

SECTION **EL**

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When you read wiring diagrams:

- Read GI section, "HOW TO READ WIRING DIAGRAMS".

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

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WIRING DIAGRAM REFERENCE CHART

ECCS	EC SECTION	
A/T CONTROL, SHIFT LOCK CONTROL	AT SECTION	EM
ANTI-LOCK BRAKE SYSTEM	BR SECTION	
SRS "AIR BAG"	RS SECTION	LC
HEATER AND AIR CONDITIONER	HA SECTION	

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PRECAUTIONS

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 the complete harness, for easy identification.

HARNESS CONNECTOR

Description

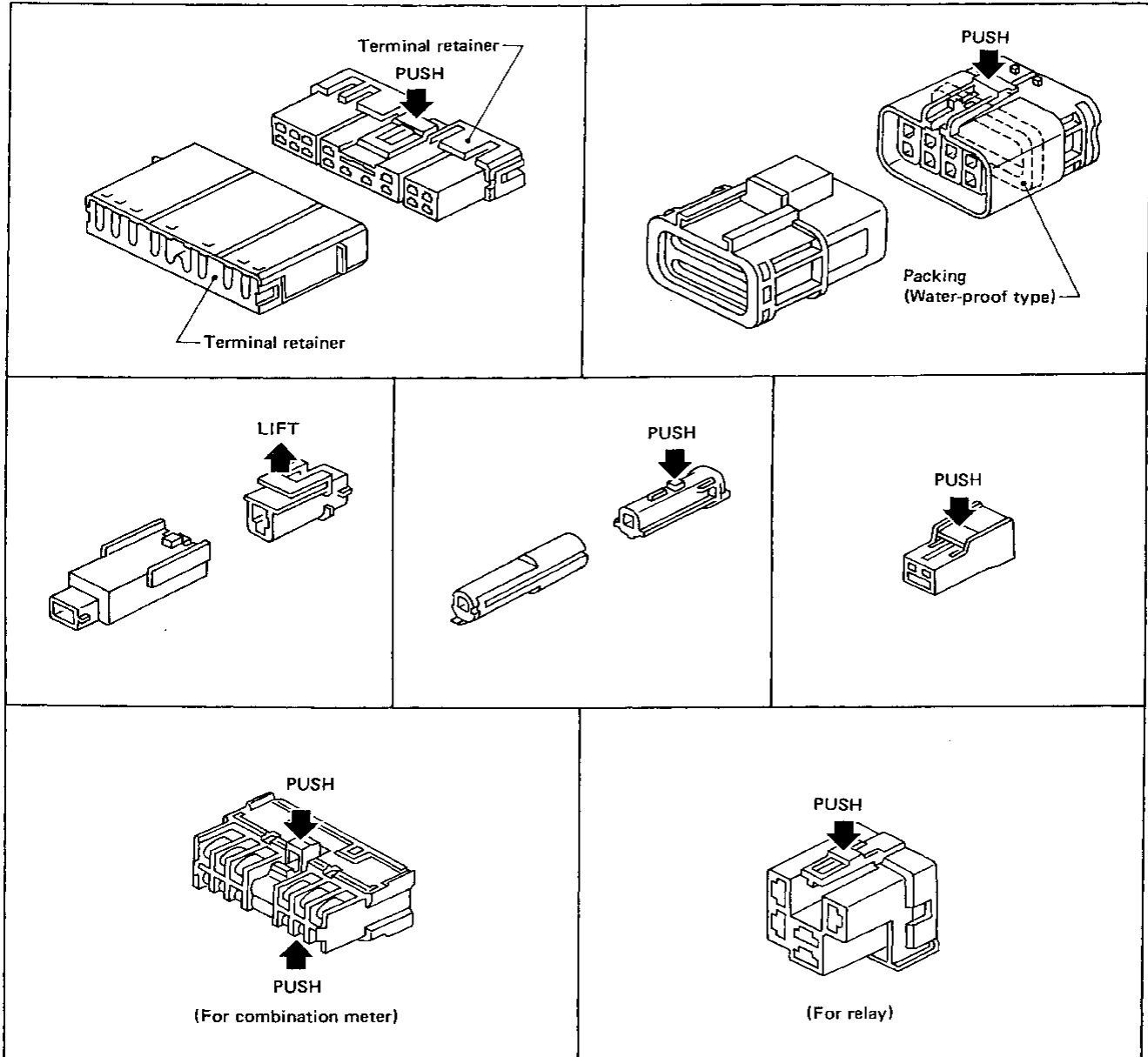
HARNESS CONNECTOR

- 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]



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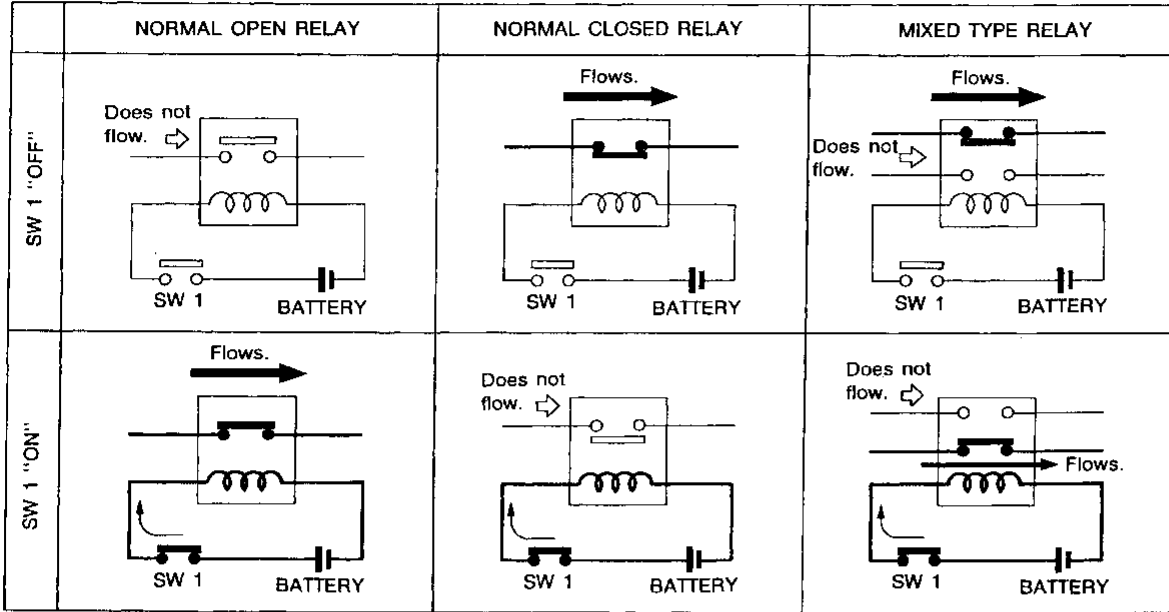
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STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

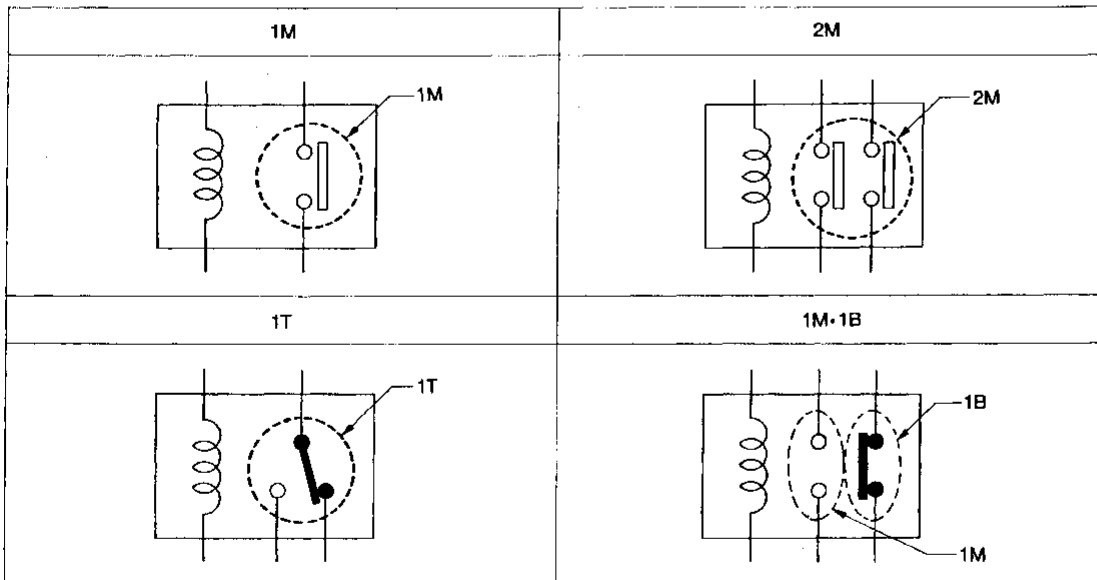
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

TYPE OF STANDARDIZED RELAYS

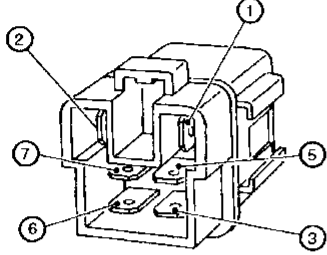
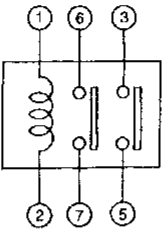
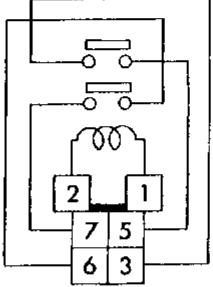
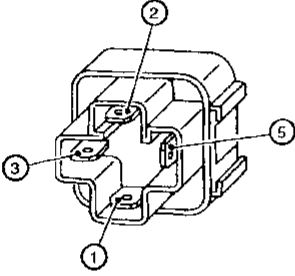
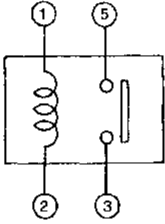
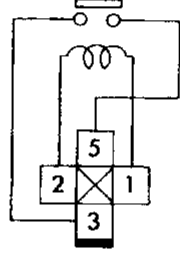
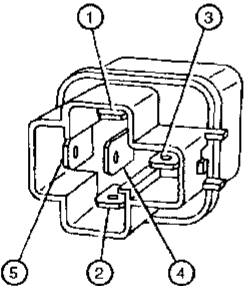
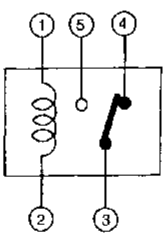
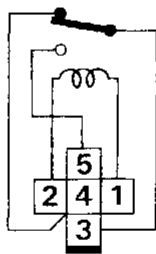
1M 1 Make 2M 2 Make
 1T 1 Transfer 1M-1B 1 Make 1 Break



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STANDARDIZED RELAY

Description (Cont'd)

TYPE	Outer view	Circuit	Connector symbol and connection	Case color
2M				BROWN
1M				BLUE
1T				BLACK

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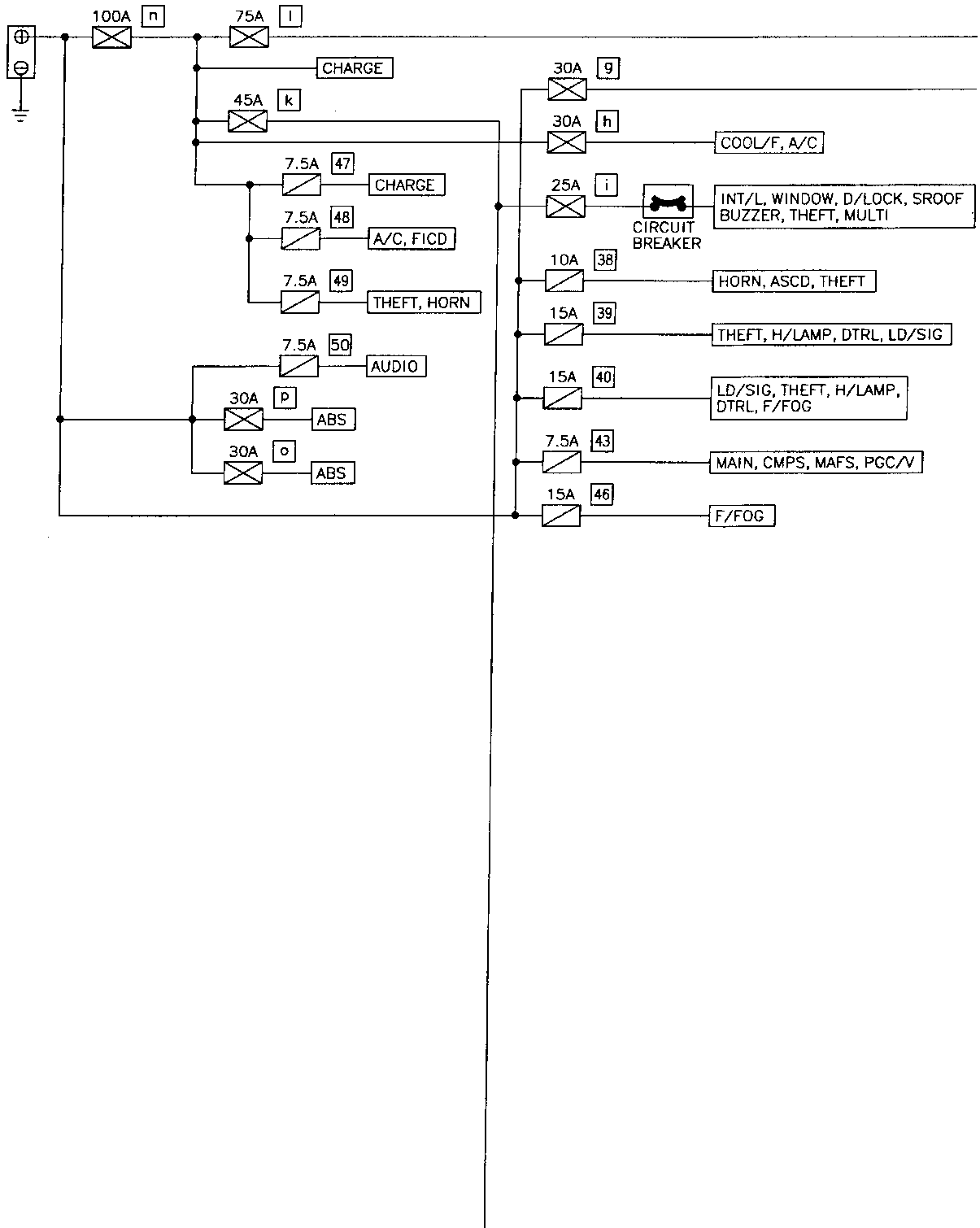
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POWER SUPPLY ROUTING

Schematic

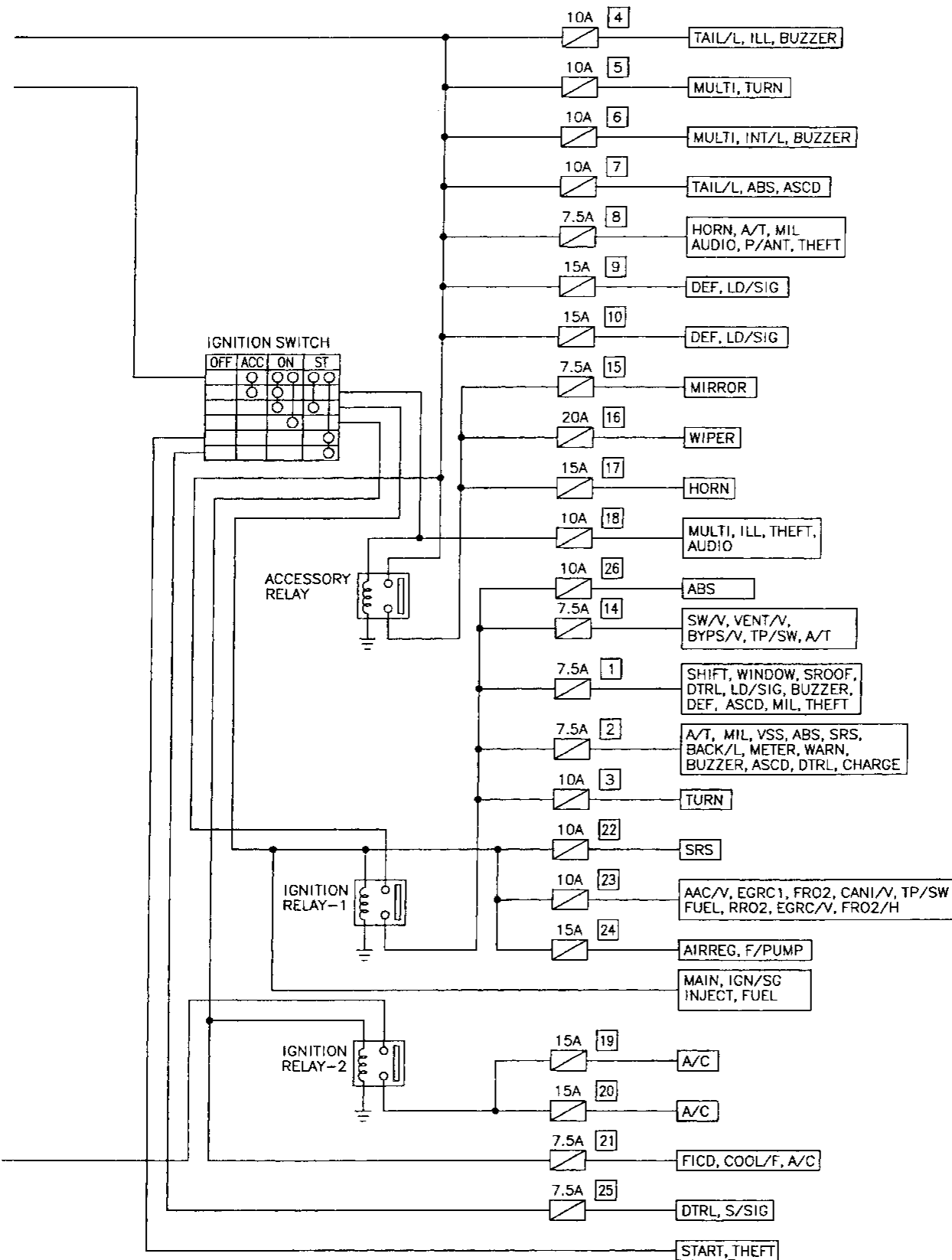


⊗ : FUSIBLE LINK

▢ : FUSE

POWER SUPPLY ROUTING

Schematic (Cont'd)



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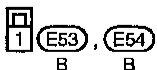
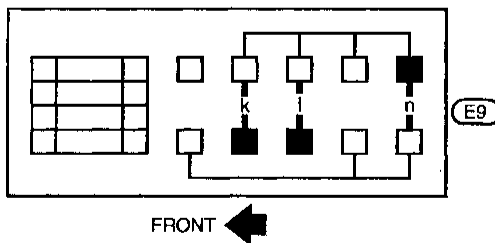
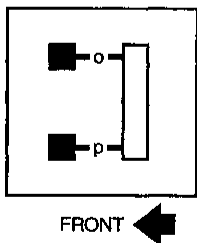
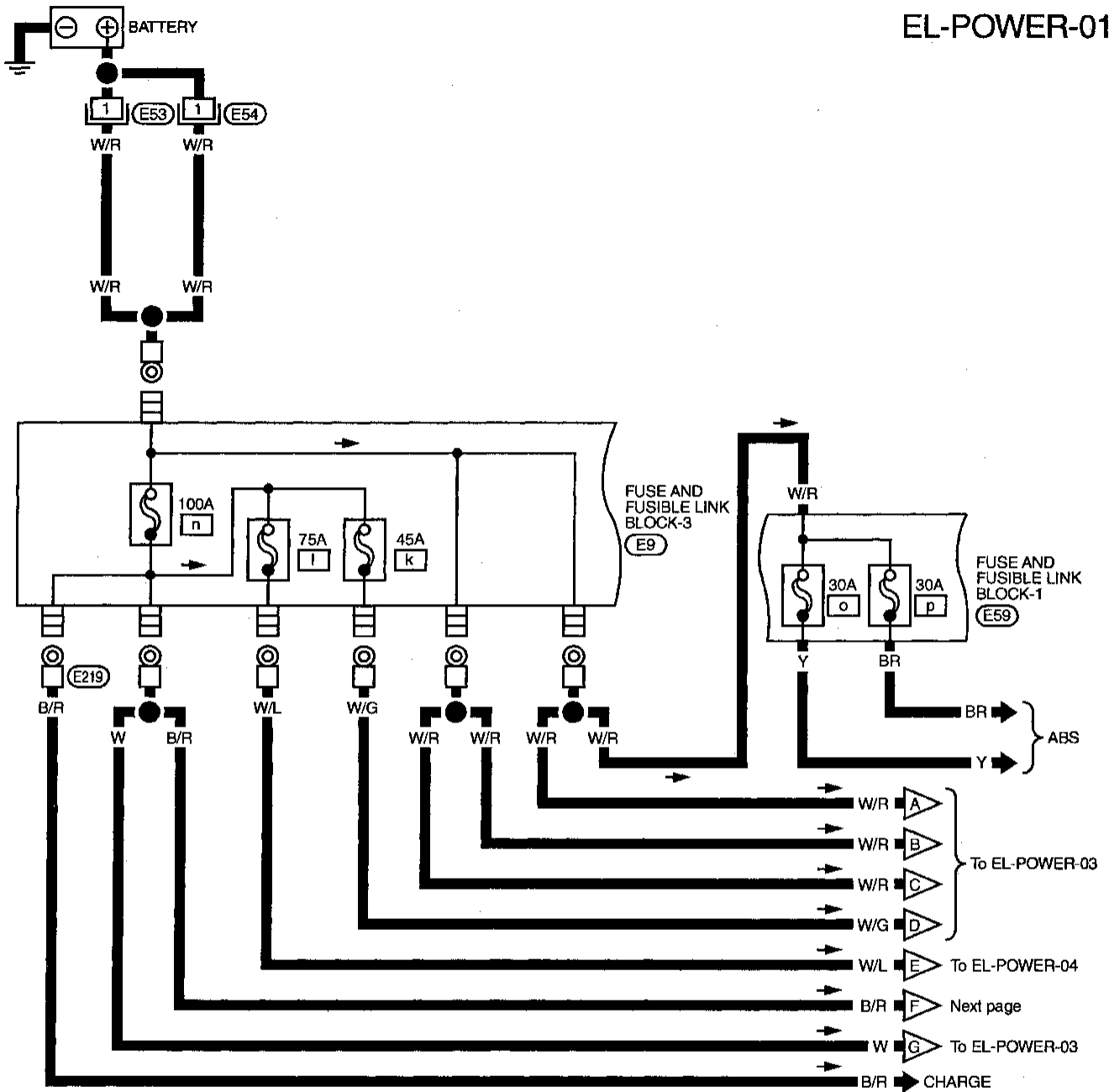
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POWER SUPPLY ROUTING

Wiring Diagram — POWER —

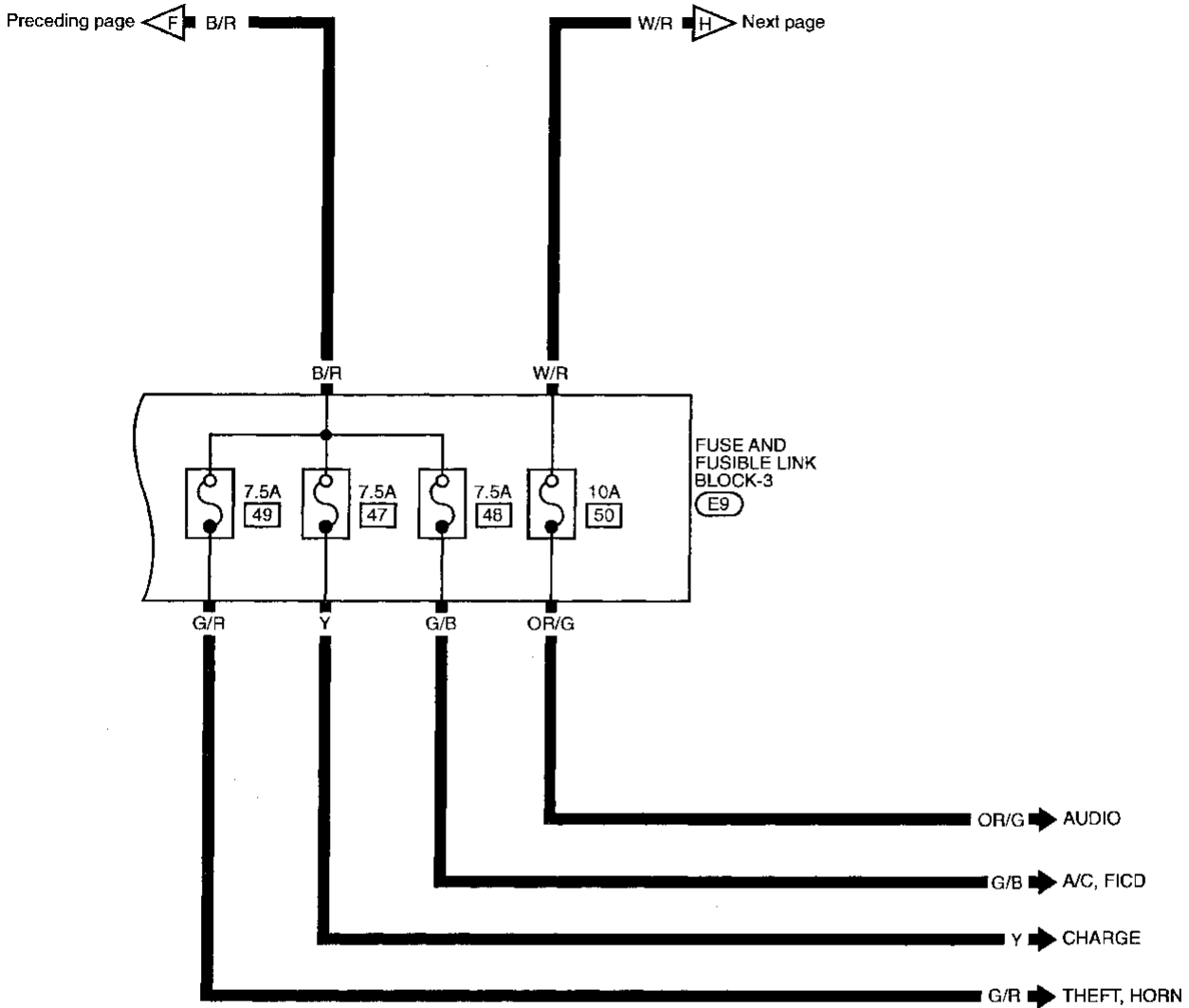
EL-POWER-01



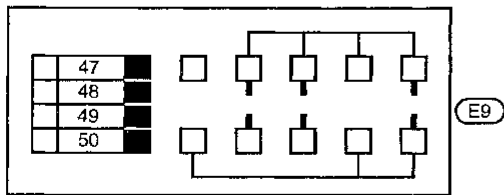
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02



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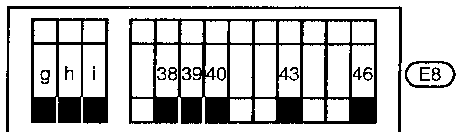
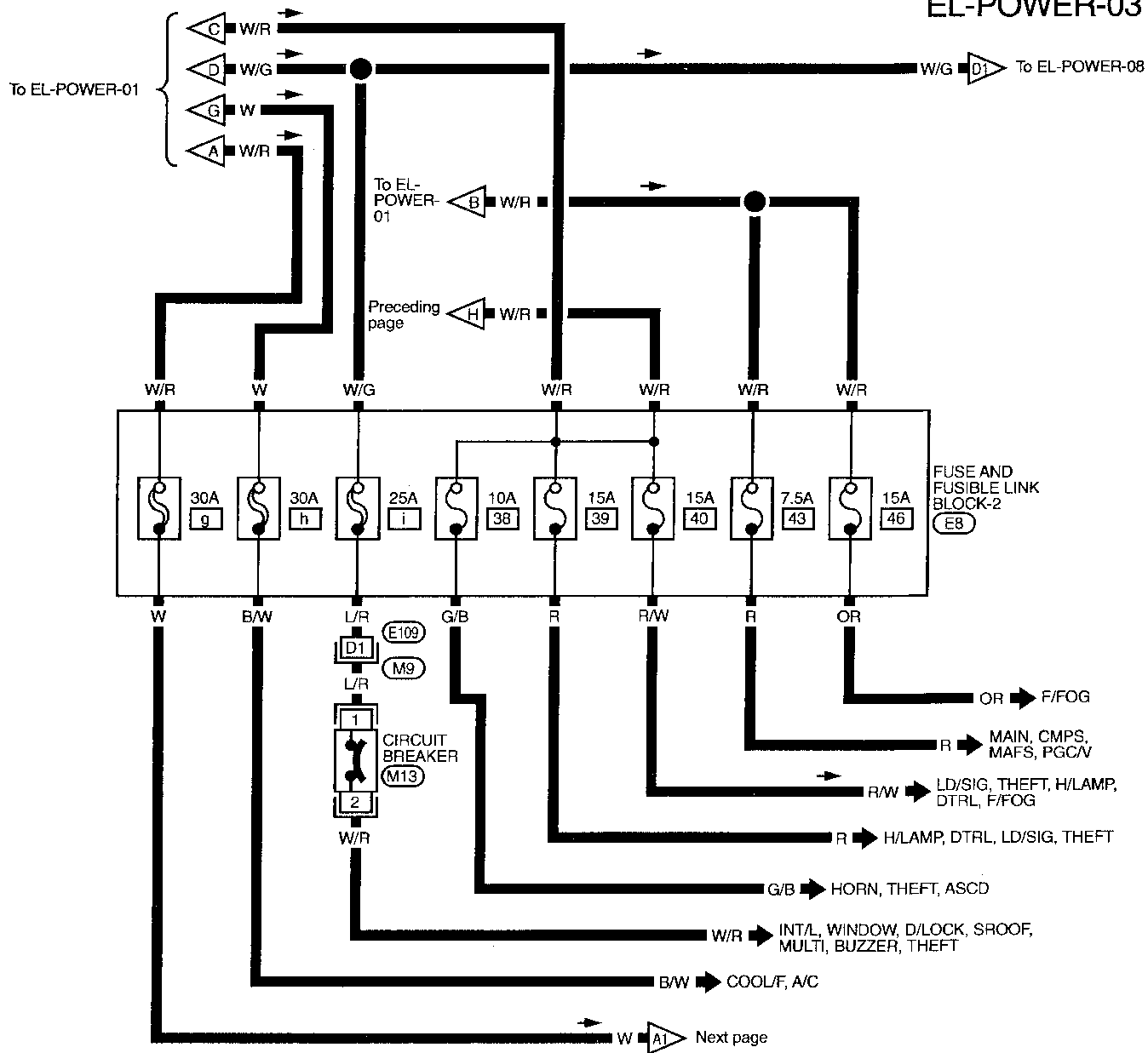
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

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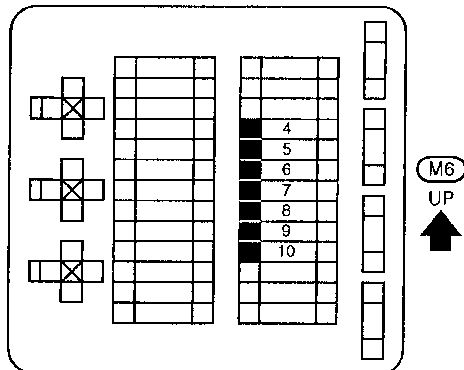
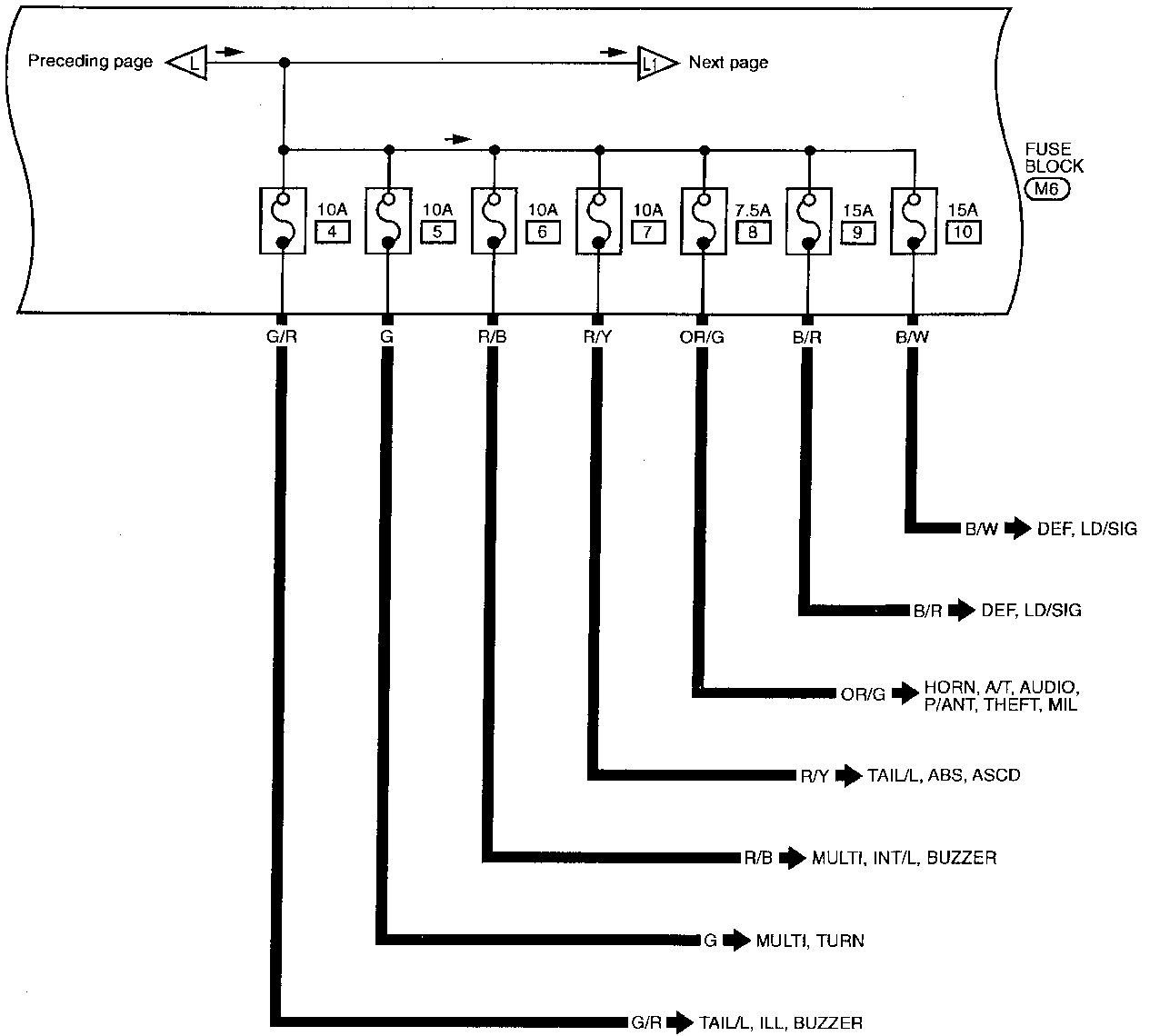
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(M9), (E109)

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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

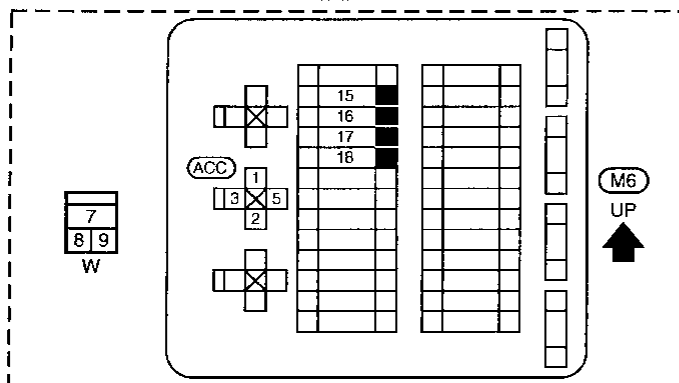
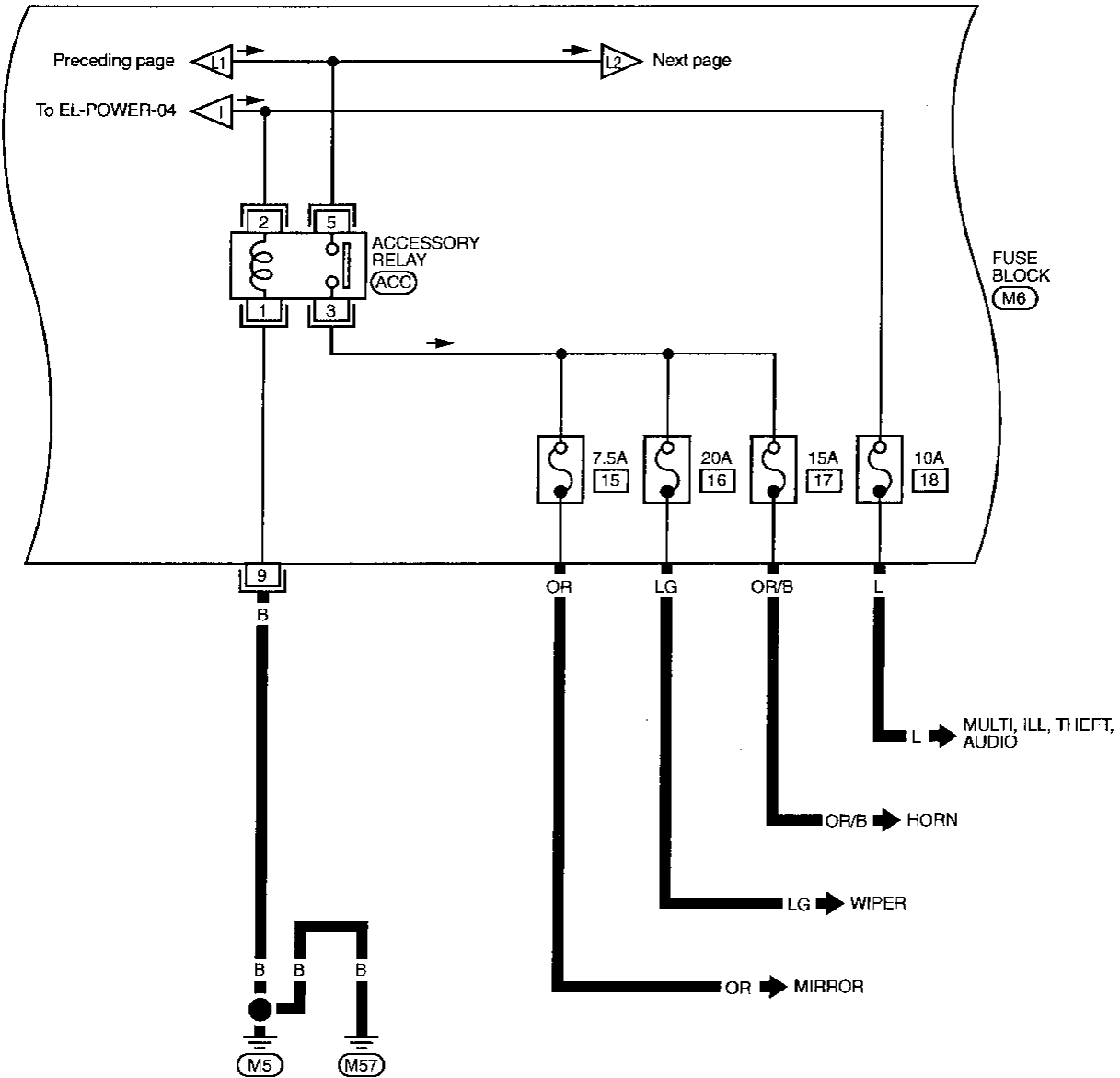
EL-POWER-05



POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06

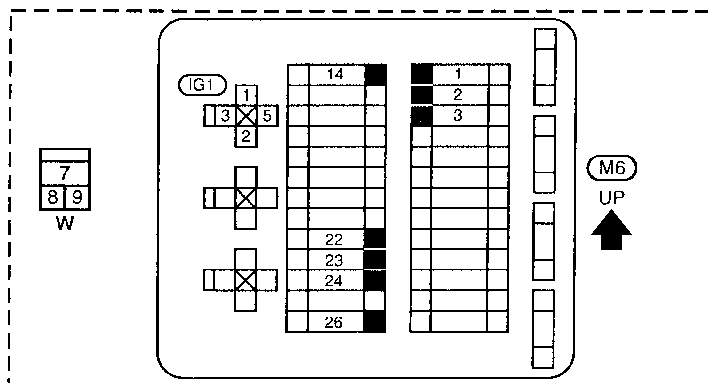
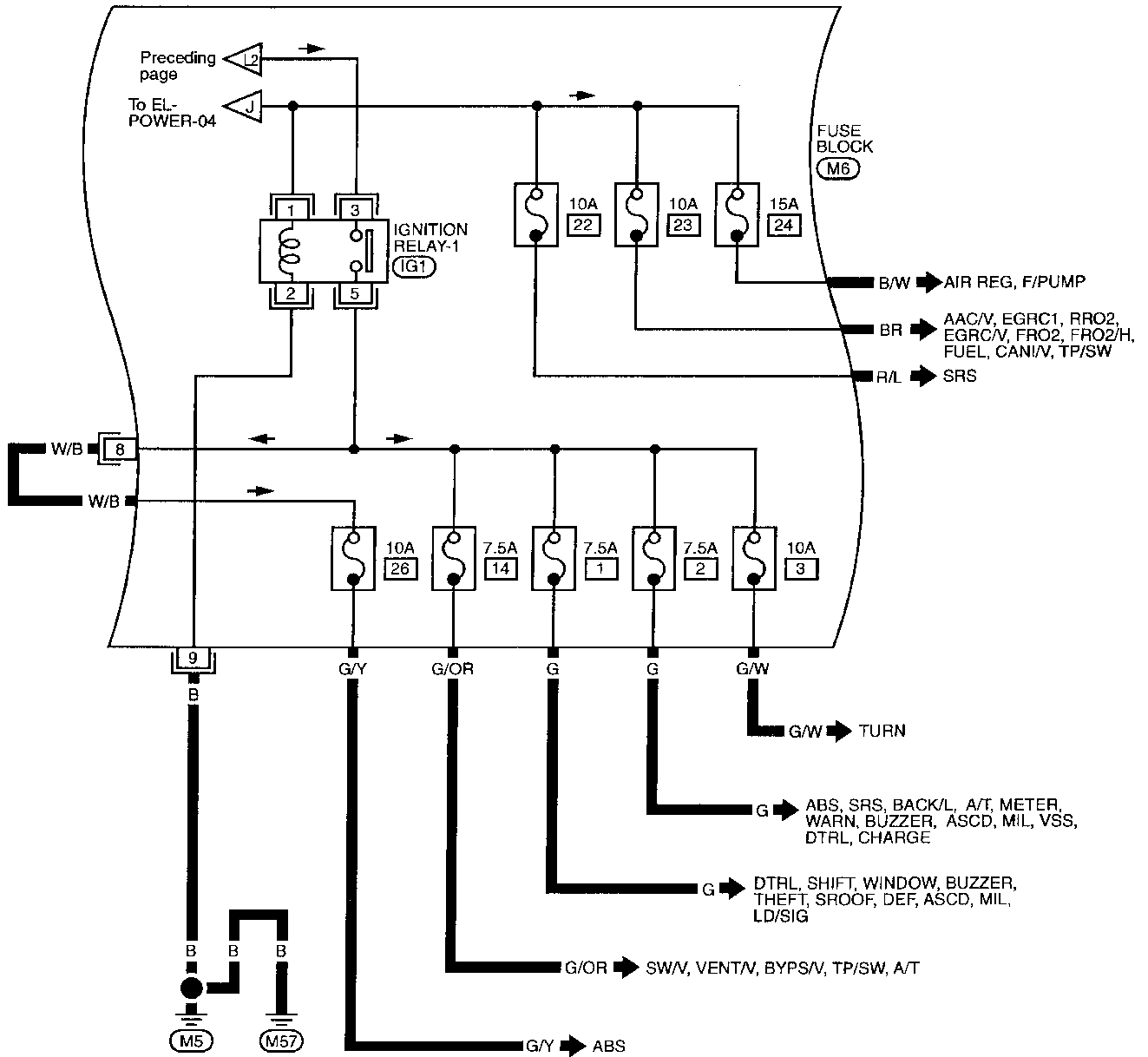


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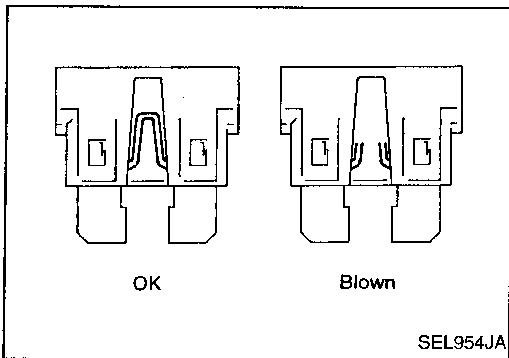
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

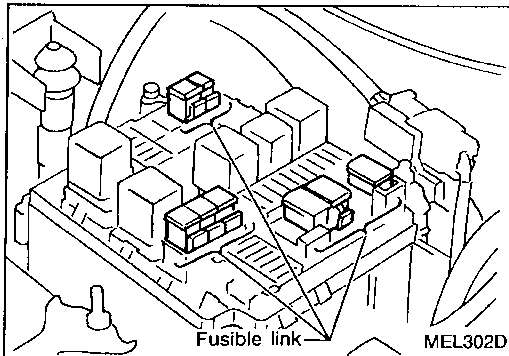


POWER SUPPLY ROUTING



Fuse

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

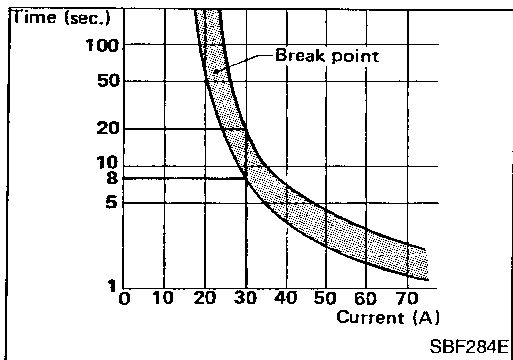


Fusible Link

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

CAUTION:

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



Circuit Breaker Inspection

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

Circuit breakers are used in the following systems.

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

GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M5/M57	AIR MIX DOOR MOTOR	M33	HA-A/C
	ASCD CONTROL UNIT	M62	EL-ASCD
	ASCD HOLD RELAY	M58: M/T M79: A/T	EL-ASCD
	ASCD MAIN SWITCH	M17	EL-ASCD
	CIGARETTE LIGHTER SOCKET	M78	EL-HORN
	COMBINATION FLASHER UNIT	M32	EL-TURN
	COMBINATION METER (AIR BAG)	M72	EL-WARN
	COMBINATION METER (CLOCK)	M72	EL-HORN
	COMBINATION METER (CRUISE)	M71	AT-A/T EL-ASCD
	COMBINATION METER (HIGH BEAM)	M73	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEED)	M72	EL-METER EL-ASCD EC-VSS
	COMBINATION METER (TACHO)	M72	EL-METER
	COMBINATION METER (TURN)	M71	EL-TURN
	COMBINATION METER (WATER)	M72	EL-METER
	DATA LINK CONNECTOR FOR CONSULT	M7	EC-MIL
	DATA LINK CONNECTOR FOR GST	M74	EC-MIL
	FAN SWITCH	M35	HA-A/C
	FUSE BLOCK (ACCESSORY RELAY)	M6	EL-POWER
	ILLUMINATION CONTROL SWITCH	M16	EL-ILL
	INTAKE DOOR MOTOR	M51	HA-A/C
	MODE DOOR MOTOR	M34	HA-A/C
	POWER WINDOW RELAY	M1	EL-SROOF EL-WINDOW
	PUSH CONTROL UNIT	M77	HA-A/C
	REAR WINDOW DEFOGGER SWITCH	M39	EL-DEF
	REAR WINDOW DEFOGGER TIMER	M18	EL-DEF
	SMART ENTRANCE CONTROL UNIT	M20	EL-INT/L EL-BUZZER EL-DEF EL-D/LOCK EL-THEFT
	THEFT WARNING HORN RELAY-2	M80	EL-THEFT
	WARNING BUZZER UNIT	M19	EL-BUZZER
	SHIELD WIRE (ABS CONTROL UNIT)	T32	BR-ABS
	DOOR KEY CYLINDER SWITCH LH	D10	EL-THEFT
DOOR KEY CYLINDER SWITCH RH	D110	EL-THEFT	
DOOR LOCK ACTUATOR LH	D12	EL-MULTI EL-THEFT	
DOOR LOCK ACTUATOR RH	D111	EL-MULTI EL-THEFT	
DOOR LOCK/UNLOCK SWITCH	D108	EL-D/LOCK	
POWER WINDOW MAIN SWITCH	D8	EL-WINDOW EL-D/LOCK	
SPOT LAMP	R3	EL-INT/L	
AIR BAG DIAGNOSIS SENSOR UNIT	Z1	RS-SRS	

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GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
E28/E42	5TH POSITION SWITCH	E215	EC-5TH/P
	AMBIENT SWITCH	E36	EC-FICD HA-A/C
	BRAKE FLUID LEVEL SWITCH	E45	EL-WARN
	CLUTCH INTERLOCK SWITCH	E102	EL-START EL-THEFT
	COOLING FAN MOTOR	E30	HA-A/C EC-COOL/F
	DAYTIME LIGHT CONTROL UNIT	E27	EL-DTRL EL-THEFT
	FOG LAMP SWITCH	E108	EL-F/FOG
	FRONT FOG LAMP LH	E39	EL-F/FOG
	FRONT FOG LAMP RH	E33	EL-F/FOG
	FRONT SIDE MARKER LAMP LH	E43	EL-TAIL/L
	FRONT SIDE MARKER LAMP RH	E22	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E38	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E34	EL-TURN
	HEADLAMP RH (INSIDE)	E49	EL-H/LAMP EL-DTRL
	HEADLAMP LH (INSIDE)	E50	EL-H/LAMP
	HEADLAMP RH (OUTSIDE)	E32	EL-H/LAMP EL-DTRL EL-THEFT
	HEADLAMP LH (OUTSIDE)	E40	EL-H/LAMP EL-THEFT
	HOOD SWITCH	E21	EL-THEFT
	NEUTRAL POSITION SWITCH	E214	EC-PNP/SW
	PARKING LAMP LH	E41	EL-TAIL/L
	PARKING LAMP RH	E31	EL-TAIL/L
	PARK/NEUTRAL POSITION RELAY	E51	EL-ASCD
	POWER STEERING OIL PRESSURE SWITCH	E47	EC-PST/SW
	TRIPLE-PRESSURE SWITCH	E29	EC-FICD HA-A/C
	WASHER FLUID LEVEL SWITCH	E25	EL-WARN
	WIPER SWITCH	E104	EL-WIPER
E205	ALTERNATOR	E220	EL-CHARGE
F14/F57	REAR HEATED OXYGEN SENSOR	E217	EC-RR02
	ABS ACTUATOR	F40	BR-ABS
	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F31	EC-CMPS EC-IGN/SG
	ECM (ECCS CONTROL MODULE)	F1	EC-MAIN AT-A/T
	IACV-AIR REGULATOR	F52	EC-AIRREG
	ABSOLUTE PRESSURE SENSOR	F36	EC-AP/SEN
	CRANKSHAFT POSITION SENSOR (OBD)	E231	EC-CKPS
	FRONT HEATED OXYGEN SENSOR	F16	EC-FRO2 EC-FRO2/H EC-FUEL
	KNOCK SENSOR	F62	EC-KS
	MASS AIR FLOW SENSOR	F30	EC-MAFS
	THROTTLE POSITION SENSOR	F22	EC-TPS
	WIPER AMPLIFIER	F9	EL-WIPER
	WIPER MOTOR	F7	EL-WIPER
	EVAP CONTROL SYSTEM PRESSURE SENSOR	T36	EC-PRE/SE
	DATA LINK CONNECTOR FOR GST	M74	EC-MIL

GROUND DISTRIBUTION

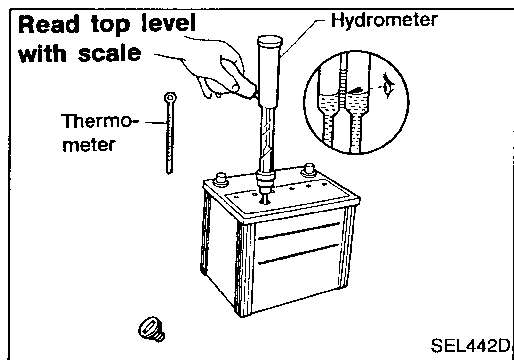
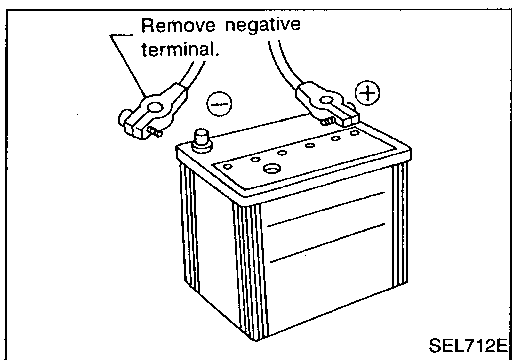
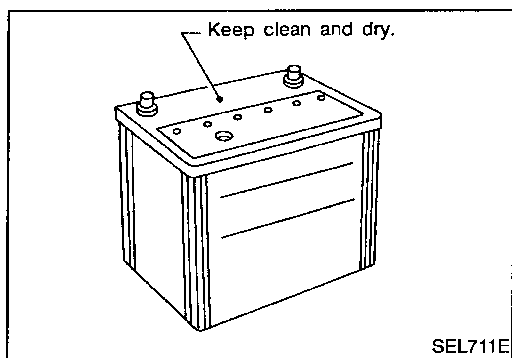
EARTH	CONNECT TO	CONN. NO.	CELL CODE	
B4/B13	COMBINATION METER (FUEL)	M73	EL-WARN	
	DOOR MIRROR REMOTE CONTROL SWITCH	B8	EL-MIRROR	
	DOOR SWITCH LH	B10	INT/L EL-BUZZER EL-MULTI EL-THEFT RS-SRS	CI
	SEAT BELT BUCKLE SWITCH	B5	EL-WARN EL-BUZZER	MA
	DIODE	B37	AT-SHIFT	EM
	ABS CONTROL UNIT	T33	BR-ABS	
	OVERDRIVE CONTROL SWITCH	B7	AT-A/T	EM
	BACK-UP LAMP LH	T9	EL-BACK/L	
	BACK-UP LAMP RH	T7	EL-BACK/L	LC
	FUEL PUMP	T30	EC-F/PUMP	
	FUEL TANK GAUGE UNIT	T29	EL-METER EC-TFTS	EC
	HIGH-MOUNTED STOP LAMP	T5	EL-TAIL/L	
	LICENSE LAMP	T14	EL-TAIL/L	
	POWER ANTENNA	T10	EL-P/ANT	FE
	REAR COMBINATION LAMP LH	T13	EL-TAIL/L EL-TURN	
	REAR COMBINATION LAMP RH	T19	EL-TAIL/L EL-TURN	CL
	REAR SIDE MARKER LAMP LH	T12	EL-TAIL/L	
	REAR SIDE MARKER LAMP RH	T20	EL-TAIL/L	MT
	SHIELD WIRE (ABS CONTROL UNIT)	T32	BR-ABS	
	TRUNK LID KEY CYLINDER SWITCH	T6	EL-THEFT	
TRUNK ROOM LAMP SWITCH	T8	EL-INT/L EL-THEFT	AT	
T16	COMBINATION METER (AIR BAG)	M72	EL-WARN	
	DOOR MIRROR REMOTE CONTROL SWITCH	B8	EL-MIRROR	PD
	DOOR SWITCH LH	B10	EL-BUZZER EL-MULTI EL-THEFT	
	OVERDRIVE CONTROL SWITCH	B7	AT-A/T	FA
	SEAT BELT SWITCH	B5	EL-WARN EL-BUZZER	
	ABS CONTROL UNIT	T33	BR-ABS	RA
	BACK-UP LAMP LH	T9	EL-BACK/L	
	BACK-UP LAMP RH	T7	EL-BACK/L	
	FUEL TANK GAUGE UNIT	T29	EL-METER EL-WARN EC-TFTS	BR
	FUEL PUMP	T30	EC-F/PUMP	
	HIGH-MOUNTED STOP LAMP	T5	EL-TAIL/L	ST
	LICENSE LAMP	T14	EL-TAIL/L	
	POWER ANTENNA	T10	EL-P/ANT	RS
	REAR COMBINATION LAMP LH	T13	EL-TAIL/L EL-TURN	
	REAR COMBINATION LAMP RH	T19	EL-TAIL/L EL-TURN	
	REAR SIDE MARKER LAMP LH	T12	EL-TAIL/L	BT
	REAR SIDE MARKER LAMP RH	T20	EL-TAIL/L	
	SHIELD WIRE (ABS CONTROL UNIT)	T32	BR-ABS	HA
	TRUNK LID KEY CYLINDER SWITCH	T6	EL-THEFT	
	TRUNK ROOM LAMP SWITCH	T8	EL-INT/L EL-THEFT	EL

IDX

BATTERY

CAUTION:

- If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.
- After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.
- 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

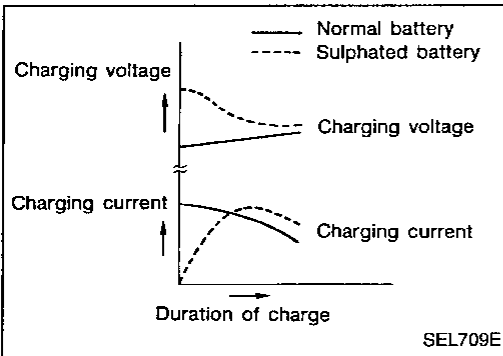
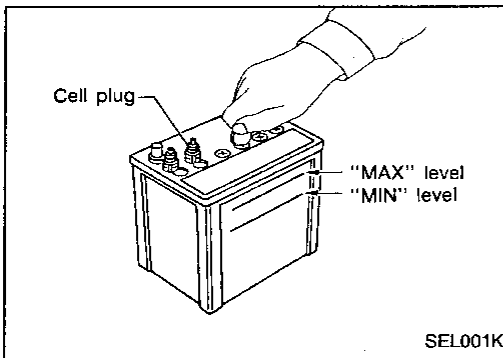
WARNING:

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.

BATTERY

How to Handle Battery (Cont'd)

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

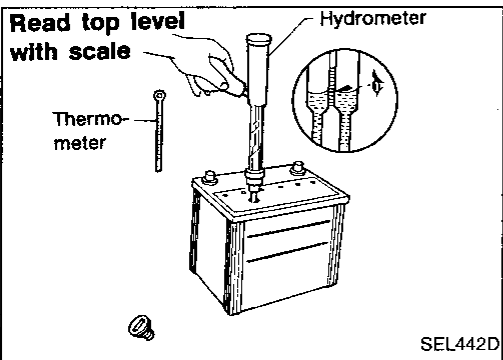


SULPHATION

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.

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BATTERY

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:

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

Charging rates:

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

BATTERY

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
Type		55D23R	65D26R
Capacity	V-AH	12-60	12-65
Cold cranking current (For reference value)	A	356	413

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System Description

M/T MODELS

Power is supplied at all times

- to ignition switch terminal ①
- through 30A fusible link (letter 9, located in the fuse and fusible link box).

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

- through terminal ⑤ of the ignition switch
- to clutch interlock relay terminal ③.

For models with theft warning system

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

- through 7.5A fuse (No. 1, located in the fuse block)
- to theft warning relay-2 terminal ①.
- through terminal ③ of the ignition switch
- to theft warning relay-2 terminal ③.

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

When the theft warning system is not operating, power is supplied

- through theft warning relay-2 terminal ④
- to clutch interlock relay terminal ①.

For models without theft warning system

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

- through terminal ③ of the ignition switch
- to clutch interlock relay terminal ①.

Ground is supplied to clutch interlock relay terminal ②, when the clutch pedal is depressed through the clutch interlock switch and body grounds (E42) and (E28).

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.

A/T MODELS

Power is supplied at all times

- to ignition switch terminal ①
- through 30A fusible link (letter 9, located in the fuse and fusible link box).

Models with theft warning system

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

- through 7.5A fuse (No. 1, located in the fuse block)
- to theft warning relay-2 terminal ①.

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

- from ignition switch terminal ⑤
- to theft warning relay-2 terminal ③.

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

When the theft warning system is not operating, power is supplied

- through theft warning relay-2 terminal ④
- to inhibitor switch terminal ②
- through inhibitor switch terminal ①, with the selector lever in the P or N position
- to terminal ② of the starter motor windings.

STARTING SYSTEM

System Description (Cont'd)

Models without theft warning system

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

- from ignition switch terminal ⑤
- to inhibitor switch terminal ②
- through inhibitor switch terminal ① , with the selector lever in the P or N position
- to terminal ② of the starter motor windings.

GI

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.

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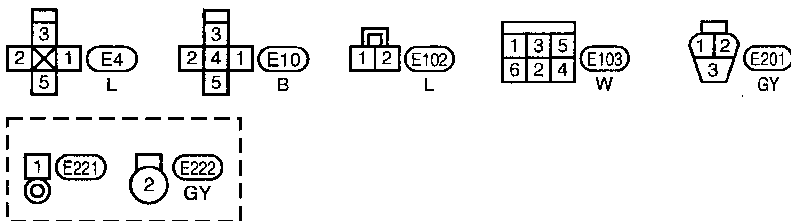
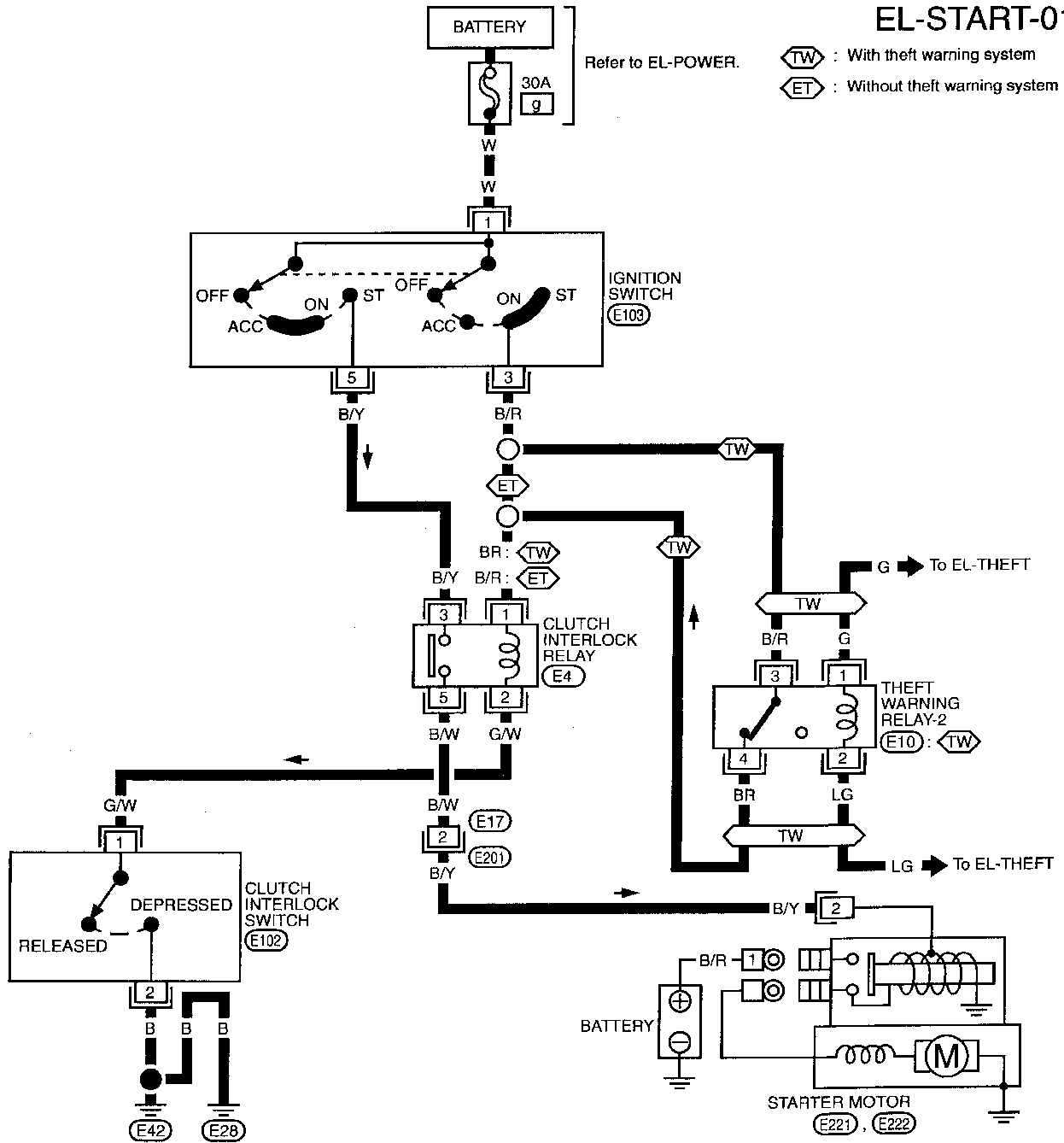
IDX

STARTING SYSTEM

Wiring Diagram — START —

M/T MODELS

EL-START-01

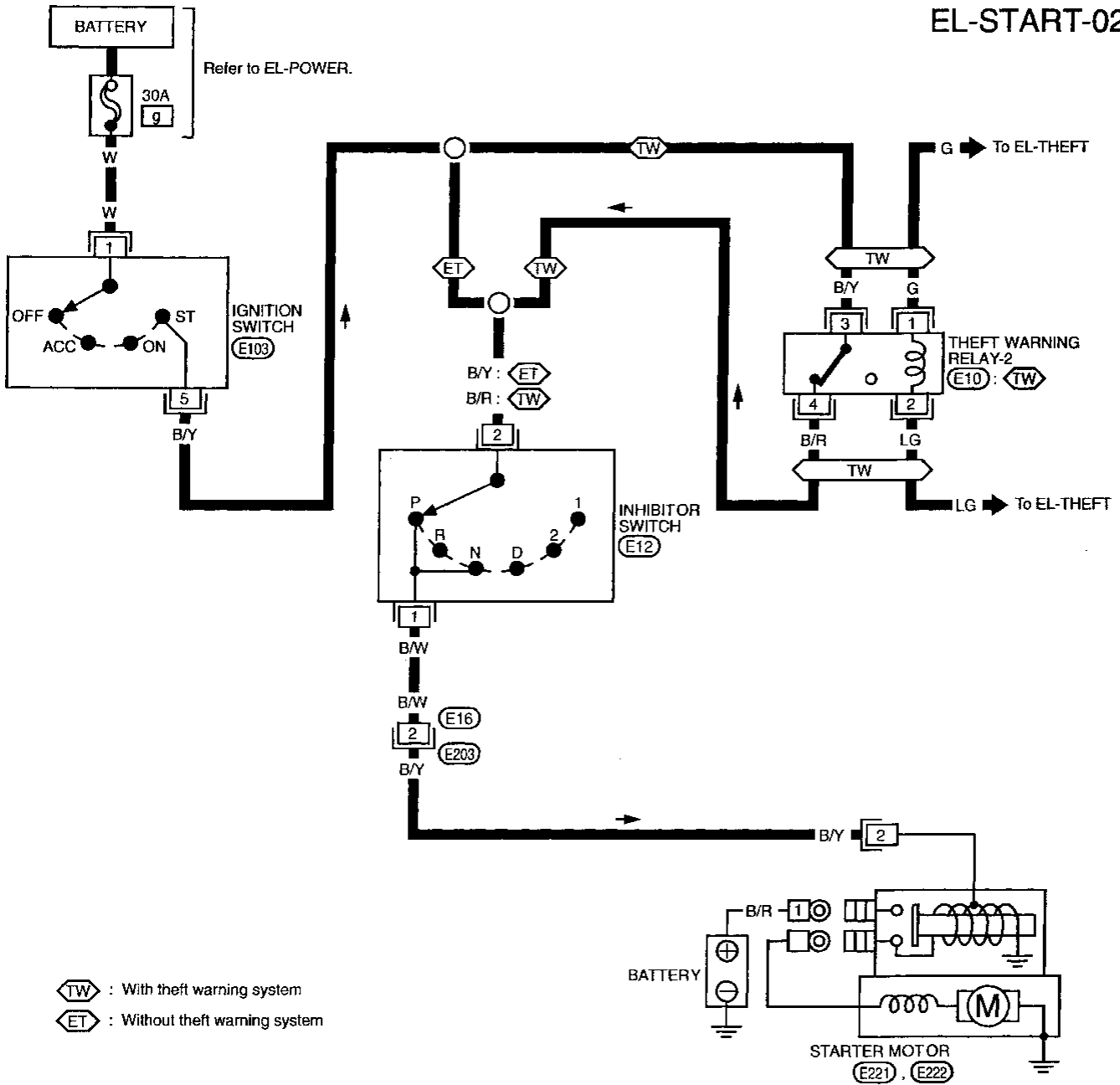


STARTING SYSTEM

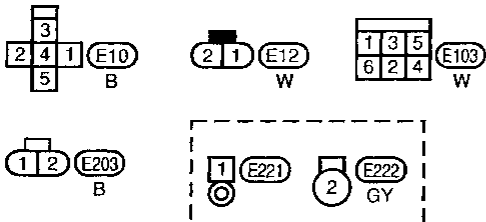
Wiring Diagram — START — (Cont'd)

A/T MODELS

EL-START-02

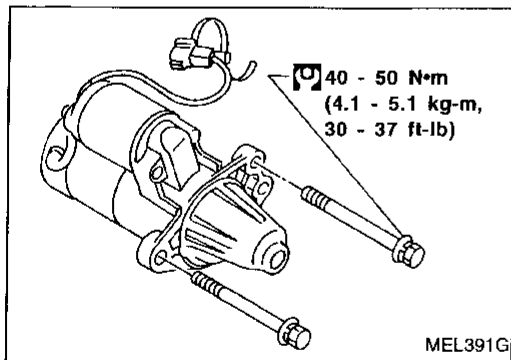
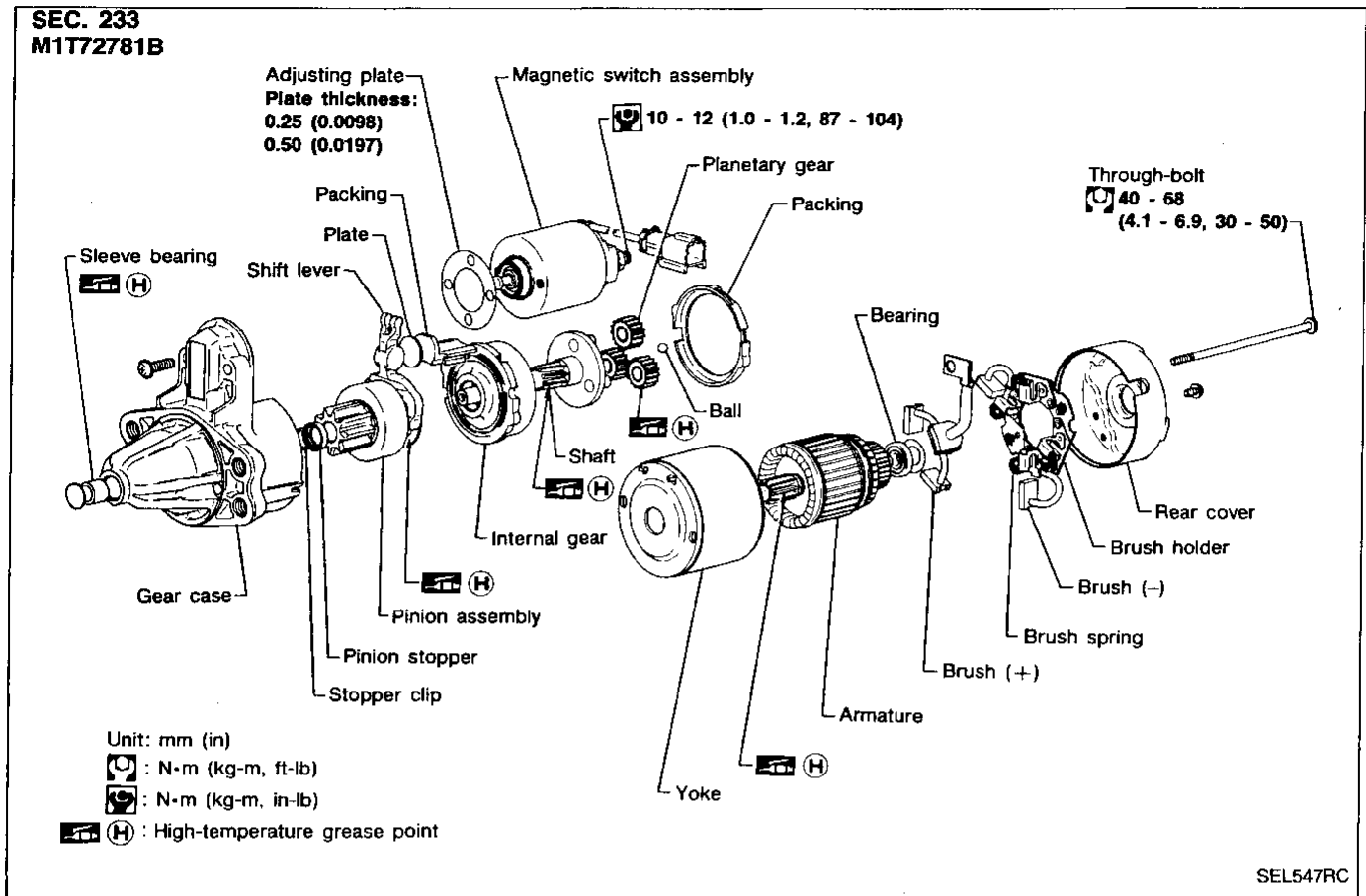


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STARTING SYSTEM

Construction



Removal and Installation

REMOVAL

- (A/T model only)
 - Support automatic transmission with a jack.
 - Remove rear mounting bracket bolts (4).
 - Slightly lower the transmission to make room.
 - Pull out ATF level gauge pipe.
- Remove connector bracket from front mount bracket.
- Remove harness connector.
- Remove starter.

INSTALLATION

To install, reverse the removal procedure.

STARTING SYSTEM

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.

GI

MA

EM

Service Data and Specifications (SDS)

LC

STARTER

Type	M1T72781B		EC
	MITSUBISHI make		
	Reduction gear type		
System voltage	V	12	FE
No-load			
Terminal voltage	V	11.0	CL
Current	A	50 - 75	MT
Revolution	rpm	3,000 - 4,000	
Minimum diameter of commutator	mm (in)	28.8 (1.134)	AT
Minimum length of brush	mm (in)	12.0 (0.472)	
Brush spring tension	N (kg, lb)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)	PD
Clearance between pinion front edge and pinion stopper	mm (in)	0.5 - 2.0 (0.020 - 0.079)	

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CHARGING SYSTEM

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 ⑤ through:

- 100A fusible link (letter [n], located in the fuse and fusible link box), and
- 7.5A fuse (No. 47, located in the fuse and fusible link box).

Terminal ⑥ supplies power to charge the battery and operate the vehicle's electrical system. Output voltage is controlled by the IC regulator at terminal ⑤ detecting the input voltage. The charging circuit is protected by the 100A fusible link.

Terminal ⑤ of the alternator supplies ground through body ground (E205).

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

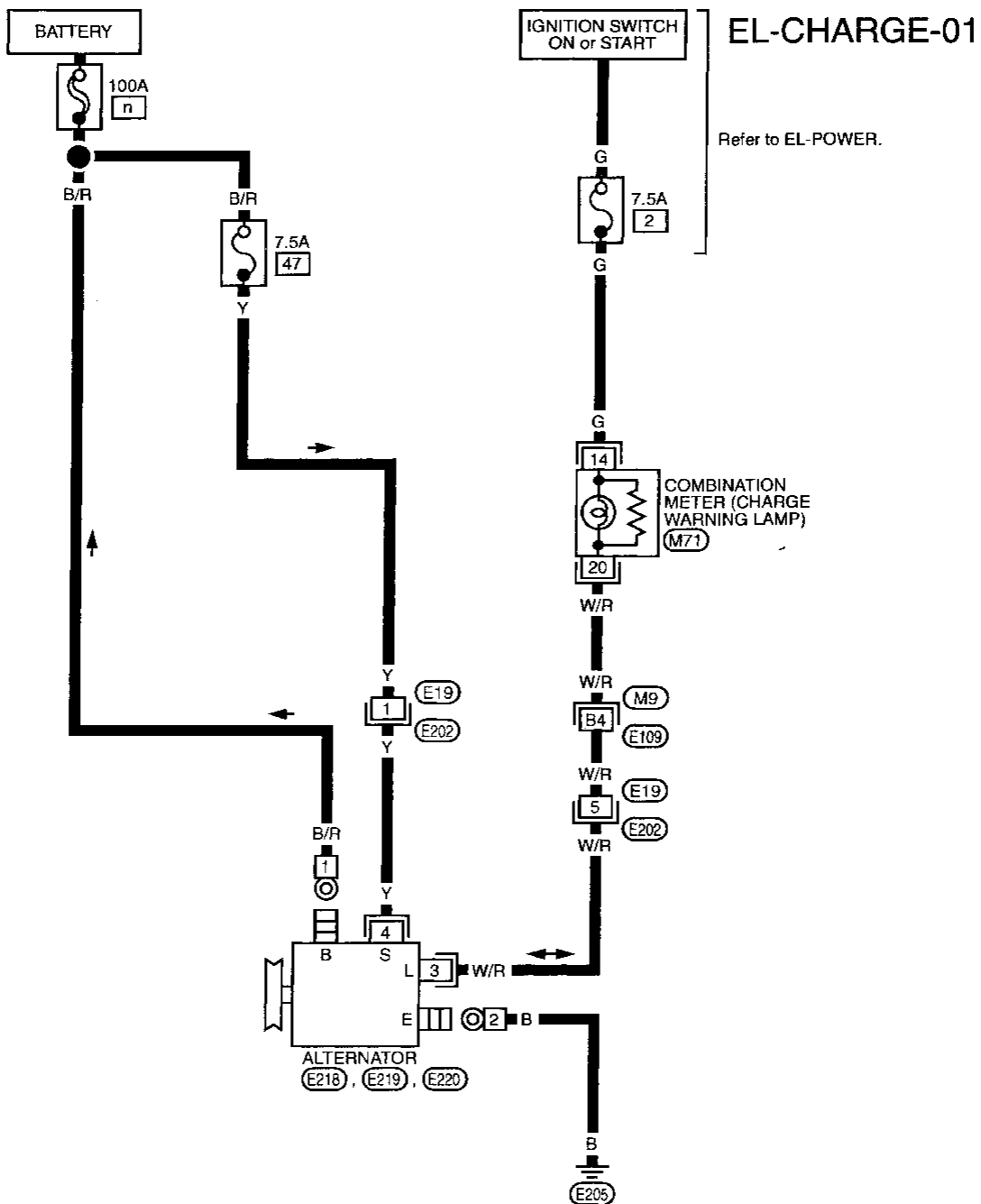
- through 7.5A fuse (No. 2, located in the fuse block)
- to combination meter terminal ⑭ for the charge warning lamp.

Ground is supplied to terminal ⑳ of the combination meter through terminal ① 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.

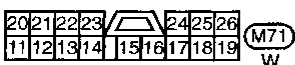
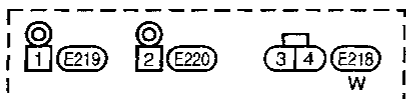
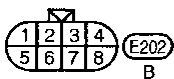
If the charge warning lamp illuminates with the engine running, a fault is indicated.

CHARGING SYSTEM

Wiring Diagram — CHARGE —



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Refer to last page (Foldout page).
M9, E109

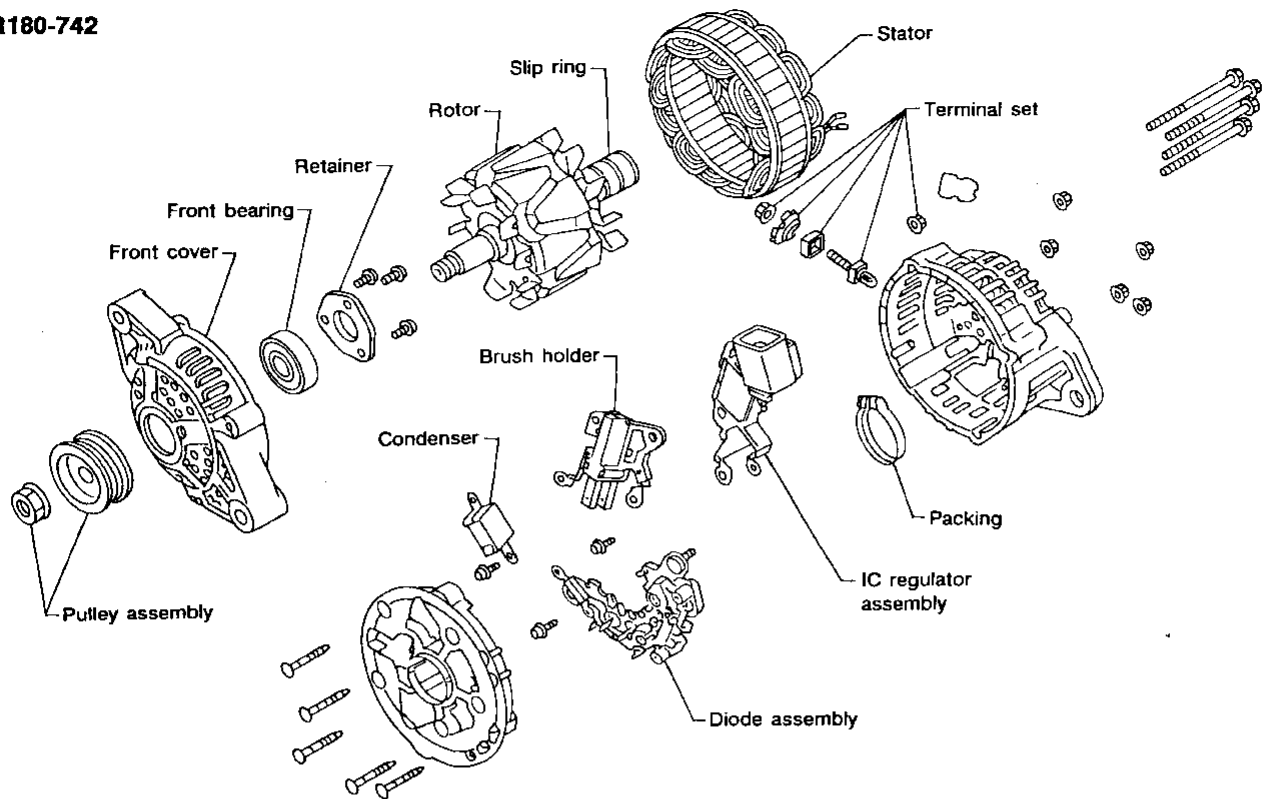
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CHARGING SYSTEM

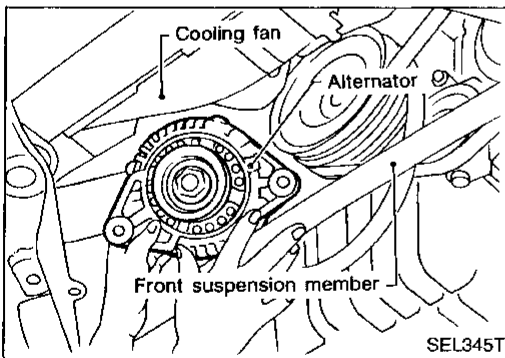
Construction

SEC. 231

LR180-742



SEL347TA



SEL345T

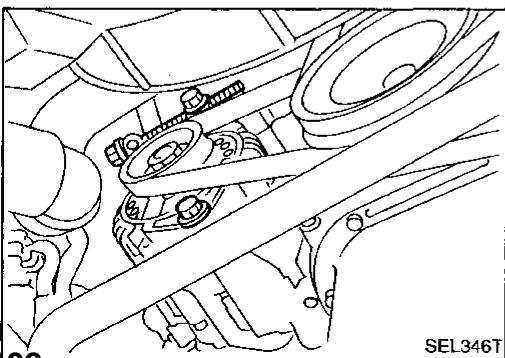
Removal and Installation

REMOVAL

1. Remove engine undercover.
2. Remove drive belt from alternator.
3. Disconnect harness connector.
4. Remove cooling fan lower shroud.
5. Remove alternator.

INSTALLATION

To install, reverse the removal procedure.



SEL346T

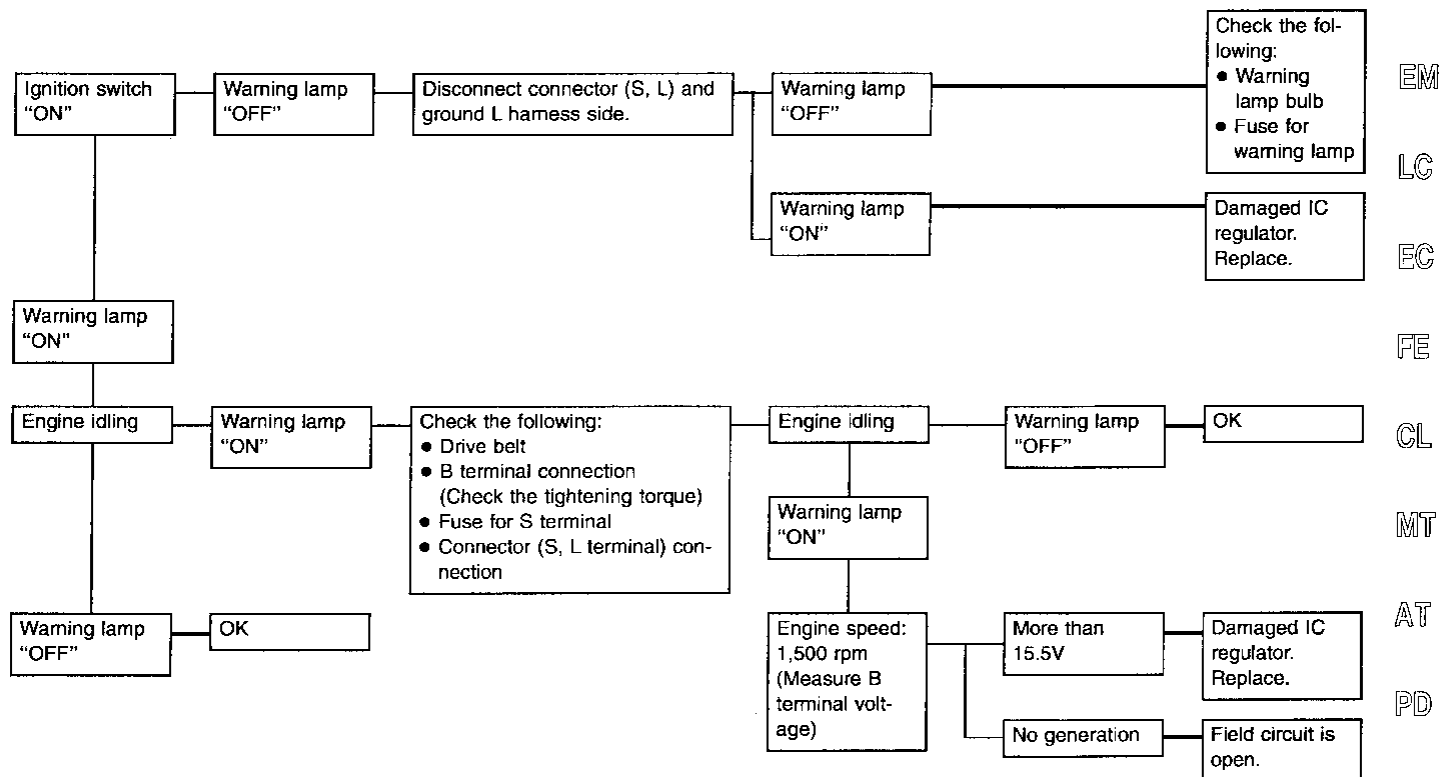
CHARGING SYSTEM

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.

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CHARGING SYSTEM

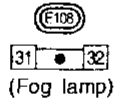
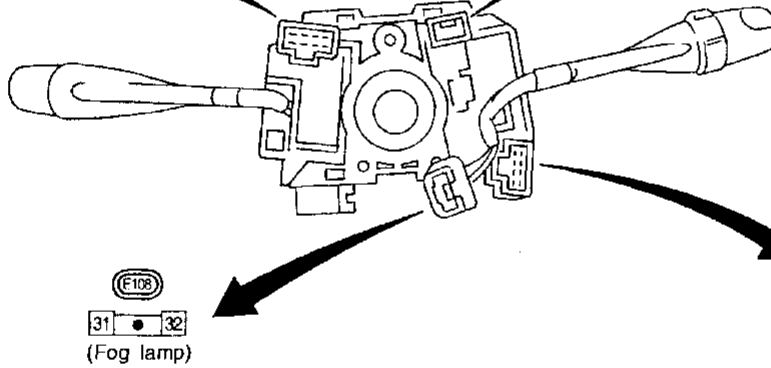
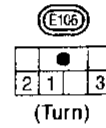
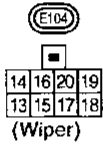
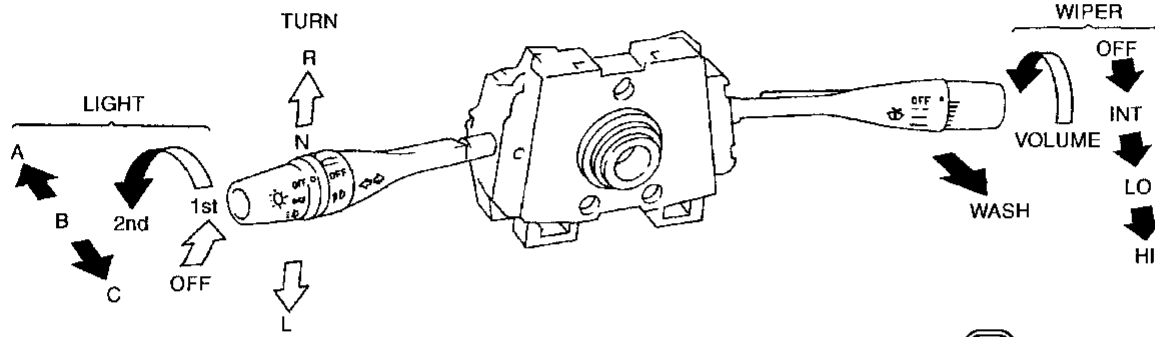
Service Data and Specifications (SDS)

ALTERNATOR

Type		LR180-742
		HITACHI make
Nominal rating	V-A	12 - 80
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 22/1,300 More than 65/2,500 More than 77/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum outer diameter	mm (in)	26.0 (1.024)

COMBINATION SWITCH

Combination Switch/Check



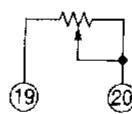
LIGHTING SWITCH

	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		○

TURN SIGNAL SWITCH

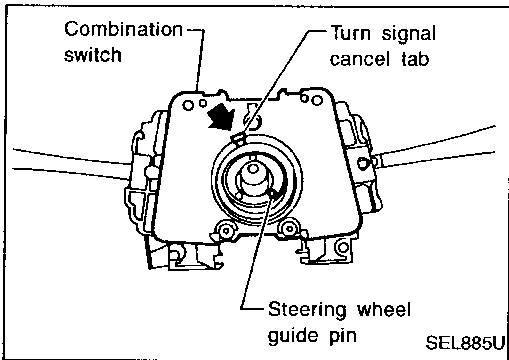
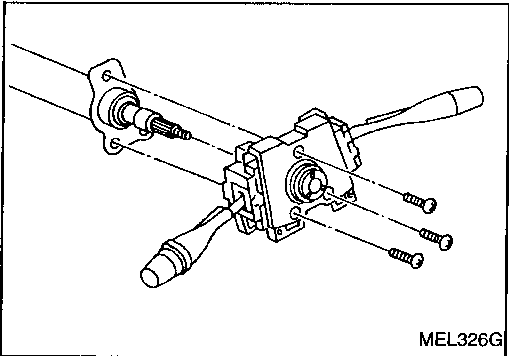
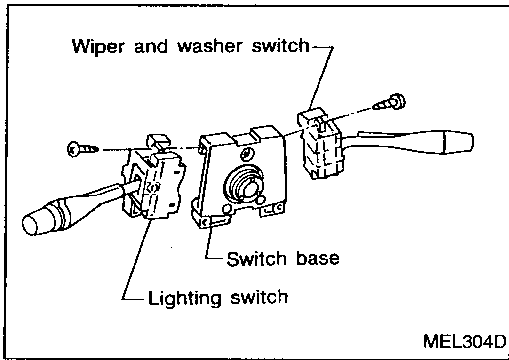
	L	N	R
1	○		○
2			
3	○		

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COMBINATION SWITCH



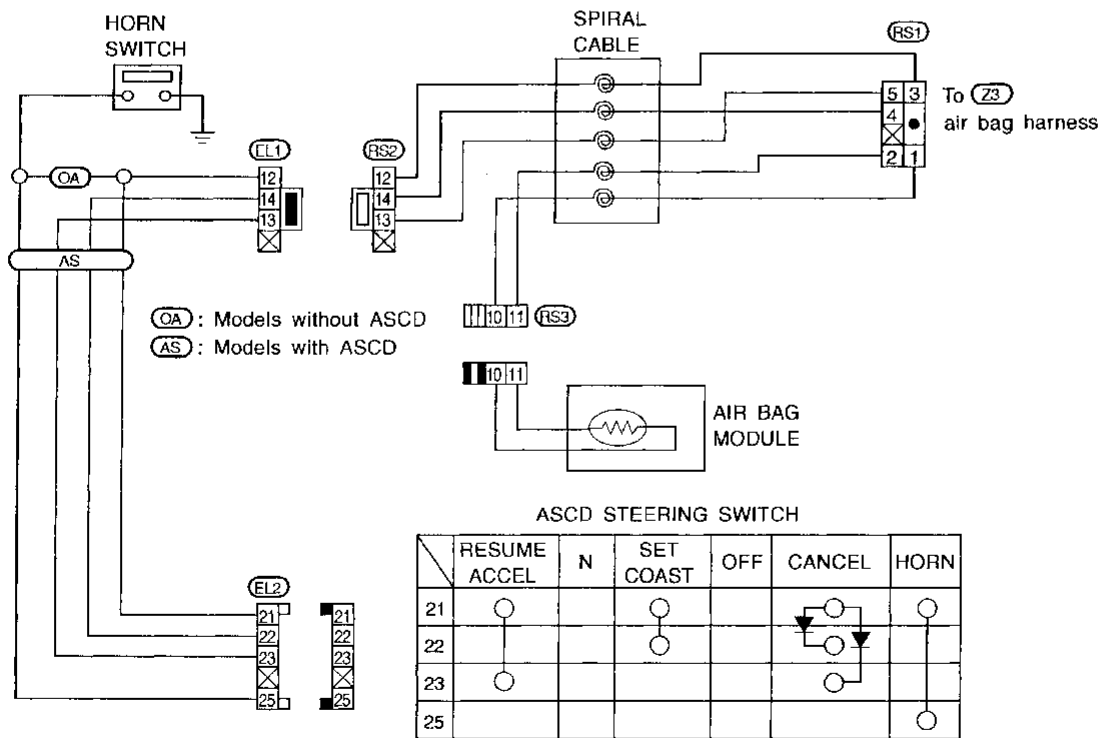
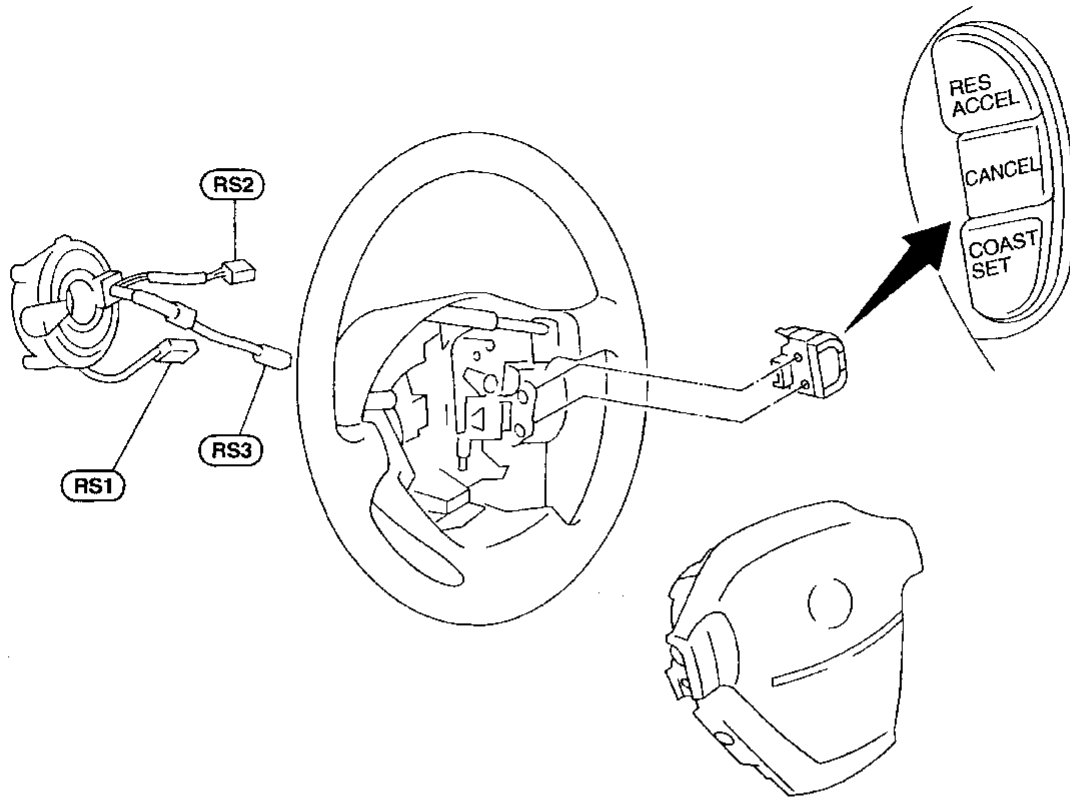
Replacement

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.

COMBINATION SWITCH

Steering Switch/Check



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HEADLAMP

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 and headlamp relay terminal ③
- through 15A fuse (No. ④⑩), located in the fuse and fusible link box), and
- to lighting switch terminal ⑧ and headlamp relay terminal ⑥
- through 15A fuse (No. ③⑨), 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 ① of the LH headlamp (Low beam), and
- from lighting switch terminal ⑦
- to terminal ① of the RH headlamp (Low beam).

Terminal ② of each headlamp supplies ground through body grounds ②②⑧ and ②④②.

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 the RH headlamp (High beam), and
- from lighting switch terminal ⑨
- to terminal ① of the LH headlamp (High beam).
- to combination meter terminal ③⑥ for the high beam indicator, and
- to headlamp relay terminal ①.

Ground is supplied to headlamp relay terminal ② through body grounds ②②⑧ and ②④②. The headlamp relay is energized and power is supplied

- from headlamp relay terminals ⑤ and ⑦
- to terminal ① of each headlamp (Low beam).

Ground is supplied to terminal ②② of the combination meter through body grounds ②②⑤ and ②⑤⑦.

Terminal ② of each headlamp supplies ground through body grounds ②②⑧ and ②④②.

With power and ground supplied, all the headlamps (High and Low beams) and the high beam indicator illuminate.

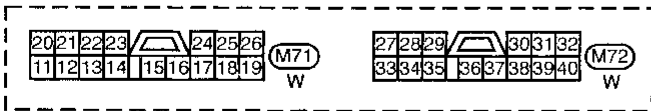
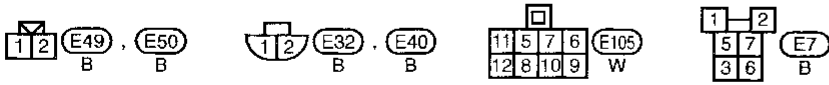
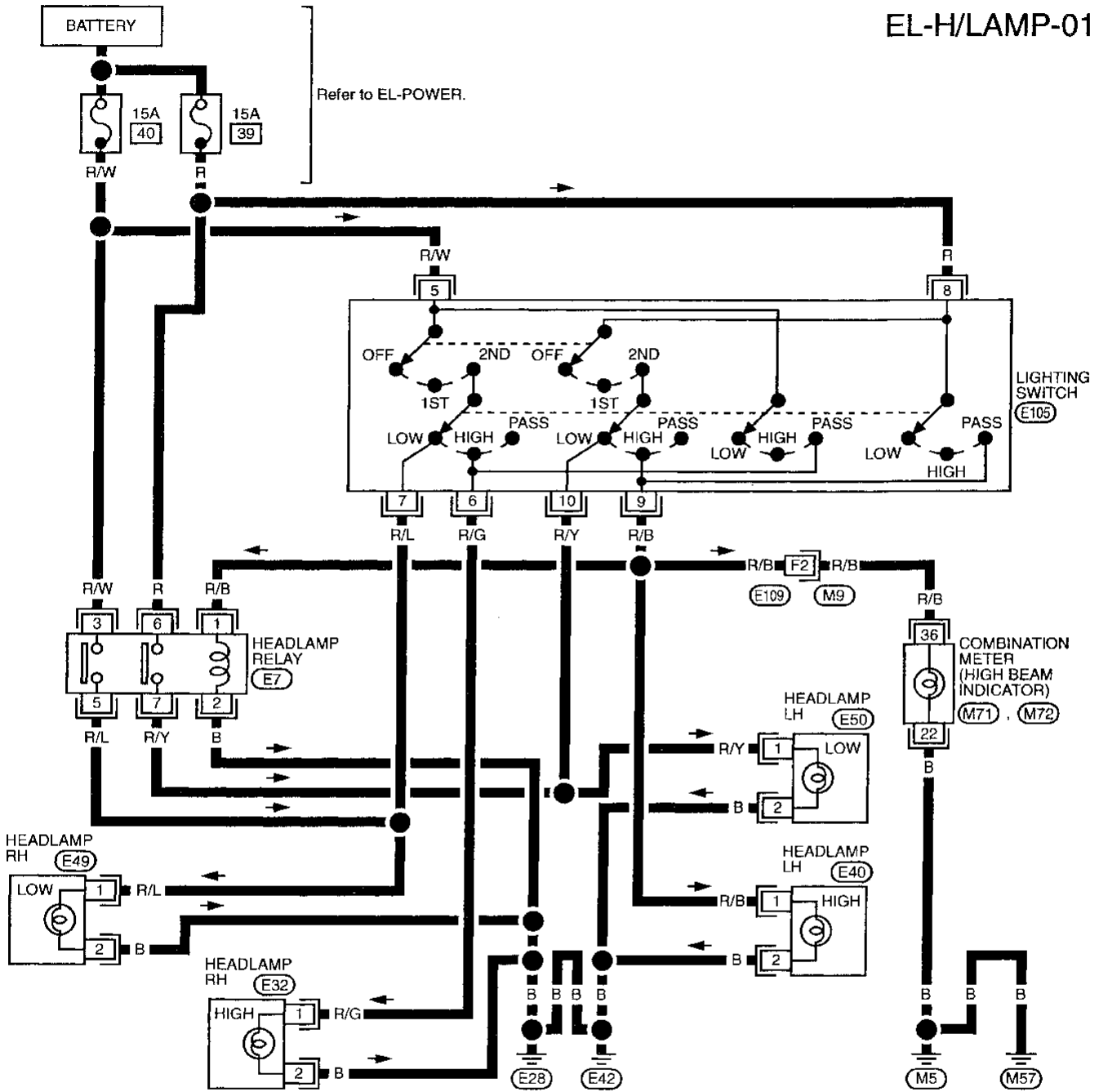
Theft warning system

The theft warning system will flash all the headlamps (High and Low beams) if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-179).

HEADLAMP

Wiring Diagram (For USA) — H/LAMP —

EL-H/LAMP-01



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HEADLAMP

Trouble Diagnoses (For USA)

Symptom	Possible cause	Repair order
LH headlamps do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E28) and (E42) 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E28) and (E42). 3. Check 15A fuse (No. 39), 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.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (E28) and (E42) 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds (E28) and (E42). 3. Check 15A fuse (No. 40), 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.	<ol style="list-style-type: none"> 1. Bulbs 2. Open in LH high beams circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulbs. 2. Check R/B 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.	<ol style="list-style-type: none"> 1. Bulb 2. Open in LH low beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check R/Y 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.	<ol style="list-style-type: none"> 1. Bulbs 2. Open in RH high beams circuit 3. Lighting switch. 	<ol style="list-style-type: none"> 1. Check bulbs. 2. Check R/G 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.	<ol style="list-style-type: none"> 1. Bulb 2. Open in RH low beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check R/L wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds (M5) and (M57) 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check grounds (M5) and (M57). 3. Check R/B wire between lighting switch and combination meter for an open circuit.
Low beams do not operate in conjunction with high beams.	<ol style="list-style-type: none"> 1. Headlamp relay 2. Grounds (E28) and (E42) 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check headlamp relay. 2. Check grounds (E28) and (E42). 3. Check R/B wire between lighting switch and headlamp relay for an open circuit.

System Description (Daytime light system 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. 39), located in the fuse and fusible link box
- to daytime light control unit terminal ③ and
- to headlamp relay terminal ③ and
- to lighting switch terminal ⑧.

Power is also supplied at all times

- through 15A fuse (No. 40), located in the fuse and fusible link box
- to daytime light control unit terminal ② and
- to headlamp relay terminal ⑥ and
- to lighting switch terminal ⑤.

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

- through 7.5A fuse (No. 1), located in the fuse block
- to daytime light control unit terminal ⑫.

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

- through 7.5A fuse (No. 25), located in the fuse block
- to daytime light control unit terminal ①.

Ground is supplied to daytime light control unit terminal ⑨ through body grounds E28 and E42.

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 ①
- to daytime light control unit terminal ④.

Ground is supplied to RH headlamp terminal ② through body grounds E28 and E42.

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 ①.

Ground is supplied

- to LH headlamp terminal ②
- from daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑨
- through body grounds E28 and E42.

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") or PASS ("C") position, power is supplied

- from lighting switch terminal ⑥
- to terminal ① of RH headlamp (High beam)
- to daytime light control unit terminal ⑧.

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

- from lighting switch terminal ⑨
- to daytime light control terminal ⑤
- to combination meter terminal 36 for the high beam indicator, and
- to headlamp relay terminal ①
- through daytime light control terminal ⑥
- to terminal ① of LH headlamp (High beam).

Ground is supplied to headlamp relay terminal ② through body grounds E28 and E42.

The headlamp relay is energized and power is supplied

- from headlamp relay terminals ⑤ and ⑦

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HEADLAMP

System Description (Daytime light system for Canada) (Cont'd)

- to terminal ① of each headlamp (Low beam).
- Ground is supplied
- to terminal ② of each RH headlamp (High and Low beams)
- through body grounds (E28) and (E42)
- to terminal ② of each LH headlamp (High and Low beams)
- from daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑨
- through body grounds (E28) and (E42).

Ground is also supplied to terminal ② of the combination meter through body grounds (M5) and (M57).
 With power and ground supplied, all the headlamps (High and Low beams) and the high beam indicator illuminate.

DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the OFF position, power is supplied

- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to terminal ① of LH headlamp (High beam)
- through terminal ② of LH headlamp
- to daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑧
- to terminal ① of RH headlamp (High beam).

Ground is supplied to terminal ② of RH headlamp through body grounds (E28) and (E42).

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								
		OFF			1ST			2ND			OFF			1ST			2ND		
Lighting switch		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.

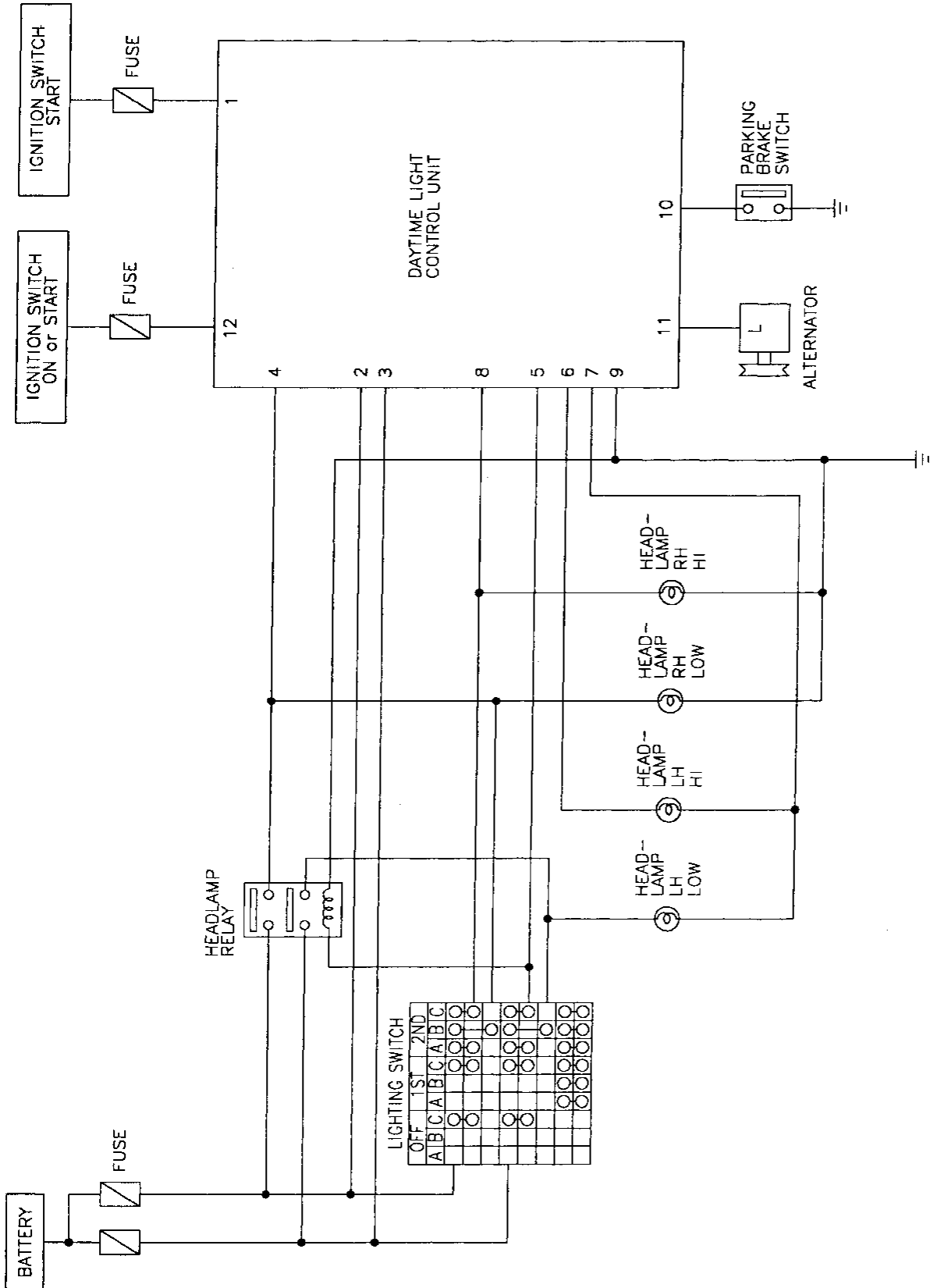
□ : Added functions

* : 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.

HEADLAMP

Schematic (Daytime light system for Canada)

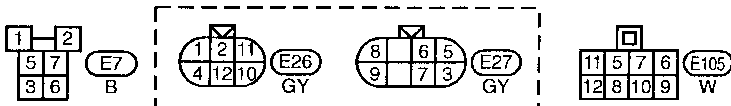
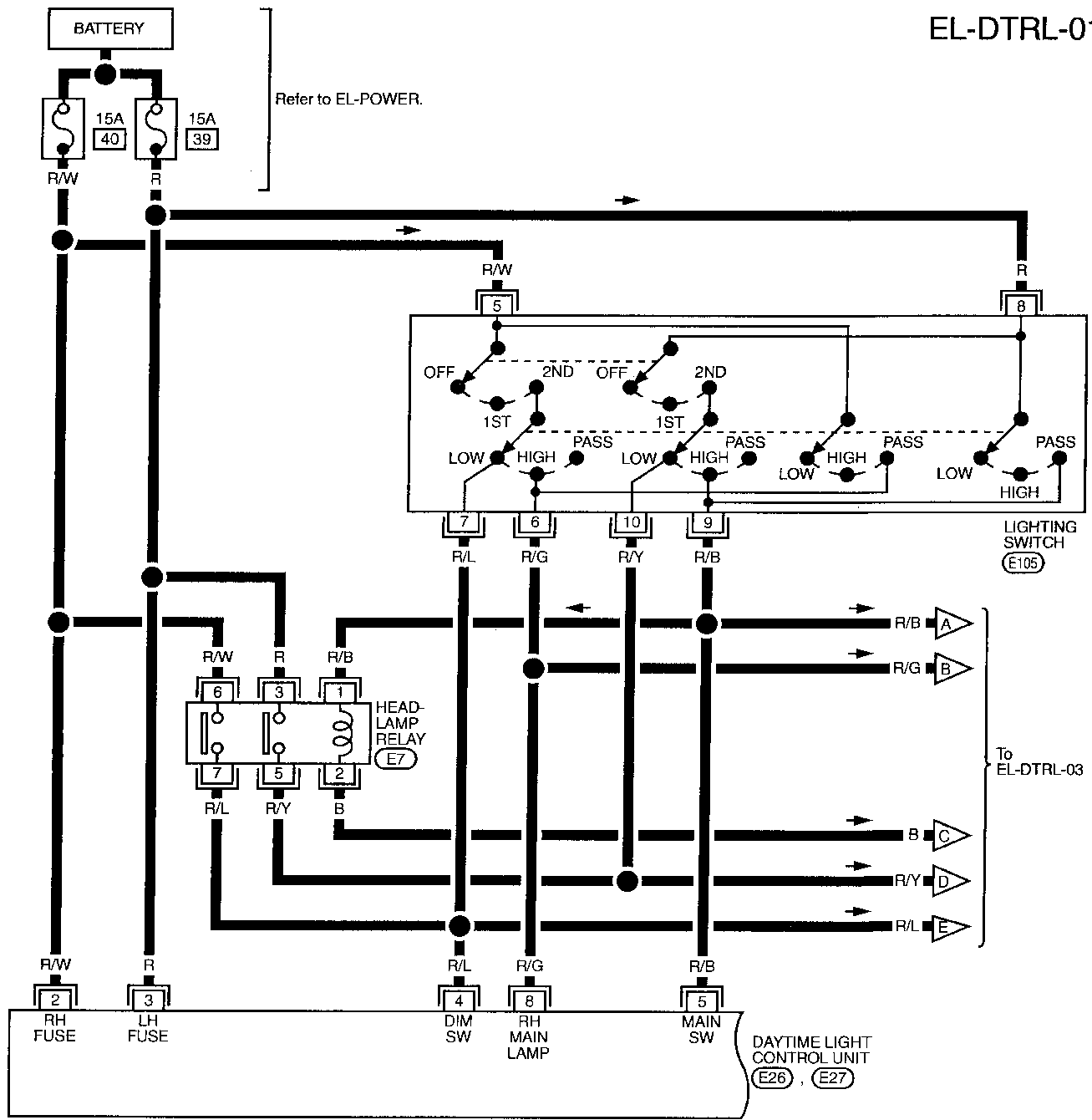


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HEADLAMP

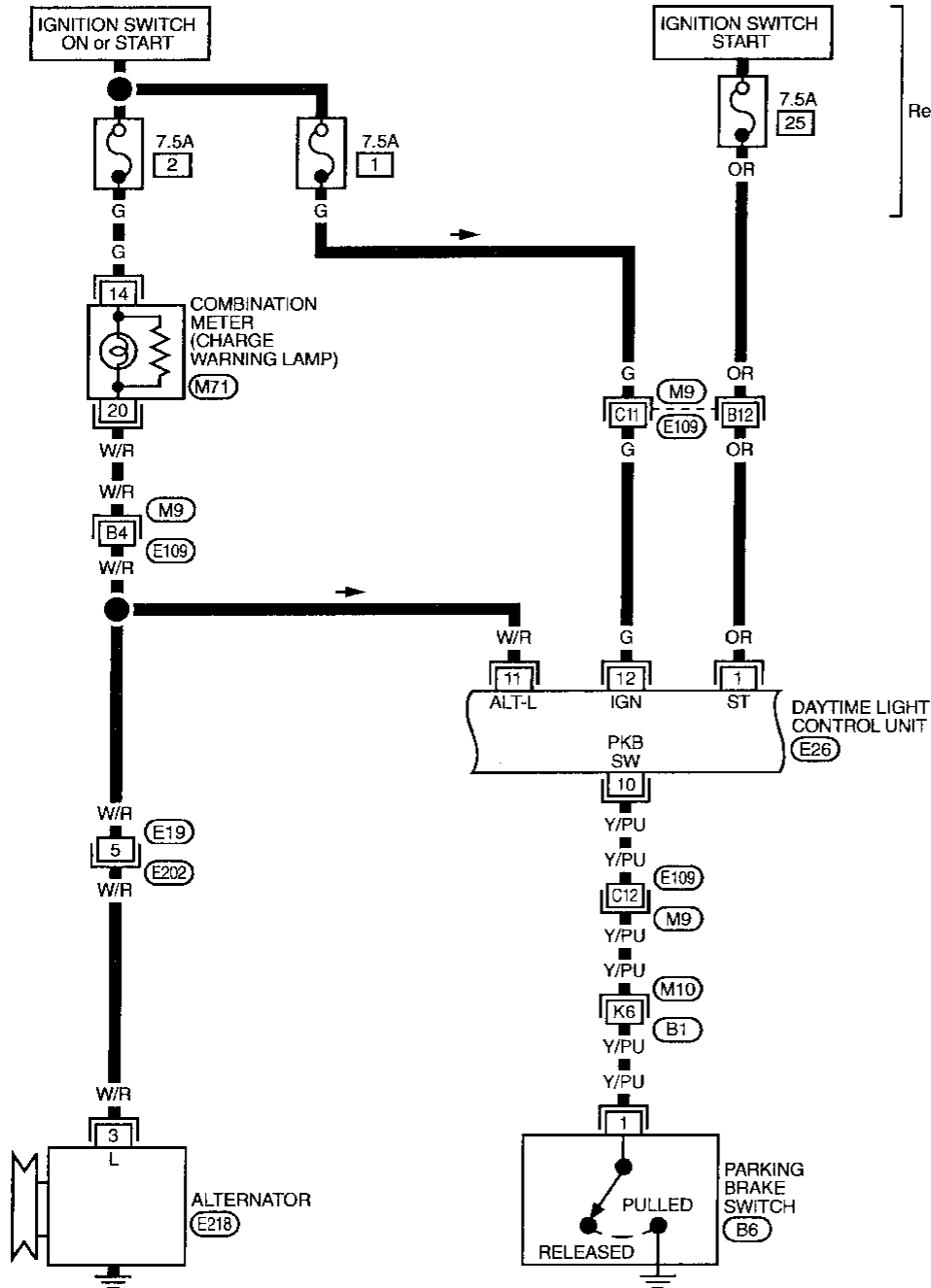
Wiring Diagram (Daytime light system for Canada) — DTRL —

EL-DTRL-01



HEADLAMP

Wiring Diagram (Daytime light system for Canada) — DTRL — (Cont'd)



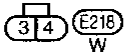
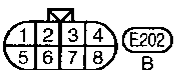
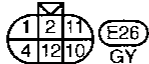
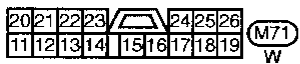
EL-DTRL-02

Refer to EL-POWER.

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Refer to last page (Foldout page).

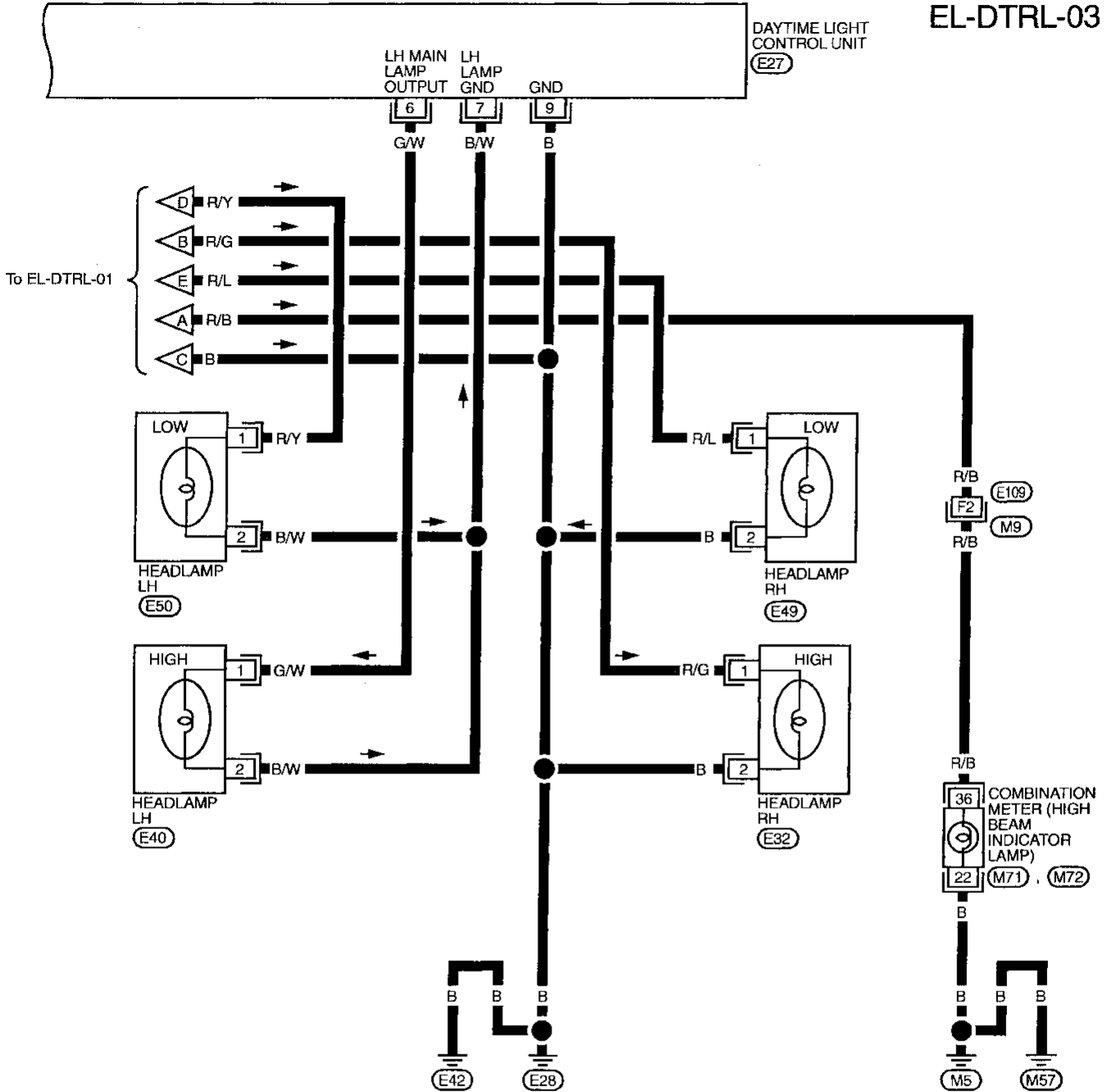
- (M9) , (E109)
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HEADLAMP

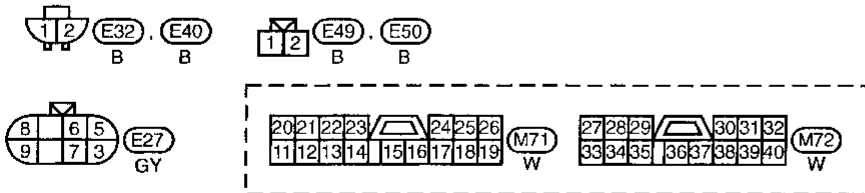
Wiring Diagram (Daytime light system for Canada) — DTRL — (Cont'd)

EL-DTRL-03



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(M9), (E109)









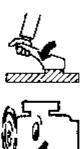


HEADLAMP

Trouble Diagnoses (Daytime light system 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

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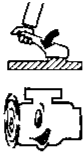







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HEADLAMP

Trouble Diagnoses (Daytime light system for Canada) (Cont'd)

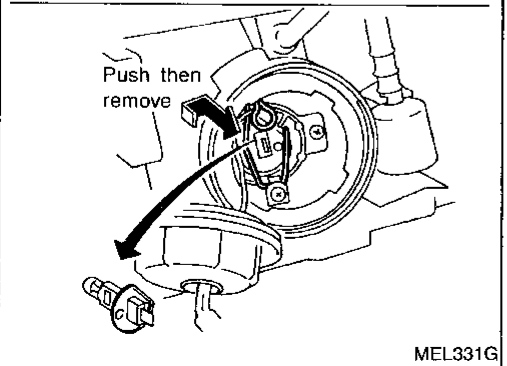
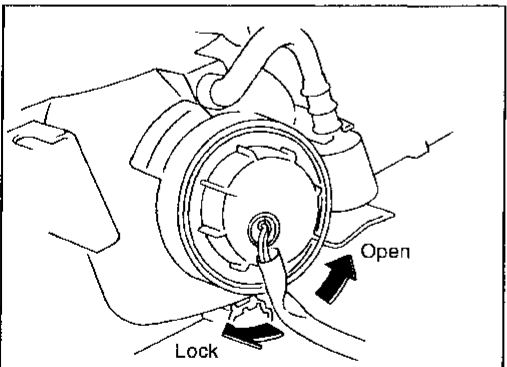
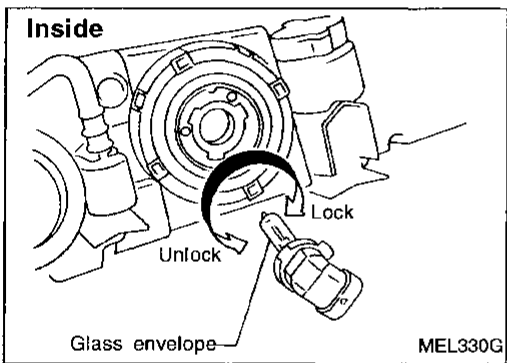
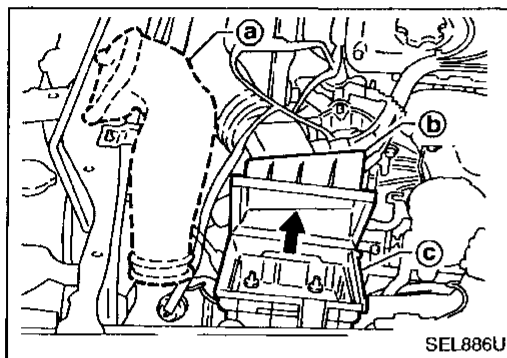
Terminal No.	Item	Condition		Judgement standard	
8	RH hi beam		When turning lighting switch to "HI BEAM"	Battery positive voltage	
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Approx. half battery voltage	
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"
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	

HEADLAMP

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. For RH bulb
 - a. Remove the battery.
 For LH bulb
 - a. Remove the air intake duct.
 - b. Open air cleaner box and remove air cleaner filter.
 - c. Remove air cleaner box nuts and bolt, then move air cleaner box in the direction of arrow.
3. Remove the headlamp seal cover.
4. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
5. Disconnect the harness connector from the back side of the bulb.
6. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
7. 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	
Inside	65 (HB3)
Outside	55 (H1)

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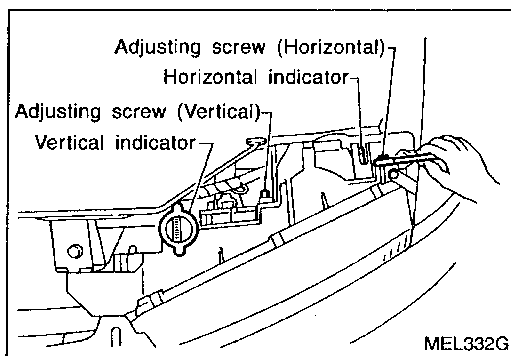
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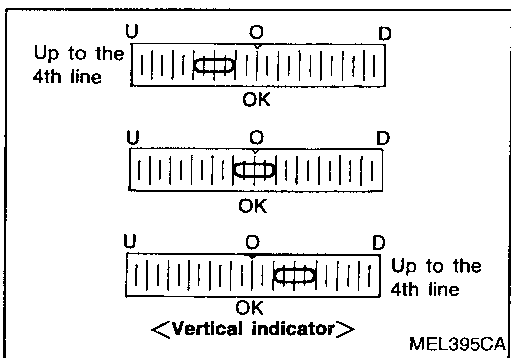
HEADLAMP



Aiming Adjustment

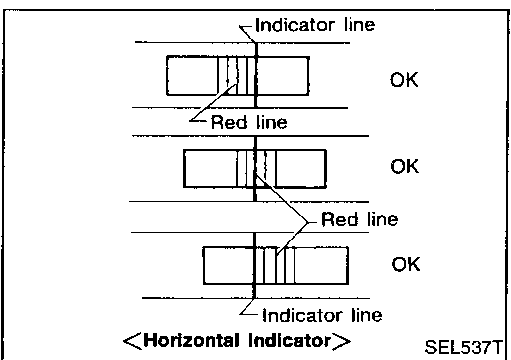
Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- 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.

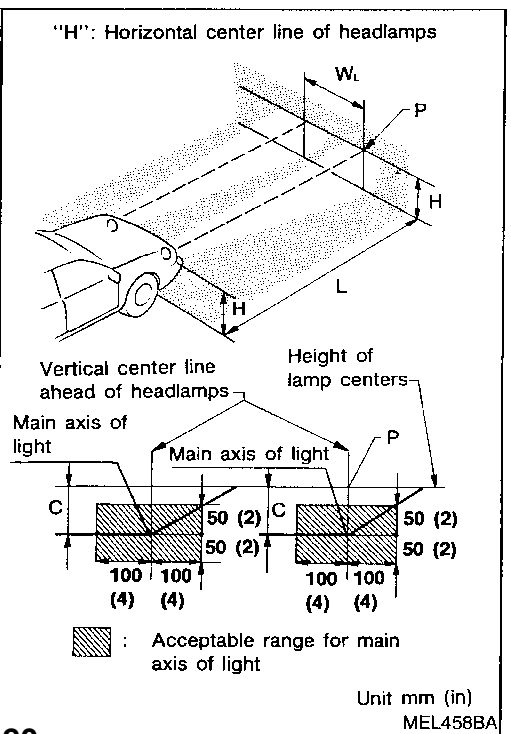


LOW BEAM

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



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



ADJUSTMENT AFTER HEADLAMP ASSEMBLY REPLACEMENT

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

- Adjust headlamps so that the main axis of light becomes:
 - parallel to center line of body, and
 - aligned with point P shown in the figure.
- Dotted lines in illustration show center of headlamp.
 "H": Horizontal center line of headlamps
 "W_L": Distance between each headlamp center
 "L": 7,620 mm (300.00 in)
 "C": 75 mm (2.95 in)

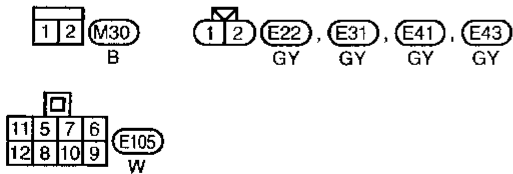
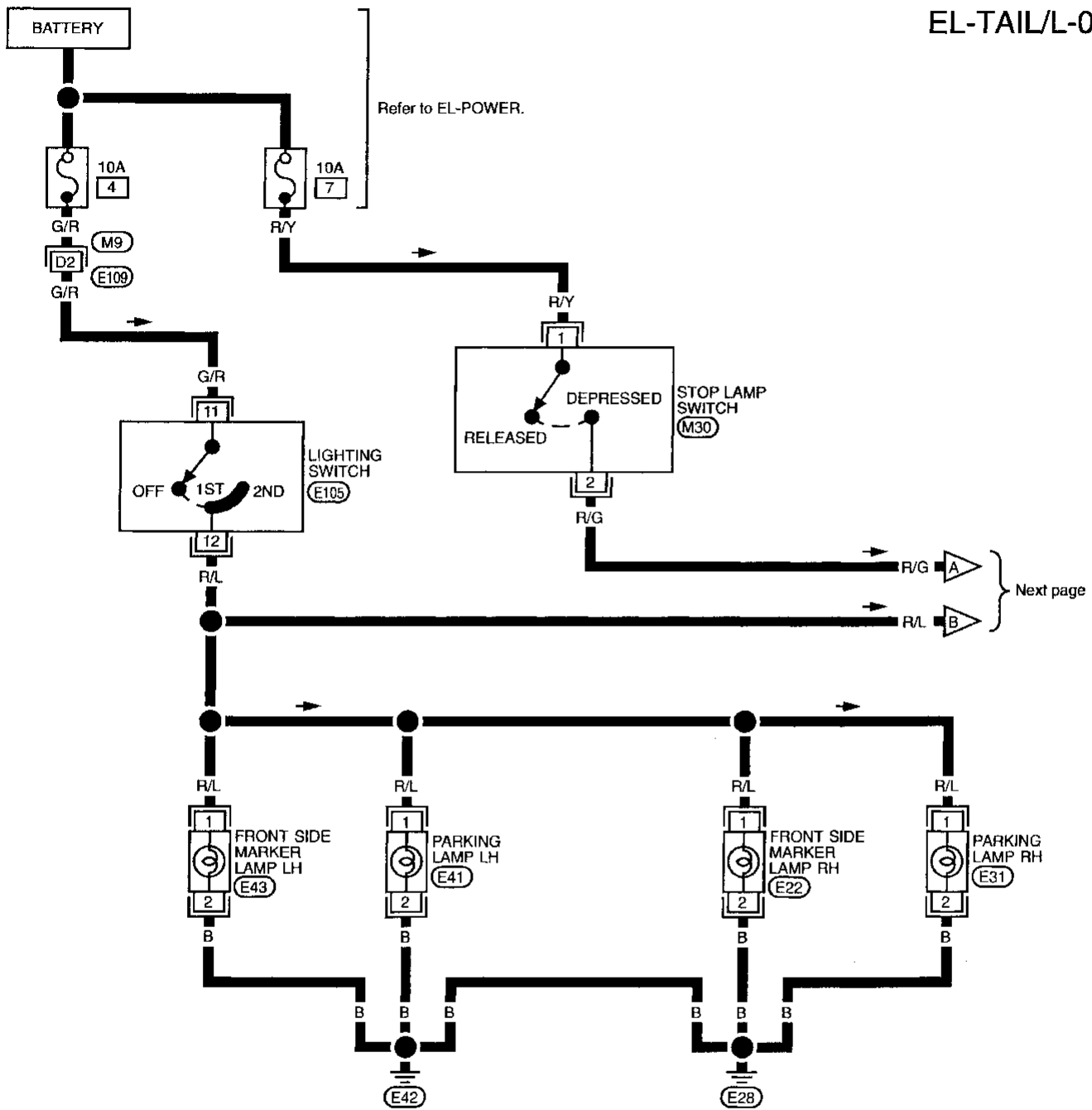
After aiming adjustment using the chart, check the indications to make sure of alignment. Even if the following are observed, it is acceptable while the indications are within the OK ranges.

- Indicator does not align with the indicator line, or
- the bubble is not centered in the vertical indicator.

EXTERIOR LAMP

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

EL-TAIL/L-01



Refer to last page (Foldout page).
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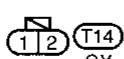
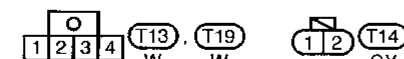
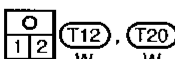
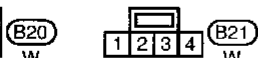
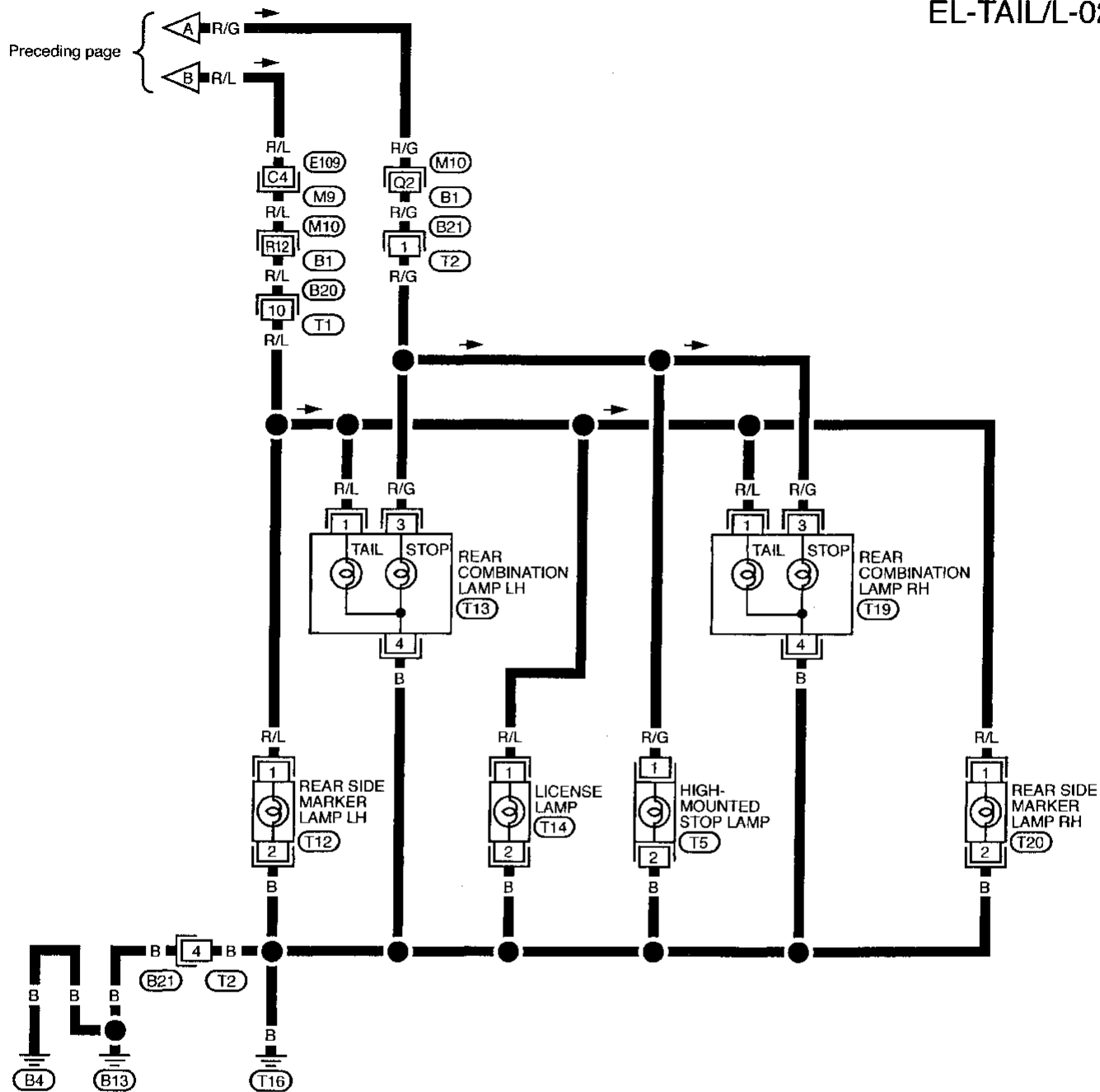
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EXTERIOR LAMP

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

EL-TAIL/L-02



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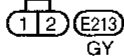
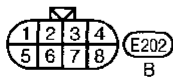
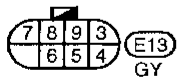
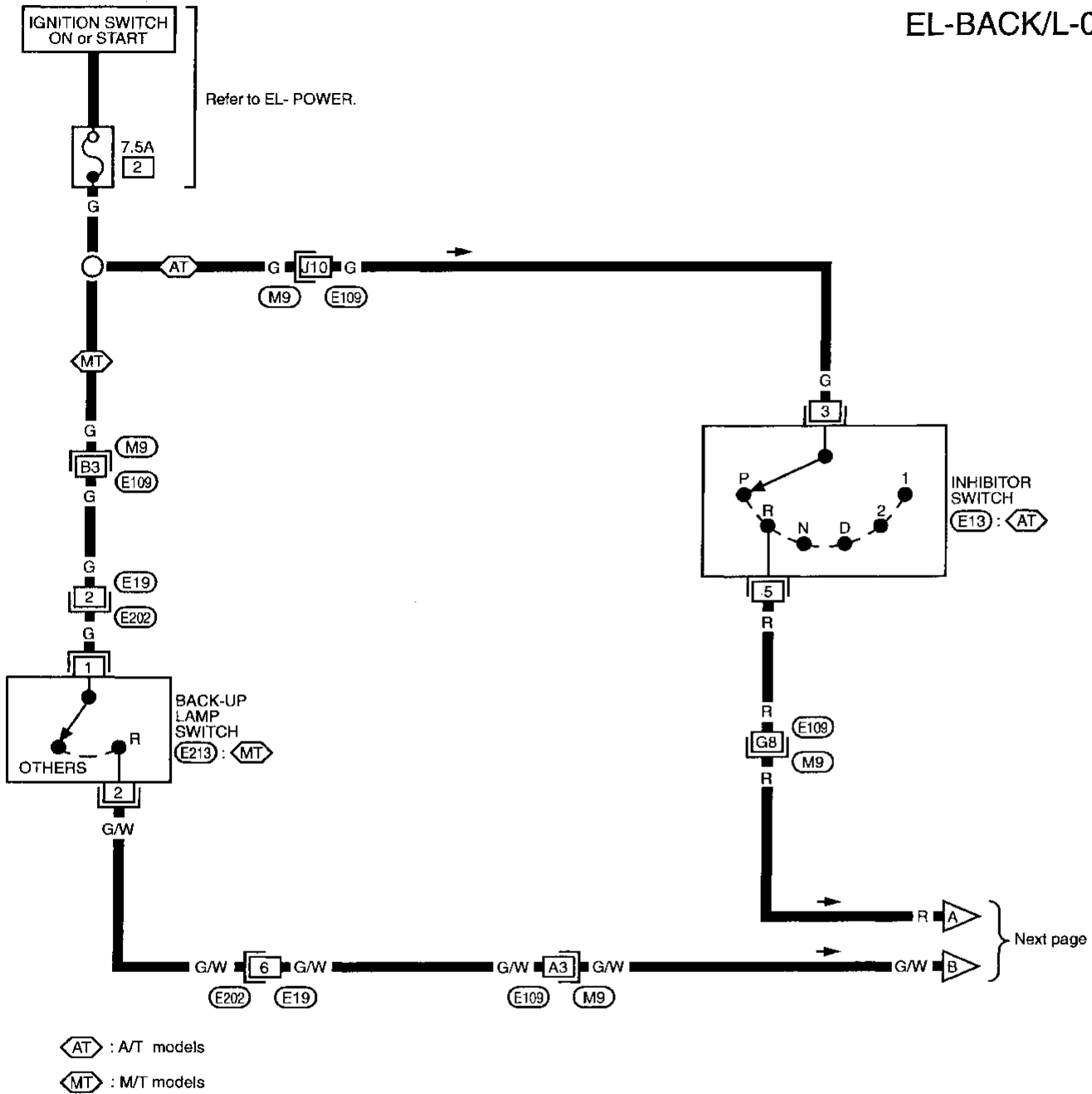
M9 , E109

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EXTERIOR LAMP

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

EL-BACK/L-01



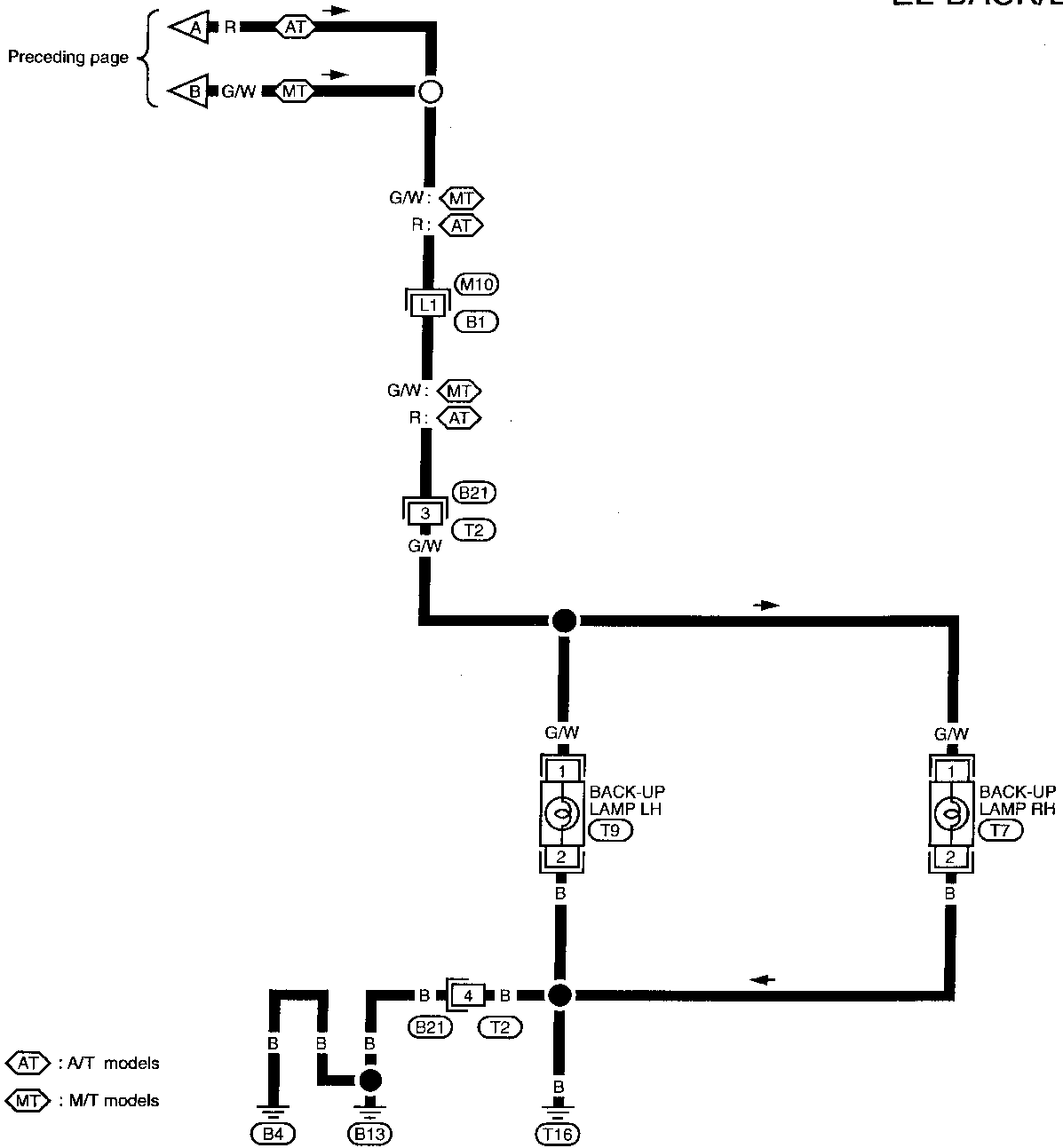
Refer to last page (Foldout page).
M9 , E109

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FA
RA
BR
ST
RS
BT
HA
EL
IDX

EXTERIOR LAMP

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

EL-BACK/L-02



Refer to last page (Foldout page).

M10 , B1

Front Fog Lamp/System Description

Power is supplied at all times

- to fog lamp relay terminal ③
- through 15A fuse (No. 46), located in the fusible link and fuse box
- to lighting switch terminal ⑤ .
- through 15A fuse (No. 40), located in the fuse and fusible link box

With the lighting switch in the 2ND position and LOW ("B") position, power is supplied

- from terminal ⑦ of the lighting switch
- to fog lamp relay-2 terminal ④
- through fog lamp relay-2 terminal ③
- to fog lamp relay-1 terminal ① .

GI

MA

EM

FOG LAMP OPERATION

Headlamp (Low beam) 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-1 terminal ②
- through the fog lamp switch and body grounds (E28) and (E42).

The fog lamp relay-1 is energized and power is supplied

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

Ground is supplied to terminal ② of each fog lamp through body grounds (E28) and (E42).

With power and ground supplied, the fog lamps illuminate.

LC

EC

FE

CL

MT

Headlamp (High beam/flash-to-pass) operation

With the lighting switch in the 2ND position and HIGH ("A") position, power is supplied

- through terminal ⑥ of the lighting switch
- to fog lamp relay-2 terminal ①

The fog lamp relay-2 is energized and ground is supplied.

- through terminal ② of the fog lamp relay-2
- to body grounds (E28) and (E42).

Then, power supply to the fog lamp relay-1 is cut, turning fog lamps off.

AT

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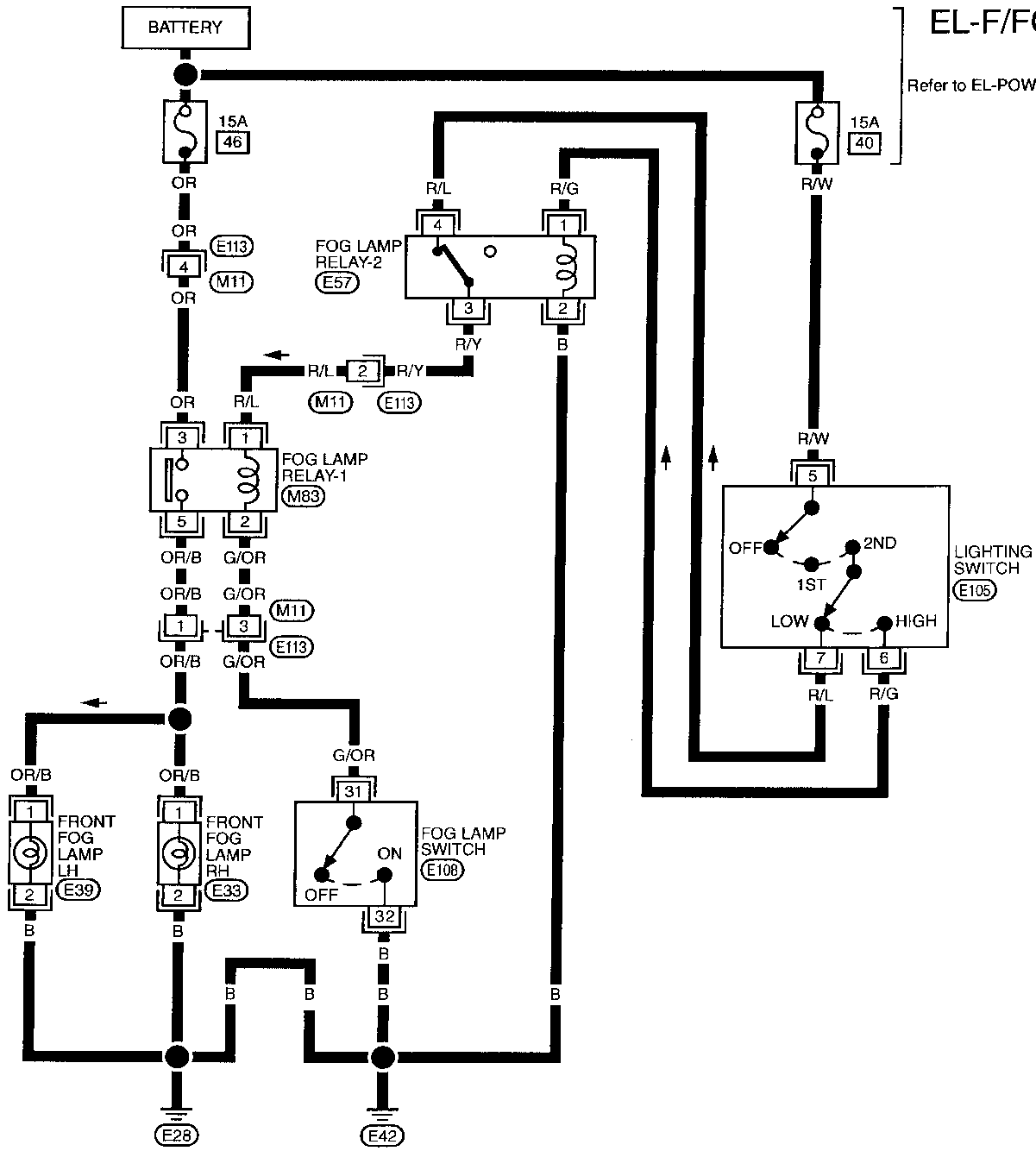
IDX

EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram — F/FOG —

EL-F/FOG-01

Refer to EL-POWER.



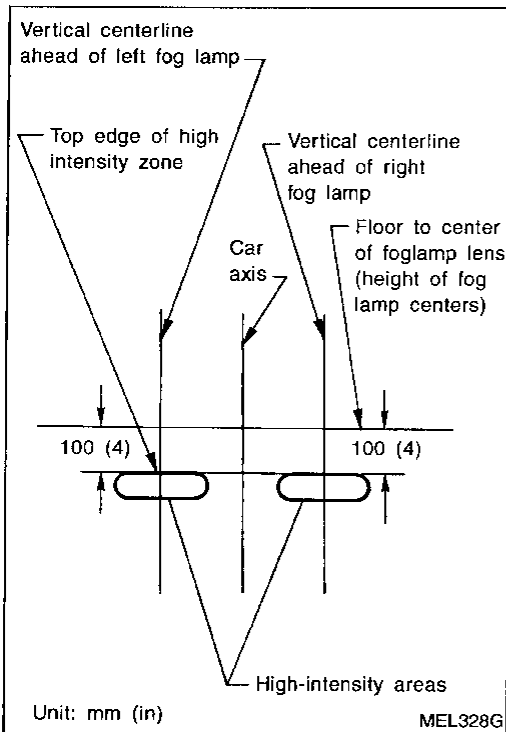
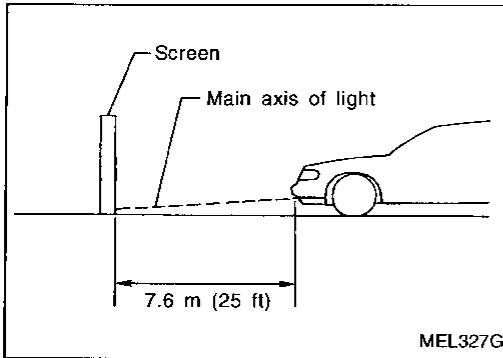
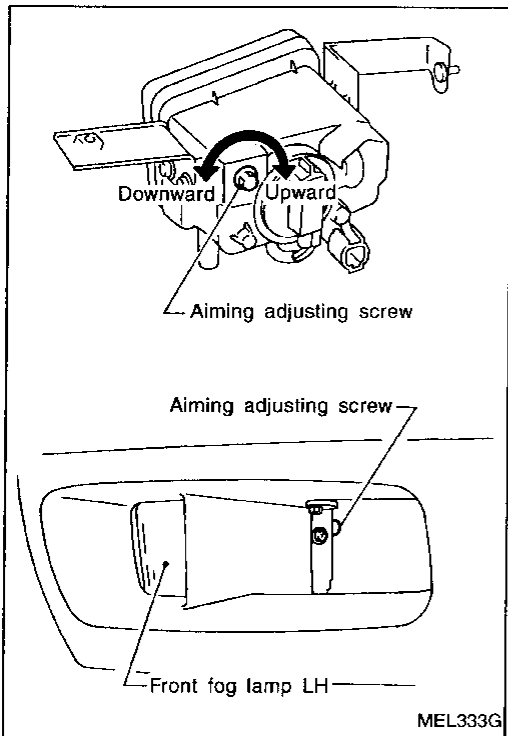
EXTERIOR LAMP

Front Fog Lamp Aiming Adjustment

Before performing aiming adjustment, make sure of the following.

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

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



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

- 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.
- Tighten the front fog lamp bolts.

Bulb specifications

Item	Wattage (W)
Front fog lamp	55 (H3)

GI

MA

EM

LC

EC

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IDX

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 10A fuse (No. [3], located in the fuse block)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ②
- through terminal ③ of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ① through body grounds (M5) and (M57).

LH turn

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

- front turn signal lamp LH terminal ①
- rear combination lamp LH terminal ②
- combination meter terminal ②.

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds (E28) and (E42).

Ground is supplied to the rear combination lamp LH terminal ④ through body grounds (B4), (B13) and (T16).

Ground is supplied to combination meter terminal ② through body grounds (M5) and (M57).

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 ①
- rear combination lamp RH terminal ②
- combination meter terminal ③.

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds (E28) and (E42).

Ground is supplied to the rear combination lamp RH terminal ④ through body grounds (B4), (B13) and (T16).

Ground is supplied to combination meter terminal ② through body grounds (M5) and (M57).

With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

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

- 10A fuse (No. [5], located in the fuse block).

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

- through terminal ① of the hazard switch
- to combination flasher unit terminal ②
- through terminal ③ of the combination flasher unit
- to hazard switch terminal ④.

Ground is supplied to combination flasher unit terminal ① through body grounds (M5) and (M57).

Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ①
- rear combination lamp LH terminal ②
- combination meter terminal ②.

Power is supplied through terminal ⑥ of the hazard switch to

- front turn signal lamp RH terminal ①
- rear combination lamp RH terminal ②
- combination meter terminal ③.

Ground is supplied to terminal ② of each front turn signal lamp through body grounds (E28) and (E42).

Ground is supplied to terminal ④ of the rear combination lamps through body grounds (B4), (B13) and (T16).

Ground is supplied to combination meter terminal ② through body grounds (M5) and (M57).

With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

EXTERIOR LAMP

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

WITH MULTI-REMOTE CONTROL SYSTEM

Power is supplied at all times

- through 10A fuse (No. ⑤), located in the fuse block)
- to multi-remote control relay-1 terminals ①, ⑥ and ③.

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-164.

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 ①
- to rear combination lamp LH terminal ②
- to combination meter terminal ⑳.

Power is supplied through terminal ⑤ of the multi-remote control relay-1

- to front turn signal lamp RH terminal ①
- to rear combination lamp RH terminal ②
- to combination meter terminal ㉓.

Ground is supplied to terminal ② of each front turn signal lamp through body grounds ②②⑧ and ②④②.

Ground is supplied to terminal ④ of the rear combination lamps through body grounds ②④, ②①③ and ②①⑧.

Ground is supplied to combination meter terminal ㉒ through body grounds ②⑤ and ②⑤⑦.

With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

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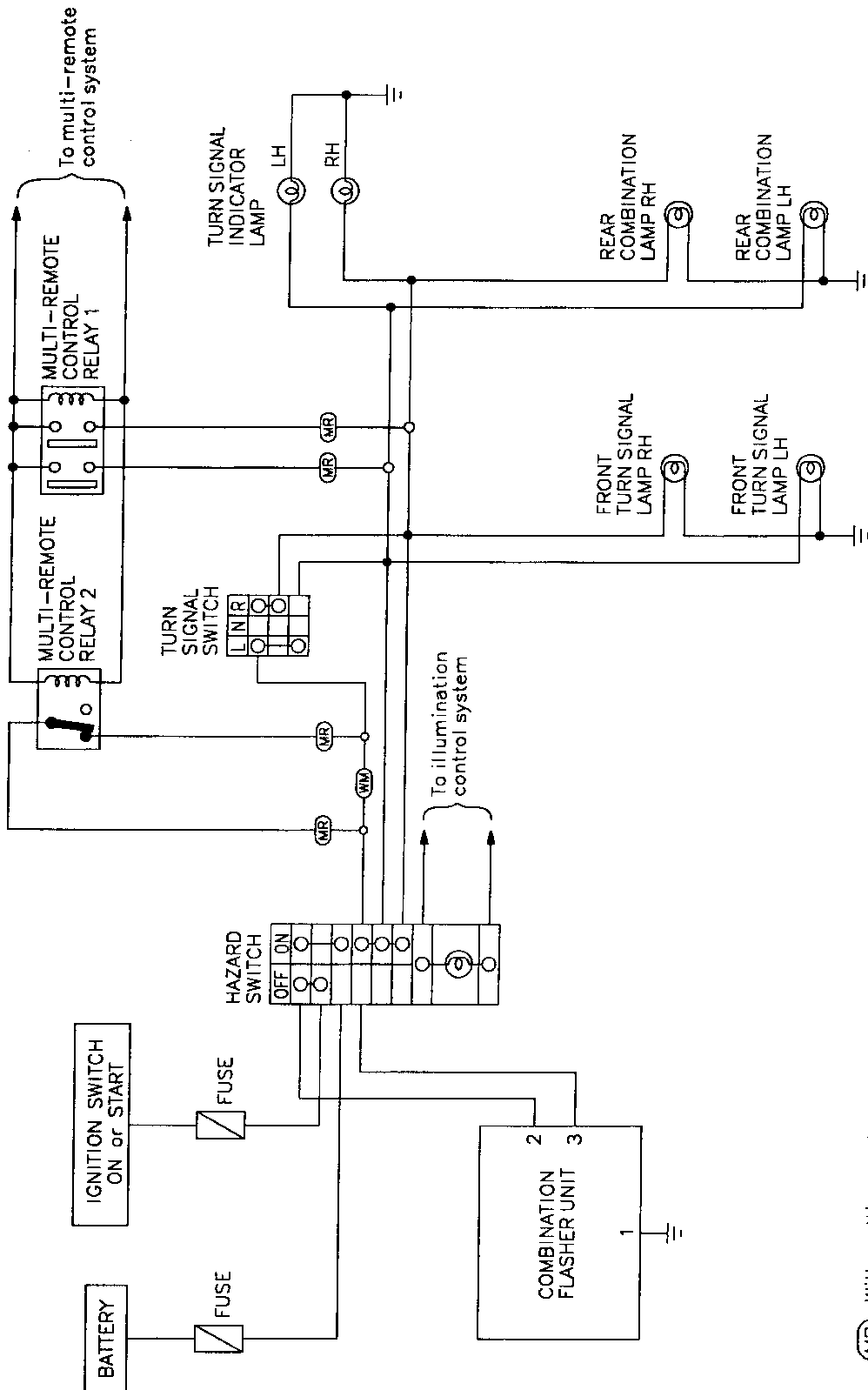
HA

EL

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EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/ Schematic



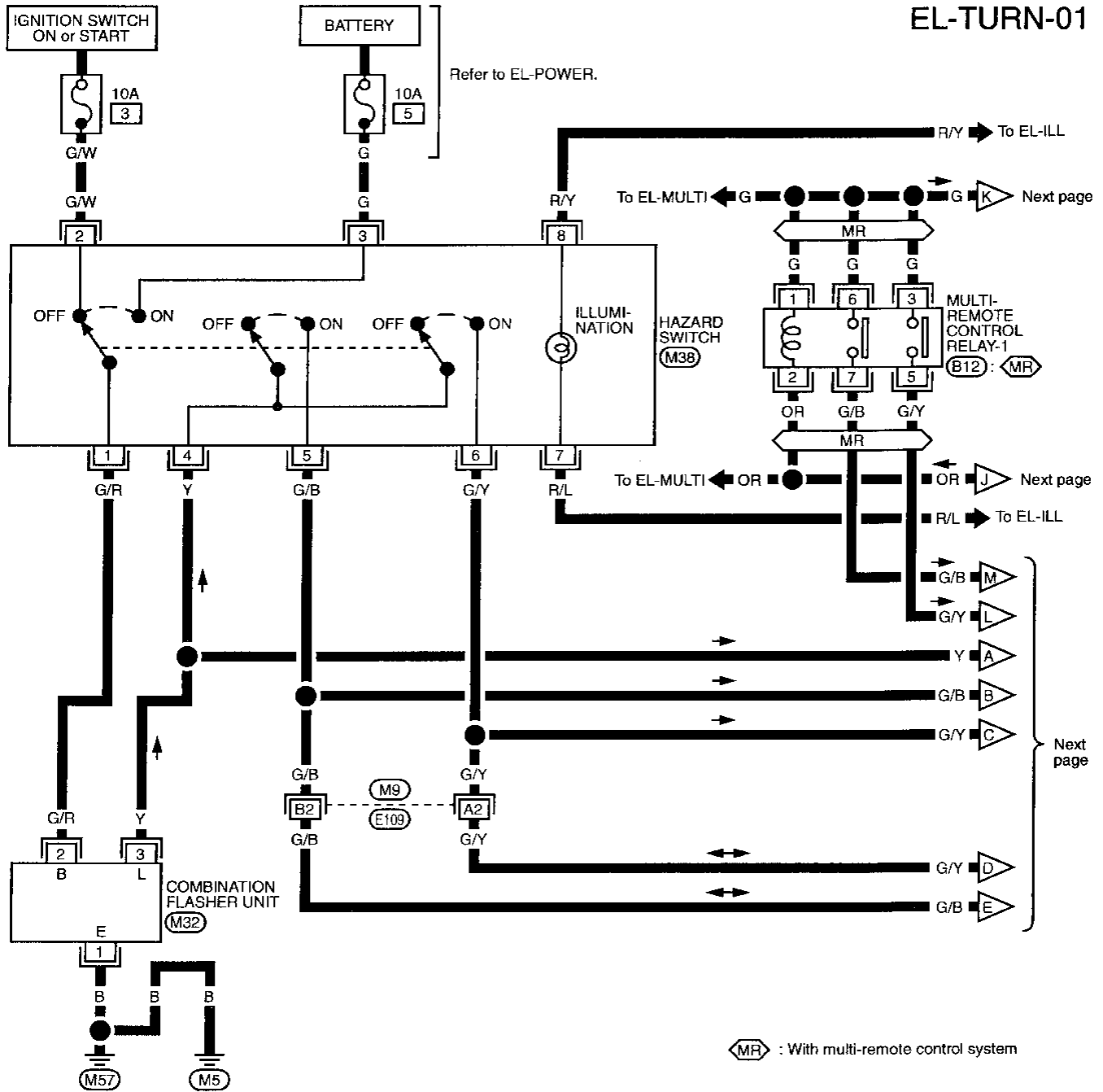
(MR) : With multi-remote control unit

(WM) : Without multi-remote control unit

EXTERIOR LAMP

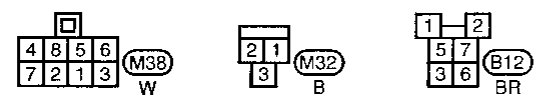
Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN —

EL-TURN-01



- GI
- MA
- EM
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- EC
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- RA
- BR
- ST
- RS
- BT
- HA
- EL**
- IDX

MR : With multi-remote control system

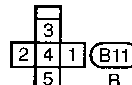
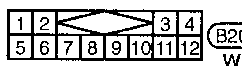
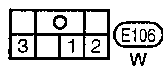
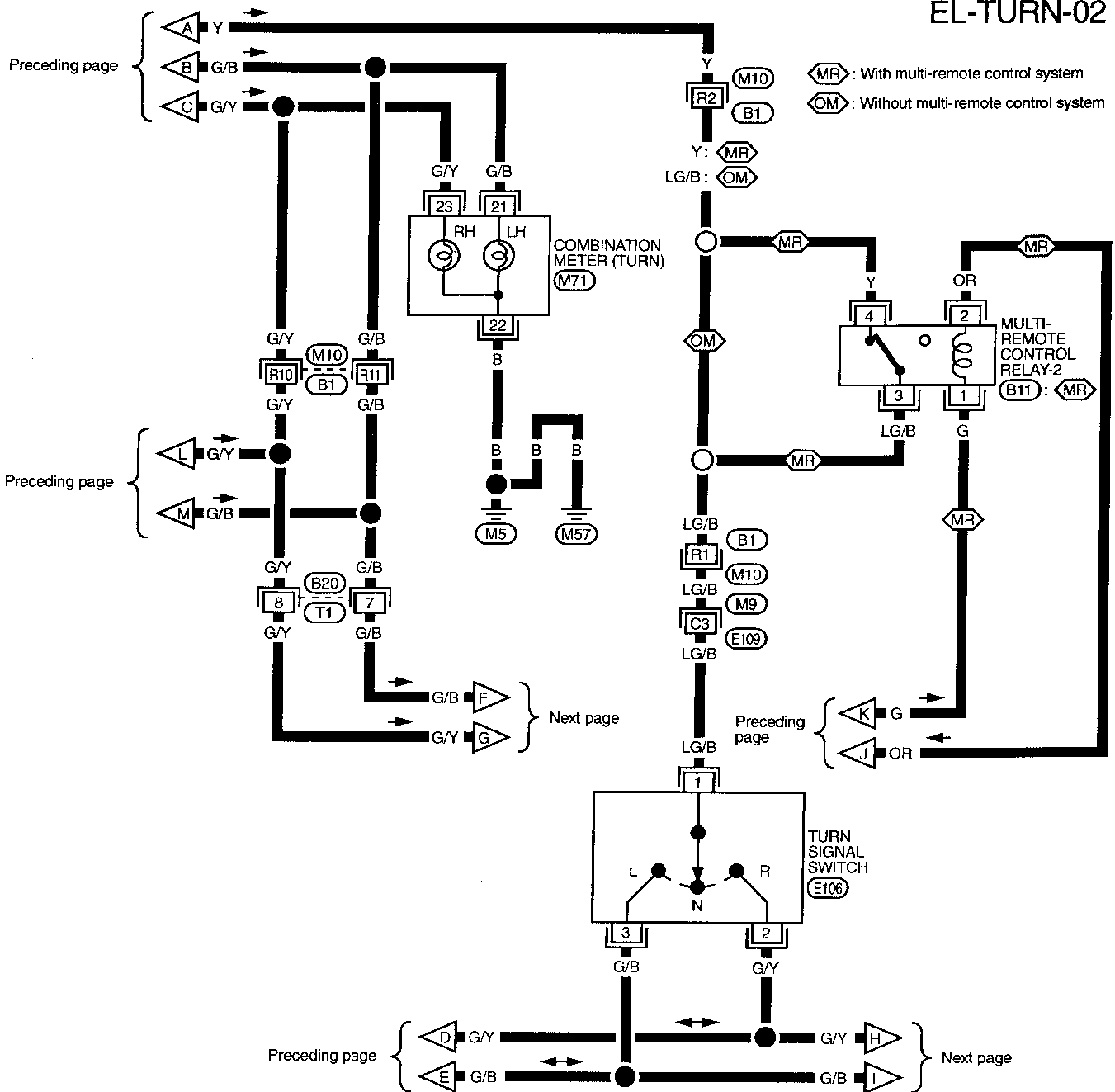


Refer to last page (Foldout page).
M9, E109

EXTERIOR LAMP

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

EL-TURN-02



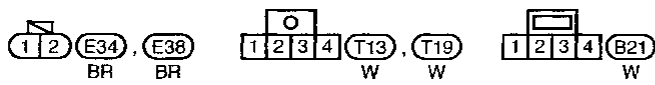
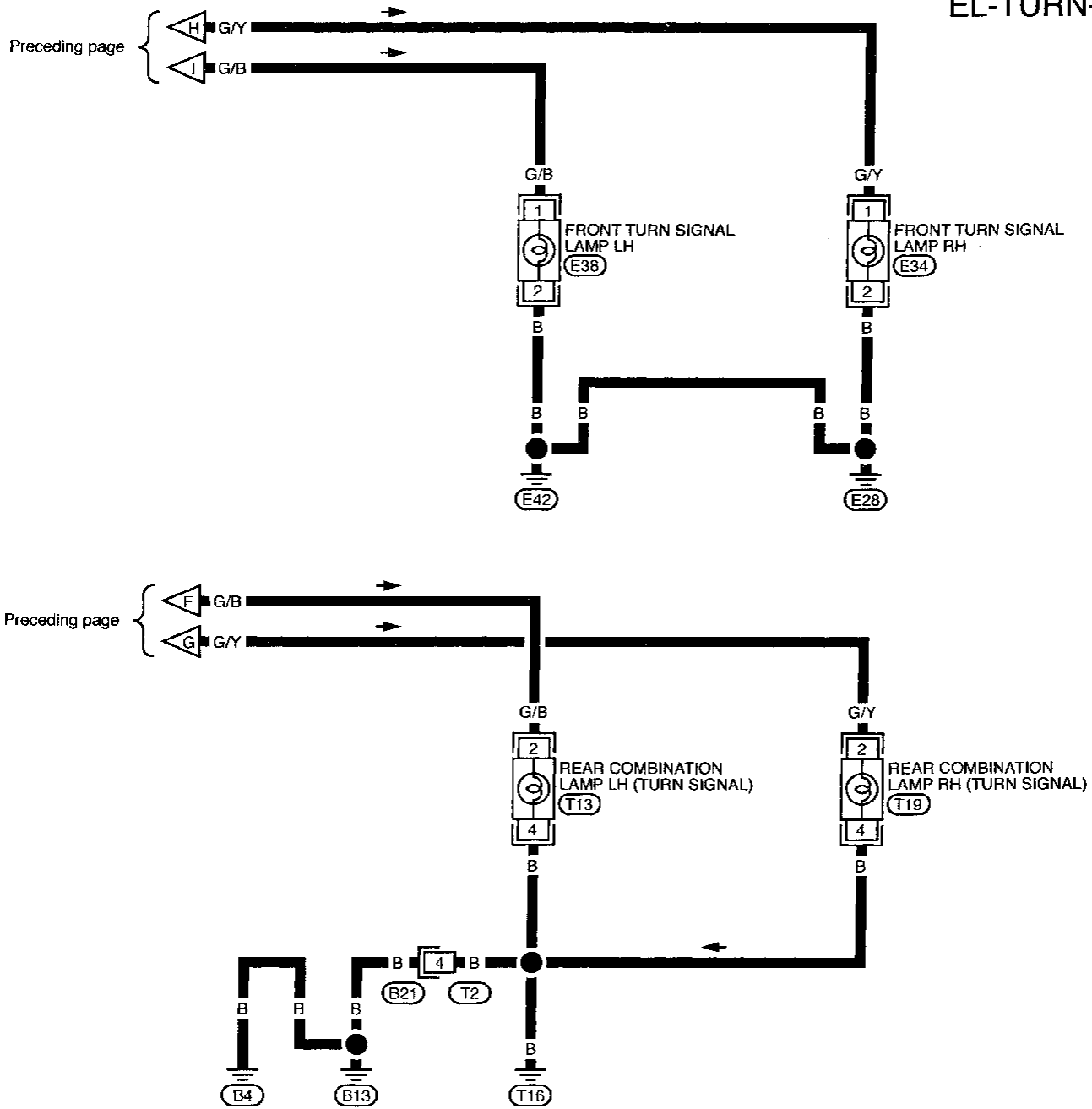
Refer to last page (Foldout page).

(M9) , (E109)
(M10) , (B1)

EXTERIOR LAMP

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

EL-TURN-03



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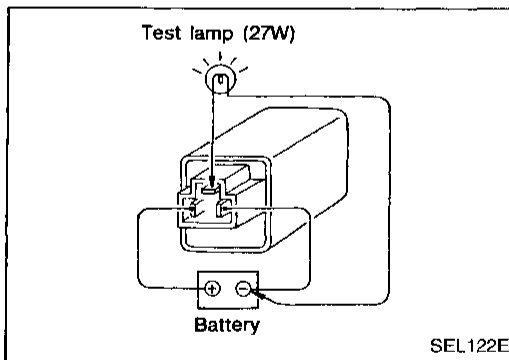
EL

IDX

EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/ Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<ol style="list-style-type: none"> 1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit 	<ol style="list-style-type: none"> 1. Check hazard switch. 2. Refer to combination flasher unit check. (EL-64) 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	<ol style="list-style-type: none"> 1. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit 	<ol style="list-style-type: none"> 1. Check 10A fuse (No. 3), located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	<ol style="list-style-type: none"> 1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit 	<ol style="list-style-type: none"> 1. Check 10A fuse (No. 5), located in fuse block). Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check Y wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds E28 and E42 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds E28 and E42.
Rear turn signal lamp LH or RH does not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds B4, B13 and T16 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check grounds B4, B13 and T16.
LH and RH turn indicators do not operate.	<ol style="list-style-type: none"> 1. Ground 	<ol style="list-style-type: none"> 1. Check grounds M6 and M57.
LH or RH turn indicator does not operate.	<ol style="list-style-type: none"> 1. Bulb 	<ol style="list-style-type: none"> 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.

EXTERIOR LAMP

Bulb Specifications

Item	Wattage (W)	
Headlamp		
Inside	65 (HB3)	GI
Outside	55 (H1)	
Front fog lamp	55 (H3)	MA
Front turn signal lamp	27	
Parking lamp	8	EM
Front side marker lamp	3.8	
Rear side marker lamp	3.8	LC
Rear combination lamp		
Turn signal lamp	27	EC
Stop/Tail lamp	27/8	
Back-up lamp	27	FE
License plate lamp	5	
High-mounted stop lamp	5	

CL

MT

AT

PD

FA

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ST

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HA

EL

IDX

INTERIOR LAMP

Illumination/System Description

Power is supplied at all times

- through 10A fuse (No. ④), located in the fuse block)
- 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.

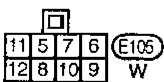
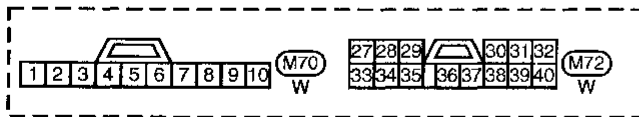
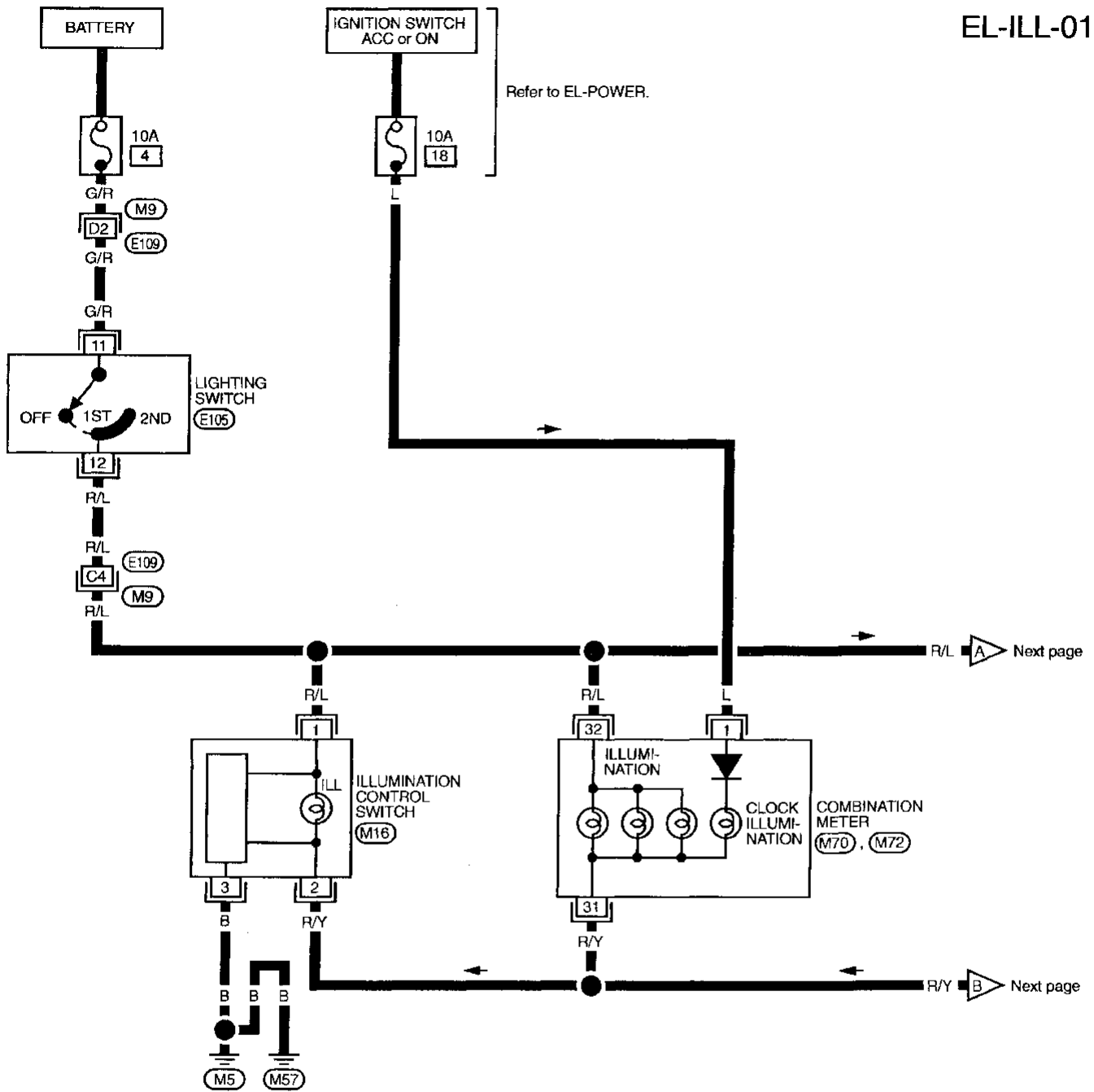
Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M16	①	③
Combination meter	M70, M72	⑫	⑩
Clock	M70	①	⑩
ASCD main switch	M17	⑤	⑥
Rear window defogger switch	M39	⑤	⑥
Push control unit	M77	⑮	⑯
Hazard switch	M38	⑦	⑧
Cigarette lighter	M78	③	④
Audio	M43	⑧	⑦
CD deck	M45, M46	③	⑤
Power window main switch	D8	⑯	⑨
A/T indicator	B7	④	③

The ground for all of the components are controlled through terminals ② and ③ of the illumination control switch and body grounds ⑮ and ⑯.

INTERIOR LAMP

Illumination/Wiring Diagram — ILL —

EL-ILL-01

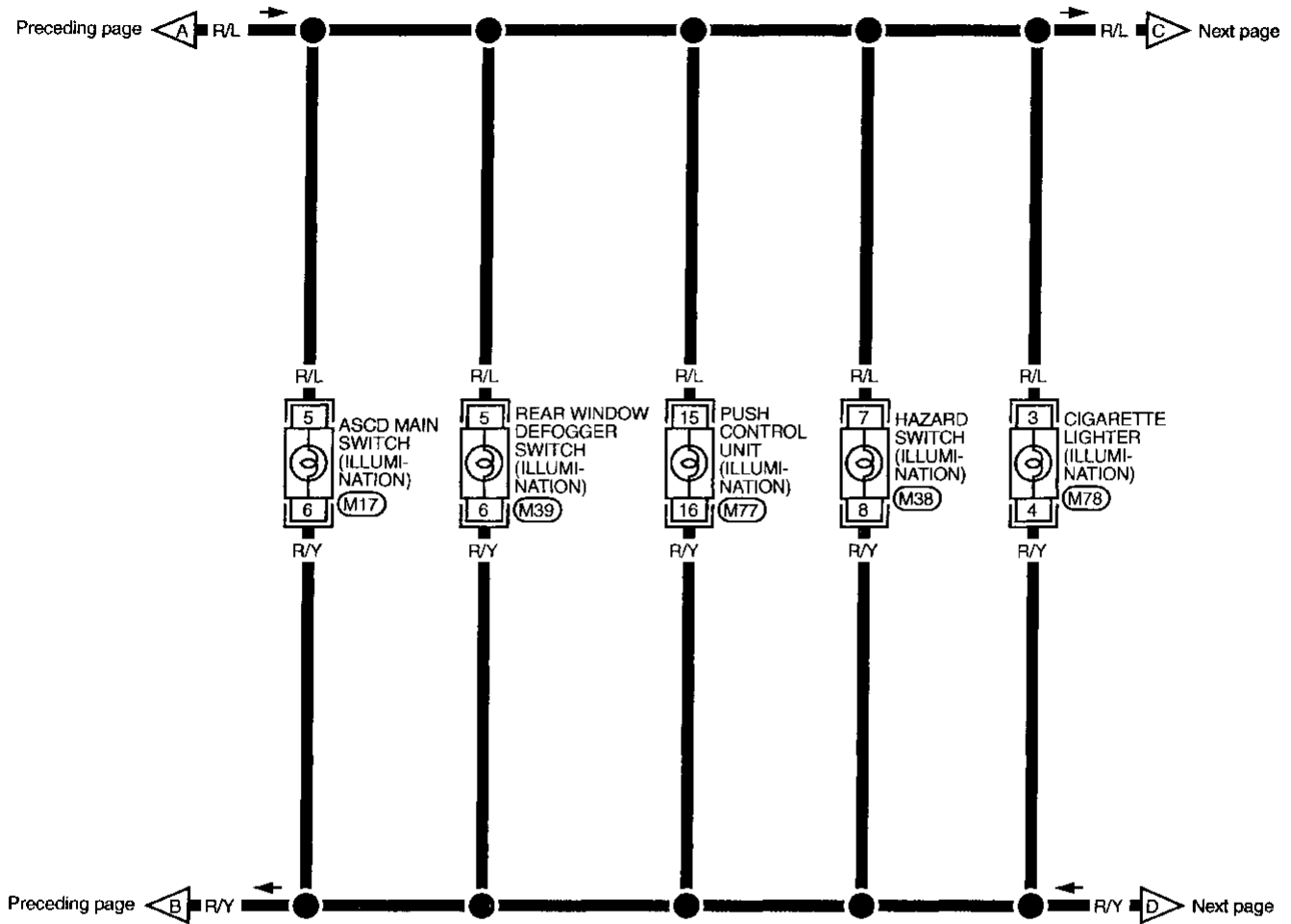


Refer to last page (Foldout page).
M9, E109

INTERIOR LAMP

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

EL-ILL-02



GI

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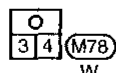
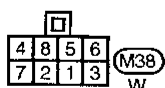
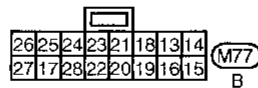
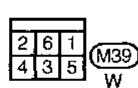
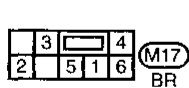
RS

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EL

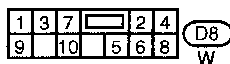
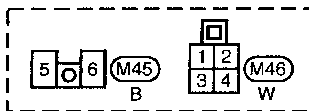
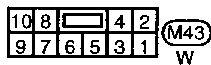
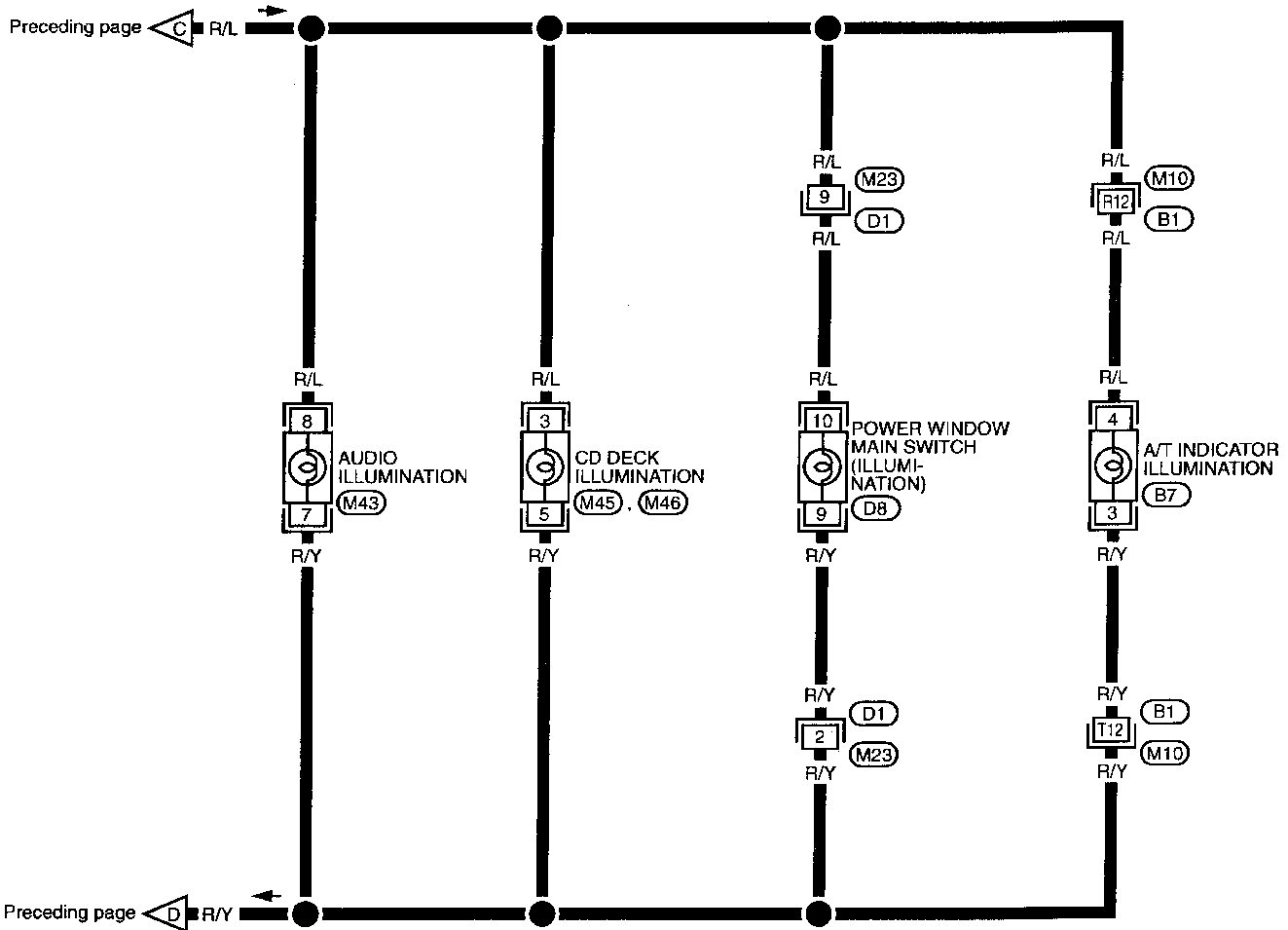
IDX



INTERIOR LAMP

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

EL-ILL-03



Refer to last page (Foldout page).

(M10) (B1)

INTERIOR LAMP

Interior, Spot and Trunk Room Lamps/System Description

Power is supplied at all times

- through 10A fuse (No. **6**), located in the fuse block
- to interior lamp terminal **1**,
- to spot lamp terminal **1** and
- to trunk room lamp terminal **1**.
- through 25A fusible link (letter **i**), located in the fuse and fusible link box)
- to circuit breaker
- to smart entrance control unit terminal **1** for multi-remote control system.

GI

MA

EM

INTERIOR LAMP

Switch operation

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 **M26** terminal **1** (SE grade models)
- to diode **M26** terminal **2** (SE grade models)
- through diode **M66** terminal **1** (SE grade models)
- to diode **M66** terminal **2** (SE grade models)
- through door switch RH terminal **1** or
- through door switch LH terminal **2**,
- through body ground.

LC

EC

FE

CL

Interior lamp control by multi-remote control system

Smart entrance control unit receives a signal from multi-remote controller to turn interior lamp ON with interior lamp switch set to DOOR. Ground is then supplied

- to interior lamp terminal **2**
- through smart entrance control unit terminal **9**,
- through smart entrance control unit terminal **10** and
- through body grounds **M5** and **M57**.

MT

AT

PD

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

TRUNK ROOM LAMP

When the trunk room lamp switch is set to OPEN, ground is supplied

- to trunk room lamp terminal **2**
- through trunk room switch terminal **1**,
- through trunk room lamp switch terminal **2** and
- through body grounds **B4**, **B13** and **T16**.

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

FA

RA

BR

SPOT LAMP

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

- to spot lamp terminal **2**
- through body grounds **M5** and **M57**.

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

ST

RS

Bulb Specifications

Item	Wattage (W)
Interior lamp	10
Spot lamp	10
Trunk room lamp	3.4

BT

HA

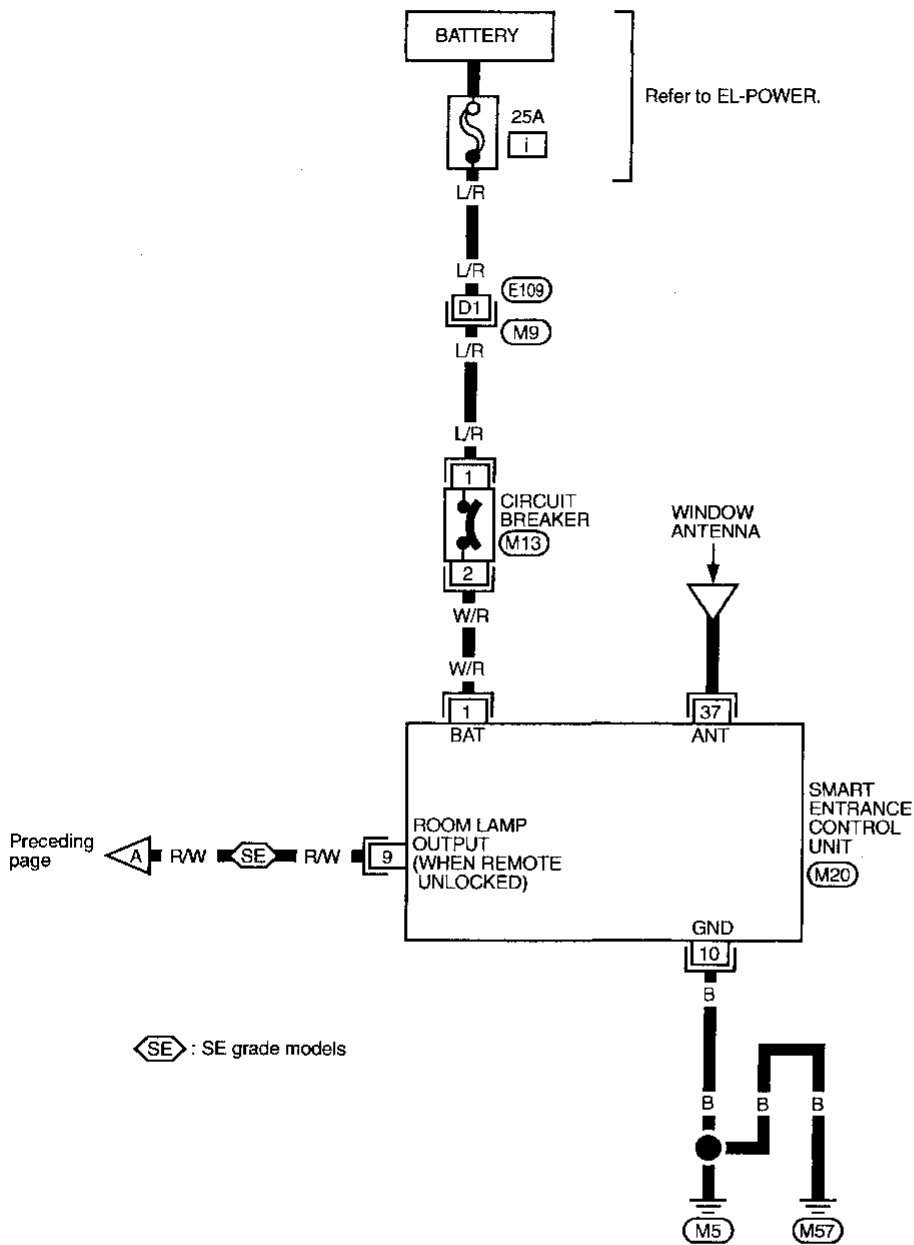
EL

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INTERIOR LAMP

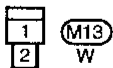
Interior, Spot and Trunk Room Lamps/Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-02



Preceding page

SE : SE grade models



Refer to last page (Foldout page).

M9, E109
M20

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

System Description

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

- through 7.5A fuse (No. 2), located in the fuse block)
- to combination meter terminal 14.

Ground is supplied

- to combination meter terminal 40
- through body grounds M5 and M57.

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 24 for the fuel gauge
- from terminal 1 of the fuel tank gauge unit
- through terminal 4 of the fuel tank gauge unit and
- through body grounds B4, B13 and T16.

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 6 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 17 for the tachometer.

SPEEDOMETER

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

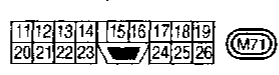
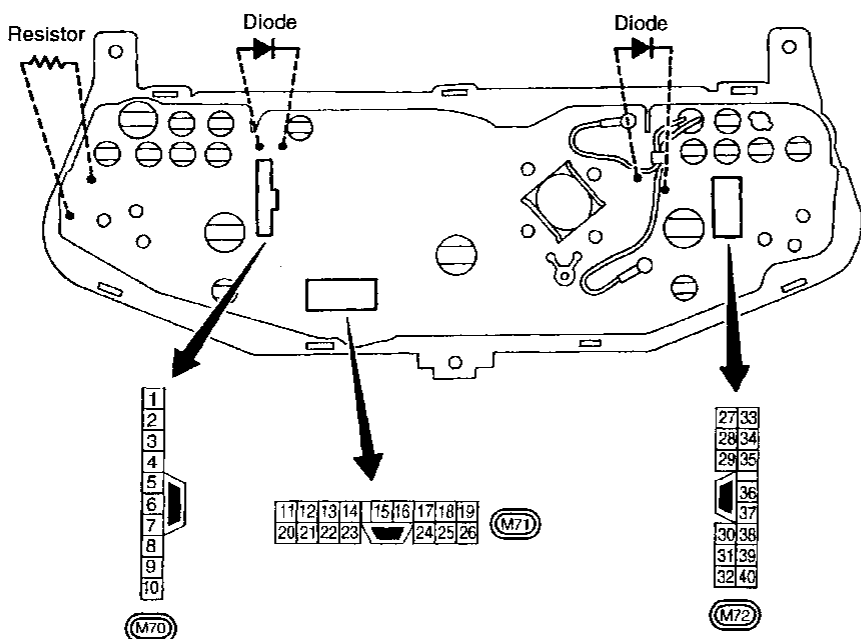
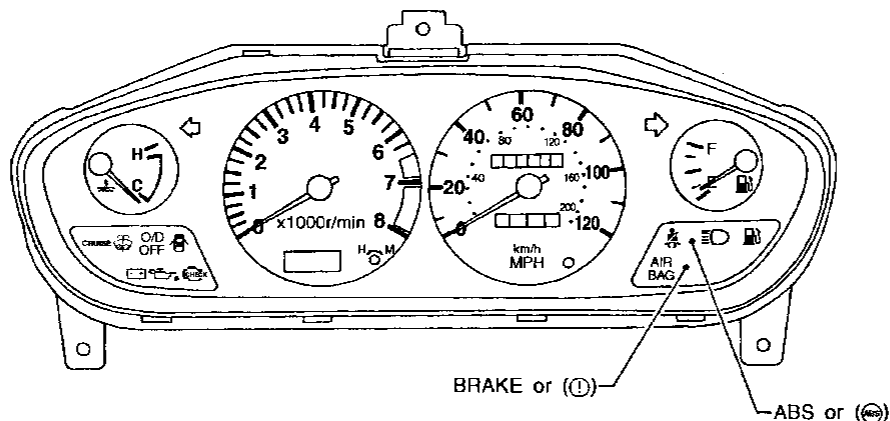
The voltage is supplied

- to combination meter terminals 25 and 26 for the speedometer
- from terminals 1 and 2 of the vehicle speed sensor.

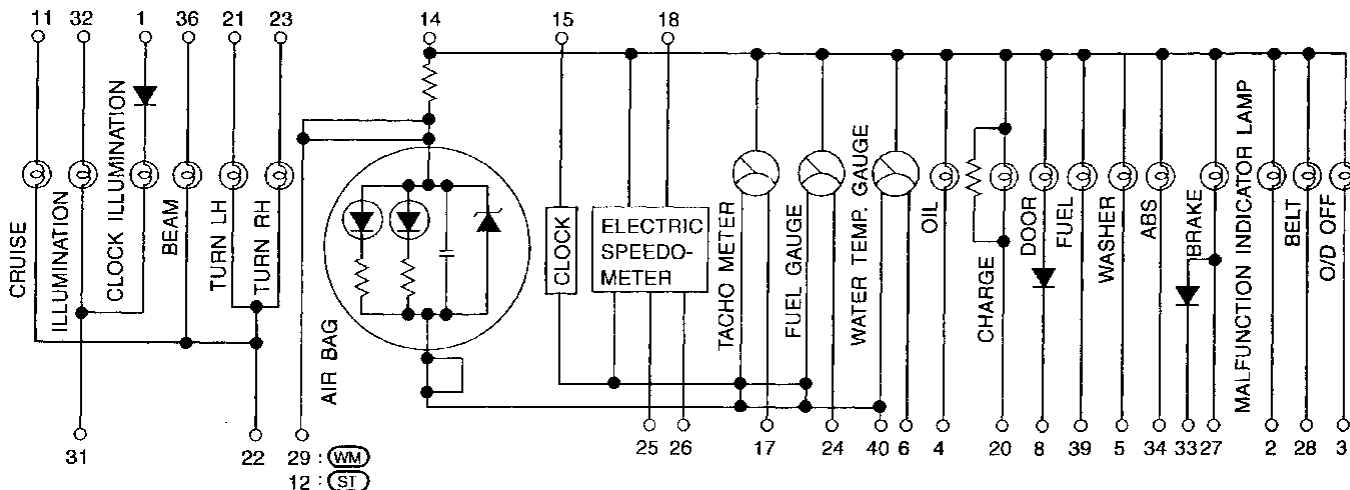
The speedometer converts the voltage into the vehicle speed displayed.

METER AND GAUGES

Combination Meter

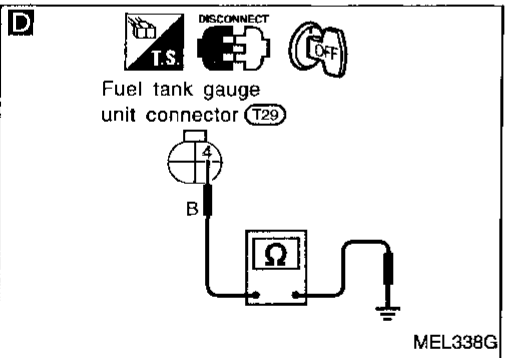
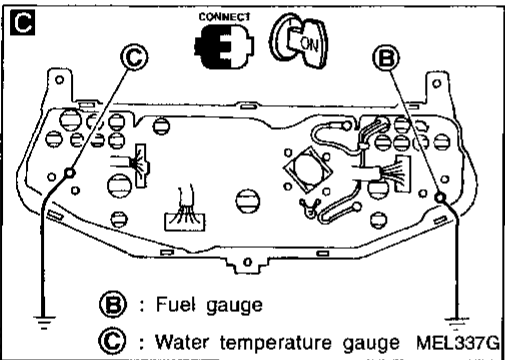
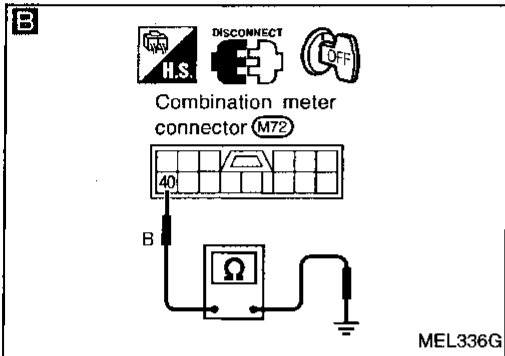
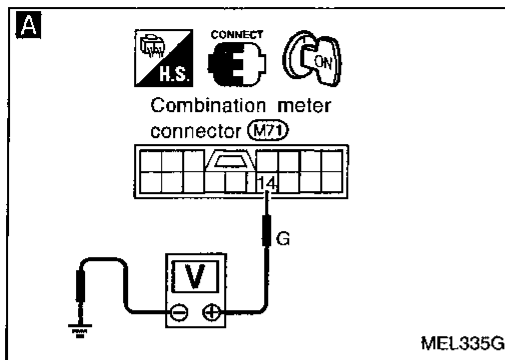


- (WM) : Models with white combination meter
- (ST) : Models with standard combination meter

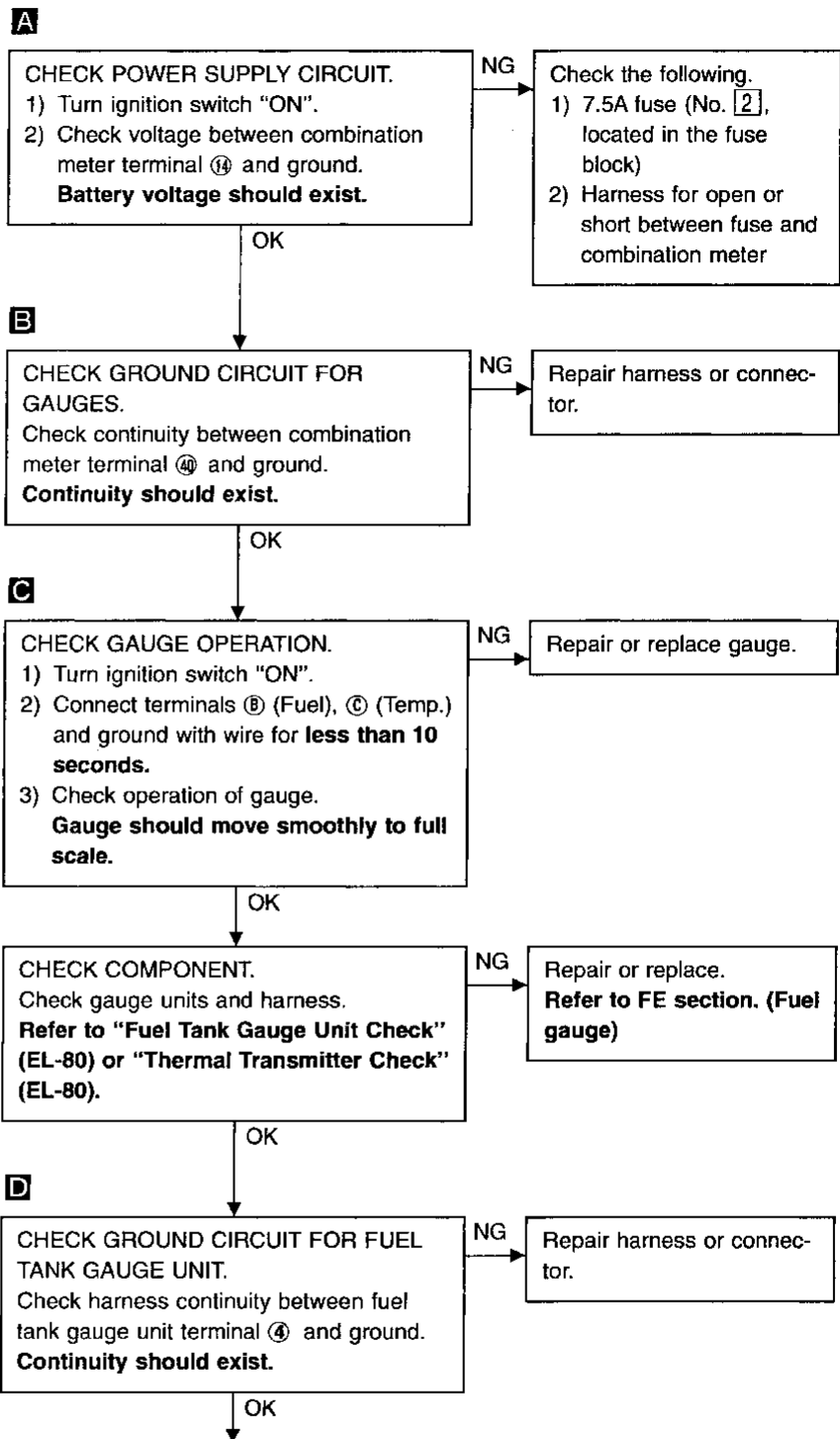


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METER AND GAUGES



Inspection/Fuel Gauge and/or Water Temperature Gauge



(Go to ① on next page.)

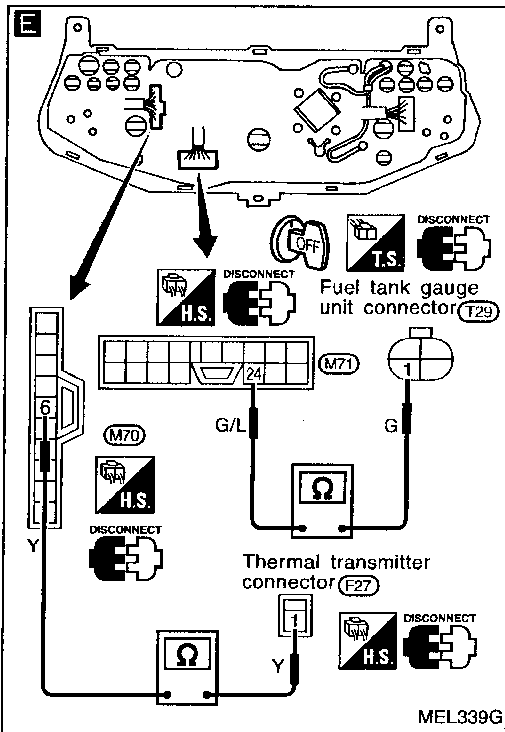
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METER AND GAUGES

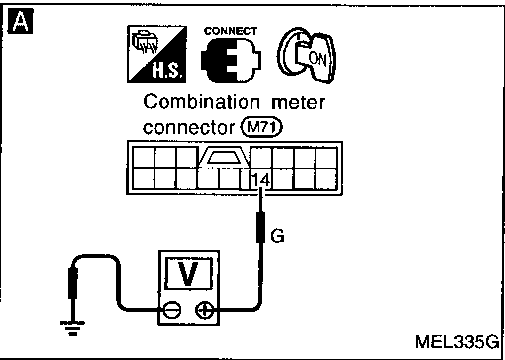
Inspection/Fuel Gauge and/or Water Temperature Gauge (Cont'd)



E

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

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



Inspection/Tachometer

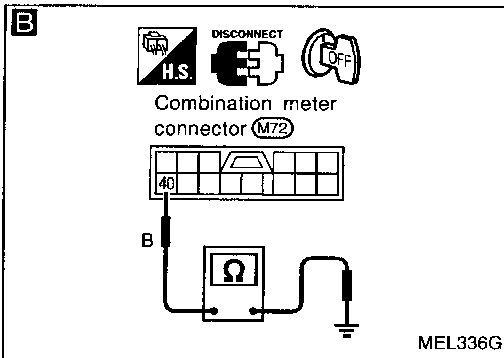
A

CHECK POWER SUPPLY CIRCUIT.

- 1) Turn ignition switch "ON".
- 2) Check voltage between combination meter terminal ⑭ and ground.
Battery voltage should exist.

NG → Check the following.
1) 7.5A fuse [No. ②], located in the fuse block
2) Harness for open or short between fuse and combination meter

OK ↓

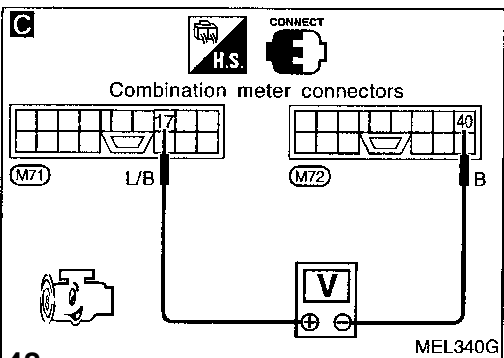


B

CHECK GROUND CIRCUIT FOR TACHOMETER.
Check continuity between combination meter terminal ④ and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓



C

CHECK ECM OUTPUT.

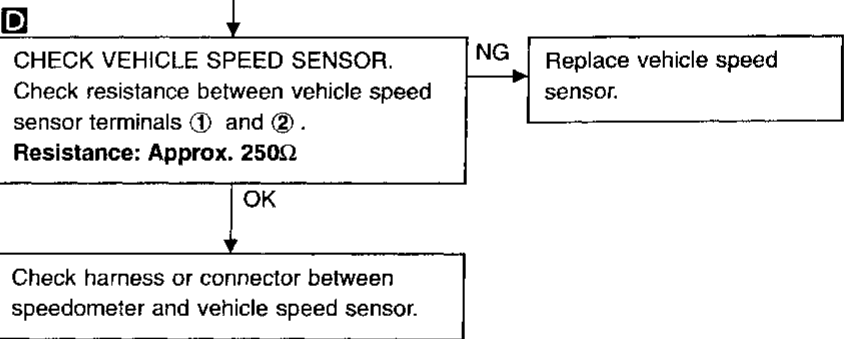
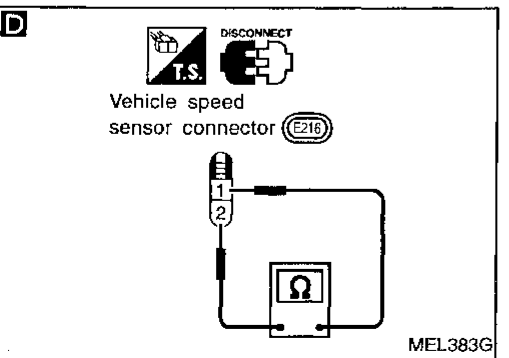
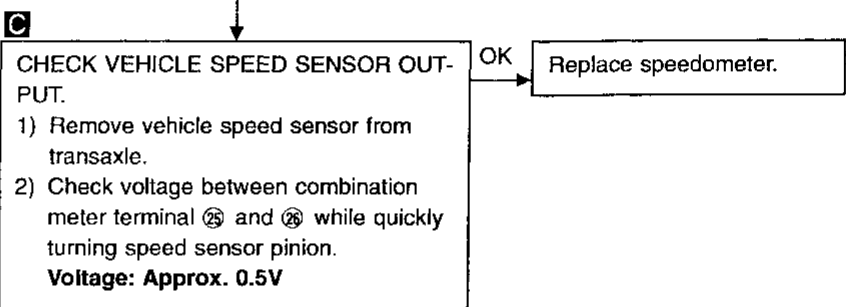
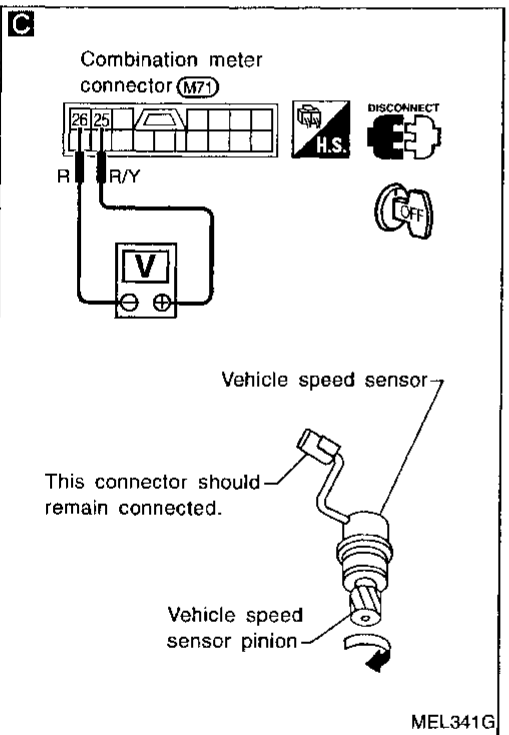
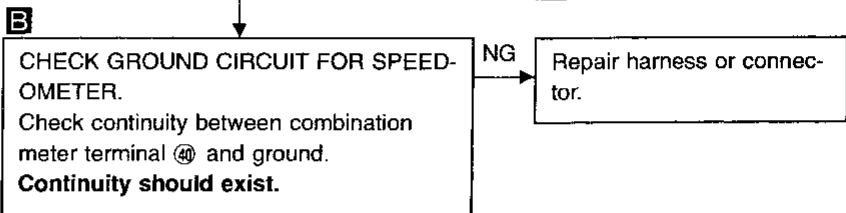
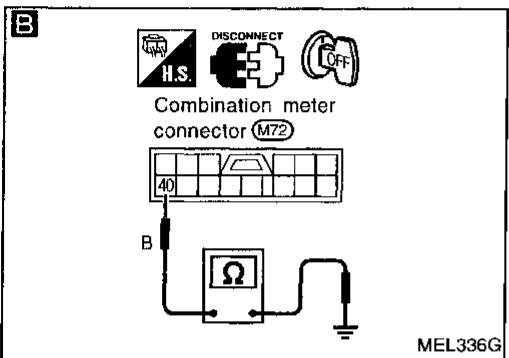
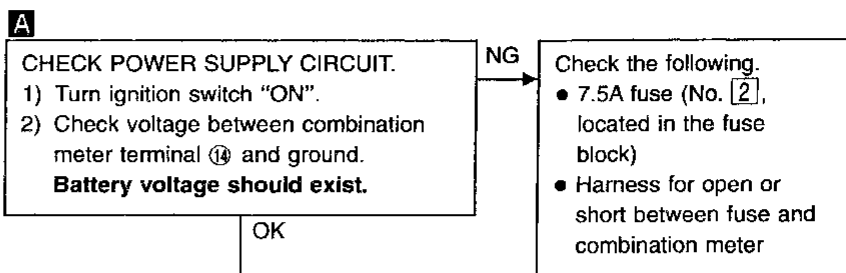
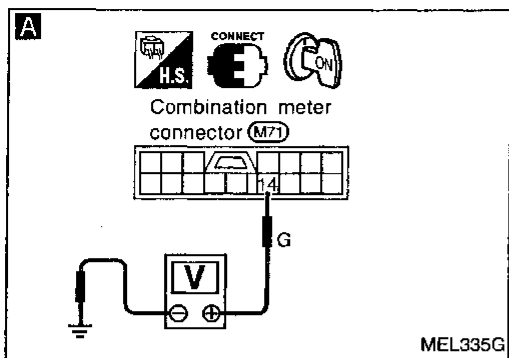
- 1) Start engine.
- 2) Check voltage between combination meter terminals ⑰ and ④ at idle and 2,000 rpm.
Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

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

OK ↓

Replace tachometer.

Inspection/Speedometer and Vehicle Speed Sensor



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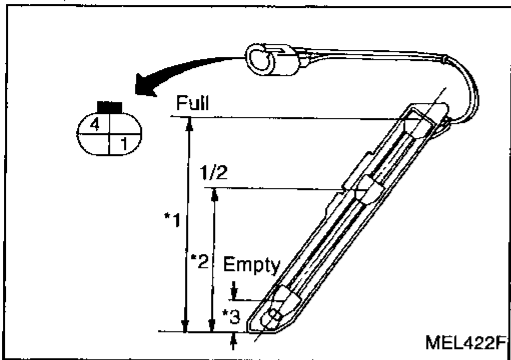
RS

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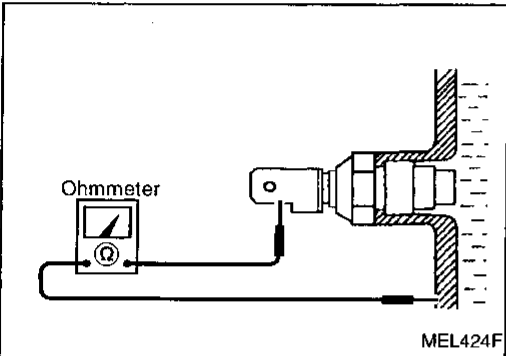


Fuel Tank Gauge Unit Check

- For removal, refer to FE section.
- Check the resistance between terminals ① and ④ .

Ohmmeter		Float position		Resistance value (Ω)
(+)	(-)	mm (in)		
①	④	*1	Full	356 (14.02)
		*2	1/2	245 (9.65)
		*3	Empty	50 (1.97)

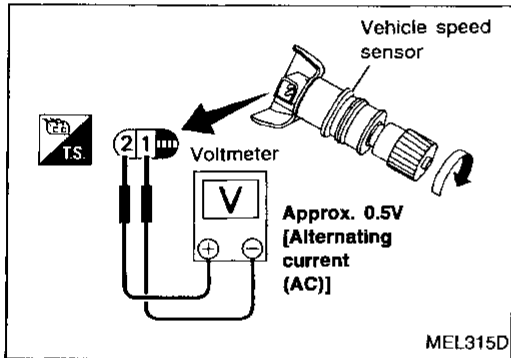
*1 and *3: When float rod is in contact with stopper.



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



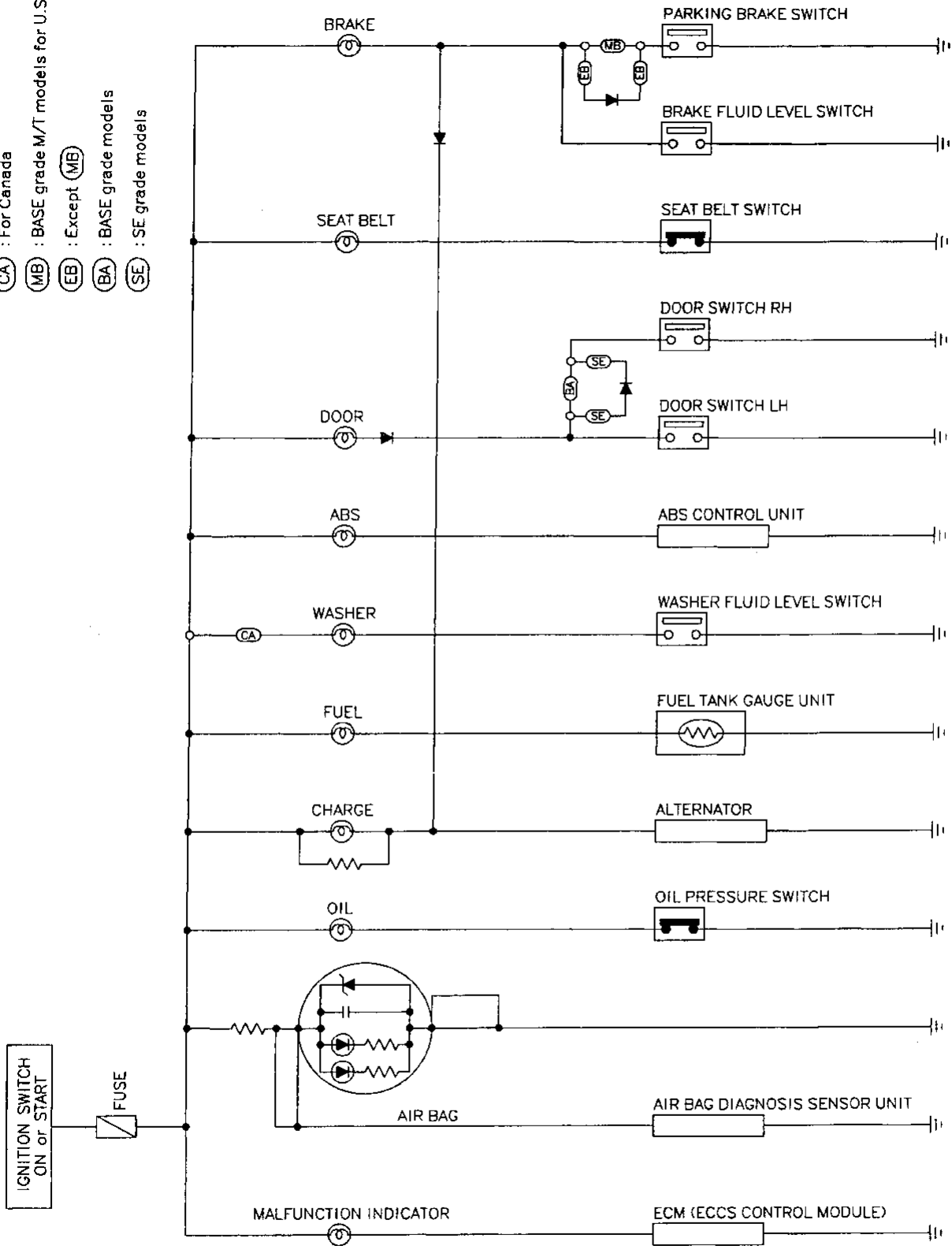
Vehicle Speed Sensor Signal Check

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

WARNING LAMPS

Warning Lamps/Schematic

- (CA) : For Canada
- (MB) : BASE grade M/T models for U.S.A.
- (EB) : Except (MB)
- (BA) : BASE grade models
- (SE) : SE grade models



- GI
- MA
- EM
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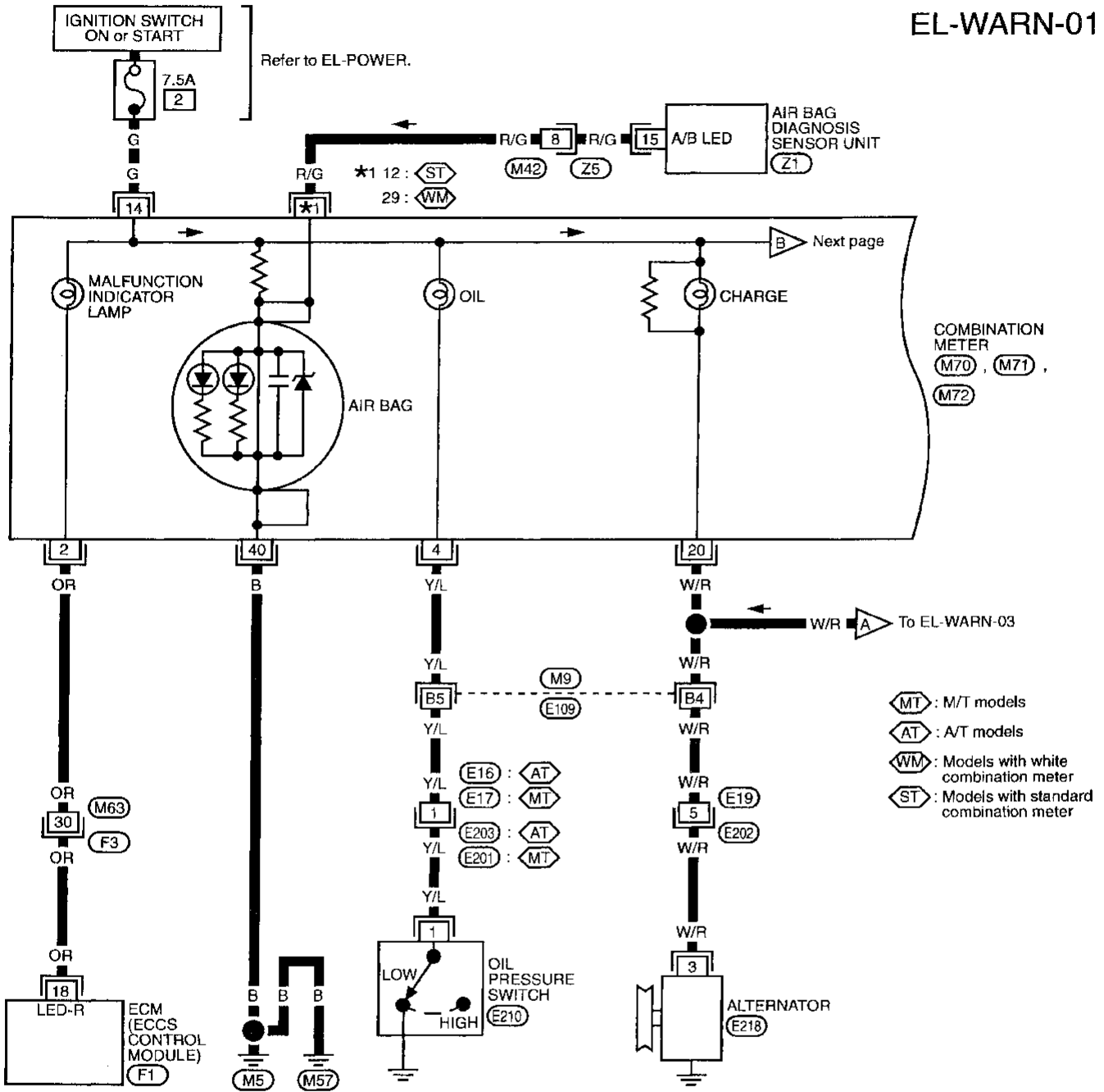
EL

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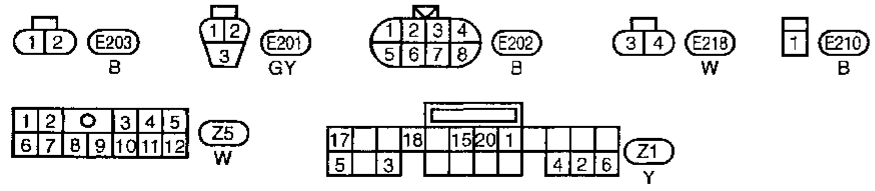
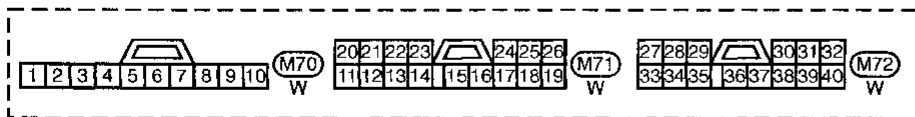
WARNING LAMPS

Warning Lamps/Wiring Diagram — WARN —

EL-WARN-01



- ⓂT : M/T models
- ⓂA : A/T models
- ⓂW : Models with white combination meter
- ⓂS : Models with standard combination meter

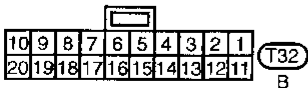
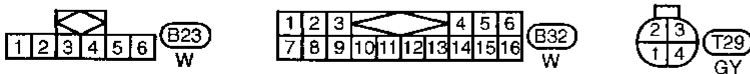
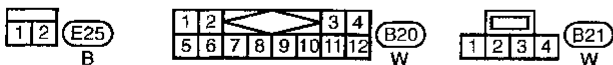
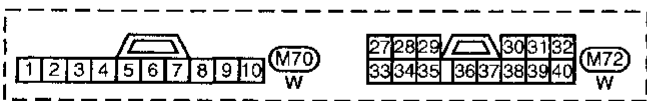
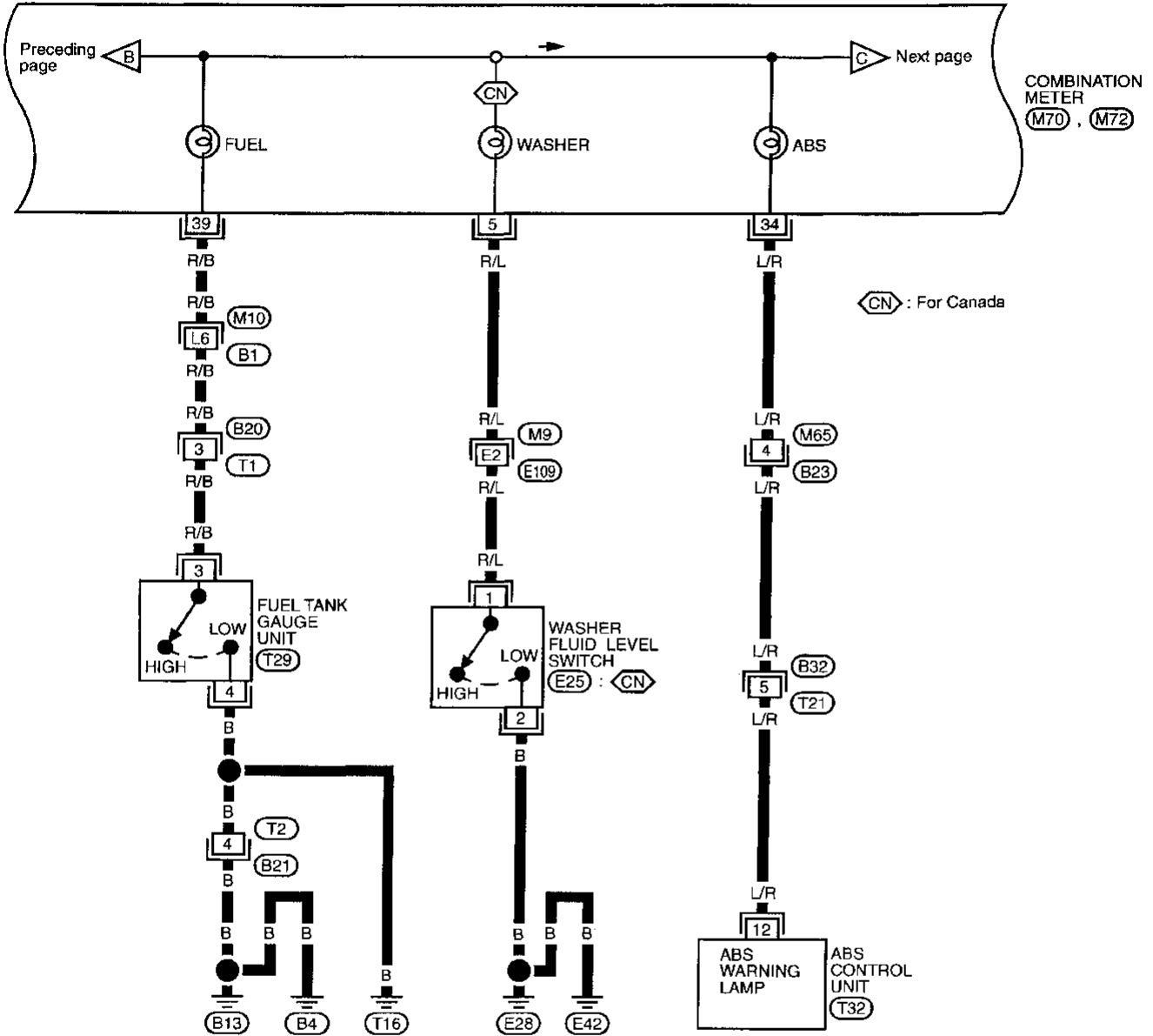


- Refer to last page (Foldout page).
- Ⓜ9 , Ⓜ109
 - Ⓜ3 , Ⓜ63
 - Ⓜ1

WARNING LAMPS

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

EL-WARN-02



Refer to last page (Foldout page).

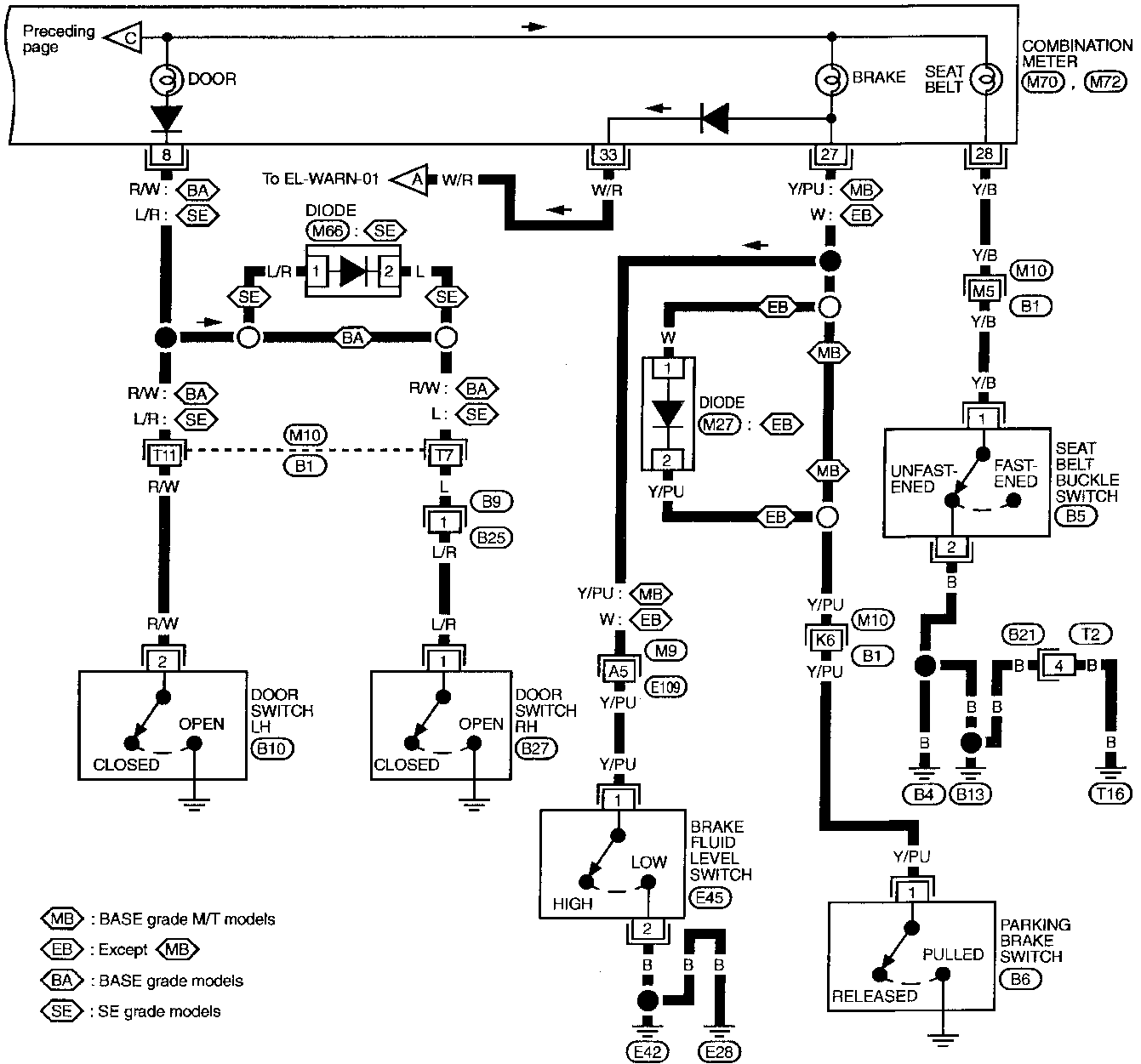
M9, E109
M10, B1

GI
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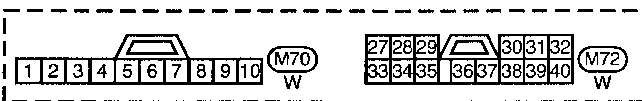
WARNING LAMPS

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

EL-WARN-03

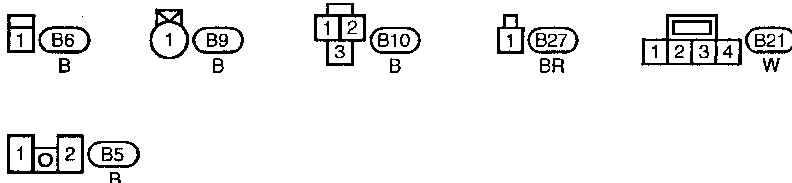


- ⬢ MB : BASE grade M/T models
- ⬢ EB : Except ⬢ MB
- ⬢ BA : BASE grade models
- ⬢ SE : SE grade models



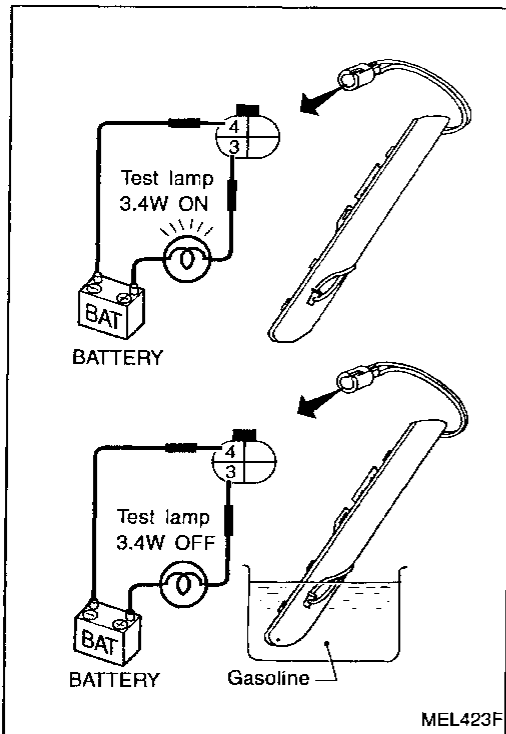
Refer to last page (Foldout page).

- ⬢ M9 , ⬢ E109
- ⬢ M10 , ⬢ B1

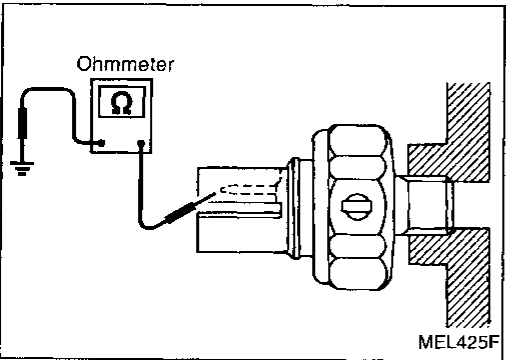


Fuel Warning Lamp Sensor Check

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



Oil Pressure Switch Check



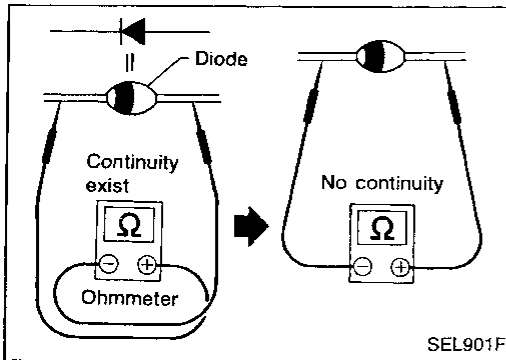
Check the continuity between the terminals of oil pressure switch and body ground.

	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

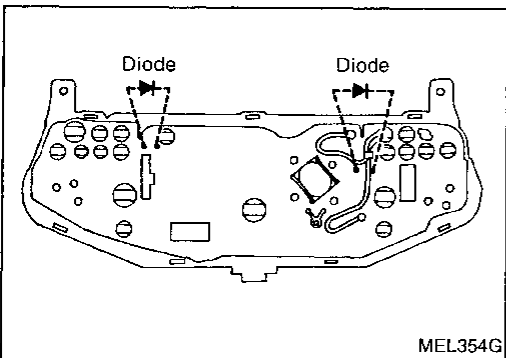
Diode Check

- 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.



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Warning Buzzer/System Description

MODELS WITH POWER DOOR LOCKS

The warning buzzer is controlled by the smart entrance control unit.

Power is supplied at all times

- through 10A fuse (No. [6], located in the fuse block)
- to warning buzzer terminal ③
- to key switch terminal ① .

Power is supplied at all times

- through 10A fuse (No. [4], located in the fuse block)
- to lighting switch terminal ⑪ .

Power is supplied at all times

- through 25A fusible link (letter [I], 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. [1], located in the fuse block)
- to smart entrance control unit terminal ⑪ .

Ground is supplied to smart entrance control unit terminal ⑩ through body grounds (M5) and (M57).

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

- through smart entrance control unit terminal ⑫
- to warning buzzer terminal ① .

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

Ignition key warning buzzer

With the key in the ignition switch in the OFF 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 ⑭ .

Ground is supplied

- from door switch LH terminal ①
- to smart entrance control unit terminal ⑮ .

Door switch LH terminal ③ is grounded through body grounds (B4), (B13) and (T16).

Light warning buzzer

With ignition switch OFF, 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 ⑮

Ground is supplied

- from door switch LH terminal ①
- to smart entrance control unit terminal ⑮ .

Door switch LH terminal ③ is grounded through body grounds (B4), (B13) and (T16).

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 ⑰ .

Seat belt switch terminal ② is grounded through body grounds (B4), (B13) and (T16).

MODELS WITHOUT POWER DOOR LOCKS

The warning buzzer is controlled by the warning buzzer unit.

Power is supplied at all times

- through 10A fuse (No. [6], located in the fuse block)
- to key switch terminal ① .

Power is supplied at all times

- through 10A fuse (No. [4], located in the fuse block)
- to lighting switch terminal ⑪ .

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

- through 7.5A fuse (No. [2], located in the fuse block)

1156 to warning buzzer unit terminal ① .

WARNING BUZZER

Warning Buzzer/System Description (Cont'd)

Ground is supplied to warning buzzer unit terminal ⑧ through body grounds (M5) and (M57).

When a signal, or combination of signals, is received by the warning buzzer unit.

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

Ignition key warning buzzer

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

- from key switch terminal ②
- to warning buzzer unit terminal ⑤ . MA

Ground is supplied

- from door switch LH terminal ①
- to warning buzzer unit terminal ⑦ . EM

Door switch LH terminal ③ is grounded through body grounds (B4), (B13) and (T16).

Light warning buzzer

With ignition switch OFF, driver's door open, and lighting switch in 1ST or 2ND position, warning buzzer will sound. A battery positive voltage is supplied LC

- from lighting switch terminal ⑫
- to warning buzzer unit terminal ④ . EC

Ground is supplied

- from door switch LH terminal ①
- to warning buzzer unit terminal ⑦ . FE

Door switch LH terminal ③ is grounded through body grounds (B4), (B13) and (T16).

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. CL

Ground is supplied MT

- from seat belt switch terminal ①
- to warning buzzer unit terminal ② .

Seat belt switch terminal ② is grounded through body grounds (B4), (B13) and (T16). AT

PD

FA

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RS

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HA

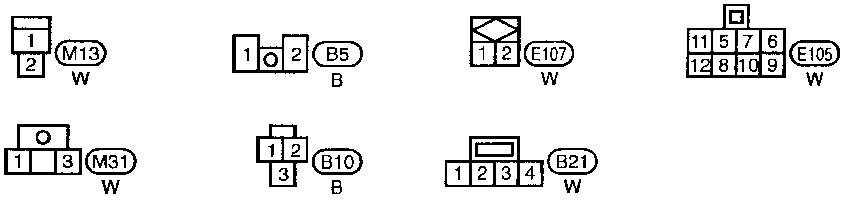
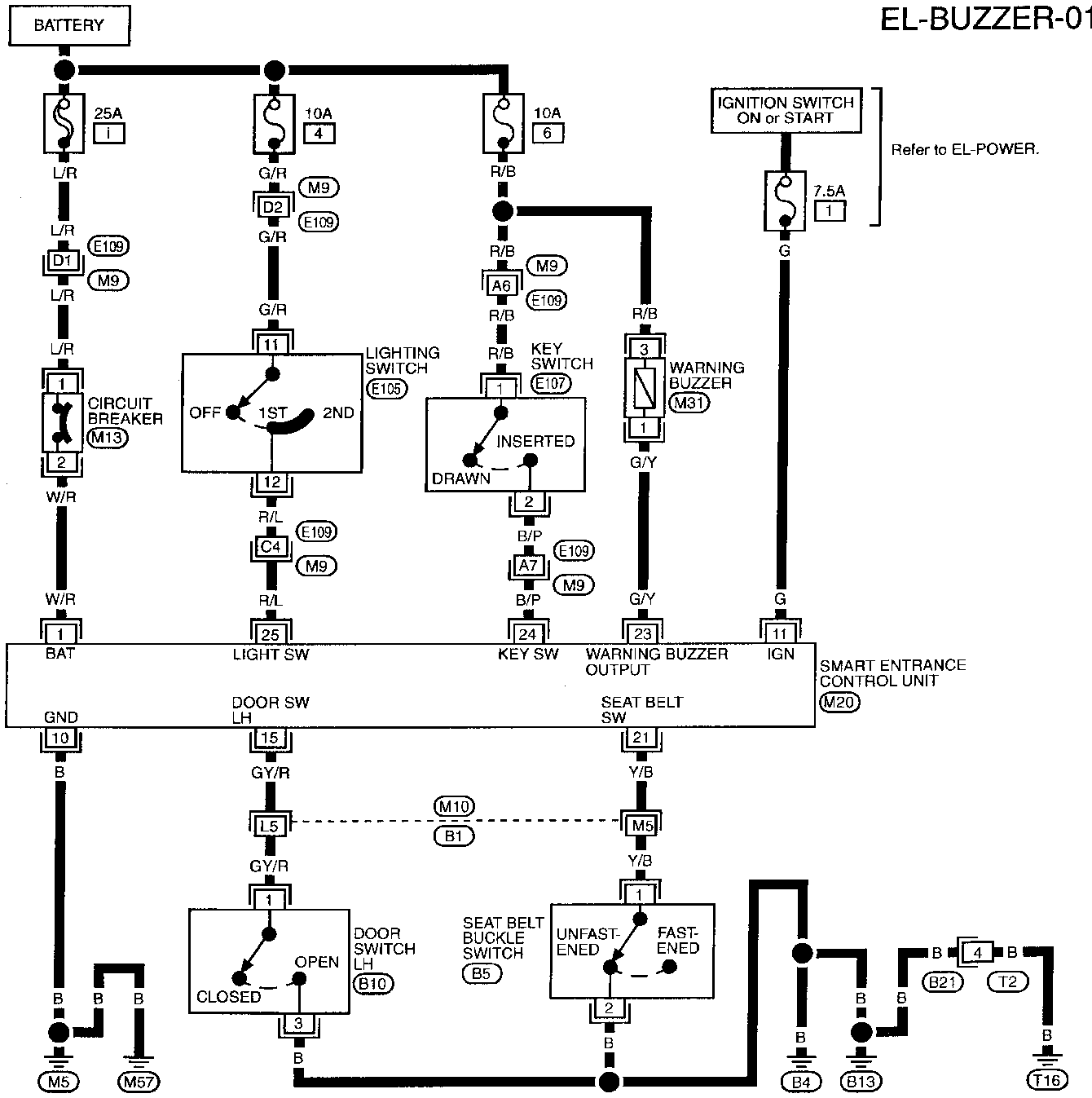
EL

IDX

WARNING BUZZER

Warning Buzzer/Wiring Diagram — BUZZER — MODELS WITH POWER DOOR LOCKS

EL-BUZZER-01



Refer to last page (Foldout page).

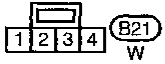
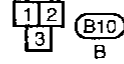
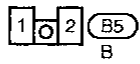
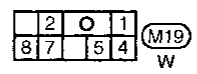
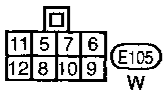
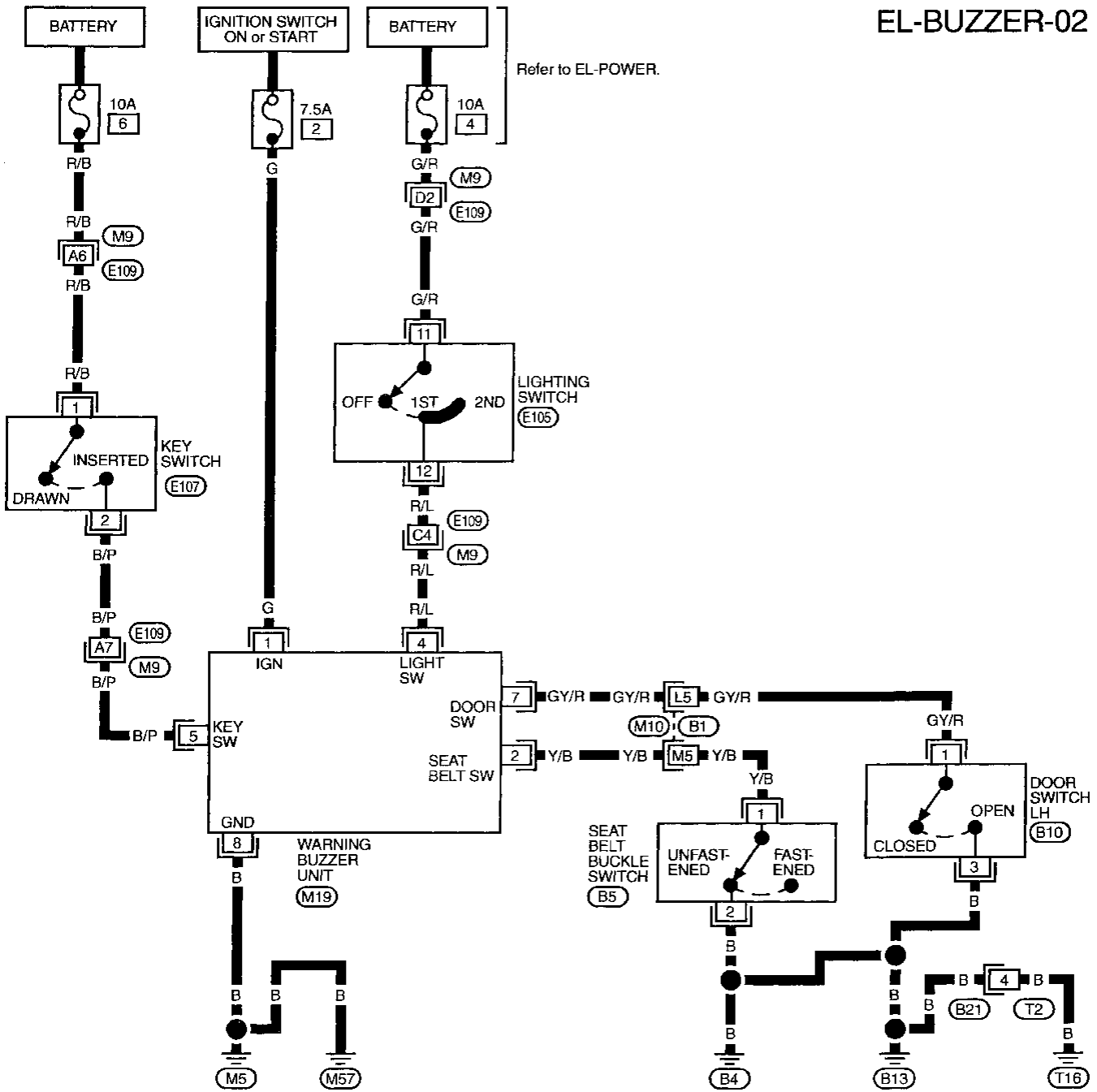
- (M9) , (E109)
- (M10) , (B1)
- (M20)

WARNING BUZZER

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

MODELS WITHOUT POWER DOOR LOCKS

EL-BUZZER-02



Refer to last page (Foldout page).

M9, E109
M10, B1

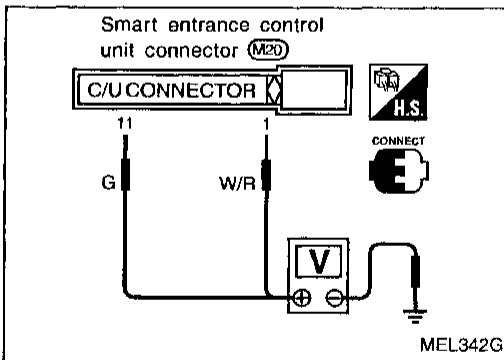
- GI
- MA
- EM
- LC
- EC
- FE
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- MT
- AT
- PD
- FA
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- BT
- HA
- EL
- IDX

WARNING BUZZER

Trouble Diagnoses

SYMPTOM CHART

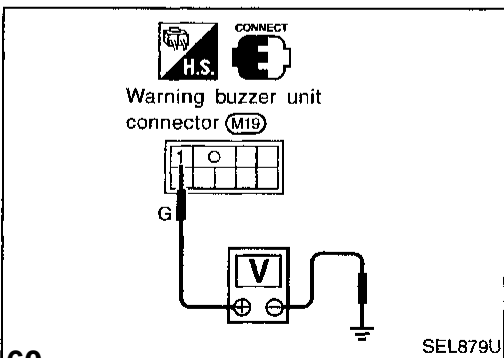
REFERENCE PAGE	EL-90	EL-91	EL-92	EL-92	EL-93
	POWER SUPPLY AND GROUND CIRCUIT CHECK	DIAGNOSTIC PROCEDURE 1 (LIGHTING SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 2 (KEY SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 3 (SEAT BELT BUCKLE SWITCH INPUT SIGNAL CHECK)	DIAGNOSTIC PROCEDURE 4
SYMPTOM					
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 circuit check (Models with power door locks)

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
①	Ground	Battery voltage	Battery voltage	Battery voltage
②	Ground	0V	0V	Battery voltage



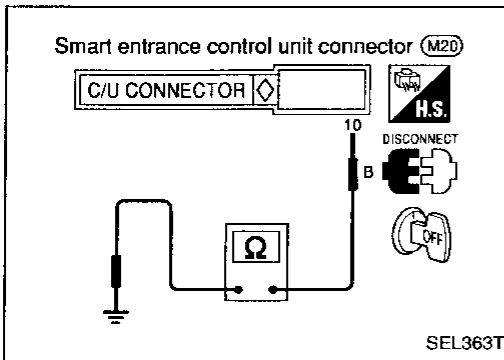
Power supply circuit check (Models without power door locks)

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

WARNING BUZZER

Trouble Diagnoses (Cont'd)

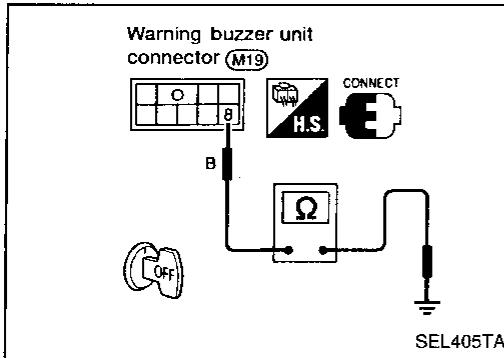
Ground circuit check (Models with power door locks)



Terminals	Continuity
⑩ - Ground	Yes

GI
MA
EM

Ground circuit check (Models without power door locks)

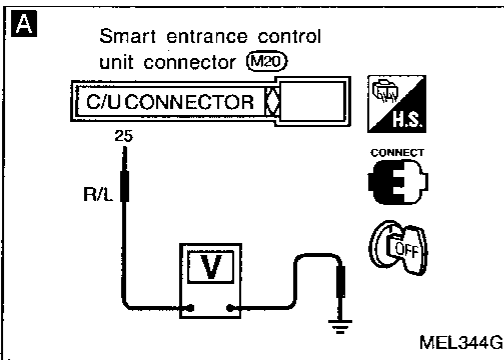


Terminals	Continuity
Ⓑ - Ground	Yes

LC
EC
FE

DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)



A B

CHECK LIGHTING SWITCH INPUT SIGNAL.

A (Models with power door locks)
Check voltage between control unit terminal ⑫ and ground.

B (Models without power door locks)
Check voltage between buzzer unit terminal ④ and ground.

NG → Check the following.

- 10A fuse (No. 4, located in the fuse block)
- Harness for open or short between control/buzzer unit and lighting switch

MT
AT
PD

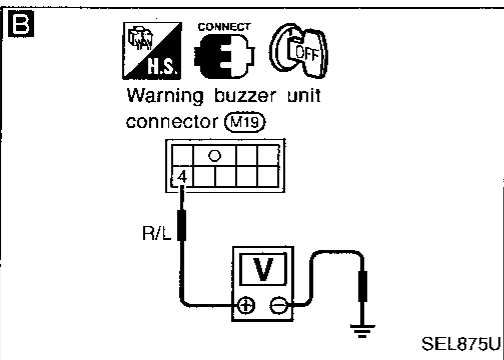
Condition of lighting switch	Voltage [V]
1ST or 2ND	Approx. 12
OFF	0

FA
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OK ↓

Go to Procedure 4.

ST
RS



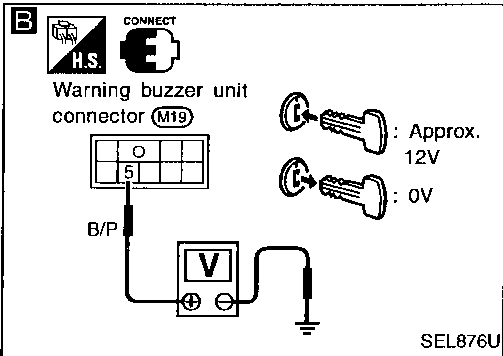
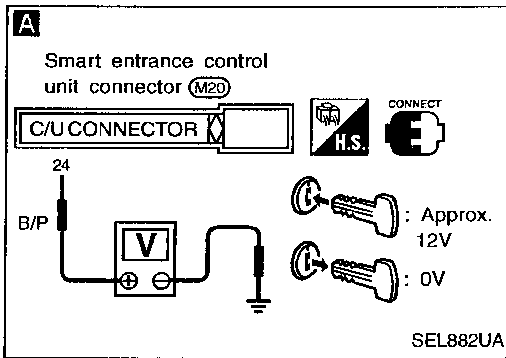
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WARNING BUZZER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)



A B

CHECK KEY SWITCH INPUT SIGNAL.

- A** (Models with power door locks)
Check voltage between control unit terminal ④ and ground.
- B** (Models without power door locks)
Check voltage between buzzer unit terminal ⑤ and ground.

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

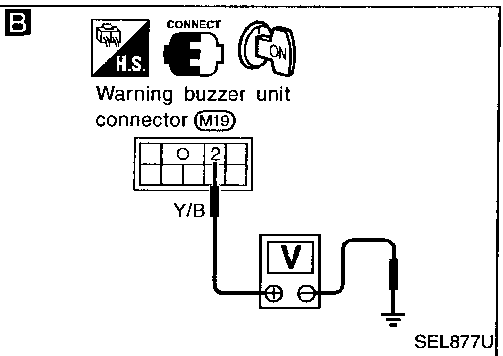
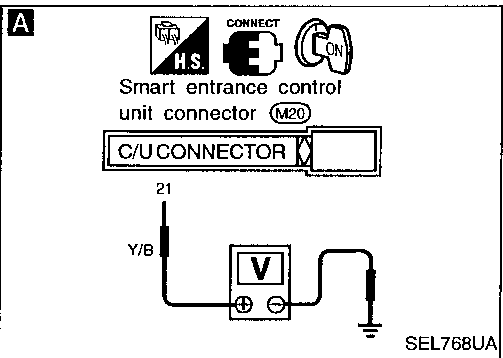
- NG
- Check the following.
- Key switch
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-94).
 - 10A fuse [No. ⑥], located in fuse block
 - Harness for open or short between key switch and fuse
 - Harness for open or short between control/ buzzer unit and key switch

OK

Go to Procedure 4.

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)



A B

CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.

- A** (Models with power door locks)
1. Turn ignition switch "ON".
 2. Check voltage between control unit terminal ④ and ground.
- B** (Models without power door locks)
1. Turn ignition switch "ON".
 2. Check voltage between buzzer unit terminal ② 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-94).
 - Seat belt buckle switch ground circuit
 - Harness for open or short between control/ buzzer unit and seat belt buckle switch

OK

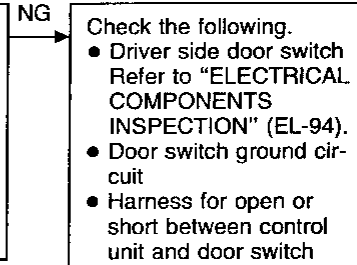
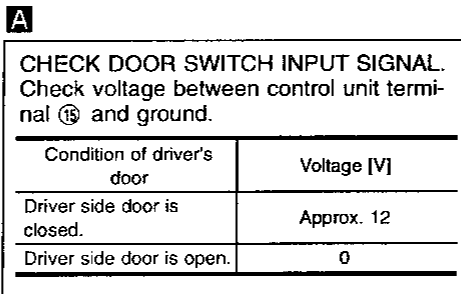
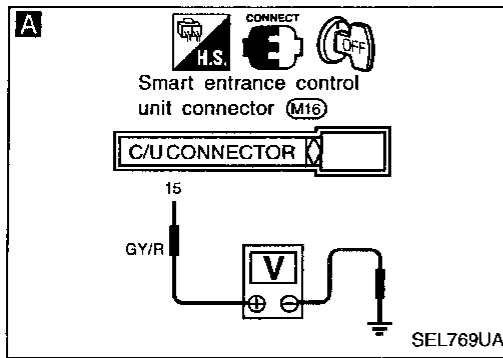
Go to Procedure 4.

WARNING BUZZER

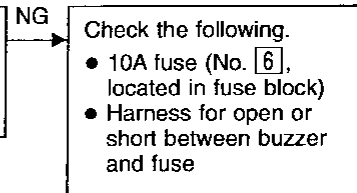
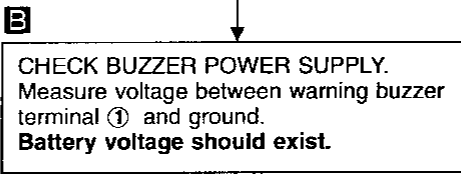
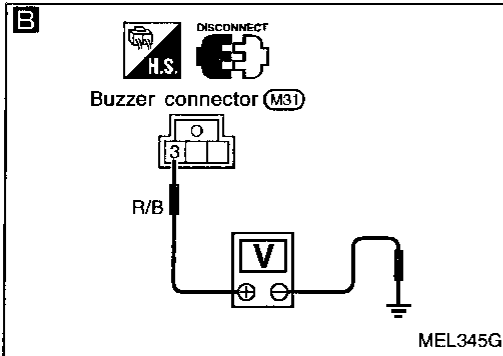
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4-1

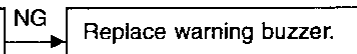
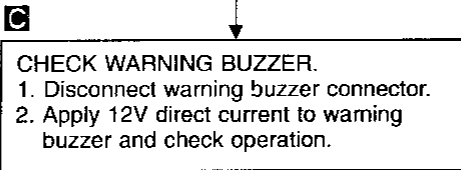
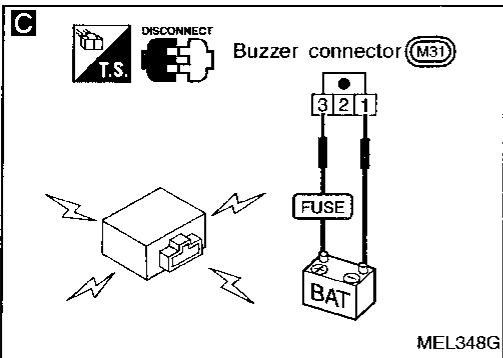
(For models with power door locks)



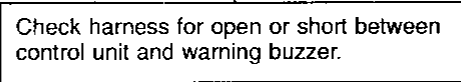
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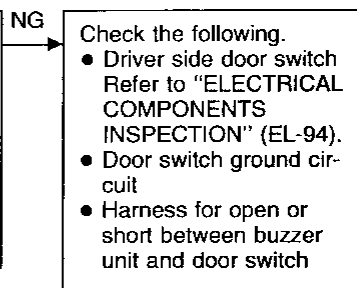
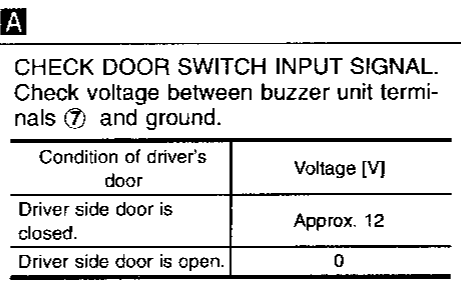
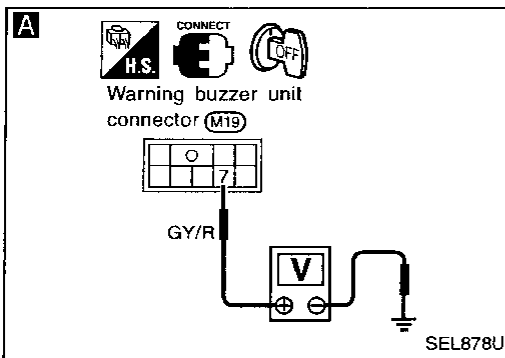
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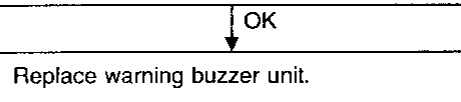
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DIAGNOSTIC PROCEDURE 4-2

(For models without power door locks)



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WARNING BUZZER

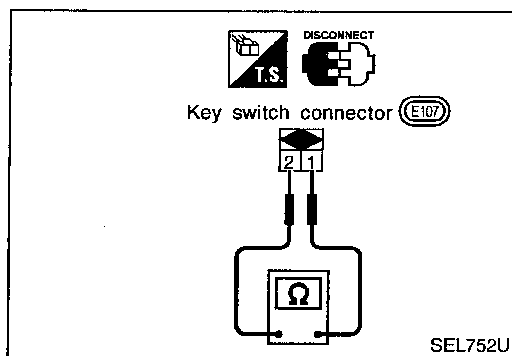
Trouble Diagnoses (Cont'd)

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.

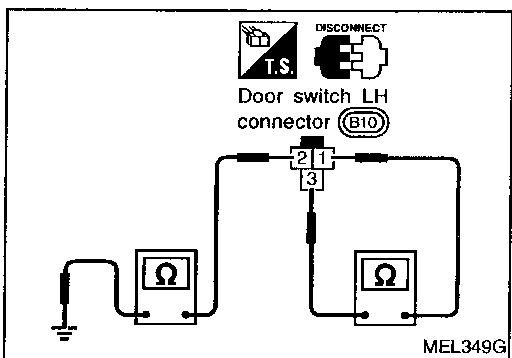
Terminal No.	Condition	Continuity
① - ②	Key is inserted	Yes
	Key is removed	No



Driver side door switch

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

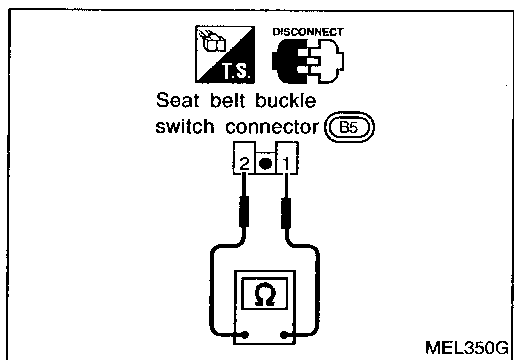
Terminal No.	Condition	Continuity
① - ③, ② - Ground	Door switch is pushed.	No
	Door switch is released.	Yes



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 intermittent wiper models)

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

- through 20A fuse (No. 16, located in the fuse block)
- to wiper motor terminal 2.

Low and high speed wiper operation

Ground is supplied to wiper switch terminal 17 through body grounds E28 and E42.

When the wiper switch is placed in the LO position, ground is supplied

- through terminal 14 of the wiper switch
- to wiper motor terminal 4.

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 5.

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 4, 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 4
- through terminal 8 of the wiper amplifier } (With intermittent wiper models)
- to wiper motor terminal 1
- through terminal 6 of the wiper motor, and
- through body grounds F15 and F57.

When wiper arms reach base of windshield, wiper motor terminals 1 and 2 are connected instead of terminals 1 and 6. Wiper motor will then stop wiper arms at the PARK position.

Intermittent operation

SE grade models

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 E28 and E42.
- to wiper motor terminal 4
- through the wiper switch terminal 14
- to wiper switch terminal 13
- through wiper amplifier terminal 4
- to wiper amplifier terminal 7
- through body grounds F15 and F57.

The desired interval time is input

- to wiper amplifier terminal 2
- from wiper switch terminal 19.

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

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WIPER AND WASHER

System Description (Cont'd)

BASE grade models

The wiper motor operates the wiper arms one time at low speed at an interval of approximately 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 wiper switch terminal ⑮
- through body grounds (E28) and (E42).
- to wiper motor terminal ④
- through the wiper switch terminal ⑭
- to wiper switch terminal ⑬
- through wiper amplifier terminal ④
- to wiper amplifier terminal ⑦
- through body grounds (F15) and (F57).

WASHER OPERATION

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

- through 20A fuse (No. 16), located in the fuse block
- 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 ⑤ (With intermittent wiper models)
- from terminal ⑩ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body grounds (E28) and (E42).

With power and ground supplied, the washer motor operates.

With intermittent wiper models

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.

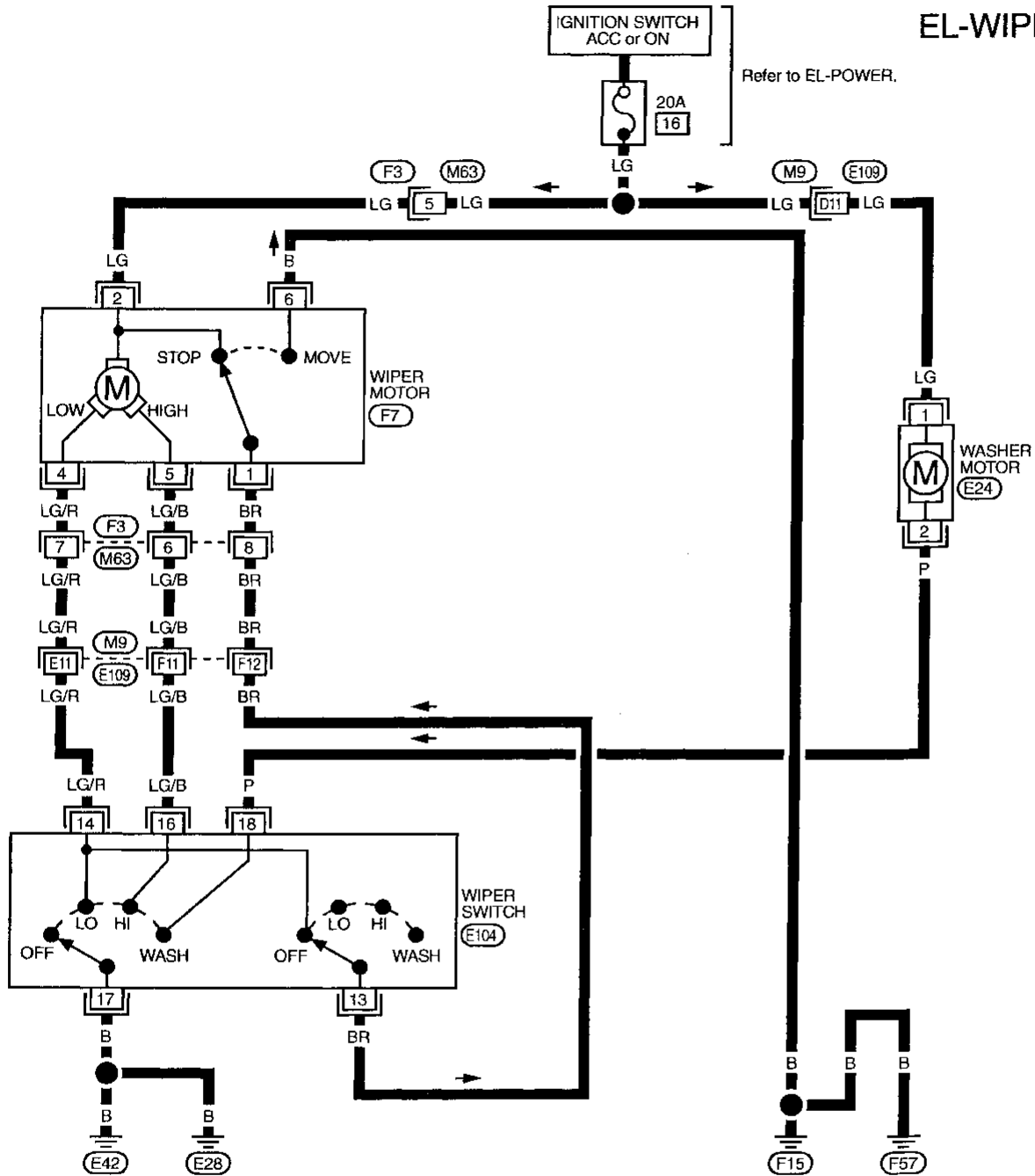
WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram — WIPER —

WITHOUT INTERMITTENT WIPER

EL-WIPER-01

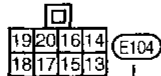
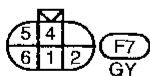
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Refer to EL-POWER.

Refer to last page (Foldout page).

M9, E109
F3, M63

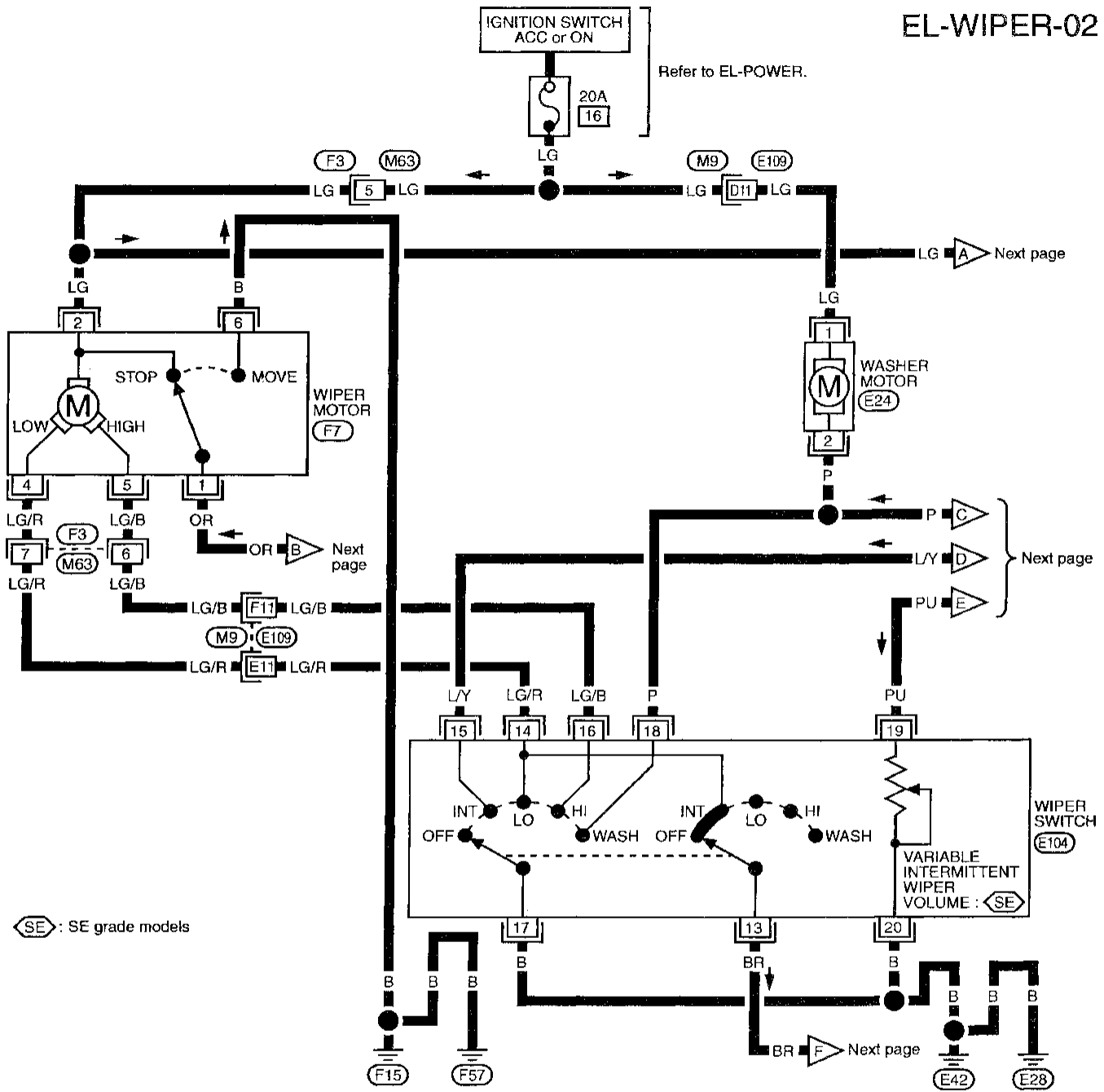


WIPER AND WASHER

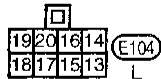
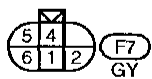
Front Wiper and Washer/Wiring Diagram — WIPER — (Cont'd)

WITH INTERMITTENT WIPER

EL-WIPER-02



SE : SE grade models



Refer to last page (Foldout page).

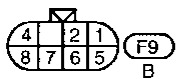
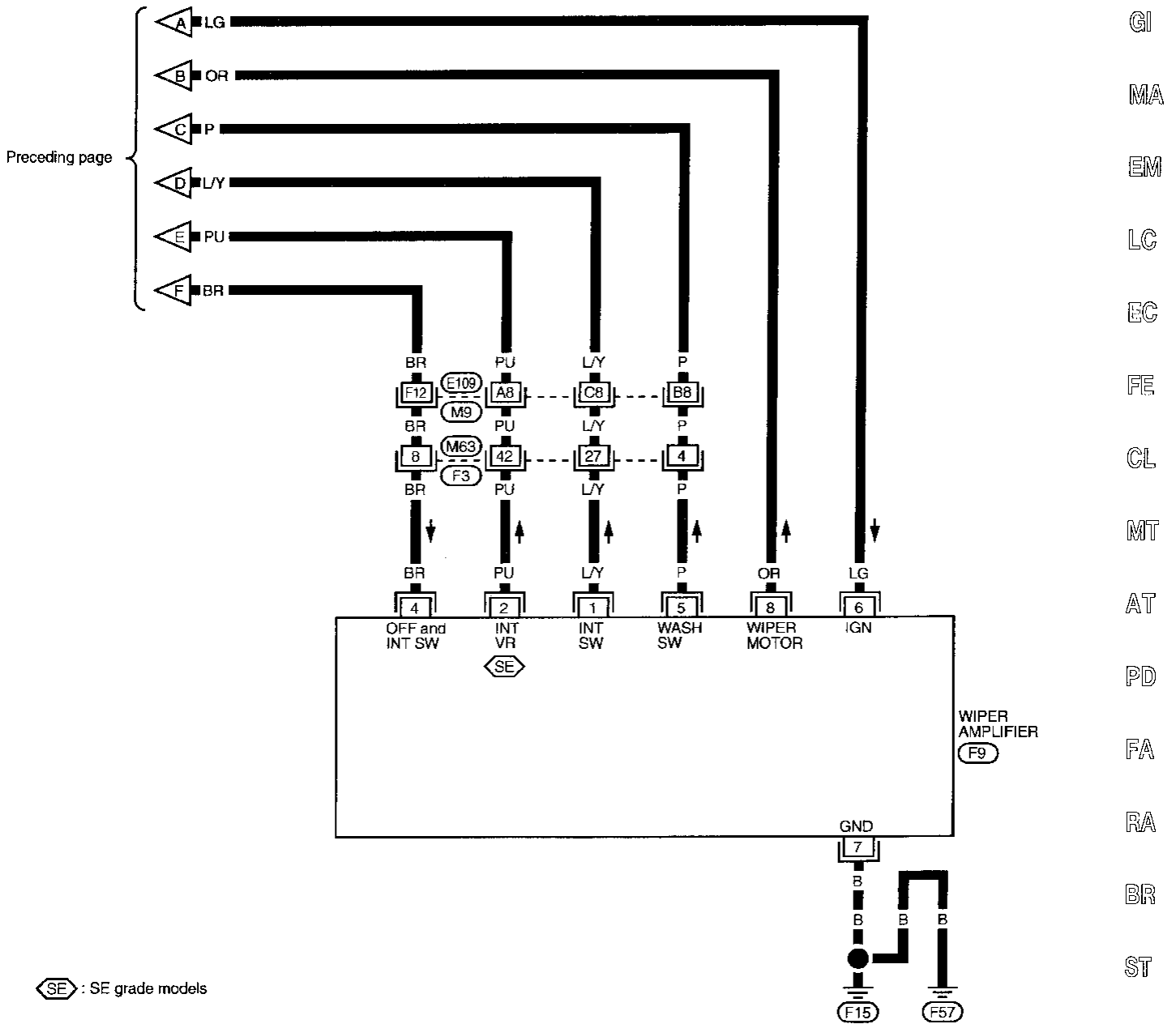
M9 , E109

F3 , M63

WIPER AND WASHER

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

EL-WIPER-03



Refer to last page (Foldout page).

(M9), (E109)
(F3), (M63)

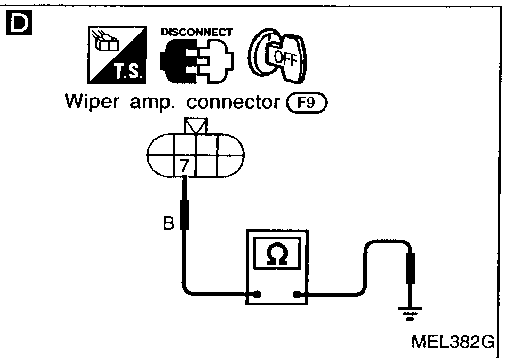
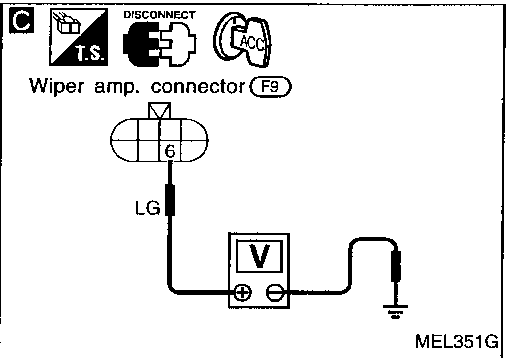
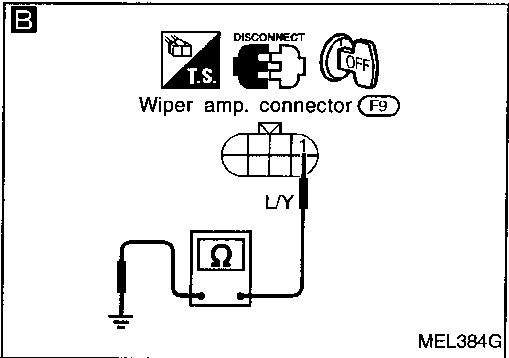
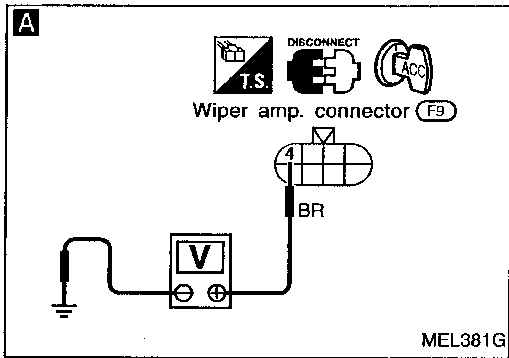
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WIPER AND WASHER

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. 16, located in fuse block)
- Wiper motor
- Wiper switch
- Harness for open or short.

OK ↓

A

1) Turn front wiper switch to OFF.
2) Disconnect wiper amp. connector.
3) Measure voltage between wiper amp. harness terminal ④ and body ground.
Battery voltage should exist.

NG → Check the following.

- Wiper switch
- Wiper motor
- Harness for open or short between wiper amp. terminal ④ and wiper switch harness terminal ⑬

OK ↓

B

CHECK INTERMITTENT SWITCH INPUT SIGNAL.
Check harness continuity between wiper amp. harness terminal ① and body 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 harness terminal ⑭
- Ground circuit for front wiper switch terminal ⑰

OK ↓

C

CHECK WIPER AMP. POWER SUPPLY CIRCUIT.
Check voltage between wiper amp. terminal ⑥ and ground while ignition switch is "ACC".
Battery voltage should exist.

NG → Check the following.

- 20A fuse (No. 16, located in fuse block)
- Harness for open or short between wiper amp. and fuse

OK ↓

D

CHECK WIPER AMP. GROUND CIRCUIT.
Check harness continuity between wiper amp. harness terminal ⑦ and body ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

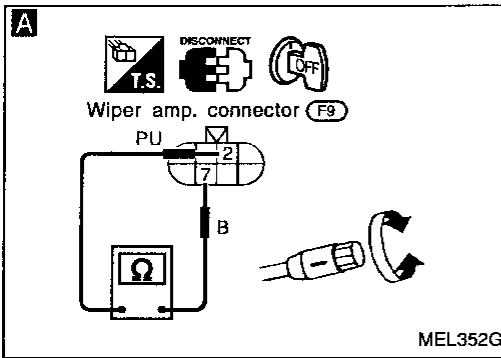
Replace wiper amp.

WIPER AND WASHER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK

- 1) Disconnect wiper amp. connector.
- 2) Measure resistance between wiper amp. harness terminals ② and ⑦ while turning intermittent wiper volume.

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

OK → Replace wiper amp.

NG

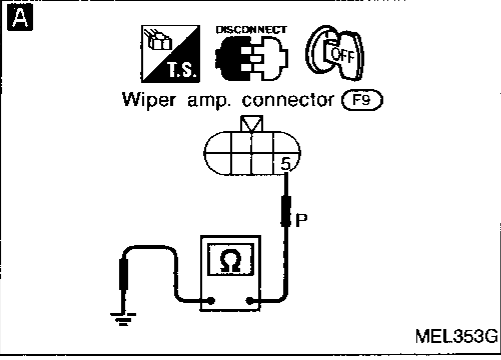
- Check intermittent wiper volume.
- Check harness continuity between wiper amp. harness terminal ② and wiper switch harness terminal ⑩.

Check harness continuity between wiper switch harness terminal ⑩ and body ground.

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DIAGNOSTIC PROCEDURE 3

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



A

WASHER SWITCH INPUT SIGNAL CHECK

- 1) Turn ignition switch to "OFF".
- 2) Disconnect wiper amp. connector.
- 3) Check harness continuity between wiper amp. harness terminal ⑤ and body ground.

Condition of washer switch	Continuity
OFF	No
ON	Yes

NG → Check harness for open or short between wiper amp. harness terminal ⑤ and wiper switch harness terminal ⑩.

OK → Go to DIAGNOSTIC PROCEDURE 1.

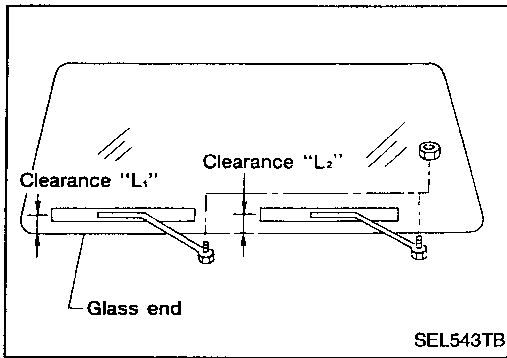
NG → Replace wiper amp.

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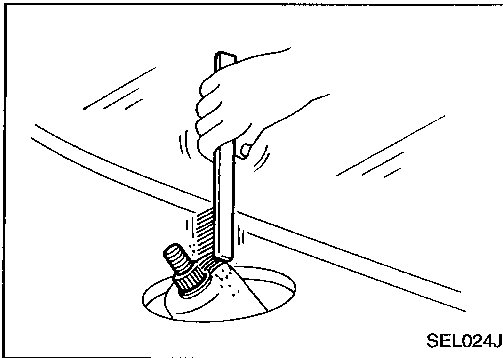
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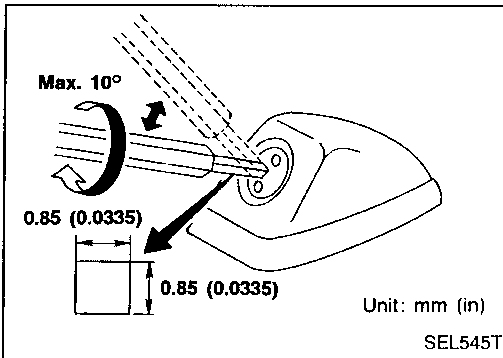


Wiper Installation and Adjustment

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 "L₁" & "L₂" 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 "L₁" & "L₂".
Clearance "L₁": 18 - 33 mm (0.71 - 1.30 in)
Clearance "L₂": 17 - 32 mm (0.67 - 1.26 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.

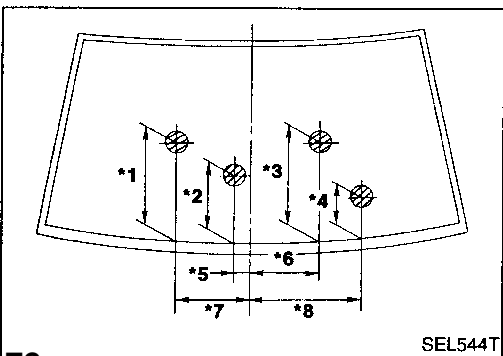


Washer Nozzle Adjustment

- Using a suitable tool, adjust windshield washer nozzle to correct its spray pattern.

Before attempting to turn the nozzle, gently tap the end of the tool to free the nozzle.

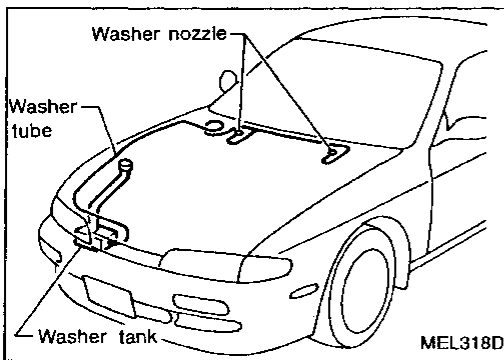
This will prevent "rounding out" the small female square in the center of the nozzle.



Unit: mm (in)			
*1	358 (14.09)	*5	70 (2.76)
*2	245 (9.65)	*6	245 (9.65)
*3	300 (11.81)	*7	378 (14.88)
*4	203 (7.99)	*8	503 (19.80)

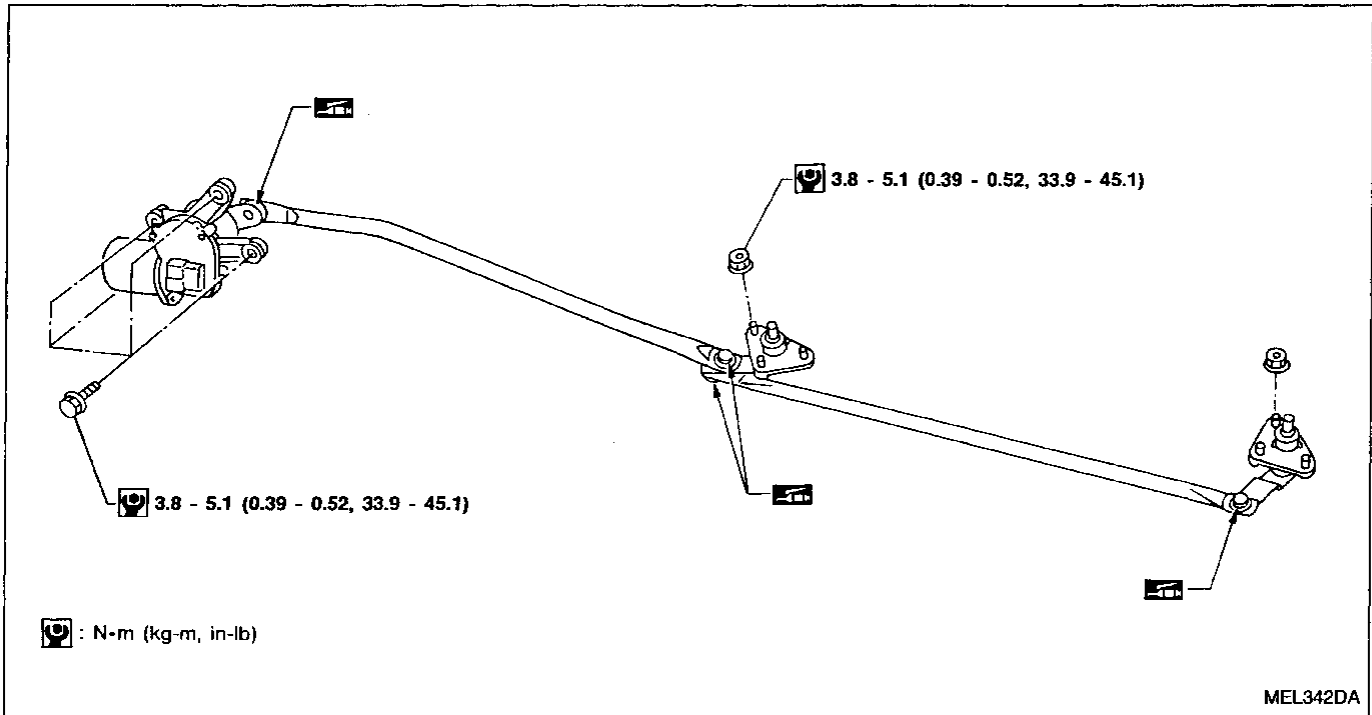
*: The diameters of these circles are less than 80 mm (3.15 in).

WIPER AND WASHER



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.

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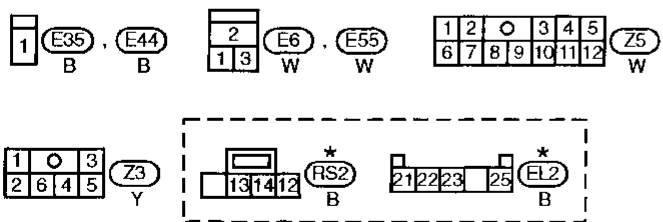
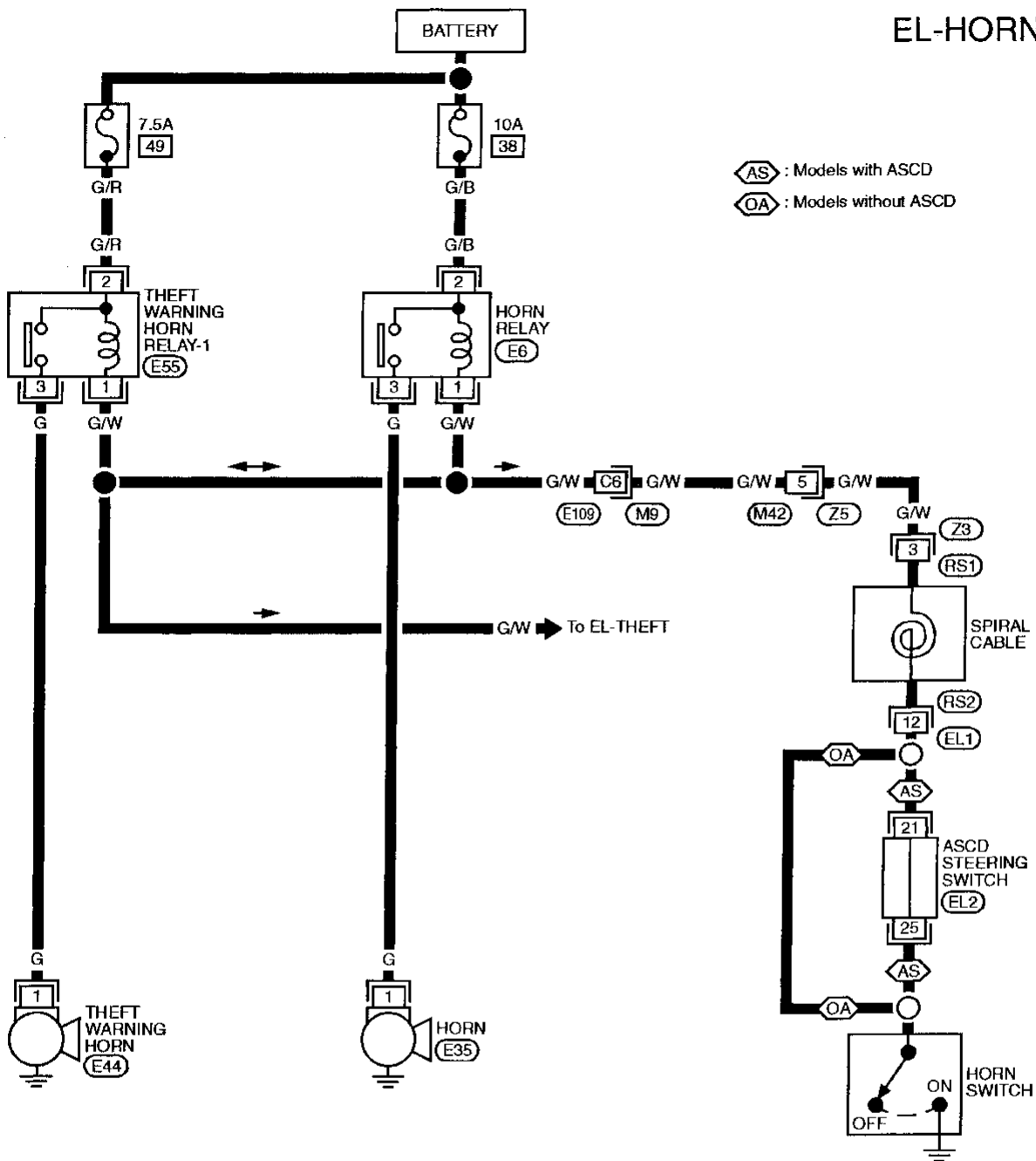
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Wiring Diagram — HORN —

EL-HORN-01



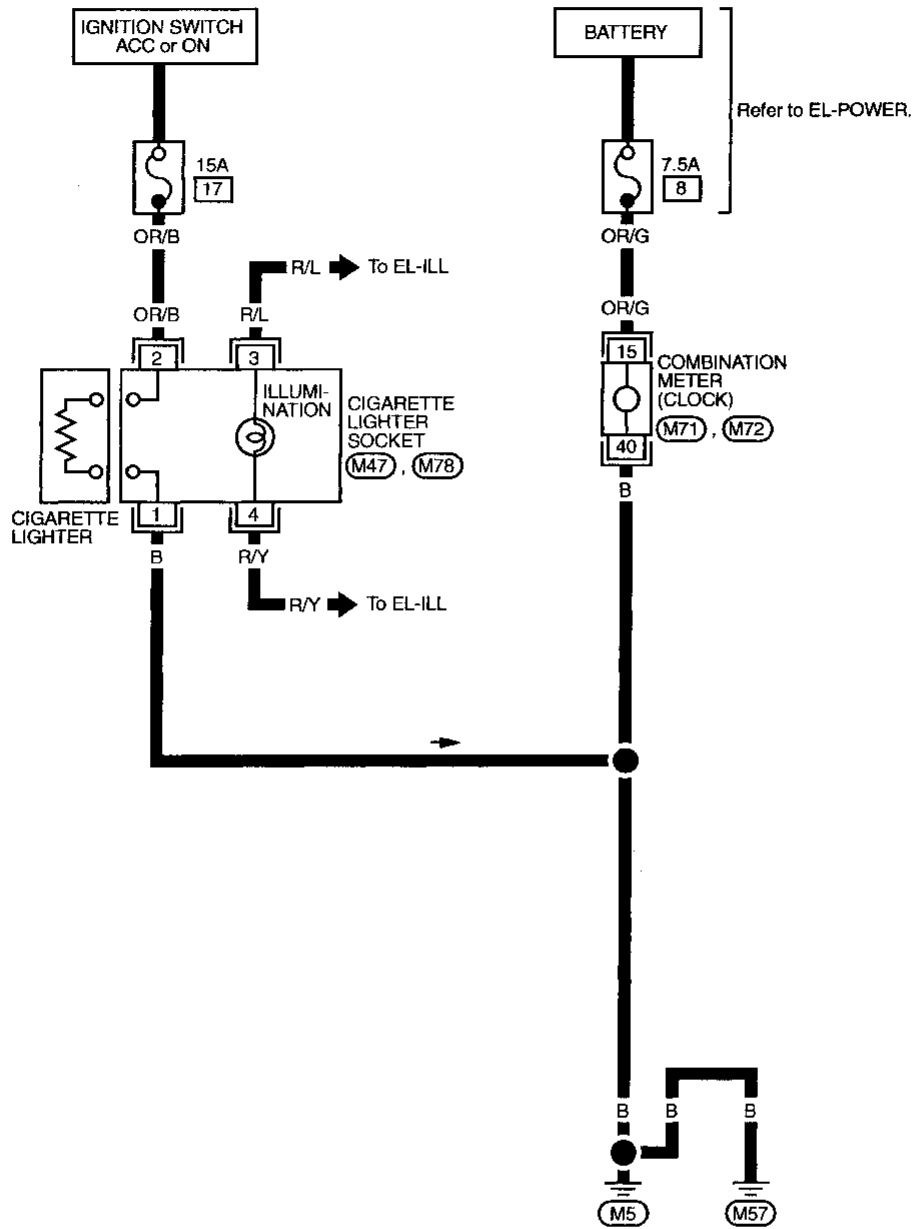
* : This connector is not shown in "HARNES LAYOUT". Refer to "COMBINATION SWITCH".

Refer to last page (Foldout page).
 (M9) , (E109)

HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram — HORN — (Cont'd)

EL-HORN-02



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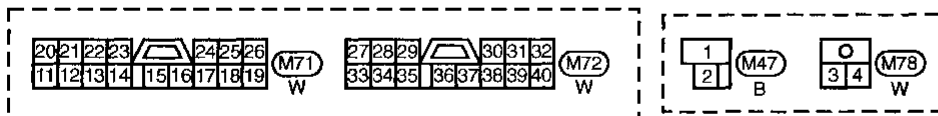
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REAR WINDOW DEFOGGER

System Description

The rear window defogger system is controlled by the smart entrance control unit (Models with power door lock) or rear window defogger timer (Models without power door lock). The rear window defogger operates only for approximately 15 minutes.

Power is supplied at all times

- to rear window defogger relay terminal ③
- through 15A fuse (No. ⑨, located in the fuse block) and
- to rear window defogger relay terminal ⑥
- through 15A fuse (No. ⑩, located in the fuse block).

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 (Models with power door lock), or
- to the rear window defogger timer terminal ① (Models without power door lock).
- through 7.5A fuse (No. ①, located in the fuse block).

Ground is supplied to terminal ② of the rear window defogger switch through body grounds M5 and M57.

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

- through terminal ① of the rear window defogger switch
- to smart entrance control unit terminal ⑫ (Models with power door lock) or
- to rear window defogger timer terminal ③ (Models without power door lock).

Terminal ⑬ of the smart entrance control unit (Models with power door lock) or terminal ② of the rear window defogger timer (Models without power door lock) 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 condenser terminal ①
- through terminal ② of the condenser
- 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

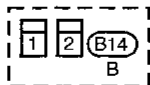
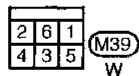
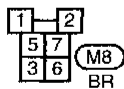
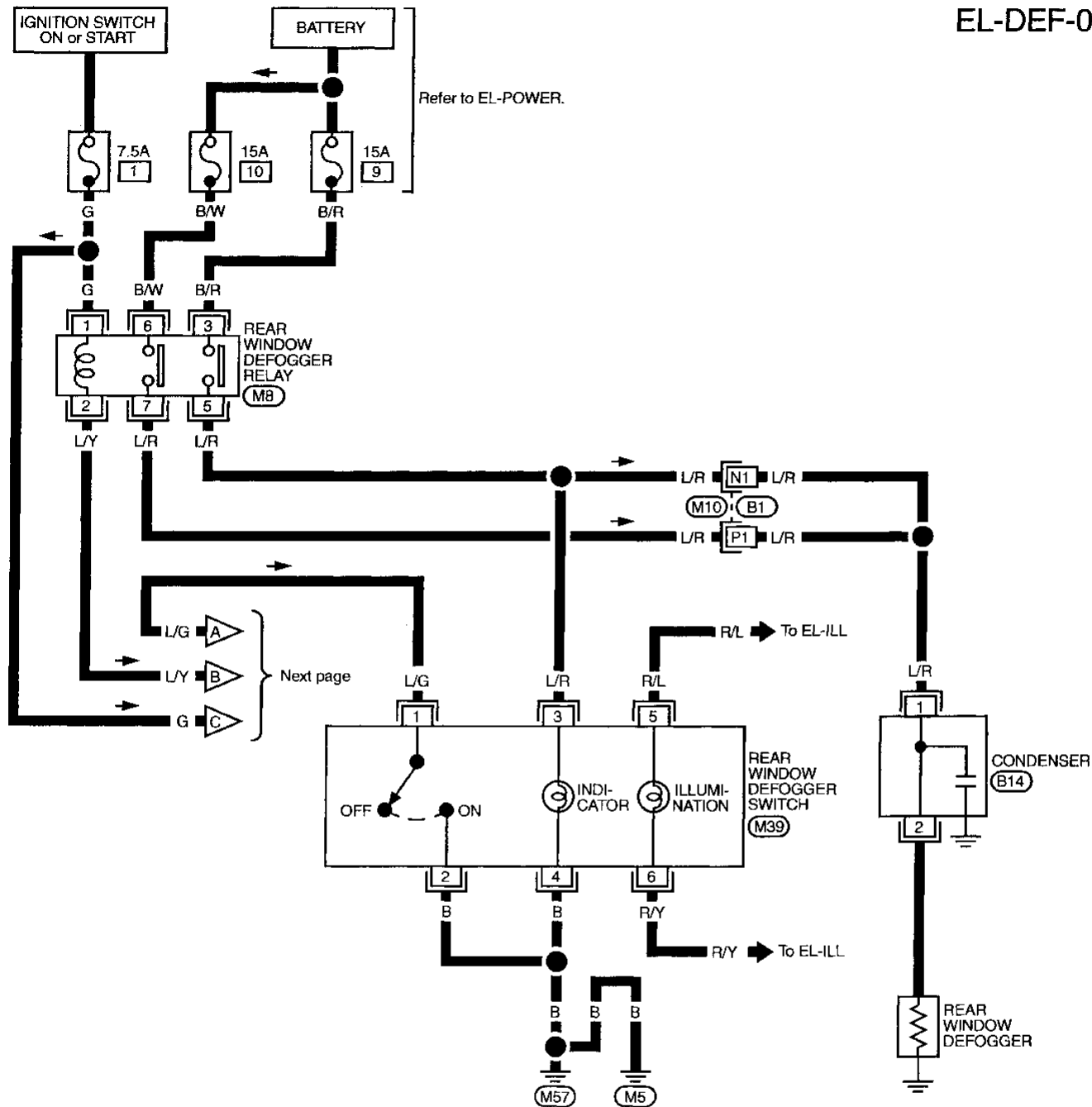
- to terminal ③ of the rear window defogger switch
- from terminal ⑤ of the rear window defogger relay.

Terminal ④ of the rear window defogger switch is grounded through body grounds M5 and M57.

REAR WINDOW DEFOGGER

Wiring Diagram — DEF —

EL-DEF-01

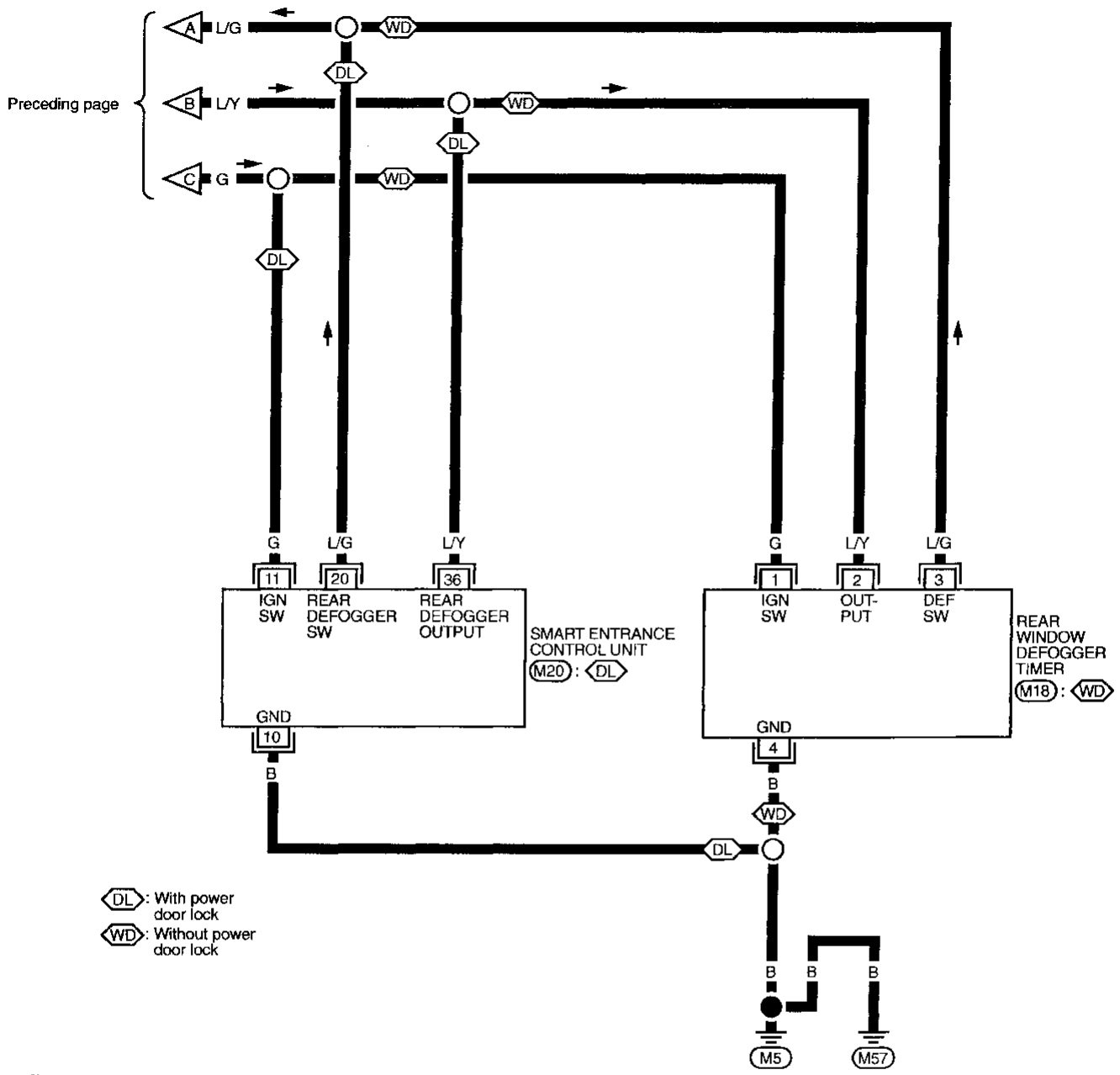


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REAR WINDOW DEFOGGER

Wiring Diagram — DEF — (Cont'd)

EL-DEF-02



Refer to last page (Foldout page).
M20

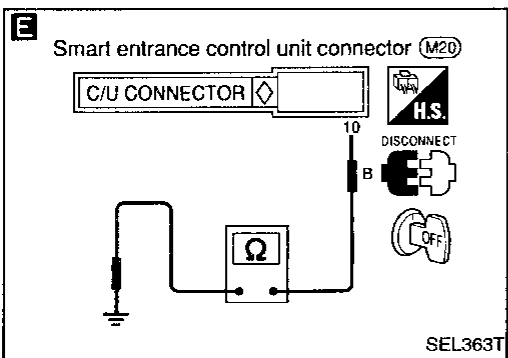
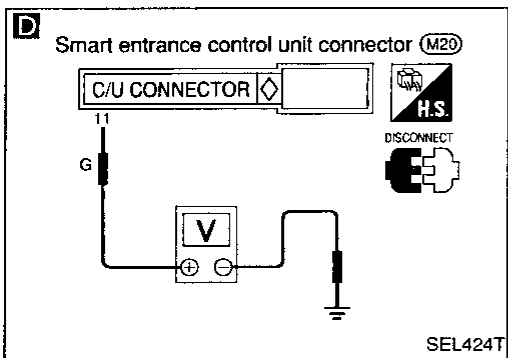
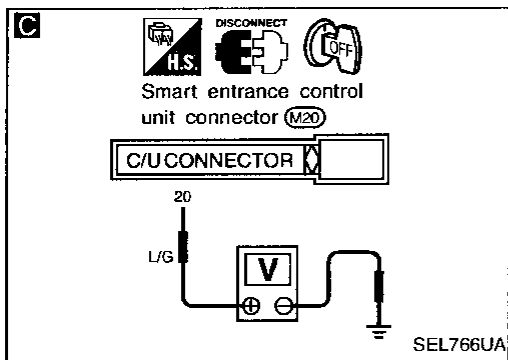
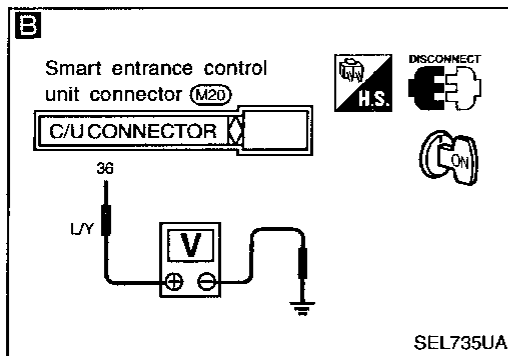
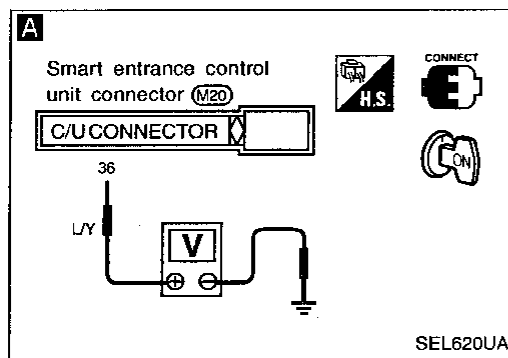
REAR WINDOW DEFOGGER

Trouble Diagnoses

DIAGNOSTIC PROCEDURE

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

Models with power door lock



A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK

1. Turn ignition switch to ON position.
2. Check voltage between control unit harness terminal ③ 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-111.)
- Rear window defogger circuit
- Rear window defogger filament (Refer to EL-111.)

NG →

B

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

NG → Check the following.

- 7.5A fuse (No. 1, located in the fuse block)
- Rear window defogger relay
- Harness for open or short between control unit and fuse

OK →

C

REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL CHECK

Check continuity between control unit harness terminal ② 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-111.)
- Harness for open or short between control unit and rear window defogger switch
- Rear window defogger switch harness ground circuit

OK →

D

IGNITION INPUT SIGNAL CHECK

Check voltage between control unit harness terminal ① and ground.

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

NG → Check the following.

- 7.5A fuse (No. 1 located in the fuse block)
- Harness for open or short between control unit and fuse

OK →

E

CONTROL UNIT GROUND CIRCUIT CHECK

Check continuity between control unit harness terminal ⑩ and ground. **Continuity should exist.**

NG → Repair harness or connectors.

OK →

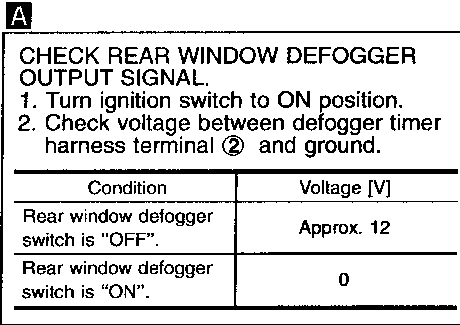
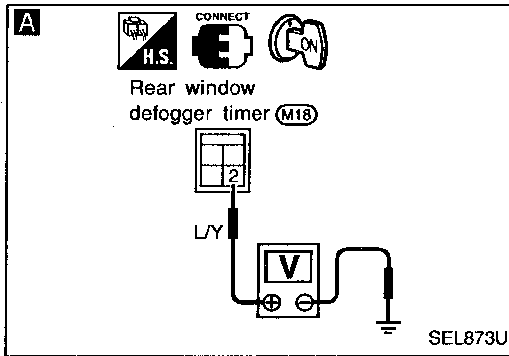
Replace control unit.

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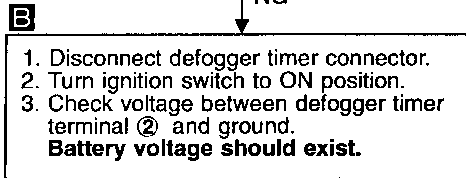
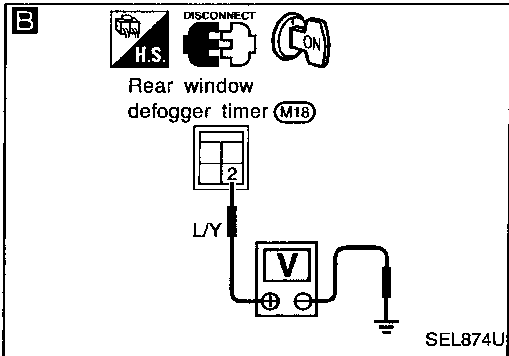
REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

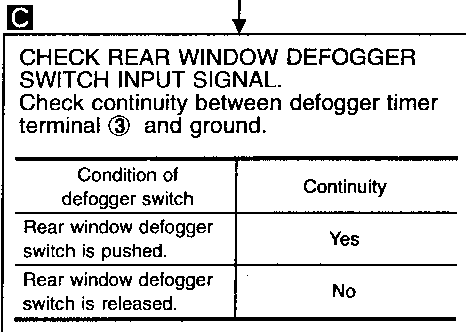
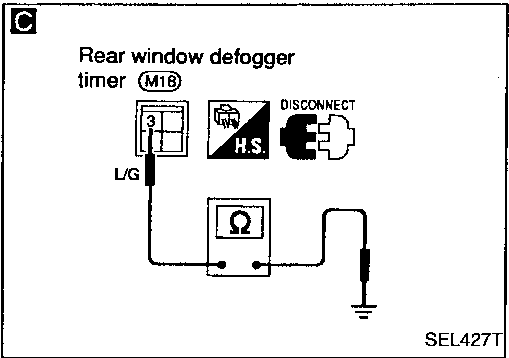
Models without power door lock



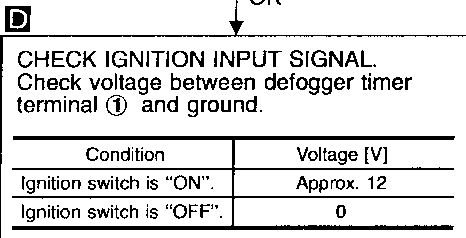
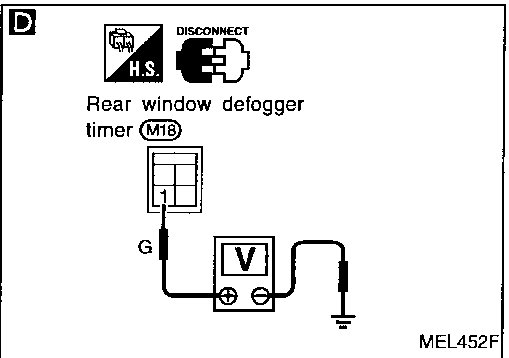
- Check the following.
- Rear window defogger relay (Refer to EL-111.)
 - Rear window defogger circuit
 - Rear window defogger filament (Refer to EL-111.)



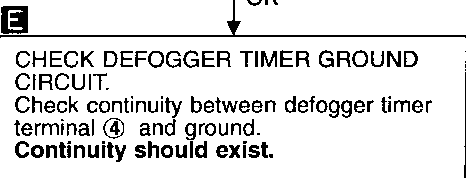
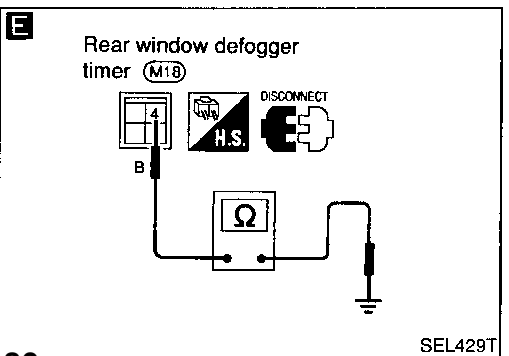
- Check the following.
- 7.5A fuse (No. ①, located in the fuse block)
 - Rear window defogger relay
 - Harness for open or short between defogger timer and fuse



- Check the following.
- Rear window defogger switch (Refer to EL-111.)
 - Harness for open or short between defogger timer and rear window defogger switch
 - Rear window defogger switch ground circuit



- Check the following.
- 7.5A fuse (No. ① located in the fuse block)
 - Harness for open or short between defogger timer and fuse



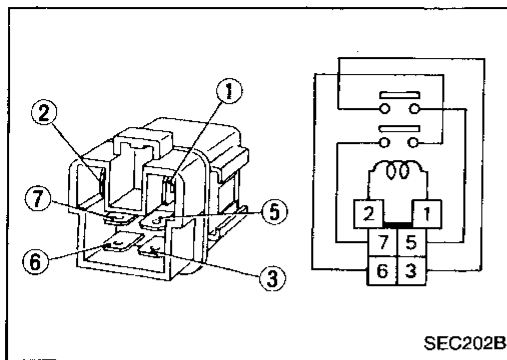
- Repair harness or connectors.

Replace defogger timer.

REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

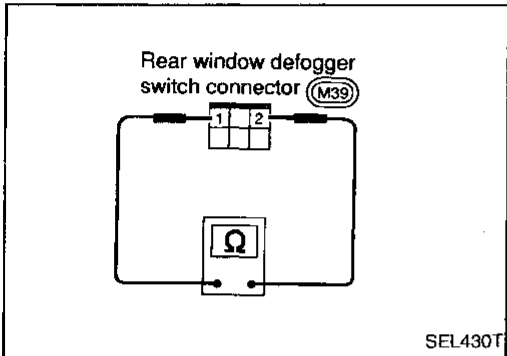
ELECTRICAL COMPONENTS INSPECTION



Rear window defogger relay

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

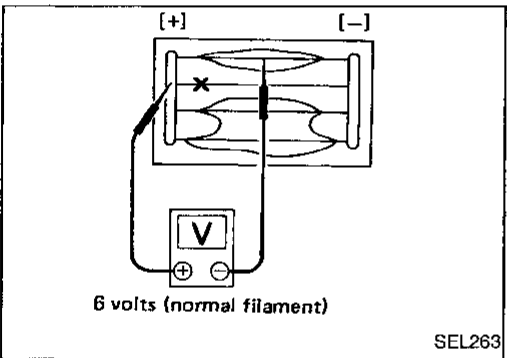
Condition	Continuity
12V direct current supply between terminals ① and ②	Yes
No current supply	No



Rear window defogger switch

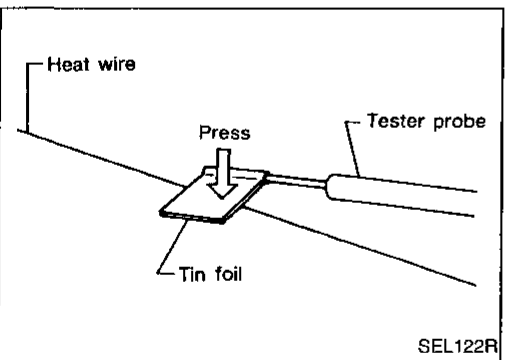
Check continuity between terminals when rear window defogger switch is pushed and released.

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



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.

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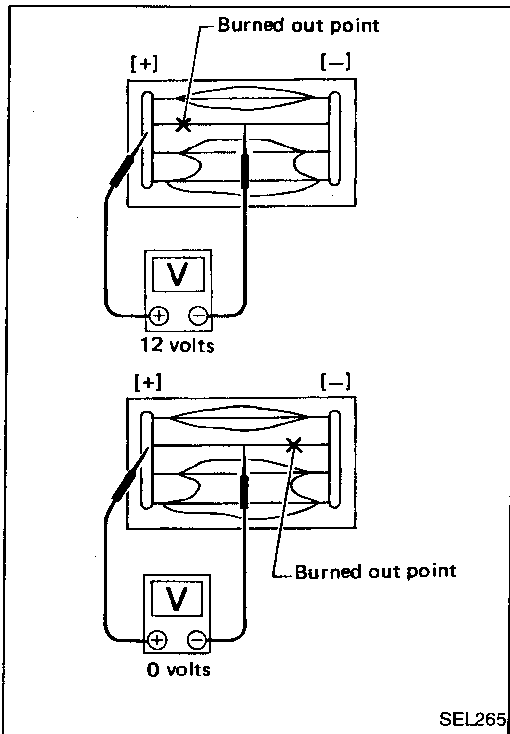
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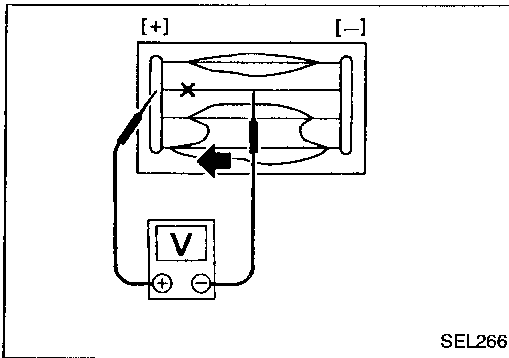
IDX

REAR WINDOW DEFOGGER

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

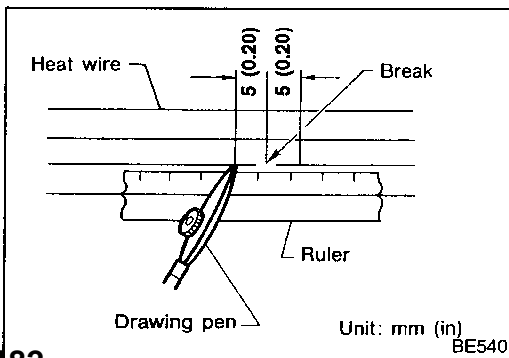
1. Conductive silver composition (Dupont No. 4817 or equivalent)
2. Ruler 30 cm (11.8 in) long
3. Drawing pen
4. Heat gun
5. Alcohol
6. Cloth

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.

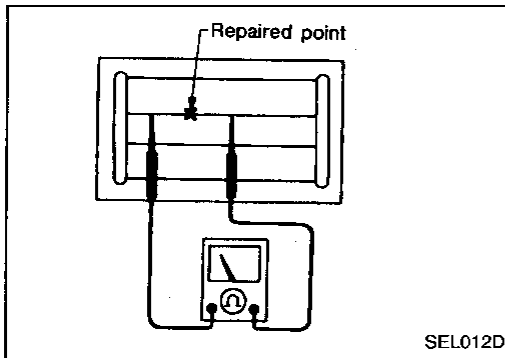
Shake silver composition container before use.

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.



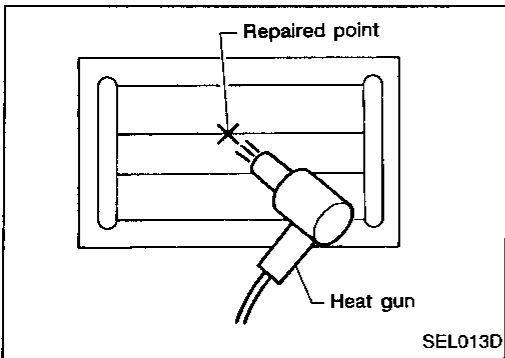
REAR WINDOW DEFOGGER

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.

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Audio/System Description

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

4-SPEAKER MODELS

Power is supplied at all times

- through 10A fuse (No. 50, located in the fuse block)
- to radio terminal 6.

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

- through 10A fuse (No. 18, located in the fuse block)
- to radio terminal 10.

Ground is supplied through the case of the radio.

When the radio power knob is pushed to the ON position, audio signals are supplied

- through radio terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to the front and rear speakers.

6-SPEAKER MODELS

Power is supplied at all times

- through 10A fuse (No. 50, located in the fuse block)
- to radio terminal 6

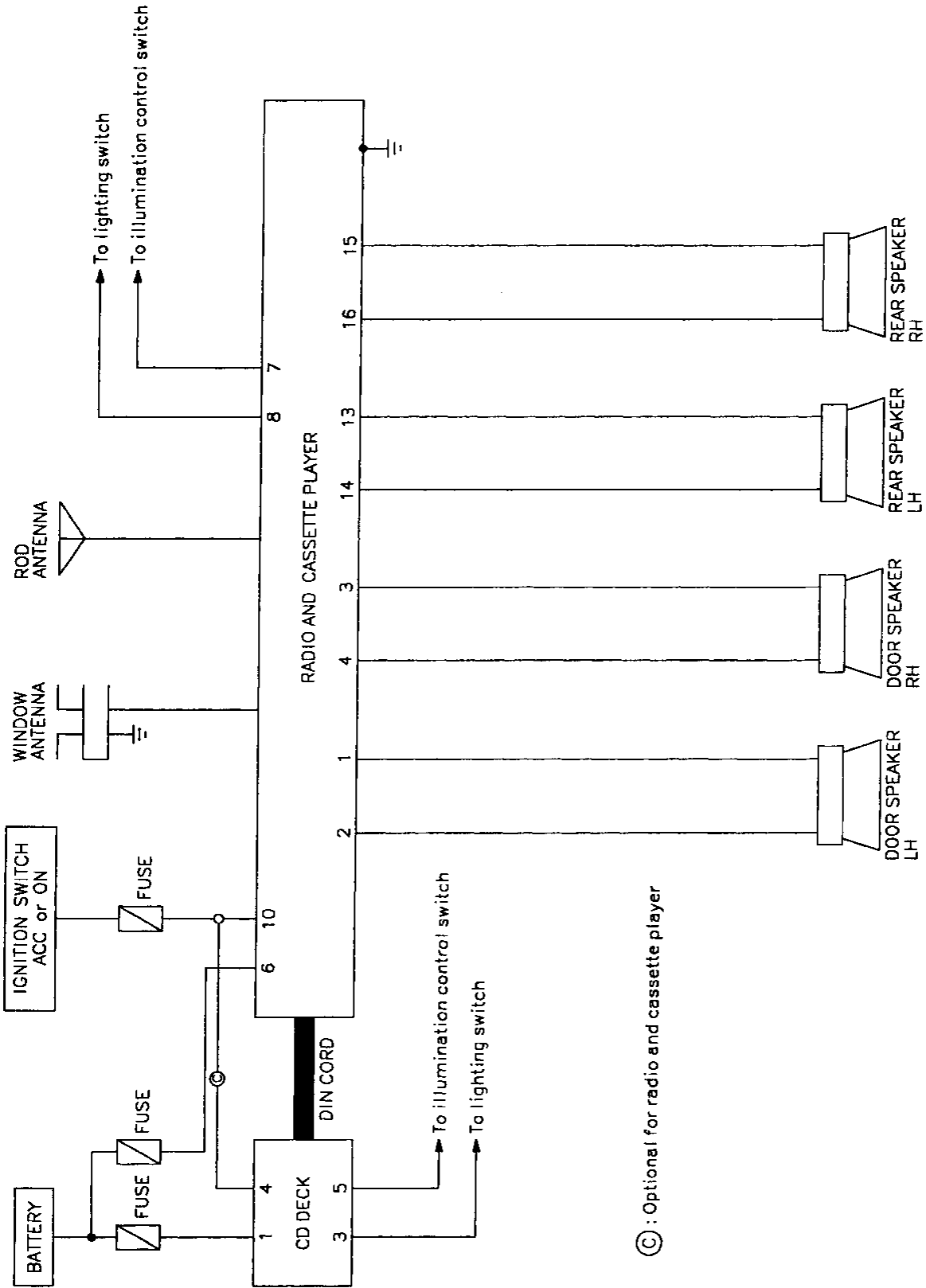
With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse (No. 18, located in the fuse block)
- to radio terminal 10.

Ground is supplied through the case of the radio.

When the radio power knob is pushed to the ON position, audio signals are supplied through radio terminals 1, 2, 3, 4, 13, 14, 15 and 16.

Audio (4-speaker models)/Schematic



© : Optional for radio and cassette player

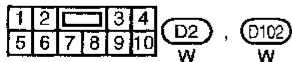
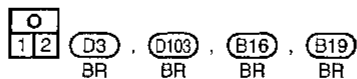
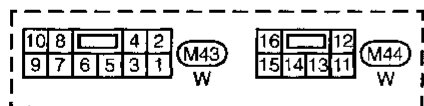
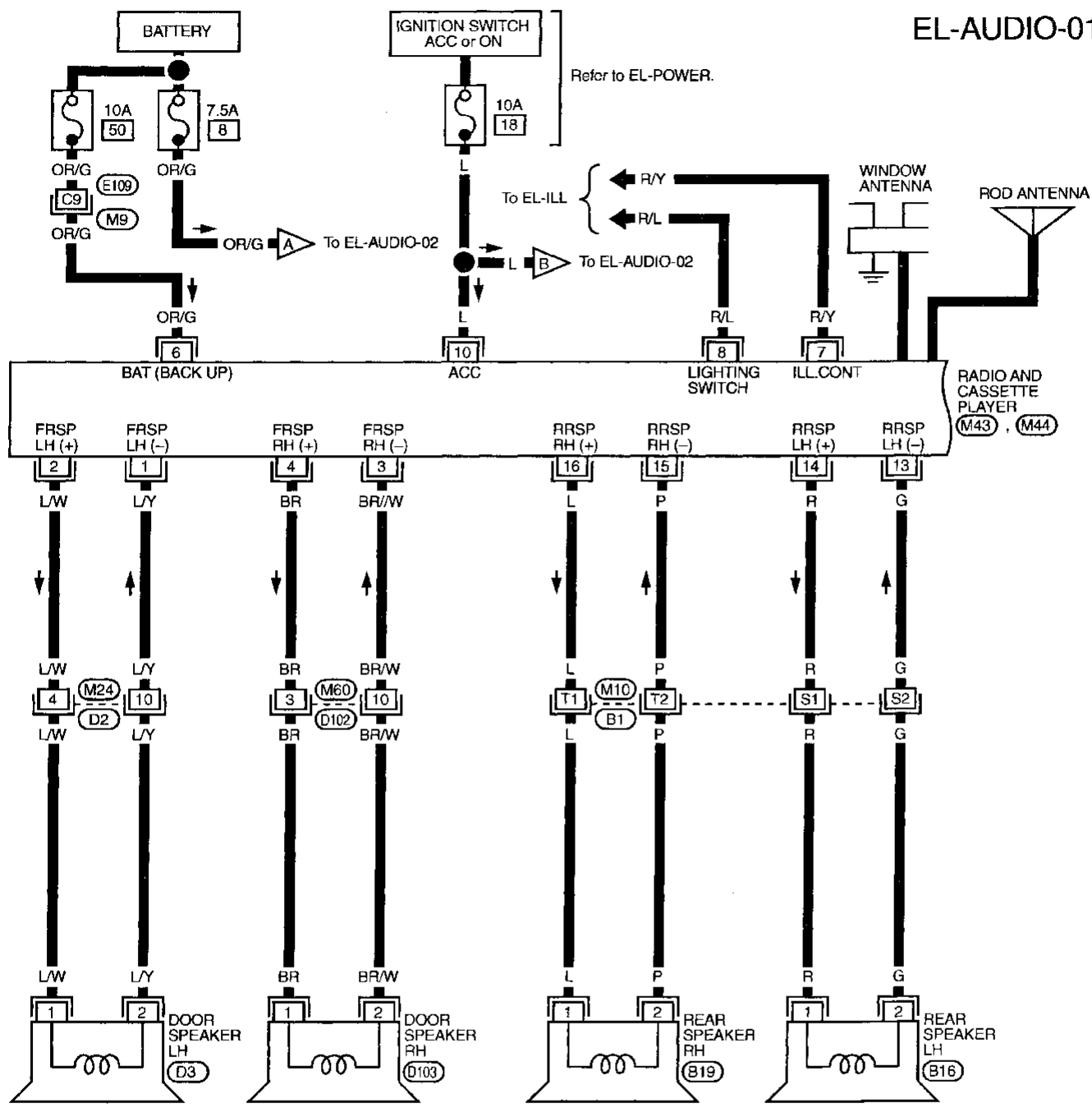
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Audio (4-speaker models)/Wiring Diagram
— AUDIO —

EL-AUDIO-01



Refer to last page (Foldout page).

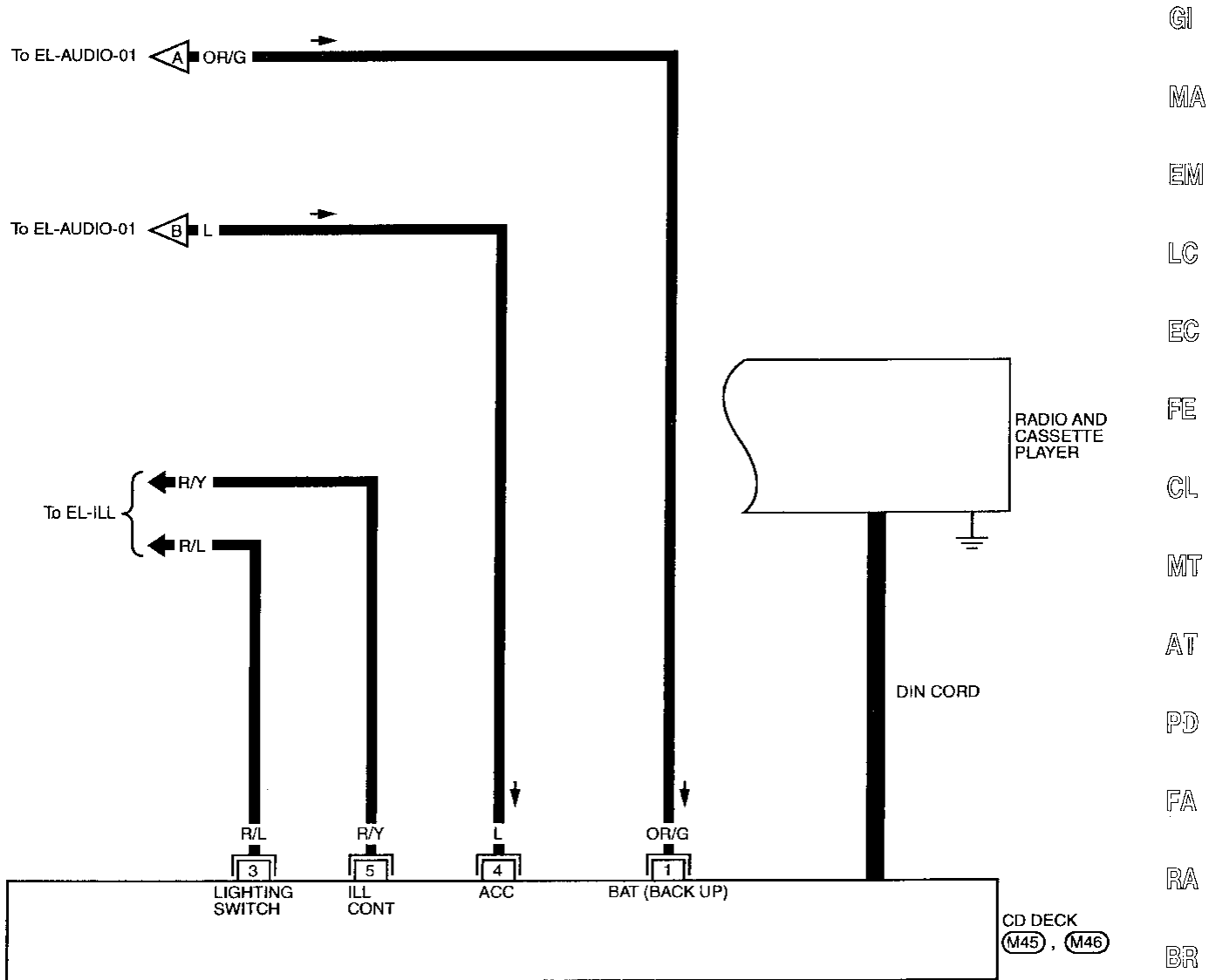
(M10), (B1)

(M9), (E109)

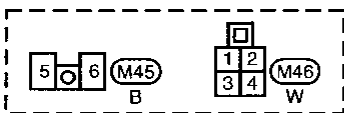
AUDIO AND POWER ANTENNA

Audio (4-speaker models)/Wiring Diagram — AUDIO — (Cont'd)

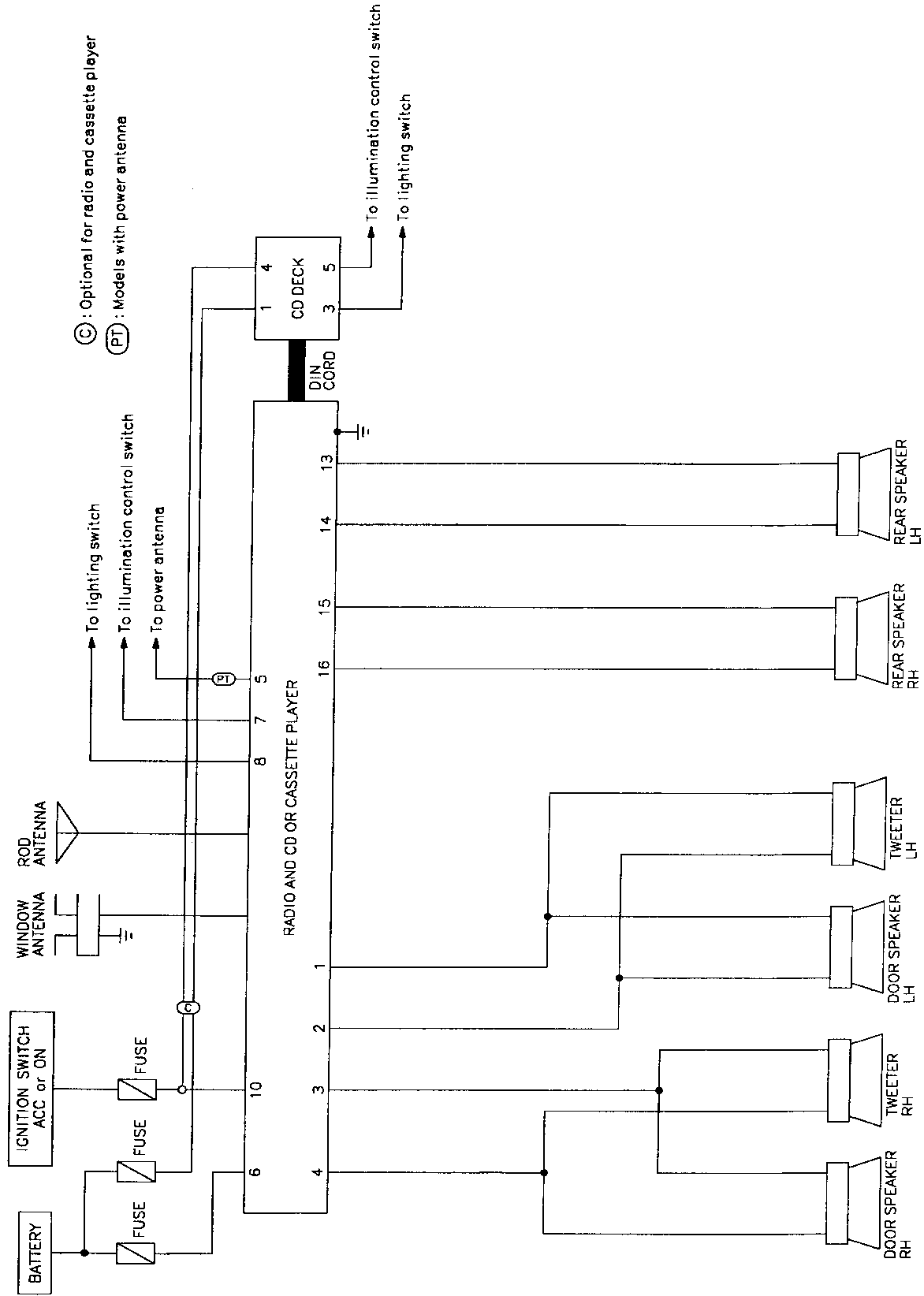
EL-AUDIO-02



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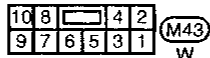
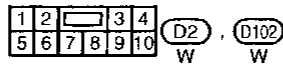
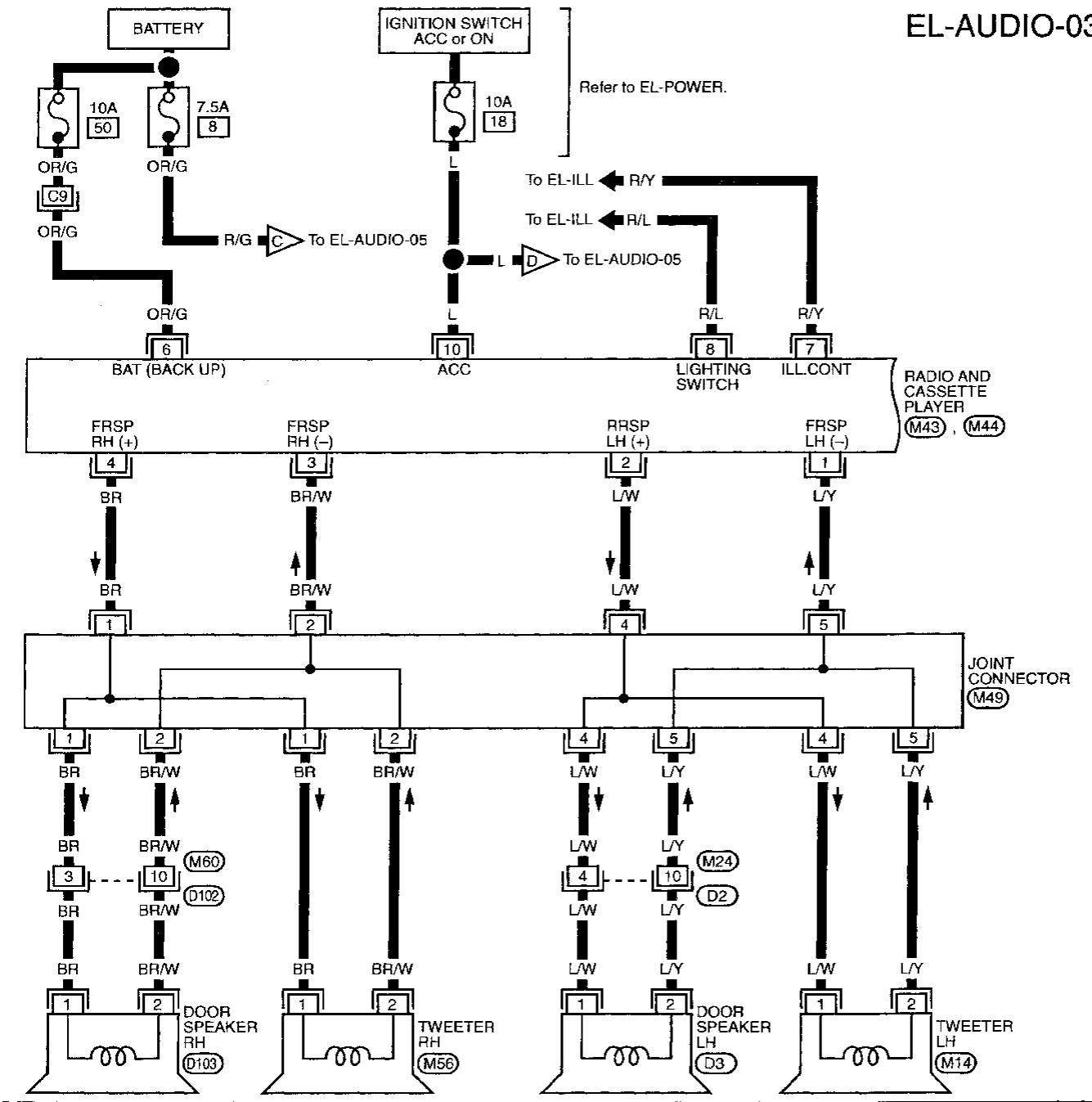


Audio (6-speaker models)/Schematic



Audio (6-speaker models)/Wiring Diagram
— AUDIO —

EL-AUDIO-03



Refer to last page (Foldout page).
M9, E109

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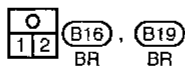
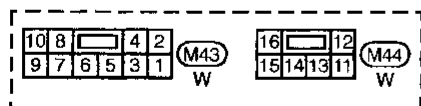
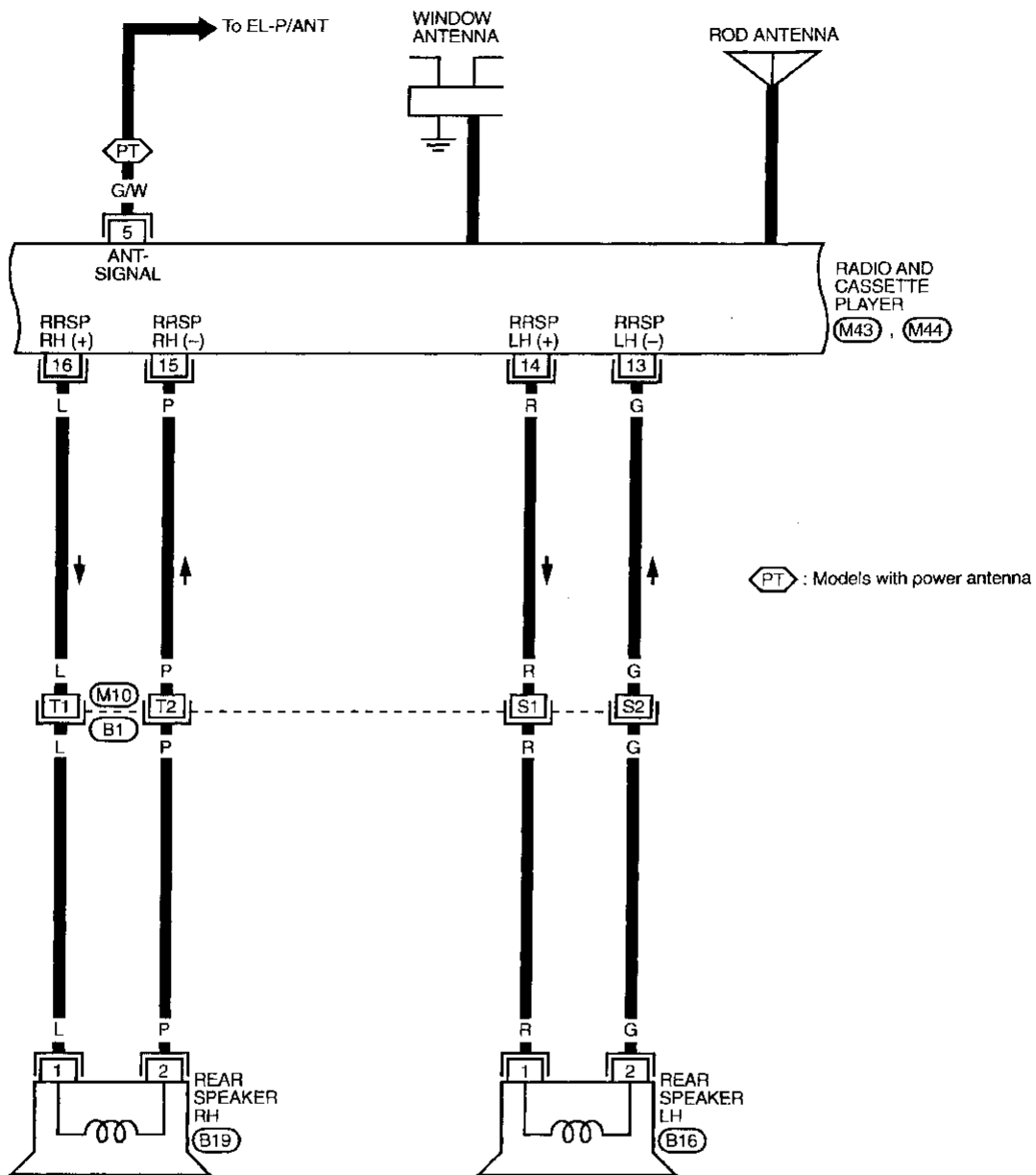
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AUDIO AND POWER ANTENNA

Audio (6-speaker models)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04



Refer to last page (Foldout page).

(M10), (B1)

AUDIO AND POWER ANTENNA

Audio (6-speaker models)/Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-05

- 4S : Models with 4-speaker audio system
- 6S : Models with 6-speaker audio system

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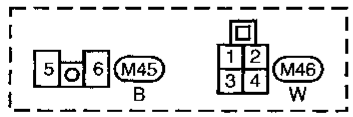
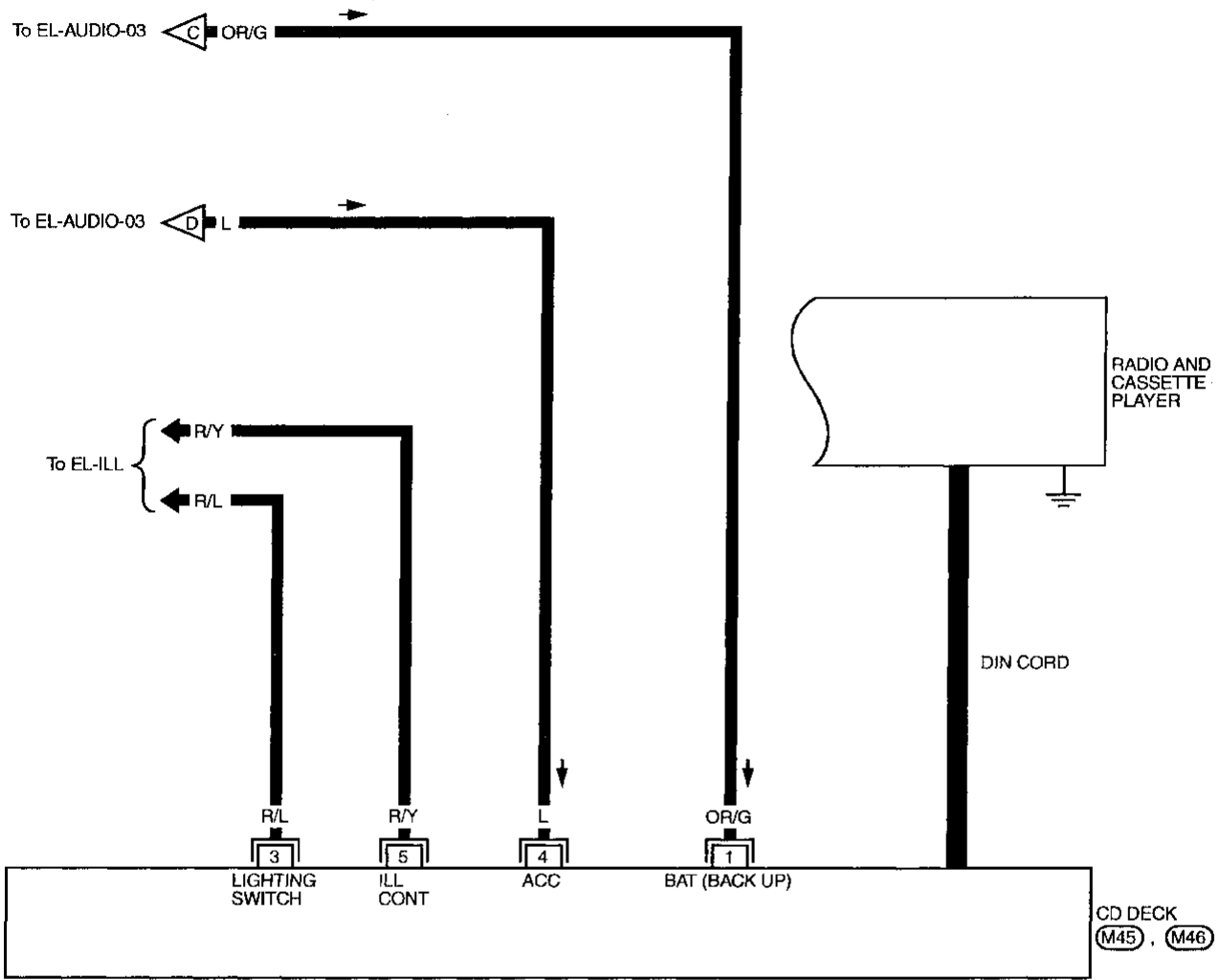
RS

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Power Antenna/System Description

Power is supplied at all times

- through 7.5A fuse (No. ⑧, located in the fuse block)
- to power antenna terminal ③.

Ground is supplied to the power antenna terminal ⑥ through body grounds ④, ⑤ and ⑥.

When the radio is turned to the ON position, battery positive voltage is supplied

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

The antenna raises and is held in the extended position.

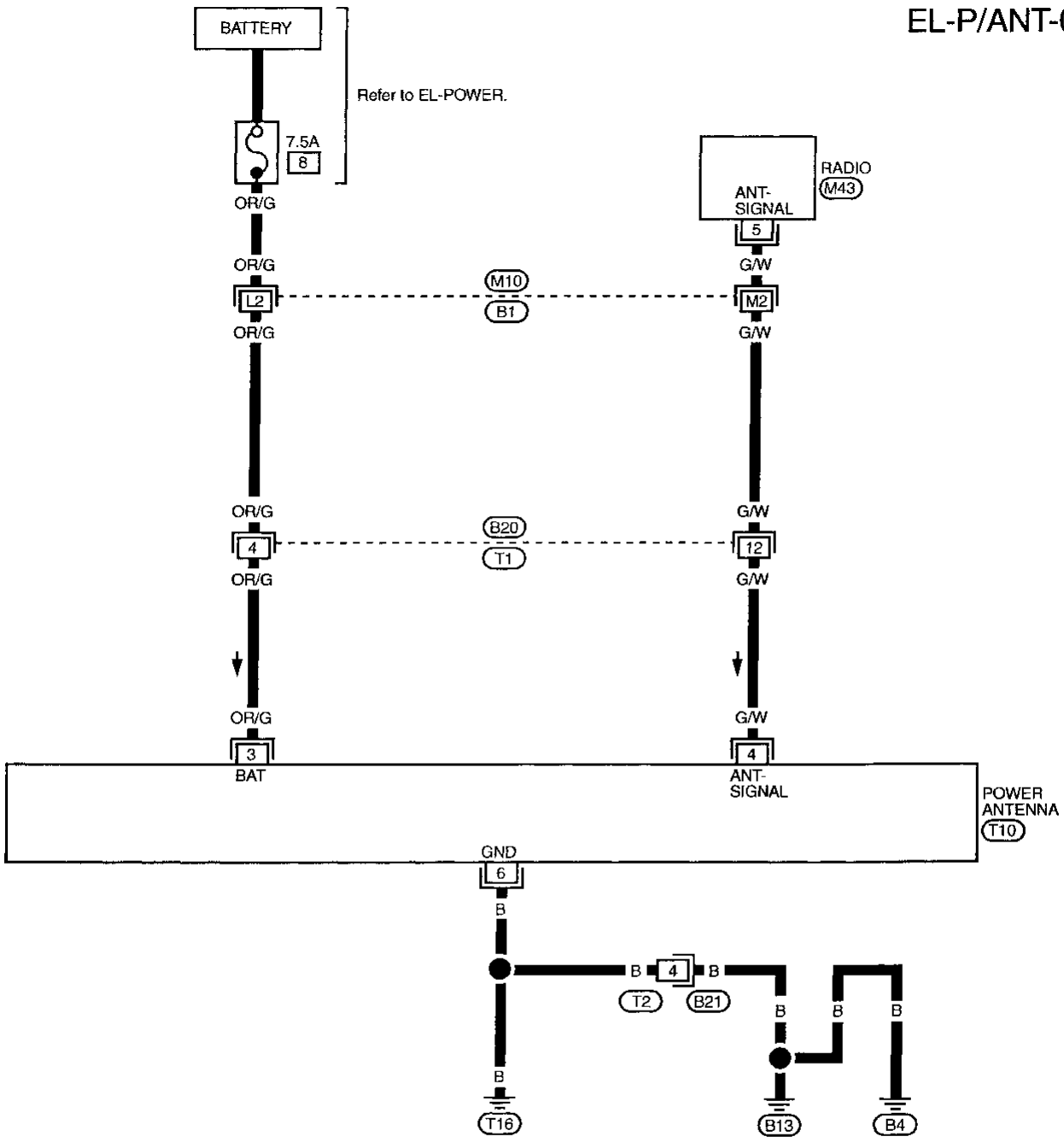
When the radio is turned to the OFF position, battery positive voltage is interrupted

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

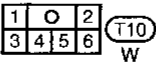
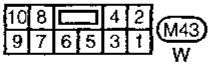
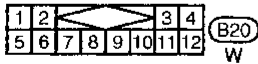
The antenna retracts.

Power Antenna/Wiring Diagram — P/ANT —

EL-P/ANT-01



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

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AUDIO AND POWER ANTENNA

Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none"> 10A fuse Poor radio case ground Radio 	<ol style="list-style-type: none"> Check 10A fuse (No. 18), located in fuse block). Turn ignition switch ON and verify that battery positive voltage is present at terminal ⓐ of radio. Check radio case ground. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	<ol style="list-style-type: none"> 7.5A fuse Radio 	<ol style="list-style-type: none"> Check 10A fuse (No. 50), located in fuse block) and verify that battery positive voltage is present at terminal ⓐ of radio. Remove radio for repair.
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> Speaker Radio output Speaker circuit Radio 	<ol style="list-style-type: none"> Check speaker. Check radio output voltage. Check wires for open or short between radio/amp. and speaker. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	<ol style="list-style-type: none"> Antenna Poor radio ground Radio 	<ol style="list-style-type: none"> Check antenna. Check radio ground. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	<ol style="list-style-type: none"> Window antenna Radio 	<ol style="list-style-type: none"> Check window antenna. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none"> Poor radio ground Loose or missing ground bonding straps Ignition condenser or rear window defogger noise suppressor condenser Alternator Ignition coil or secondary wiring Radio 	<ol style="list-style-type: none"> Check radio ground. Check ground bonding straps. Replace ignition condenser or rear window defogger noise suppressor condenser. Check alternator. Check ignition coil and secondary wiring. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none"> Poor radio ground Antenna Accessory ground Faulty accessory 	<ol style="list-style-type: none"> Check radio ground. Check antenna. Check accessory ground. Replace accessory.
Power antenna does not operate.	<ol style="list-style-type: none"> 7.5A fuse Radio signal Grounds (B4), (B13) and (T16). 	<ol style="list-style-type: none"> Check 7.5A fuse (No. 8), located in fuse block). Verify that battery positive voltage is present at terminal ⓐ of power antenna. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ⓐ of power antenna. Check grounds (B4), (B13) and (T16).

SPEAKER INSPECTION

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 INSPECTION

All voltage inspections are made with:

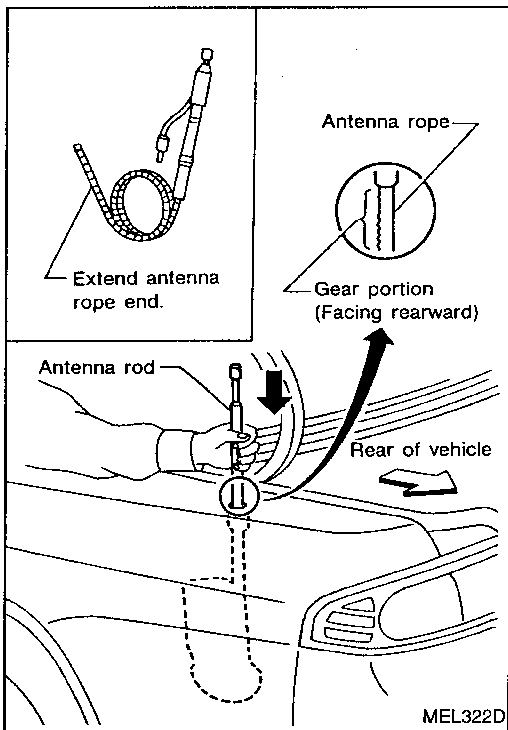
- Ignition switch ON or ACC
- Radio ON
- Radio connected (If radio is removed for inspection, supply a ground to the case using a jumper wire.)

AUDIO AND POWER ANTENNA

Antenna Rod Replacement (Cont'd)

INSTALLATION

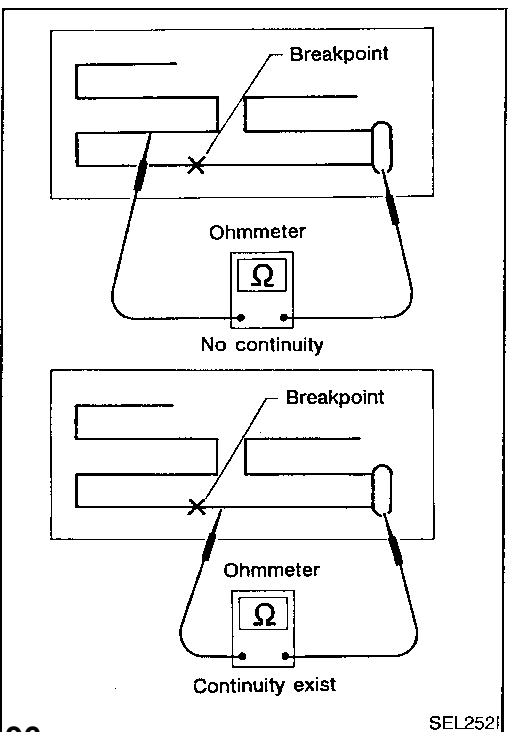
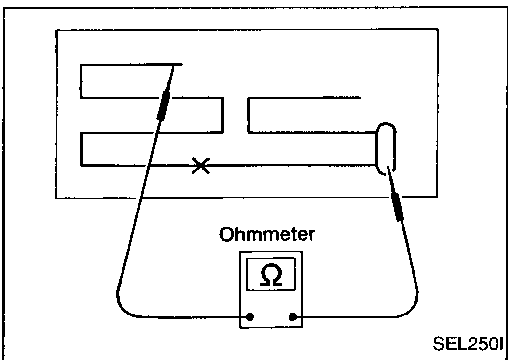
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by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



Window Antenna Repair

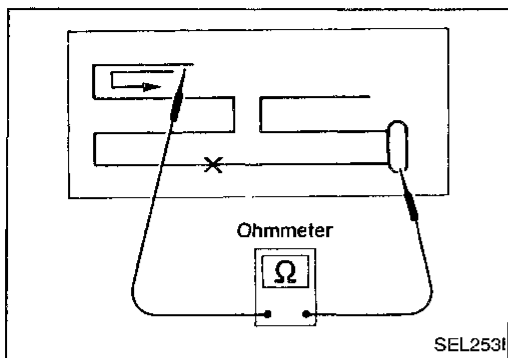
ELEMENT CHECK

1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.
2. If an element is broken, no continuity will exist.



AUDIO AND POWER ANTENNA

Window Antenna Repair (Cont'd)



3. To locate broken point, move probe to left and right along element. Tester needle will swing abruptly when probe passes the point.
- Refer to REAR WINDOW DEFOGGER "Filament Repair" for Element Repair.

GI

MA

EM

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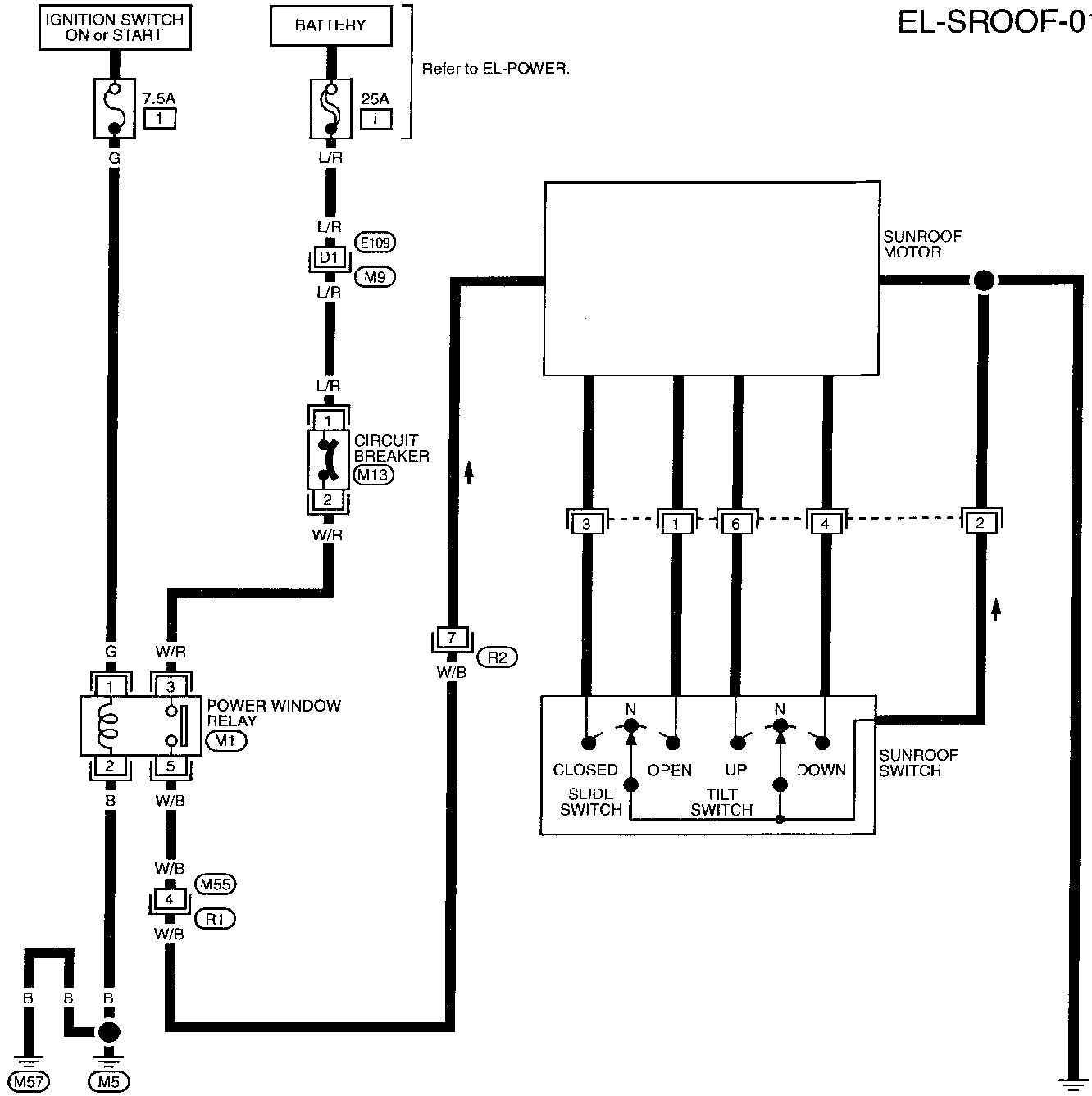
EL

IDX

POWER SUNROOF

Wiring Diagram — SROOF —

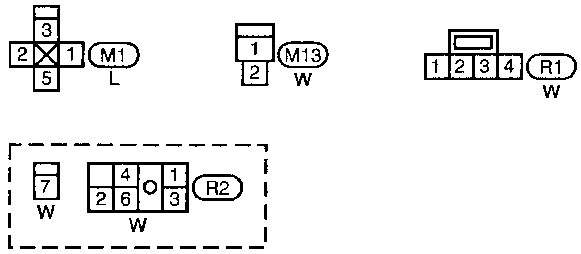
EL-SROOF-01



Refer to EL-POWER.

Refer to last page (Foldout page).

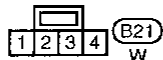
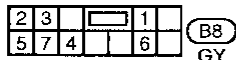
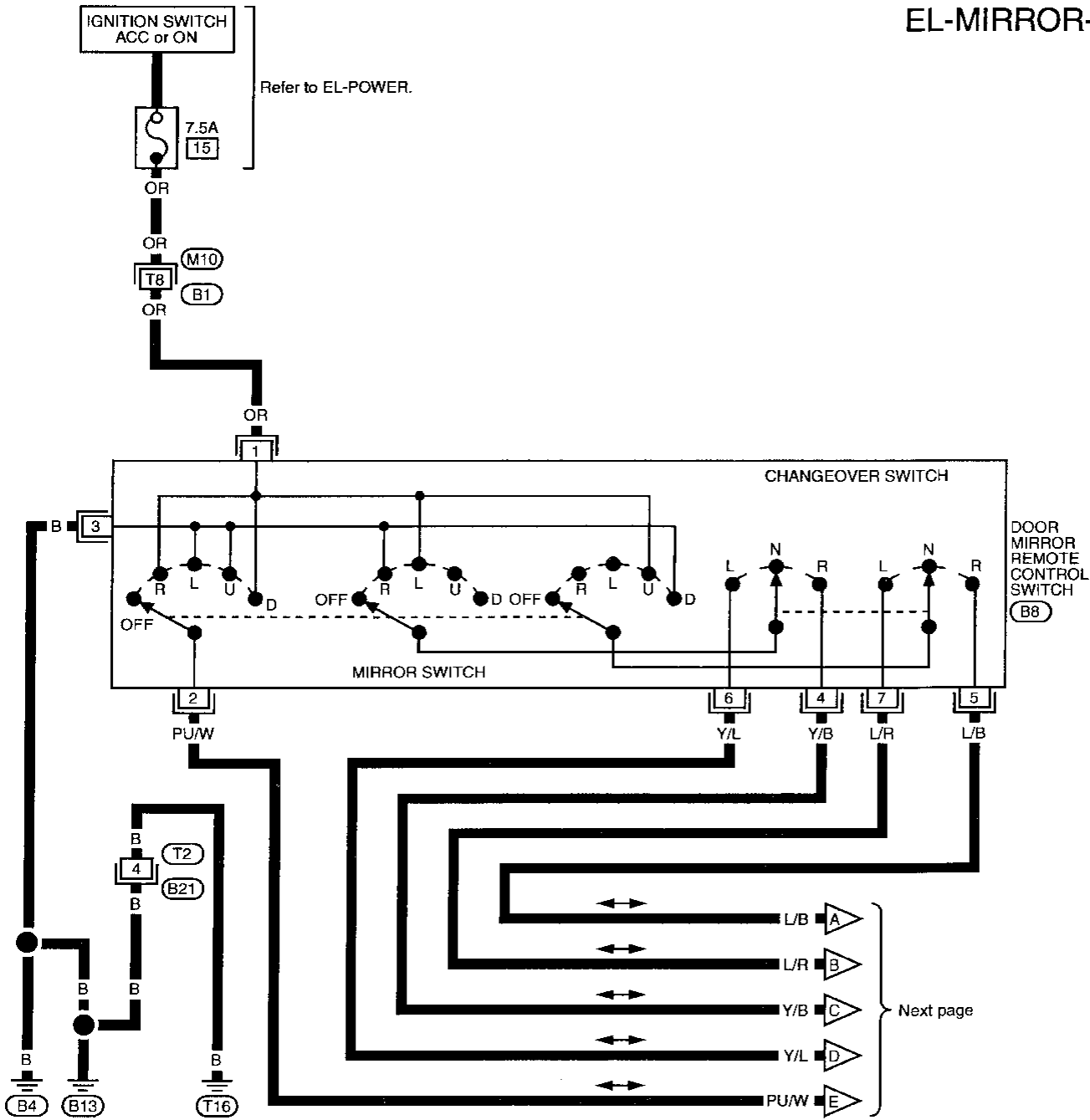
(M9), (E109)



POWER DOOR MIRROR

Wiring Diagram — MIRROR —

EL-MIRROR-01



Refer to last page (Foldout page).

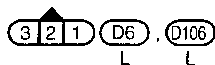
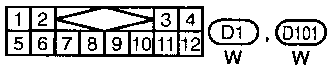
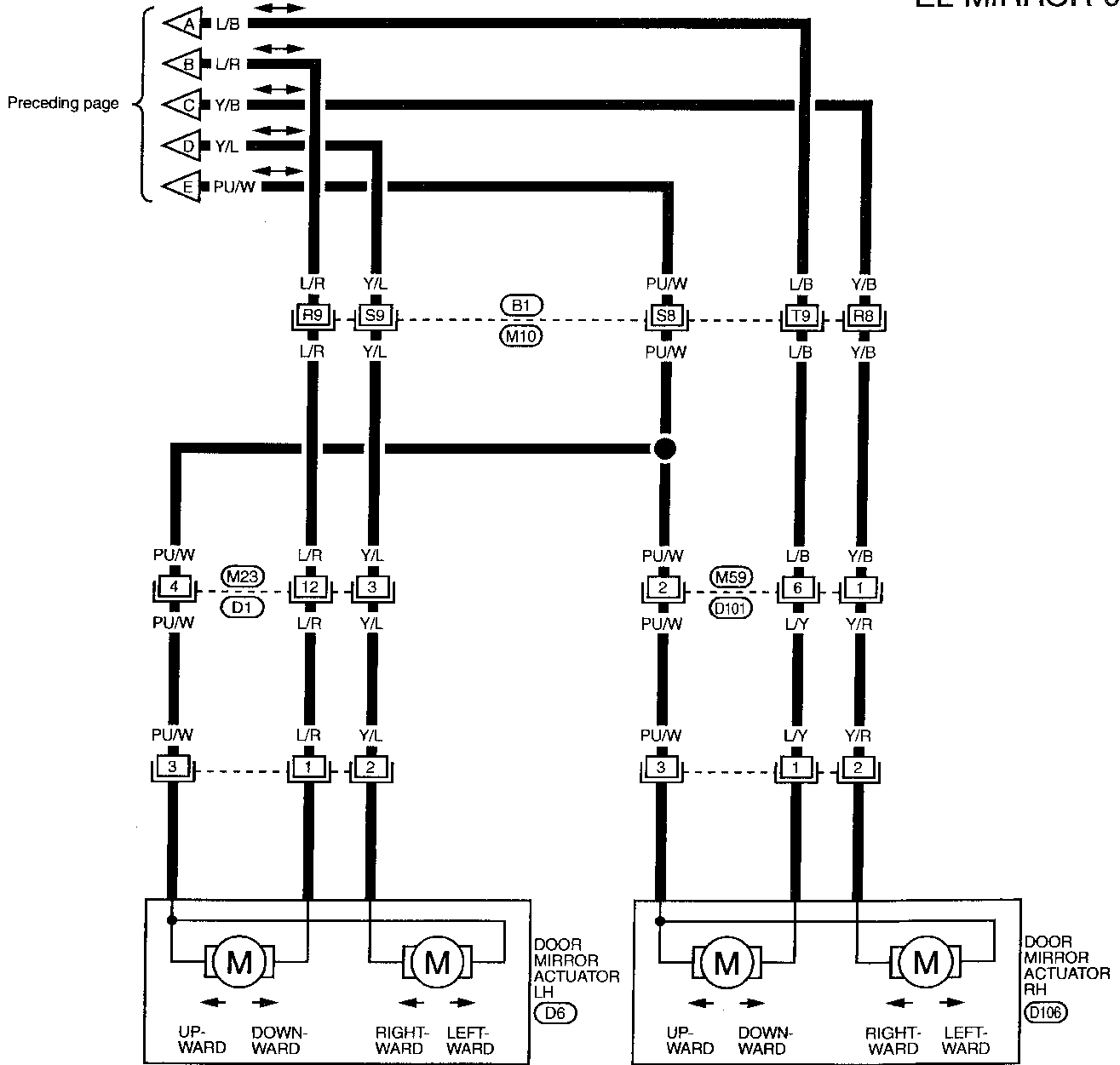
(M10) . (B1)

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

POWER DOOR MIRROR

Wiring Diagram — MIRROR — (Cont'd)

EL-MIRROR-02

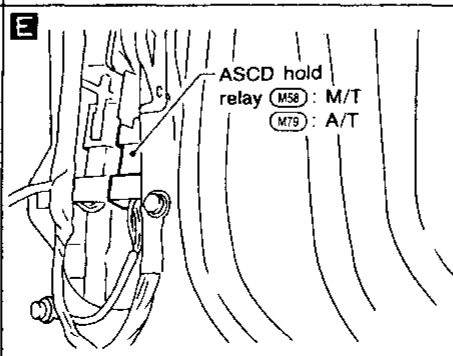
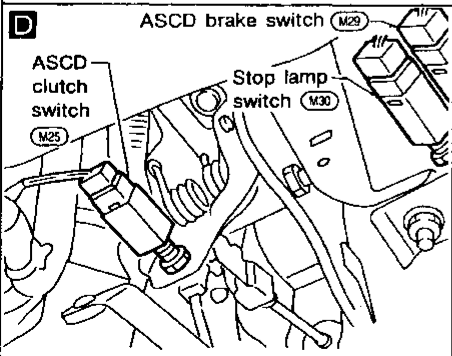
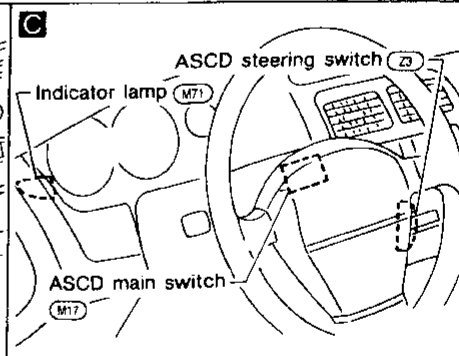
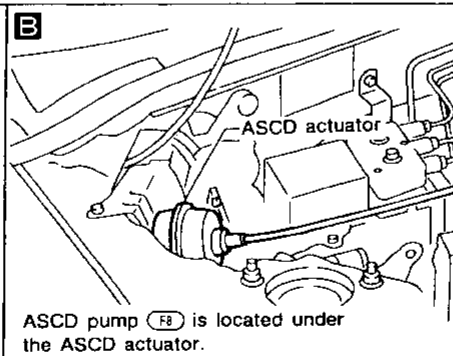
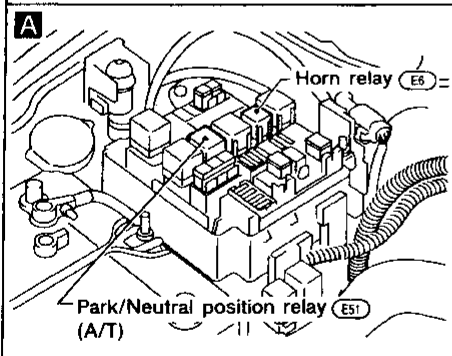
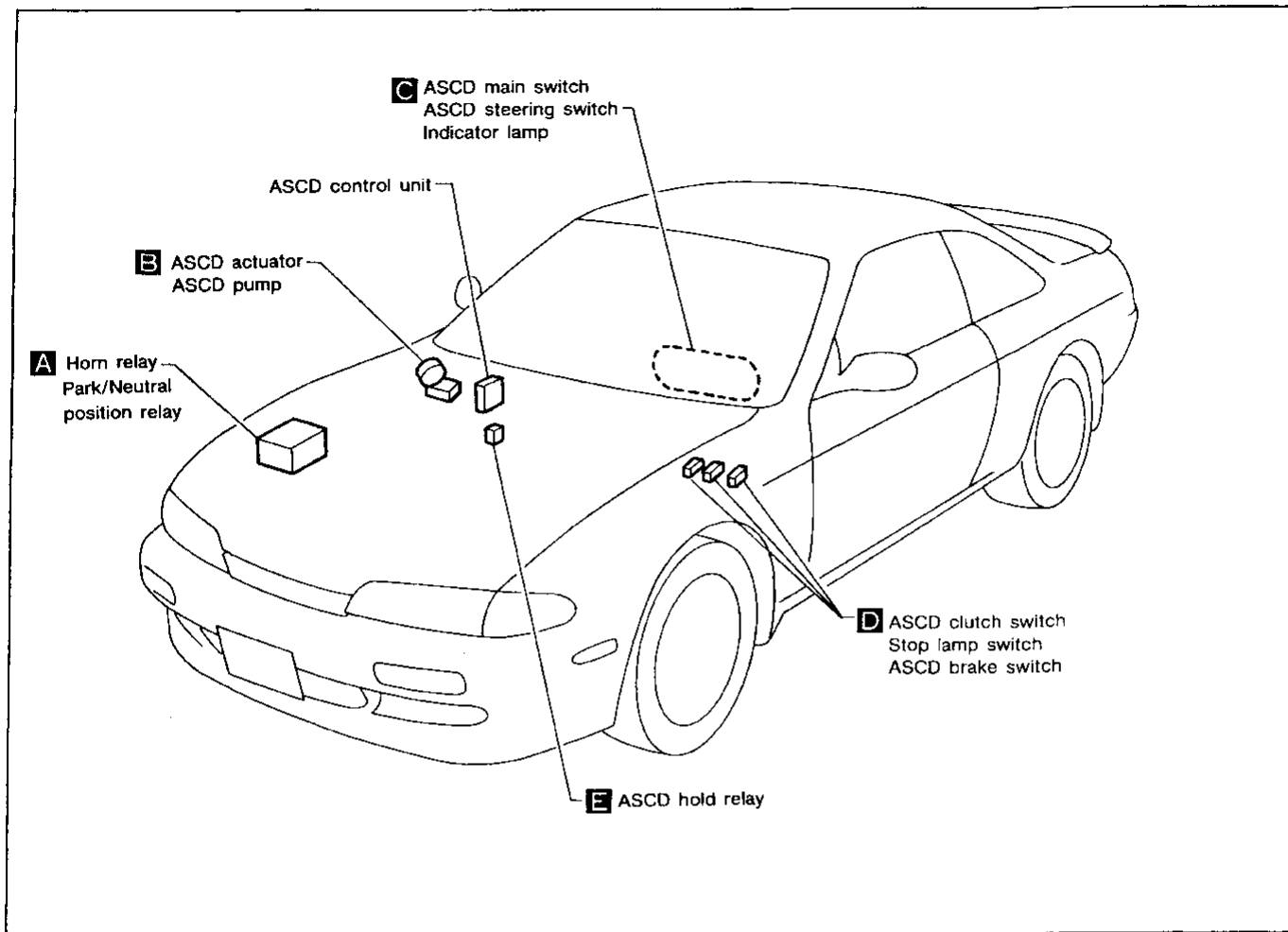


Refer to last page (Foldout page).

(M10), (B1)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Component Parts and Harness Connector Location



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

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. 1), located in the fuse block)
- to ASCD main switch terminal ① and
- to ASCD hold relay terminal ⑤.

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 (M5) and (M57).

With power and ground supplied, the ASCD hold relay is activated, and power is supplied

- from terminal ③ of the ASCD hold relay
- to ASCD control terminal ④ and
- to ASCD clutch switch terminal ① (M/T models) or
- to park/neutral position relay terminal ③ (A/T models).

Power remains supplied to ASCD control unit terminal ④ when the ASCD switch is released to the N (neutral) position.

Ground is supplied

- to ASCD control unit terminal ③
- through body grounds (M5) and (M57).

Inputs

At this point, the system is ready to activate or deactivate, based on inputs from the following:

- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- park/neutral position relay (A/T models)
- ASCD clutch switch (M/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. 7), located in the fuse block).

When the brake pedal is depressed, power is supplied

- from terminal ② of the stop lamp switch
- to ASCD control unit terminal ⑩.

Power is supplied at all times

- through 10A fuse (No. 38), 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 ②).

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

- from terminal ⑫ of the ASCD steering switch
- to ASCD control unit terminal ②.

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

- from terminal ⑬ of the ASCD steering switch
- to ASCD control unit terminal ①.

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

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

Power is interrupted when

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

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

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 .

GI

Ground is supplied to the vacuum motor

- from terminal ⑨ of the ASCD control unit
- to ASCD pump terminal ④ .

MA

Ground is supplied to the air valve

- from terminal ⑩ of the ASCD control unit
- to ASCD pump terminal ② .

EM

Ground is supplied to the release valve

- from terminal ⑭ of the ASCD control unit
- to ASCD pump terminal ③ .

LC

When the system is activated, power is supplied

- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ⑪ and
- to A/T control unit terminal ⑳ (A/T models).

EC

Ground is supplied

- to combination meter terminal ⑫
- through body grounds ⑮ and ⑮7 .

FE

With power and ground supplied, the CRUISE indicator illuminates.

CL

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 ⑳ .

MT

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.

AT

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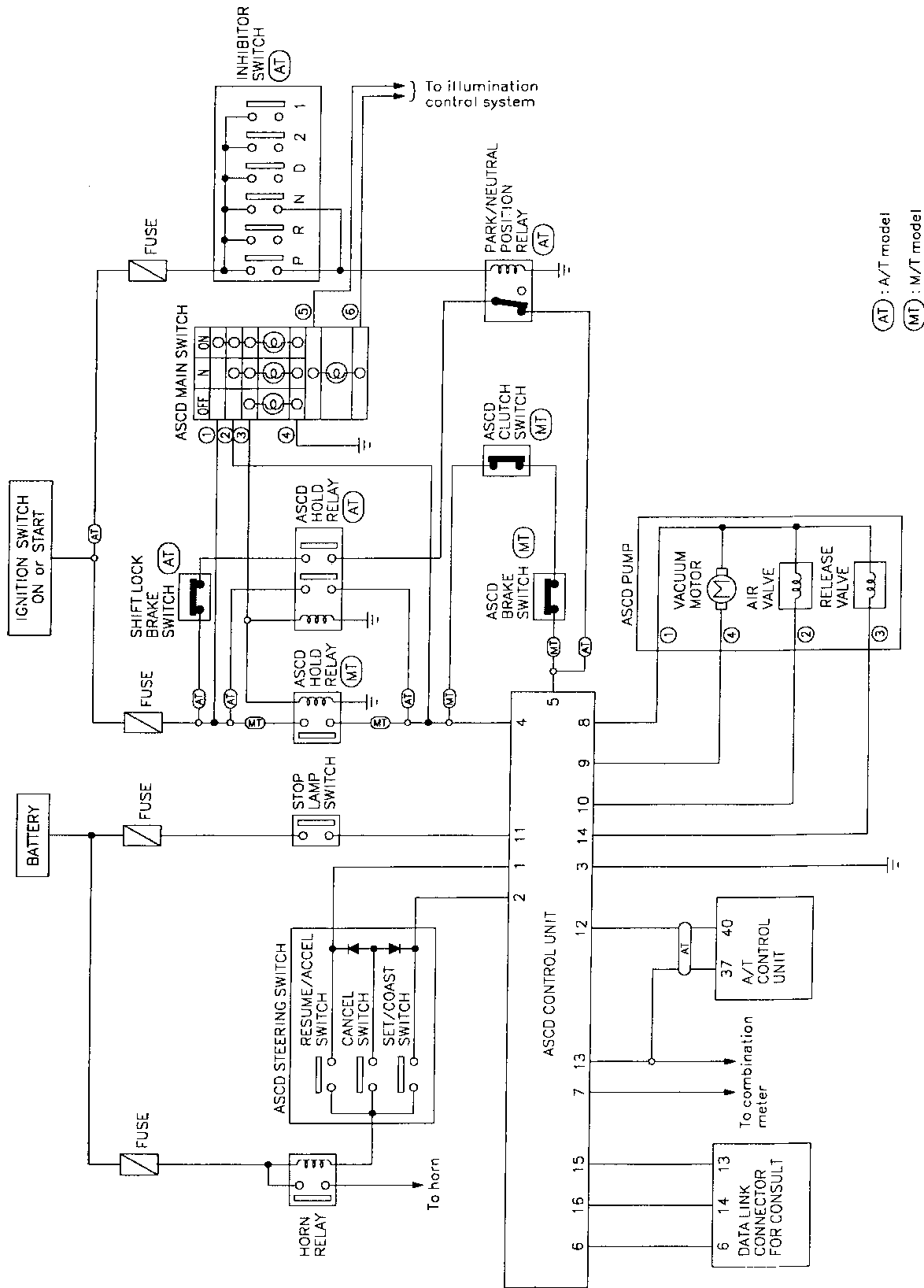
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

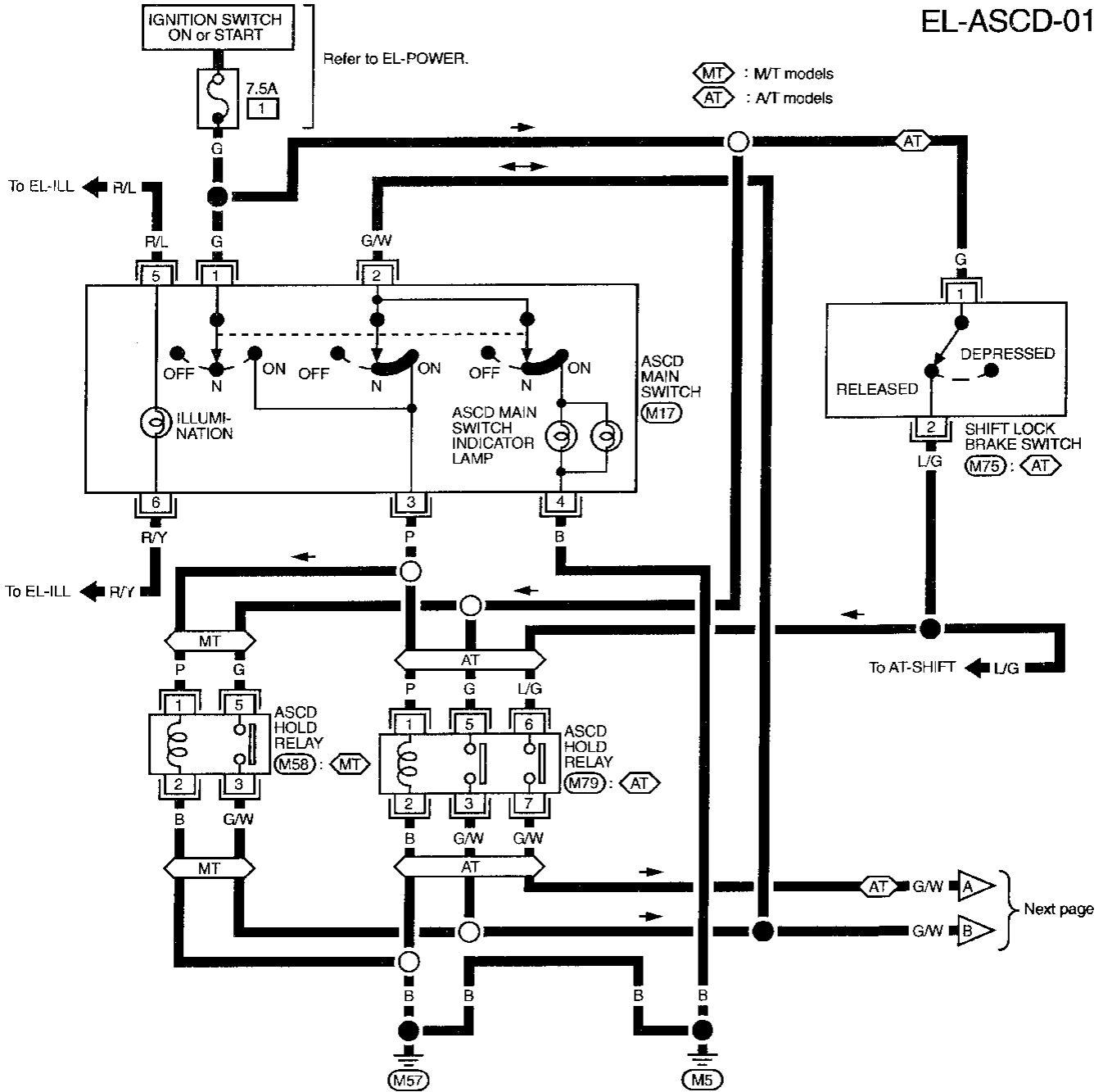
Schematic



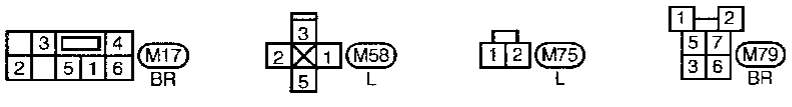
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD —

EL-ASCD-01



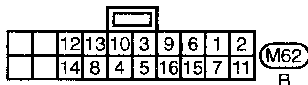
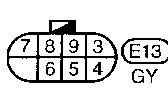
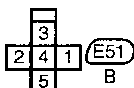
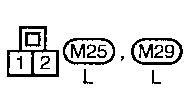
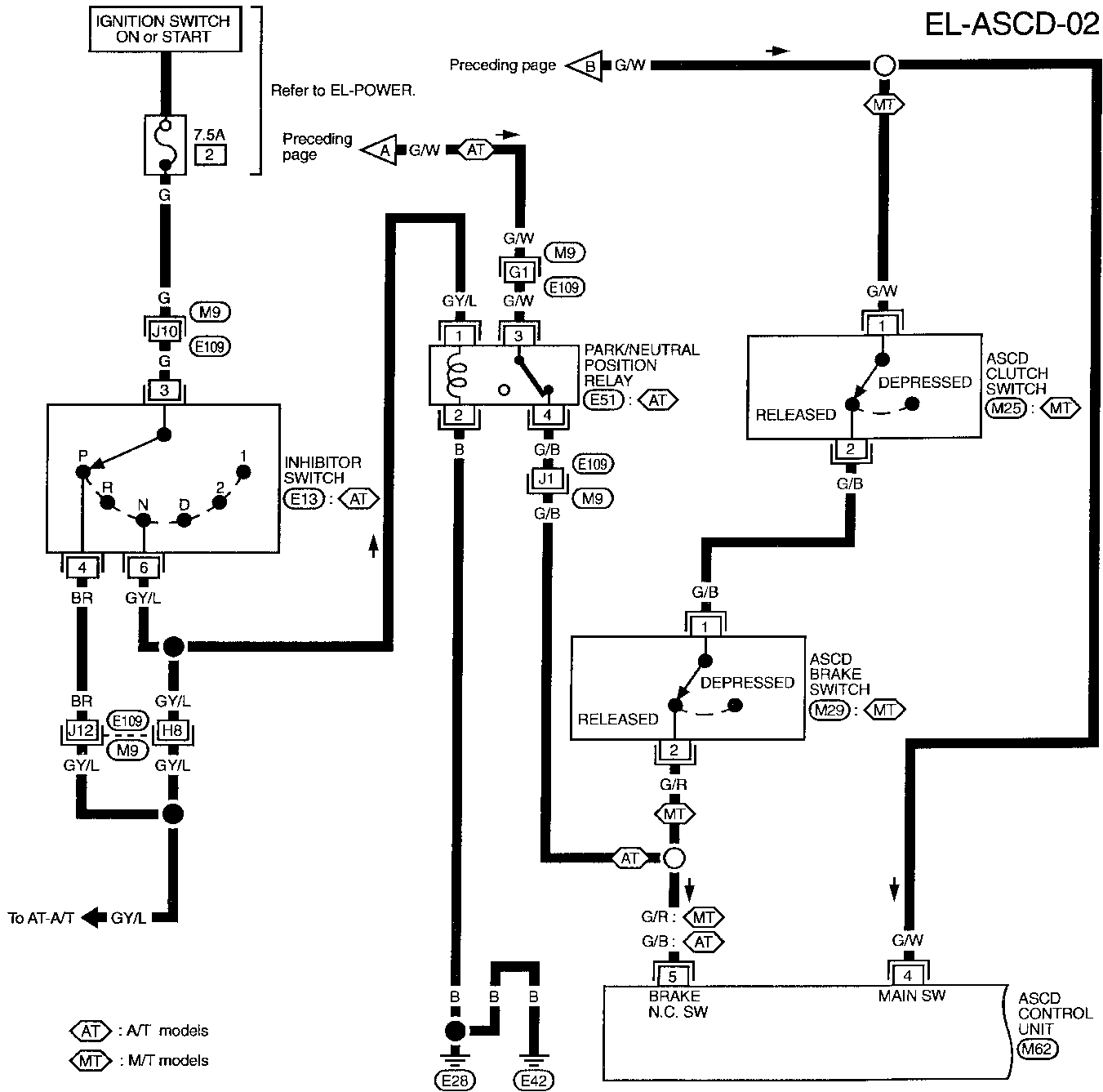
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-02

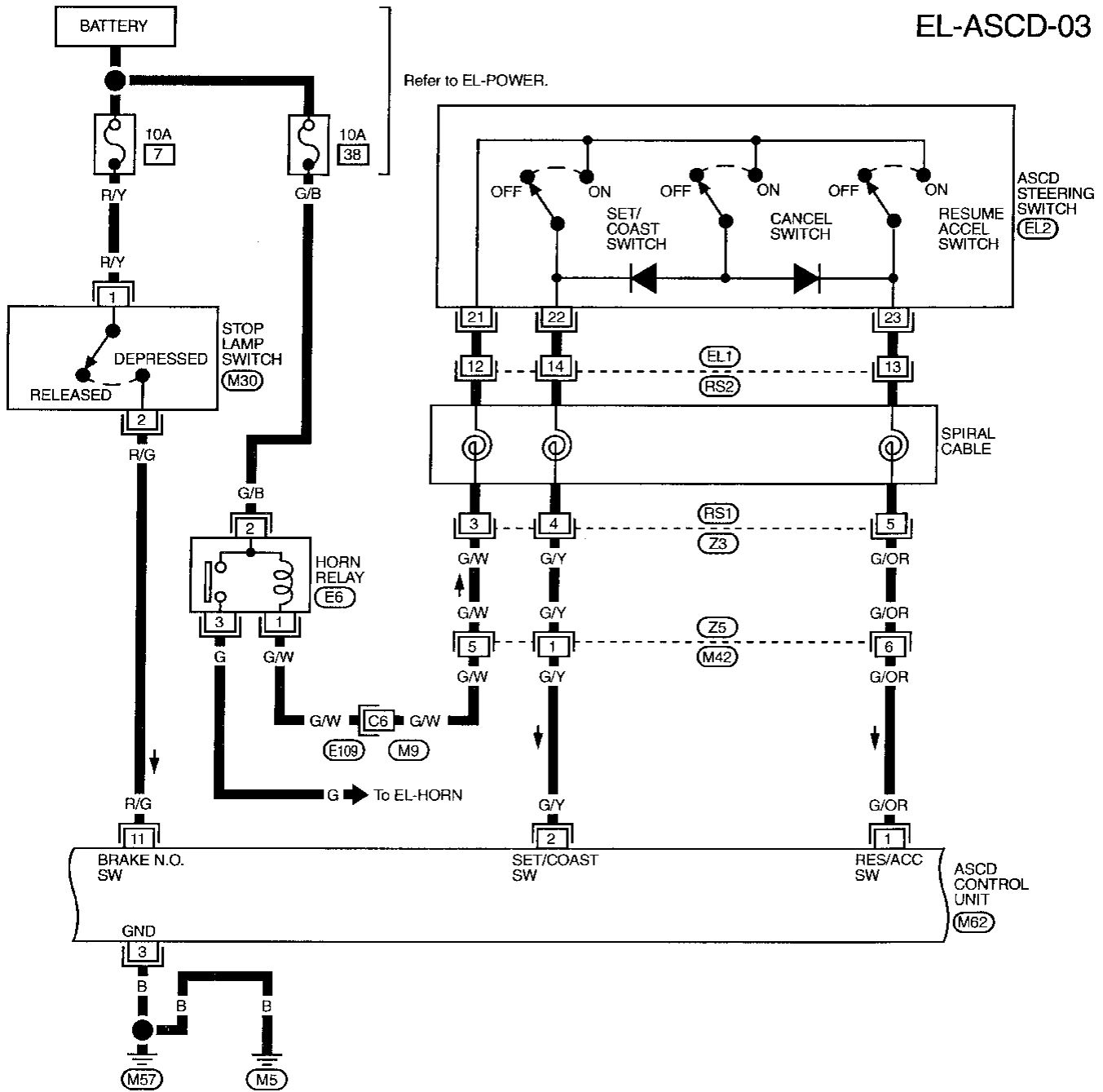


Refer to last page (Foldout page).
M9 , E109

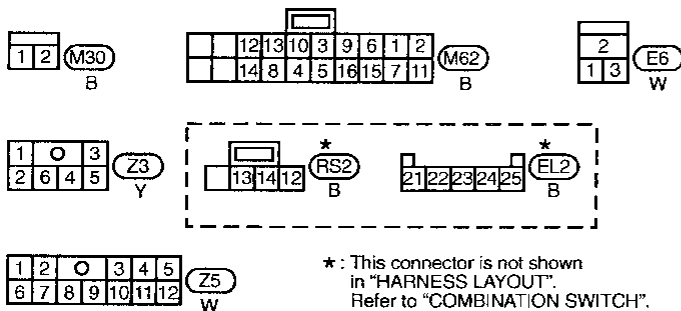
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03



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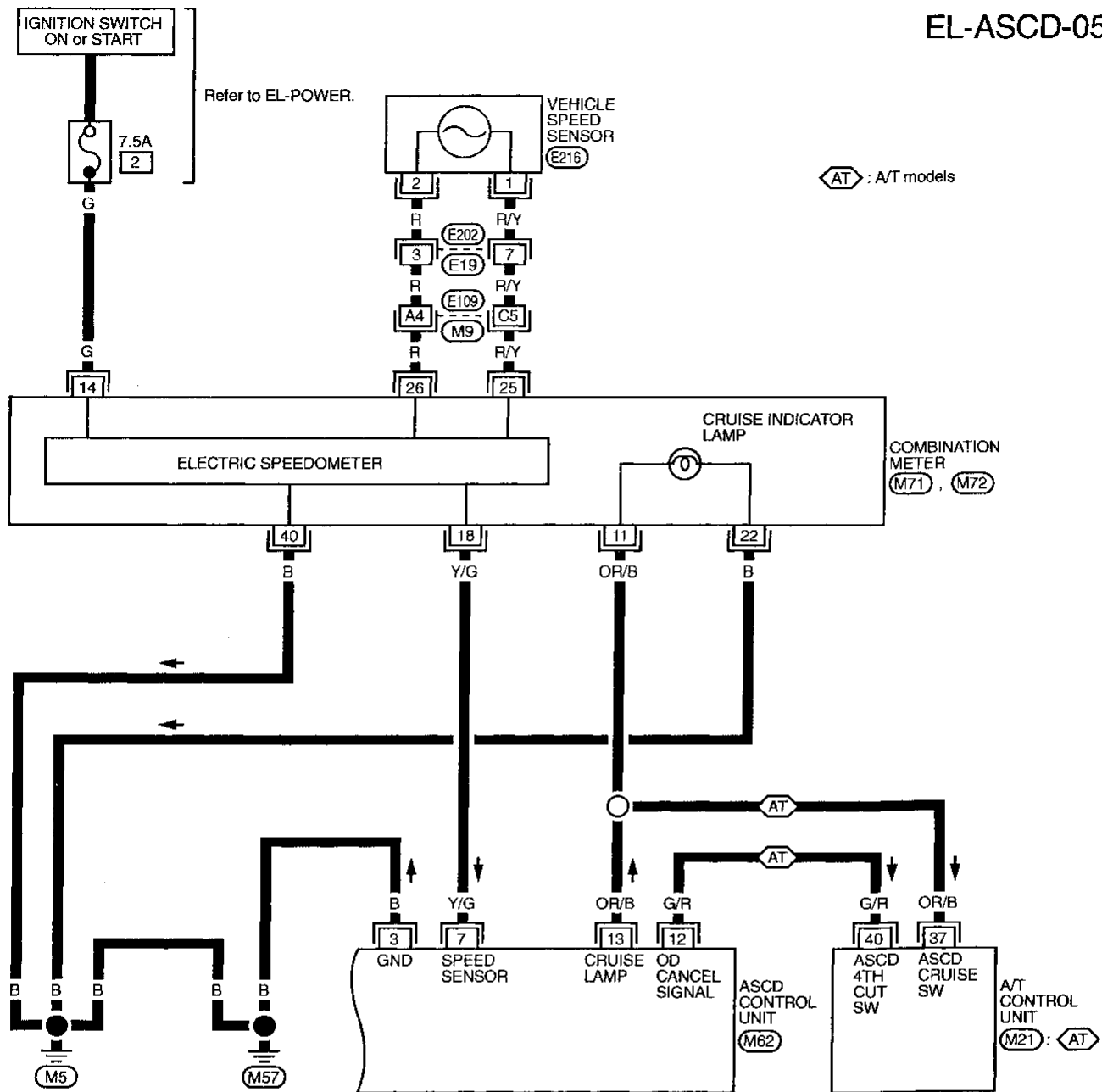
EL

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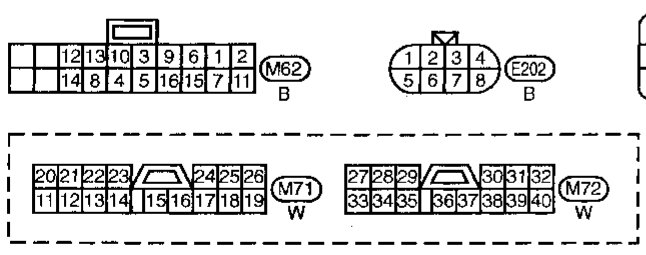
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05

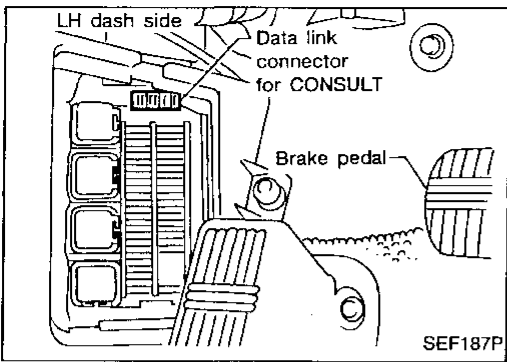


GI
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Refer to last page (Foldout page).
M9, E109
M21

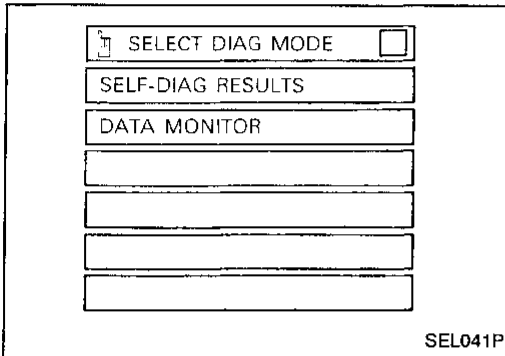
AUTOMATIC SPEED CONTROL DEVICE (ASCD)



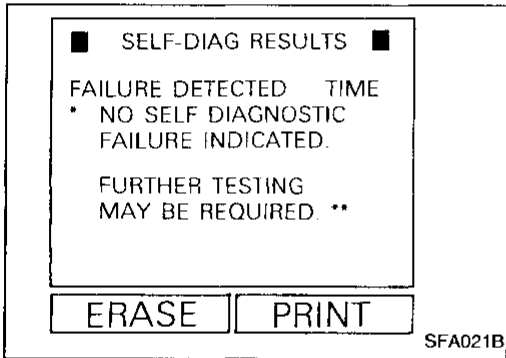
Trouble Diagnoses

CONSULT

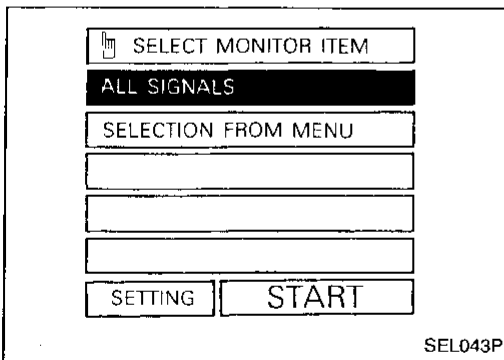
1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector for CONSULT.



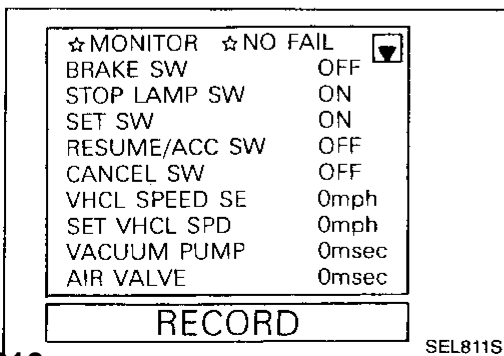
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



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



8. Touch DATA MONITOR.



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

For further information, read the CONSULT Operation Manual.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

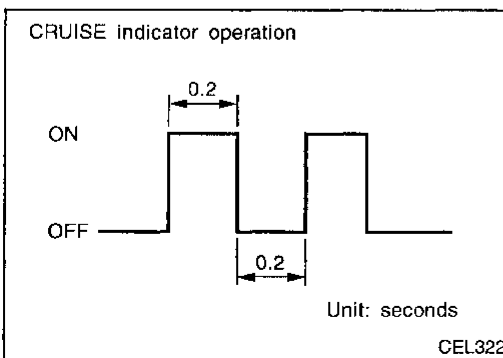
Trouble Diagnoses (Cont'd)

Self-diagnostic results

Diagnostic item	Description	Repair/Check order
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	<ul style="list-style-type: none"> Even if no self diagnostic failure is indicated, further testing may be required as far as the customer complains. 	—
POWER SUPPLY-VALVE	<ul style="list-style-type: none"> The power supply circuit for the pump is open. (An abnormally high voltage is entered.) 	Diagnostic procedure 7 (EL-149)
VACUUM PUMP	<ul style="list-style-type: none"> The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.) 	Diagnostic procedure 7 (EL-149)
AIR VALVE	<ul style="list-style-type: none"> The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.) 	Diagnostic procedure 7 (EL-149)
RELEASE VALVE	<ul style="list-style-type: none"> The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.) 	Diagnostic procedure 7 (EL-149)
VHCL SP-S/FAILSAFE	<ul style="list-style-type: none"> The vehicle speed sensor or the fail-safe circuit is malfunctioning. 	Diagnostic procedure 6 (EL-148)
CONTROL UNIT	<ul style="list-style-type: none"> The ASCD control unit is malfunctioning. 	Replace ASCD control unit.
BRAKE SW/STOP/L SW	<ul style="list-style-type: none"> The brake switch or stop lamp switch is malfunctioning. 	Diagnostic procedure 4 (EL-146)

Data monitor

Monitored item	Description
BRAKE SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the brake switch circuit.
STOP LAMP SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the set switch circuit.
RESUME/ACC SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the resume/accelerate switch circuit.
CANCEL SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the cancel circuit.
VHCL SPEED SE	<ul style="list-style-type: none"> The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	<ul style="list-style-type: none"> The preset vehicle speed is displayed.
VACUUM PUMP	<ul style="list-style-type: none"> The operation time of the vacuum pump is displayed.
AIR VALVE	<ul style="list-style-type: none"> The operation time of the air valve is displayed.
PW SUP-VALVE	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the cruise lamp circuit.
A/T-OD CANCEL	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the OD cancel circuit.
FAIL SAFE-LOW	<ul style="list-style-type: none"> The fail-safe (LOW) circuit function is displayed.
FAIL SAFE-SPD	<ul style="list-style-type: none"> The fail-safe (SPEED) circuit function is displayed.



FAIL-SAFE SYSTEM

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

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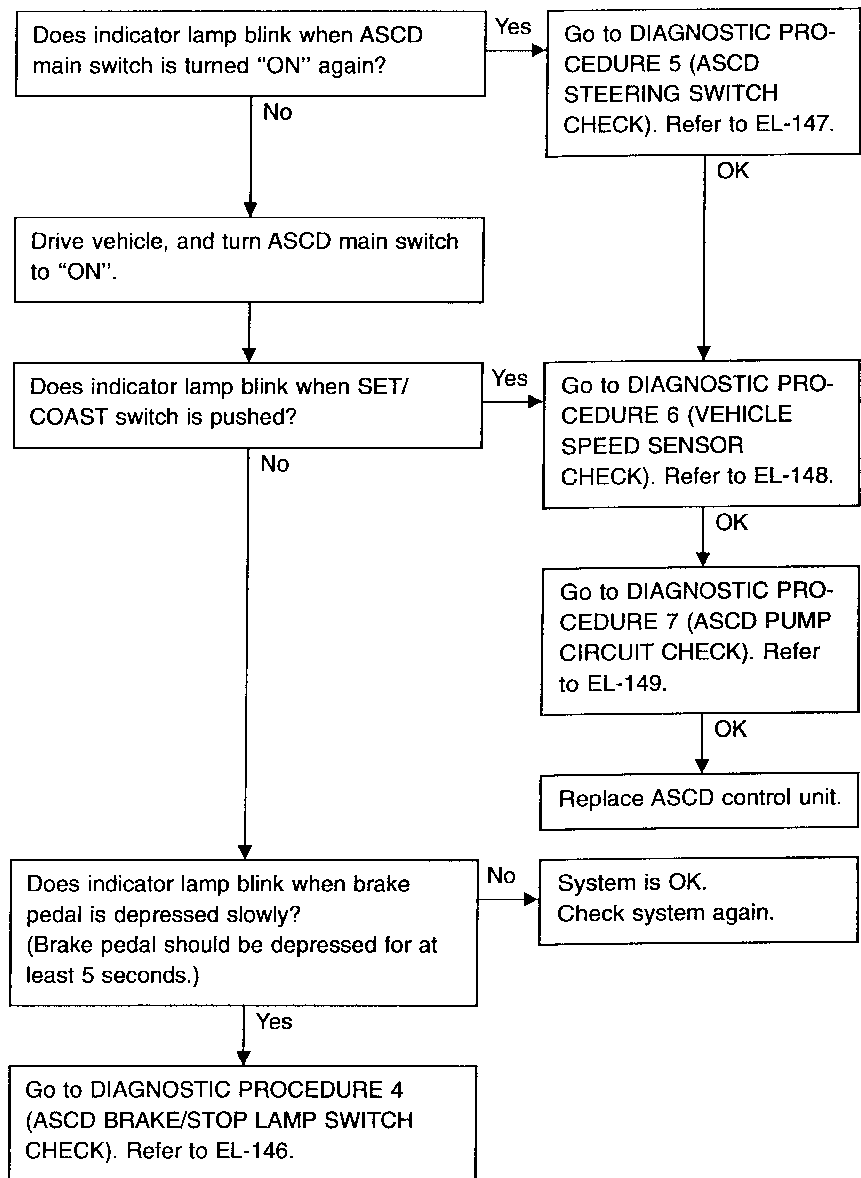
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

Malfunction detection conditions

Detection conditions	ASCD operation during malfunction detection
<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● ASCD is deactivated. ● Vehicle speed memory is canceled.
<ul style="list-style-type: none"> ● ASCD brake switch or stop lamp switch is faulty. 	<ul style="list-style-type: none"> ● ASCD is deactivated. ● Vehicle speed memory is not canceled.

Fail-safe system check



AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	—		Diagnostic procedure							
REFERENCE PAGE	EL-141	EL-142	EL-144	EL-144	EL-145	EL-146	EL-147	EL-148	EL-149	EL-150
SYMPTOM	Self-diagnosis in CONSULT	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)	X		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" indicator lamp blinks.★1)	X	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.	X						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2	X						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.	X						X			X
System is not released after CANCEL switch (steering) has been pressed.	X						X			X
Large difference between set speed and actual vehicle speed.	X									X
Deceleration is greatest immediately after ASCD has been set.	X									X

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

★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.

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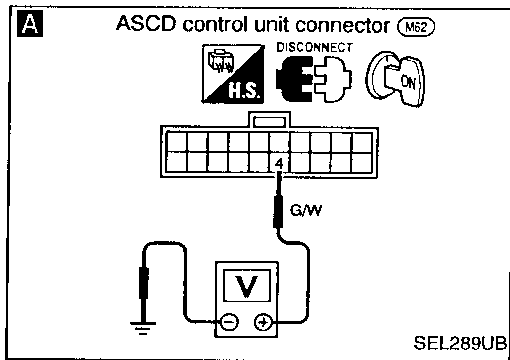
IDX

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

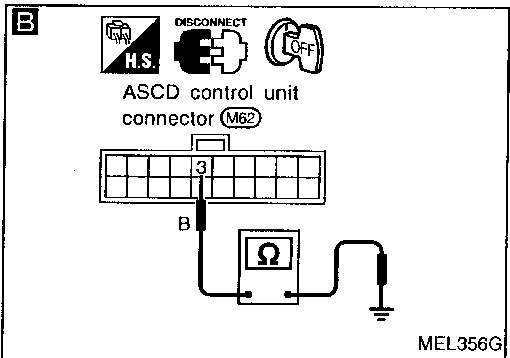
(POWER SUPPLY AND GROUND CIRCUIT CHECK)



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). Refer to EL-144.

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 body ground.
- Battery voltage should exist.**
Refer to wiring diagram in EL-136.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-145.

OK →

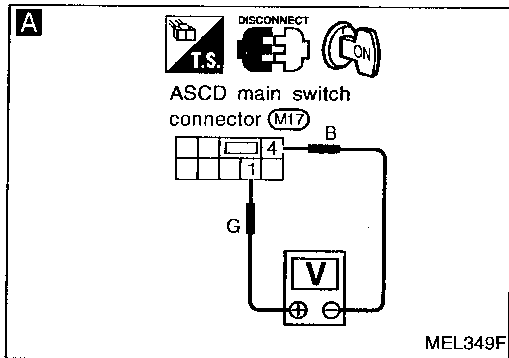
- #### B CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.
- Check continuity between ASCD control unit harness terminal ③ and body ground.
- Refer to wiring diagram in EL-137.

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-135.

NG → Check the following.

- 7.5A fuse (No. 1, 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-151).

NG → Replace ASCD main switch.

OK →

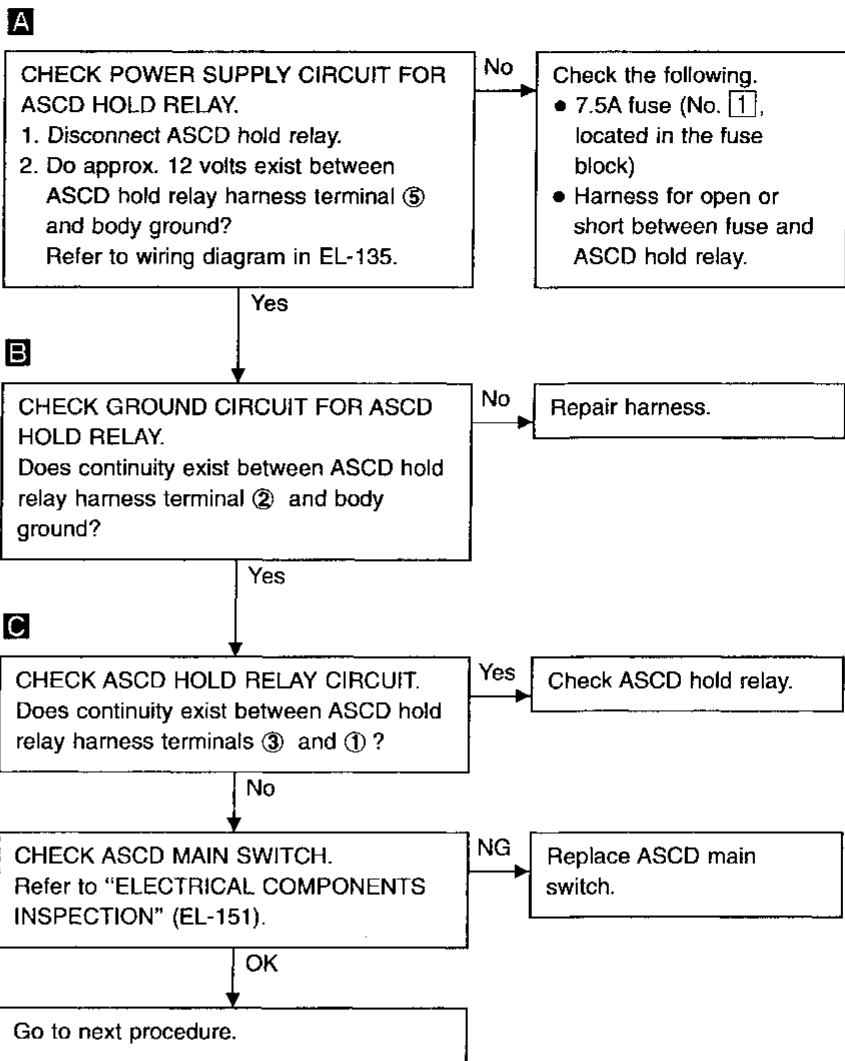
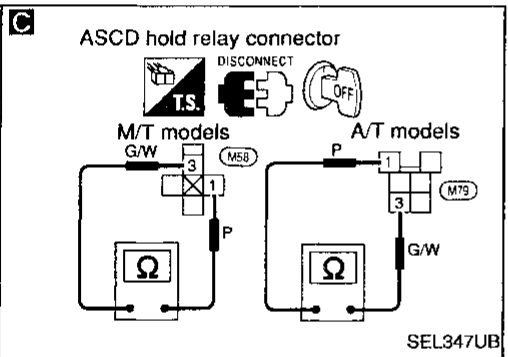
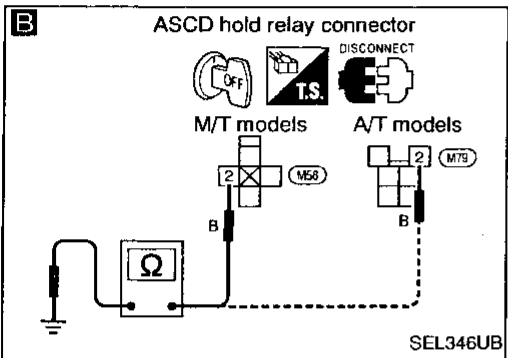
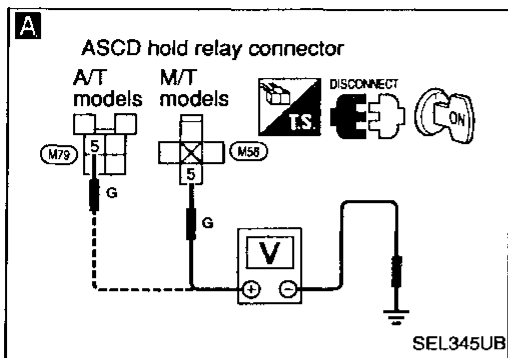
Go to next procedure.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CIRCUIT CHECK)



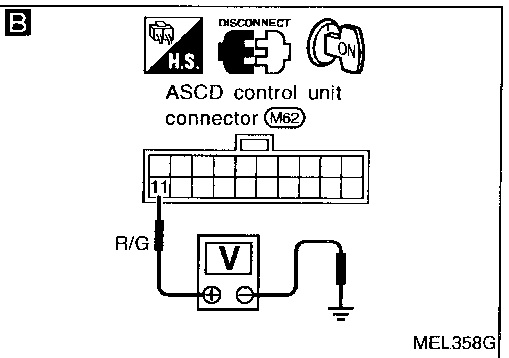
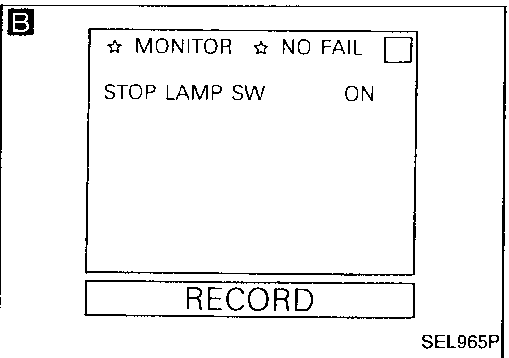
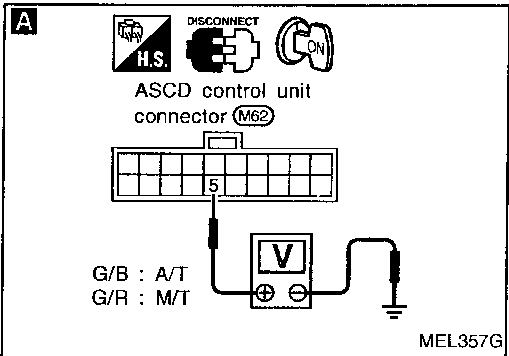
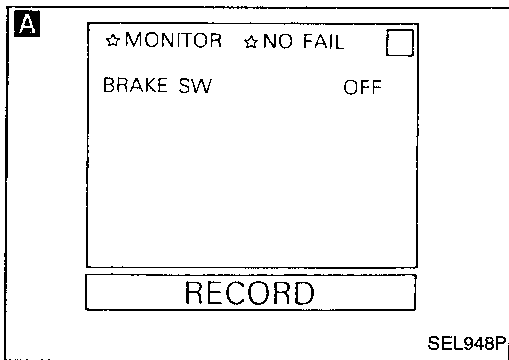
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(ASCD BRAKE/STOP LAMP SWITCH CHECK)



A

CHECK BRAKE/STOP LAMP CIRCUIT FOR ASCD CONTROL UNIT.

See "BRAKE SW" in "Data monitor" mode.
When brake pedal or clutch pedal (M/T) is depressed or A/T shift lever (A/T) is in "N" or "P" range:
BRAKE SW OFF
When both brake pedal and clutch pedal (M/T) are released and A/T shift lever (A/T) is not in "N" or "P" range:
BRAKE SW ON

OR

1. Disconnect control unit connector.
2. Turn ignition switch ON.
3. Turn ASCD main switch "ON".
4. Measure voltage between control unit connector terminals ⑤ and ground. When brake pedal or clutch pedal (M/T) is depressed or A/T shift lever (A/T) is in "N" or "P" range:
Approx. 0V
When both brake pedal and clutch pedal (M/T) are released and A/T shift lever (A/T) is not in "N" or "P" range:
Battery voltage should exist.
Refer to wiring diagram in EL-136.

- CHECK THE FOLLOWING.**
- ASCD brake switch
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-152).
 - ASCD clutch switch (M/T model)
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-152).
 - Inhibitor switch (A/T model)
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-152).
 - ASCD hold relay (A/T model)
 - Harness for open or short

B

CHECK STOP LAMP SWITCH CIRCUIT.

See "STOP LAMP SW" in "Data monitor" mode.
STOP LAMP SW
When brake pedal is released:
OFF
When brake pedal is depressed:
ON

OR

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

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

Refer to wiring diagram in EL-137.

- CHECK THE FOLLOWING.**
- Harness for open or short between ASCD control unit and stop lamp switch.
 - Fuse
 - Stop lamp switch
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-152).

OK

ASCD brake switch is OK.

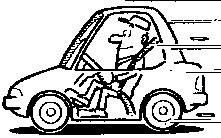
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)

A



☆ MONITOR ☆ NO FAIL


VHCL SPEED SE 45mph

RECORD


SEL084T

A

CHECK VEHICLE SPEED SENSOR CIRCUIT.




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

OR

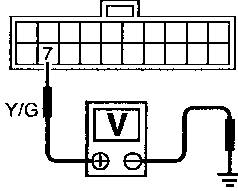
 1. Apply wheel chocks and jack up drive wheels.
 2. Disconnect control unit connector.
 3. Connect voltmeter between control unit harness terminal ⑦ and ground.
 4. Slowly turn drive wheels.
 5. Check deflection of voltmeter pointer.
 Refer to wiring diagram in EL-139.

OK → Vehicle speed sensor is OK.

A

ASCD control unit connector (M62)



MEL360G

NG

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-80.

Yes

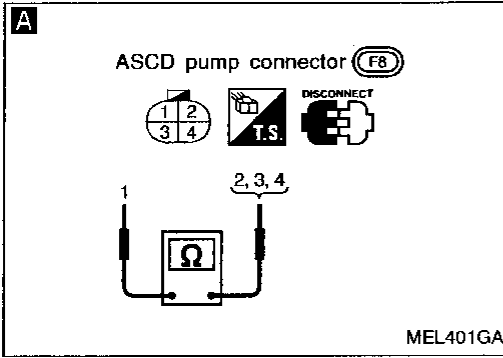
Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ⑱.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

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-138.

NG

Replace ASCD pump.

OK

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

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

CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑪	③

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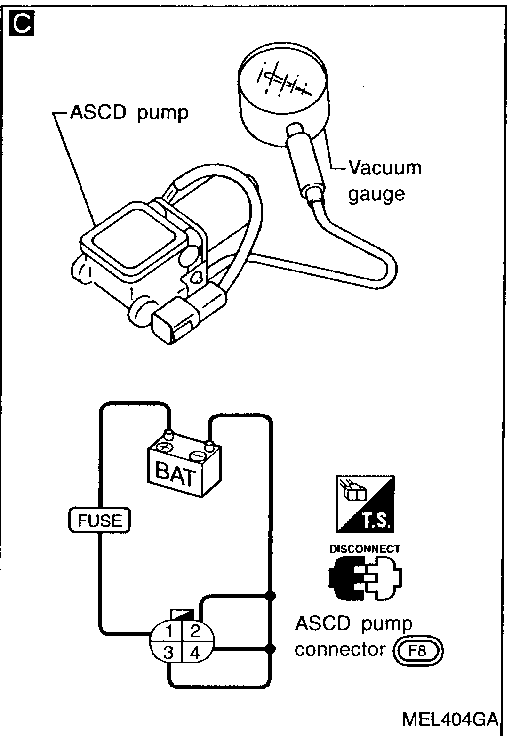
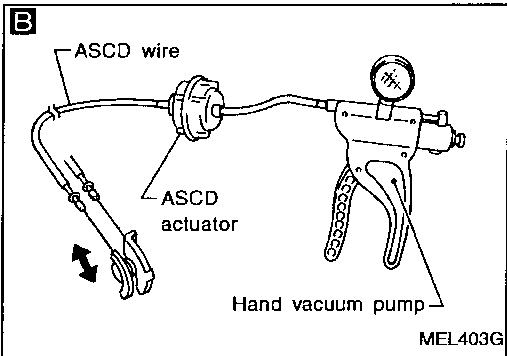
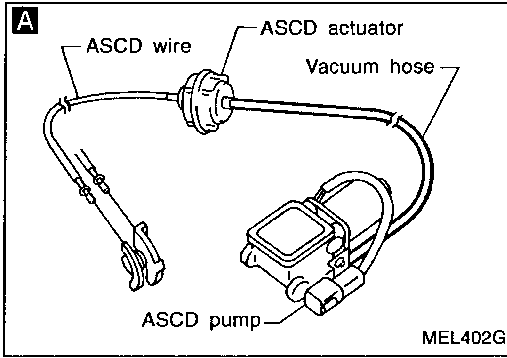
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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-151).

OK ↓

B

CHECK ASCD ACTUATOR.

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

ASCD wire should move to pull throttle drum.

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

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

NG → Replace ASCD actuator.

OK ↓

C

CHECK ASCD PUMP.

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

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

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

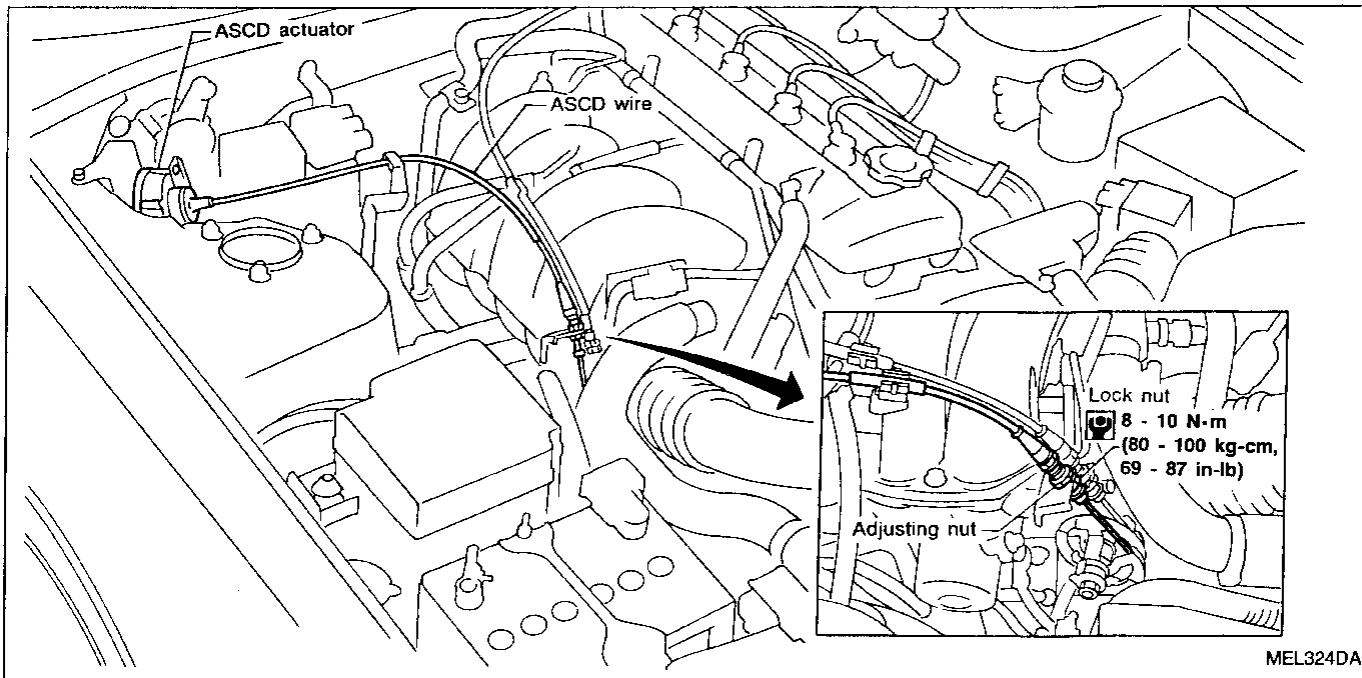
OK ↓

INSPECTION END

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD WIRE ADJUSTMENT

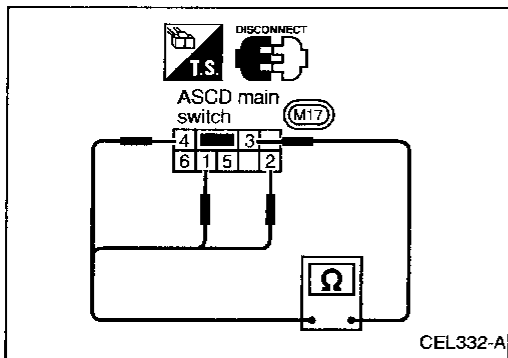


CAUTION:

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

Adjust the tension of ASCD wire in the following manner.

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



ELECTRICAL COMPONENTS INSPECTION

ASC 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						

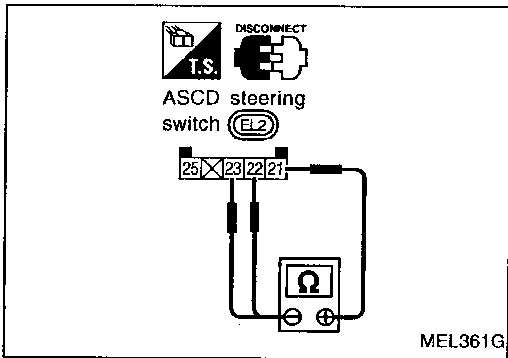
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

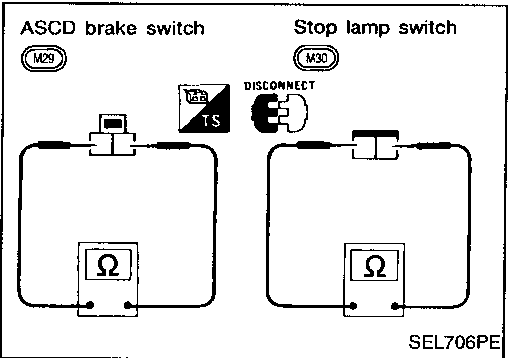
Trouble Diagnoses (Cont'd)

ASCD steering switch

Check continuity between terminals by pushing each button.



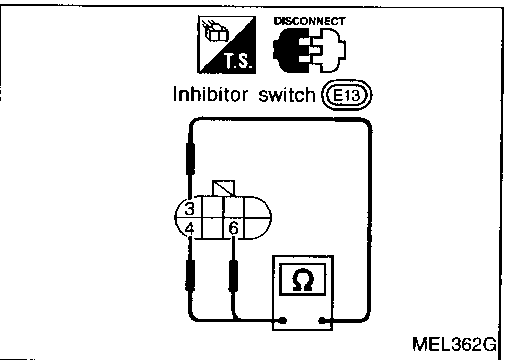
Button	Terminal		
	①	③	②
SET/COAST	○	○	○
RESUME/ACCEL	○	○	○
CANCEL	○	→	○
	○	→	○



ASCD brake switch and stop lamp switch

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

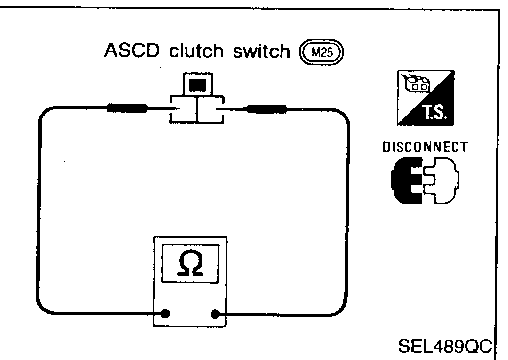
Check each switch after adjusting brake pedal — refer to BR section.



Inhibitor switch

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

Shift lever position	Terminal		
	③	④	⑥
"N"	○	○	○
"P"	○	○	○
Others	○	○	○



Clutch switch (For M/T models)

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

POWER WINDOW

System Description

Power is supplied at all times

- from 25A fusible link (Letter **i**, 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. **1**, located in the fuse block)
- to power window relay terminal **①**.

Ground is supplied

- to power window relay terminal **②**
- through body grounds **(M5)** and **(M57)**.

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 **④**.

MANUAL OPERATION

Door LH

Ground is supplied

- to power window main switch terminal **②**
- through body grounds **(M5)** and **(M57)**.

WINDOW UP

When the LH switch in the power window main switch is pressed in the up position, power is supplied

- to power window regulator LH terminal **①**
- through power window main switch terminal **③**.

Ground is supplied

- to power window regulator LH terminal **②**
- through power window main switch terminal **④**.

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 power window regulator LH terminal **②**
- through power window main switch terminal **④**.

Ground is supplied

- to power window regulator LH terminal **①**
- through power window main switch terminal **③**.

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

Door RH

Ground is supplied

- to power window main switch terminal **②**
- through body grounds **(M5)** and **(M57)**.

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POWER WINDOW

System Description (Cont'd)

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 power window sub-switch (⑤ , ①).

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

Sub-switch operation

Power is supplied

- through power window sub-switch (② , ③)
- to power window regulator RH (① , ②).

Ground is supplied

- to power window regulator RH (② , ①)
- through power window sub-switch (③ , ②)
- to power window sub-switch (⑤ , ①)
- through power window main switch (⑥ , ⑤).

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

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

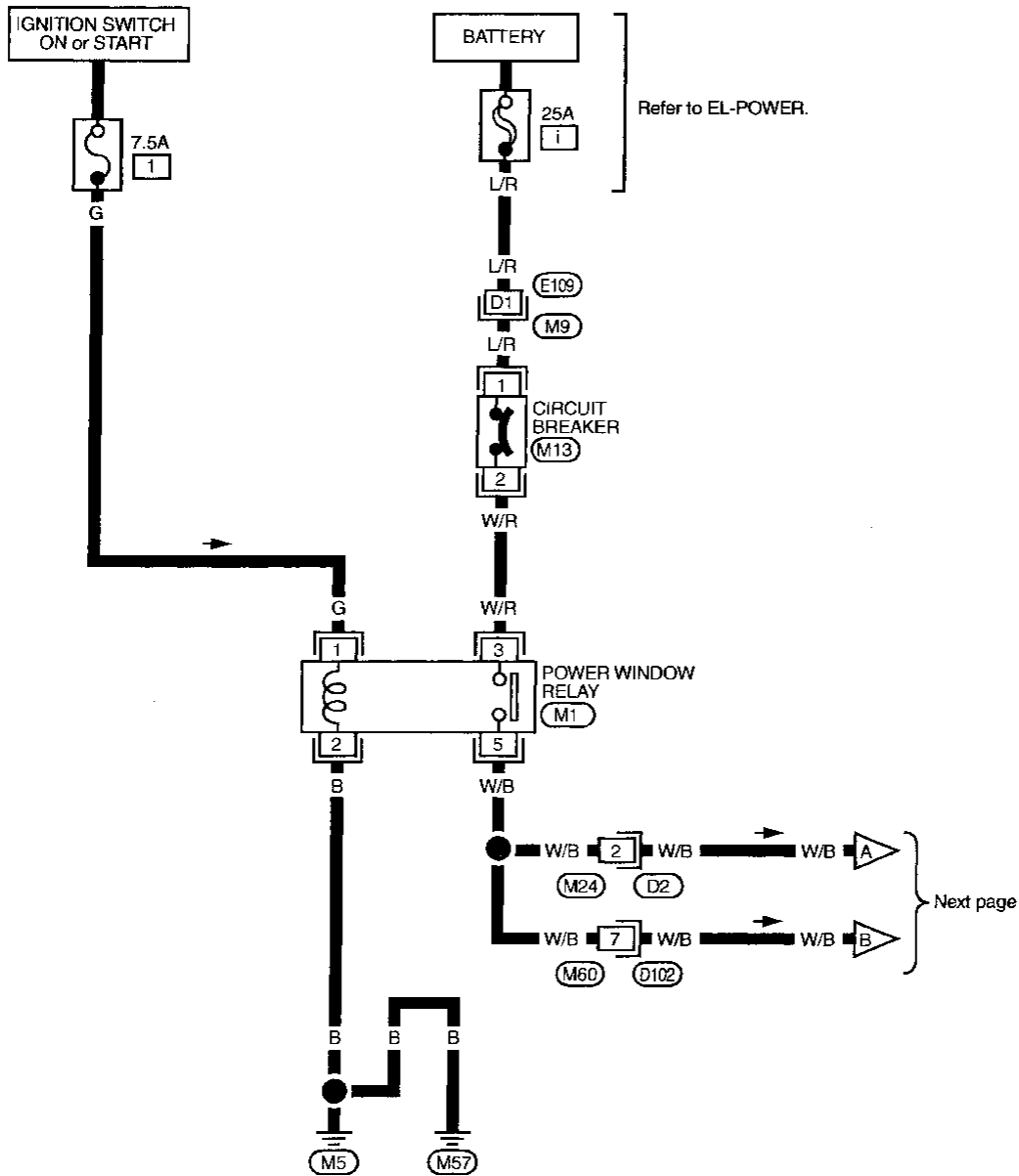
The power window lock is designed to lock window operation to door RH window.

When the lock switch is pressed to lock position, ground of the RH switch in the power window main switch is disconnected. This prevents the power window motors from operating.

POWER WINDOW

Wiring Diagram — WINDOW —

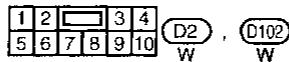
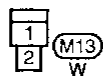
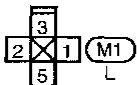
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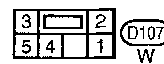
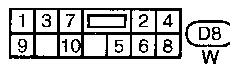
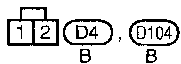
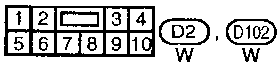
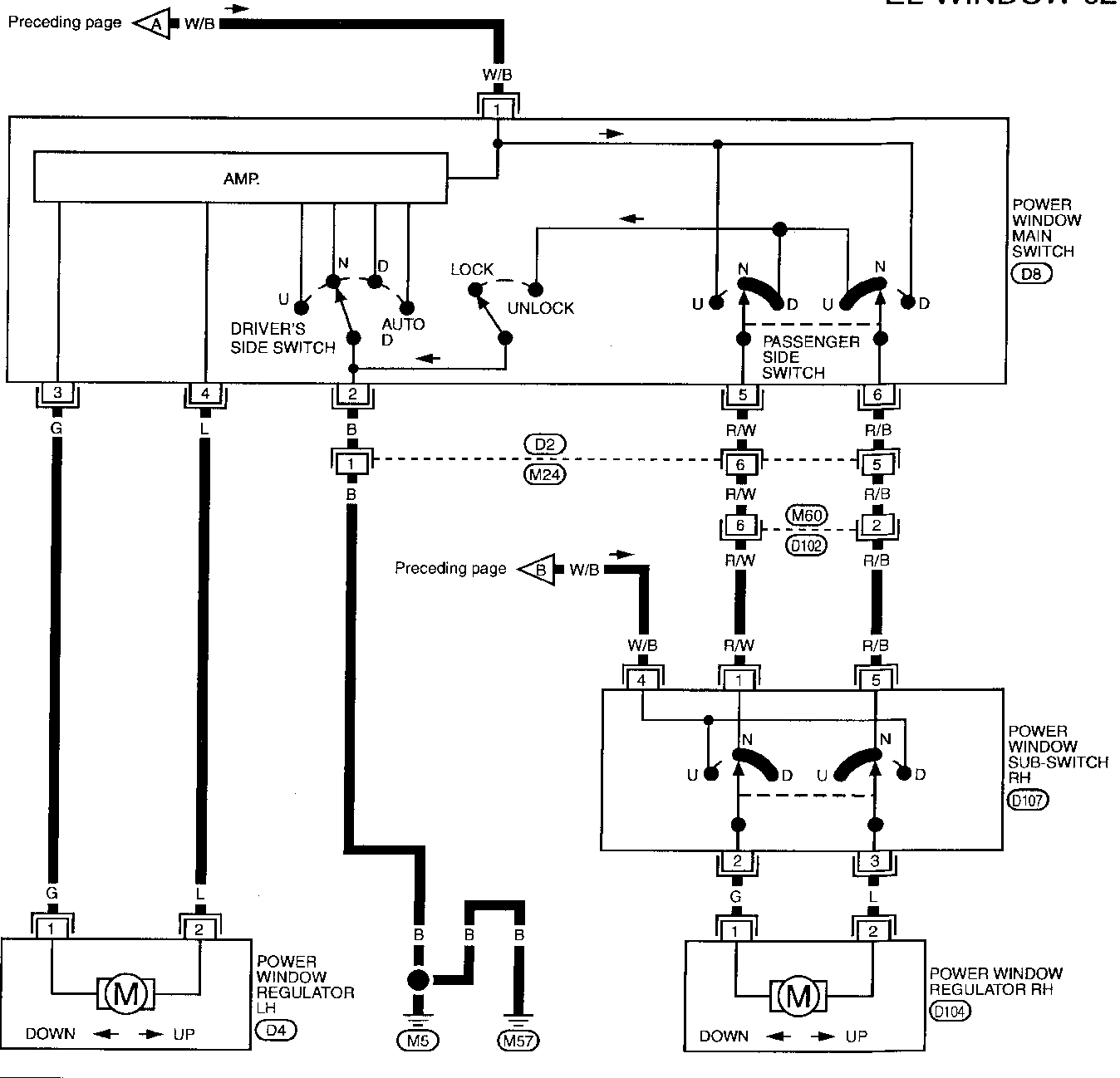
M9 , E109



POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02



POWER WINDOW

Trouble Diagnoses

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	<ol style="list-style-type: none"> 7.5A fuse, 25A fusible link and (M13) circuit breaker Grounds (M5) and (M57) Power window relay Open/short in power window main switch circuit 	<ol style="list-style-type: none"> Check 7.5A fuse (No. 1, located in fuse block), 25A fusible link (letter I, located in fuse and fusible link box) and (M13) circuit breaker. Turn ignition switch "ON" and verify battery positive voltage is present at terminal ① of power window main switch and terminal ④ of sub-switch. Check grounds (M5) and (M57). Check power window relay. Check W/B wire between power window relay and power window main switch for open/short circuit.
Driver's side power window cannot be operated but other windows can be operated.	<ol style="list-style-type: none"> Driver's side power window regulator circuit Driver's side power window regulator 	<ol style="list-style-type: none"> Check driver's side power window regulator circuit Check driver's side power window regulator
Passenger power window cannot be operated.	<ol style="list-style-type: none"> Power window sub-switches Passenger side power window regulators Power window main switch Power window circuit 	<ol style="list-style-type: none"> Check power window sub-switch Check passenger's side power window regulator Check power window main switch 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.	<ol style="list-style-type: none"> Power window main switch 	<ol style="list-style-type: none"> Check power window main switch.
Driver's side power window auto function cannot be operated using power window main switch.	<ol style="list-style-type: none"> Power window main switch 	<ol style="list-style-type: none"> Check power window main switch.

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POWER DOOR LOCK

System Description

Power is supplied at all times

- through 25A fusible link (No. □□, 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 (M5) and (M57).

INPUT

When the door lock & unlock switch LH is in LOCKED position, ground signal is supplied

- to smart entrance control unit terminal ⑩
- through door lock & unlock switch LH terminal ⑦
- to door lock & unlock switch LH terminal ②
- through body grounds (M5) and (M57).

When the door lock & unlock switch RH is in LOCKED position, ground signal is supplied

- to smart entrance control unit terminal ⑩
- through door lock & unlock switch RH terminal ③
- to door lock & unlock switch RH terminal ②
- through body grounds (M5) and (M57).

When the door lock & unlock switch LH is in UNLOCKED position, ground signal is supplied

- to smart entrance control unit terminal ⑩
- through door lock & unlock switch LH terminal ⑧
- to door lock & unlock switch LH terminal ②
- through body grounds (M5) and (M57).

When the door lock & unlock switch RH is in UNLOCKED position, ground signal is supplied

- to smart entrance control unit terminal ⑩
- through door lock & unlock switch RH terminal ①
- to door lock & unlock switch RH terminal ②
- through body grounds (M5) and (M57).

OUTPUT

Unlock

Ground is supplied

- to door lock actuator LH terminal ③
- to door lock actuator RH terminal ③
- through smart entrance control unit terminal ④.

DOOR LH

Power is supplied

- to door lock actuator LH terminal ①
- through smart entrance control unit terminal ③.

DOOR RH

Power is supplied

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

Then, the door is unlocked.

Lock

Ground is supplied

- to door lock actuator LH terminal ①
- through smart entrance control unit terminal ③, and
- to door lock actuator RH terminal ①
- through smart entrance control unit terminal ②.

Power is supplied

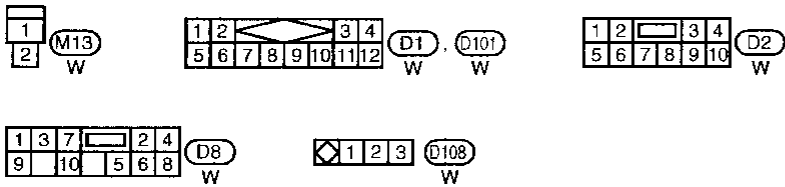
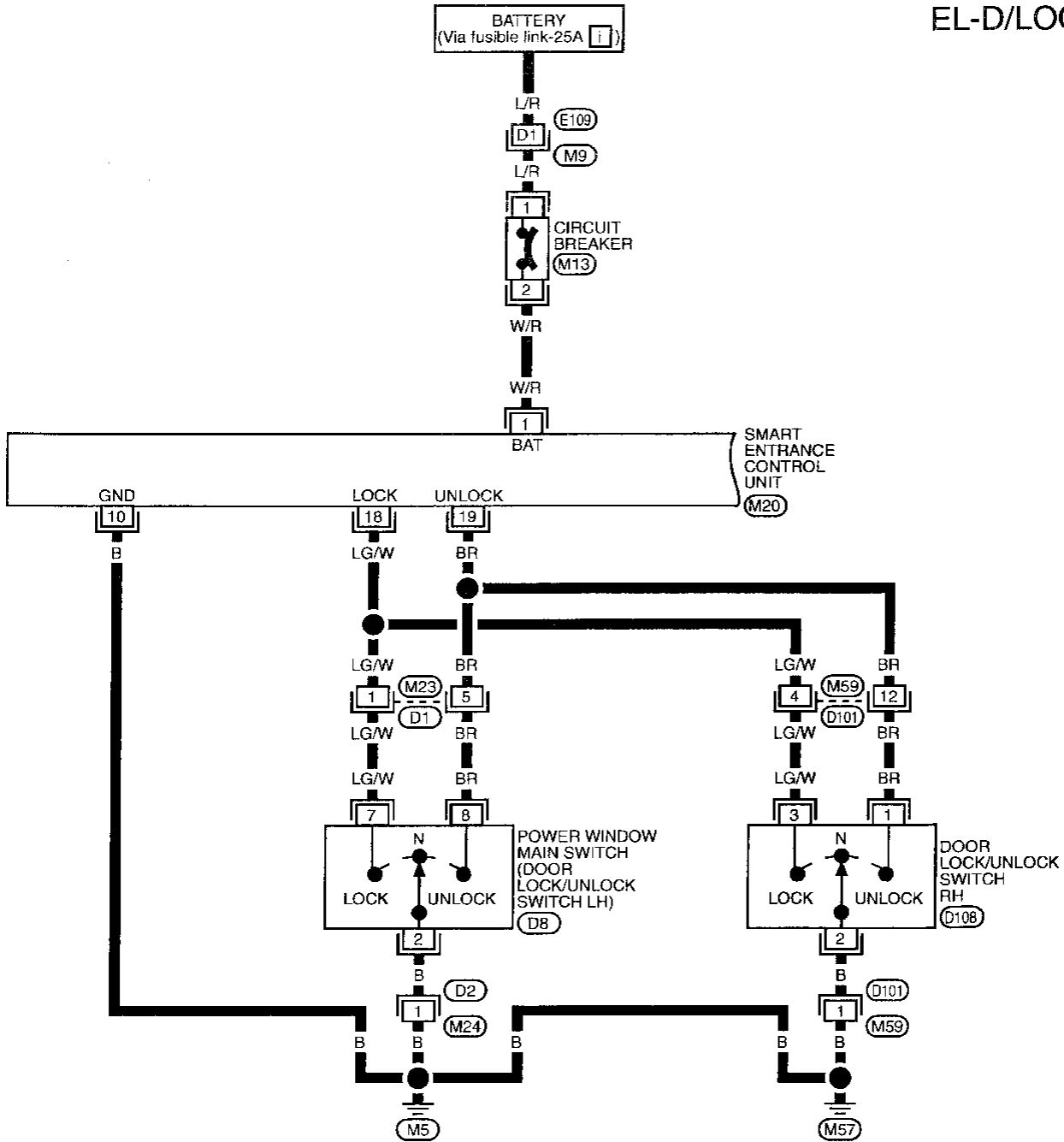
- to door lock actuator LH terminal ③,
- to door lock actuator RH terminal ③,
- through terminal ④.

Then, the door is locked.

POWER DOOR LOCK

Wiring Diagram — D/LOCK —

EL-D/LOCK-01



Refer to last page (Foldout page).

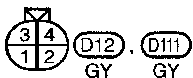
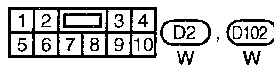
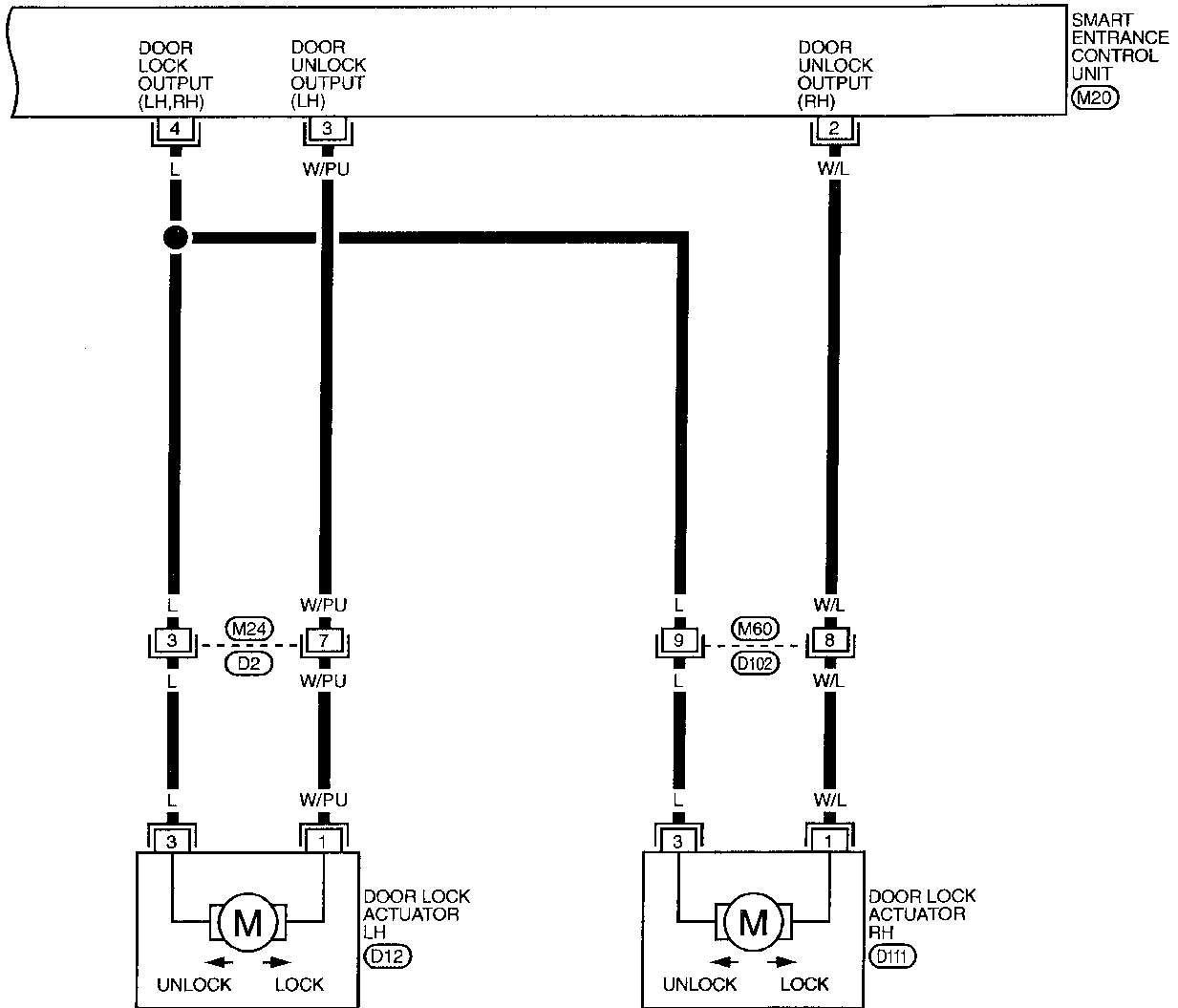
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POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02



Refer to last page (Foldout page).

(M20)

POWER DOOR LOCK

Trouble Diagnoses

SYMPTOM CHART

REFERENCE PAGE	EL-161	EL-162	EL-163
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	

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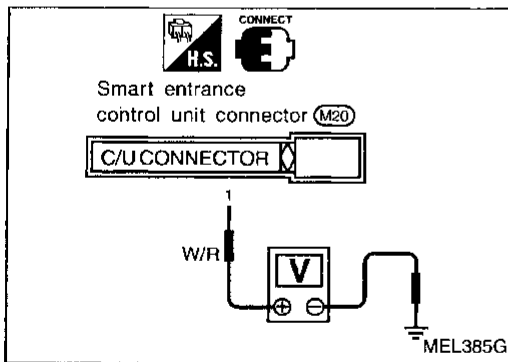
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BT

HA

EL

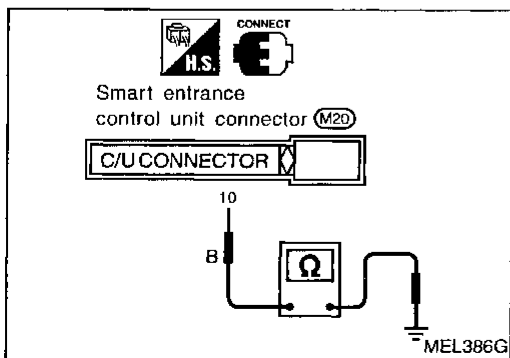
IDX



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

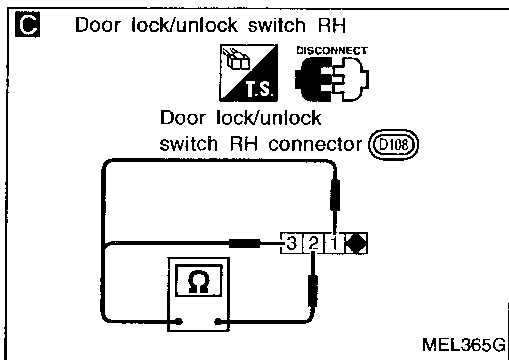
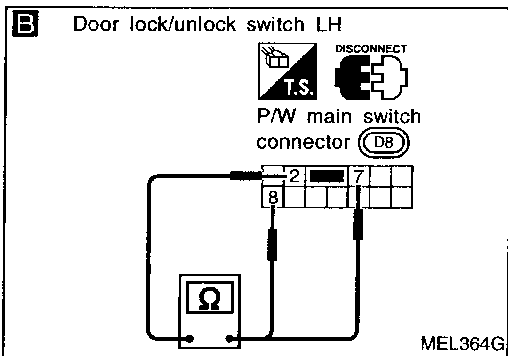
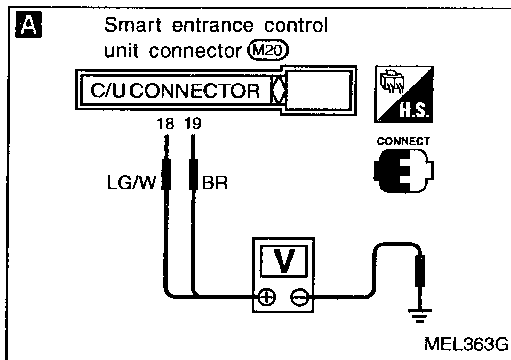
Terminals	Continuity
⑩ - Ground	Yes

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Door lock/unlock switch check)



A

CHECK SIGNAL OF DOOR LOCK/UNLOCK SWITCH.

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) operation	Continuity
⑲ - Ground	Lock	Yes
	N and Unlock	No
⑱ - Ground	Unlock	Yes
	N and Lock	No

Refer to wiring diagram in EL-159.

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 terminal.

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

Condition	Terminals		
	2	7	8
Lock	○—○	○	○
N	No continuity		
Unlock	○	○	○—○

C Door lock/unlock switch RH

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

OK

NG

Replace door lock/unlock switch.

Check the following.

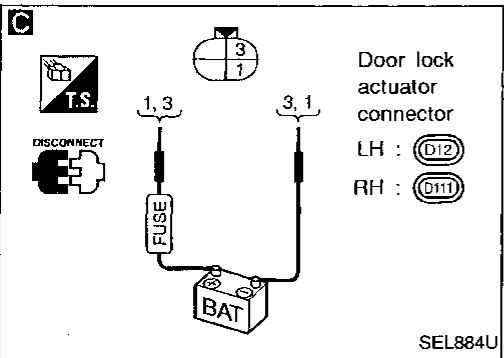
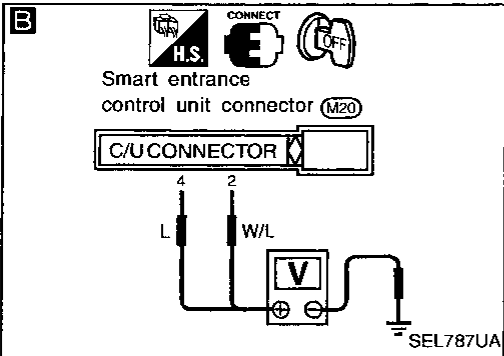
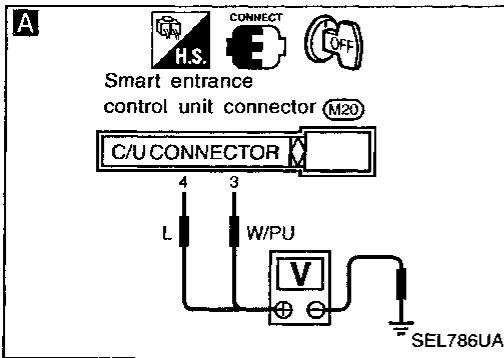
- Ground circuit for door lock/unlock switch
- Harness for open or short between door lock/unlock switch and control unit connector

POWER DOOR LOCK

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 LH

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

B Door lock actuator RH

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

Refer to wiring diagram in EL-160.

NG

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

GI

MA

EM

LC

EC

FE

CL

OK

C

CHECK DOOR LOCK ACTUATOR.

1. Disconnect door lock actuator connector.

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

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

NG

Replace door lock actuator.

MT

AT

PD

FA

RA

OK

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

BR

ST

RS

BT

HA

EL

IDX

System Description

Power is supplied at all times

- to smart entrance control unit terminal ①
- through 25A fusible link (letter **i**), located in the fuse and fusible link box).

Power is supplied at all times

- to interior lamp terminal ① and
- to key switch terminal ①
- through 10A fuse (No. **6**), located in the fuse block).

Power is supplied at all times

- to multi-remote control relays-1 and 2 terminal ①
- through 10A fuse (No. **5**), located in the fuse block).

Terminal ⑩ of the smart entrance control unit is grounded through body grounds **M5** and **M57**.

INPUTS

When the key switch is ON (key is inserted in ignition key cylinder), power is supplied

- through key switch terminal ②
- to smart entrance control unit terminal ⑭.

When the door switch LH is OPEN, ground is supplied

- to smart entrance control unit terminal ⑮
- through door switch LH terminal ①
- to door switch LH terminal ③
- through body grounds **B4**, **B13** and **T16**.

When the door switch RH is OPEN, ground is supplied

- to smart entrance control unit terminal ⑯
- through door switch RH body ground.

When the 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 **M5** and **M57**.

When the door lock actuator RH (door unlock sensor) is UNLOCKED, ground is supplied

- to smart entrance control unit terminal ⑬
- through door lock actuator RH (door unlock sensor) terminal ④
- to door lock actuator RH (door unlock sensor) terminal ②
- through body grounds **M5** and **M57**.

Remote controller signal input

- through window antenna
- to smart entrance control unit terminal ⑳.

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 key is not inserted in ignition 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-158).

MULTI-REMOTE CONTROL SYSTEM

System Description (Cont'd)

Interior lamp operation

When the following input signals are both supplied:

- key switch OFF (when key is not inserted in ignition 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.

GI

For detailed description, refer to "Interior, Spot and Trunk Room Lamps" (EL-71).

MA

Panic alarm operation

When key switch is OFF (when key is not inserted in ignition key cylinder), multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.

EM

For detailed description, refer to "THEFT WARNING SYSTEM" (EL-179).

LC

Hazard lamp operation

When the following input signals are all supplied:

- key switch OFF (when key is not inserted in ignition 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:

EC

- to multi-remote control relays-1 and 2 terminal ② ;

FE

- through smart entrance control unit terminal ⑦ .

CL

As a result, multi-remote control relay-1 is energized, and hazard warning lamps flash on and off.

For detailed description, refer to "Turn Signal and Hazard Warning Lamps" (EL-58).

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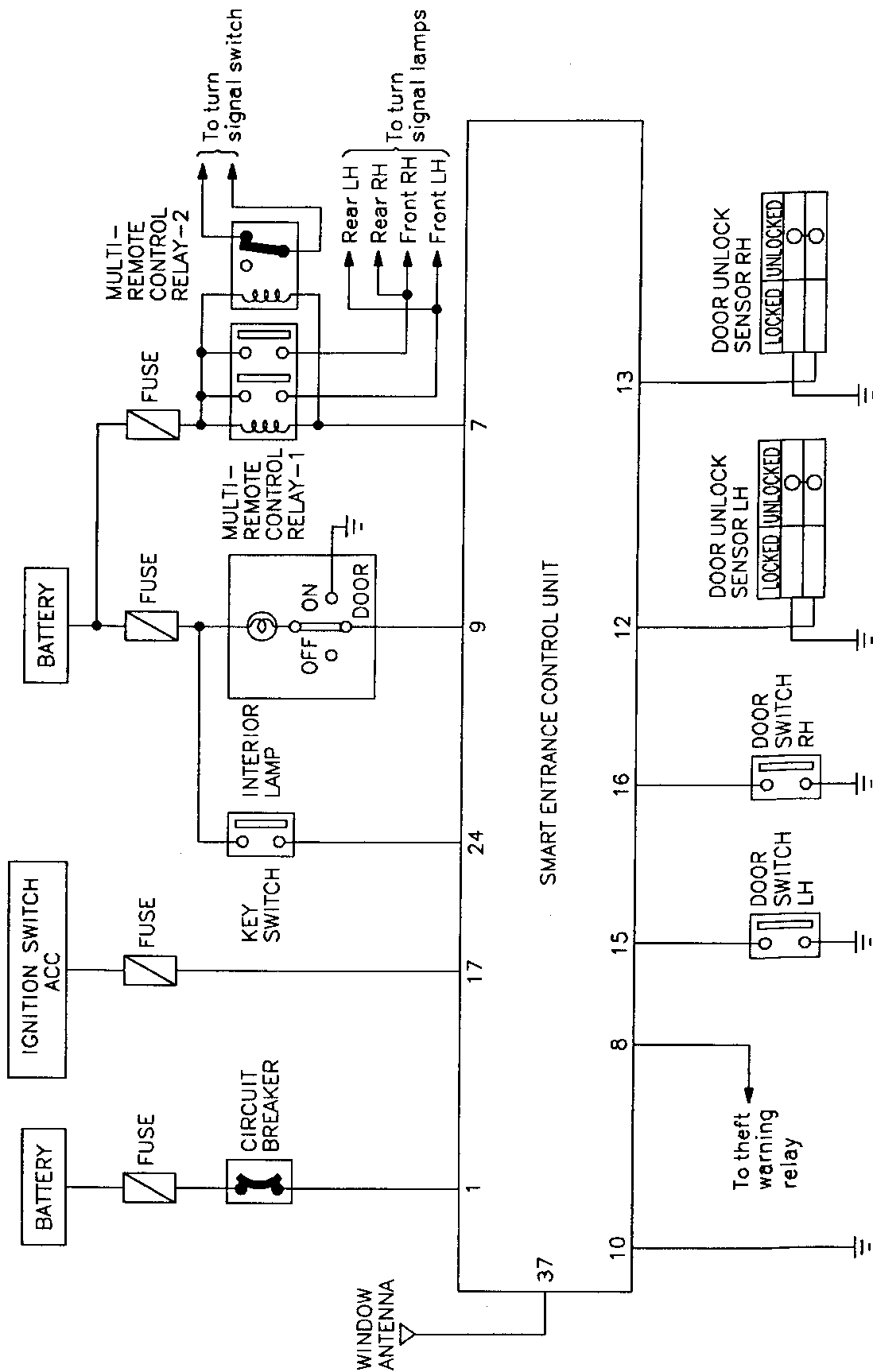
HA

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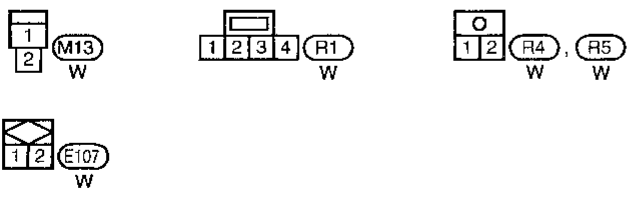
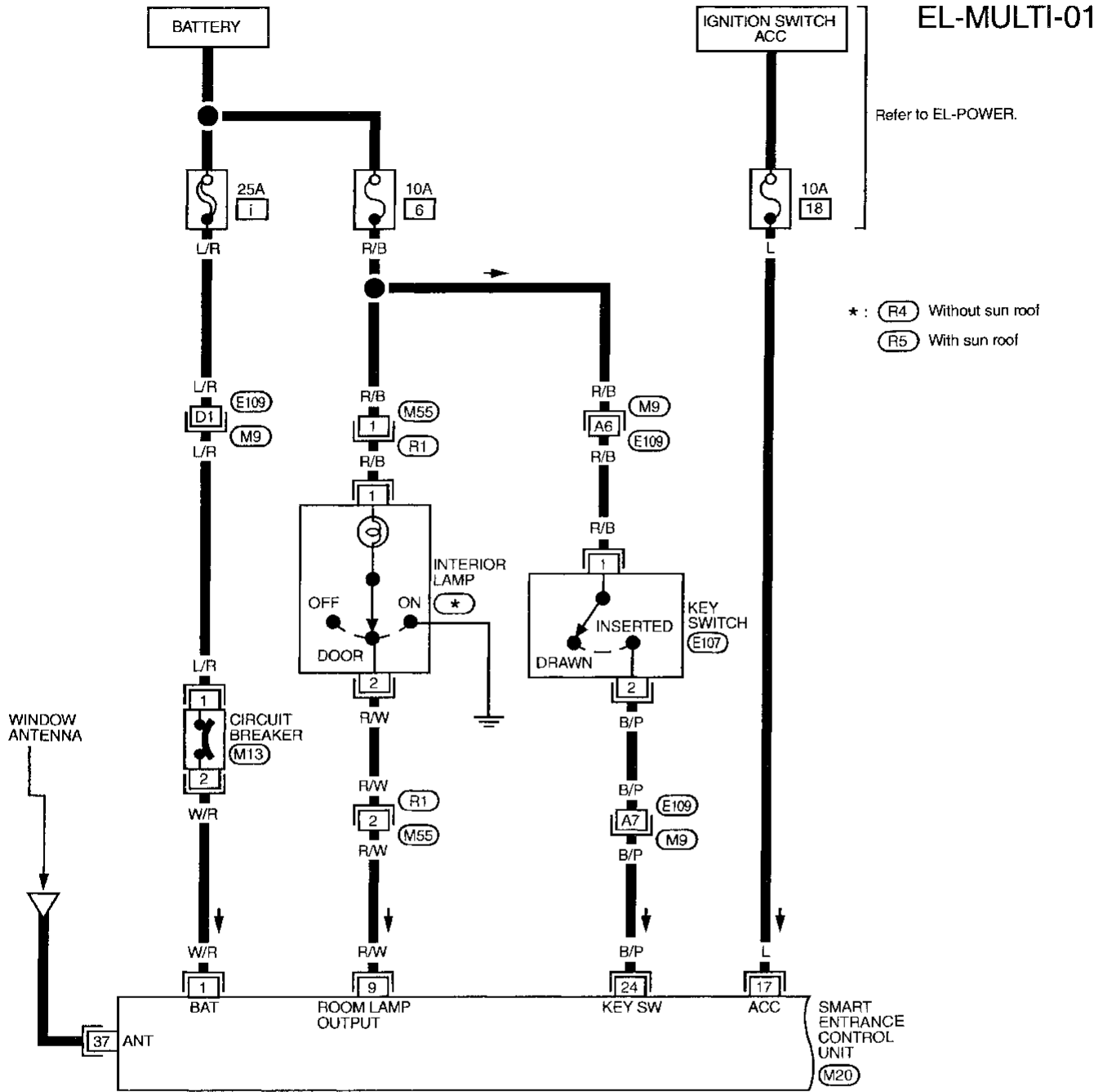
MULTI-REMOTE CONTROL SYSTEM

Schematic



MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI —



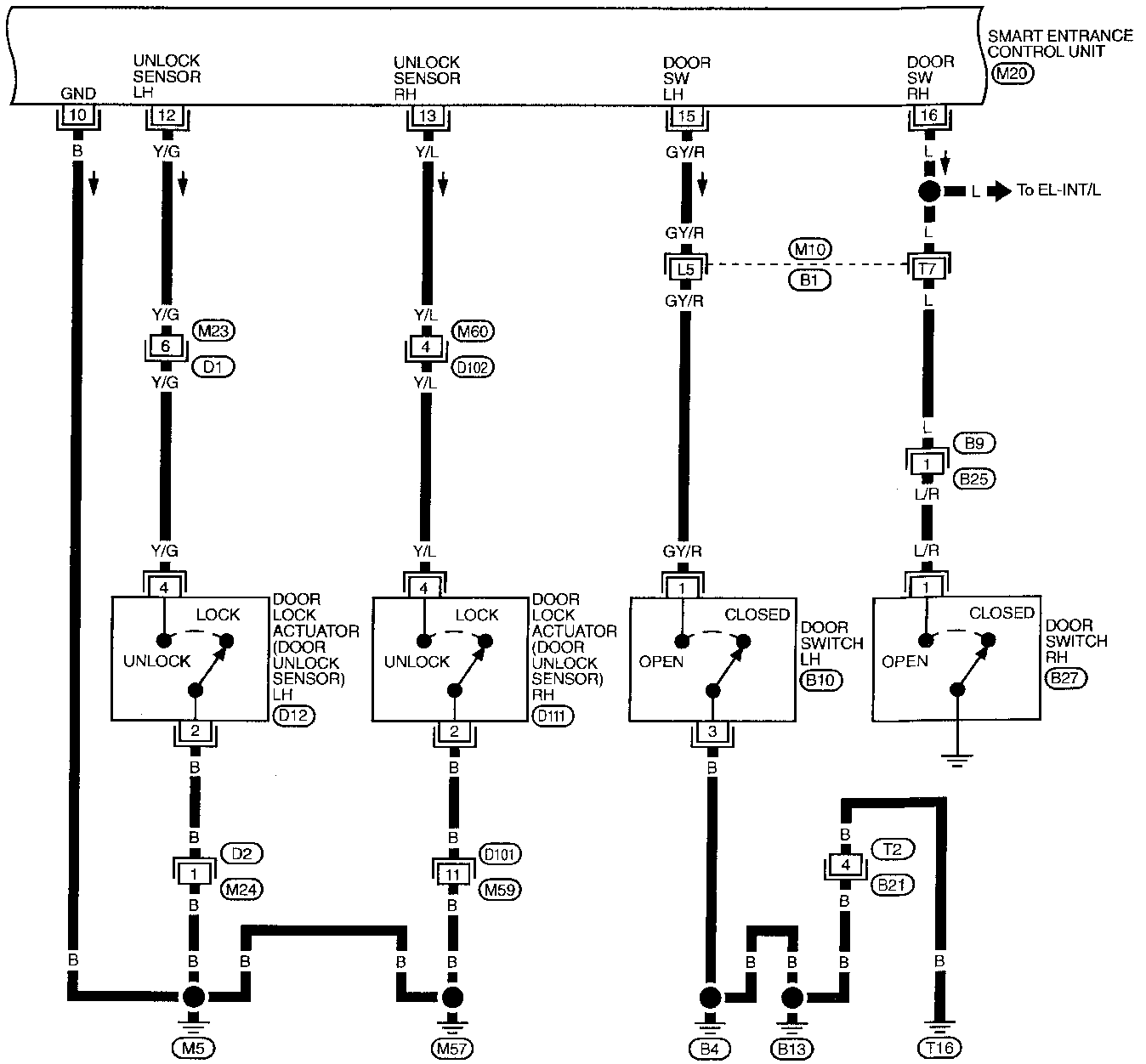
Refer to last page (Foldout page).
 (M9), (E109)
 (M20)

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MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02



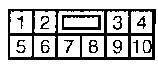
Refer to last page (Foldout page).

M10, B1

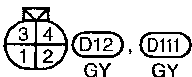
M20



D1, D101
W



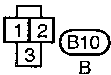
D2, D102
W



D12, D11
GY



B21
W



B10
B



B9
B

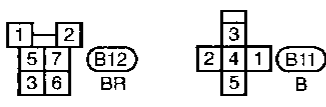
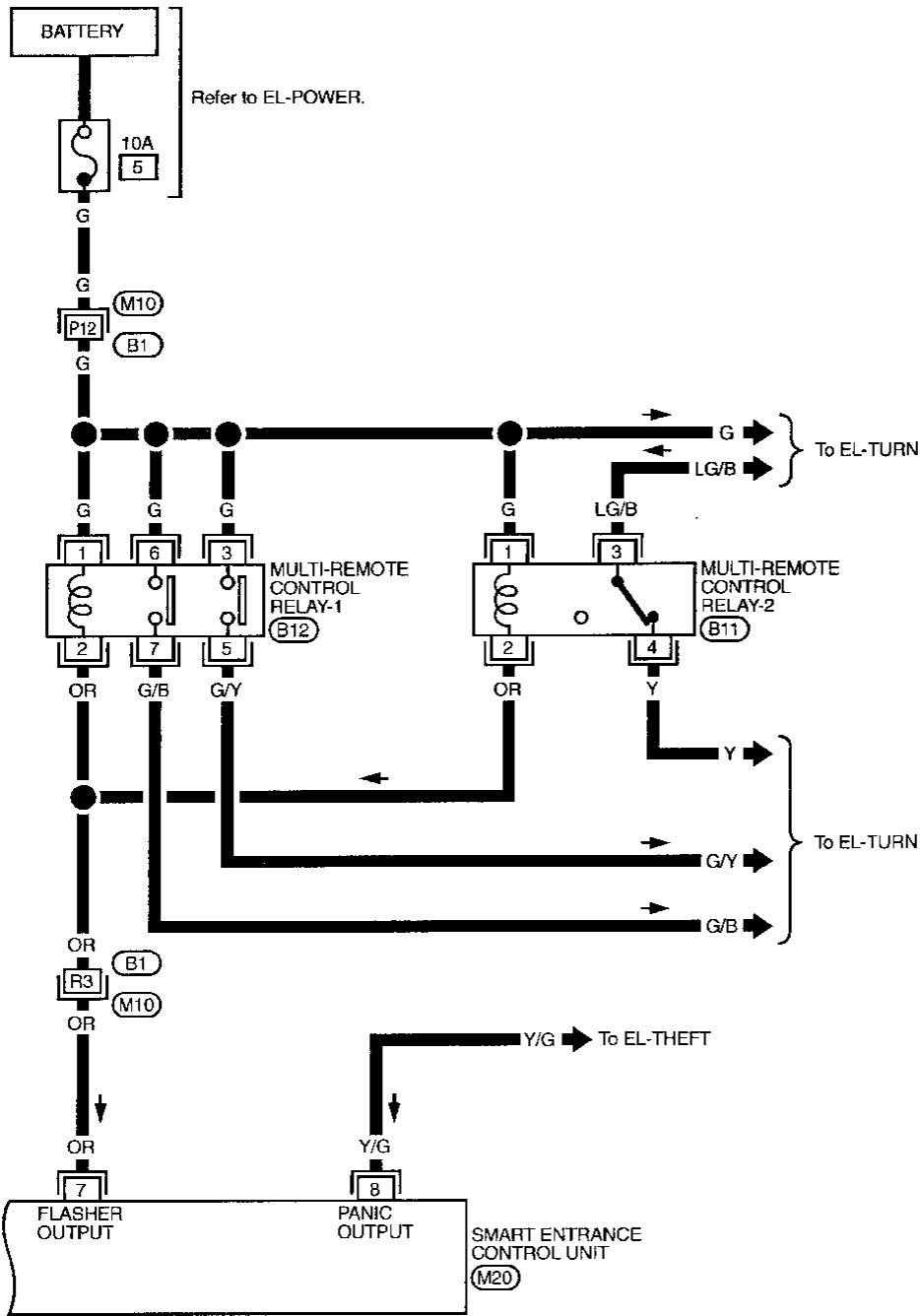


B27
BR

MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03



Refer to last page (Foldout page).
 (M10), (B1)
 (M20)

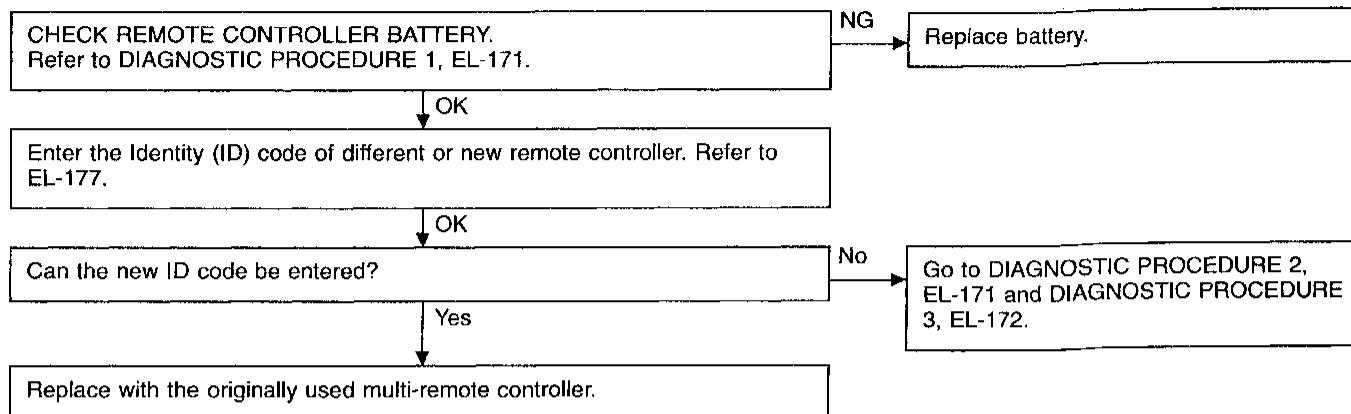
- GI
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- EL**
- IDX

MULTI-REMOTE CONTROL SYSTEM

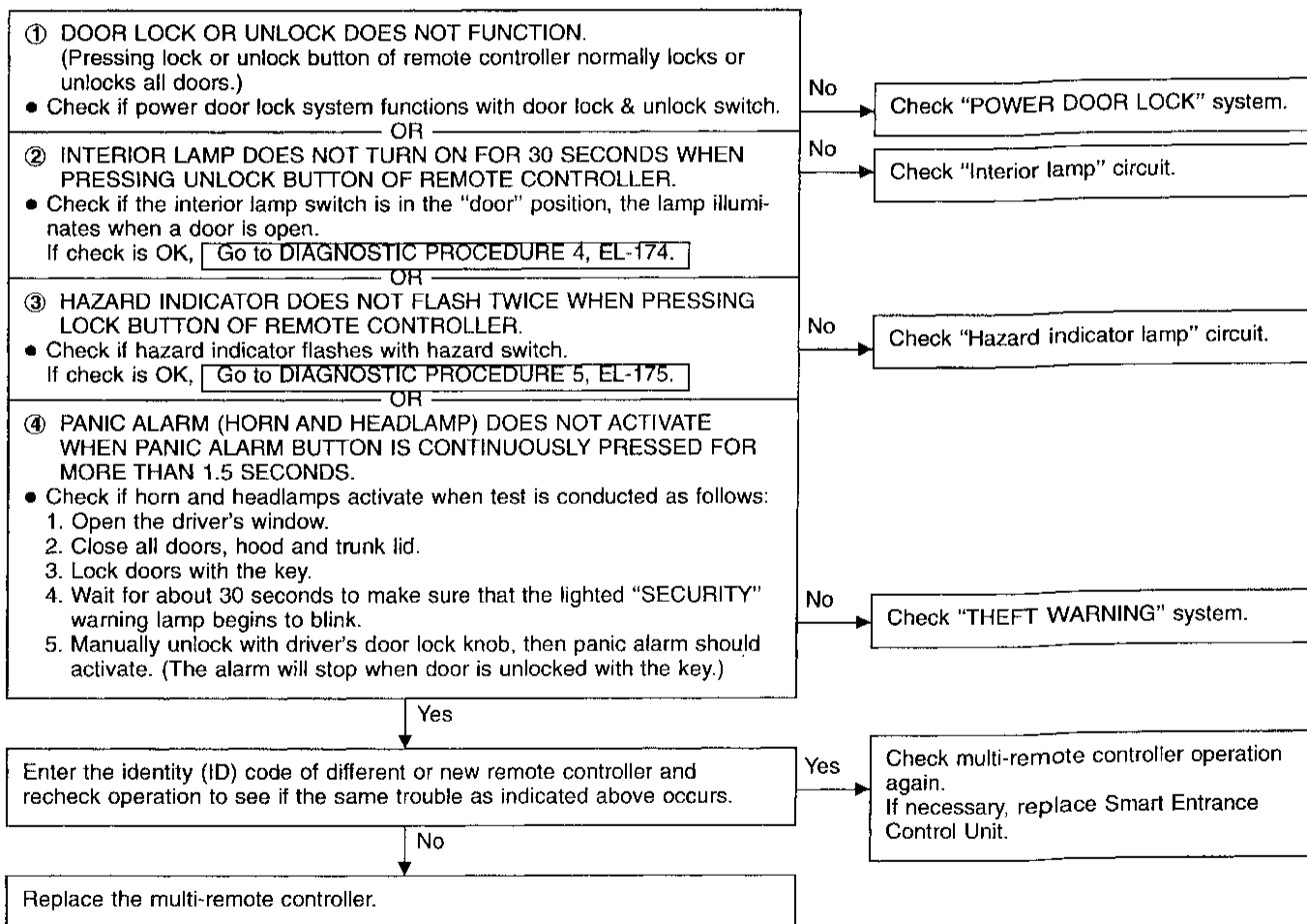
Trouble Diagnoses

TROUBLE SYMPTOM

- All functions of remote control system do not operate.



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

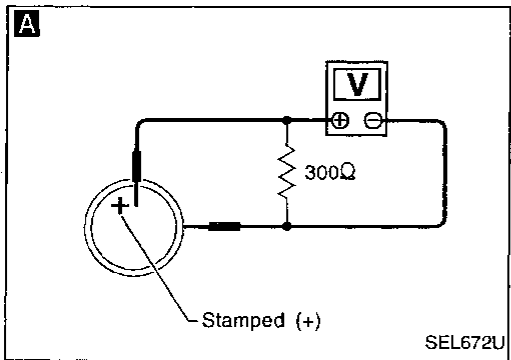


Note: The multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1



A

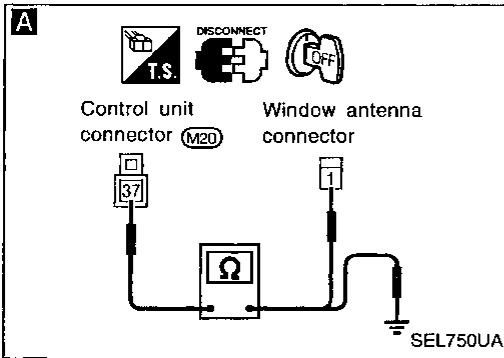
CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

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

Note:

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

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DIAGNOSTIC PROCEDURE 2

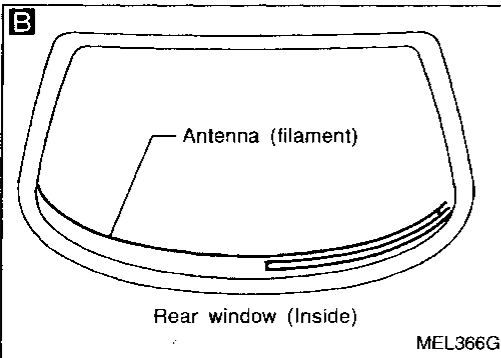
A

CHECK ANTENNA FEEDER CABLE.

- 1) Disconnect feeder cable connector from control unit.
- 2) Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna. (Feeder cable connector is the one at bottom left.)
- 3) Check continuity between the feeder cable connectors.
Continuity should exist.
- 4) Check continuity between the feeder cable connector terminal and ground.
Continuity should not exist.

Refer to wiring diagram in EL-167.

NG → Replace feeder cable.



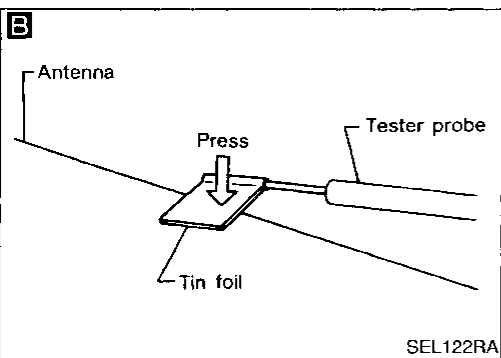
B

CHECK REAR WINDOW GLASS ANTENNA.

- 1) Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna.
- 2) Check continuity between glass antenna terminal and end of glass antenna.
Continuity should exist.

Note: When checking continuity, wrap tin foil around top of the probe. Then press the foil against the wire with your finger.

NG → Repair glass window antenna. Refer to REAR WINDOW DEFOGGER "Filament Repair".



OK → Antenna of multi-remote control is OK.

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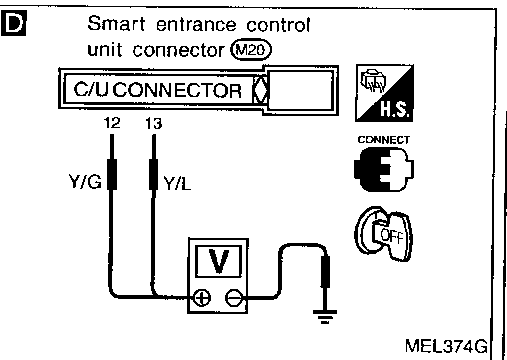
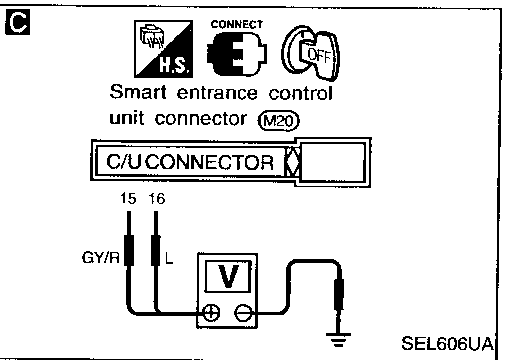
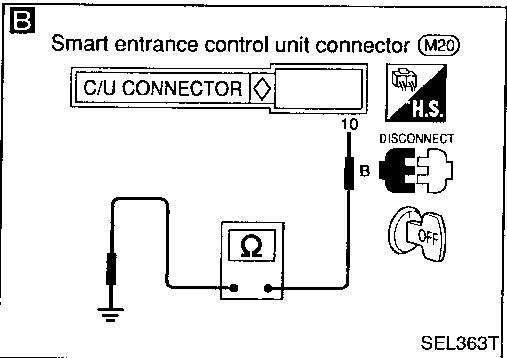
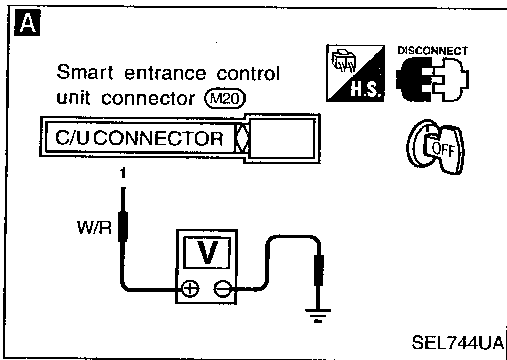
IDX

MULTI-REMOTE CONTROL SYSTEM

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-167.

NG

Check the following.

- 25A fusible link (Letter **I**, located in fuse and fusible link box)
- (M13) circuit breaker
- Harness for open or short

B

CHECK GROUND CIRCUIT FOR CONTROL UNIT.

Check continuity between terminal ⑩ and ground.

Continuity should exist.

Refer to wiring diagram in EL-168.

OK

NG

Check ground harness.

C

CHECK DOOR SWITCH CIRCUIT.

Check voltage between control unit terminal ⑮ and ground, ⑯ and ground.

	Terminals		Condition	Voltage [V]
	⊕	⊖		
LH door switch	⑮	Ground	Open	0
			Close	Approx. 12
RH door switches	⑯	Ground	Open	0
			Close	Approx. 12

Refer to wiring diagram in EL-168.

NG

Check the following.

- Door switch
- Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-176).
- Door switch ground circuit (Driver side) or door switch ground condition (Passenger side)
- Harness for open or short between control unit and door switch

D

CHECK UNLOCK SENSOR CIRCUIT.

Check voltage between control unit terminal ⑫ and ground, ⑬ and ground.

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

Refer to wiring diagram in EL-168.

No

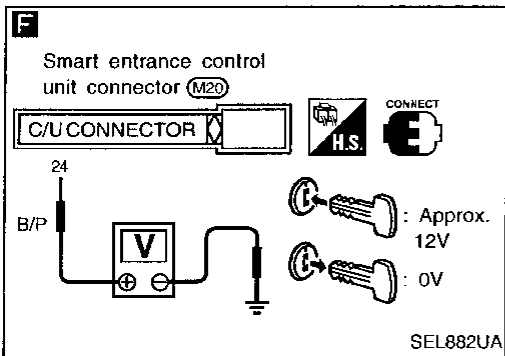
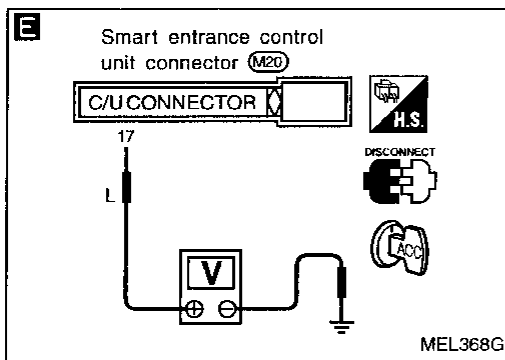
Check the following.

- Door unlock sensor
- Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-176).
- Door unlock sensor ground circuit
- Harness for open or short between control unit and unlock sensor

(Go to next page.)

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)



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-167.

NG

Check the following.

- 10A fuse (No. ⑱, located in fuse block)
- Harness for open or short between control unit and fuse

F CHECK KEY SWITCH INPUT SIGNAL.

Check voltage between control unit terminals ⑳ and ground.

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

Refer to wiring diagram in EL-167.

NG

Check the following.

- 10A fuse (No. ⑆, located in fuse block)
- Key switch
- Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-176).
- 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.

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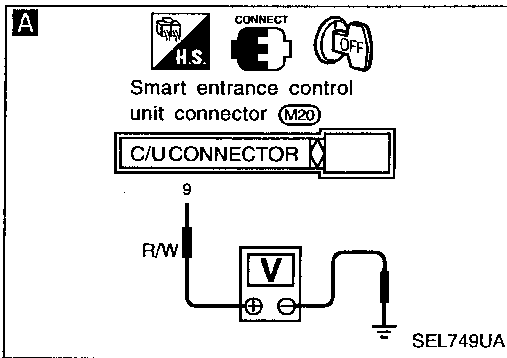
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MULTI-REMOTE CONTROL SYSTEM

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?

No

Repair harness between control unit and interior lamp.

Does battery voltage exist?

Refer to wiring diagram in EL-167.

Yes

A

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

No

Replace smart entrance control unit.

Condition of multi-remote controller button	Voltage (V)
Unlock button is pushed.	0
Unlock button is not pushed.	Battery voltage

Yes

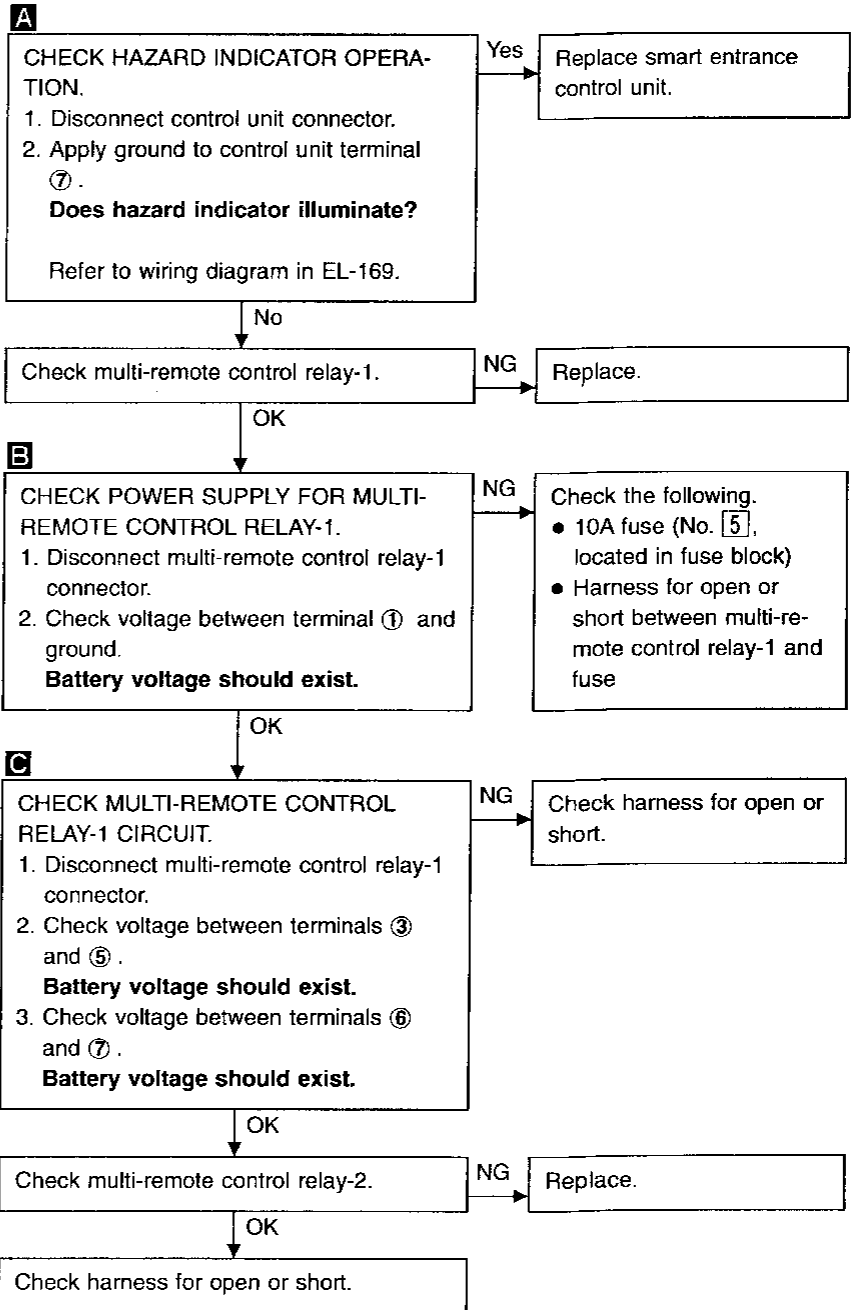
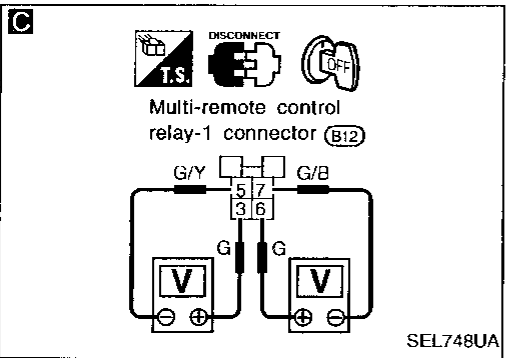
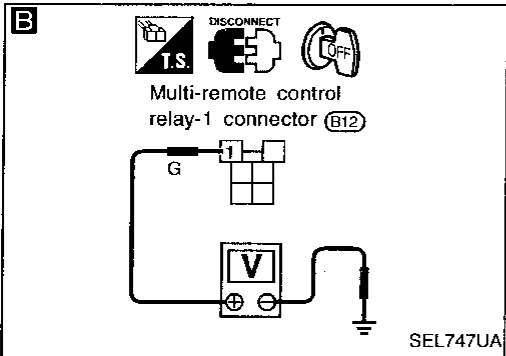
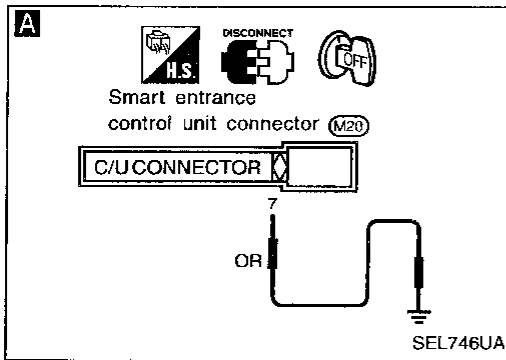
Check system again.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

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



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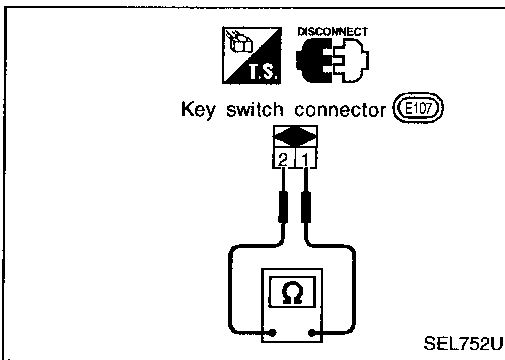
MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

Key switch (insert)

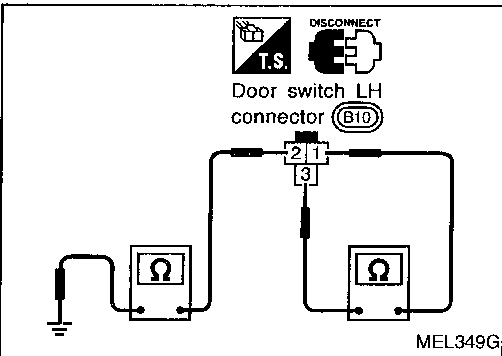
Check continuity between terminals when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.



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

Driver side door switch

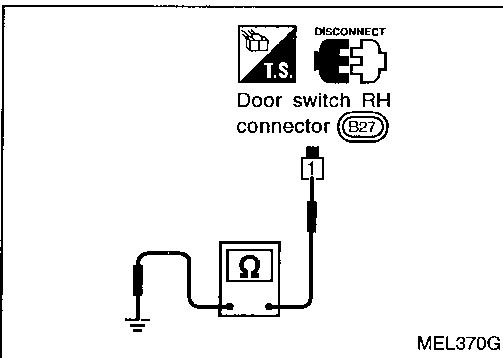
Check continuity between terminals when door switch is pushed and released.



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

Passenger side door switch

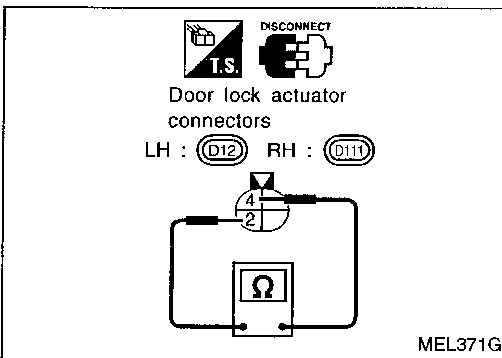
Check continuity between terminals when door switch is pushed and released.



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

Door unlock sensor

Check continuity between terminals when door lock actuator is locked and unlocked.



Terminal No.	Condition	Continuity
④ - ②	Locked	No
	Unlocked	Yes

MULTI-REMOTE CONTROL SYSTEM

Replacing Remote Controller or Control Unit

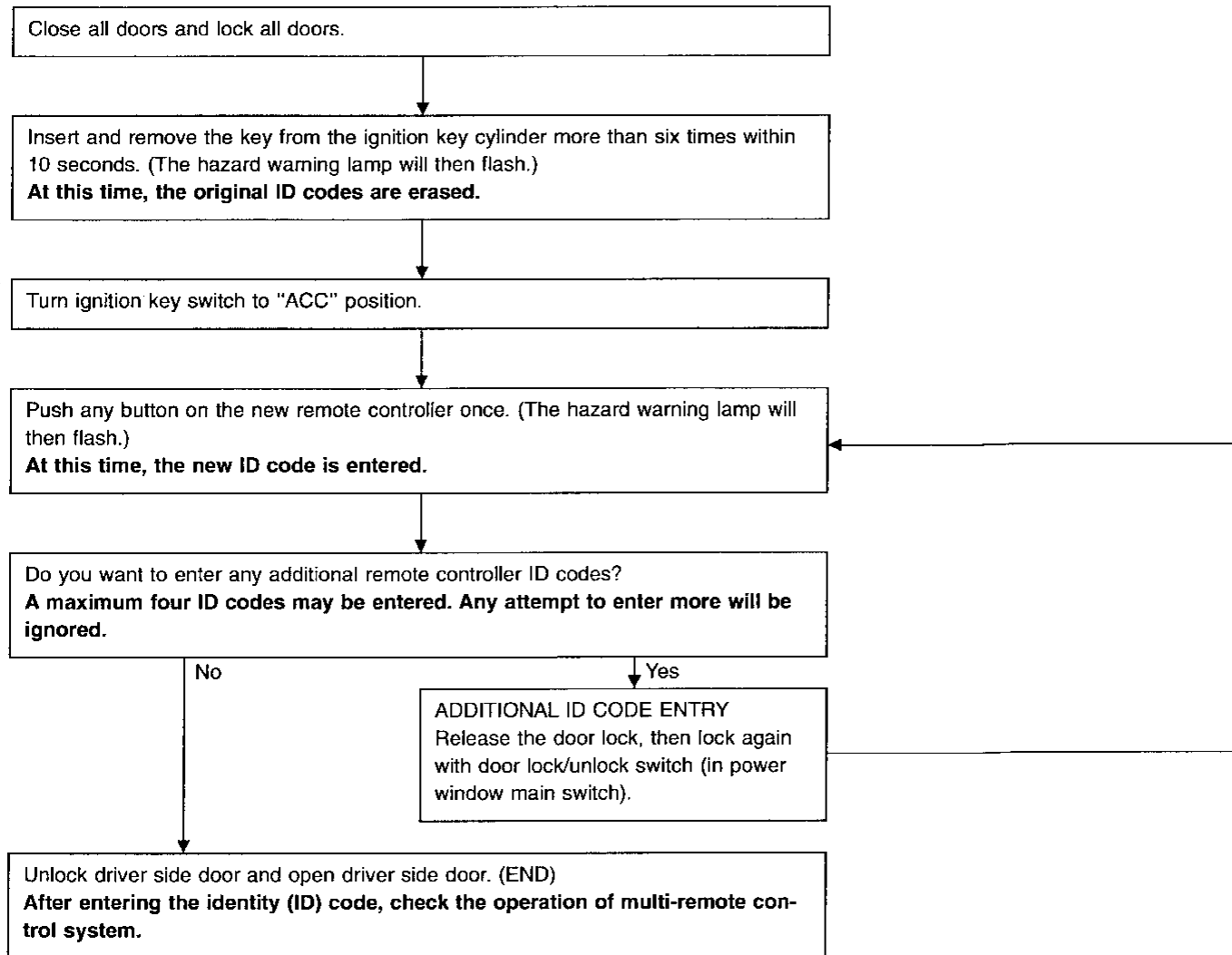
Enter the identity (ID) code manually when:

- 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.
- Any ID codes entered after termination of the "setting mode" will not be accepted. Additionally remote control signals will be inhibited when an ID code has not been entered during the "setting" mode.

GI

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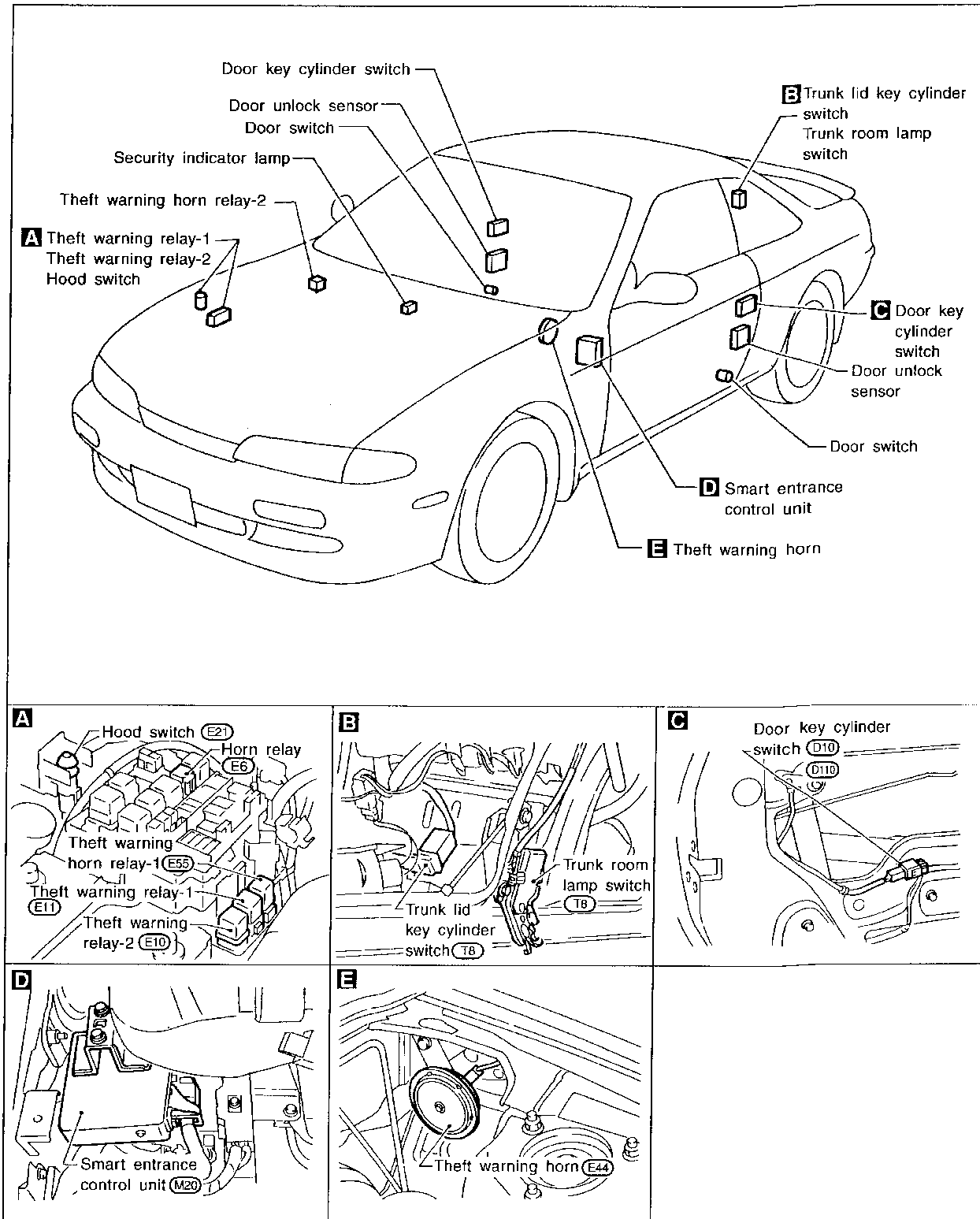
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THEFT WARNING SYSTEM

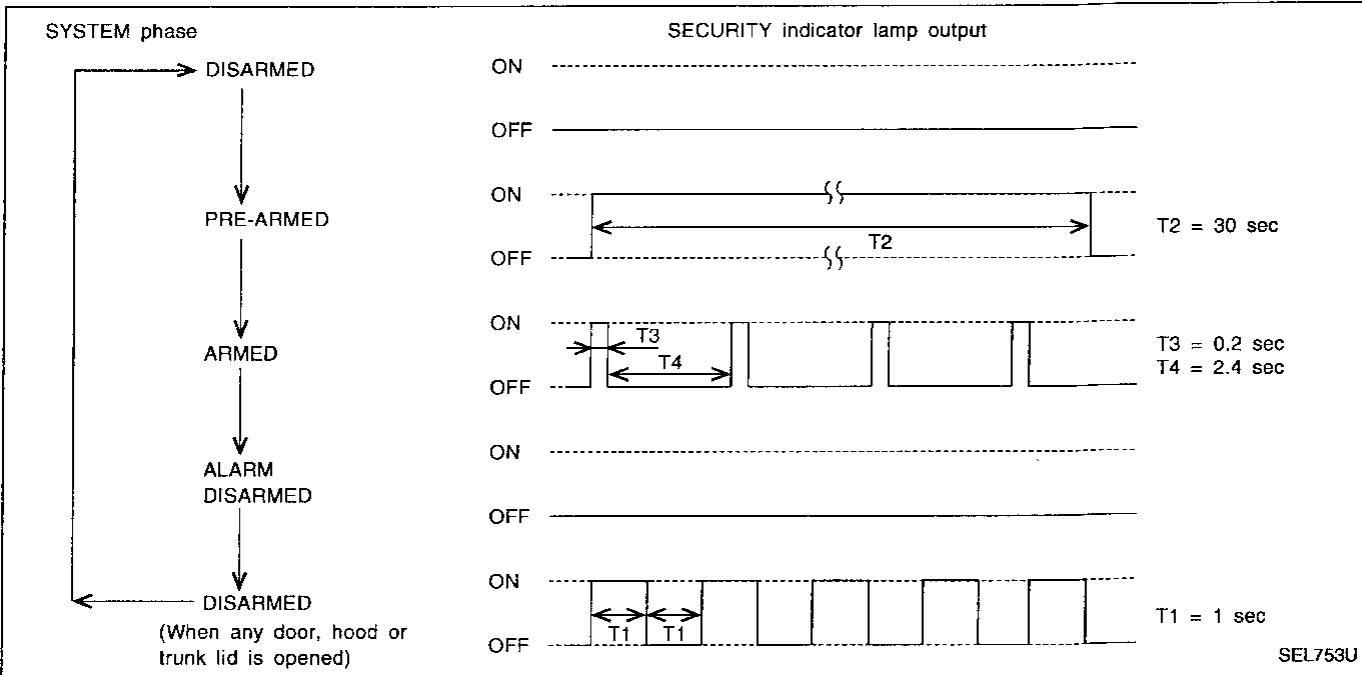
Component Parts and Harness Connector Location



System Description

DESCRIPTION

1. Operation flow



2. Setting the theft warning system

Initial condition

- (1) Close all doors.
- (2) Close hood and trunk lid.

Disarmed phase

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

Pre-armed phase and armed phase

The theft warning system turns into the "pre-armed" phase when hood, trunk lid and all doors are closed and locked by key or multi-remote 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 trunk lid with the key. When the trunk lid is closed after opening the trunk lid with the key, the system returns to the armed phase.

4. Activating the alarm operation of the 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, trunk lid 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.

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THEFT WARNING SYSTEM

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. 18), located in the fuse block
- to security indicator lamp terminal 2.

Power is supplied at all times

- through 25A fusible link (letter I), 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. 18), located in the fuse block
- to smart entrance control unit terminal 17.

Ground is supplied

- to smart entrance control unit terminal 10
- through body grounds M5 and M57.

THEFT WARNING SYSTEM ACTIVATION (Without key or remote controller used to lock doors)

The operation of the theft warning system is controlled by the doors, hood and trunk lid.

To activate the theft warning system, the smart entrance control unit must receive signals indicating the doors, hood and trunk lid 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 or 13 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 2 of the hood switch
- through body grounds E28 and E42.

When the trunk lid is open, smart entrance control unit terminal 26 receives a ground signal

- from terminal 1 of the trunk room lamp switch
- through body grounds B4, B13 and T16.

When the theft warning system is in armed phase

If none of the described conditions exist, the theft warning system will alarm automatically.

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 1 of the key cylinder switch LH
- from terminal 2 of the door key cylinder switch RH
- through body grounds M5 and M57

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 1 of the security indicator lamp.

The security lamp will illuminate for approximately 30 seconds and then blink.

Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM

System Description (Cont'd)

THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by

- opening a door
- opening the trunk lid
- opening the hood
- unlocking door without using key or multi-remote controller.

Once the theft warning system is in armed phase, if the smart entrance control unit receives a ground signal at terminal ⑫, ⑬ (door unlock sensor), ⑮, ⑯ (door switch), ⑳ (trunk room lamp switch) or ㉑ (hood switch), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently, and the starting system is interrupted.

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

- through 7.5A fuse (No. ①), located in the fuse block).
- to theft warning relay-2 terminal ①.

If the theft warning system is triggered, ground is supplied

- from terminal ㉒ of the smart entrance control unit
- to theft warning relay-2 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. ④), located in fuse and fusible link box)
- to theft warning relay-1 terminal ①,
- to theft warning horn relay-1 terminal ② and theft warning horn relay-2 terminal ②.
- through 10A fuse (No. ③), located in the fuse and fusible link box)
- to horn relay terminal ②.

When the theft warning system is triggered, ground is supplied intermittently

- from terminal ⑧ of the smart entrance control unit
- to theft warning relay-1 terminal ② and
- to theft warning horn relay-2 terminal ①.

The headlamps flash and the horn sounds intermittently.

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

THEFT WARNING SYSTEM DEACTIVATION

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

When the key is used to unlock a door, smart entrance control unit terminal ㉓ receives a ground signal

- from terminal ② of the LH key cylinder switch
- from terminal ① of the RH key cylinder switch.

When the key is used to unlock the trunk lid, smart entrance control unit terminal ㉔ receives a ground signal from terminal ① of the trunk lid key cylinder switch.

When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the 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 relay-1 terminal ② and
- to theft warning horn relay-2 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.

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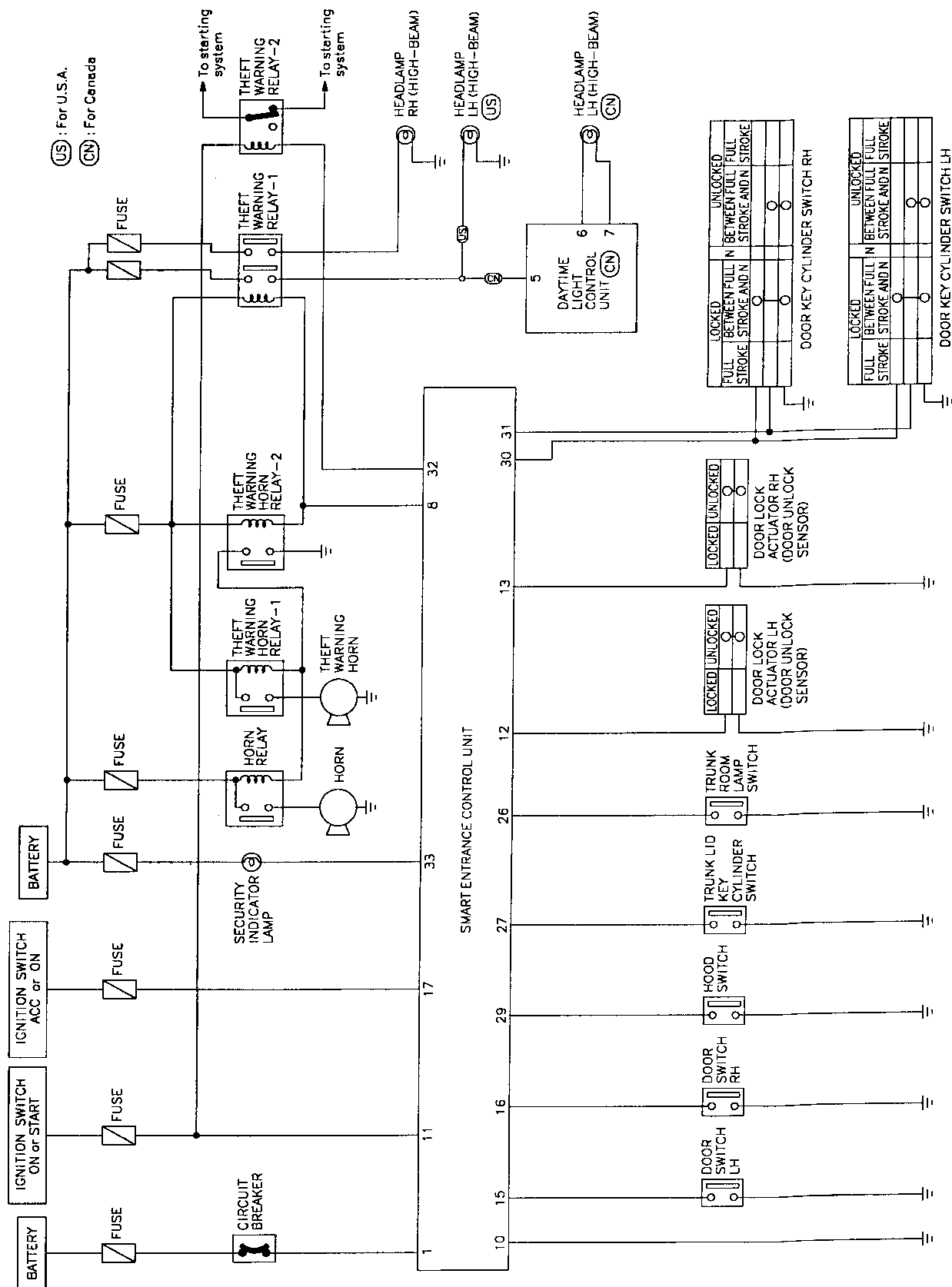
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THEFT WARNING SYSTEM

Schematic

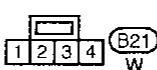
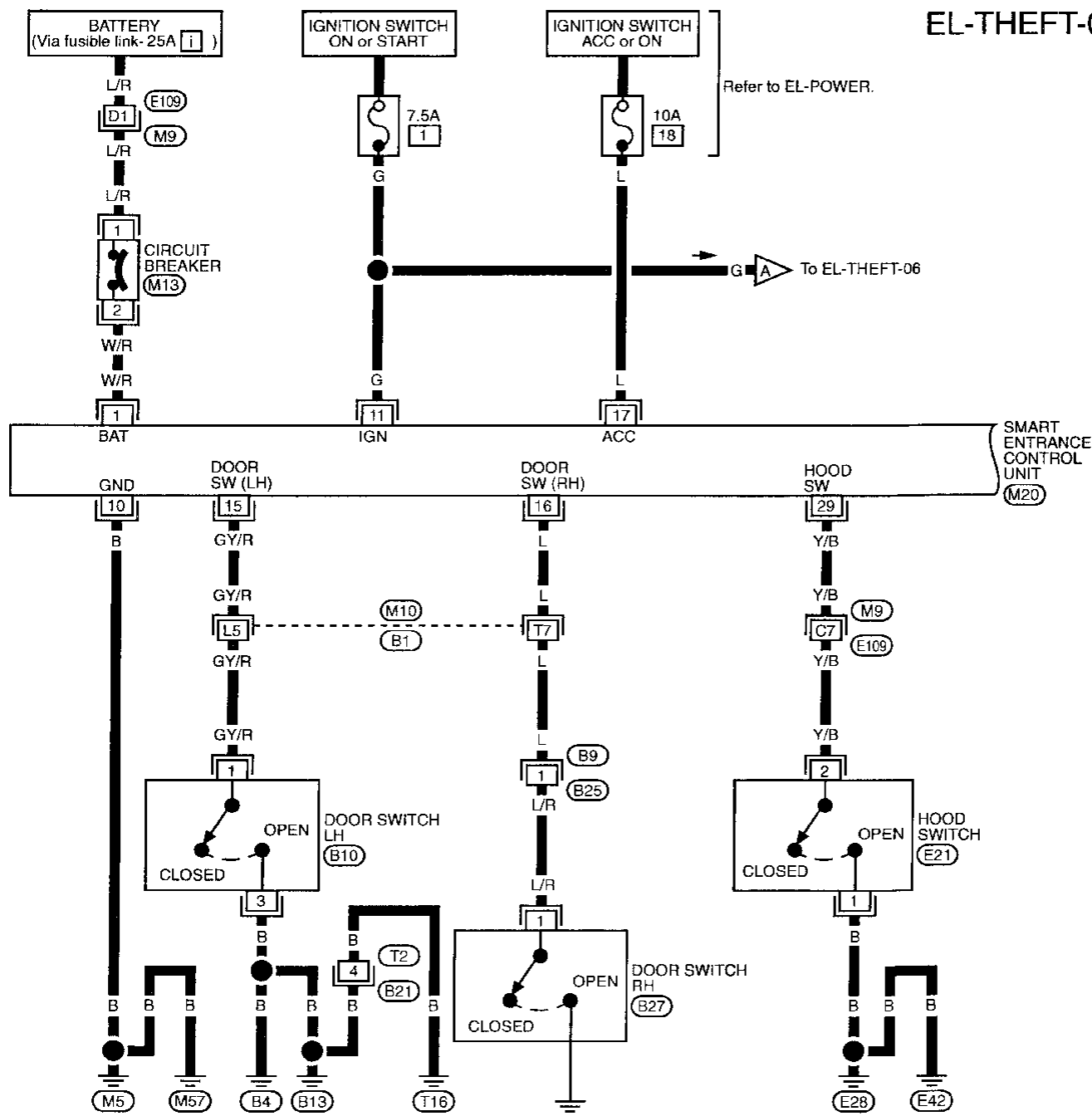


US : For U.S.A.
 CN : For Canada

THEFT WARNING SYSTEM

Wiring Diagram — THEFT —

EL-THEFT-01



Refer to last page (Foldout page).

M9, E109

M10, B1

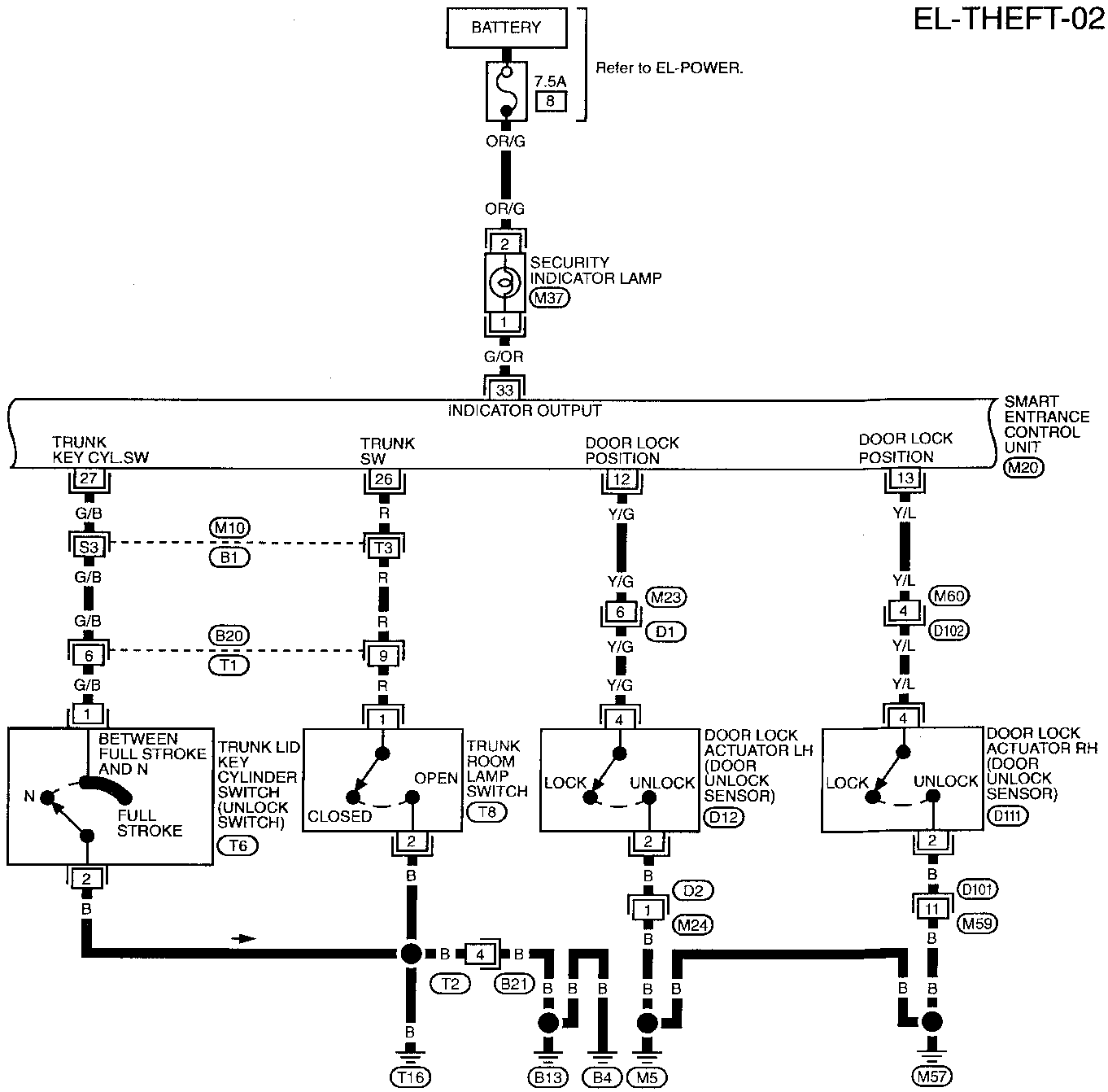
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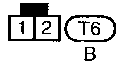
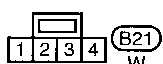
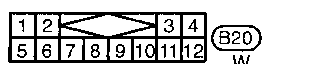
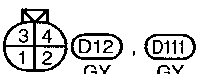
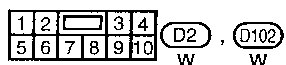
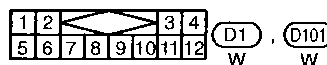
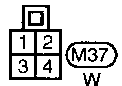
THEFT WARNING SYSTEM

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-02



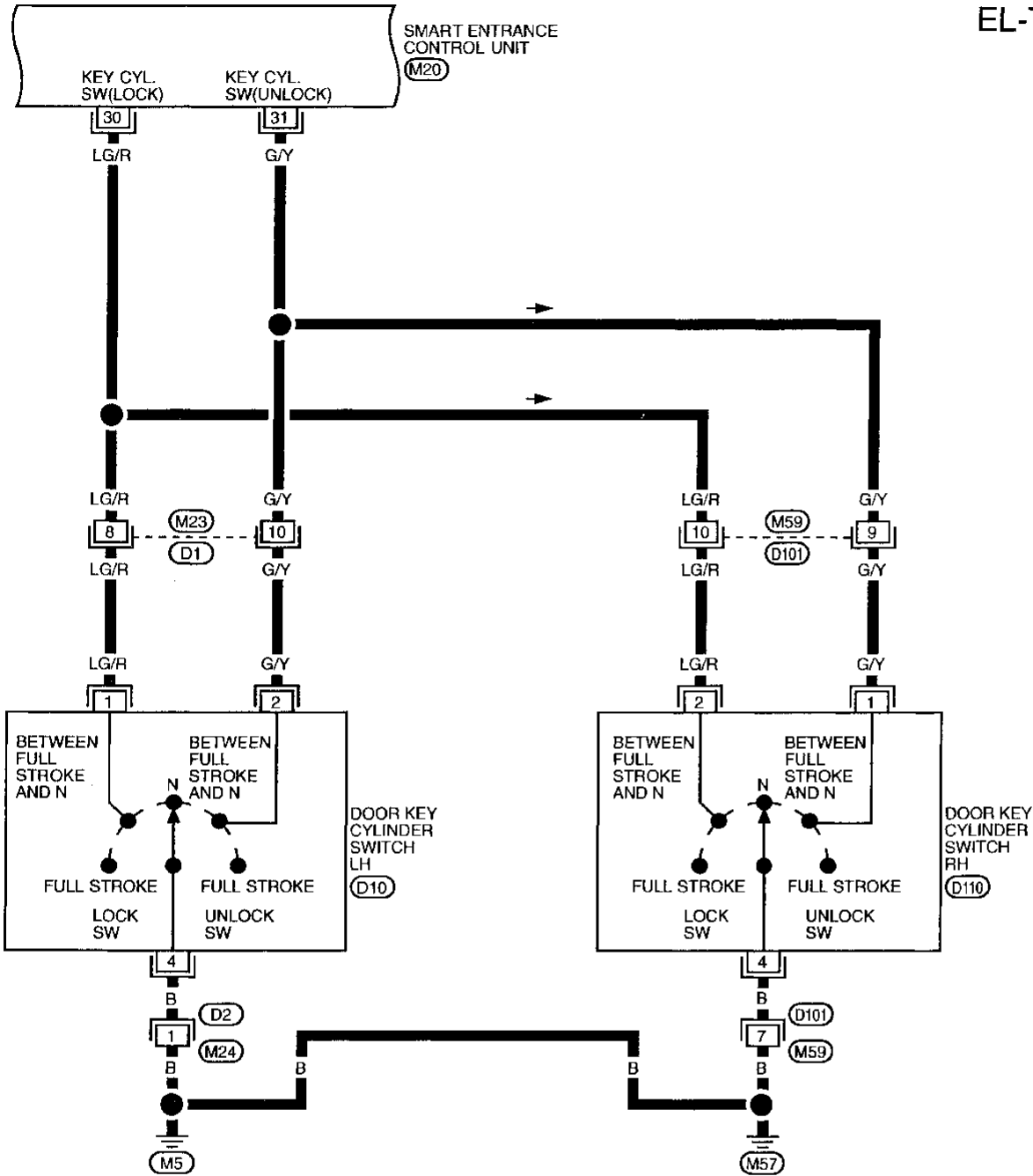
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THEFT WARNING SYSTEM

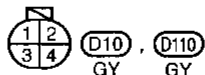
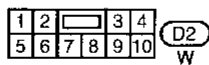
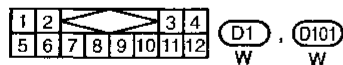
Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-03



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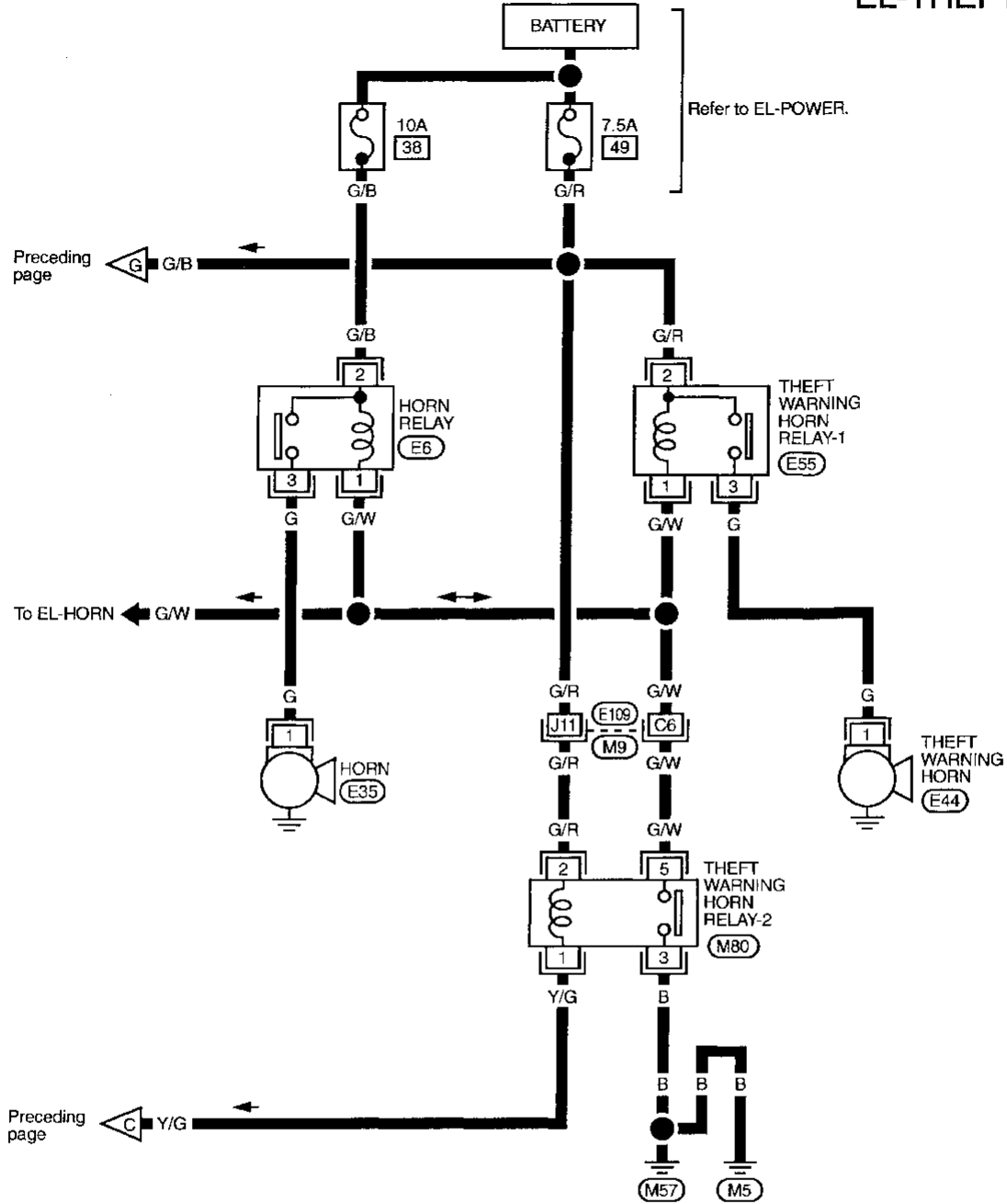
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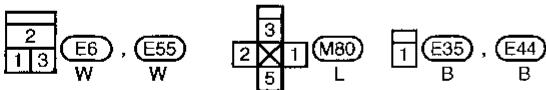
THEFT WARNING SYSTEM

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-05



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M9, E109

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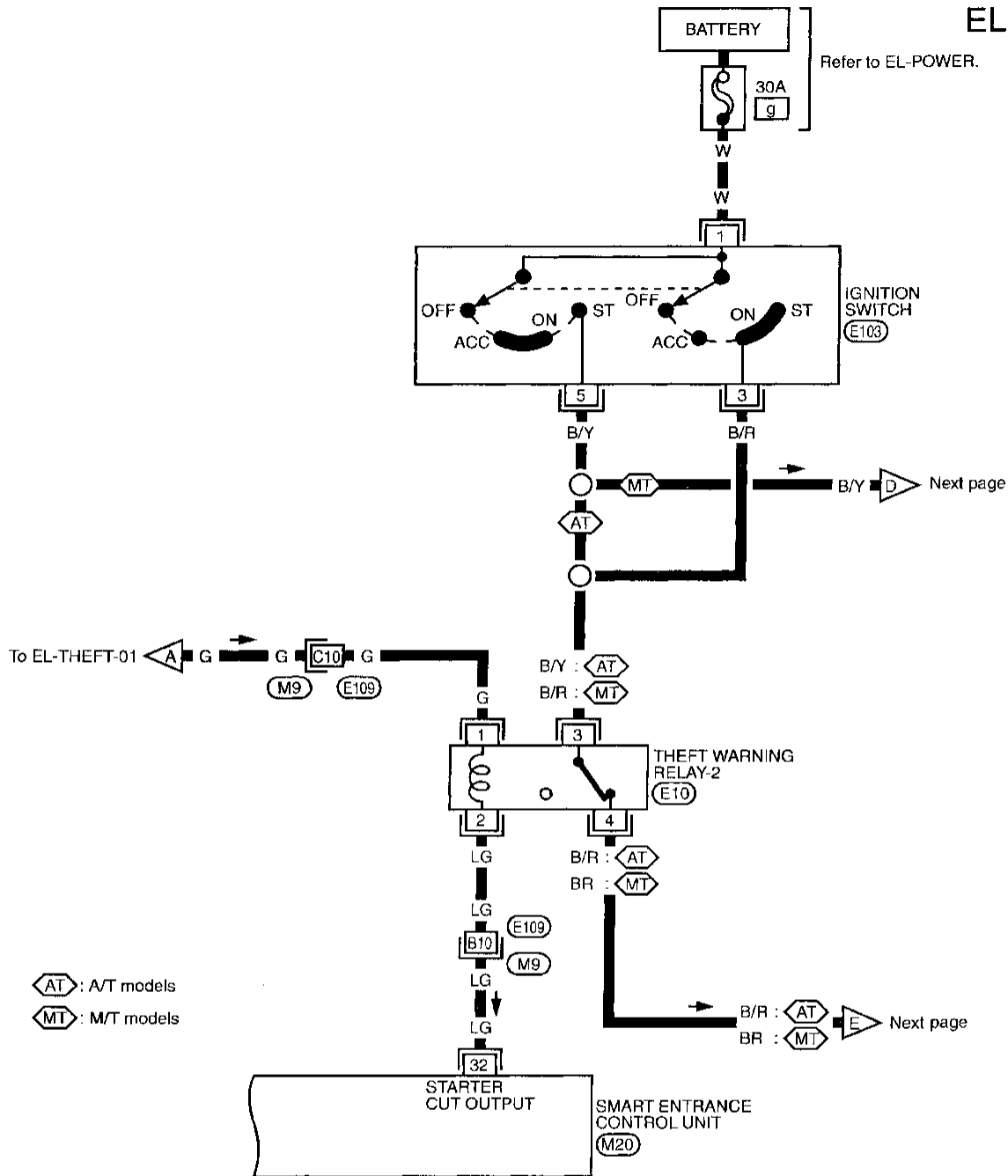
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THEFT WARNING SYSTEM

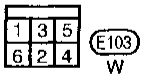
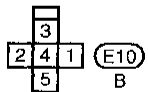
Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-06

Refer to EL-POWER.



AT : A/T models
MT : M/T models



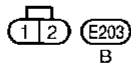
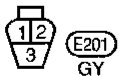
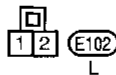
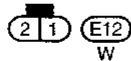
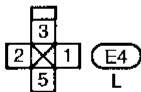
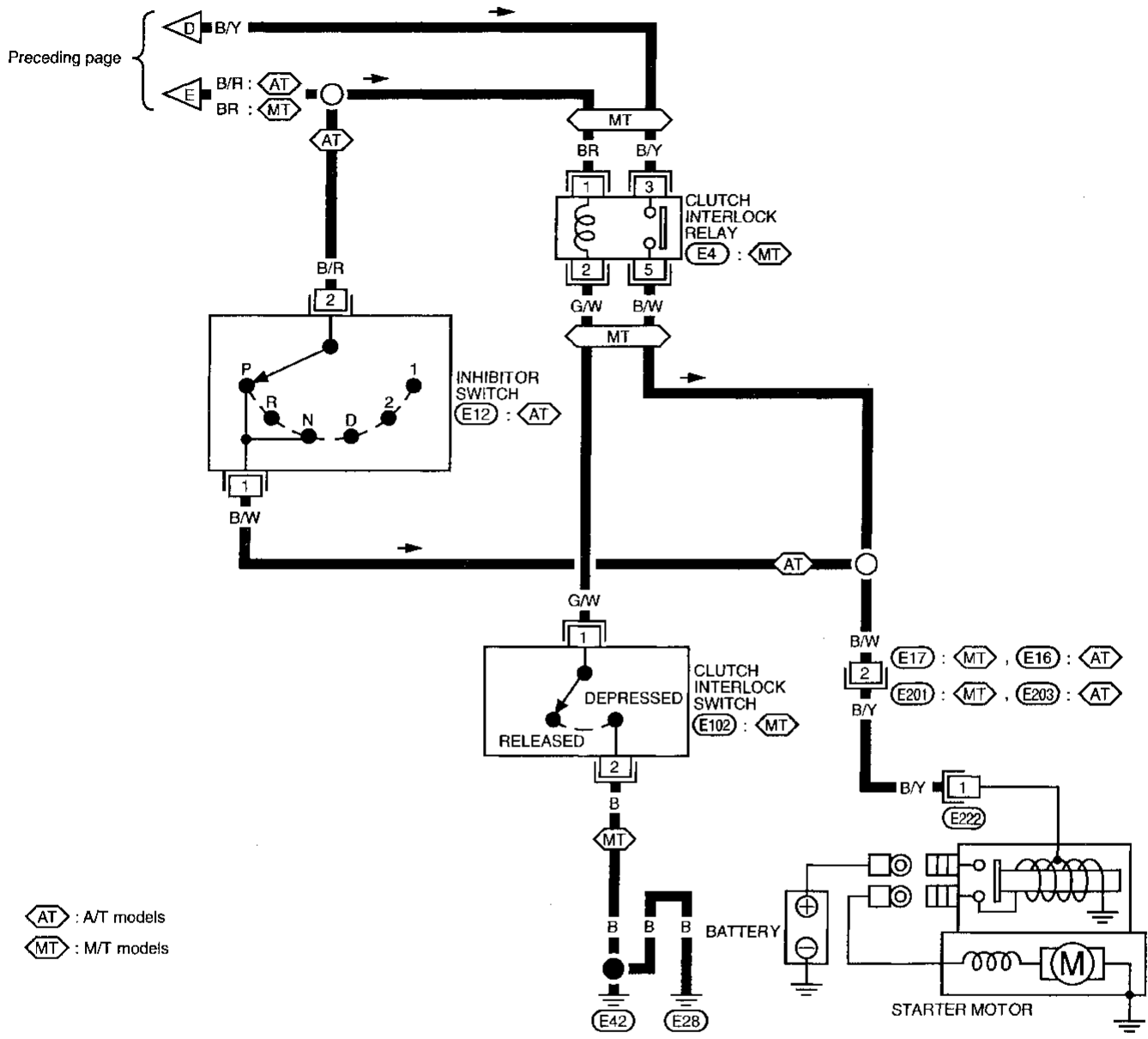
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(M9) , (E109)
(M20)

THEFT WARNING SYSTEM

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-07



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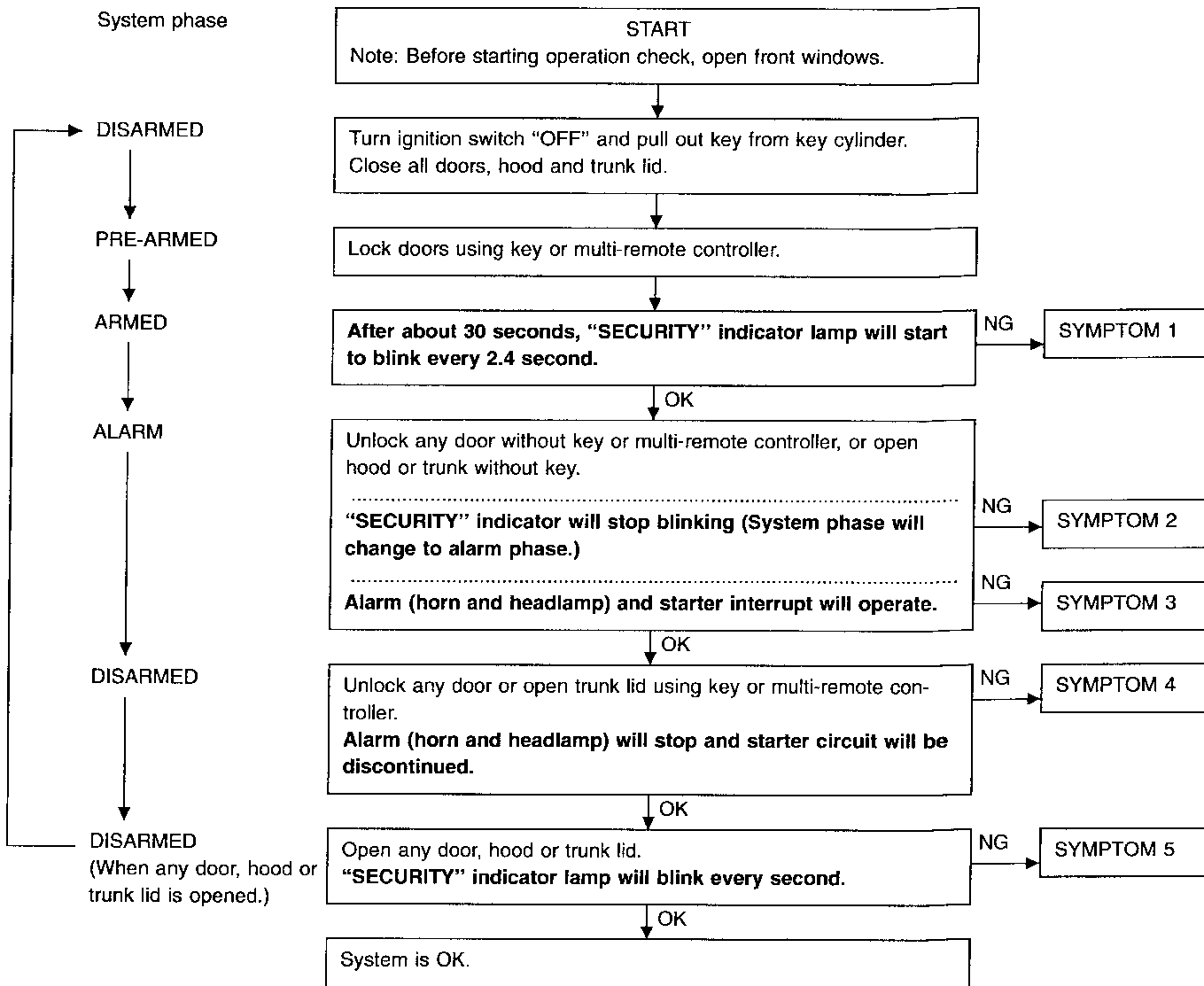
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THEFT WARNING SYSTEM

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 the corresponding diagnostic procedure(s) indicated in the symptom chart.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check.

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

SYMPTOM CHART

PROCEDURE		—	Power supply and ground circuit check		Diagnostic procedure								—	GI
REFERENCE PAGE		EL-190	EL-192	EL-192	EL-193	EL-196	EL-197	EL-198	EL-199	EL-200	EL-201	EL-202	EL-164	MA
SYMPTOM		Preliminary check	Power supply circuit check	Ground circuit check	Diagnostic Procedure 1 (Door, hood and trunk room lamp switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Trunk lid key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn alarm check)	Diagnostic Procedure 7 (Headlamp alarm check)	Diagnostic Procedure 8 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.	EM
1	Theft warning system cannot be set by ...	All items	X	X	X	X		X						LC
		Door out side key	X	X	X				X					FE
		Multi-remote control	X	X	X								X	CL
2	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X	X	X								MT
		Any door is unlocked without using key or multi-remote controller	X	X	X			X						
3	Theft warning alarm does not activate.	All function	X	X	X	X		X						PD
		Horn alarm	X	X	X					X				FA
		Headlamp alarm	X	X	X						X			RA
		Starter interrupt	X	X	X								X	BR
4	Theft warning system cannot be canceled by ...	Door out side key	X	X	X			X						ST
		Trunk lid key								X				RS
		Multi-remote control	X	X	X								X	BT
5	Theft warning indicator does not turn "ON" or blinking.	X	X	X		X							HA	

X : Applicable

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

EL

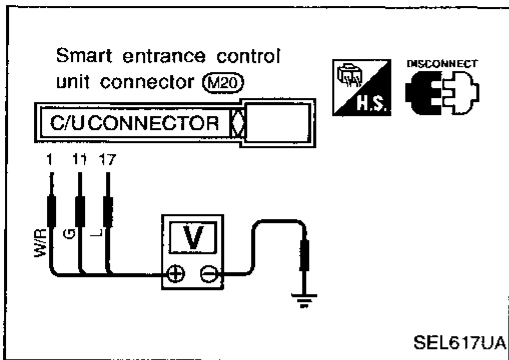
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THEFT WARNING SYSTEM

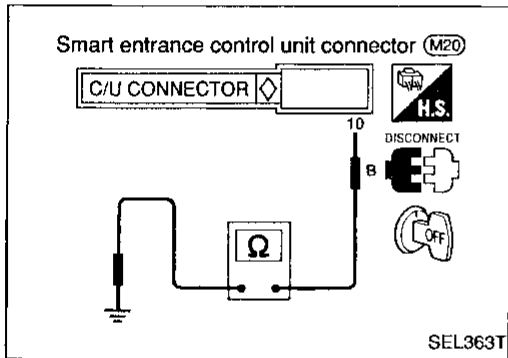
Trouble Diagnoses (Cont'd)

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



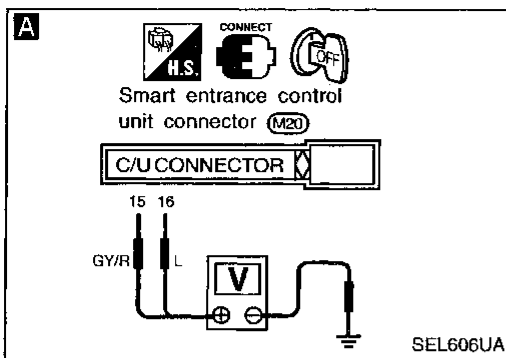
Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

THEFT WARNING SYSTEM

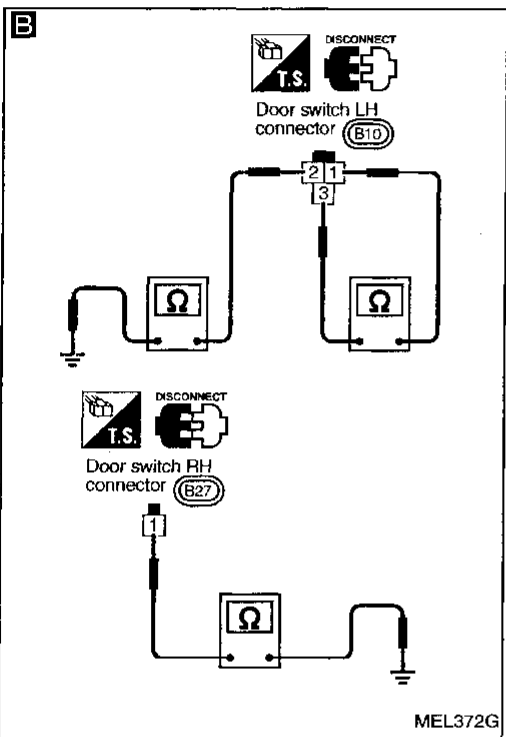
Trouble Diagnoses (Cont'd)

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



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

OK → Door switch is OK.



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

	Terminals		Condition	Voltage [V]
	⊕	⊖		
LH door switch	15	Ground	Open	0
			Closed	Approx. 12
RH door switch	16	Ground	Open	0
			Closed	Approx. 12

Refer to wiring diagram in EL-183.

OK → Door switch is OK.

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

	Terminals	Condition	Continuity
LH door switch	① - ③, ② - Ground	Closed	No
		Open	Yes
RH door switch	① - Ground	Closed	No
		Open	Yes

NG → Replace door switch.

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

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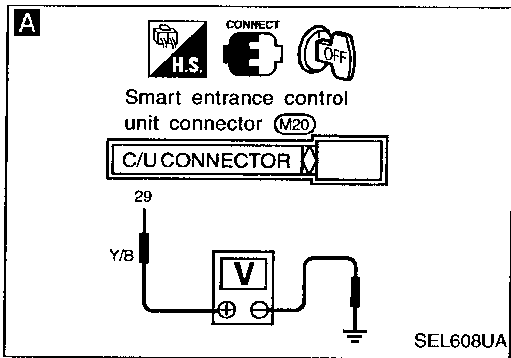
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THEFT WARNING SYSTEM

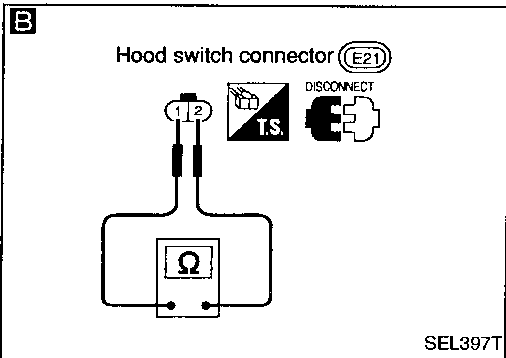
Trouble Diagnoses (Cont'd)

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



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

OK → Hood switch is OK.



Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

A

CHECK HOOD SWITCH INPUT SIGNAL.
Check voltage between control unit terminal ② and ground.

OK → Hood switch is OK.

Condition	Voltage [V]
Hood is open.	0
Hood is closed.	Approx. 5

Refer to wiring diagram in EL-183.

NG

B

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

NG → Replace hood switch.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

OK

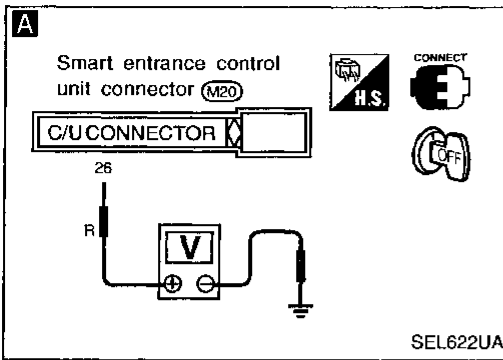
Check the following.

- Hood switch ground circuit
- Harness for open or short between control unit and hood switch

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

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



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

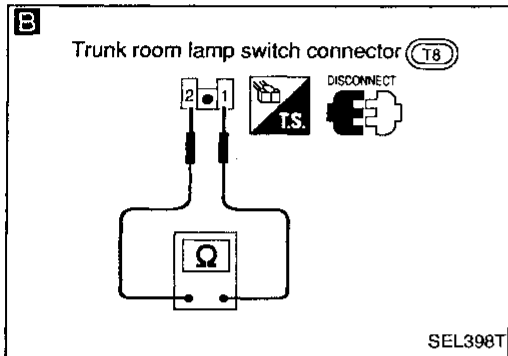
OK → Trunk room lamp switch is OK.

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- A**
- CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL.
Check voltage between control unit terminal 26 and ground.

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

Refer to wiring diagram in EL-184.

OK → Trunk room lamp switch is OK.

EC

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- B**
- CHECK TRUNK ROOM LAMP SWITCH.
- 1) Disconnect trunk room lamp switch connector.
 - 2) Check continuity between trunk room lamp switch terminals.

Terminals	Condition	Continuity
① - ②	Closed	No
	Open	Yes

NG → Replace trunk room lamp switch.

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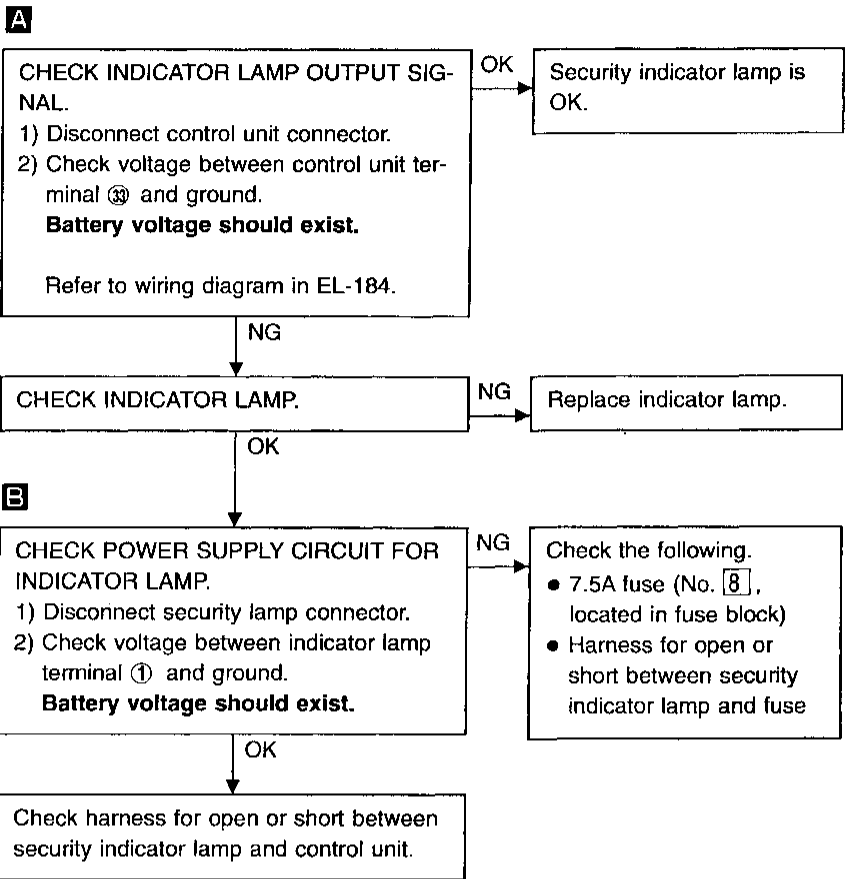
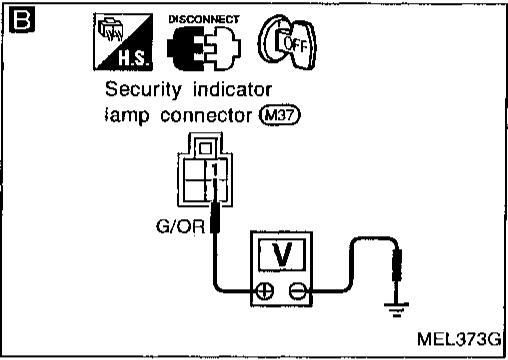
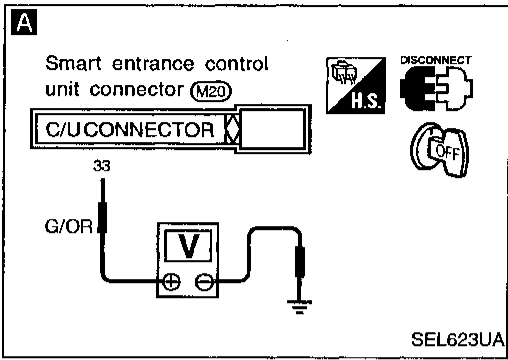
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- OK →
- Check the following.
- Trunk room lamp switch ground circuit
 - Harness for open or short between control unit and trunk room lamp switch

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

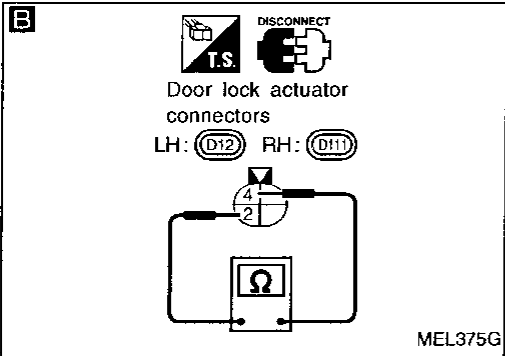
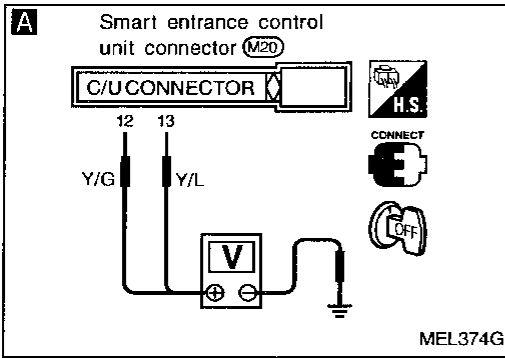
DIAGNOSTIC PROCEDURE 2 (Security indicator lamp check)



THEFT WARNING SYSTEM

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 or ⑬, and ground.

OK → Door unlock sensor is OK.

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

Refer to wiring diagram in EL-184.

NG →

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

NG → Replace door unlock sensor.

Terminals	Condition	Continuity
④ - ②	Locked	No
	Unlocked	Yes

OK →

Check the following.

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

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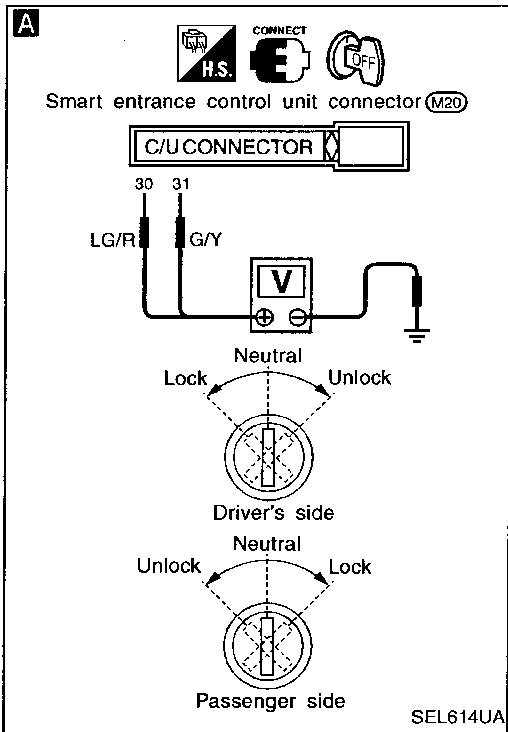
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4 (Door key cylinder switch check)



A

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

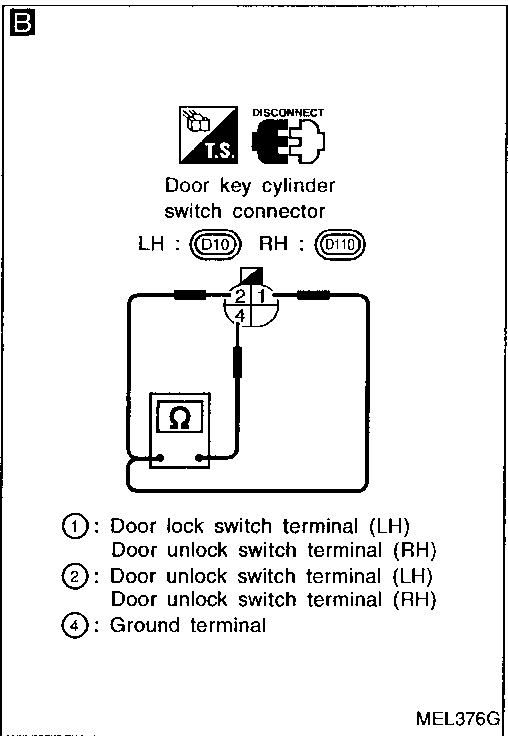
Check voltage between control unit terminals ⑩ or ⑪ and ground.

Terminals		Key position	Voltage [V]
⊕	⊖		
⑩	Ground	Neutral	Approx. 5
		Lock	0
⑪	Ground	Neutral	Approx. 5
		Unlock	0

Refer to wiring diagram in EL-185.

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: ① - ④	Neutral	No
RH: ② - ④		Lock
LH: ② - ④	Neutral	No
RH: ① - ④		Unlock

NG → Replace door key cylinder switch.

OK ↓

Check the following.

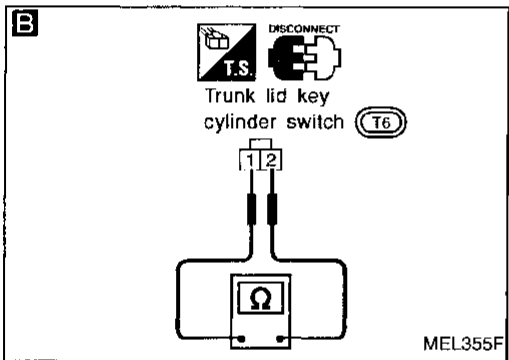
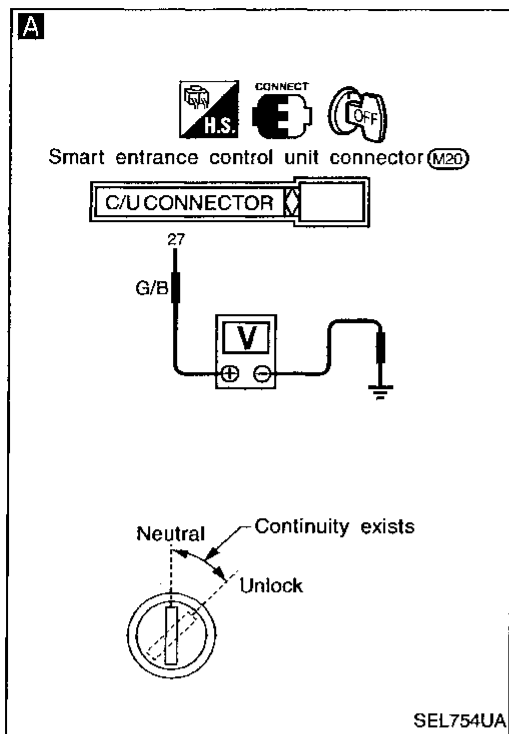
- Door key cylinder switch ground circuit
- Harness for open or short between control unit and door key cylinder switch

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Trunk lid key cylinder switch check)



A

CHECK TRUNK LID KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL).
Check voltage between control unit terminal 27 and ground.

Key position	Voltage [V]
Neutral	Approx. 5
Between neutral and unlock	0

Refer to wiring diagram in EL-184.

OK → Trunk lid key cylinder switch is OK.

NG ↓

B

CHECK TRUNK LID KEY CYLINDER SWITCH.
1) Disconnect trunk lid key cylinder switch connector.
2) Check continuity between trunk lid key cylinder switch terminals.

Key position	Continuity
Neutral and lock	No
Between neutral and unlock	Yes

NG → Replace trunk lid key cylinder switch.

OK ↓

Check the following.

- Trunk lid key cylinder switch ground circuit
- Harness for open or short between control unit and trunk lid key cylinder switch

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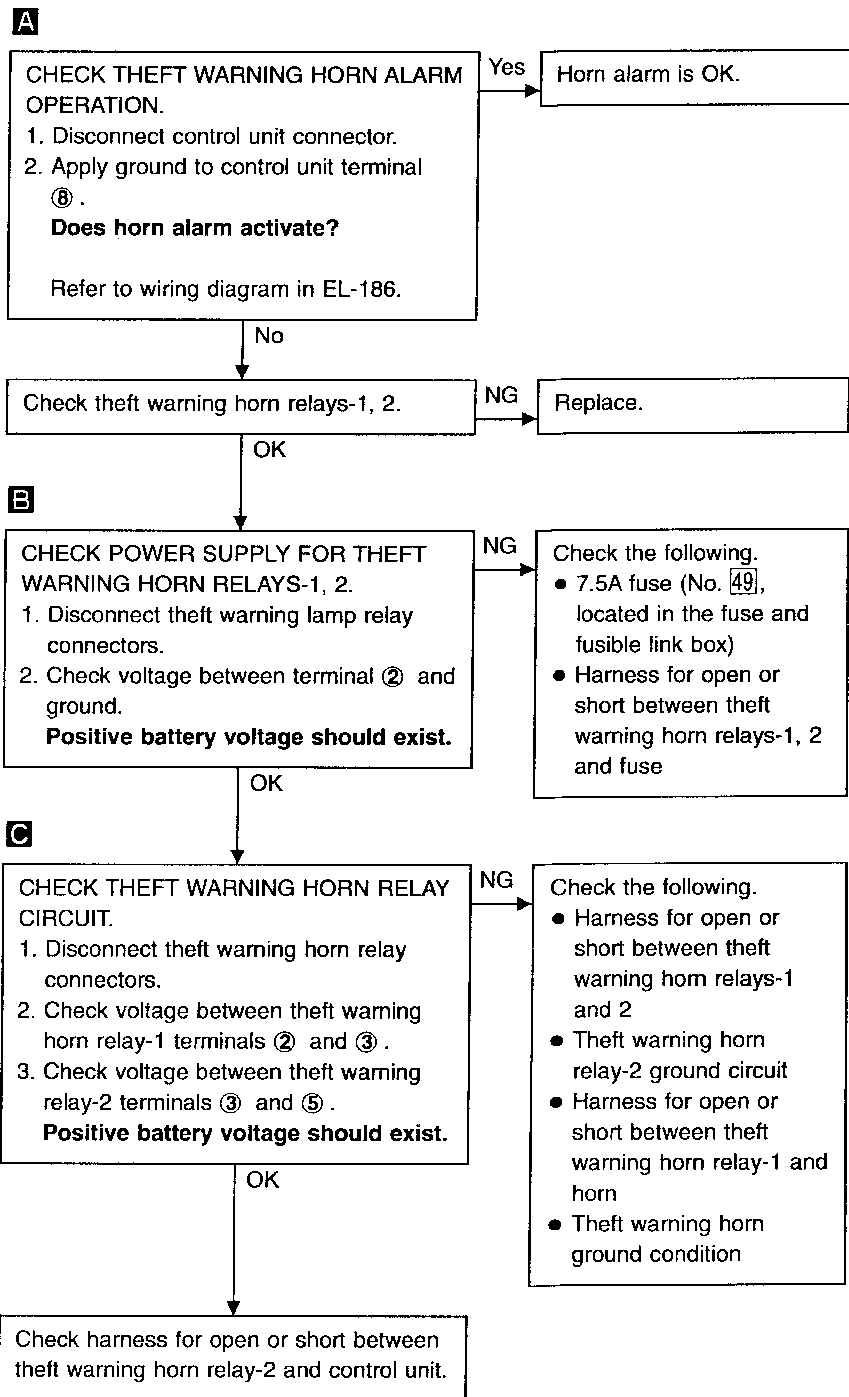
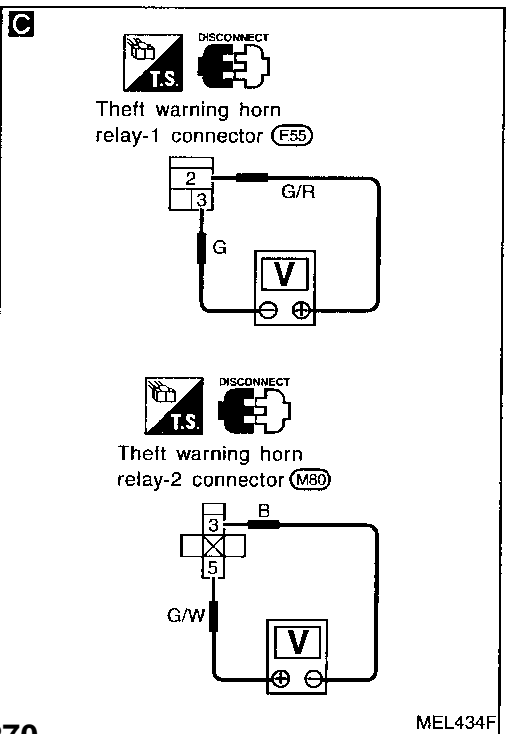
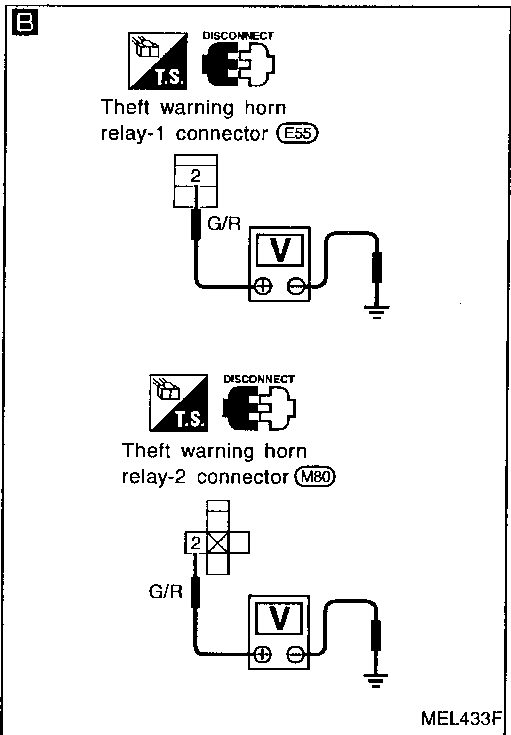
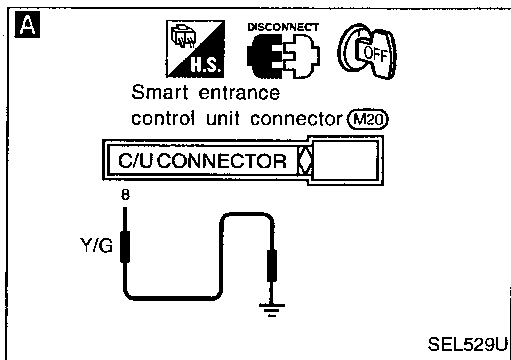
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6 (Theft warning horn alarm check)

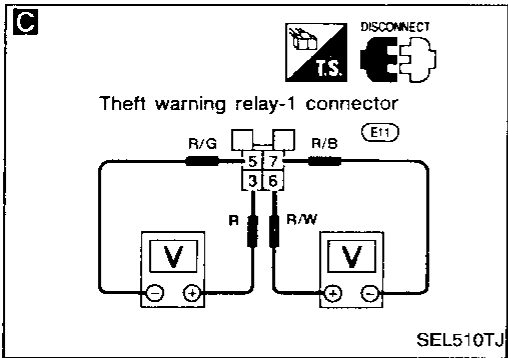
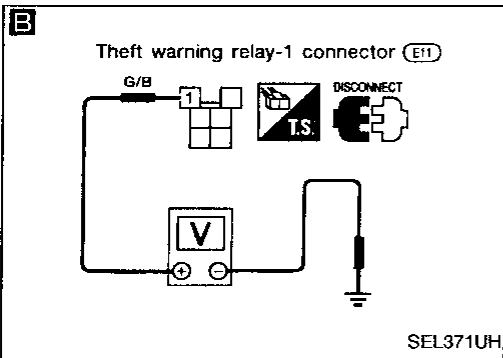
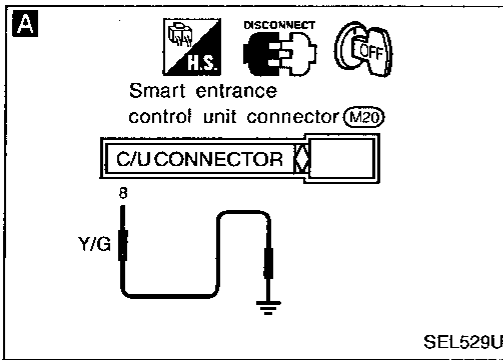


THEFT WARNING SYSTEM

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-186.

Yes → Headlamp alarm is OK.

No

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

No → Check headlamp system. Refer to "HEADLAMP" (EL-38).

Yes

Check theft warning relay-1.

NG → Replace.

OK

B

CHECK POWER SUPPLY FOR THEFT WARNING RELAY-1.

1. Disconnect theft warning relay-1 connector.
2. Check voltage between terminal ① and ground.

Positive battery voltage should exist.

Refer to wiring diagram in EL-186.

NG → Check the following.

- 7.5A fuse (No. 49, located in the fuse and fusible link box)
- Harness for open or short between theft warning relay-1 and fuse

OK

C

CHECK THEFT WARNING RELAY-1 CIRCUIT.

1. Disconnect theft warning relay-1 connector.
2. Check voltage between terminals ③ and ⑤.
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 relay-1 and control unit.

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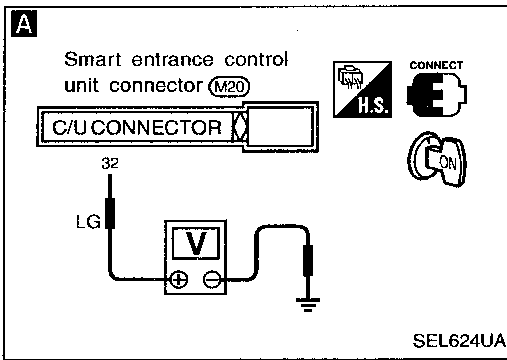
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(Starter interrupt system check)



A

CHECK STARTER MOTOR CUT OUTPUT SIGNAL.

1. Turn ignition switch "ON".
2. Check voltage between control unit terminal ③ and ground.

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

Refer to wiring diagram in EL-188.

NG

Check the following.

- 7.5A fuse (No. 1, located in fuse block)
- Harness for open or short between theft warning relay-2 and fuse
- Harness for open or short between control unit and theft warning relay-2

OK

Check theft warning relay-2.

NG

Replace relay.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

THEFT WARNING SYSTEM

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SMART ENTRANCE CONTROL UNIT

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-1 and 2 Theft warning relay-1 (headlamp) 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 Trunk room lamp switch Door key cylinder switch (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensor	Theft warning horn relay-1 and 2 Theft warning relay-1 (headlamp) Theft warning relay-2 (Starter interrupt) Security indicator

SMART ENTRANCE CONTROL UNIT

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 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)	"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	
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	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	Trunk switch	ON (Open) → OFF (Closed)	0V → 12V	
27	Trunk key unlock switch	OFF (Neutral) → ON (Unlocked)	5V → 0V	
29	Hood open signal	ON (Open) → OFF (Closed)	0V → 5V	
30	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)	5V → 0V	
31	Door key cylinder lock switch	OFF (Neutral) → ON (Unlocked)	5V → 0V	
32	Theft warning relay (Starter cut)	OFF → ON	12V → 0V	
33	Security indicator	Goes off → Illuminates	12V → 0V	
36	Rear window defogger relay	OFF → ON	12V → 0V	
37	Multi-remote antenna	—	—	

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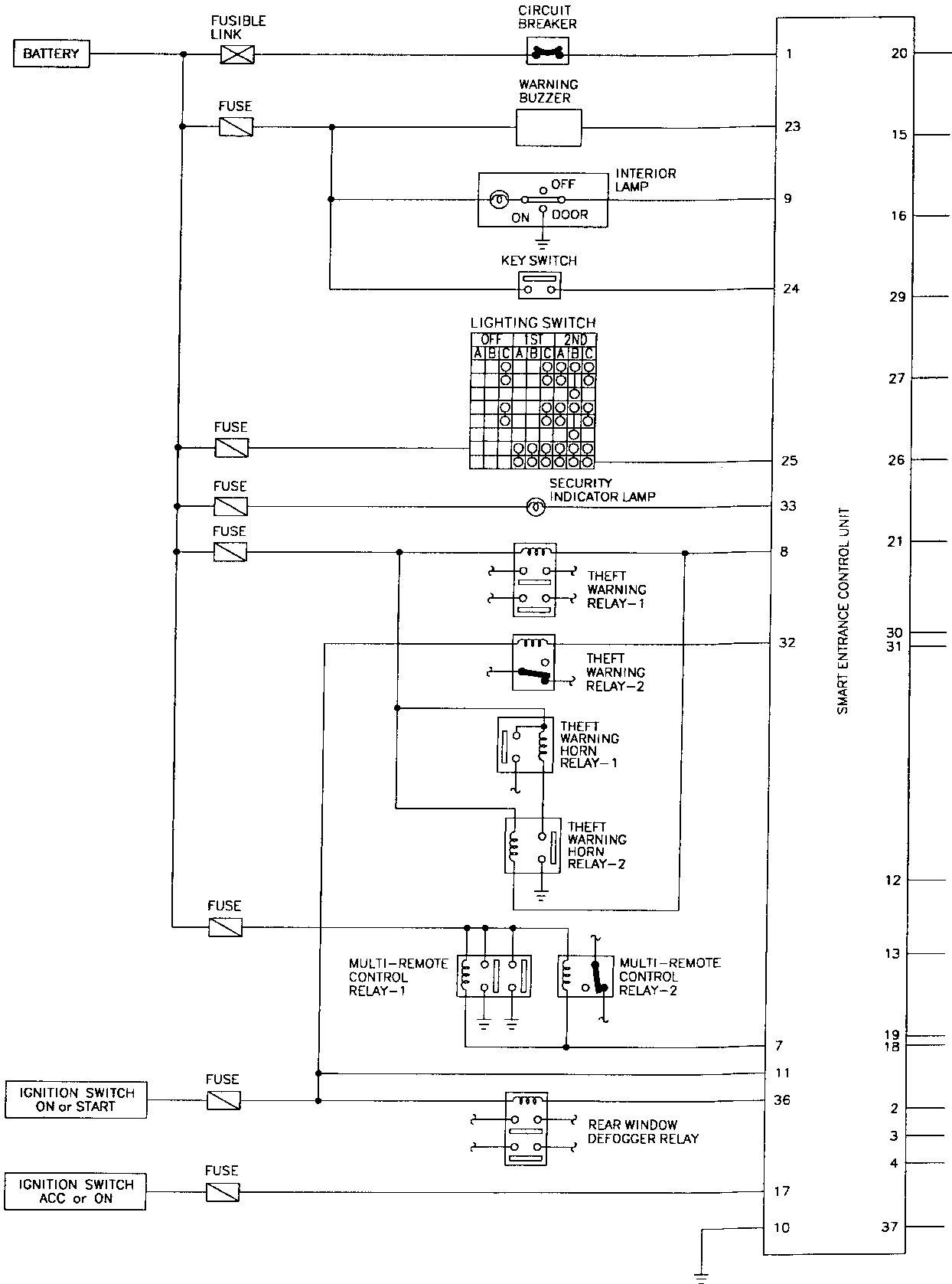
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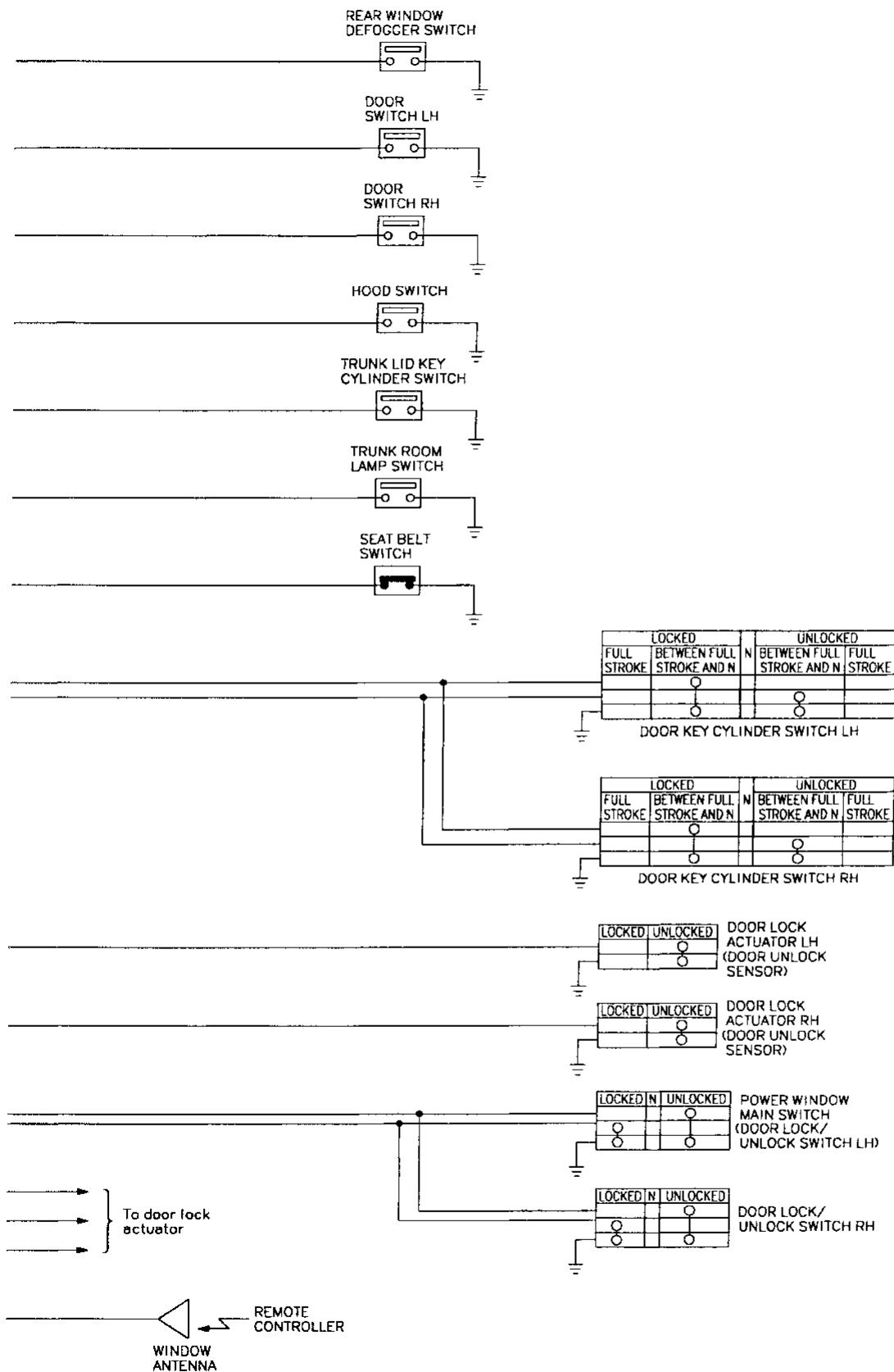
SMART ENTRANCE CONTROL UNIT

Schematic



SMART ENTRANCE CONTROL UNIT

Schematic (Cont'd)



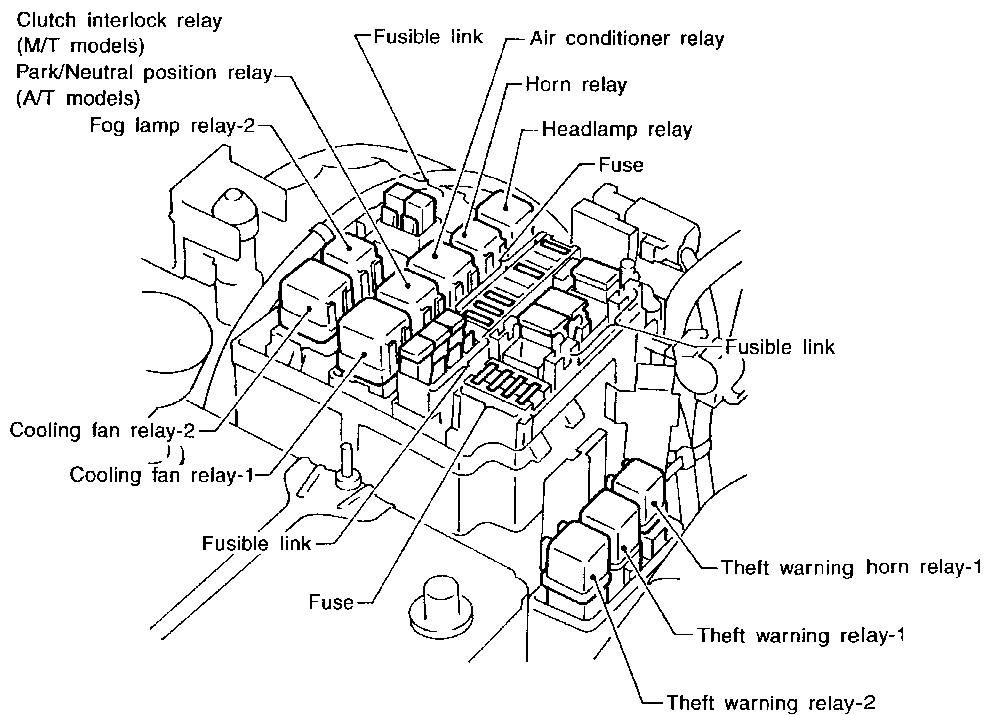
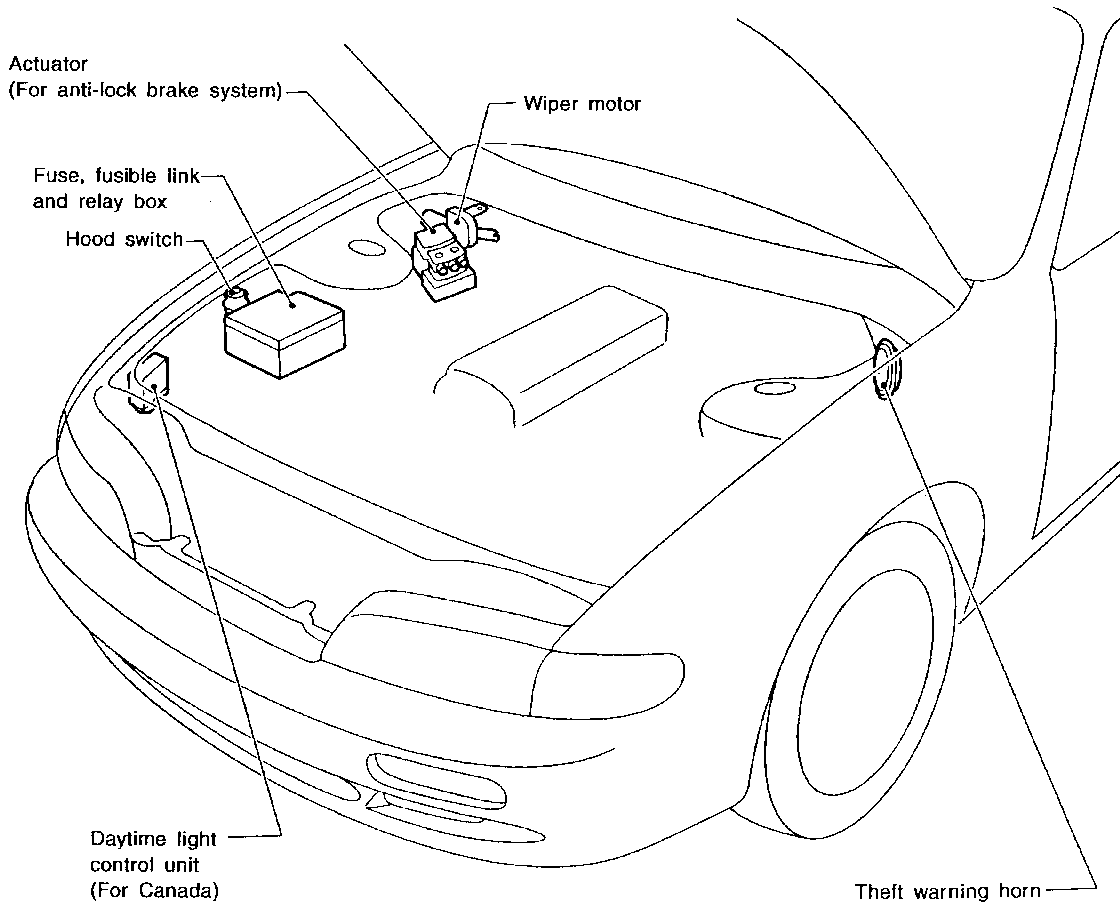
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LOCATION OF ELECTRICAL UNITS

Engine Compartment



LOCATION OF ELECTRICAL UNITS

Passenger Compartment

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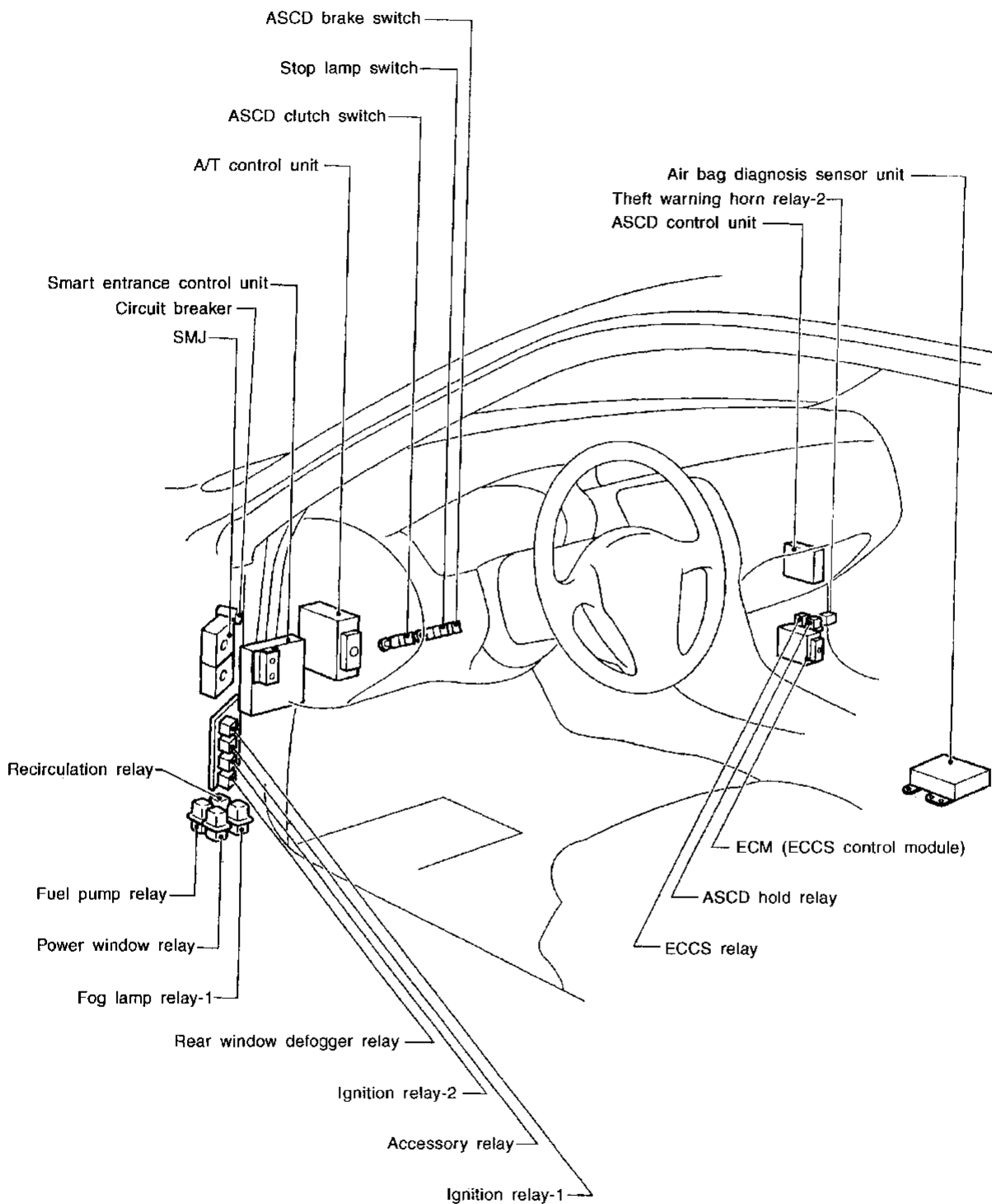
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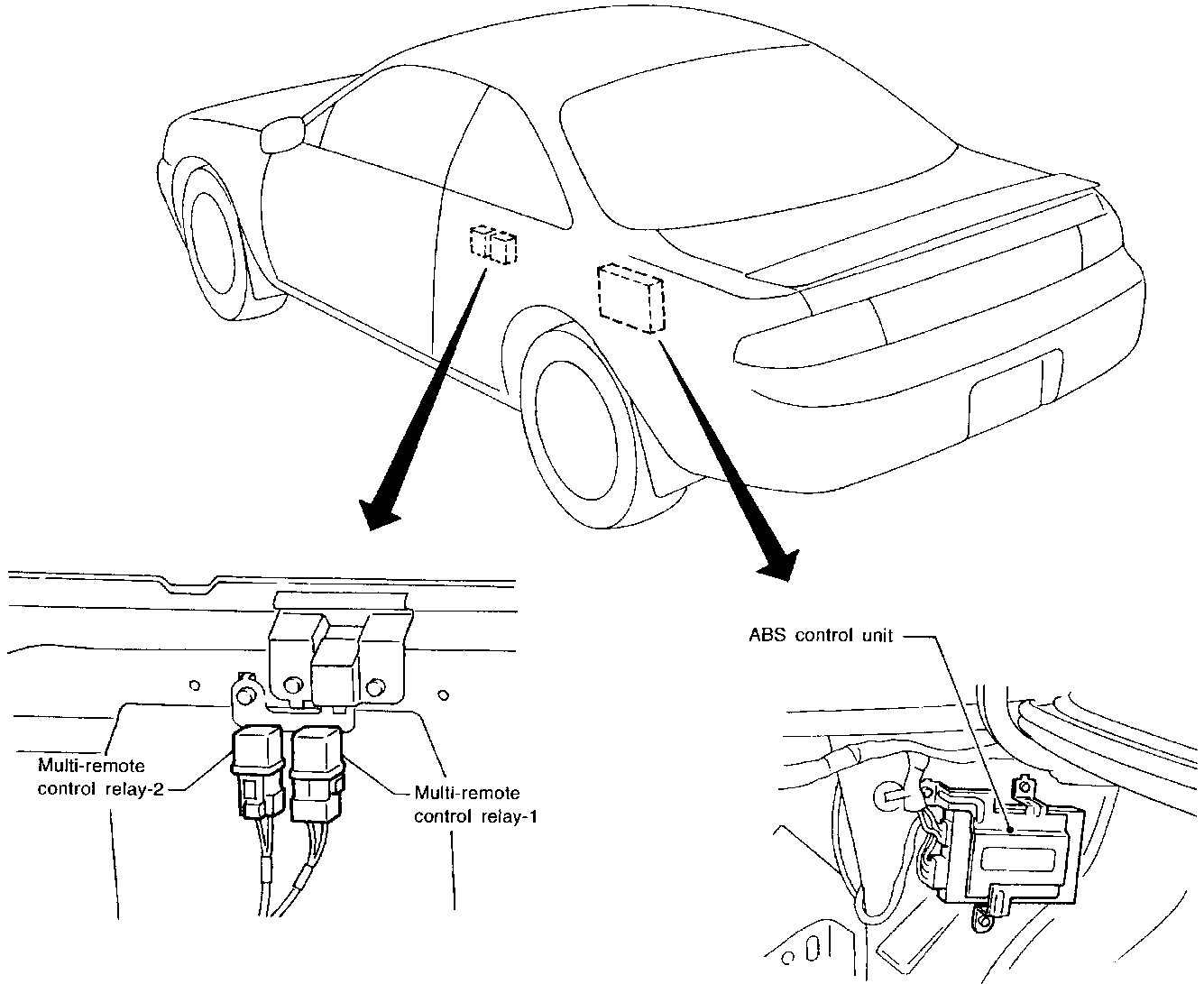
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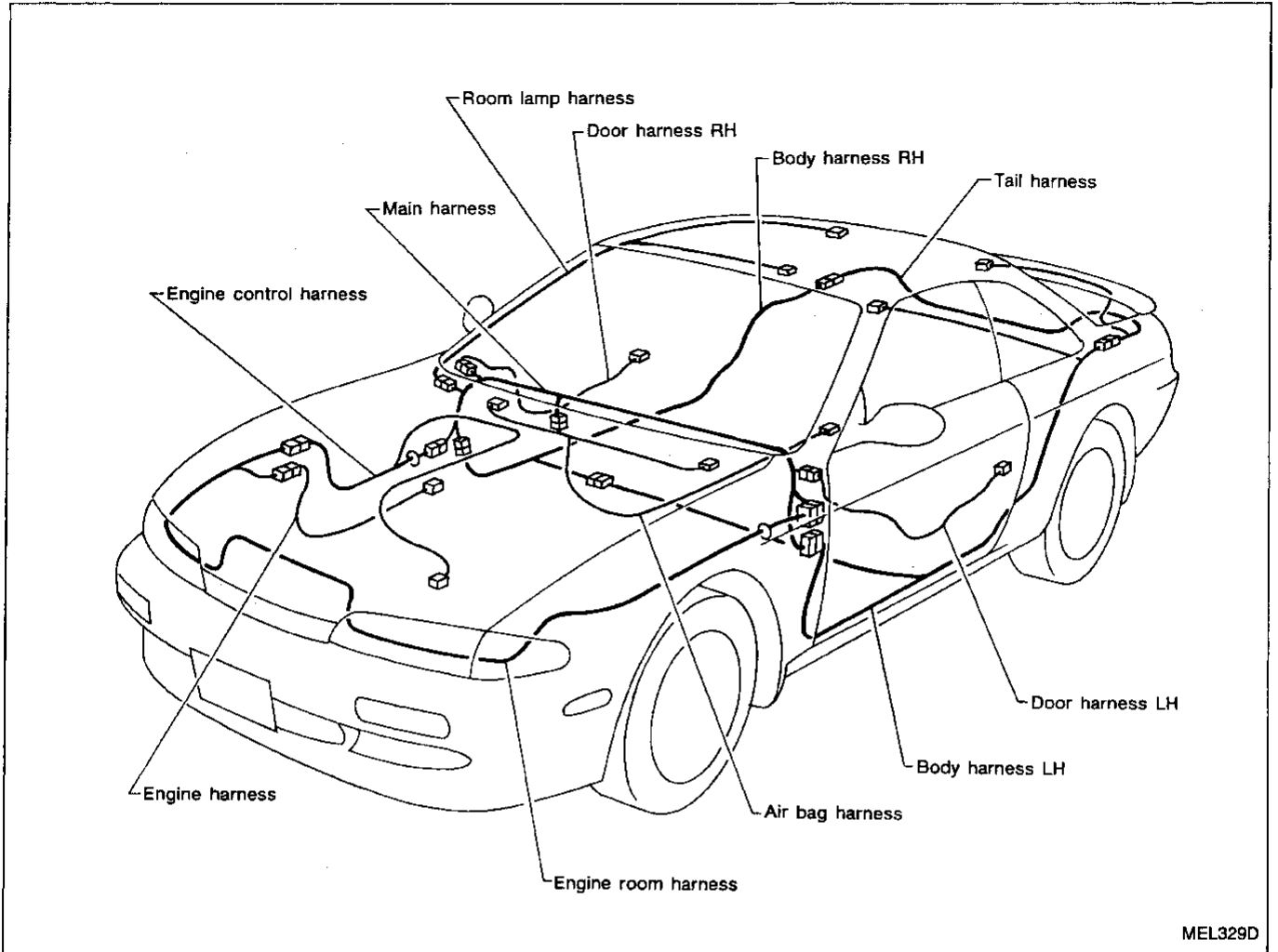
LOCATION OF ELECTRICAL UNITS

Passenger Compartment (Cont'd)



HARNES LAYOUT

Outline



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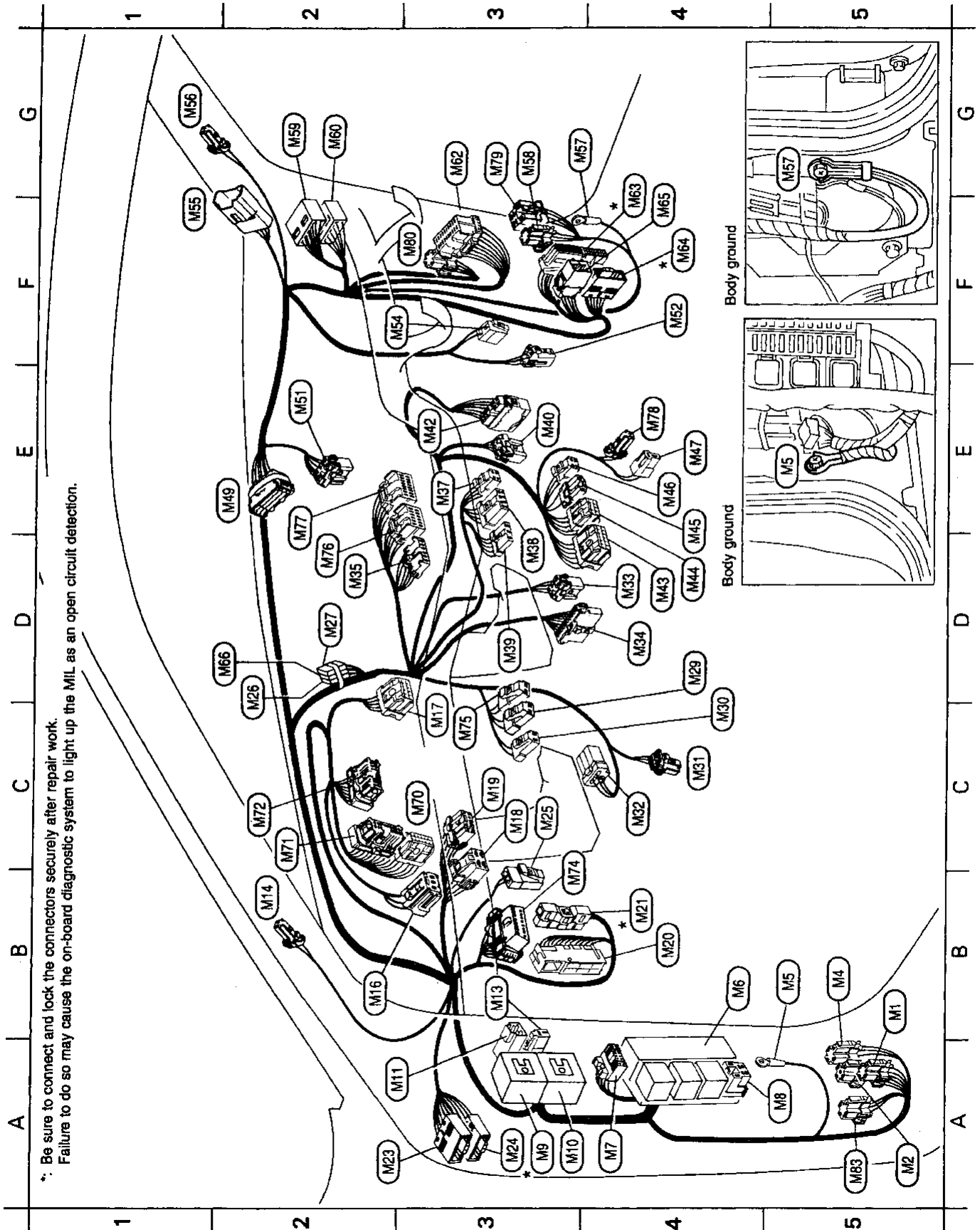
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HARNESS LAYOUT

Main Harness

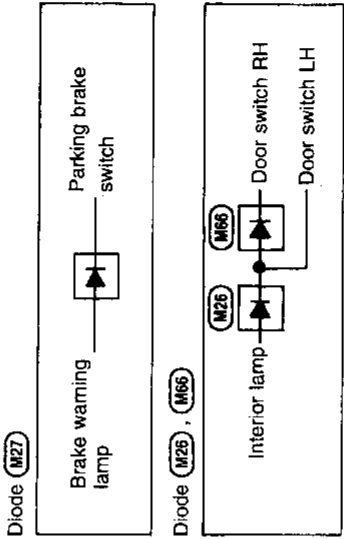


*: Be sure to connect and lock the connectors securely after repair work.
 Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

HARNES LAYOUT

Main Harness (Cont'd)

<p>B5 (M1) : Power window relay</p> <p>A5 (M2) : Recirculation relay</p> <p>B5 (M4) : Fuel pump relay</p> <p>B5 (M5) : Body ground</p> <p>B4 (M6) : Fuse block</p> <p>A4 (M7) : Data link connector for CONSULT</p> <p>A5 (M8) : Rear window defogger relay</p> <p>A3* (M9) : To (E109) (SMJ)</p> <p>A3 (M10) : To (B1) (SMJ)</p> <p>A2 (M11) : To (E113)</p> <p>B3 (M13) : Circuit breaker</p> <p>B2 (M14) : Tweeter LH</p> <p>B2 (M16) : (Models with 6-speaker audio system)</p> <p>C3 (M17) : Illumination control switch</p> <p>C3 (M18) : ASCD main switch</p> <p>C3 (M19) : Rear window defogger timer</p> <p>C3 (M20) : (Models without power door locks)</p> <p>C3 (M21) : Warning buzzer unit</p> <p>B4 (M20) : (Models without power door locks)</p> <p>B4 (M21) : Smart entrance control unit</p> <p>A2 (M23) : (Models with power door locks)</p> <p>A3 (M24) : A/T control unit (A/T models)</p> <p>C3 (M25) : To (D1)</p> <p>D2 (M26) : To (D2)</p> <p>D2 (M27) : ASCD clutch switch (M/T models)</p> <p>D4 (M29) : Diode (Models with theft warning system)</p> <p>C4 (M30) : Diode (Except BASE grade M/T models for USA)</p> <p>C4 (M31) : ASCD cancel switch (M/T models)</p> <p>C4 (M32) : Stop lamp switch</p> <p>D4 (M33) : Warning buzzer</p> <p>D4 (M34) : (Models with power door locks)</p> <p>D2 (M35) : Combination flasher unit</p> <p>E3 (M37) : Air mix door motor</p> <p>D3 (M38) : Mode door motor</p> <p>D3 (M39) : Fan switch</p> <p>E3 (M42) : Security indicator lamp</p> <p>D4 (M43) : (Models with theft warning system)</p> <p>D4 (M44) : Hazard switch</p> <p>E4 (M45) : Rear window defogger switch</p> <p>E4 (M46) : Bi-level door motor</p> <p>E4 (M47) : To (Z5)</p> <p>E4 (M48) : Audio</p> <p>E4 (M49) : Audio</p> <p>E4 (M50) : CD deck illumination</p> <p>E4 (M51) : CD deck</p> <p>E4 (M52) : Cigarette lighter</p>	<p>E2 (M49) : Joint connector</p> <p>E2 (M51) : (Models with 6-speaker audio system)</p> <p>F4 (M52) : Intake door motor</p> <p>F2 (M54) : Fan resistor</p> <p>F1 (M55) : Blower motor</p> <p>G1 (M56) : To (R1)</p> <p>G3 (M57) : Tweeter RH</p> <p>G3 (M58) : (Models with 6-speaker audio system)</p> <p>G3 (M59) : Body ground</p> <p>G2 (M60) : ASCD hold relay (M/T models)</p> <p>G3 (M62) : To (Q101)</p> <p>F4* (M63) : To (Q102)</p> <p>F4* (M64) : ASCD control unit</p> <p>F4 (M65) : To (F3)</p>	<p>F4* (M64) : To (F4)</p> <p>F4 (M65) : To (B23) (Models with ABS)</p> <p>D2 (M66) : Diode</p> <p>C3 (M70) : (Models with theft warning system)</p> <p>C2 (M71) : Combination meter</p> <p>C2 (M72) : Combination meter</p> <p>B3 (M74) : Combination meter</p> <p>C3 (M75) : Data link connector for GST</p> <p>D2 (M76) : Shift lock brake switch (A/T models)</p> <p>D2 (M77) : Push control unit</p> <p>E4 (M78) : Push control unit</p> <p>G3 (M79) : Cigarette lighter illumination</p> <p>F3 (M80) : ASCD hold relay (A/T models)</p> <p>A5 (M83) : Theft warning horn relay-2</p> <p>A5 (M83) : Fog lamp relay-1</p>	<p>(M49) : Joint connector</p> <p>(M51) : (Models with 6-speaker audio system)</p> <p>(M52) : Intake door motor</p> <p>(M54) : Fan resistor</p> <p>(M55) : Blower motor</p> <p>(M56) : To (R1)</p> <p>(M57) : Tweeter RH</p> <p>(M58) : (Models with 6-speaker audio system)</p> <p>(M59) : Body ground</p> <p>(M60) : ASCD hold relay (M/T models)</p> <p>(M62) : To (Q101)</p> <p>(M63) : To (Q102)</p> <p>(M64) : ASCD control unit</p> <p>(M65) : To (F3)</p>	<p>(M64) : To (F4)</p> <p>(M65) : To (B23) (Models with ABS)</p> <p>(M66) : Diode</p> <p>(M70) : (Models with theft warning system)</p> <p>(M71) : Combination meter</p> <p>(M72) : Combination meter</p> <p>(M74) : Combination meter</p> <p>(M75) : Data link connector for GST</p> <p>(M76) : Shift lock brake switch (A/T models)</p> <p>(M77) : Push control unit</p> <p>(M78) : Push control unit</p> <p>(M79) : Cigarette lighter illumination</p> <p>(M80) : ASCD hold relay (A/T models)</p> <p>(M83) : Theft warning horn relay-2</p> <p>(M83) : Fog lamp relay-1</p>
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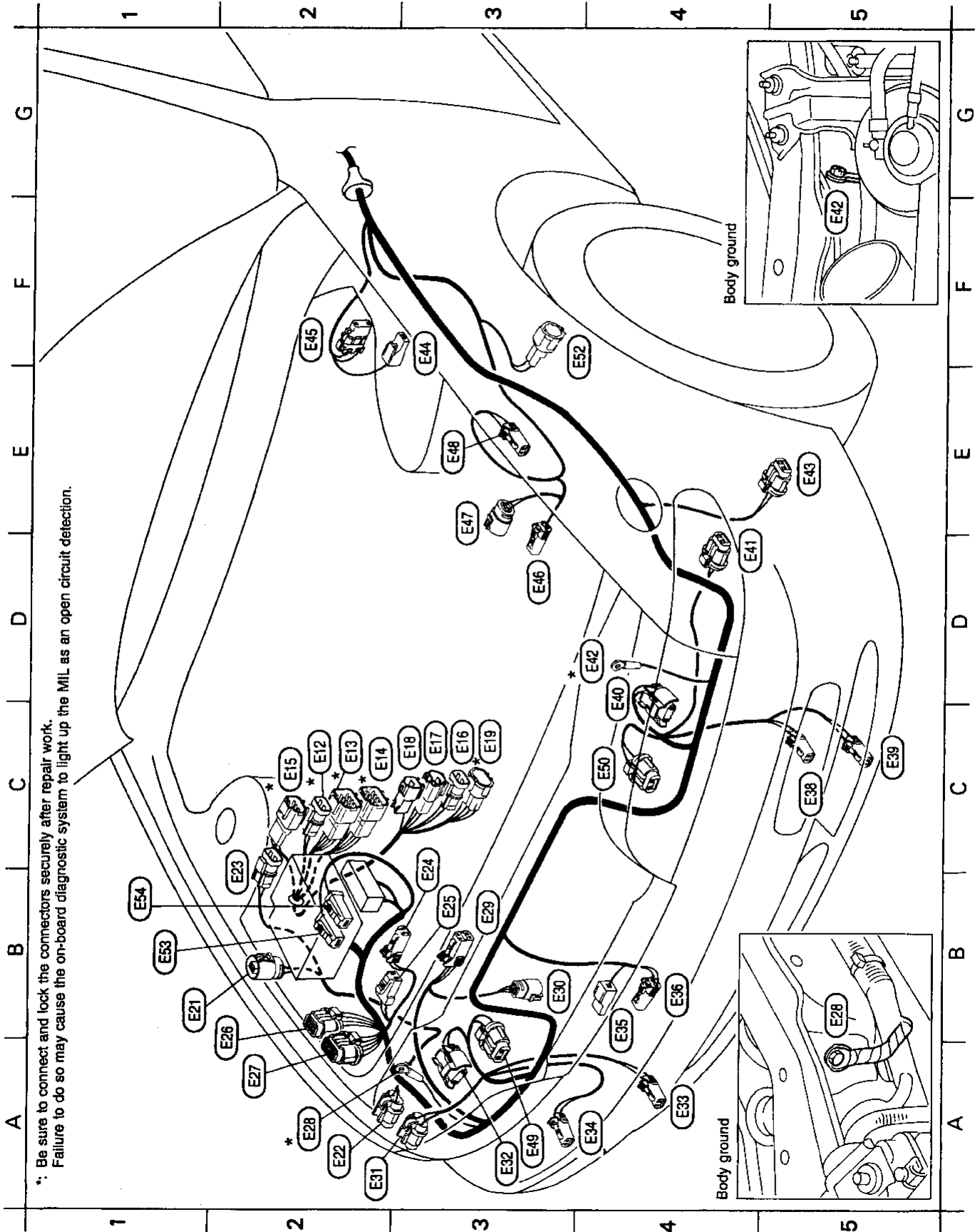


*: Be sure to connect and lock the connectors securely after repair work.
 Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

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HARNESS LAYOUT

Engine Room Harness



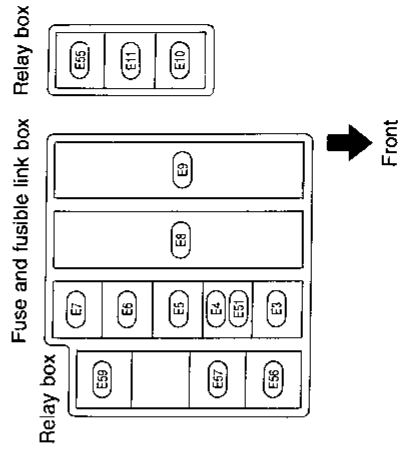
HARNESS LAYOUT

Engine Room Harness (Cont'd)

E3	Cooling fan relay-1	C5	Fog lamp LH
E4	Clutch interlock relay (M/T models)	D4	Headlamp LH
E5	Air conditioner relay	D4	Parking lamp LH
E6	Horn relay	D4*	Body ground
E7	Headlamp relay	E5	Front side marker lamp LH
E8	Fuse and fusible link block-2	F3	Theft warning horn
E9	Fuse and fusible link block-3	F2	Brake fluid level switch
E10	Theft warning relay-2 (SE grade models)	D3	Compressor
E11	Theft warning relay-1 (SE grade models)	E3	Power steering oil pressure switch
E12	Inhibitor switch (A/T models)	E3	Dropping resistor (A/T models)
E13	Inhibitor switch (A/T models)	A3	Headlamp RH
E14	A/T solenoid valve (A/T models)	C4	Headlamp LH
E15	Revolution sensor (A/T models)		Park/Neutral position relay (A/T models with ASCD)
E16	To E203 (A/T models)		Fuse and fusible link box
E17	To E201 (M/T models)	F3	Front wheel sensor LH (Models with ABS)
E18	To E204	B1	Battery
E19	To E202	B1	Battery
B1	Hood switch (SE grade models)	E55	Theft warning horn relay-1 } Relay box
A2	Front side marker lamp RH	E56	Cooling fan relay-2 } Relay box
B2	To F13	E57	Fog lamp relay-2 } Relay box
B3	Washer motor	E59	Fuse and fusible link box
B3	Washer fluid level switch		
A2	Daytime light control unit (For Canada)		
A2	Daytime light control unit (For Canada)		
A2*	Body ground		
B3	Triple-pressure switch		
B3	Cooling fan motor		
A2	Parking lamp RH		
A3	Headlamp RH		
A4	Fog lamp RH		
A4	Front turn signal lamp RH		
B4	Horn		
B4	Ambient temperature switch		
C5	Front turn signal lamp LH		

Fuse and fusible link box

Relay box



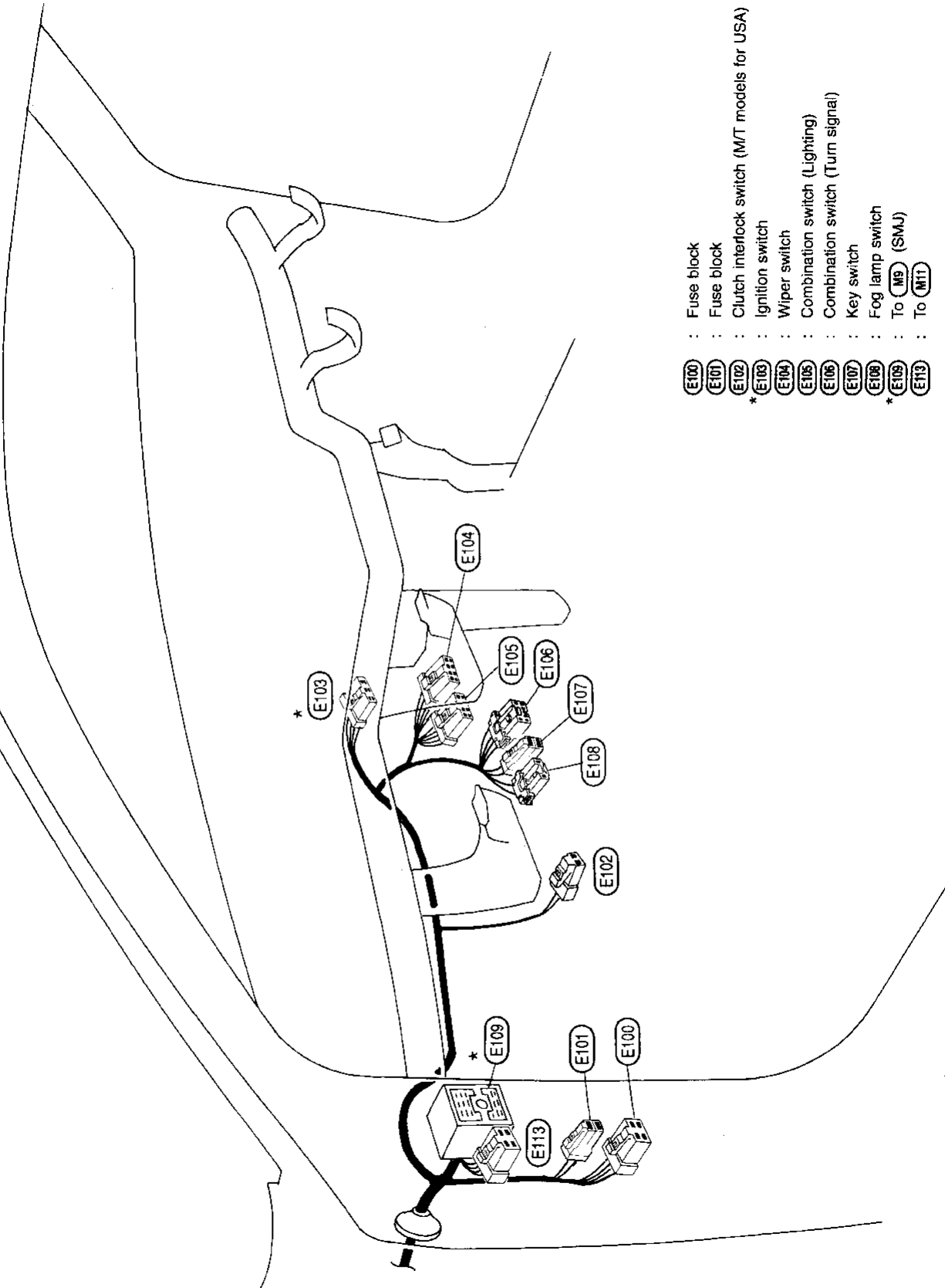
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HARNESS LAYOUT

Engine Room Harness (Cont'd)

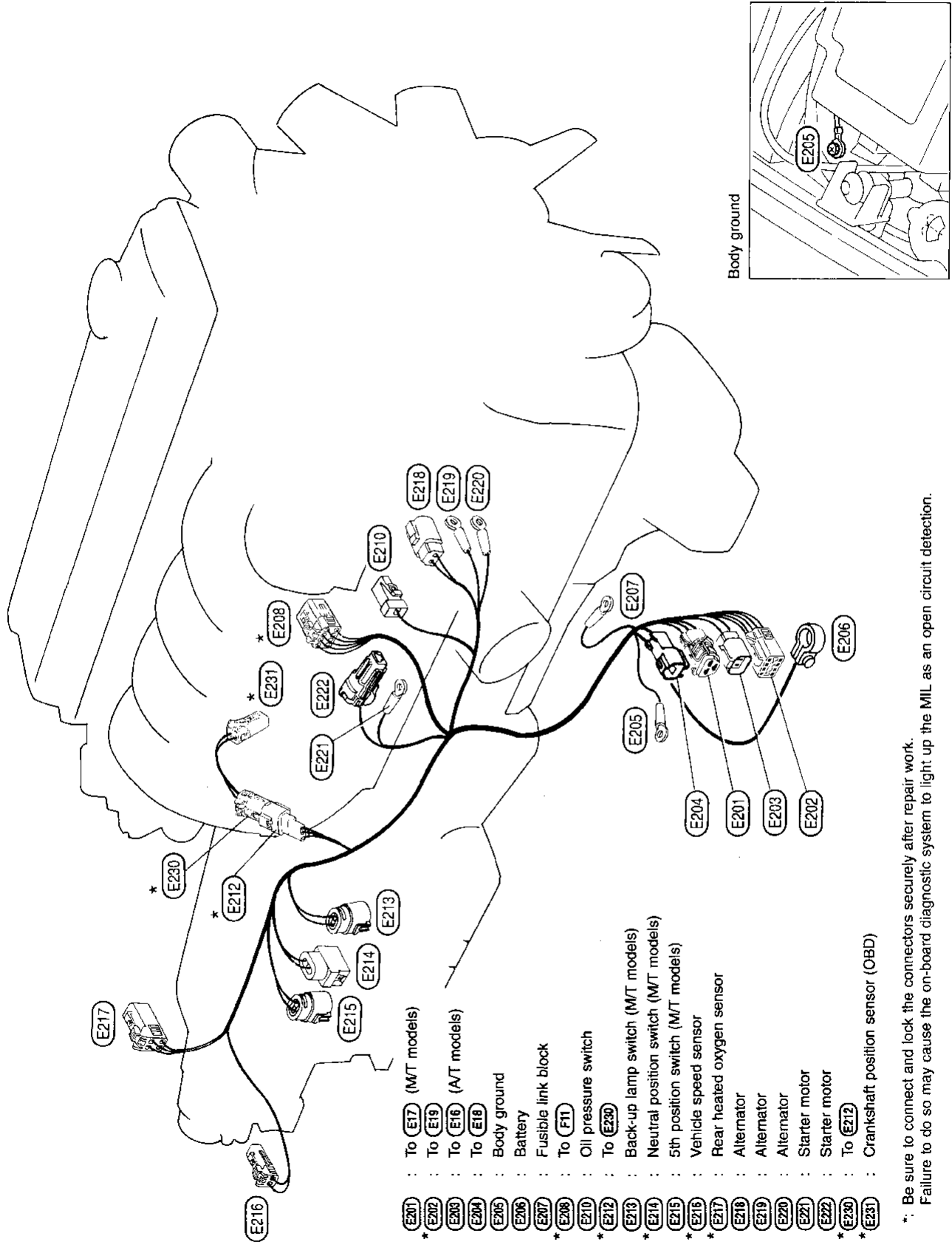
*: Be sure to connect and lock the connectors securely after repair work.
 Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.



- (E100) : Fuse block
- (E101) : Fuse block
- (E102) : Clutch interlock switch (M/T models for USA)
- * (E103) : Ignition switch
- (E104) : Wiper switch
- (E105) : Combination switch (Lighting)
- (E106) : Combination switch (Turn signal)
- (E107) : Key switch
- (E108) : Fog lamp switch
- * (E109) : To (M9) (SMJ)
- (E110) : To (M11)
- (E111) : To (M11)
- (E112) : To (M11)
- (E113) : To (M11)

HARNES LAYOUT

Engine Harness



- * E201 : To E17 (M/T models)
- E202 : To E19
- E203 : To E16 (M/T models)
- E204 : To E18
- E205 : Body ground
- E206 : Battery
- E207 : Fusible link block
- * E208 : To F11
- E209 : Oil pressure switch
- * E210 : To E230
- E211 : Back-up lamp switch (M/T models)
- * E212 : Neutral position switch (M/T models)
- E213 : 5th position switch (M/T models)
- * E214 : Vehicle speed sensor
- * E215 : Rear heated oxygen sensor
- E216 : Alternator
- E217 : Alternator
- E218 : Alternator
- E219 : Alternator
- E220 : Alternator
- E221 : Starter motor
- E222 : Starter motor
- * E223 : To E212
- * E224 : Crankshaft position sensor (OBD)

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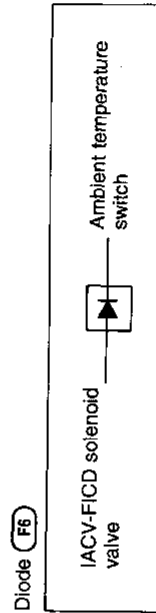
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HARNESS LAYOUT

Engine Control Harness (Cont'd)

- * (F1) : ECM (ECCS control module)
- * (F2) : ECCS relay
- * (F3) : To (M63)
- * (F4) : To (M64)
- (F5) : To (B24)
- (F6) : Diode
- (F7) : Wiper motor
- (F8) : ASCD pump
- (F9) : Wiper amplifier
- * (F11) : To (E208)
- (F12) : Front wheel sensor RH
- (F13) : To (E23)
- * (F15) : Engine ground
- * (F16) : Front heated oxygen sensor
- * (F17) : To (E71)
- * (F18) : Injector No. 4
- * (F19) : Injector No. 3
- * (F20) : Injector No. 2
- * (F21) : Injector No. 1
- * (F22) : Throttle position sensor
- * (F23) : To (F50)
- * (F24) : Engine coolant temperature sensor
- * (F25) : Throttle position switch
- * (F26) : To (F61)
- (F27) : Thermal transmitter

- (F28) : Resistor
- * (F29) : Intake air temperature sensor
- * (F30) : Mass air flow sensor
- * (F31) : Distributor (Camshaft position sensor is built-in.)
- * (F32) : Ignition coil
- (F33) : Condenser
- (F34) : EVAP canister purge control solenoid valve
- * (F35) : MAP/BARO switch solenoid valve
- * (F36) : Absolute pressure sensor
- * (F37) : To (F55)
- (F38) : } ABS actuator
- (F39) : }
- (F40) : }
- * (F41) : To (B35)
- * (F50) : To (F23)
- * (F51) : EGR temperature sensor
- (F52) : IACV-air regulator
- * (F53) : IACV-AAC valve
- (F54) : IACV-FICD solenoid valve
- * (F55) : To (F37)
- * (F56) : EVAP canister purge volume control valve
- * (F57) : Engine ground
- * (F61) : To (F28)
- * (F62) : Knock sensor
- * (F71) : To (F17)
- * (F72) : EGRC-solenoid valve

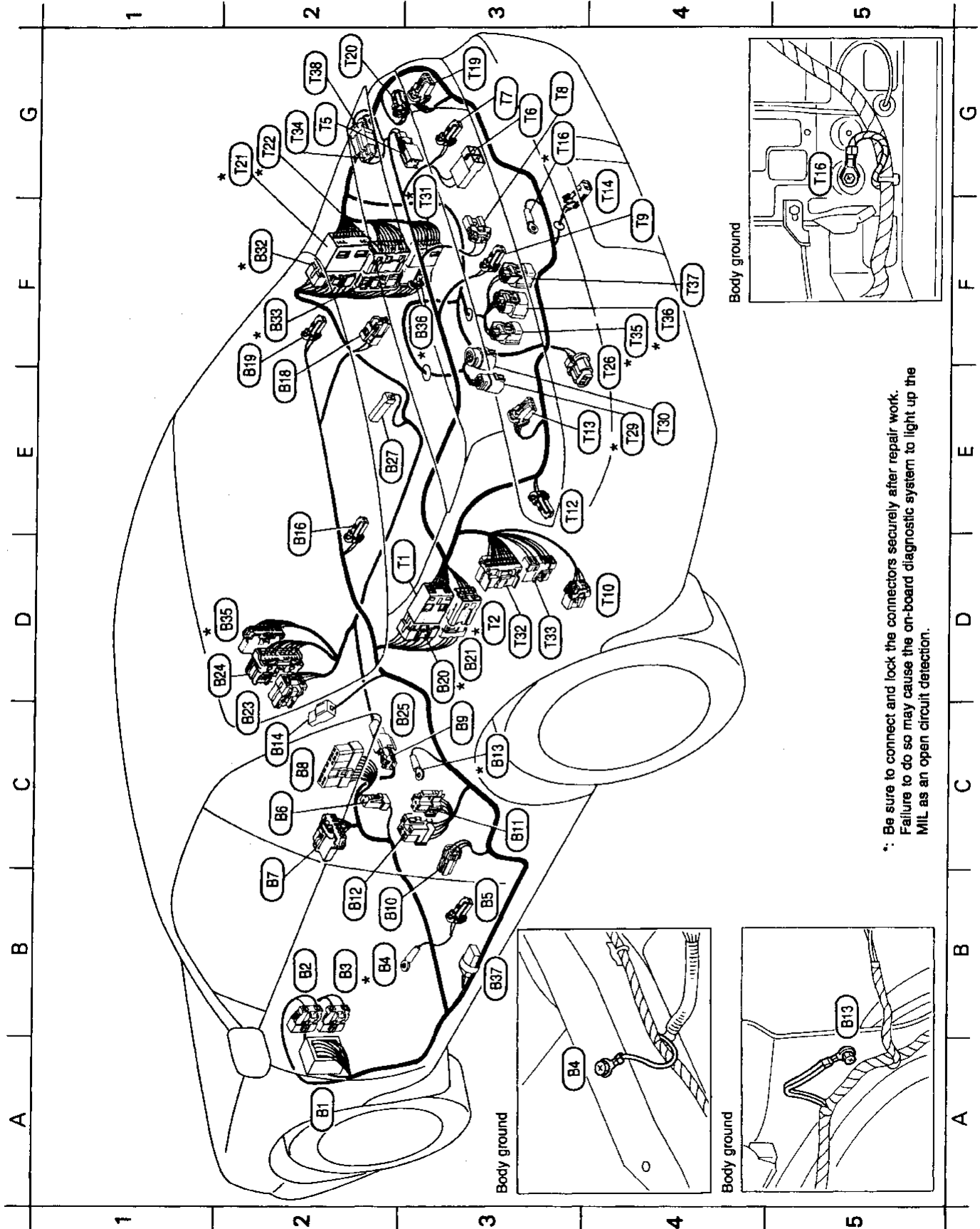


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HARNESS LAYOUT

Body Harness and Tail Harness



HARNES LAYOUT

Body Harness and Tail Harness (Cont'd)

Body harness

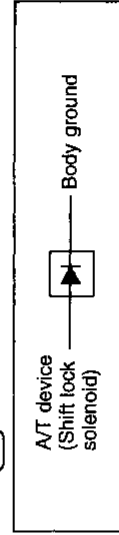
A2	B1	:	To (M10) (SMJ)
B2	B2	:	To (M11)
B2	B3	:	To (M12)
B2	B4	:	Body ground
B3	B5	:	Seat belt buckle switch
C2	B6	:	Parking brake switch
B2	B7	:	A/T device
C2	B8	:	Door mirror remote control switch
C3	B9	:	To (B25)
B2	B10	:	Door switch LH
C3	B11	:	Multi-remote control relay-2 (SE grade models)
B2	B12	:	Multi-remote control relay-1 (SE grade models)
C3	B13	:	Body ground
C2	B14	:	Rear window defogger
D2	B16	:	Rear speaker LH
E2	B18	:	Trunk room lamp
E2	B19	:	Rear speaker RH
D3	B20	:	To (T1)
D3	B21	:	To (T2)
C2	B23	:	To (M65) (Models with ABS)
D2	B24	:	To (F5) (Models with ABS)
C3	B25	:	To (B9)
E2	B27	:	Door switch RH
F2	B32	:	To (T21) (Models with ABS)
F2	B33	:	To (T22) (Models with ABS)
D2	B35	:	To (F41)
F3	B36	:	To (T31) (Models without ABS)
B3	B37	:	Diode (A/T models)

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Tail harness

D3	T1	:	To (E20)
D3	T2	:	To (E21)
G2	T5	:	High-mounted stop lamp
G3	T6	:	Trunk lid key cylinder switch (Models with theft warning system)
G3	T7	:	Back-up lamp RH
G3	T8	:	Trunk room lamp switch
F4	T9	:	Back-up lamp LH
D4	T10	:	Power antenna
E3	T12	:	Rear side marker lamp LH
E4	T13	:	Rear combination lamp LH
G4	T14	:	License plate lamp
G3	T16	:	Body ground
G3	T19	:	Rear combination lamp RH
G2	T20	:	Rear side marker lamp RH
G2	T21	:	To (E32) (Models with ABS)
G2	T22	:	To (E33) (Models with ABS)
E4	T26	:	Rear skid sensor (Models with ABS)
E4	T29	:	Fuel tank gauge unit
E4	T30	:	Fuel pump
G3	T31	:	To (E36) (Models without ABS)
D3	T32	:	ABS control unit
D3	T33	:	ABS control unit
G2	T34	:	Check connector
F4	T35	:	EVAP canister vent control valve
F4	T36	:	EVAP control system pressure sensor
F4	T37	:	Vacuum cut valve bypass valve
G2	T38	:	Check connector

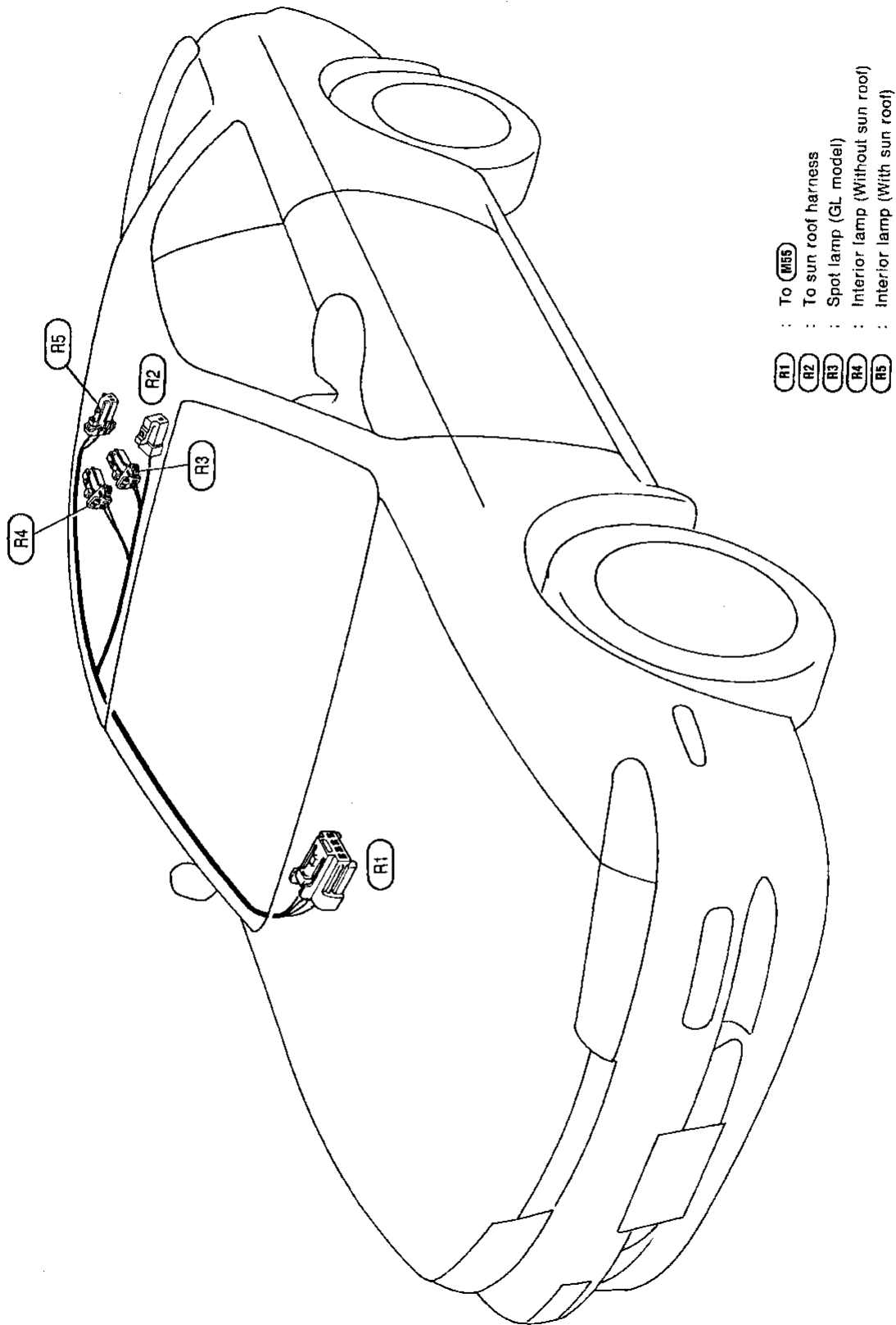
Diode (B37)



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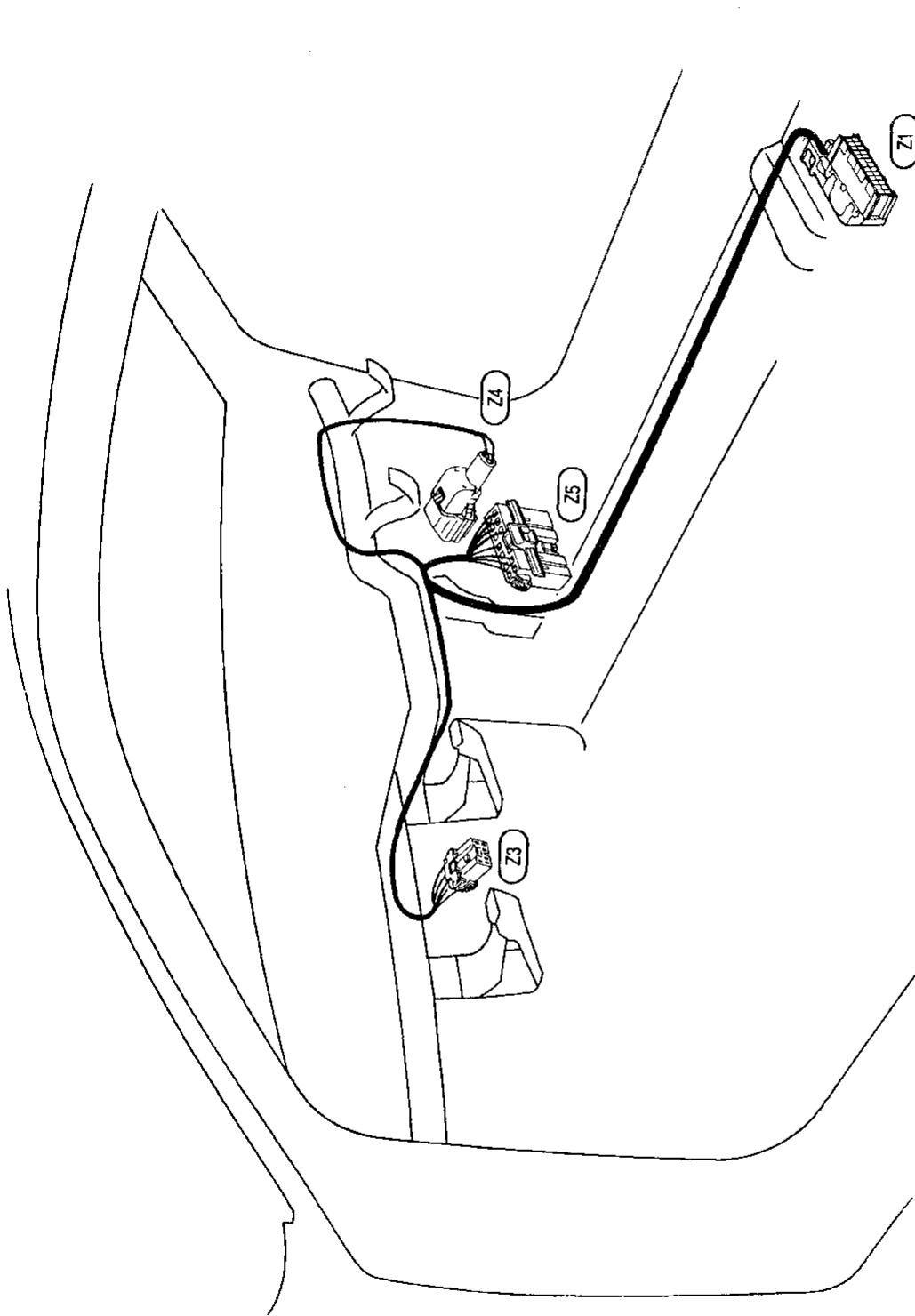
HARNES LAYOUT

Room Lamp



HARNESS LAYOUT

Air Bag Harness

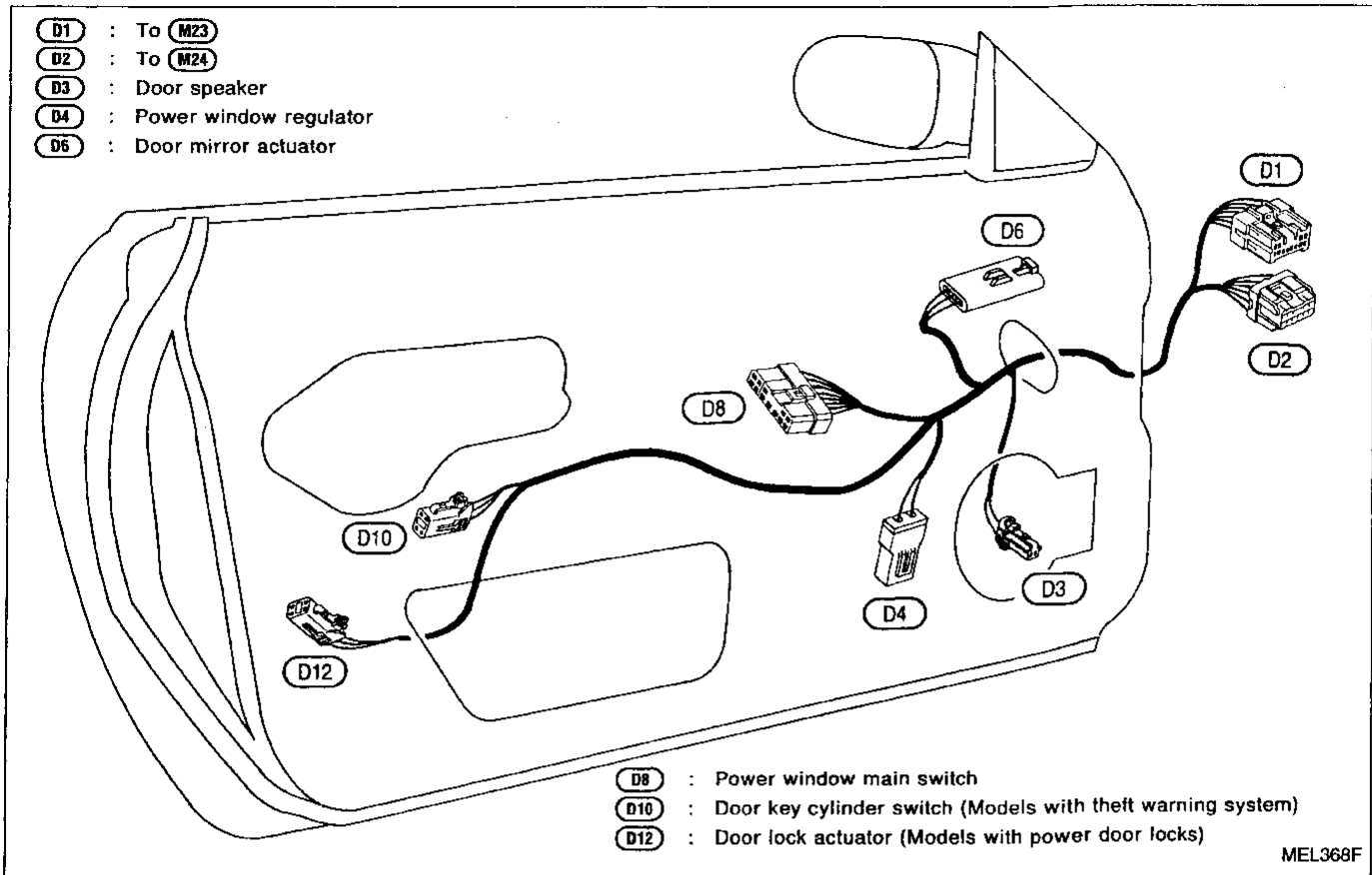


- (Z1) : Airbag diagnosis sensor unit
- (Z3) : To airbag module (Driver side), ASCD steering switch and horn switch via spiral cable
- (Z4) : Airbag module (Passenger side)
- (Z5) : To (M42)

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HARNESS LAYOUT

Door Harness LH



Door Harness RH

