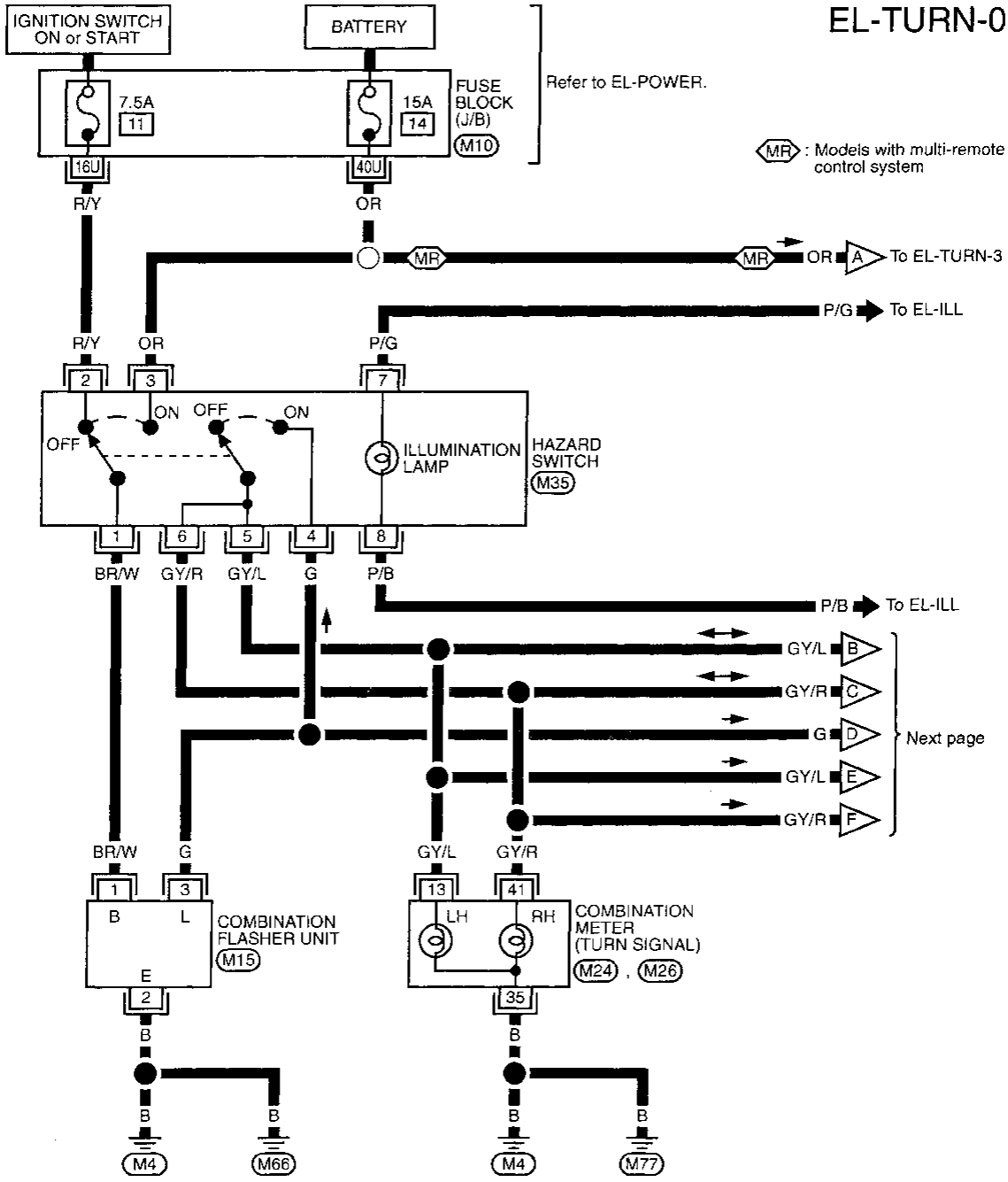
Ground is supplied to terminal ① of each front turn signal lamp through body grounds (E13) and (E41).
Ground is supplied to terminal ⑥ of the rear combination lamp LH through body grounds (B11), (B22) and (D210).
Ground is supplied to terminal ⑥ of the rear combination lamp RH through body grounds (B55) and (B75).
Ground is supplied to combination meter terminal ㉟ through body grounds (M4) and (M77).
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

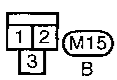
Turn Signal and Hazard Warning Lamps/ Schematic

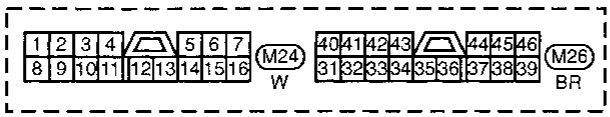


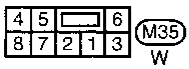
MEL554F

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









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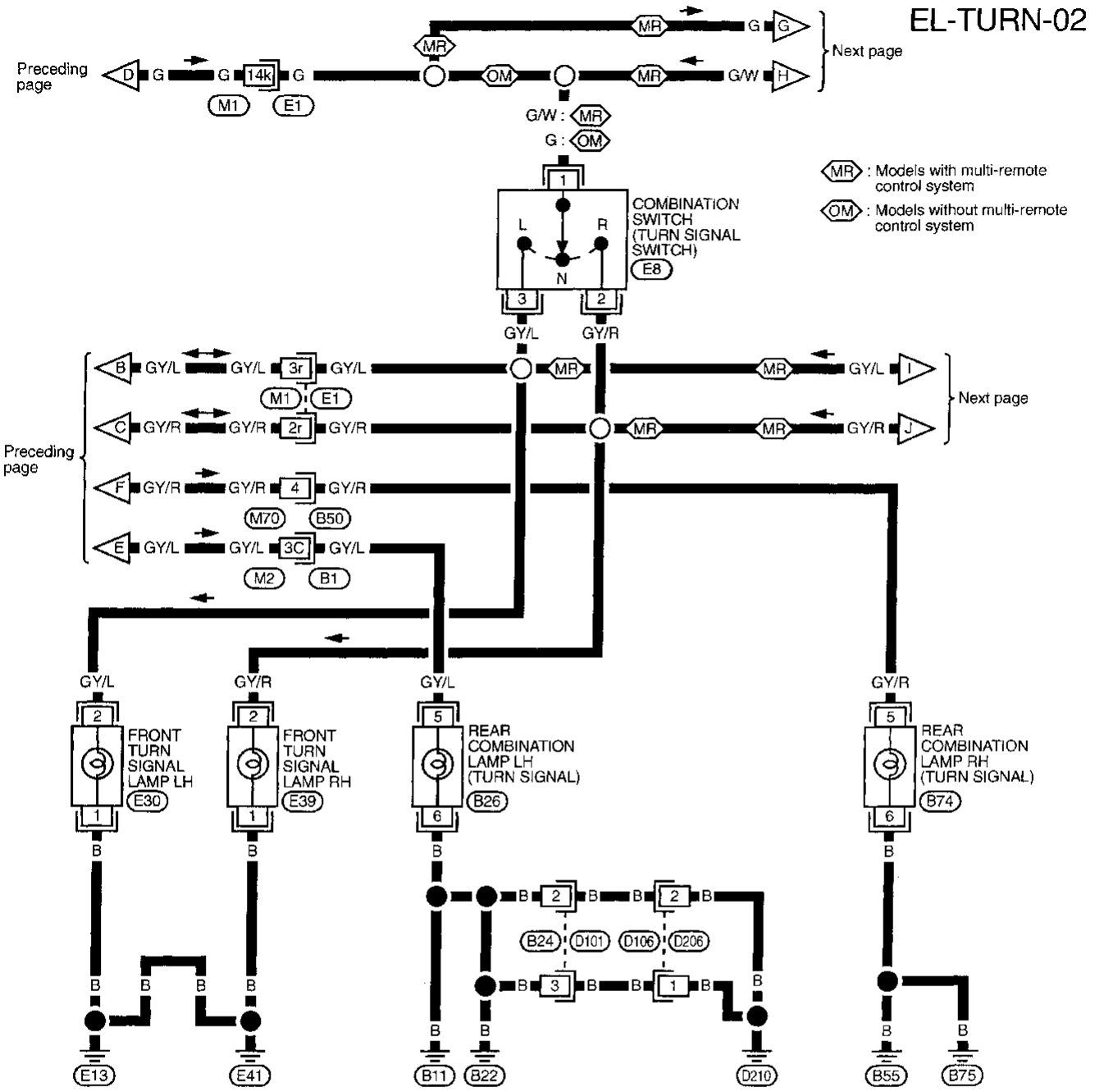
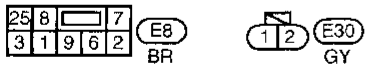
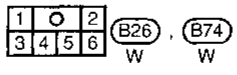
M10

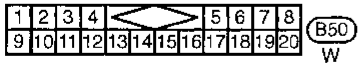
MEL551F

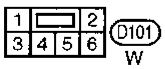
Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

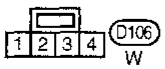












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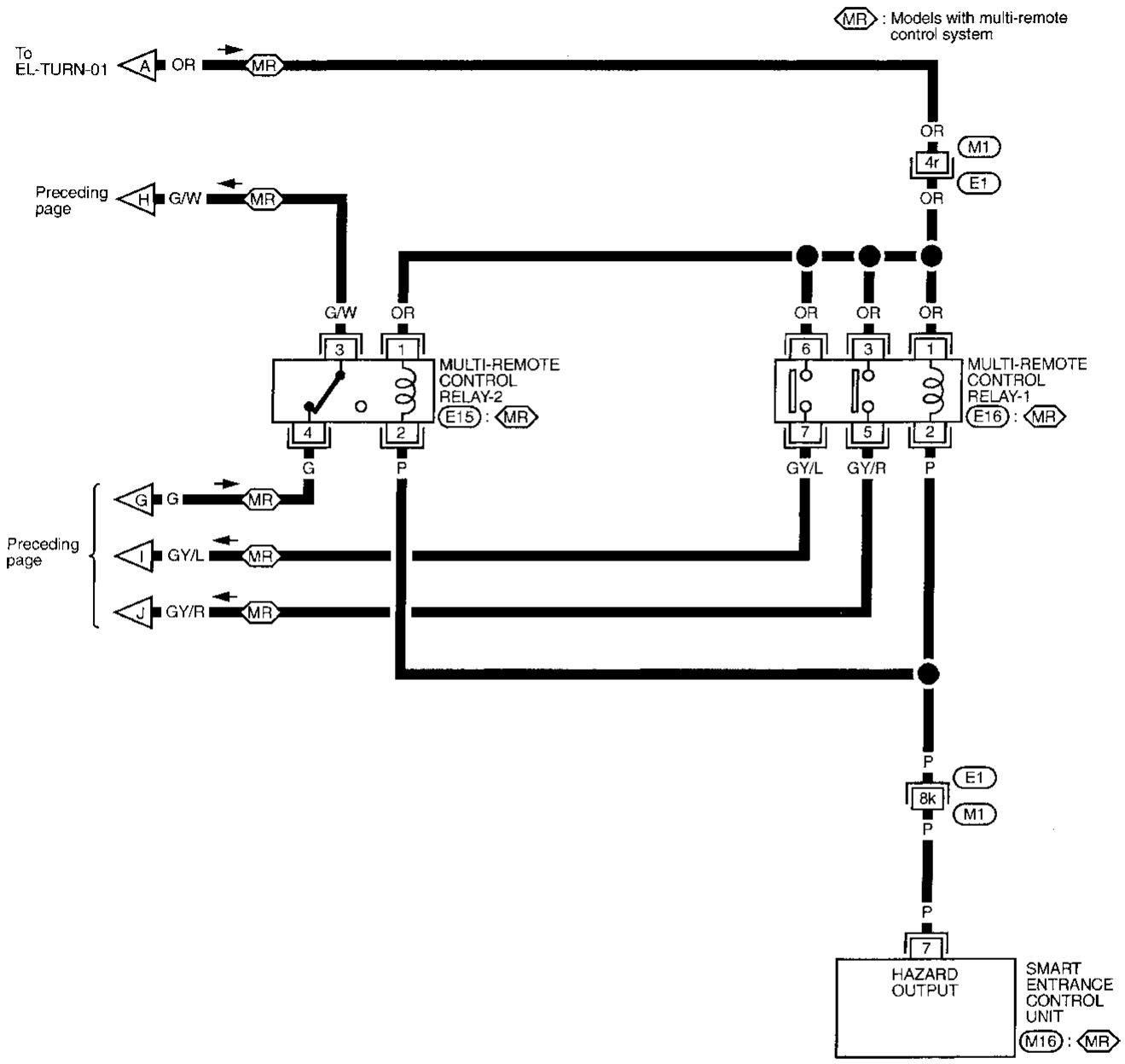
E1 , M1

M2 , B1

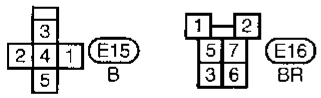
MEL752G

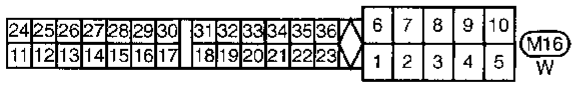
Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

EL-TURN-03



Refer to last page (Foldout page).
E1 , M1

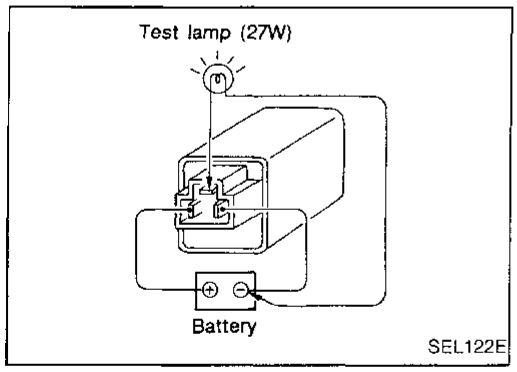




MEL753G

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. 11], located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check G wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 15A fuse [No. 14], located in fuse block (J/B)]. Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check G wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (E13) and (E41)	1. Check bulb. 2. Check grounds (E13) and (E41).
Rear turn signal lamp LH does not operate.	1. Bulb 2. Grounds (B11), (B22) and (D210)	1. Check bulb. 2. Check grounds (B11), (B22) and (D210).
Rear turn signal lamp RH does not operate.	1. Bulb 2. Grounds (B55) and (B75)	1. Check bulb. 2. Check grounds (B55) and (B75).
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds (M4) and (M77).
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.



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.

Bulb Specifications

Item	Wattage (W)
Headlamp (Semi-sealed beam)	
High/Low	65/45 (HB1)
Front fog lamp	55
Front turn signal lamp	27
Parking lamp	7
Rear combination lamp	
Turn signal lamp	27
Stop/Tail lamp	27/8
Back-up lamp	27
License plate lamp	10
High-mounted stop lamp	5

Illumination/System Description

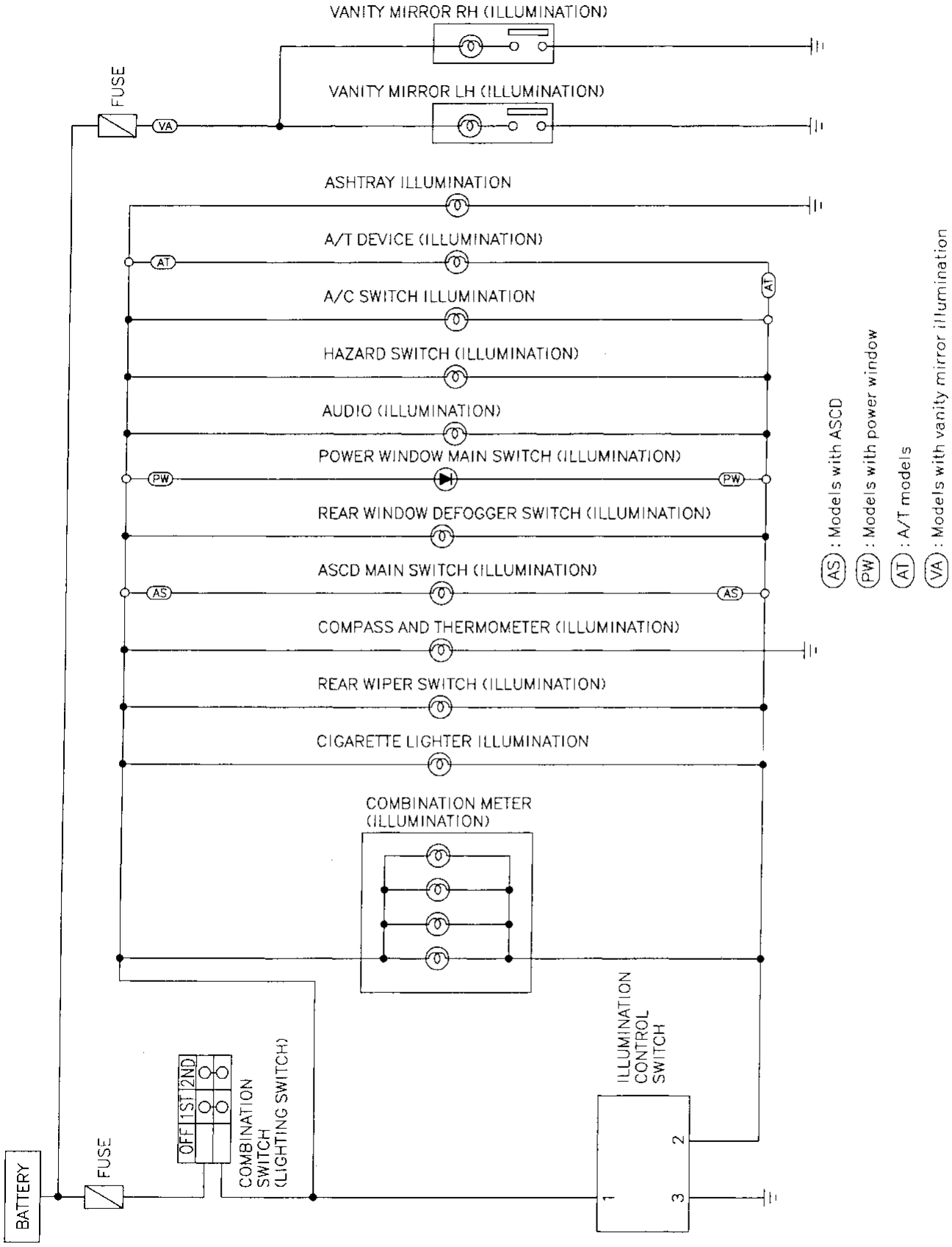
Power is supplied at all times
- through 10A fuse [No. 61], located in the fuse block (J/B)]
- to lighting switch terminal ⑪.

The lighting switch must be in the 1ST or 2ND position for illumination.
The illumination control switch that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M19	①	③
Combination meter	M24, M25	⑪	㉑
Cigarette lighter	M57	③	④
Rear wiper switch	M50	⑩	⑪
Compass and thermo meter	R4	⑤	②
ASCD main switch	M18	⑤	⑥
Rear window defogger switch	M36	⑤	⑥
Power window main switch	D6	④	⑬
Audio	M48	⑧	⑦
Hazard switch	M35	⑦	⑧
A/C switch	M45	②	①
A/T indicator	B59	③	④
Ashtray	B60, M76	①	②
Vanity mirror	R3, R5	①	②

The ground for all of the components except for ashtray and vanity mirror are controlled through terminals ② and ③ of the illumination control switch and body grounds (M4) and (M77).

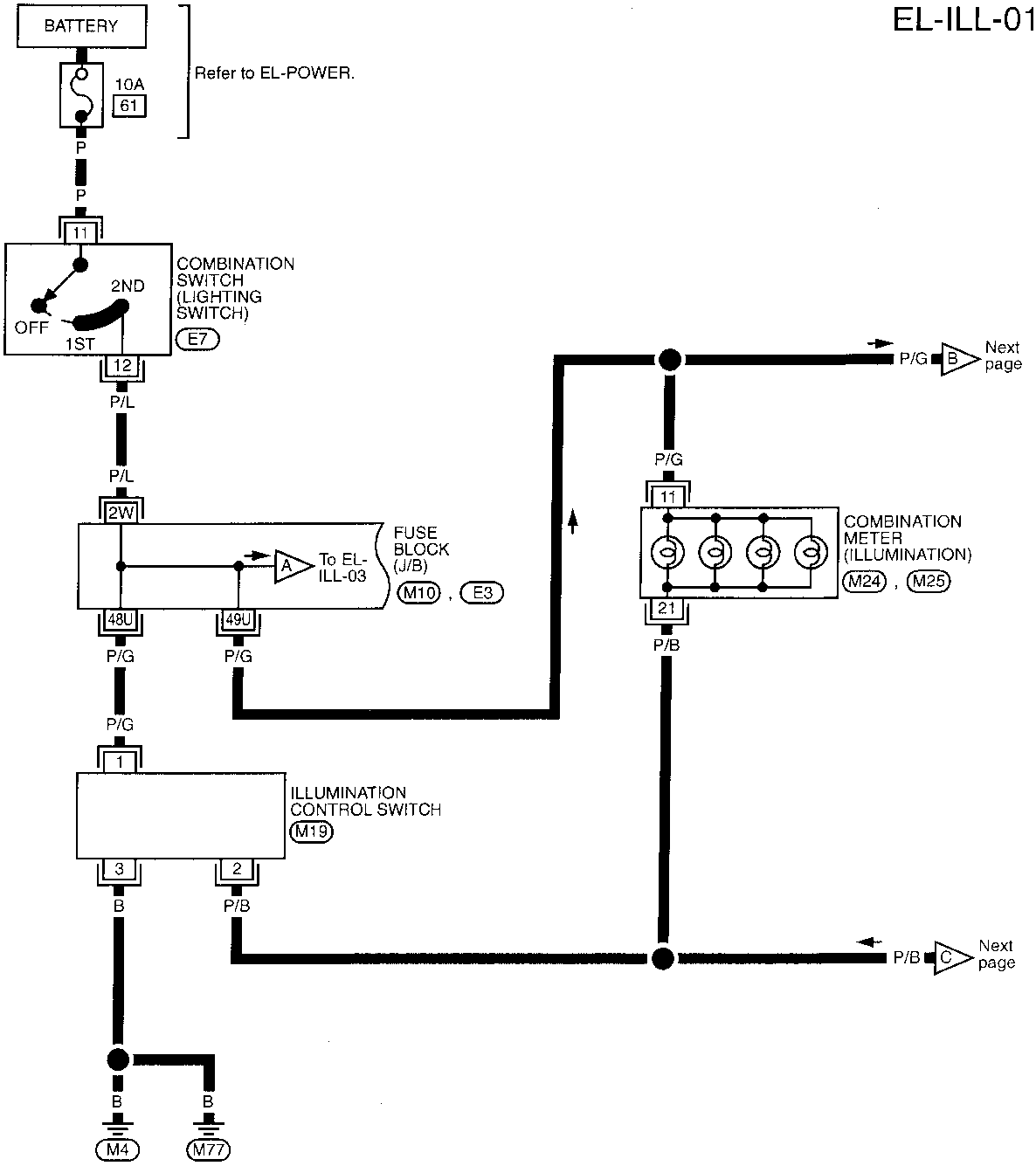
Illumination/Schematic

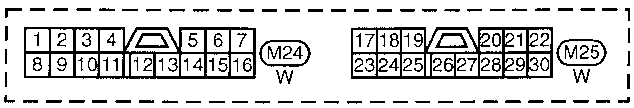


MEL567F

Illumination/Wiring Diagram — ILL —

EL-ILL-01



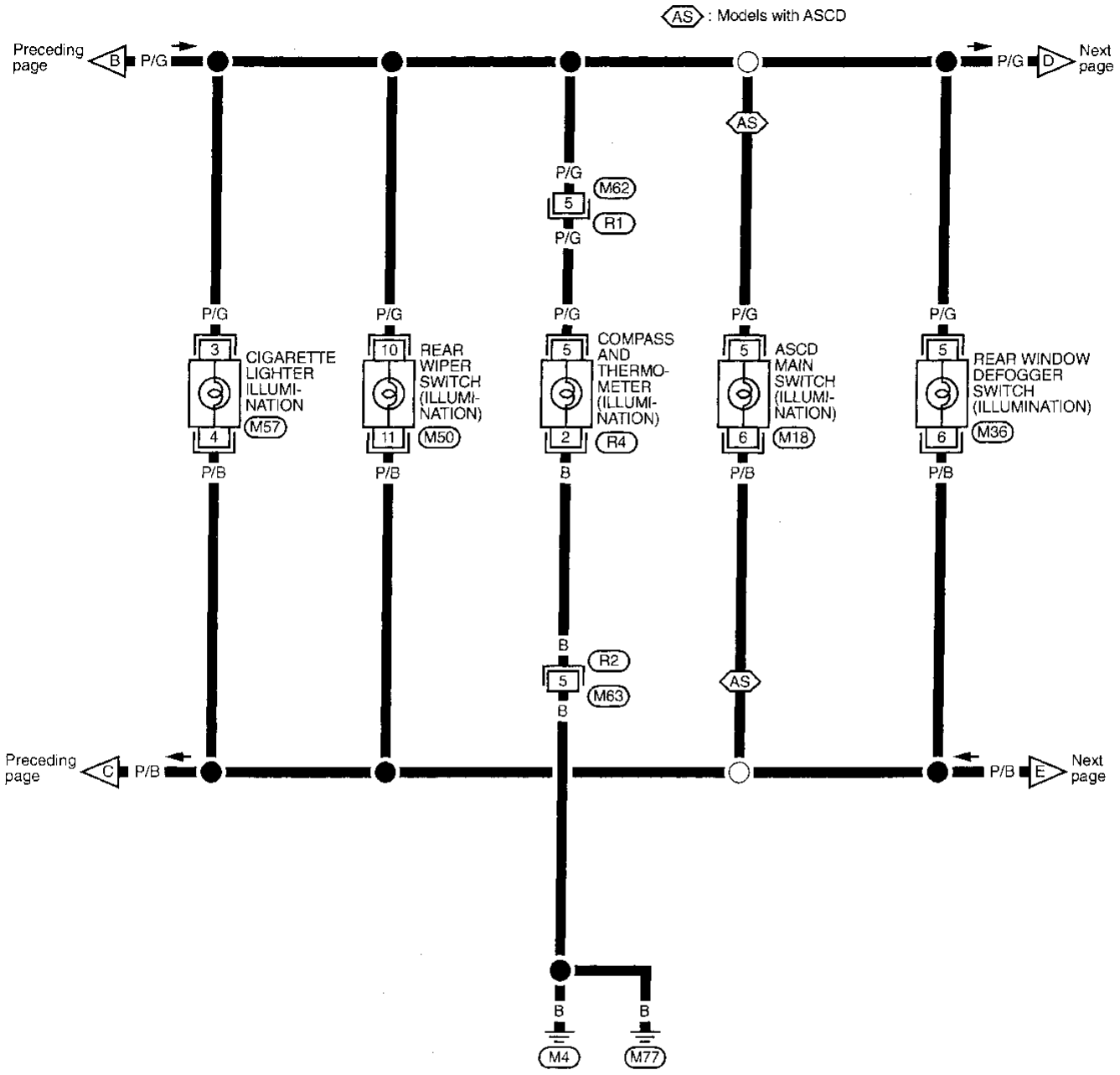


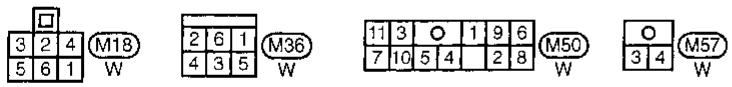
Refer to last page (Foldout page).
M10
E3

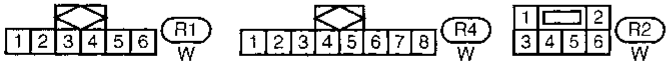
MEL563F

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

EL-ILL-02



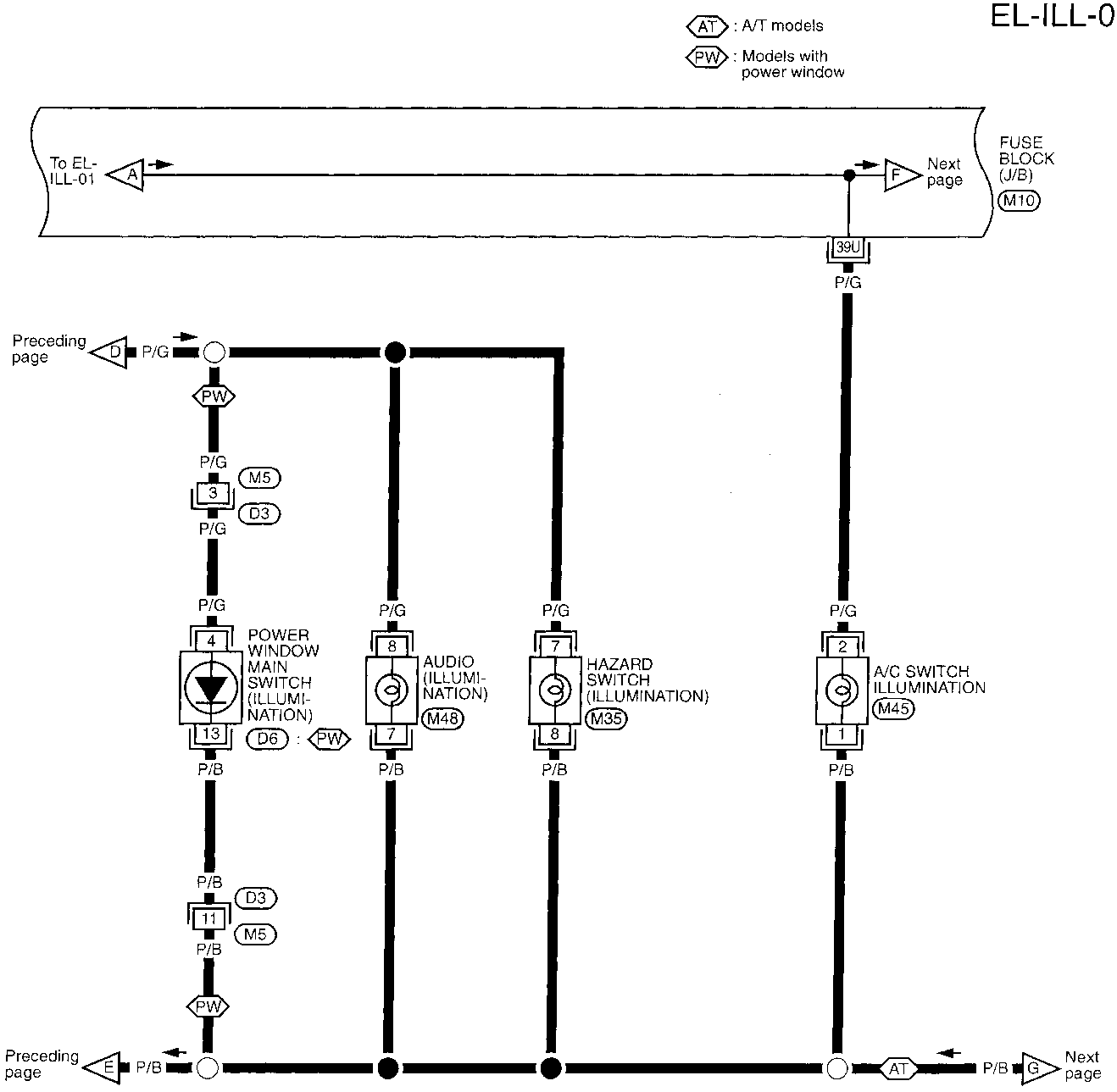


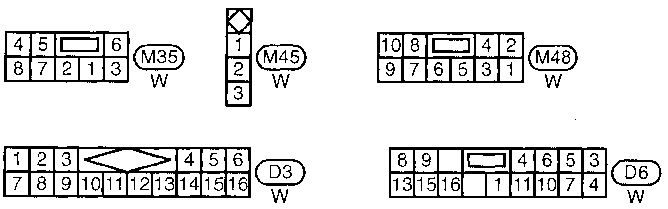


MEL564F

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

EL-ILL-03





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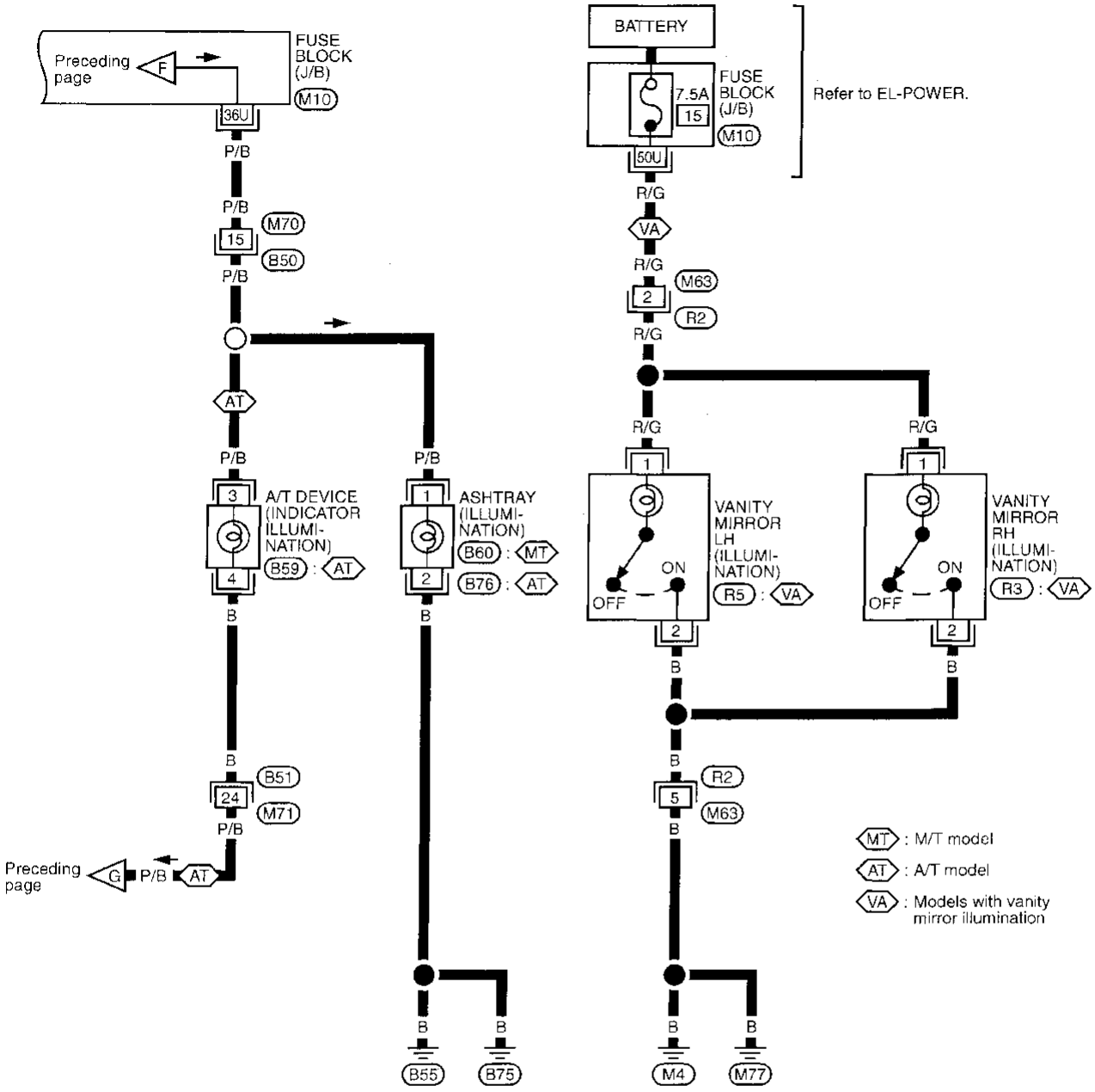
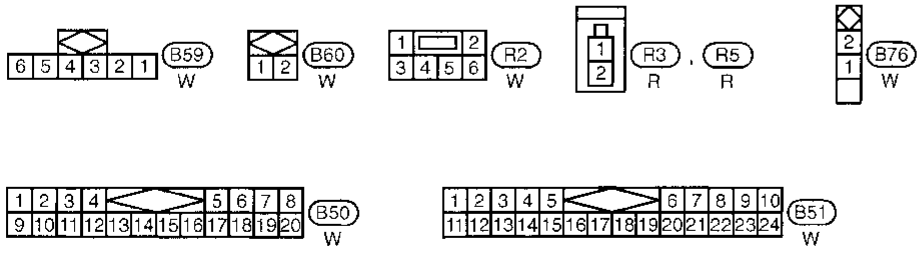
M10

MEL565F

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

EL-ILL-04





Refer to last page (Foldout page).
M10

Interior, Spot and Luggage Room Lamps/ System Description

Power is supplied at all times
- through 7.5A fuse [No. 15, located in the fuse block (J/B)]
- to interior lamp terminal ①,
- to spot lamp terminal ① and
- to luggage room lamp terminal ①.

INTERIOR LAMP

With interior lamp switch ON, ground is supplied to turn interior lamp ON.
When a door switch is opened with interior lamp switch in DOOR, ground is supplied
- to interior lamp terminal ②
- through diode (M65) terminal ① (Models with theft warning system)
- to diode (M65) terminal ② (Models with theft warning system)
- through front door switch LH terminal ③ or
- through front door switch RH terminal ① or
- through rear door switch LH terminal ① or
- through rear door switch RH terminal ① or
- through back door switch terminal ②
- through body ground.

LUGGAGE ROOM LAMP

The luggage room lamp will turn on in the same manner as interior lamp.

SPOT LAMP

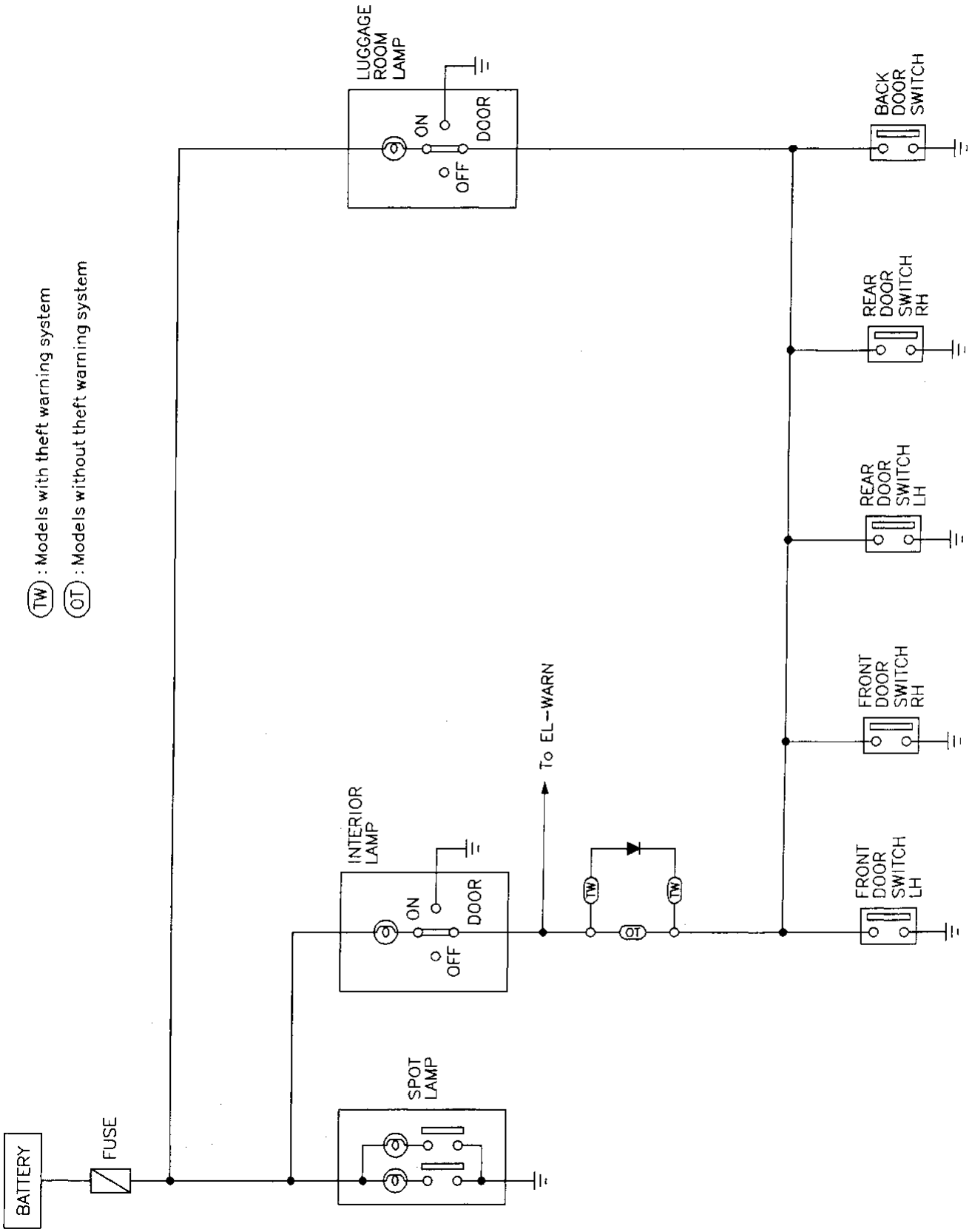
With the spot lamp switch in the ON position, ground is supplied
- to spot lamp terminal ②
- through body grounds (M4) and (M77).

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

Bulb Specifications

Item	Wattage (W)
Interior lamp	10
Spot lamp	10
Luggage room lamp	10

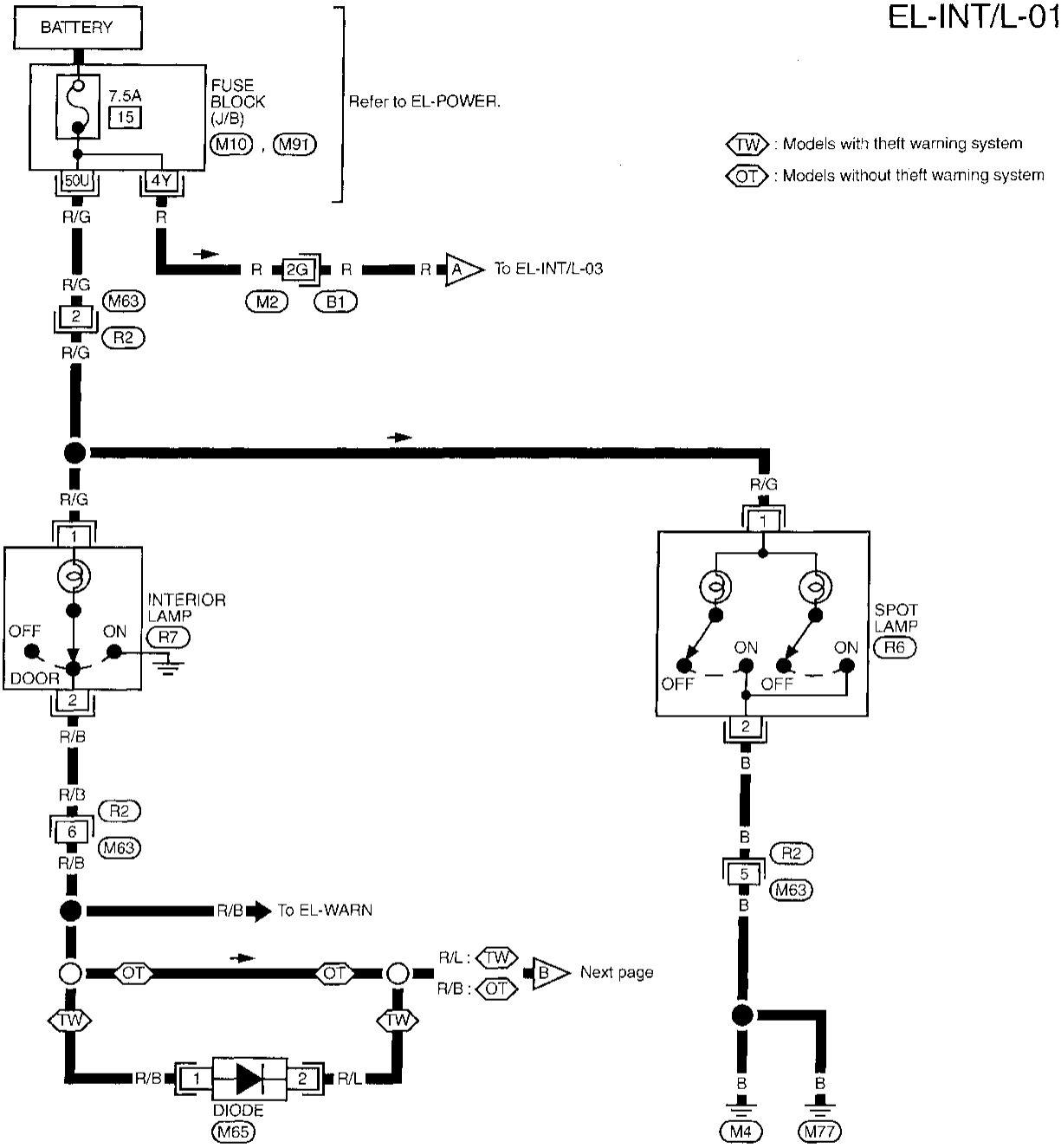
Interior, Spot and Luggage Room Lamps/ Schematic

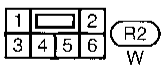


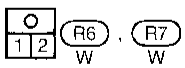
MEL562F

Interior, Spot and Luggage Room Lamps/ Wiring Diagram — INT/L —

EL-INT/L-01







Refer to last page (Foldout page).

M2 , B1

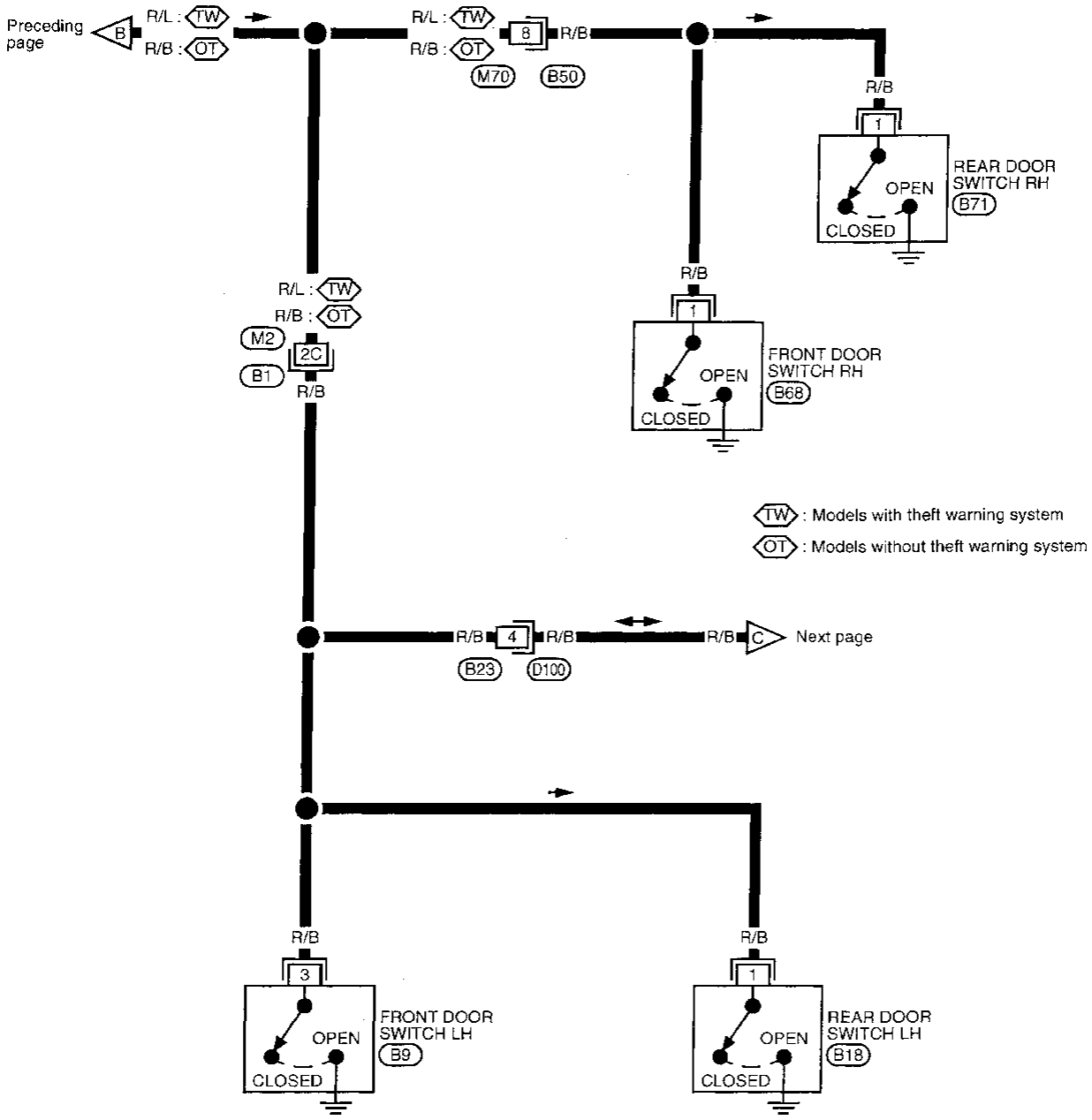
M10

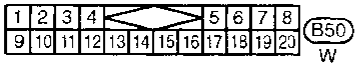
M91

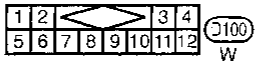
MEL755G

Interior, Spot and Luggage Room Lamps/ Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-02





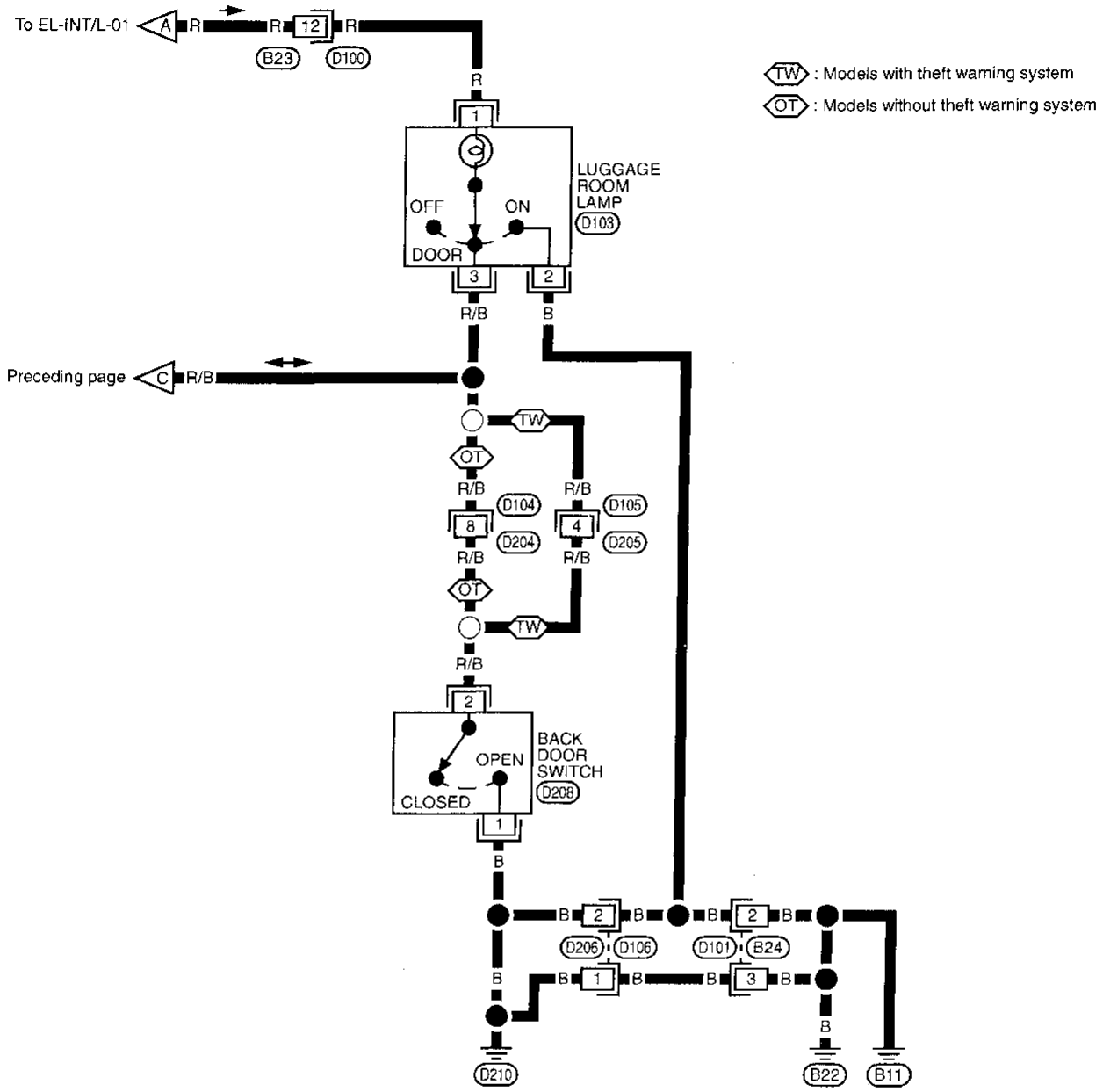


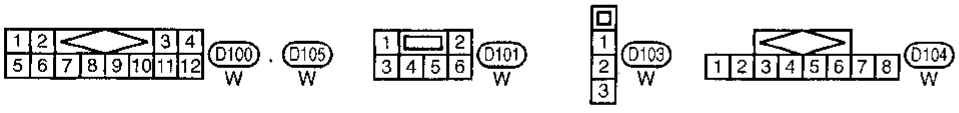
Refer to last page (Foldout page).
M2 , B1

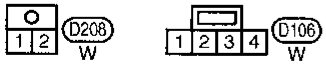
MEL756G

Interior, Spot and Luggage Room Lamps/ Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-03







MEL560F

System Description

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 7, located in the fuse block (J/B)]
- to combination meter terminal ⑮.

Ground is supplied
- to combination meter terminals ㉓ and ㉟
- through body grounds (M4) and (M77).

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.
As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal ㊲ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal
- from terminal ③ of the ECM (ECCS control module)
- to combination meter terminal ㉜ for the tachometer.

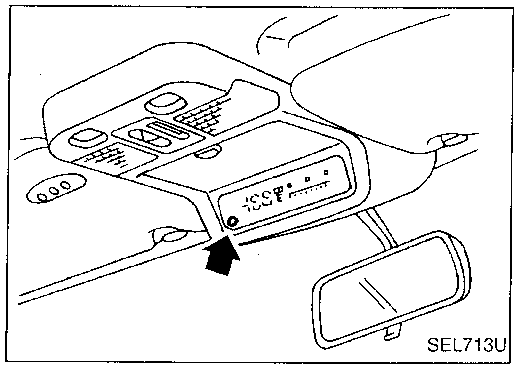
FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied
- to combination meter terminal ⑥ 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 (B11), (B22) and (0210).

SPEEDOMETER

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
The voltage is supplied
- to combination meter terminals ⑧ and ⑫ for the speedometer
- from terminals ② and ① of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.


SEL713U

COMPASS AND THERMOMETER

This unit is a display unit which possesses the following functions:
- Function to measure earth magnetism and indicate heading direction of vehicle.
- Function to indicate outside air temperature.
- Function to indicate caution for frozen road surfaces.

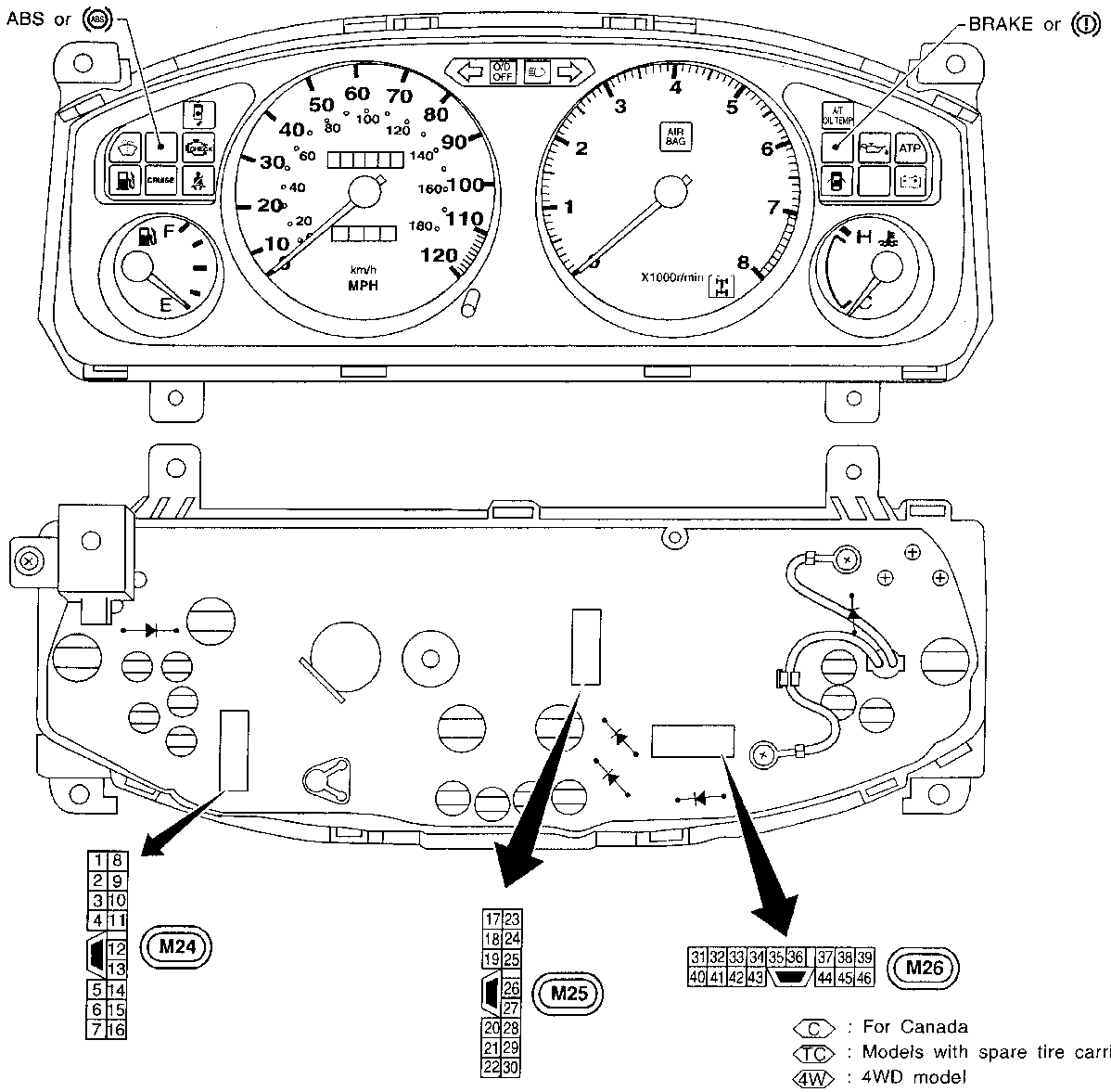
Outside temperature display

Push the switch when the ignition key is in the "ACC" or "ON" position. The outside temperature will be displayed in "°F".
- Selecting the indication range
  Push the switch to change from "°F" to "°C".
- When the outside temperature drops below freezing point, ICE is displayed on the unit.
- When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F).
- When the outside temperature is lower than –30°C (–20°F) or higher than 70°C (158°F), the display shows only "---" though it is operating. This is not a problem.

Direction display

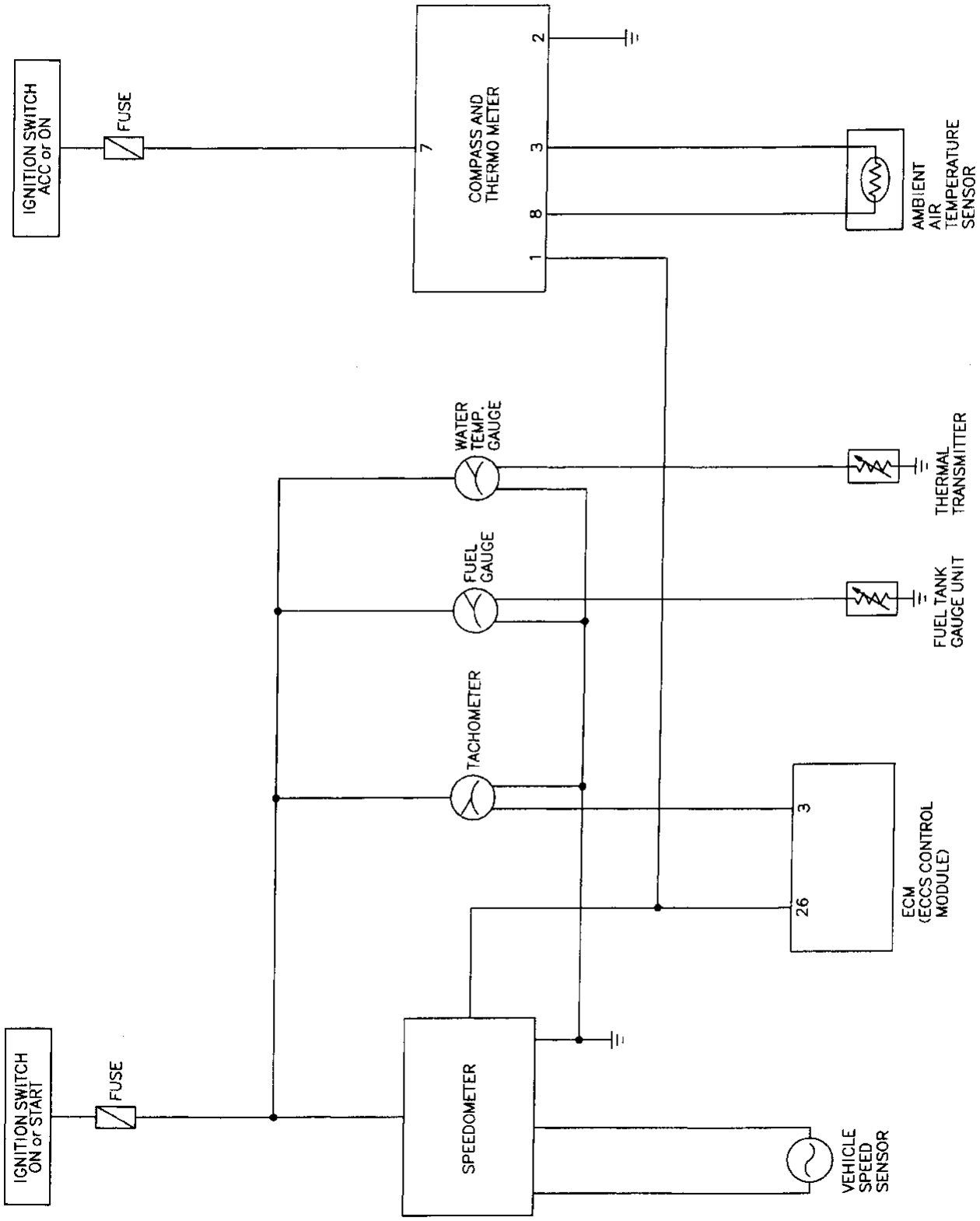
Push the switch when the ignition key is in the "ACC" or "ON" position. The direction will be displayed.

Combination Meter



MEL757G

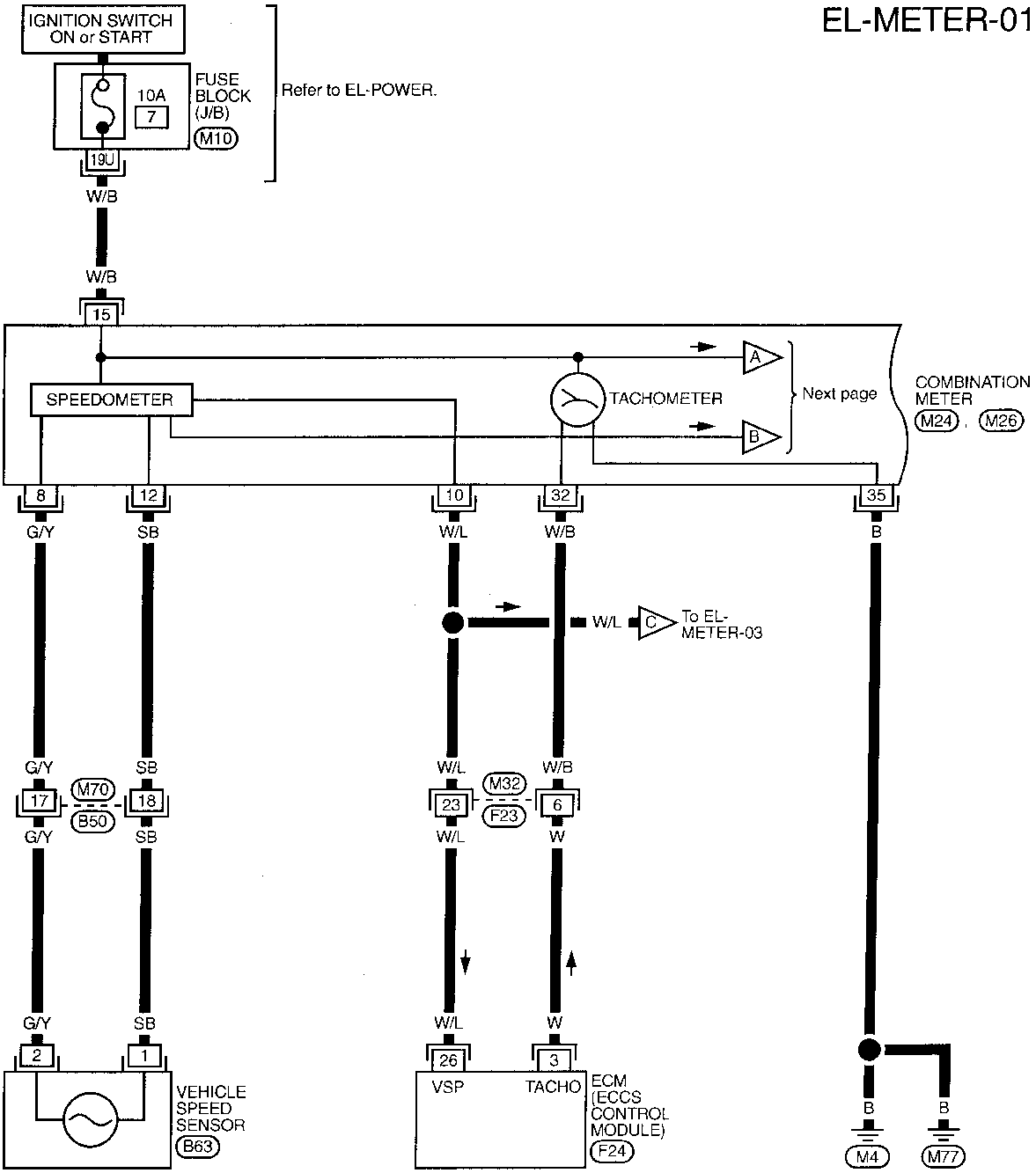
Combination Meter, Compass and Thermometer/Schematic

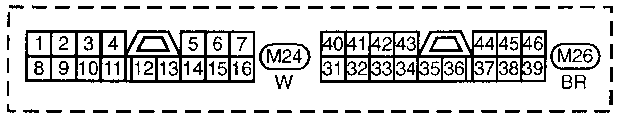


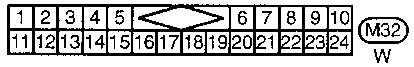
MEL758G

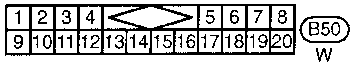
Combination Meter, Compass and Thermometer/Wiring Diagram — METER —

EL-METER-01







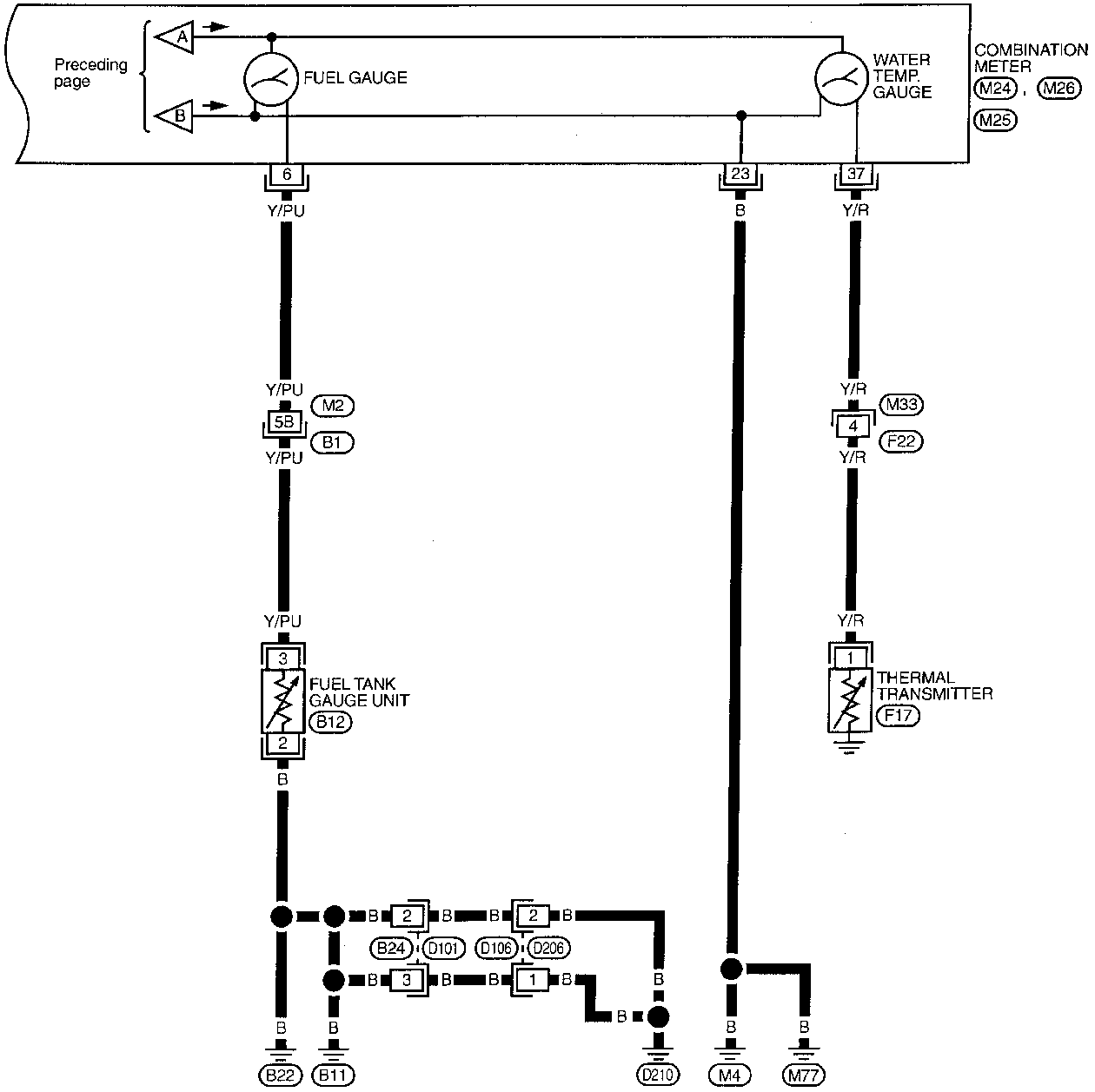


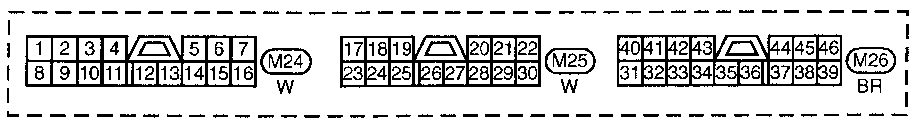
Refer to last page (Foldout page).
M10
F24

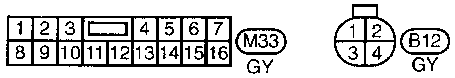
MEL759G

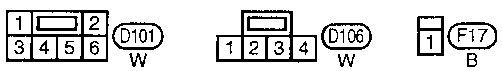
Combination Meter, Compass and Thermometer/Wiring Diagram — METER — (Cont'd)

EL-METER-02







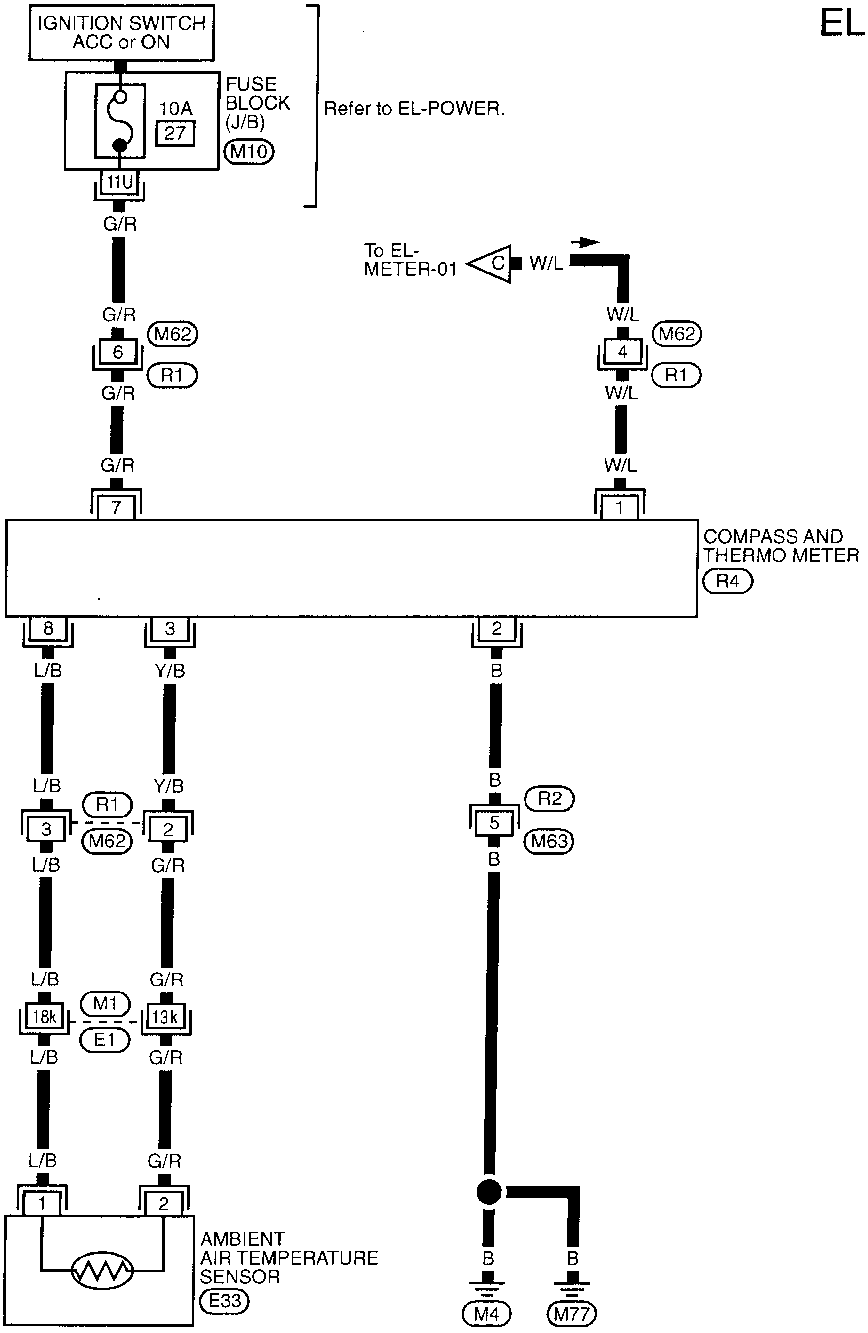


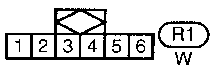
Refer to last page (Foldout page).
M2, B1

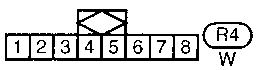
MEL760G

Combination Meter, Compass and Thermometer/Wiring Diagram — METER — (Cont'd)

EL-METER-03





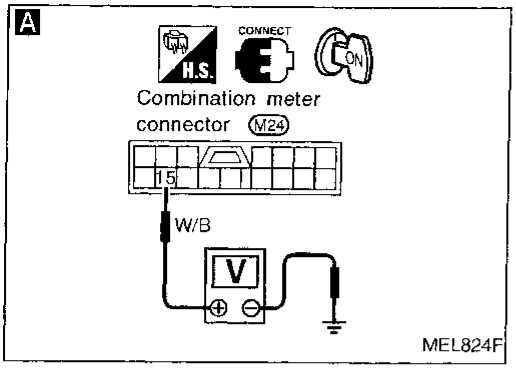


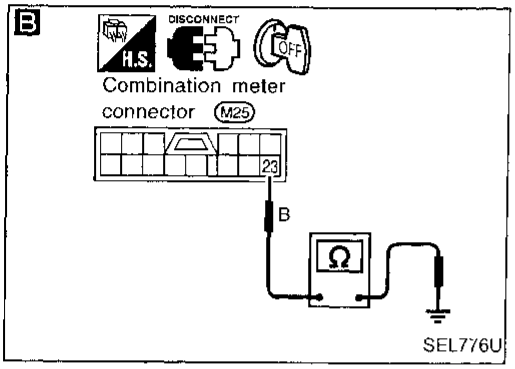
Refer to last page (Foldout page).
E1 , M1
M10

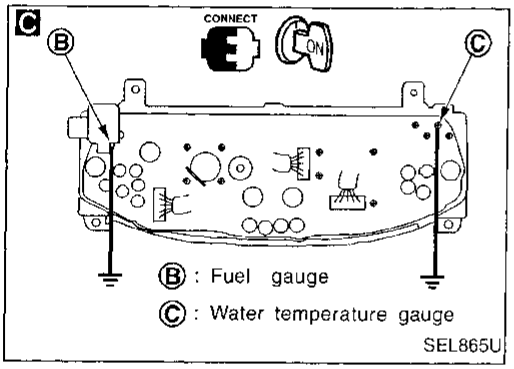
MEL761G

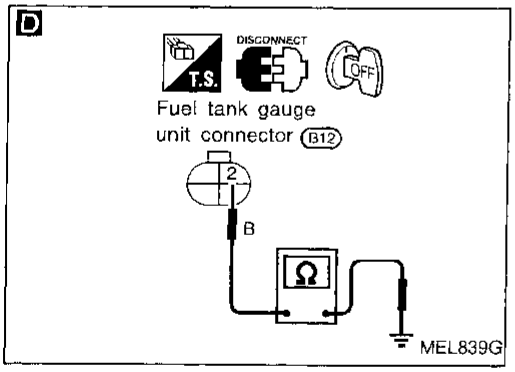
Trouble Diagnoses

INSPECTION/FUEL GAUGE AND/OR WATER TEMPERATURE GAUGE









A

CHECK POWER SUPPLY CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between combination meter terminal ⑮ and ground.
Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 7], located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR GAUGES.
Check continuity between combination meter terminal ㉓ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

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

NG → Repair or replace gauge.

OK ↓

D

CHECK GROUND CIRCUIT FOR FUEL TANK GAUGE UNIT.
Check harness continuity between fuel tank gauge unit terminal ② and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

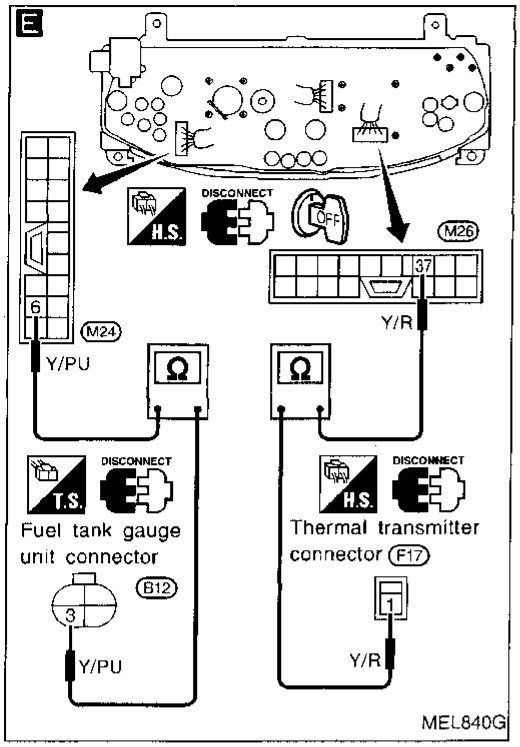
CHECK COMPONENT.
Check gauge units.
Refer to "Fuel Tank Gauge Unit Check" (EL-92) or "Thermal Transmitter Check" (EL-92).

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

OK ↓

(Go to Ⓐ on next page.)

Trouble Diagnoses (Cont'd)

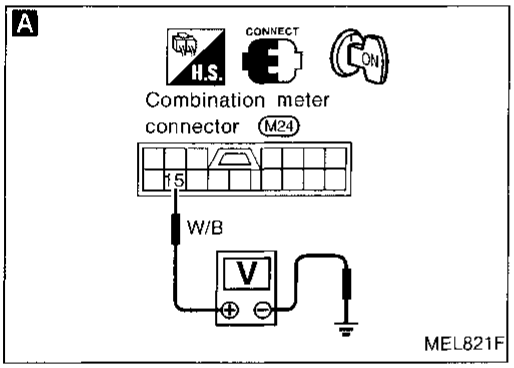


Ⓐ

E

CHECK HARNESS.
Check harness for open or short between terminals.

Terminals	
Combination meter connector	Component
⑥	Fuel tank gauge unit connector ③
㊲	Thermal transmitter connector ①



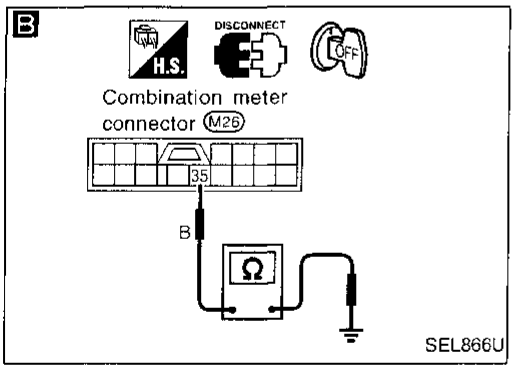
INSPECTION/TACHOMETER

A

CHECK POWER SUPPLY CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between combination meter terminal ⑮ and ground.
Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 7], located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

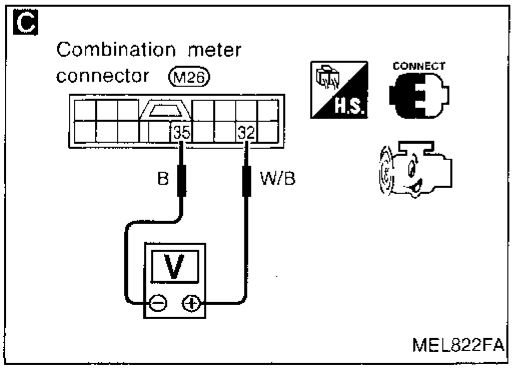


B

CHECK GROUND CIRCUIT FOR TACHOMETER.
Check continuity between combination meter terminal ㉟ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓



C

CHECK ECM OUTPUT.
1) Start engine.
2) Check voltage between combination meter terminals ㉜ and ㉟ at idle and 2,000 rpm.
Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

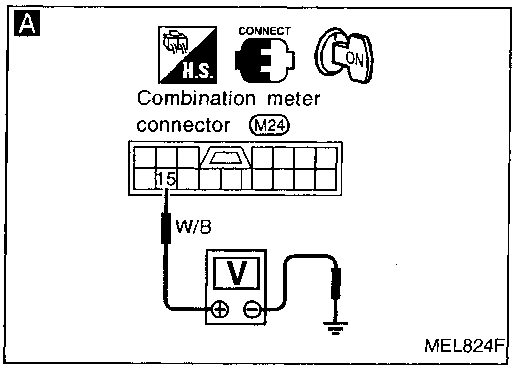
NG → Check harness for open or short between ECM and combination meter.

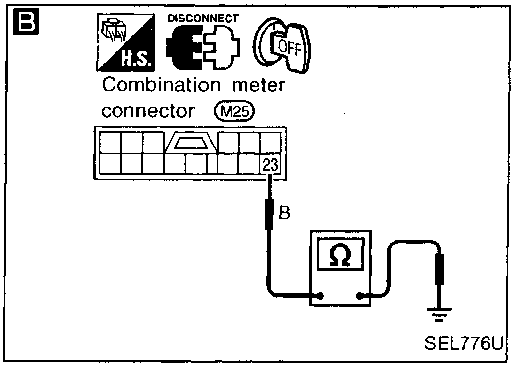
OK ↓

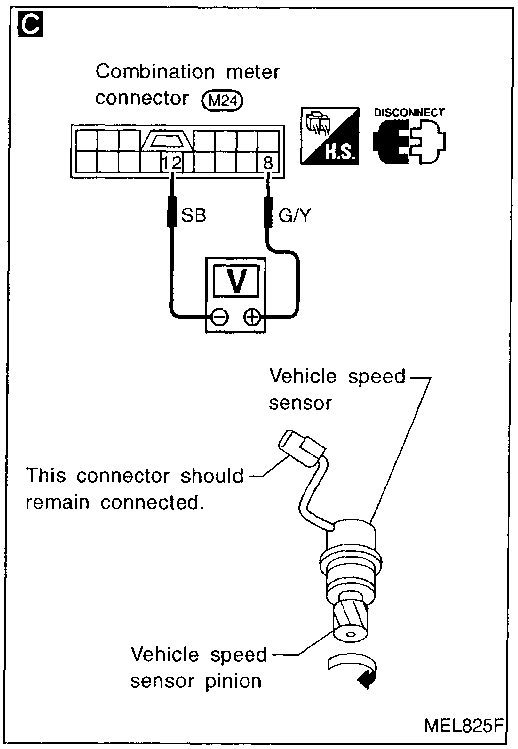
Replace tachometer.

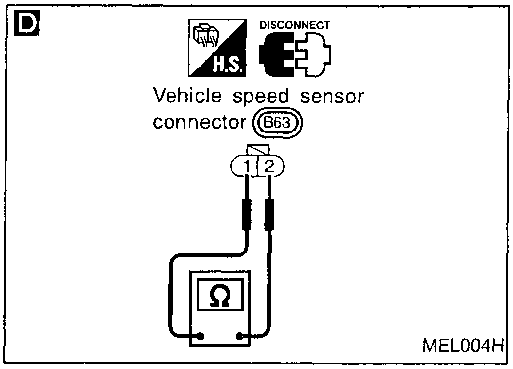
Trouble Diagnoses (Cont'd)

INSPECTION/SPEEDOMETER AND VEHICLE SPEED SENSOR









A

CHECK POWER SUPPLY CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between combination meter terminal ⑮ and ground.
Battery voltage should exist.

NG → Check the following.
- 10A fuse [No. 7], located in the fuse block (J/B)]
- Harness for open or short between fuse and combination meter

OK ↓

B

CHECK GROUND CIRCUIT FOR SPEEDOMETER.
Check continuity between combination meter terminal ㉓ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

C

CHECK VEHICLE SPEED SENSOR OUTPUT.
1) Remove vehicle speed sensor from transaxle.
2) Check voltage between combination meter terminals ⑧ and ⑫ while quickly turning speed sensor pinion.
Voltage: Approx. 0.5V

OK → Replace speedometer.

NG ↓

D

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

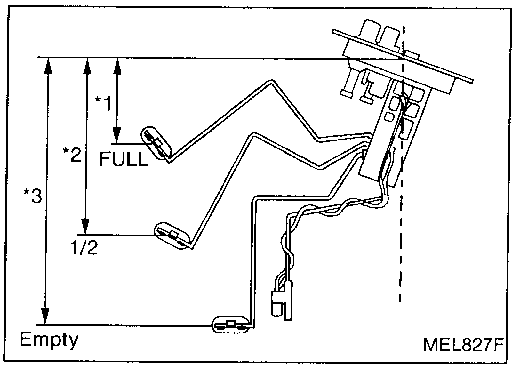
NG → Replace vehicle speed sensor.

OK ↓

Check harness or connector between speedometer and vehicle speed sensor.

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION



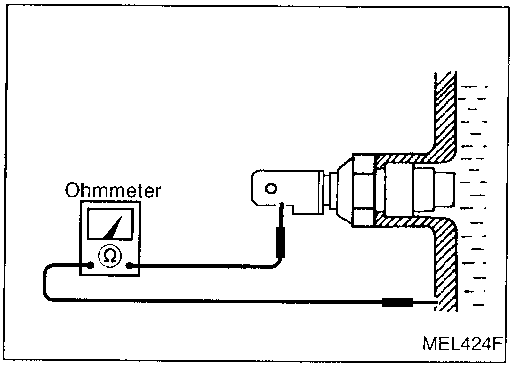
Fuel tank gauge unit check

- For removal, refer to FE section.

Check the resistance between terminals ① and ③.

Ohmmeter (+)	Ohmmeter (–)	Float position mm (in)			Resistance value (Ω)
①	③	*1	Full	96 (3.78)	Approx. 4 - 6
		*2	1/2	188 (7.40)	30 - 34
		*3	Empty	257 (10.12)	80 - 83

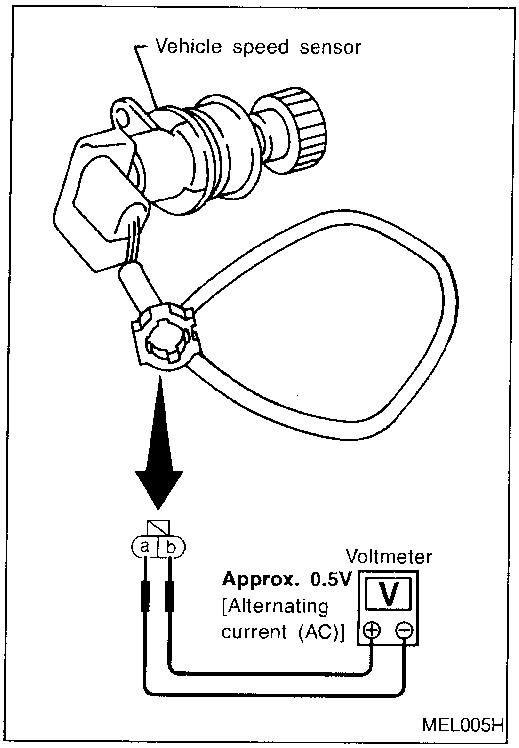
*1 and *3: When float rod is in contact with stopper.



Thermal transmitter check

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

Water temperature	Resistance
60°C (140°F)	Approx. 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 and measure voltage across ⓐ and ⓑ.

Trouble Diagnoses (Cont'd)

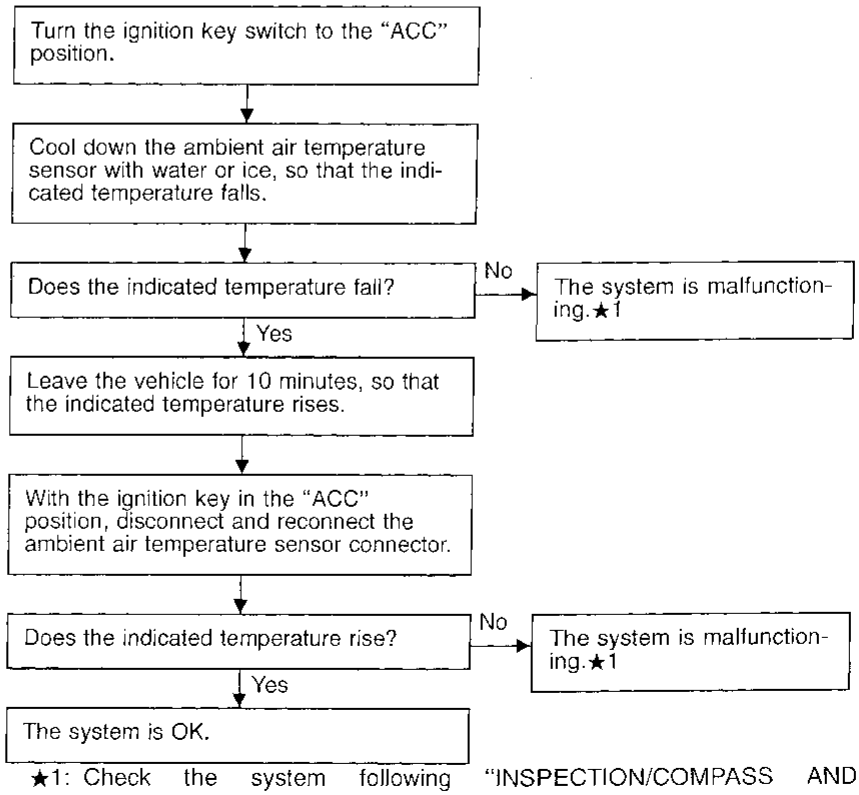
INSPECTION/COMPASS AND THERMOMETER

Symptom	Possible causes	Repair order
No display at all	1. 10A fuse	1. Check 10A fuse [No. 27], located in fuse block (J/B)]. Turn the ignition switch ON and verify that battery positive voltage is at terminal ⑦ of compass and thermometer.
	2. Ground circuit	2. Check ground circuit for compass and thermometer.
	3. Compass and thermometer	3. Replace compass and thermometer.
Forward direction indication slips off the mark or incorrect.	1. In manual correction mode (Bar and display vanish.)	1. Drive the vehicle and turn at an angle of 90°.
	2. Zone variation change is not done.	2. Perform the zone variation change.
Compass reading remains unchanged.	1. Vehicle speed sensor is not entered.	1. Check harness for open or short between combination meter terminal ⑩ and compass and thermometer terminal ① .
	2. Compass and thermometer	2. Replace compass and thermometer.
Displays wrong temperature when ambient temperature is between –30°C (–20°F) and 55°C (130°F). (See NOTE)	1. Check operation	1. Perform preliminary check shown below.
	2. Ambient sensor circuit	2. Check harness for open or short between ambient sensor and compass and thermometer.
	3. Vehicle speed sensor is not entered.	3. Check harness for open or short between combination meter terminal ⑩ and compass and thermometer terminal ① .
	4. Ambient sensor	4. Replace ambient sensor.
	5. Compass and thermometer	5. Replace compass and thermometer.

NOTE:

- **When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F). When the outside temperature is lower than –30°C (–20°F) or higher than 70°C (158°F), the display shows only "---".**
- **While the vehicle is being driven, the indicated temperature on the thermometer changes only when the following condition (a), (b) and/or (c) is met.**
  - **(a) The temperature detected by the ambient sensor is lower than the indicated temperature on the thermometer.**
  - **(b) The difference in temperature detected during a period of 40 seconds is less than 1°C (1.8°F) when vehicle speed has been greater than 24 km/h (15 MPH) for more than 100 seconds. In other words, when the temperature rise is too rapid, the indicated temperature will not change.**
  - **(c) The ignition key has been turned to the "OFF" position for more than 4 hours.**

PRELIMINARY CHECK FOR THERMOMETER

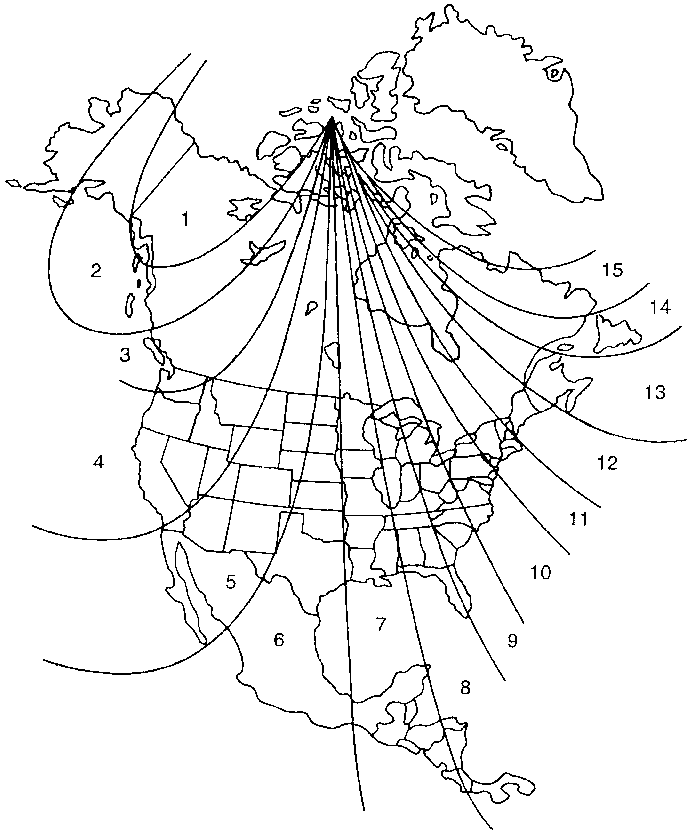


★1: Check the system following "INSPECTION/COMPASS AND THERMOMETER".

Trouble Diagnoses (Cont'd)

CALIBRATION PROCEDURE FOR COMPASS

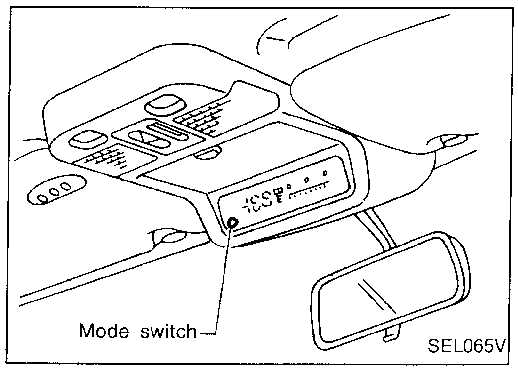
The difference between magnetic North and geographical North can sometimes be great enough to cause false compass readings. In order for the compass to operate accurately in a particular zone, it must be calibrated using the following procedure.



1. Determine your location on the zone map. Record your zone number.
2. Turn the ignition switch to ACC or ON position.
3. Push the "Mode" switch continuously for five seconds until the current zone entry number is displayed.
4. Press the "Mode" switch repeatedly until the desired zone number is displayed.

Once the desired zone number is displayed, stop pressing the "Mode" switch and the display will show compass direction after a few seconds.

SEL738UA



CORRECTION FUNCTIONS OF COMPASS

The direction display is equipped with automatic correction function. If the direction is not shown correctly, carry out initial correction.

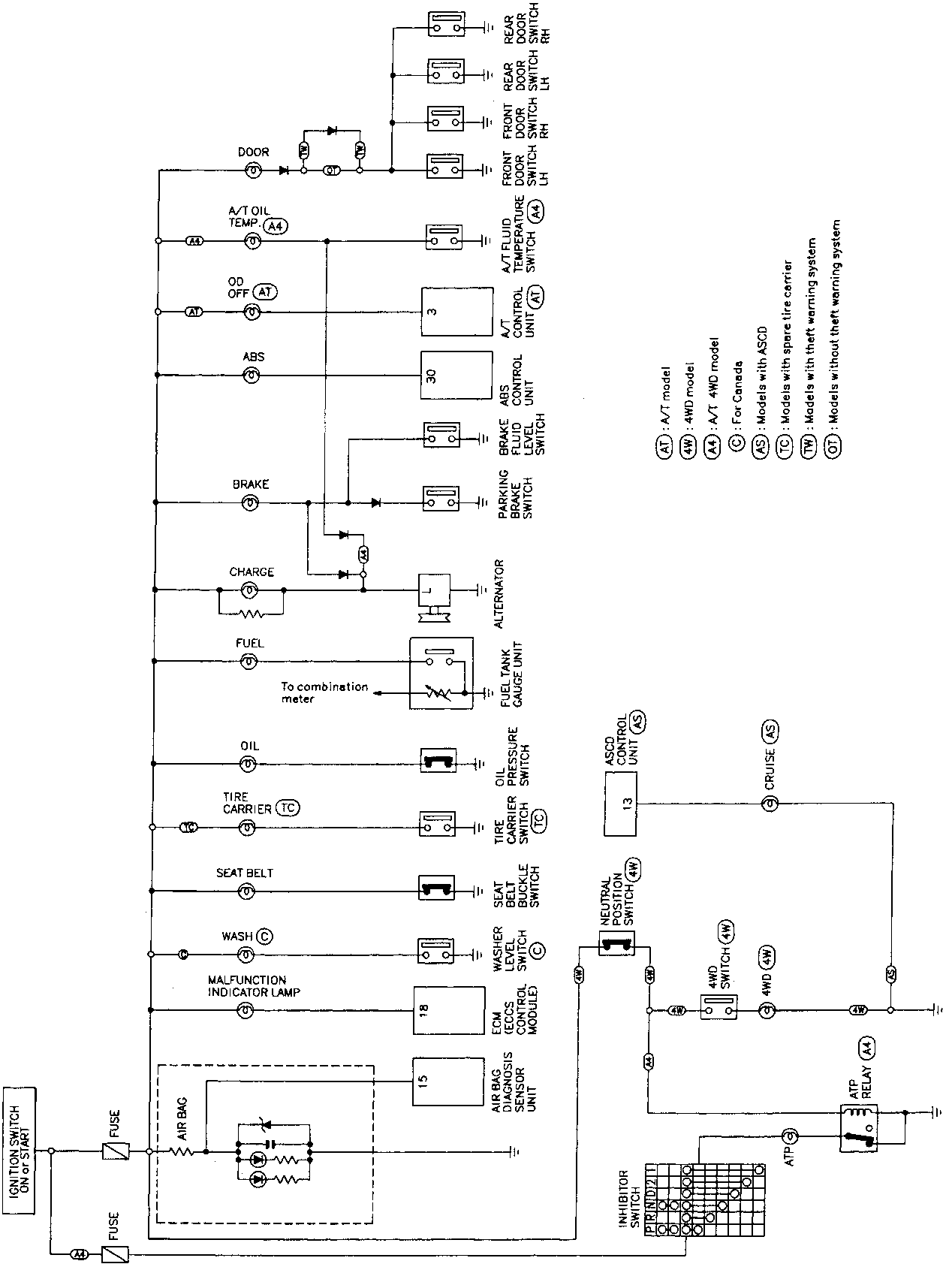
INITIAL CORRECTION PROCEDURE FOR COMPASS

1. Pushing the "Mode" switch for about 10 seconds will enter the initial correction mode. The direction bar starts blinking.
2. Turn the vehicle slowly in an open, safe place. The initial correction is completed in one or two turns.

NOTE:

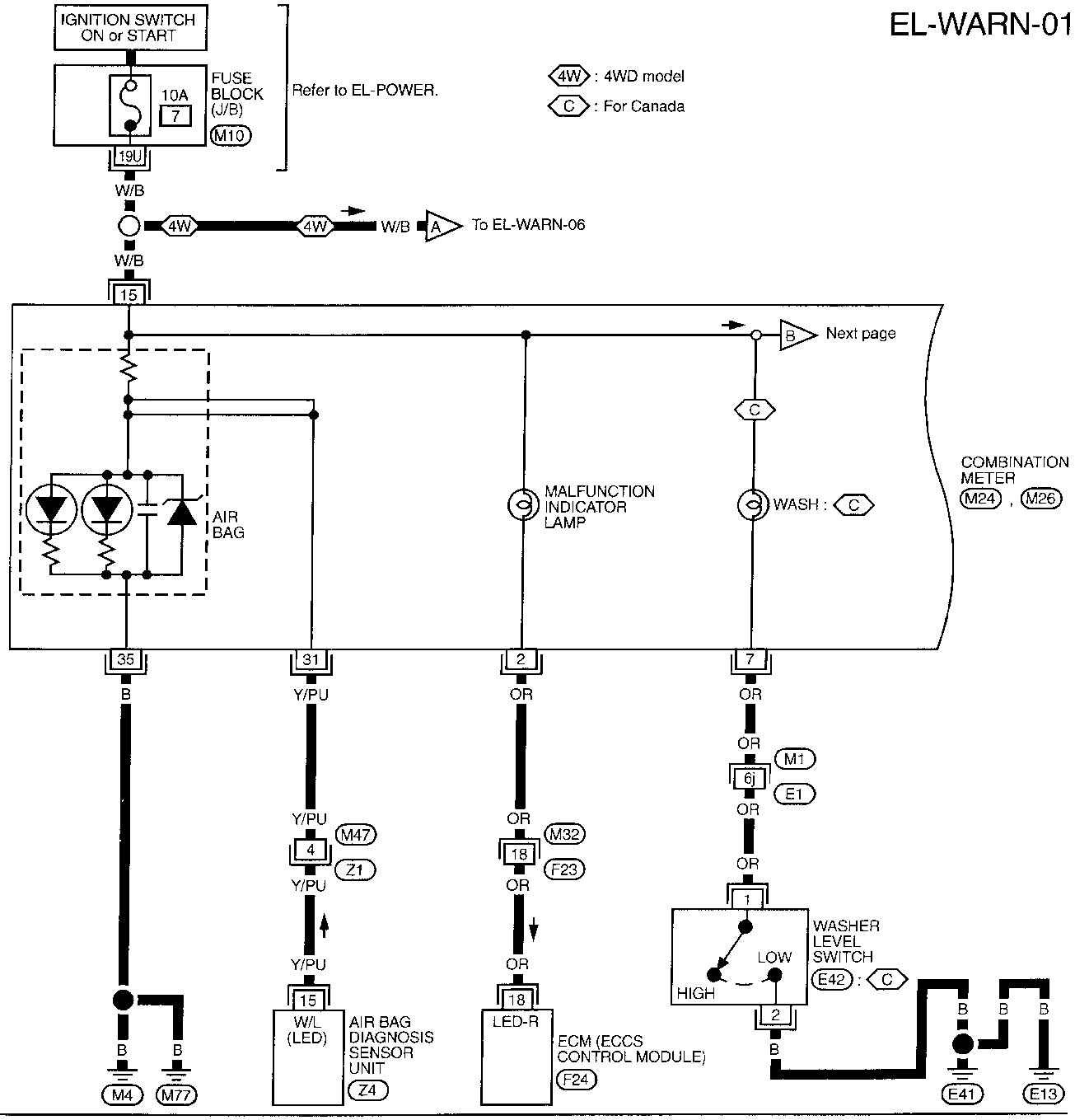
In places where the terrestrial magnetism is extremely disturbed, the initial correction may start automatically.

Warning Lamps/Schematic

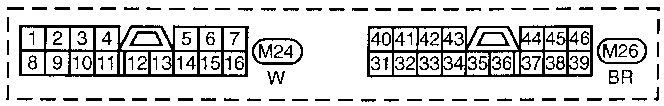


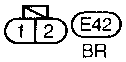
MEL762G

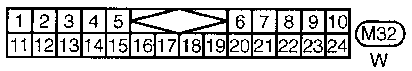
Warning Lamps/Wiring Diagram — WARN —

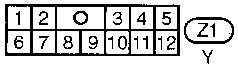


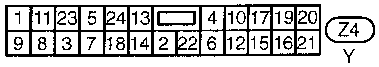
Refer to last page (Foldout page).
E1 , M1
M10
F24







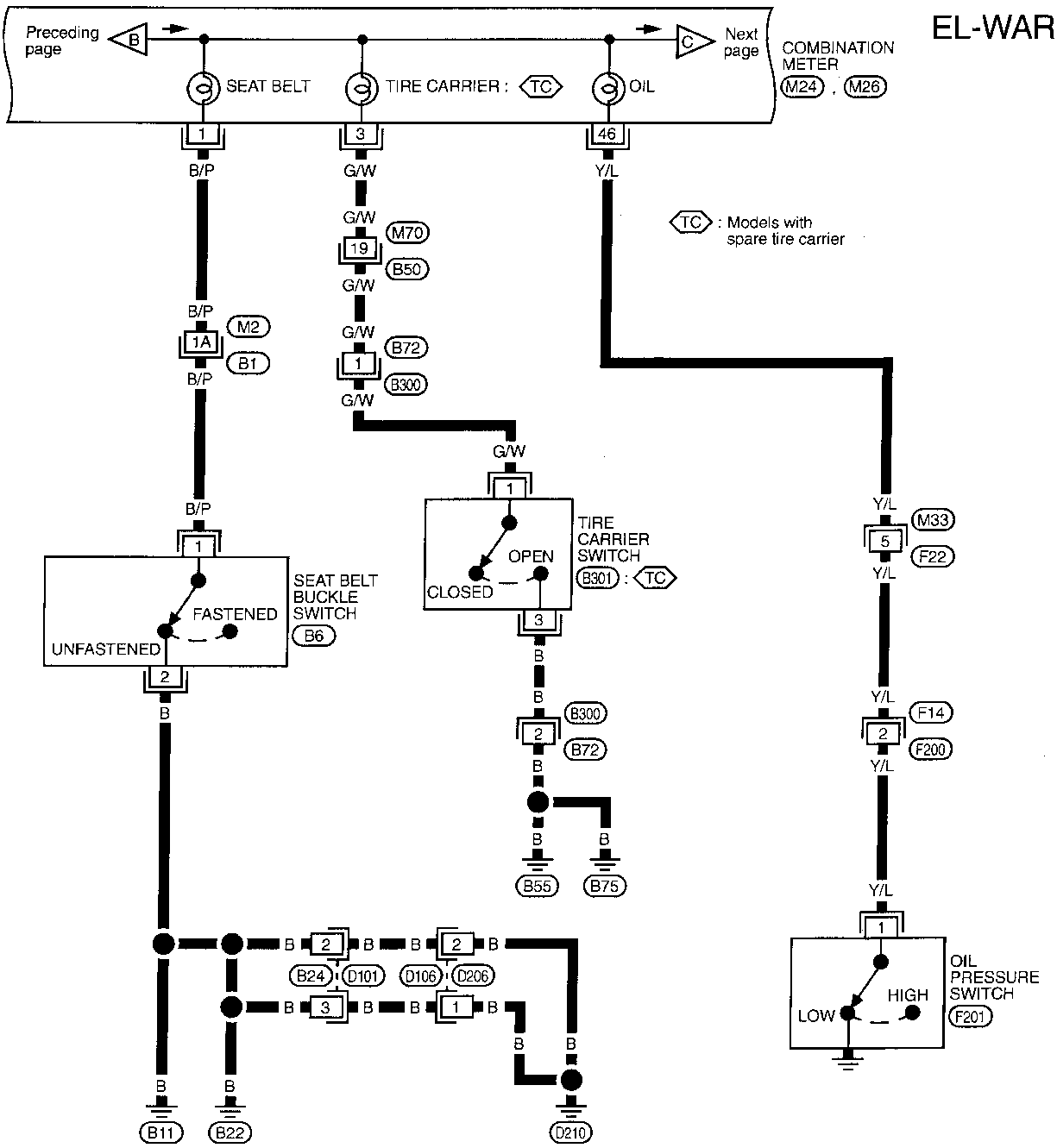


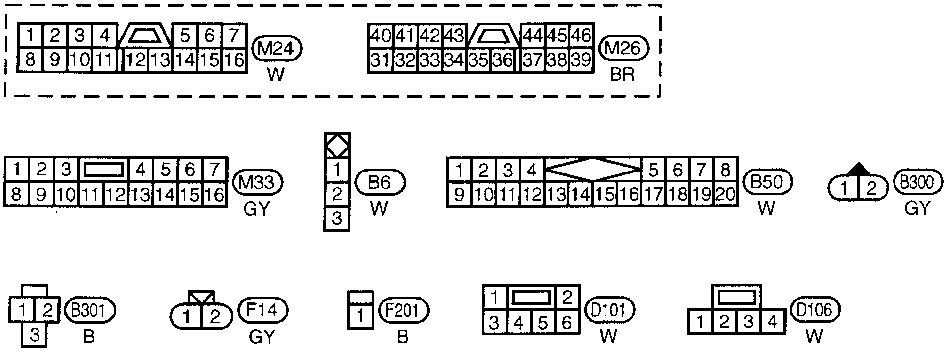


MEL763G

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

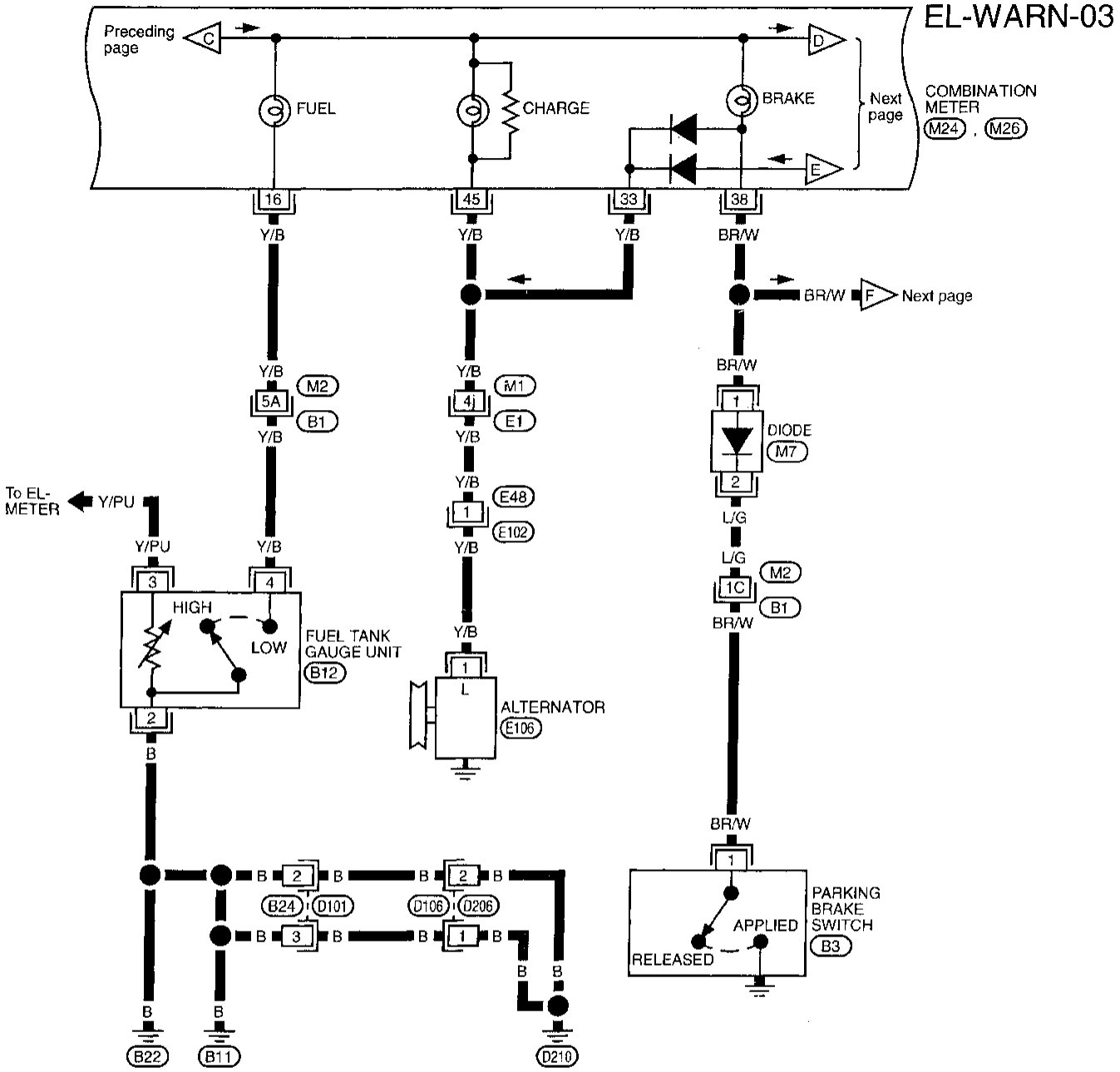
EL-WARN-02

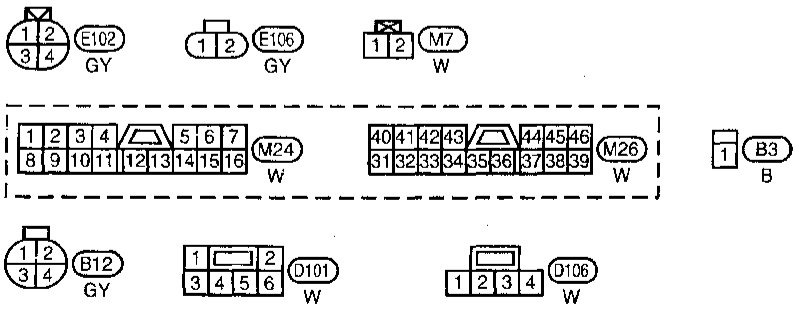




Refer to last page (Foldout page).
M2 , B1

Warning Lamps/Wiring Diagram — WARN — (Cont'd)



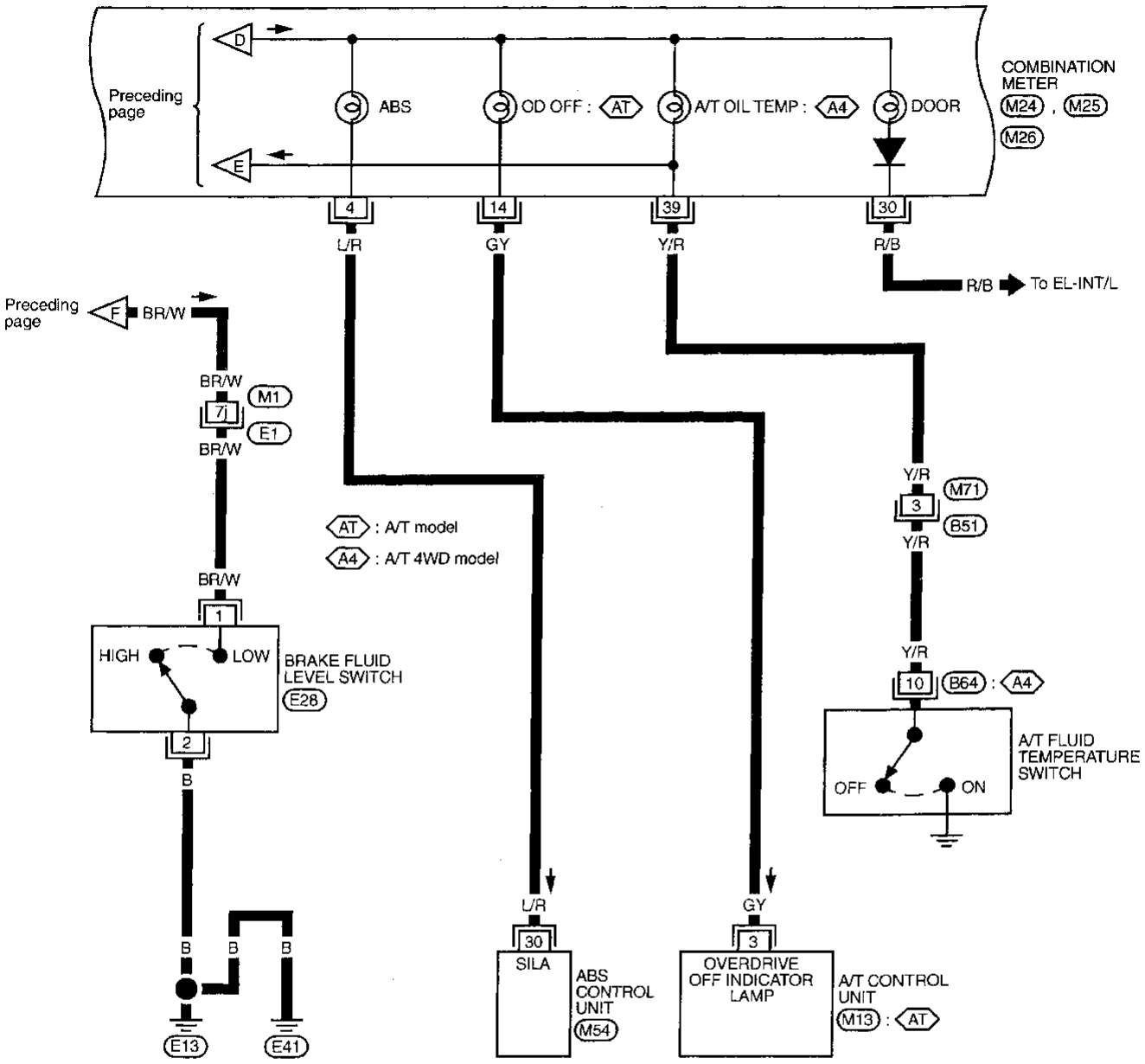


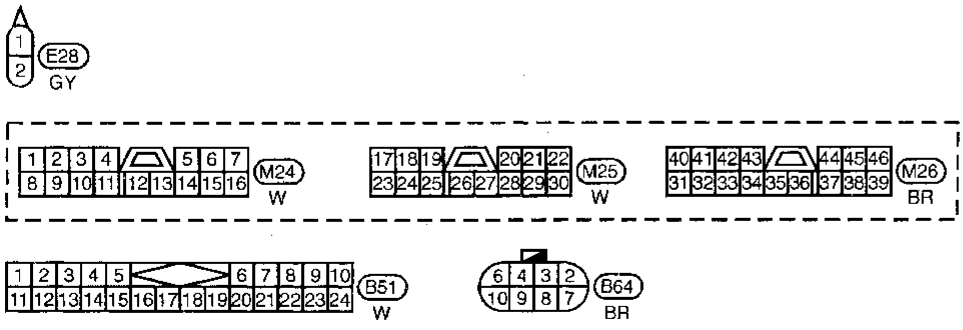
Refer to last page (Foldout page).
E1 , M1
M2 , B1

MEL765G

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-04



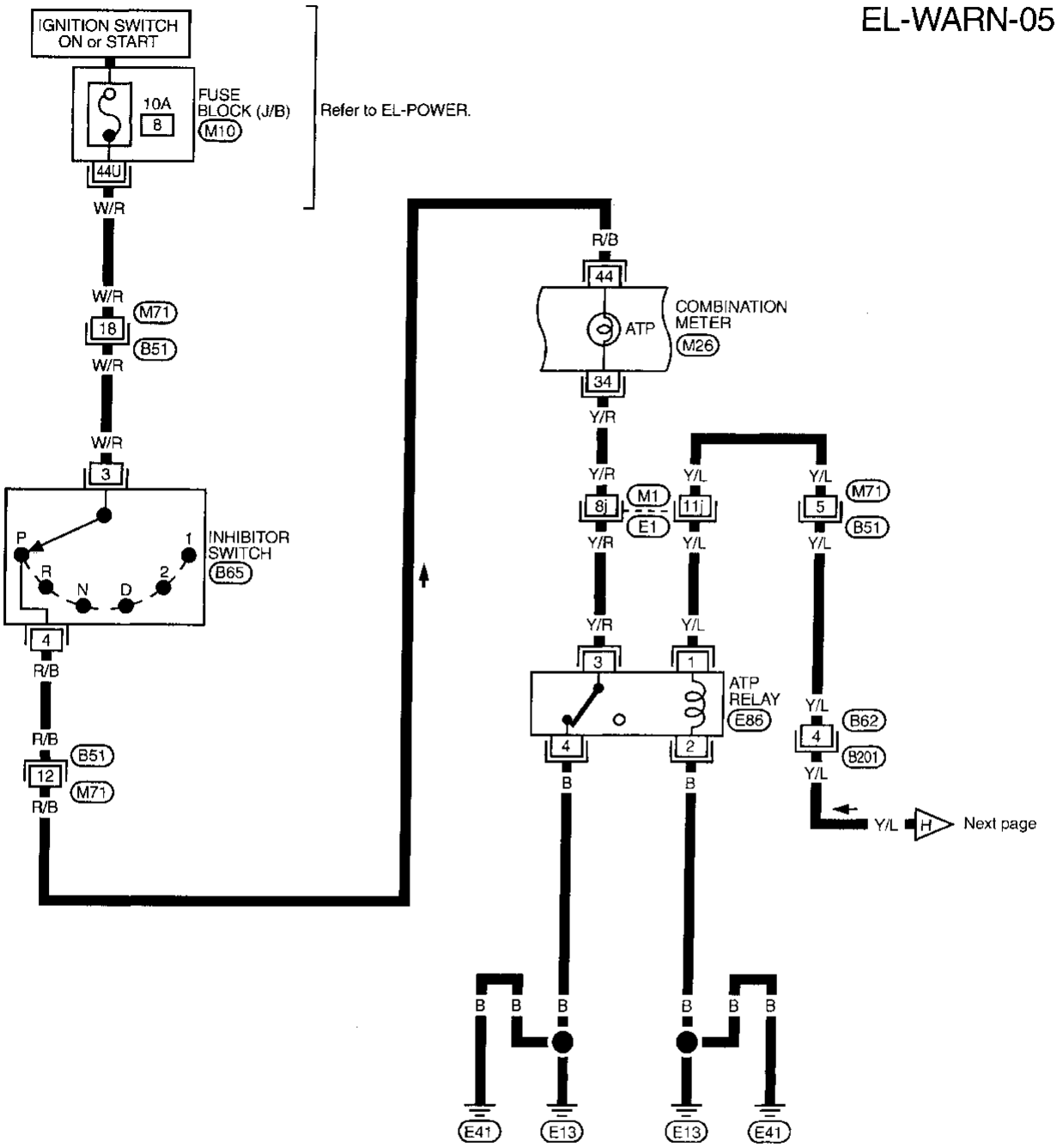


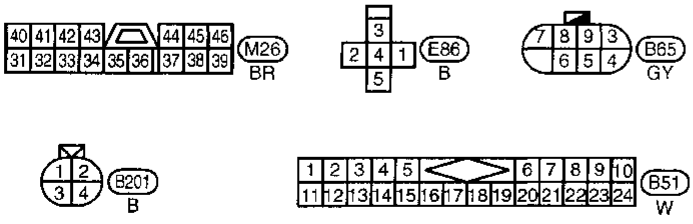
Refer to last page (Foldout page).
E1 , M1
M13
M54

MEL766G

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-05



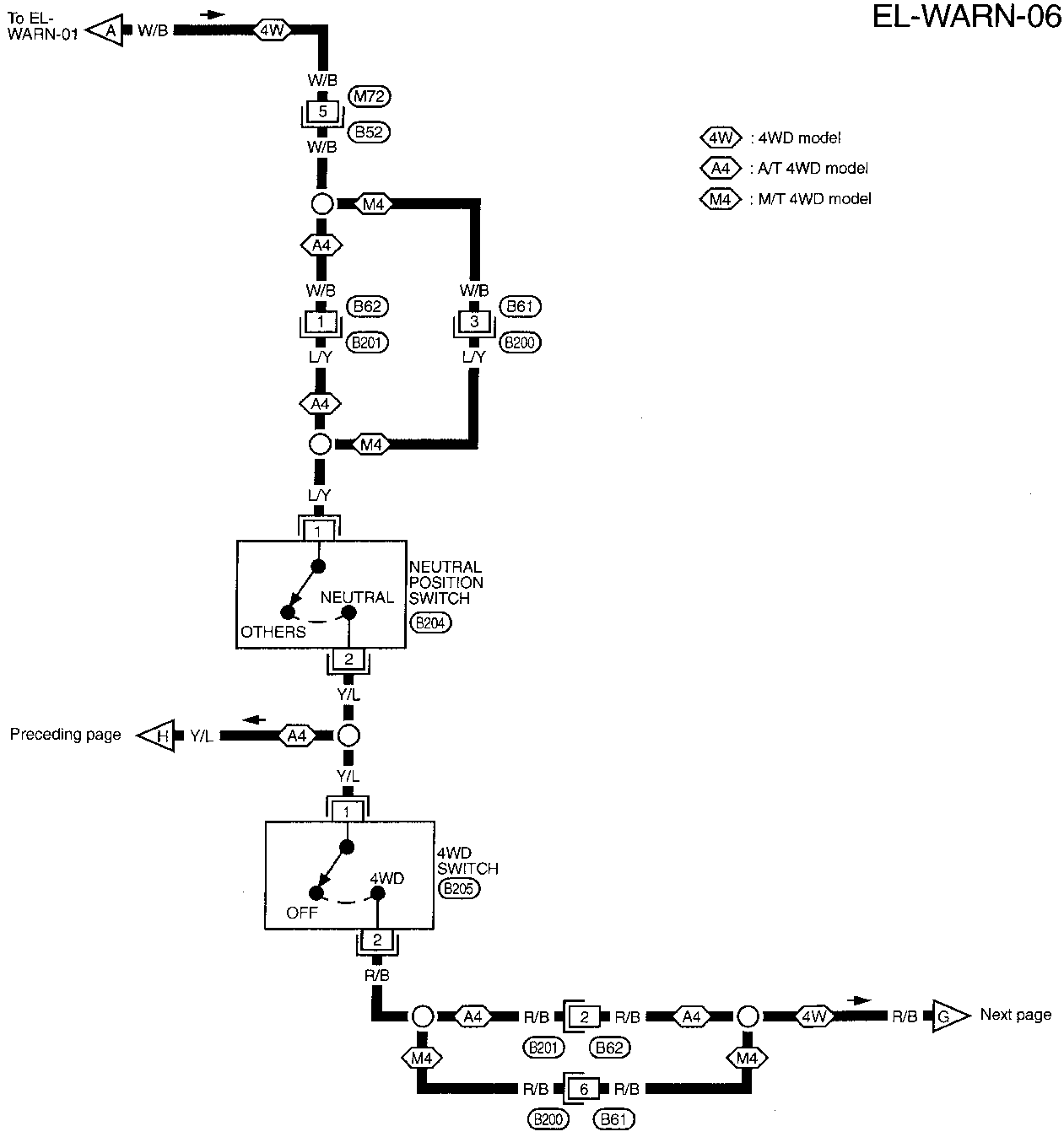


Refer to last page (Foldout page).
M1 , E1
M10

MEL767G

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

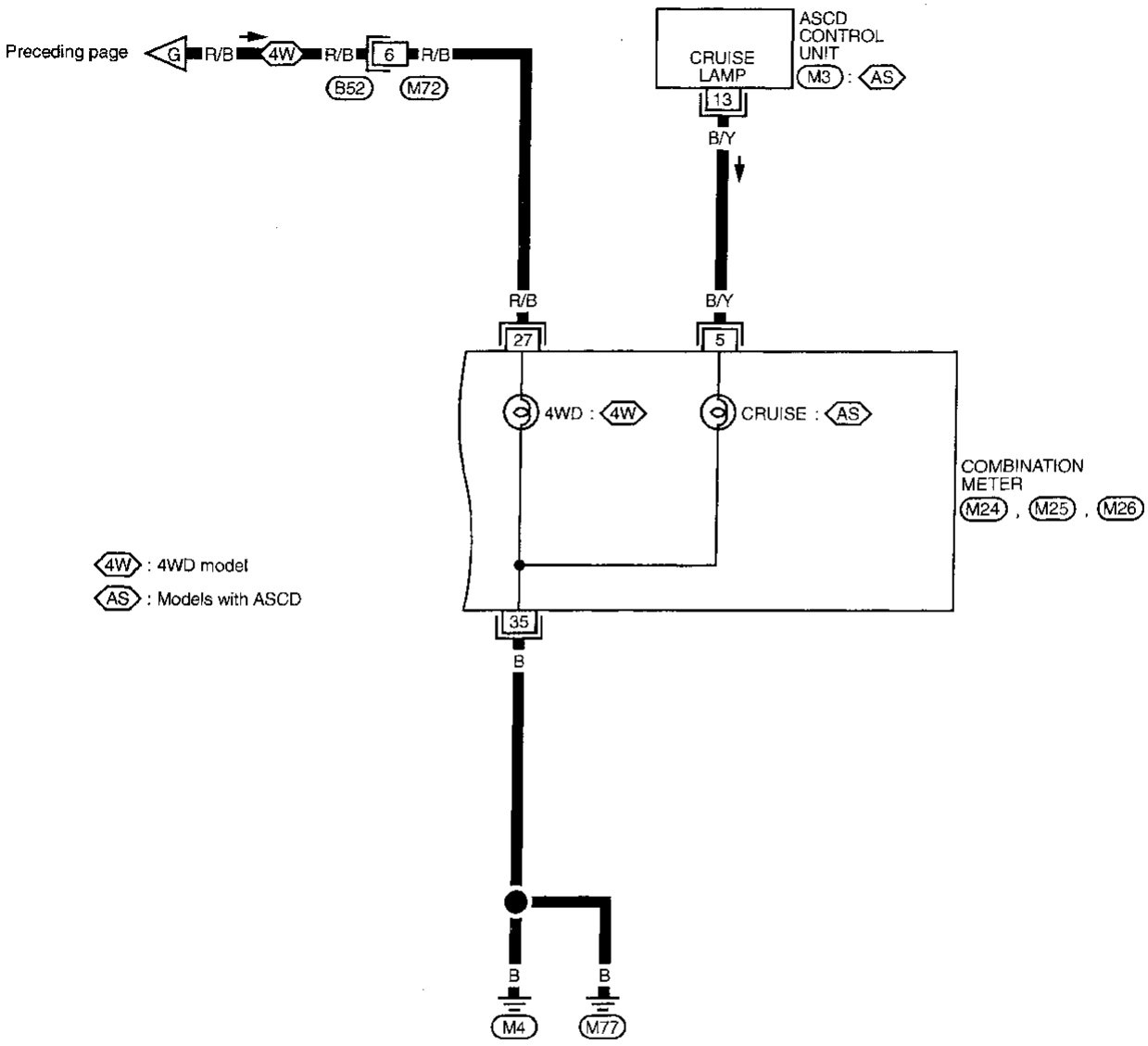
EL-WARN-06

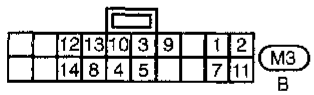


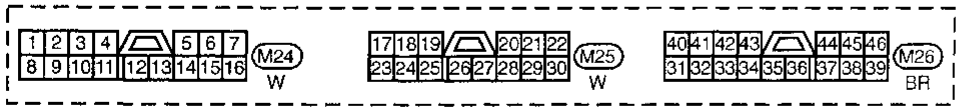
MEL768G

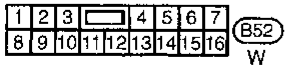
Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-07

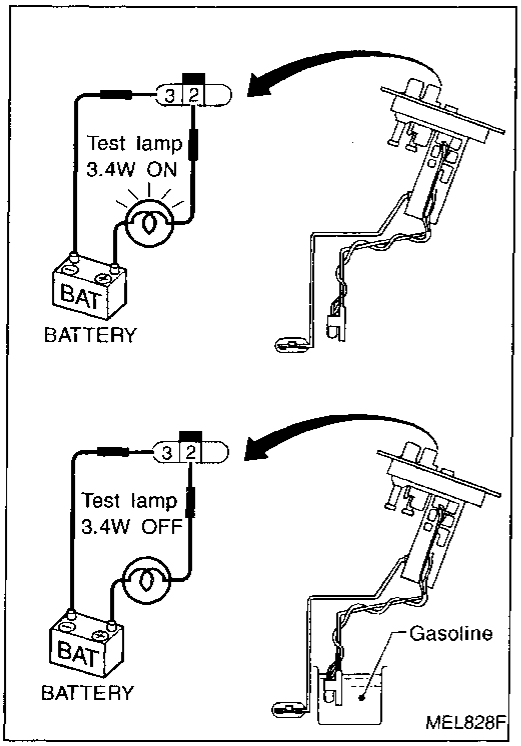








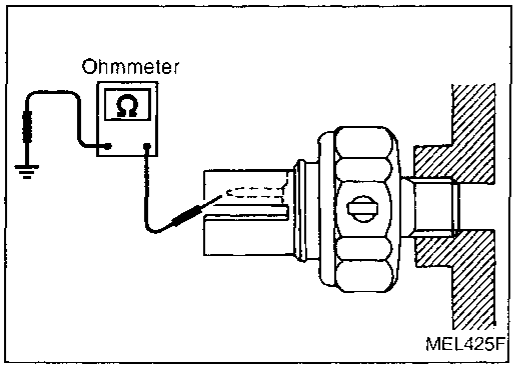
MEL769G



Electrical Components Inspection

FUEL WARNING LAMP SENSOR CHECK

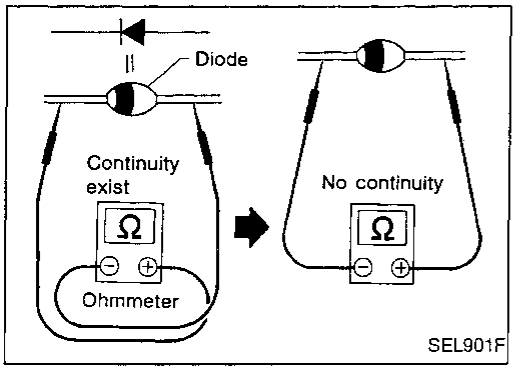
- It will take a short time for the bulb to light.



OIL PRESSURE SWITCH CHECK

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

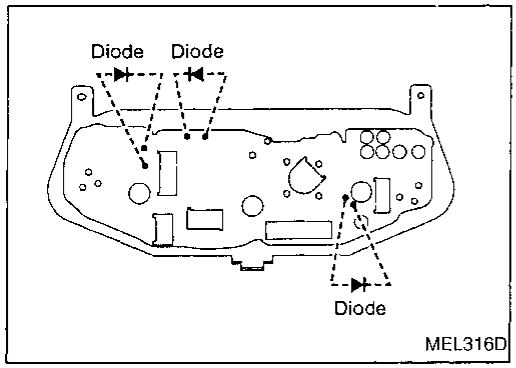
Check the continuity between the terminals of oil pressure switch and body ground.



DIODE CHECK

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

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



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

Warning Buzzer/System Description

The warning buzzer is controlled by the smart entrance control unit.
Power is supplied at all times
- through 7.5A fuse [No. 24], located in the fuse block (J/B)]
- to warning buzzer terminal ①
- to key switch terminal ① .

Power is supplied at all times
- through 10A fuse [No. 61], located in the fuse block (J/B)]
- to lighting switch terminal ⑪ .

Power is supplied at all times
- through 40A fusible link (letter f, located in the fuse and fusible link box).
- to smart entrance control unit 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 smart entrance control unit terminal ⑪ .

Ground is supplied to smart entrance control unit terminal ⑩ through body grounds (M4) and (M77).
When a signal, or combination of signals, is received by the smart entrance control unit, ground is supplied
- through smart entrance control unit terminal ㉓
- to warning buzzer terminal ③ .

With power and ground supplied, the warning buzzer will sound.

Ignition key warning buzzer

With the key in the ignition switch in the OFF or ACC position, and the driver's door open, the warning buzzer will sound. A battery positive voltage is supplied
- from key switch terminal ②
- to smart entrance control unit terminal ㉔ .

Ground is supplied
- from front door switch LH terminal ①
- to smart entrance control unit terminal ⑮ .

Front door switch LH terminal ② is grounded through body grounds (B11), (B22) and (D210).

Light warning buzzer

With ignition switch OFF or ACC, driver's door open, and lighting switch in 1ST or 2ND position, warning buzzer will sound. A battery positive voltage is supplied.
- from lighting switch terminal ⑫
- to smart entrance control unit terminal ㉕

Ground is supplied
- from front door switch LH terminal ①
- to smart entrance control unit terminal ⑮ .

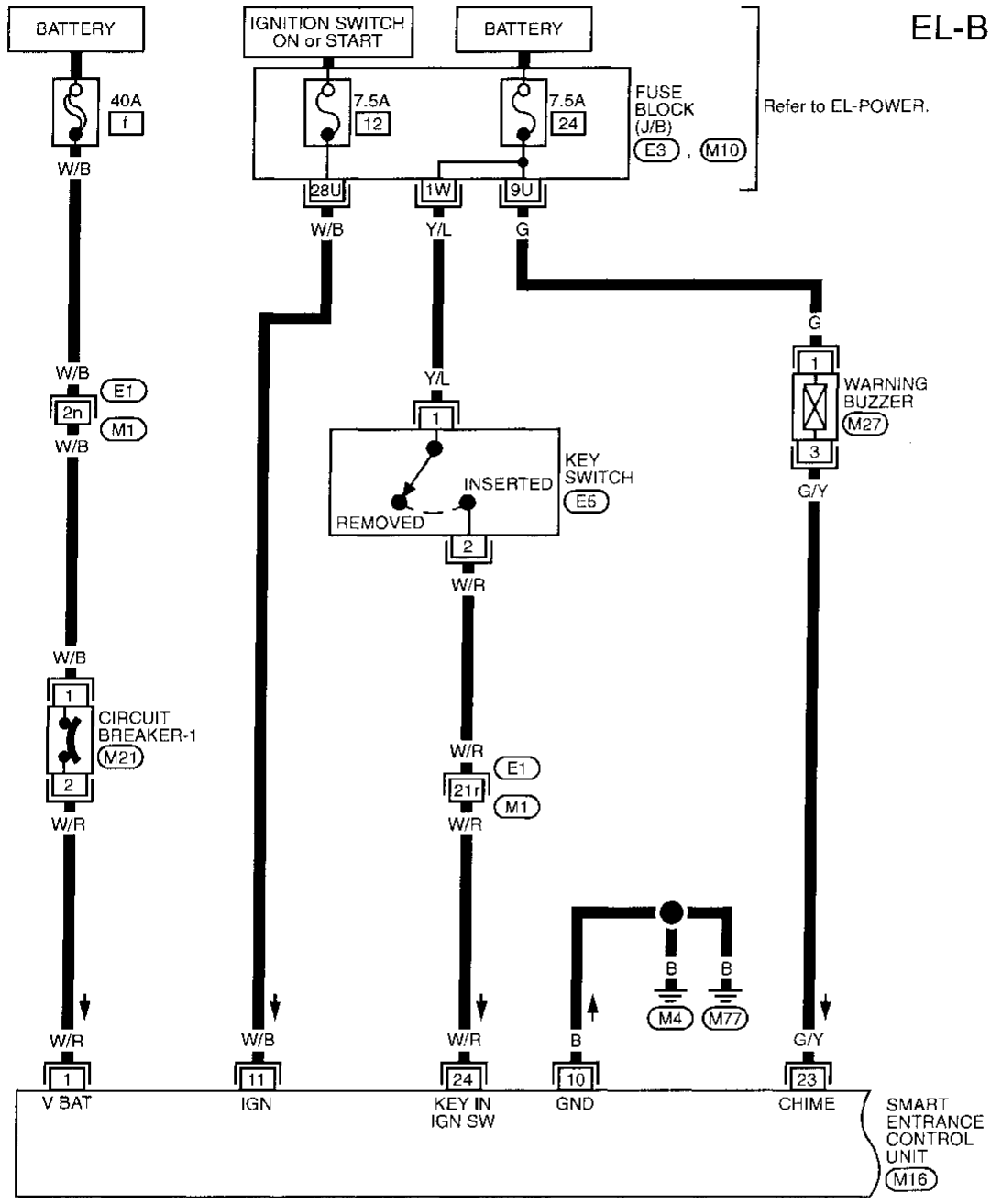
Front door switch LH terminal ② is grounded through body grounds (B11), (B22) and (D210).

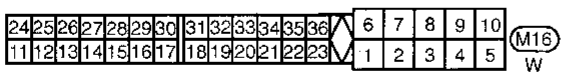
Seat belt warning buzzer

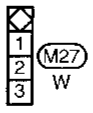
With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning buzzer will sound for approximately 6 seconds.
Ground is supplied
- from seat belt switch terminal ①
- to smart entrance control unit terminal ㉑ .

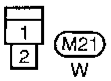
Seat belt switch terminal ② is grounded through body grounds (B11), (B22) and (D210).

Warning Buzzer/Wiring Diagram — BUZZER —







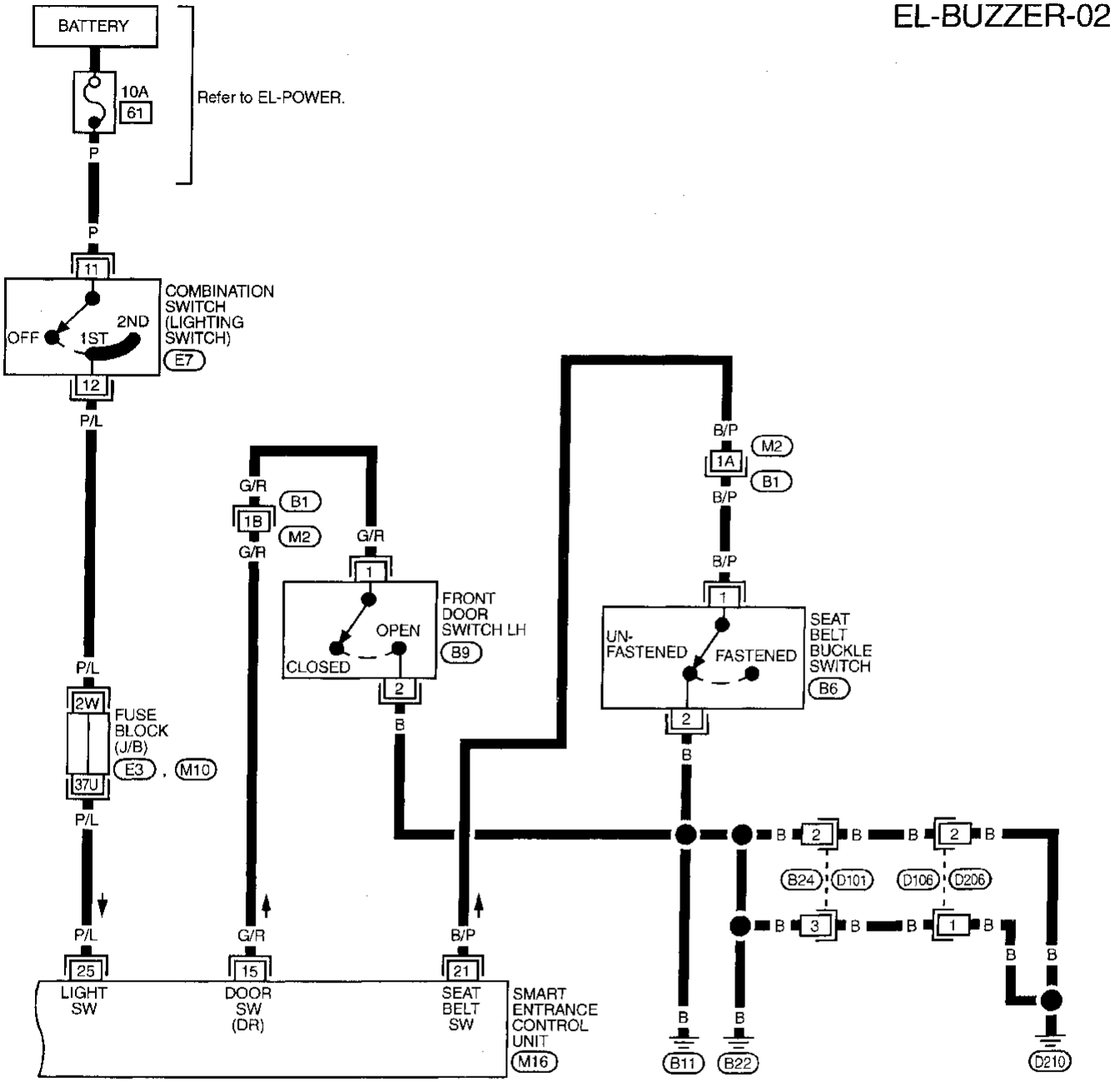


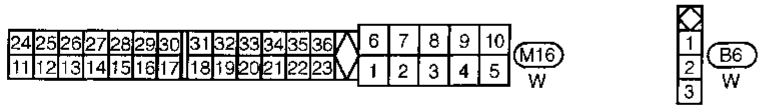
Refer to last page (Foldout page).
E1 , M1
E3
M10

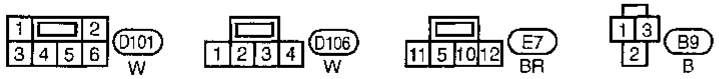
MEL770G

Warning Buzzer/Wiring Diagram — BUZZER — (Cont'd)

EL-BUZZER-02







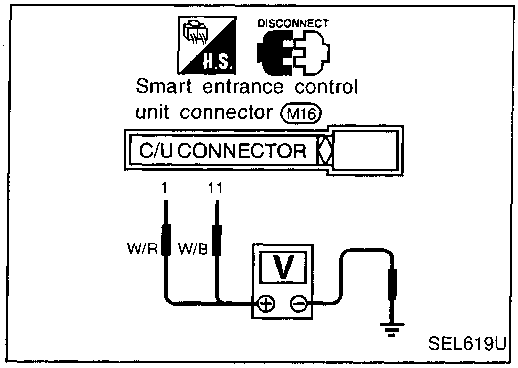
Refer to last page (Foldout page).
M2 , B1
M10
E3

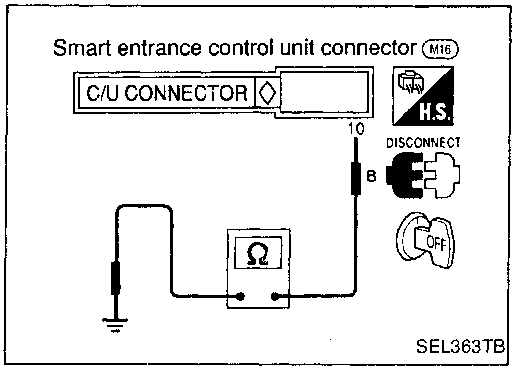
MEL771G

Trouble Diagnoses

SYMPTOM CHART

REFERENCE PAGE	EL-107	EL-108	EL-108	EL-109	EL-109
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1	DIAGNOSTIC PROCEDURE 2	DIAGNOSTIC PROCEDURE 3	DIAGNOSTIC PROCEDURE 4
Light warning buzzer does not activate.	X	X			X
Ignition key warning buzzer does not activate.	X		X		X
Seat belt warning buzzer does not activate.	X			X	X
All warning buzzers do not activate.	X				X





POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply for smart entrance control unit

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage
⑪	Ground	0V	0V	Battery voltage

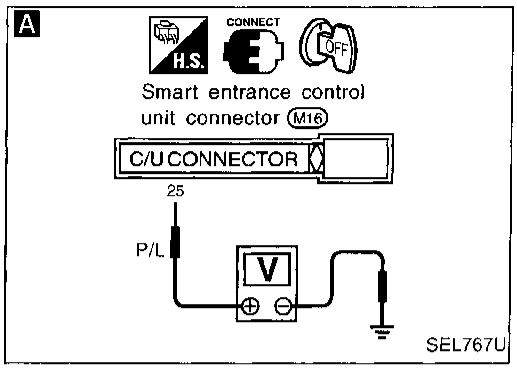
Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)



A

CHECK LIGHTING SWITCH INPUT SIGNAL.
Check voltage between control unit terminal 25 and ground.

Condition of lighting switch	Voltage [V]
1ST or 2ND	Approx. 12
OFF	0

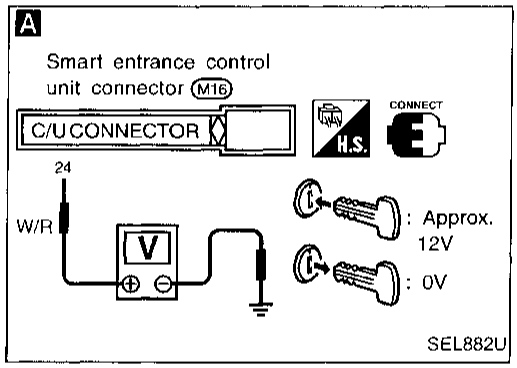
NG → Check the following.
- 10A fuse (No. 61, located in the fuse and fusible link box)
- Harness for open or short between control unit and lighting switch

OK ↓

Go to Procedure 4.

DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)



A

CHECK KEY SWITCH INPUT SIGNAL.
Check voltage between control unit terminal 24 and ground.

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

NG → Check the following.
- Key switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-110).
- 7.5A fuse [No. 24, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between control unit and key switch

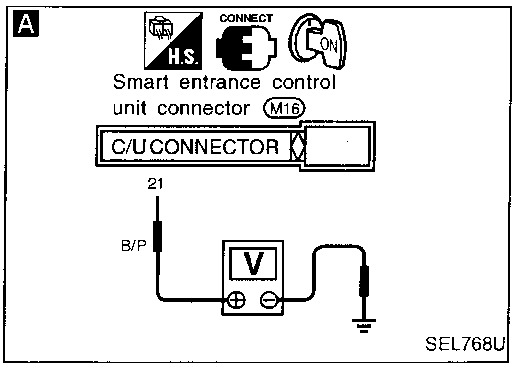
OK ↓

Go to Procedure 4.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)



A

CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.
1. Turn ignition switch "ON".
2. Check voltage between control unit terminal ㉑ and ground.

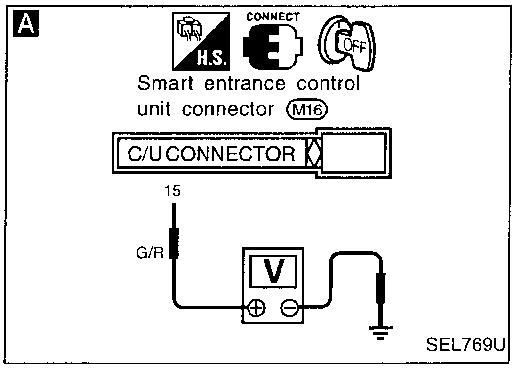
Condition of seat belt buckle switch	Voltage [V]
Fastened	Approx. 12
Unfastened	0

NG → Check the following.
- Seat belt buckle switch Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-110).
- Seat belt buckle switch ground circuit
- Harness for open or short between control unit and seat belt buckle switch

OK ↓

Go to Procedure 4.

DIAGNOSTIC PROCEDURE 4



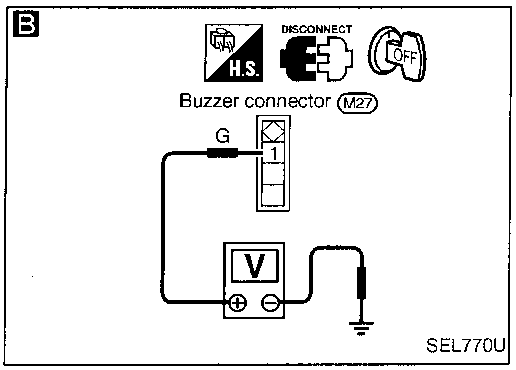
A

CHECK DOOR SWITCH INPUT SIGNAL.
Check voltage between control unit terminal ⑮ and ground.

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

NG → Check the following.
- Driver side door switch Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-110).
- Door switch ground circuit
- Harness for open or short between control unit and door switch

OK ↓

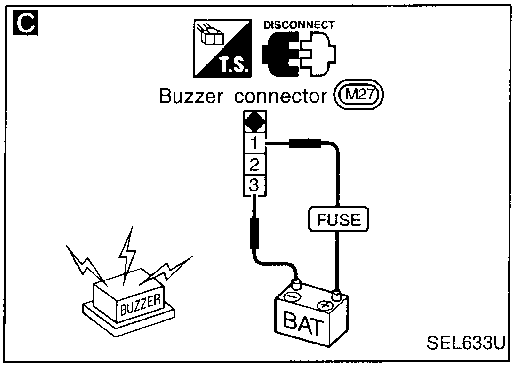


B

CHECK BUZZER POWER SUPPLY.
Measure voltage between warning buzzer terminal ① and ground.
Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 24, located in fuse block (J/B)]
- Harness for open or short between buzzer and fuse

OK ↓



C

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

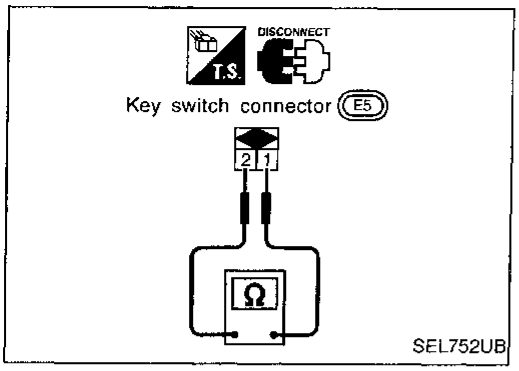
NG → Replace warning buzzer.

OK ↓

Check harness for open or short between control unit and warning buzzer.

Trouble Diagnoses (Cont'd)

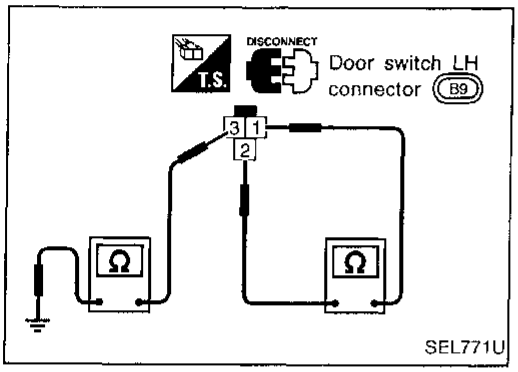
ELECTRICAL COMPONENTS INSPECTION



Key switch (insert)

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

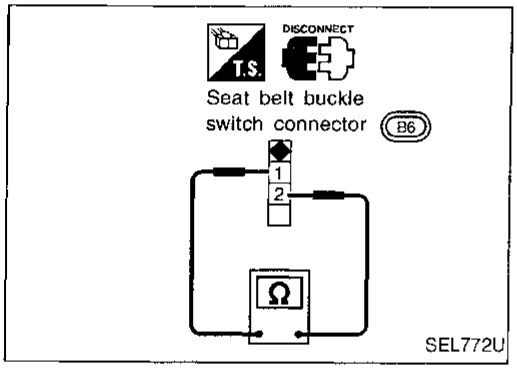
Terminal No.	Condition	Continuity
① - ②	Key is inserted	Yes
	Key is removed	No



Driver side door switch

Check continuity between terminals when door switch is pushed and released.

Terminal No.	Condition	Continuity
① - ②, ③ - ground	Door switch is pushed.	No
	Door switch is released.	Yes



Seat belt buckle switch

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

Terminal No.	Condition	Continuity
① - ②	Seat belt is fastened.	No
	Seat belt is unfastened.	Yes

System Description

WIPER OPERATION

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

- LO speed
- HI speed
- INT (Intermittent)

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

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

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body grounds E13 and E41 .
When the wiper switch is placed in the LO position, ground is supplied

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

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

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

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

Auto stop operation

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

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

Ground is also supplied

- through terminal ⑬ of the wiper switch
- to wiper amplifier terminal ②
- through terminal ⑦ of the wiper amplifier
- to wiper motor terminal ⑤
- through terminal ④ of the wiper motor, and
- through body grounds M4 and M77 .

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

Intermittent operation

The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 3 to 13 seconds. This feature is controlled by the wiper amplifier.
When the wiper switch is placed in the INT position, ground is supplied

- to wiper amplifier terminal ①
- from wiper switch terminal ⑮
- through body grounds E13 and E41 .
- to wiper motor terminal ②
- through the wiper switch terminal ⑭
- to wiper switch terminal ⑬
- through wiper amplifier terminal ②
- to wiper amplifier terminal ③
- through body grounds M4 and M77 .

The desired interval time is input

- to wiper amplifier terminal ⑧
- from wiper switch terminal ⑲ .

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

System Description (Cont'd)

WASHER OPERATION

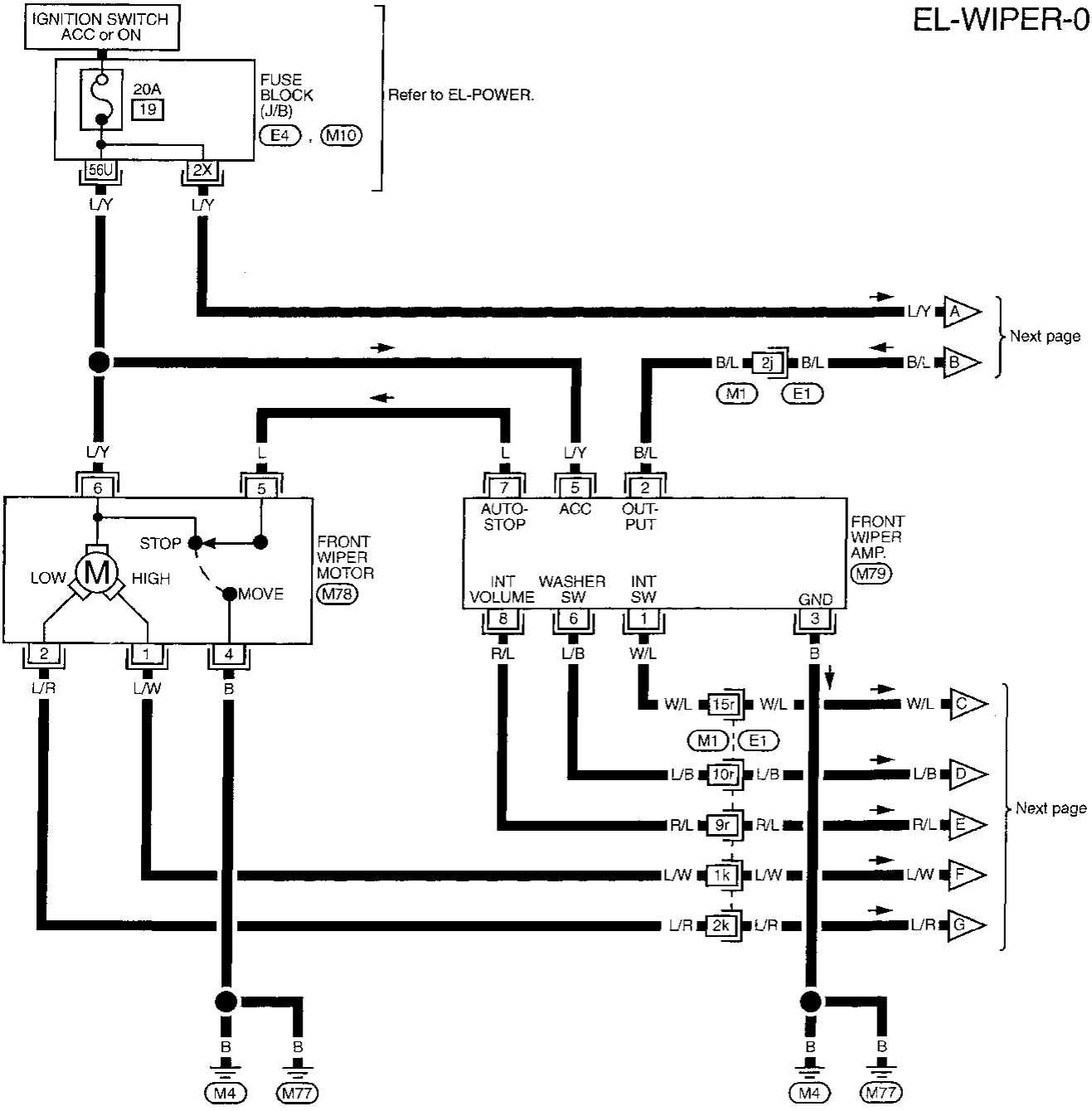
With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse [No. 19 , located in the fuse block (J/B)]
- to washer motor terminal ① .

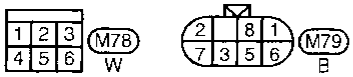
When the lever is pulled to the WASH position, ground is supplied
- to washer motor terminal ② , and
- to wiper amplifier terminal ⑥
- from terminal ⑱ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body grounds E13 and E41 .

With power and ground supplied, the washer motor operates.
When the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper amplifier in the same manner as the intermittent operation.

Front Wiper and Washer/Wiring Diagram — WIPER —

EL-WIPER-01



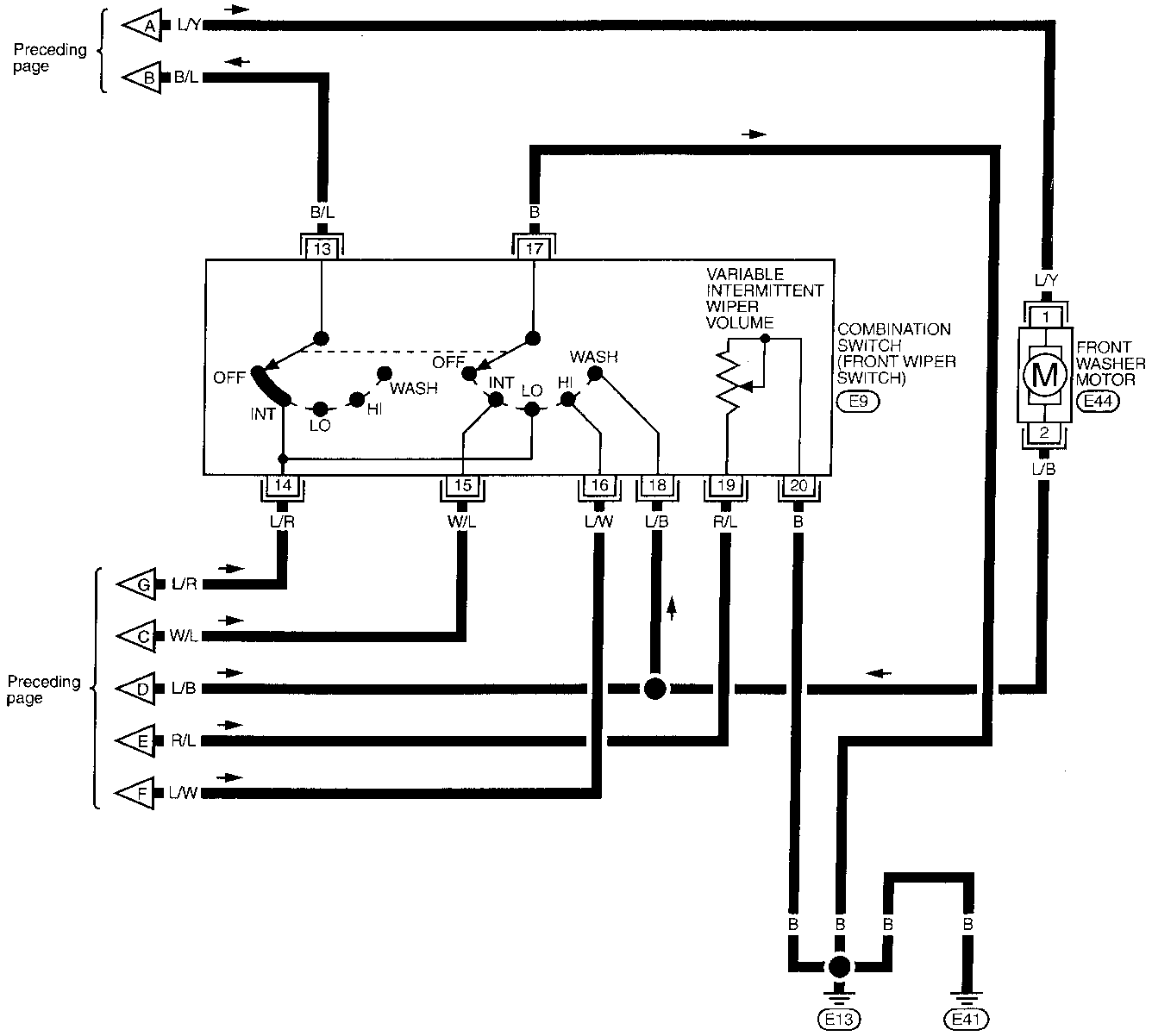


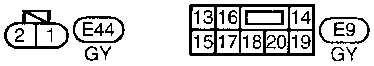
Refer to last page (Foldout page).
E1 , M1
E4
M10

MEL772G

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

EL-WIPER-02





MEL773G

Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

Check whether wiper operates with the wiper switch at Lo position.

NG → Check the following.
- 20A fuse [No. 19], located in fuse block (J/B)]
- Wiper motor
- Wiper switch
- Harness for open or short

OK ↓

A

1) Turn front wiper switch to OFF.
2) Disconnect wiper amp. connector.
3) Check voltage between wiper amp. terminal ② and ground.
Battery voltage should exist.

NG → Check the following.
- Wiper switch
- Harness for open or short between wiper amp. terminal ② and wiper switch terminal ⑬

OK ↓

B

CHECK INTERMITTENT SWITCH INPUT SIGNAL.
Check harness continuity between wiper amp. terminal ① and ground.

Condition of wiper switch	Continuity
OFF	No
INT	Yes

NG → Check the following.
- Wiper switch
- Harness for open or short between wiper amp. terminal ① and wiper switch terminal ⑮
- Ground circuit for front wiper switch terminal ⑰

OK ↓

C

CHECK WIPER AMP. POWER SUPPLY CIRCUIT.
Check voltage between wiper amp. terminal ⑤ and ground while ignition switch is "ACC".
Battery voltage should exist.

NG → Check the following.
- 20A fuse [No. 19], located in fuse block (J/B)]
- Harness for open or short between wiper amp. and fuse

OK ↓

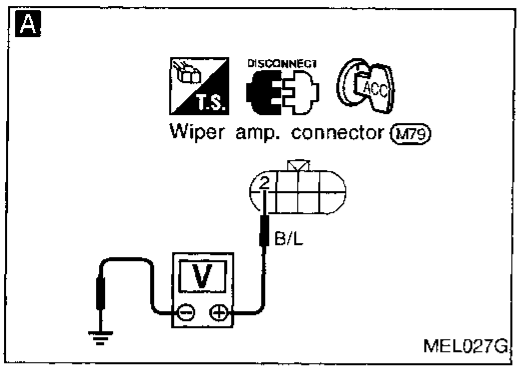
D

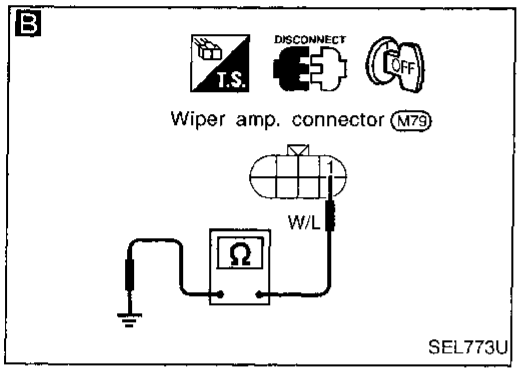
CHECK WIPER AMP. GROUND CIRCUIT.
Check harness continuity between wiper amp. terminal ③ and body ground.
Continuity should exist.

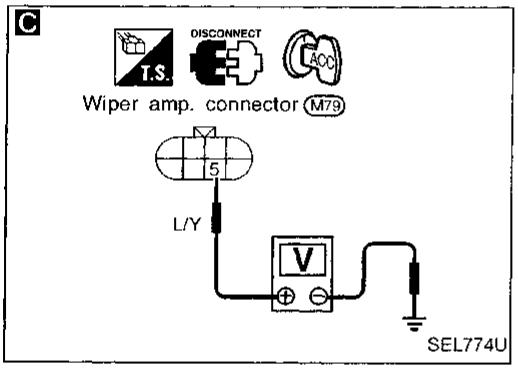
NG → Repair harness or connector.

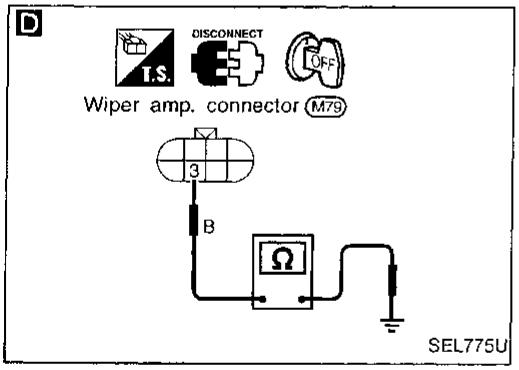
OK ↓

Replace wiper amp.





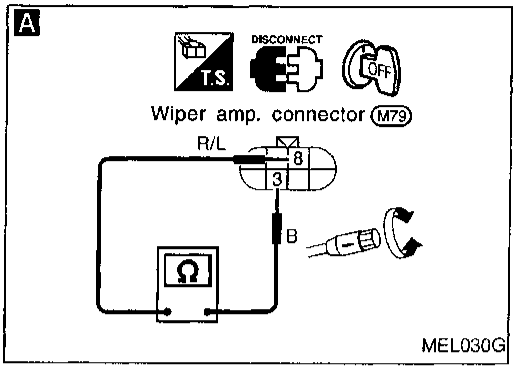




Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



A

CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL.
1) Disconnect wiper amp. connector.
2) Measure resistance between wiper amp. terminals ⑧ and ③ while turning intermittent wiper volume.

Position of wiper knob	Resistance [Ω]
S	0
L	Approx. 1 k

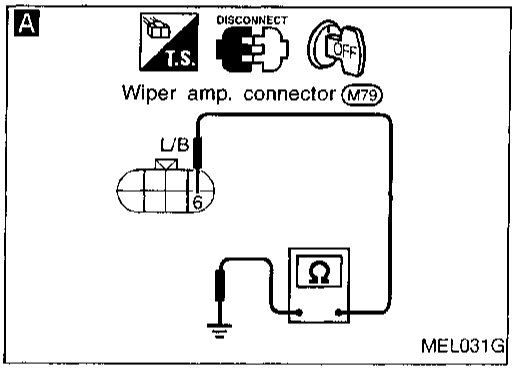
OK → Replace wiper amp.

NG

Check the following.
- Intermittent wiper volume
- Harness for open or short between wiper amp. terminal ⑧ and wiper switch terminal ⑲
- Ground circuit for front wiper switch terminal ⑳

DIAGNOSTIC PROCEDURE 3

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



A

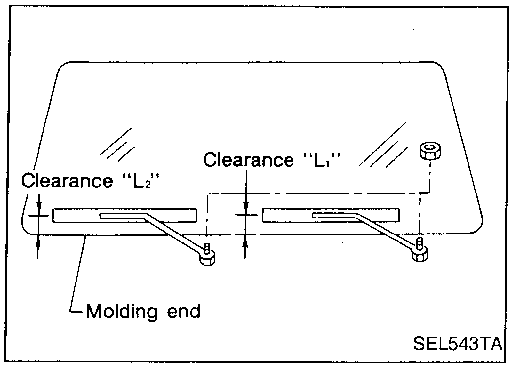
CHECK WASHER SWITCH INPUT SIGNAL.
1) Turn ignition switch to "OFF".
2) Disconnect wiper amp. connector.
3) Check harness continuity between wiper amp. terminal ⑥ and ground.

Condition of washer switch	Continuity
OFF	No
ON	Yes

NG → Check harness for open or short between wiper amp. terminal ⑥ and wiper switch terminal ⑱.

OK

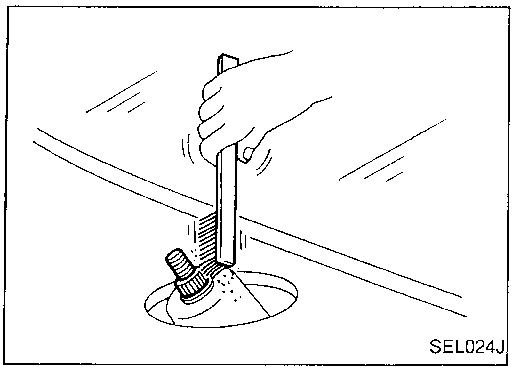
Go to DIAGNOSTIC PROCEDURE 1. → NG → Replace wiper amp.



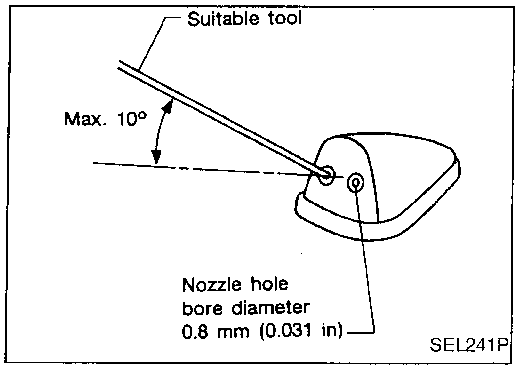
Wiper Installation and Adjustment

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

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

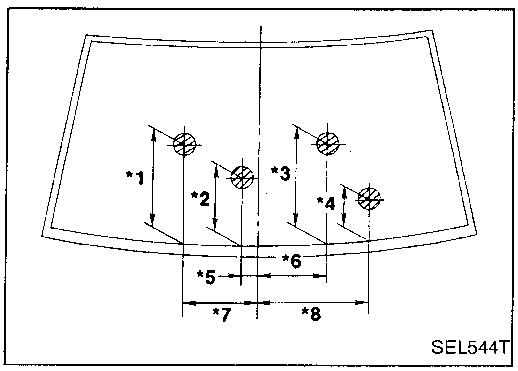


- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**



Washer Nozzle Adjustment

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

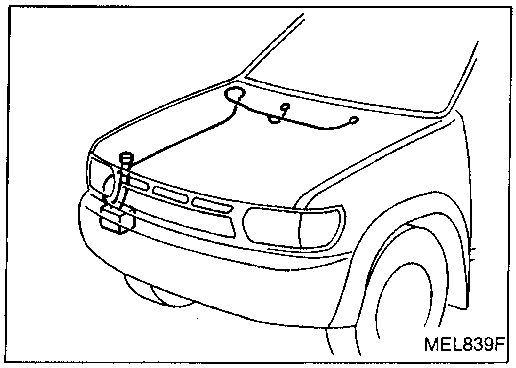


Unit: mm (in)

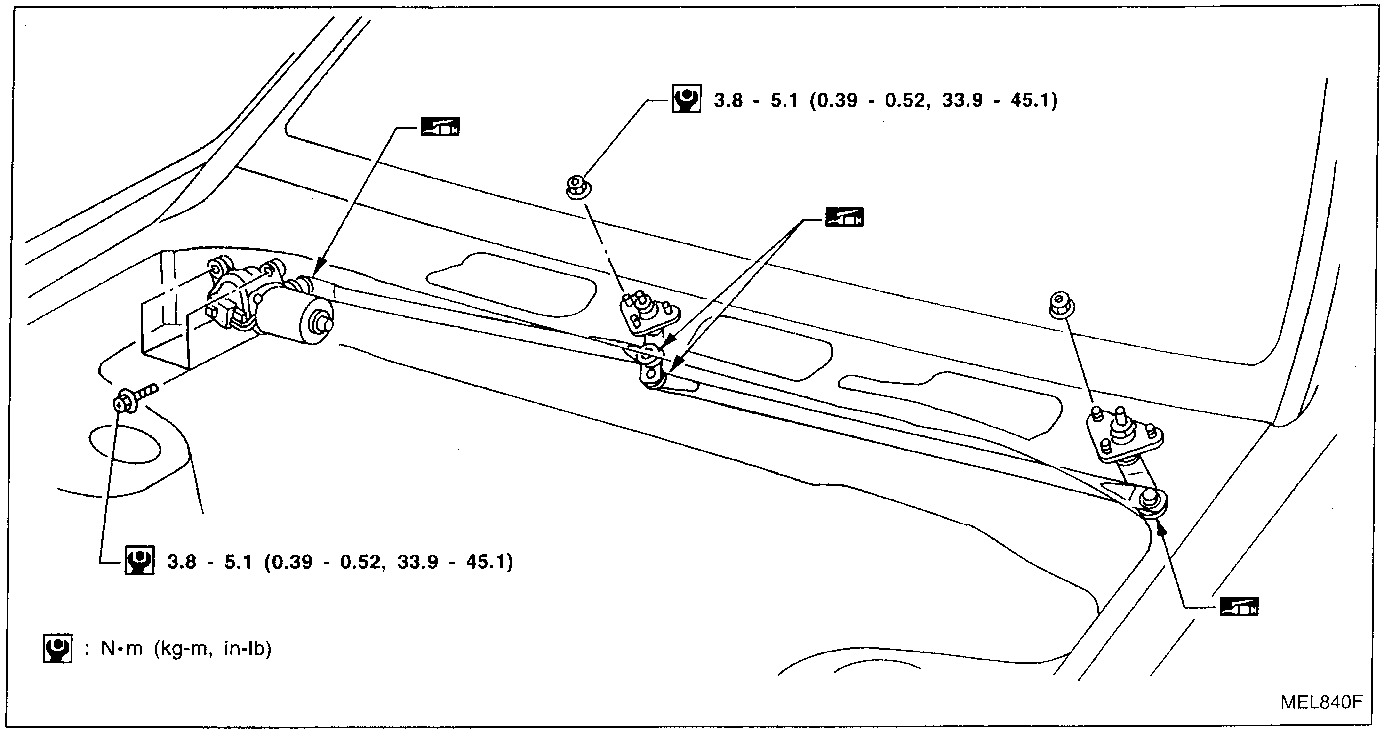
*1	390 (15.35)	*5	145 (5.71)
*2	160 (6.30)	*6	143 (5.63)
*3	379 (14.92)	*7	225 (8.86)
*4	140 (5.51)	*8	535 (21.06)

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

Washer Tube Layout



Wiper Linkage



REMOVAL

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

Be careful not to break ball joint rubber boot.

INSTALLATION

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.

Rear Wiper and Washer/System Description

WIPER OPERATION

Power supply and ground

With ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 29, located in the fuse block (J/B)]
- to rear wiper relay terminals ④ and ①.

When the glass hatch switch is CLOSED, power is supplied
- from rear wiper relay terminal ③
- to rear wiper amp. terminal ⑤,
- to rear washer motor terminal ① and
- to rear wiper motor terminal ⑥.

If the glass hatch switch is OPEN, ground is supplied
- to rear wiper relay terminal ②
- from glass hatch switch terminal ①.

Then rear wiper relay is energized and power to the rear wiper amp., washer motor and wiper motor is interrupted.
(If the glass hatch is opened, no function of rear wiper motor will operate.)
If the rear wiper switch is turned to the INT or ON position, when glass hatch is opened, rear wiper relay terminal ② is also grounded
- through rear wiper relay terminals ⑥ and ⑦
- from rear wiper switch terminal ⑧.

(The purpose of this circuit is to prevent an abrupt operation of the rear wiper when the hatch is closed with the ignition switch turned to ON or ACC, and with the rear wiper switch set to INT or ON.)
Ground is supplied
- to rear wiper amplifier terminal ③
- through body grounds B11, B22 and D210.
- to rear wiper switch terminal ③
- through body grounds M4 and M66.

Rising up operation

When the rear wiper switch is turned to the INT or ON position, ground is supplied
- through terminal ① of rear wiper switch
- to rear wiper amp. terminal ①.

Then wiper amp. is energized and power is supplied
- through rear wiper amp. terminal ④
- to rear wiper motor terminal ④.

Ground is supplied to rear wiper motor through rear wiper switch.
With power and ground supplied, rear wiper operates and rear wiper arm moves up.
Wiper does not return to resting position until wiper switch is turned to OFF position.

Low speed wiper operation

When the rear wiper switch is placed in the ON position, ground is supplied
- through terminal ⑤ of rear wiper switch
- to rear wiper motor terminal ③.

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

Rear Wiper and Washer/System Description (Cont'd)

Auto stop operation

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arms reach rear wiper stopper.
When wiper arm is not located at rear wiper stopper with wiper switch OFF, ground is provided
- from terminal ⑤ of the rear wiper switch
- to wiper motor terminal ③, in order to continue wiper motor operation at low speed.

Ground is also supplied
- through terminal ④ of the rear wiper switch
- to rear wiper amplifier terminal ②
- through terminal ⑦ of the rear wiper amplifier
- to rear wiper motor terminal ⑦
- through terminal ⑧ of the wiper motor, and
- through body grounds (B11), (B22) and (D210).

When wiper arms reach rear wiper stopper, rear wiper motor terminals ⑦ and ⑥ are connected instead of terminals ⑦ and ⑧. Rear wiper motor will then stop wiper arms at the PARK position.

Intermittent operation

The rear wiper motor operates the wiper arms at low speed approximately every 7 seconds. This feature is controlled by the wiper amplifier.
When the wiper switch is placed in the INT position, ground is supplied
- to wiper amplifier terminal ①
- from rear wiper switch terminal ①
- through body grounds (M4) and (M66).
- to wiper motor terminal ③
- through the rear wiper switch terminal ⑤
- to rear wiper switch terminal ④
- through wiper amplifier terminal ②
- to wiper amplifier terminal ③
- through body grounds (B11), (B22) and (D210).

The rear wiper motor operates at low speed intermittent.

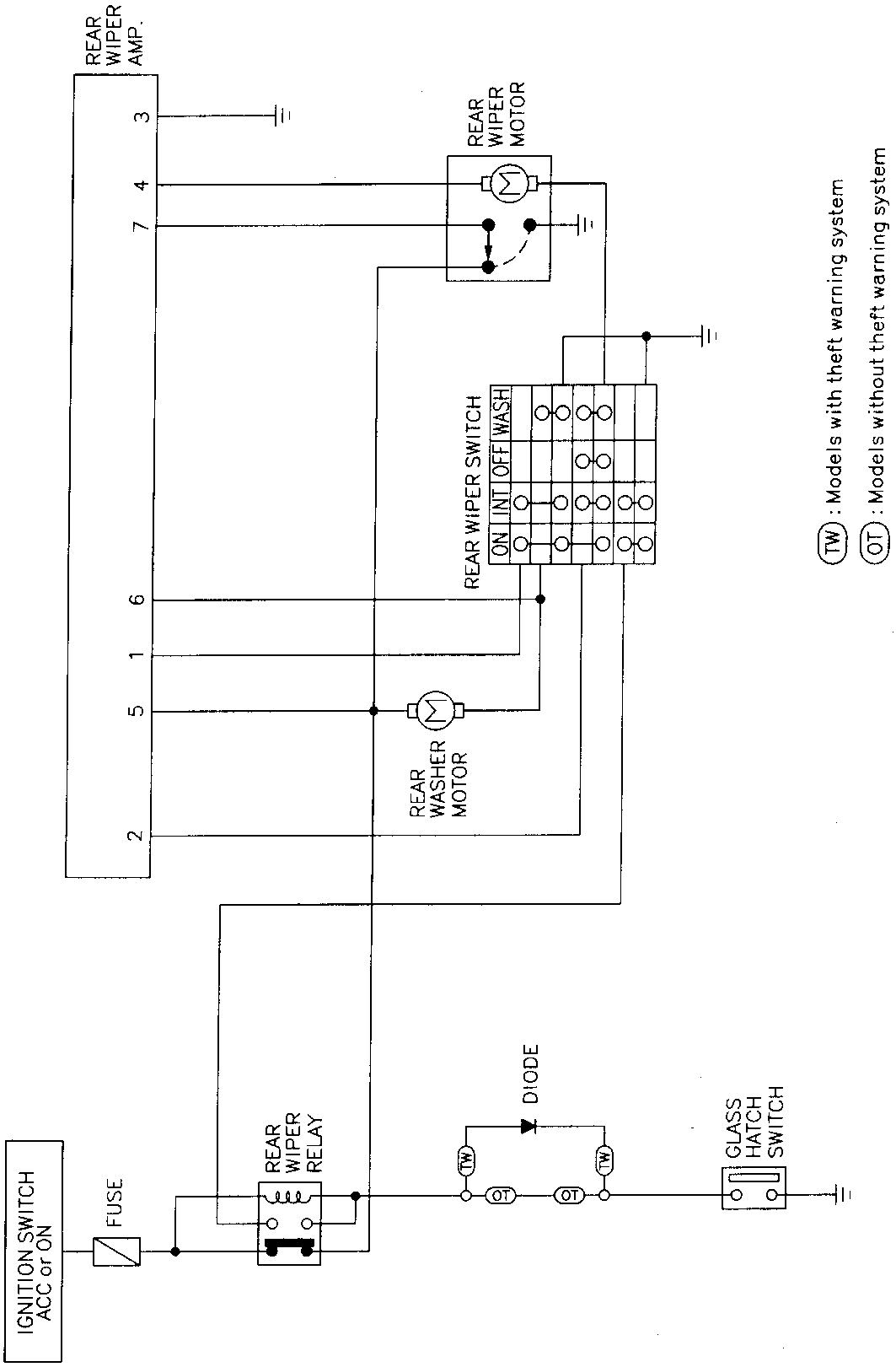
WASHER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse (No. 29, located in the fuse block)
- to rear washer motor terminal ①.

When the rear wiper switch is turned to WASH position, ground is supplied
- to rear washer motor terminal ②, and
- to rear wiper amplifier terminal ⑥
- from terminal ② of rear wiper switch
- through terminal ③ of rear wiper switch, and
- through body grounds (B11), (B22) and (D210).

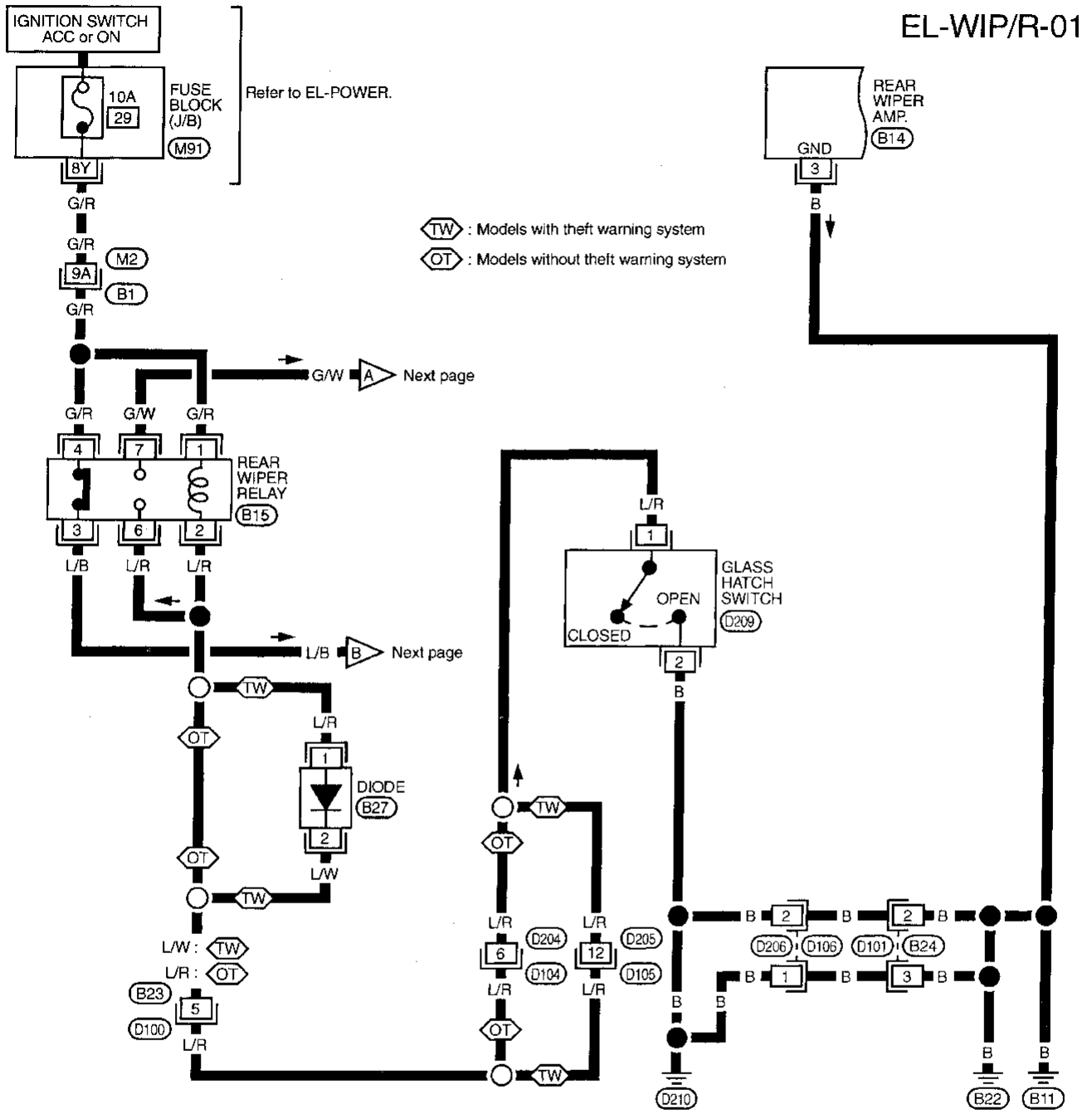
With power and ground supplied, the rear washer motor operates.
When the rear wiper switch is turned to WASH position for one second or more, the rear wiper motor operates at low speed for approximately 3 seconds after the rear wiper switch is released. This feature is controlled by the rear wiper amplifier in the same manner as the intermittent operation.

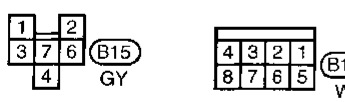
Rear Wiper and Washer/Schematic

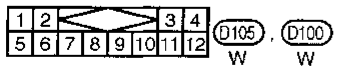


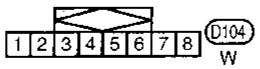
MEL774G

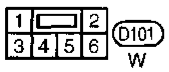
Rear Wiper and Washer/Wiring Diagram — WIP/R —











Refer to last page (Foldout page).
M91
M2 , B1

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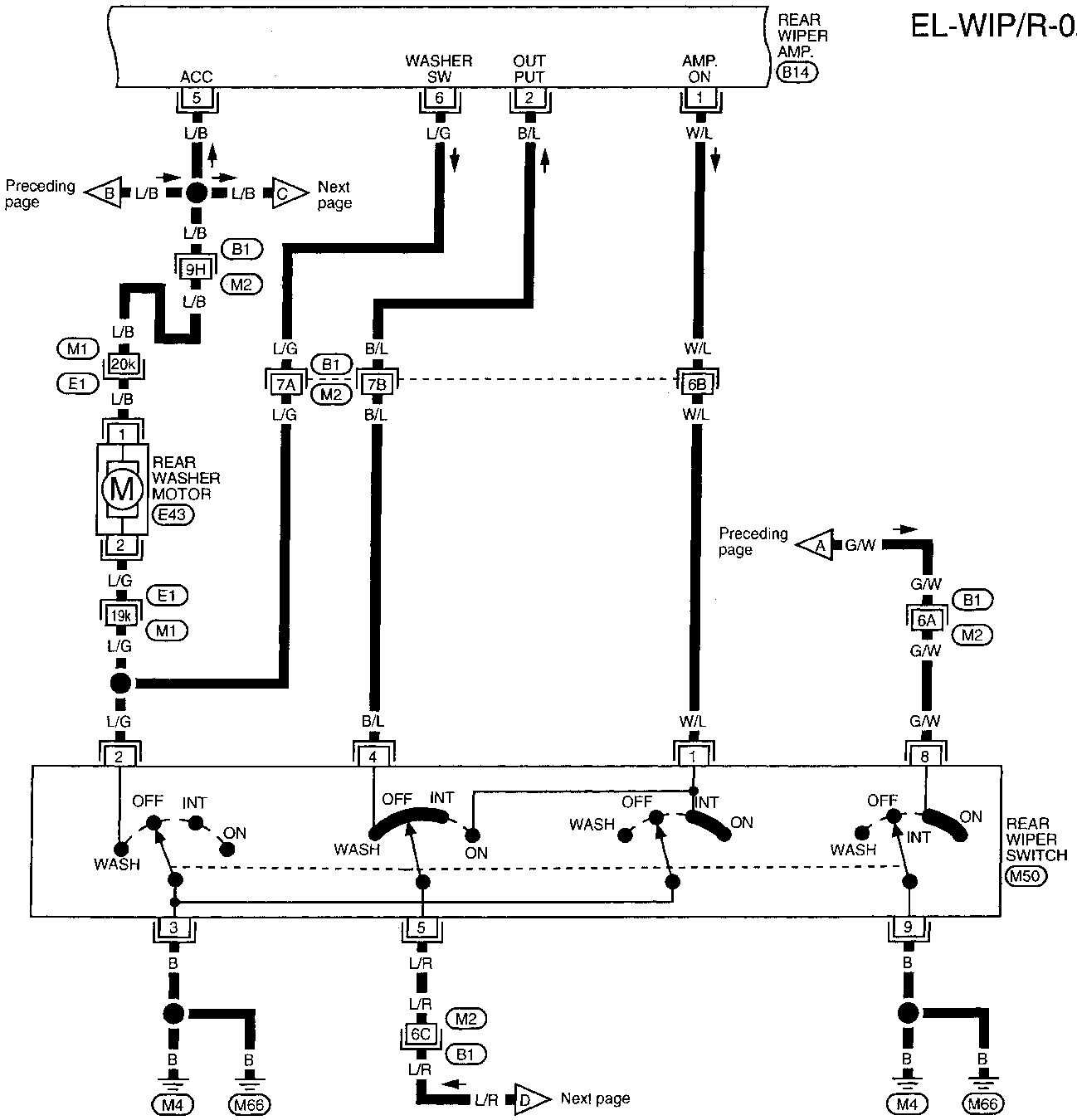
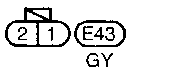
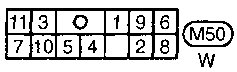
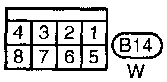
Rear Wiper and Washer/Wiring Diagram — WIP/R — (Cont'd)

EL-WIP/R-02







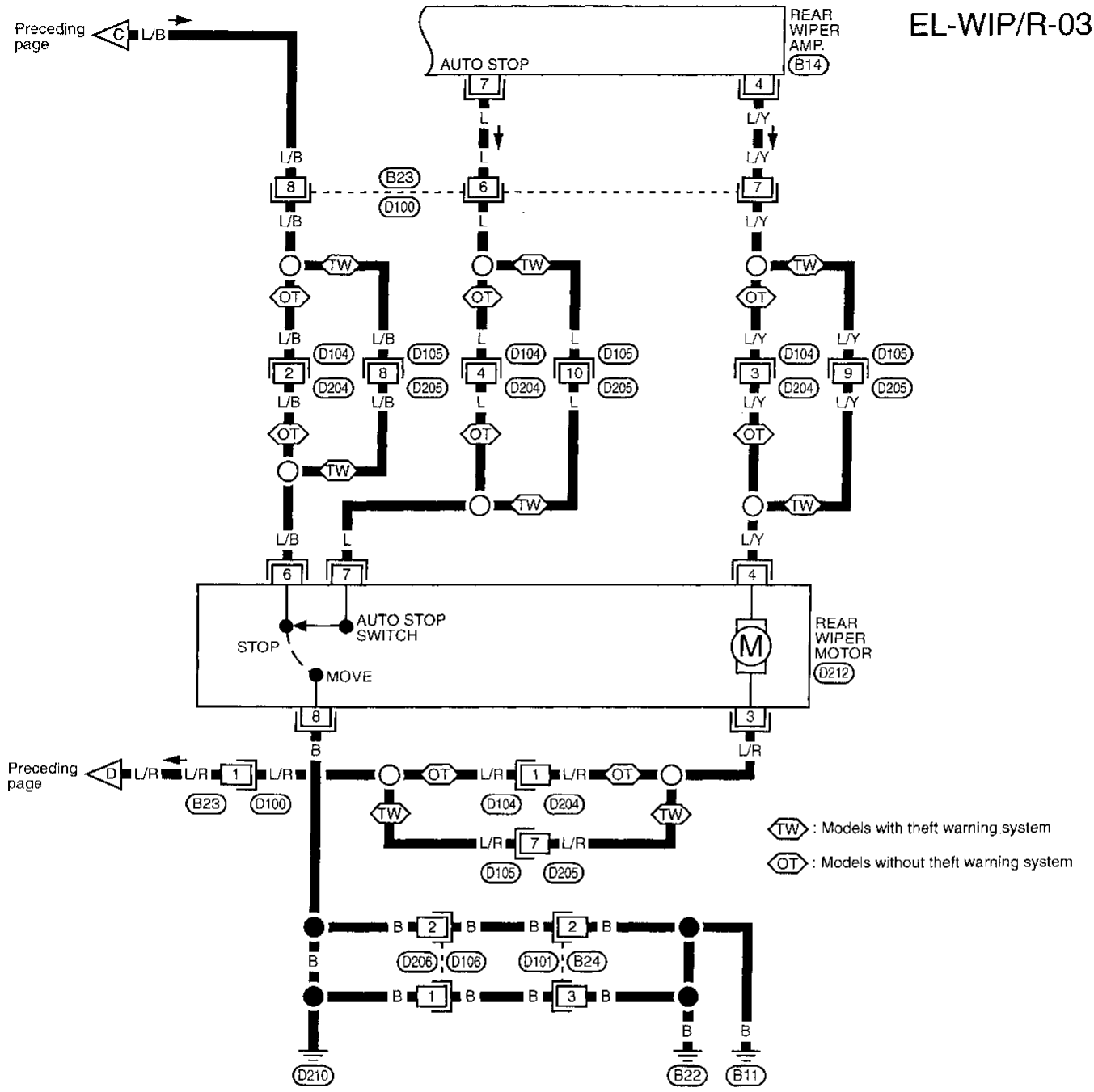


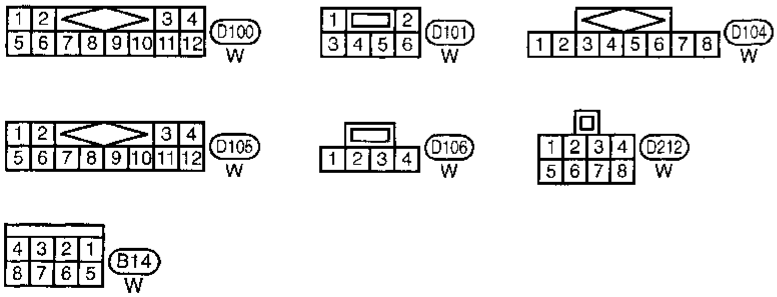
Refer to last page (Foldout page).
E1, M1
M2, B1

MEL776G

Rear Wiper and Washer/Wiring Diagram — WIP/R — (Cont'd)

EL-WIP/R-03





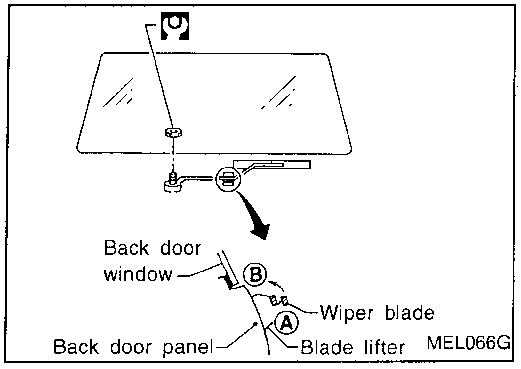
MEL777G

Rear Wiper/Trouble Diagnoses

REAR WIPER AMP. INSPECTION TABLE
(Data are reference values.)

Terminal No.	Item	Condition			Voltage (Approximate value)
1	Amp. ON signal	ACC	Rear wiper switch	ON or INT	1V or less
				OFF	Approx. 12
2	Wiper amp. output	ACC	Rear wiper switch "INT"	Wiper is moving	1V or less
				Wiper stop	Approx. 12
3	Ground	—			—
4	Rear wiper motor	ACC	Rear wiper switch	ON, INT or WASH	Approx. 12
				OFF	1V or less
5	Power supply (See NOTE)	ACC	Rear glass hatch	OPENED	0V
				CLOSED	Approx. 12
6	Washer switch	ACC	Rear wiper switch	WASH	1V or less
				OFF	Approx. 12
7	Auto stop	ACC	Rear wiper switch "ON" or "INT"	Wiper is moving	1V or less
				Wiper stop	Approx. 12

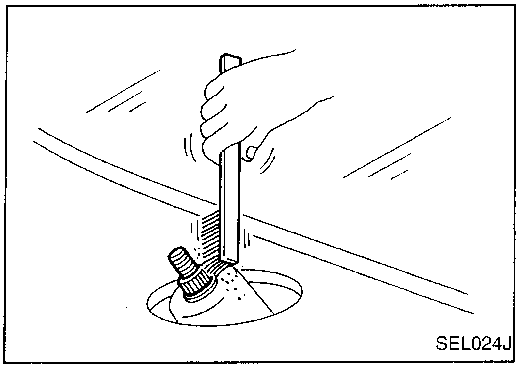
NOTE: Power to the rear wiper amp. will be interrupted when the rear glass hatch is opened. In that case, conduct the inspection of the rear wiper amp. with the rear glass hatch closed, unless otherwise indicated.



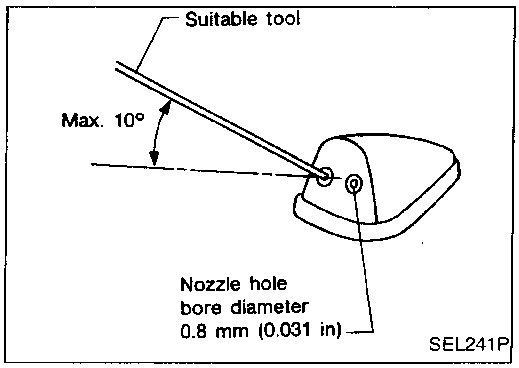
Rear Wiper Installation and Adjustment

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Install wiper arm to portion Ⓐ as in figure below and tighten wiper arm nut to specification.
3. Then, set wiper arm to portion Ⓑ.

: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)

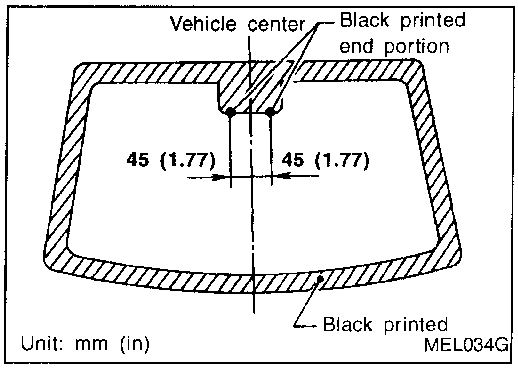


- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

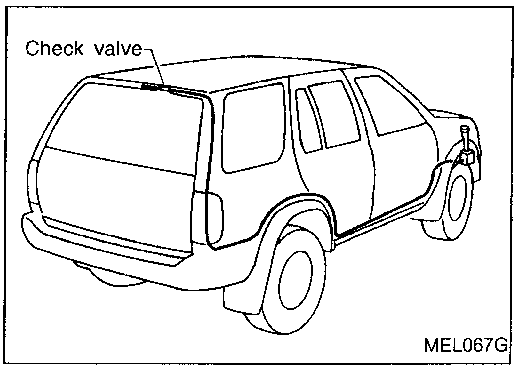


Rear Washer Nozzle Adjustment

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

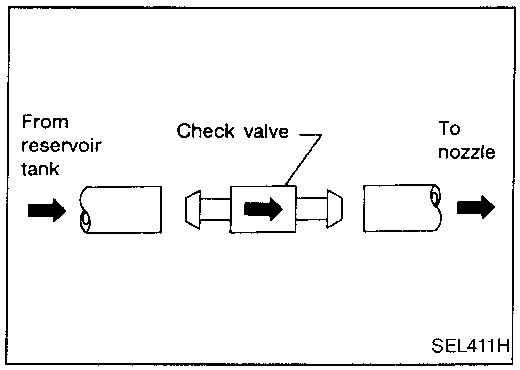


Washer Tube Layout

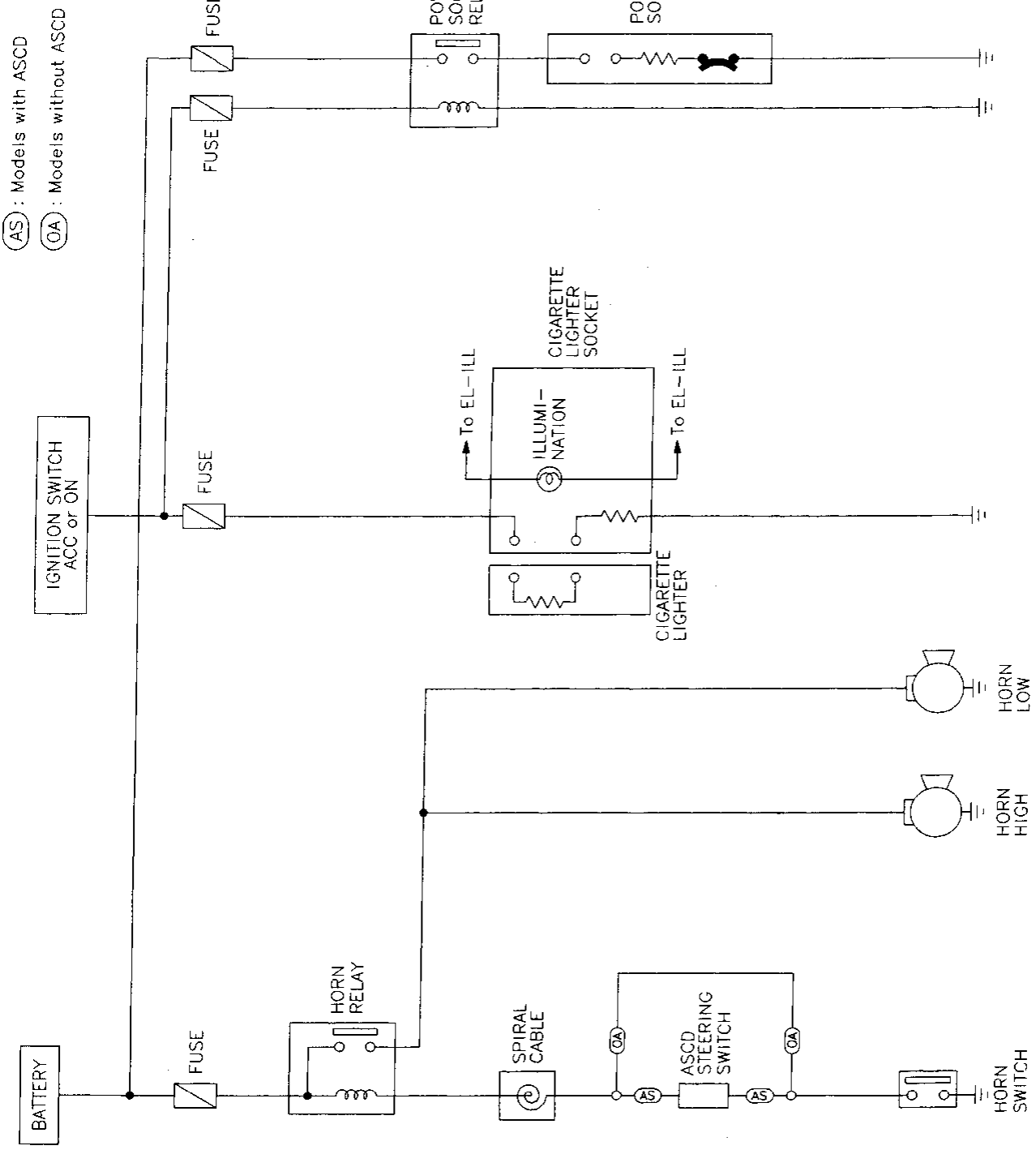


Check Valve (for rear washer)

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



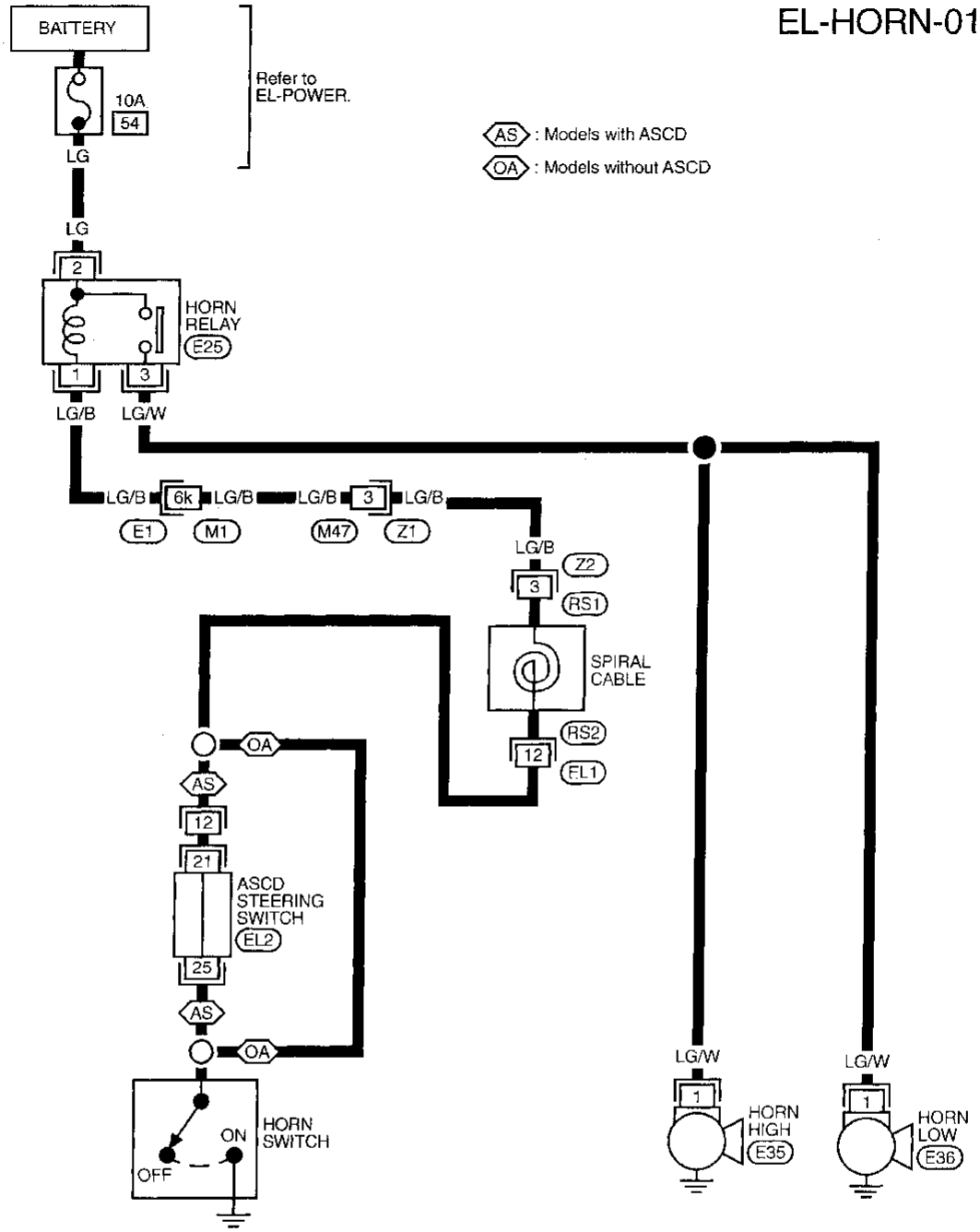
Schematic



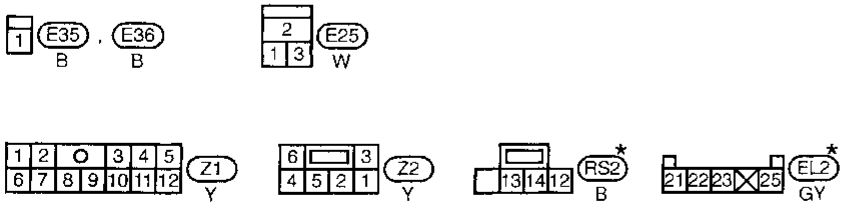
MEL778G

Wiring Diagram — HORN —

EL-HORN-01



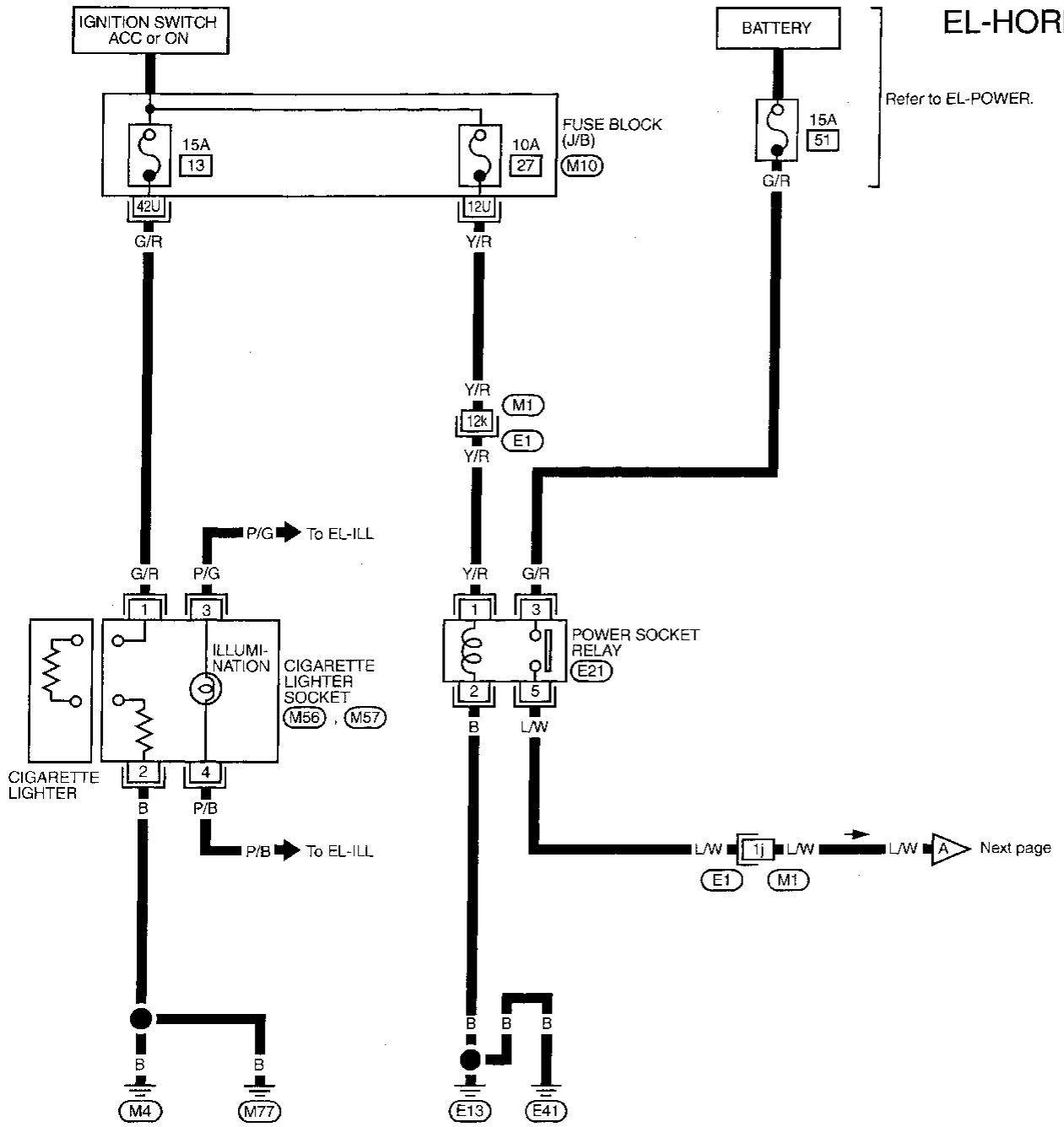
Refer to last page (Foldout page).
E1 , M1

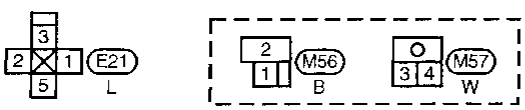


* : This connector is not shown in " HARNESS LAYOUT".

MEL779G

Wiring Diagram — HORN — (Cont'd)



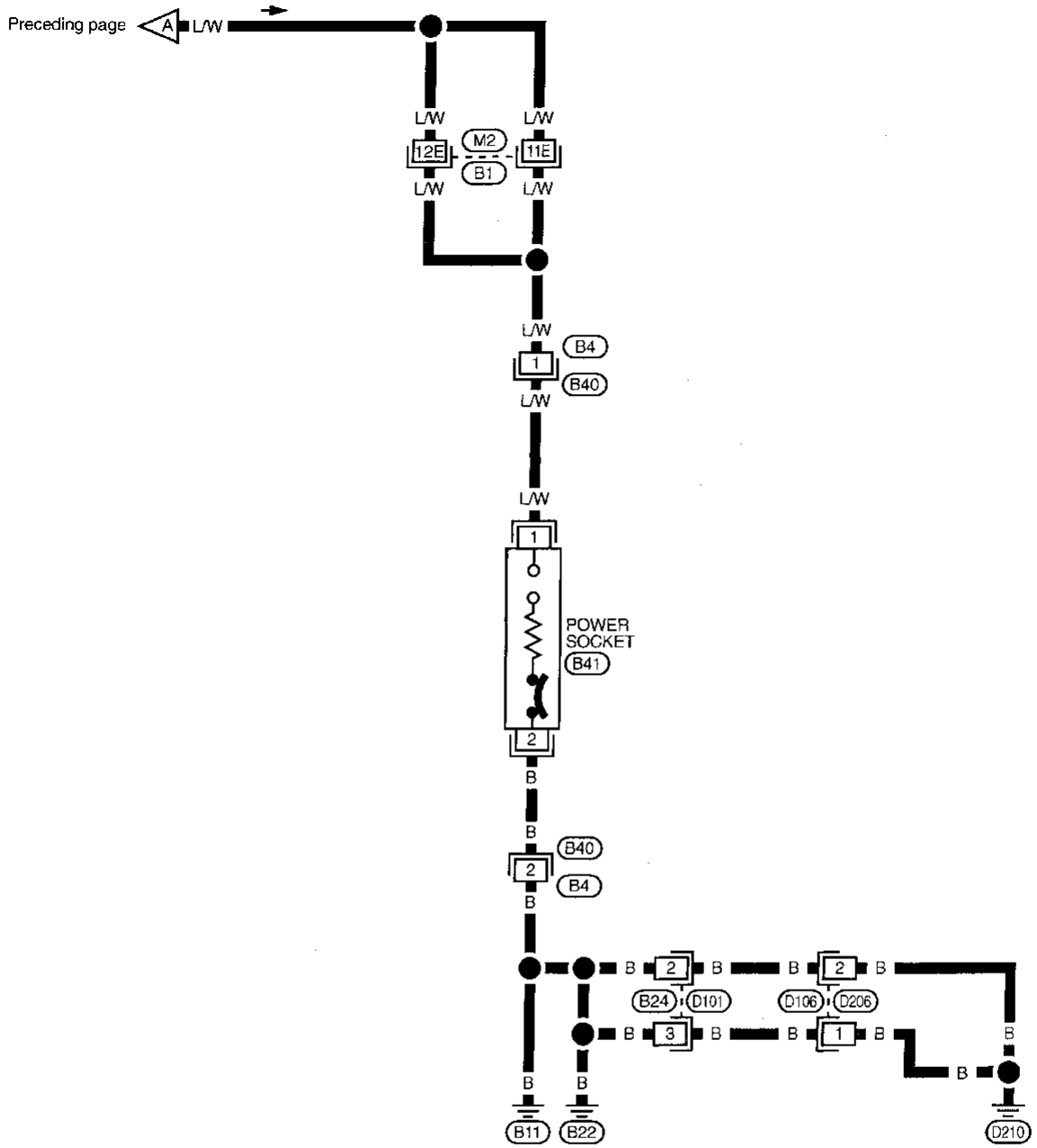


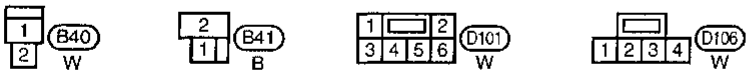
Refer to last page (Foldout page).
E1, M1
M10

MEL780G

Wiring Diagram — HORN — (Cont'd)

EL-HORN-03





Refer to last page (Foldout page).
M2 , B1

MEL781G

System Description

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

Power is supplied at all times

- to rear window defogger relay terminal ③
- through 20A fuse (No. 56, located in the fuse and fusible link box) and
- to rear window defogger relay terminal ⑥
- through 20A fuse (No. 57, located in the fuse and fusible link box).

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

- to the rear window defogger relay terminal ① and
- to smart entrance control unit terminal ⑪
- through 7.5A fuse [No. 12, located in the fuse block (J/B)].

Ground is supplied to terminal ① of the rear window defogger switch through body grounds M4 and M66.

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

- through terminal ② of the rear window defogger switch
- to smart entrance control unit terminal ⑳.

Terminal ㊱ of the smart entrance control unit then supplies ground to the rear window defogger relay terminal ②.

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

Power is supplied

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

The rear window defogger has an independent ground.

With power and ground supplied, the rear window defogger filaments heat and defog the rear window.

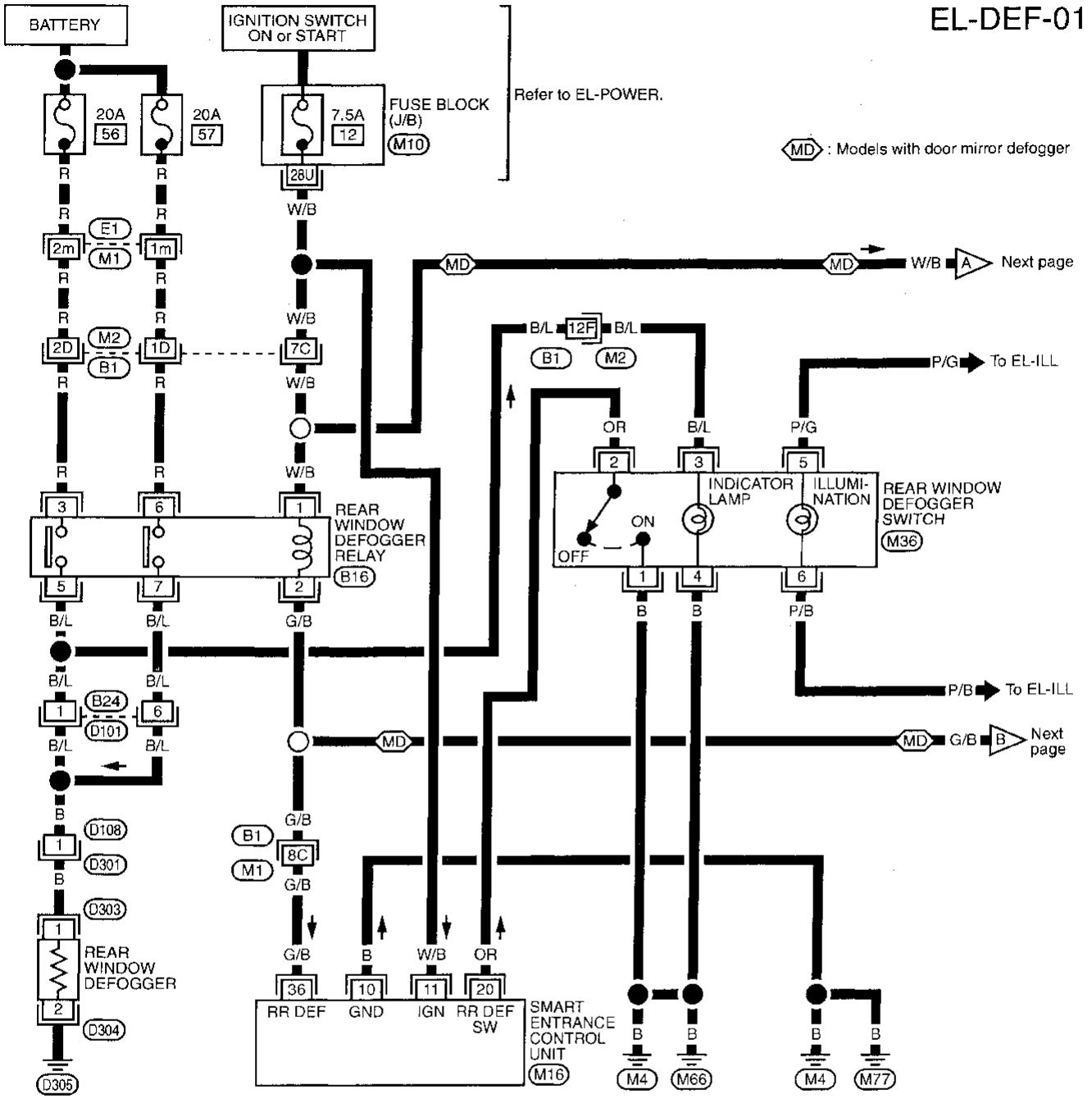
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.

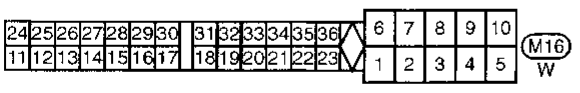
Power is supplied

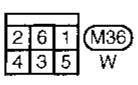
- to terminal ③ of the rear window defogger switch
- from terminal ⑤ of the rear window defogger relay.

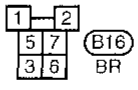
Terminal ④ of the rear window defogger switch is grounded through body grounds M4 and M66.

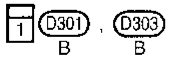
Wiring Diagram — DEF —

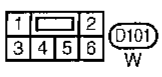








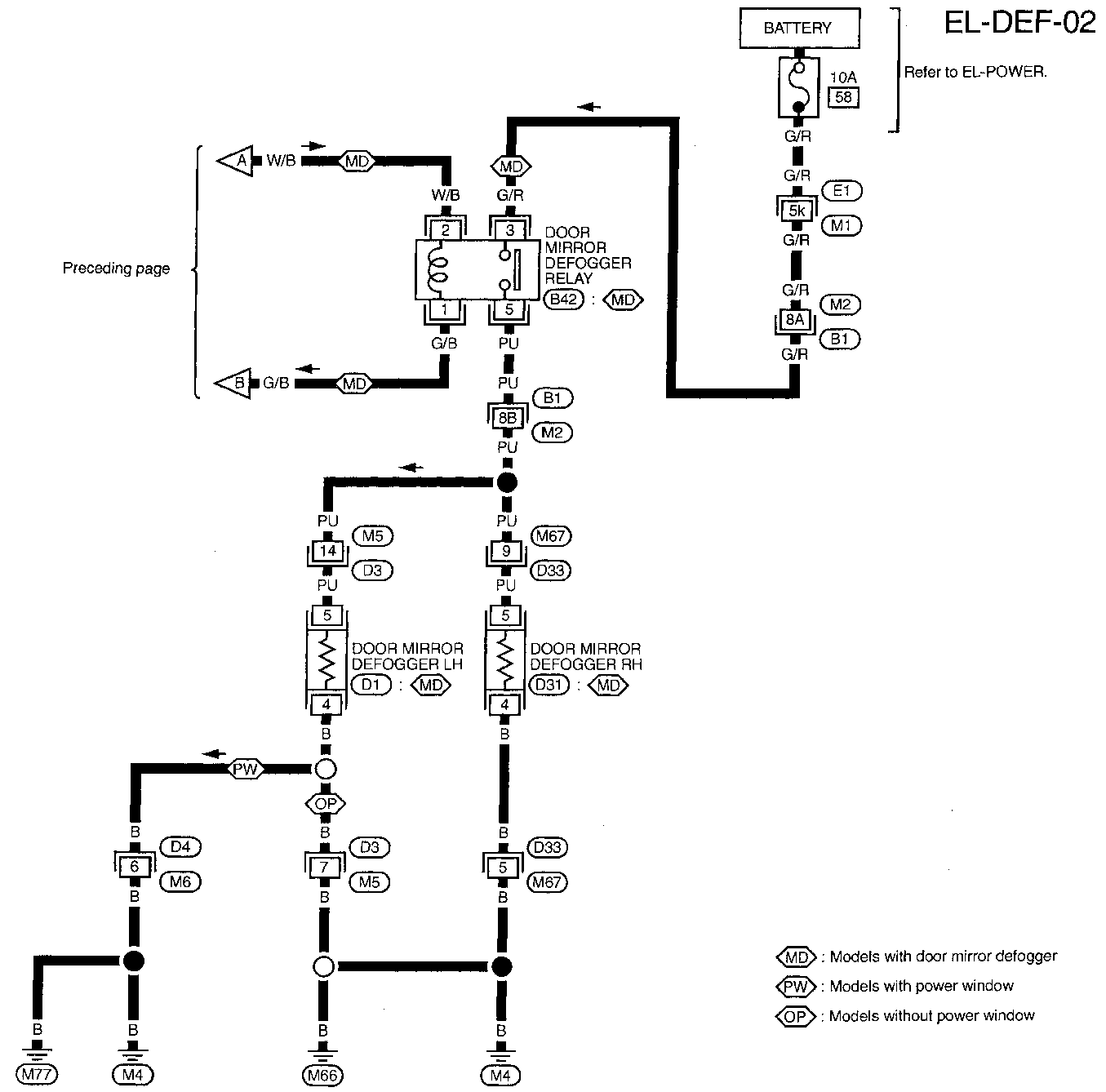


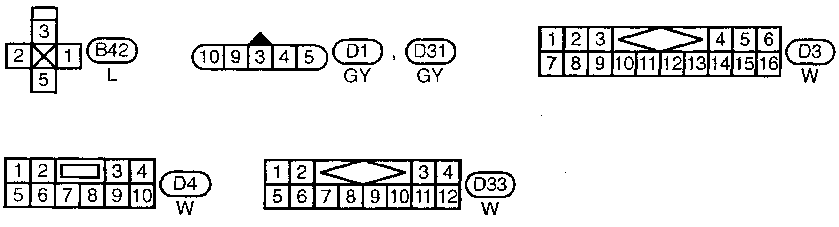


Refer to last page (Foldout page).
E1 , M1
M2 , B1
M10

MEL782G

Wiring Diagram — DEF — (Cont'd)





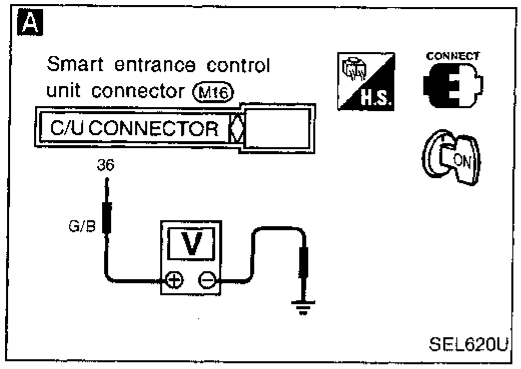
Refer to last page (Foldout page).
E1 , M1
M2 , B1

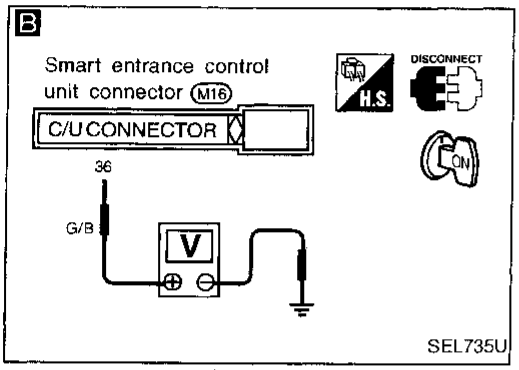
MEL783G

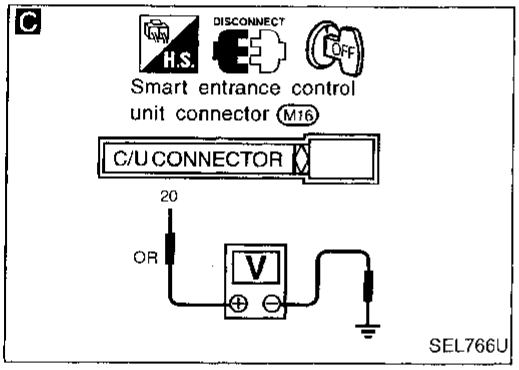
Trouble Diagnoses

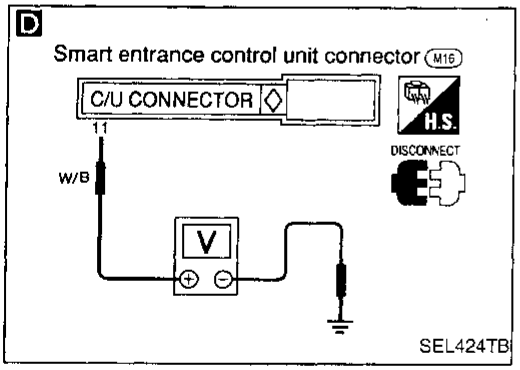
DIAGNOSTIC PROCEDURE

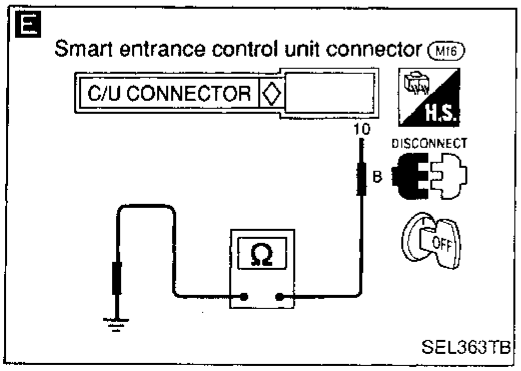
SYMPTOM: Rear window defogger does not activate, or does not go off after activating.











A

CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL.
1. Turn ignition switch to ON position.
2. Check voltage between control unit harness terminal ㊱ and ground.

Condition	Voltage [V]
Rear window defogger switch is "OFF".	Approx. 12
Rear window defogger switch is "ON".	0

OK → Check the following.
- Rear window defogger relay (Refer to EL-135.)
- Rear window defogger circuit
- Rear window defogger filament (Refer to EL-135.)

NG ↓

B

1. Disconnect control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between control unit terminal ㊱ and ground.
Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Rear window defogger relay
- Harness for open or short between fuse and rear window defogger relay
- Harness for open or short between rear window defogger relay and control unit

OK ↓

C

CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL.
Check continuity between control unit terminal ⑳ and ground.

Condition of defogger switch	Continuity
Rear window defogger switch is pushed.	Yes
Rear window defogger switch is released.	No

NG → Check the following.
- Rear window defogger switch (Refer to EL-135.)
- Harness for open or short between control unit and rear window defogger switch
- Rear window defogger switch ground circuit

OK ↓

D

CHECK IGNITION INPUT SIGNAL.
Check voltage between control unit terminal ⑪ and ground.

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

NG → Check the following.
- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between control unit and fuse

OK ↓

E

CHECK CONTROL UNIT GROUND CIRCUIT.
Check continuity between control unit terminal ⑲ and ground.
Continuity should exist.

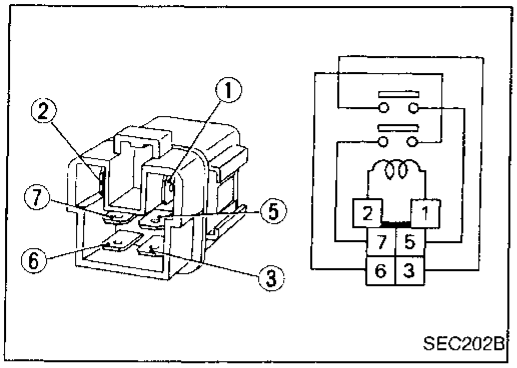
NG → Repair harness or connectors.

OK ↓

Replace control unit.

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

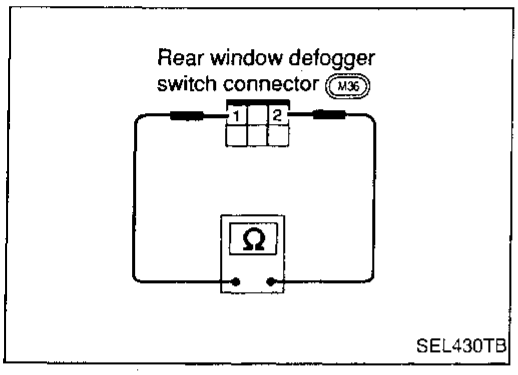


SEC202B

Rear window defogger relay

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

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

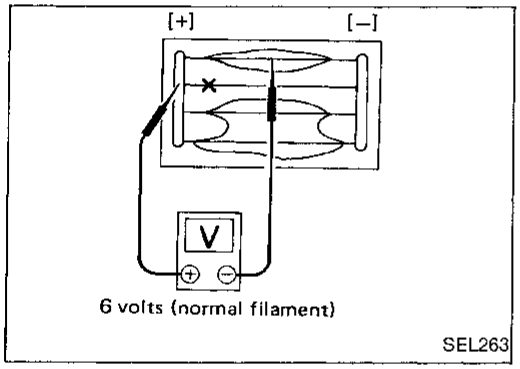


SEL430TB

Rear window defogger switch

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

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

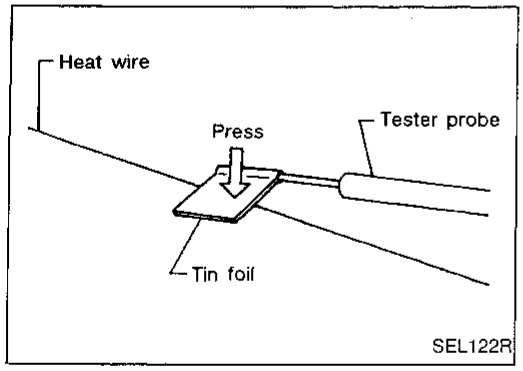


SEL263

Filament Check

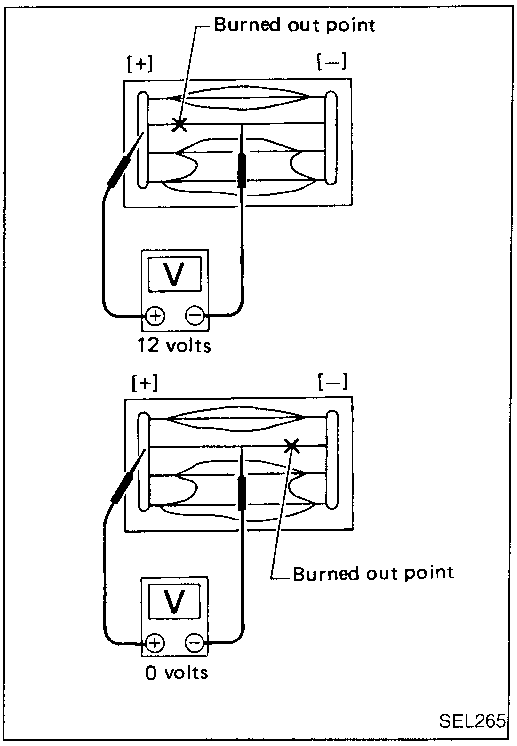
1. Attach probe circuit tester (in volt range) to middle portion of each filament.

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

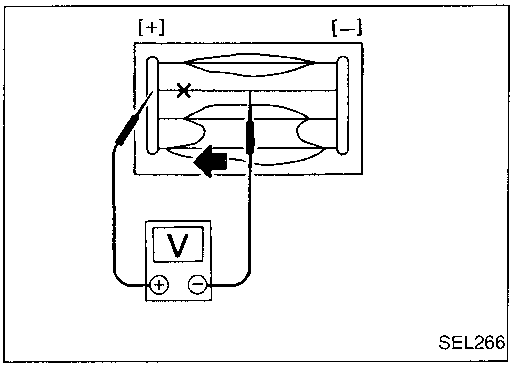


SEL122R

Filament Check (Cont'd)



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

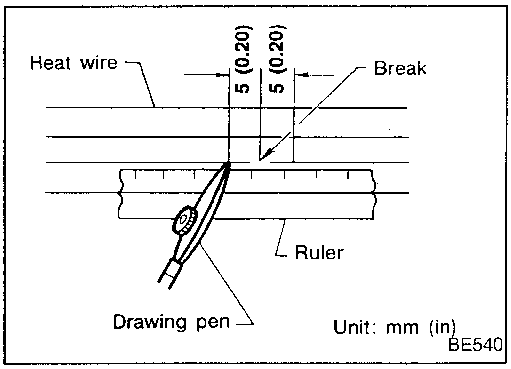


3. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.

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



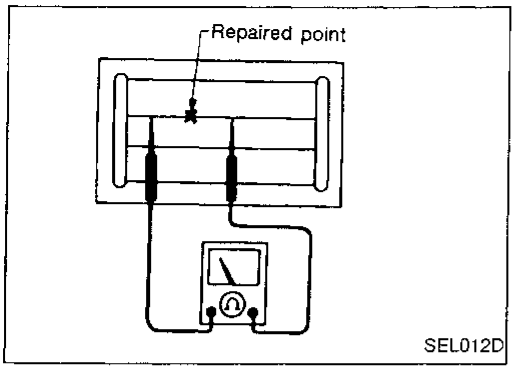
REPAIRING PROCEDURE

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.

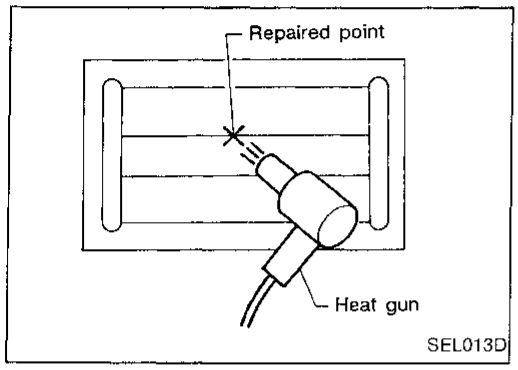
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.

Filament Repair (Cont'd)



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.

MODELS WITH SPEAKER AMP.

Power is supplied at all times
- through 7.5A fuse [No. 24], located in the fuse block (J/B)]
- to audio terminal ⑥ and
- through 15A fuse [No. 4], located in the fuse block (J/B)]
- to speaker amp. terminals ⑫ and ⑭.

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

Ground is supplied through the case of the audio.
Ground is supplied
- to speaker amp. terminals ⑪ and ⑬
- through body grounds (B11), (B22) and (D210).

When the audio power knob is pushed to the ON position, power is supplied to speaker amp. terminal ⑲ from audio terminal ⑫ and audio signals are supplied
- through audio terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to terminals ⑦, ⑧, ⑨, ⑩, ⑮, ⑯, ⑰, and ⑱ of the speaker amp.
- to tweeters and the front and rear speakers through terminals ①, ②, ⑤, ⑥, ⑧①, ⑧②, ⑧⑤ and ⑧⑥ of the speaker amp.

MODELS WITHOUT SPEAKER AMP.

Power is supplied at all times
- through 7.5A fuse [No. 24], located in the fuse block (J/B)]
- to audio terminal ⑥.

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

Ground is supplied through the case of the audio.
When the audio power knob is pushed to the ON position, audio signals are supplied
- through audio terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to the front and rear speakers.

BOSE SYSTEM

Power is supplied at all times
- through 15A fuse [No. 4], located in the fuse block (J/B)]
- to audio terminal ⑥,
- to audio amp. relay terminal ② and
- to rear speaker amp. terminal ⑪.

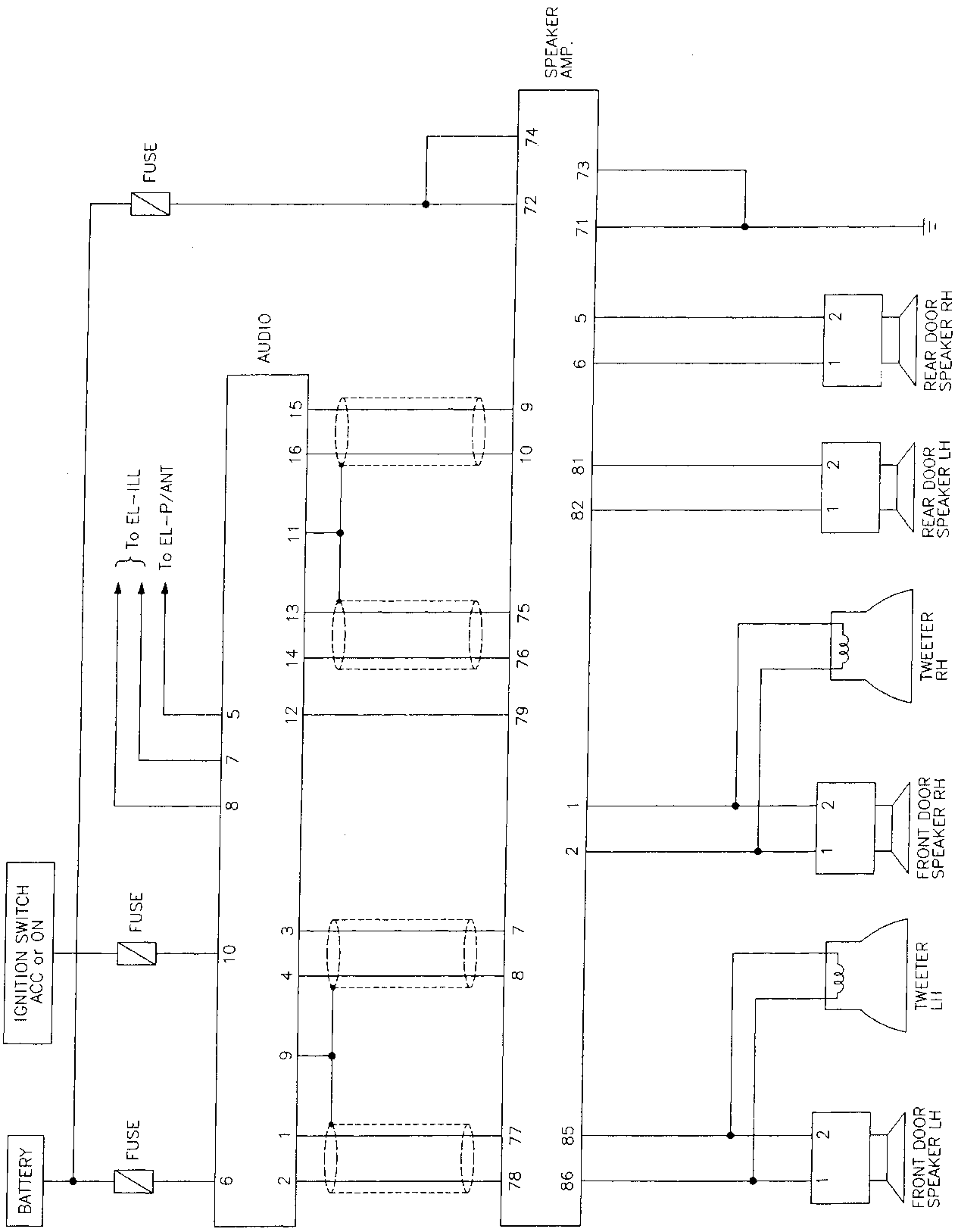
With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 10], located in the fuse block (J/B)]
- to audio terminal ⑩.

Ground is supplied through the case of the audio.
Ground is supplied
- to audio amp. relay terminal ③,
- to front door speaker LH terminal ⑤ and
- to front door speaker RH terminal ⑤
- through body grounds (M4) and (M77)
- to rear speaker amp. terminal ㉔
- through body grounds (B11), (B22) and (D210).

When the radio POWER button is pressed, power is supplied to rear speaker amp. terminal ⑨ and audio amp. relay ① from audio terminal ⑫. Then audio amp. relay is energized and power is supplied
- to front door speaker LH terminal ④ and
- to front door speaker RH terminal ④.

Audio signals are supplied
- through audio terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to terminals ② and ⑥ of the LH and RH front speakers and terminals ⑤, ⑦, ⑱ and ⑳ of the rear speaker amp.
- to LH and RH tweeters through terminals ① and ③ of the front speakers
- to rear LH and RH speakers through terminals ①, ②, ㉕ and ㉖ of the rear speaker amp.

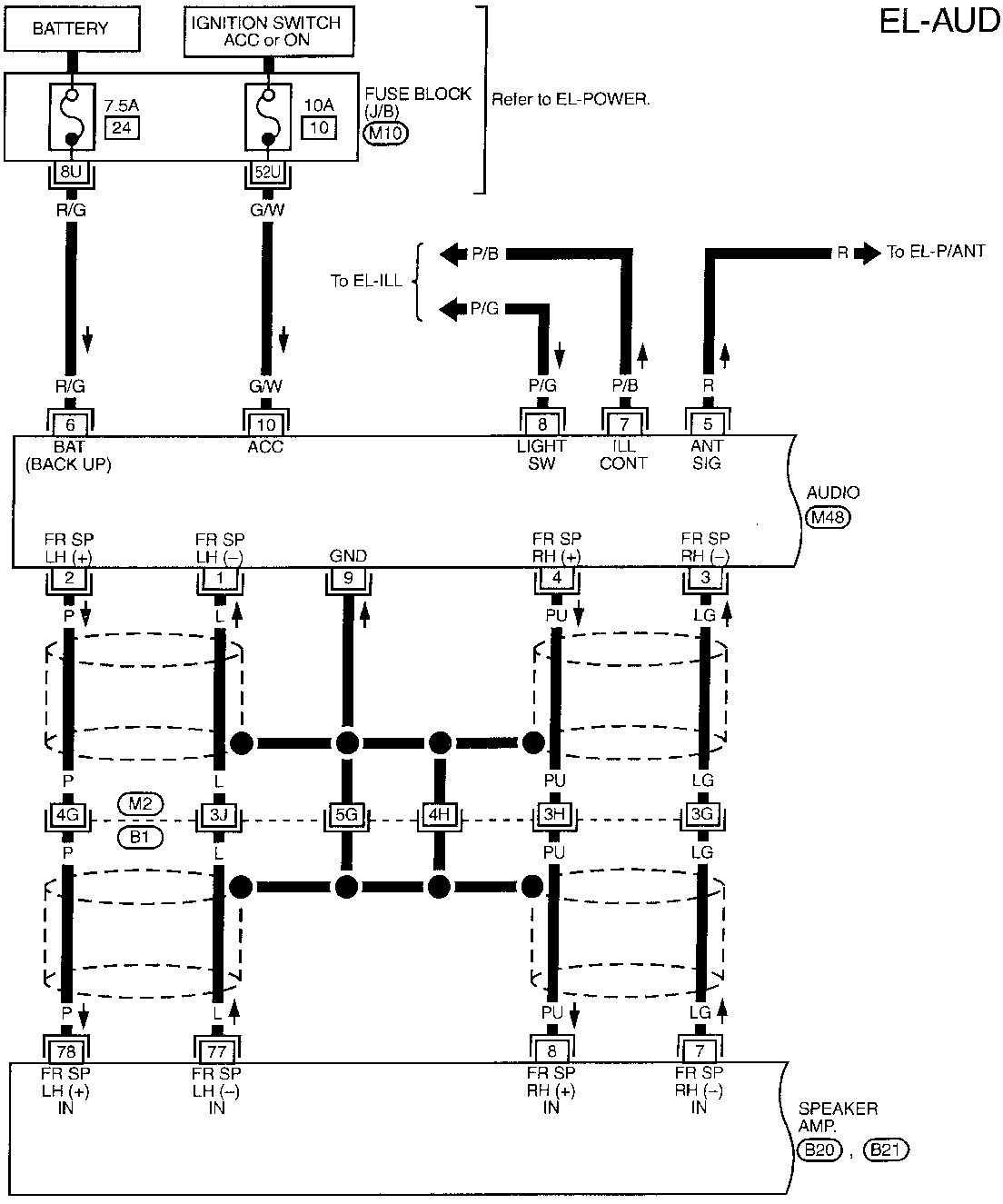
Audio (With speaker amp.)/Schematic

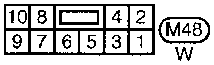


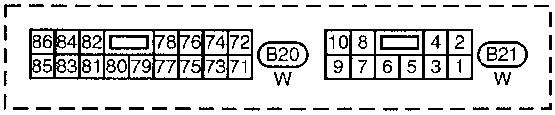
MEL784G

Audio (With speaker amp.)/Wiring Diagram — AUDIO —

EL-AUDIO-01







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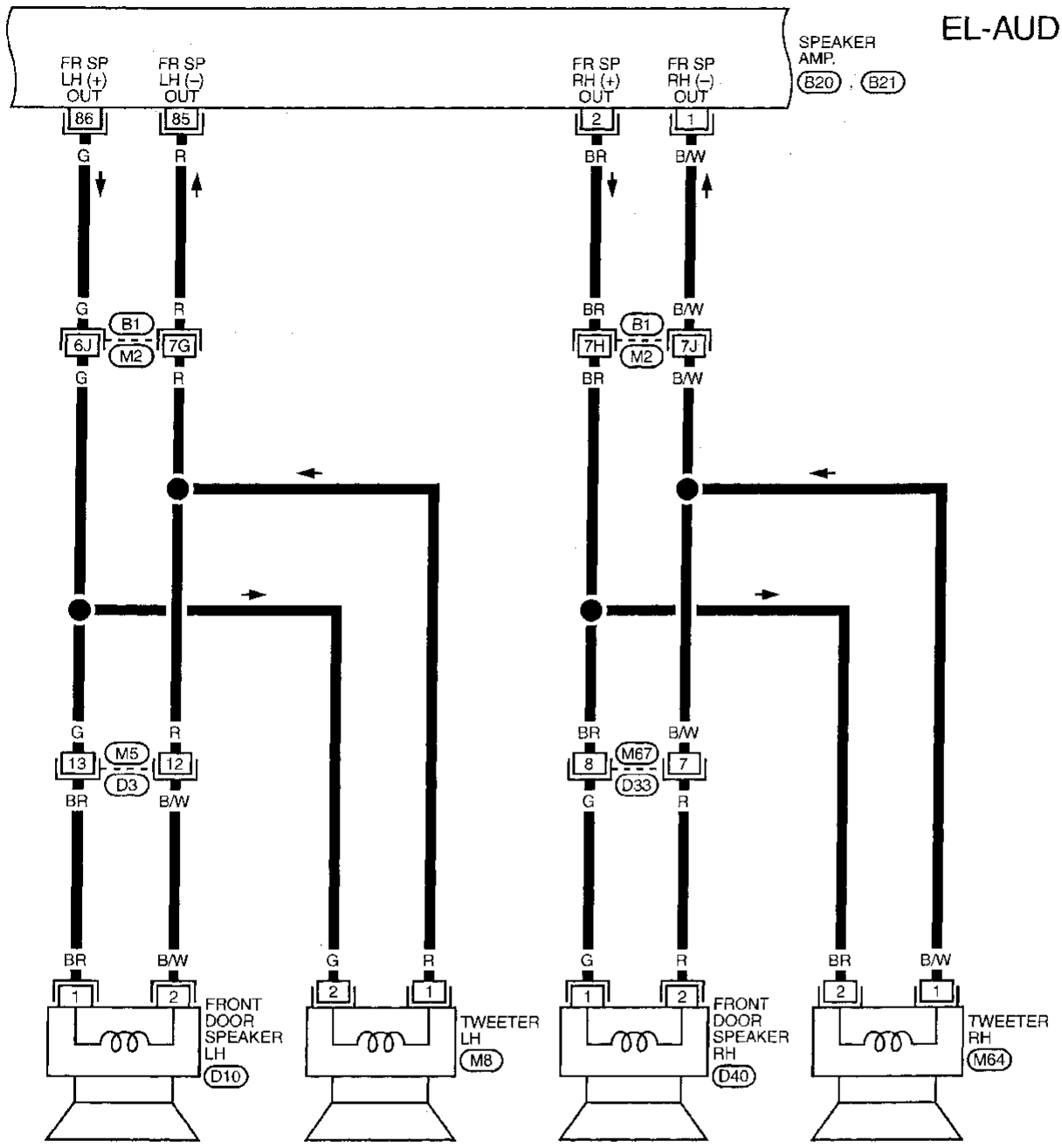
M10

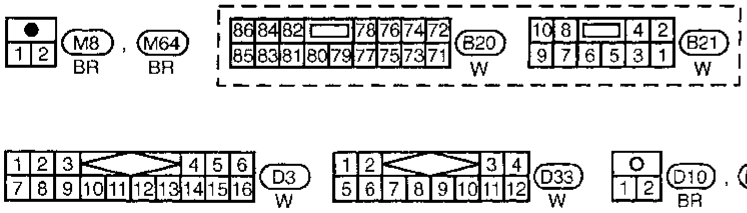
M2, B1

MEL785G

Audio (With speaker amp.)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-02



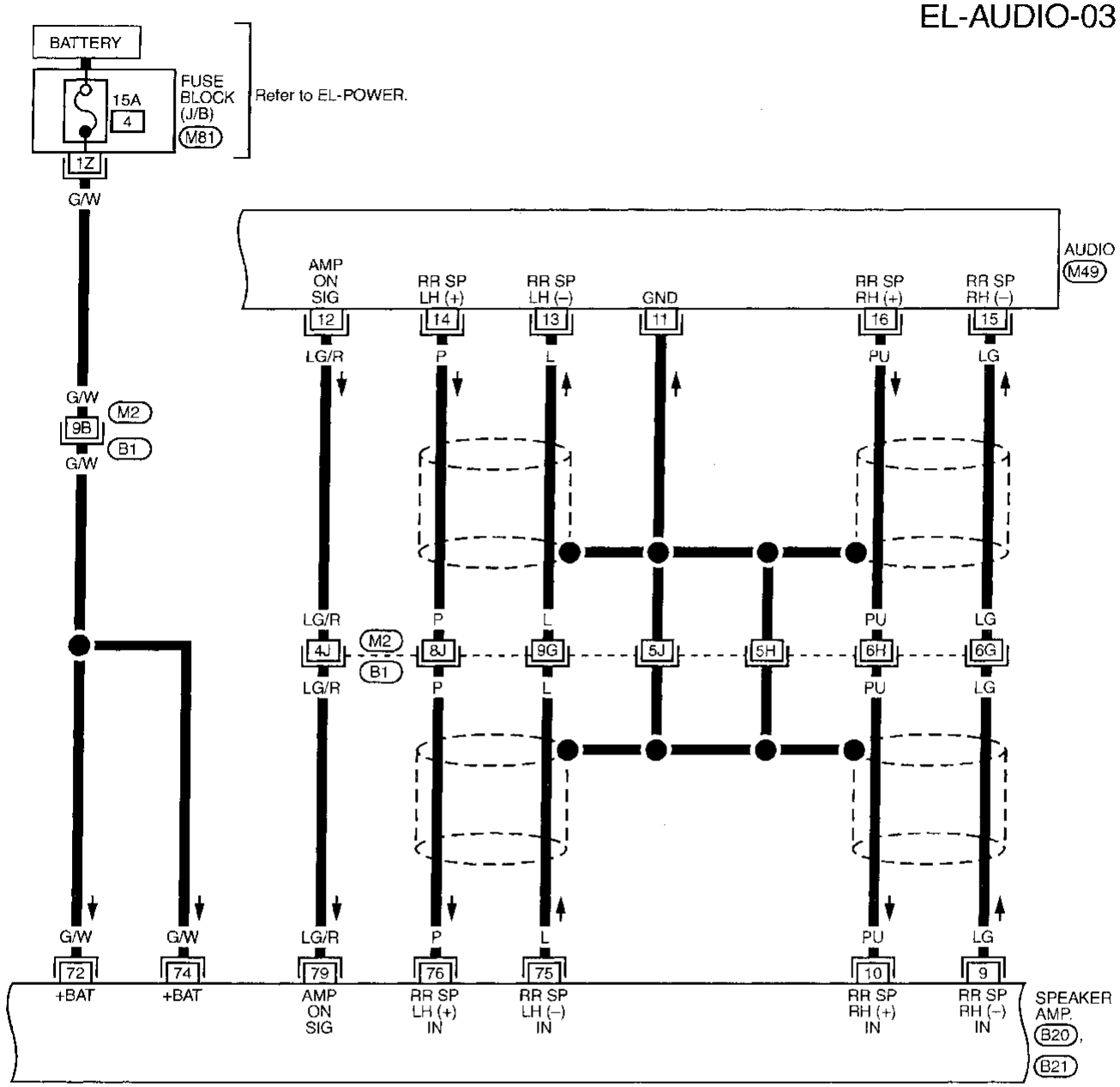


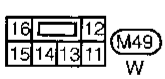
Refer to last page (Foldout page).
M2 , B1

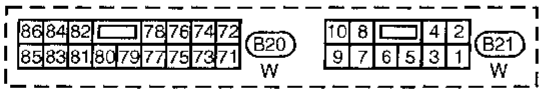
MEL786G

Audio (With speaker amp.)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03





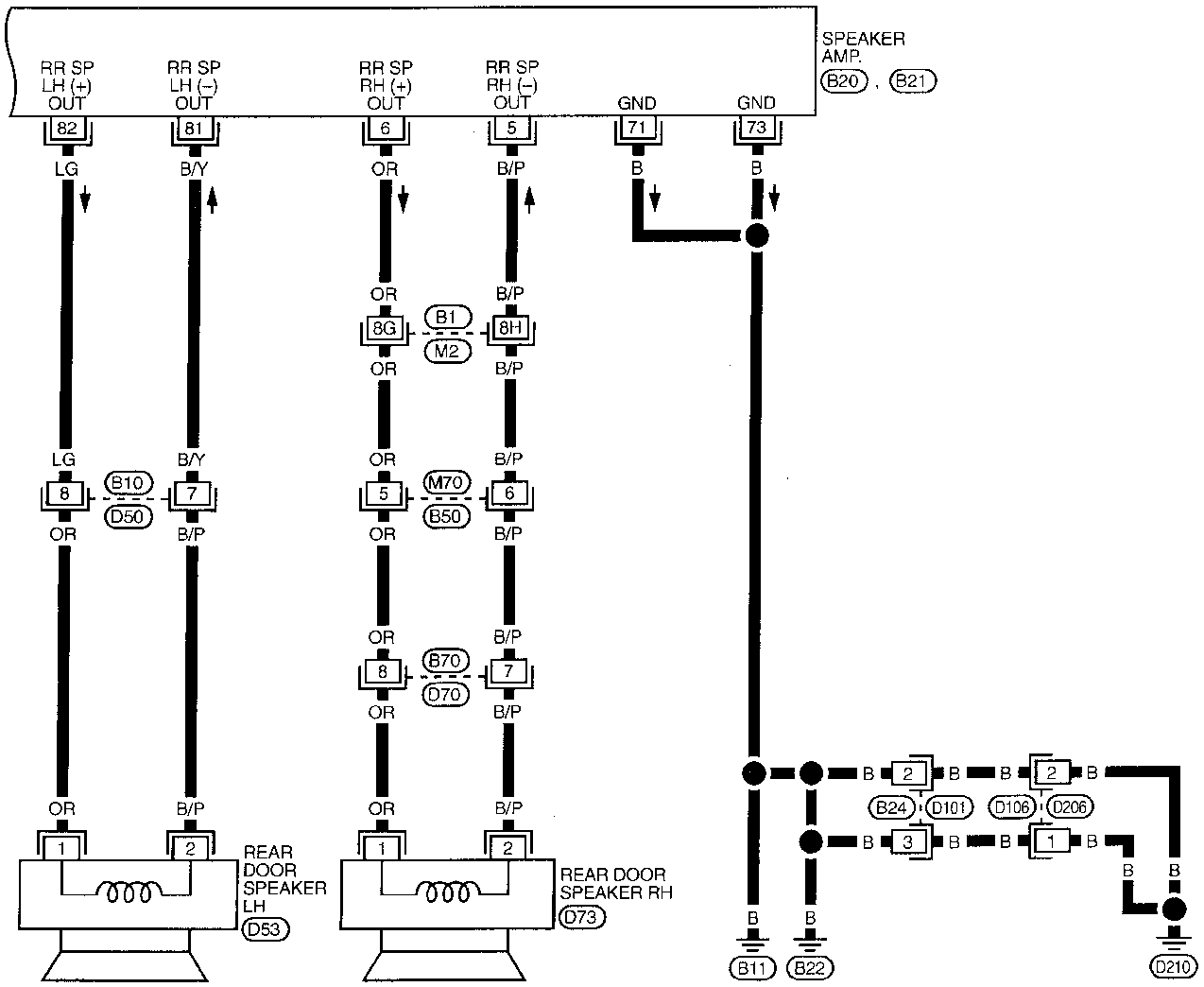


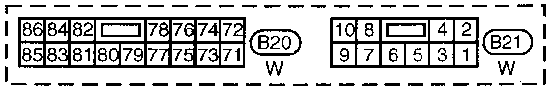
Refer to last page (Foldout page).
M2 , B1
M81

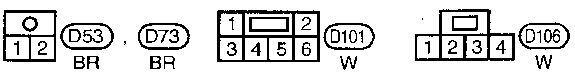
MEL787G

Audio (With speaker amp.)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04







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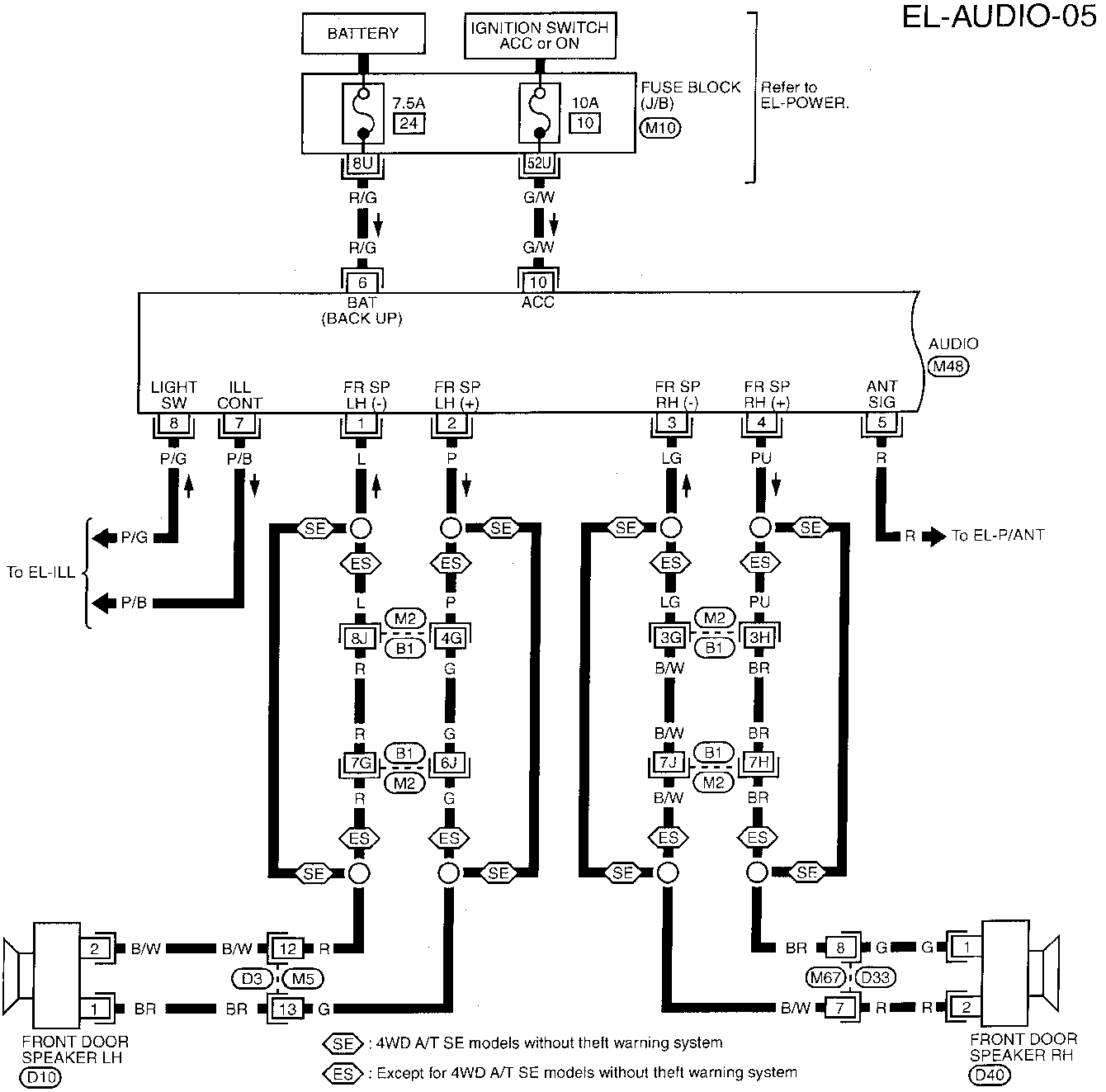
M2, B1

MEL788G

Audio (Without speaker amp.)/Wiring Diagram — AUDIO —

EL-AUDIO-05

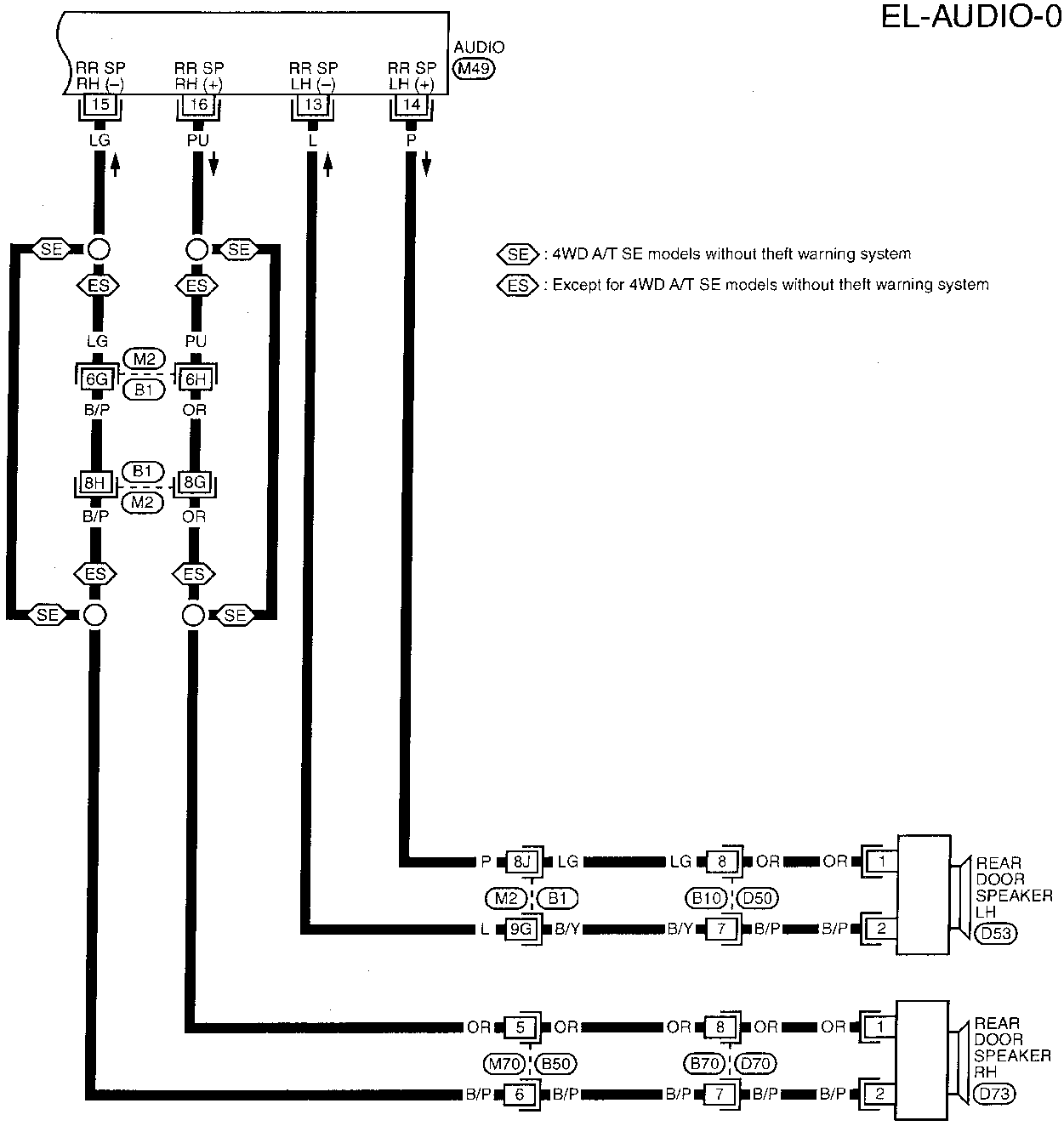


Refer to last page (Foldout page).
M2 , B1
M10

MEL789G

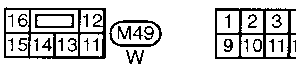
Audio (Without speaker amp.)/Wiring Diagram — AUDIO — (Cont'd)

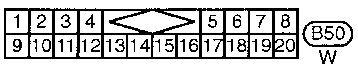
EL-AUDIO-06

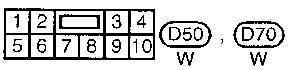


SE : 4WD A/T SE models without theft warning system

ES : Except for 4WD A/T SE models without theft warning system



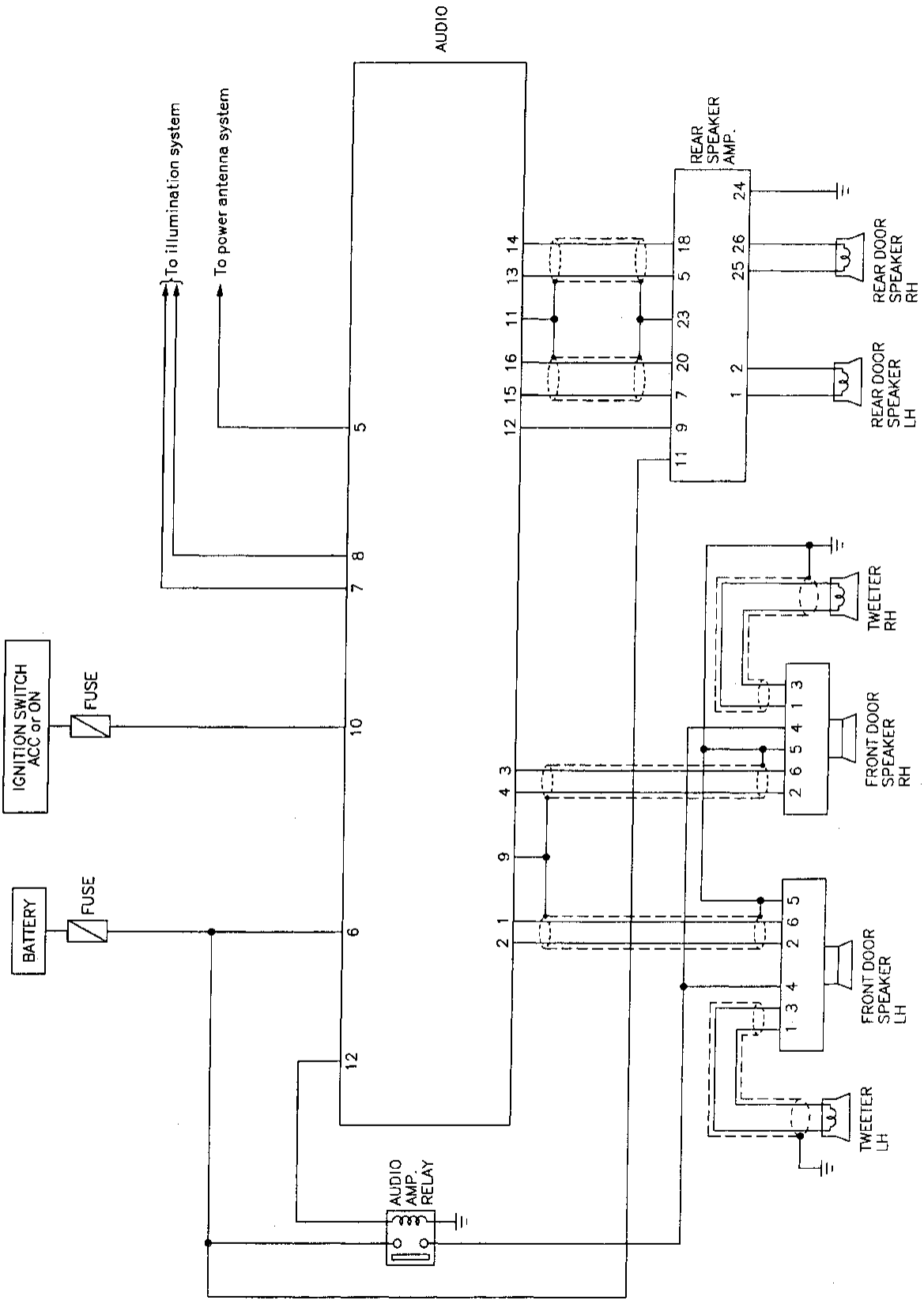




Refer to last page (Foldout page).
M2 , B1

MEL792G

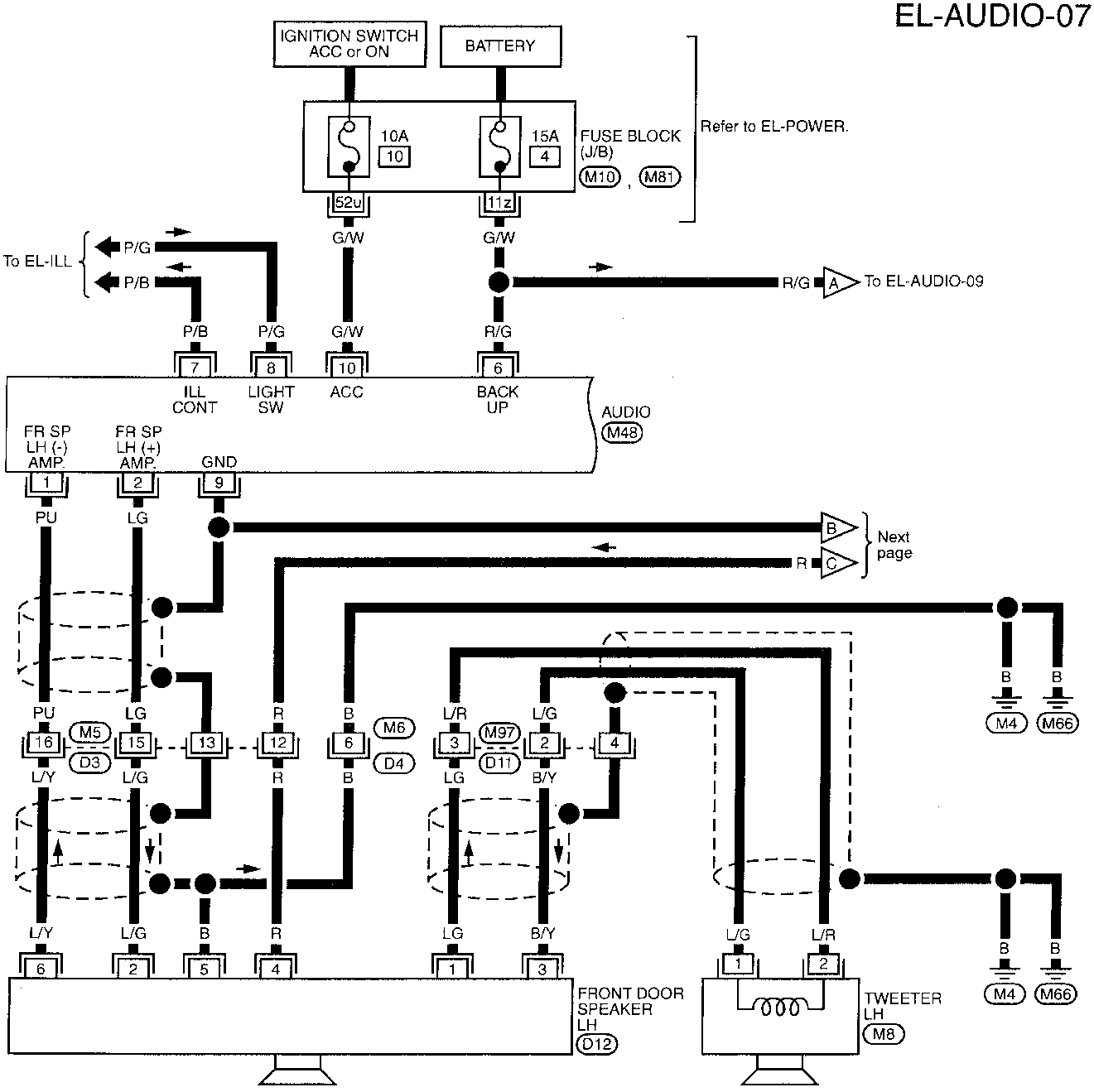
Audio (BOSE system)/Schematic

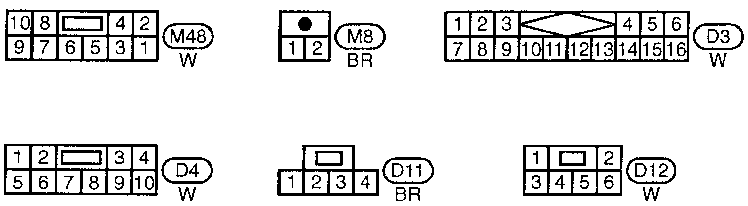


MEL006H

Audio (BOSE system)/Wiring Diagram — AUDIO —

EL-AUDIO-07





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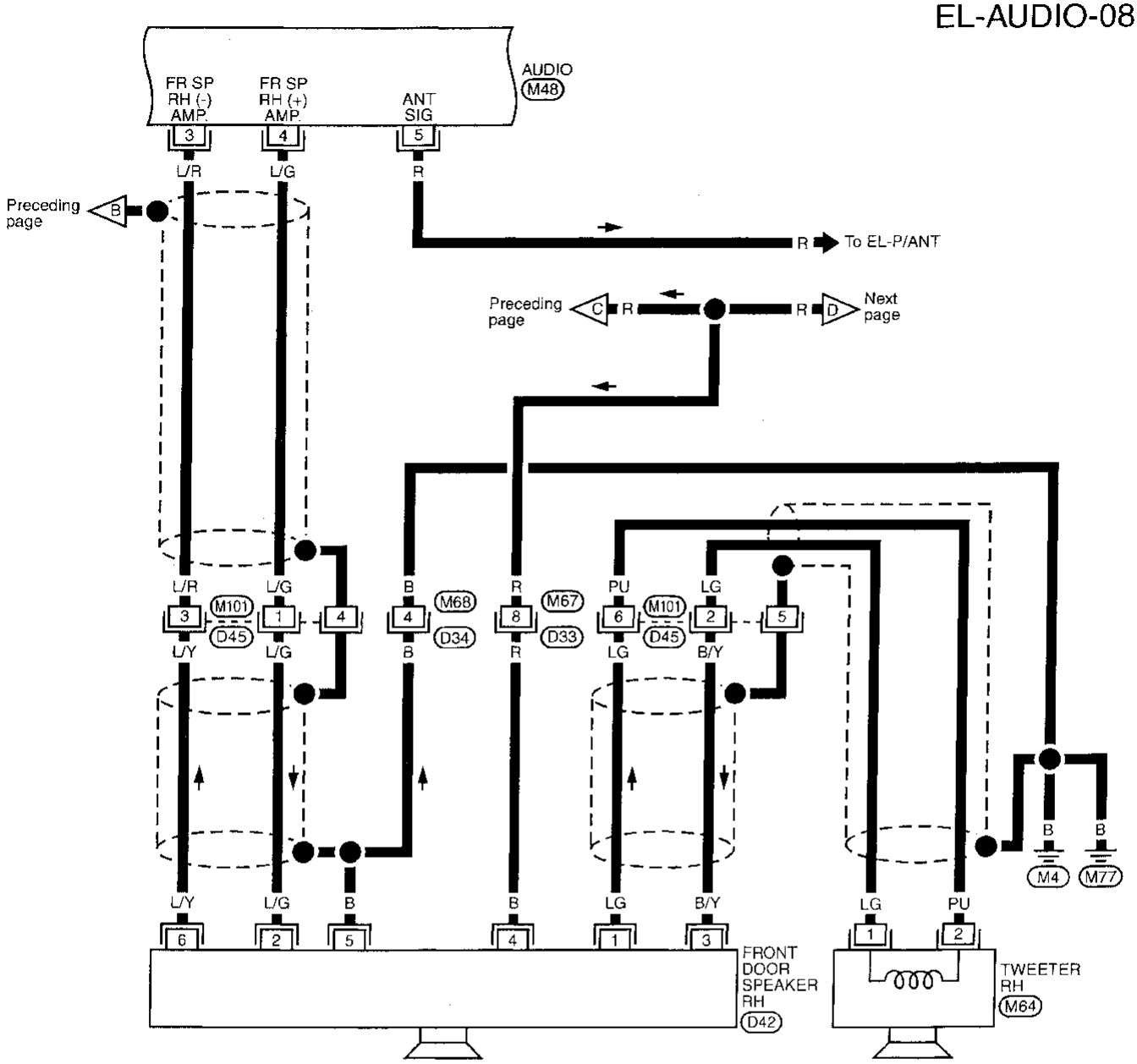
M10

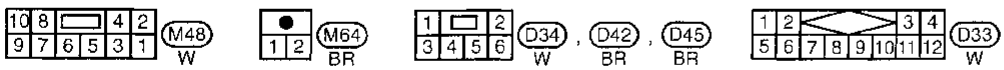
M81

MEL007H

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

EL-AUDIO-08

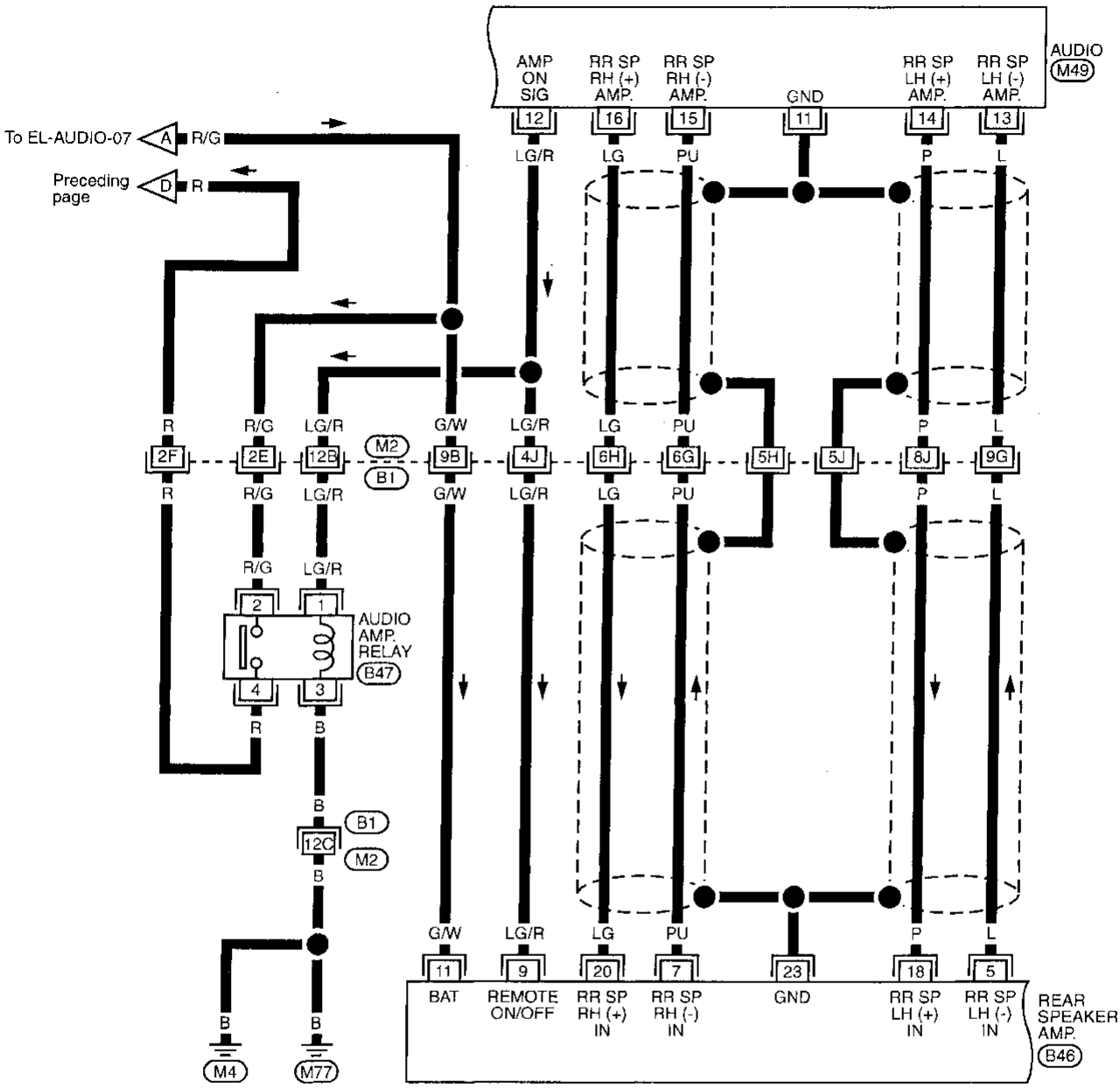


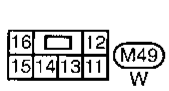


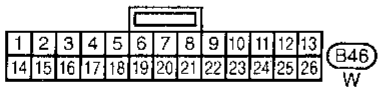
MEL008H

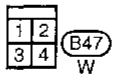
Audio (BOSE system)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-09









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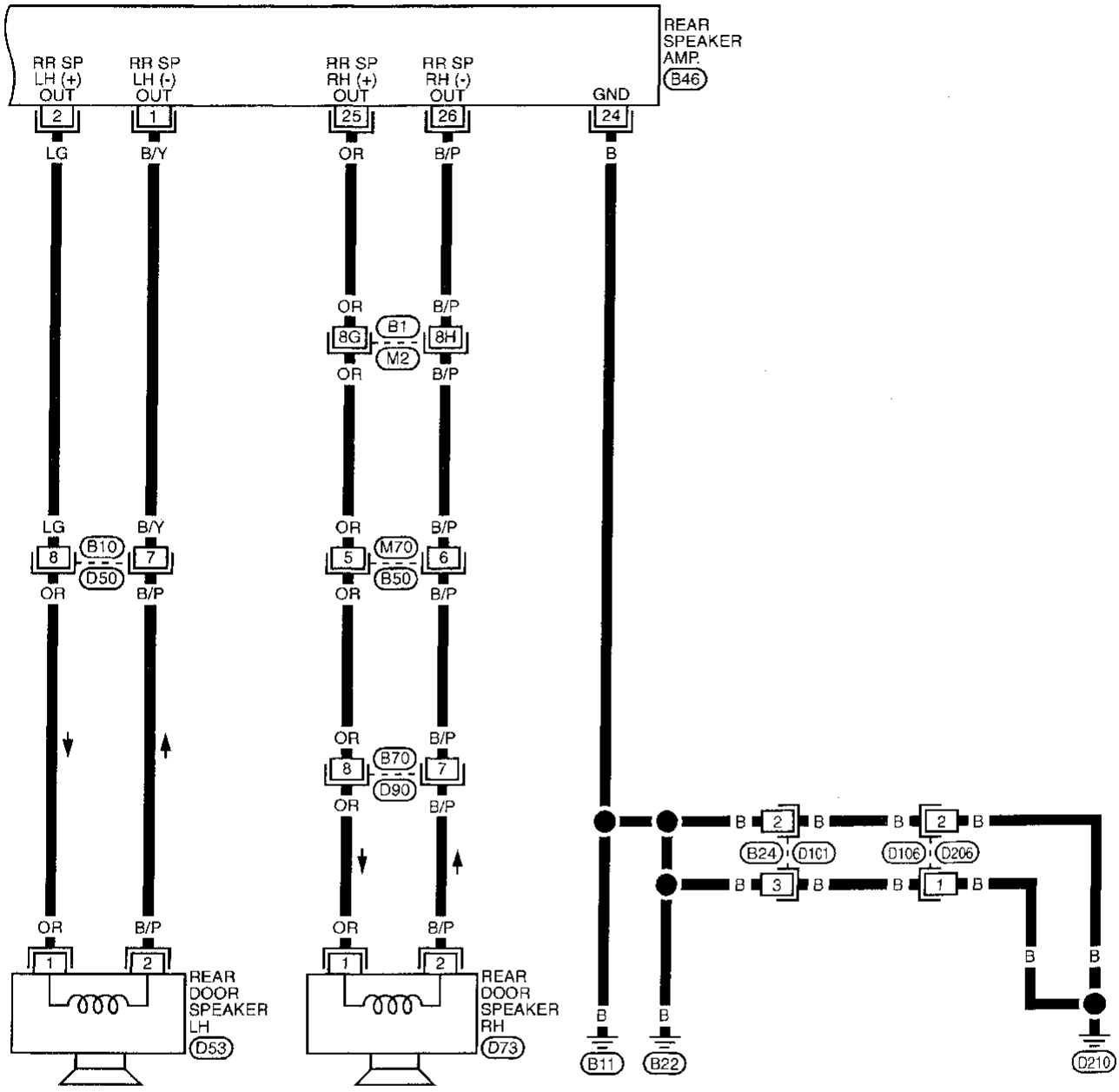
M2 , B1

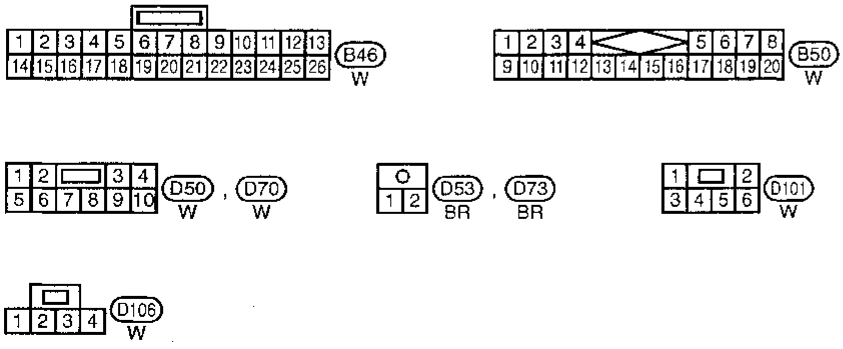
MEL009H

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

EL-AUDIO-10



Refer to last page (Foldout page).
M2 , B1



MEL010H

Power Antenna/System Description

Power is supplied at all times
- through 7.5A fuse (No. 24, located in the fuse block)
- to power antenna terminal ⑥.

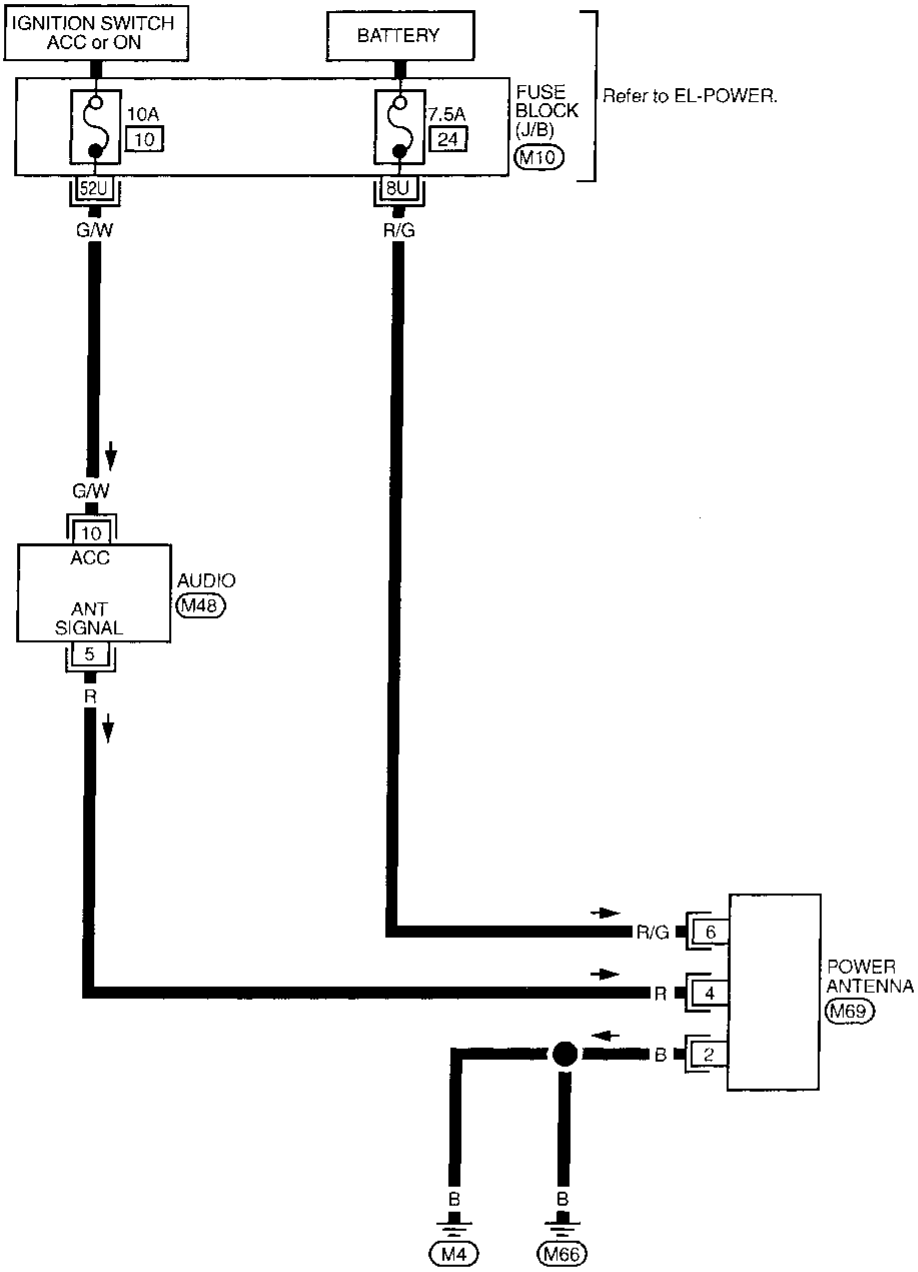
Ground is supplied to the power antenna terminal ② through body grounds M4 and M66.
When the audio is turned to the ON position, battery positive voltage is supplied
- through audio terminal ⑤
- to power antenna terminal ④.

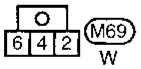
The antenna raises and is held in the extended position.
When the audio is turned to the OFF position, battery positive voltage is interrupted
- from audio terminal ⑤
- to power antenna terminal ④.

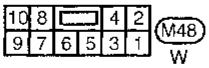
The antenna retracts.

Power Antenna/Wiring Diagram — P/ANT —

EL-P/ANT-01







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M10

MEL597F

Trouble Diagnoses

RADIO

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor radio case ground 3. Radio	1. Check 10A fuse [No. 10 , located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal ⑩ of radio. 2. Check radio case ground. 3. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 7.5A fuse (except for BOSE system) 15A fuse (for BOSE system) 2. Radio	1. Check 7.5/15A fuse [No. 24/4, located in fuse block (J/B)] and verify that battery positive voltage is present at terminal ⑥ of radio. 2. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor radio ground 3. Radio	1. Check antenna. 2. Check radio ground. 3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Radio	1. Check window antenna. 2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Radio	1. Check radio ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check radio ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

MODELS WITH SPEAKER AMP.

Symptom	Possible causes	Repair order
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Speaker amp. ground circuit 3. Speaker amp. 4. Speaker amp. circuit 5. Radio	1. Check 15A fuse [No. 4, located in fuse block (J/B)]. Verify that battery positive voltage is present at terminals ⑫ and ⑭ of speaker amp. 2. Check speaker amp. ground circuit. 3. Check speaker amp. voltages. 4. Check wires for open or short between radio, speaker amp. and speakers. 5. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. Radio/amp. output 3. Speaker circuit 4. Radio	1. Check speaker. 2. Check radio/amp. output voltages. 3. Check wires for open or short between radio/amp. and speaker. 4. Remove radio for repair.

Trouble Diagnoses (Cont'd)

MODELS WITHOUT SPEAKER AMP.

Symptom	Possible causes	Repair order
Individual speaker is noisy or inoperative.	1. Speaker 2. Radio output 3. Speaker circuit 4. Radio	1. Check speaker. 2. Check radio output voltages. 3. Check wires for open or short between radio and speaker. 4. Remove radio for repair.

BOSE SYSTEM

Symptom	Possible causes	Repair order
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Audio amp. relay 3. Audio amp. relay ground 4. Amp. ON signal 5. Radio output 6. Radio	1. Check 15A fuse [No. 4, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal ② of audio amp. relay. 2. Check audio amp. relay. 3. Check audio amp. relay ground (Terminal ③). 4. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ① of audio amp. relay. 5. Check radio output voltage (Terminal ⑫). 6. Remove radio for repair.
Individual front speaker is noisy or inoperative.	1. Speaker ground 2. Power supply 3. Radio output 4. Speaker	1. Check speaker ground (Terminal ⑤). 2. Check power supply for speaker (Terminal ④). 3. Check radio output voltage for speaker. 4. Replace speaker.
Both rear speakers are inoperative.	1. Poor rear speaker amp. ground 2. Power supply 3. Amp. ON signal 4. Rear speaker amp.	1. Check rear speaker amp. ground circuit. 2. Check power supply for rear speaker amp. (Terminal ⑪). 3. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ⑨ of rear speaker amp. 4. Remove rear speaker amp. for repair.
Individual rear speaker is noisy or inoperative.	1. Speaker 2. Radio/amp. output 3. Speaker circuit 4. Radio	1. Check speaker 2. Check radio/amp. output 3. Check wires for open or short between radio/amp. and speakers. 4. Remove radio for repair.

POWER ANTENNA

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse 2. Radio signal 3. Grounds (M4) and (M66)	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify that battery positive voltage is present at terminal ⑥ of power antenna. 2. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna. 3. Check grounds (M4) and (M66).

Trouble Diagnoses (Cont'd)

SPEAKER INSPECTION (Except for BOSE system)

1. Disconnect speaker harness connector.
2. Measure the resistance between speaker terminals ① and ② .
- The resistance should be 2 - 4 Ω.
3. Using jumper wires, momentarily connect a 9V battery between speaker terminals ① and ② .
- A momentary hum or pop should be heard.

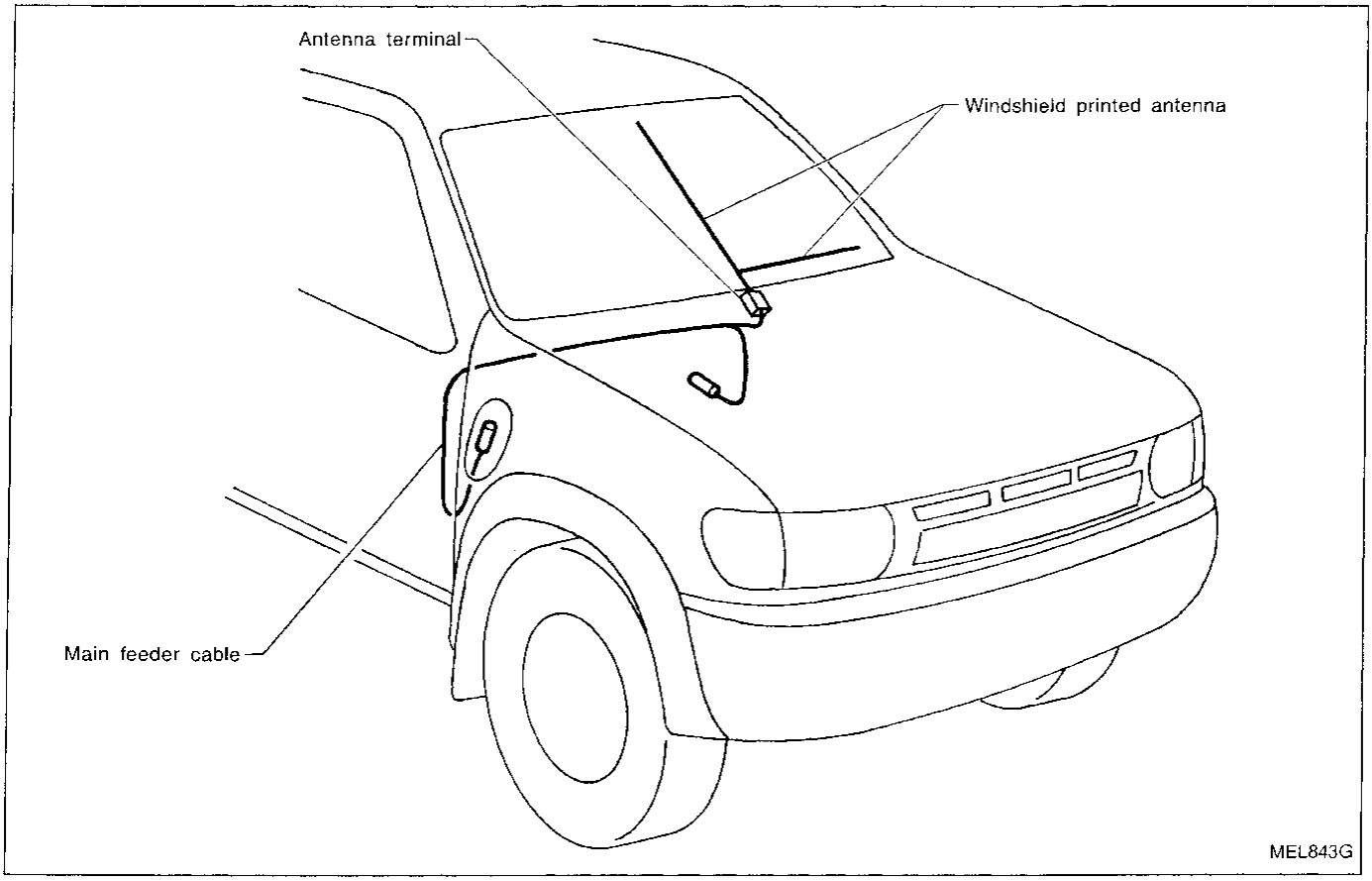
ANTENNA INSPECTION

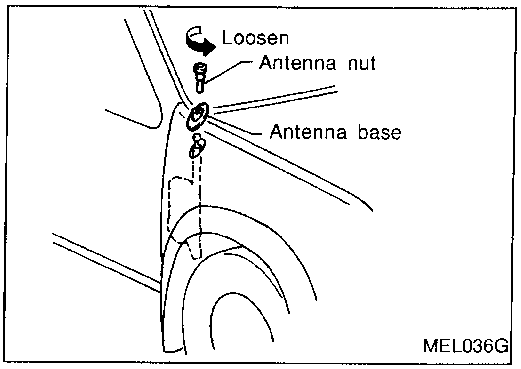
1. Using a jumper wire, clip an auxiliary ground between antenna and body.
- If reception improves, check antenna ground (at body surface).
- If reception does not improve, check main feeder cable for short circuit or open circuit.

RADIO AND AMP INSPECTION

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

Location of Antenna

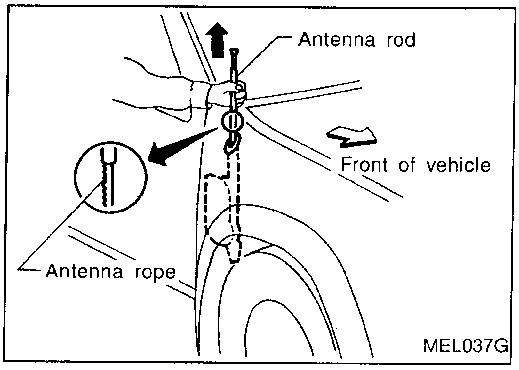




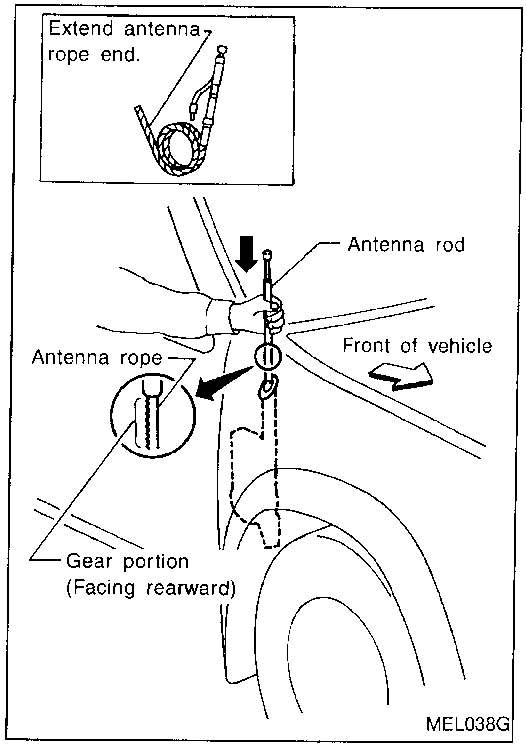
Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.



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

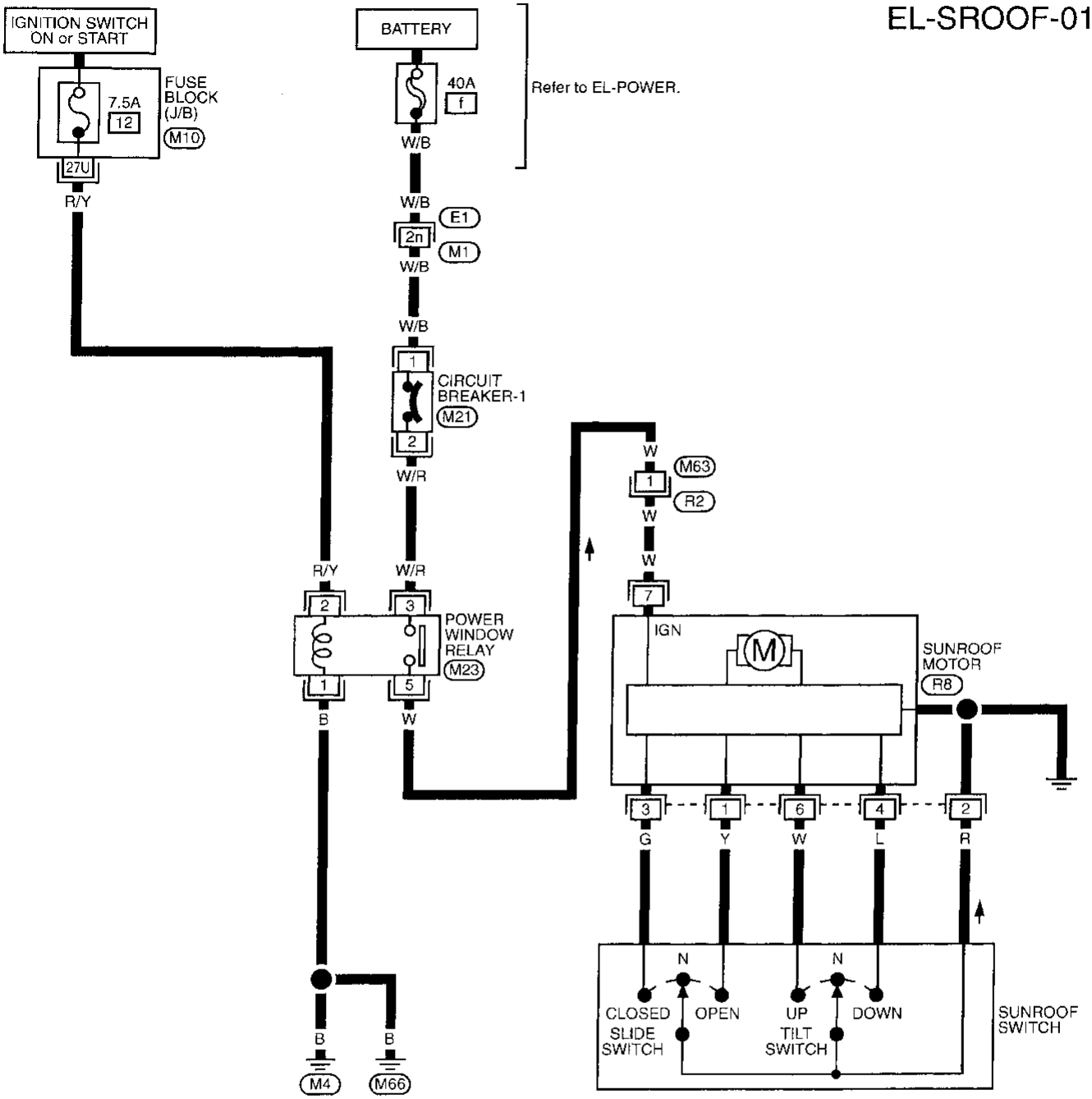


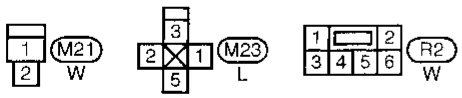
INSTALLATION

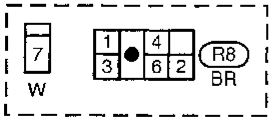
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by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

Wiring Diagram — SROOF —

EL-SROOF-01





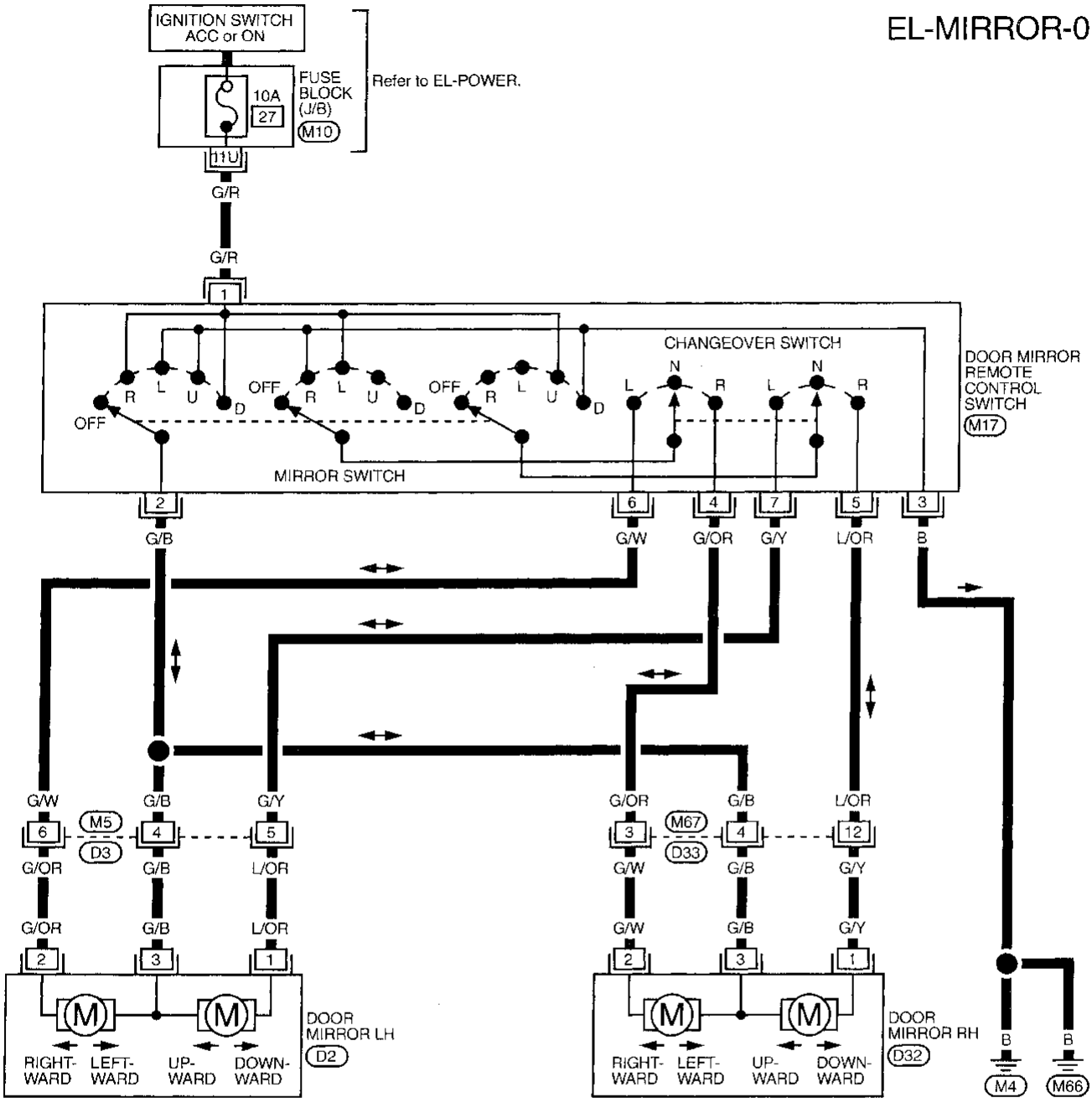


Refer to last page (Foldout page).
E1 , M1
M10

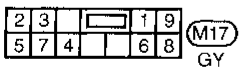
MEL793G

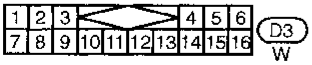
Wiring Diagram — MIRROR —

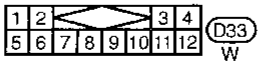
EL-MIRROR-01



Refer to last page (Foldout page).
M10



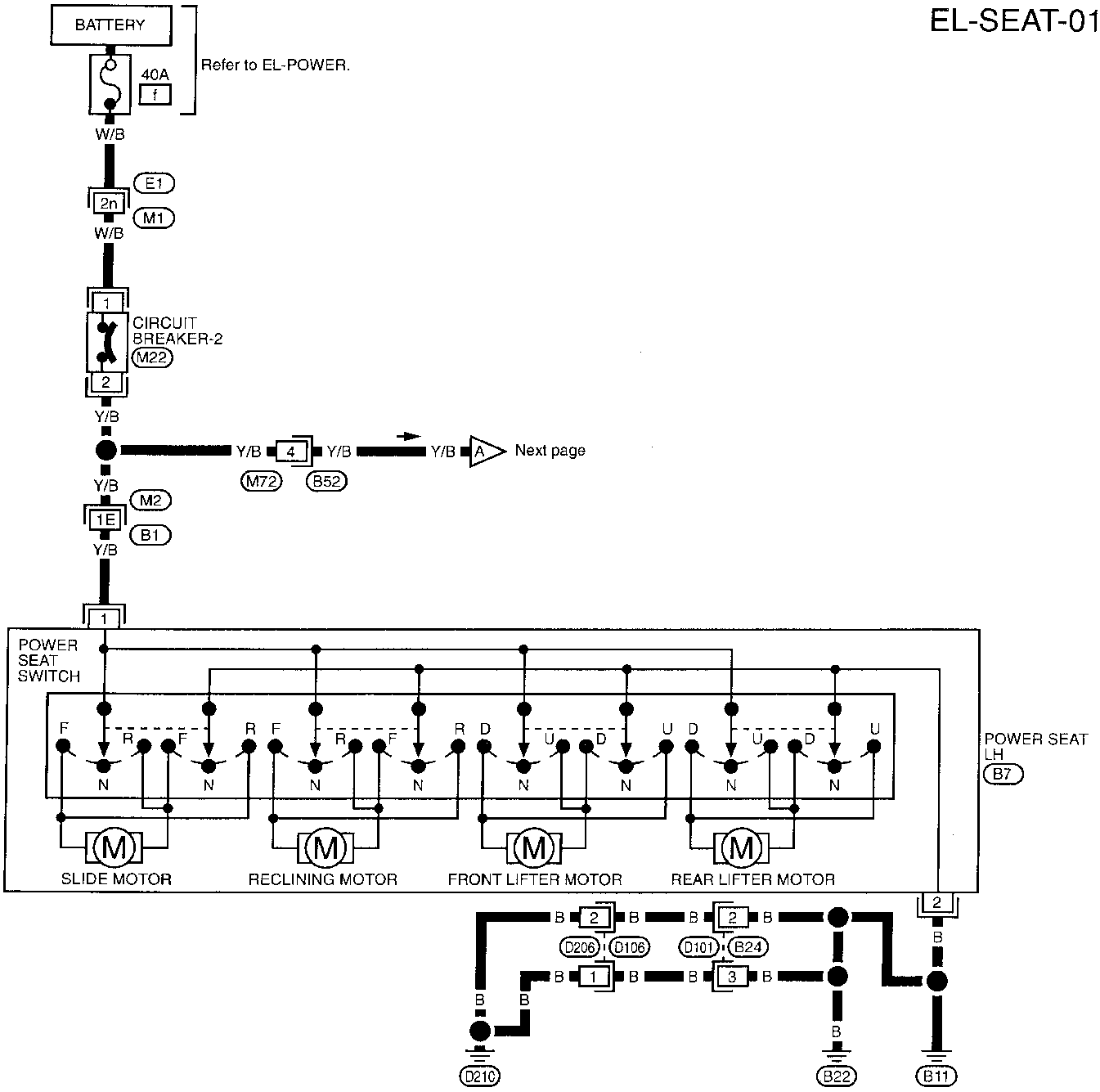




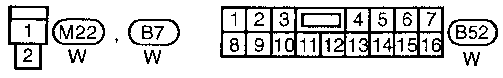
MEL598F

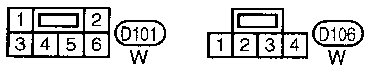
Power Seat/Wiring Diagram — SEAT —

EL-SEAT-01



Refer to last page (Foldout page).
E1 , M1
M2 , B1

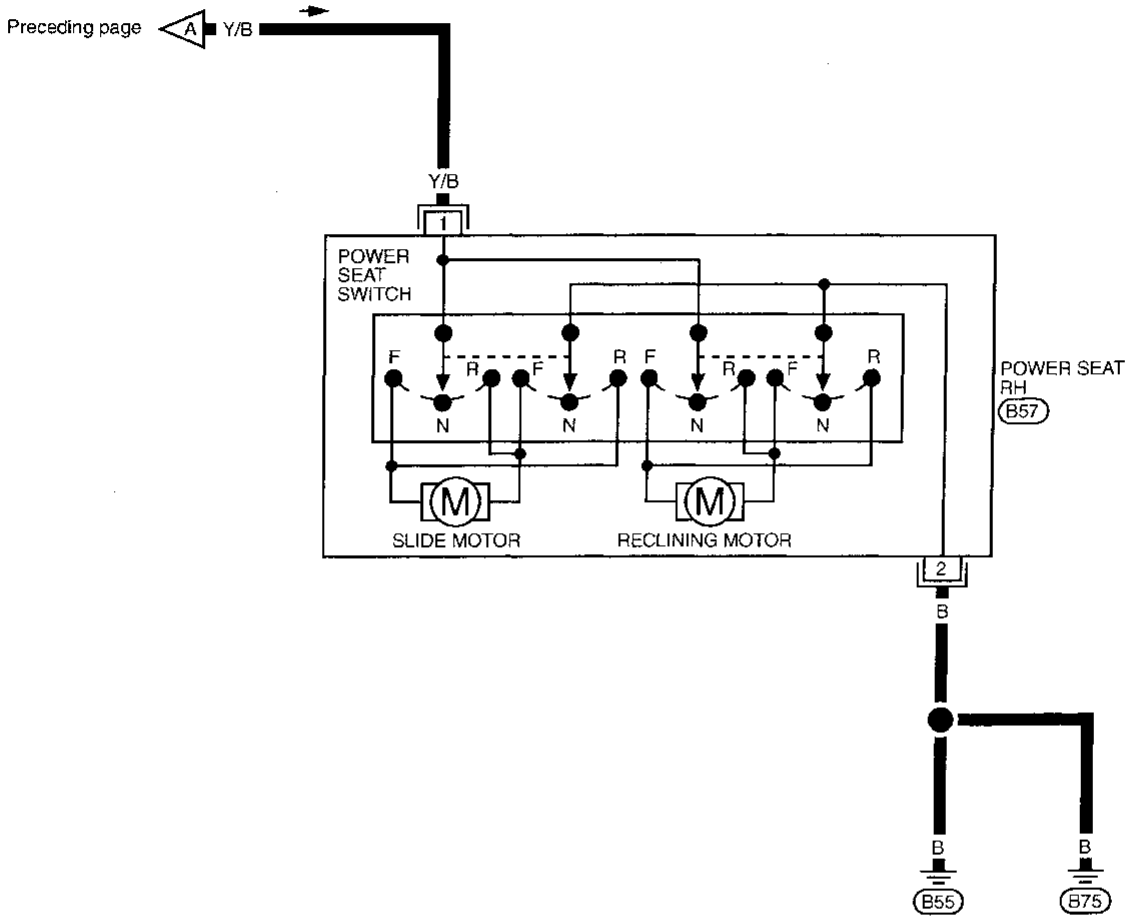


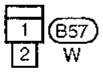


MEL794G

Power Seat/Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02

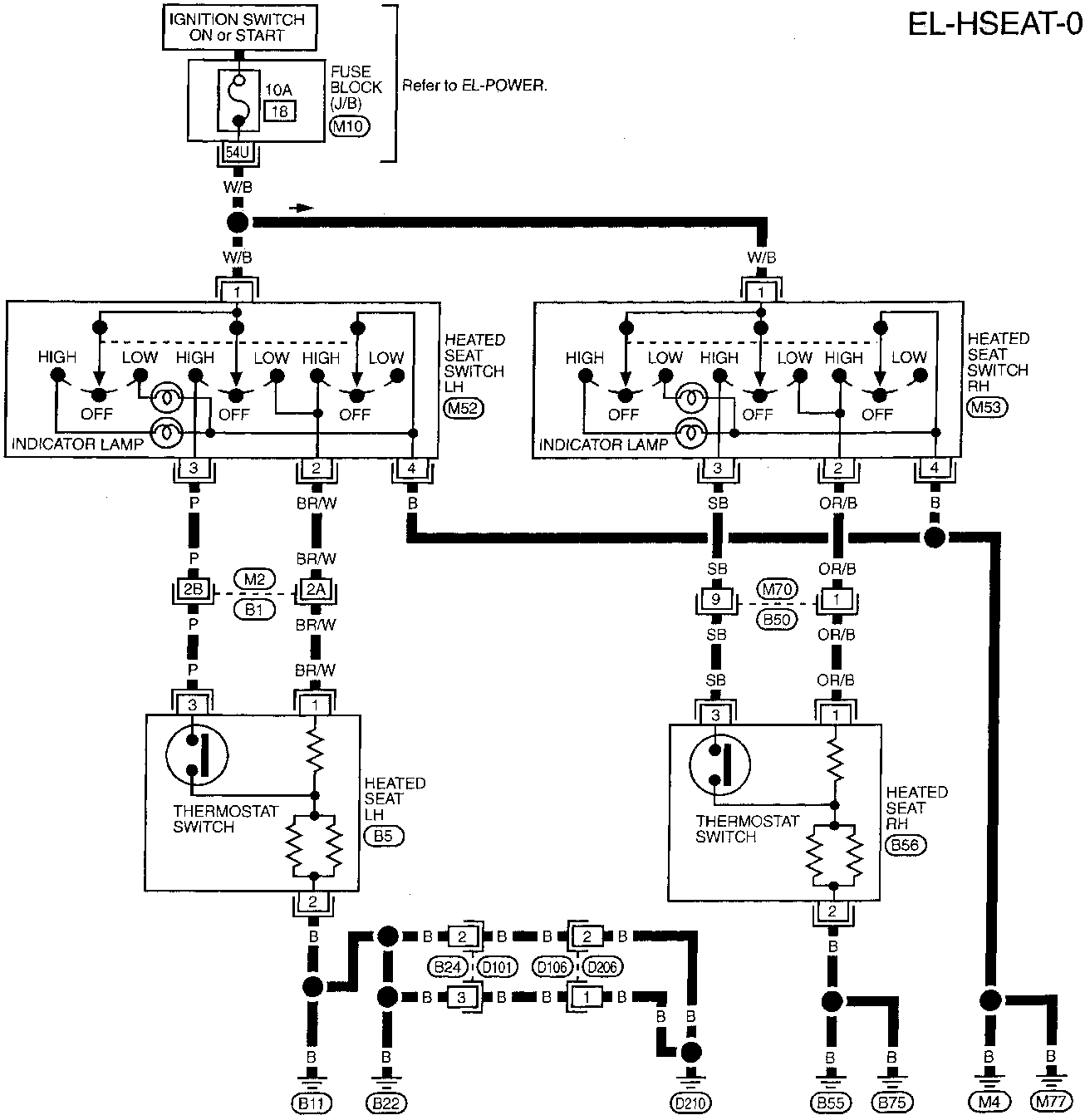


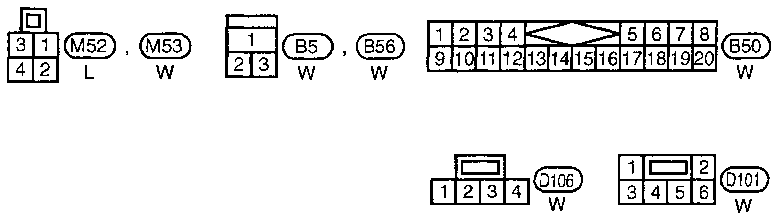


MEL601F

Heated Seat/Wiring Diagram — HSEAT —

EL-HSEAT-01

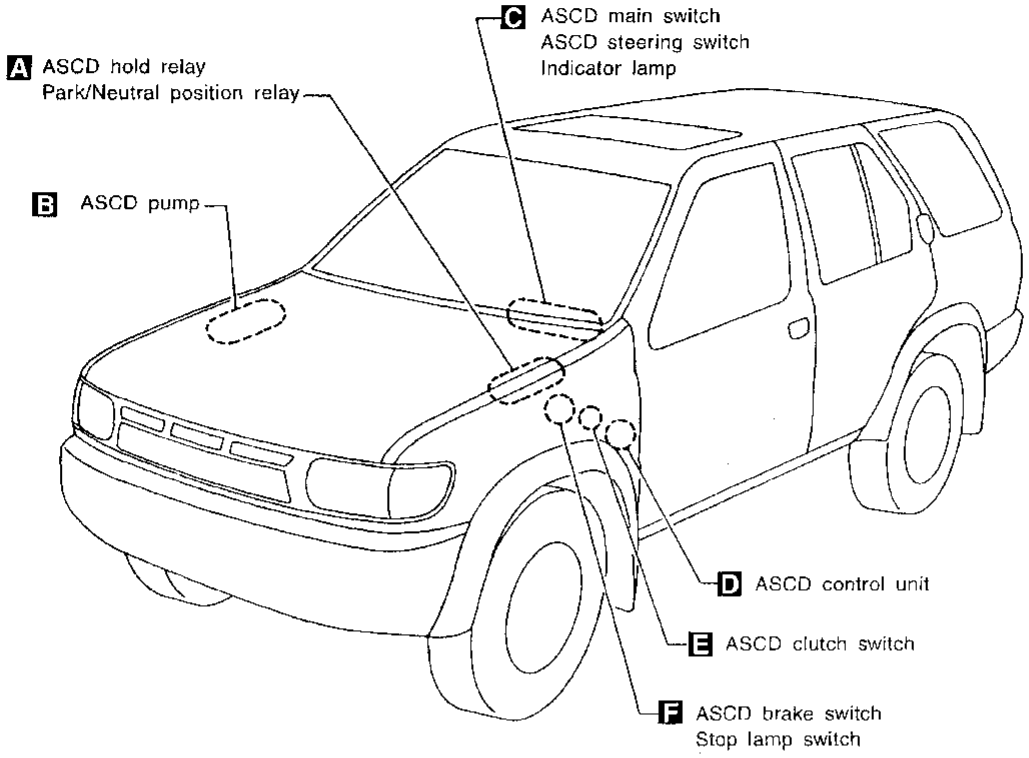


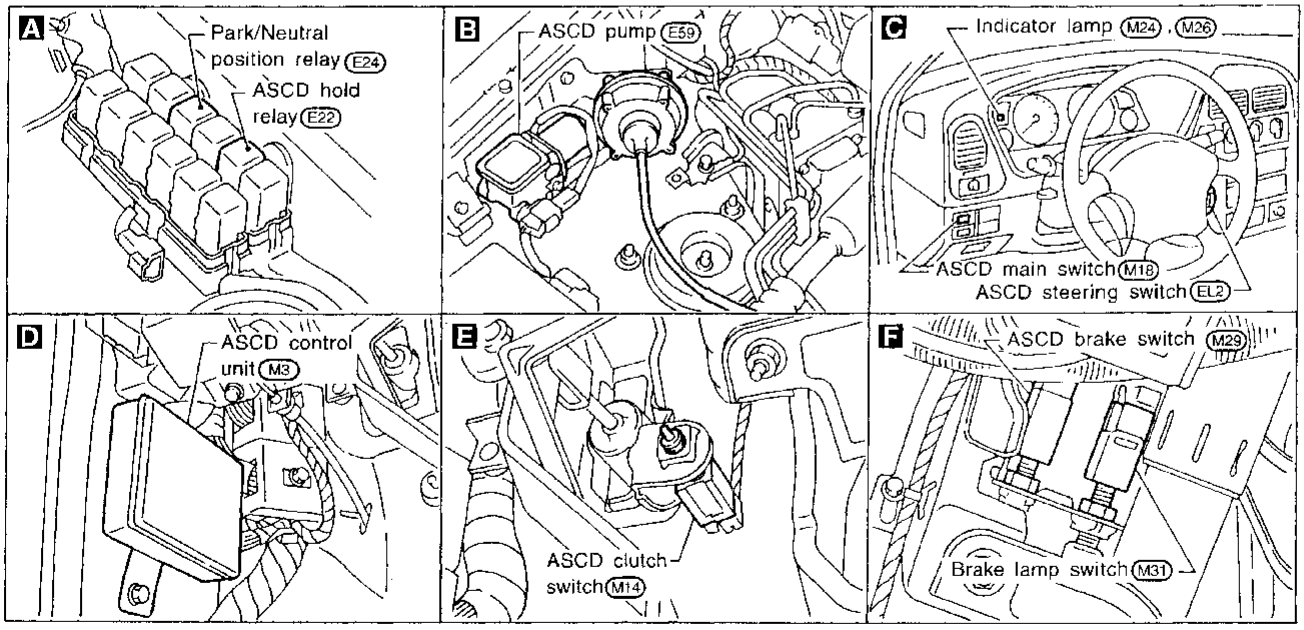


Refer to last page (Foldout page).
M2 , B1
M10

MEL795G

Component Parts and Harness Connector Location





MEL841G

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 ⑦.

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 E13 and E41.

With power and ground supplied, the ASCD hold relay is activated, and power is supplied
- from terminal ⑥ of the ASCD hold relay
- through ASCD main switch terminals ② and ③
- to ASCD hold relay terminal ①.

Power remains supplied when the ASCD switch is released to the N (neutral) position
- from terminal ⑥ of ASCD hold relay
- to ASCD control unit terminal ④ and
- from terminal ③ of ASCD hold relay
- to ASCD clutch switch terminal ① (M/T models) or
- to park/neutral position relay terminal ③ (A/T models).

Ground is supplied
- to ASCD control unit terminal ③
- through body grounds M4 and M66.

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
- ASCD clutch switch (M/T models) or
- park/neutral position relay (A/T models)
- ASCD brake switch.

A vehicle speed input is supplied
- to ASCD control unit terminal ⑦
- from terminal ⑩ of the combination meter.

Power is supplied at all times
- to stop lamp switch terminal ①
- through 10A fuse [No. 20, 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. 54, 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 system is activated, power is supplied
- to ASCD control unit terminal ⑤.

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

- the ASCD brake switch is depressed.

Outputs

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

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

Ground is supplied to the vacuum motor

- from terminal ⑨ of the ASCD control unit
- to ASCD pump terminal ②.

Ground is supplied to the air valve

- from terminal ⑩ of the ASCD control unit
- to ASCD pump terminal ③.

Ground is supplied to the release valve

- from terminal ⑭ of the ASCD control unit
- to ASCD pump terminal ④.

When the system is activated, power is supplied

- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ⑤ and
- to A/T control unit terminal ㊲ (A/T models).

Ground is supplied

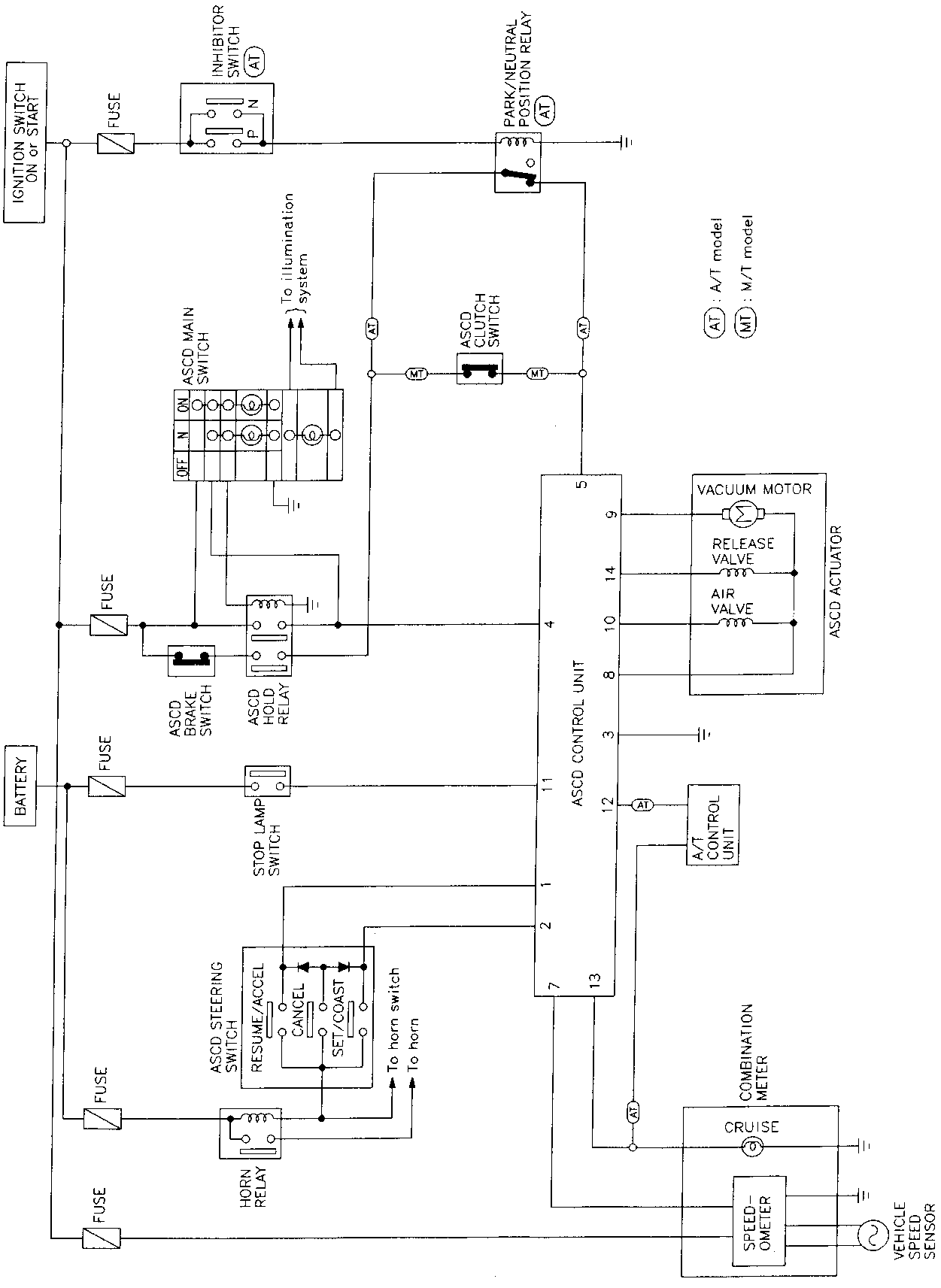
- to combination meter terminal ㉟
- through body grounds (M4) and (M77).

With power and ground supplied, the CRUISE indicator illuminates.
When vehicle speed is approximately 8 km/h (5 MPH) below set speed 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.
After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

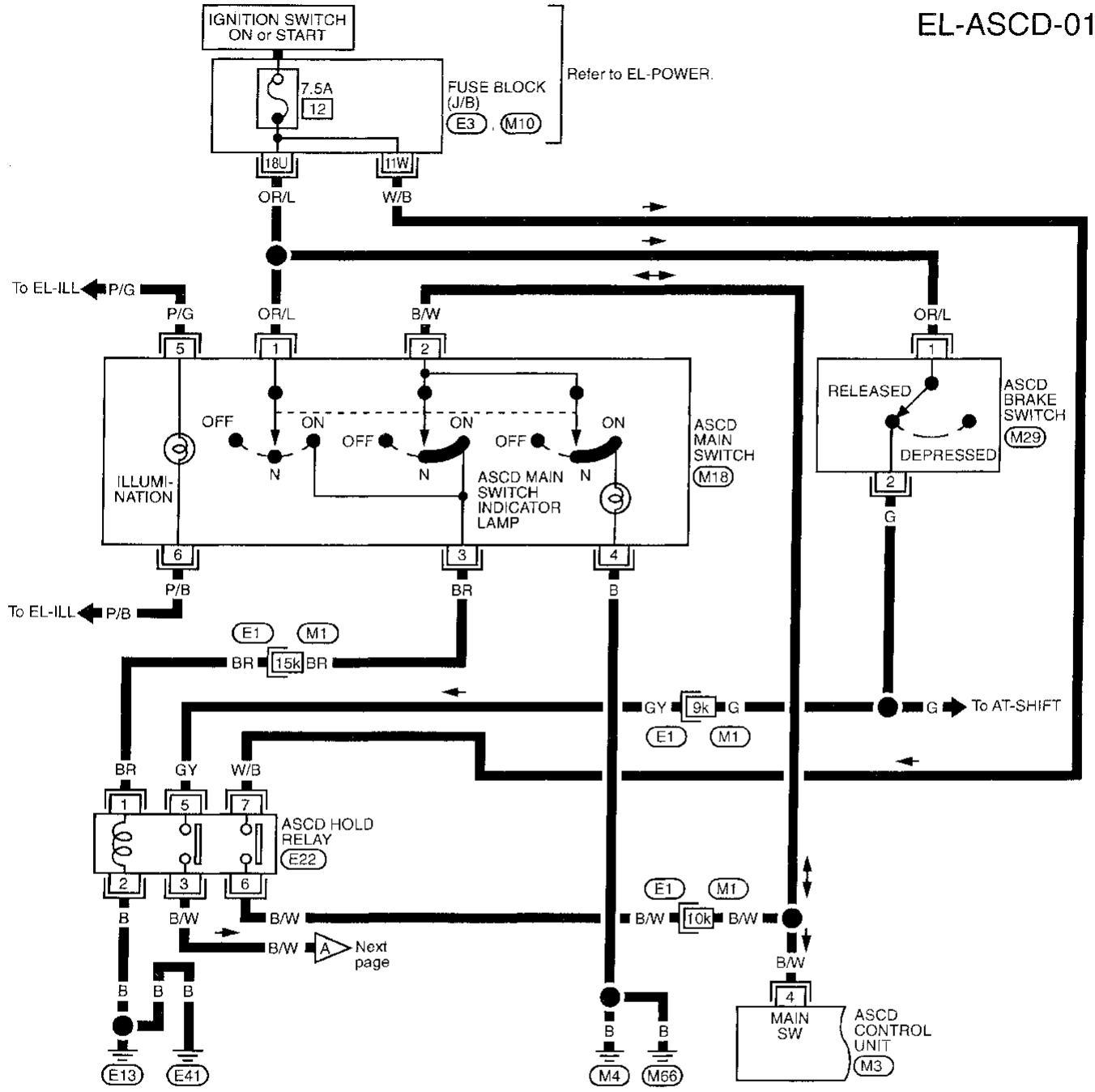
Schematic

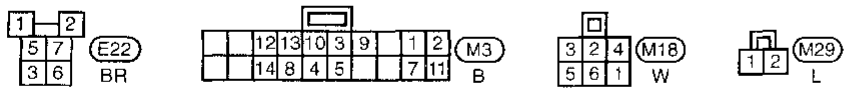


MEL796G

Wiring Diagram — ASCD —

EL-ASCD-01





Refer to last page (Foldout page).

E1, M1

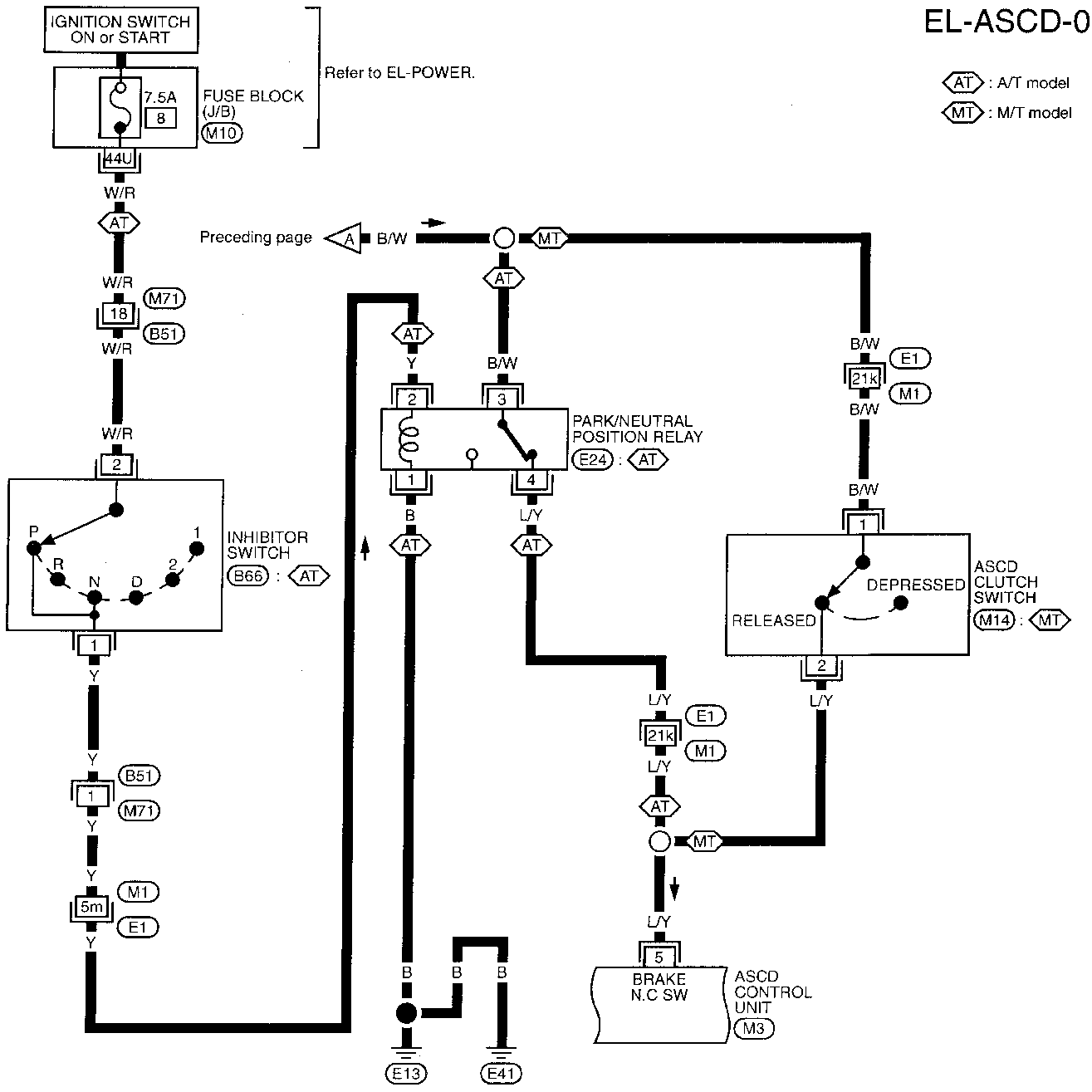
E3

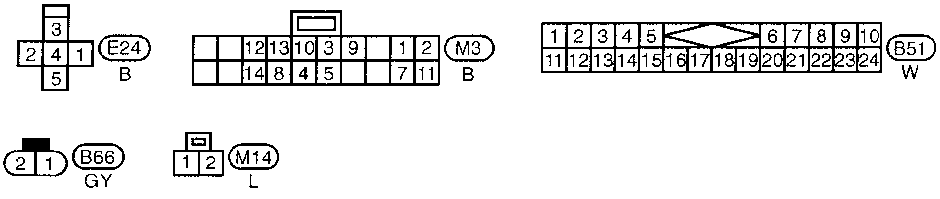
M10

MEL797G

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-02



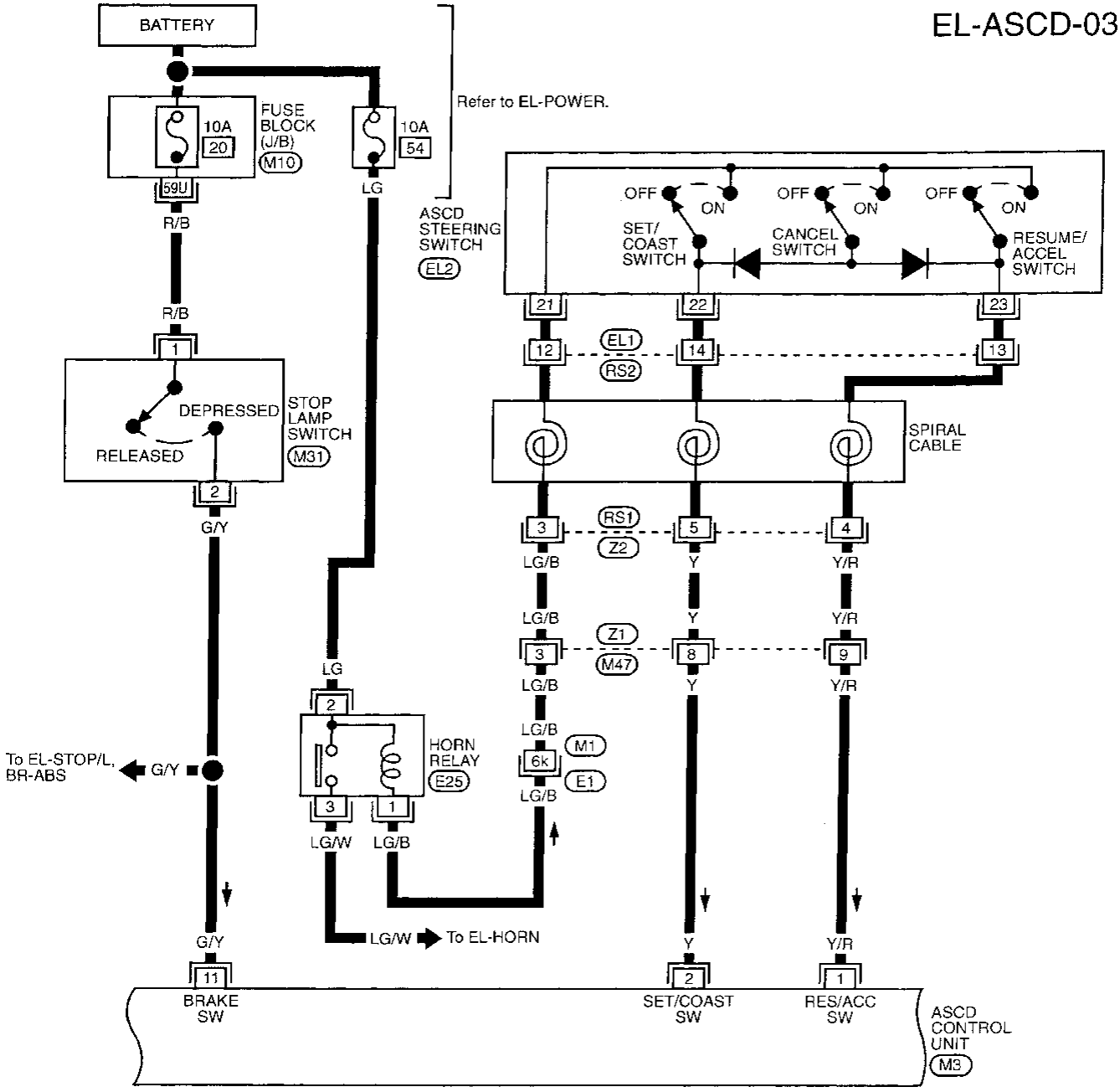


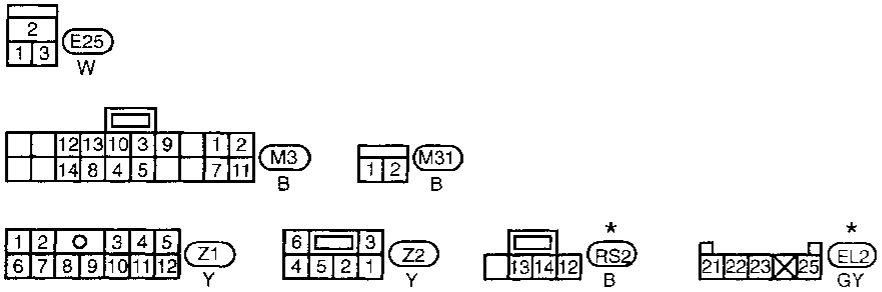
Refer to last page (Foldout page).
E1 , M1
M10

MEL798G

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03





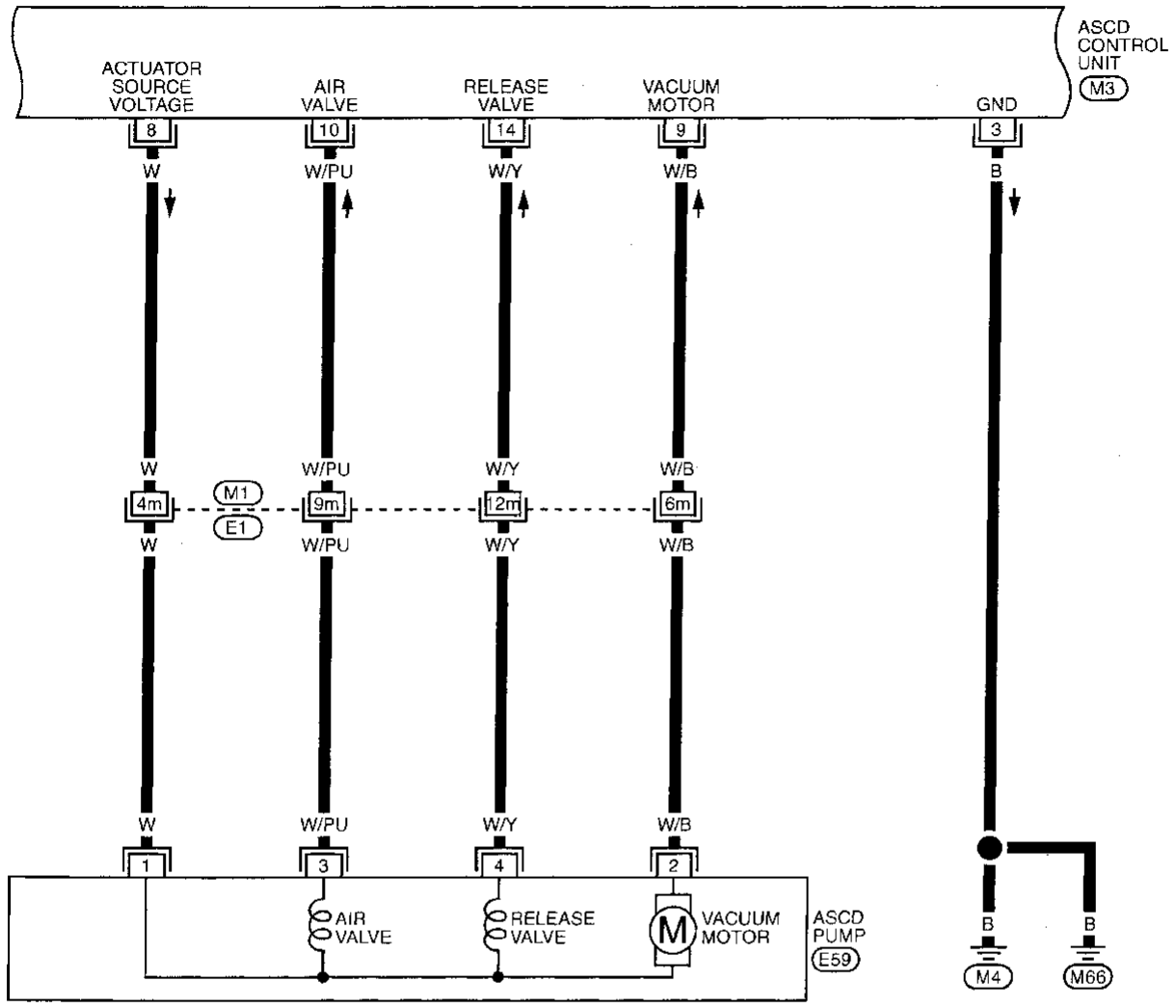
* : This connector is not shown in "HARNESS LAYOUT".

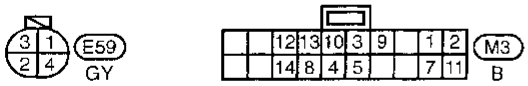
Refer to last page (Foldout page).
E1, M1
M10

MEL799G

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-04



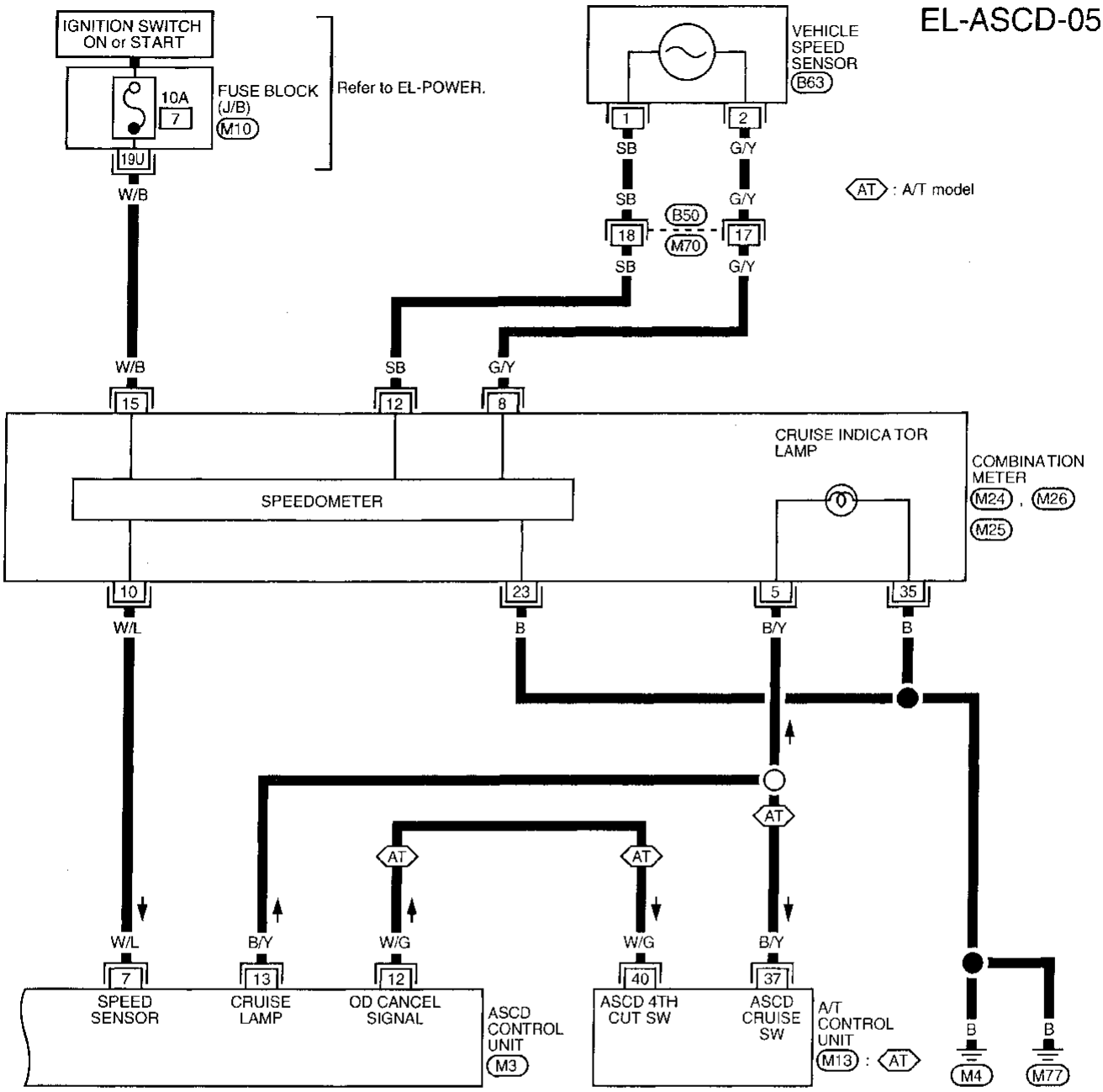


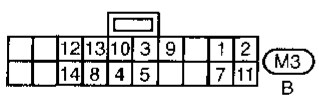
Refer to last page (Foldout page).
E1, M1

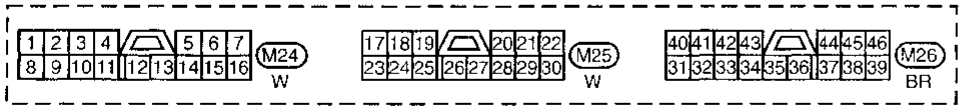
MEL800G

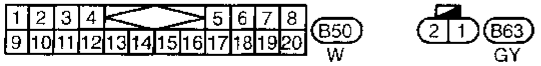
Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05



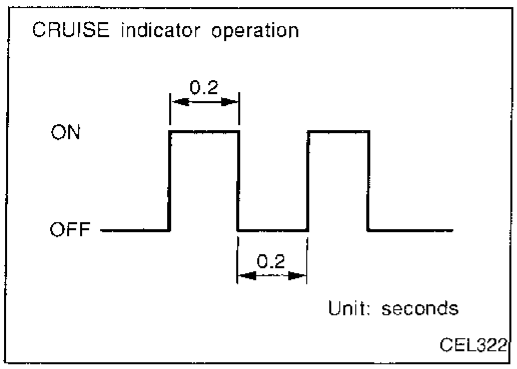






Refer to last page (Foldout page).
M10
M13

MEL801G



Trouble Diagnoses

FAIL-SAFE SYSTEM

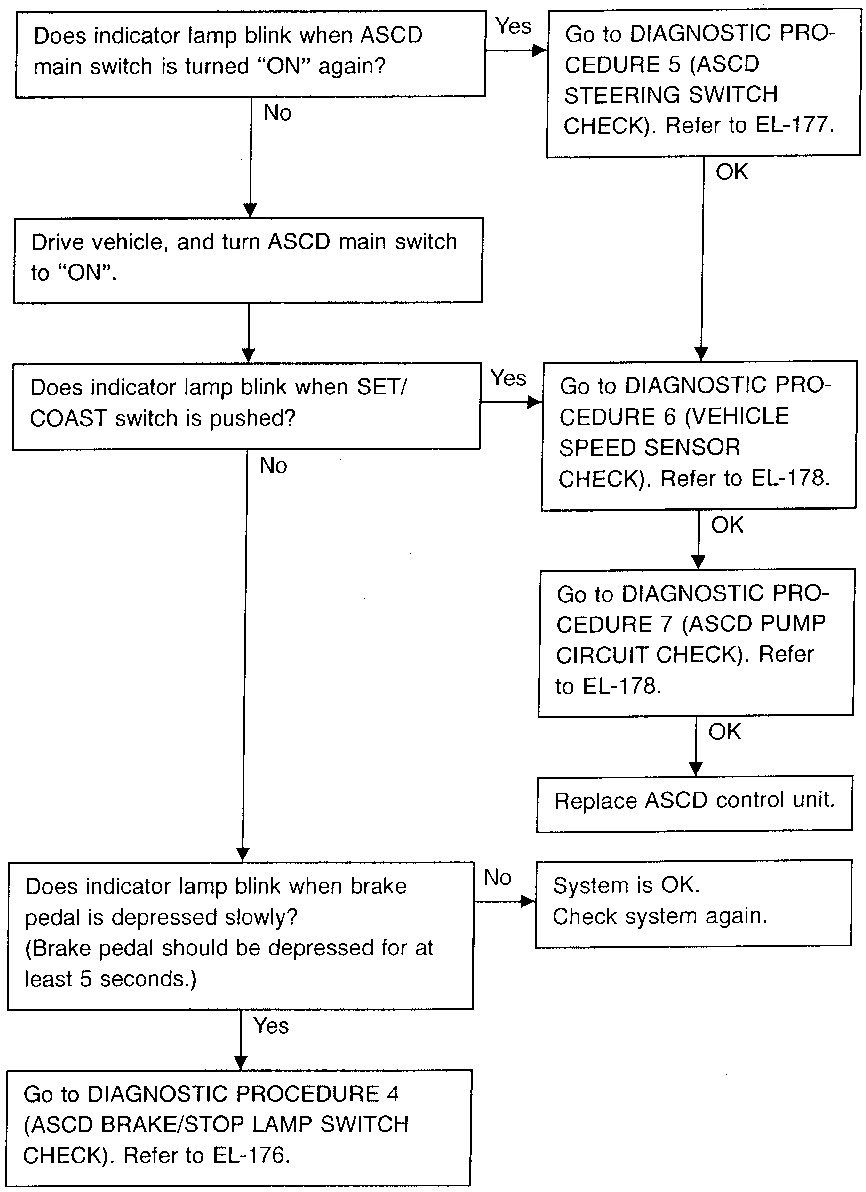
When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE indicator in the combination meter will then flash.

Malfunction detection conditions

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

Trouble Diagnoses (Cont'd)

Fail-safe system check



Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	—	Diagnostic procedure							
REFERENCE PAGE	EL-172	EL-174	EL-174	EL-175	EL-176	EL-177	EL-178	EL-178	EL-179
SYMPTOM	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" indicator lamp blinks.★1)	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.						X			X
System is not released after CANCEL switch (steering) has been pressed.						X			X
Large difference between set speed and actual vehicle speed.									X
Deceleration is greatest immediately after ASCD has been set.									X

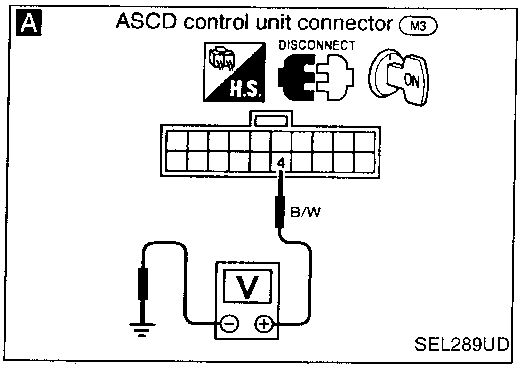
★1: It indicates that system is in fail-safe.

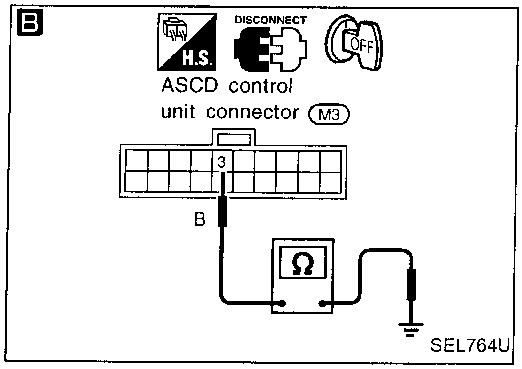
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)





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

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

OK ↓

A

CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.
1. Disconnect ASCD control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch "ON".
4. Check voltage between control unit connector terminal ④ and ground.
Battery voltage should exist.

Refer to wiring diagram in EL-166.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-175.

OK ↓

B

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

Refer to wiring diagram in EL-169.

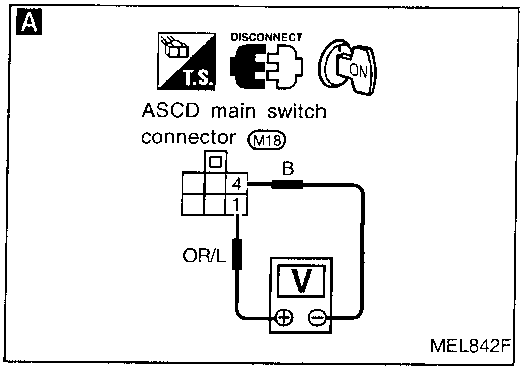
NG → Repair harness.

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.

Refer to wiring diagram in EL-166.

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
- Ground circuit for ASCD main switch

OK ↓

CHECK ASCD MAIN SWITCH.
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).

NG → Replace ASCD main switch.

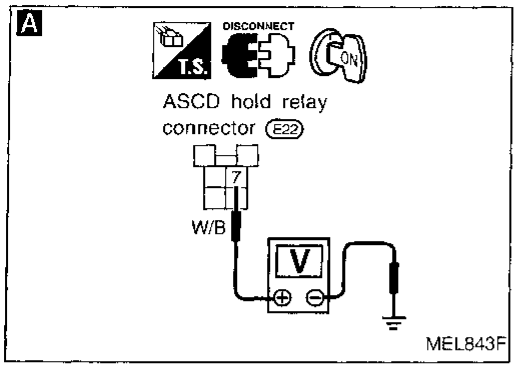
OK ↓

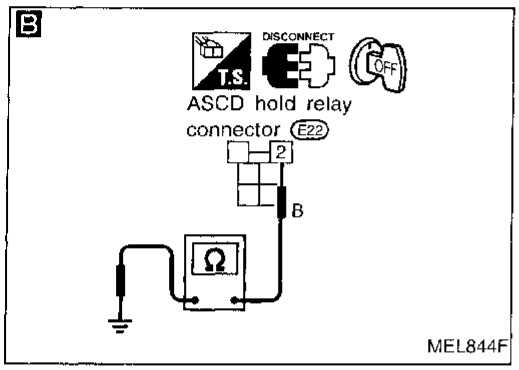
Go to next procedure.

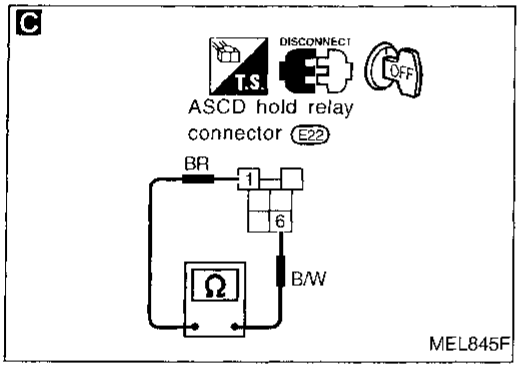
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CHECK)







A

CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY.
1. Disconnect ASCD hold relay
2. Do approx. 12 volts exist between ASCD hold relay terminal ⑦ and body ground?

Refer to wiring diagram in EL-166.

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

Yes ↓

B

CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY.
Does continuity exist between ASCD hold relay terminal ② and ground?

No → Repair harness.

Yes ↓

C

CHECK ASCD HOLD RELAY CIRCUIT.
Does continuity exist between ASCD hold relay terminals ⑥ and ①?

Yes → Check ASCD hold relay.

No ↓

CHECK ASCD MAIN SWITCH.
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).

NG → Replace ASCD main switch.

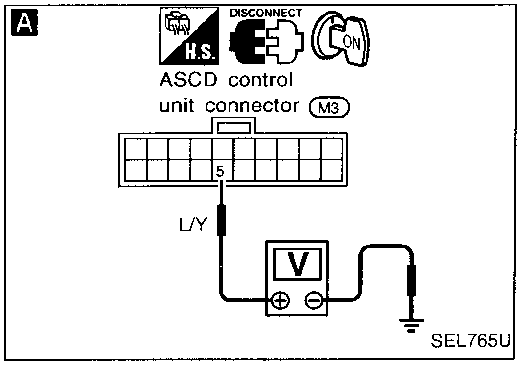
OK ↓

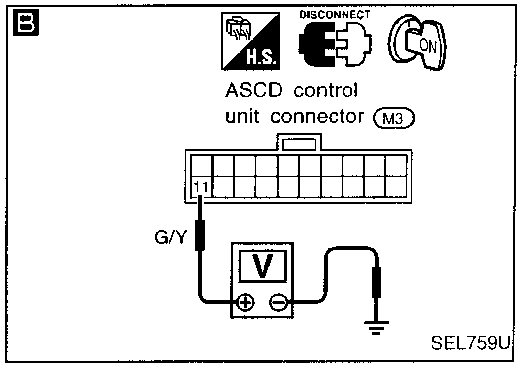
Go to next procedure.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(ASCD BRAKE/STOP LAMP SWITCH CHECK)





A

CHECK BRAKE/STOP LAMP CIRCUIT FOR ASCD CONTROL UNIT.

1. Disconnect control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch "ON".
4. Check voltage between control unit connector terminal ⑤ and ground.
   When brake pedal or clutch pedal (M/T) is depressed or A/T selector lever (A/T) is in "N" or "P" range:
   Approx. 0V
   When both brake pedal and clutch pedal (M/T) are released or A/T selector lever (A/T) is not in "N" or "P" range:
   Battery voltage should exist.

   Refer to wiring diagram in EL-167.

NG →

Check the following.
- ASCD brake switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).
- ASCD clutch switch (M/T model)
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).
- Inhibitor switch (A/T model)
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).
- ASCD hold relay
- Harness for open or short

OK ↓

B

CHECK STOP LAMP SWITCH CIRCUIT.

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

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

Refer to wiring diagram in EL-168.

NG →

Check the following.
- 10A fuse [No. 20, located in the fuse block (J/B)]
- Harness for open or short between ASCD control unit and stop lamp switch
- Stop lamp switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-180).

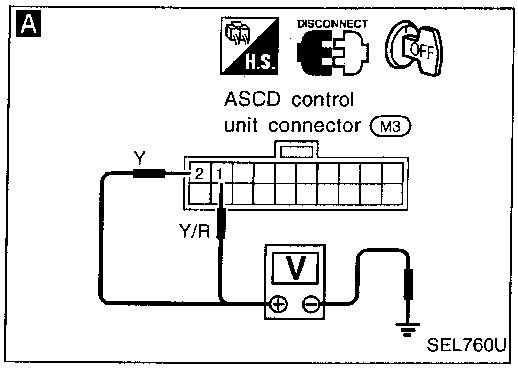
OK ↓

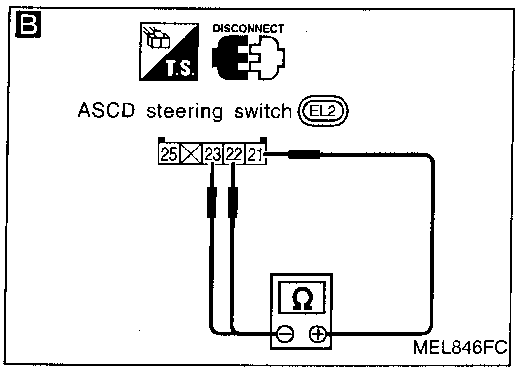
ASCD brake switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)





A

CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT.
1. Disconnect control unit connector.
2. Check voltage between control unit harness terminals and ground.

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

Refer to wiring diagram in EL-168.

OK → ASCD steering switch is OK.

NG ↓

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

NG → Check the following.
- 10A fuse (No. 54, located in the relay box)
- Horn relay
- Harness for open or short between horn and fuse

OK ↓

B

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

Switch	Terminal		
	㉑	㉒	㉓
RESUME/ ACCEL	○		○
SET/ COAST	○	○	
CANCEL	○	▶ ○	
	○	▶	○

NG → Replace ASCD steering switch.

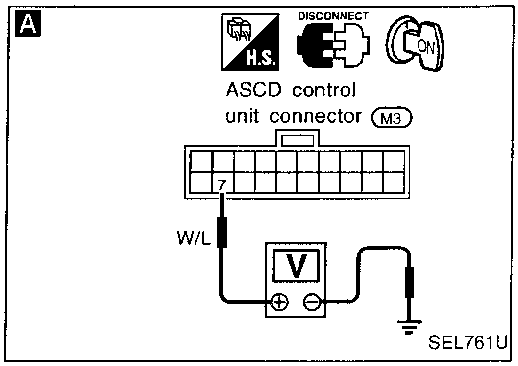
OK ↓

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)



A

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

Refer to wiring diagram in EL-170.

OK → Vehicle speed sensor is OK.

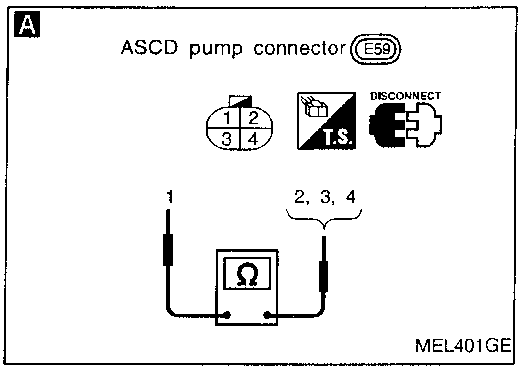
OK ↓

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-91.

Yes ↓

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ⑩.



DIAGNOSTIC PROCEDURE 7

(ASCD PUMP CIRCUIT CHECK)

A

CHECK ASCD PUMP.
1. Disconnect ASCD pump connector.
2. Measure resistance between control unit harness terminals ① and ②, ③, ④.

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

Refer to wiring diagram in EL-169.

NG → Replace ASCD pump.

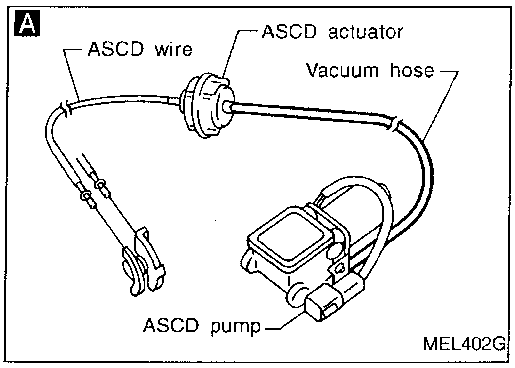
OK ↓

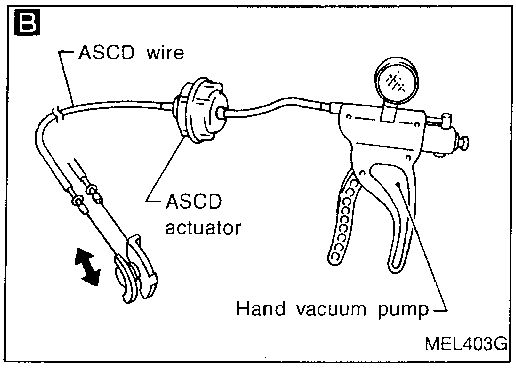
Check harness for open or short between ASCD pump and ASCD control unit.

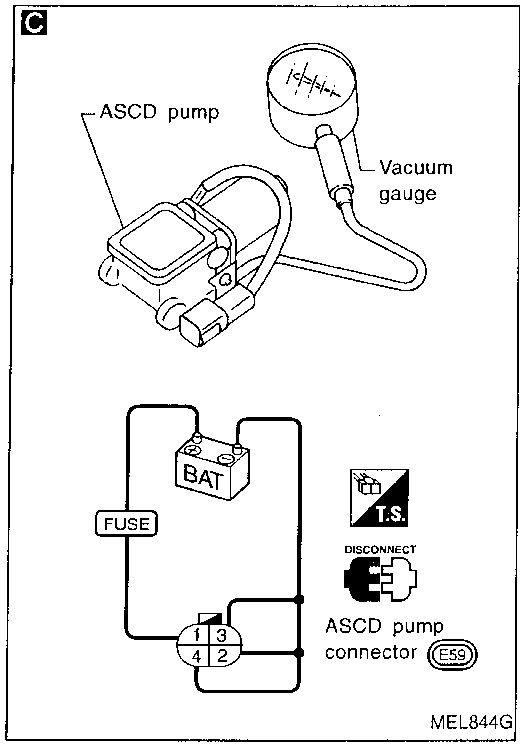
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(ASCD ACTUATOR/PUMP CHECK)







A

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

NG → Repair or replace hose.

OK ↓

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

NG → Repair or replace wire. Refer to "ASCD WIRE ADJUSTMENT" (EL-181).

OK ↓

B

CHECK ASCD ACTUATOR.

1. Disconnect vacuum hose from ASCD actuator.
2. Apply −40 kPa (−0.41 kg/cm^2, −5.8 psi) vacuum to ASCD actuator with hand vacuum pump.

ASCD wire should move to pull throttle drum.

3. Wait 10 seconds and check for decrease in vacuum pressure.

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

NG → Replace ASCD actuator.

OK ↓

C

CHECK ASCD PUMP.

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

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

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

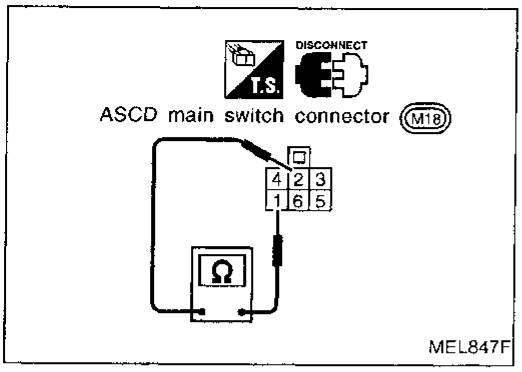
NG → Replace ASCD pump.

OK ↓

INSPECTION END

Trouble Diagnoses (Cont'd)

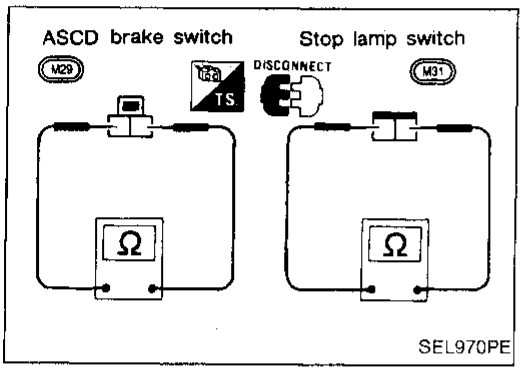
ELECTRICAL COMPONENT CHECK



ASCD main switch

Check continuity between terminals by pushing switch to each position.

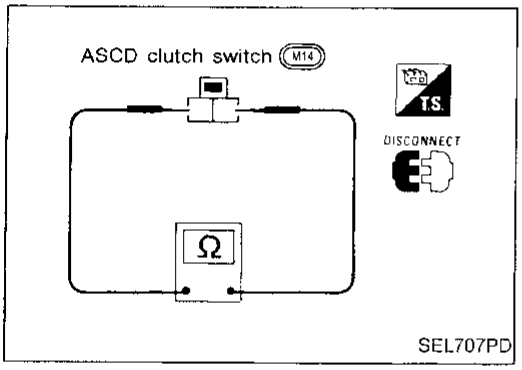
Switch position	Terminals					
	1	2	3	4	5	6
ON	○	○	○	○	ILL.	
N		○	○	○	○	○
OFF						



ASCD brake switch and stop lamp switch

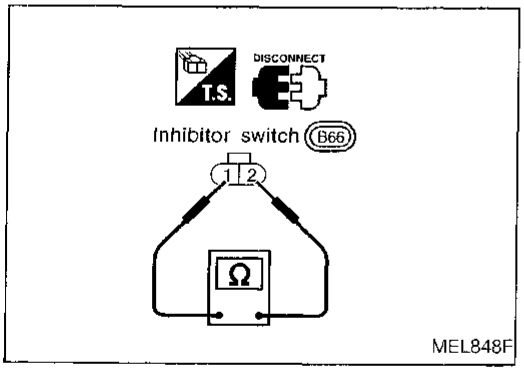
Condition	Continuity	
	ASCD brake switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

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



ASCD clutch switch (For M/T models)

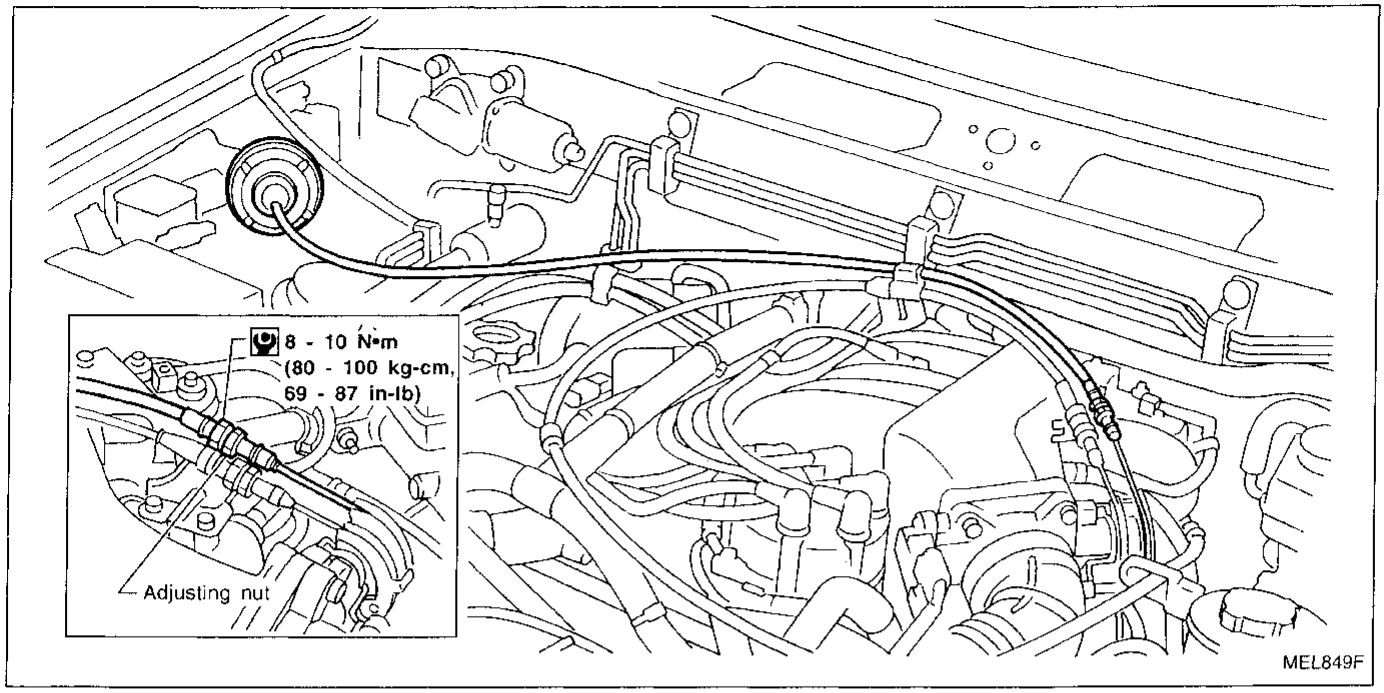
Condition	Continuity
When clutch pedal is depressed	No
When clutch pedal is released	Yes



Inhibitor switch (For A/T models)

Selector lever position	Continuity
	Between terminals ① and ②
"P"	Yes
"N"	Yes
Except "P" and "N"	No

ASCD Wire Adjustment



CAUTION:

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

Adjust the tension of ASCD wire in the following manner.

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

System Description

Power is supplied at all times
- from 40A fusible link (letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to power window relay terminal ③.

With ignition switch in ON or START position, power is supplied
- through 7.5A fuse [No. [12], located in the fuse block (J/B)]
- to power window relay terminal ②.

Ground is supplied to power window relay terminal ①
- through body grounds (M4) and (M66).

The power window relay is energized and power is supplied
- through power window relay terminal ⑤
- to power window main switch terminal ①,
- to power window sub switch terminal ⑤.

MANUAL OPERATION

Front door LH

Ground is supplied
- to power window main switch terminal ③
- through body grounds (M4) and (M77).

WINDOW UP
When the front LH switch in the power window main switch is pressed in the up position, power is supplied
- to front power window regulator LH terminal ②
- through power window main switch terminal ⑨.

Ground is supplied
- to front power window regulator LH terminal ①
- through power window main switch terminal ⑧.

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

WINDOW DOWN
When the LH switch in the power window main switch is pressed in the down position, power is supplied
- to front power window regulator LH terminal ①
- through power window main switch terminal ⑧.

Ground is supplied
- to front power window regulator LH terminal ②
- through power window main switch terminal ⑨.

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

Front door RH

Ground is supplied
- to power window main switch terminal ③
- through body grounds (M4) and (M77).

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

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

The subsequent operation is the same as the sub-switch operation.

SUB-SWITCH OPERATION
Power is supplied
- through front power window sub-switch (②, ①)
- to front power window regulator RH (②, ①).

Ground is supplied
- to front power window regulator RH (①, ②)
- through front power window sub-switch (①, ②)
- to front power window sub-switch (③, ④)
- through power window main switch (⑥, ⑤).

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

Rear door

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

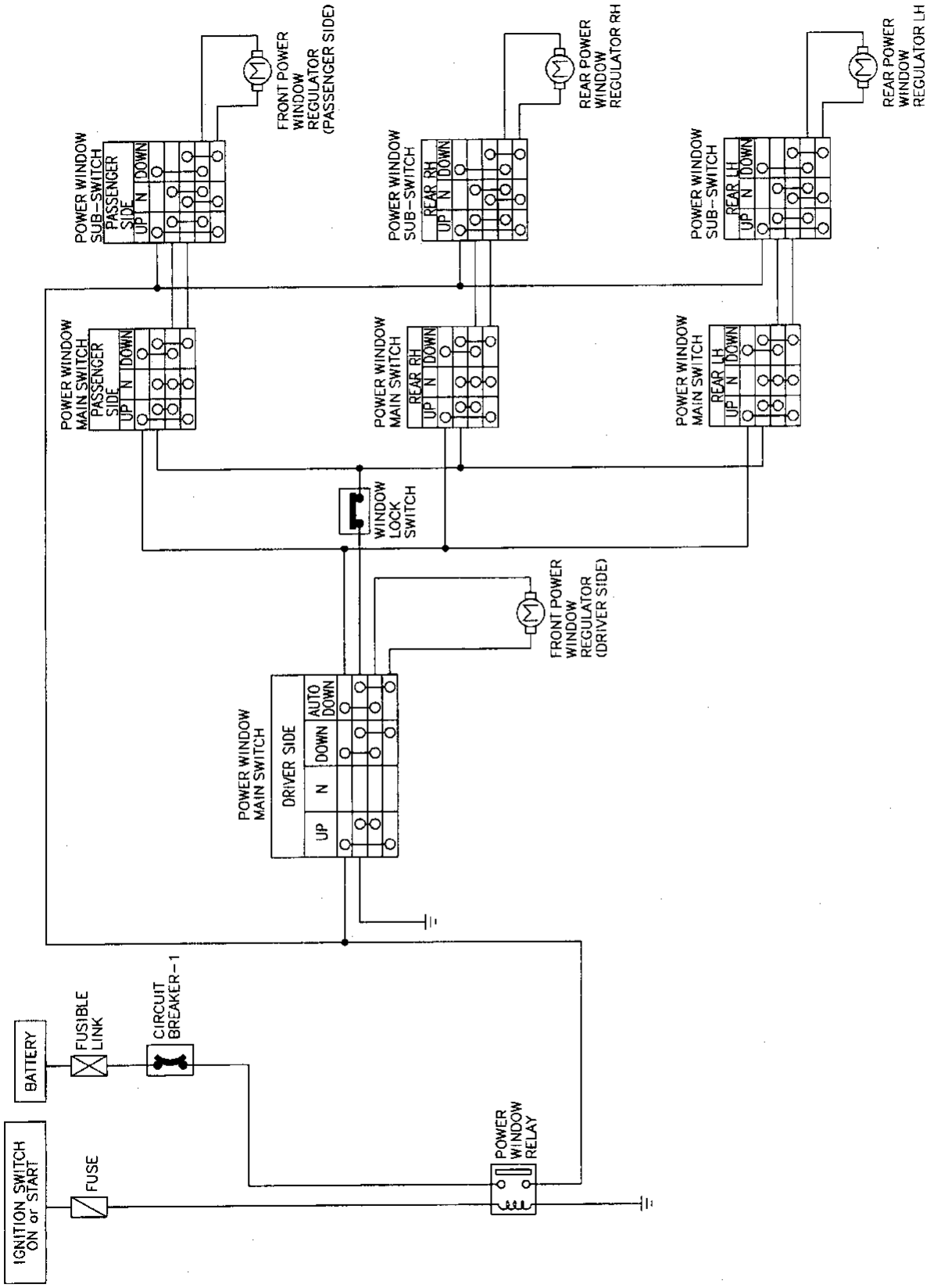
AUTO OPERATION

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

POWER WINDOW LOCK

The power window lock is designed to lock operation of all windows except for driver's door window.
When the lock switch is pressed to lock position, ground of the sub-switches in the power window main switch is disconnected. This prevents the power window motors from operating.

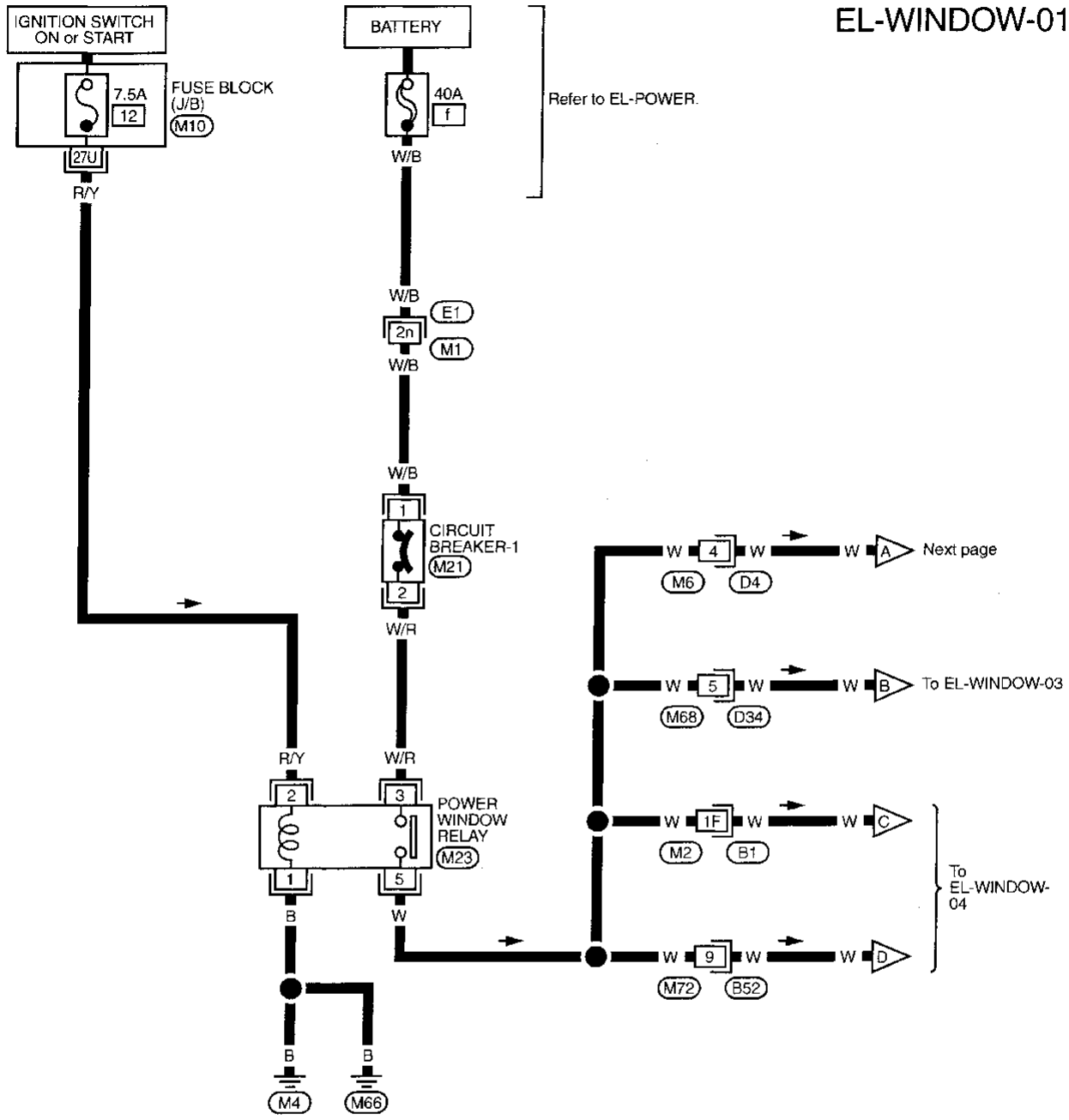
Schematic

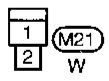


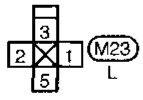
MEL613F

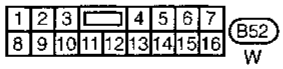
Wiring Diagram — WINDOW —

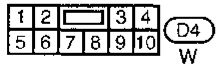
EL-WINDOW-01

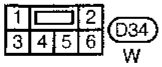










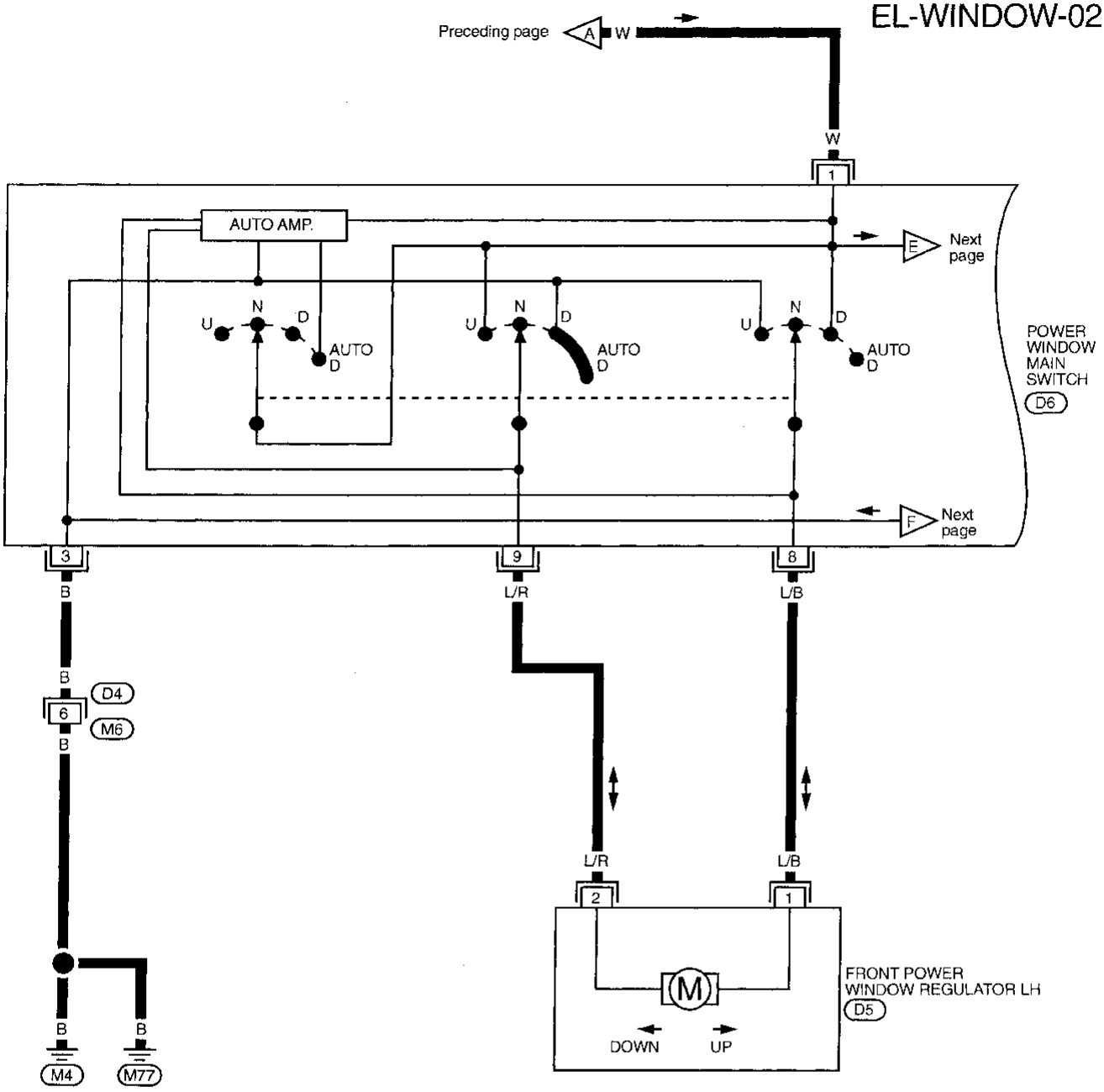


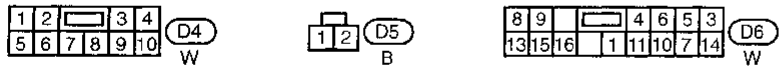
Refer to last page (Foldout page).
E1 , M1
M2 , B1
M10

MEL802G

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02

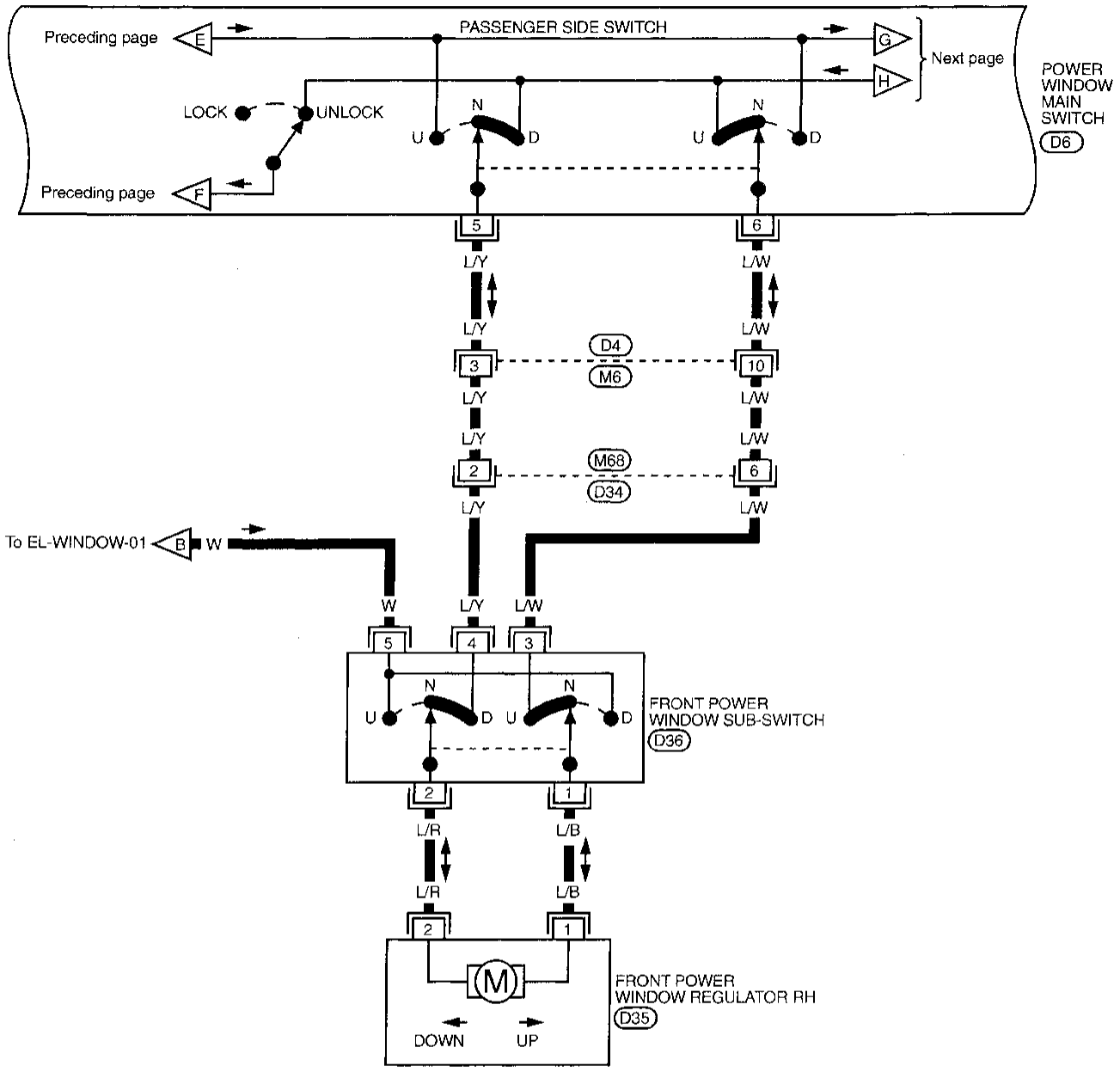


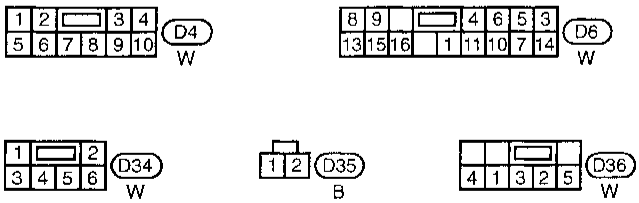


MEL610F

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03

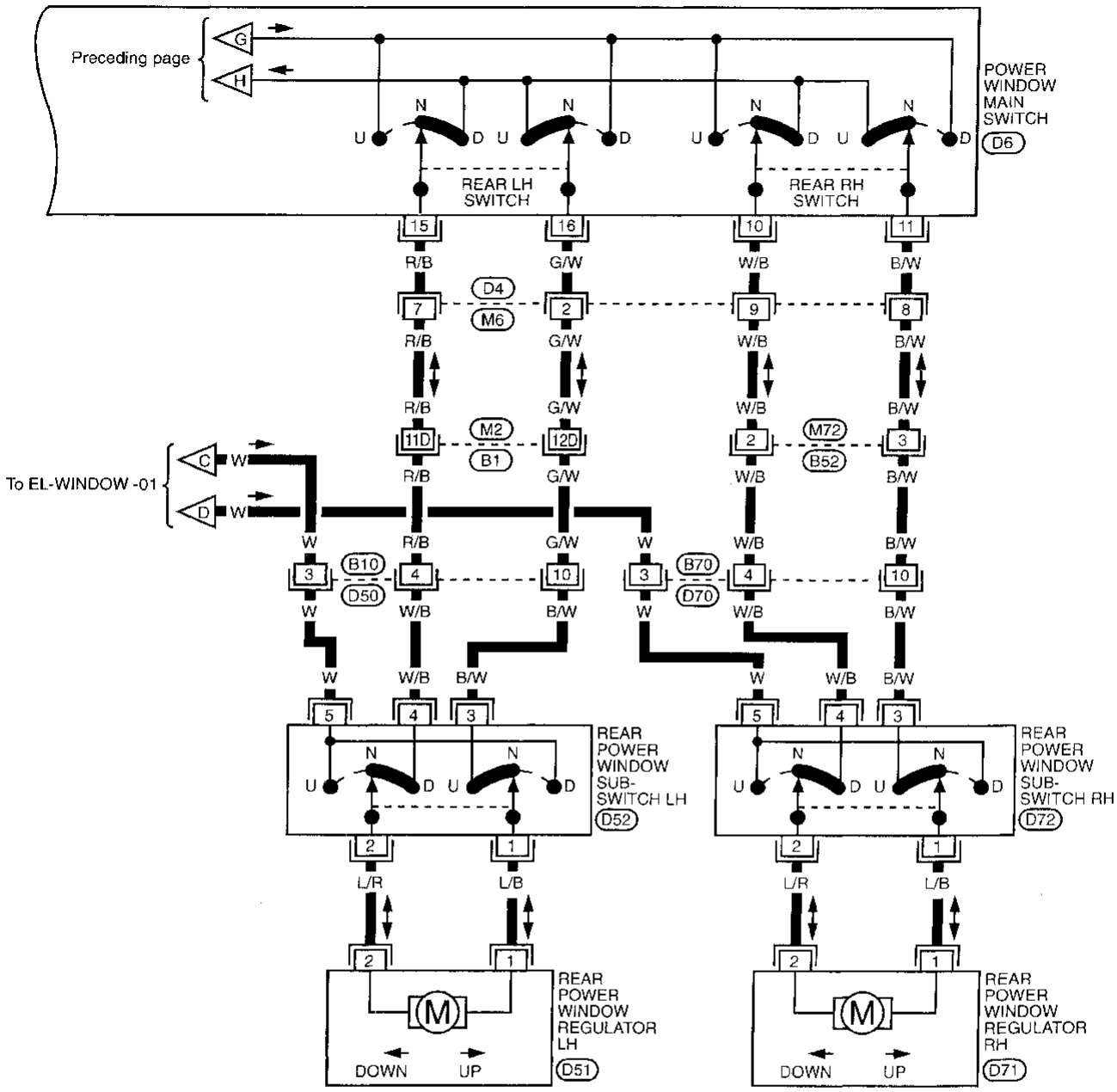


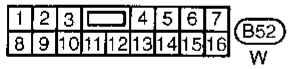


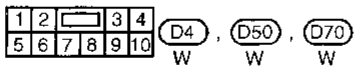
MEL611F

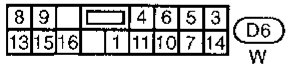
Wiring Diagram — WINDOW — (Cont'd)

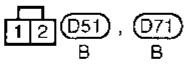
EL-WINDOW-04

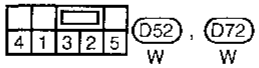



B52 W


D4 W, D50 W, D70 W


D6 W


D51 B, D71 B


D52 W, D72 W

Refer to last page (Foldout page).
M2, B1

MEL803G

Trouble Diagnoses

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 7.5A fuse, 40A fusible link and (M21) circuit breaker	1. Check 7.5A fuse (No. 12, located in fuse block [J/B]), 40A fusible link (letter f, located in fuse and fusible link box) and (M21) circuit breaker. Turn ignition switch "ON" and verify battery positive voltage is present at terminal ① of power window main switch and terminal ⑤ of sub-switch.
	2. Grounds (M4) and (M77)	2. Check grounds (M4) and (M77).
	3. Power window relay	3. Check power window relay.
	4. Open/short in power window main switch circuit	4. Check W wire between power window relay and power window main switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit	1. Check harness between power window main switch and power window regulator for open or short circuit.
	2. Driver side power window regulator	2. Check driver side power window regulator.
Passenger power window cannot be operated.	1. Power window sub-switches	1. Check power window sub-switch.
	2. Passenger side power window regulators	2. Check passenger side power window regulator.
	3. Power window main switch	3. Check power window main switch.
	4. Power window circuit	4-1. Check harnesses between power window main switch and power window sub-switch for open/short circuit.
		4-2. Check harnesses between power window sub-switch and power window regulator for open/short circuit.
Passenger power window cannot be operated using power window main switch but can be operated by power window sub-switch.	1. Power window main switch	1. Check power window main switch.
Driver side power window auto function cannot be operated using power window main switch.	1. Power window main switch	1. Check power window main switch.

System Description

Power is supplied at all times
- through 40A fusible link (letter [f], located in the fuse and fusible link box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

Ground is supplied to smart entrance control unit terminal ⑩ through body grounds (M4) and (M77).

INPUT

When the door lock & unlock switch LH is in LOCKED position, ground signal is supplied
- to smart entrance control unit terminal ⑱
- through door lock & unlock switch LH terminal ⑭
- to door lock & unlock switch LH terminal ③
- through body grounds (M4) and (M77).

When the door lock & unlock switch RH is in LOCKED position, ground signal is supplied
- to smart entrance control unit terminal ⑱
- through door lock & unlock switch RH terminal ①
- to door lock & unlock switch RH terminal ②
- through body grounds (M4) and (M66).

When the door lock & unlock switch LH is in UNLOCKED position, ground signal is supplied
- to smart entrance control unit terminal ⑲
- through door lock & unlock switch LH terminal ⑦
- to door lock & unlock switch LH terminal ③
- through body grounds (M4) and (M77).

When the door lock & unlock switch RH is in UNLOCKED position, ground signal is supplied
- to smart entrance control unit terminal ⑲
- through door lock & unlock switch RH terminal ③
- to door lock & unlock switch RH terminal ②
- through body grounds (M4) and (M66).

OUTPUT

Unlock

Ground is supplied
- to front door lock actuator LH terminal ③
- to front door lock actuator RH terminal ③
- to rear door lock actuator LH terminal ③
- to rear door lock actuator RH terminal ③
- to back door lock actuator terminal ②
- through smart entrance control unit terminal ④.

FRONT DOOR LH

Power is supplied
- to front door lock actuator LH terminal ①
- through smart entrance control unit terminal ③.

FRONT DOOR RH

Power is supplied
- to front door lock actuator RH terminal ①,
- through smart entrance control unit terminal ②.

REAR DOOR LH

Power is supplied
- to rear door lock actuator LH terminal ①
- through smart entrance control unit terminal ②.

REAR DOOR RH

Power is supplied
- to rear door lock actuator RH terminal ①
- through smart entrance control unit terminal ②.

BACK DOOR

Power is supplied
- to back door lock actuator terminal ①
- through smart entrance control unit terminal ②.

System Description (Cont'd)

Then, the doors are unlocked.

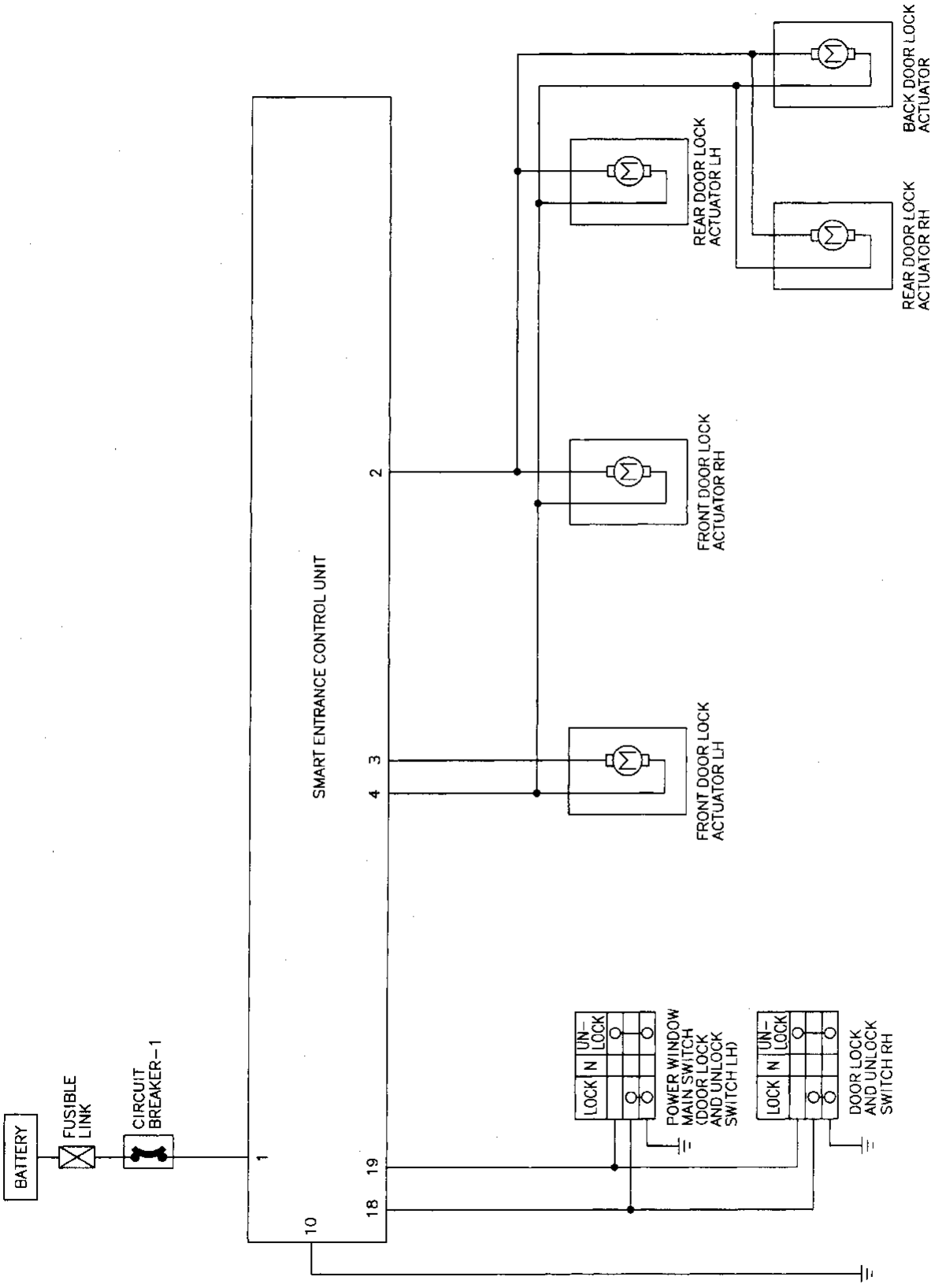
Lock

Ground is supplied
- to front door lock actuator LH terminal ①
- through smart entrance control unit terminal ③, and
- to front door lock actuator RH terminal ①
- to rear door lock actuator LH terminal ①
- to rear door lock actuator RH terminal ①
- to back door lock actuator ①
- through smart entrance control unit terminal ②.

Power is supplied
- to front door lock actuator LH terminal ③,
- to front door lock actuator RH terminal ③,
- to rear door lock actuator LH terminal ③
- to rear door lock actuator RH terminal ③
- to back door lock terminal ②
- through smart entrance control unit terminal ④.

Then, the doors are locked.

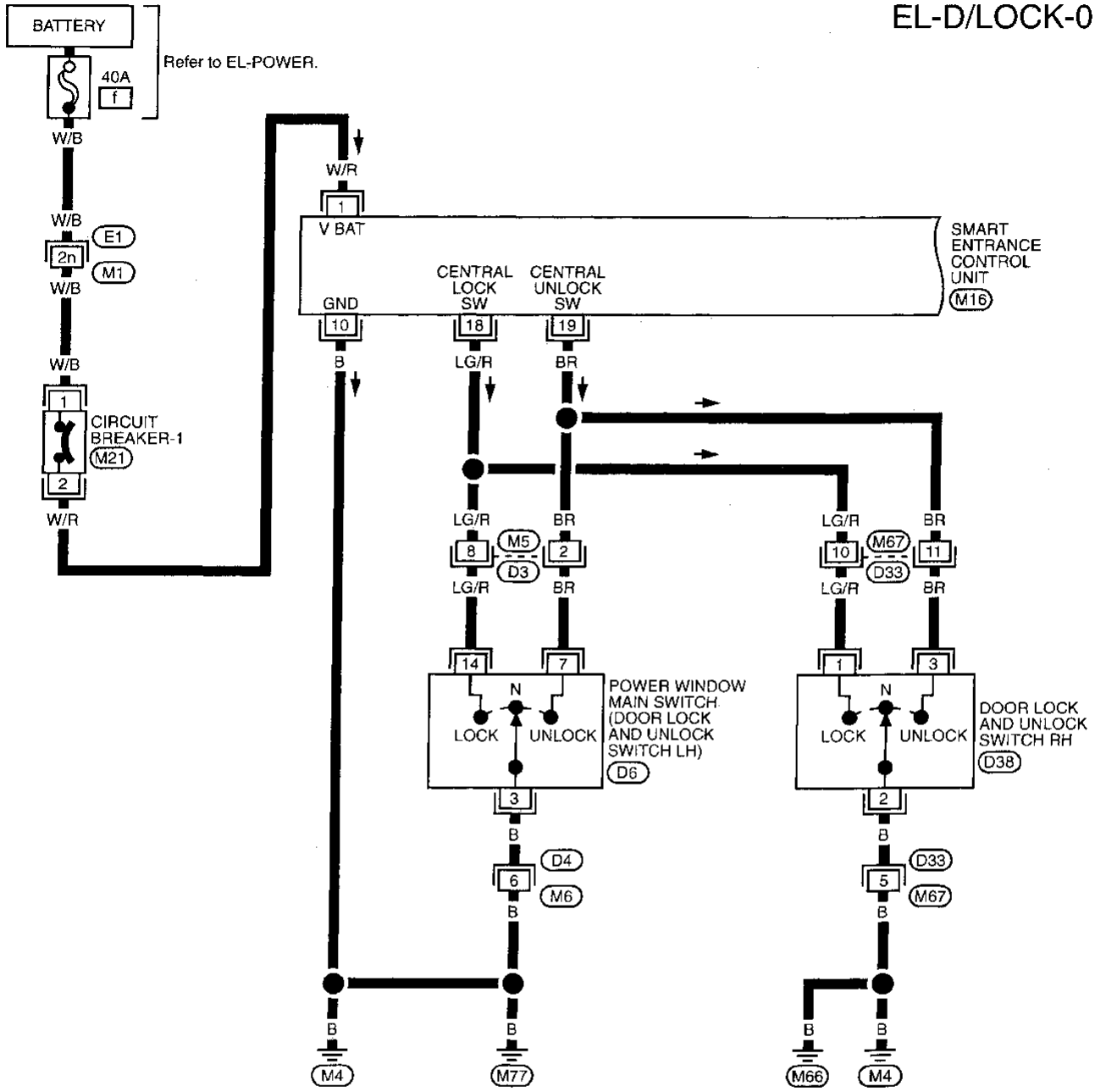
Schematic

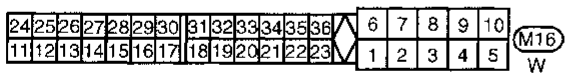


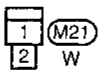
MEL804G

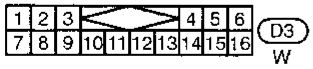
Wiring Diagram — D/LOCK —

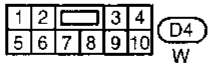
EL-D/LOCK-01

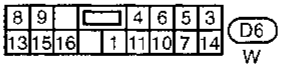


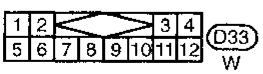


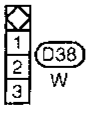










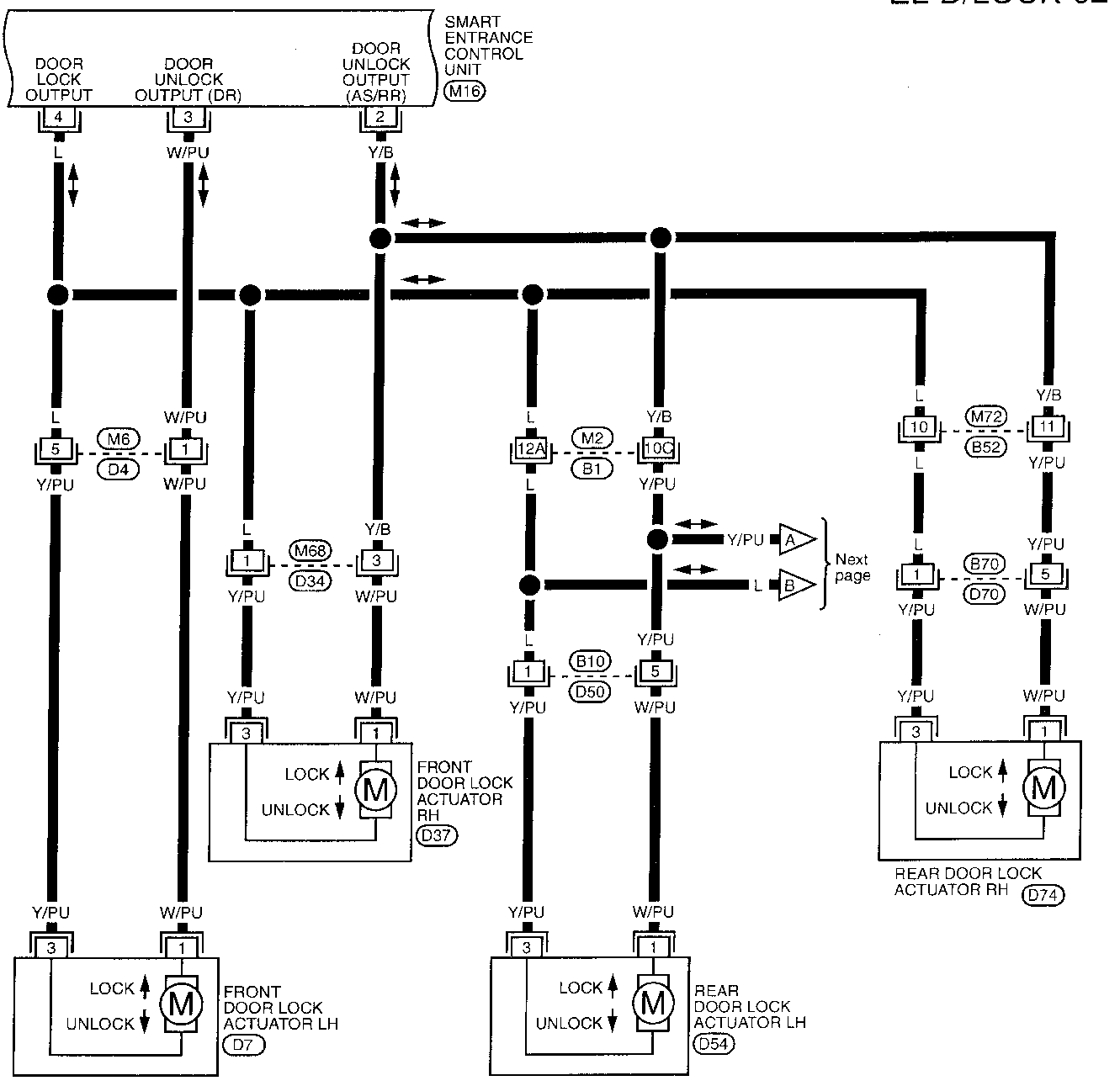


Refer to last page (Foldout page).
E1 , M1

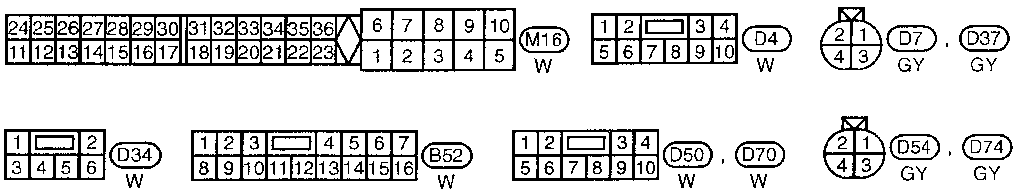
MEL805G

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02



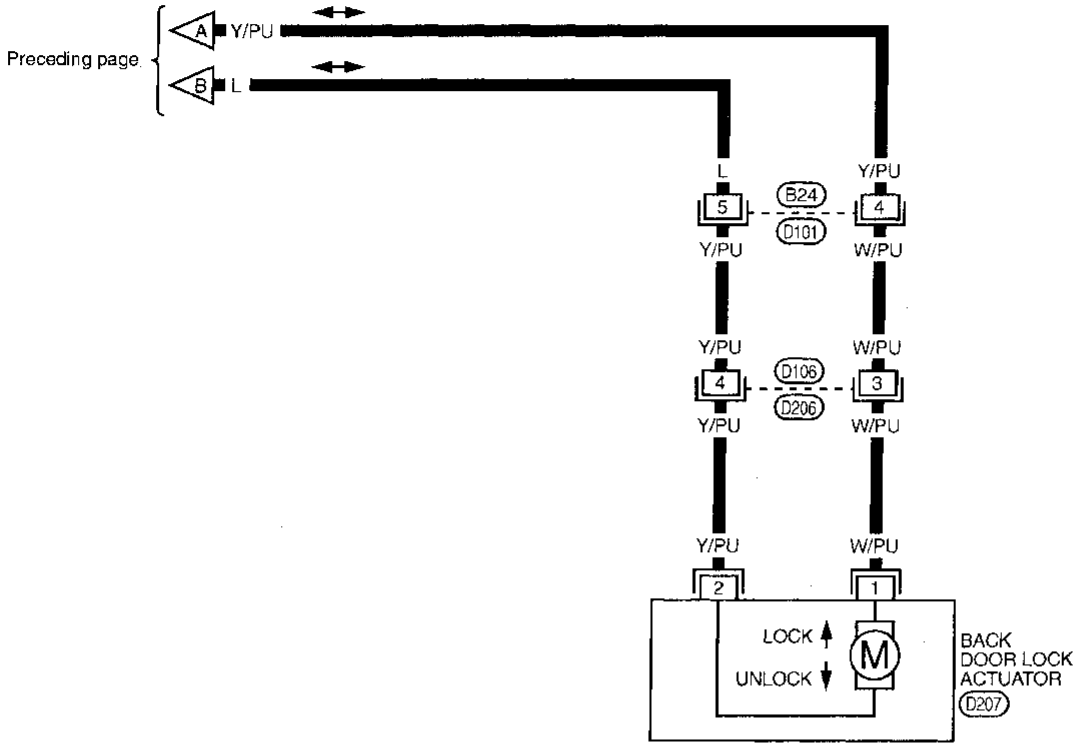
Refer to last page (Foldout page).
M2 , B1

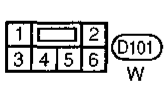


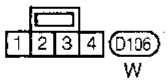
MEL806G

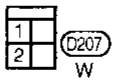
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-03







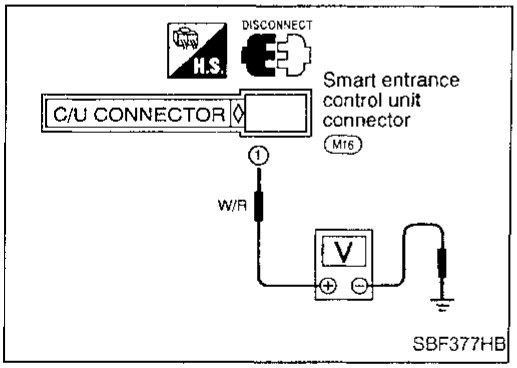


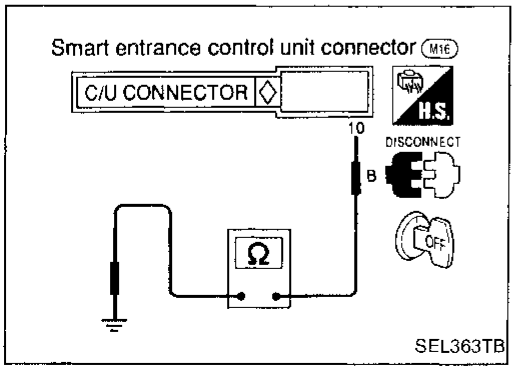
MEL064H

Trouble Diagnoses

SYMPTOM CHART

REFERENCE PAGE	EL-196	EL-197	EL-198
SYMPTOM	Main power supply and ground circuit check	Diagnostic procedure 1 (Door lock/unlock switch check)	Diagnostic procedure 2 (Door lock actuator check)
None of the doors lock/unlock when operating both door lock/unlock switch.	X		X
One or more doors are not locked and/or unlocked.			X
LH or RH lock/unlock switch does not operate.		X	





MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply for smart entrance control unit (SECU)

Terminal		Ignition switch		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage

Ground circuit for smart entrance control unit

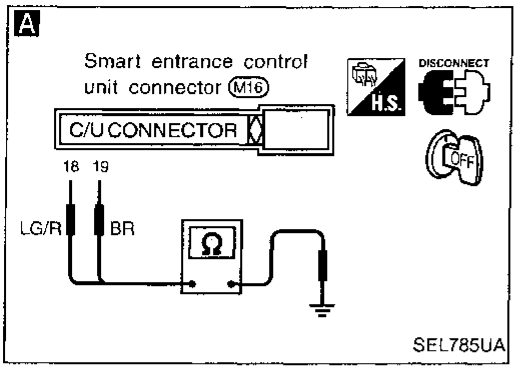
Terminals	Continuity
⑩ - Ground	Yes

Trouble Diagnoses (Cont'd)

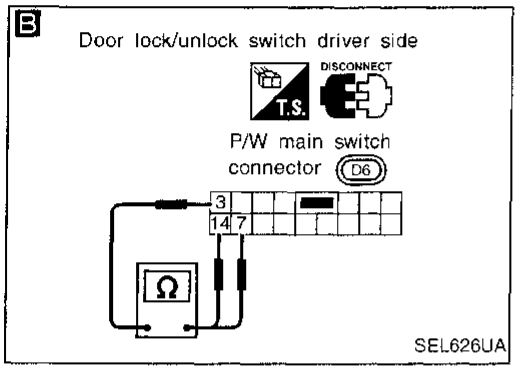
DIAGNOSTIC PROCEDURE 1

(Door lock/unlock switch check)

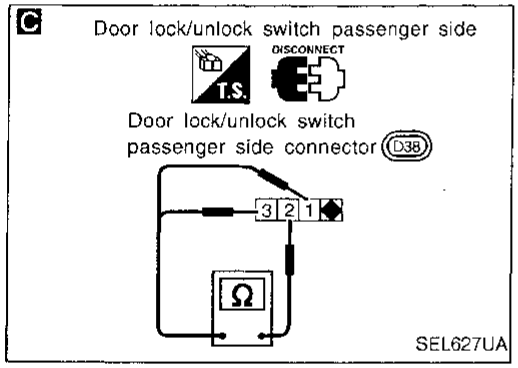
A



B



C



A

CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL.

1. Disconnect control unit connector.
2. Check continuity between control unit terminal ⑱ or ⑲ and ground.

Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
⑱ - ground	Lock	Yes
	N and Unlock	No
⑲ - ground	Unlock	Yes
	N and Lock	No

Refer to wiring diagram in EL-193.

OK → Door lock/unlock switch is OK.

NG ↓

B C

CHECK DOOR LOCK/UNLOCK SWITCH.

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

B Power window main switch (Door lock/unlock switch driver side)

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

C Door lock/unlock switch passenger side

Condition	Terminals 1	2	3
Lock	○	○	
N	No continuity		
Unlock		○	○

NG → Replace door lock/unlock switch.

OK ↓

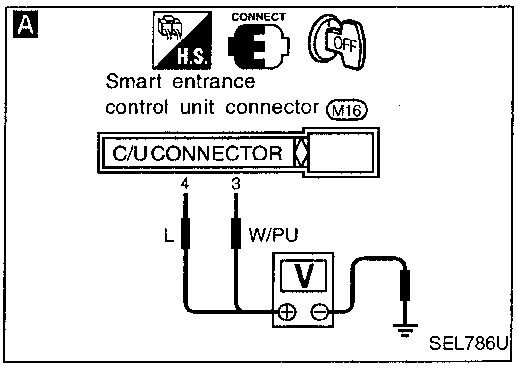
Check the following.

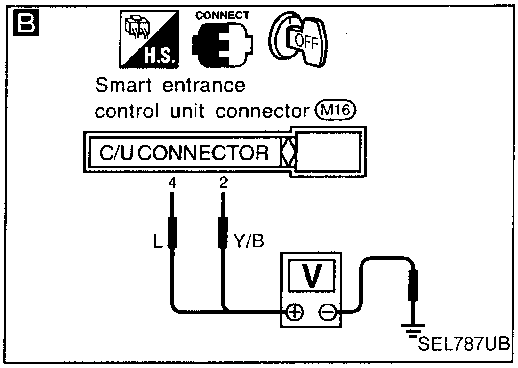
- Ground circuit for door lock/unlock switch
- Harness for open or short between door lock/unlock switch and control unit connector

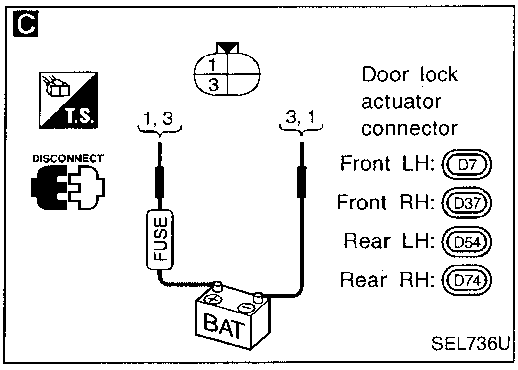
Trouble Diagnoses (Cont'd)

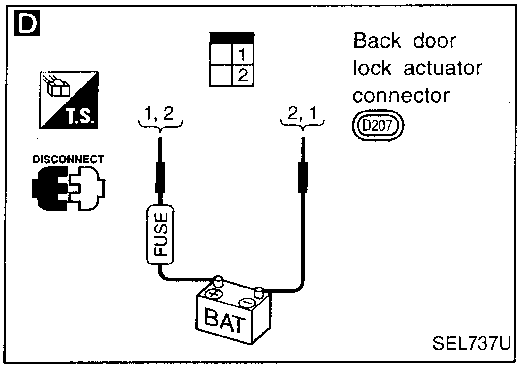
DIAGNOSTIC PROCEDURE 2

(Door lock actuator check)









A B

CHECK DOOR LOCK ACTUATOR CIRCUIT.

Check voltage for door lock actuator.

A Door lock actuator front LH

Door lock/unlock switch condition	Terminals ⊕	Terminals ⊖	Voltage (V)
Lock	④	ground	Approx. 12
Unlock	③	ground	

B Door lock actuator front RH, rear and back

Door lock/unlock switch condition	Terminals ⊕	Terminals ⊖	Voltage (V)
Lock	④	ground	Approx. 12
Unlock	②	ground	

Refer to wiring diagram in EL-194.

NG → Replace smart entrance control unit. (Before replacing control unit, perform Diagnostic procedure 1.)

OK ↓

C D

CHECK DOOR LOCK ACTUATOR.

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

C

Door lock actuator operation	Terminals ⊕	Terminals ⊖
Unlocked → Locked	③	①
Locked → Unlocked	①	③

D

Back door lock actuator operation	Terminals ⊕	Terminals ⊖
Unlocked → Locked	②	①
Locked → Unlocked	①	②

NG → Replace door lock actuator.

OK ↓

Check harness for open or short between control unit connector and door lock actuator.

System Description

Power is supplied at all times
- to smart entrance control unit terminal ①
- through 40A fusible link (letter [f], located in the fuse and fusible link box).

Power is supplied at all times
- to interior lamp terminal ①
- through 7.5A fuse [No. [15], located in the fuse block (J/B)].

Power is supplied at all times
- to key switch terminal ①
- through 7.5A fuse [No. [24], located in the fuse block (J/B)].

Power is supplied at all times
- to multi-remote control relays-1 and 2 terminal ①
- through 15A fuse [No. [14], located in the fuse block (J/B)].

Terminal ⑩ of the smart entrance control unit is grounded through body grounds (M4) and (M77).

INPUTS

When the key switch is ON (ignition key is inserted in key cylinder), power is supplied
- through key switch terminal ②
- to smart entrance control unit terminal ㉔.

When the front door switch LH is OPEN, ground is supplied
- to smart entrance control unit terminal ⑮
- through front door switch LH terminal ①
- to front door switch LH terminal ②
- through body grounds (B11), (B22) and (D210).

When the each door switch is OPEN, ground is supplied
- to smart entrance control unit terminal ⑯
- through each door switch body ground or (B11), (B22) and (D210).

When the front door lock actuator LH (door unlock sensor) is UNLOCKED, ground is supplied
- to smart entrance control unit terminal ⑫
- through door lock actuator LH (door unlock sensor) terminal ④
- to door lock actuator LH (door unlock sensor) terminal ②
- through body grounds (M4) and (M77).

When the front door lock actuator RH (door unlock sensor) is UNLOCKED, ground is supplied to smart entrance control unit terminal ⑬ in the same manner as front door lock actuator LH.

When the rear door lock actuator (door unlock sensor) is UNLOCKED, ground is supplied to smart entrance control unit terminal ⑭ in the same manner as other door lock actuator.

Remote controller signal input
- through antenna
- to smart entrance control unit terminal ㊲.

The multi-remote control system controls operation of the
- power door lock
- interior lamp
- panic alarm
- hazard lamp
- ID code entry.

OPERATED PROCEDURE

Power door lock operation

When the following input signals are both supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switch CLOSED (when all the doors are closed);

smart entrance control unit locks all the doors with input of LOCK signal from remote controller.

Smart entrance control unit unlocks the doors with input of UNLOCK signal from remote controller.

Refer to "Power Door Lock" (EL-190).

System Description (Cont'd)

Interior lamp operation

When the following input signals are both supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switch CLOSED (when all the doors are closed);

multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller.
For detailed description, refer to "Interior, Spot and Luggage Room Lamps" (EL-78).

Panic alarm operation

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

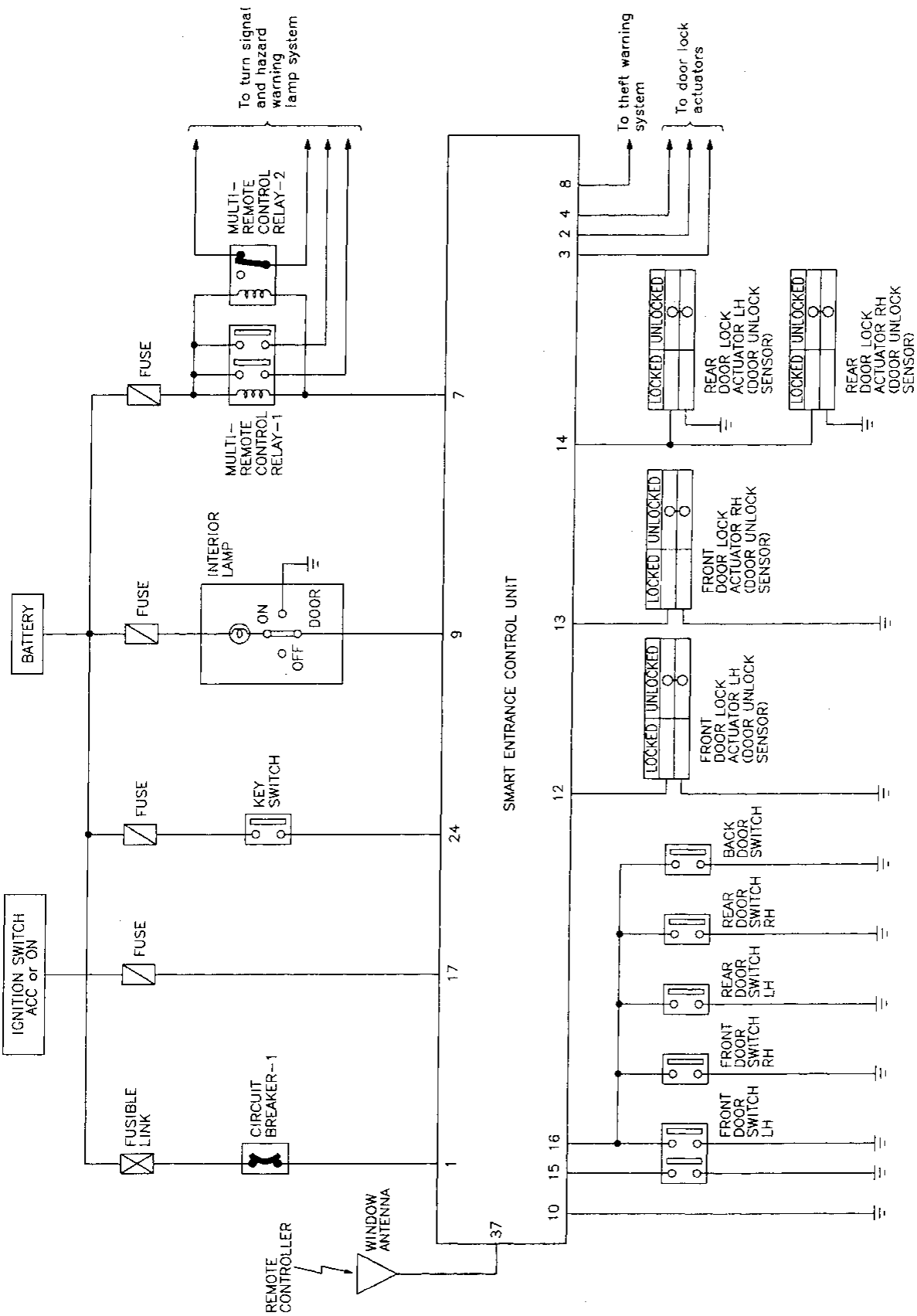
Hazard lamp operation

When the following input signals are all supplied:
- key switch OFF (when ignition key is not inserted in key cylinder);
- door switch CLOSED (when all the doors are closed);
- door lock actuator (door unlock sensor) LOCKED (when all the doors are locked);

multi-remote control system outputs the following ground signals with input of LOCK signal from remote controller:
- to multi-remote control relays-1 and 2 terminal ② ;
- through smart entrance control unit terminal ⑦ .

As a result, multi-remote control relay-1 and -2 are energized, and hazard warning lamps flash on and off.
For detailed description, refer to "Turn Signal and Hazard Warning Lamps" (EL-64).

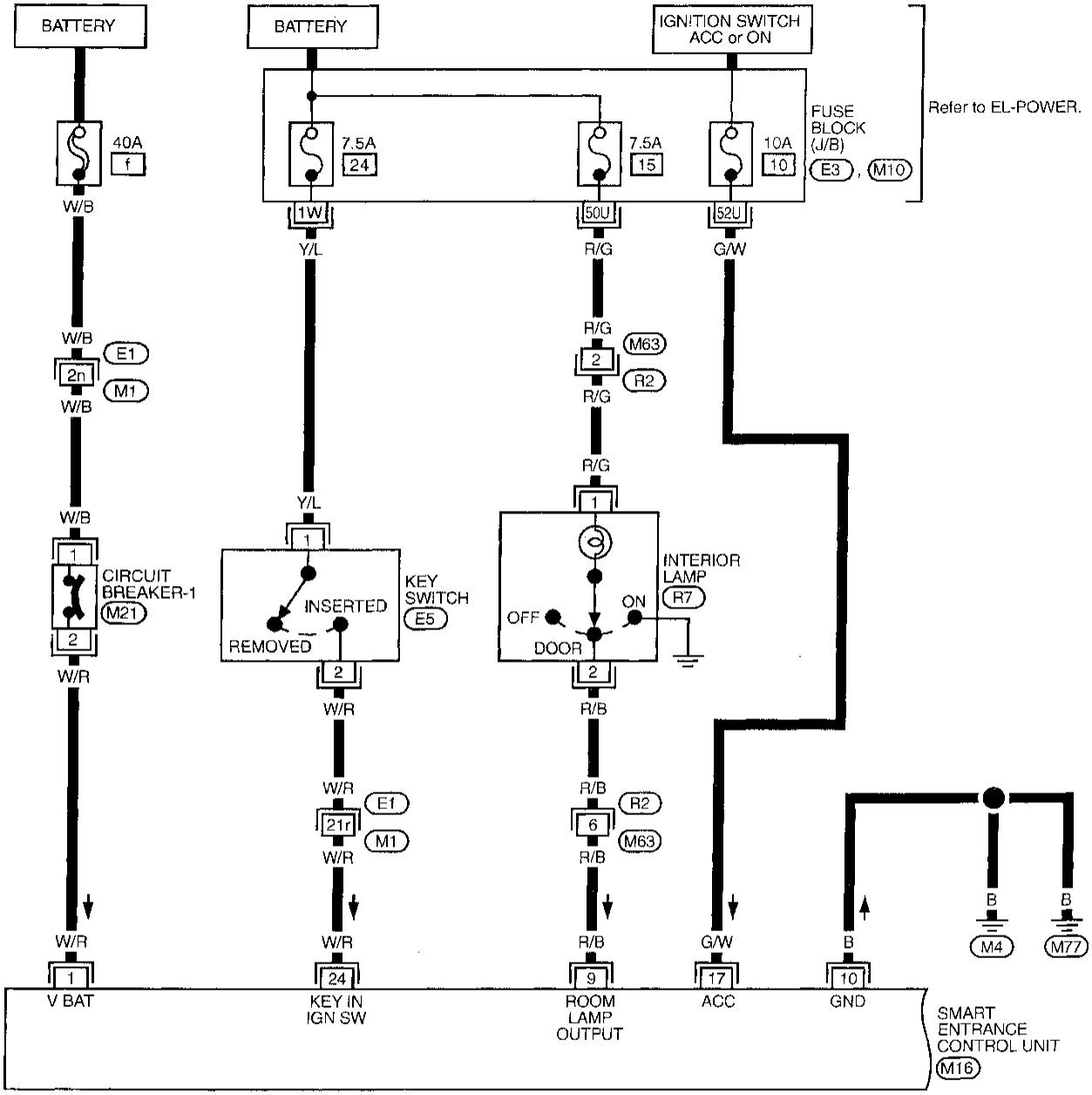
Schematic

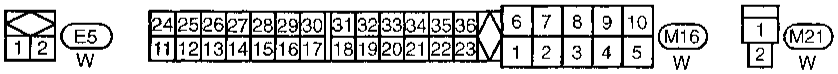


MEL627F

Wiring Diagram — MULTI —

EL-MULTI-01



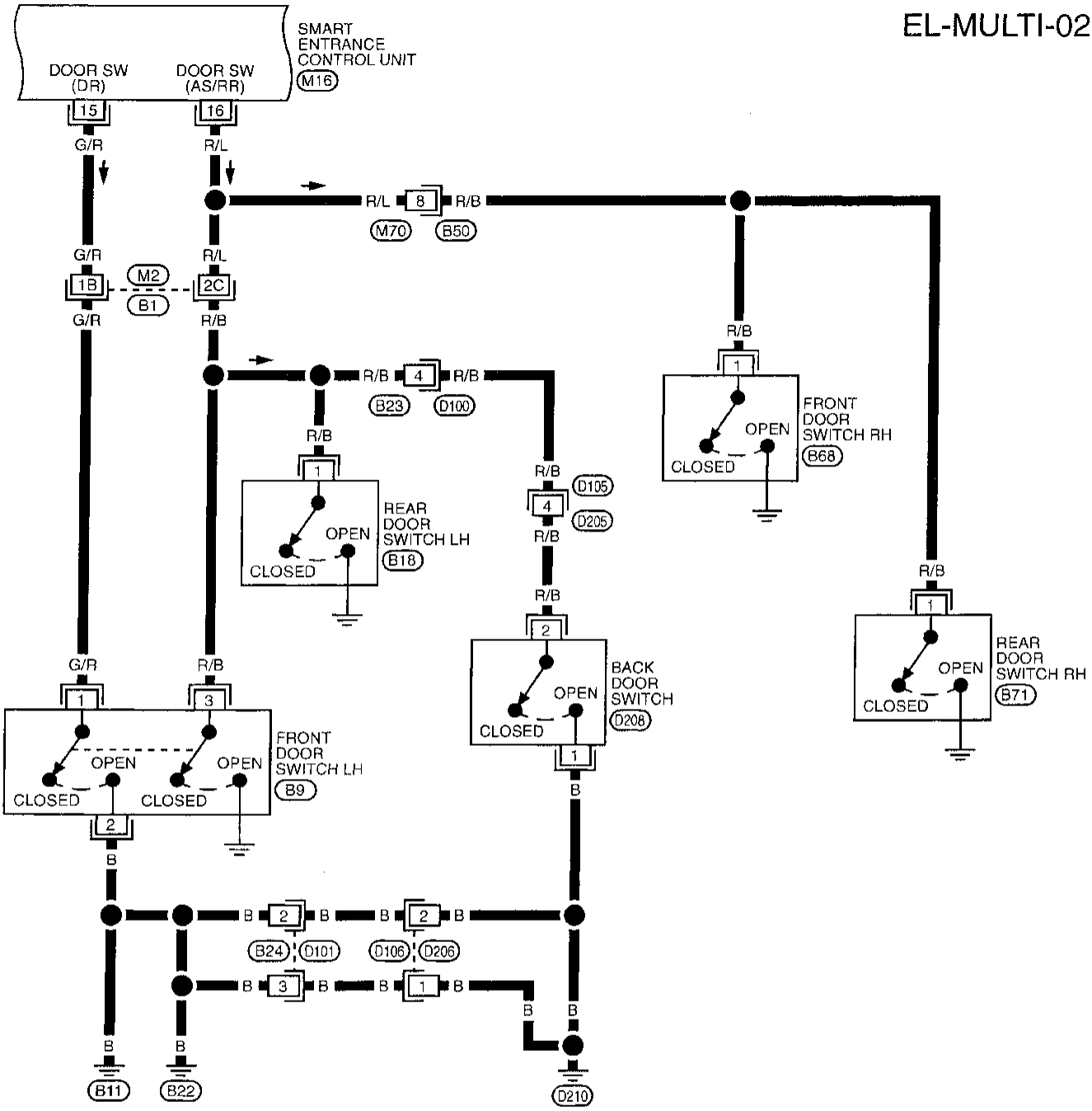


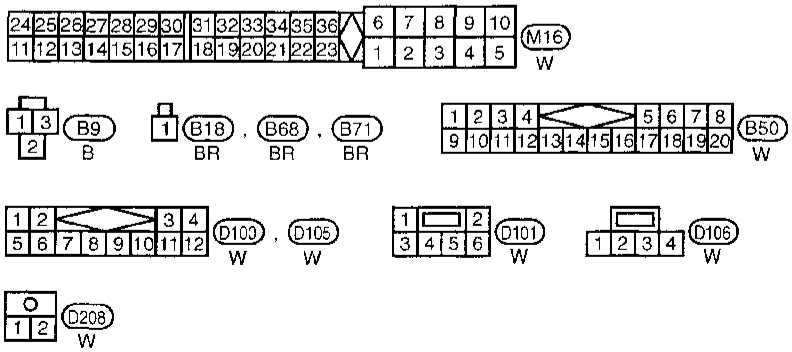
Refer to last page (Foldout page).
E1 , M1
E3
M10

MEL808G

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02



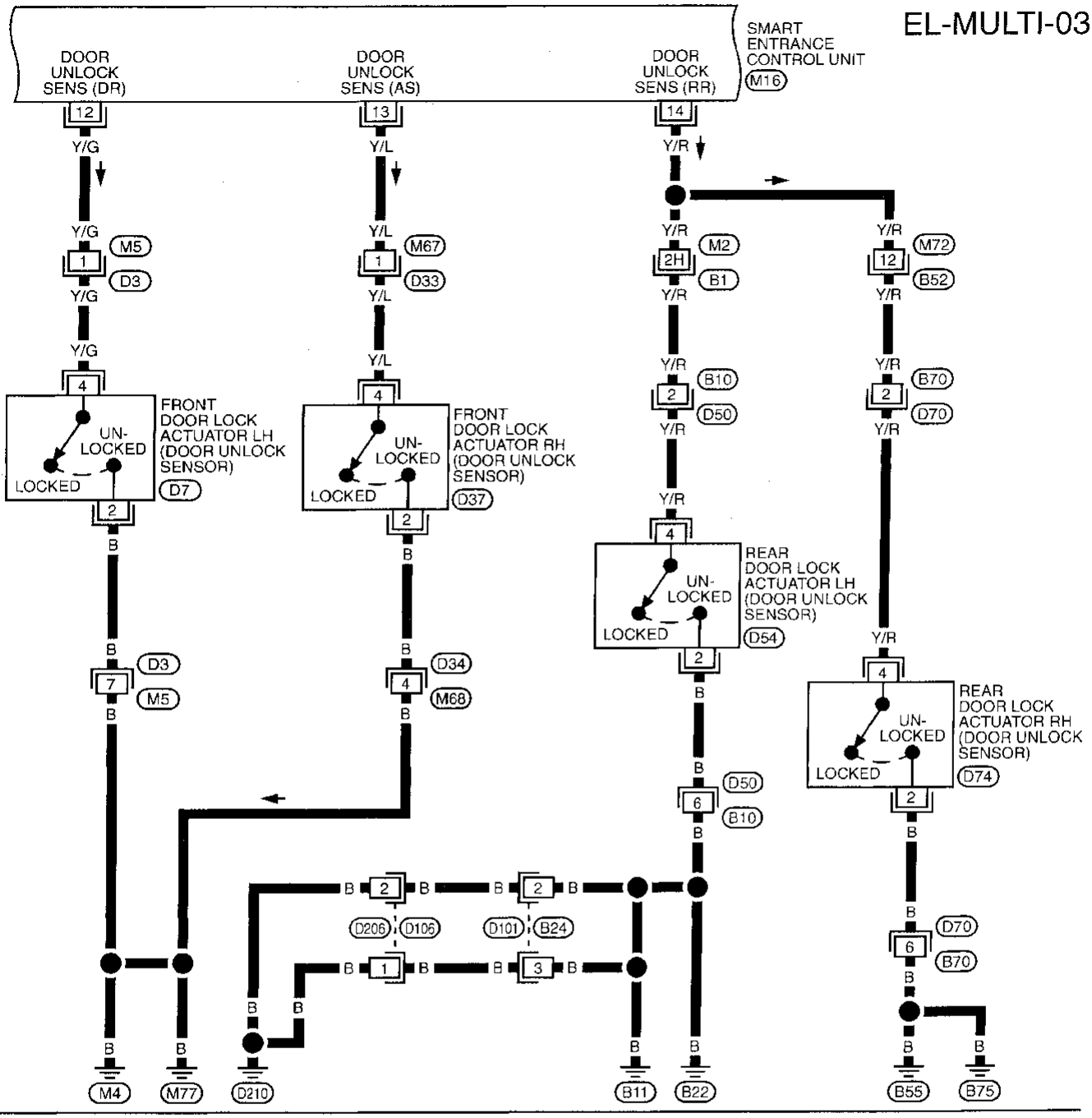


Refer to last page (Foldout page).
M2 , B1

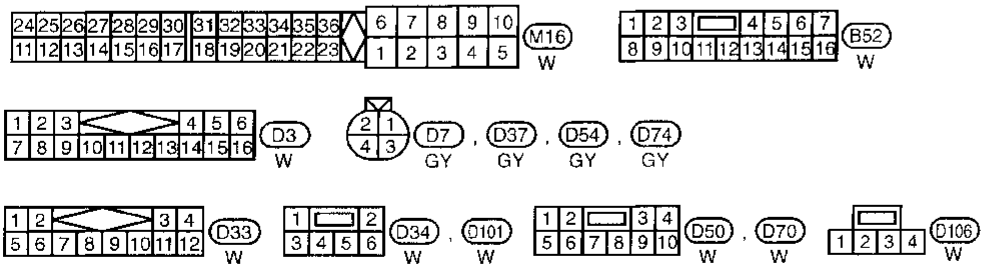
MEL809G

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03



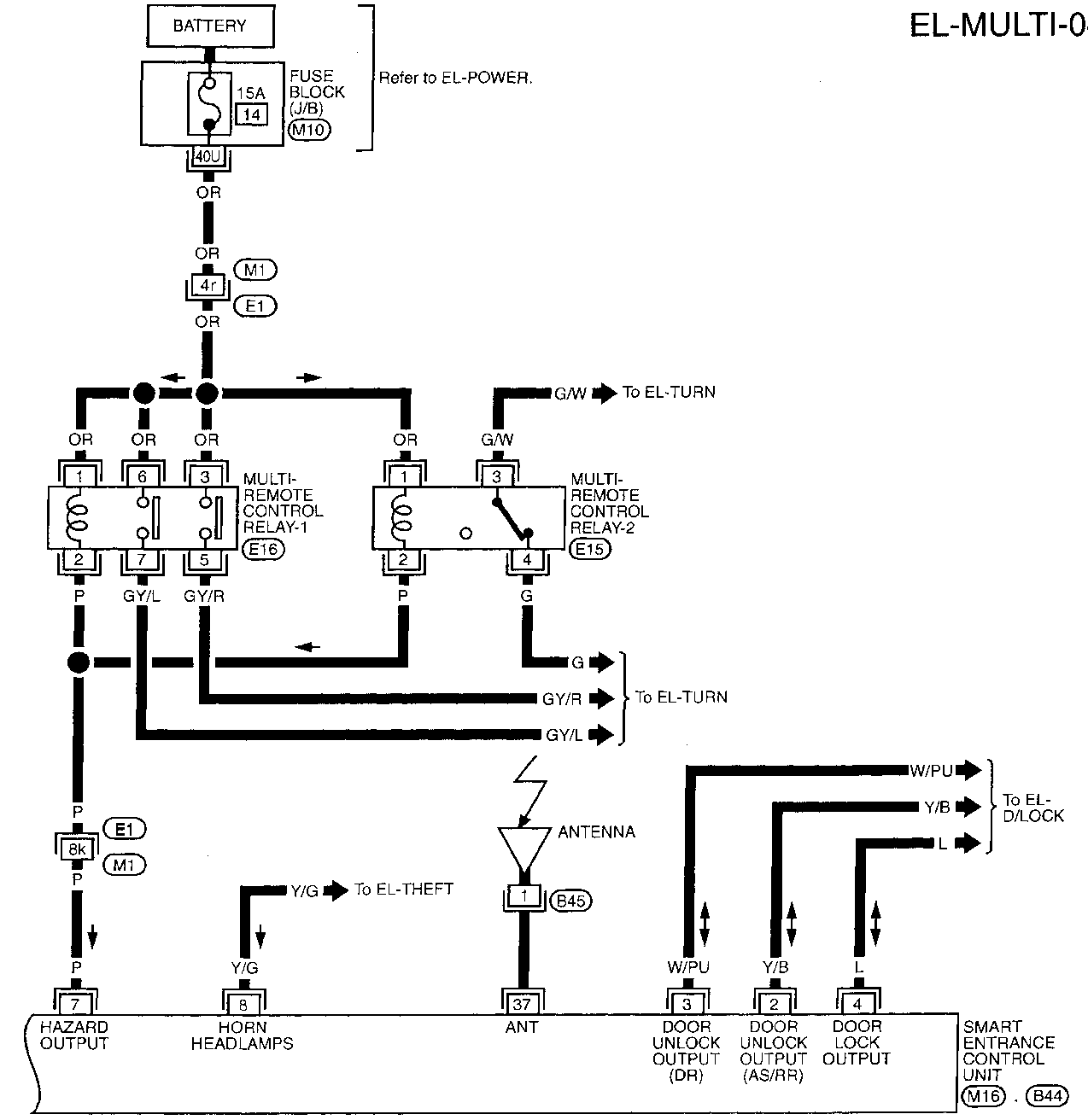
Refer to last page (Foldout page).
M2 , B1



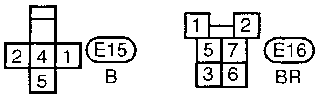
MEL810G

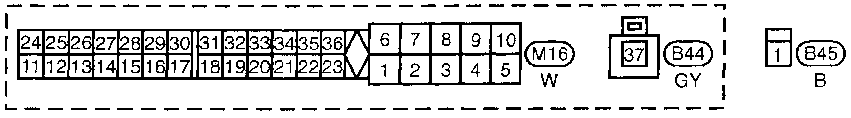
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04



Refer to last page (Foldout page).
E1 . M1
M10



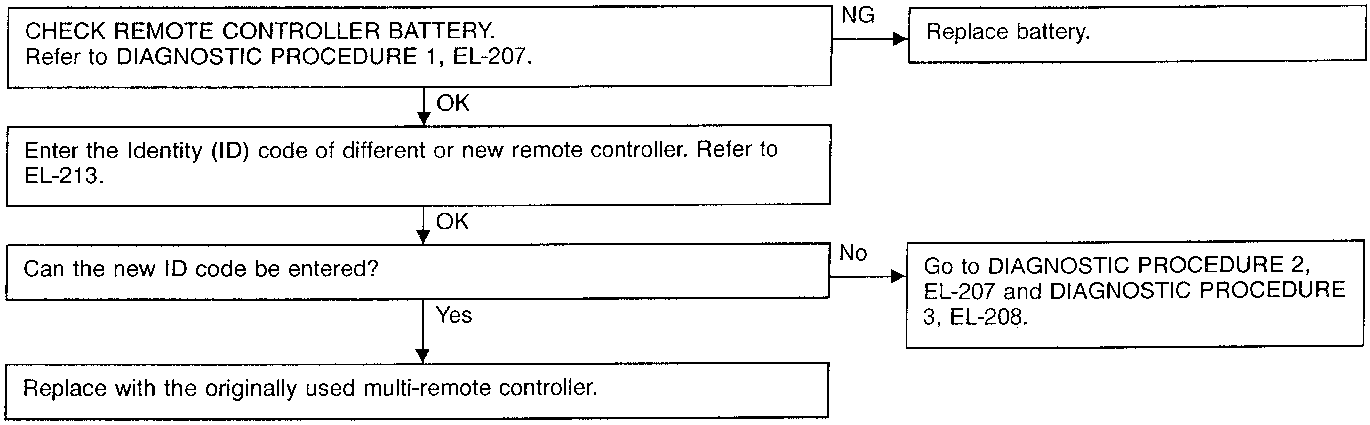


MEL811G

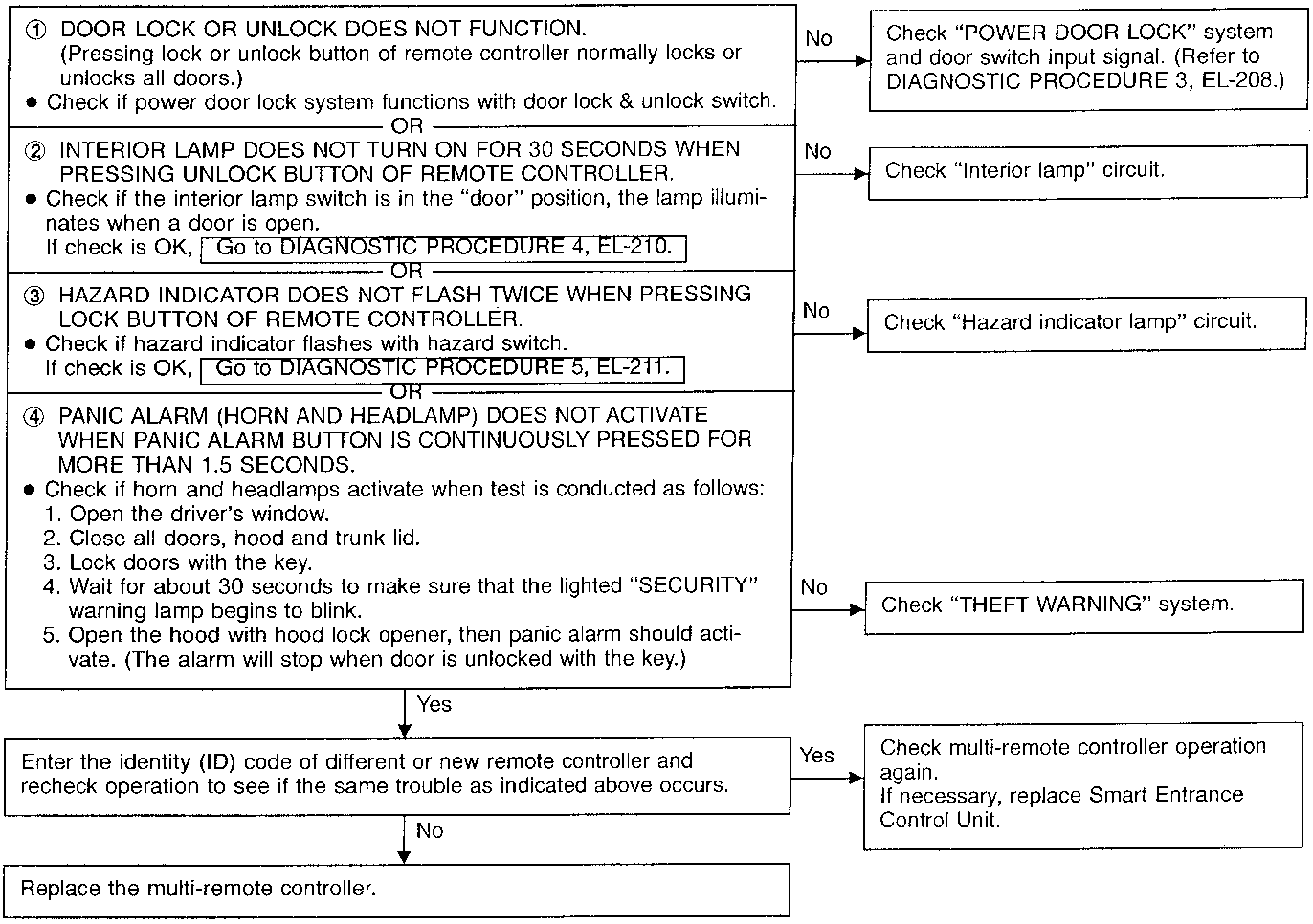
Trouble Diagnoses

TROUBLE SYMPTOM

- All functions of remote control system do not operate.



- Some functions of multi-remote controller do not operate.

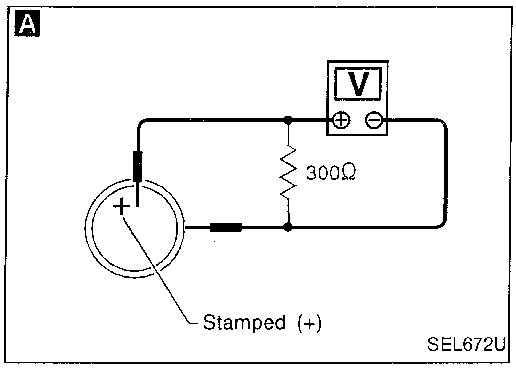


Note: • The unlock operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.
• The lock operation of multi-remote control system does not activate with the key inserted in the ignition key cylinder, or if one of the doors is opened.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Check remote controller battery.



A

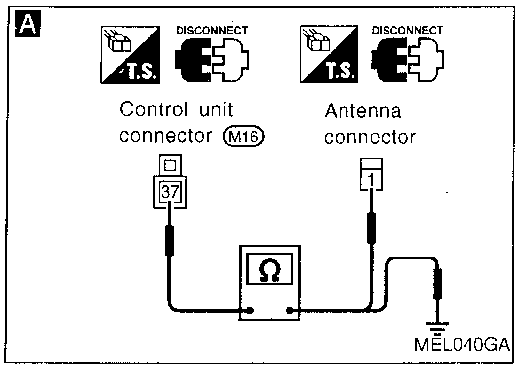
CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

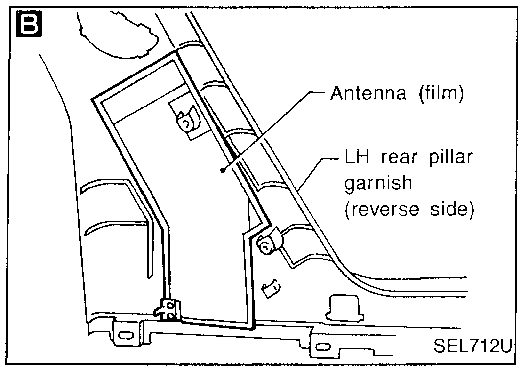
Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

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

DIAGNOSTIC PROCEDURE 2

Check antenna of multi remote control system.





A

CHECK ANTENNA FEEDER CABLE.
1) Disconnect feeder cable connector from control unit.
2) Remove LH rear pillar garnish and disconnect feeder cable connector from antenna.
3) Check continuity between the feeder cable connectors.
Continuity should exist.
4) Check continuity between the feeder cable connector terminal and body ground.
Continuity should not exist.

Refer to wiring diagram in EL-205.

NG → Replace feeder cable.

OK ↓

B

CHECK ANTENNA.
1) Remove rear pillar garnish and disconnect feeder cable connector from antenna.
2) Visually check film antenna.

NG → Replace antenna.

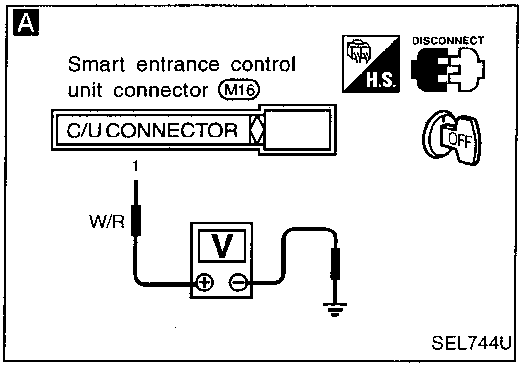
OK ↓

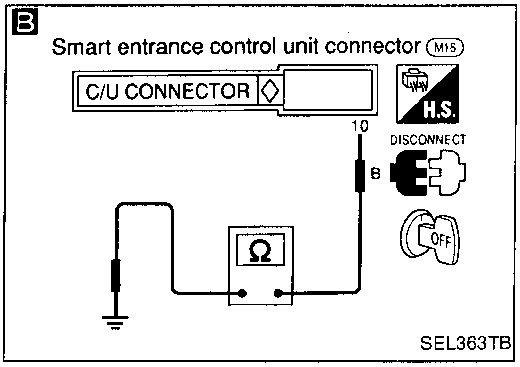
Antenna of multi-remote control is OK.

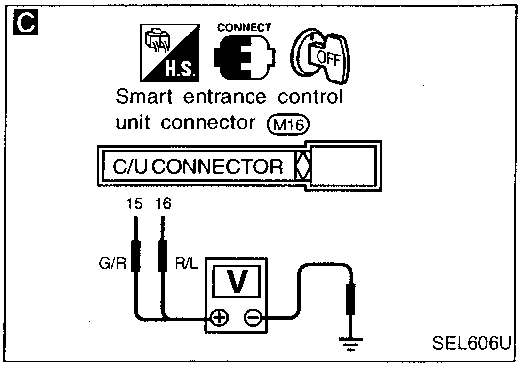
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

All remote controls do not function even if remote controller is operated properly.







A

CHECK MAIN POWER SUPPLY CIRCUIT FOR CONTROL UNIT.
1) Disconnect connector from control unit.
2) Check voltage between control unit terminal ① and ground.
Battery voltage should exist.

Refer to wiring diagram in EL-202.

NG → Check the following.
- 40A fusible link (Letter f, located in fuse and fusible link box)
- M21 circuit breaker
- Harness for open or short between control unit and circuit breaker

OK ↓

B

CHECK GROUND CIRCUIT FOR CONTROL UNIT.
Check continuity between terminal ⑩ and ground.
Continuity should exist.

Refer to wiring diagram in EL-202.

NG → Check ground harness.

OK ↓

C

CHECK DOOR SWITCH CIRCUIT.
Check voltage between control unit terminal ⑮ and ground, ⑯ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Driver side door switch	⑮	ground	Open	0
			Close	Approx. 12
Other door switches	⑯	ground	Open	0
			Close	Approx. 12

Refer to wiring diagram in EL-203.

NG → Check the following.
- Door switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-212).
- Door switch ground circuit (Driver side, back door) or door switch ground condition (Other door)
- Harness for open or short between control unit and door switch

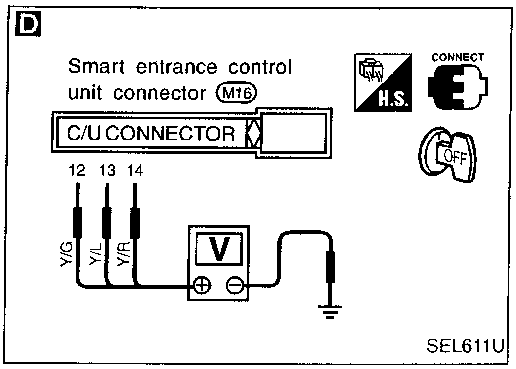
OK ↓

Ⓐ

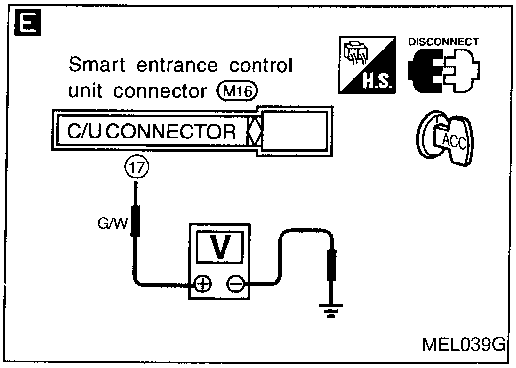
(Go to next page.)

Trouble Diagnoses (Cont'd)

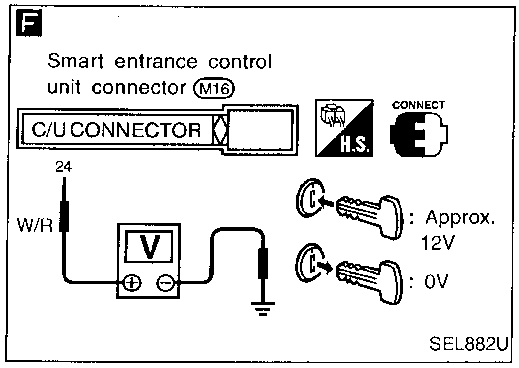
D



E



F



Ⓐ

D

CHECK UNLOCK SENSOR CIRCUIT.
Check voltage between control unit terminal ⑫ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door	⑫	ground	Unlock	0
			Lock	Approx. 12
Front RH door	⑬	ground	Unlock	0
			Lock	Approx. 12
Rear door	⑭	ground	Unlock	0
			Lock	Approx. 12

Refer to wiring diagram in EL-204.

No →
Check the following.
- Door unlock sensor
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-212).
- Door unlock sensor ground circuit
- Harness for open or short between control unit and unlock sensor

E

CHECK IGNITION SWITCH "ACC" CIRCUIT.
1) Disconnect control unit connector.
2) Check voltage between control unit terminal ⑰ and ground while ignition switch is "ACC".
   Battery voltage should exist.

Refer to wiring diagram in EL-202.

NG →
Check the following.
- 10A fuse [No. 10, located in fuse block (J/B)]
- Harness for open or short between control unit and fuse

OK ↓

F

CHECK KEY SWITCH INPUT SIGNAL.
Check voltage between control unit terminal ㉔ and ground.

Condition	Voltage [V]
Key is inserted.	Approx. 12
Key is withdrawn.	0

Refer to wiring diagram in EL-202.

NG →
Check the following.
- 7.5A fuse [No. 24, located in fuse block (J/B)]
- Key switch
  Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-212).
- Harness for open or short between key switch and fuse
- Harness for open or short between control unit and key switch

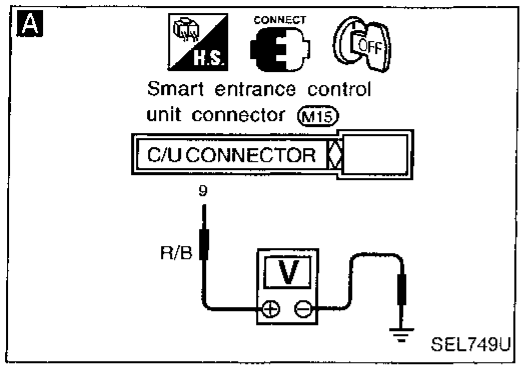
OK ↓

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

Interior lamp does not turn on for 30 seconds when pressing unlock button of remote controller. Everything else functions.



A

CHECK INTERIOR LAMP CIRCUIT.
When interior lamp switch is "DOOR" position, check voltage across control unit terminal ⑨ and ground.
Does battery voltage exist?

Refer to wiring diagram in EL-202.

No → Repair harness between control unit and interior lamp.

Yes ↓

A

Push unlock button of remote controller and check voltage across control unit terminal ⑨ and ground.

Multi-remote controller button condition	Voltage (V)
Unlock button is pushed.	0
Unlock button is not pushed.	Battery voltage

No → Replace smart entrance control unit.

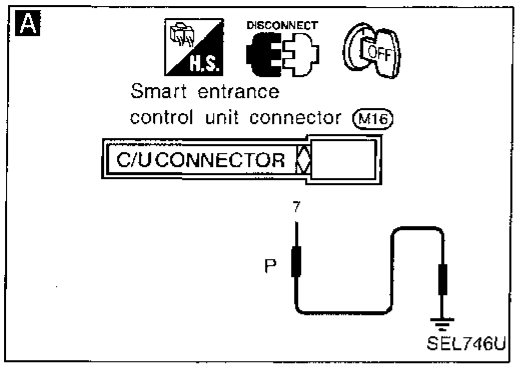
Yes ↓

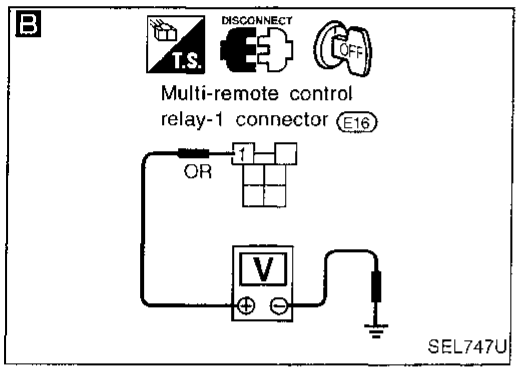
Check system again.

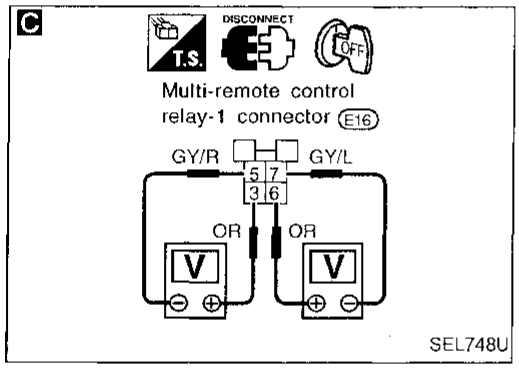
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

Hazard indicator does not flash twice when pressing lock button of remote controller. Everything else functions.







A

CHECK HAZARD INDICATOR OPERATION.
1. Disconnect control unit connector.
2. Apply ground to control unit terminal ⑦.
Does hazard indicator illuminate?

Refer to wiring diagram in EL-205.

Yes → Replace smart entrance control unit.

No ↓

Check multi-remote control relay-1. → NG → Replace.

OK ↓

B

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

NG → Check the following.
- 15A fuse [No. 14, located in fuse block (J/B)]
- Harness for open or short between multi-remote control relay-1 and fuse

OK ↓

C

CHECK MULTI-REMOTE CONTROL RELAY-1 CIRCUIT.
1. Disconnect multi-remote control relay-1 connector.
2. Check voltage between terminals ③ and ⑤.
Battery voltage should exist.
3. Check voltage between terminals ⑥ and ⑦.
Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

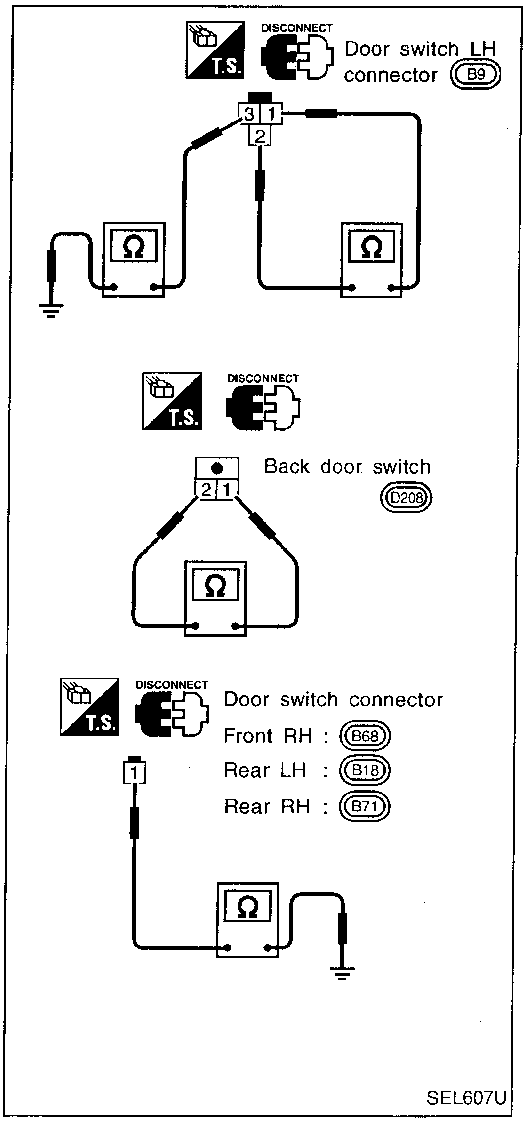
Check multi-remote control relay-2. → NG → Replace.

OK ↓

Check harness for open or short.

Trouble Diagnoses (Cont'd)

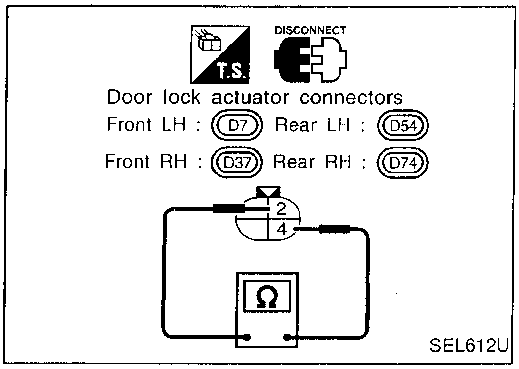
ELECTRICAL COMPONENTS INSPECTION



Door switches

Check continuity between terminals when door switch is pushed and released.

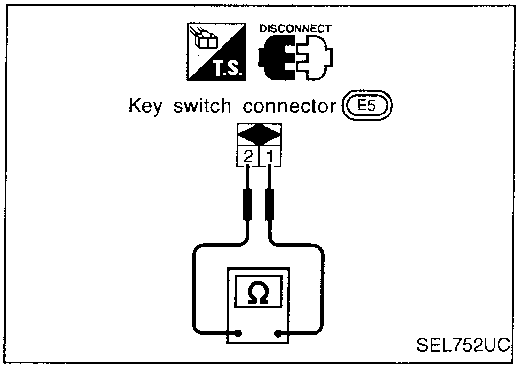
	Terminal No.	Condition	Continuity
Front LH door switch	① - ②, ③ - ground	Closed	No
		Open	Yes
Back door switch	② - ①	Closed	No
		Open	Yes
Other door switches	① - ground	Closed	No
		Open	Yes



Door lock actuator (Door unlock sensor)

Check continuity between terminals when door is locked and unlocked.

Terminal No.	Condition	Continuity
④ - ②	Door is locked.	No
	Door is unlocked.	Yes



Key switch (insert)

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

Terminal No.	Condition	Continuity
① - ②	Key is inserted.	Yes
	Key is removed.	No

Replacing Remote Controller or Control Unit

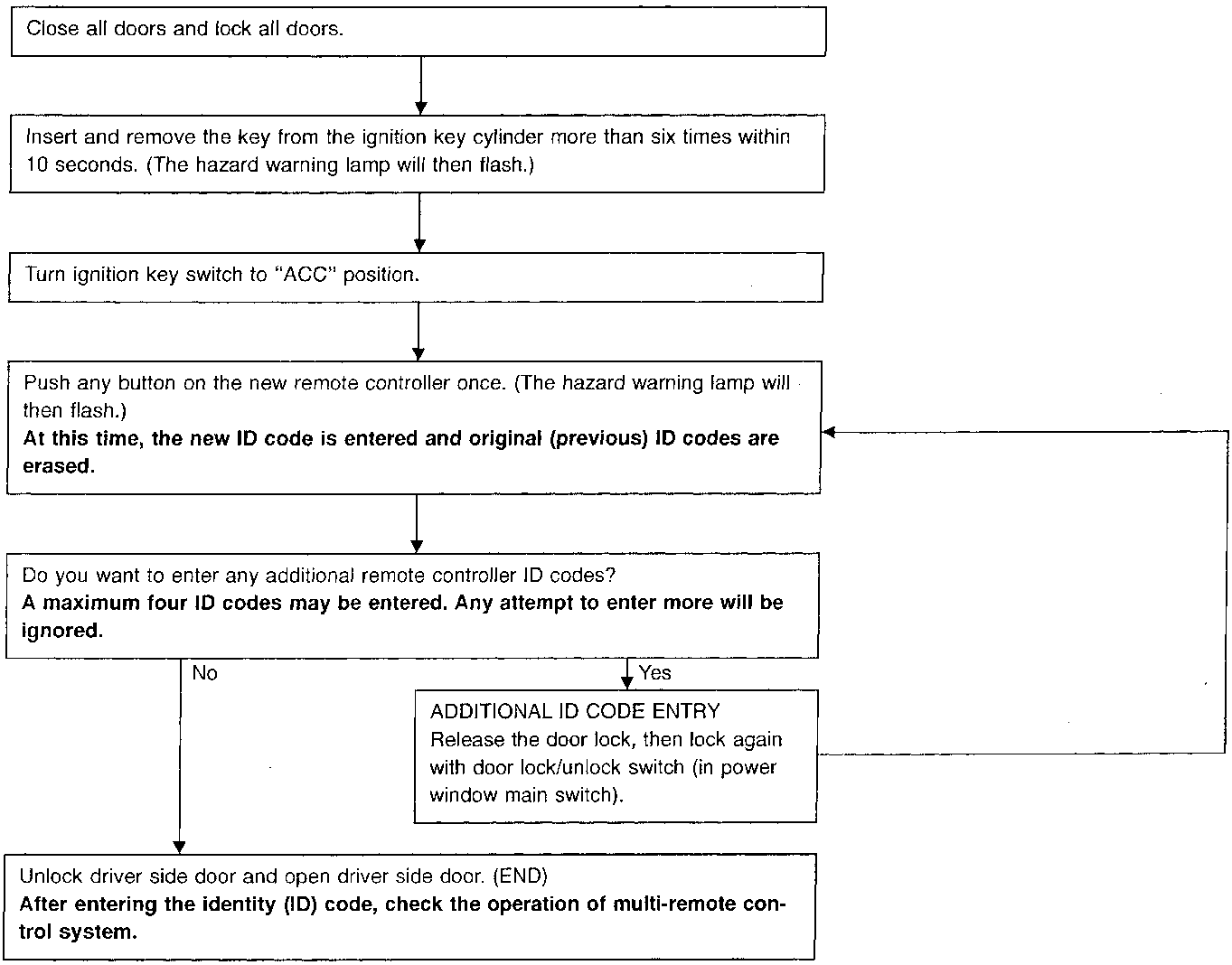
Enter the identity (ID) code manually when:

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

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

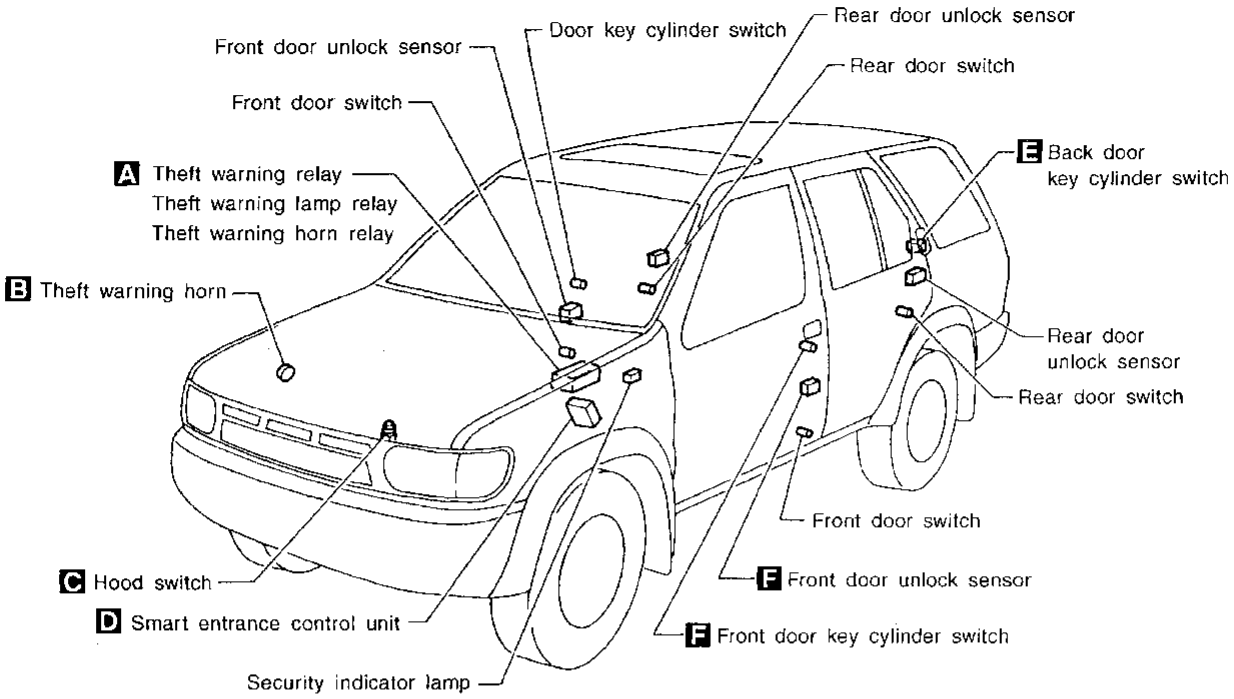
PROCEDURE

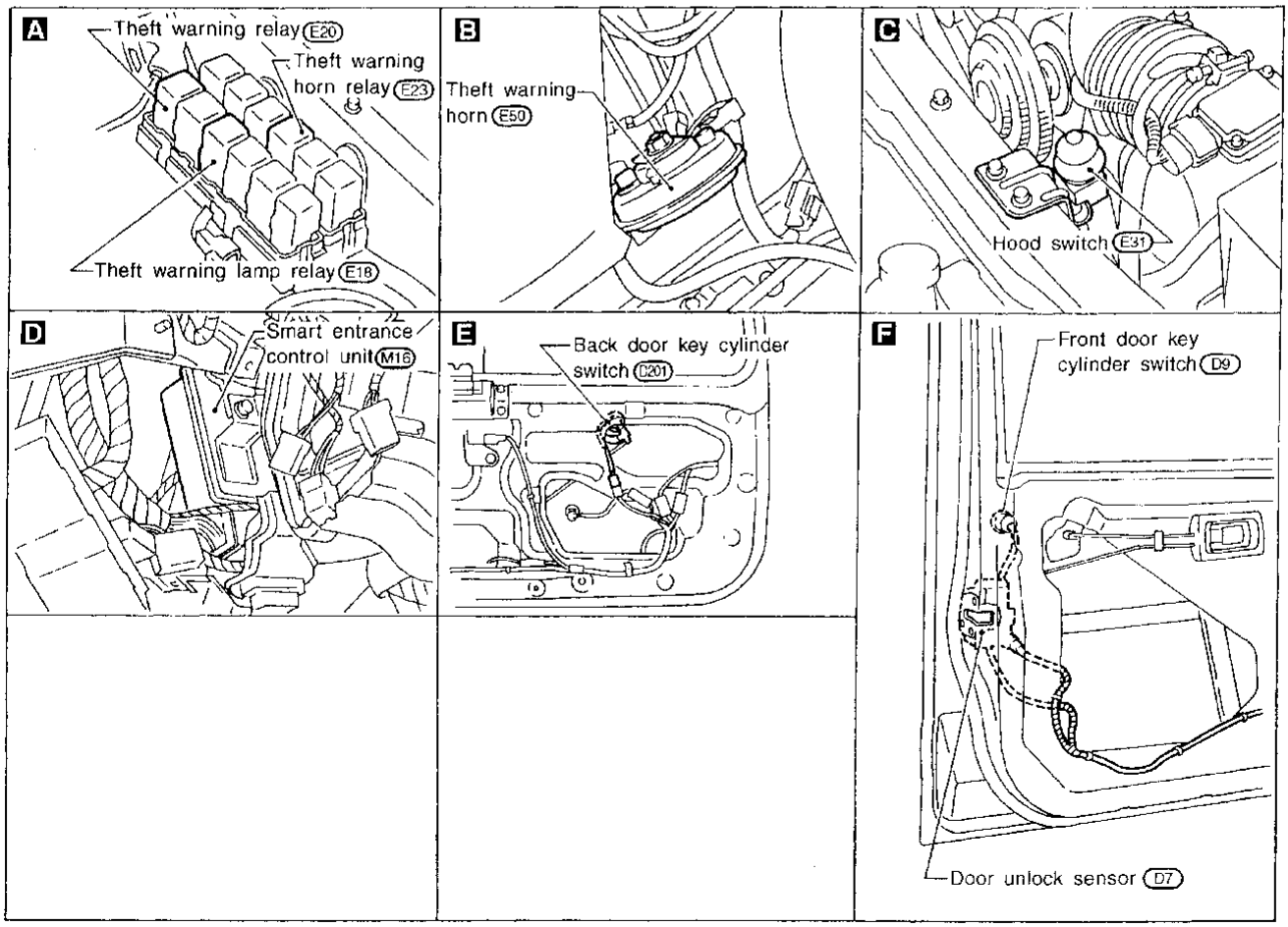


NOTE

- **If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.**
- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**

Component Parts and Harness Connector Location



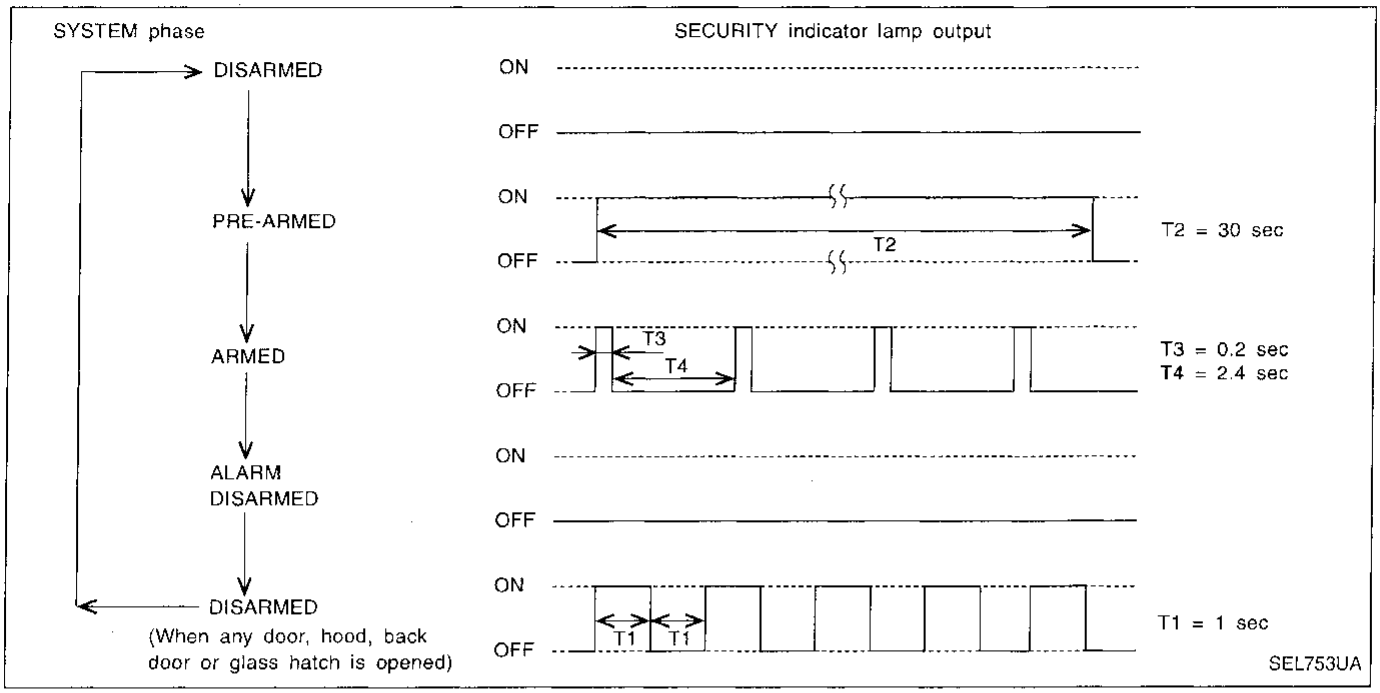


MEL852F

System Description

DESCRIPTION

1. Operation flow



2. Setting the theft warning system

Initial condition

(1) Close all doors.
(2) Close hood and glass hatch.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or glass hatch 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, glass hatch and all doors are closed and locked by key or multi-remote controller. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set). (The security indicator lamp blinks every 2.4 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 with the key or multi-remote controller.
(b) Open the glass hatch with the key. When the glass hatch is closed after opening the glass hatch with the key, the system returns to the armed phase.

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 the following operation (a) or (b) 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.)
(a) Engine hood, glass hatch or any door is opened before unlocking door with key or multi-remote controller.
(b) Door is unlocked without using key or multi-remote controller.

System Description (Cont'd)

Refer to Owner's Manual for theft warning system operating instructions.
Power is supplied at all times
- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to security indicator lamp terminal ①.

Power is supplied at all times
- through 40A fusible link (letter f, located in the fuse and fusible link box)
- to smart entrance control unit terminal ①.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal ⑰.

Ground is supplied
- to smart entrance control unit terminal ⑩
- through body grounds M4 and M77.

THEFT WARNING SYSTEM ACTIVATION

The operation of the theft warning system is controlled by the doors, hood and glass hatch.
To activate the theft warning system, the smart entrance control unit must receive signals indicating the doors, hood and glass hatch are closed and the doors are locked.
When a door is open, smart entrance control unit terminal ⑮ or ⑯ receives a ground signal from each door switch.
When a door is unlocked, smart entrance control unit terminal ⑫, ⑬ or ⑭ receives a ground signal from terminal ④ of each door unlock sensor.
When the hood is open, smart entrance control unit terminal ㉙ receives a ground signal
- from terminal ① of the hood switch
- through body grounds E13 and E41.

When the glass hatch is open, smart entrance control unit terminal ㉖ receives a ground signal
- from terminal ① of the glass hatch switch
- through body grounds D210, B11 and B22.

When the doors are locked with key or multi-remote controller
If none of the described conditions exist, the theft warning system will automatically shift to armed phase.

THEFT WARNING SYSTEM ACTIVATION (With key or remote controller used to lock doors)

If the key is used to lock doors, terminal ㉚ receives a ground signal
- from terminal ③ of the key cylinder switch LH
- from terminal ① of the door key cylinder switch RH
- through body grounds M4 and M77 or M4 and M66
- from terminal ① of the back door key cylinder switch
- through body grounds B11, B22 and D210.

If this signal or lock signal from remote controller is received by the smart entrance control unit, the theft warning system will activate automatically.
Once the theft warning system has been activated, smart entrance control unit terminal ㉝ supplies ground to terminal ② of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the theft warning system is in armed phase.

System Description (Cont'd)

THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by
- opening a door or the glass hatch without using the key
- opening the hood
- unlocking door.

Once the theft warning system is in armed phase, if the smart entrance control unit receives a ground signal at terminal ⑫, ⑬, ⑭ (door unlock sensor), ⑮, ⑯ (door switch), ㉖ (glass hatch switch) or ㉙ (hood switch), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently, and the starting system is interrupted.

Power is supplied at all times
- through 7.5A fuse [No. 12, located in the fuse block (J/B)].
- to theft warning relay terminal ①.

If the theft warning system is triggered, ground is supplied
- from terminal ㉜ of the smart entrance control unit
- to theft warning relay terminal ②.

With power and ground supplied, power to the clutch interlock relay (M/T models) or inhibitor switch (A/T models) is interrupted. The starter motor will not crank and the engine will not start.

Power is supplied at all times
- through 7.5A fuse (No. 52, located in fuse and fusible link box)
- to theft warning lamp relay terminal ① and
- to theft warning horn relay terminal ①.

When the theft warning system is triggered, ground is supplied intermittently
- from terminal ⑧ of the smart entrance control unit
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamps flash and the horn sounds intermittently.

The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the glass hatch must be unlocked with the key or remote controller.

When the key is used to unlock the back door, smart entrance control unit terminal ㉛ receives a ground signal
- from terminal ① of the LH key cylinder switch
- from terminal ③ of the RH key cylinder switch
- from terminal ② of the back door key cylinder switch.

When the key is used to open the glass hatch, smart entrance control unit terminal ㉗ receives a ground signal from terminal ③ of the back door key cylinder switch.

When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

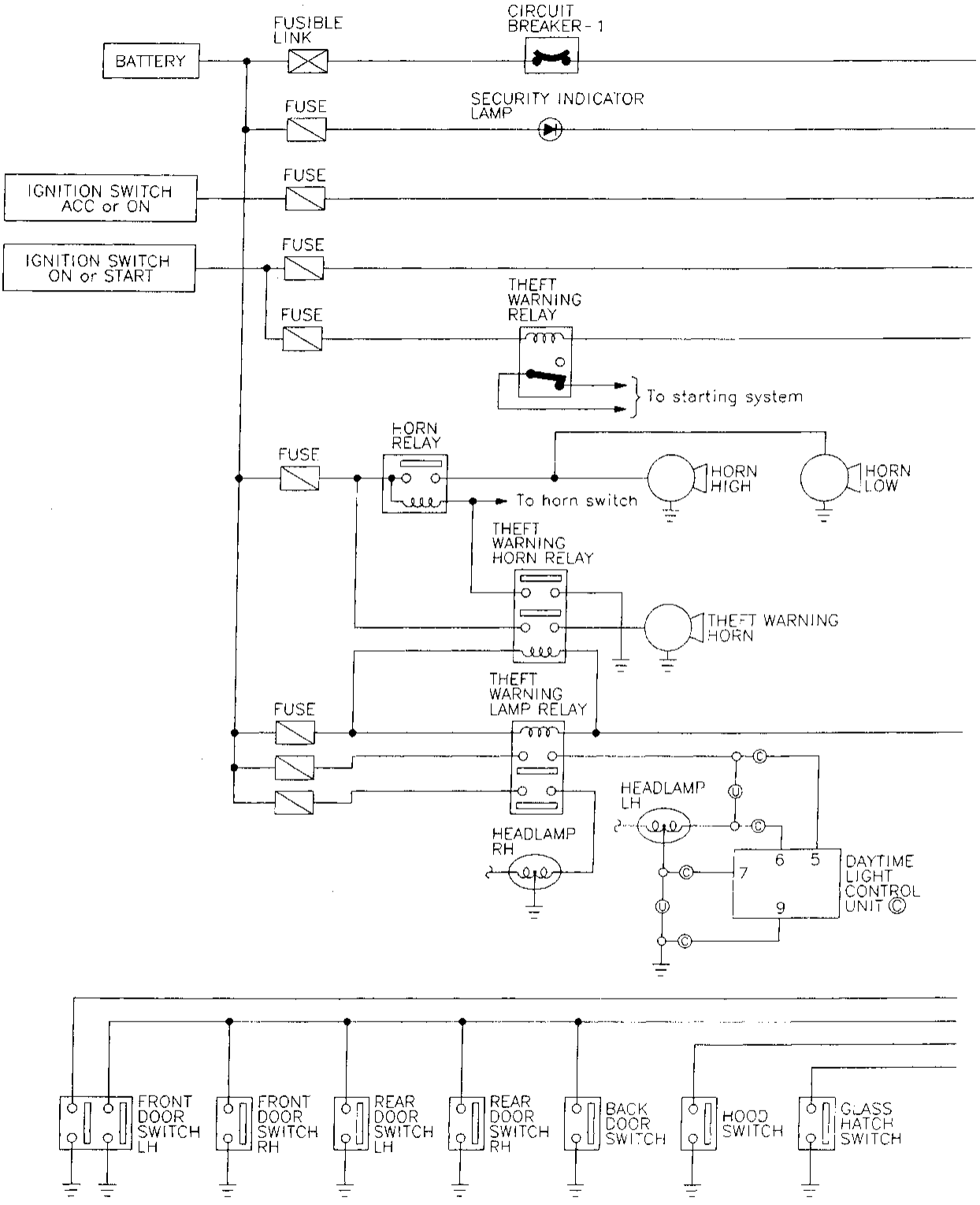
Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.

When the multi-remote control system is triggered, ground is supplied intermittently.
- from smart entrance control unit terminal ⑧
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamp flashes and the horn sounds intermittently.

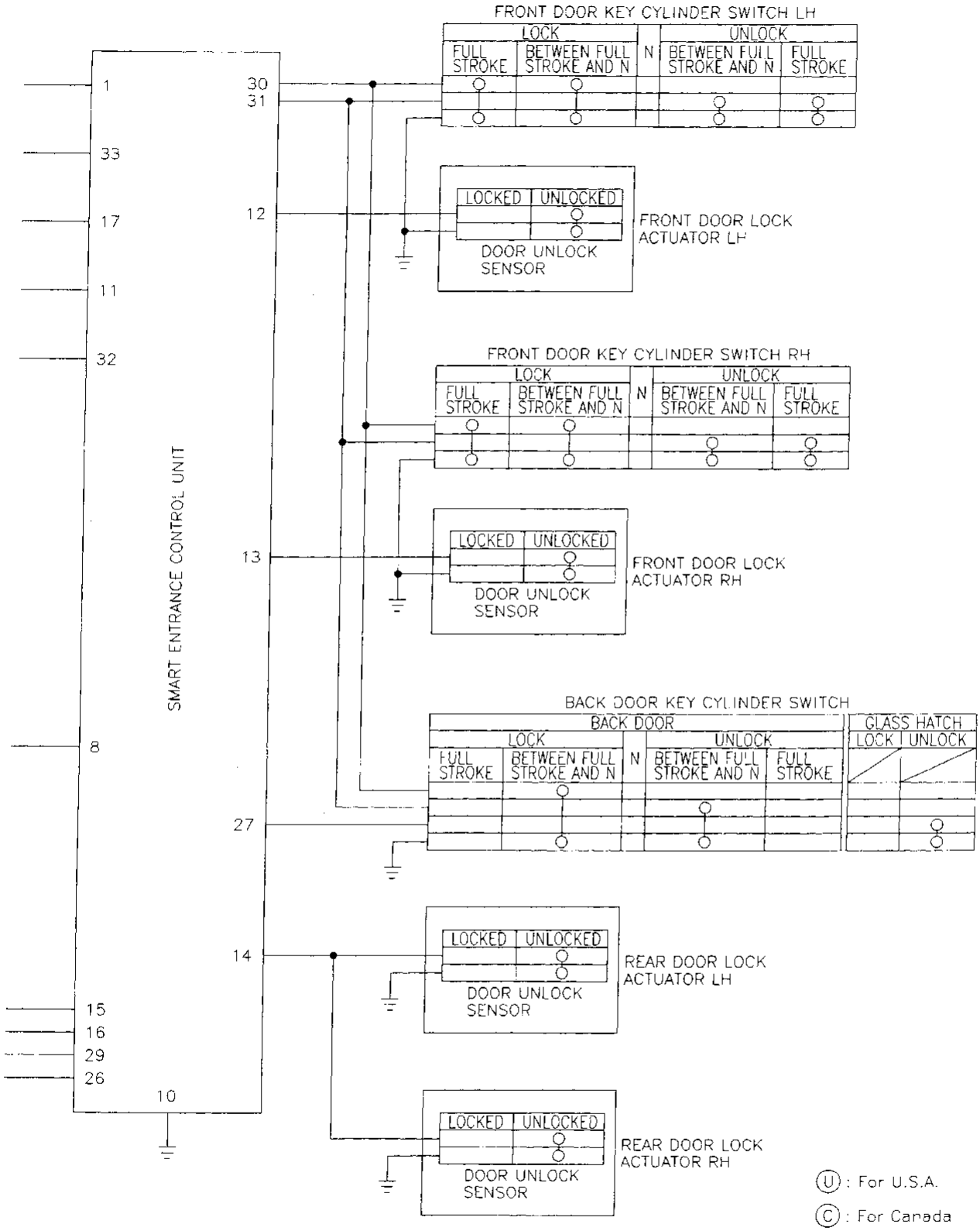
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

Schematic



MEL812G

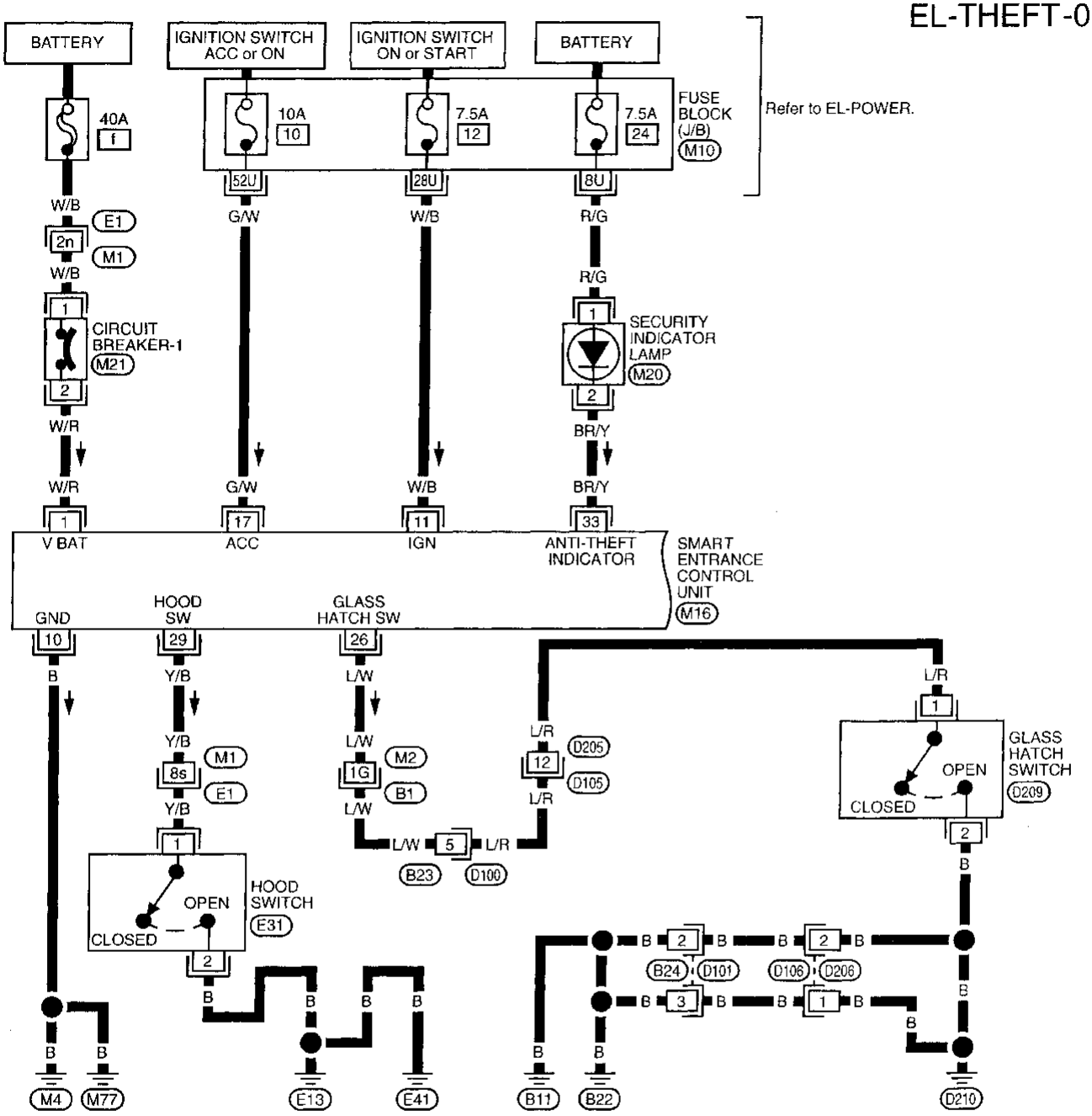
Schematic (Cont'd)

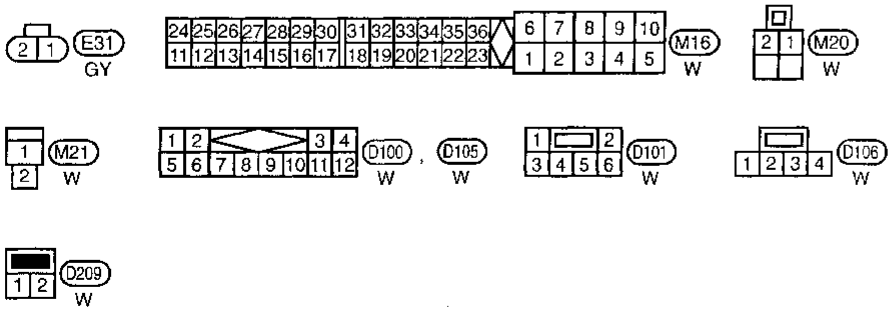


MEL813G

Wiring Diagram — THEFT —

EL-THEFT-01



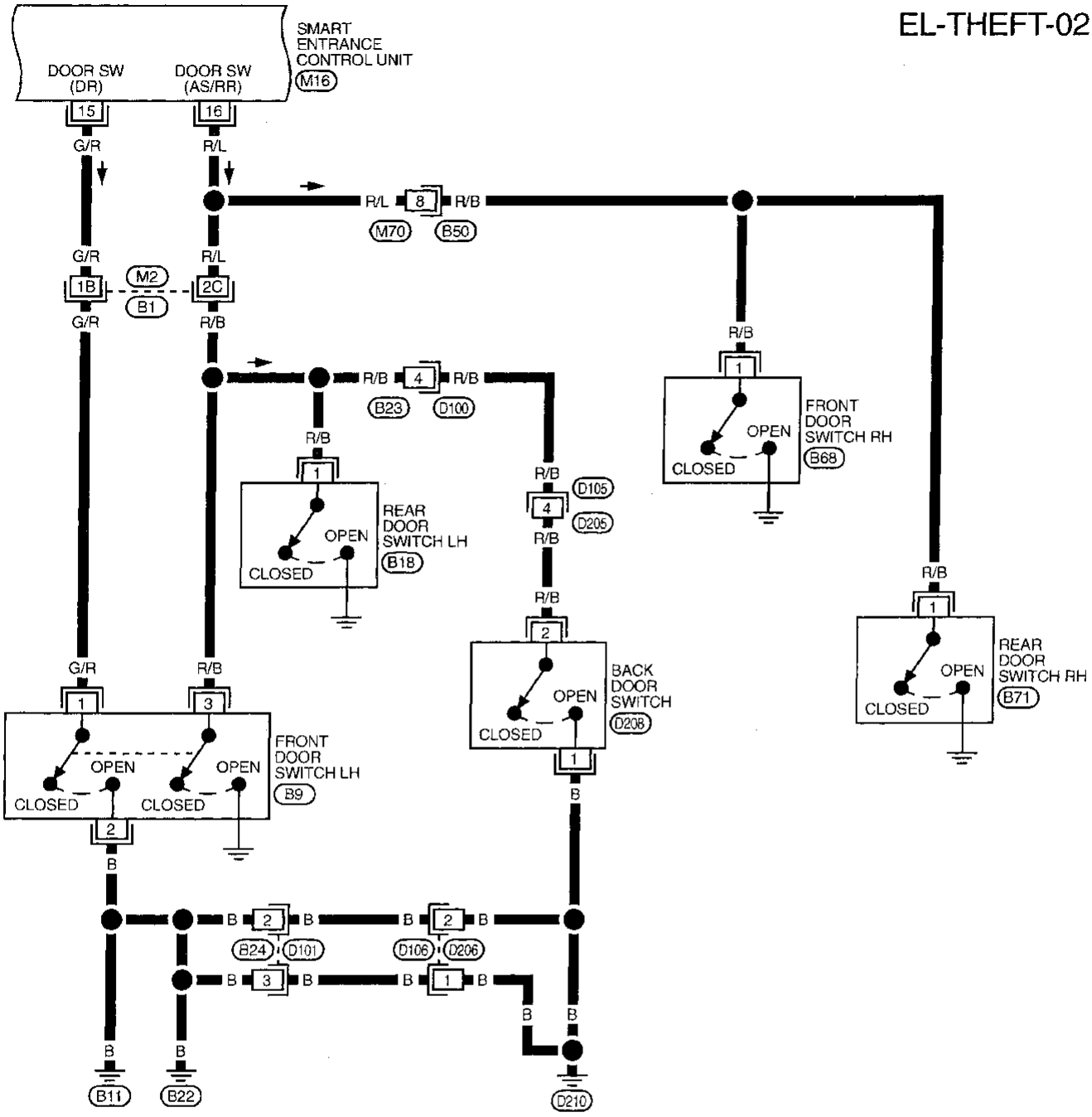


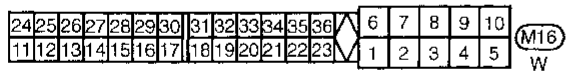
Refer to last page (Foldout page).
E1 , M1
M2 , B1
M10

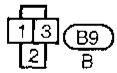
MEL814G

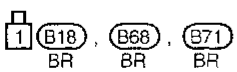
Wiring Diagram — THEFT — (Cont'd)

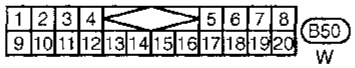
EL-THEFT-02

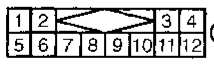


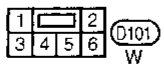


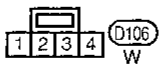










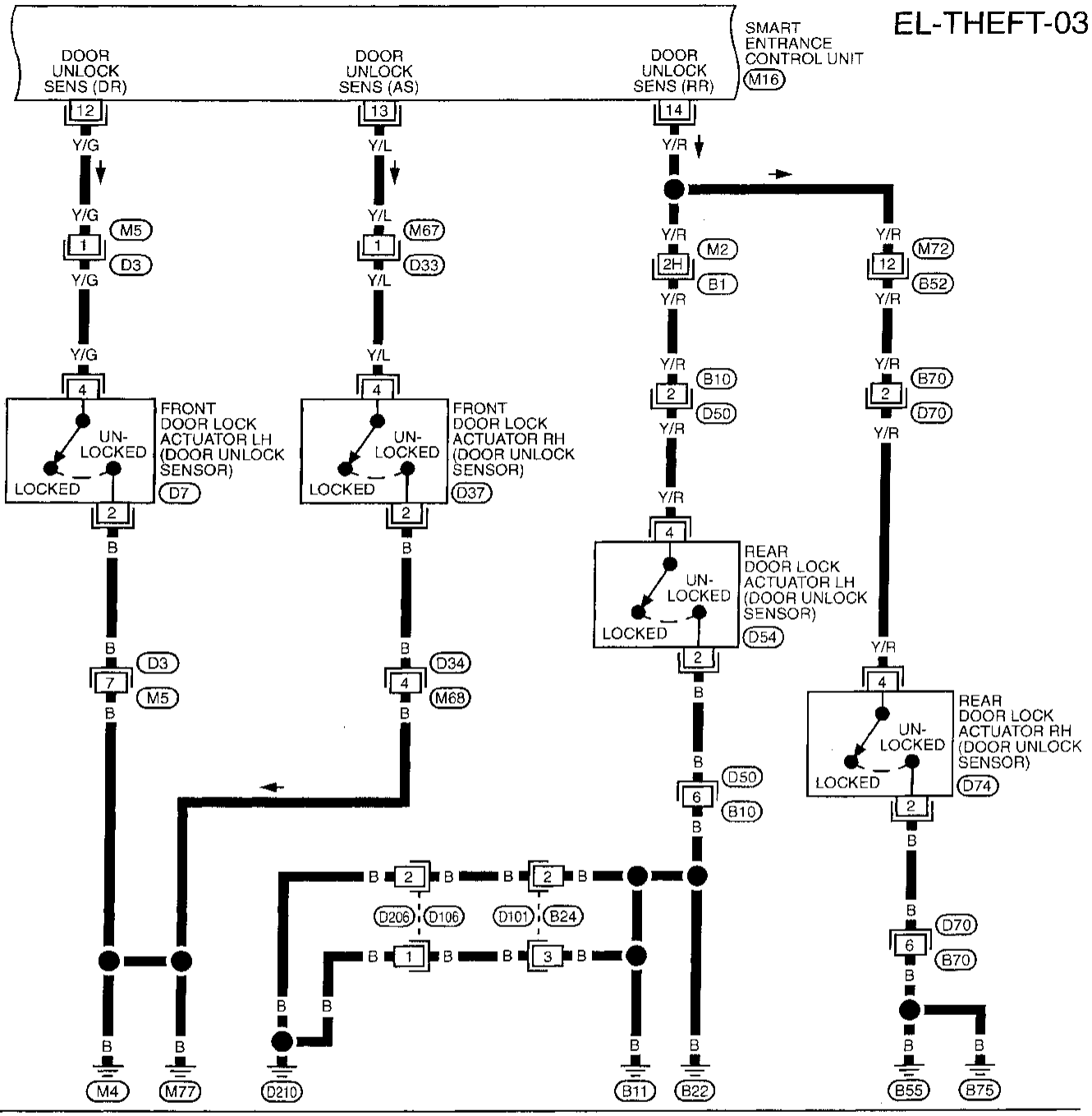


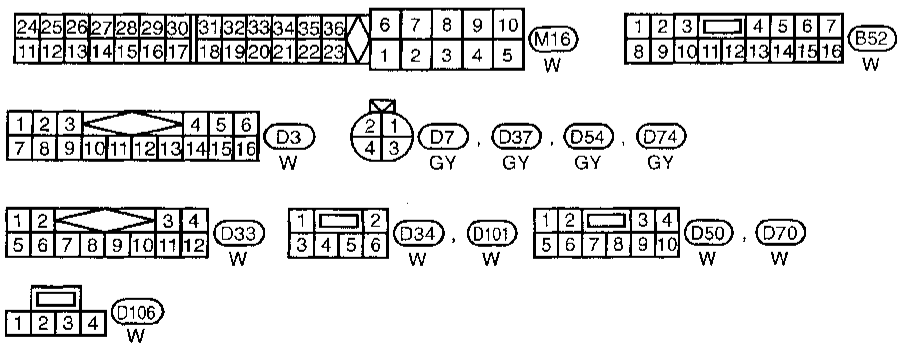
Refer to last page (Foldout page).
M2 , B1

MEL815G

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-03





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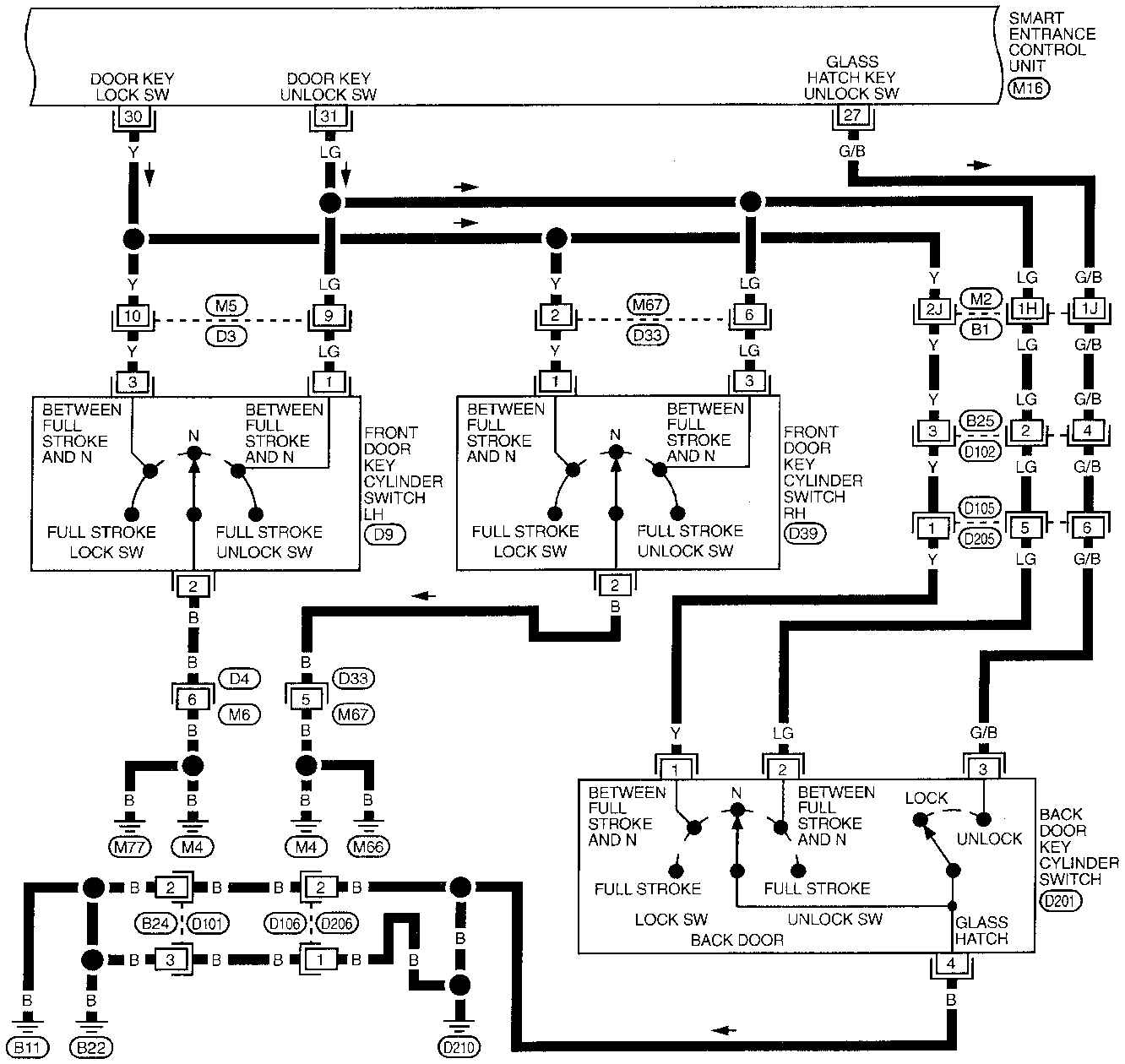
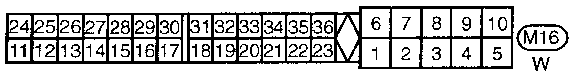
M2, B1

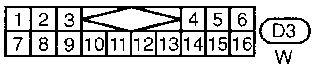
MEL816G

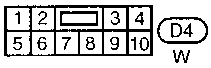
Wiring Diagram — THEFT — (Cont'd)

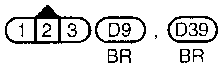
EL-THEFT-04

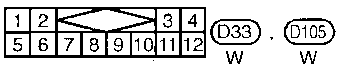


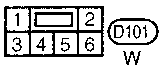


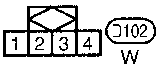


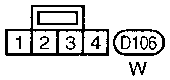


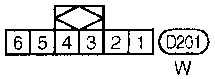










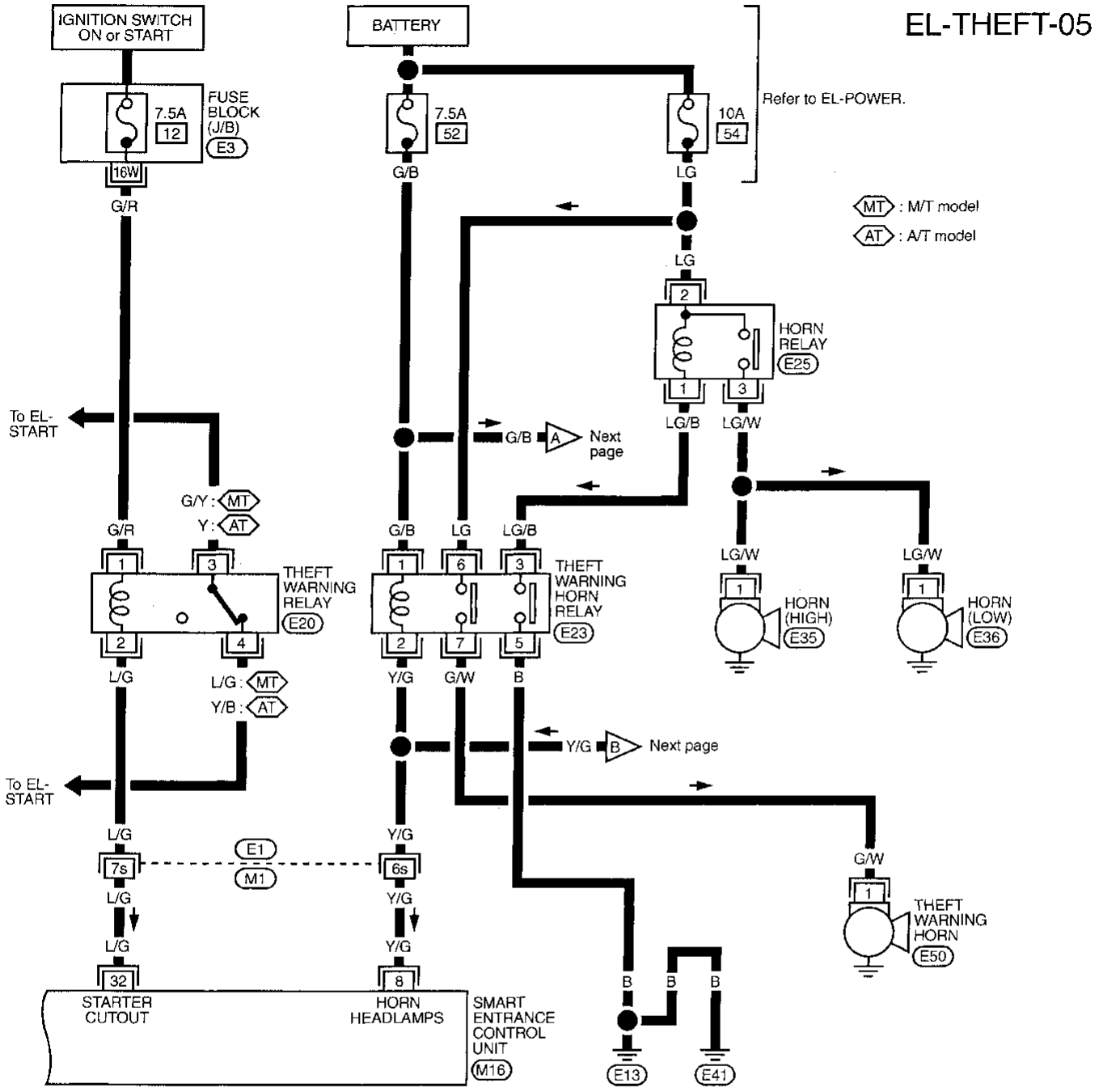


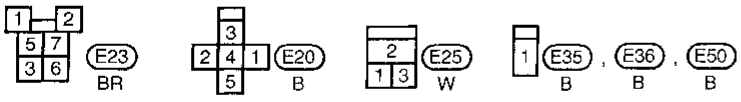
Refer to last page (Foldout page).
M2 , B1

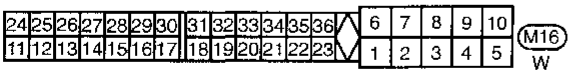
MEL817G

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-05





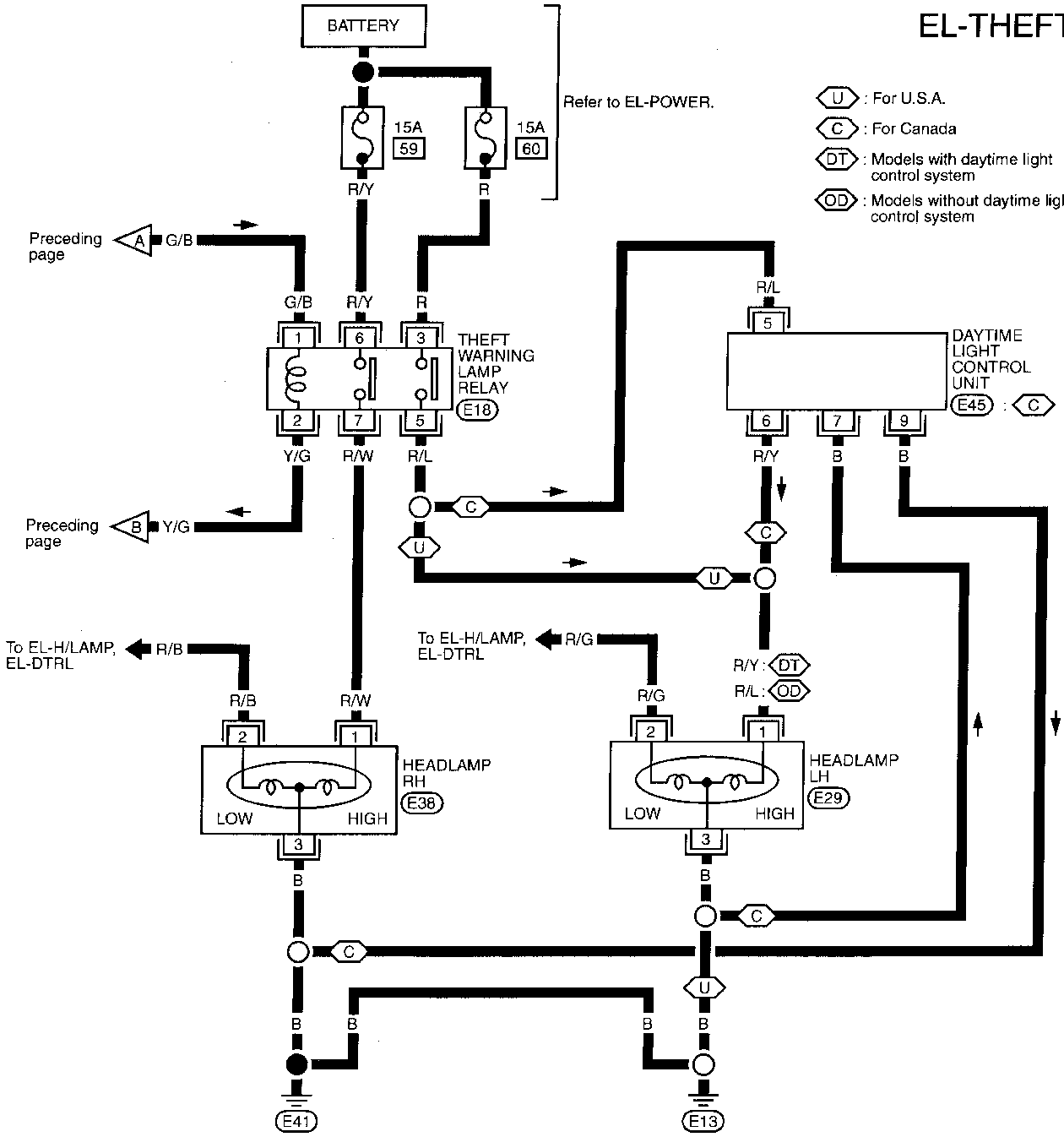


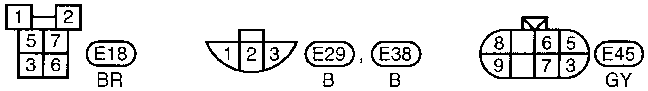
Refer to last page (Foldout page).
E1 , M1
E3

MEL818G

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-06



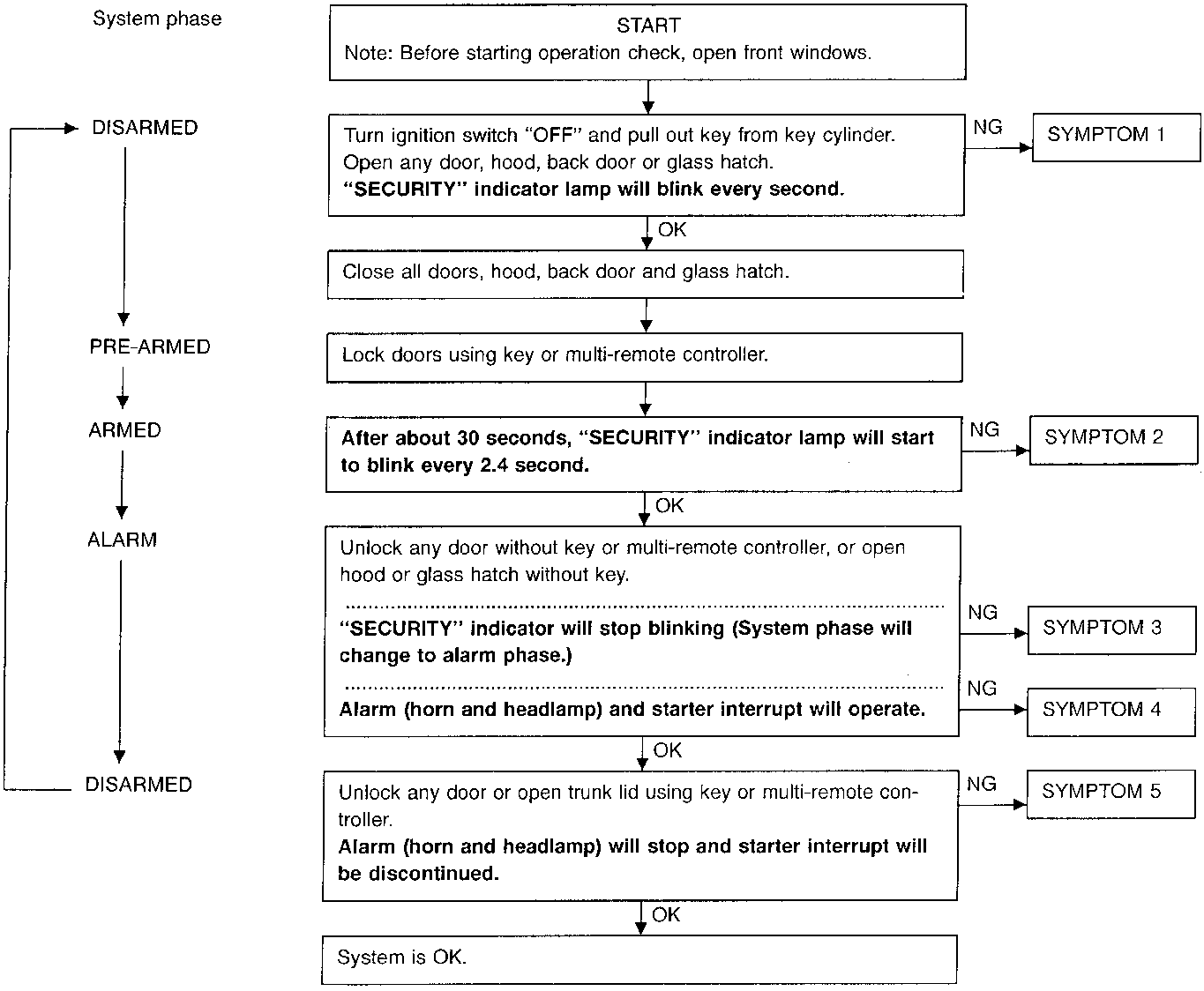


MEL819G

Trouble Diagnoses

PRELIMINARY CHECK

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



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

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-226.

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

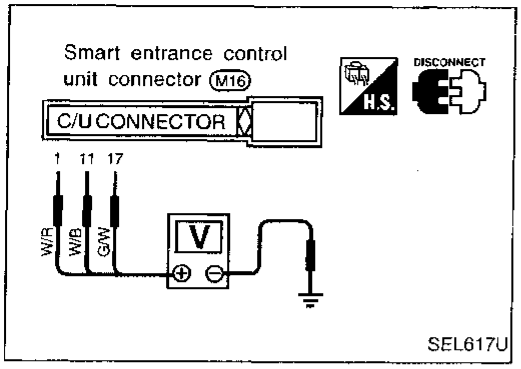
SYMPTOM CHART

PROCEDURE			—	Power supply and ground circuit check		Diagnostic procedure								—
REFERENCE PAGE			EL-226	EL-228	EL-228	EL-229	EL-232	EL-233	EL-234	EL-235	EL-236	EL-237	EL-238	EL-206
SYMPTOM			Preliminary check	Power supply circuit check	Ground circuit check	Diagnostic Procedure 1 (Door, hood and glass hatch switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Back door key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn alarm check)	Diagnostic Procedure 7 (Theft warning headlamp alarm check)	Diagnostic Procedure 8 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.
1	Theft warning indicator does not turn "ON" or blinking.		X	X	X		X							
2	Theft warning system cannot be set by	All items	X	X	X	X		X						
		Door out side key	X	X	X				X					
		Back door key								X				
		Multi-remote control	X	X	X									X
3	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X	X	X								
		Any door is unlocked without using key or multi-remote controller	X	X	X			X						
4	Theft warning alarm does not activate.	All function	X	X	X	X		X						
		Horn alarm	X	X	X						X			
		Headlamp alarm	X	X	X							X		
		Starter interrupt	X	X	X								X	
5	Theft warning system cannot be canceled by	Door out side key	X	X	X				X					
		Back door key	X	X	X					X				
		Multi-remote control	X	X	X									X

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

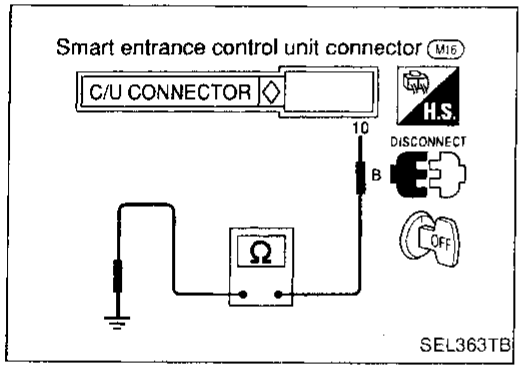
Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK



Power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage
⑪	Ground	0V	0V	Battery voltage
⑰	Ground	0V	Battery voltage	Battery voltage

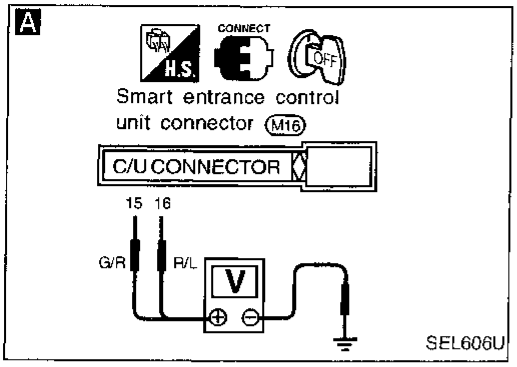


Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(1)
(Door switch check)



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

OK → Door switch is OK.

NG ↓

A

CHECK DOOR SWITCH INPUT SIGNAL.
Check voltage between control unit terminals ⑮ or ⑯ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door switch	⑮	ground	Open	0
			Closed	Approx. 12
Other door switches	⑯	ground	Open	0
			Closed	Approx. 12

Refer to wiring diagram in EL-221.

OK → Door switch is OK.

NG ↓

B

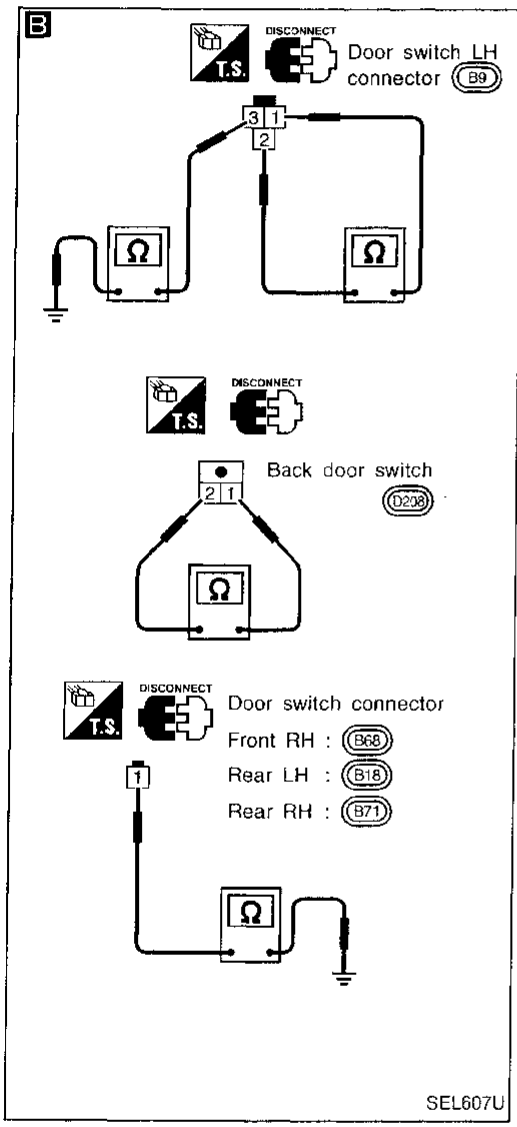
CHECK DOOR SWITCH.
1) Disconnect door switch connector.
2) Check continuity between door switch terminals.

	Terminals	Condition	Continuity
Front LH door switch	① - ②, ③ - ground	Closed	No
		Open	Yes
Back door switch	② - ①	Closed	No
		Open	Yes
Other door switches	① - ground	Closed	No
		Open	Yes

NG → Replace door switch.

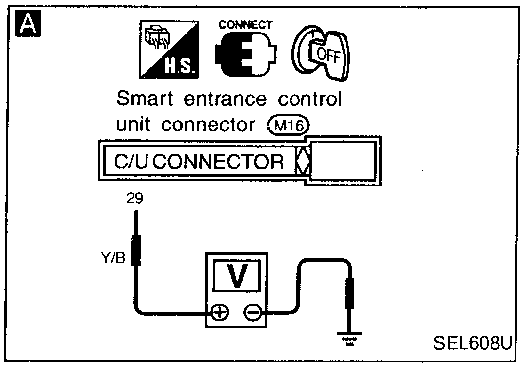
OK ↓

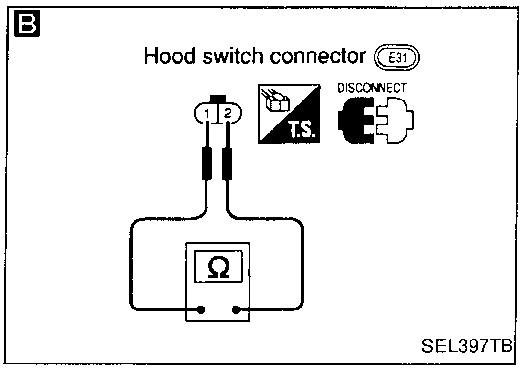
Check the following.
- Door switch ground circuit (Front LH, back door) or door switch ground condition
- Harness for open or short between control unit and door switch



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(2)
(Hood switch check)





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

OK → Hood switch is OK.

NG ↓

Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK ↓

A

CHECK HOOD SWITCH INPUT SIGNAL.
Check voltage between control unit terminal ㉙ and ground.

Condition	Voltage [V]
Hood is open.	0
Hood is closed.	Approx. 12

Refer to wiring diagram in EL-220.

OK → Hood switch is OK.

NG ↓

B

CHECK HOOD SWITCH.
1) Disconnect hood switch connector.
2) Check continuity between hood switch terminals.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

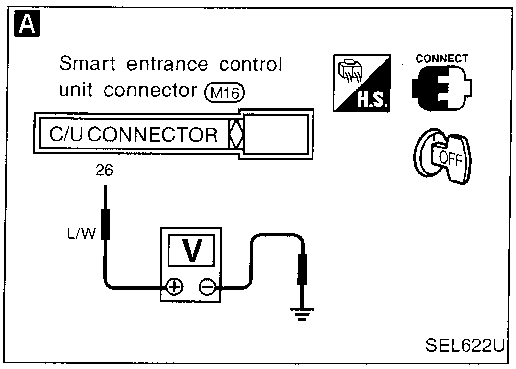
NG → Replace hood switch.

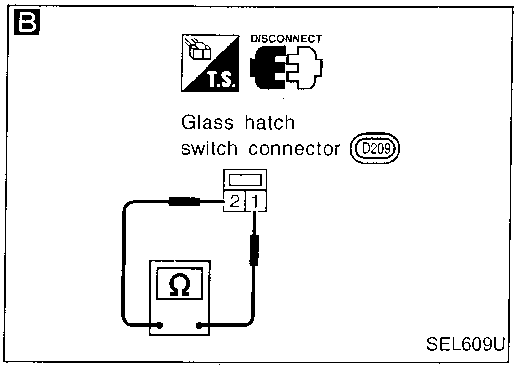
OK ↓

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(3)
(Glass hatch switch check)





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

OK → Glass hatch switch is OK.

NG ↓

A

CHECK GLASS HATCH SWITCH INPUT SIGNAL.
Check voltage between control unit terminal (26) and ground.

Condition	Voltage [V]
Glass hatch is open.	Approx. 0
Glass hatch is closed.	Approx. 12

Refer to wiring diagram in EL-220.

OK → Glass hatch switch is OK.

NG ↓

B

CHECK GLASS HATCH SWITCH.
1) Disconnect glass hatch switch connector.
2) Check continuity between glass hatch switch terminals.

Terminals	Condition	Continuity
① - ②	Closed	No
	Open	Yes

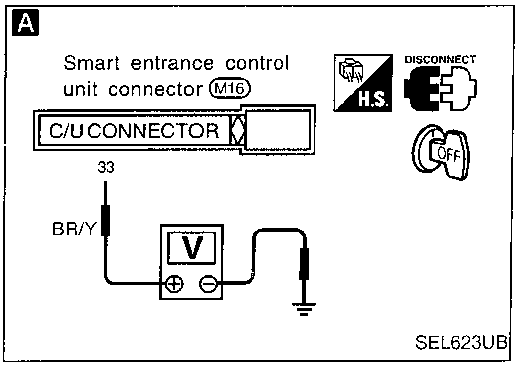
NG → Replace glass hatch switch.

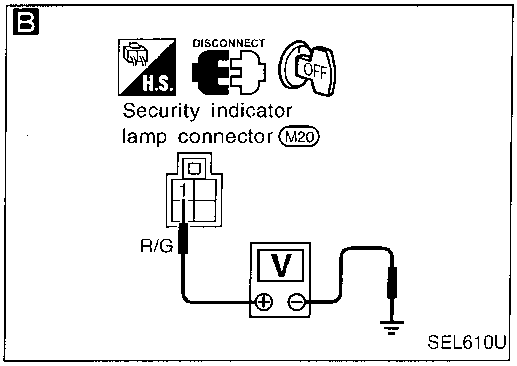
OK ↓

Check the following.
- Glass hatch switch ground circuit
- Harness for open or short between control unit and glass hatch switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2
(Security indicator lamp check)





A

CHECK INDICATOR LAMP OUTPUT SIGNAL.
1) Disconnect control unit connector.
2) Check voltage between control unit terminal ㉝ and ground.
Battery voltage should exist.

Refer to wiring diagram in EL-220.

OK → Security indicator lamp is OK.

NG ↓

CHECK INDICATOR LAMP. NG → Replace indicator lamp.

OK ↓

B

CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP.
1) Disconnect security lamp connector.
2) Check voltage between indicator lamp terminal ① and ground.
Battery voltage should exist.

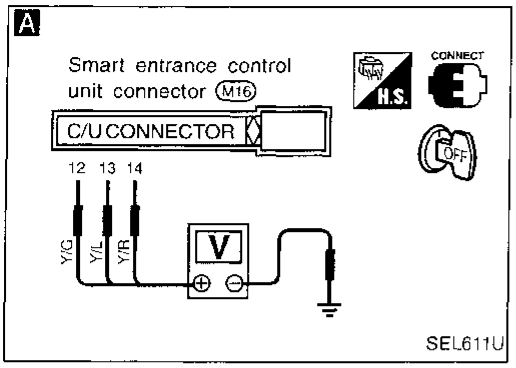
NG → Check the following.
- 7.5A fuse [No. 24 , located in fuse block (J/B)]
- Harness for open or short between security indicator lamp and fuse

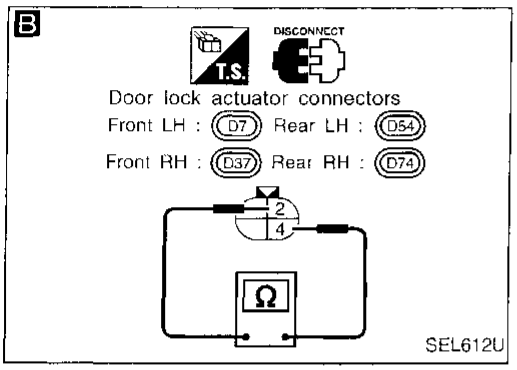
OK ↓

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3
(Door unlock sensor check)





A

CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.
Check voltage between control unit terminals ⑫, ⑬ or ⑭ and ground.

	Terminals ⊕	Terminals ⊖	Condition	Voltage [V]
Front LH door	⑫	Ground	Locked	Approx. 12
			Unlocked	0
Front RH door	⑬	Ground	Locked	Approx. 12
			Unlocked	0
Rear door	⑭	Ground	Locked	Approx. 12
			Unlocked	0

Refer to wiring diagram in EL-222.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.
1) Disconnect door unlock sensor connector.
2) Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
④ - ②	Locked	No
	Unlocked	Yes

NG → Replace door unlock sensor.

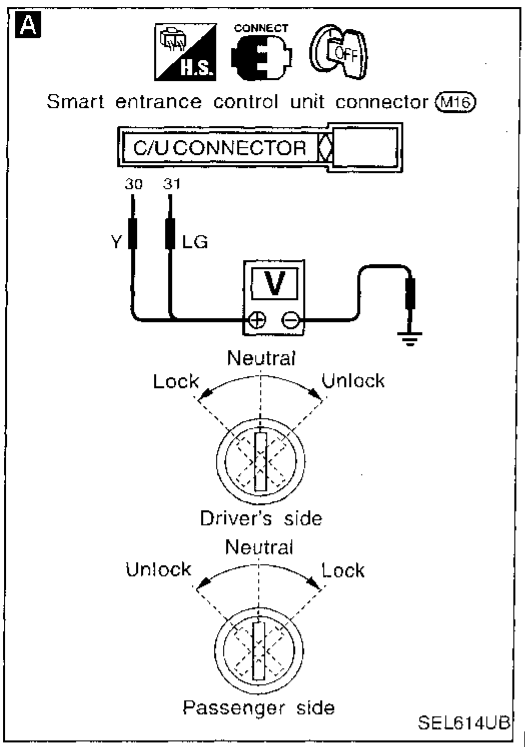
OK ↓

Check the following.
- Door unlock sensor ground circuit
- Harness for open or short between control unit and door unlock sensor

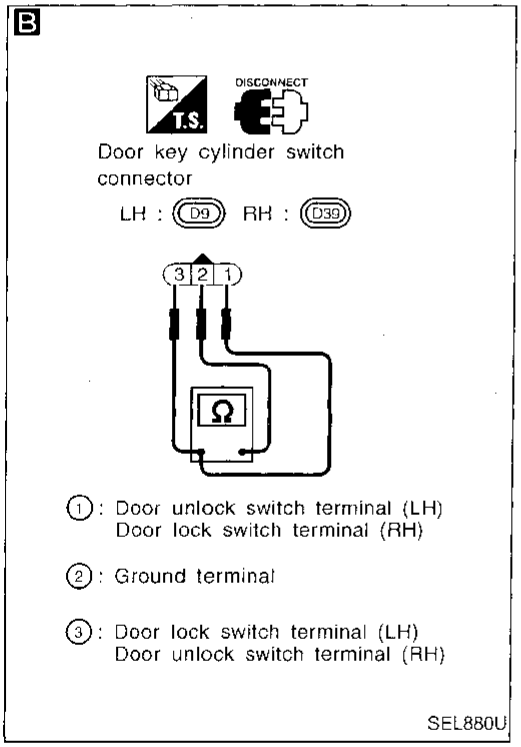
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4
(Door key cylinder switch check)

A



B



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

② : Ground terminal

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

A

CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL).
Check voltage between control unit terminals ㉚ or ㉛ and ground.

Terminals ⊕	Terminals ⊖	Key position	Voltage [V]
㉚	Ground	Neutral	Approx. 12
		Lock	0
㉛	Ground	Neutral	Approx. 12
		Unlock	0

Refer to wiring diagram in EL-223.

OK → Door key cylinder switch is OK.

NG ↓

B

CHECK DOOR KEY CYLINDER SWITCH.
1) Disconnect door key cylinder switch connector.
2) Check continuity between door key cylinder switch terminals.

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

NG → Replace door key cylinder switch.

OK ↓

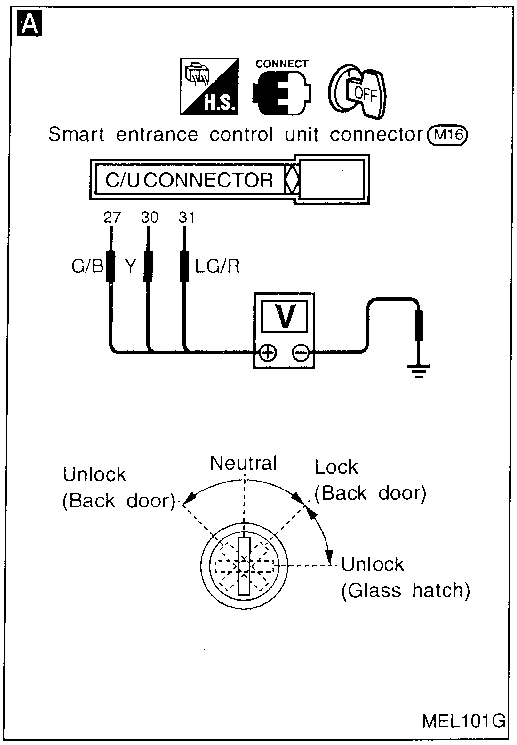
Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between control unit and door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Back door key cylinder switch check)

A



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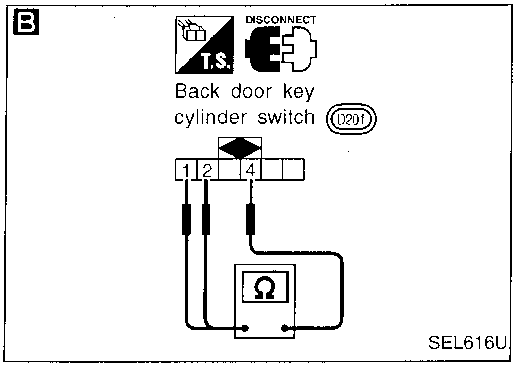
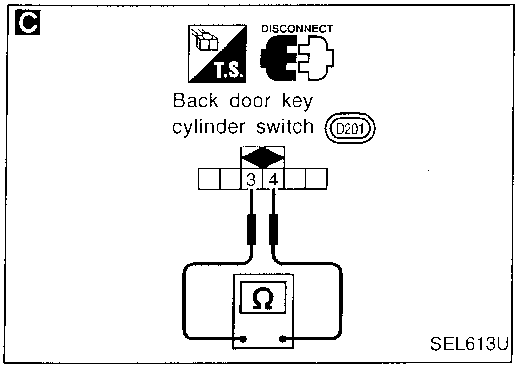


C



A

CHECK BACK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL).
Check voltage between control unit terminals ㉚, ㉛ or ㉗ and ground.

	Terminals ⊕	Terminals ⊖	Key position	Voltage [V]
Back door	㉚	Ground	Neutral	Approx. 12
			Between neutral and lock	0
	㉛	Ground	Neutral	Approx. 12
			Between neutral and unlock	0
Glass hatch	㉗	Ground	Neutral	Approx. 12
			Between lock and unlock	0

Refer to wiring diagram in EL-223.

OK → Back door key cylinder switch is OK.

NG ↓

B C

CHECK BACK DOOR KEY CYLINDER SWITCH.
1) Disconnect back door key cylinder switch connector.
2) Check continuity between back door key cylinder switch terminals.

Key position	Terminals ①	②	③	④
Between neutral and lock (Back door)	○			○
Between neutral and unlock (Back door)		○		○
Between lock (Back door) and unlock (glass hatch)			○	○

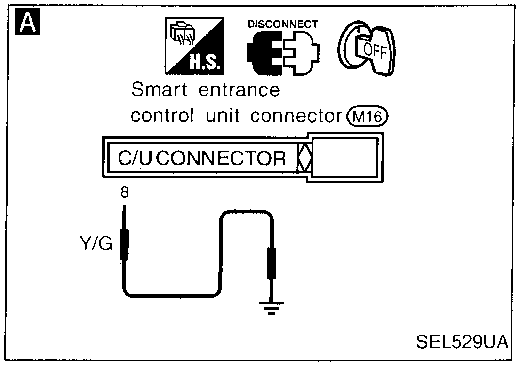
NG → Replace back door key cylinder switch.

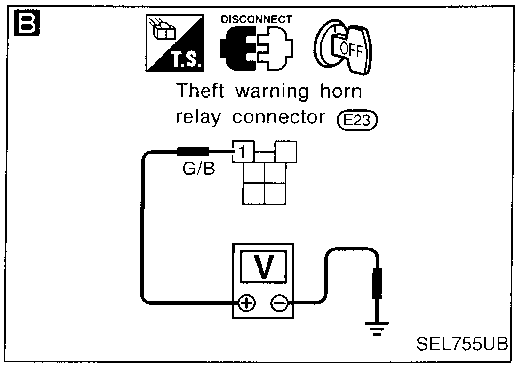
OK ↓

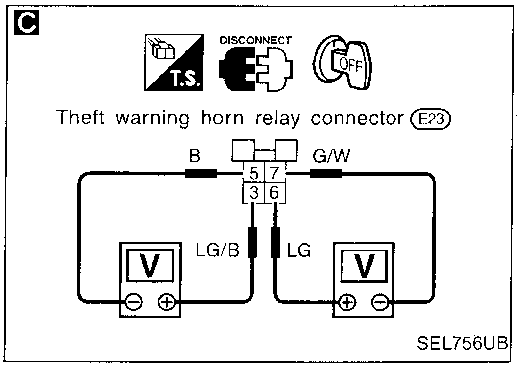
Check the following.
- Back door key cylinder switch ground circuit
- Harness for open or short between control unit and back door key cylinder switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6
(Theft warning horn alarm check)







A

CHECK THEFT WARNING HORN ALARM OPERATION.
1. Disconnect control unit connector.
2. Apply ground to control unit terminal ⑧.

Does horn alarm activate?

Refer to wiring diagram in EL-224.

Yes → Horn alarm is OK.

No ↓

Check theft warning horn relay. → NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAY.
1. Disconnect theft warning horn relay connector.
2. Check voltage between terminal ① and ground.

Positive battery voltage should exist.

NG → Check the following.
- 7.5A fuse (No. 52, located in the fuse and fusible link box)
- Harness for open or short between theft warning horn relay and fuse

OK ↓

C

CHECK THEFT WARNING HORN RELAY CIRCUIT.
1. Disconnect theft warning horn relay connector.
2. Check voltage between terminals ③ and ⑤.

Positive battery voltage should exist.

3. Check voltage between terminals ⑥ and ⑦.

Positive battery voltage should exist.

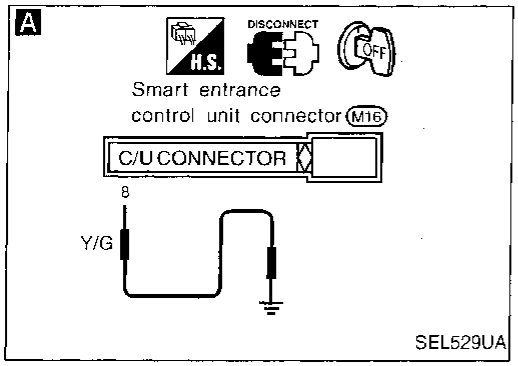
NG → Check harness for open or short.

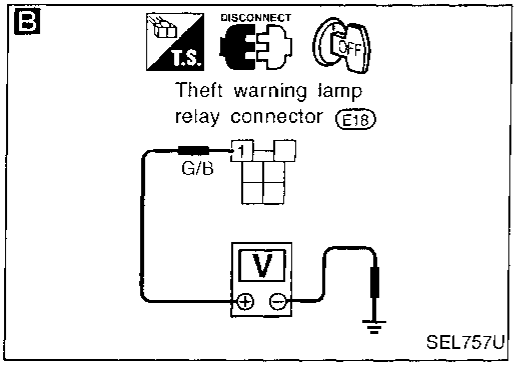
OK ↓

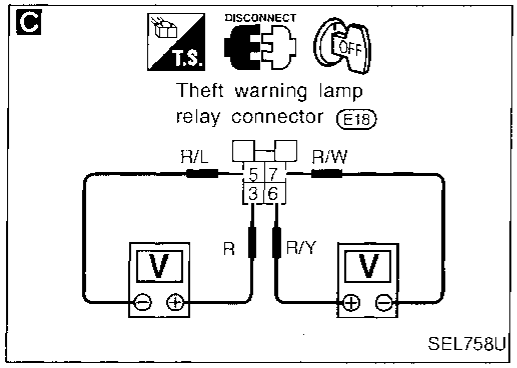
Check harness for open or short between theft warning horn relay and control unit.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7
(Theft warning headlamp alarm check)







A

CHECK THEFT WARNING HEADLAMP ALARM OPERATION.
1. Disconnect control unit connector.
2. Apply ground to control unit terminal ⑧.
   Does headlamp alarm activate?

   Refer to wiring diagram in EL-224.

Yes → Headlamp alarm is OK.

No ↓

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

No → Check headlamp system. Refer to "HEADLAMP".

Yes ↓

Check theft warning lamp relay.

NG → Replace.

OK ↓

B

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

   Refer to wiring diagram in EL-225.

NG → Check the following.
- 7.5A fuse (No. 52, located in the fuse and fusible link box)
- Harness for open or short between theft warning lamp relay and fuse

OK ↓

C

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

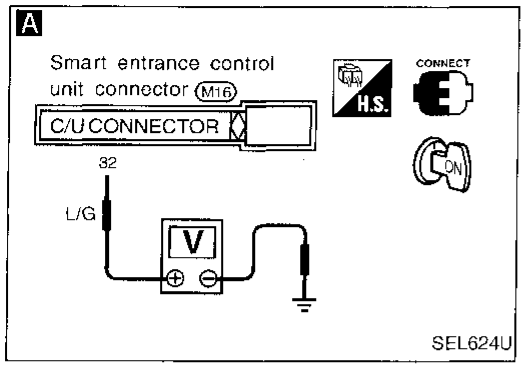
NG → Check harness for open or short.

OK ↓

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8
(Starter interrupt system check)



A

CHECK STARTER MOTOR CUT OUT-PUT SIGNAL.
1. Turn ignition switch "ON".
2. Check voltage between control unit terminal ㉜ and ground.

Condition	Voltage [V]
Except starter killed phase	Approx. 12
Starter killed phase	0

Refer to wiring diagram in EL-224.

NG → Check the following.
- 7.5A fuse [No. 12, located in fuse block (J/B)]
- Harness for open or short between theft warning relay and fuse
- Harness for open or short between control unit and theft warning relay

OK ↓

Check theft warning relay.

NG → Replace relay.

OK ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR.

Description

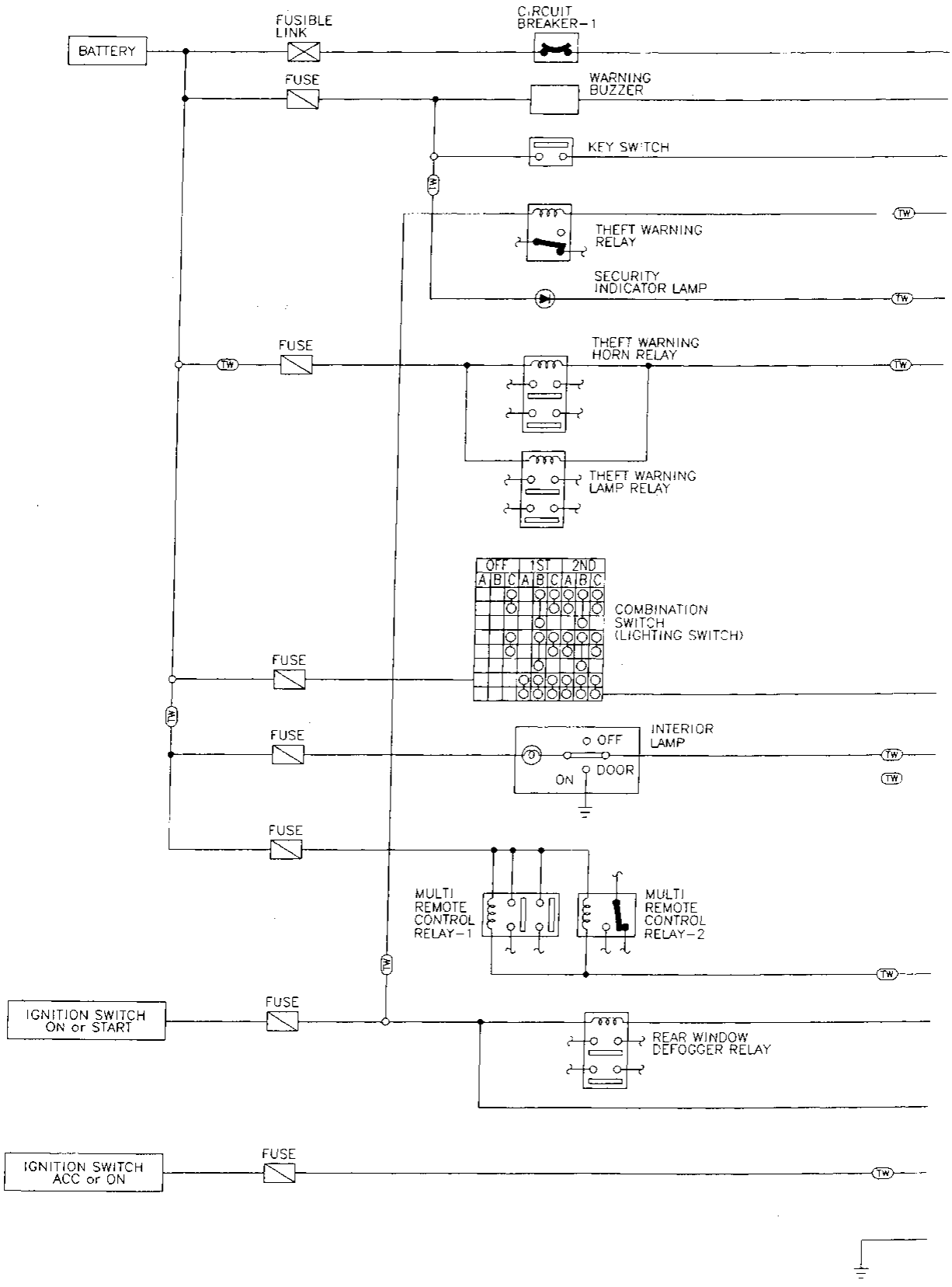
The following systems are controlled by the smart entrance control unit.

- Warning buzzer
- Rear window defogger timer
- Power door lock
- Multi-remote control system
- Theft warning system

For detailed description and wiring diagrams, refer to the relevant pages for the each system.
The control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

System	Input	Output
Power door lock	Door lock and unlock switch	Door lock actuator
Multi-remote control	Key switch (Insert) Ignition switch (ACC) Door switch Door unlock sensor Antenna (remote controller signal)	Theft warning horn relay Theft warning lamp relay Interior lamp Multi-remote control relay 1 and 2 Door lock actuator
Warning buzzer	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	Warning buzzer
Rear window defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Theft warning	Ignition switch (ACC, ON) Door switch Hood switch Glass hatch switch Door key cylinder switch (lock/unlock) Back door key cylinder switch (lock/unlock) Door unlock sensor	Theft warning horn relay Theft warning lamp relay Theft warning relay (Starter interrupt) Security indicator

Schematic



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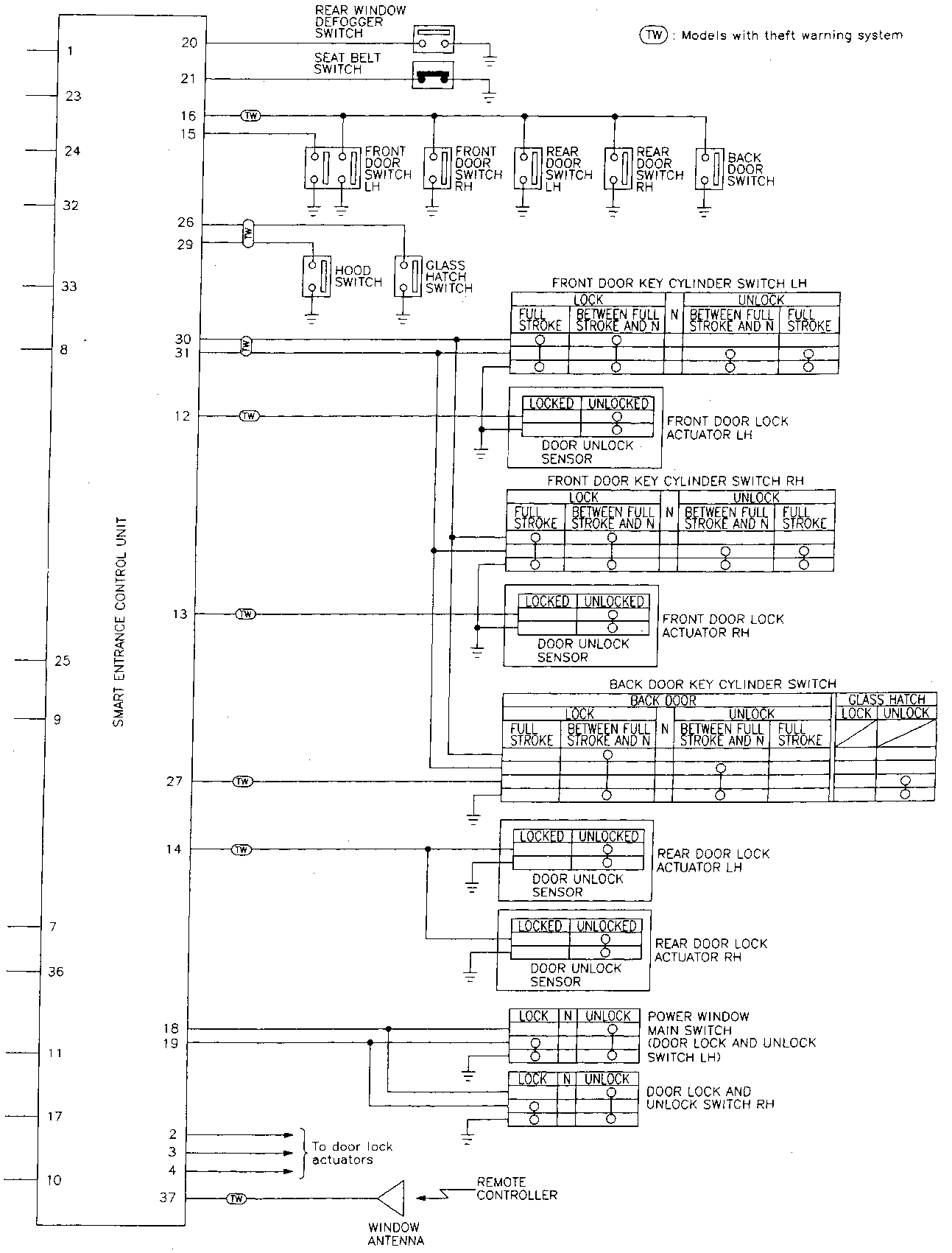
Schematic (Cont'd)



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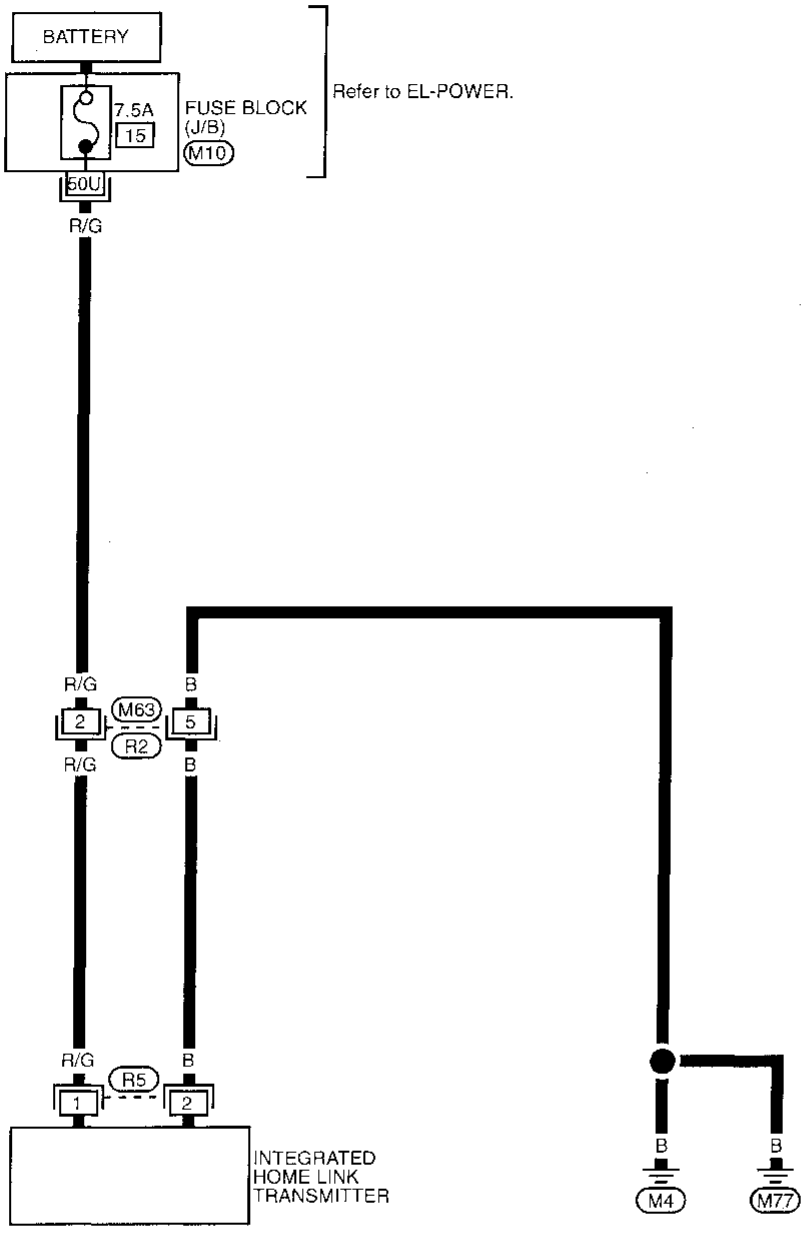
Input/Output Operation Signal

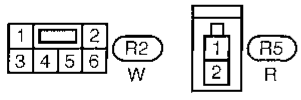
SMART ENTRANCE CONTROL UNIT

Terminal No.	Connections	Operated condition		Voltage (V) (Approximate values)
1	Power source (C/B)	—		12V
2	Passenger door lock motor	Door lock & unlock switch	Unlocked	12V
3	Driver door lock motor		Free	0V
4	Driver and passenger door lock motors	Door lock & unlock switch	Locked	12V
			Free	0V
7	Multi-remote control relays -1 and 2	When doors are locked using remote controller		12V → 0V
8	Theft warning horn relay	When panic alarm is operated using remote controller		12V → 0V
9	Interior lamp	When interior lamp is operated using remote controller. (Lamp switch in "DOOR" position)		12V → 0V
10	Ground	—		—
11	Ignition switch (ON)	Ignition key is in "ON" position		12V
12	Driver door unlock sensor	Driver door: Locked → Unlocked		12V → 0V
13	Passenger door unlock sensor	Passenger door: Locked → Unlocked		12V → 0V
14	Rear door unlock sensor	Rear door LH & RH: Locked → Unlocked		12V → 0V
15	Driver door switch	OFF (Closed) → ON (Open)		12V → 0V
16	Passenger door switch	OFF (Closed) → ON (Open)		12V → 0V
17	Ignition switch (ACC)	"ACC" position		12V
18	Door lock & unlock switches	Neutral → Locks		12V → 0V
19	Door lock & unlock switches	Neutral → Unlocks		12V → 0V
20	Rear window defogger switch	OFF → ON		12V → 0V
21	Seat belt switch	Unfasten → Fasten (Ignition key is in "ON" position)		0V → 12V
23	Warning buzzer	OFF → ON		12V → 0V
24	Ignition key switch (Insert)	IGN key inserted → IGN key removed from IGN key cylinder		12V → 0V
25	Headlamp switch (1ST)	1ST, 2ND positions: ON → OFF		12V → 0V
26	Glass hatch switch	ON (Open) → OFF (Closed)		0V → 12V
27	Back door key unlock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
29	Hood open signal	ON (Open) → OFF (Closed)		0V → 12V
30	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)		12V → 0V
31	Door key cylinder lock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
32	Theft warning relay (Starter cut)	OFF → ON (Ignition key is in "ON" position)		12V → 0V
33	Theft warning indicator	Goes off → Illuminates		12V → 0V
36	Rear defogger relay	OFF → ON (Ignition key is in "ON" position)		12V → 0V
37	Multi-remote antenna	—		—

Wiring Diagram — TRNSMT —

EL-TRNSMT-01





Refer to last page (Foldout page).
M10

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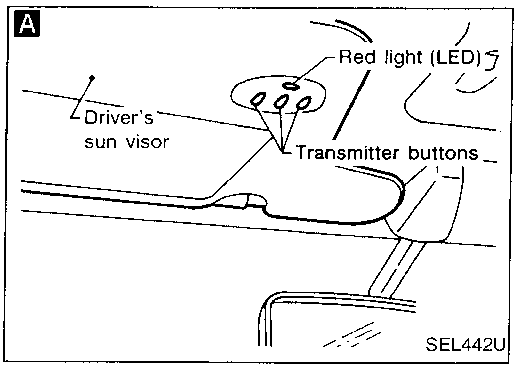
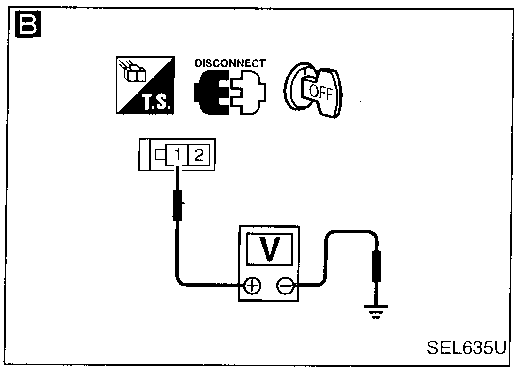
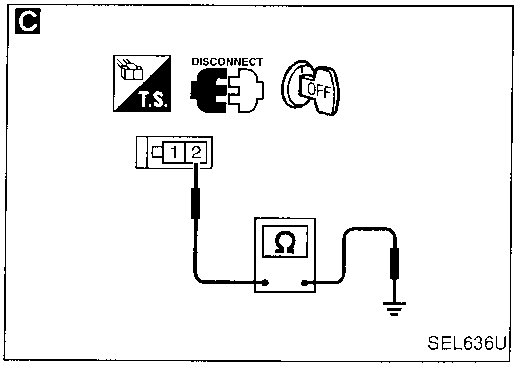






Trouble Diagnoses

DIAGNOSTIC PROCEDURE

SYMPTOM: Transmitter does not activate receiver.

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

A

1. Turn ignition switch "OFF".
2. Does red light (LED) of transmitter illuminate when any button is pressed?

OK → Check transmitter with Tool*.

- OK → Receiver or hand-held transmitter fault, not vehicle related.
- NG → Replace transmitter with sunvisor assembly.

NG ↓

B

POWER SUPPLY CHECK.
1. Disconnect transmitter connector.
2. Turn ignition switch "OFF".
3. Check voltage between terminal ① and body ground.
   Voltage: Battery voltage

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

OK ↓

C

GROUND CIRCUIT CHECK.
Check continuity between terminal ② and body ground.
Continuity should exist.

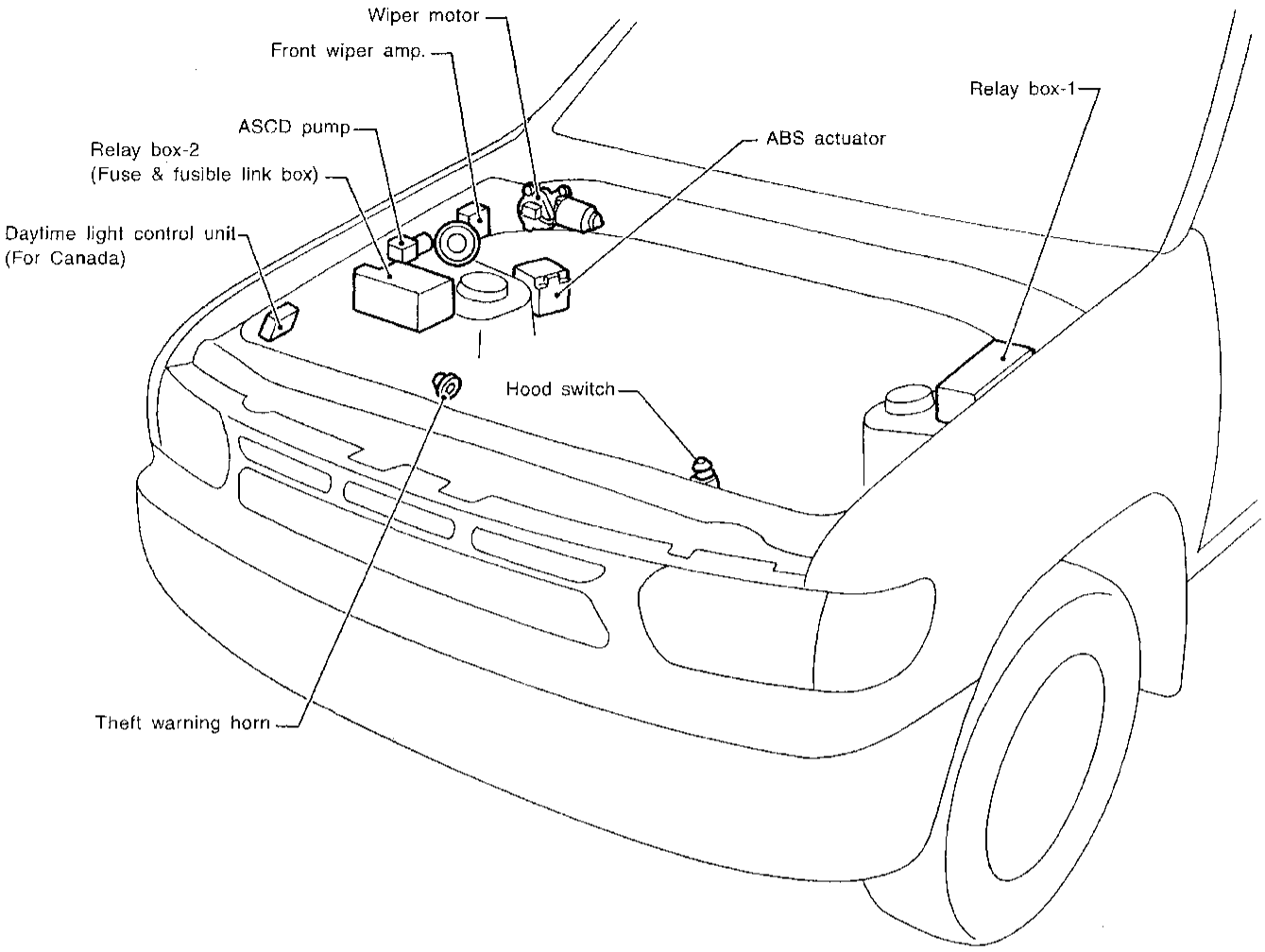
NG → Repair harness.

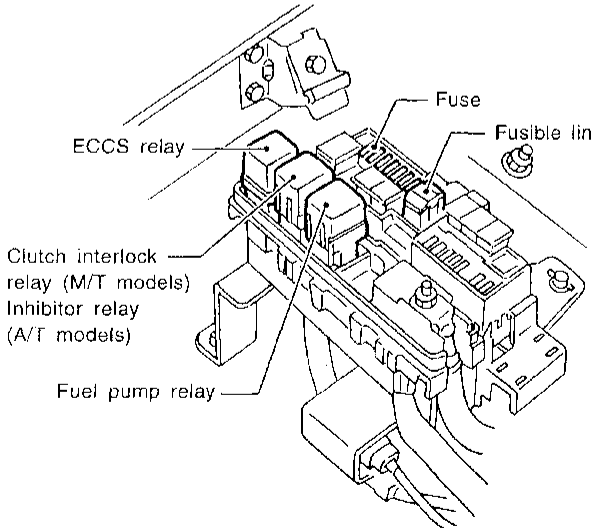
OK ↓

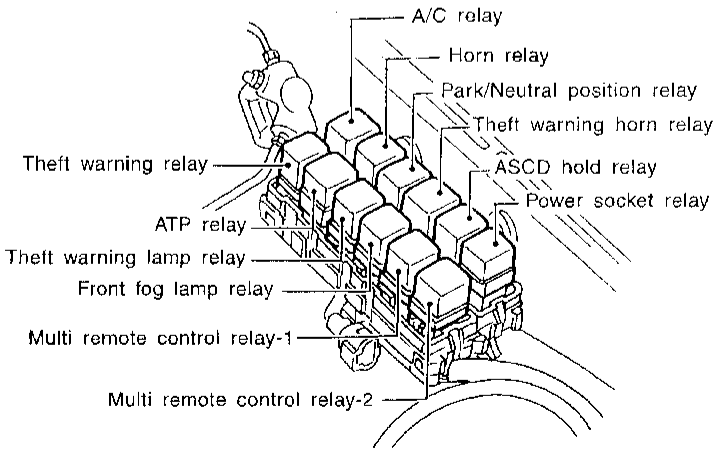
Replace transmitter with sunvisor assembly.

*For details, refer to Technical Service Bulletin.

Engine Compartment







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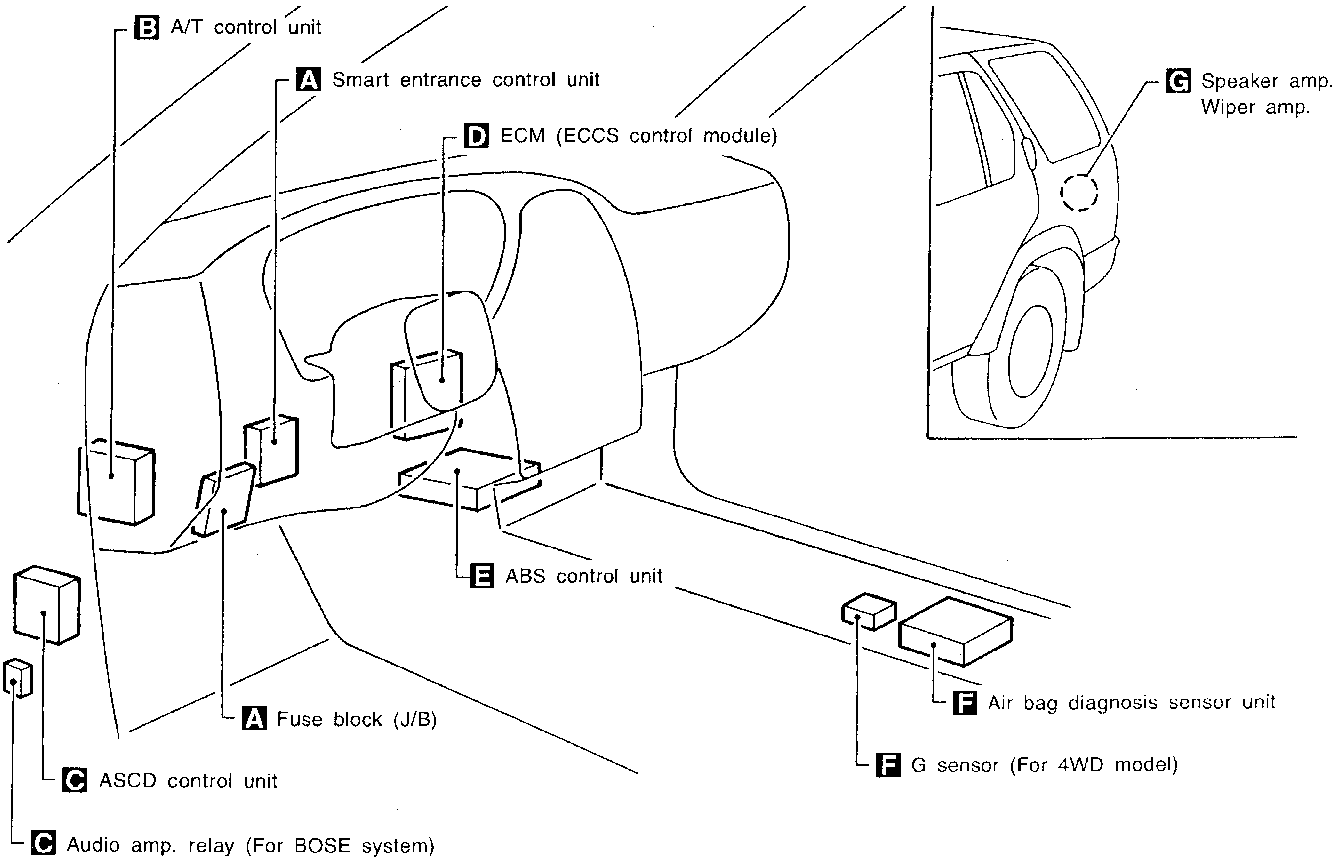
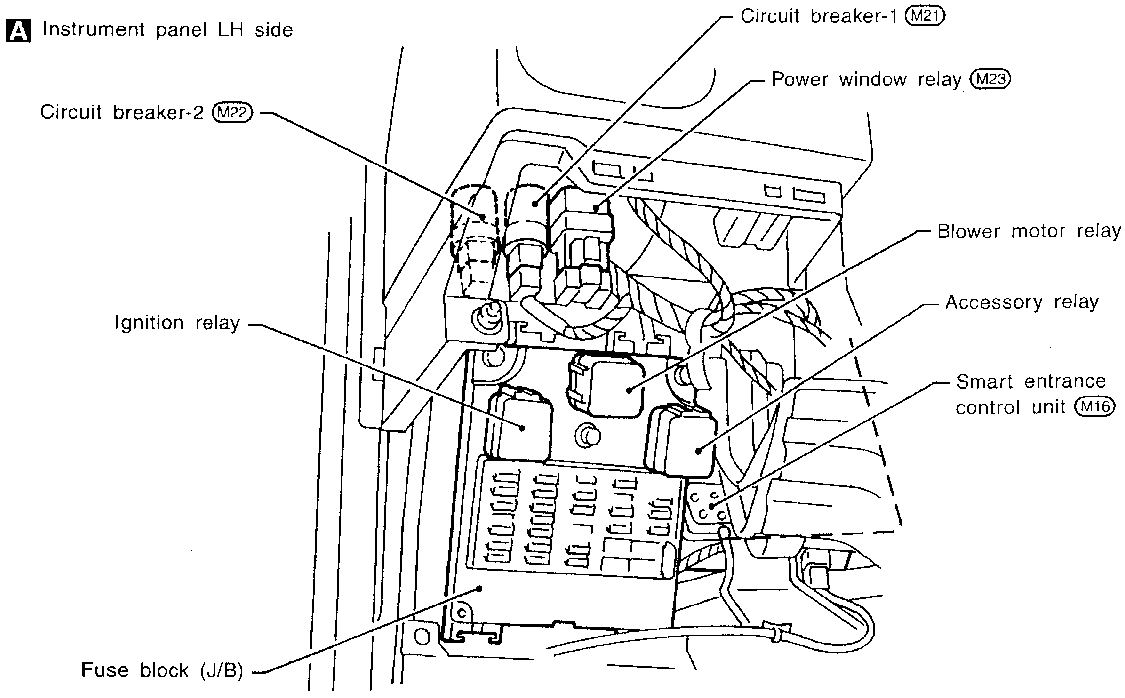
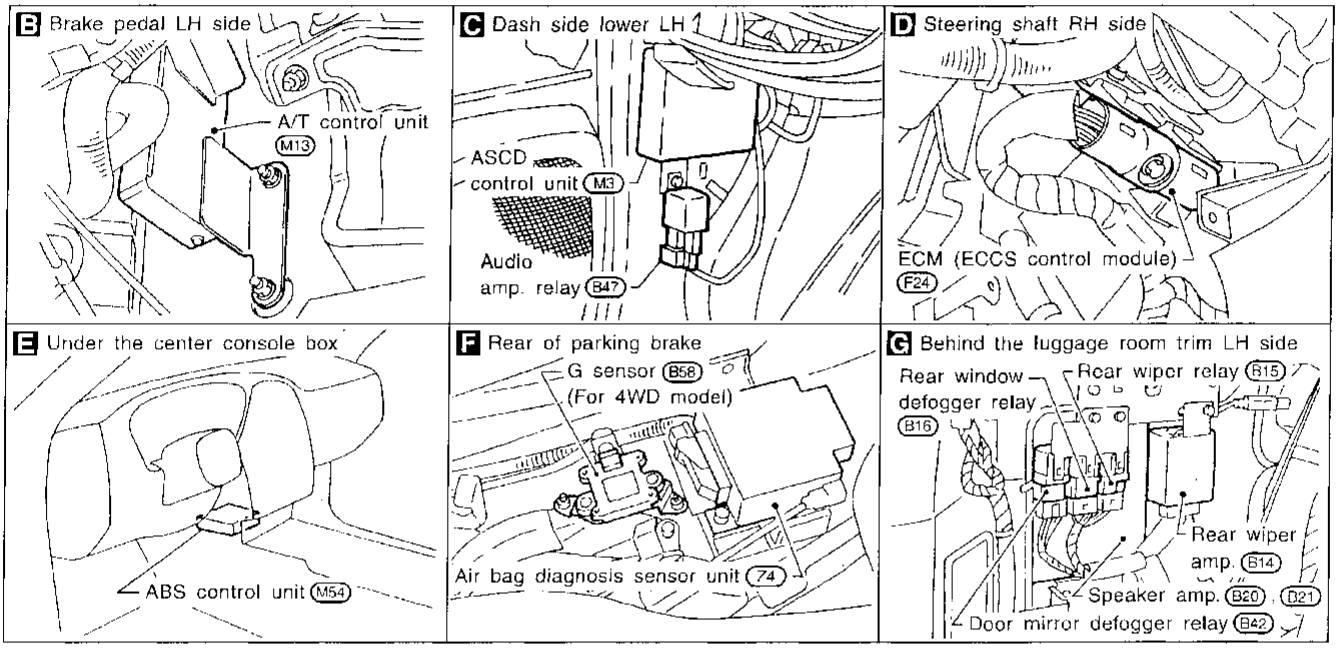
Passenger Compartment





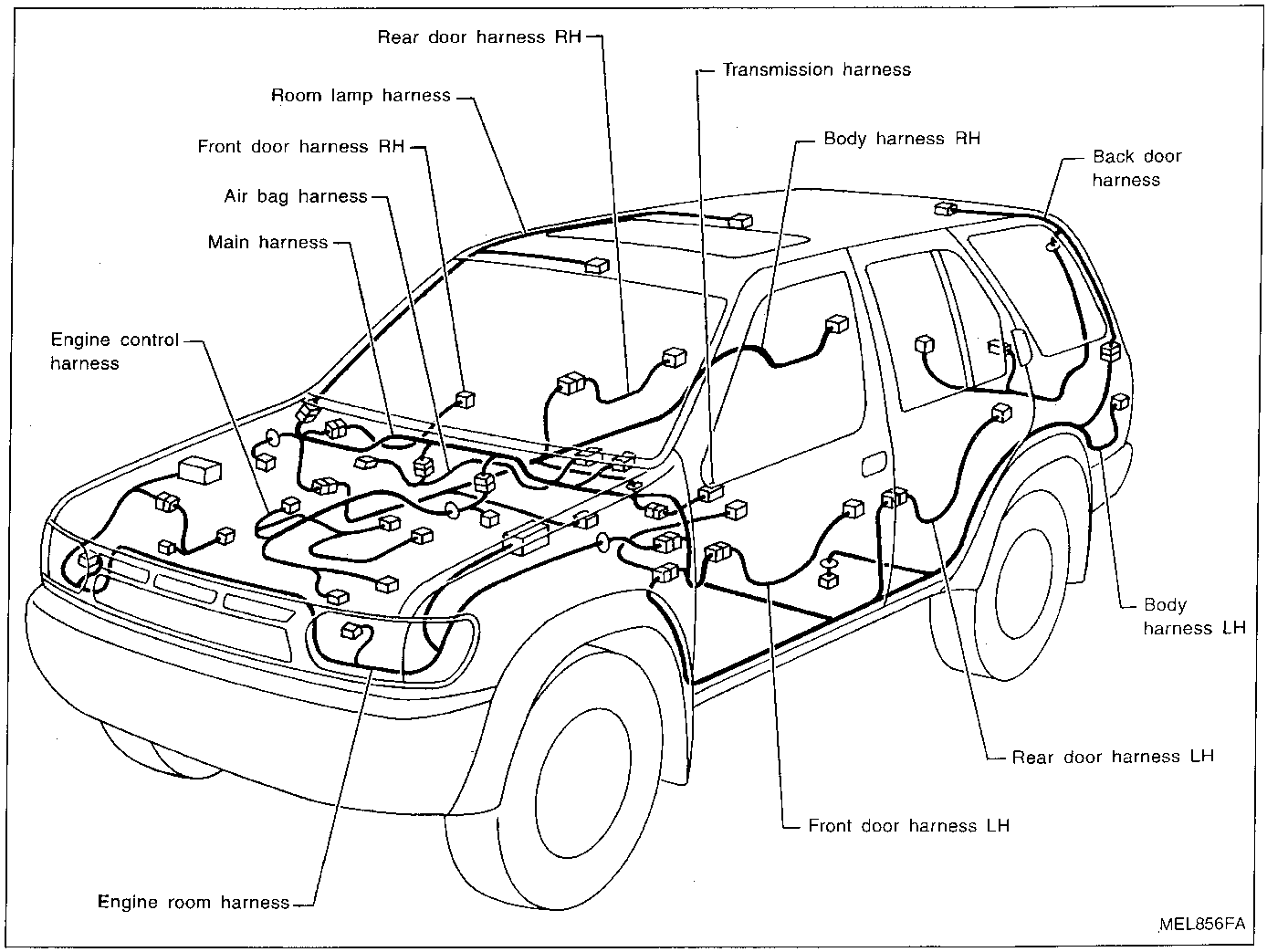
MEL065H

Passenger Compartment (Cont'd)



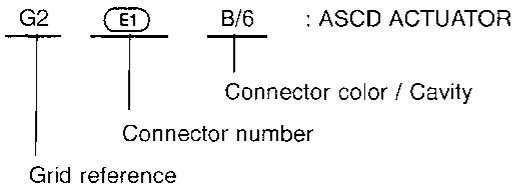
MEL066H

Outline


Rear door harness RH
Transmission harness
Room lamp harness
Front door harness RH
Body harness RH
Back door harness
Air bag harness
Main harness
Engine control harness
Body harness LH
Rear door harness LH
Front door harness LH
Engine room harness
MEL856FA

How to Read Harness Layout

Example:



The following Harness Layouts use a map style grid to help locate connectors on the drawings:
- Main Harness
- Engine Room Harness (Engine Compartment)
- Engine Control Harness

To use the grid reference

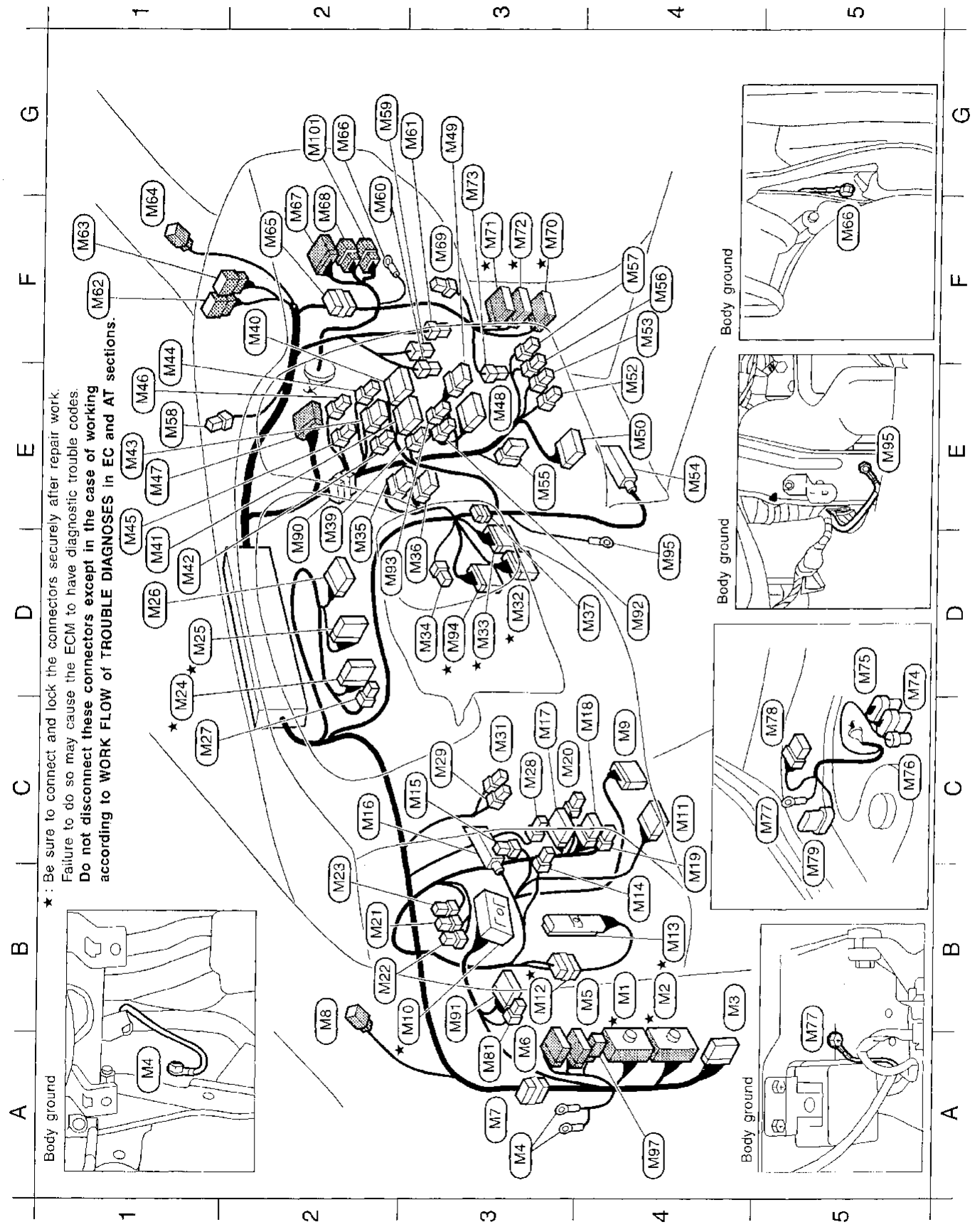
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

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.	—			

Main Harness



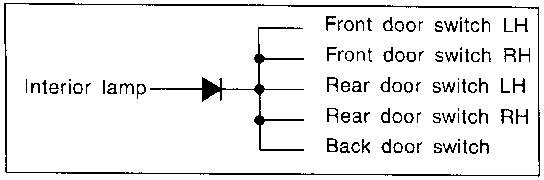
MEL822G

B4★	M1	SMJ	:	To E1
B4★	M2	SMJ	:	To B1
B4	M3	B/20	:	ASCD control unit
A3	M4	—	:	Body ground
B4	M5	W/16	:	To D3
A3	M6	W/10	:	To D4
A3	M7	W/2	:	Diode
B2	M8	BR/2	:	Tweeter LH
C4	M9	W/16	:	Data link connector for GST
B3★	M10	SMJ	:	Fuse block (J/B)
C4	M11	GY/14	:	Data link connector for CONSULT
B3★	M12	SB/6	:	Diode
B4★	M13	W/48	:	A/T control unit
B4	M14	L/2	:	ASCD clutch switch
C3	M15	B/3	:	Combination flasher unit
C2	M16	W/36	:	Smart entrance control unit
C3	M17	GY/12	:	Door mirror remote control switch
C4	M18	W/6	:	ASCD main switch
C4	M19	W/3	:	Illumination control switch
C3	M20	W/4	:	Security indicator lamp (With theft warning system)
B2	M21	W/2	:	Circuit breaker-1
B2	M22	W/2	:	Circuit breaker-2 (With power seat)
B2	M23	L/4	:	Power window relay
D1★	M24	W/16	:	Combination meter
D1★	M25	W/14	:	Combination meter
D1	M26	BR/16	:	Combination meter
C1	M27	W/3	:	Warning buzzer
C3	M28	L/2	:	Clutch interlock switch (For M/T model)
C3	M29	L/2	:	ASCD brake switch
C3	M31	B/2	:	Brake lamp switch
D3★	M32	W/24	:	To F23
D3★	M33	GY/16	:	To F22
D3	M34	W/2	:	In-vehicle sensor (With auto A/C)
D2	M35	W/8	:	Hazard switch
D3	M36	W/6	:	Rear window defogger switch
D4	M37	GY/6	:	Joint connector
E2	M39	BR/4	:	A/C mode switch (For auto A/C)
F2	M40	B/12	:	A/C auto amp. (For auto A/C)
D1	M41	B/16	:	A/C auto amp. (For auto A/C)
D1	M42	W/4	:	Recirculation switch
E1	M43	W/6	:	Fan switch
E1	M44	W/3	:	A/C switch
E1	M45	W/3	:	A/C switch illumination
E1	M46	BR/4	:	Thermo control amp.
E1	M47	Y/12	:	To Z1
E3	M48	W/10	:	Audio
G3	M49	W/6	:	Audio
E4	M50	W/12	:	Rear wiper switch
E4	M52	L/4	:	Heated seat switch LH
F4	M53	W/4	:	Heated seat switch RH
E4	M54	B/88	:	ABS control unit
E3	M55	B/6	:	Air mix door motor
F4	M56	B/2	:	Cigarette lighter socket
F4	M57	W/2	:	Cigarette lighter illumination
E1	M58	B/2	:	Sunload sensor
G2	M59	W/4	:	Intake door motor
F2	M60	W/4	:	Fan control amp. (For auto A/C)
G3	M61	BR/4	:	Fan resistor
F1	M62	W/6	:	To R1
F1	M63	W/6	:	To R2
F1	M64	BR/2	:	Tweeter RH
F2	M65	W/2	:	Diode
G2	M66	—	:	Body ground
F2	M67	W/12	:	To D33
F2	M68	W/6	:	To D34
F3	M69	W/3	:	Power antenna motor
F3★	M70	W/20	:	To B50
F3★	M71	W/24	:	To B51
F3★	M72	W/16	:	To B52
G3	M73	W/2	:	Blower motor
D5	M74	B/6	:	ABS actuator
D5	M75	GY/8	:	ABS actuator
C5	M76	W/2	:	ABS actuator
C5	M77	—	:	Body ground
C5	M78	W/6	:	Front wiper motor
C5	M79	W/8	:	Front wiper amp.
A3	M81	B/2	:	Fuse block (J/B)
D2	M90	W/2	:	Diode
B3	M91	W/12	:	Fuse block (J/B)
E3	M92	B/2	:	Audio option connector (Not used)
D2	M93	W/4	:	Audio option connector (Not used)
D3★	M94	W/18	:	To F27
D4	M95	—	:	Body ground (For ABS)
A4	M97	BR/4	:	To D11
G2	M101	BR/6	:	To D45

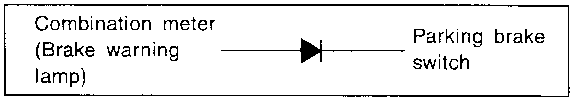
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

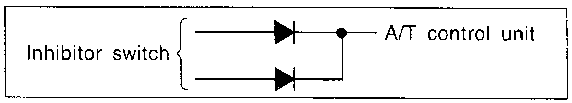
Diode M65



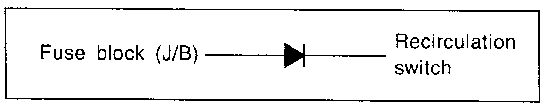
Diode M7



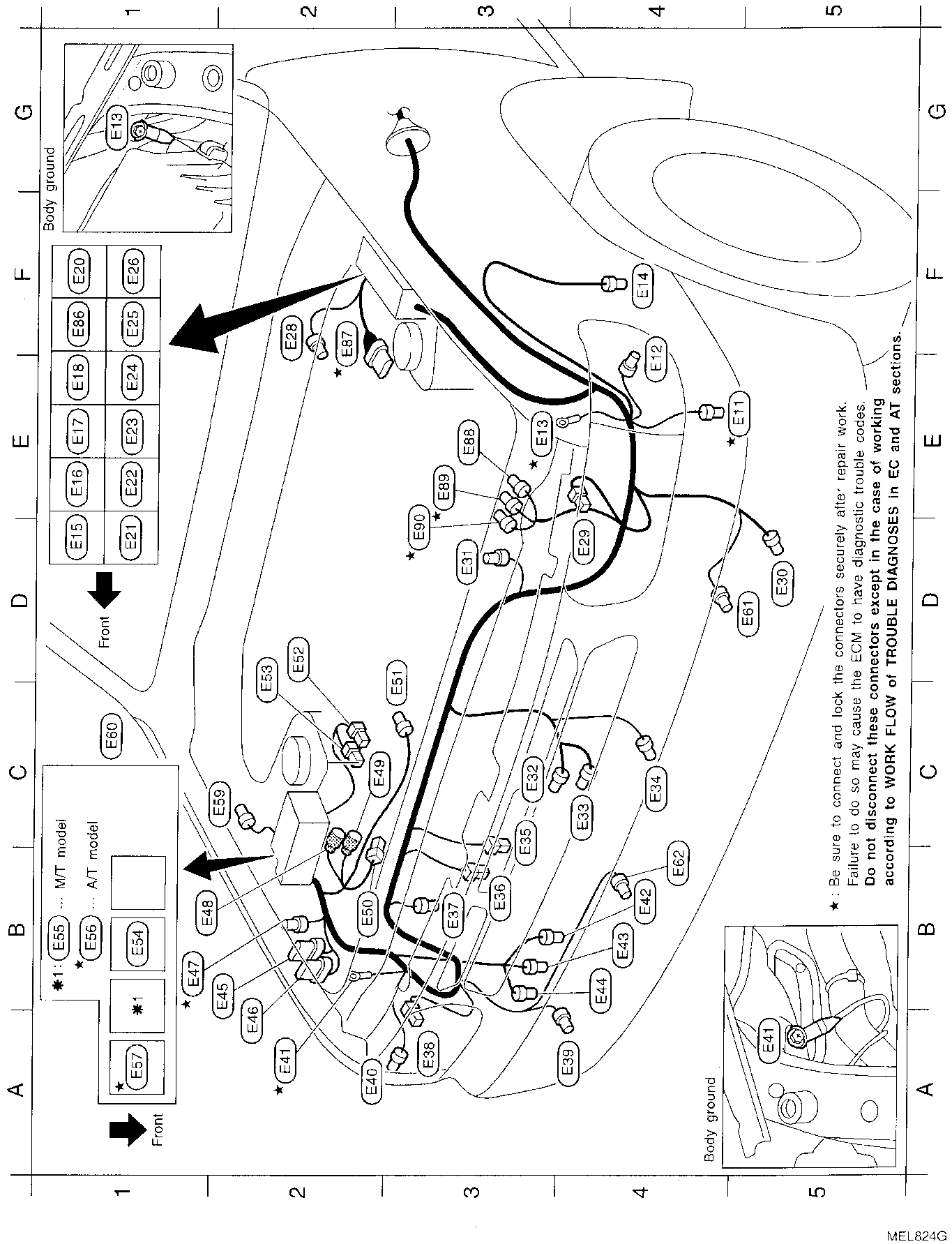
Diode M12



Diode M90



Engine Room Harness



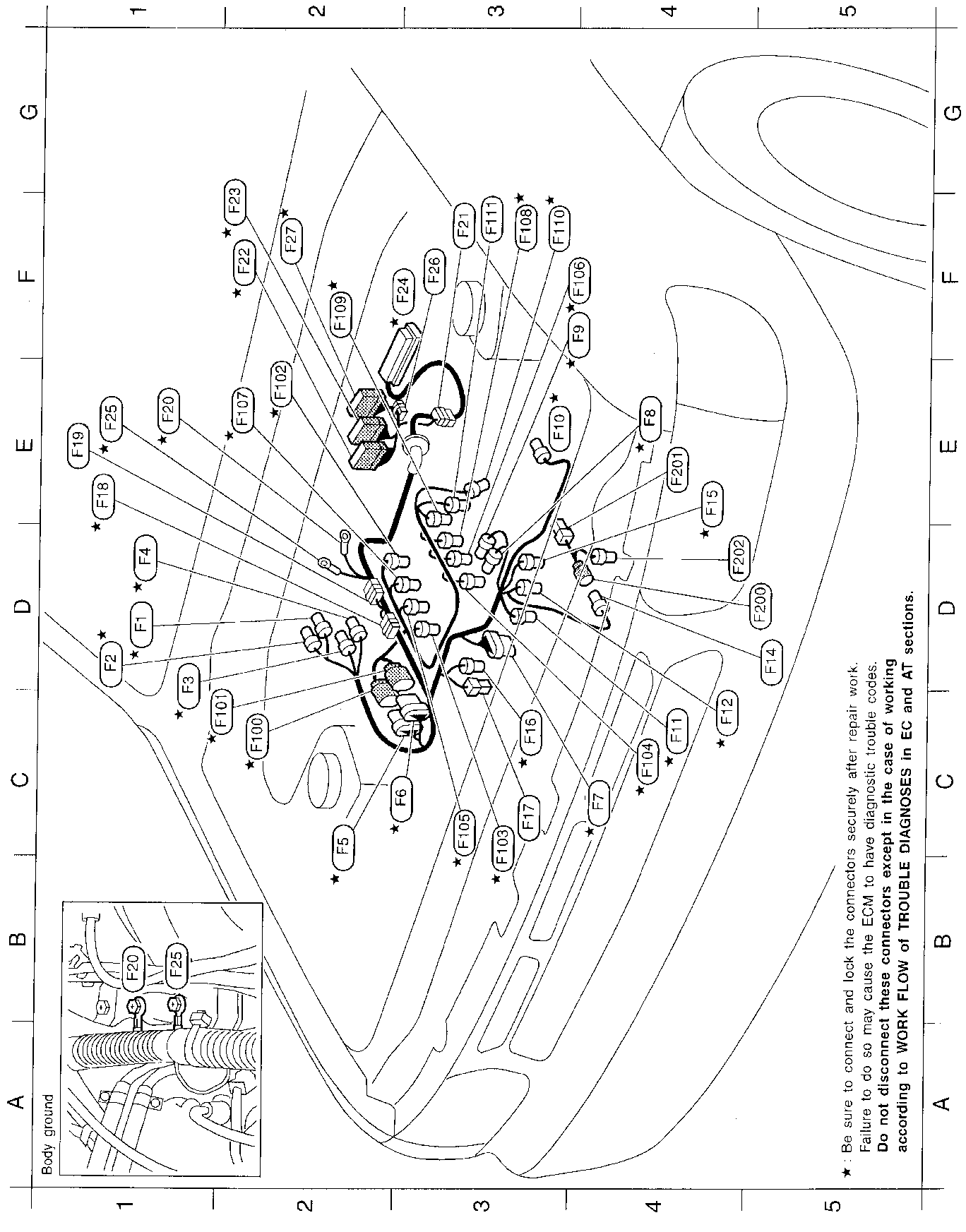
Engine Room Harness (Cont'd)

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.**

★	E1	SMJ	To M1		
	E2	B/2	Fuse block (J/B)		
	E3	W/16	Fuse block (J/B)		
	E4	W/6	Fuse block (J/B)		
	E5	W/2	Key switch		
★	E6	W/6	Ignition switch		
	E7	BR/4	Combination switch (Lighting switch)		
	E8	BR/8	Combination switch (Lighting & turn signal switch)		
	E9	GY/8	Combination switch (Front wiper switch)		
	E10	B/1	Not used		
E4 ★	E11	GY/2	Intake air temperature sensor		
E4	E12	GY/2	Side marker lamp LH		
E3 ★	E13	—	Body ground		
F4	E14	BR/2	Front wheel sensor LH		
E1	E15	B/5	Multi remote control relay-2	(Relay box-1)	
E1	E16	BR/6	Multi remote control relay-1		
E1	E17	L/4	Front fog lamp relay		
F1	E18	BR/6	Theft warning lamp relay		
F1	E20	B/5	Theft warning relay		
E1	E21	L/4	Power socket relay		
E1	E22	BR/6	ASCD hold relay		
E1	E23	BR/6	Theft warning horn relay		
F1	E24	B/5	Park/Neutral position relay		
F1	E25	W/3	Horn relay		
F1	E26	L/4	A/C relay		
F2	E28	GY/2	Brake fluid level switch		
E4	E29	B/3	Headlamp LH		
D5	E30	GY/2	Front turn signal lamp LH		
D3	E31	GY/2	Hood switch		
C3	E32	B/2	Ambient sensor (With auto A/C)		
C4	E33	B/2	Ambient air temperature sensor (For thermometer)		
C4	E34	GY/2	Ambient air temperature switch		
C3	E35	B/1	Horn (High)		
B3	E36	B/1	Horn (Low)		
B3	E37	B/2	Dual-pressure switch		
A3	E38	B/3	Headlamp RH		
A4	E39	GY/2	Front turn signal lamp RH		
A2	E40	GY/2	Side marker lamp RH		
A2 ★	E41	—	Body ground		
B4	E42	BR/2	Washer level switch		
B4	E43	GY/2	Rear washer motor		
B4	E44	GY/2	Front washer motor		
B2	E45	GY/8	Daytime light control unit		
A2	E46	GY/6	Daytime light control unit		
B1 ★	E47	GY/2	Dropping resistor		
B1	E48	GY/4	To E102		
C2	E49	GY/1	To E104		
B2	E50	B/1	Theft warning horn		
C3	E51	GY/2	Front wheel sensor RH		
D2	E52	B/1	Battery		
C2	E53	B/1	Battery		
B1	E54	L/4	Fuel pump relay		
B1	E55	L/4	Clutch interlock relay (For M/T model)	(Relay box-2)	
B1 ★	E56	BR/6	Inhibitor relay (For A/T model)		
B1 ★	E57	BR/6	ECCS relay		
C2	E59	GY/4	ASCD pump		
C1	E60	—	Fuse and fusible link box		
D5	E61	BR/2	Front fog lamp LH		
B4	E62	BR/2	Front fog lamp RH		
	E63	W/3	Front fog lamp switch		
F1	E86	L/4	ATP relay (Relay box-1)		
E2 ★	E87	GY/6	EVAP canister purge volume control valve		
E3	E88	GY/3	Absolute pressure sensor		
E3 ★	E89	G/2	EVAP canister purge control solenoid valve		
E3 ★	E90	B/2	MAP/BARO switch solenoid valve		

MEL825G

Engine Control Harness



MEL826G

Engine Control Harness (Cont'd)

D1★	F1	GY/4	: Rear heated oxygen sensor RH
D1★	F2	GY/3	: Front heated oxygen sensor RH
D1★	F3	GY/4	: Rear heated oxygen sensor LH
D1★	F4	GY/3	: Front heated oxygen sensor LH
C2★	F5	GY/8	: To F100
C3★	F6	B/8	: To F101
C4★	F7	GY/6	: Distributor
E4★	F8	BR/3	: Throttle position sensor
F4★	F9	GY/3	: Throttle position switch
E3★	F10	BR/4	: Mass air flow sensor
C4★	F11	GY/2	: Ignition coil
C4	F12	GY/2	: EGR temperature sensor
D5	F14	GY/2	: To F200
E4★	F15	B/2	: EGRC-solenoid valve
C3★	F16	GY/2	: Engine coolant temperature sensor
C3	F17	B/1	: Thermal transmitter
E1★	F18	B/2	: Resistor
E1	F19	W/2	: Condenser
E1★	F20	—	: Engine ground
F3	F21	L/12	: Joint connector
F2★	F22	GY/16	: To M33
F2★	F23	W/24	: To M32
F2★	F24	W/88	: ECM (ECCS control module)
E1★	F25	—	: Engine ground
F3	F26	W/2	: Diode
F2★	F27	W/18	: To M94
C2★	F100	GY/8	: To F5
C2★	F101	B/8	: To F6
E2★	F102	B/2	: Knock sensor
C3★	F103	B/2	: Injector No. 1
C4★	F104	B/2	: Injector No. 2
C3★	F105	B/2	: Injector No. 3
F4★	F106	B/2	: Injector No. 4
E2★	F107	B/2	: Injector No. 5
F3★	F108	B/2	: Injector No. 6
F2★	F109	BR/2	: IACV-AAC valve
F3★	F110	GY/2	: Crankshaft position sensor (OBD)
F3	F111	GY/2	: IACV-FICD solenoid valve
D5	F200	GY/2	: To F14
E4	F201	B/1	: Oil pressure switch
D4	F202	B/1	: Compressor (Air conditioner)

Diode F26

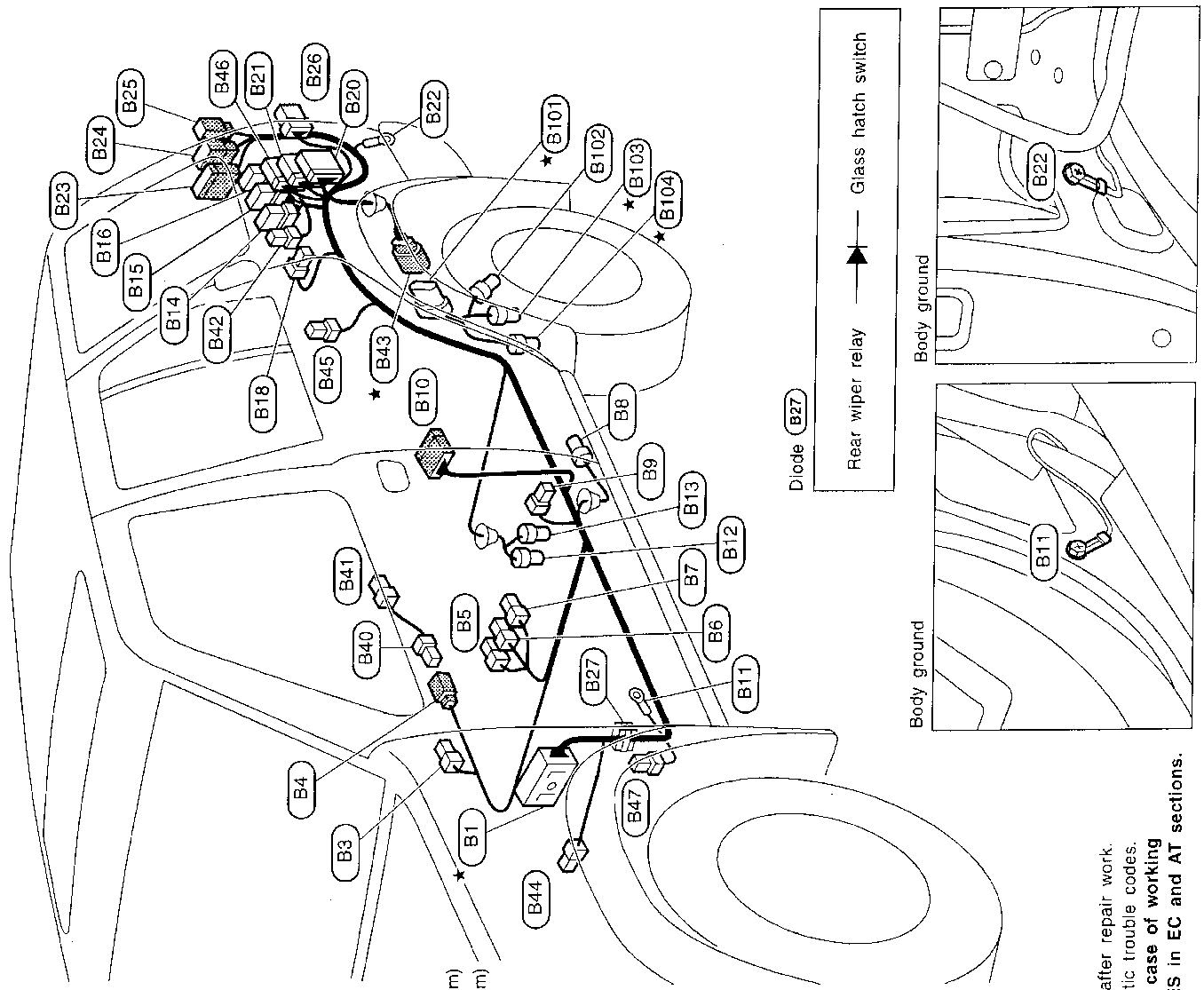
IACV-FICD solenoid valve → ECM (ECCS control module)

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

MEL827G

Body Harness LH

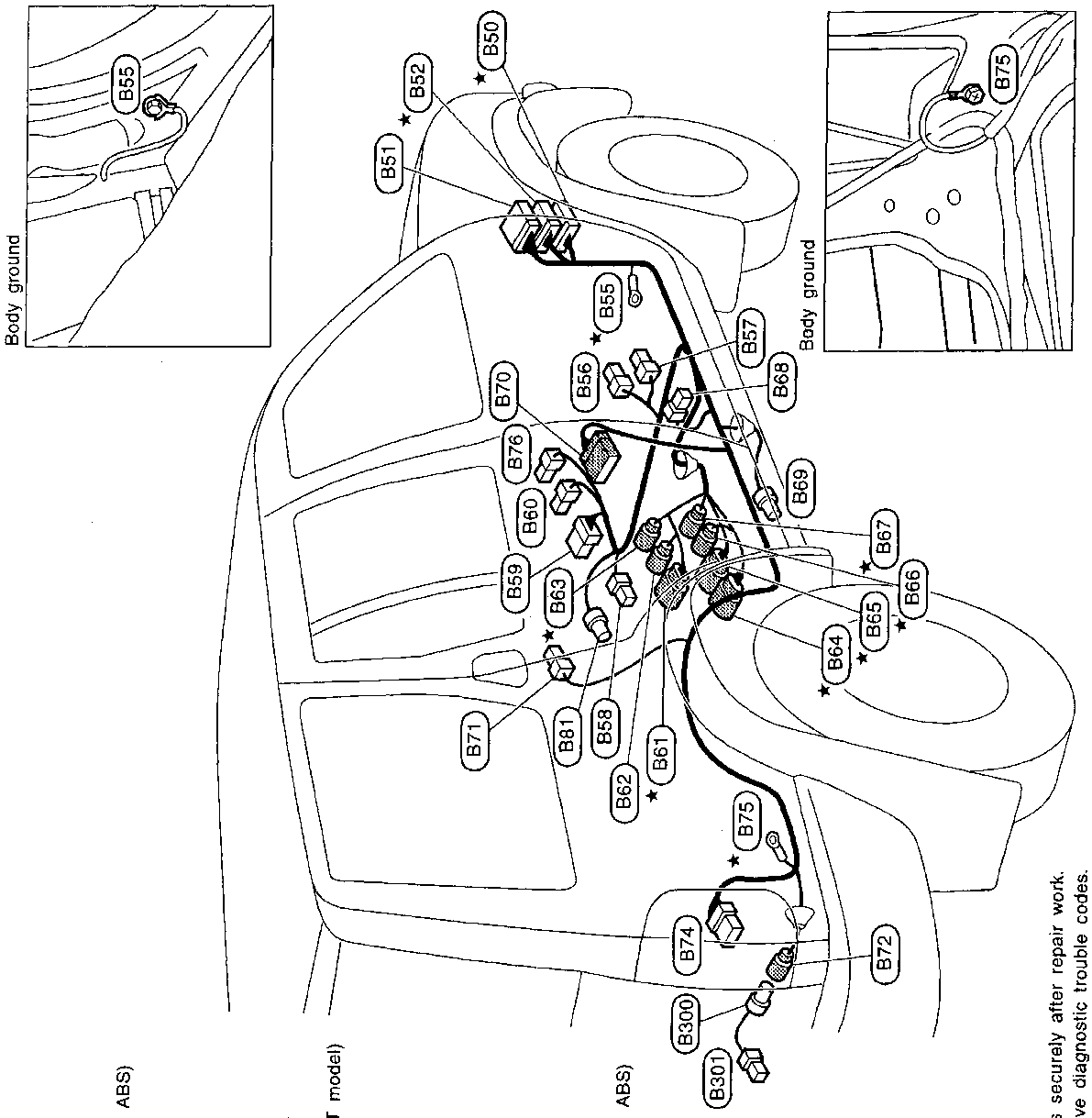


★	B1	SMJ	: To M2
	B3	B/1	: Parking brake switch
	B4	W/2	: To B40
	B5	GY/3	: Heated seat LH
	B6	W/3	: Seat belt buckle switch
	B7	W/2	: Power seat harness
	B8	BR/2	: Rear wheel sensor LH
	B9	B/3	: Front door switch LH
	B10	W/10	: To D50
	B11	—	: Body ground
	B12	GY/4	: Fuel tank gauge unit
	B13	GY/2	: Fuel pump
	B14	W/8	: Rear wiper amp.
	B15	GY/6	: Rear wiper relay
	B16	BR/6	: Rear window defogger relay
	B18	BR/1	: Rear door switch LH
	B20	W/16	: Speaker amp. (With 6-speaker audio system)
	B21	W/10	: Speaker amp. (With 6-speaker audio system)
	B22	—	: Body ground
	B23	W/12	: To D100
	B24	W/6	: To D101
	B25	W/4	: To D102
	B26	W/6	: Rear combination lamp LH
	B27	—	: Diode
	B40	W/2	: To B4
	B41	B/2	: Power socket
	B42	L/4	: Door mirror defogger relay
★	B43	GY/8	: To B101
	B44	GY/1	: Smart entrance control unit
	B45	B/1	: Antenna (For smart entrance control unit)
	B46	W/26	: Speaker amp. (For BOSE system)
	B47	W/4	: Audio amp. relay
★	B101	W/8	: To B43
★	B102	GY/3	: EVAP control system pressure sensor
★	B103	B/2	: EVAP canister vent control valve
★	B104	G/2	: Vacuum cut valve bypass valve

★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

MEL828G

Body Harness RH

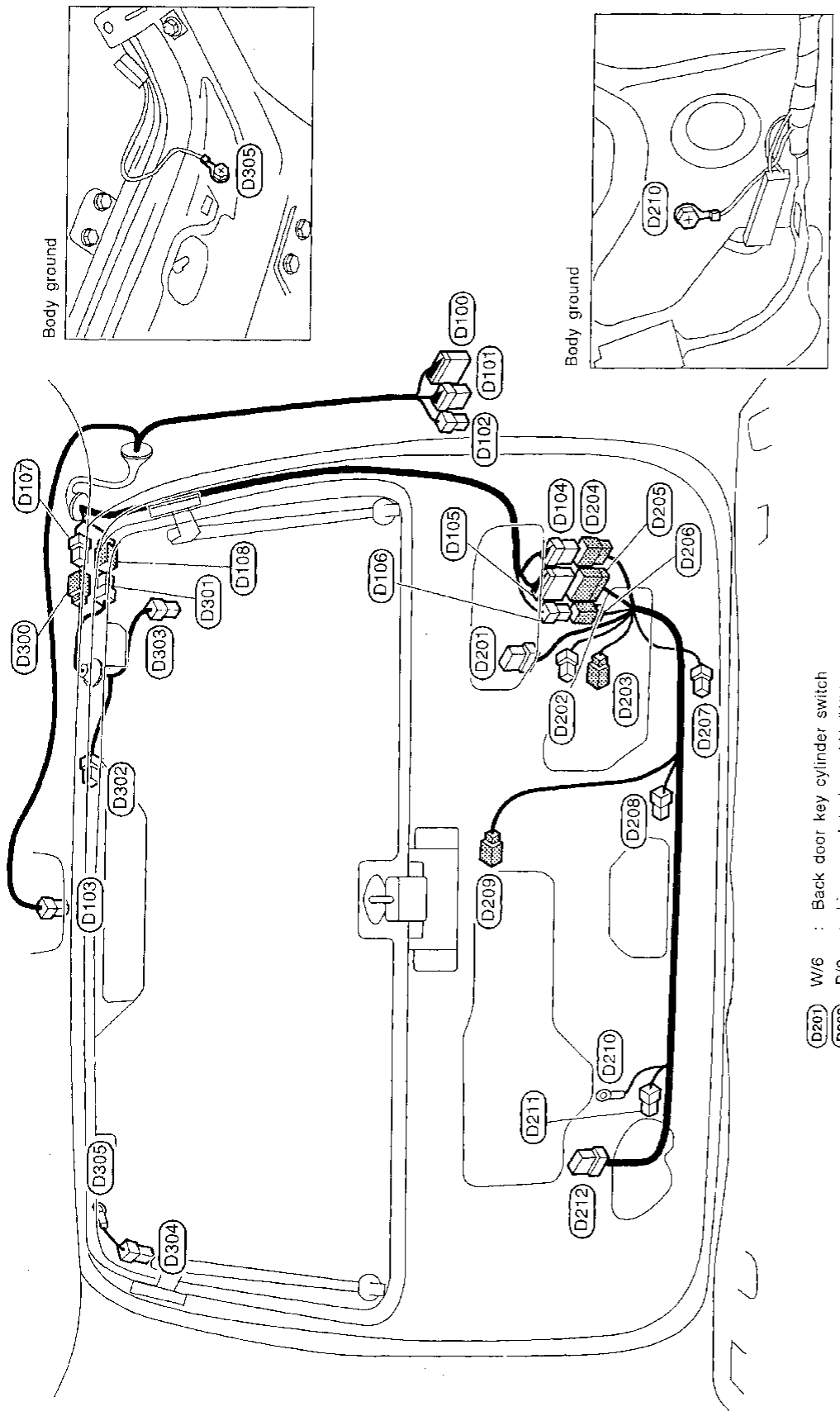


★★	B50	W/20	: To M70		
★★	B51	W/24	: To M71		
★★	B52	W/16	: To M72		
★★	B55	—	: Body ground		
	B56	GY/3	: Heated seat RH		
	B57	W/2	: To power seat harness RH		
	B58	GY/2	: G sensor (For 4WD model with ABS)		
	B59	W/6	: A/T device		
	B60	W/2	: Ashtray (M/T model)		
★	B61	B/6	: To B200 (M/T model)		
	B62	B/4	: To B201 (4WD A/T model)		
★★	B63	GY/2	: Vehicle speed sensor		
★★★	B64	BR/8	: Terminal cord assembly	(A/T model)	
★★★	B65	GY/8	: Inhibitor switch		
★★	B66	GY/2	: Inhibitor switch		
★★	B67	GY/3	: Revolution sensor		
	B68	BR/1	: Front door switch RH		
	B69	GY/2	: Rear wheel sensor RH		
	B70	W/10	: To D70		
	B71	BR/1	: Rear door switch RH		
	B72	GY/2	: To B300		
★	B74	W/6	: Rear combination lamp RH		
★	B75	—	: Body ground		
	B76	W/3	: Ashtray (A/T model)		
	B81	GY/2	: G sensor (For 4WD model with ABS)		
	B300	GY/2	: To B72		
	B301	B/3	: Tire carrier switch		

★: Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

MEL829G

Back Door Harness



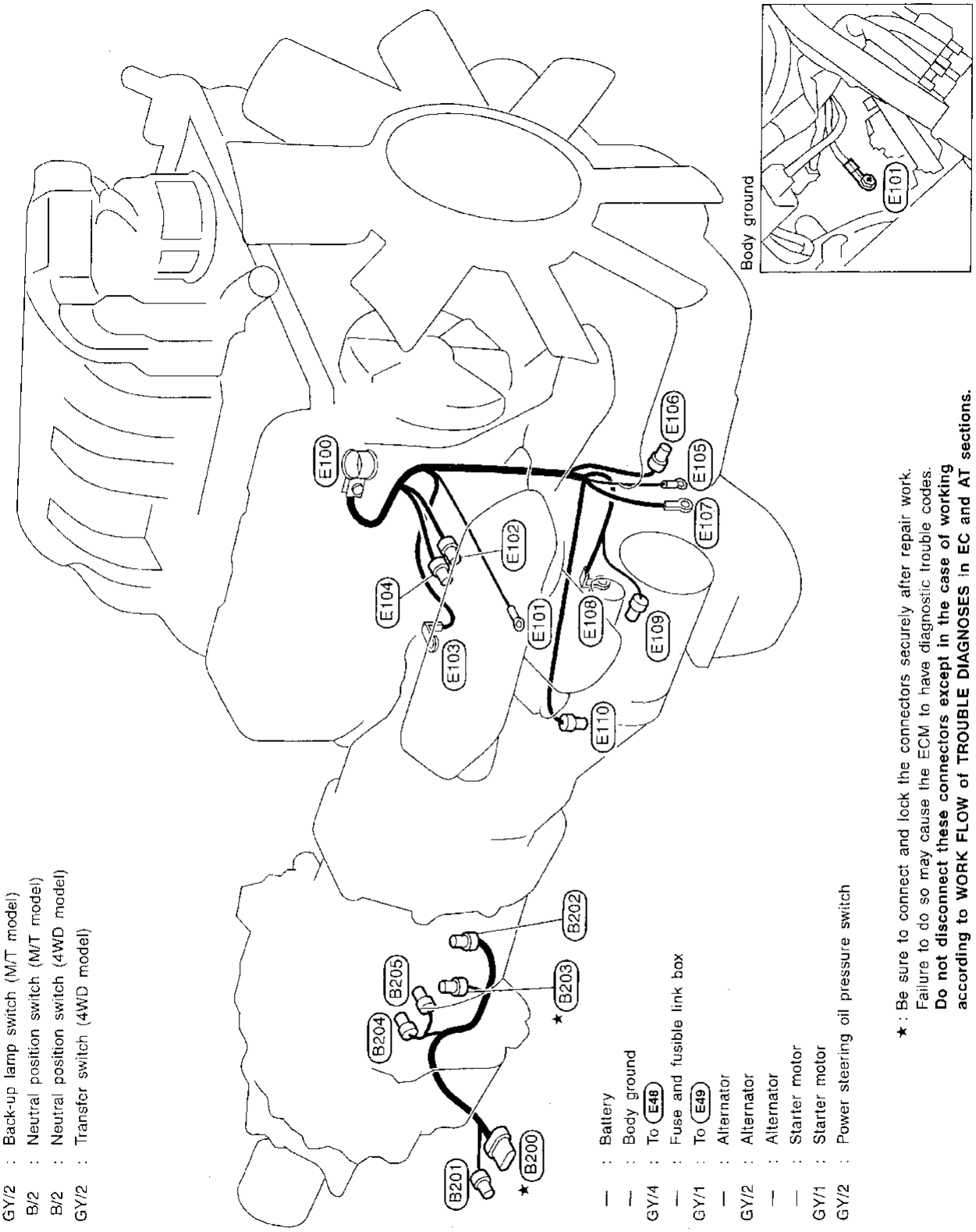
D300 W/2 : To D107
D301 W/1 : To D108
D302 W/3 : High-mounted stop lamp
D303 B/1 : Rear window defogger
D304 B/1 : Rear window defogger
D305 — : Body ground

D201 W/6 : Back door key cylinder switch
D202 B/2 : License plate lamp LH (Without spare tire carrier)
D203 BR/2 : License plate lamp (With spare tire carrier)
D204 W/8 : To D104
D205 W/12 : To D105
D206 W/4 : To D106
D207 W/4 : Back door lock actuator
D208 W/2 : Back door switch
D209 W/2 : Glass hatch switch
D210 — : Body ground
D211 B/2 : License plate lamp RH (Without spare tire carrier)
D212 W/8 : Rear wiper motor

D100 W/12 : To B23
D101 W/6 : To B24
D102 W/4 : To B25
D103 W/3 : Luggage room lamp
D104 W/8 : To D204
D105 W/12 : To D205
D106 W/4 : To D206
D107 W/2 : To D300
D108 W/1 : To D301

MEL830G

Engine and Transmission Harness



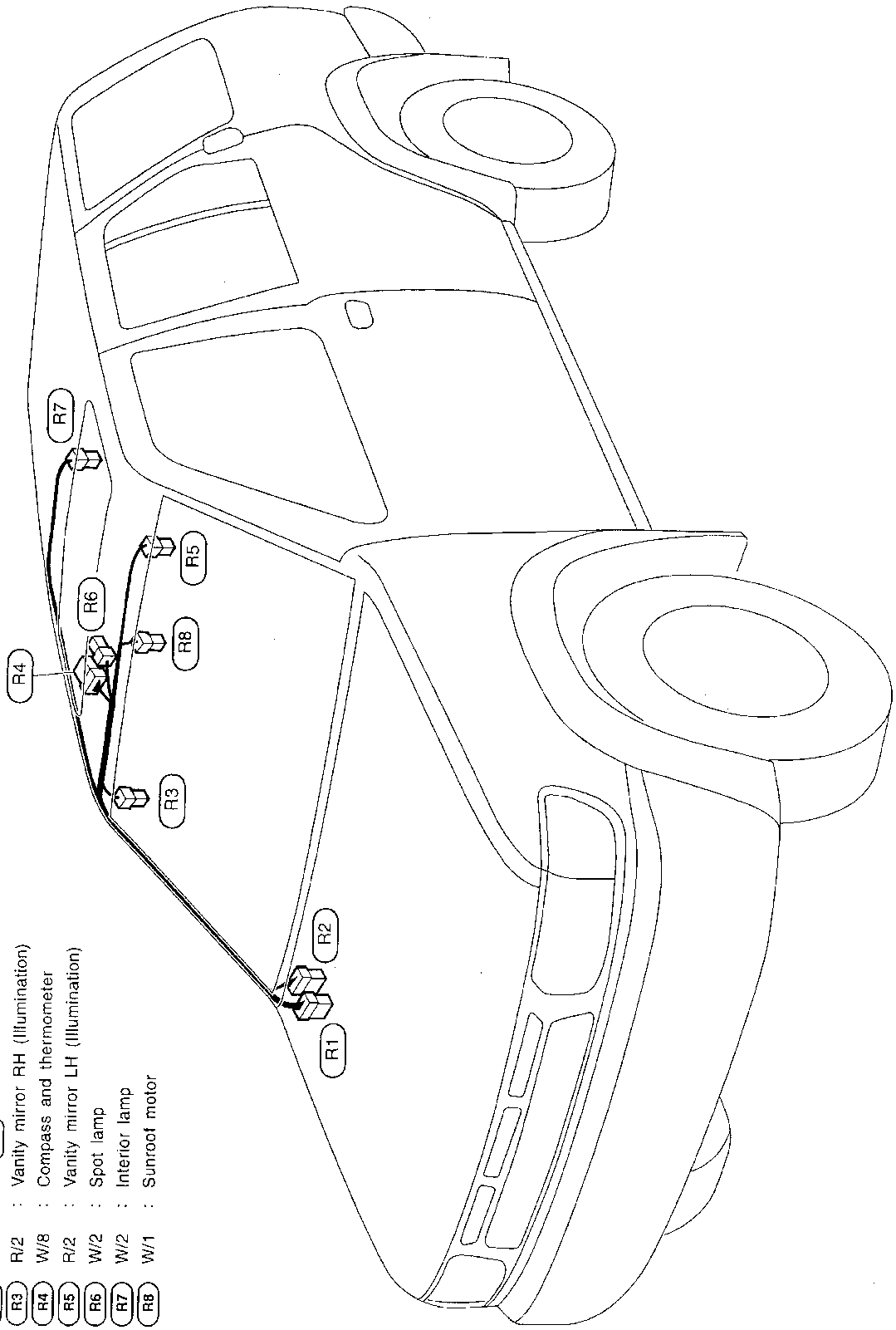
★ B200 B/6 : To B61 (M/T model)
B201 B/4 : To B62 (A/T model)
B202 GY/2 : Back-up lamp switch (M/T model)
★ B203 B/2 : Neutral position switch (M/T model)
B204 B/2 : Neutral position switch (4WD model)
B205 GY/2 : Transfer switch (4WD model)

E100 — : Battery
E101 — : Body ground
E102 GY/4 : To E48
E103 — : Fuse and fusible link box
E104 GY/1 : To E49
E105 — : Alternator
E106 GY/2 : Alternator
E107 — : Alternator
E108 — : Starter motor
E109 GY/1 : Starter motor
E110 GY/2 : Power steering oil pressure switch

★ : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

MEL831G

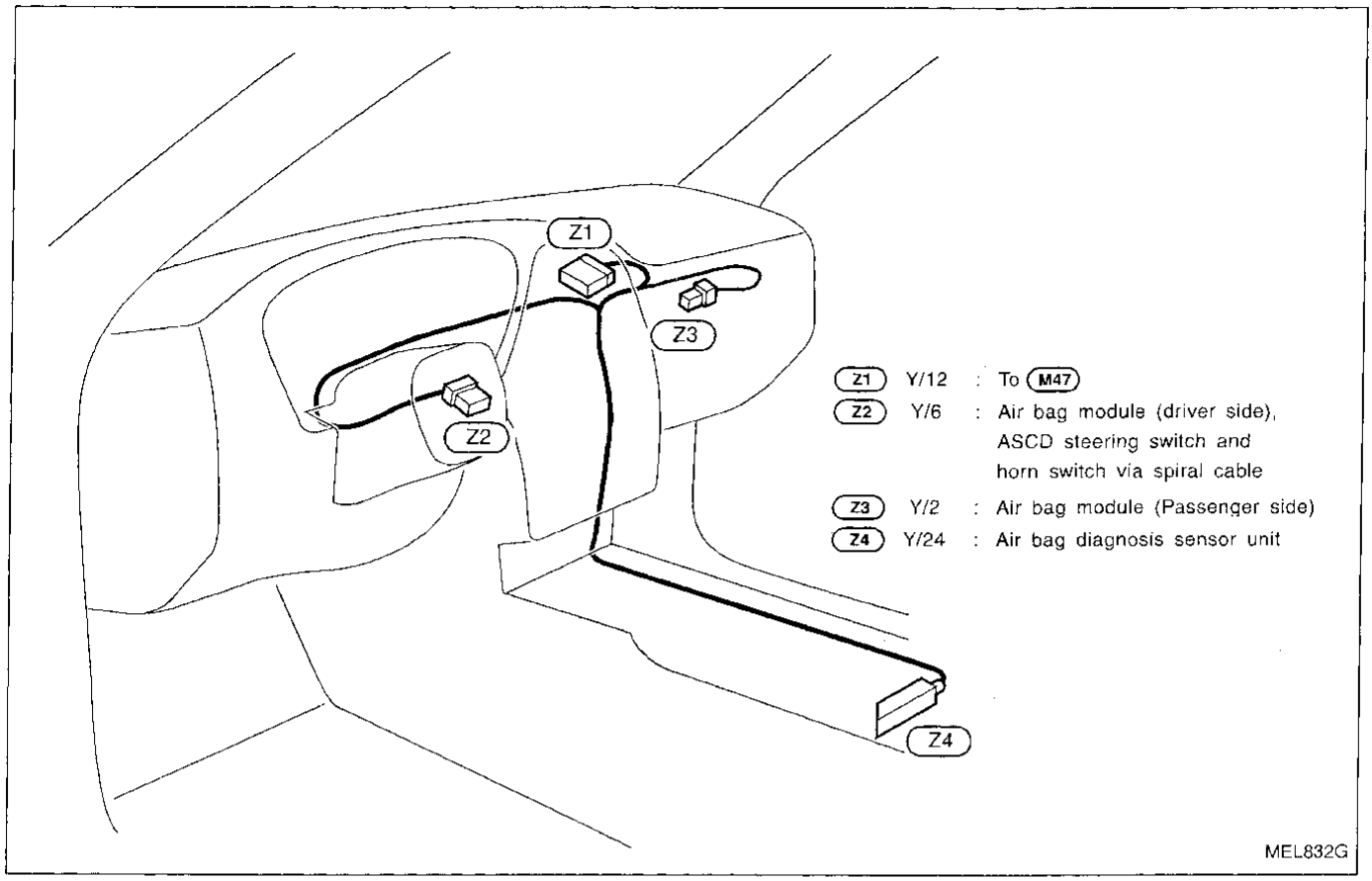
Room Lamp



R1	W/6	: To M62
R2	W/6	: To M63
R3	R/2	: Vanity mirror RH (Illumination)
R4	W/8	: Compass and thermometer
R5	R/2	: Vanity mirror LH (Illumination)
R6	W/2	: Spot lamp
R7	W/2	: Interior lamp
R8	W/1	: Sunroof motor

MEL866FB

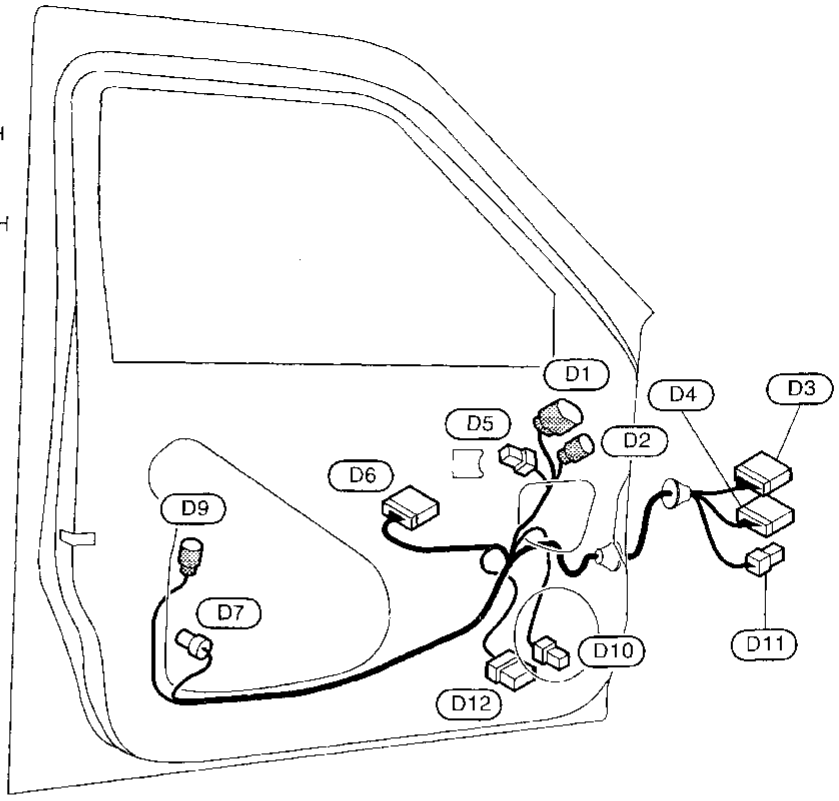
Air Bag Harness



Door Harness (LH side)

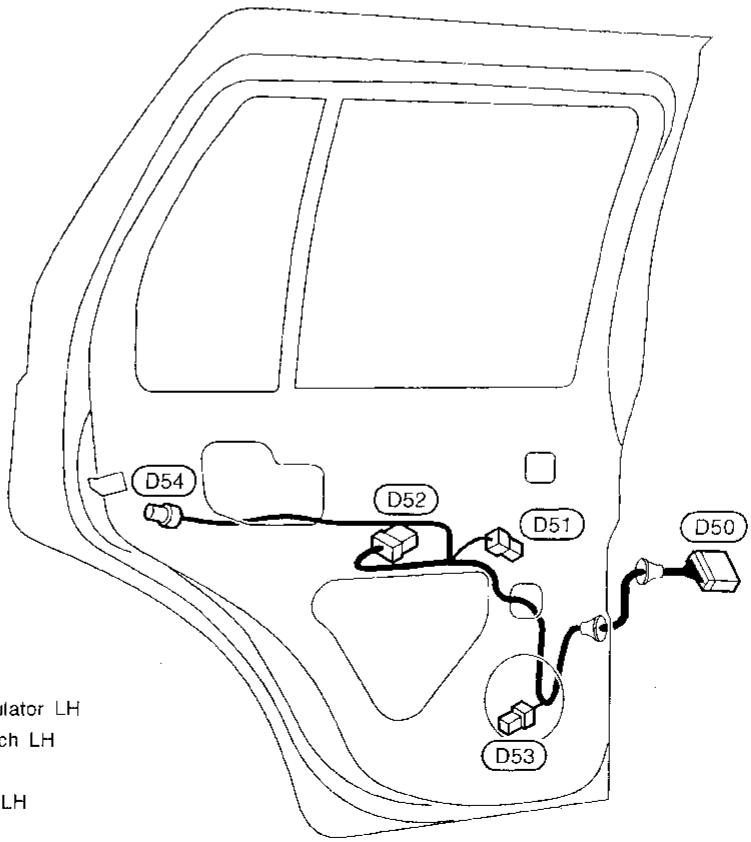
FRONT

(D1) GY/5 : Door mirror defogger LH
(D2) BR/3 : Door mirror LH
(D3) W/16 : To (M5)
(D4) W/10 : To (M6)
(D5) B/2 : Front power window regulator LH
(D6) W/16 : Front power window switch LH
(D7) GY/4 : Front door lock actuator LH
(D9) BR/3 : Front door key cylinder switch LH
(D10) BR/2 : Front door speaker LH
(Except for BOSE system)
(D11) BR/4 : To (M97)
(D12) W/6 : Front door speaker LH
(For BOSE system)



MEL833G

REAR

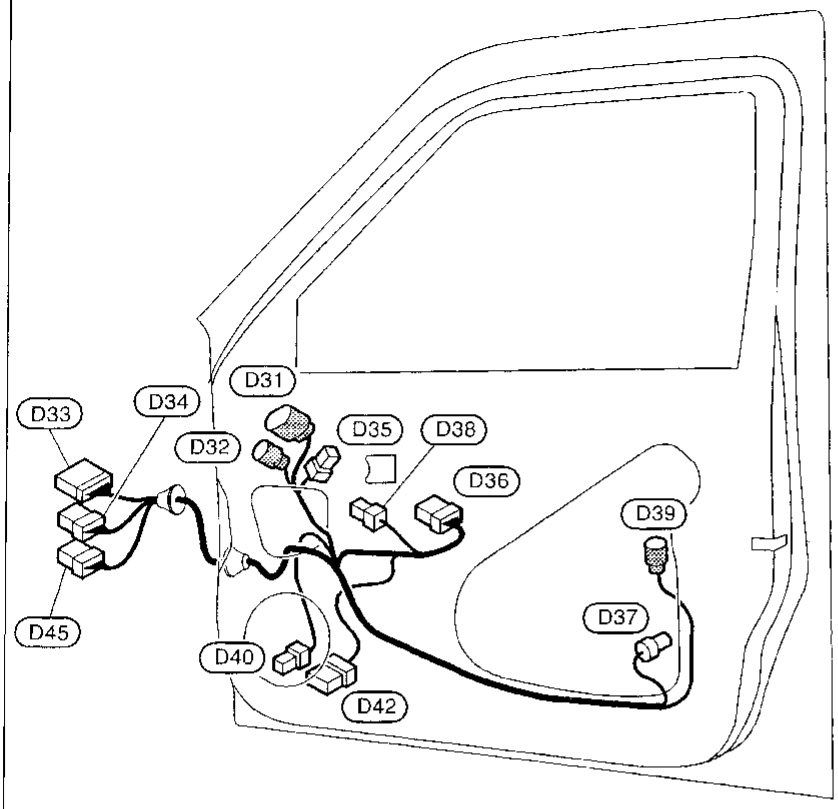


(D50) W/10 : To (B10)
(D51) B/2 : Rear power window regulator LH
(D52) W/8 : Rear power window switch LH
(D53) BR/2 : Rear door speaker LH
(D54) GY/4 : Rear door lock actuator LH

MEL870F

FRONT

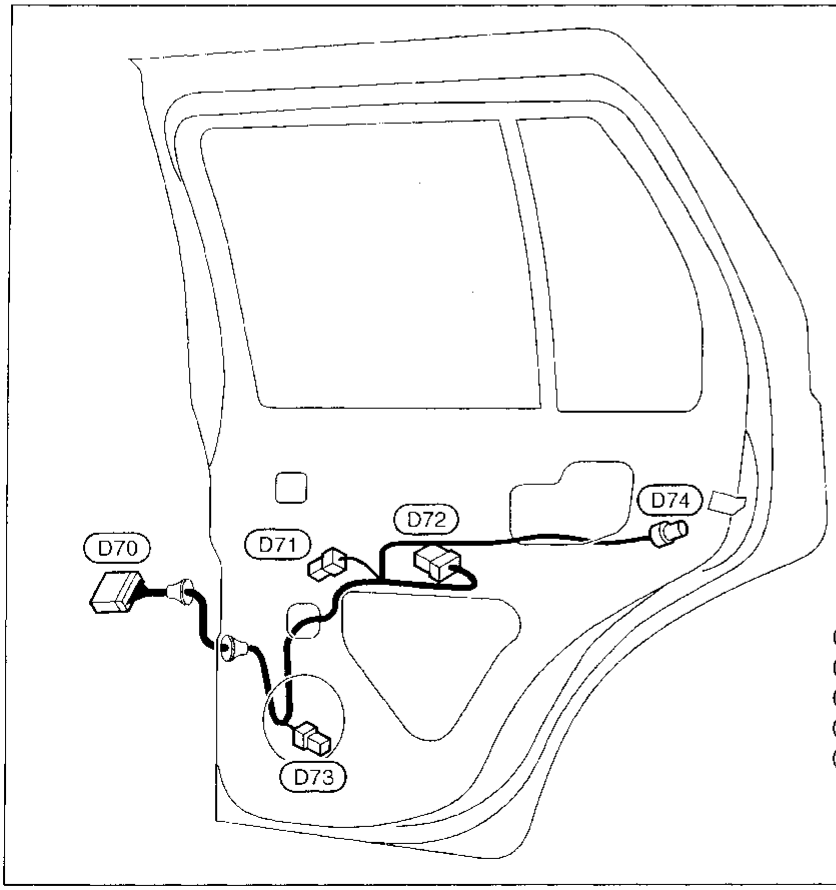
Door Harness (RH side)



D31	GY/5	:	Door mirror defogger RH
D32	BR/3	:	Door mirror RH
D33	W/12	:	To M67
D34	W/6	:	To M68
D35	B/2	:	Power window regulator RH
D36	W/8	:	Front power window switch RH
D37	GY/4	:	Front door lock actuator RH
D38	W/3	:	Door lock switch RH
D39	BR/3	:	Front door key cylinder switch RH
D40	BR/2	:	Front door speaker RH (Except for BOSE system)
D42	W/6	:	Front door speaker RH (For BOSE system)
D45	BR/6	:	To M101

MEL834G

REAR



D70	W/10	:	To B70
D71	B/2	:	Rear power window regulator RH
D72	W/8	:	Rear power window switch RH
D73	BR/2	:	Rear door speaker RH
D74	GY/4	:	Rear door lock actuator RH

MEL873F