

ELECTRICAL SYSTEM

SECTION **EL**

When you read wiring diagrams:

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

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

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WIRING DIAGRAM REFERENCE CHART

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

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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 INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- All SRS electrical connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS.

HARNESS CONNECTOR

Description

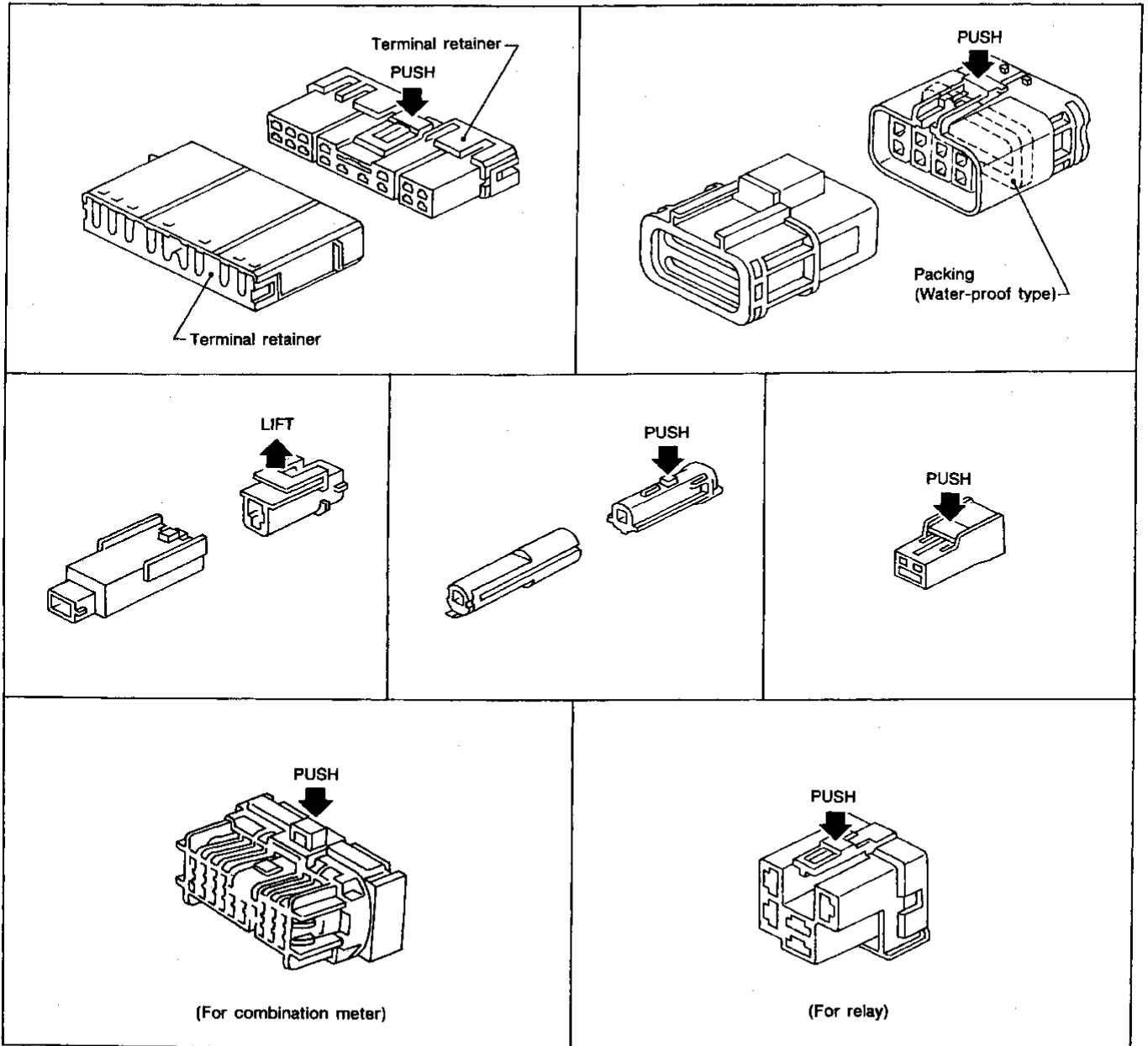
HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental loosening 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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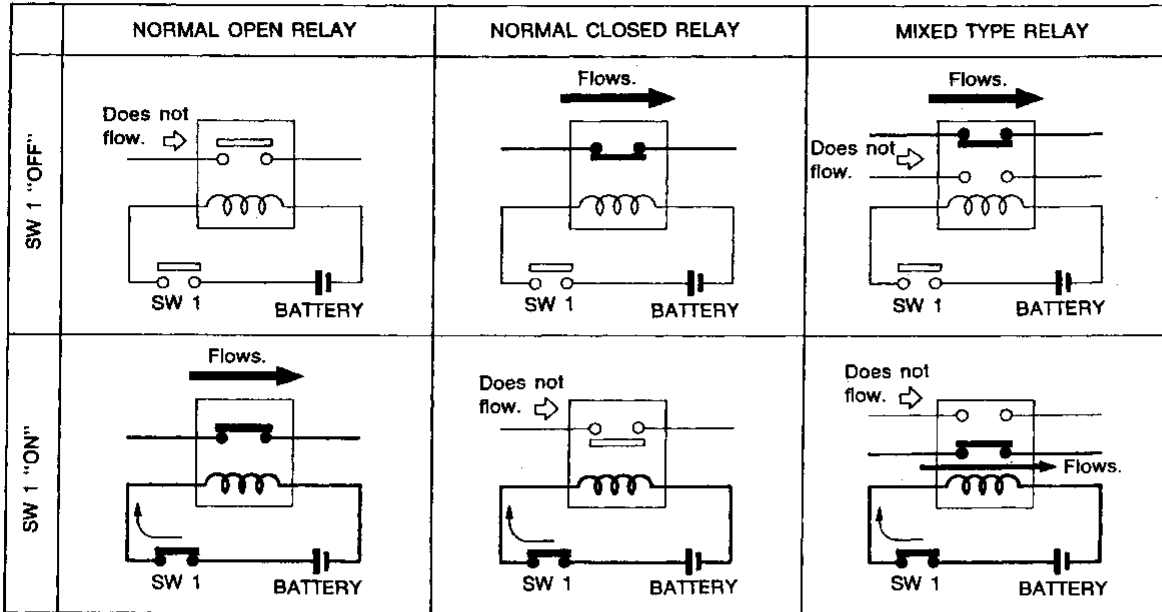
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STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

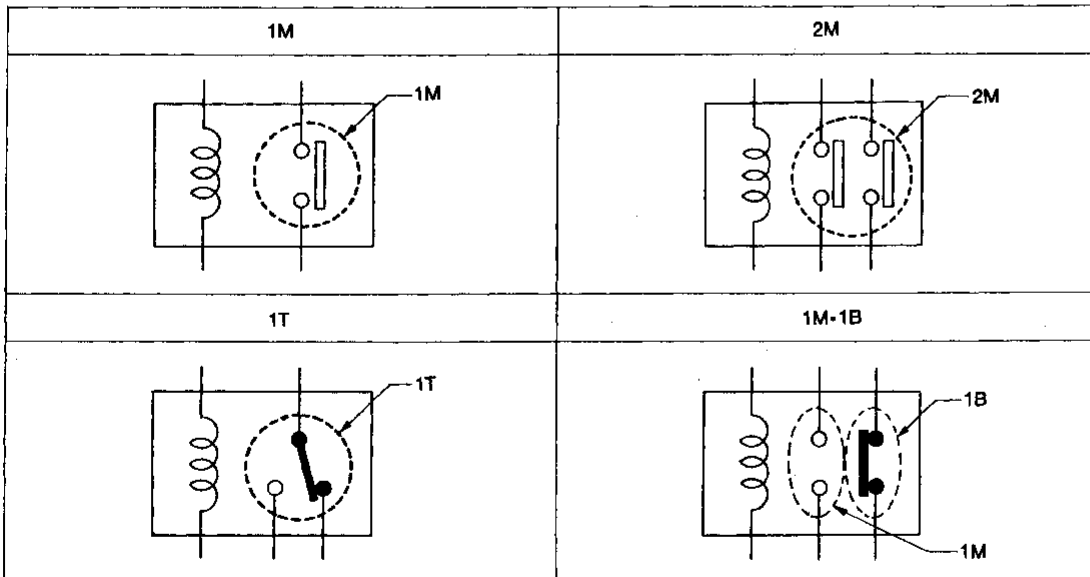
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



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TYPE OF STANDARDIZED RELAYS

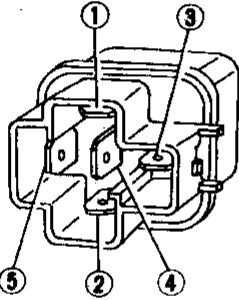
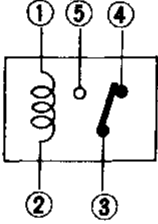
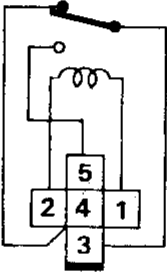
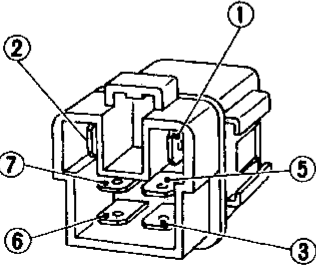
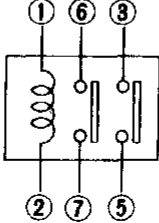
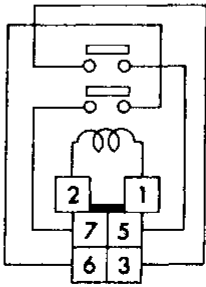
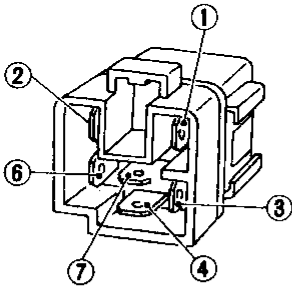
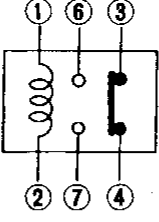
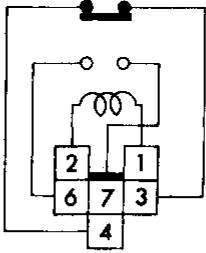
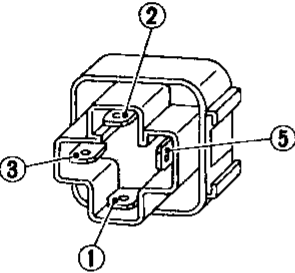
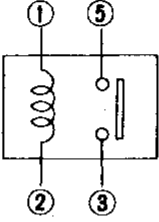
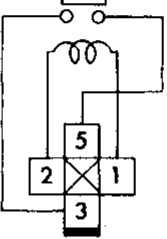
1M 1 Make 2M 2 Make
 1T 1 Transfer 1M-1B 1 Make 1 Break



SEL882H

STANDARDIZED RELAY

Description (Cont'd)

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

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

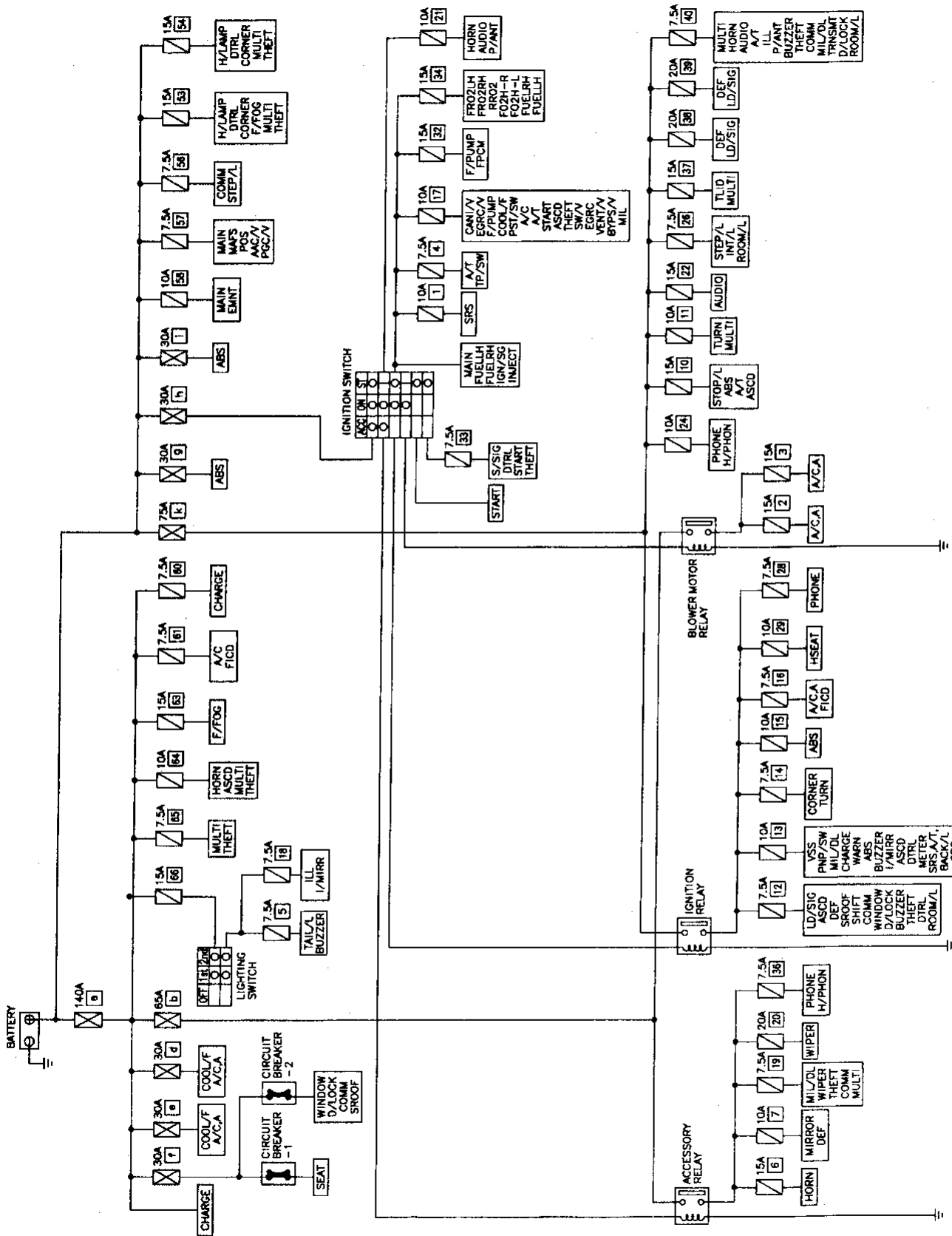
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POWER SUPPLY ROUTING

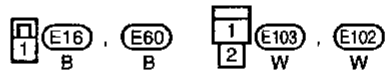
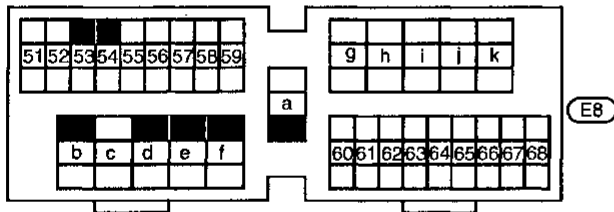
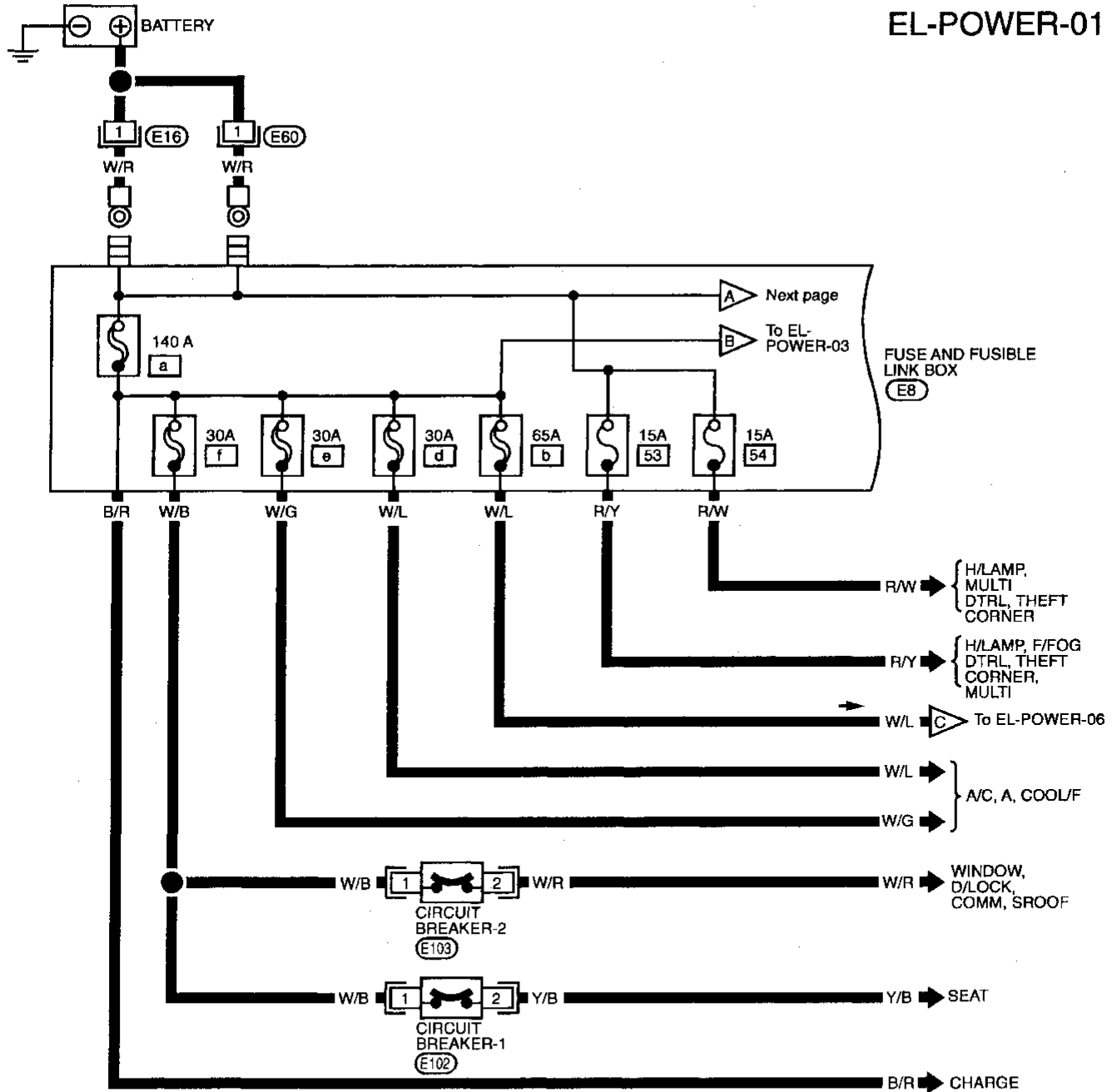
Schematic



POWER SUPPLY ROUTING

Wiring Diagram — POWER —

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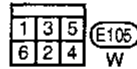
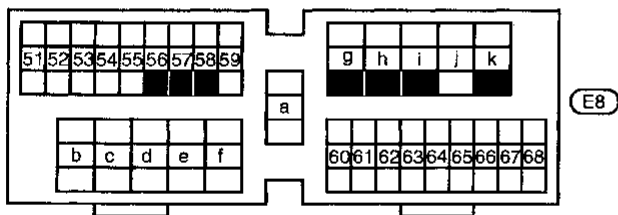
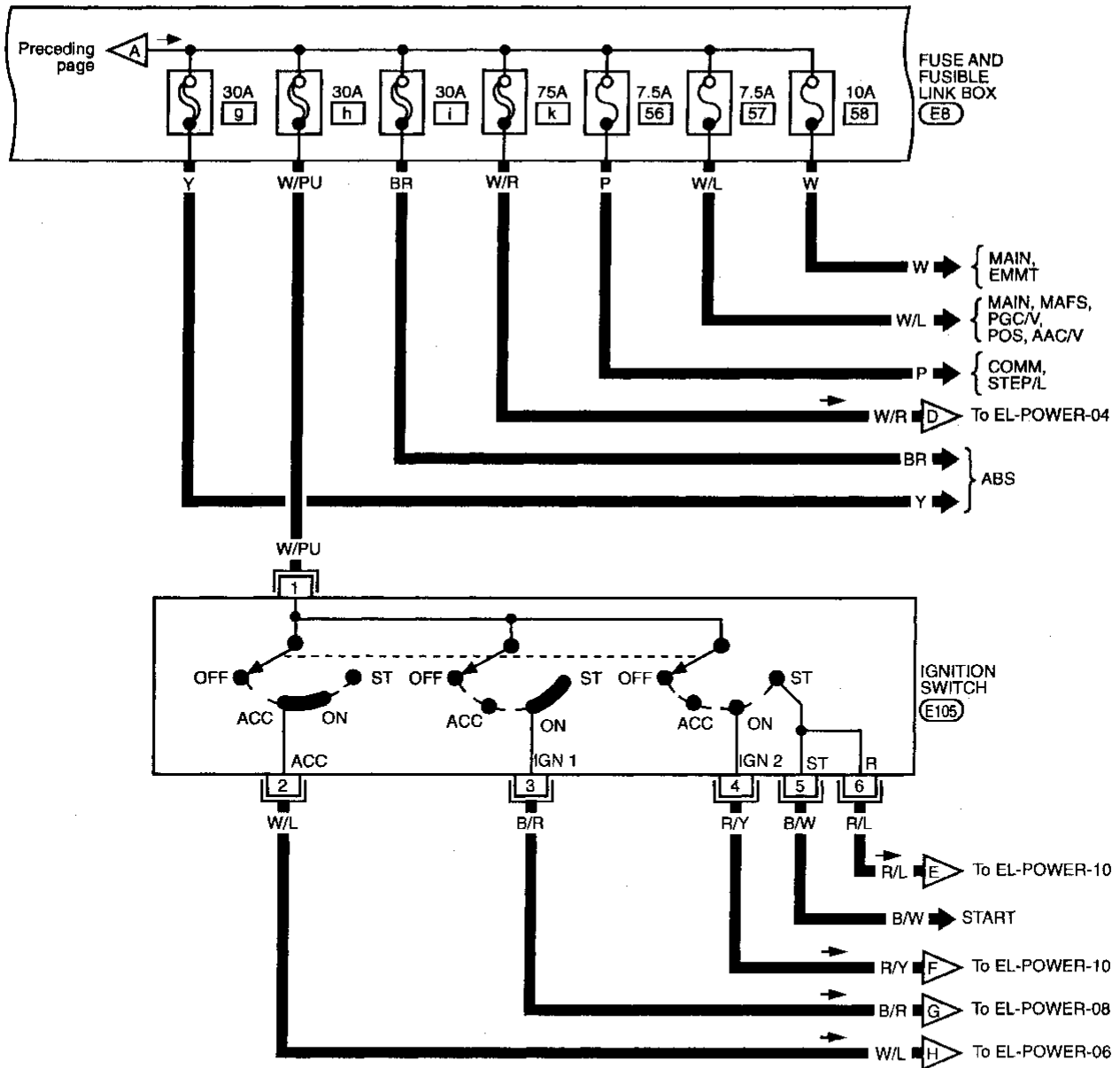


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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

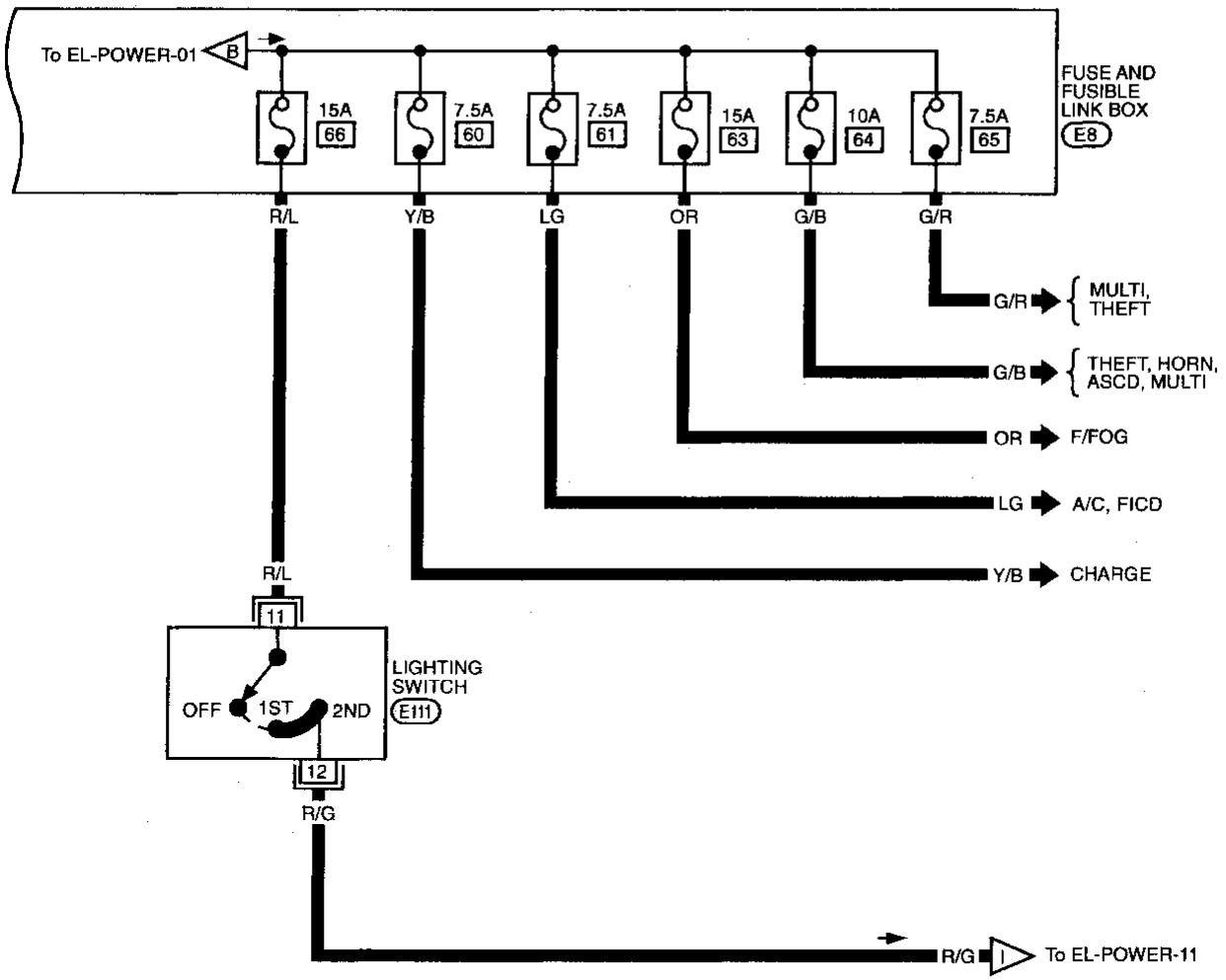
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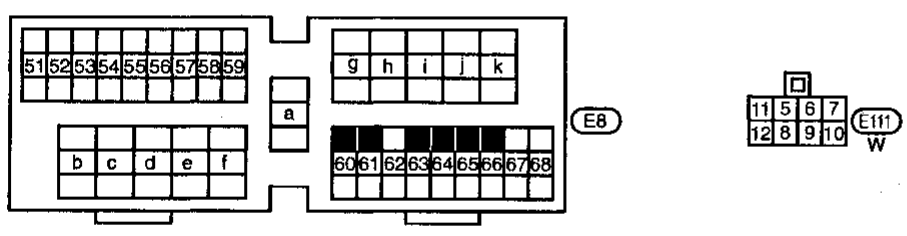
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



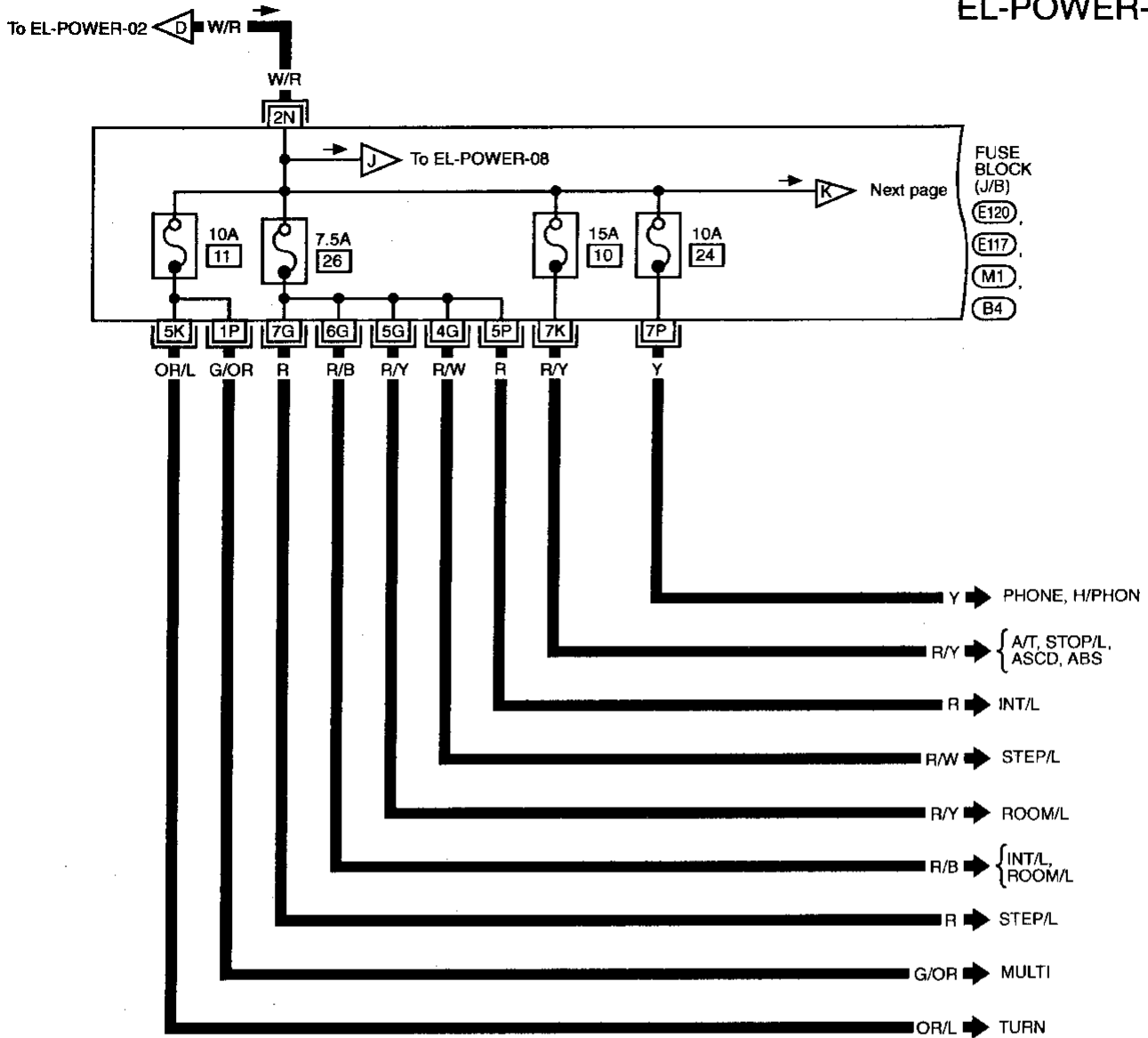
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

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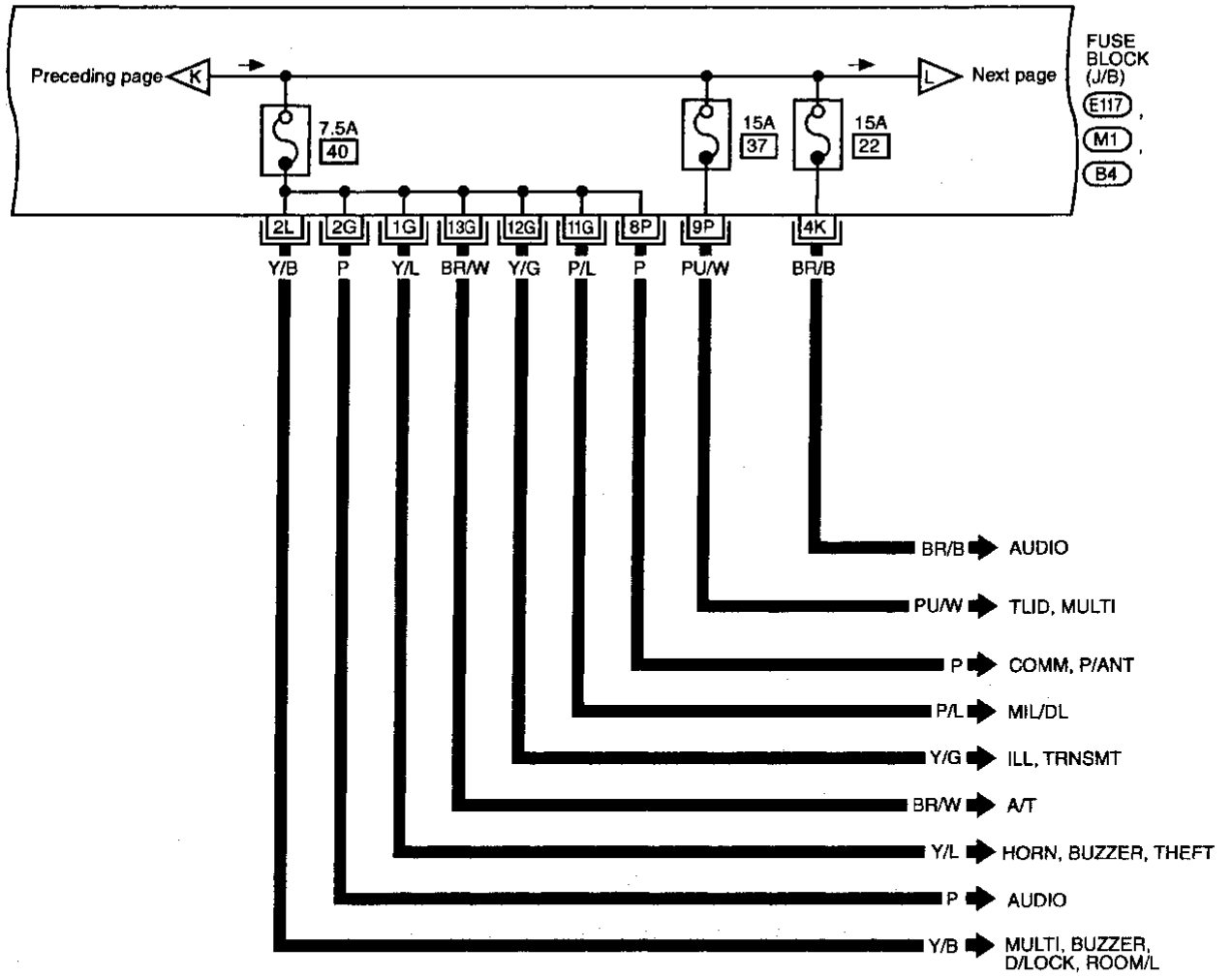
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-05



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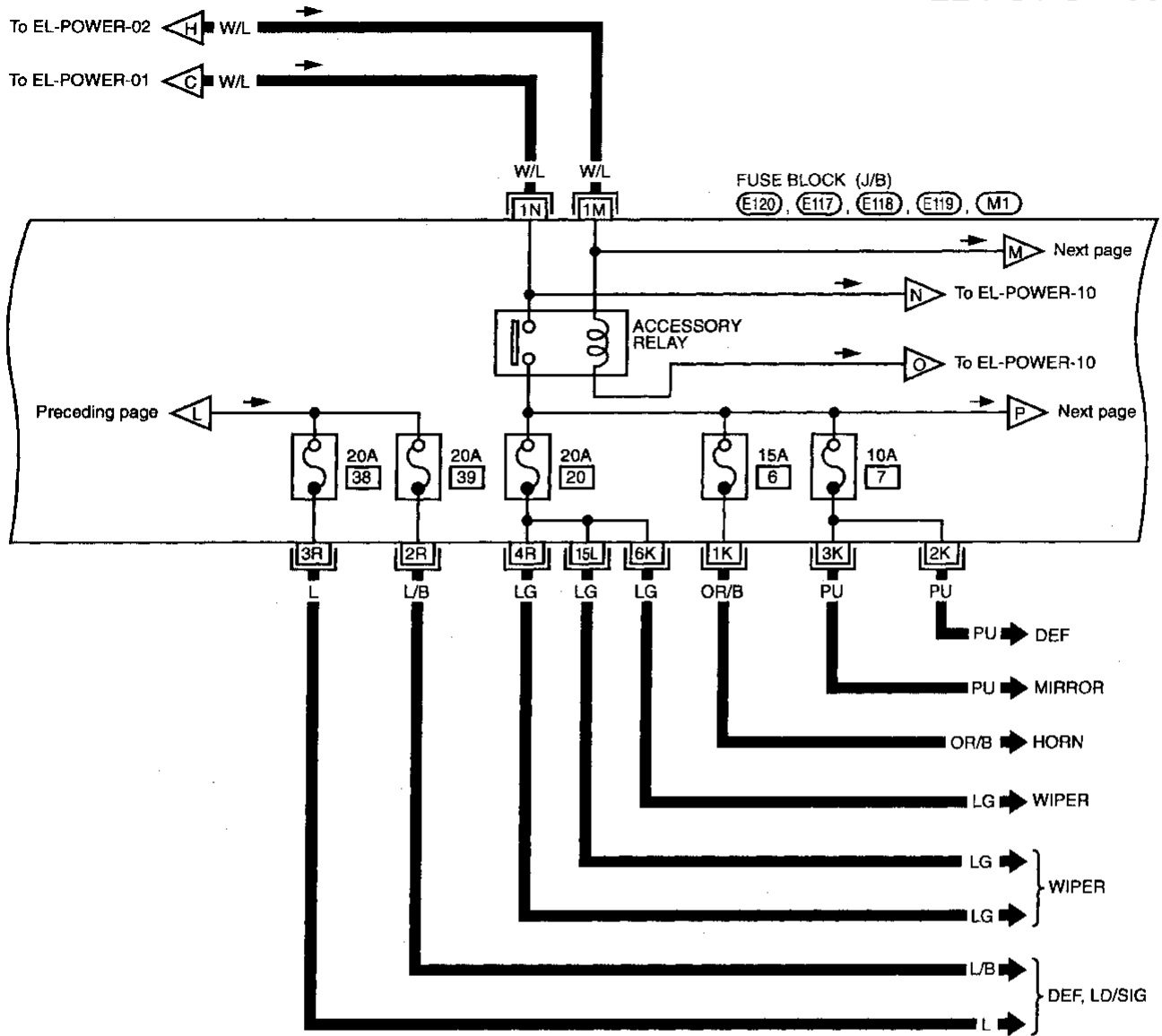
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



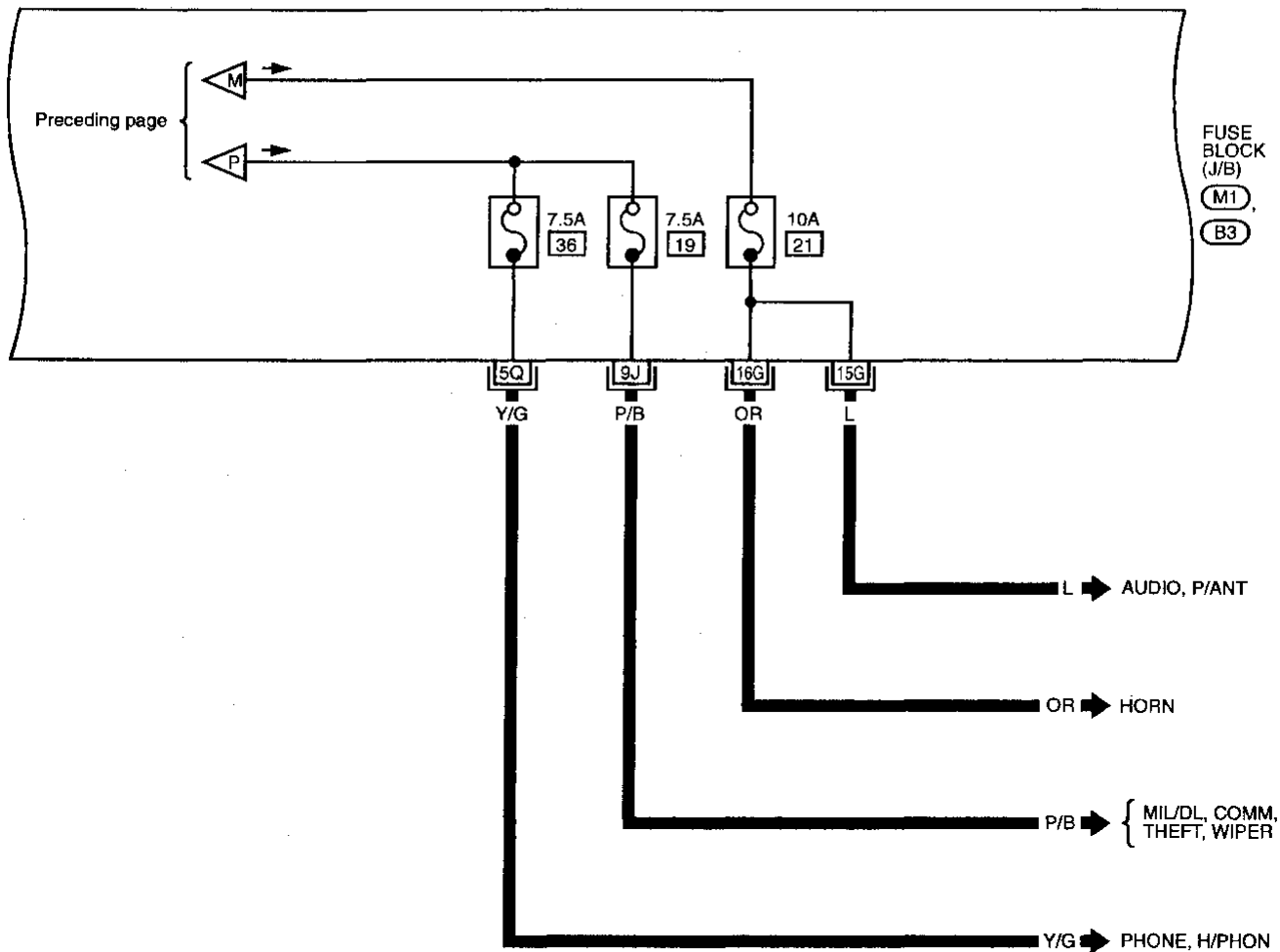
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- (E118)
- (E119)
- (E120)

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07



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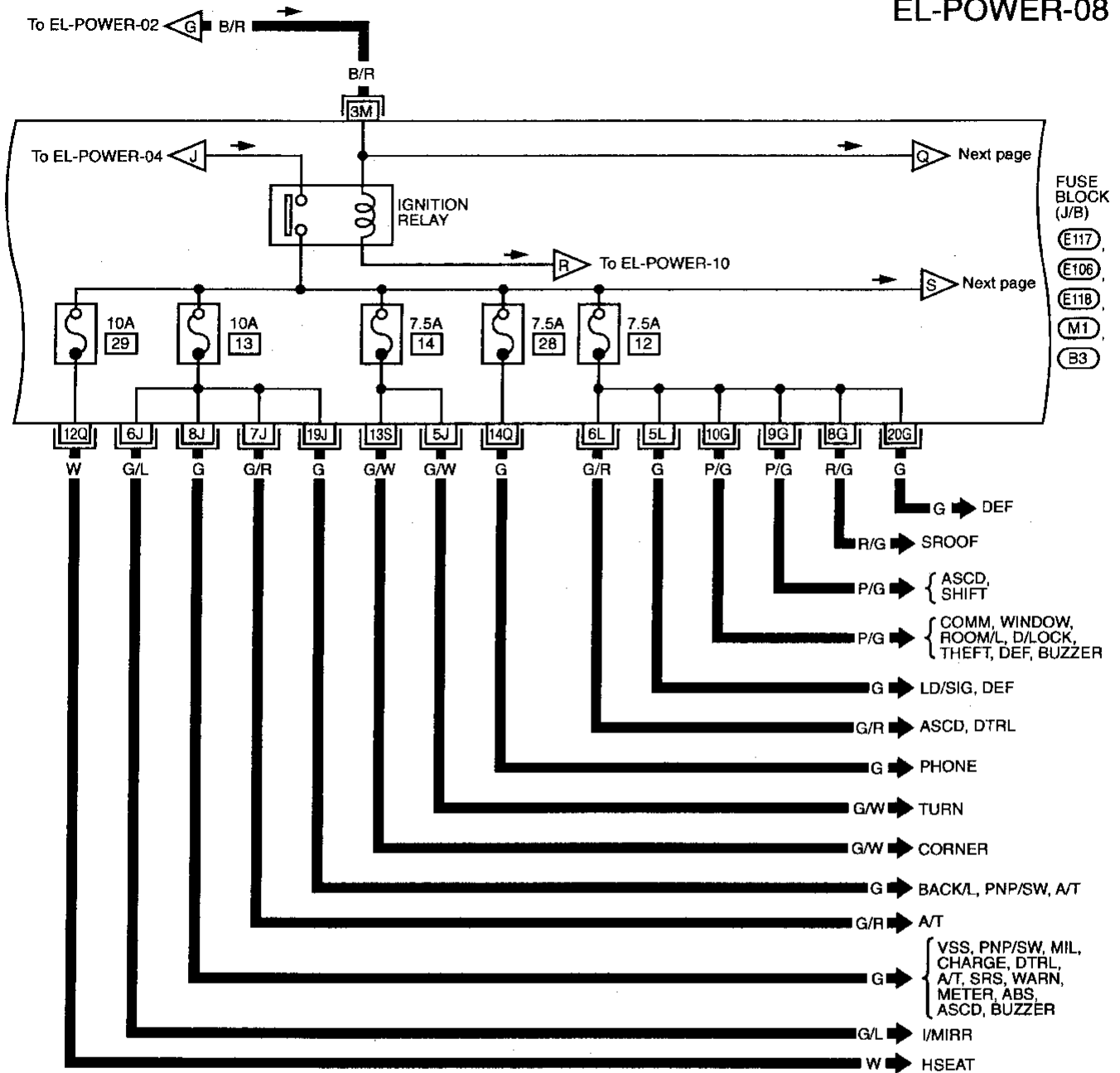
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

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FUSE BLOCK (J/B)
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 (E106)
 (E118)
 (M1)
 (B3)

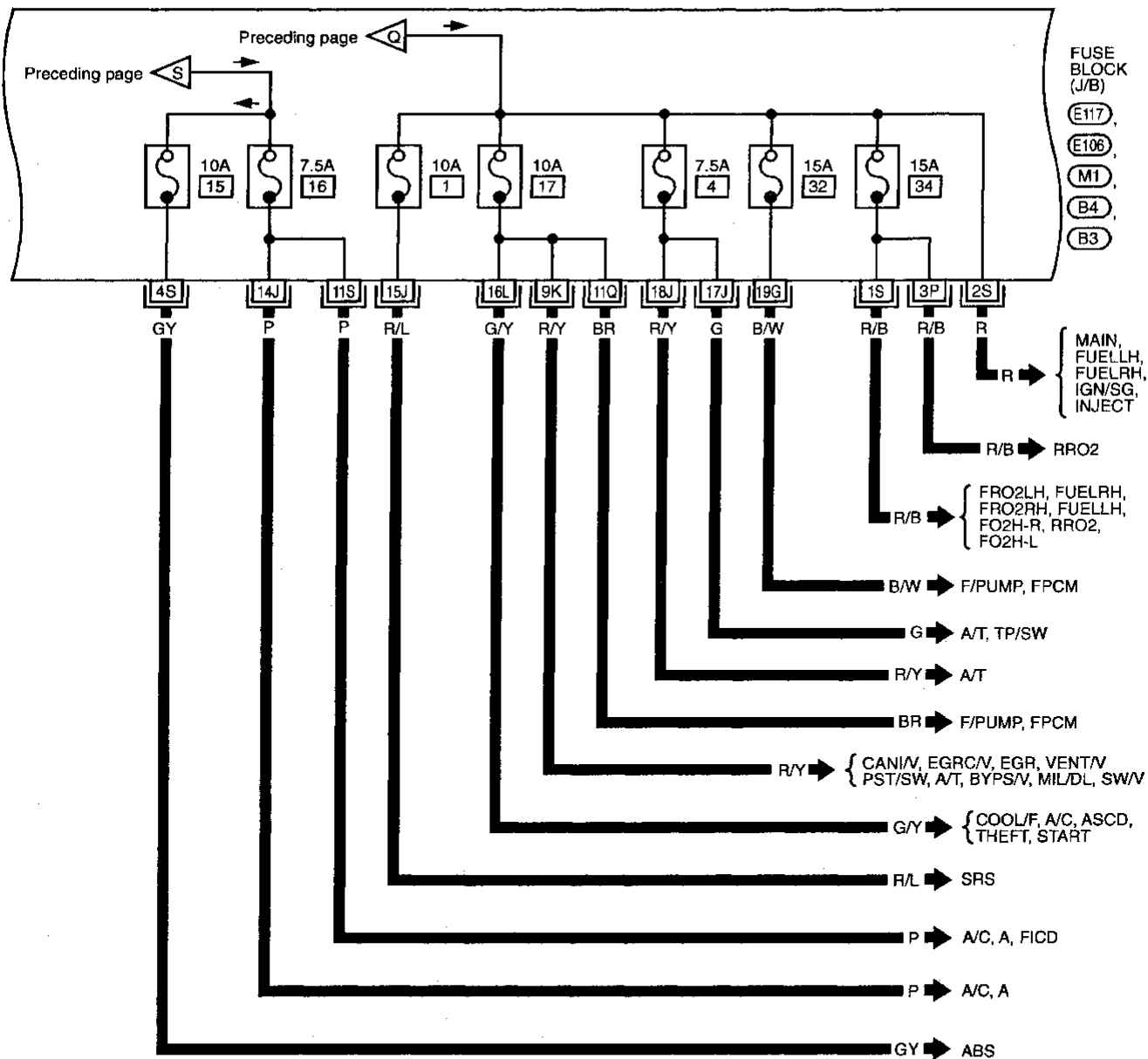
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 (E106)
 (E117)
 (E118)
 (B3)

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-09



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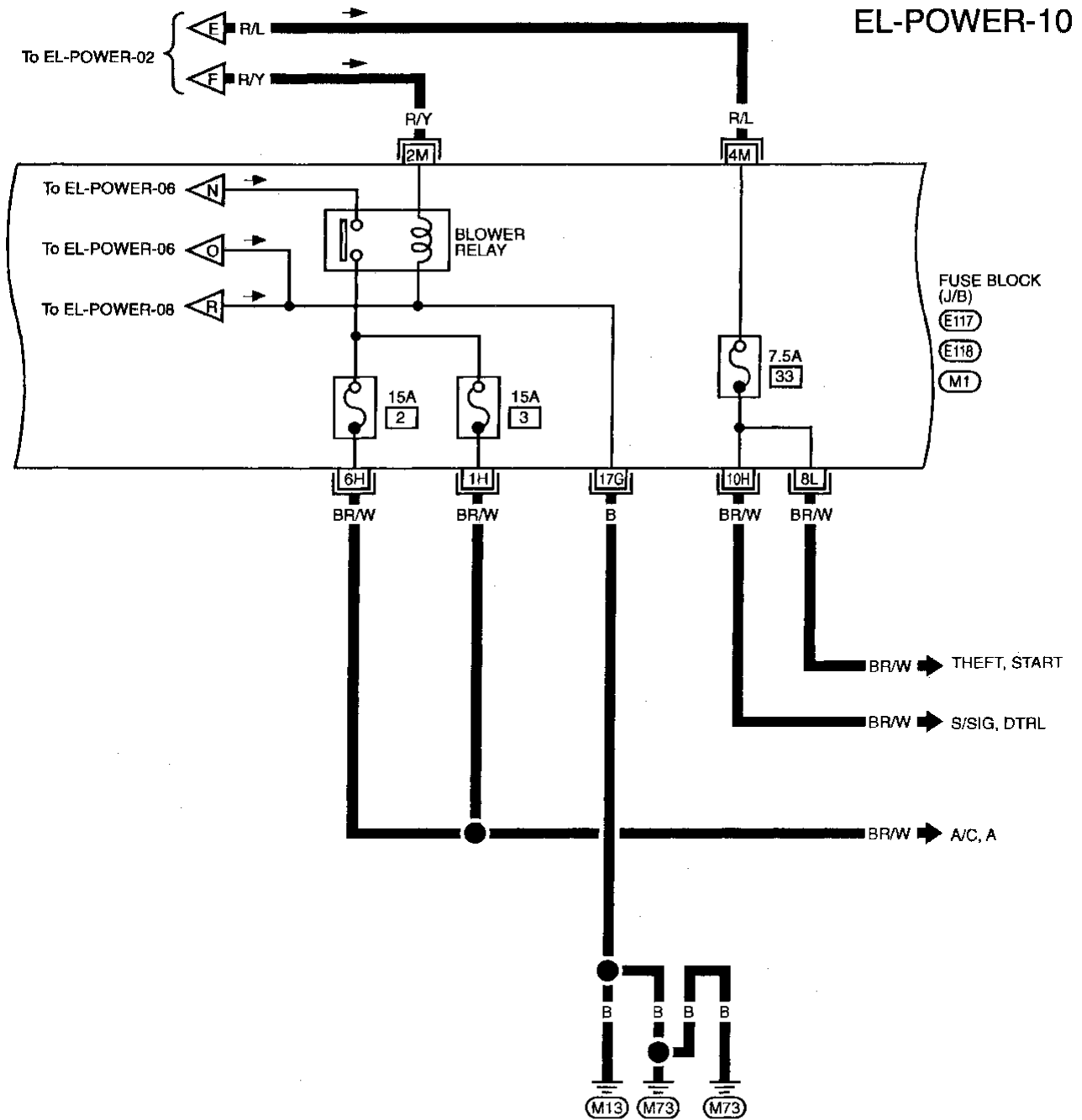
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)



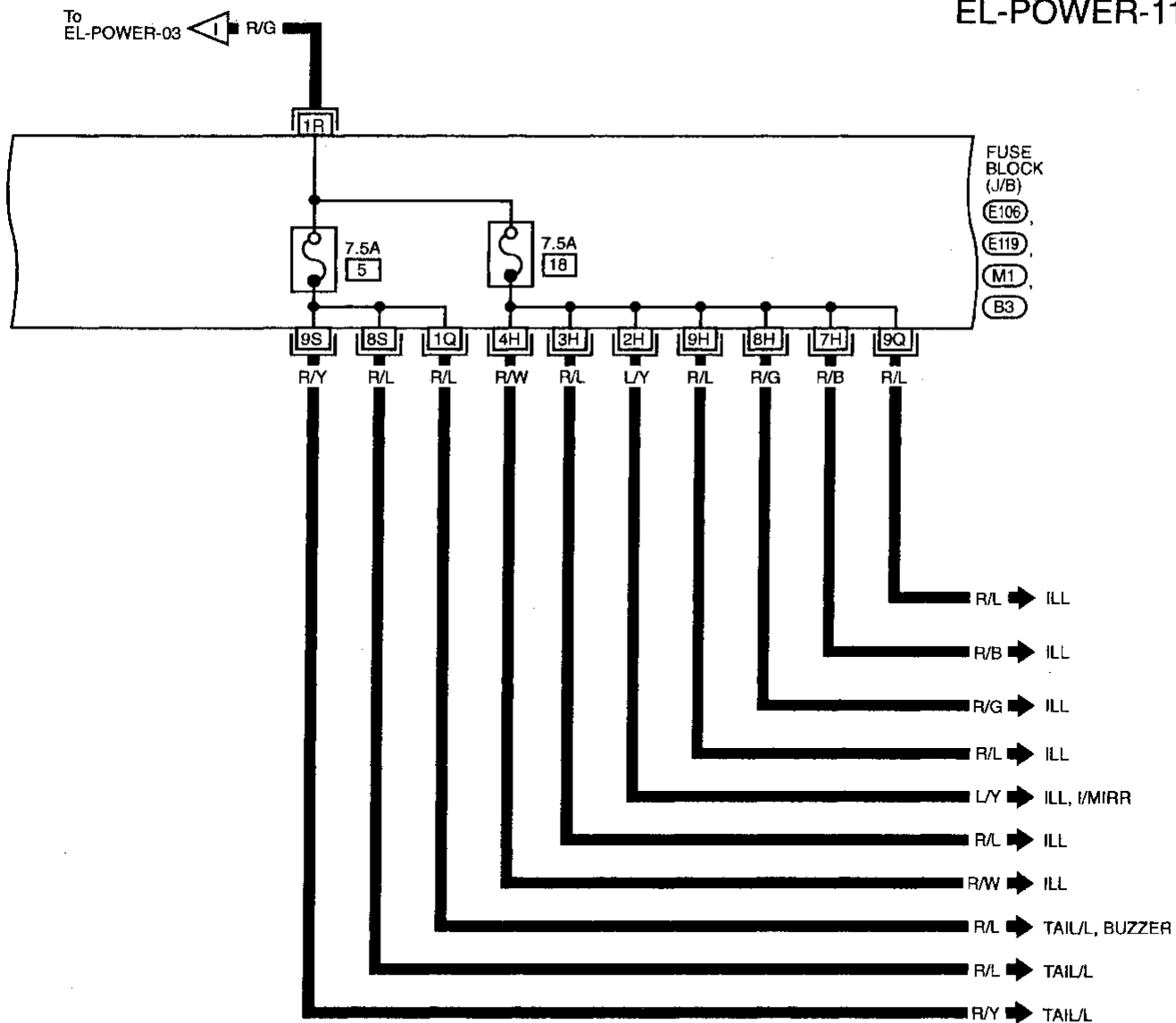
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- (E118)

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-11



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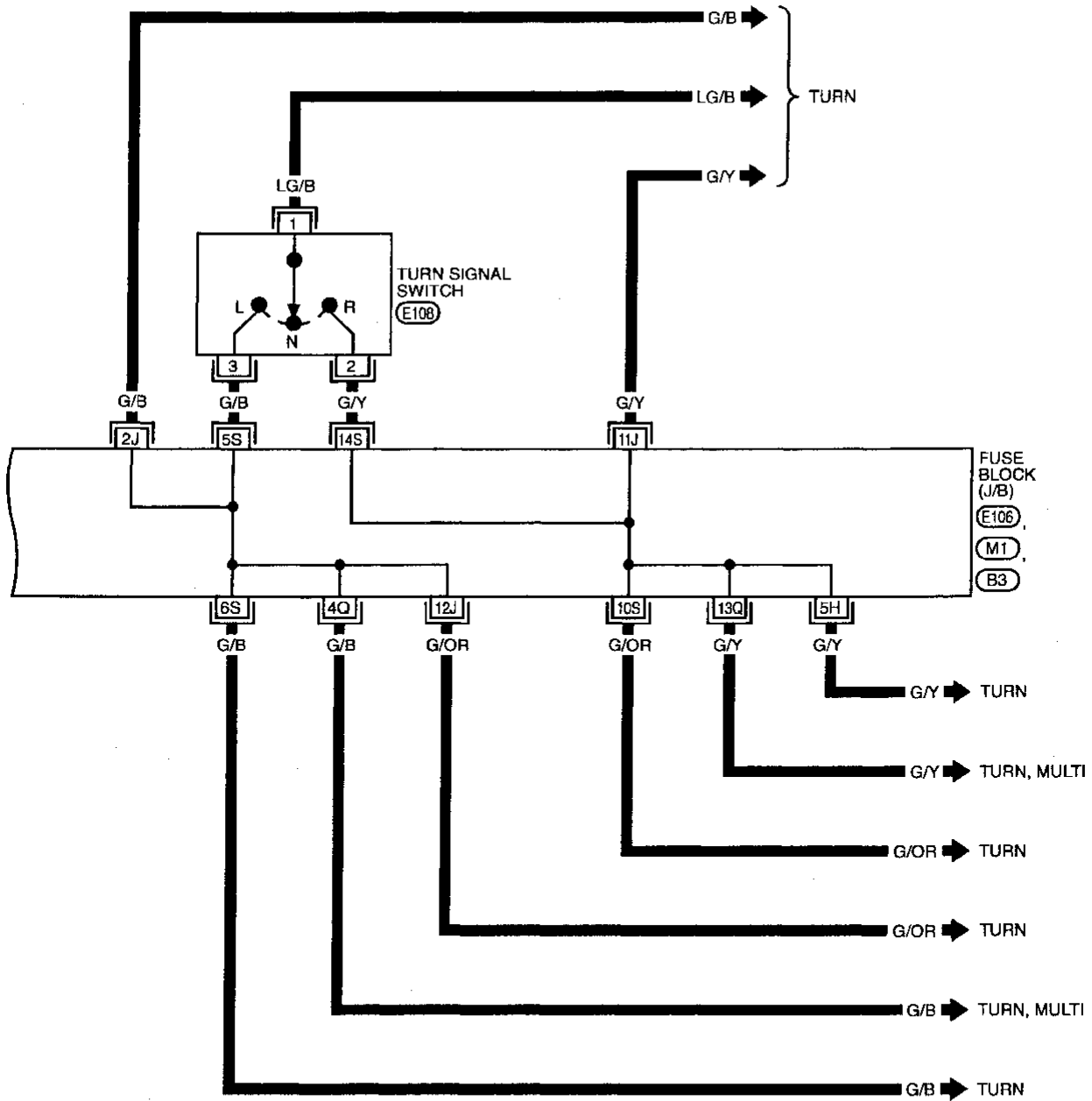
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POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

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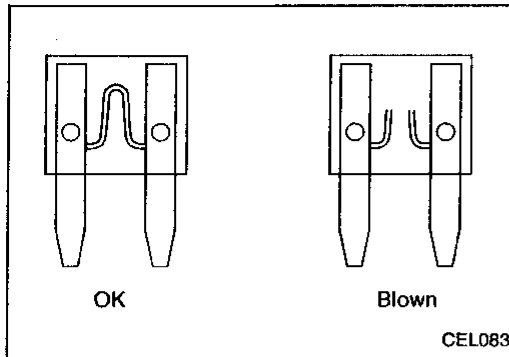
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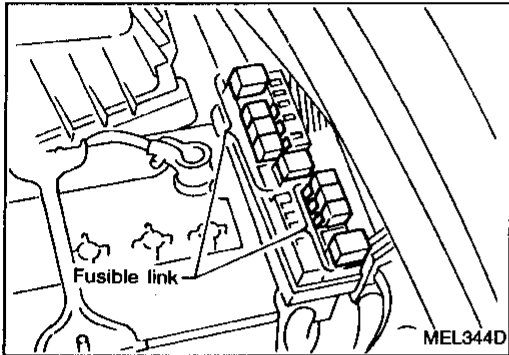
B3

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.

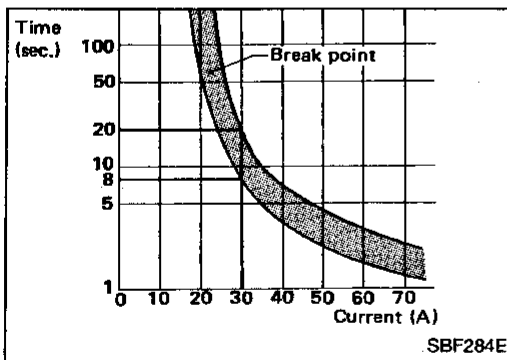


Fusible Link

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 is melted, it is possible that a critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check these circuits and eliminate cause.
- 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
- Power seat
- IVMS

GROUND DISTRIBUTION

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

GROUND DISTRIBUTION

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

GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73	FRONT DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D12	EL-D/LOCK EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D41	EL-D/LOCK EL-THEFT EL-MULTI
	FRONT DOOR SPEAKER LH	D6	EL-AUDIO
	FRONT DOOR SPEAKER RH	D36	EL-AUDIO
	PASSENGER DOOR CONTROL UNIT (LCU02)	D39	EL-COMM EL-STEP/L
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER LH)	M11, D6	EL-AUDIO
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER RH)	D36, D36	EL-AUDIO
	TRUNK LID OPENER SWITCH	D10	EL-TLID EL-MULTI
	SPOT LAMP	R4	EL-INT/L
	INTEGRATED HOMELINK™ TRANSMITTER	R2	EL-TRNSMT
	VANITY MIRROR ILLUMINATION LH	R2	EL-ILL
	VANITY MIRROR ILLUMINATION RH	R5	EL-ILL
	INSIDE MIRROR	R8	EL-I/MIRROR
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
	F18/F19	A/T CONTROL UNIT	F103
CONDENSER		F22	EC-IGN/SG
ECM (ECCS CONTROL MODULE)		F101	EC-MAIN AT-A/T
IACV-FICD SOLENOID VALVE-1		F12	EC-FICD
IGNITION COIL NO. 1		F3	EC-IGN/SG
IGNITION COIL NO. 2		F31	EC-IGN/SG
IGNITION COIL NO. 3		F4	EC-IGN/SG
IGNITION COIL NO. 4		F30	EC-IGN/SG
IGNITION COIL NO. 5		F6	EC-IGN/SG
IGNITION COIL NO. 6		F29	EC-IGN/SG
INHIBITOR SWITCH		F39	EL-START EL-ASCD
NEUTRAL POSITION SWITCH		F32	EC-PNP/SW
POWER STEERING OIL PRESSURE SWITCH		F1	EC-PST/SW
SHIELD WIRE [CAMSHAFT POSITION SENSOR (PHASE)]		F15	EC-PHASE
SHIELD WIRE [CRANKSHAFT POSITION SENSOR (POS)]		F112	EC-POS
SHIELD WIRE [CRANKSHAFT POSITION SENSOR (REF)]		F136	EC-REF
SHIELD WIRE FRONT HEATED OXYGEN SENSOR LH		F28	EC-FRO2LH EC-FUELLH EC-FO2H-L
SHIELD WIRE FRONT HEATED OXYGEN SENSOR RH		F2	EC-FRO2RH EC-FUEL RH EC-FO2H-R
SHIELD WIRE (KNOCK SENSOR)		F122	EC-KS
SHIELD WIRE (MASS AIR FLOW SENSOR)		F33	EC-MAFS
SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS, AT-A/T	

GROUND DISTRIBUTION

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

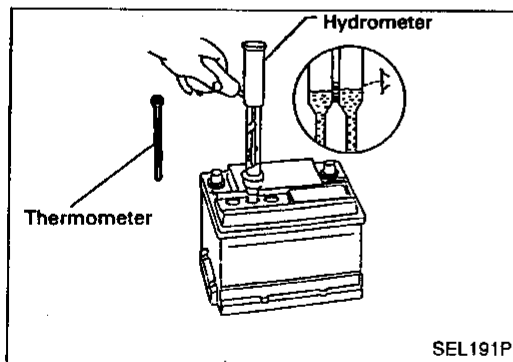
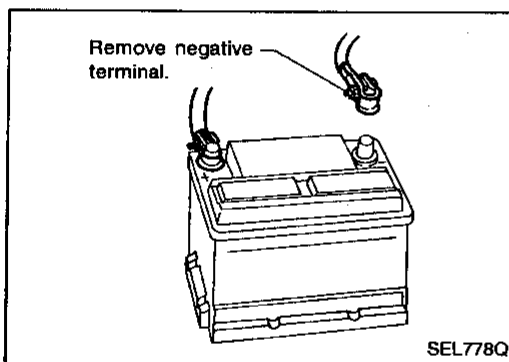
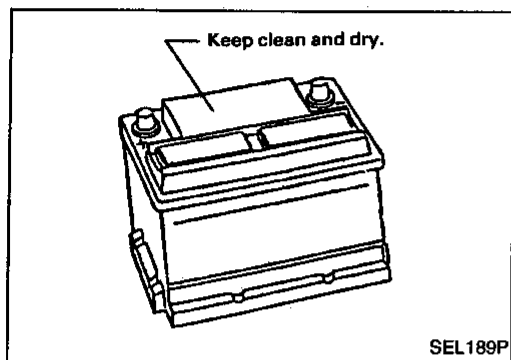
GROUND DISTRIBUTION

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

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

CHECKING ELECTROLYTE LEVEL

WARNING:

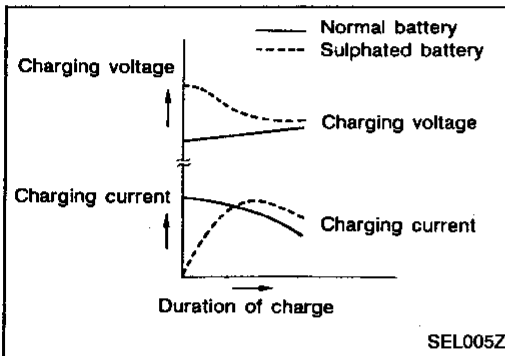
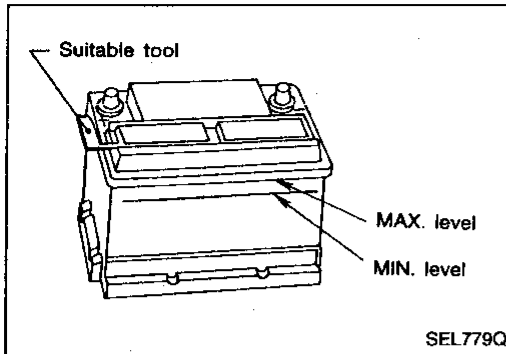
Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical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

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

BATTERY

How to Handle Battery (Cont'd)

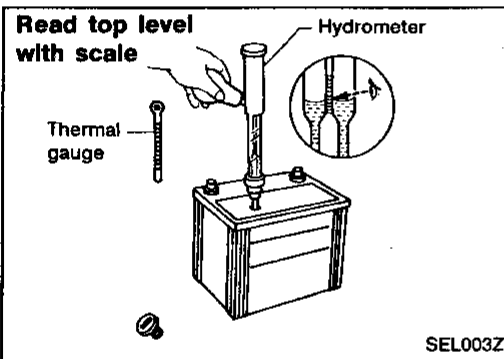
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

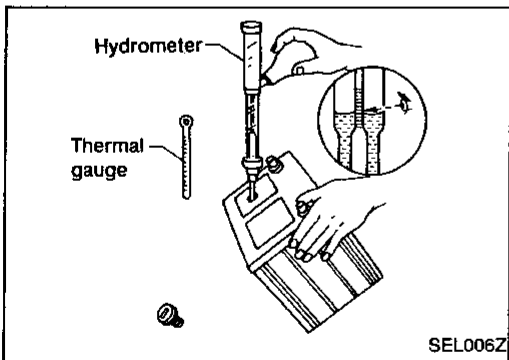
A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

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



SPECIFIC GRAVITY CHECK

- Read hydrometer and thermometer indications at eye level.



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

BATTERY

How to Handle Battery (Cont'd)

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

Hydrometer temperature correction

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

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

CHARGING THE BATTERY

CAUTION:

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

Charging rates:

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

Do not charge at more than 50 ampere rate.

BATTERY

How to Handle Battery (Cont'd)

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

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

MEMORY RESET

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

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

Service Data and Specifications (SDS)

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

STARTING SYSTEM

System Description

M/T models

Power is supplied at all times

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

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

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

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

- through 10A fuse [No. **17**], located in the fuse block (J/B)
- to theft warning relay terminal ①.

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

- through 7.5A fuse [No. **33**], located in the fuse block (J/B)
- to theft warning relay terminal ③.

If the theft warning system is not triggered, power is supplied

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

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

The clutch interlock relay is energized and power is supplied

- from terminal ⑤ of the clutch interlock relay
- to terminal ① of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates. If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the clutch interlock relay is interrupted.

A/T models

Power is supplied at all times

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

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

- through 10A fuse [No. **17**], located in the fuse block (J/B)
- to theft warning relay terminals ① and ③.

Also, with the ignition switch in the START position, power is supplied

- from ignition switch terminal ⑤
- to inhibitor relay terminal ⑥.

If the theft warning system is not triggered, power is supplied

- through theft warning relay terminal ④
- to inhibitor switch terminal ①
- through inhibitor relay terminal ②, with the selector lever in the P or N position
- to body grounds (**F18**) and (**F19**).

The inhibitor relay is energized and power is supplied

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

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates. If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the inhibitor switch is interrupted.

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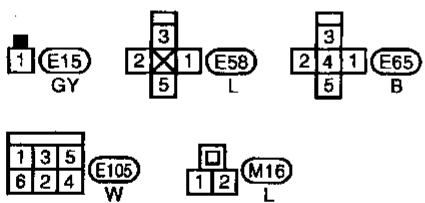
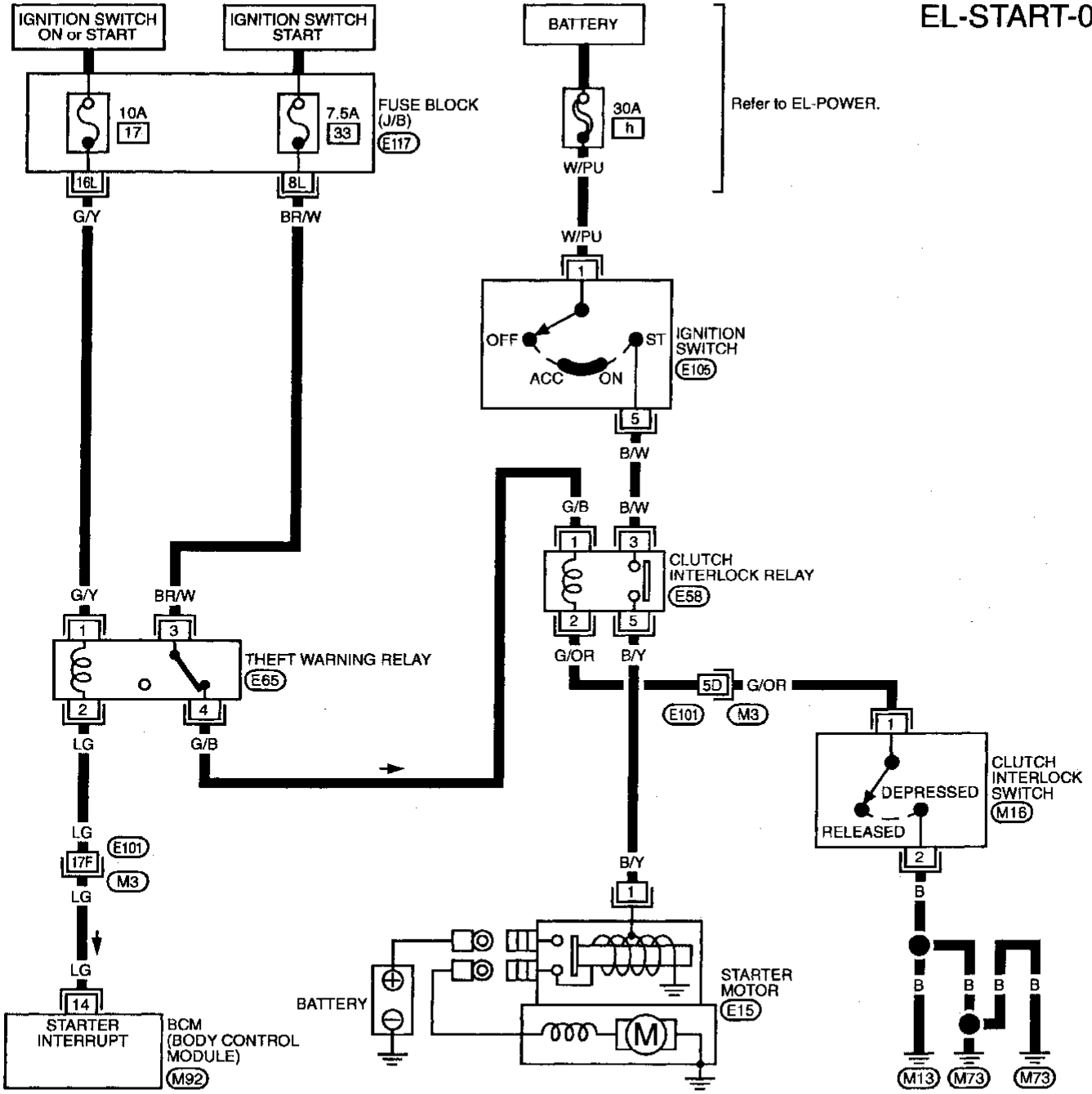
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STARTING SYSTEM

Wiring Diagram — START —

M/T MODEL

EL-START-01



Refer to last page (Foldout page).

(M3), (E101)

(E117)

(M92)

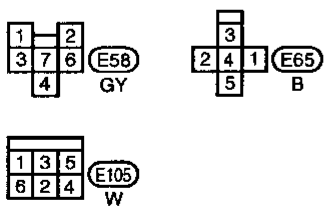
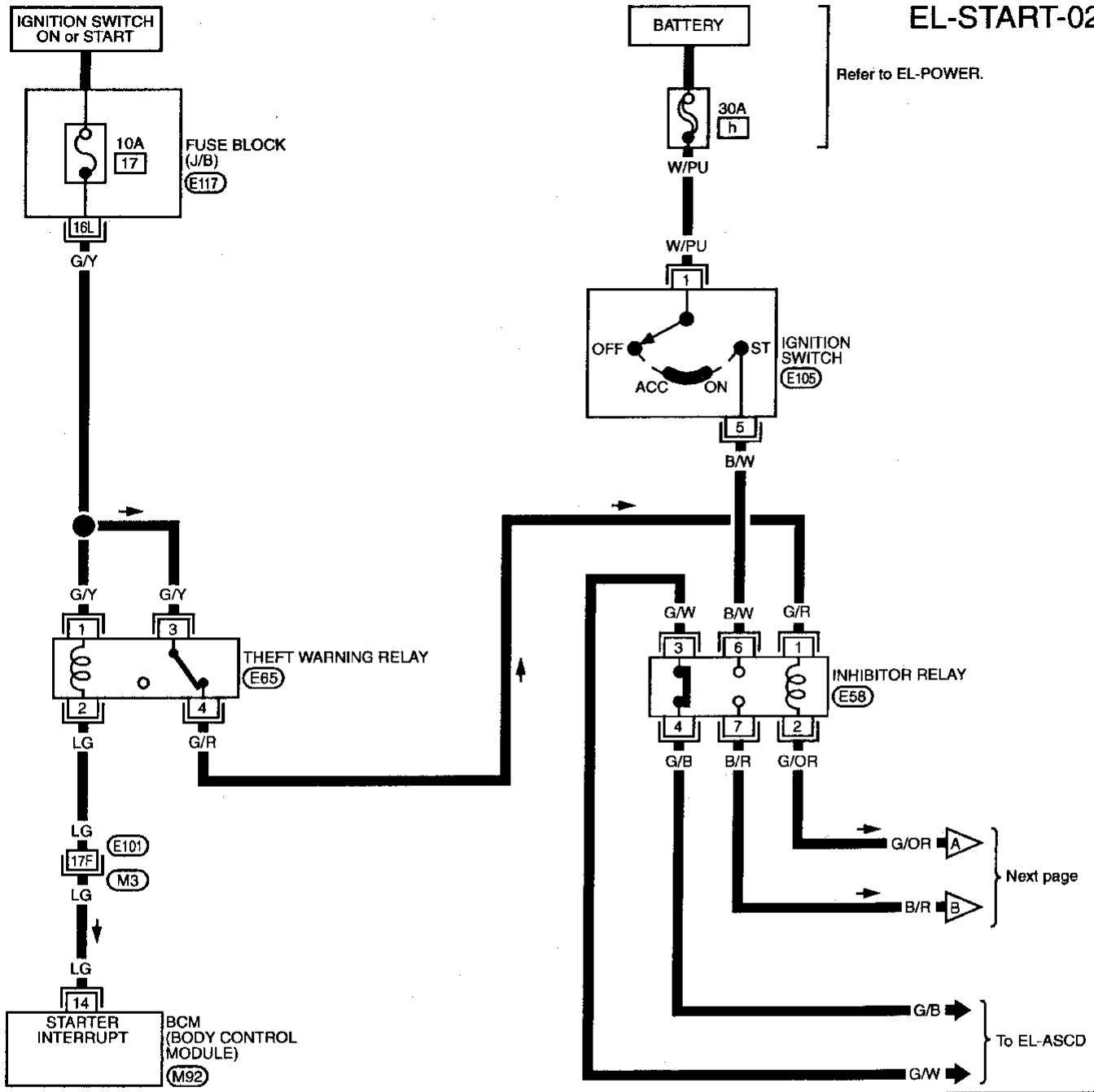
STARTING SYSTEM

Wiring Diagram — START — (Cont'd)

A/T MODEL

EL-START-02

Refer to EL-POWER.



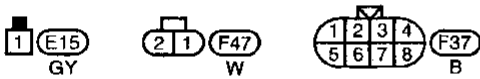
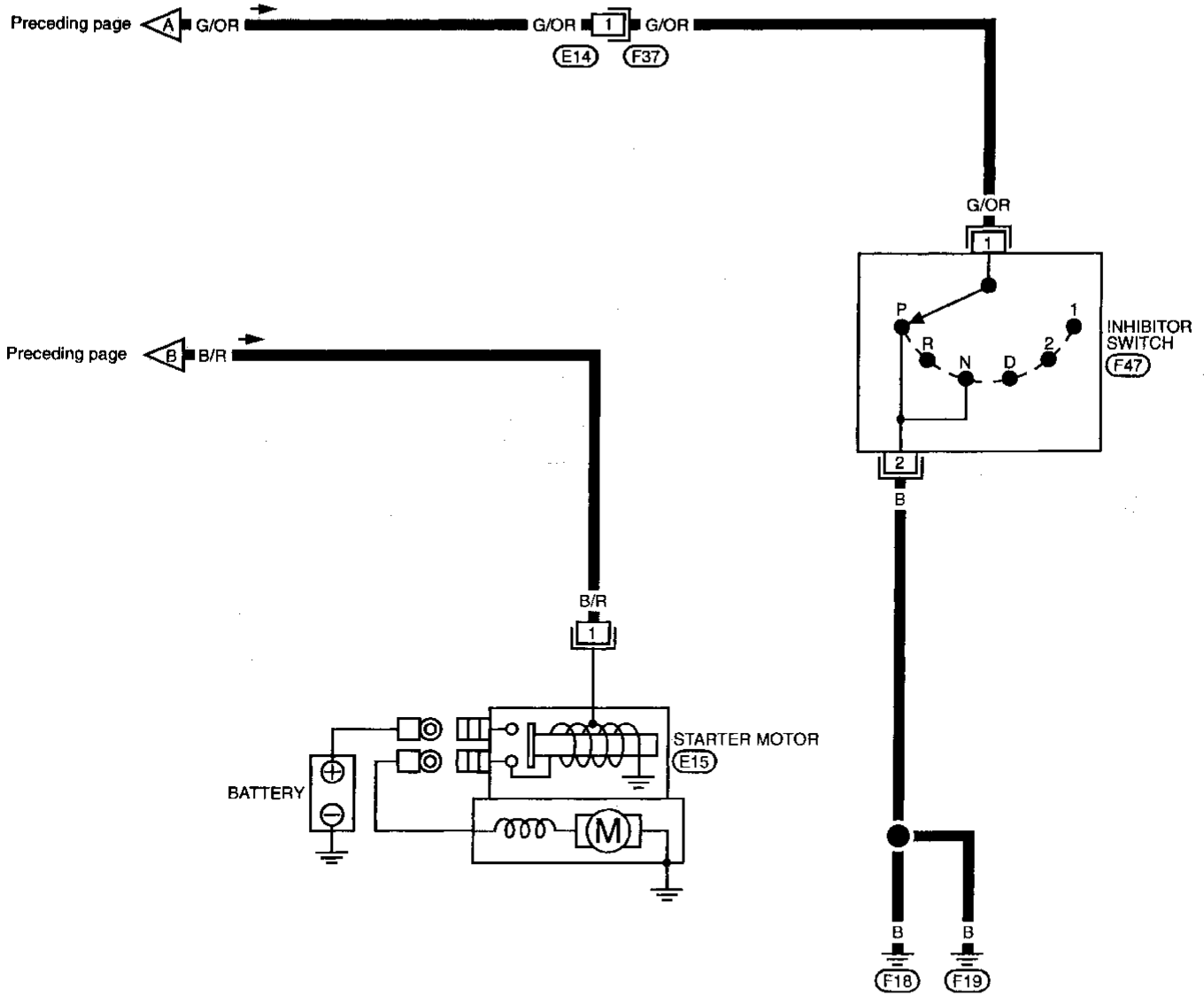
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 M3, E101
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STARTING SYSTEM

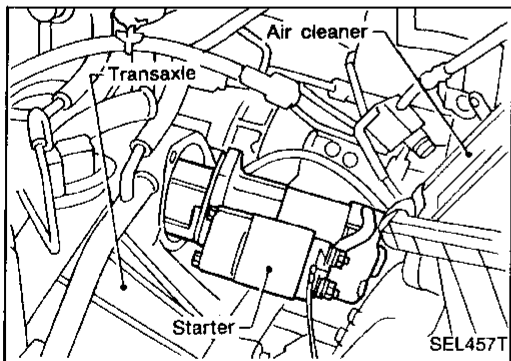
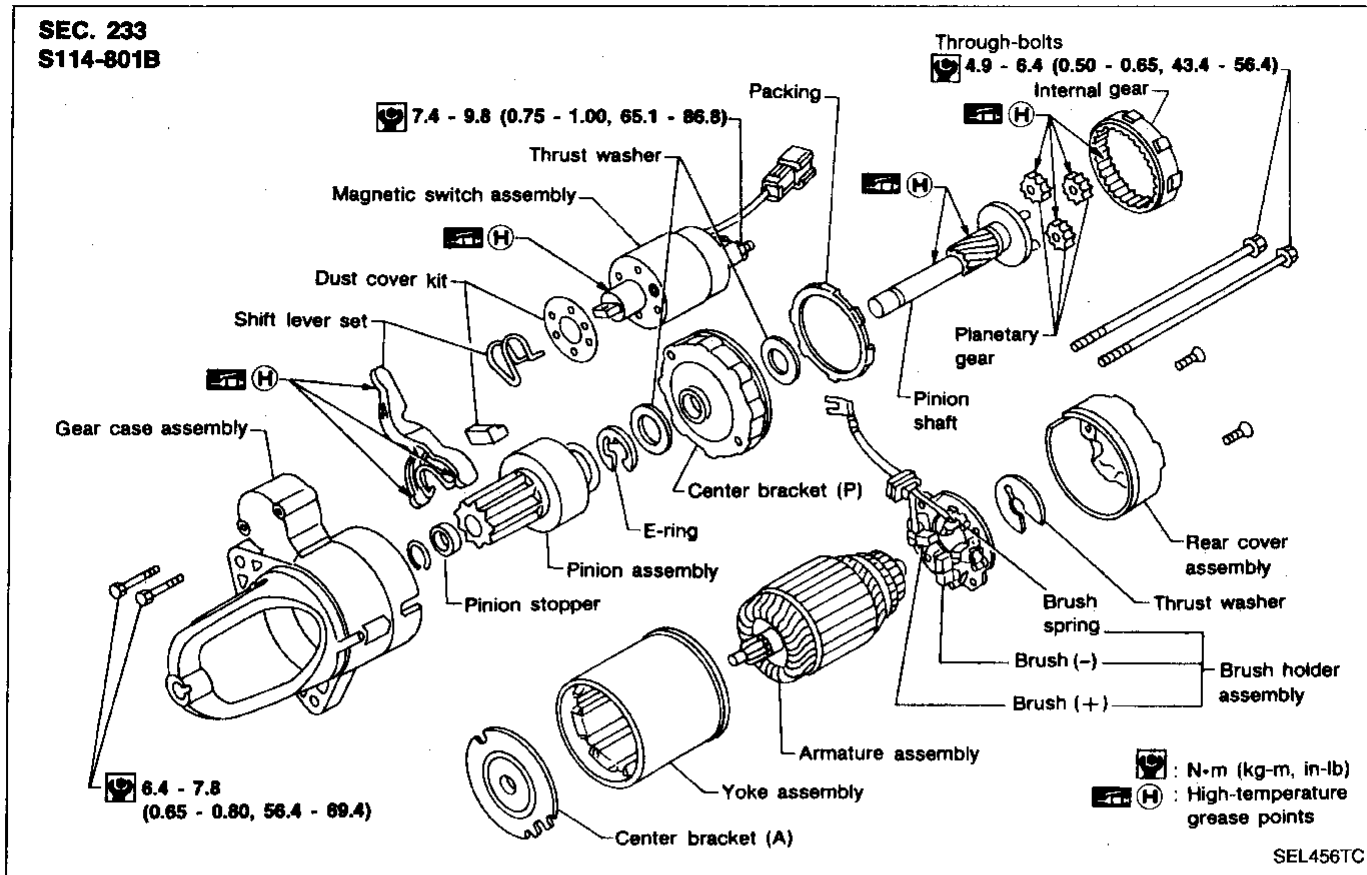
Wiring Diagram — START — (Cont'd)

EL-START-03



STARTING SYSTEM

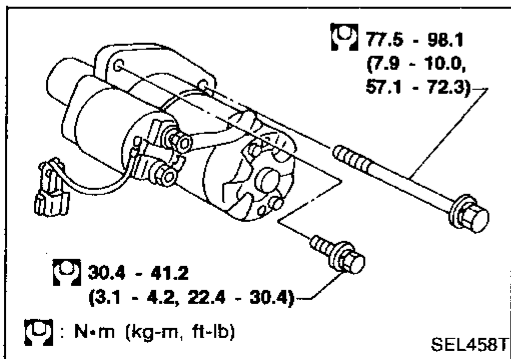
Construction



Removal and Installation

REMOVAL

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



INSTALLATION

To install, reverse the removal procedure.

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.

Service Data and Specifications (SDS)

STARTER

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

CHARGING SYSTEM

System Description

The alternator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. AC voltage is converted into DC voltage by the diode assembly in the alternator.

Power is supplied at all times to alternator terminal (S) through:

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

Voltage output through alternator terminal (B), is controlled by the IC regulator at terminal (S). The charging circuit is protected by the 140A fusible link.

Terminal (E) of the alternator supplies ground through body ground (E35).

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

- through 10A fuse [No. (13), located in the fuse block (J/B)]
- to combination meter terminal (4) for the charge warning indicator.

Ground is supplied to terminal (4) of the combination meter through terminal (L) of the alternator. With power and ground supplied, the charge warning indicator will illuminate. When the alternator is providing sufficient voltage, the ground is opened and the charge warning indicator will go off.

If the charge warning indicator illuminates with the engine running, a malfunction is indicated. Refer to "Trouble Diagnoses" (EL-37).

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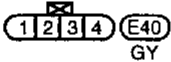
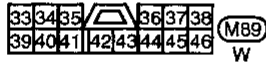
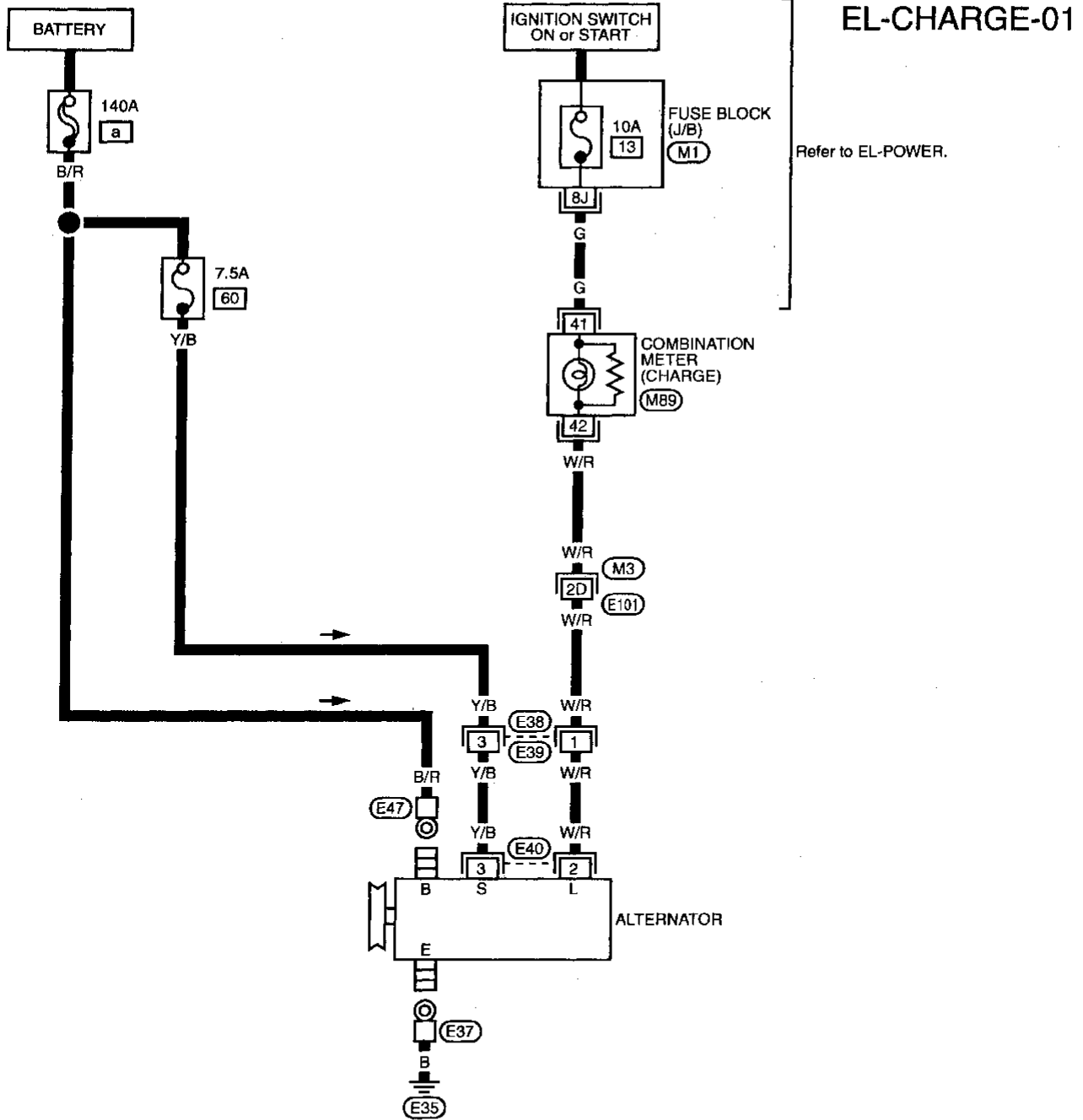
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CHARGING SYSTEM

Wiring Diagram — CHARGE —



Refer to last page (Foldout page).

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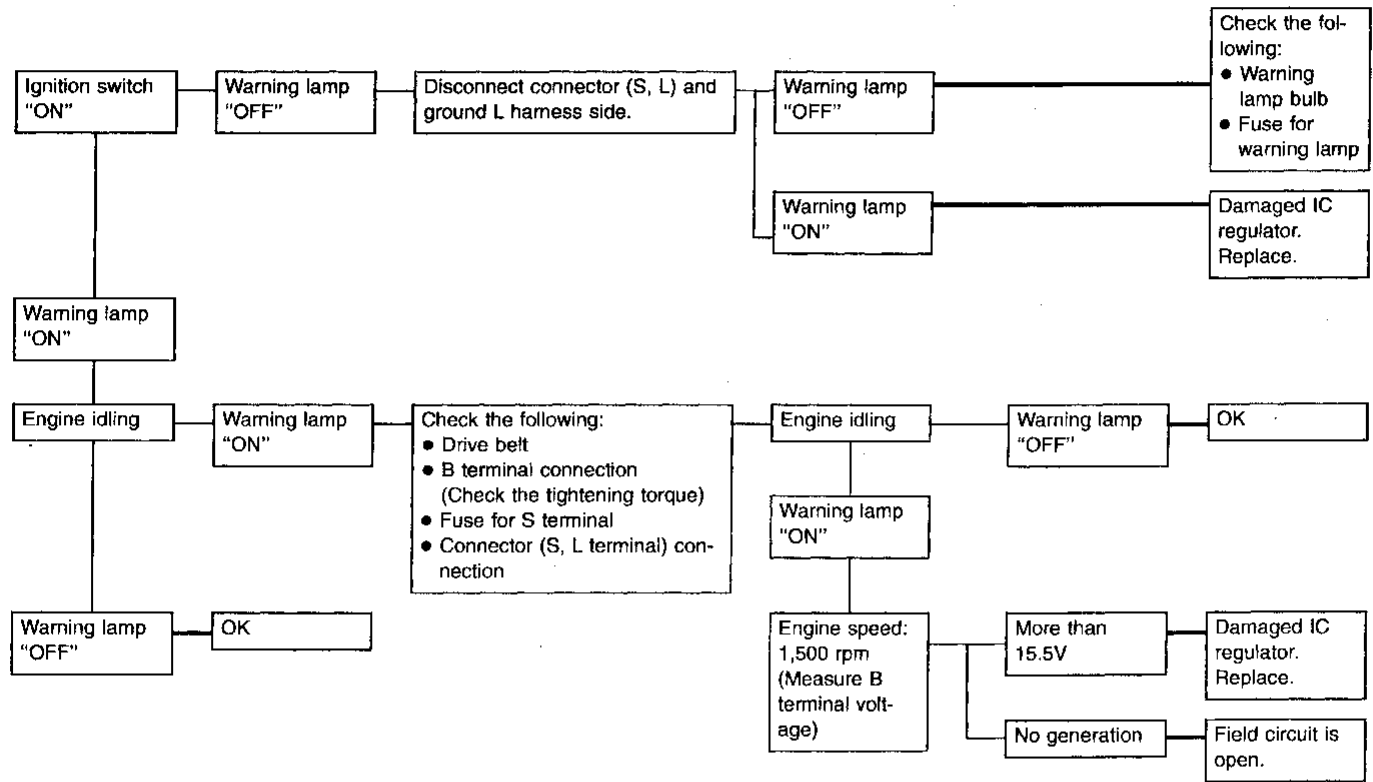
CHARGING SYSTEM

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.

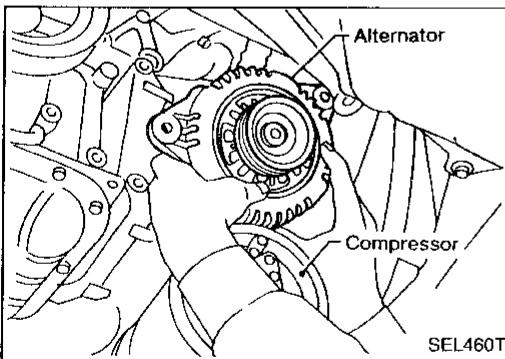
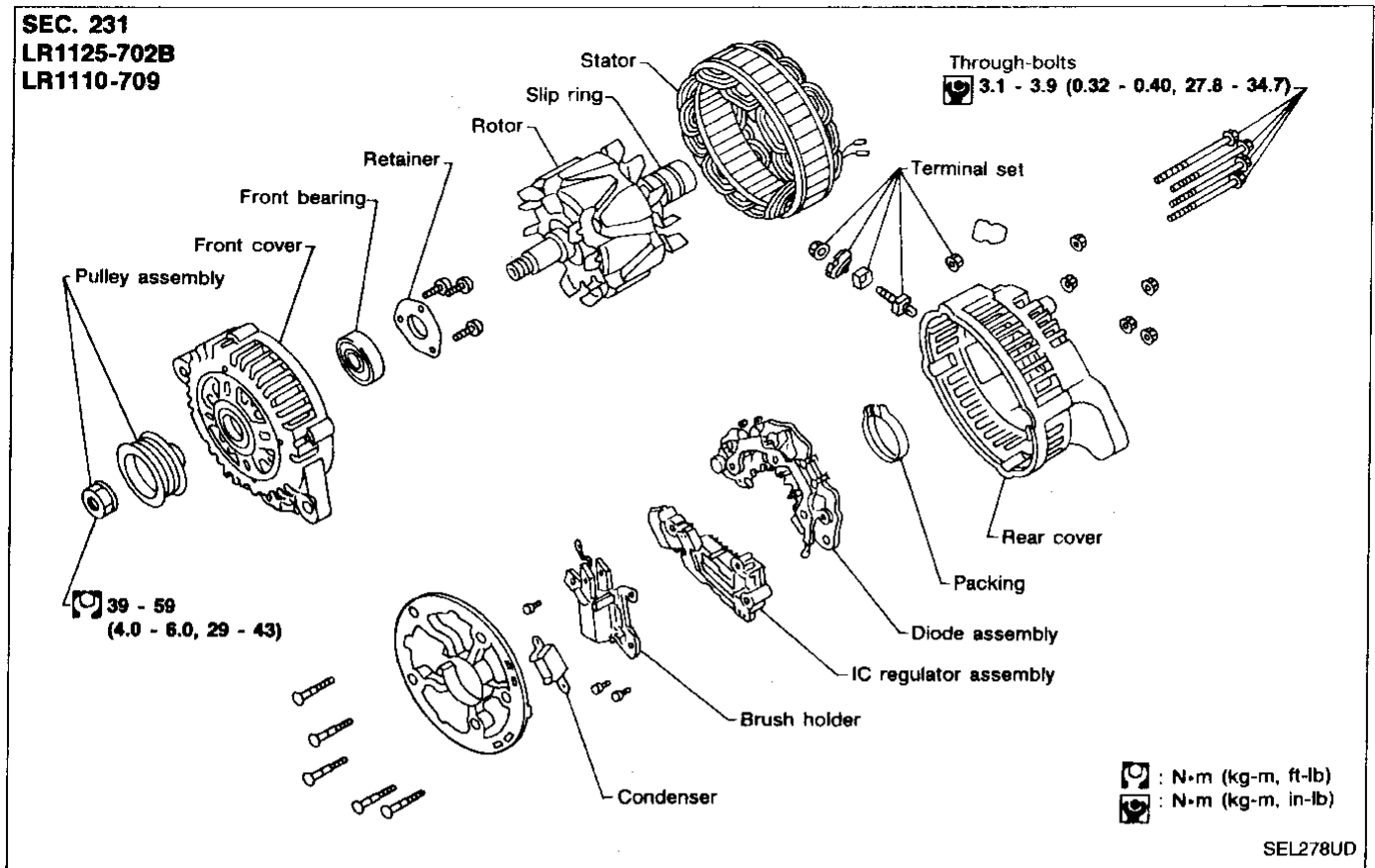
MALFUNCTION INDICATOR

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.

CHARGING SYSTEM

Construction



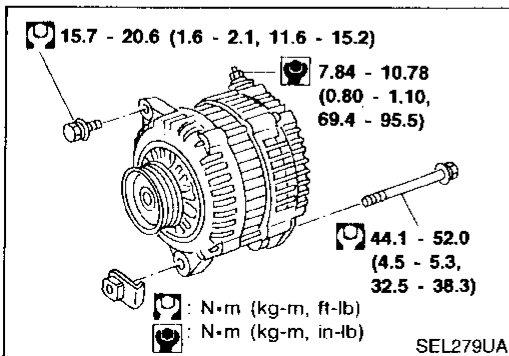
Removal and Installation

REMOVAL

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

INSTALLATION

To install, reverse the removal procedure.



CHARGING SYSTEM

Service Data and Specifications (SDS)

ALTERNATOR

Type		LR1125-702B	LR1110-709
		HITACHI make	
Nominal rating	V-A	12-125	12-110
Ground polarity		Negative	
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,100	Less than 1,000
Hot output current (When 13.5 volts is applied)	A/rpm	More than 36/1,300 More than 94/2,500 More than 123/5,000	More than 35/1,300 More than 85/2,500 More than 110/9,000
Regulated output voltage	V	14.1 - 14.7	
Minimum length of brush	mm (in)	More than 6.00 (0.2362)	
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)	
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)	
Rotor (field coil) resistance	Ω	2.35	2.31

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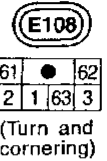
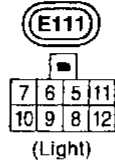
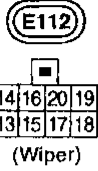
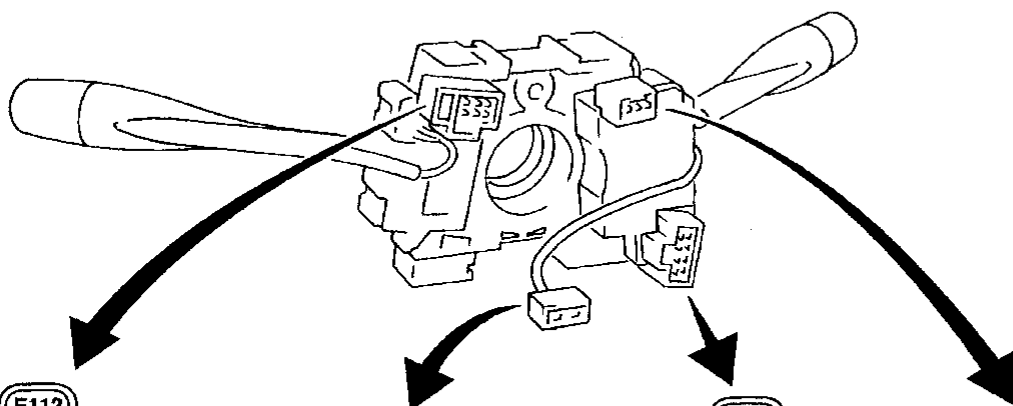
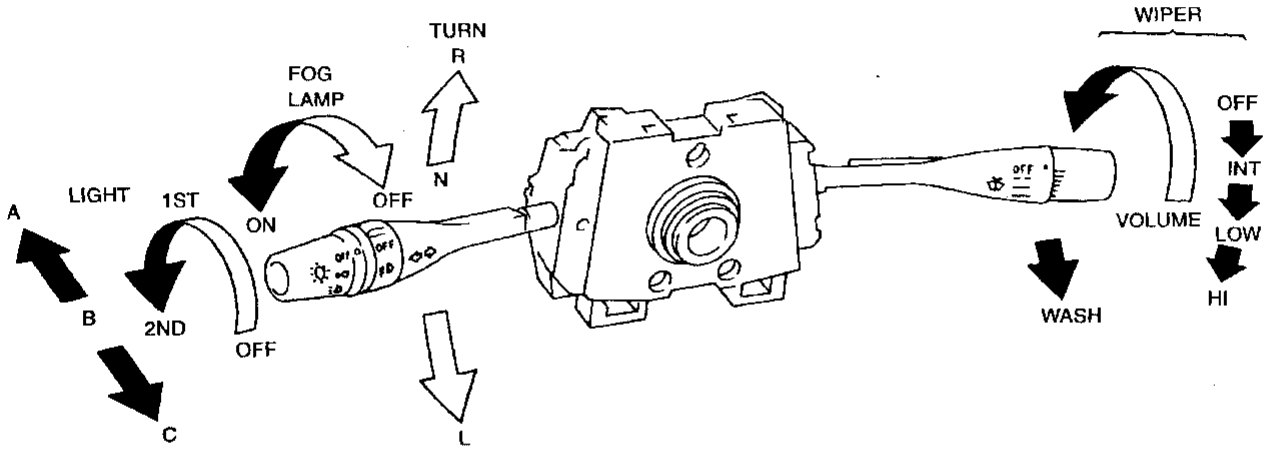
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COMBINATION SWITCH

Combination Switch/Check

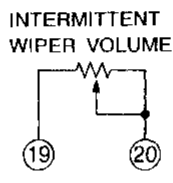


LIGHTING SWITCH

	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					○



FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

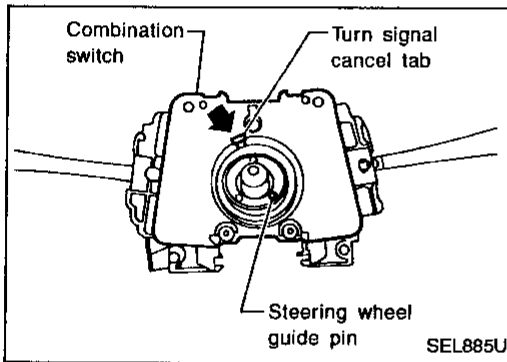
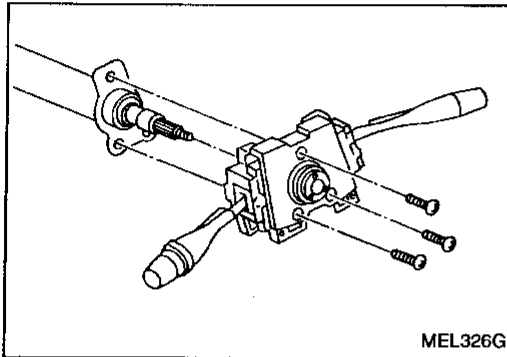
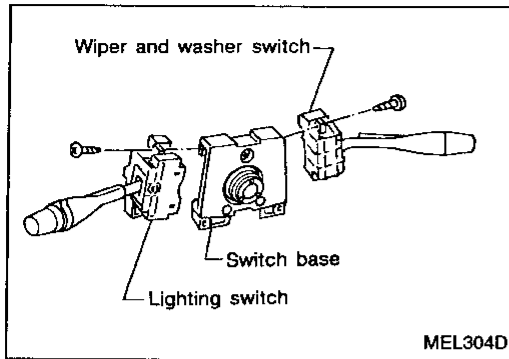
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3			

CORNERING LAMP SWITCH

	L	N	R
61	○		○
62			○
63			

COMBINATION SWITCH



Replacement

For removal and installation of air bag module and 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.

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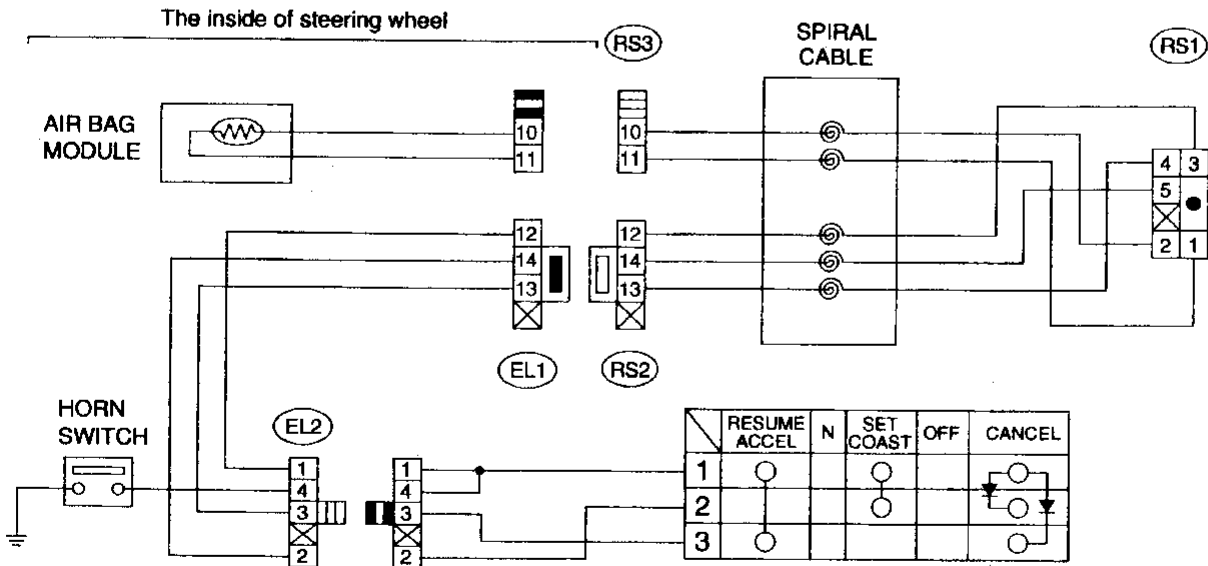
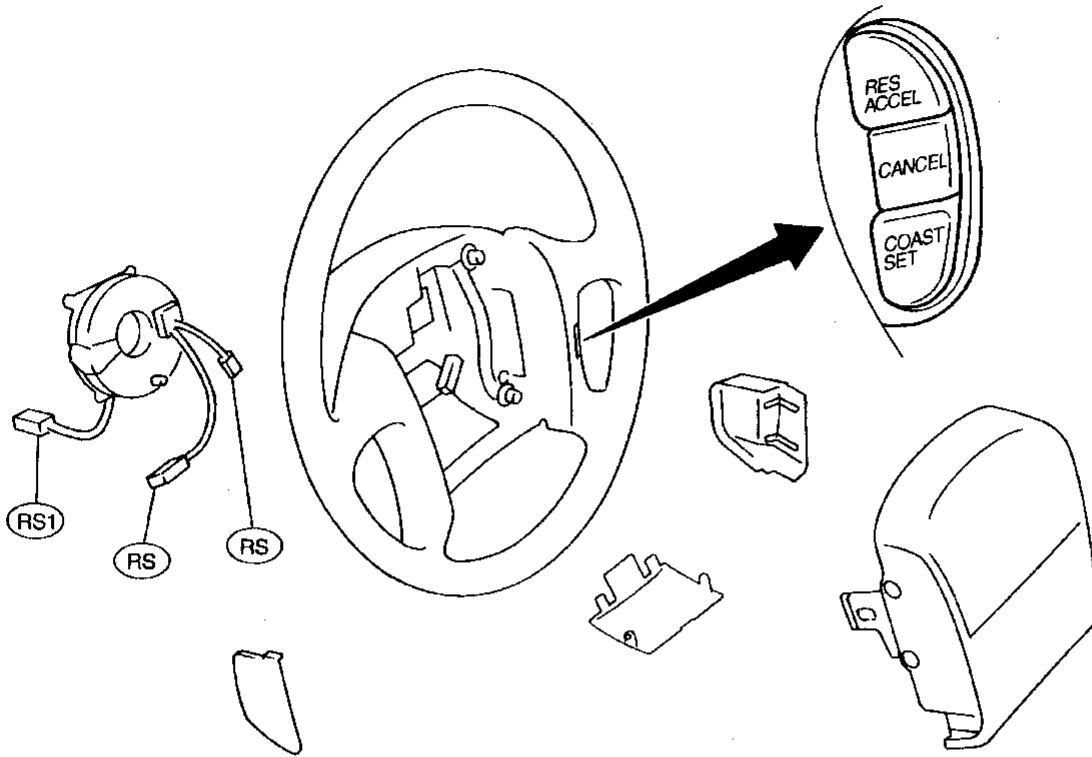
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COMBINATION SWITCH

Steering Switch/Check



HEADLAMP

System Description (For USA)

Power is supplied at all times

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

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

- from lighting switch terminal 10
- to terminal 2 of the LH headlamp, and
- from lighting switch terminal 7
- to terminal 2 of the RH headlamp.

Terminal 3 of each headlamp supplies ground through body grounds E5 and E30.

With power and ground supplied, the headlamps will illuminate.

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

- from lighting switch terminal 9
- to terminal 1 of the LH headlamp,
- to combination meter terminal 21 for the HIGH BEAM indicator, and
- from lighting switch terminal 6
- to terminal 1 of the RH headlamp.

Ground is supplied to terminal 31 of the combination meter through body grounds M13 and M73.

With power and ground supplied, the high beams and the HIGH BEAM indicator illuminate.

With theft warning system

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS" (EL-258).

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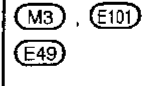
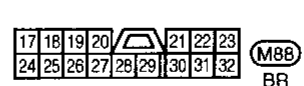
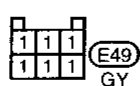
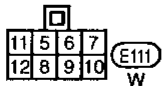
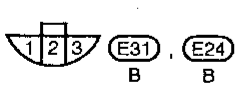
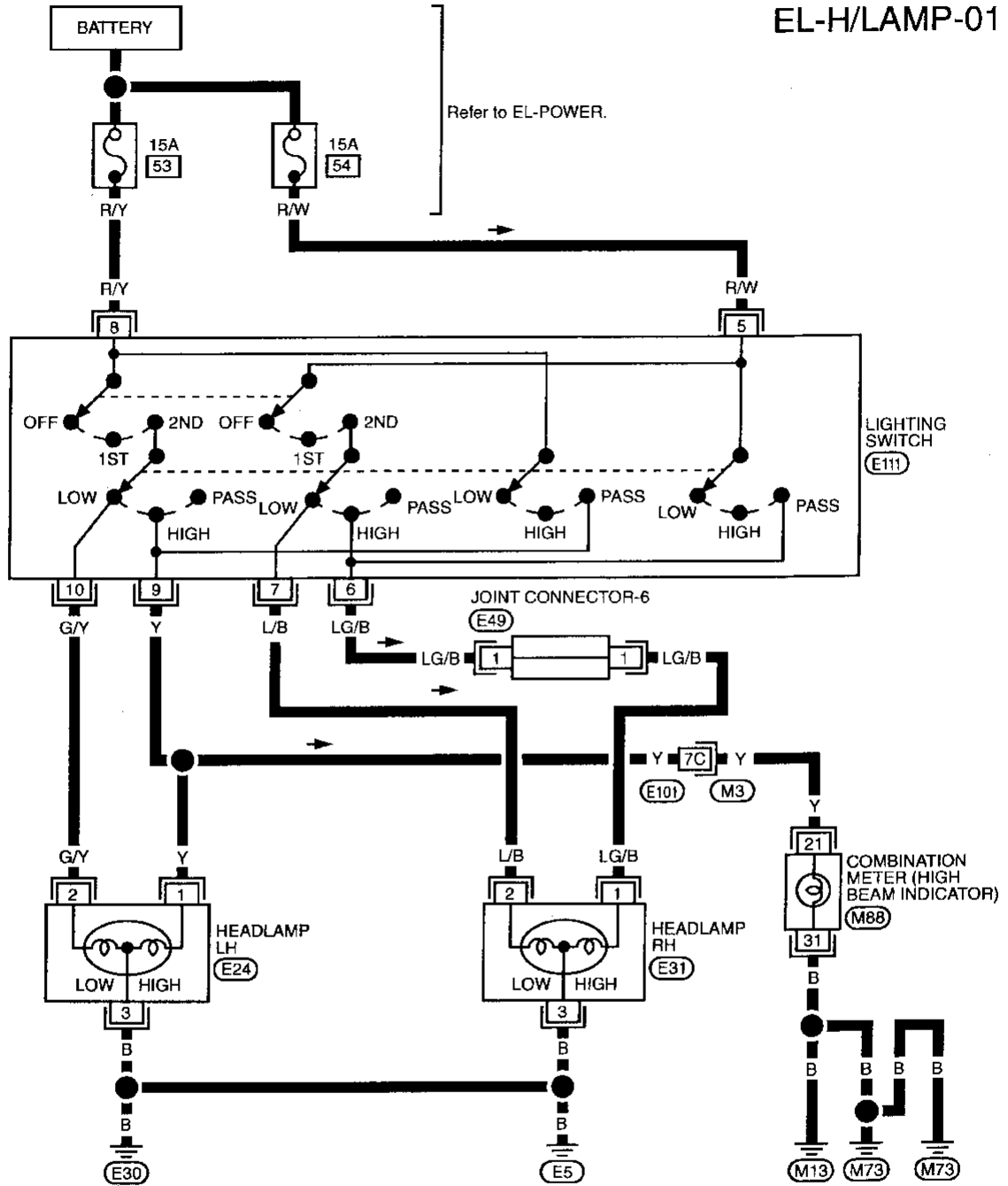
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HEADLAMP

Wiring Diagram — H/LAMP —

FOR USA

EL-H/LAMP-01



HEADLAMP

Trouble Diagnoses

Symptom	Possible cause	Repair order
LH headlamps do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. LH headlamp ground 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check LH headlamp ground. (Terminal ③) 3. Check 15A fuse (No. 53, located in fusible link). 4. Check lighting switch.
RH headlamps do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. RH headlamp ground 3. 15A fuse 4. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check RH headlamp ground. (Terminal ③) 3. Check 15A fuse (No. 54, located in fusible link). 4. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. Open in LH high beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	<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 G/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	<ol style="list-style-type: none"> 1. Bulb 2. Open in RH high beam circuit 3. Lighting switch 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check LG/B wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	<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 L/B 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. High beam indicator ground 3. Open in high beam circuit 	<ol style="list-style-type: none"> 1. Check bulb in combination meter. 2. Check combination meter ground. (Terminal ④) 3. Check Y wire between lighting switch and combination meter for an open circuit.

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System Description (For Canada)

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

Power is supplied at all times

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

Power is also supplied at all times

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

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

- through 7.5A fuse [No. 12], located in the fuse block (J/B)
- to daytime light control unit terminal 12.

Ground is supplied to daytime light control unit terminal ⑨ through body grounds E5 and E30.

HEADLAMP OPERATION

Low beam operation

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

- from lighting switch terminal ⑩
- to LH headlamp terminal ②.

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

Also, when the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied

- from lighting switch terminal ⑦
- to RH headlamp terminal ②.

Ground is supplied

- to RH headlamp terminal ③
- from daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑨
- through body grounds E5 and E30.

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

High beam operation

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

- from lighting switch terminal ⑨
- to LH headlamp terminal ①.

Also, when the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied

- from lighting switch terminal ⑥
- to daytime light control unit terminal ⑤
- to combination meter terminal 21 for the high beam indicator
- through daytime light control unit terminal ⑥
- to RH headlamp terminal ①.

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

Ground is supplied to terminal 31 of the combination meter through body grounds M13 and M73.

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

DAYTIME LIGHT OPERATION

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

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

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

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

HEADLAMP — Daytime Light System —

Operation (Daytime light system for Canada)

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

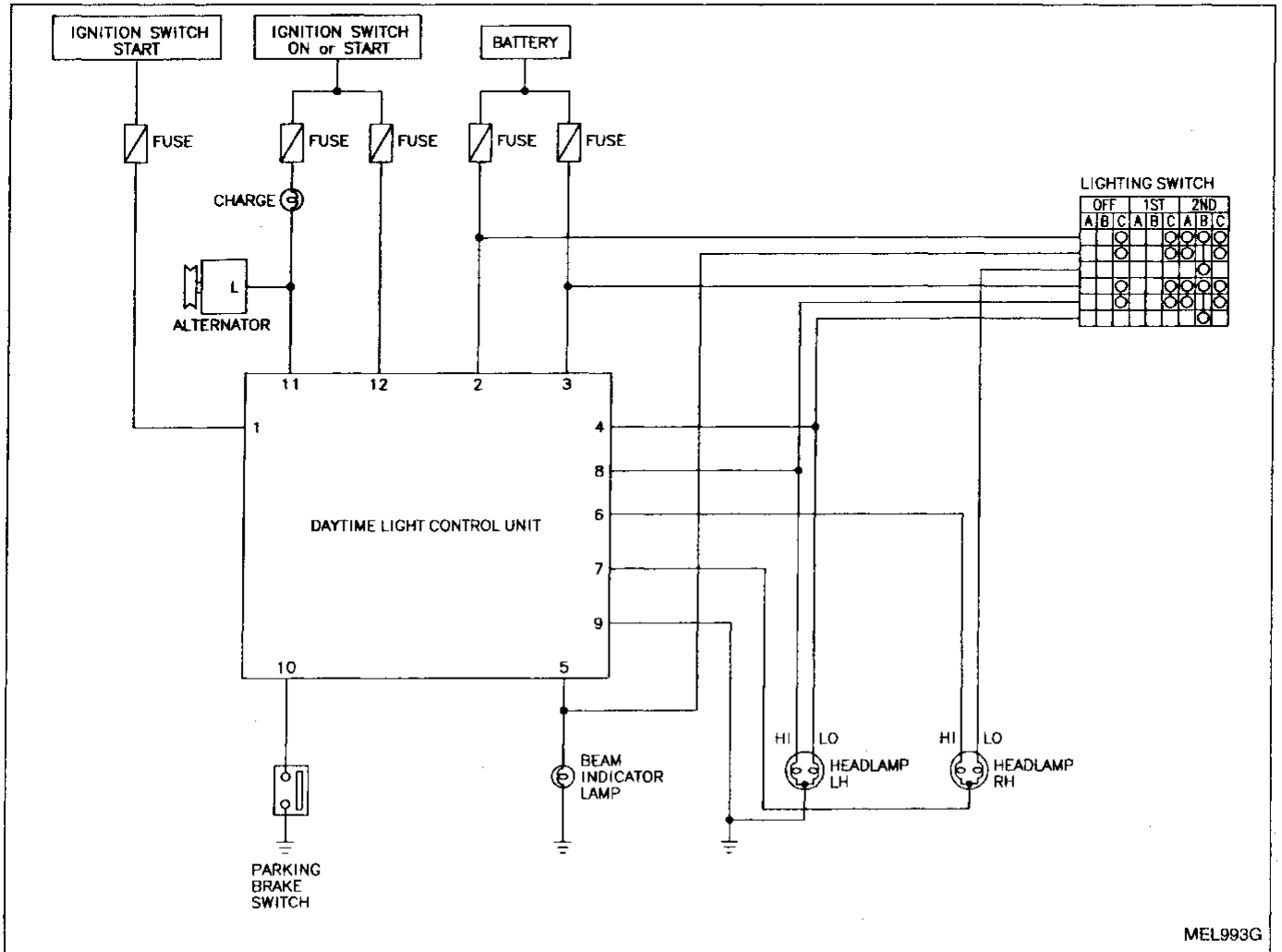
Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	O	X	X	O	O	X	O	Δ*	Δ*	O	Δ*	Δ*	O	O	X	O
	Low beam	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X	X	O	X
Clearance and tail lamp		X	X	X	O	O	O	O	O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

O : Lamp "ON"
 X : Lamp "OFF"
 Δ : Lamp dims.

* : When starting the engine with the parking brake released, the daytime lamp will come ON.
 When starting the engine with the parking brake pulled, the daytime lamp will not come ON.

Schematic

FOR CANADA

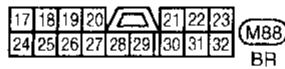
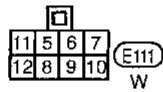
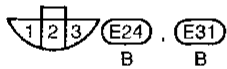
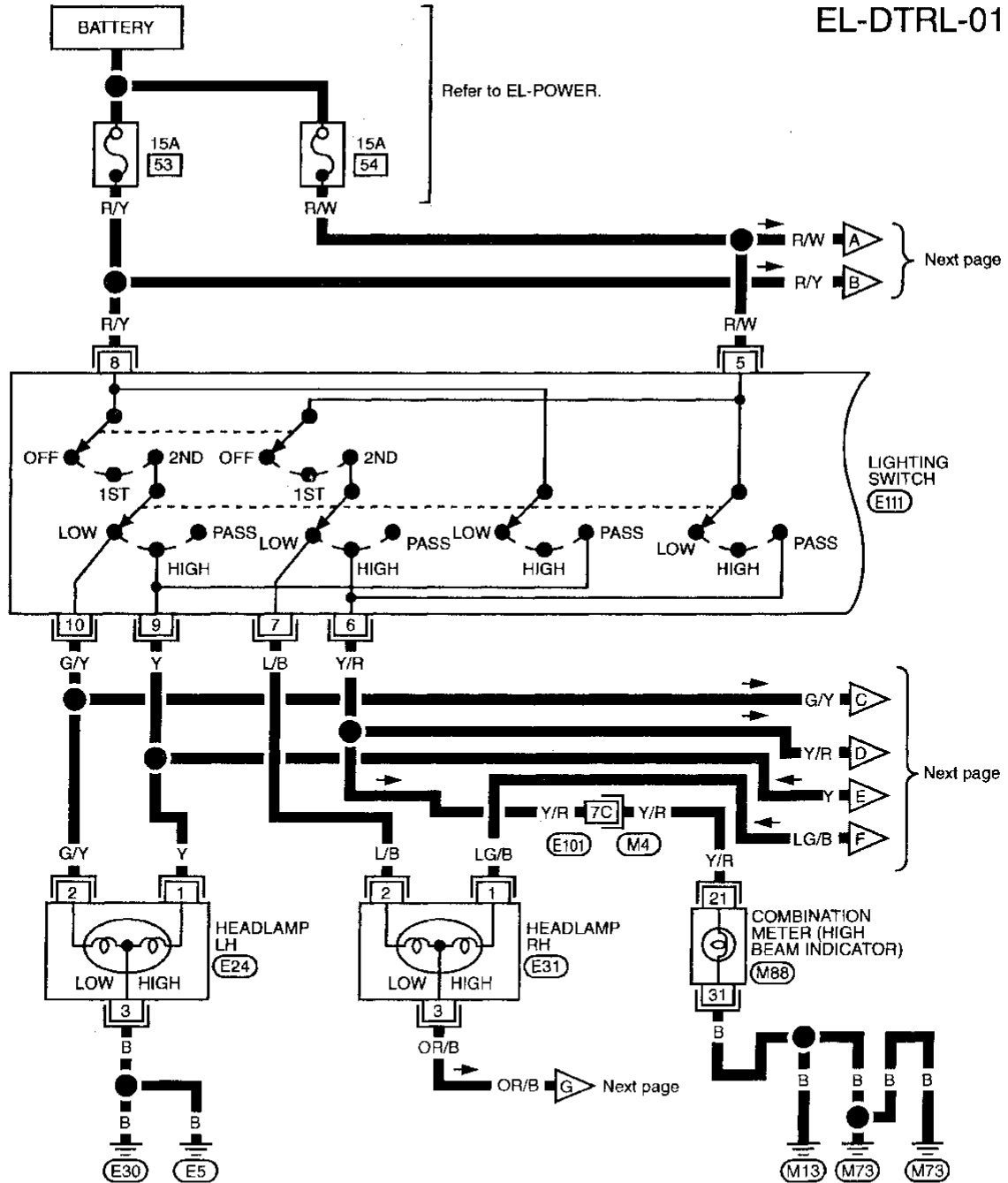


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HEADLAMP — Daytime Light System —

Wiring Diagram — DTRL —

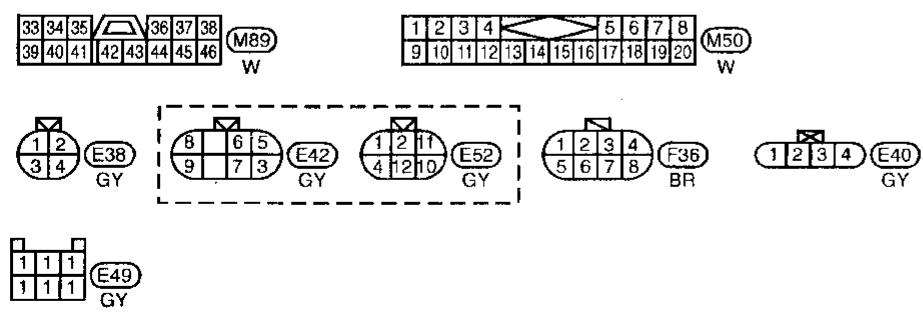
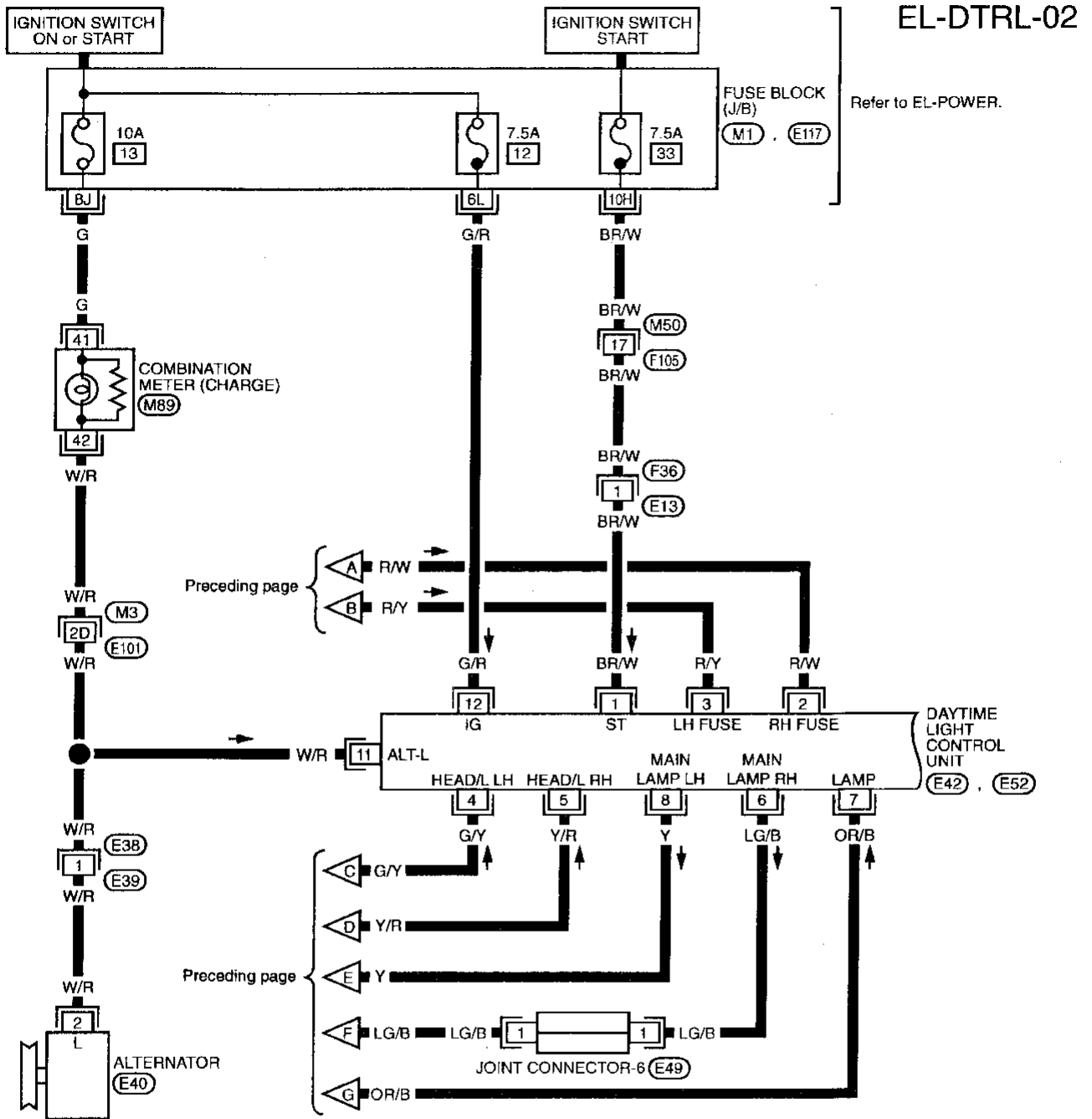
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HEADLAMP — Daytime Light System — Wiring Diagram — DTRL — (Cont'd)

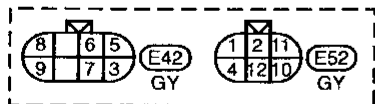
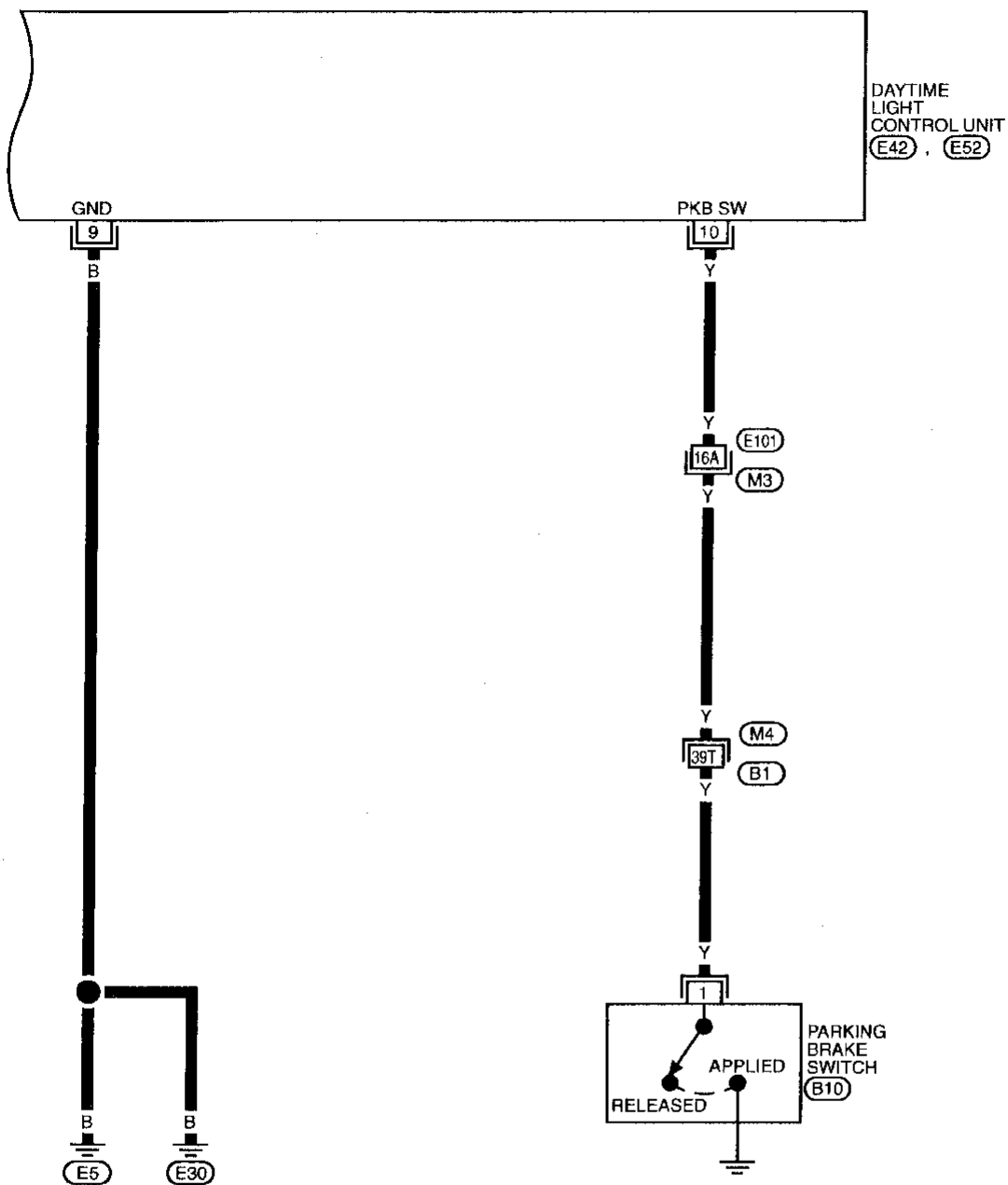


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HEADLAMP — Daytime Light System — Wiring Diagram — DTRL — (Cont'd)

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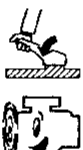
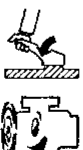
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HEADLAMP

Trouble Diagnoses (Daytime Light)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

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

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
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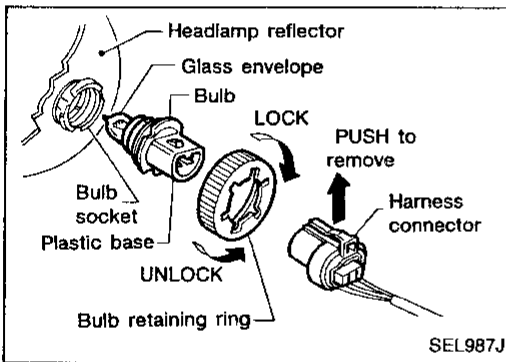
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HEADLAMP

Trouble Diagnoses (Daytime Light) (Cont'd)

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



Bulb Replacement

The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope.**

1. Disconnect the battery cable.
2. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
3. Disconnect the harness connector from the back side of the bulb.
4. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. Install in the reverse order of removal.

CAUTION:

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

Bulb Specifications

Item	Wattage (12V)
Semi-sealed beam High/Low	60/45 (HB1)

HEADLAMP

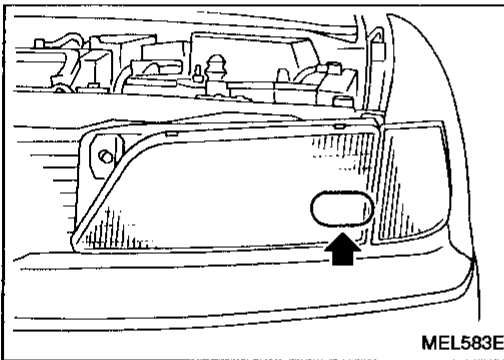
Aiming Adjustment

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

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

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

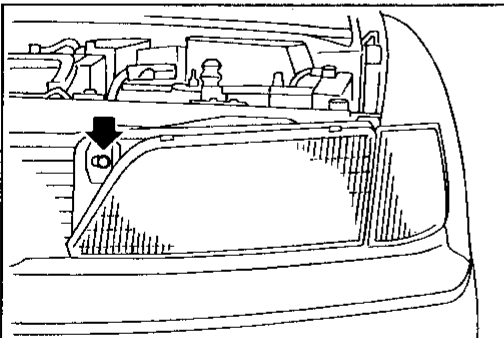
- a. Keep all tires inflated to correct pressures.
- b. Place vehicle and tester on one and same flat surface.
- c. See that there is no-load in vehicle (coolant, engine oil filled up to correct level and full fuel tank) other than the driver (or equivalent weight placed in driver's position).



AIMER ADJUSTMENT MARK

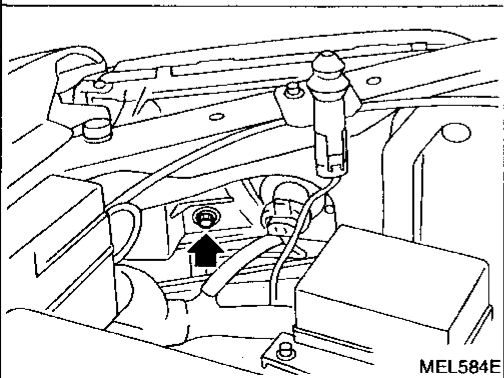
When using a mechanical aimer, adjust adapter legs to the data marked on the headlamps.

Example:



LOW BEAM

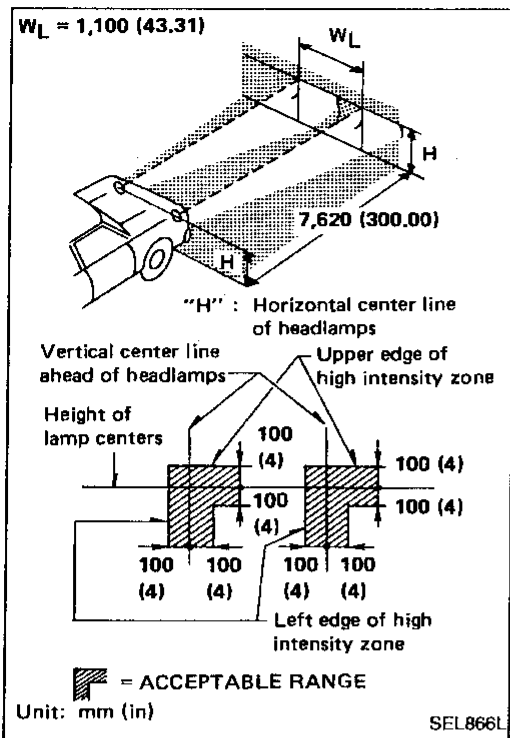
1. Turn headlamp low beam on.
 2. Use adjusting screws to perform aiming adjustment.
- First tighten the adjusting screw all the way and then make adjustment by loosening the screw.



HEADLAMP

Aiming Adjustment (Cont'd)

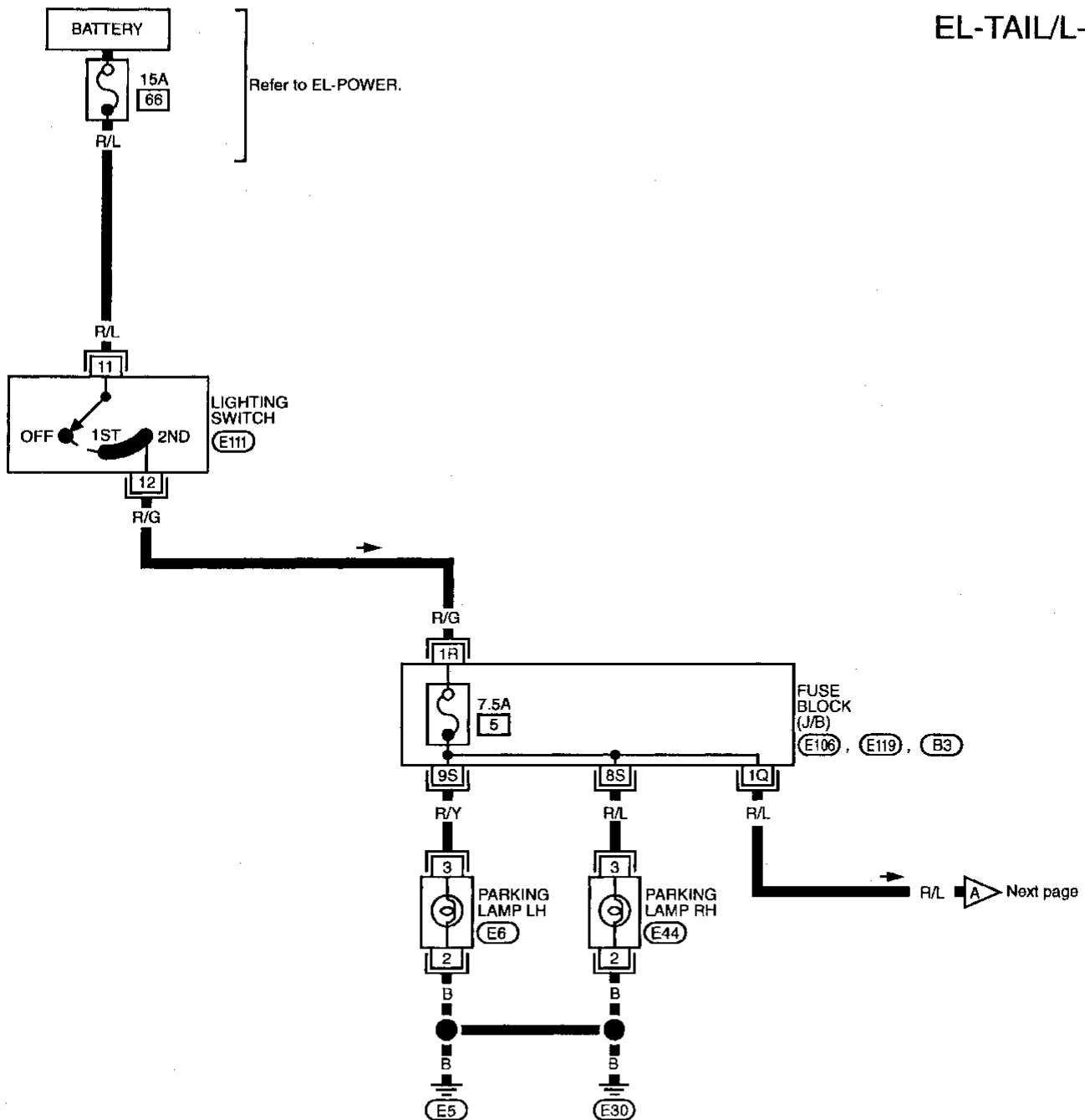
- Upper edge and left edge of high intensity zone should be within the range shown at left. Adjust headlamps accordingly.
 - Dotted lines in illustration show center of headlamp.
- "H": Horizontal center line of headlamps
 "W_L": Distance between each headlamp center



EXTERIOR LAMP

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

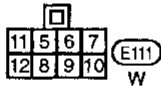
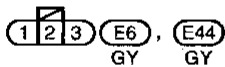
EL-TAIL/L-01



Refer to EL-POWER.

FUSE BLOCK (J/B) (E106), (E119), (B3)

R/L A Next page



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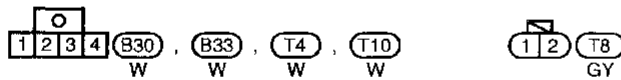
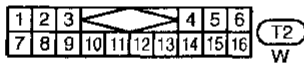
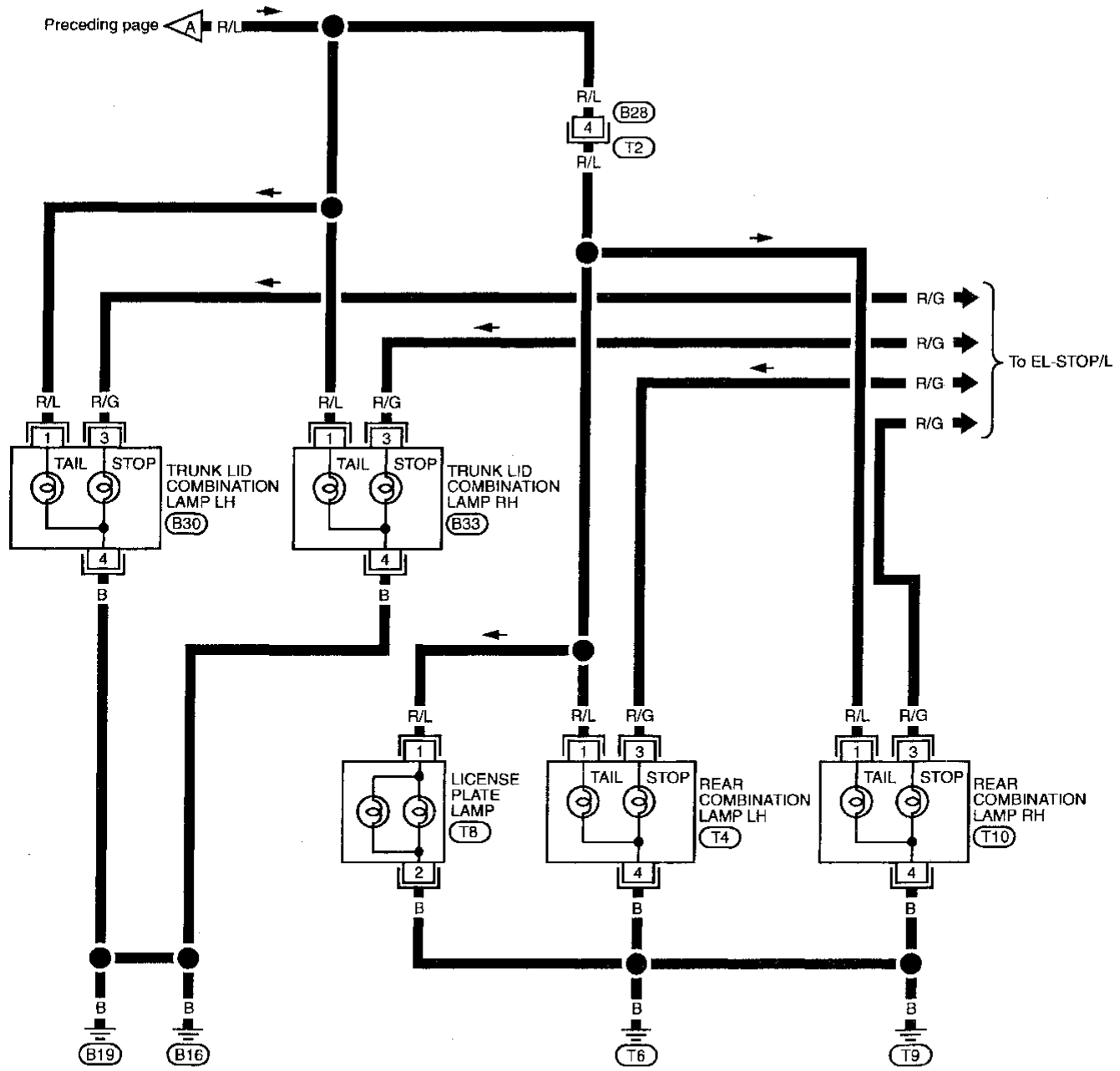
- (B3)
- (E106)
- (E119)

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EXTERIOR LAMP

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

EL-TAIL/L-02



EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/ System Description

TURN SIGNAL OPERATION

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

- through 7.5A fuse [No. 14], located in the fuse block (J/B)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ⑧
- through terminal ① of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ⑤ through body grounds M13 and M73.

LH turn

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

- front turn signal lamp LH terminal ① [through fuse block (J/B) terminals 5S and 6S]
- rear combination lamp LH terminal ② [through fuse block (J/B) terminals 5S and 4Q] and
- combination meter terminal ⑩ [through fuse block (J/B) terminals 5S and 12J].

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds E5 and E30.

Ground is supplied to the rear combination lamp LH terminal ④ through body grounds T6 and T9.

Ground is supplied to combination meter terminal ⑩ through body grounds M13 and M73.

With power and grounds supplied, the combination flasher unit controls the flashing interval of the LH turn signal lamps.

RH turn

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

- front turn signal lamp RH terminal ① [through fuse block (J/B) terminals 14S and 10S]
- rear combination lamp RH terminal ② [through fuse block (J/B) terminals 14S and 13Q] and
- combination meter terminal ⑩ [through fuse block (J/B) terminals 14S and 5H].

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds E5 and E30.

Ground is supplied to the rear combination lamp RH terminal ④ through body grounds T6 and T9.

Ground is supplied to combination meter terminal ⑩ through body grounds M13 and M73.

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

HAZARD LAMP OPERATION

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

- 10A fuse [No. 11], located in the fuse block (J/B).

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

- through terminal ① of the hazard switch
- to combination flasher unit terminal ⑧
- through terminal ① of the combination flasher unit
- to hazard switch terminal ④.

Ground is supplied to the combination flasher unit terminal ⑤ through body grounds M13 and M73.

Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ① [through fuse block (J/B) terminals 2J and 6S]
- rear combination lamp LH terminal ② [through fuse block (J/B) terminals 2J and 4Q] and
- combination meter terminal ⑩ [through fuse block (J/B) terminals 2J and 12J].

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

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

Ground is supplied to terminal ② of the front turn signal lamps through body grounds E5 and E30.

Ground is supplied to terminal ④ of the rear combination lamps through body grounds T6 and T9.

Ground is supplied to combination meter terminal ⑩ through body grounds M13 and M73.

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

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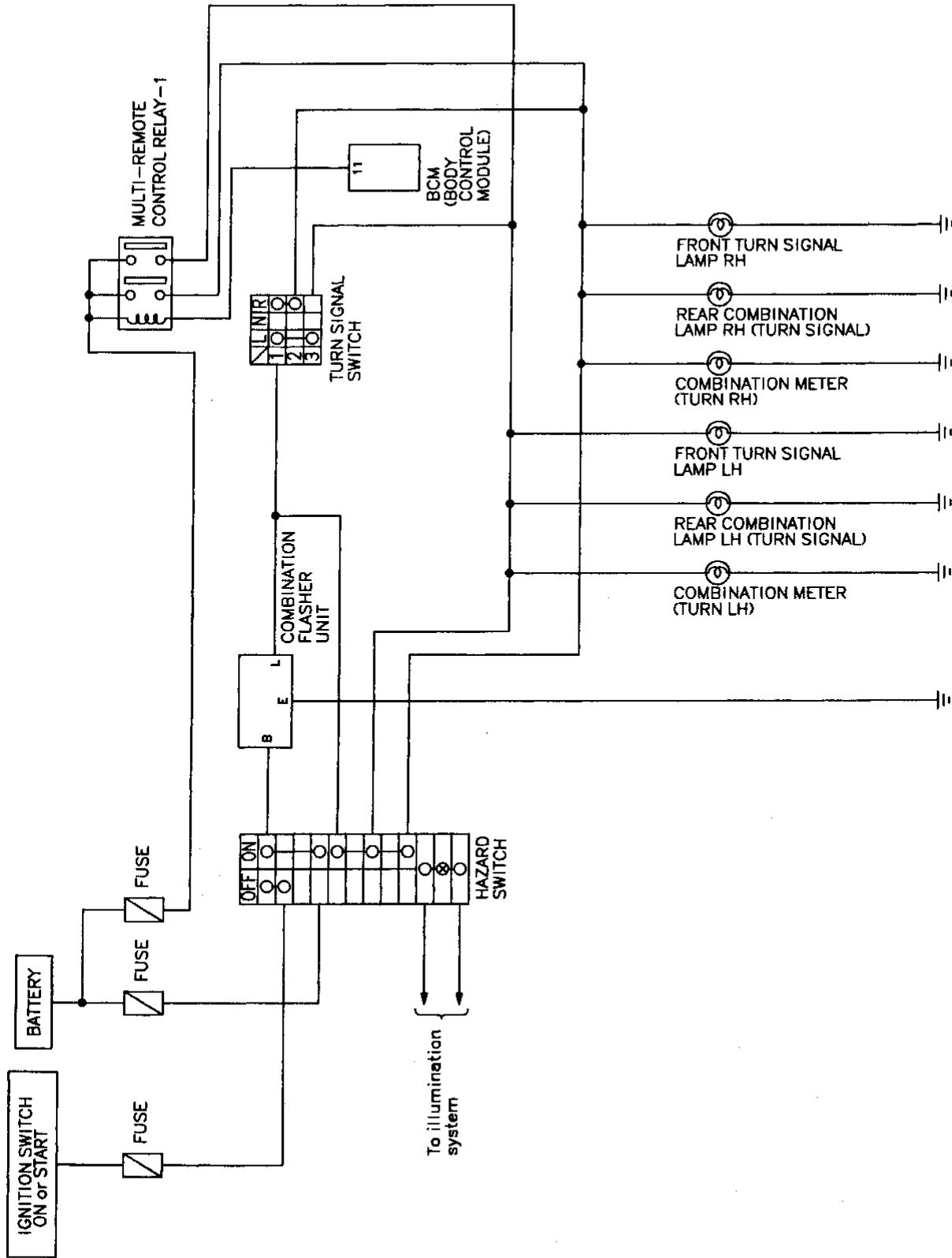
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EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/ Schematic

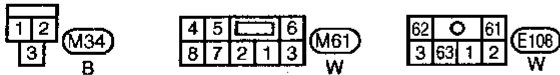
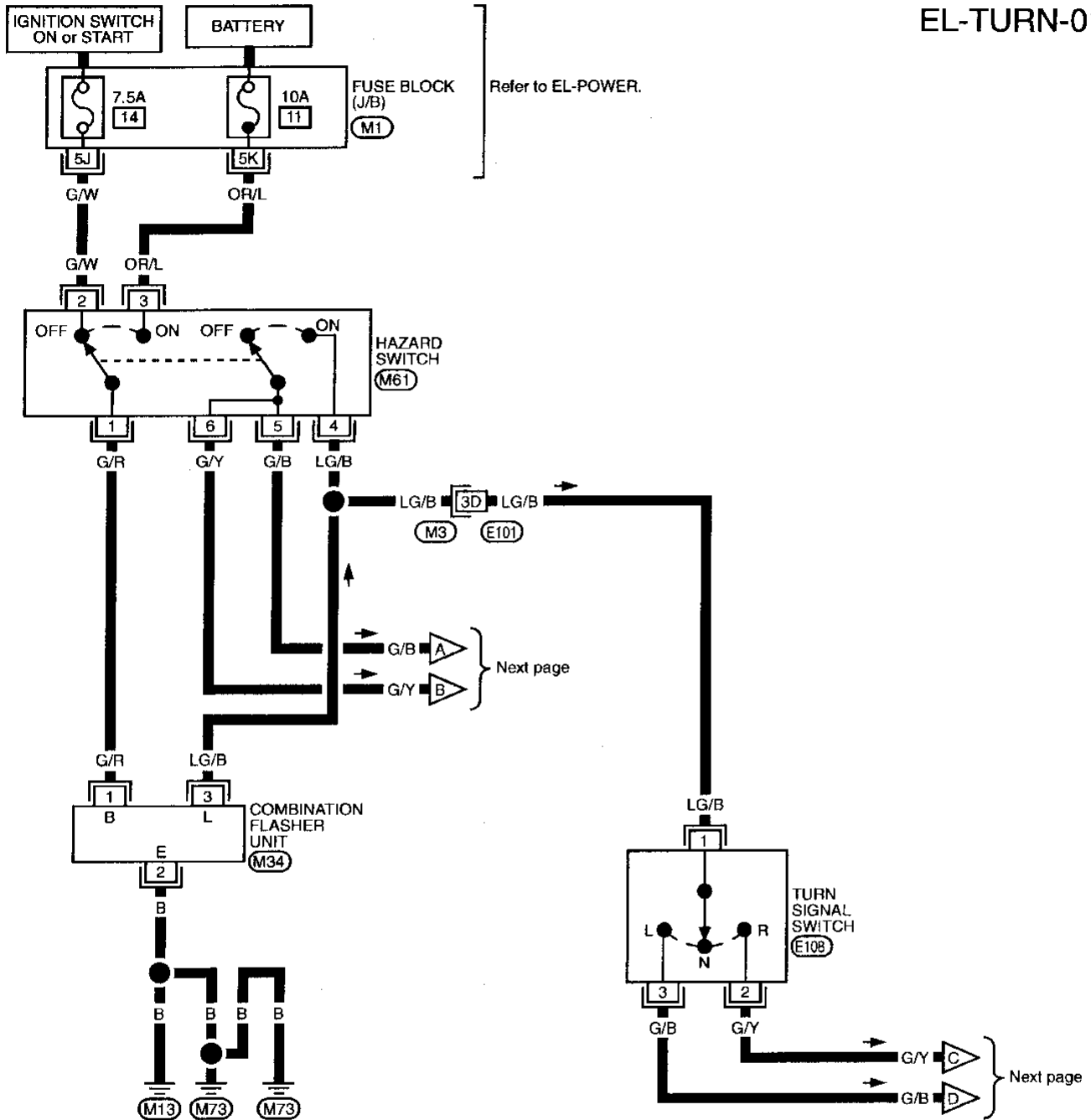


MEL619G

EXTERIOR LAMP

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

EL-TURN-01



Refer to last page (Foldout page).

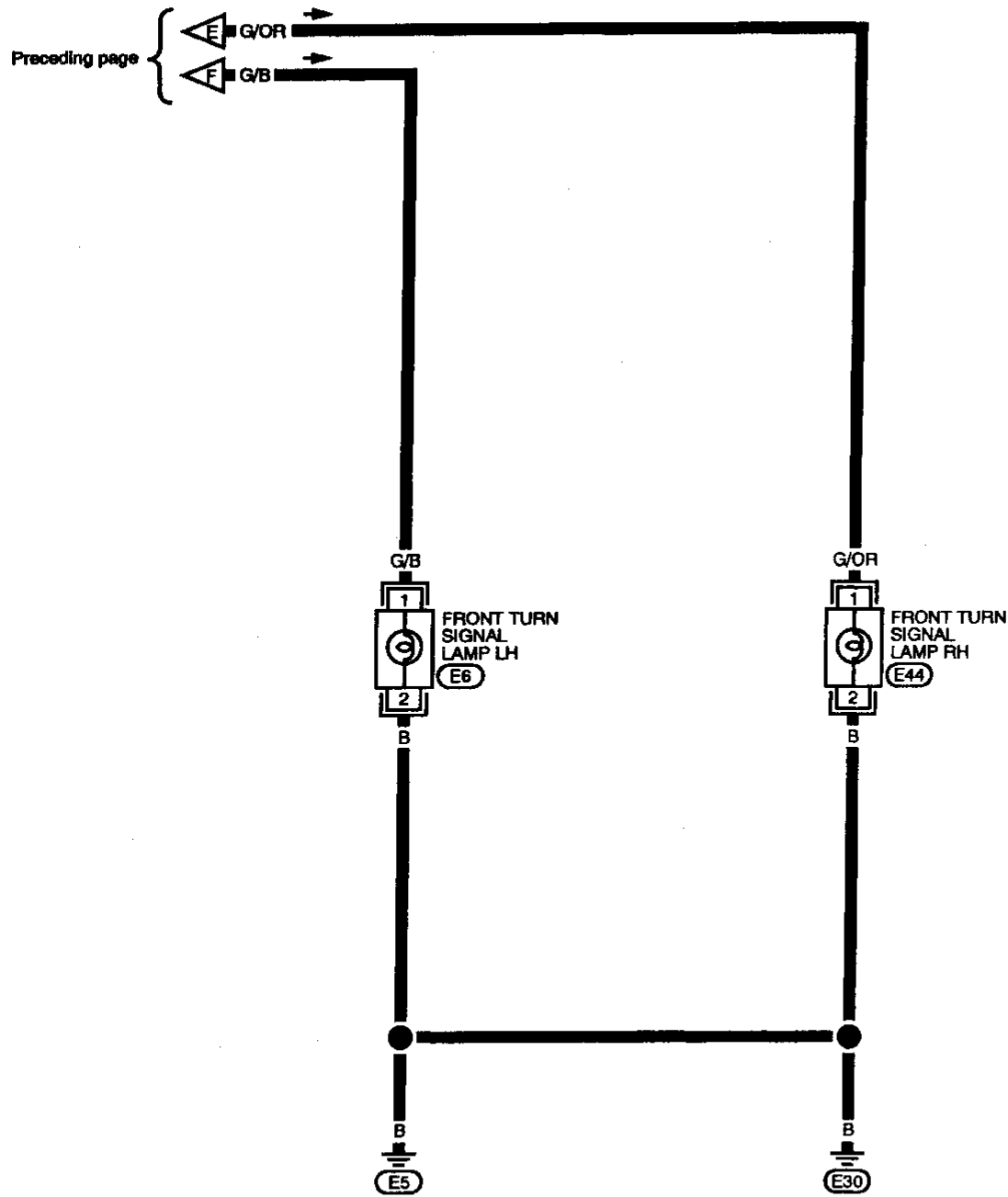
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EXTERIOR LAMP

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

EL-TURN-03



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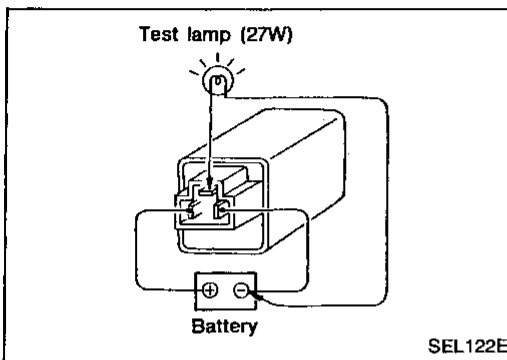
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EXTERIOR LAMP

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. 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. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit 	<ol style="list-style-type: none"> 1. Check 7.5A fuse (No. <u>14</u>), located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check harness between combination flasher unit terminal ③ and turn signal switch terminal ① for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	<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. <u>11</u>), located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check harness between combination flasher unit terminal ③ and hazard switch terminal ④ for open circuit.
Individual turn signal lamp or turn indicators do not operate.	<ol style="list-style-type: none"> 1. Bulb 2. Grounds 	<ol style="list-style-type: none"> 1. Check bulb. 2. Check ground circuit for the bulb.



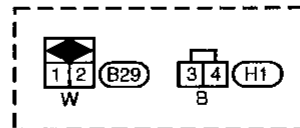
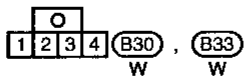
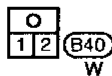
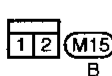
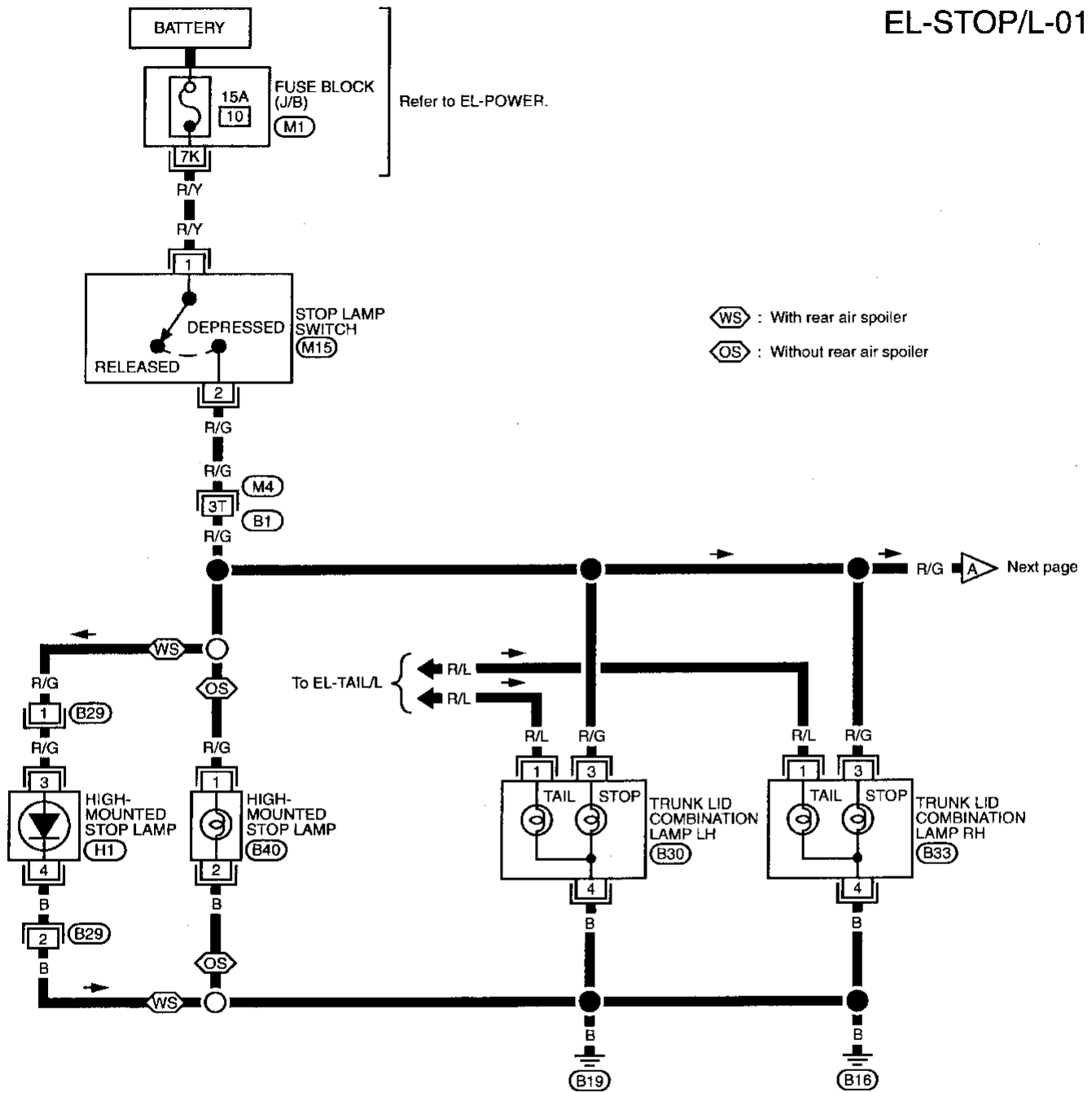
Combination Flasher Unit Check

- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.

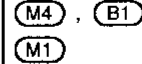
EXTERIOR LAMP

Stop Lamp/Wiring Diagram — STOP/L —

EL-STOP/L-01



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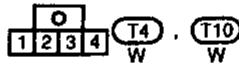
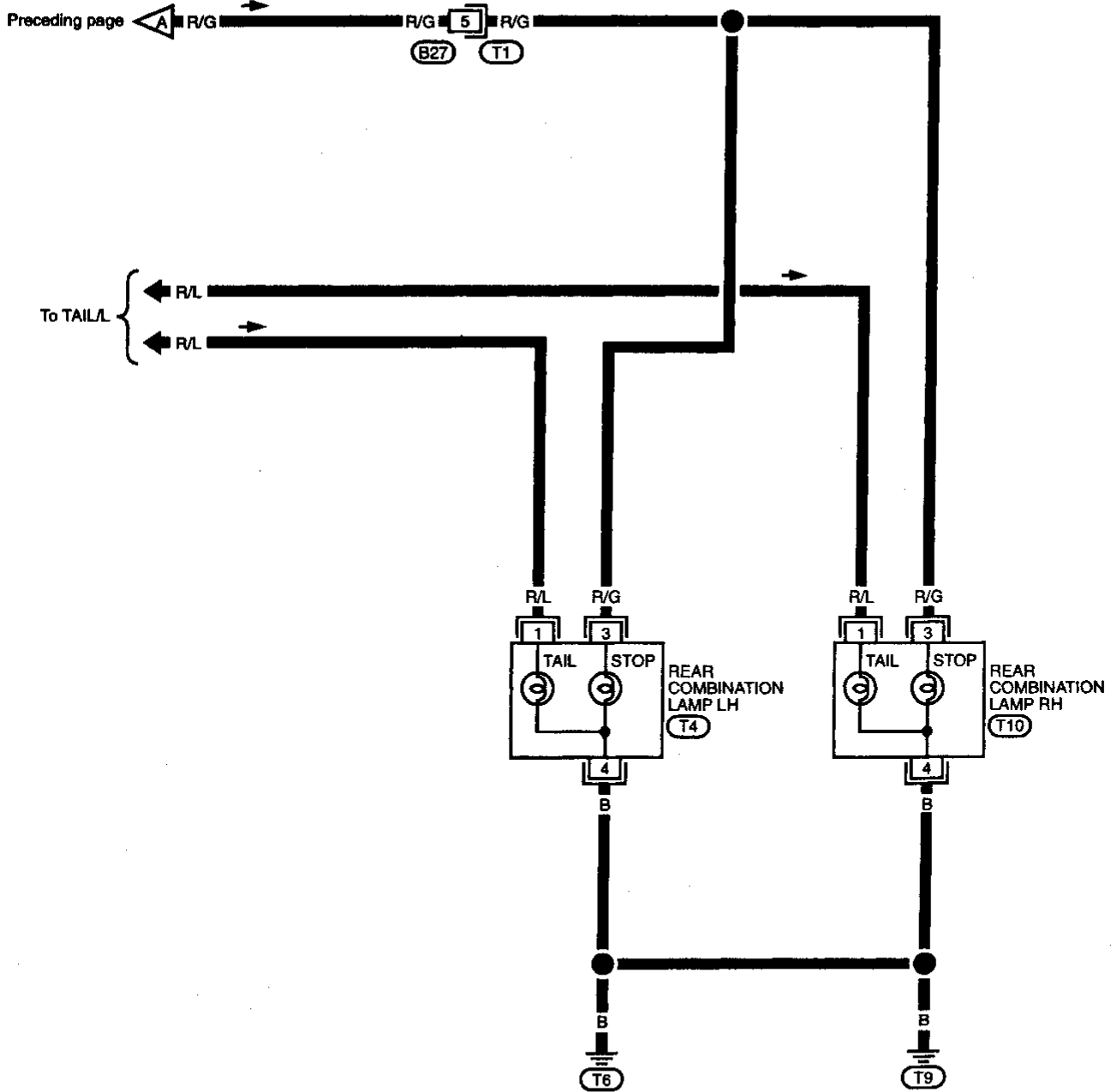


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EXTERIOR LAMP

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

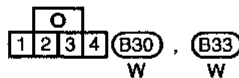
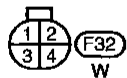
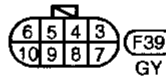
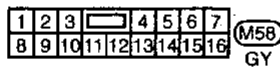
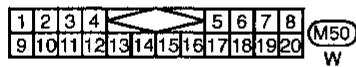
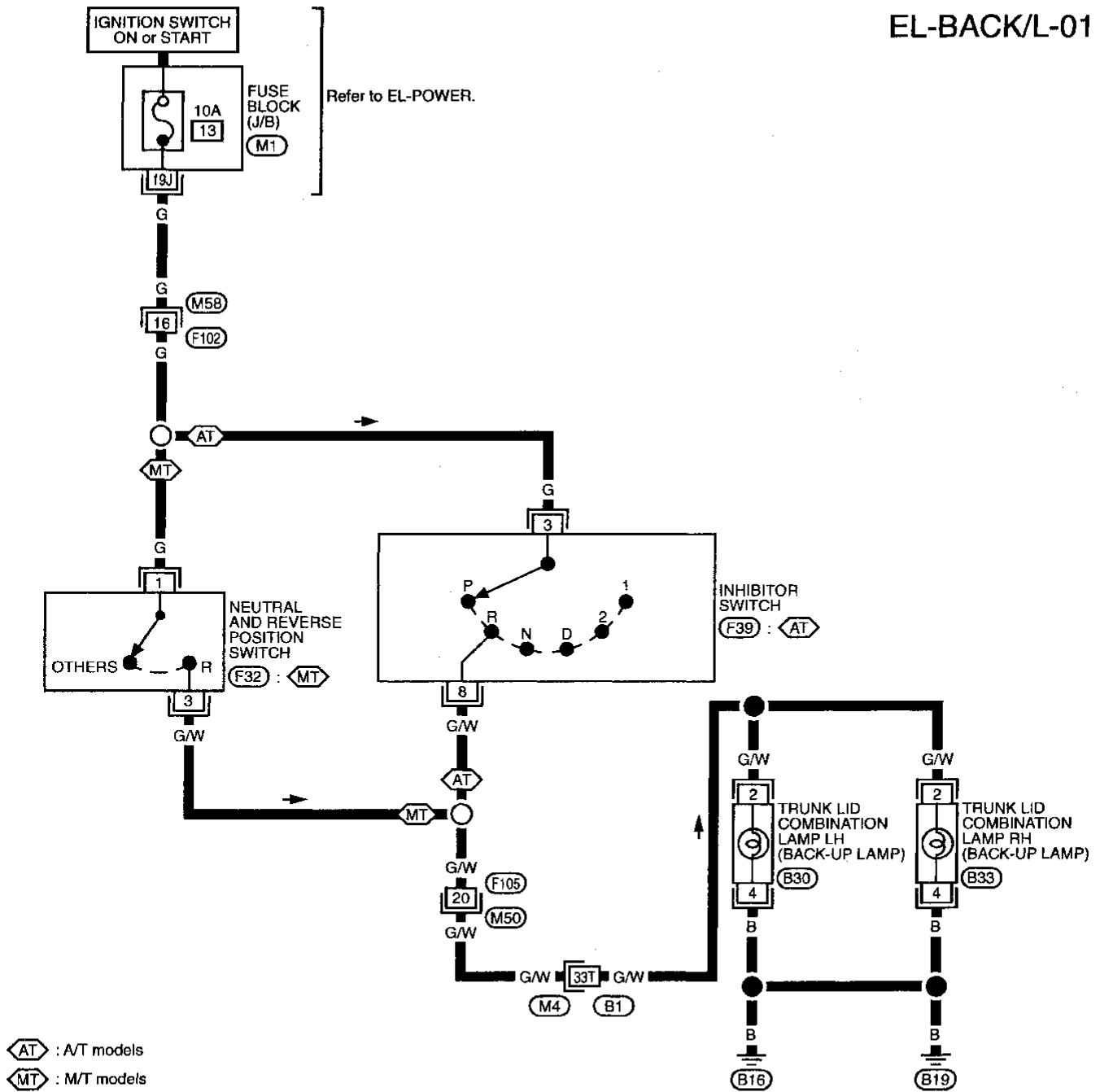
EL-STOP/L-02



EXTERIOR LAMP

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

EL-BACK/L-01



Refer to last page (Foldout page).

M4, B1
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EXTERIOR LAMP

Front Fog Lamp/System Description

Power is supplied at all times to front fog lamp relay terminal ③ through

- 15A fuse (No. 63), located in the fuse and fusible link box).

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

- through 15A fuse (No. 53), located in the fuse and fusible link box)
- to lighting switch terminal ⑧
- through terminal ⑩ of the lighting switch
- to front fog lamp relay terminal ①.

Front fog lamp operation

The lighting switch must be in the 2ND and LOW ("B") position for front fog lamp operation.

With the front fog lamp switch in the ON position

- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch and body grounds E5 and E30.

The front fog lamp relay is energized and power is supplied

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

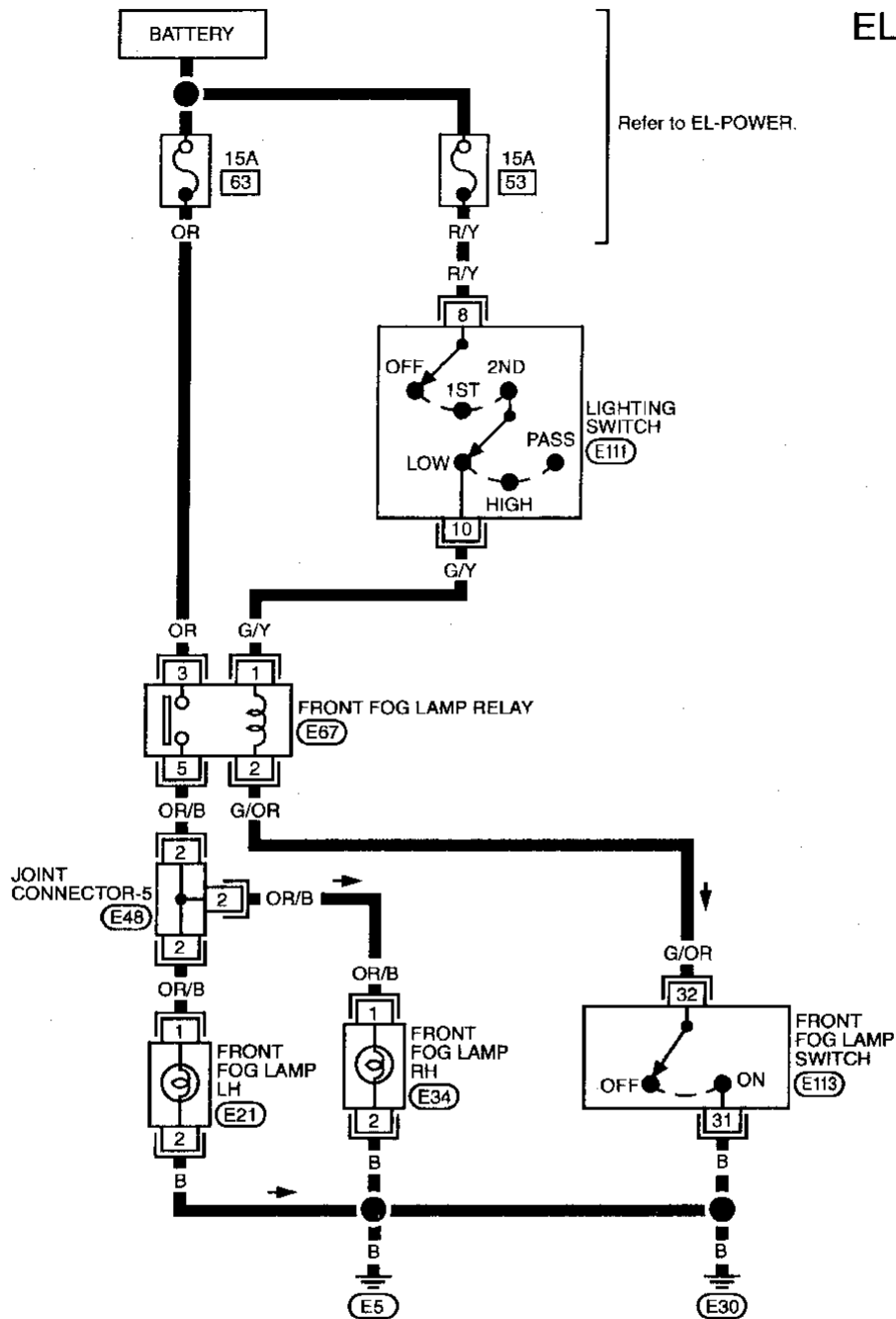
Ground is supplied to terminal ② of each front fog lamp through body grounds E5 and E30.

With power and ground supplied, the front fog lamps illuminate.

EXTERIOR LAMP

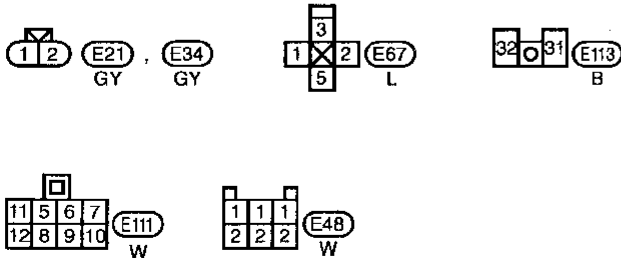
Front Fog Lamp/Wiring Diagram — F/FOG —

EL-F/FOG-01



Refer to EL-POWER.

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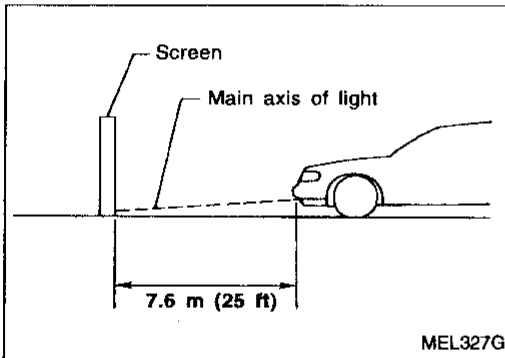
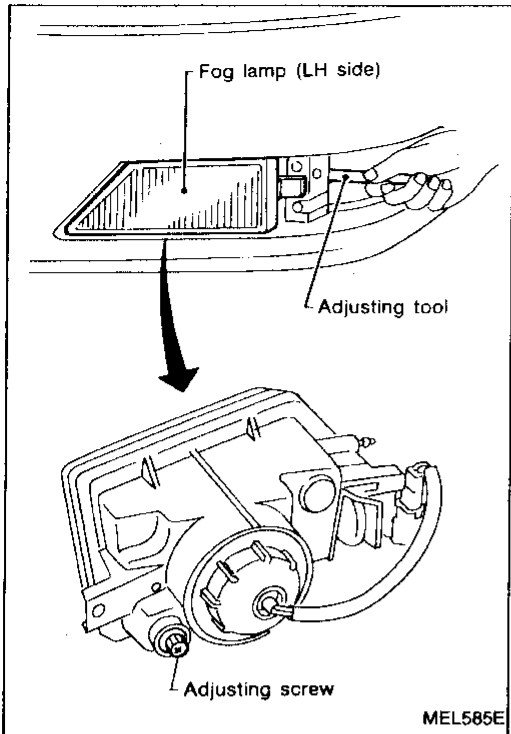
EXTERIOR LAMP

Front Fog Lamp Aiming Adjustment

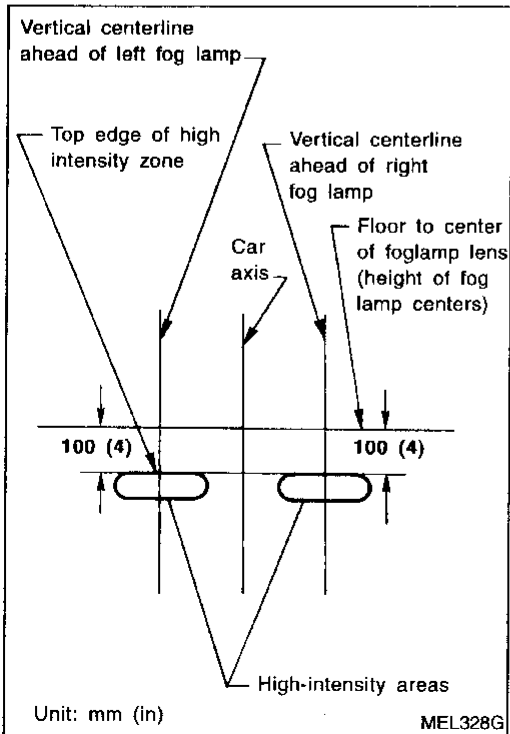
Before performing aiming adjustment, make sure of the following.

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

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



- 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.

Bulb Specifications

Item	Wattage (W)
Front fog lamp	55

EXTERIOR LAMP

Cornering Lamp/System Description

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

Power is supplied at all times

- to terminal ⑧ of the lighting switch
- through 15A fuse (No. 53, located in the fuse and fusible link box).
- to terminal ⑤ of the lighting switch
- through 15A fuse (No. 54, located in the fuse and fusible link box).

With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal ③ through 7.5A fuse [No. 14, located in the fuse block (J/B)].

Power is supplied to cornering lamp relay terminal ①

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

Ground is supplied to cornering lamp relay terminal ② through body grounds (E5) and (E30).

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

Power is supplied

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

RH turn

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

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

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

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

LH turn

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

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

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

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

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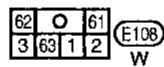
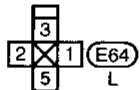
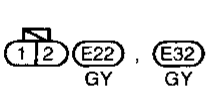
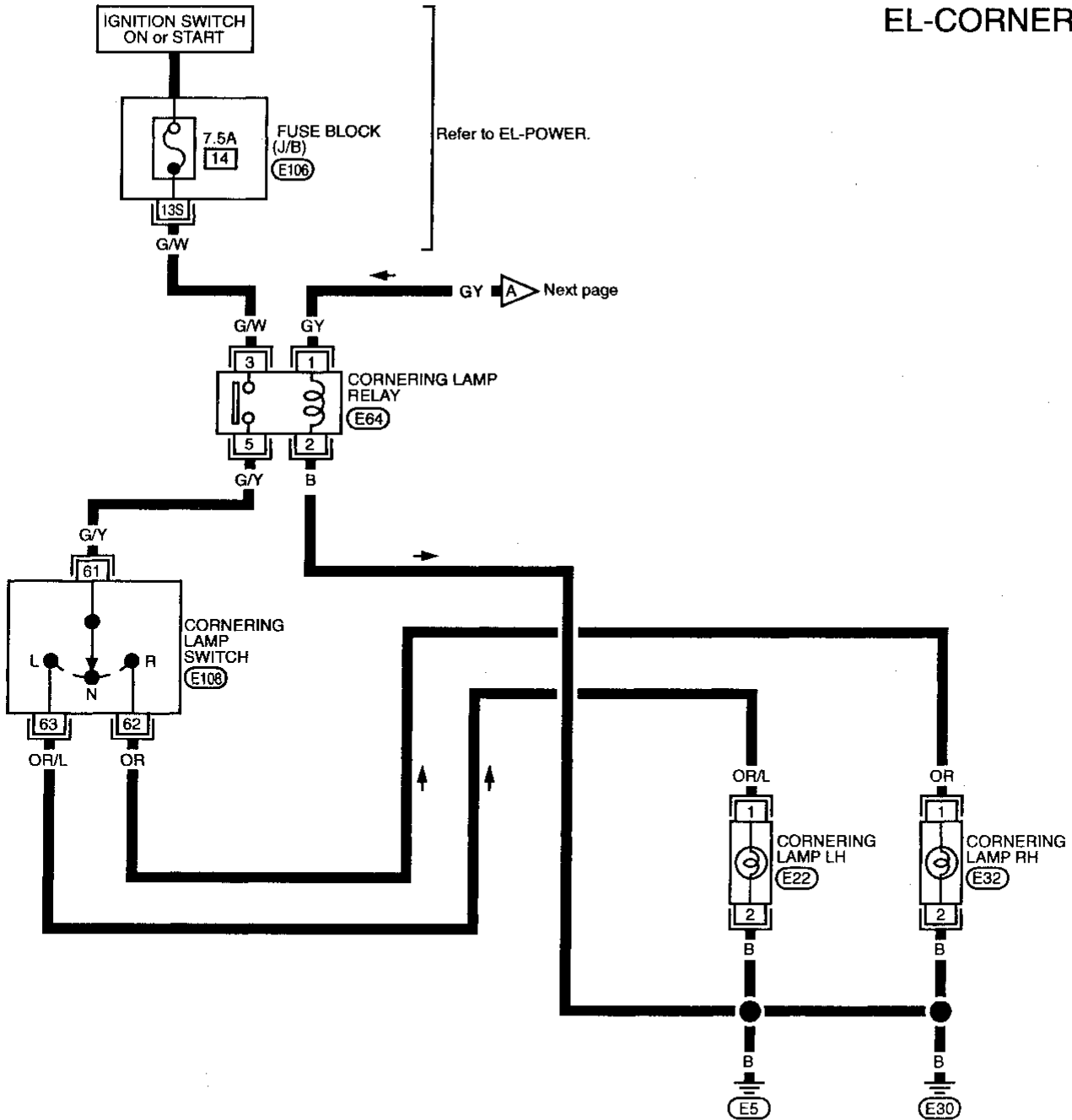
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EXTERIOR LAMP

Cornering Lamp/Wiring Diagram — CORNER —

EL-CORNER-01



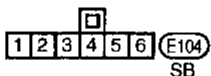
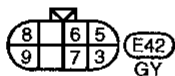
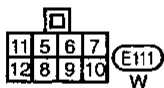
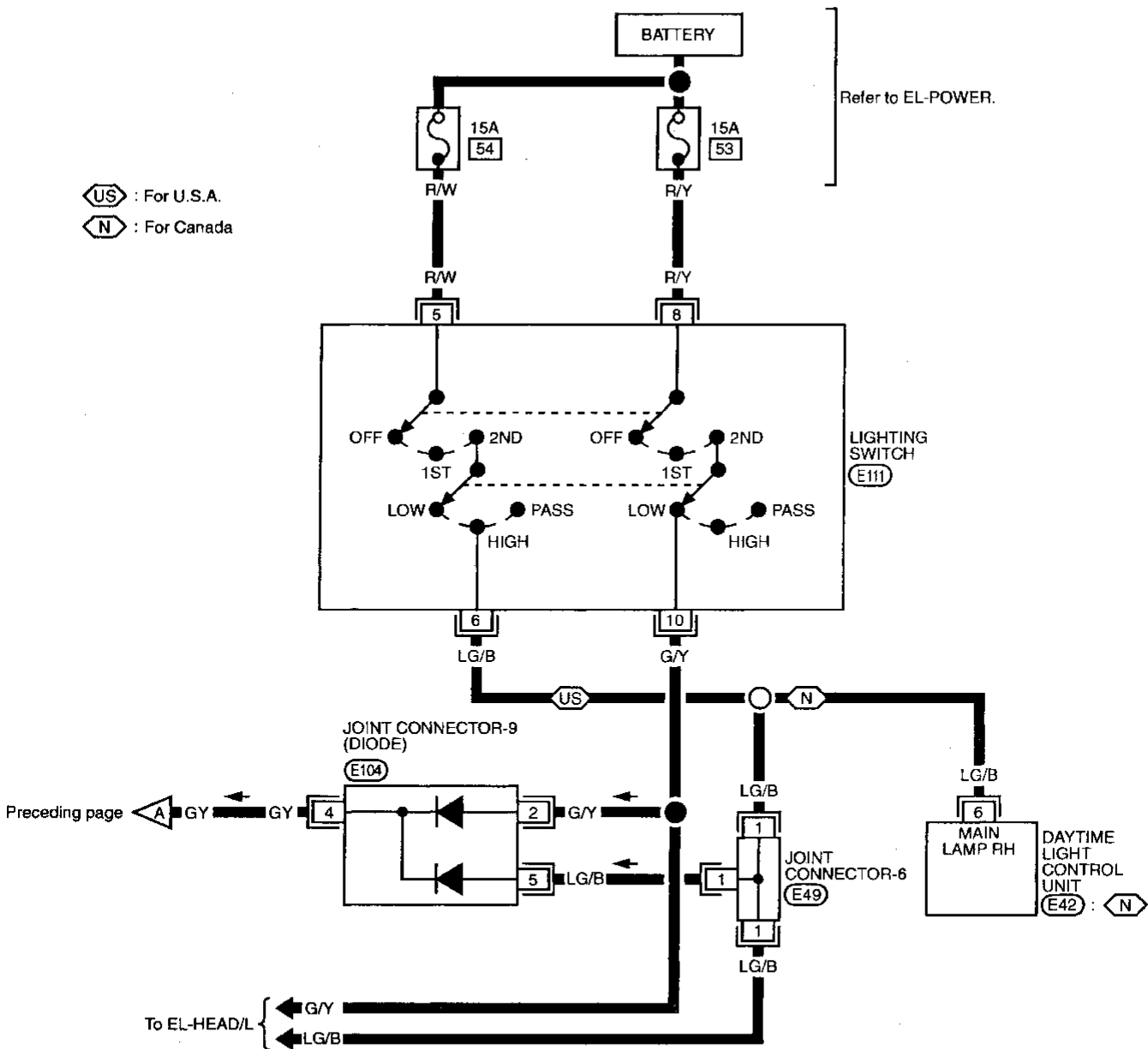
Refer to last page (Foldout page).

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EXTERIOR LAMP

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

EL-CORNER-02



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EXTERIOR LAMP

Bulb Specifications

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

INTERIOR LAMP

Illumination/System Description

Power is supplied at all times

- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to lighting switch terminal ①.

The lighting switch must be in the 1ST or 2ND position for illumination.

Power is also supplied at all times

- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to vanity mirror illumination terminal ①.

A variable resistor is built in the illumination control switch to control the amount of current to the illumination system.

The ashtray illumination, vanity mirror illumination and the glove box lamp are not controlled by the illumination control switch. The brightness of these lamps does not change.

The following chart shows the power and ground connector terminals for the components included in the illumination system.

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

With the exception of the glove box lamp, vanity mirror illumination and the ashtray illumination, the ground for all of the components are controlled through terminals 2 and 3 of the illumination control switch and body grounds M13 and M73.

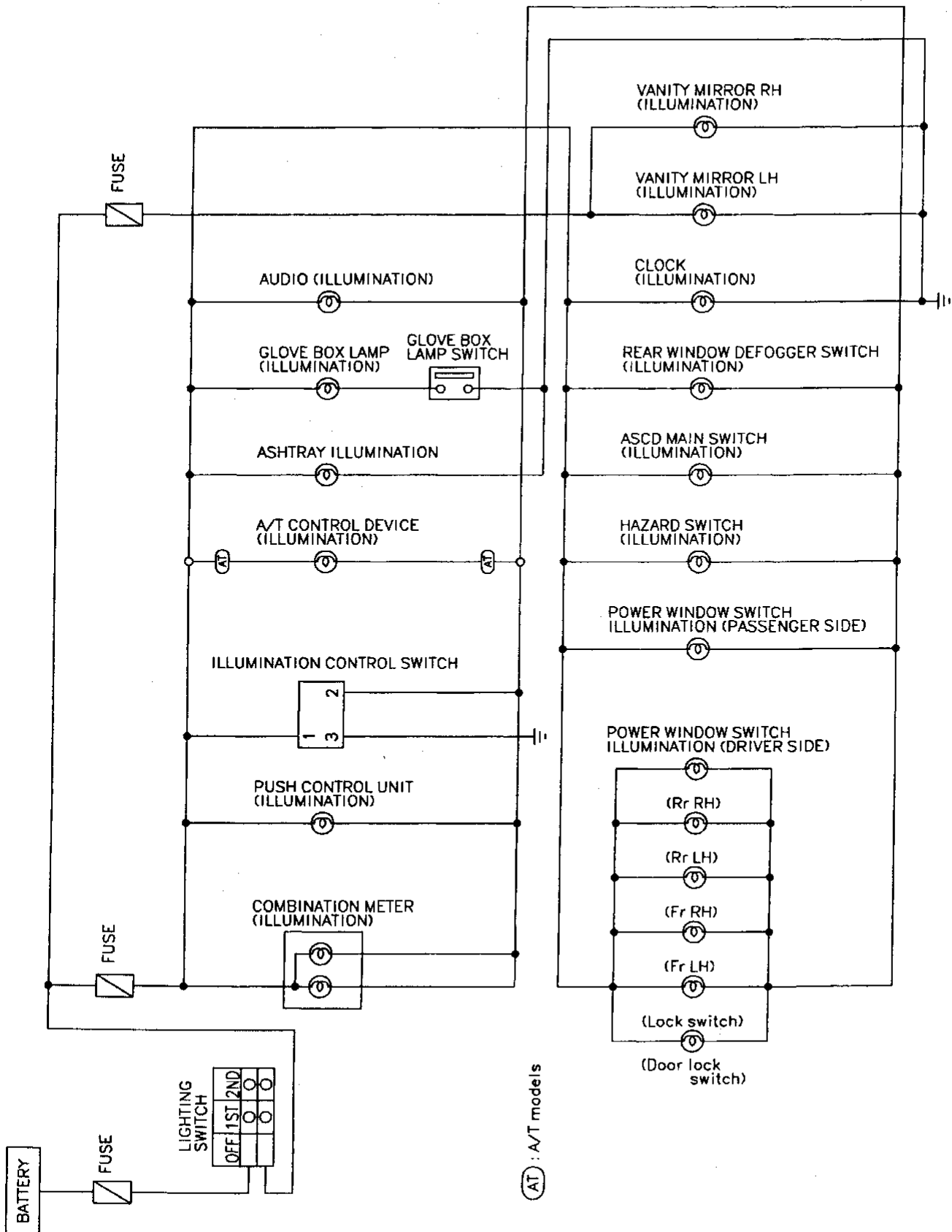
When the glove box is open, glove box lamp terminal ① is grounded through the glove box lamp switch and body grounds M13 and M73.

The ashtray illumination terminal 2 and vanity mirror illumination terminal 2 are grounded directly through body grounds M13 and M73.

Vanity mirror will illuminate when cover of the vanity mirror is opened.

INTERIOR LAMP

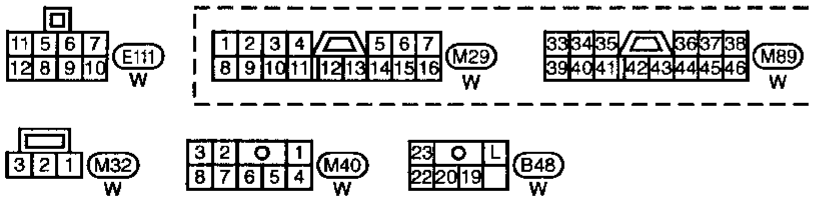
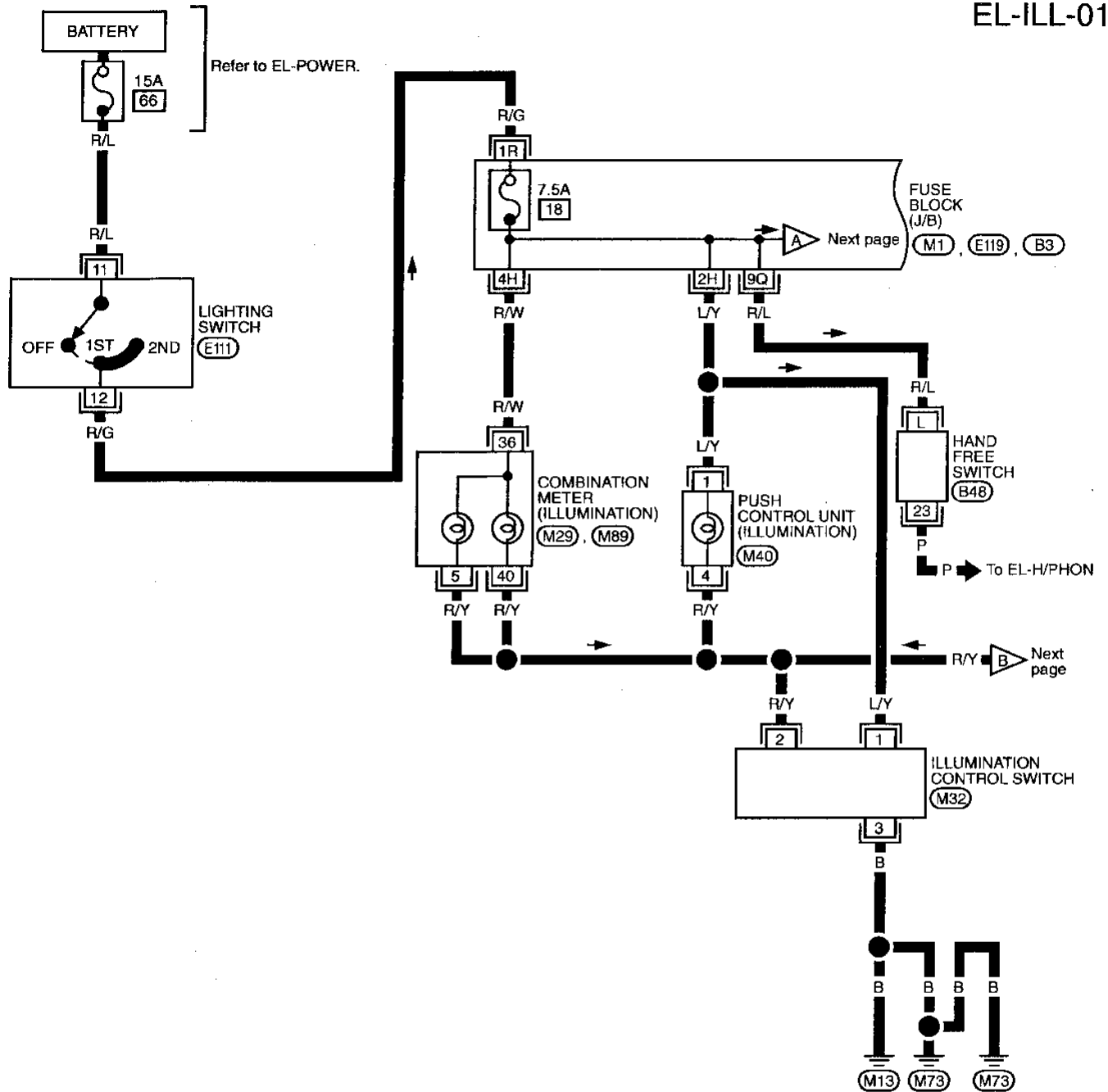
Illumination/Schematic



INTERIOR LAMP

Illumination/Wiring Diagram — ILL —

EL-ILL-01



Refer to last page (Foldout page).

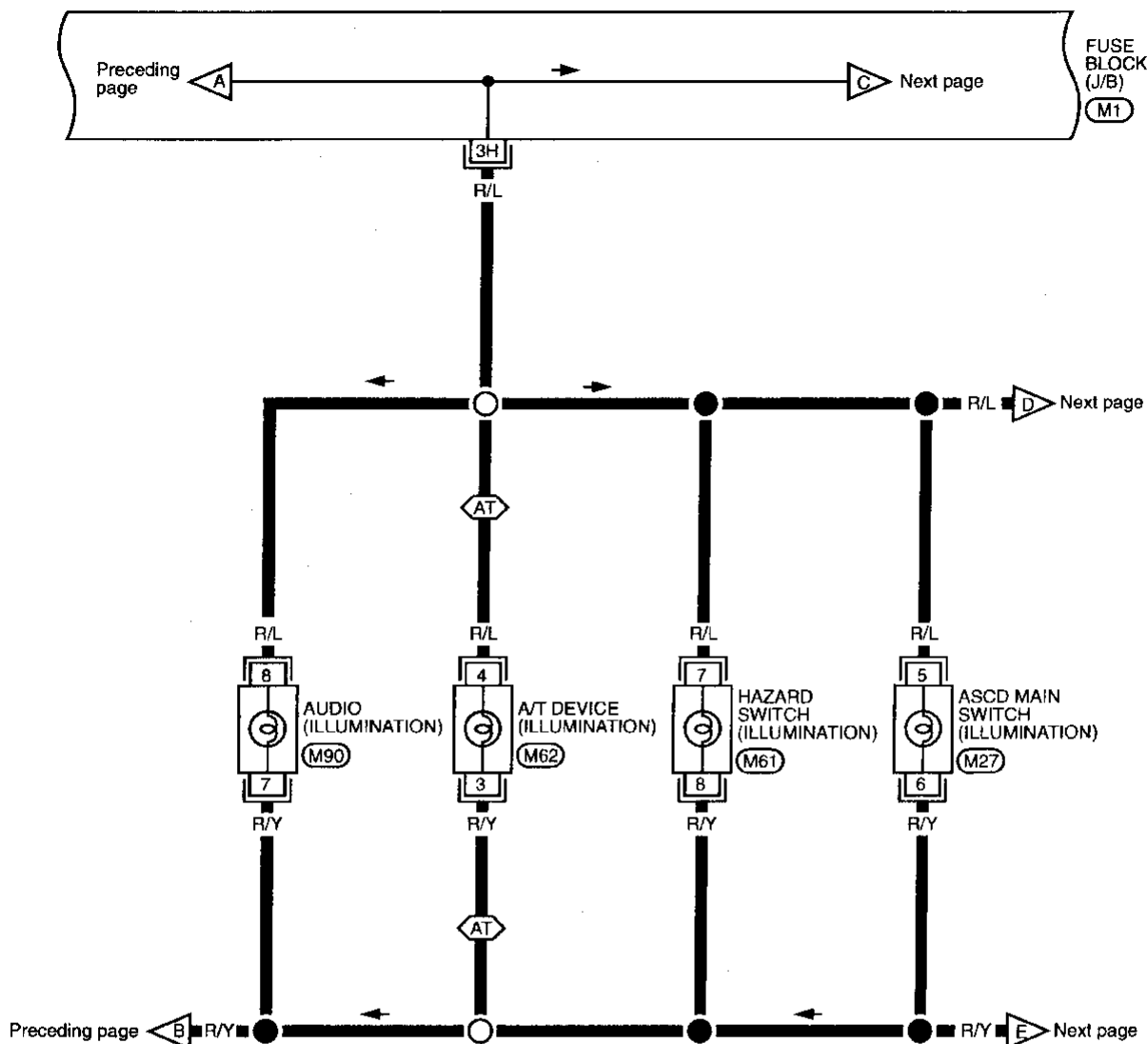
- (M1)
- (E119)
- (B3)

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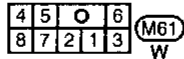
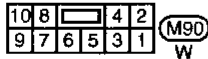
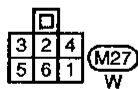
INTERIOR LAMP

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

EL-ILL-02



AT : A/T models



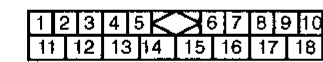
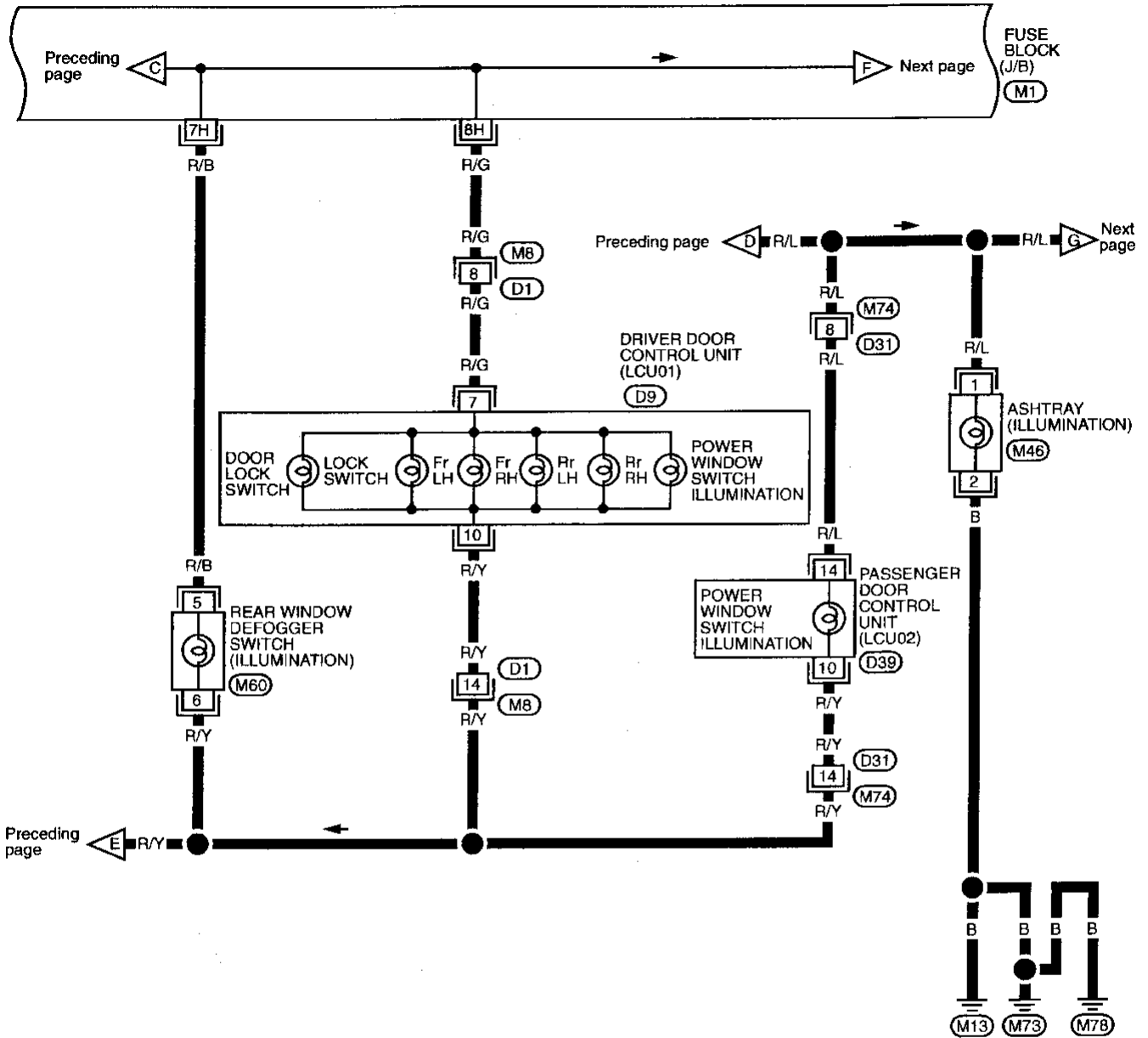
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M1

INTERIOR LAMP

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

EL-ILL-03



M8, M74
W



M46
W



M60
W



D9, D39
W

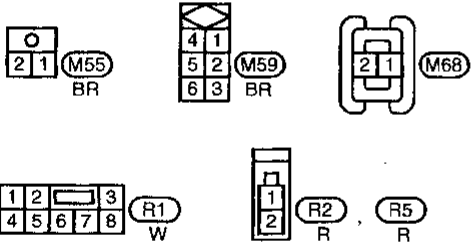
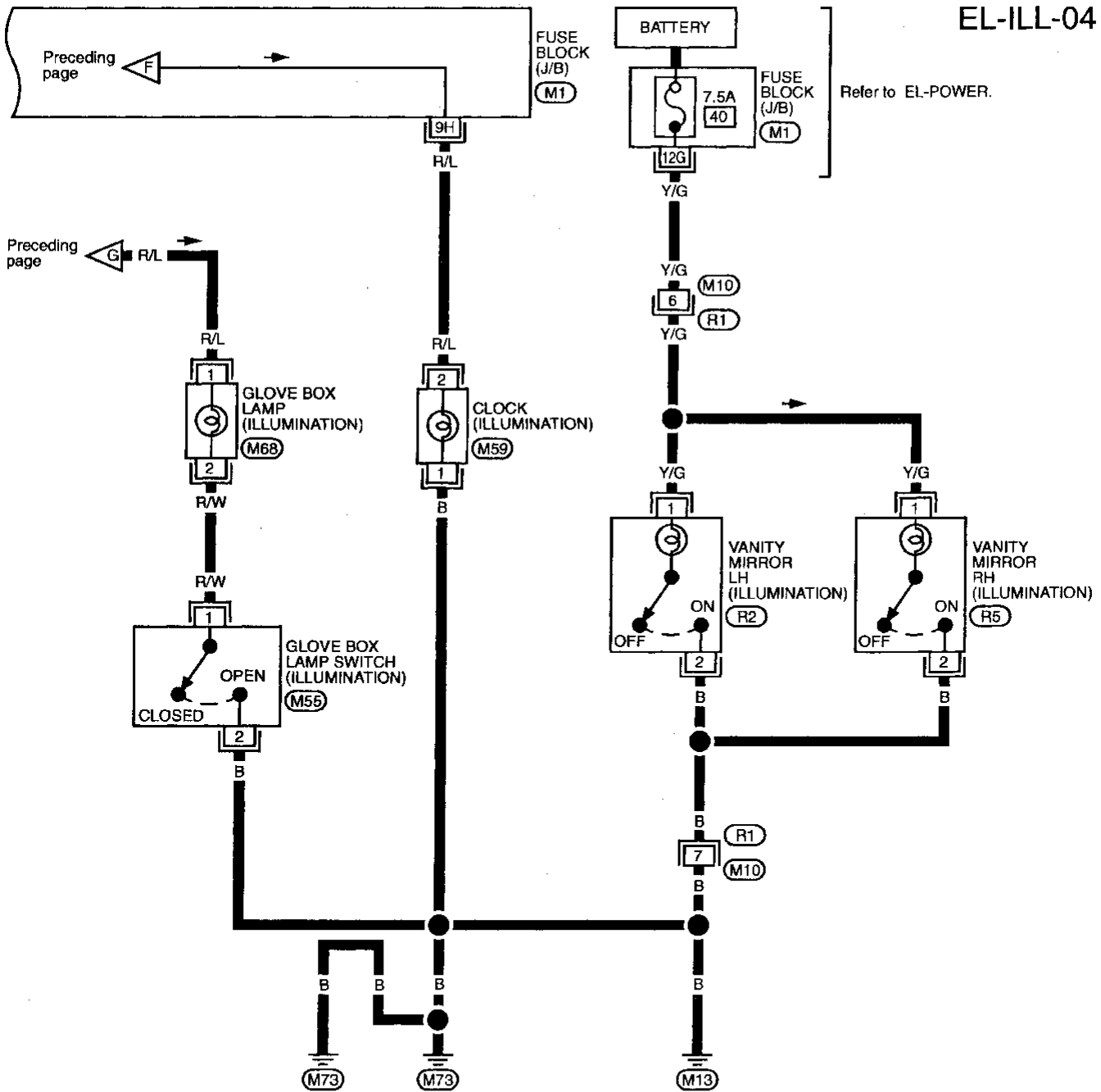
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INTERIOR LAMP

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

EL-ILL-04

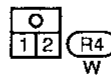
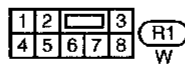
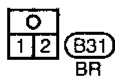
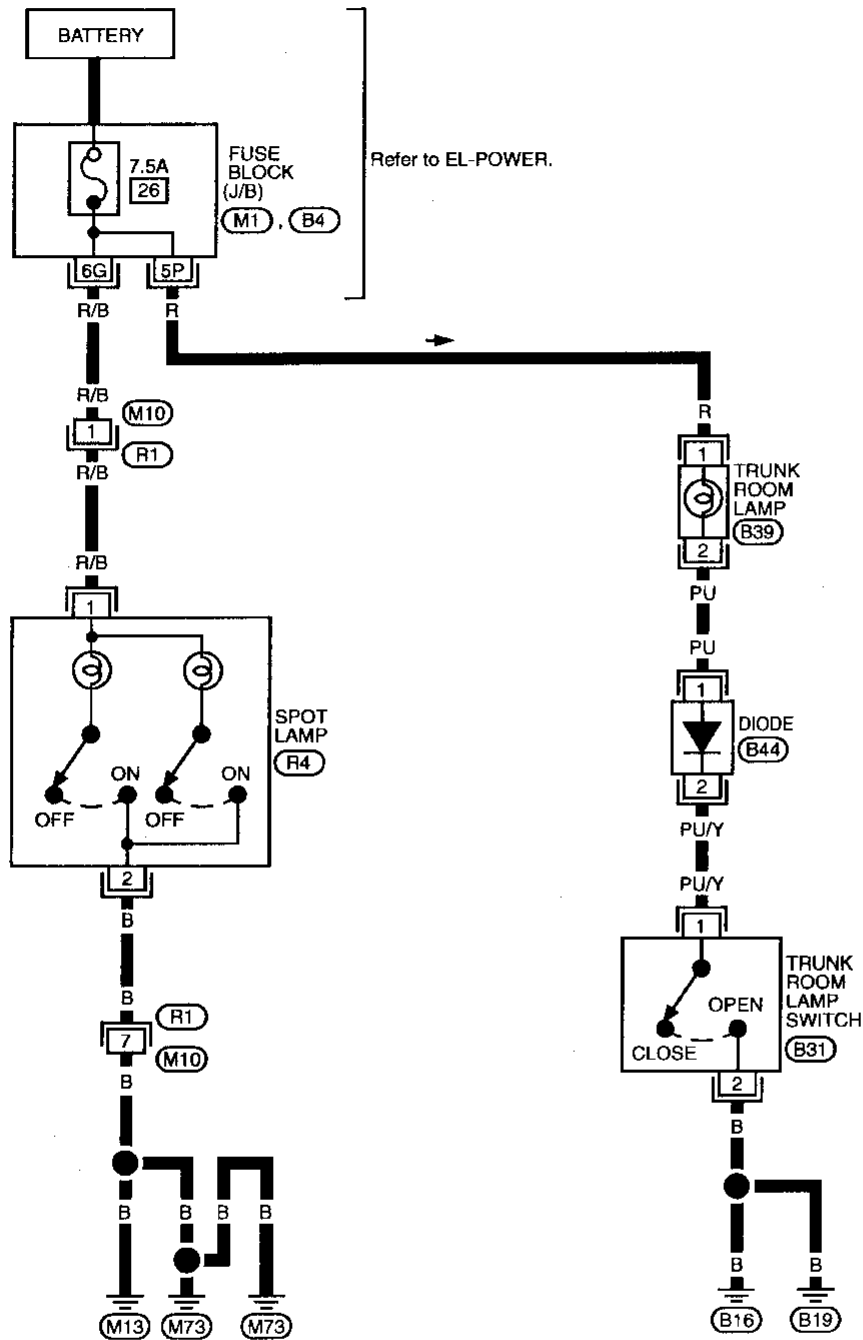


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 (M1)

INTERIOR LAMP

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

EL-INT/L-01



Refer to last page (Foldout page).



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INTERIOR LAMP

Bulb Specifications

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

System Description

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

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

Ground is supplied

- to combination meter terminal 31 , 10 and 36
- through body grounds M13 and M73 .

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 13 for the fuel gauge
- from terminal 3 of the fuel tank gauge unit
- through terminal 2 of the fuel tank gauge unit and
- through body grounds B16 and B19 .

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 17 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 5 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 29 and 11 for the speedometer
- from terminals 1 and 2 of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

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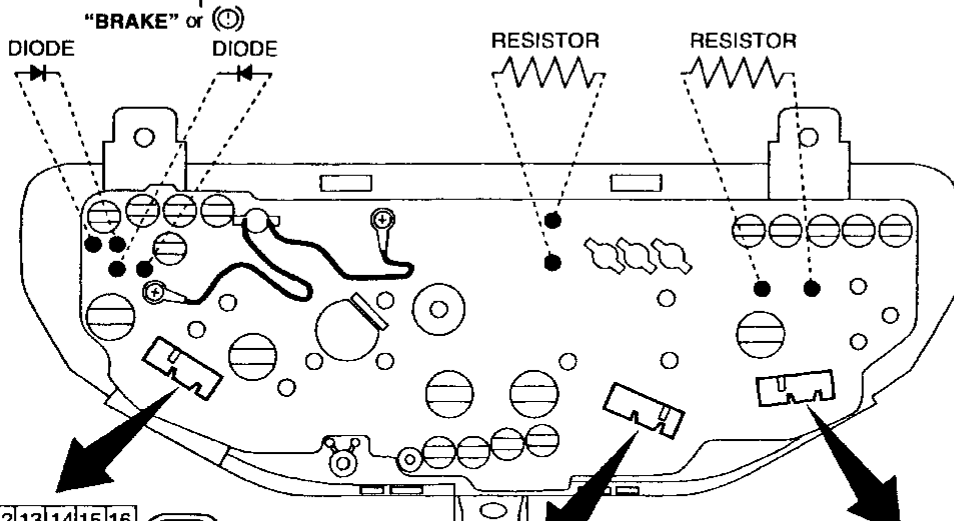
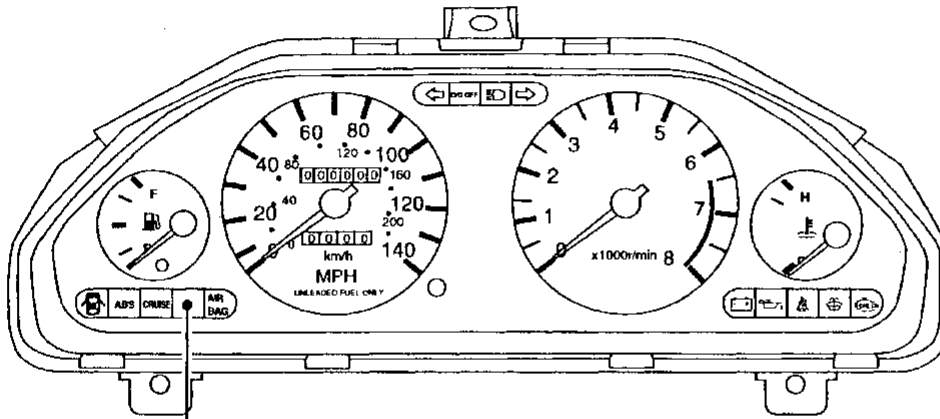
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METERS AND GAUGES

Combination Meter



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

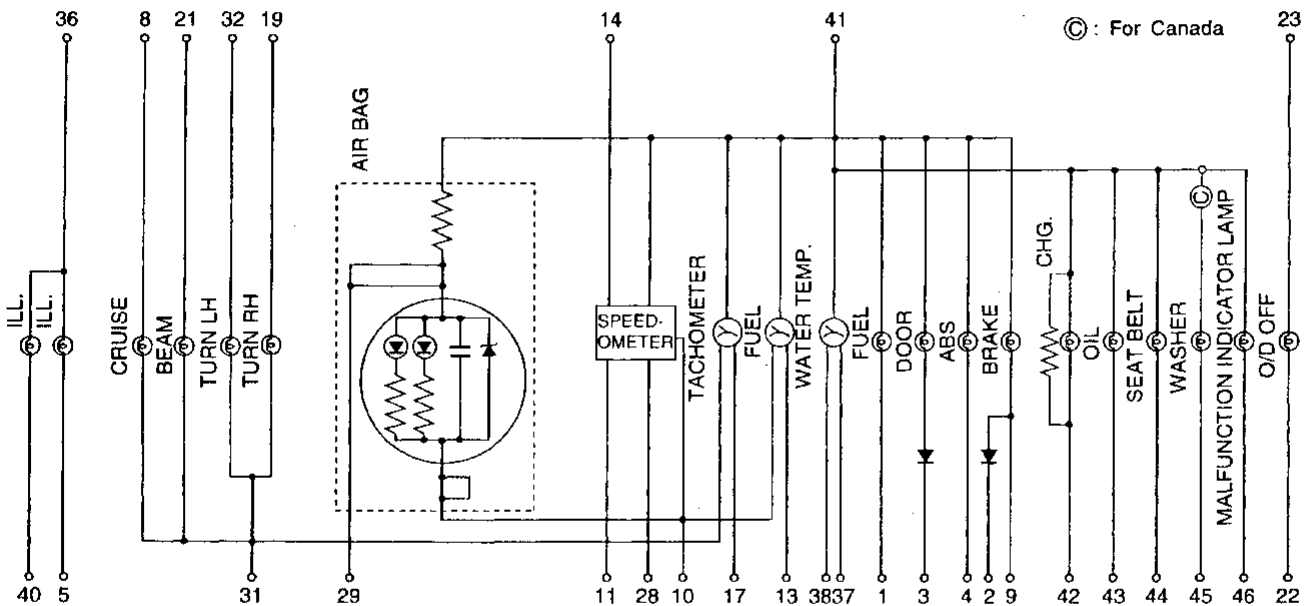
(M29)

24	25	26	27	28	29	30	31	32
17	18	19	20	21	22	23		

(M88)

39	40	41	42	43	44	45	46
33	34	35	36	37	38		

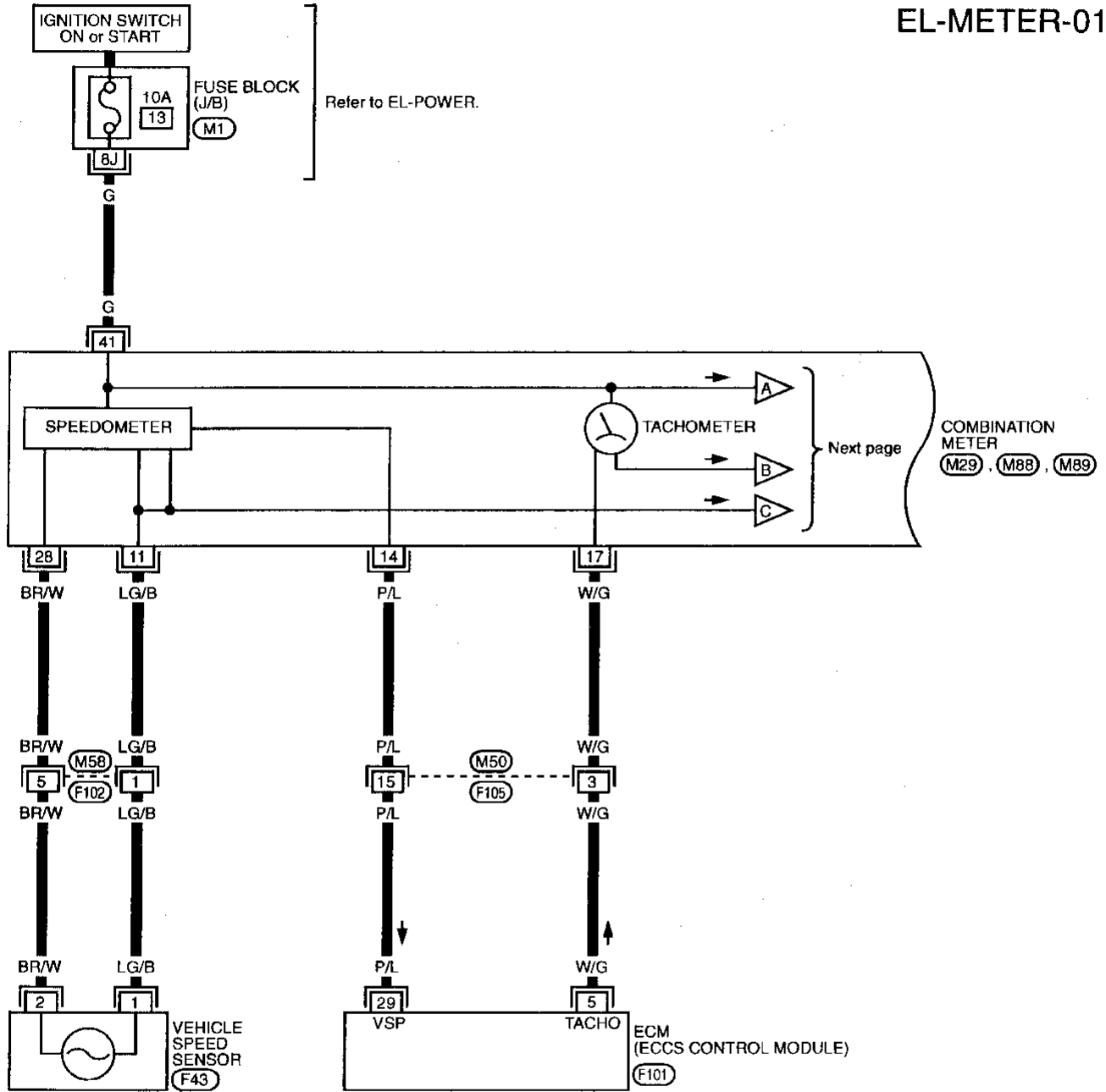
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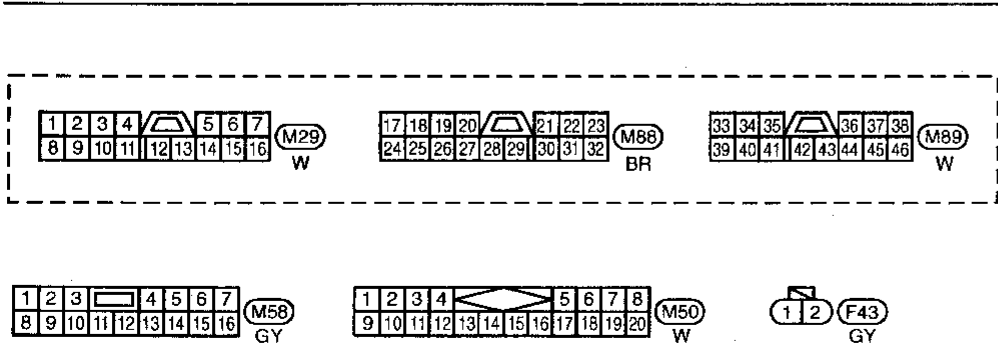
METERS AND GAUGES

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

EL-METER-01



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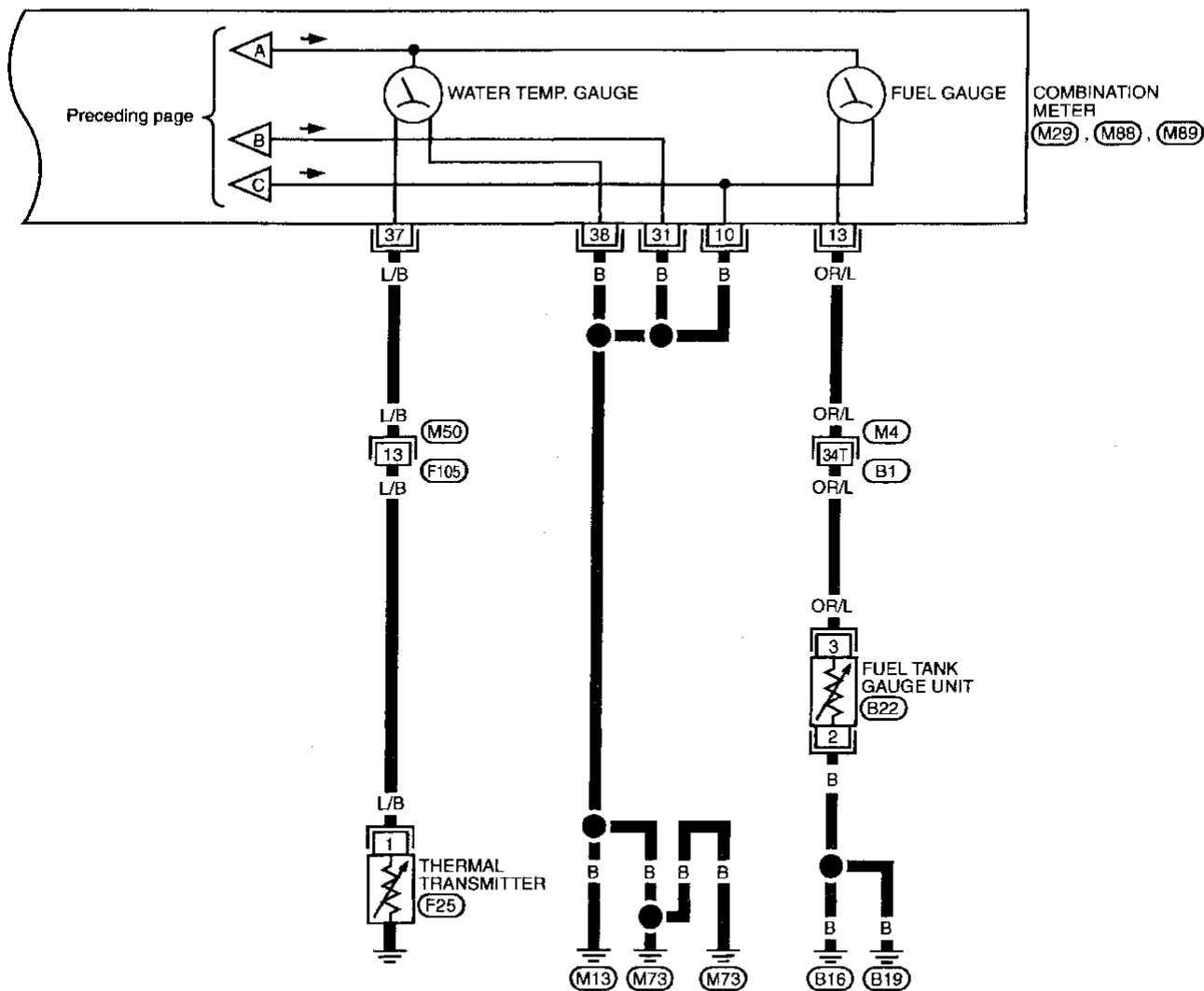
(M1)
(F101)

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METERS AND GAUGES

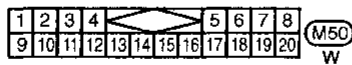
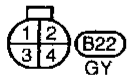
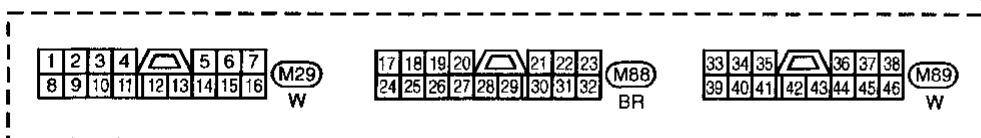
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER — (Cont'd)

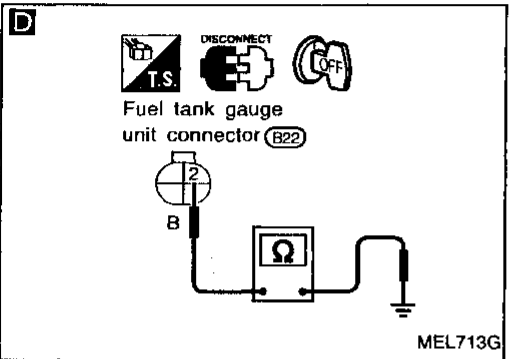
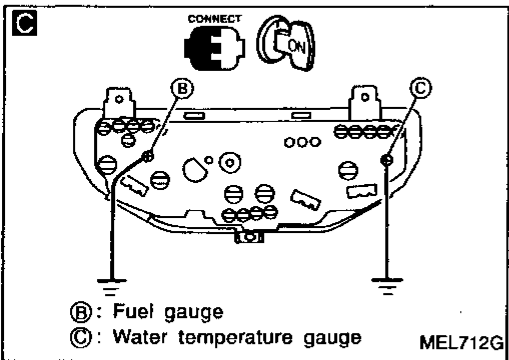
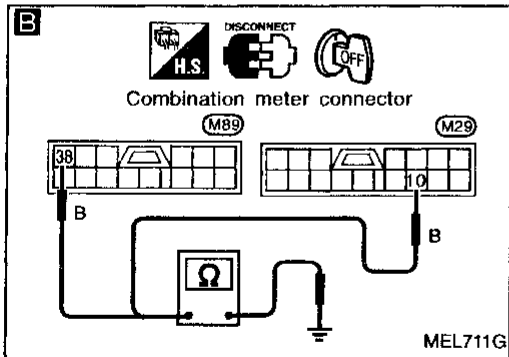
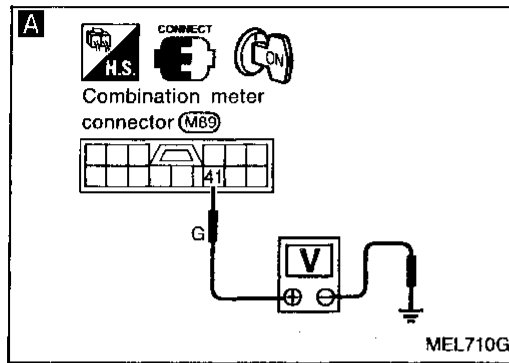
EL-METER-02



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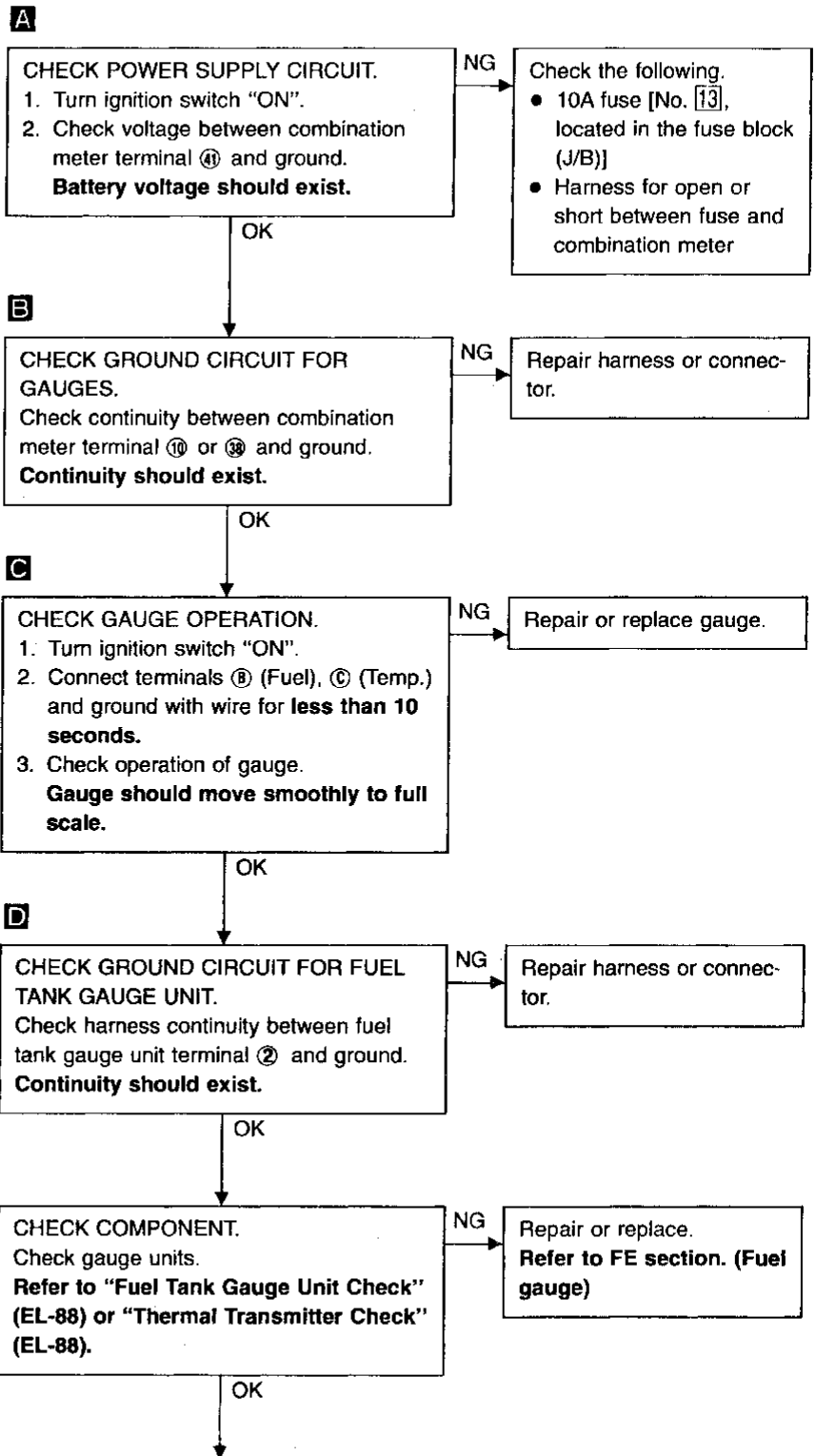
(M4), (B1)





Trouble Diagnoses

INSPECTION/FUEL GAUGE AND/OR WATER TEMPERATURE GAUGE

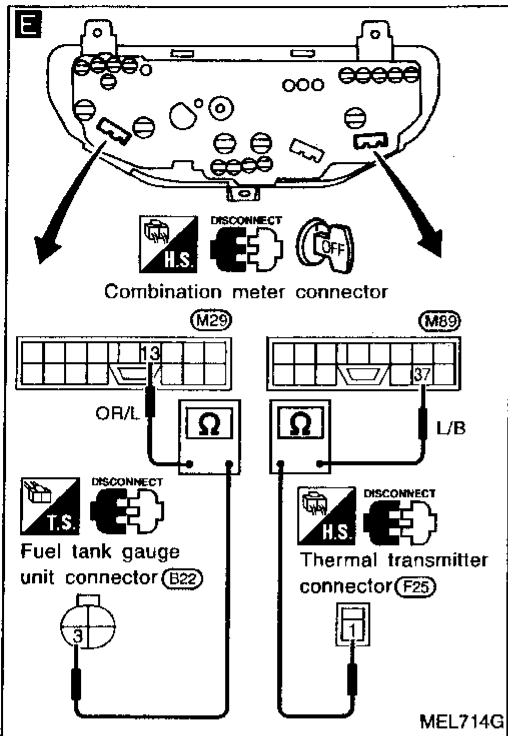


(Go to Ⓐ on next page.)

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METERS AND GAUGES

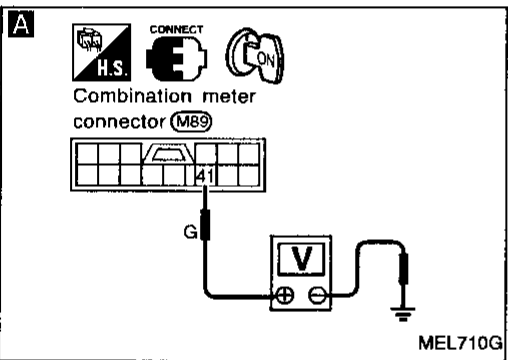
Trouble Diagnoses (Cont'd)



E

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

Terminals	
Combination meter connector	Component
⑬	Fuel tank gauge unit connector ③
⑳	Thermal transmitter connector ①



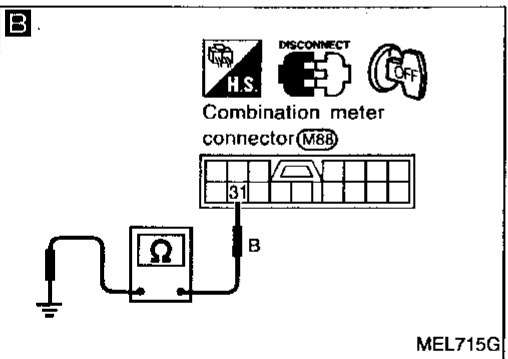
INSPECTION/TACHOMETER

A

CHECK POWER SUPPLY CIRCUIT.
1. Turn ignition switch "ON".
2. Check voltage between combination meter terminal ⑳ and ground.
Battery voltage should exist.

NG → Check the following.
• 10A fuse [No. ⑬], located in the fuse block (J/B)]
• Harness for open or short between fuse and combination meter

OK ↓

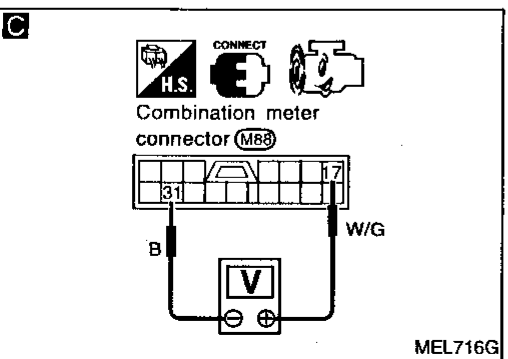


B

CHECK GROUND CIRCUIT FOR TACHOMETER.
Check continuity between combination meter terminal ⑳ 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 ⑳ and ㉑ 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.

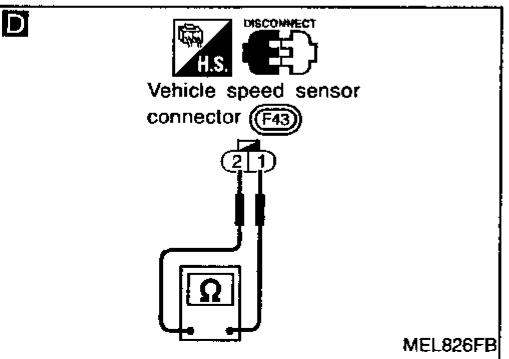
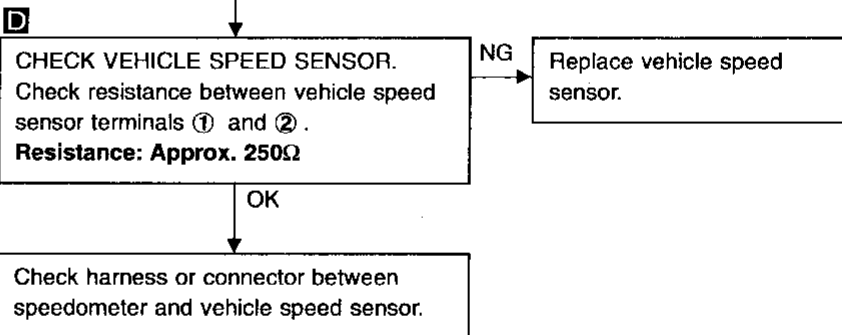
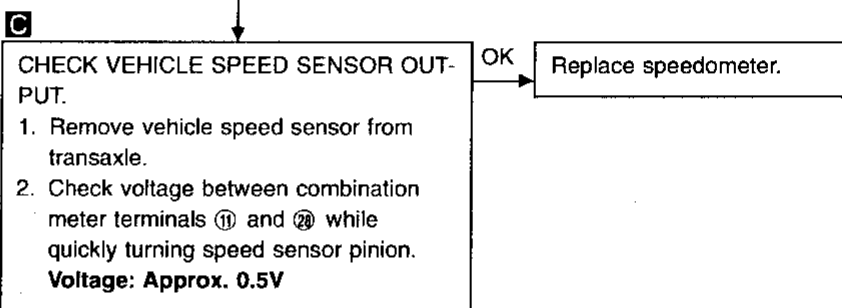
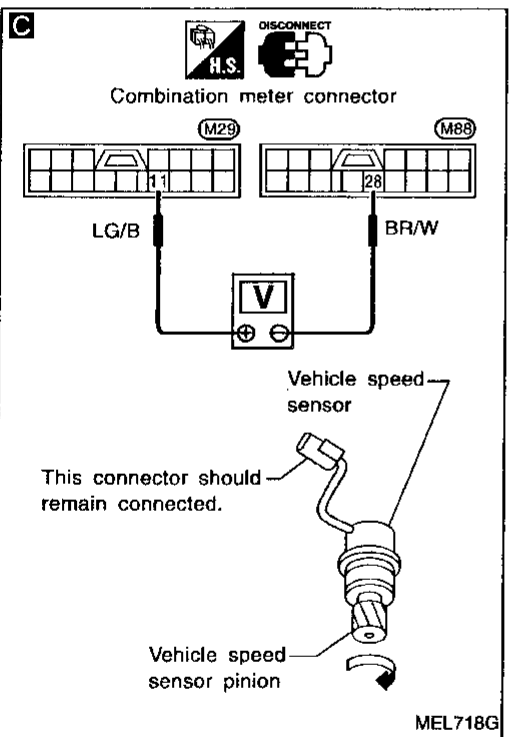
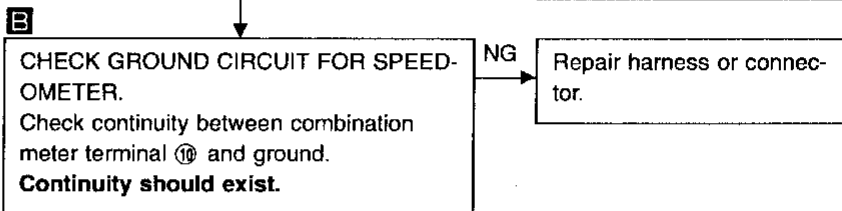
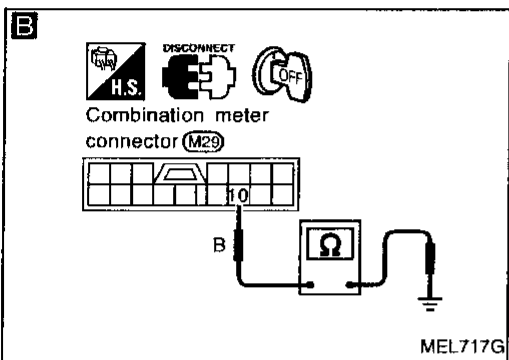
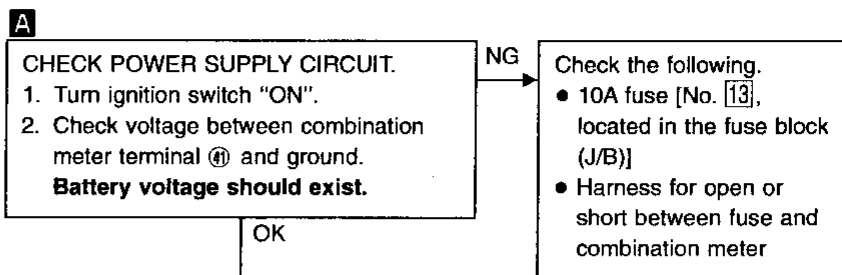
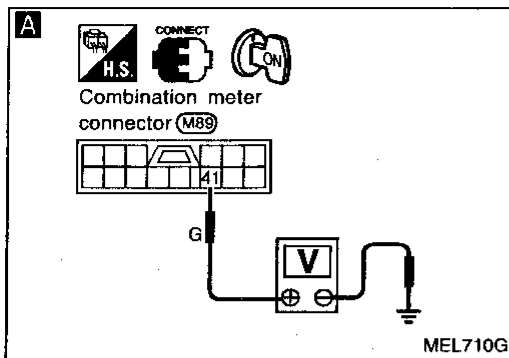
OK ↓

Replace tachometer.

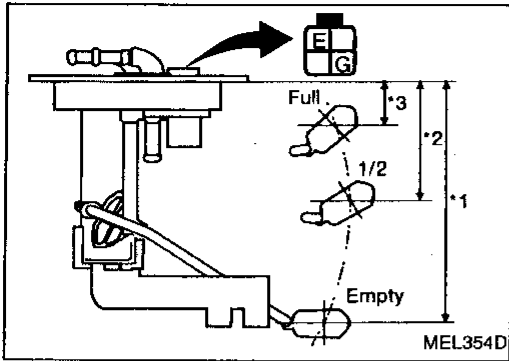
METERS AND GAUGES

Trouble Diagnoses (Cont'd)

INSPECTION/SPEEDOMETER AND VEHICLE SPEED SENSOR



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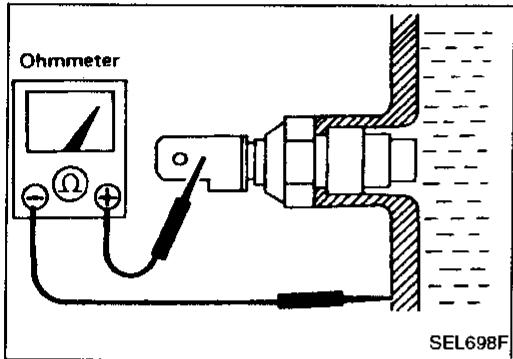


Fuel Tank Gauge Unit Check

- For removal, refer to FE section "FUEL SYSTEM".
- Check the resistance between terminals **(G)** and **(E)**.

Ohmmeter		Float position mm (in)		Resistance value (Ω)
(+)	(-)			
G	E	*3	Full	32 (1.26)
		*2	1/2	93 (3.66)
		*1	Empty	157 (6.18)

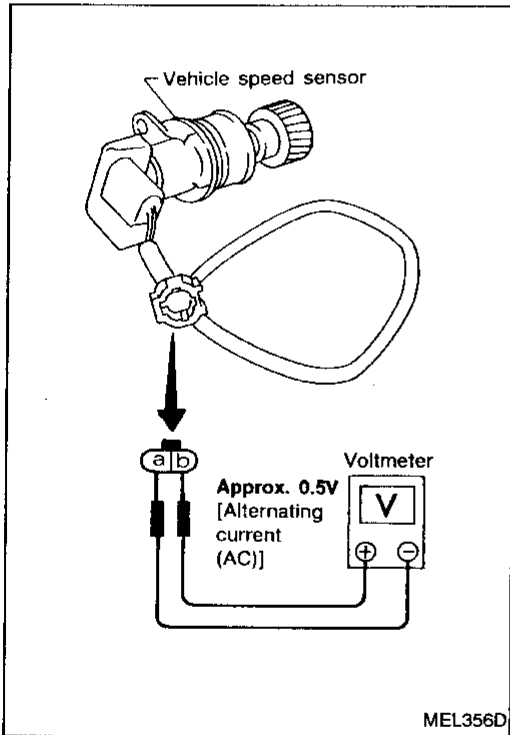
*1 and *3: When float rod is in contact with stopper.



Thermal Transmitter Check

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

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

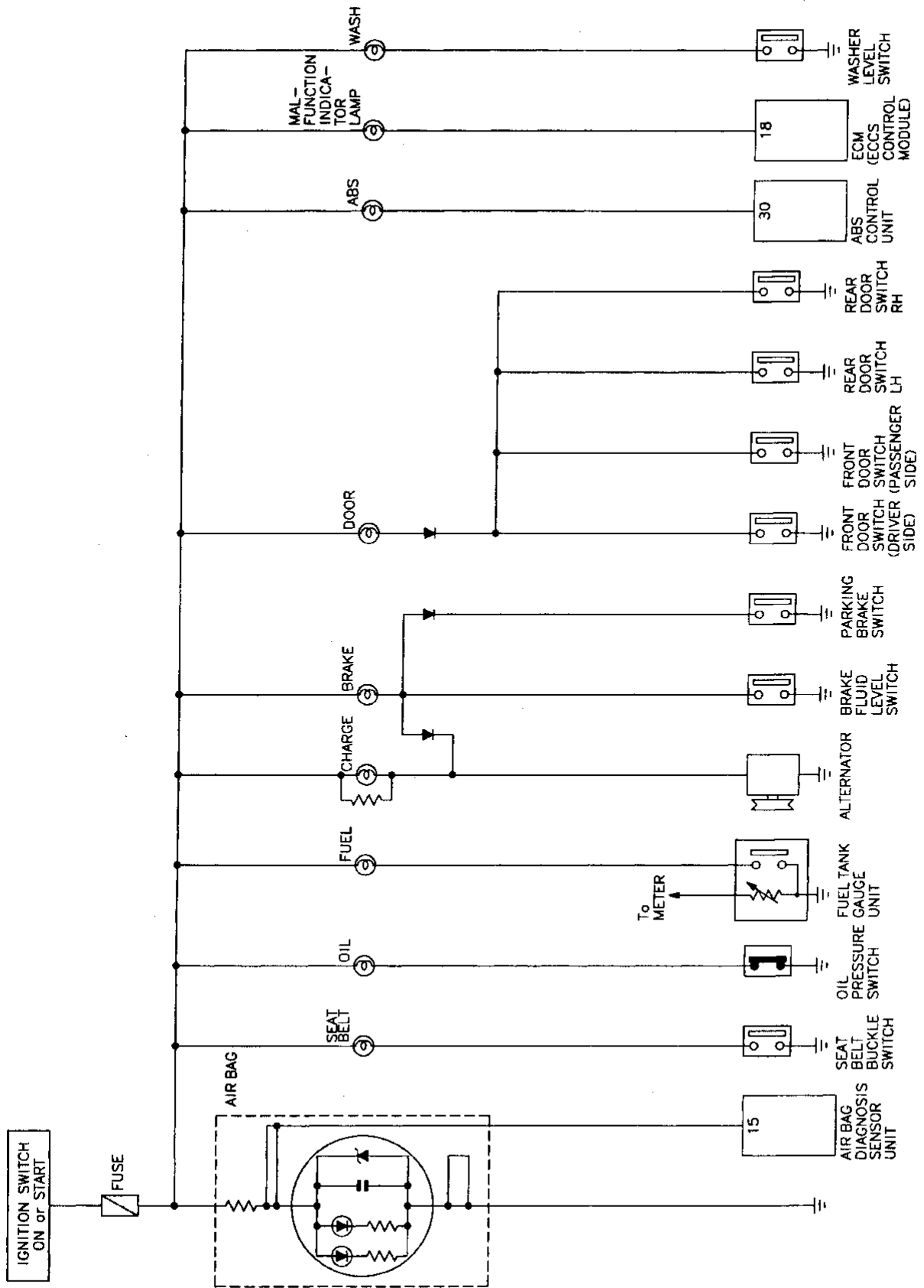


Vehicle Speed Sensor Signal Check

- Remove vehicle speed sensor from transmission.
- Turn vehicle speed sensor pinion quickly with fingers and measure voltage across **(a)** and **(b)**.

WARNING LAMPS

Schematic

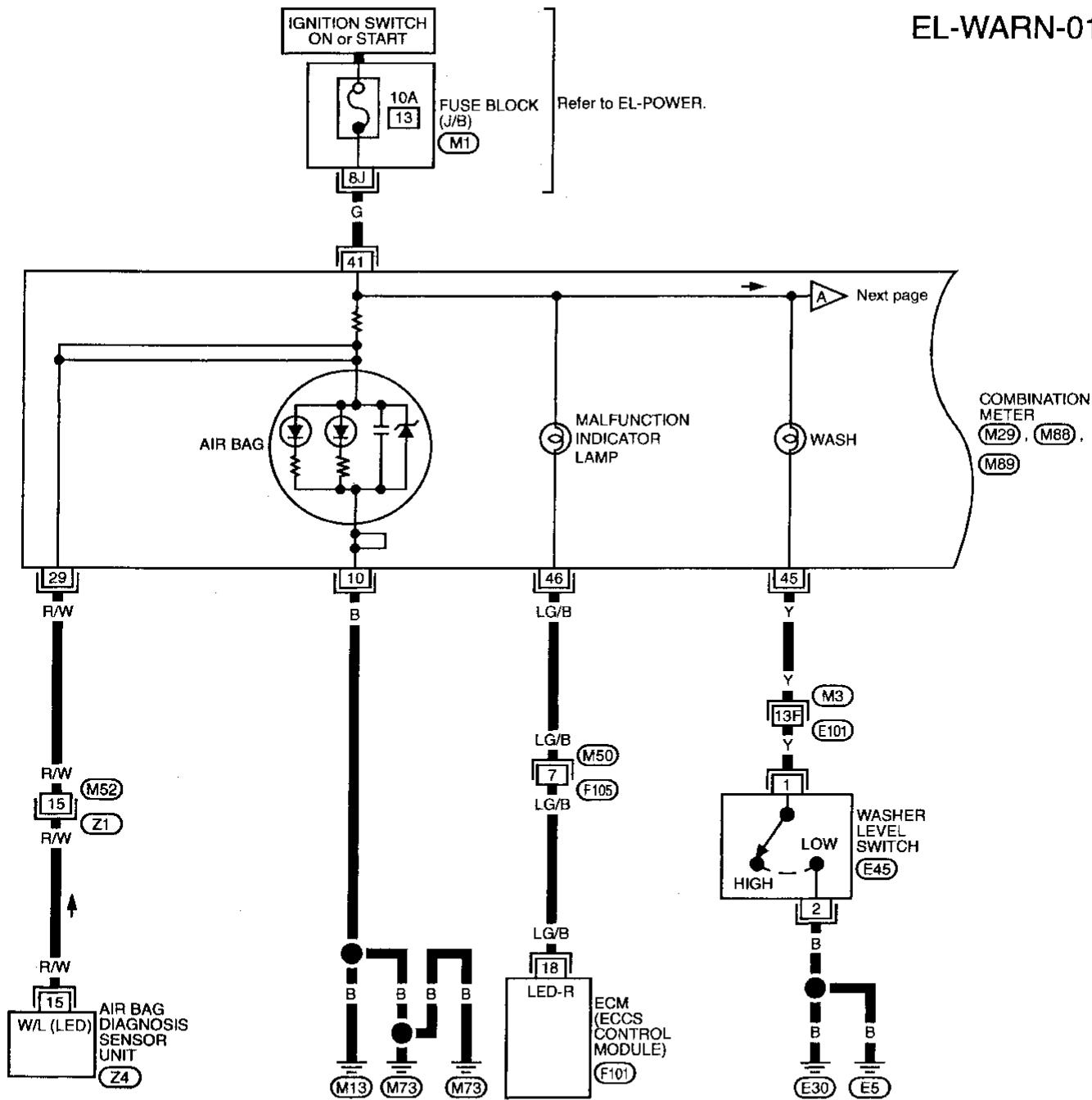


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WARNING LAMPS

Wiring Diagram — WARN —

EL-WARN-01



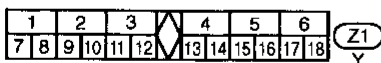
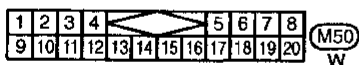
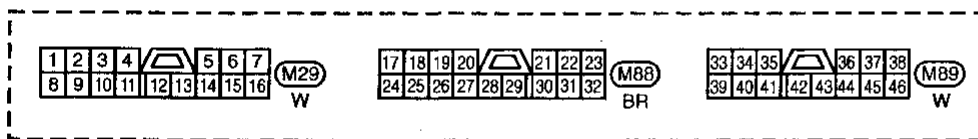
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M3, E101

M1

F101

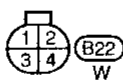
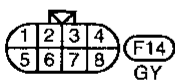
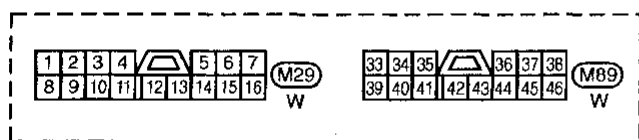
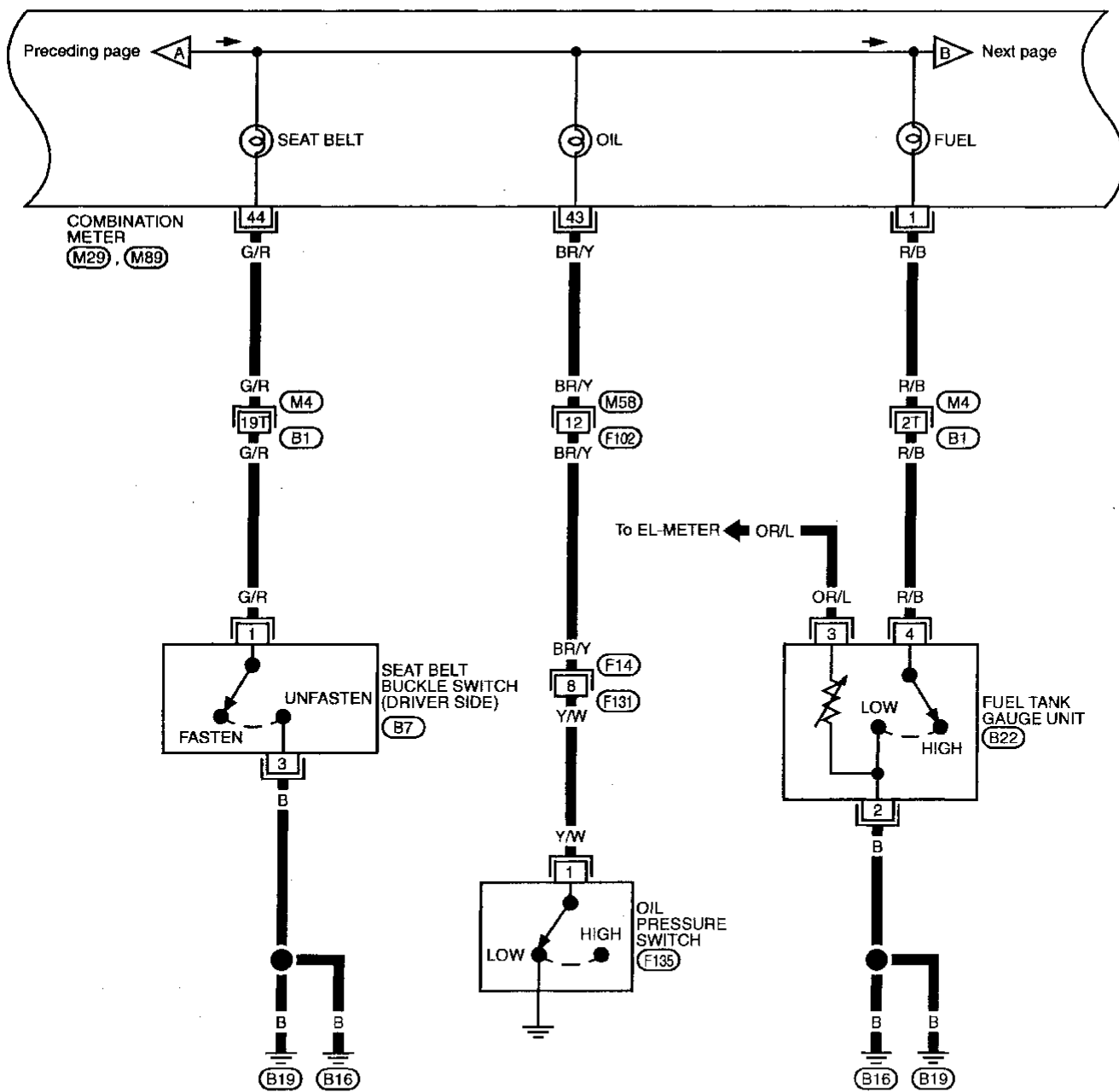
Z4



WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-02



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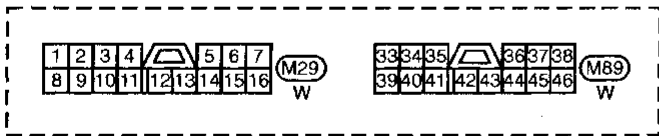
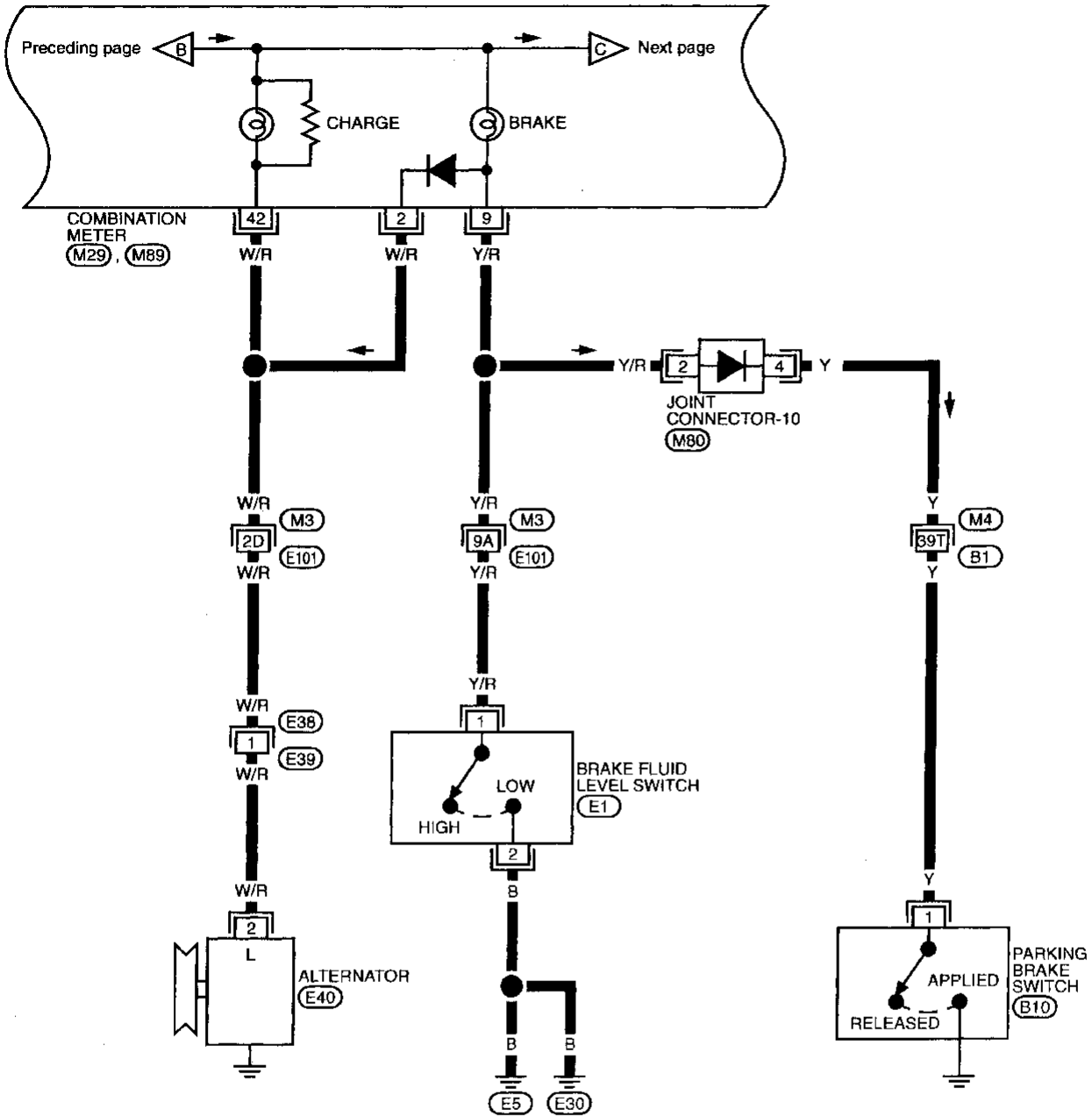
(M4) (B1)

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WARNING LAMPS

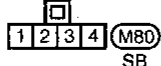
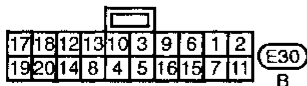
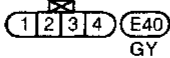
Wiring Diagram — WARN — (Cont'd)

EL-WARN-03



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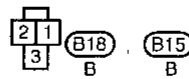
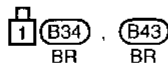
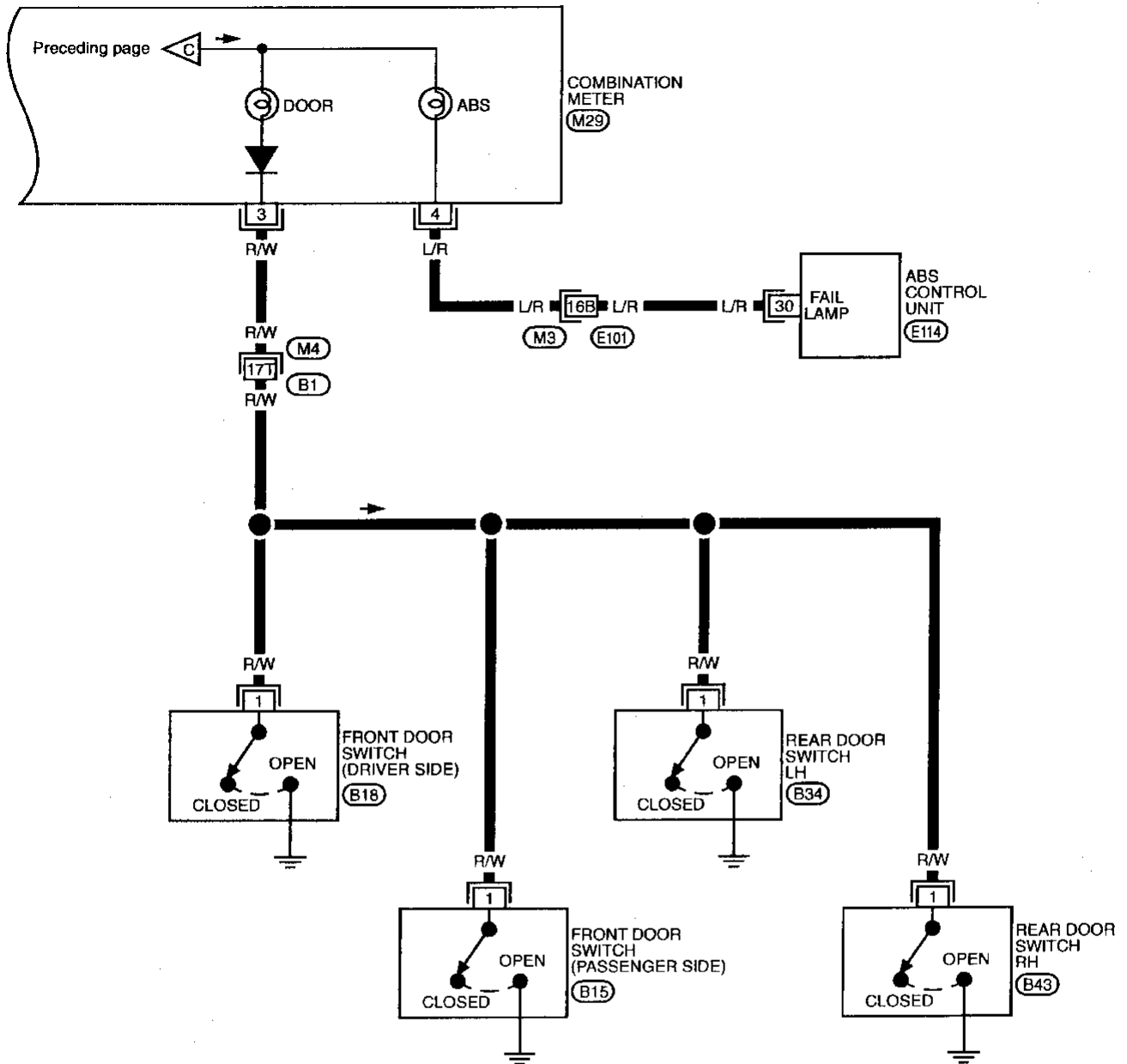
- (M3), (E101)
- (M4), (B1)
- (M80)



WARNING LAMPS

Wiring Diagram — WARN — (Cont'd)

EL-WARN-04

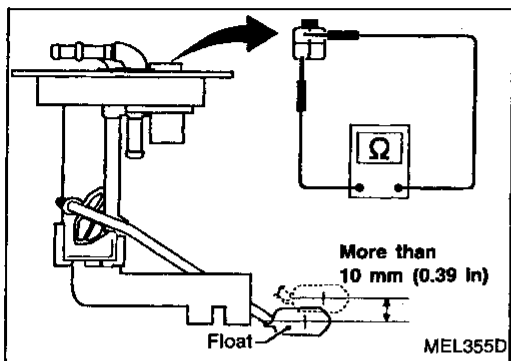


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- (M3), (E101)
- (M4), (B1)
- (E114)

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WARNING LAMPS

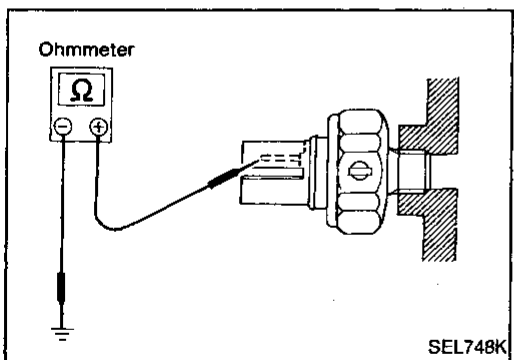


Fuel Warning Lamp Sensor Check

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

CAUTION:

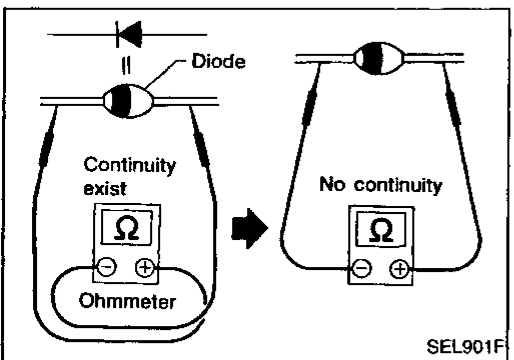
Do not move the float beyond its mobile range.



Oil Pressure Switch Check

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

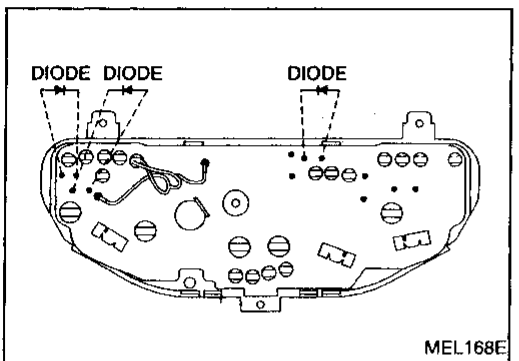
Check the continuity between the terminals of oil pressure switch and body ground.



Diode Check

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

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



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

System Description

The warning buzzer is controlled by the BCM.

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to warning buzzer terminal ①
- to key switch terminal ①.

Power is supplied at all times

- through 15A fuse [No. 66], located in the fuse block (J/B)
- to lighting switch terminal ⑪.

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

- through 7.5A fuse [No. 12] located in the fuse block (J/B)
- to BCM terminal ⑳.

Ground is supplied to BCM terminal ③ through body grounds (M13) and (M73).

When a signal, or combination of signals, is received by the BCM, ground is supplied

- through BCM terminal ⑩
- to warning buzzer terminal ③.

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

Ignition key warning buzzer

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

- from key switch terminal ②
- to BCM terminal ㉓.

Ground is supplied

- from front door switch LH terminal ②
- to BCM terminal ㉑.

Front door switch LH terminal ③ is grounded through body grounds (B16) and (B19).

Light warning buzzer

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

- from lighting switch terminal ⑫
- through 7.5A fuse [No. 5], located in the fuse block (J/B)
- to BCM terminal ㉔.

Ground is supplied

- from front door switch LH terminal ②
- to BCM terminal ㉑.

Front door switch LH terminal ③ is grounded through body grounds (B16) and (B19).

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 BCM terminal ⑨.

Seat belt switch terminal ③ is grounded through body grounds (B16) and (B19).

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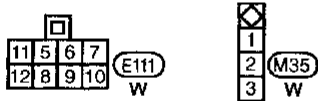
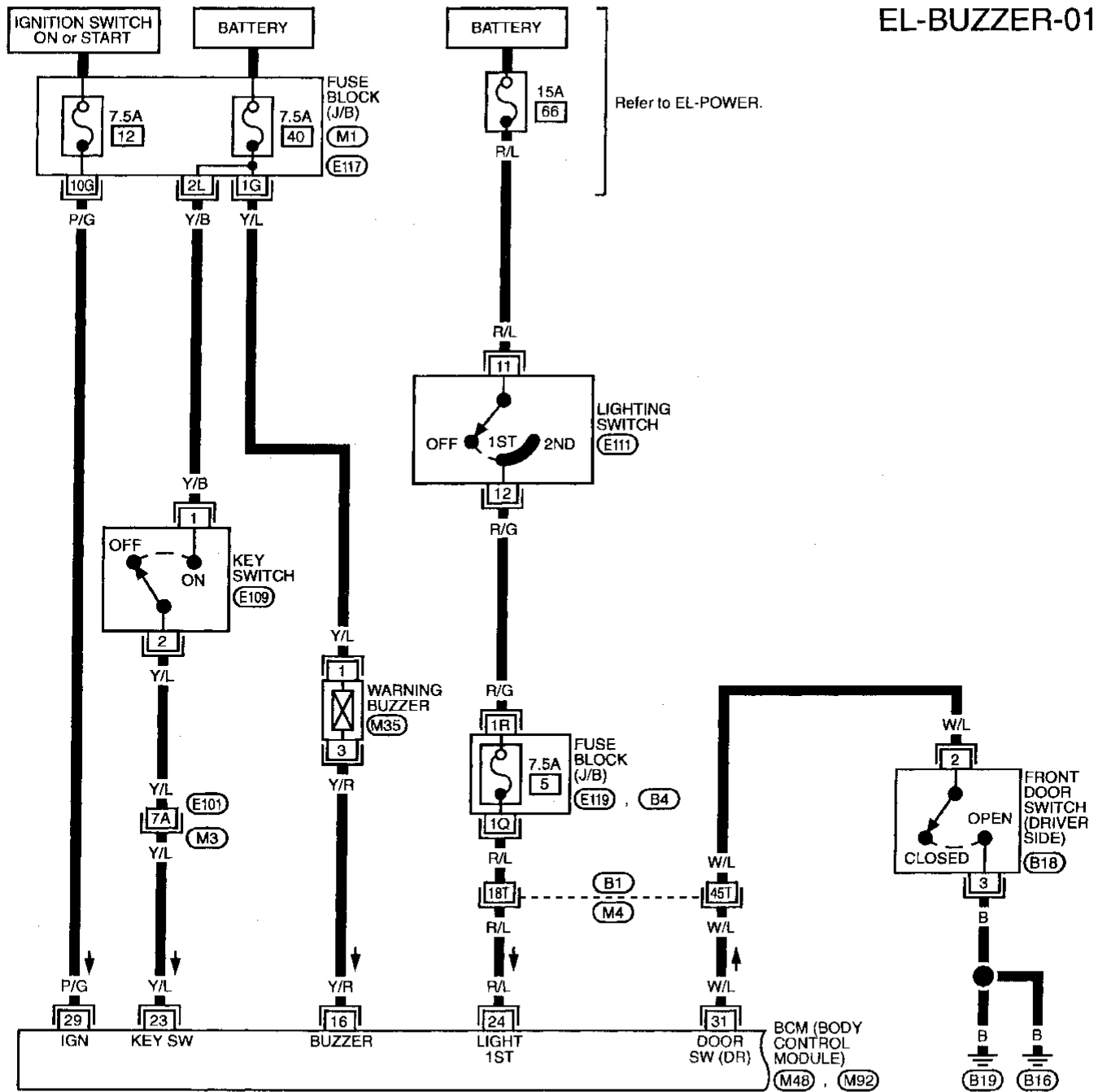
EL

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WARNING BUZZER

Warning Buzzer/Wiring Diagram — BUZZER —

EL-BUZZER-01



Refer to last page (Foldout page).

(M4), (B1)

(M3), (E101)

(M1)

(B4)

(E117)

(E119)

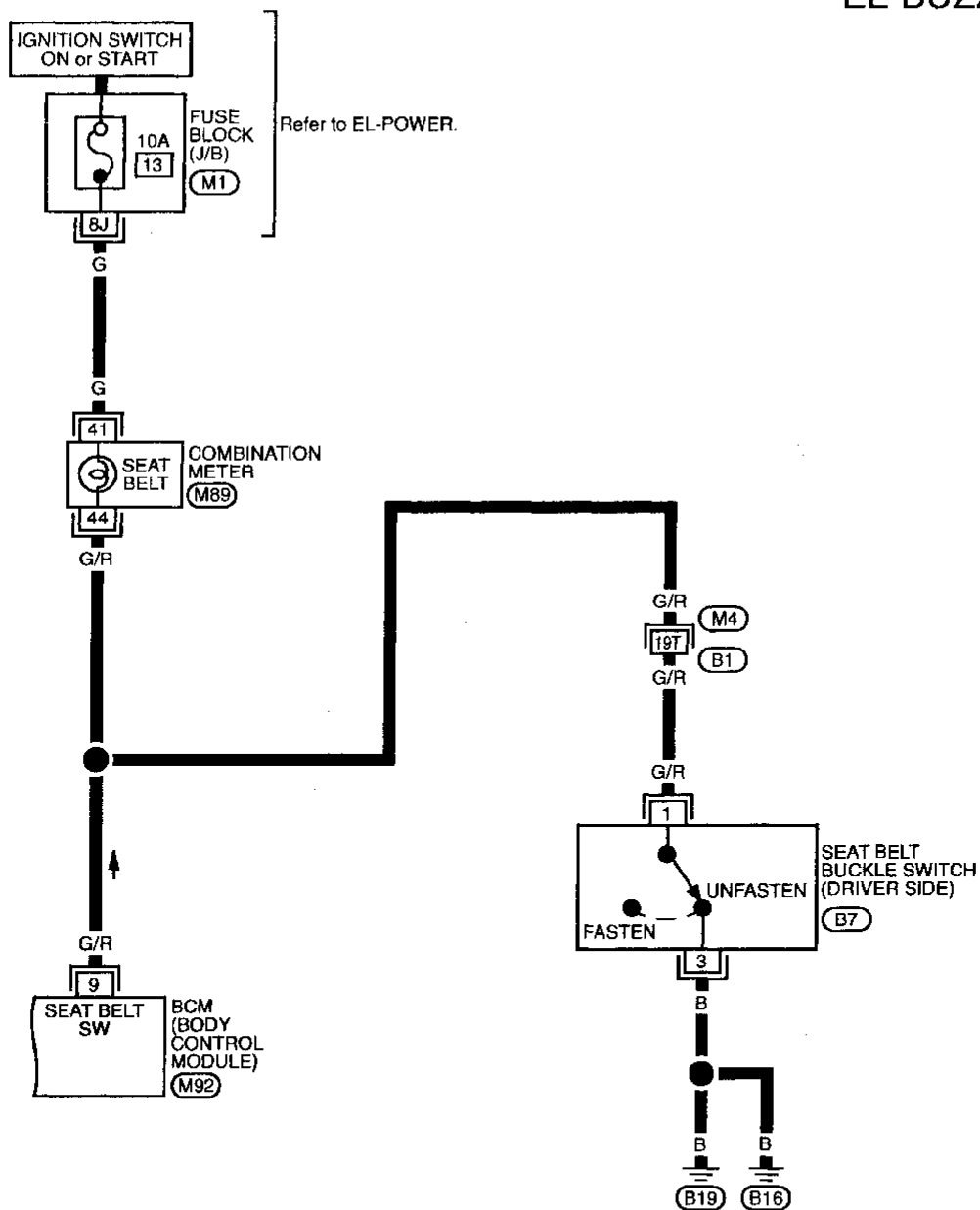
(M48)

(M92)

WARNING BUZZER

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

EL-BUZZER-02



33	34	35	36	37	38	(M89)	
39	40	41	42	43	44		45

W

1	(B7)
2	
3	

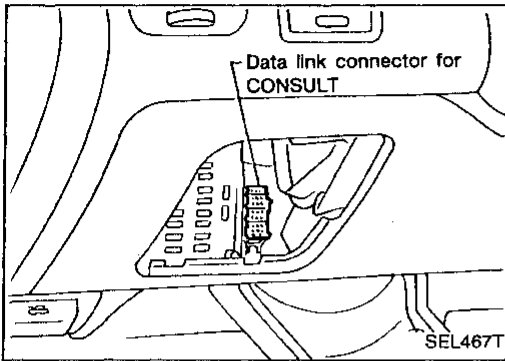
W

Refer to last page (Foldout page).

- (M4) , (B1)
- (M1)
- (M92)

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WARNING BUZZER

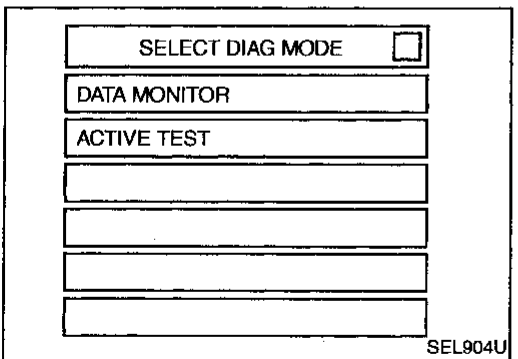
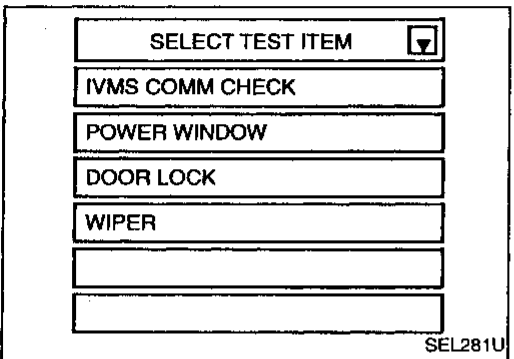
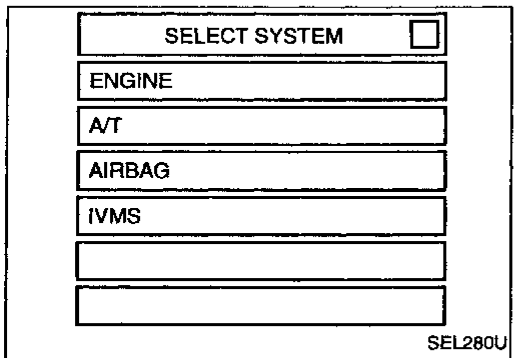
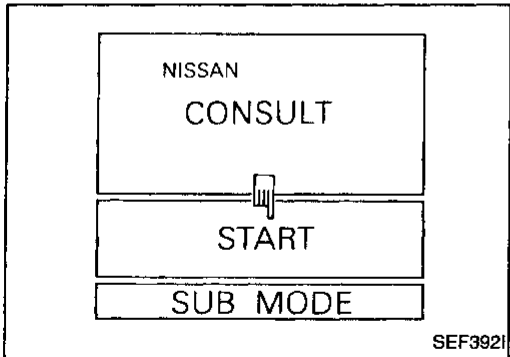


Trouble Diagnoses

CONSULT

CONSULT inspection procedure

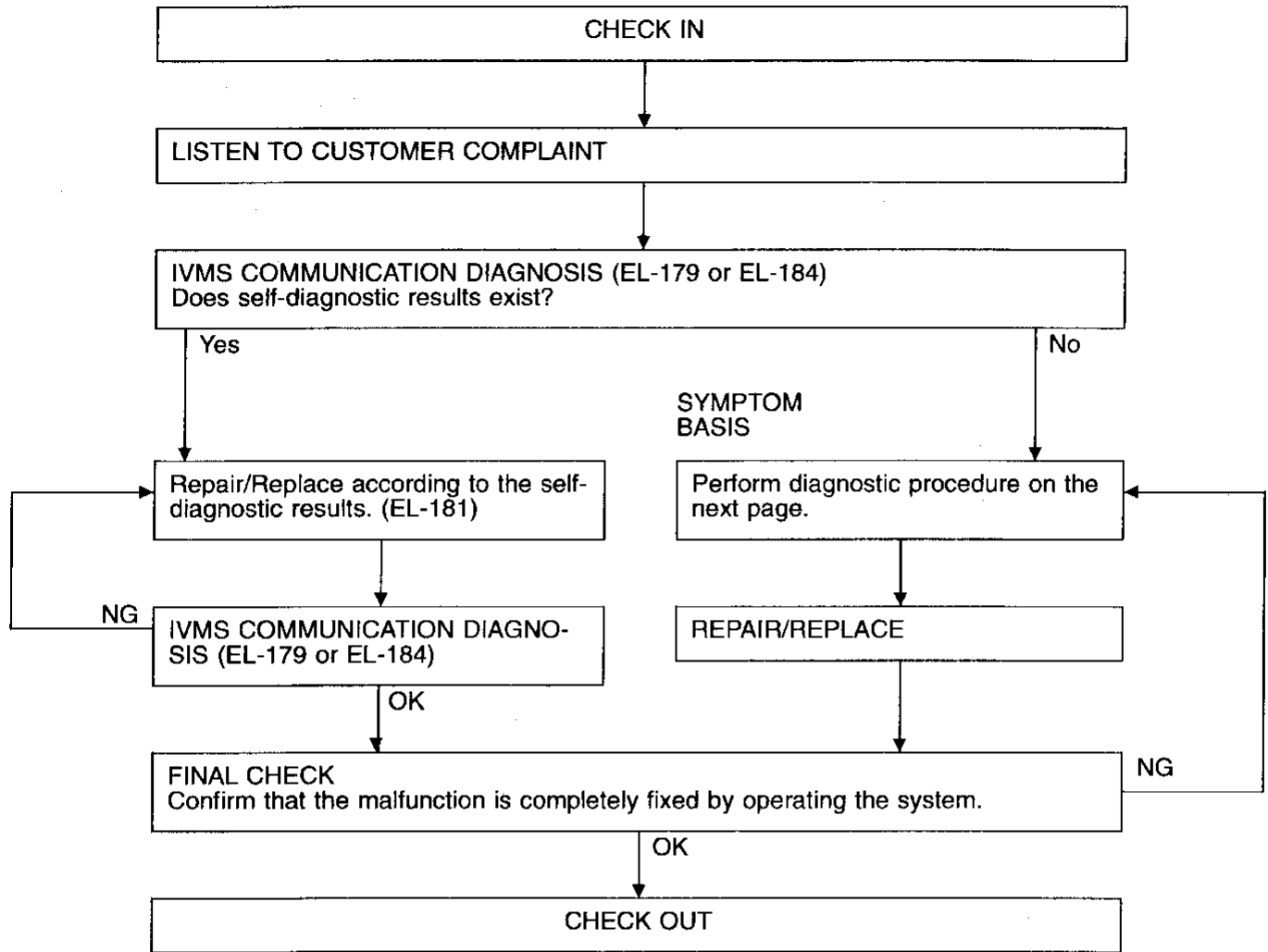
1. Turn ignition switch "OFF".
 2. Connect "CONSULT" to the data link connector.
 3. Turn ignition switch "ON".
 4. Touch "START".
 5. Touch "IVMS".
 6. Touch "IGN KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT TIMER".
- DATA MONITOR and ACTIVE TEST are available for the warning buzzer.



WARNING BUZZER

Trouble Diagnoses (Cont'd)

WORK FLOW



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NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

WARNING BUZZER

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

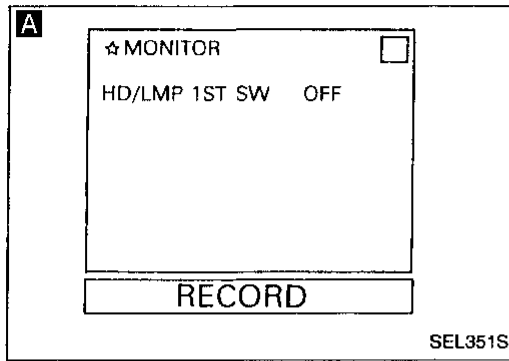
REFERENCE PAGE	EL-101	EL-101	EL-102	EL-102
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Lighting switch input signal check)	DIAGNOSTIC PROCEDURE 2 (Key switch input signal check)	DIAGNOSTIC PROCEDURE 3 (Seat belt buckle switch input signal check)	DIAGNOSTIC PROCEDURE 4
Light warning buzzer does not activate.	X			X
Ignition key warning buzzer does not activate.		X		X
Seat belt warning buzzer does not activate.			X	X
All warning buzzers do not activate.				X

WARNING BUZZER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)



CHECK LIGHTING SWITCH INPUT SIGNAL.

A **CONSULT**

See "HD/LMP 1ST SW" in "Data Monitor" mode.

When lighting switch is in 1ST or 2ND:
HD/LMP 1ST SW ON

When lighting switch is OFF:
HD/LMP 1ST SW OFF

OR

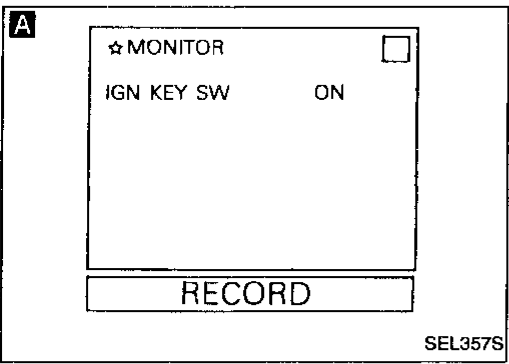
B **ON-BOARD**

Perform On-board diagnosis — Mode II (switch monitor) for light switch. Refer to EL-186.

- Check the following.
- 7.5A fuse (No. **5**), located in the fuse block)
 - Harness for open or short between fuse and BCM

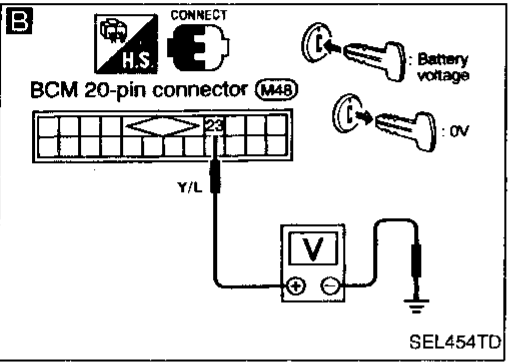
OK

Go to Procedure 4.



DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)



CHECK KEY SWITCH INPUT SIGNAL.

A **CONSULT**

See "IGN KEY SW" in "Data Monitor" mode.

When key is in ignition:
IGN KEY SW ON

When key is out of ignition:
IGN KEY SW OFF

OR

B **TESTER**

Check voltage between BCM terminal ② and ground.

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

- Check the following.
- 7.5A fuse [No. **40**], located in the fuse block (J/B)]
 - Key switch (insert)
 - Harness for open or short between key switch and fuse
 - Harness for open or short between BCM and key switch

OK

Go to Procedure 4.

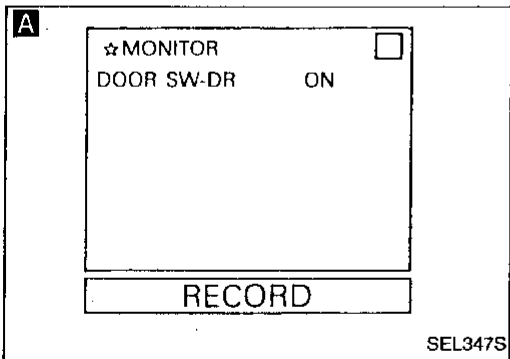
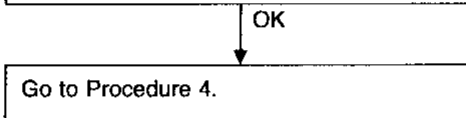
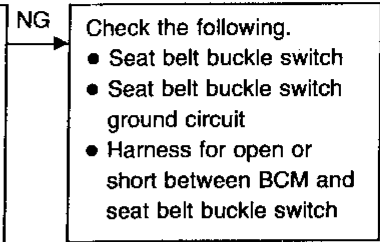
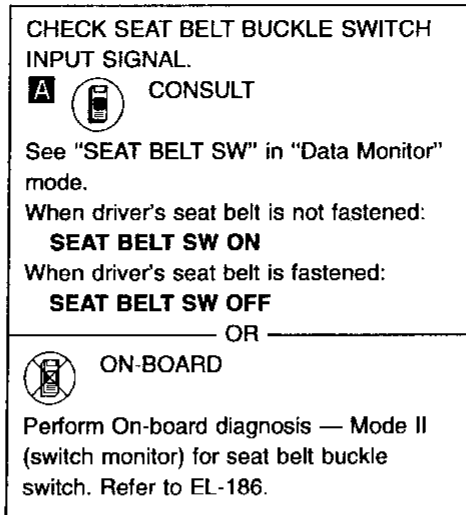
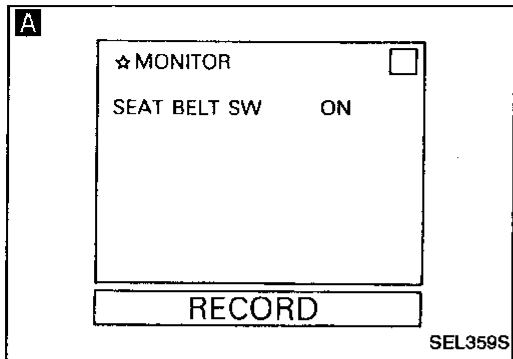
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WARNING BUZZER

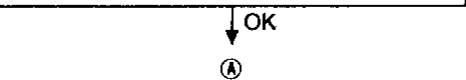
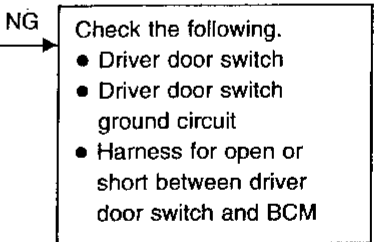
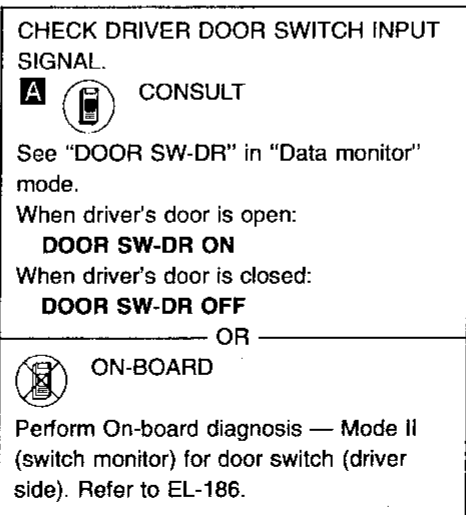
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)

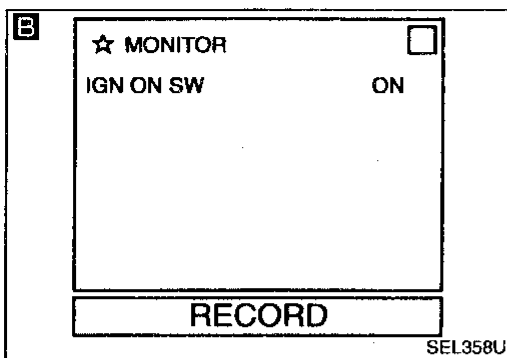


DIAGNOSTIC PROCEDURE 4



WARNING BUZZER

Trouble Diagnoses (Cont'd)



A

CHECK IGNITION ON INPUT SIGNAL.

B **CONSULT**

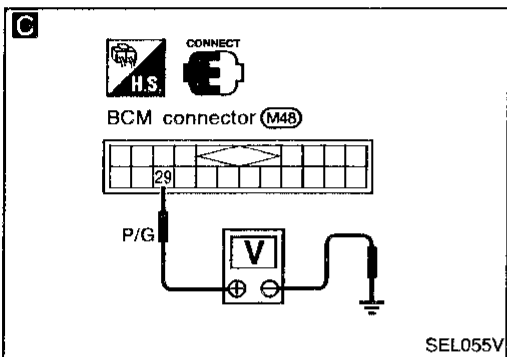
See "IGN ON SW" in "Data Monitor" mode.

When ignition switch is ON:
IGN ON SW ON

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

NG → Check the following.

- 7.5A fuse (No. 12, located in the fuse block)
- Harness for open or short between fuse and BCM

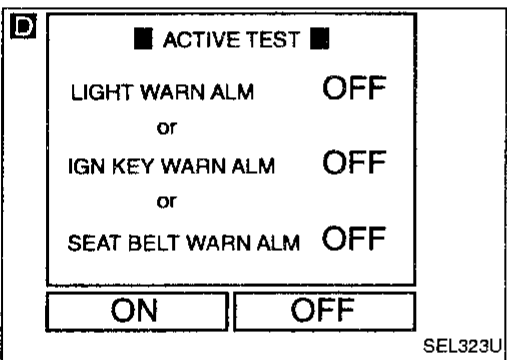


OR

C **TESTER**

Check voltage between BCM terminal 29 and ground.

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



OK

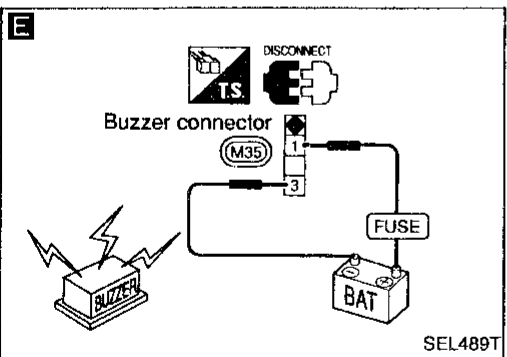
D Perform "WARN ALM" in "Active Test" mode.

Check buzzer operation.

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

OK → System is OK.

NG



E

CHECK WARNING BUZZER.

1. Disconnect buzzer connector.
2. Apply 12V direct current to buzzer and check buzzer operation.

NG → Replace buzzer.

OK

Check the following.

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

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System Description

WIPER OPERATION

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

- through 20A fuse [No. 20], located in the fuse block (J/B)
- to front wiper motor terminal ④.

Low and high speed wiper operation

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

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

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

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

When the front wiper switch is placed in the HI position, ground is supplied

- through terminal ⑱ of the front wiper switch
- to front wiper motor terminal ③.

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

Auto stop operation

When the front wiper switch is placed in the OFF position, the front wiper motor will continue to operate until the wiper arms reach the base of the windshield (Auto stop).

When the front wiper switch is placed in the OFF position, ground is supplied

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

Ground is also supplied until the wiper arms reaches the base of the windshield

- through terminal ⑲ of the front wiper switch
- to wiper relay terminal ③
- through terminal ④ of the wiper relay
- to front wiper motor terminal ⑤
- through terminal ⑥ of the front wiper motor, and
- through body grounds M13 and M73.

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

Intermittent operation

Intermittent operation is controlled by the BCM.

When the front wiper switch is placed in the INT position, ground is supplied

- to BCM terminal 25
- from front wiper switch terminal ⑮
- through body grounds E5 and E30.

The desired interval time is input

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

Based on these two inputs, an intermittent ground is supplied

- to front wiper relay terminal ②
- from BCM terminal ⑩.

With power and ground supplied, the front wiper relay is activated.

When activated, an intermittent ground is supplied

- to front wiper motor terminal ②
- through the front wiper switch terminal ⑭
- to front wiper switch terminal ⑲
- through front wiper relay terminal ③
- to front wiper relay terminal ⑤
- through body grounds E5 and E30.

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

WASHER OPERATION

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

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

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

- to washer motor terminal ②, and

WIPER AND WASHER

System Description (Cont'd)

- to BCM terminal ②⑥
- from terminal ①⑧ of the front wiper switch
- through terminal ①⑦ of the front wiper switch, and
- through body grounds ①⑤ and ①③①.

With power and ground supplied, the washer motor operates.

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

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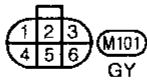
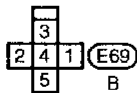
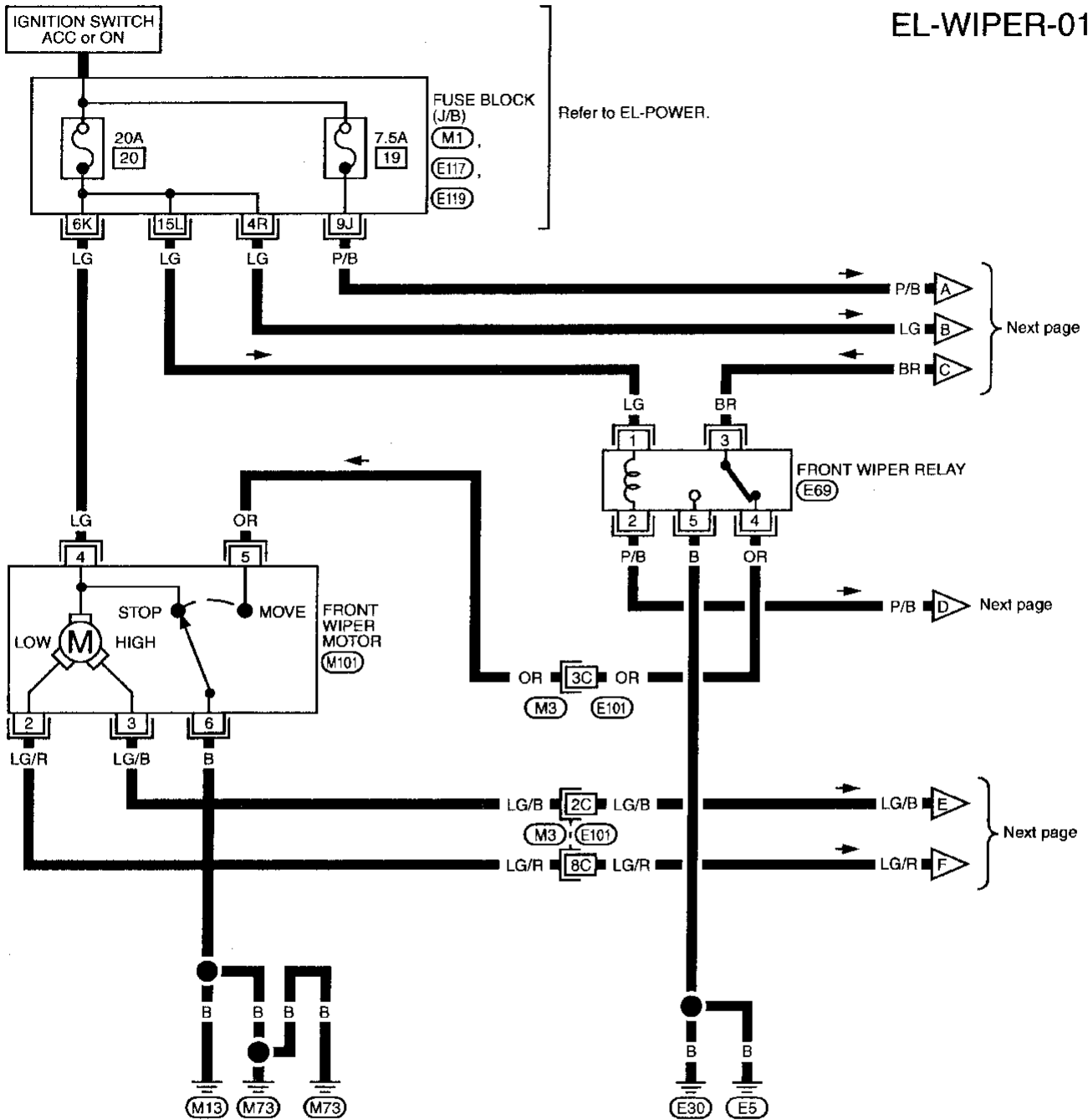
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WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram — WIPER —

EL-WIPER-01



Refer to last page (Foldout page).

M3, E101

M1

E117

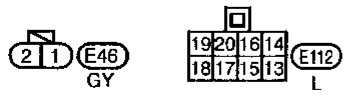
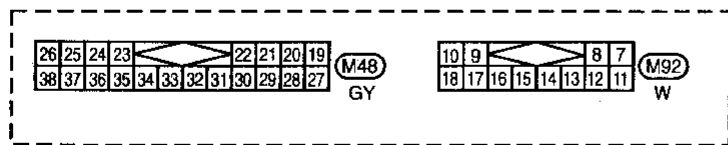
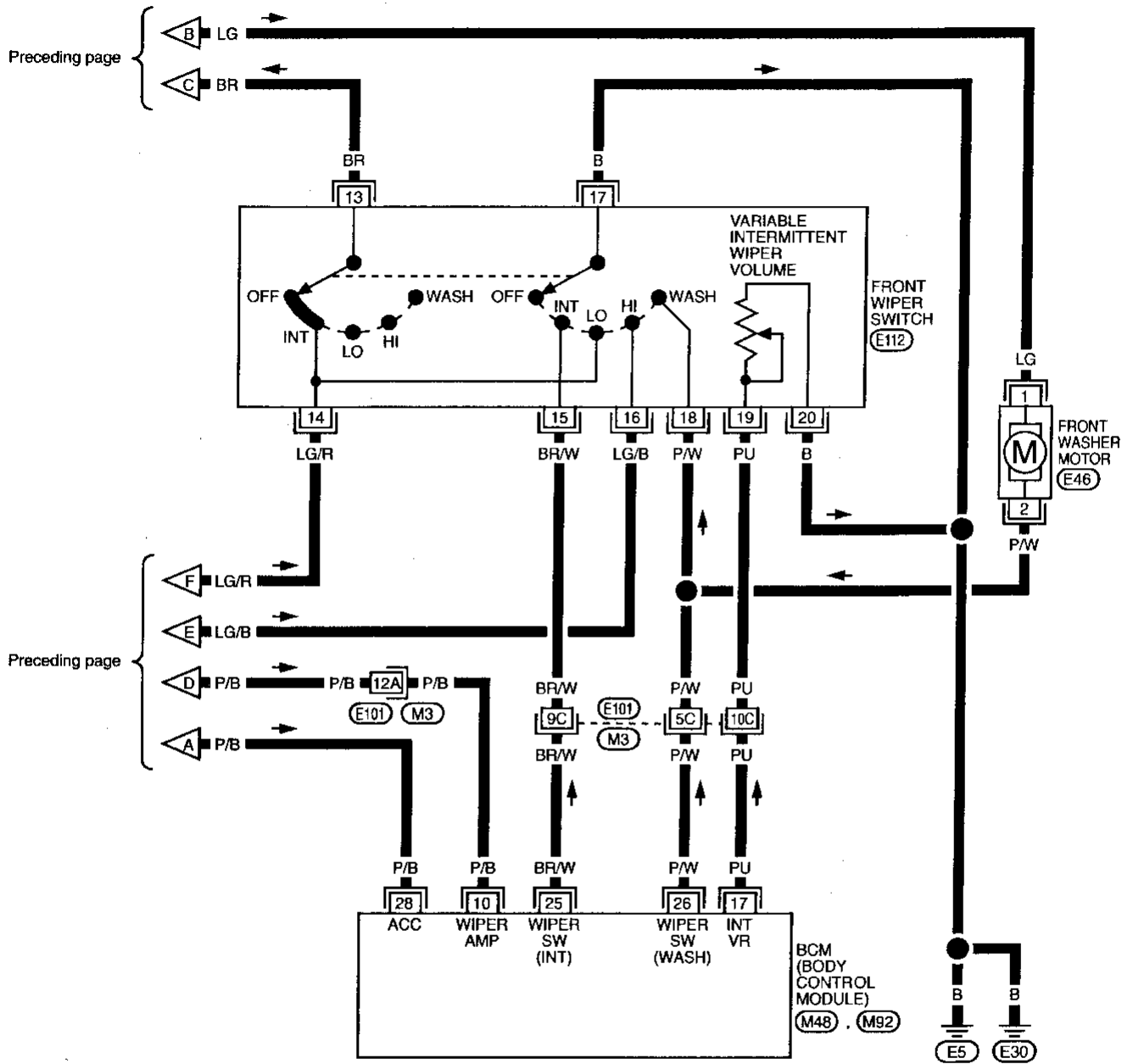
E119

WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram

— WIPER — (Cont'd)

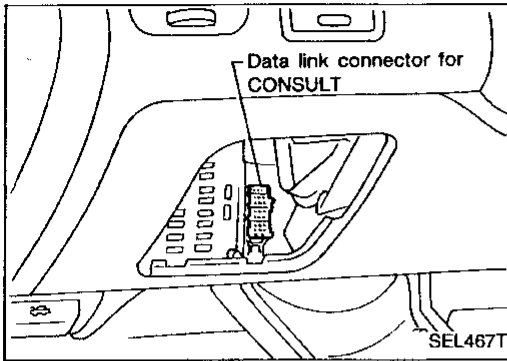
EL-WIPER-02



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

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WIPER AND WASHER

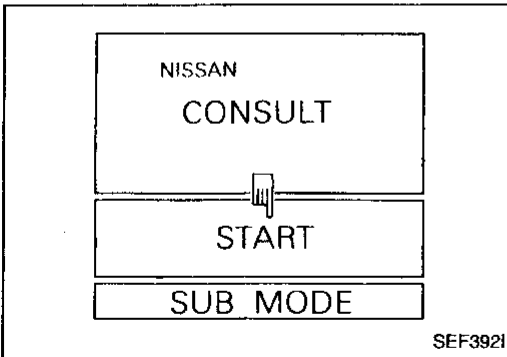


Trouble Diagnoses

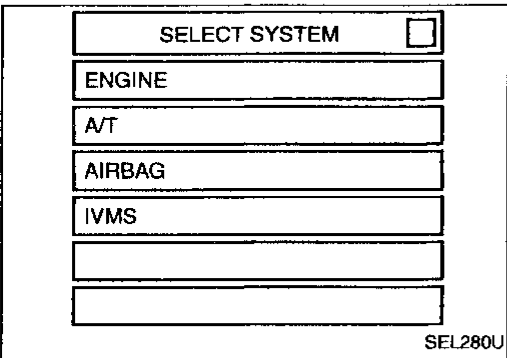
CONSULT

CONSULT inspection procedure

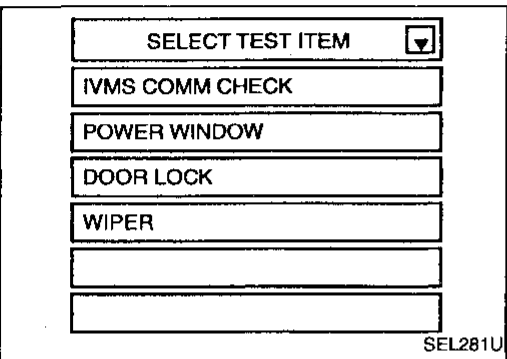
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



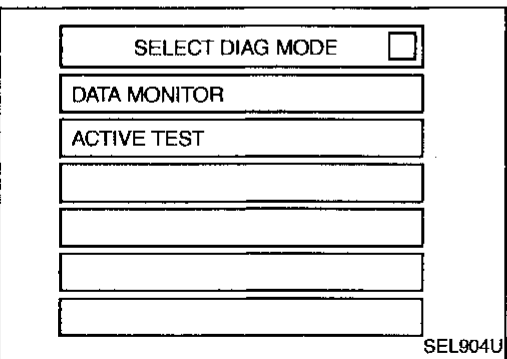
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "WIPER".

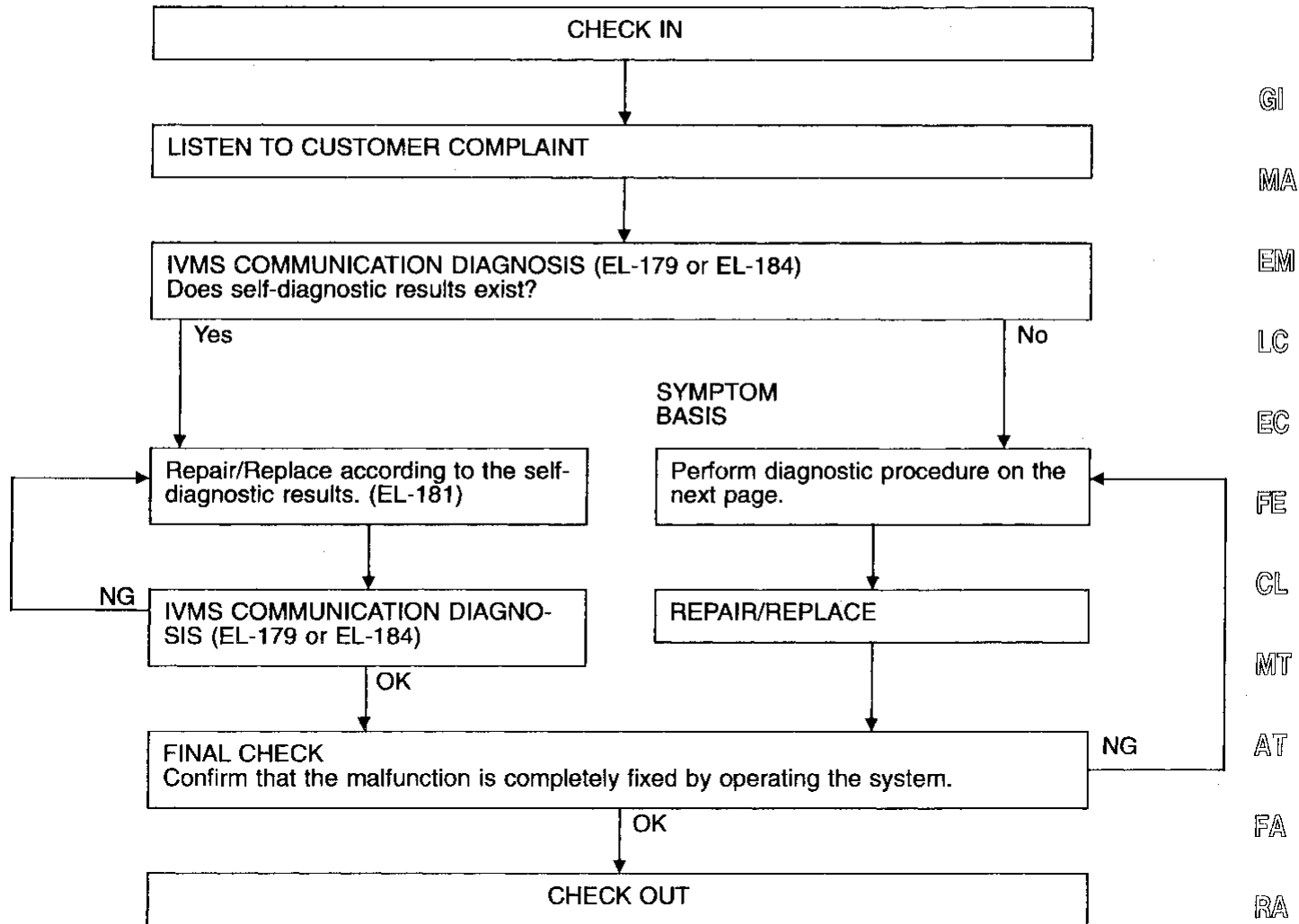


- DATA MONITOR and ACTIVE TEST are available for the wiper and washer.

WIPER AND WASHER

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

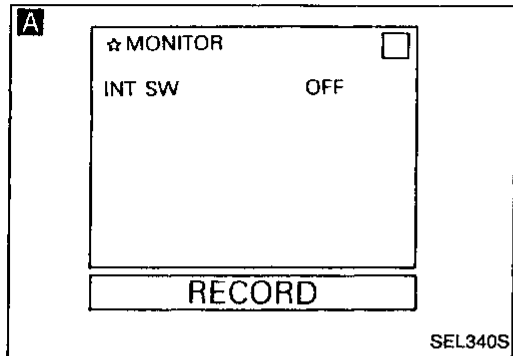
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box.

WIPER AND WASHER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.



CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL.

A **TESTER**

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

When wiper switch is in INT position:

INT SW ON

When wiper switch is in OFF position:

INT SW OFF

OR

ON-BOARD

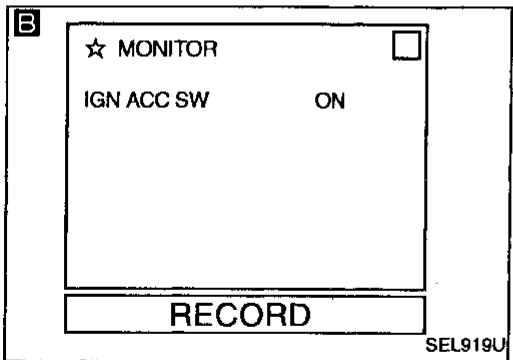
Perform On-board diagnosis — Mode II (switch monitor) for wiper switch (INT). Refer to EL-186.

NG

Check the following.

- Front wiper switch
- Front wiper switch ground circuit
- Harness for open or short between BCM and wiper switch

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



CHECK IGNITION SWITCH ACC SIGNAL.

B **CONSULT**

See "IGN ACC SW" in "Data monitor" mode.

When ignition switch is ACC or ON:

IGN ACC SW ON

When ignition switch is OFF:

IGN ACC SW OFF

OR

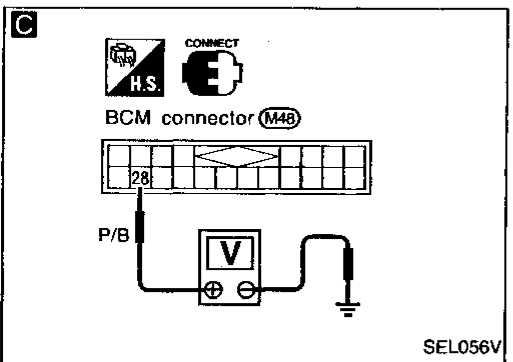
C **TESTER**

Check voltage between BCM terminal ⑳ and ground.

NG

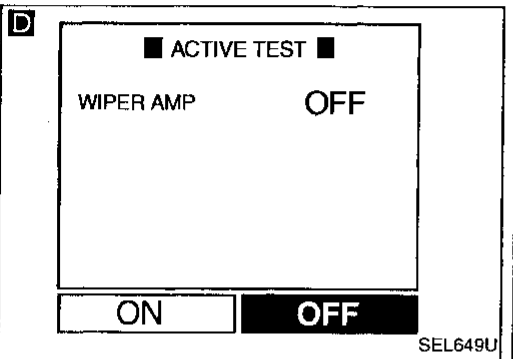
Check the following.

- 7.5A fuse [No. 19], located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM



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

OK



CHECK WIPER OPERATION.

See "WIPER AMP" in "Active test" mode.

Perform operation shown on display.

Wiper motor should operate.

Note:

If CONSULT is not available, skip this procedure.

OK

Replace BCM.

NG

Check wiper relay.

NG

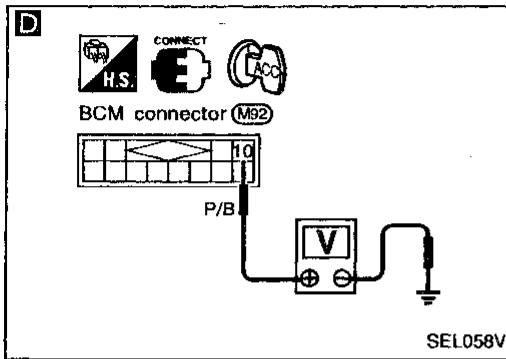
Replace wiper relay.

OK

Ⓐ

WIPER AND WASHER

Trouble Diagnoses (Cont'd)



Ⓐ

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D

INTERMITTENT OPERATION CHECK

1. Turn ignition switch to "ACC".
2. Measure voltage between BCM terminal Ⓐ and ground under the following condition.

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

NG → Replace BCM.

OK

↓

Check the following.

- 20A fuse [No. 20], located in the fuse block (J/B)]
- Harness for open or short between fuse and wiper relay
- Harness for open or short between wiper relay and BCM
- Front wiper relay ground circuit

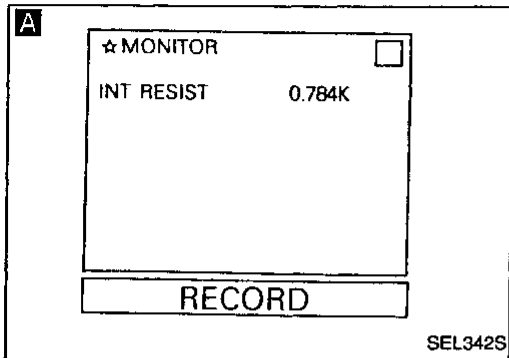
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WIPER AND WASHER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL.

A **CONSULT**

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

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

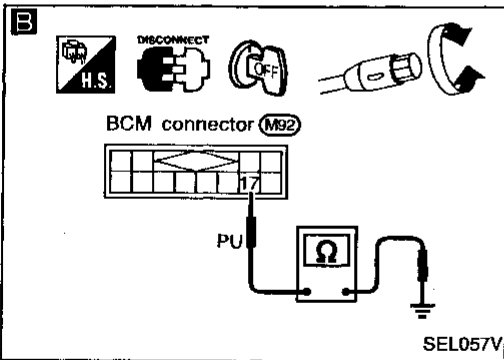
OR

B **TESTER**

Measure resistance between BCM terminal ⑰ and ground while turning intermittent wiper volume.

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

OK → Replace BCM.



NG

Check intermittent wiper volume. Refer to "COMBINATION SWITCH".

NG → Replace intermittent wiper volume.

OK

Check the following.

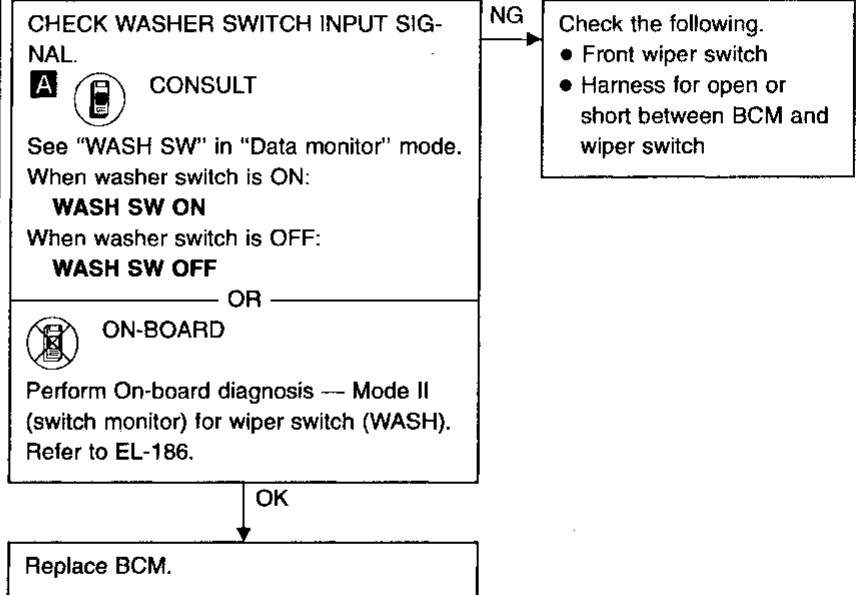
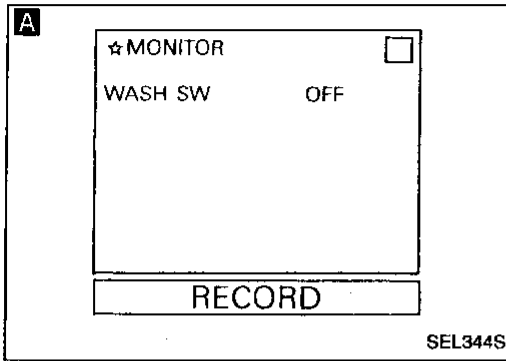
- Harness for open or short between BCM and intermittent wiper volume
- Intermittent wiper volume ground circuit

WIPER AND WASHER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

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



GI

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BT

HA

EL

IDX

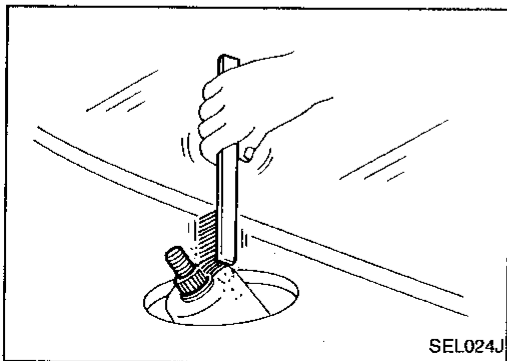
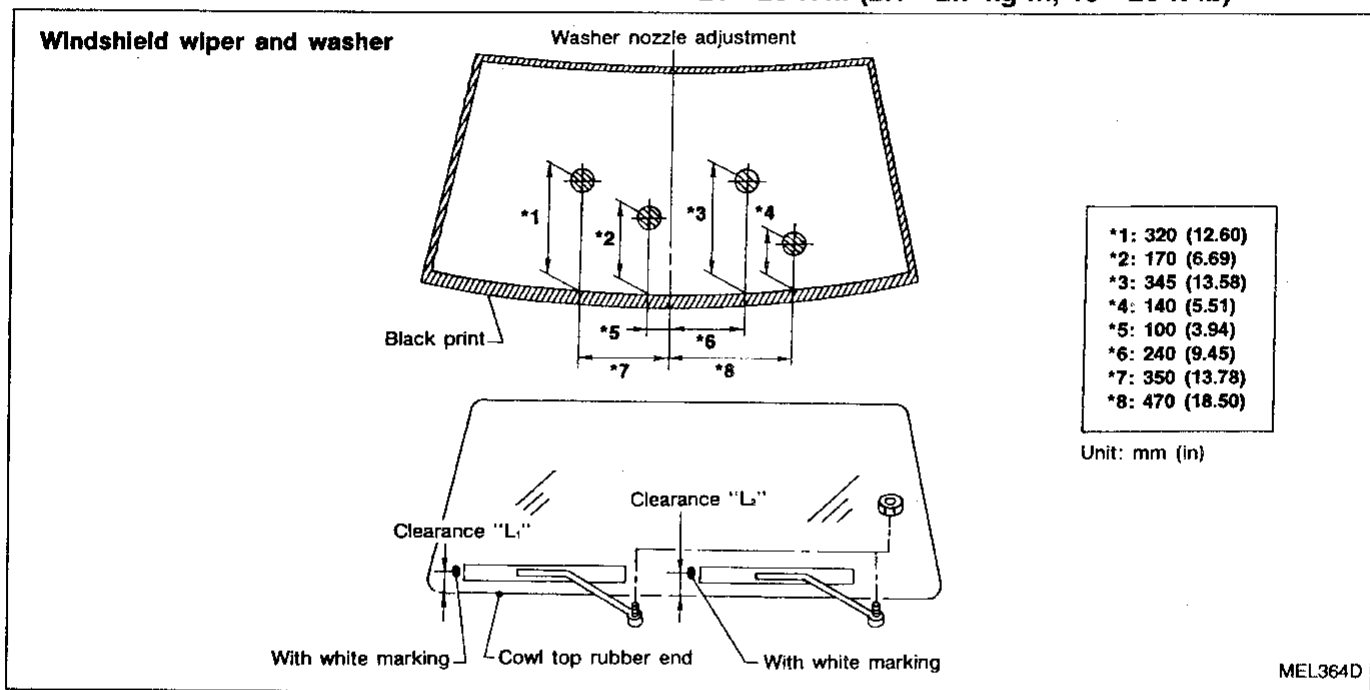
WIPER AND WASHER

Installation

1. Turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
 2. Lift the blade up and then set it down onto glass surface. Set the blade center to clearance "L₁" or "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".
- Tighten windshield wiper arm nuts to specified torque.

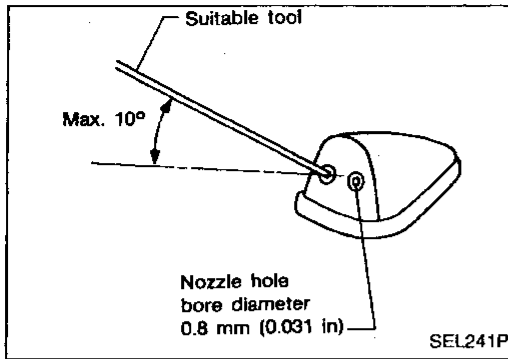
Windshield wiper:

21 - 26 N·m (2.1 - 2.7 kg·m, 15 - 20 ft·lb)



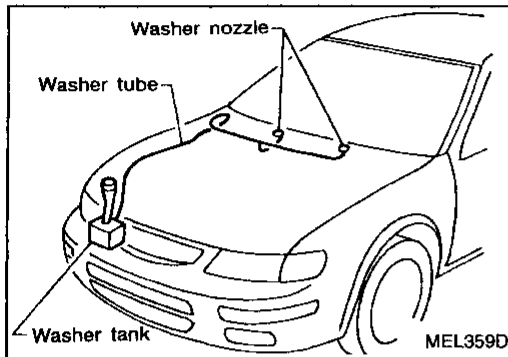
- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.

WIPER AND WASHER



Washer Nozzle Adjustment

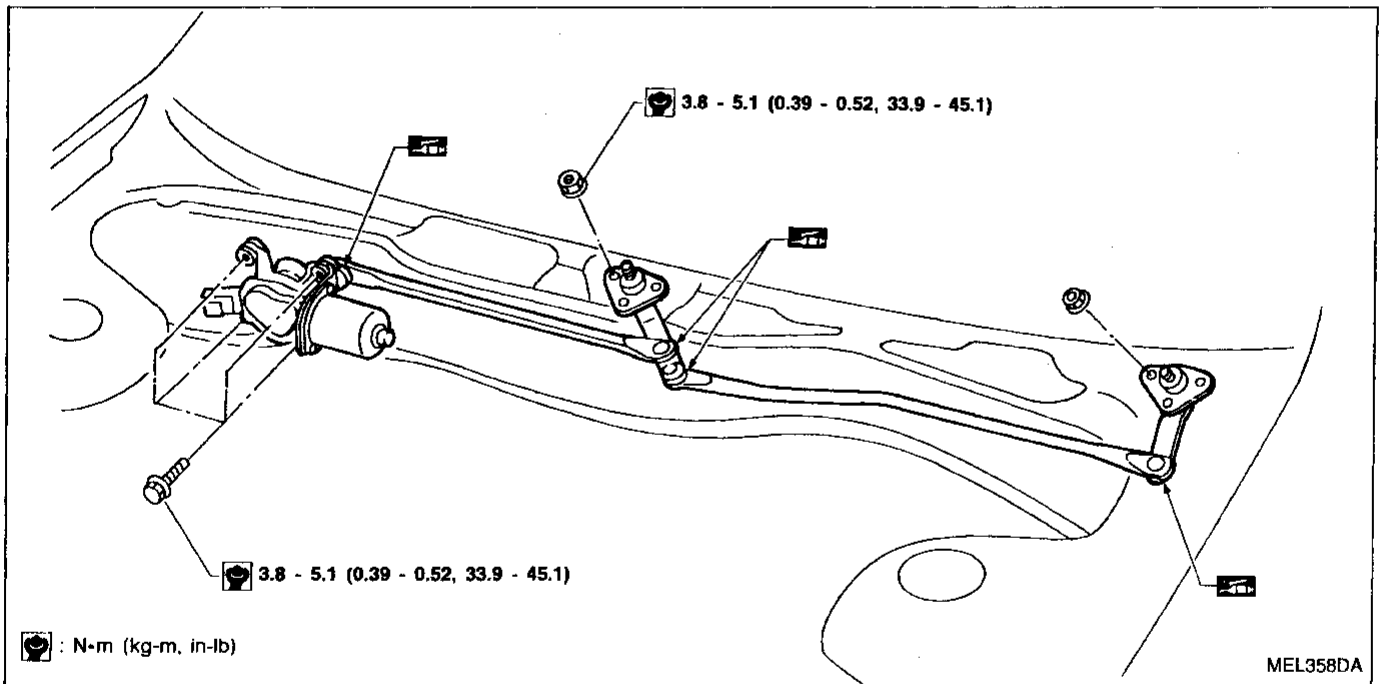
- Adjust washer nozzle with suitable tool as shown in the figure at left.
Adjustable range: $\pm 10^\circ$



Check Valve (Built in the washer nozzle)

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

Wiper Linkage



REMOVAL

- Remove 4 bolts that secure wiper motor.
- Detach wiper motor from wiper linkage at ball joint.
- Remove wiper linkage.

Be careful not to break ball joint rubber boot.

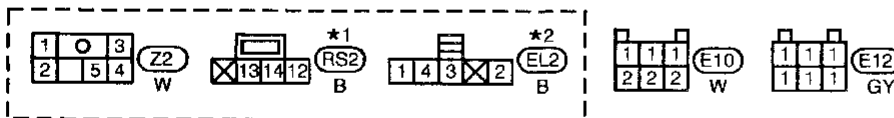
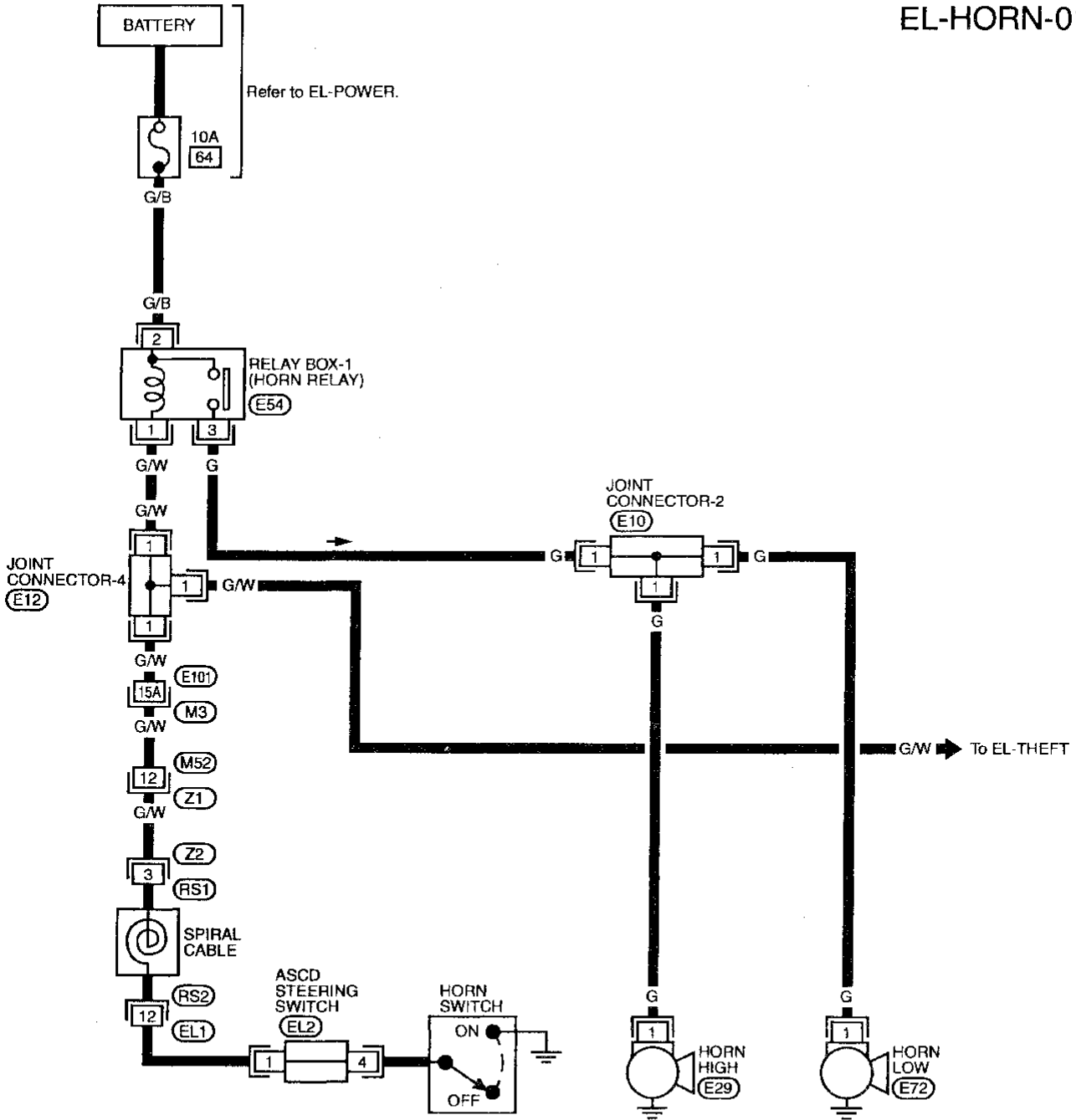
INSTALLATION

- Grease ball joint portion before installation. Installation is in reverse order of removal.

HORN, CIGARETTE LIGHTER, CLOCK

Wiring Diagram — HORN —

EL-HORN-01



*1, *2
These connectors are not shown in "HARNES LAYOUT" of EL section.

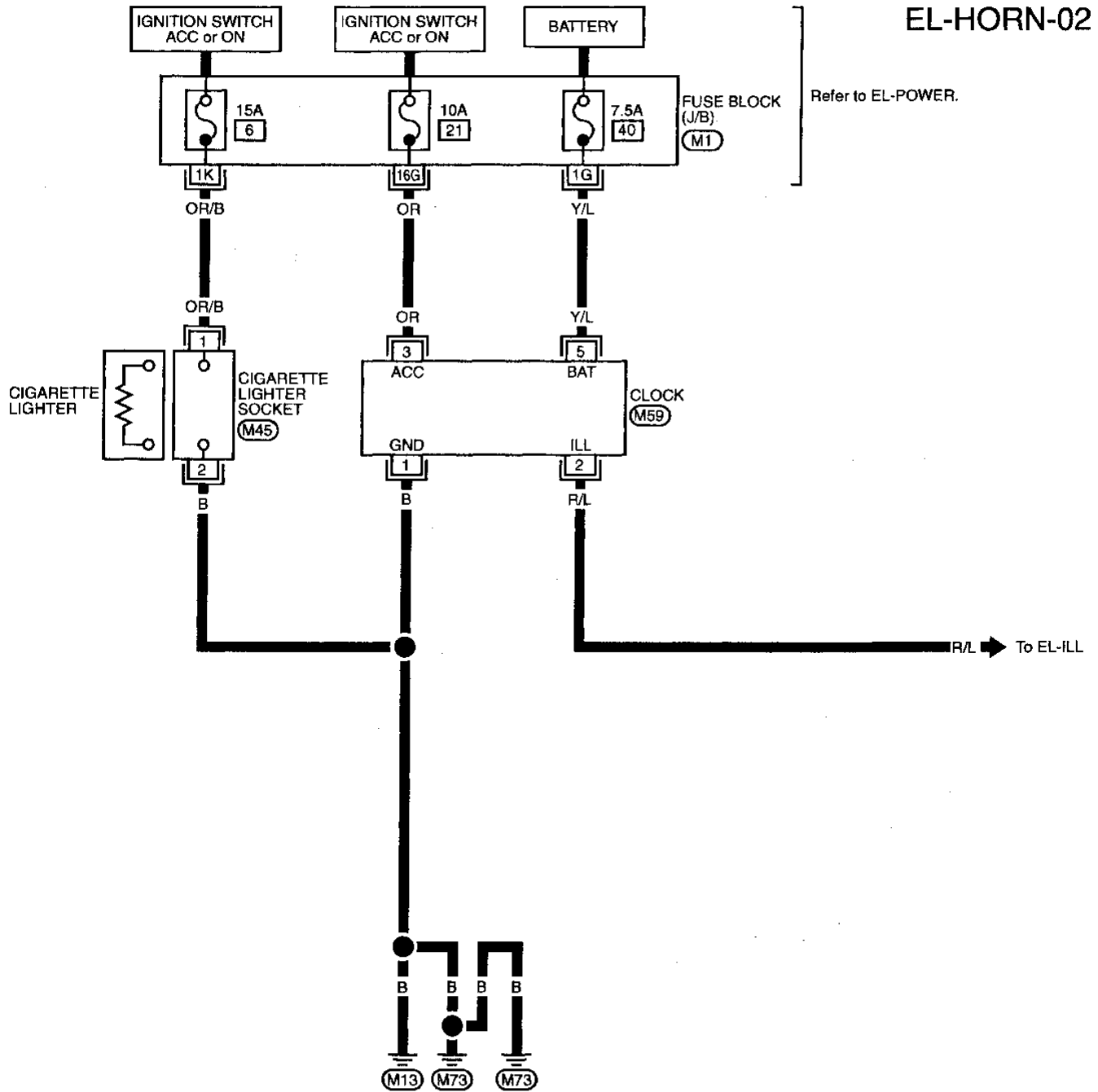
Refer to last page (Foldout page).

- M3
- E101
- E10
- E12

MEL640G

HORN, CIGARETTE LIGHTER, CLOCK

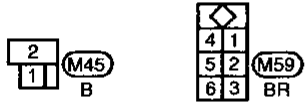
Wiring Diagram — HORN — (Cont'd)



EL-HORN-02

Refer to EL-POWER.

To EL-ILL



Refer to last page (Foldout page).
M1

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

REAR WINDOW DEFOGGER

System Description

FUNCTION

- The following time control function is controlled by BCM.

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

REAR WINDOW DEFOGGER TIMER

The rear window defogger system is controlled by the BCM.

Power is supplied at all times

- through 20A fuse [No. 38], located in the fuse block (J/B)
- to the rear window defogger relay terminal ③, and
- through 20A fuse [No. 39], located in the fuse block (J/B)
- to the rear window defogger relay terminal ⑥.

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

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

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

- through terminal ① of the rear window defogger switch
- to BCM terminal 22.

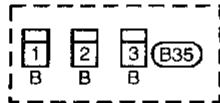
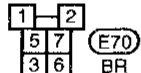
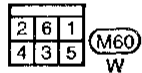
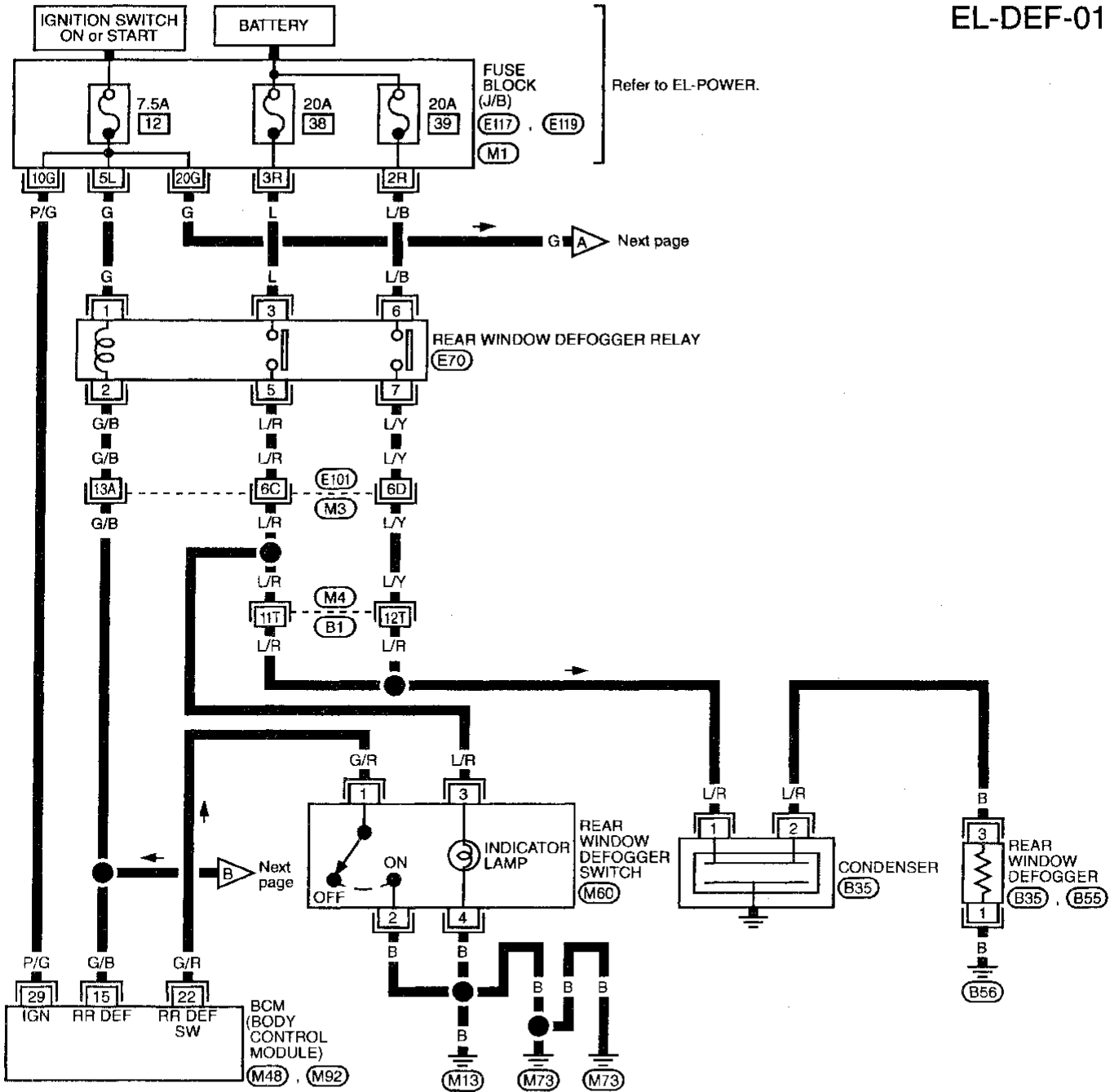
Terminal 15 of the BCM then supplies ground to the rear window defogger relay terminal ②.

With power and ground supplied, the rear window defogger relay is energized to operate rear window defogger for about 15 minutes.

REAR WINDOW DEFOGGER

Wiring Diagram — DEF —

EL-DEF-01



Refer to last page (Foldout page).

(M3), (E101)

(M4), (B1)

(M1)

(E117)

(E119)

(M48)

(M92)

GI

MA

EM

LC

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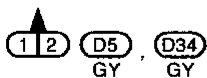
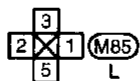
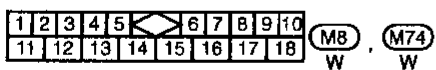
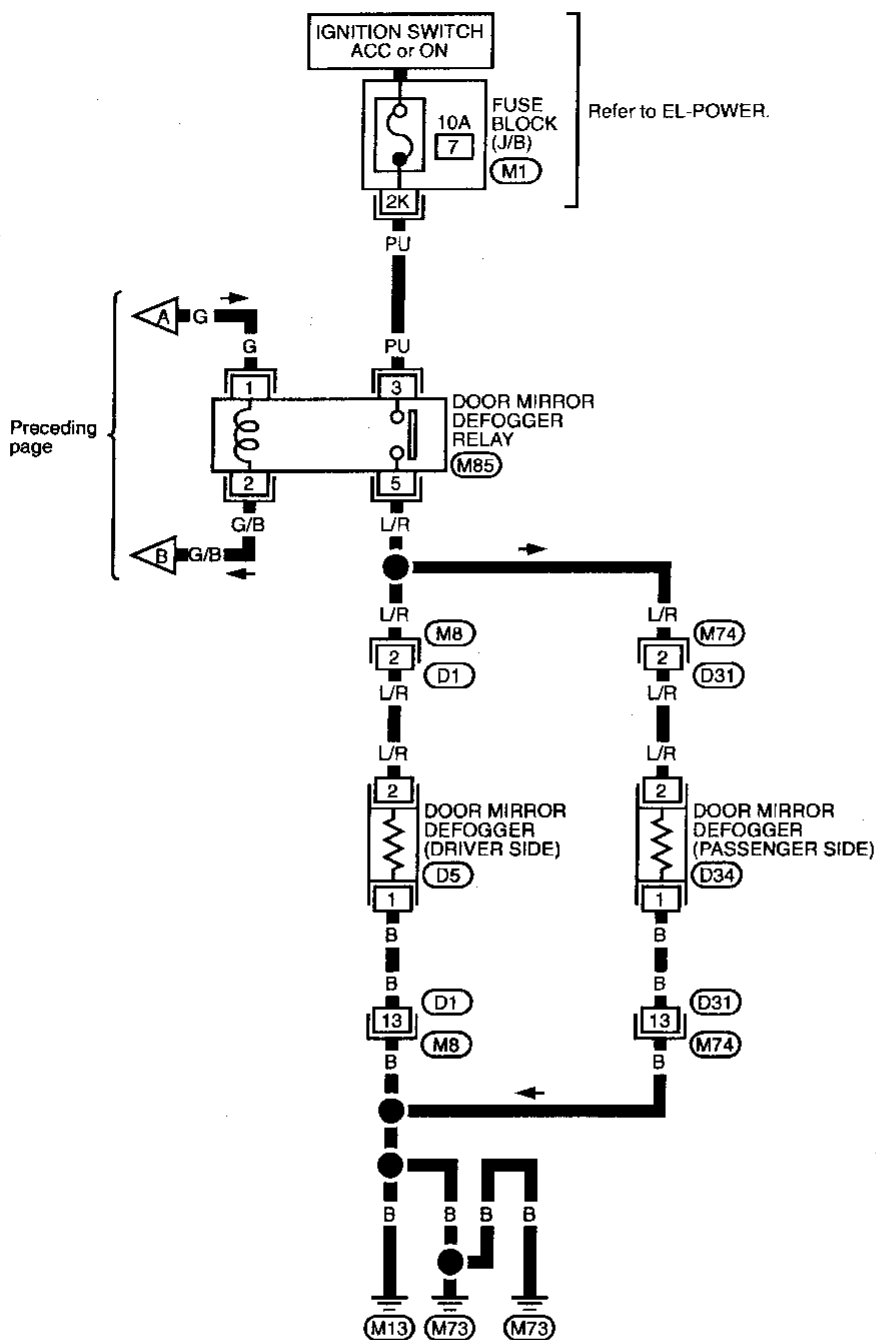
EL

IDX

REAR WINDOW DEFOGGER

Wiring Diagram — DEF — (Cont'd)

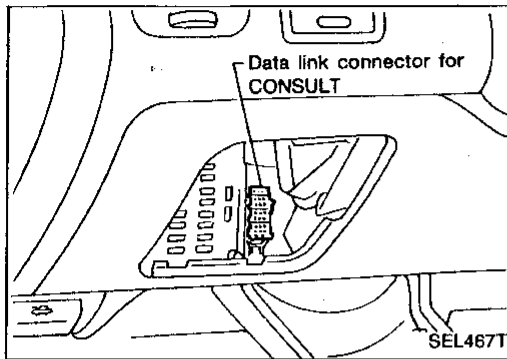
EL-DEF-02



Refer to last page (Foldout page).

(M1)

REAR WINDOW DEFOGGER

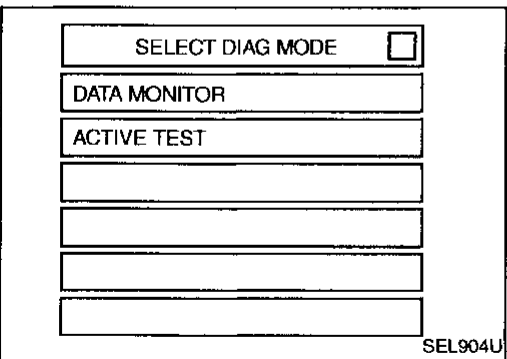
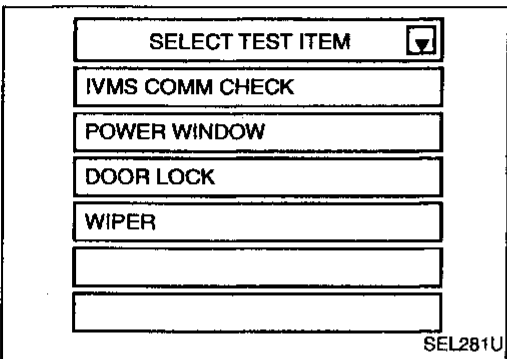
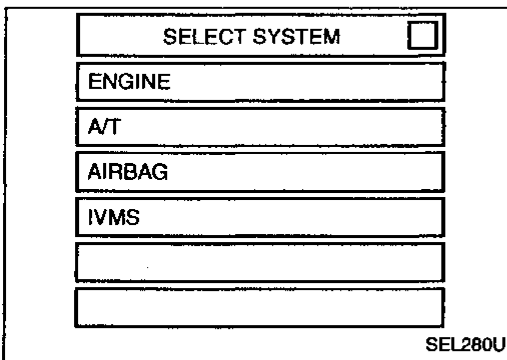
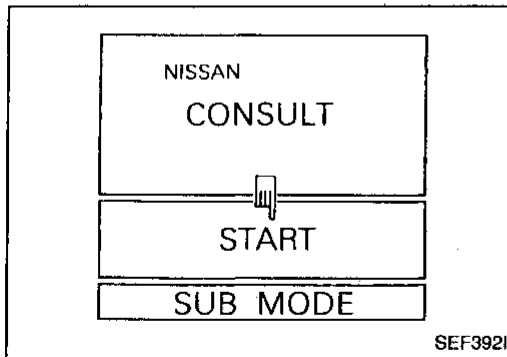


Trouble Diagnoses

CONSULT

CONSULT inspection procedure

1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

6. Touch "REAR DEFOGGER".

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

GI

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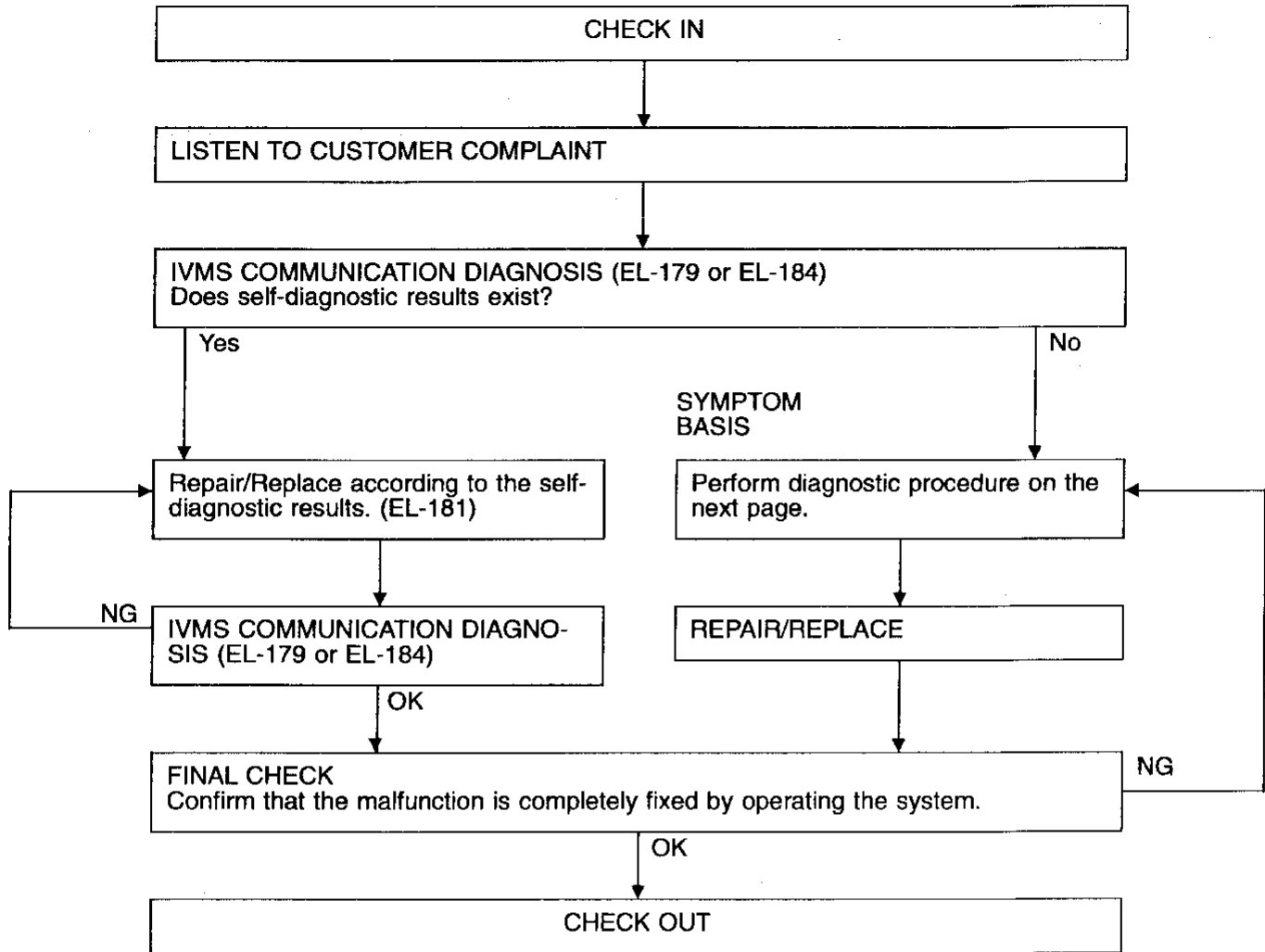
EL

IDX

REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

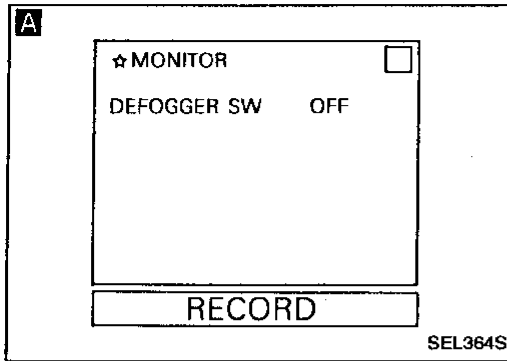
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56 located in the fuse and fusible link box).

REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

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



CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL.

A **CONSULT**

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

OR

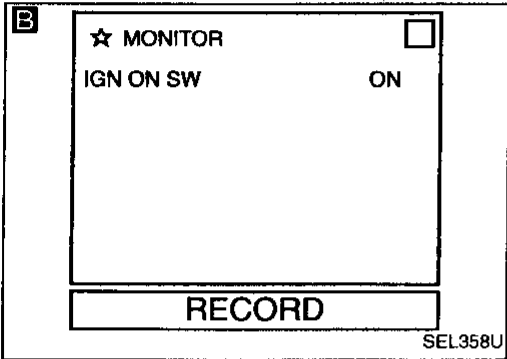
ON-BOARD

Check rear window defogger switch in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

Check rear window defogger switch.

OK → Check the following.
 • Harness for open or short between BCM and rear window defogger switch
 • Rear window defogger switch ground circuit

NG → Replace rear window defogger switch.



CHECK IGNITION SWITCH ON SIGNAL.

B **CONSULT**

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

OR

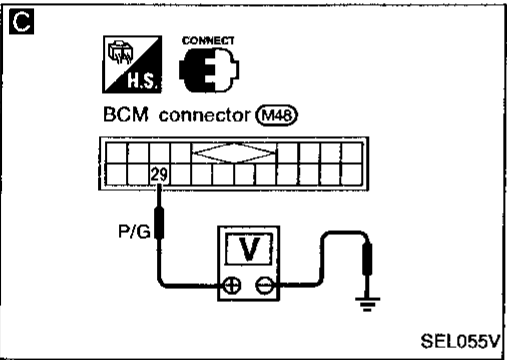
TESTER

Check voltage between BCM terminal ⑳ and ground.

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

Check the following.

- 7.5A fuse [No. 12], located in the fuse block (J/B)
- Harness for open or short between fuse and BCM



CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL.

D

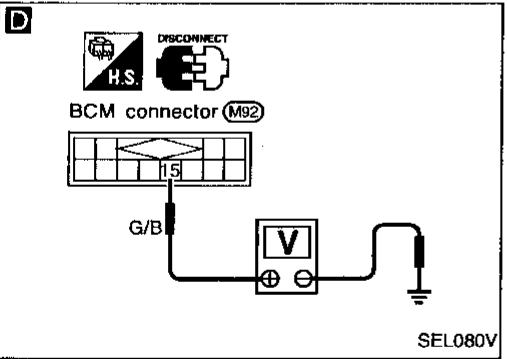
- Disconnect BCM connector.
- Check voltage between BCM terminal ⑲ and ground.

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

Check rear window defogger relay.

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

NG → Replace relay.



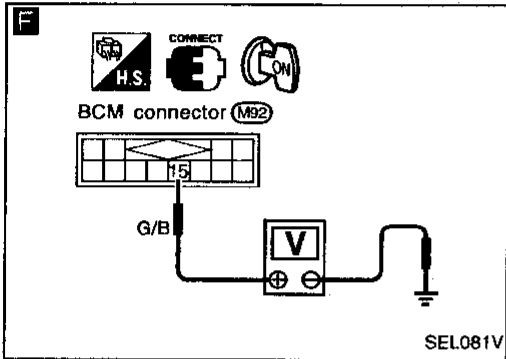
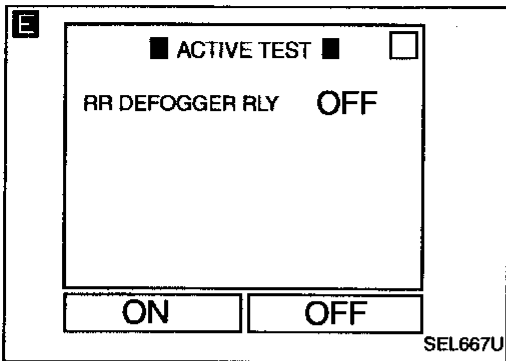
Connect BCM connector.

Ⓐ

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REAR WINDOW DEFOGGER

Trouble Diagnoses (Cont'd)



Ⓐ

REAR WINDOW DEFOGGER ACTIVE TEST.

E **CONSULT**

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

OR

F **TESTER**

1. Turn ignition switch to ON.
2. Check voltage between BCM terminal ⑮ and ground.

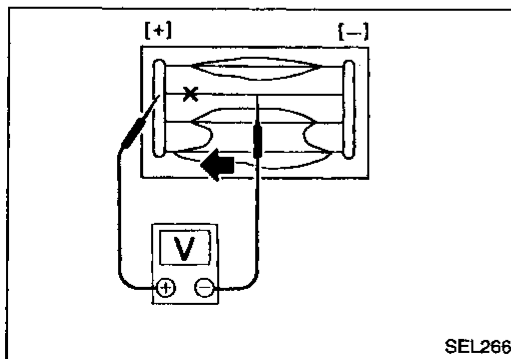
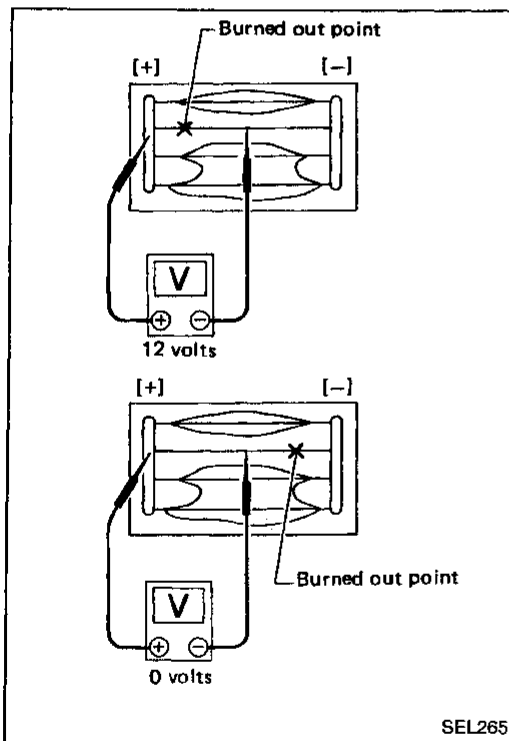
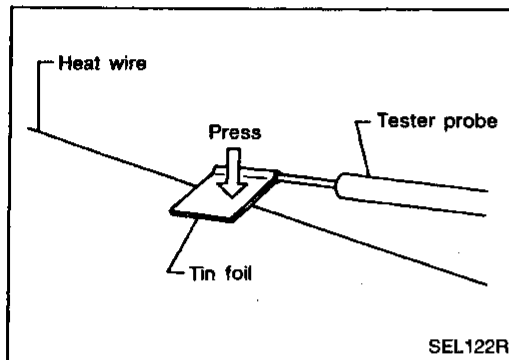
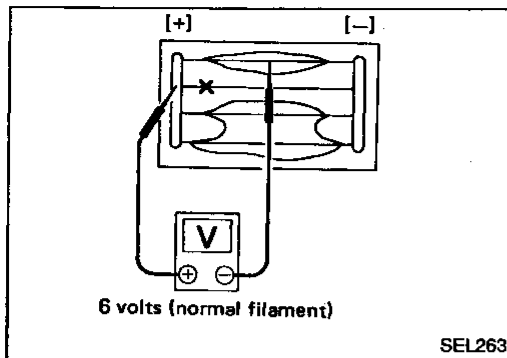
Condition of rear defogger switch	Voltage [V]
ON	0
OFF	Approx. 12

OK

Check rear window defogger circuit.

NG → Replace BCM.

REAR WINDOW DEFOGGER



Filament Check

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

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

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

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

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REAR WINDOW DEFOGGER

Filament Repair

REPAIR EQUIPMENT

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

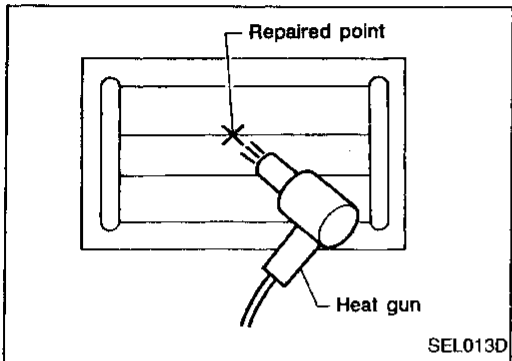
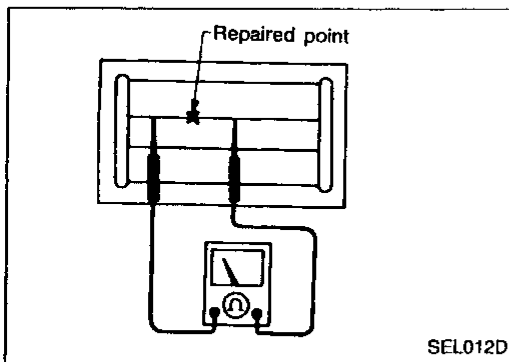
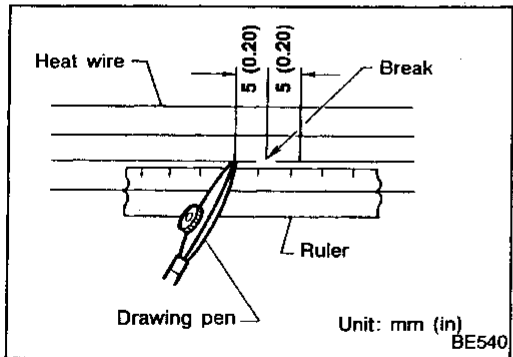
REPAIRING PROCEDURE

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

Shake silver composition container before use.

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

Do not touch repaired area while test is being conducted.



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

AUDIO AND POWER ANTENNA

Audio/System Description

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

Power is supplied at all times

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

Power is supplied at all times

- through 15A fuse [No. 22], located in the fuse block (J/B)
- to audio amp. relay terminal 3.

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

- through 10A fuse [No. 21], located in the fuse block (J/B)
- to radio and CD player terminal 10.

Ground is supplied through the case of the radio.

Ground is also supplied

- to audio amp. relay terminal 2,
- to front door speaker LH terminal 2 and
- to front door speaker RH terminal 2
- through body grounds M13 and M73
- to rear speaker LH terminal 1 and
- to rear speaker RH terminal 1
- through body grounds B16 and B19.

When the radio POWER button is pressed, power is supplied to audio amp. relay 1 from radio and CD player terminal 12. Then audio amp. relay is energized and power is supplied

- to front door speaker LH terminal 5
- to front door speaker RH terminal 5 and
- to rear speaker LH terminal 3 and RH terminal 3.

Audio signals are supplied

- through radio and CD player terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 3 and 6 of the LH and RH front speakers and terminals 2 and 4 of the LH and RH rear speakers
- to LH and RH tweeters through terminals 1 and 4 of the front and rear speakers.

GI

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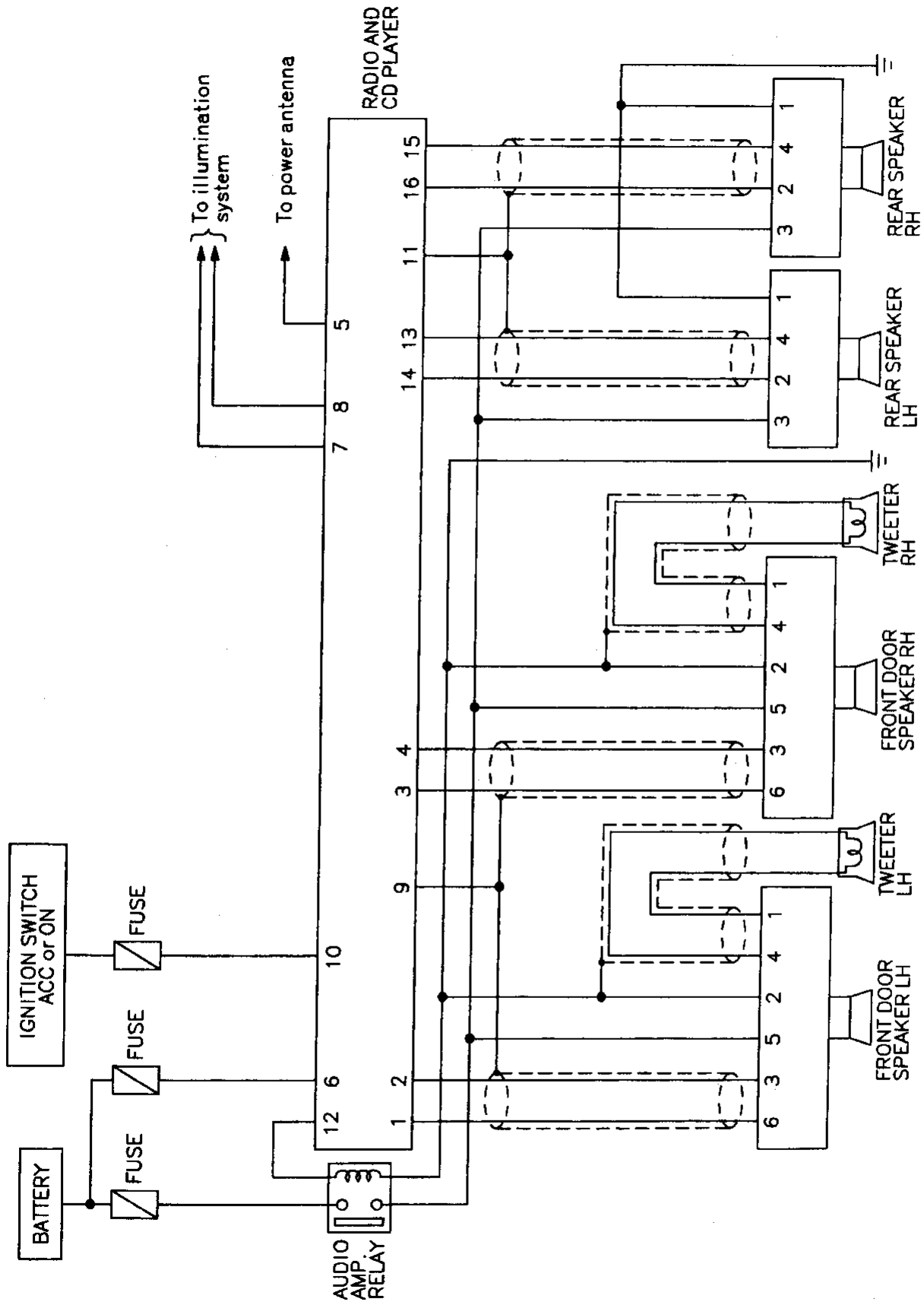
HA

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AUDIO AND POWER ANTENNA

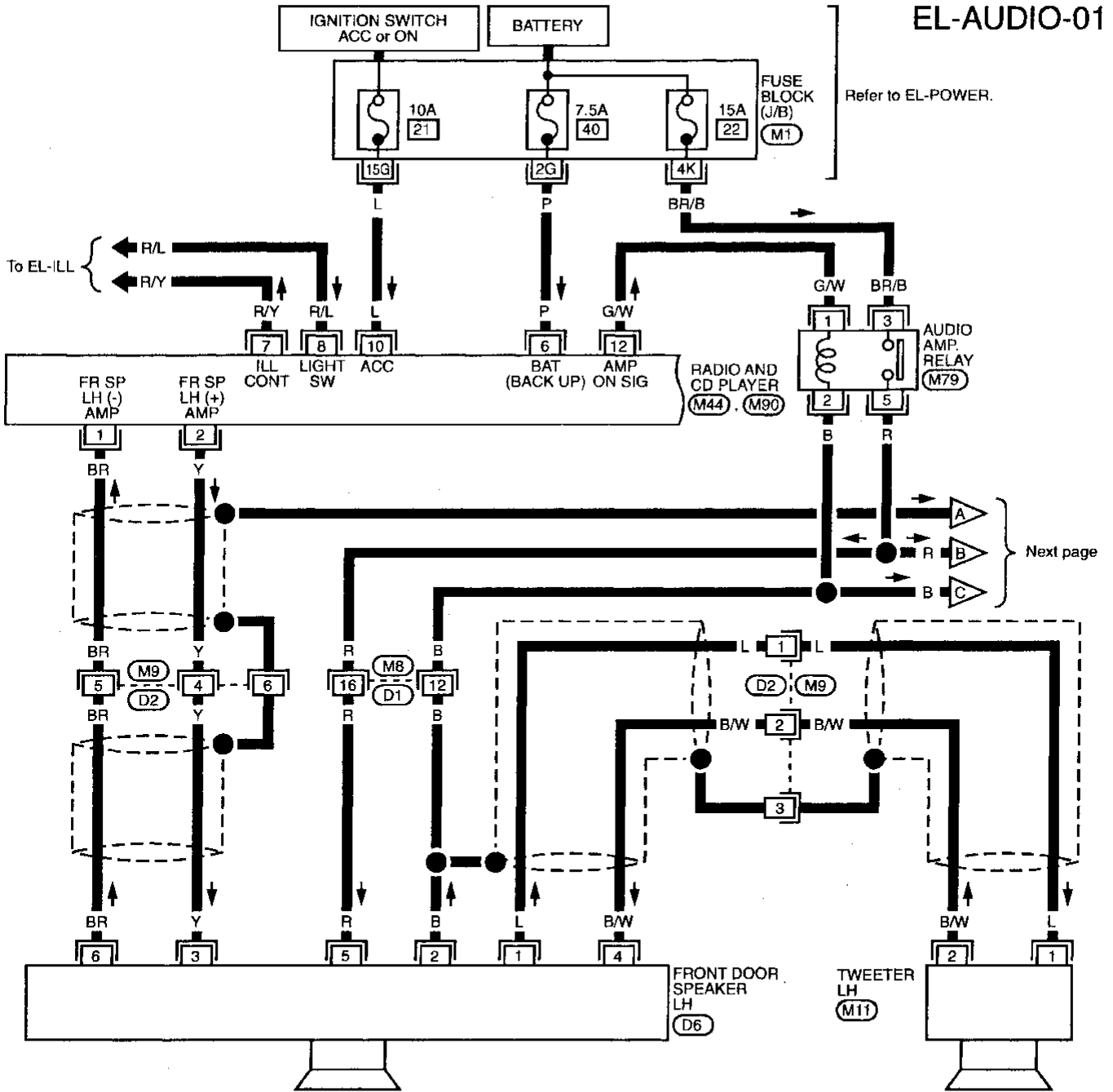
Schematic



AUDIO AND POWER ANTENNA

Audio/Wiring Diagram — AUDIO —

EL-AUDIO-01

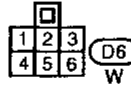
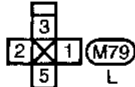
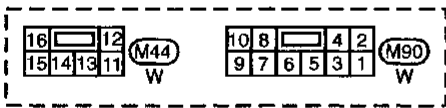
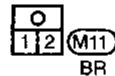


Refer to EL-POWER.

To EL-ILL

Next page

Refer to last page (Foldout page).



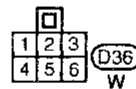
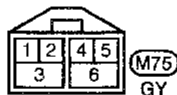
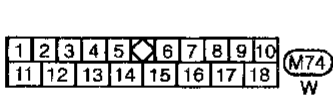
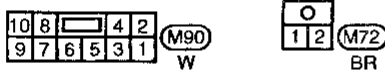
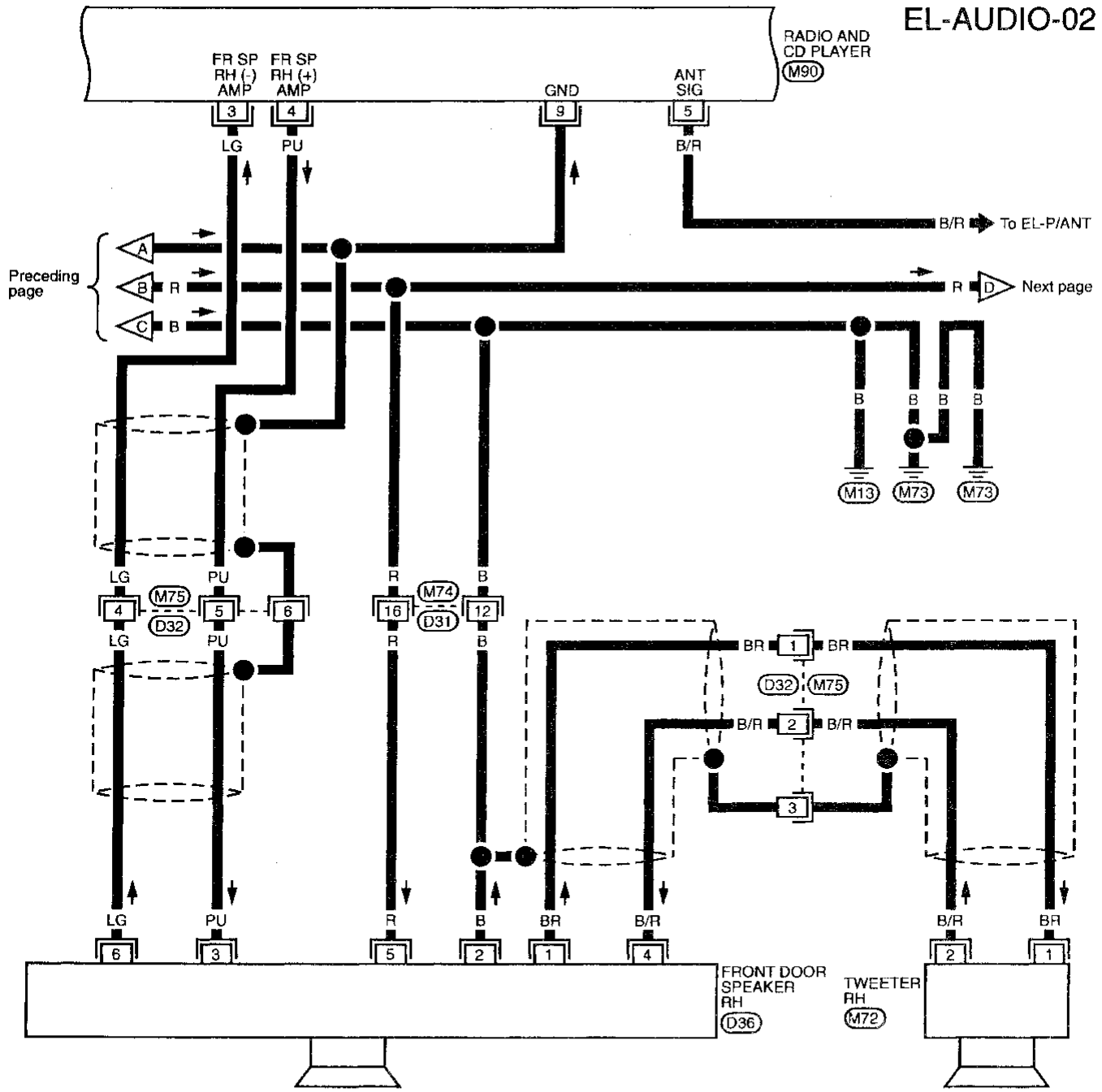
M1

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AUDIO AND POWER ANTENNA

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

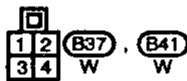
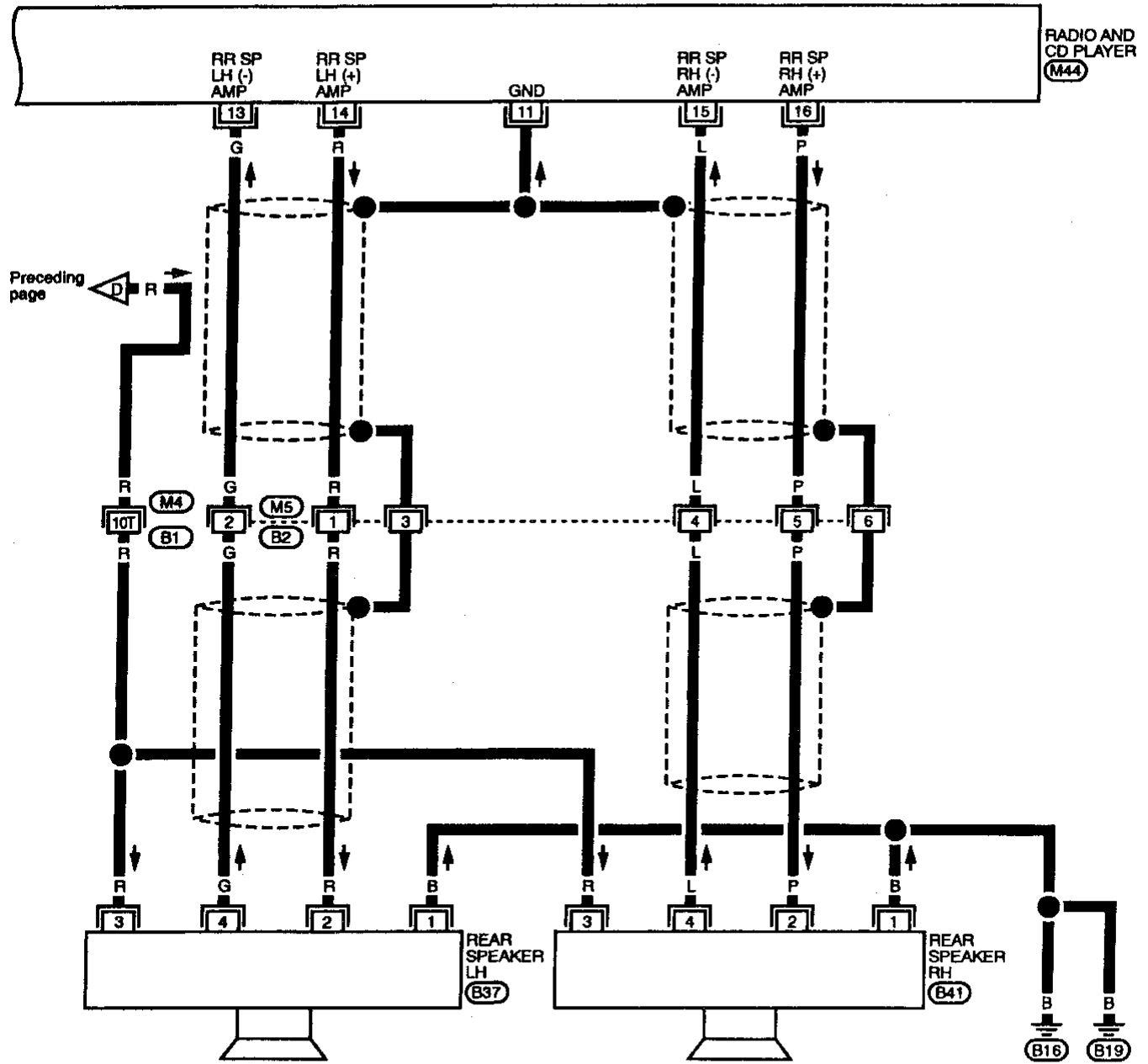
EL-AUDIO-02



AUDIO AND POWER ANTENNA

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

EL-AUDIO-03



Refer to last page (Foldout page).

M4 . B1

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

Power Antenna/System Description

Power is supplied at all times

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

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

- through 10A fuse [No. 21], located in the fuse block (J/B)]
- to radio and CD player terminal ⑩ .

Ground is supplied to the power antenna timer and motor terminal ⑥ through body grounds ⑦⑥ and ⑦⑨ .

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

- through radio and CD player terminal ⑤
- to power antenna timer and motor terminal ④ .

The antenna rises and is held in the extended position.

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

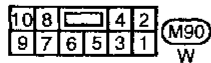
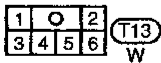
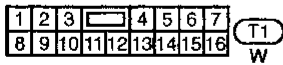
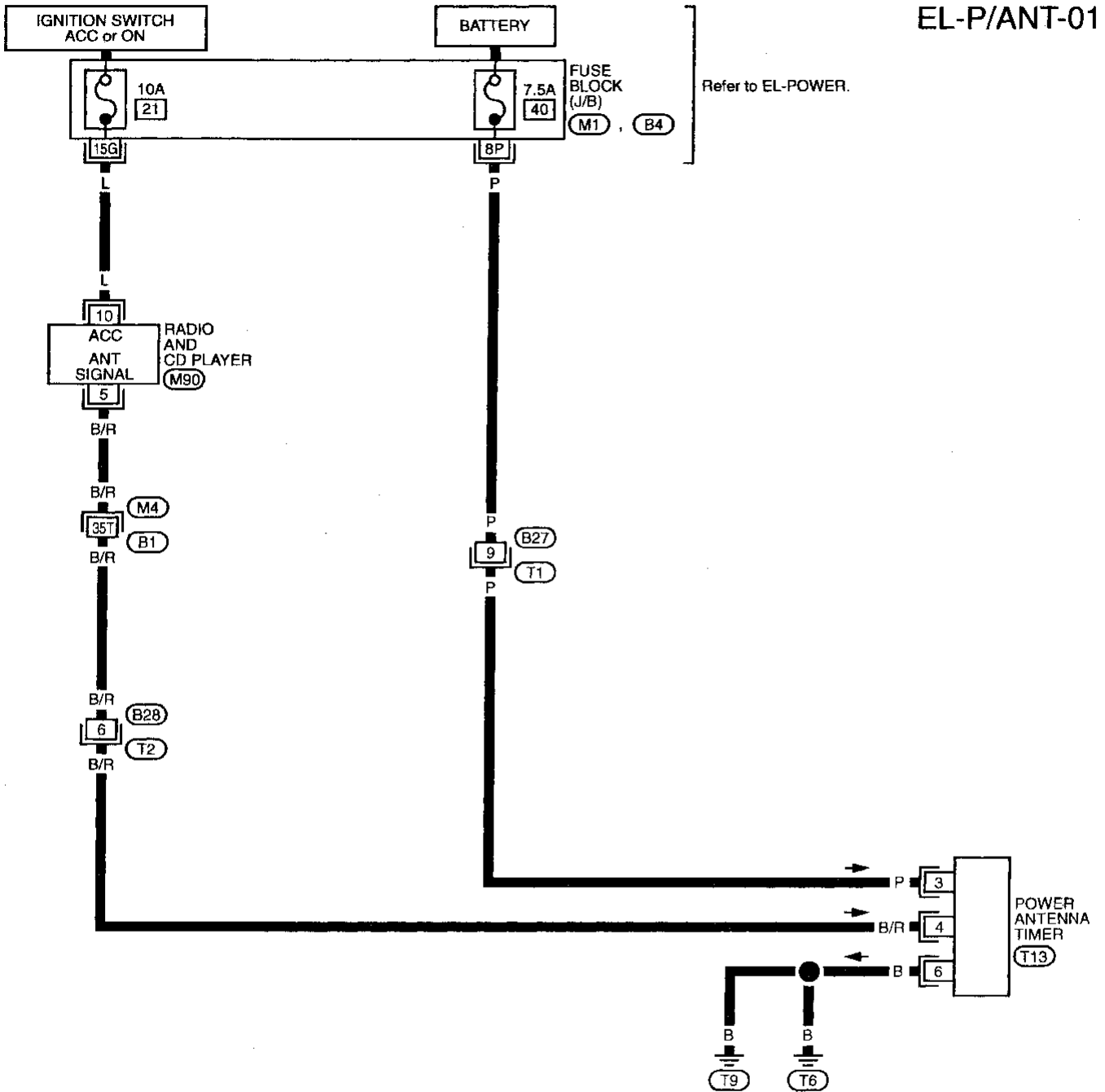
- from radio and CD player terminal ⑤
- to power antenna terminal ④ .

The antenna retracts.

AUDIO AND POWER ANTENNA

Power Antenna/Wiring Diagram — P/ANT —

EL-P/ANT-01



Refer to last page (Foldout page).

M4, B1

M1

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AUDIO AND POWER ANTENNA

Trouble Diagnoses

RADIO

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. 21], located in fuse block (J/B). Turn ignition switch ON and verify that battery positive voltage is present at terminal ⑩ of radio. Check radio case ground. Remove radio for repair.
Radio controls are operational, but no sound is heard from any speaker.	<ol style="list-style-type: none"> 15A fuse Audio amp. relay Audio amp. relay ground Amp. ON signal Radio output Radio 	<ol style="list-style-type: none"> Check 15A fuse [No. 22], located in fuse block (J/B). Verify battery positive voltage is present at terminal ③ of audio amp. relay. Check audio amp. relay. Check audio amp. relay ground (Terminal ②). Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ① of audio amp. relay. Check radio output voltage. 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 7.5A fuse [No. 40], located in fuse block (J/B) and verify that battery positive voltage is present at terminal ⑥ of radio. Remove radio for repair.
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> Speaker ground Power supply Radio output Speaker 	<ol style="list-style-type: none"> Check speaker ground (Terminal ② : FR LH, ② : FR RH, ① : RR LH, ① : RR RH). Check power supply for speaker. Check radio output voltage for amp. Replace speaker.
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

Symptom	Possible causes	Repair order
Power antenna does not operate.	<ol style="list-style-type: none"> 7.5A fuse Radio signal Grounds (T6) and (T9) 	<ol style="list-style-type: none"> Check 7.5A fuse [No. 40], located in fuse block (J/B). Verify that battery positive voltage is present at terminal ③ of power antenna. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna. Check grounds (T6) and (T9).

AUDIO AND POWER ANTENNA

Trouble Diagnoses (Cont'd)

ANTENNA INSPECTION

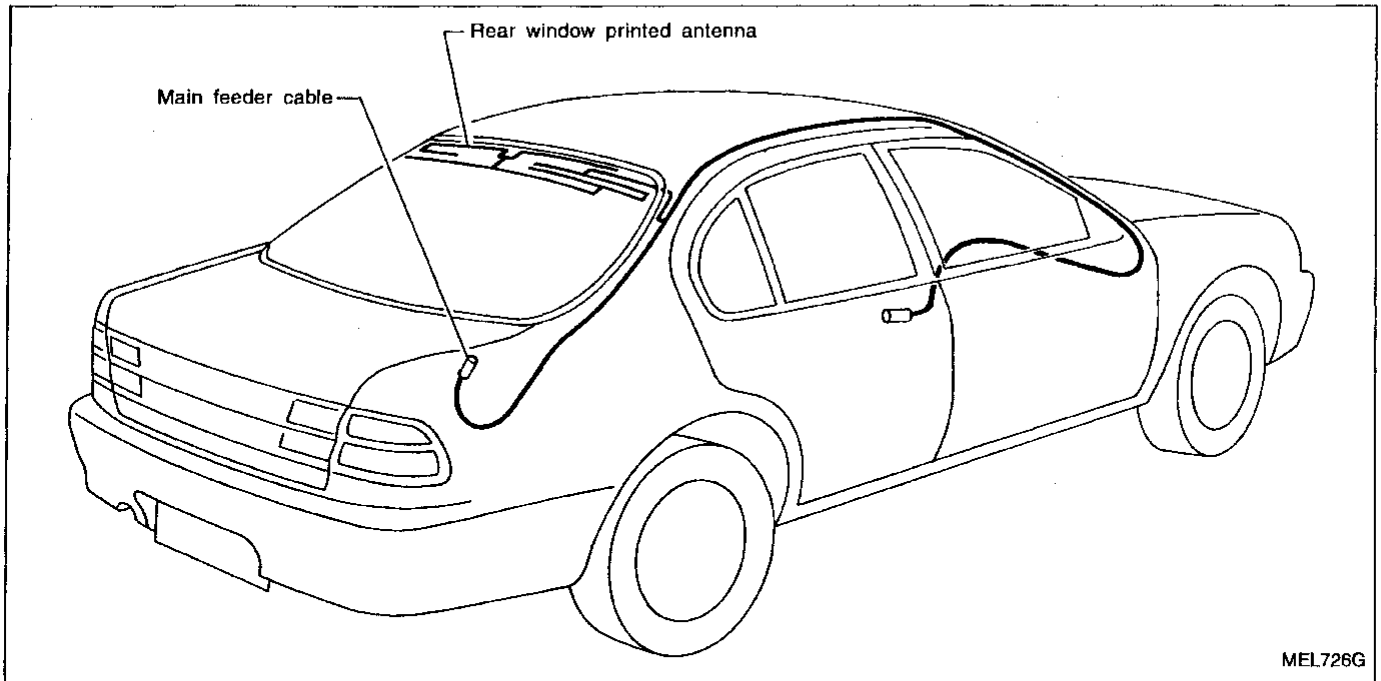
1. Using a jumper wire, clip an auxiliary ground between antenna and body.
 - If reception improves, check antenna ground (at body surface).
 - If reception does not improve, check main feeder cable for short circuit or open circuit.

RADIO INSPECTION

All voltage inspections are made with:

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

Location of Antenna



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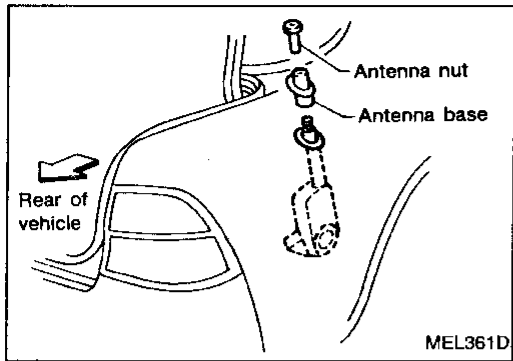
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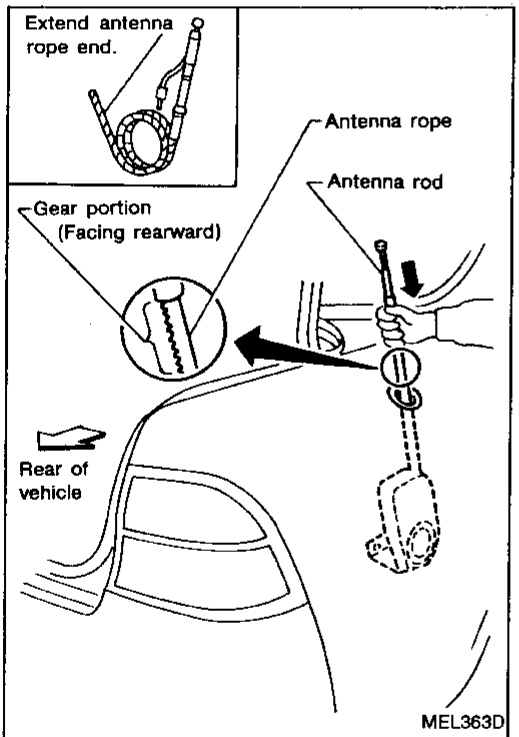
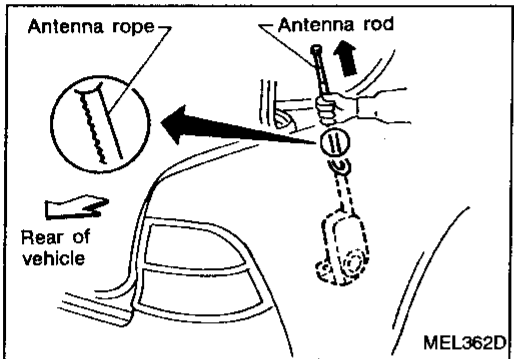
AUDIO AND POWER ANTENNA



Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.
2. Withdraw antenna rod while raising it by operating antenna motor.



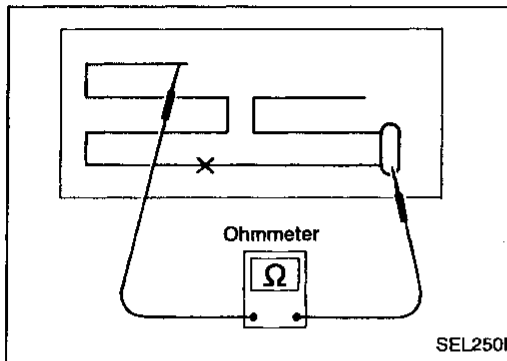
INSTALLATION

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

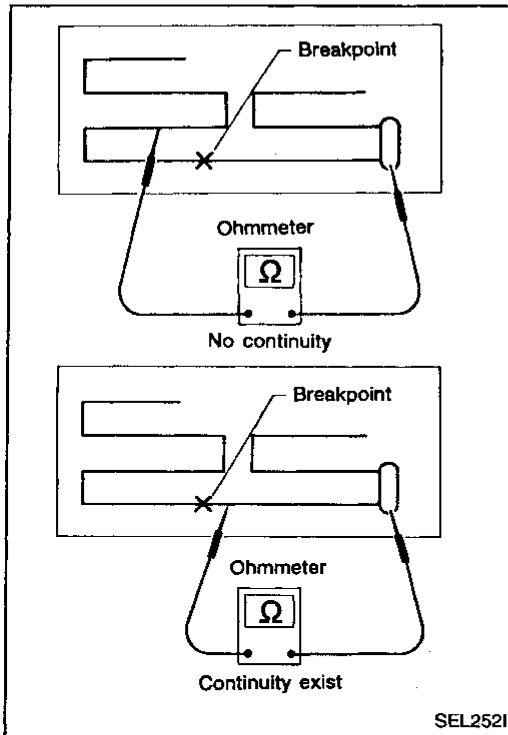
Window Antenna Repair

ELEMENT CHECK

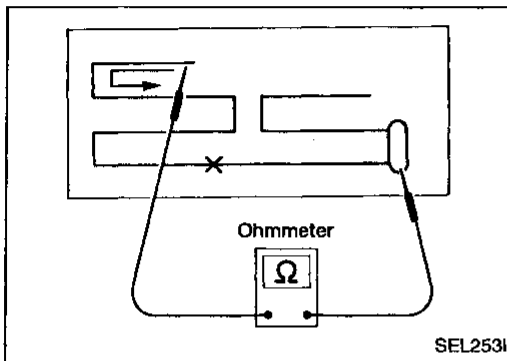
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.



2. If an element is broken, no continuity will exist.



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



ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-125).

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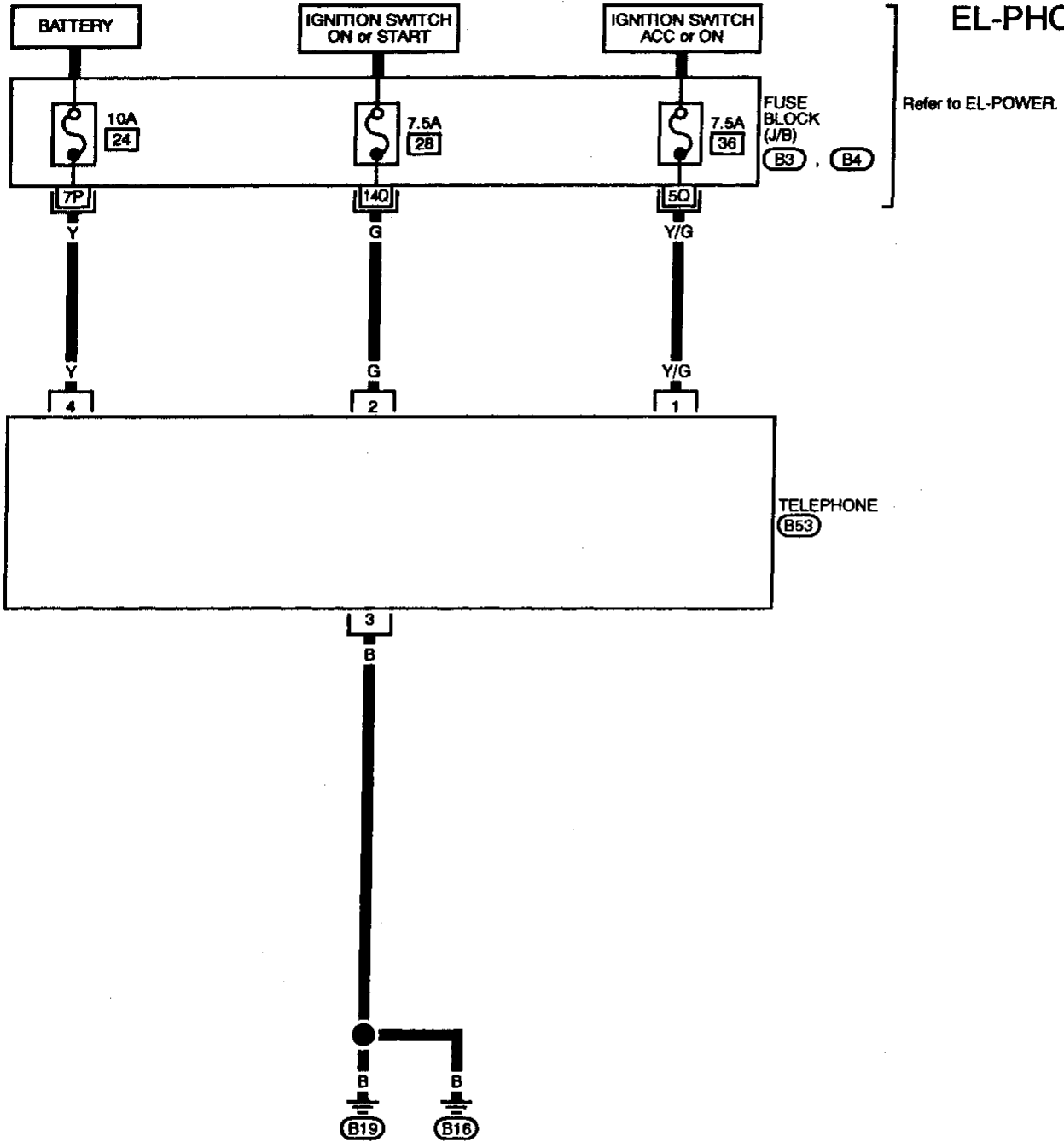
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TELEPHONE

Telephone Pre Wire/Wiring Diagram — PHONE —



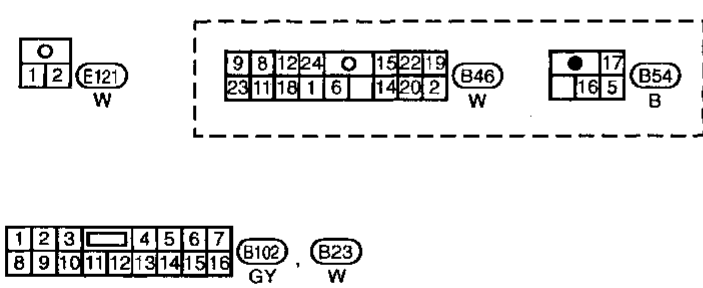
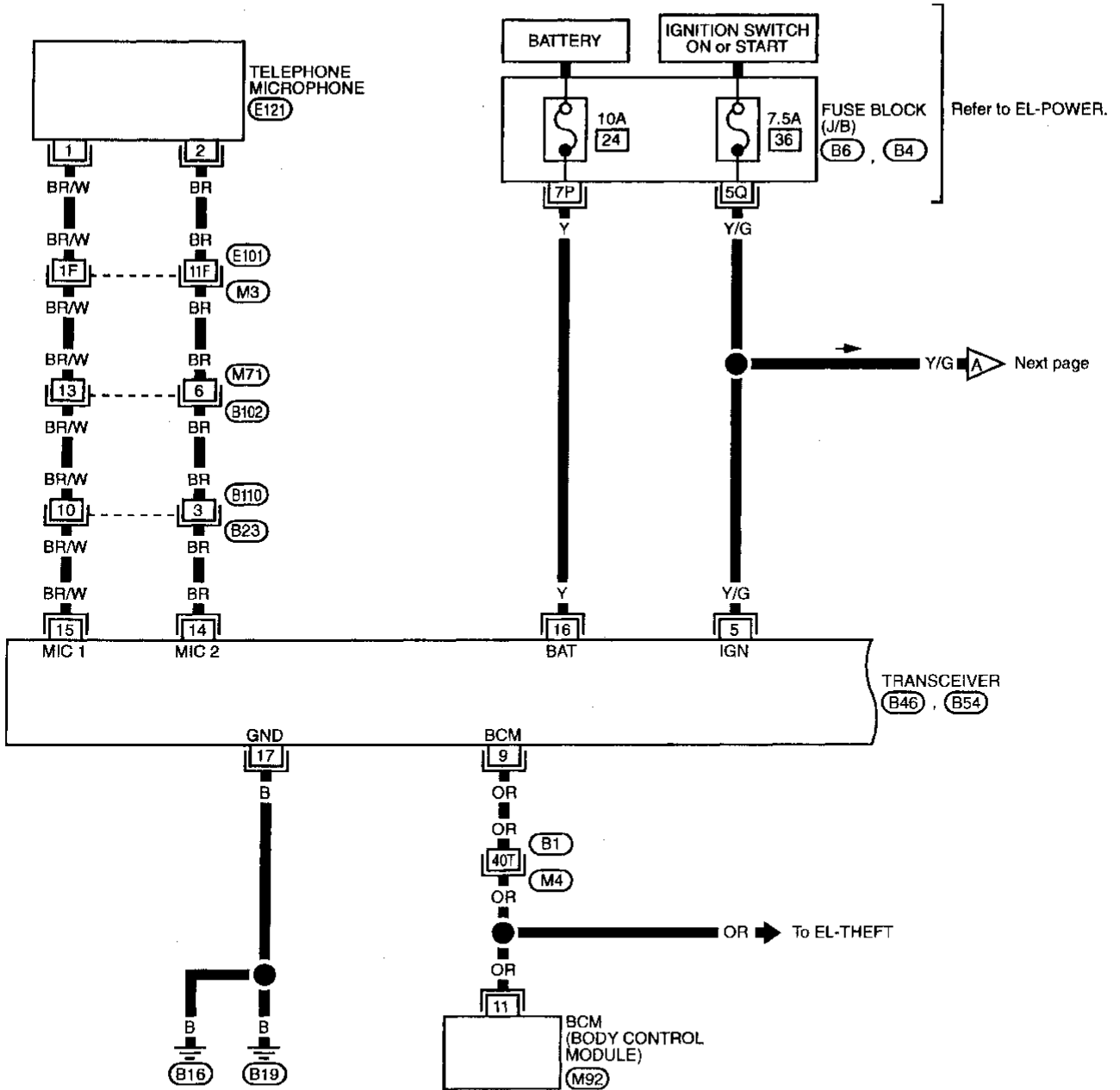
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TELEPHONE

Handsfree Telephone/Wiring Diagram — H/PHON —

EL-H/PHON-01



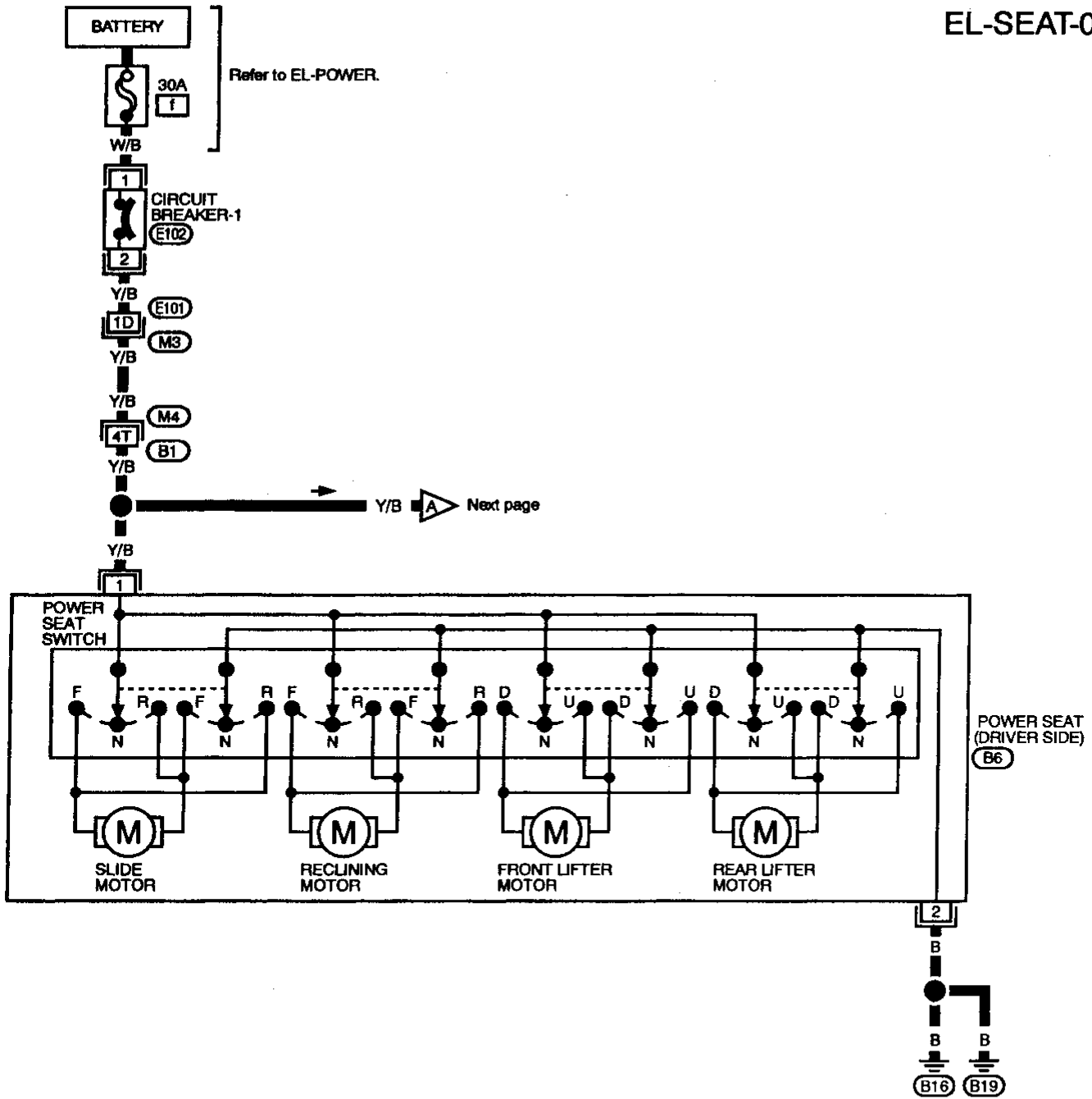
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 (M3), (E101)
 (M4), (B1)
 (B4)
 (B6)
 (M92)

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POWER SEAT

Power Seat/Wiring Diagram — SEAT —

EL-SEAT-01



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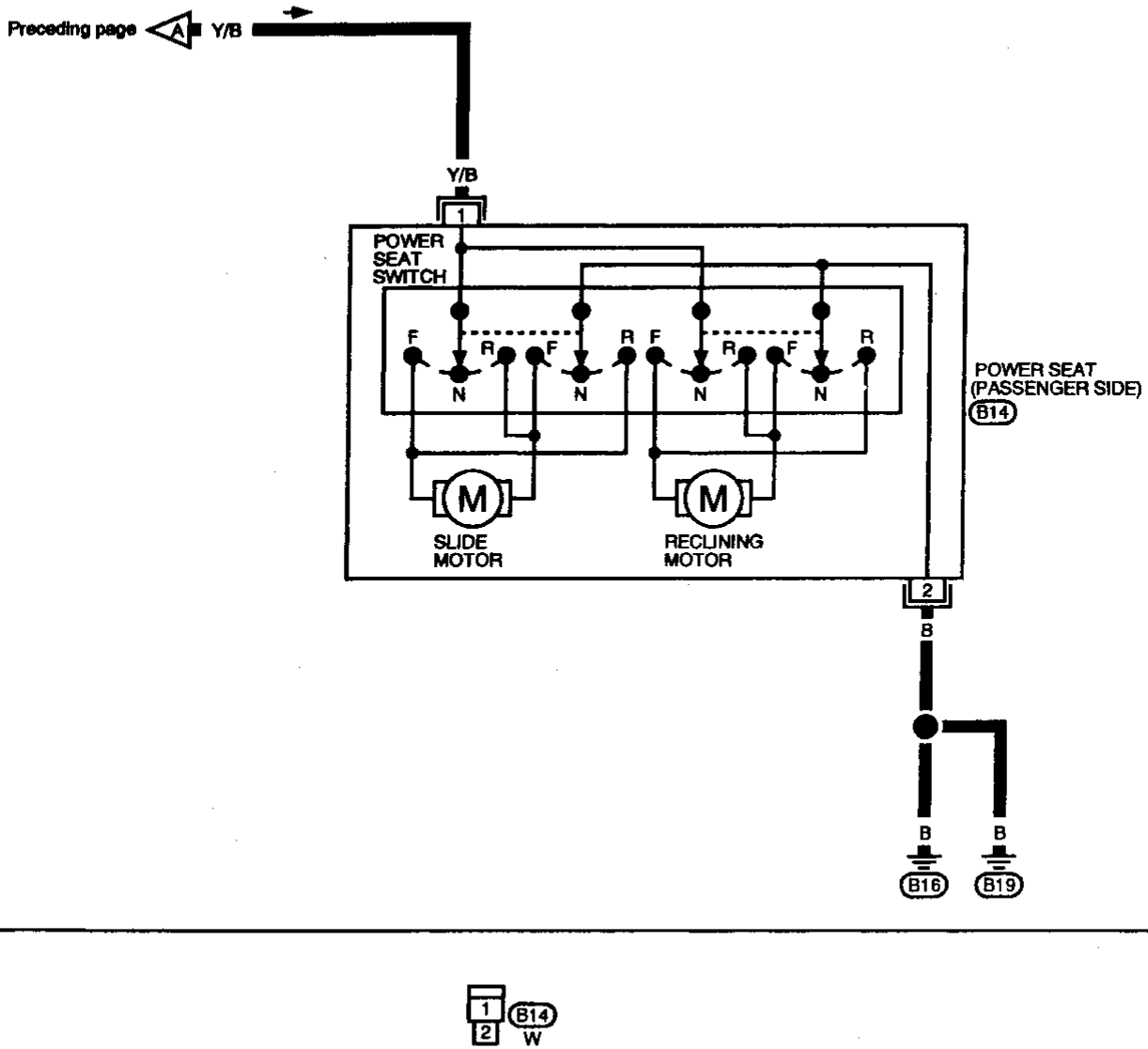
M3 , M101

M4 , B1

POWER SEAT

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

EL-SEAT-02

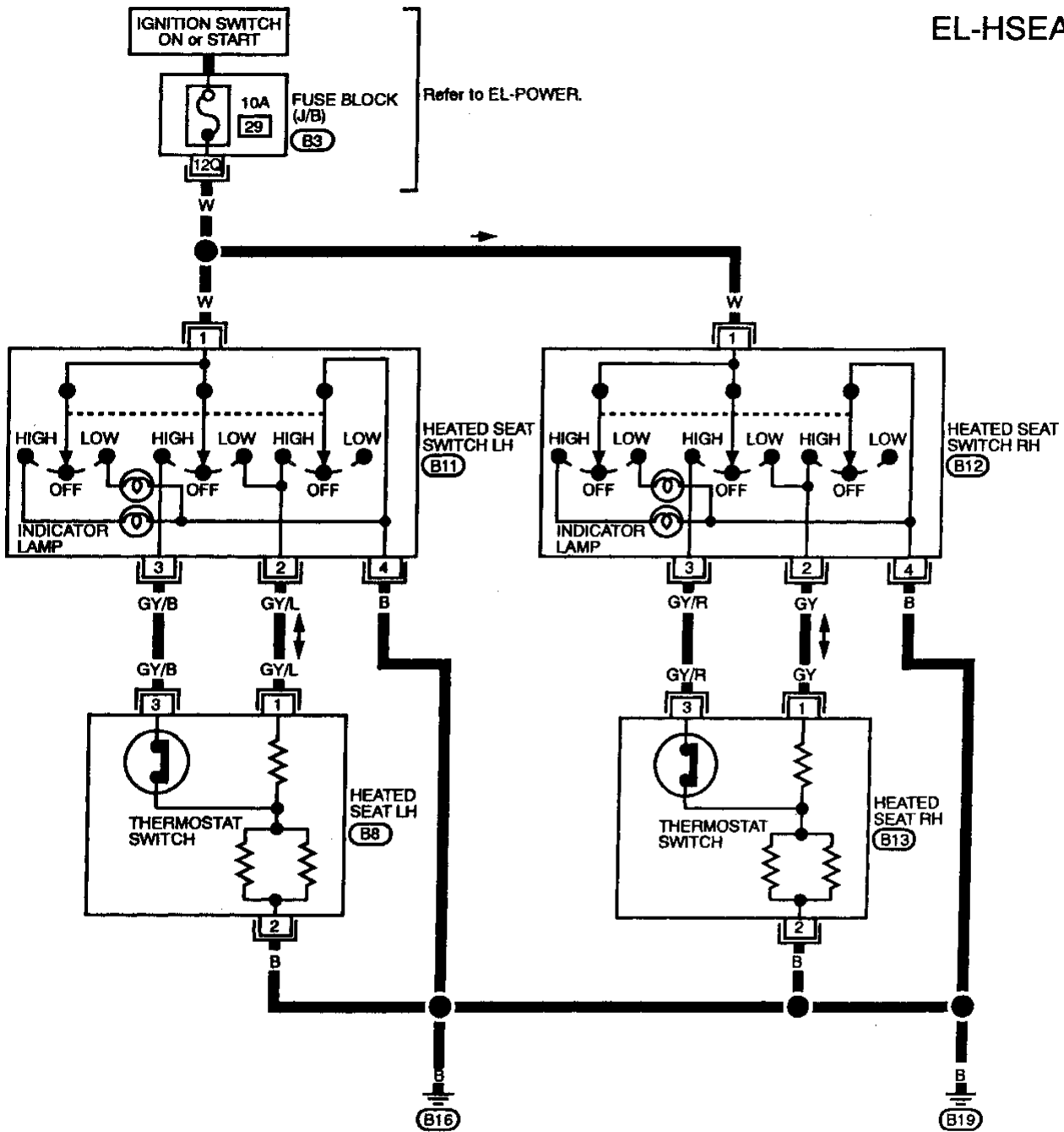


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HEATED SEAT

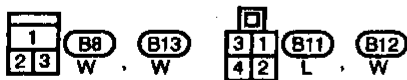
Heated Seat/Wiring Diagram — HSEAT —

EL-HSEAT-01



Refer to EL-POWER.

Refer to last page (Foldout page).

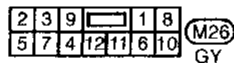
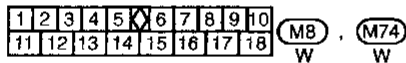
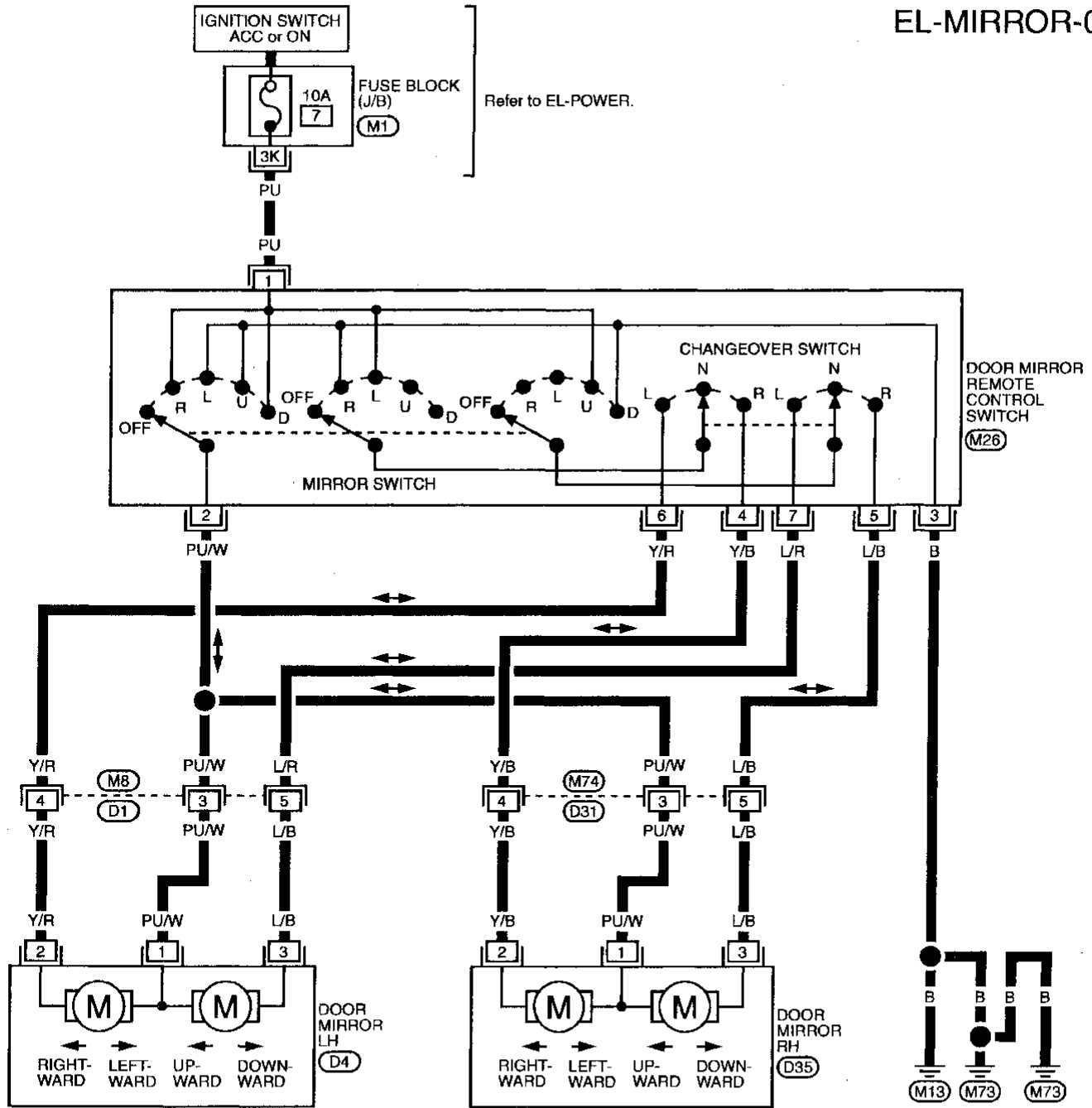


(B3)

POWER DOOR MIRROR

Wiring Diagram — MIRROR —

EL-MIRROR-01



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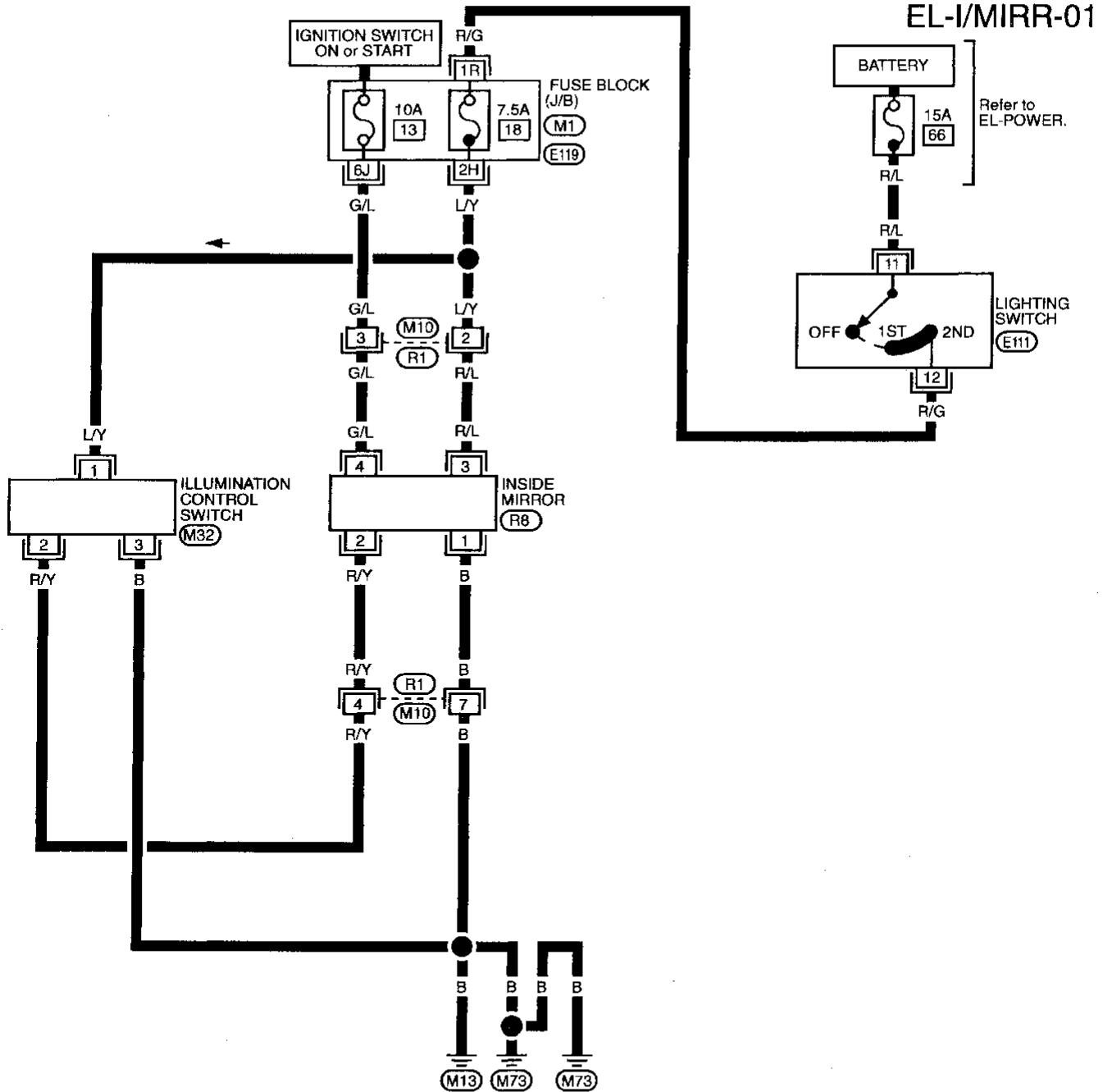
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INSIDE MIRROR

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

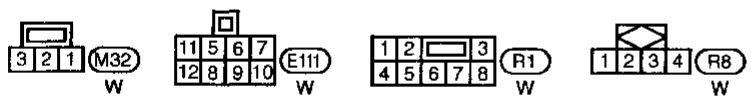


EL-I/MIRR-01

Refer to EL-POWER.

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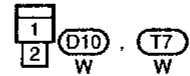
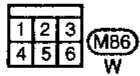
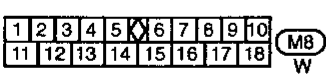
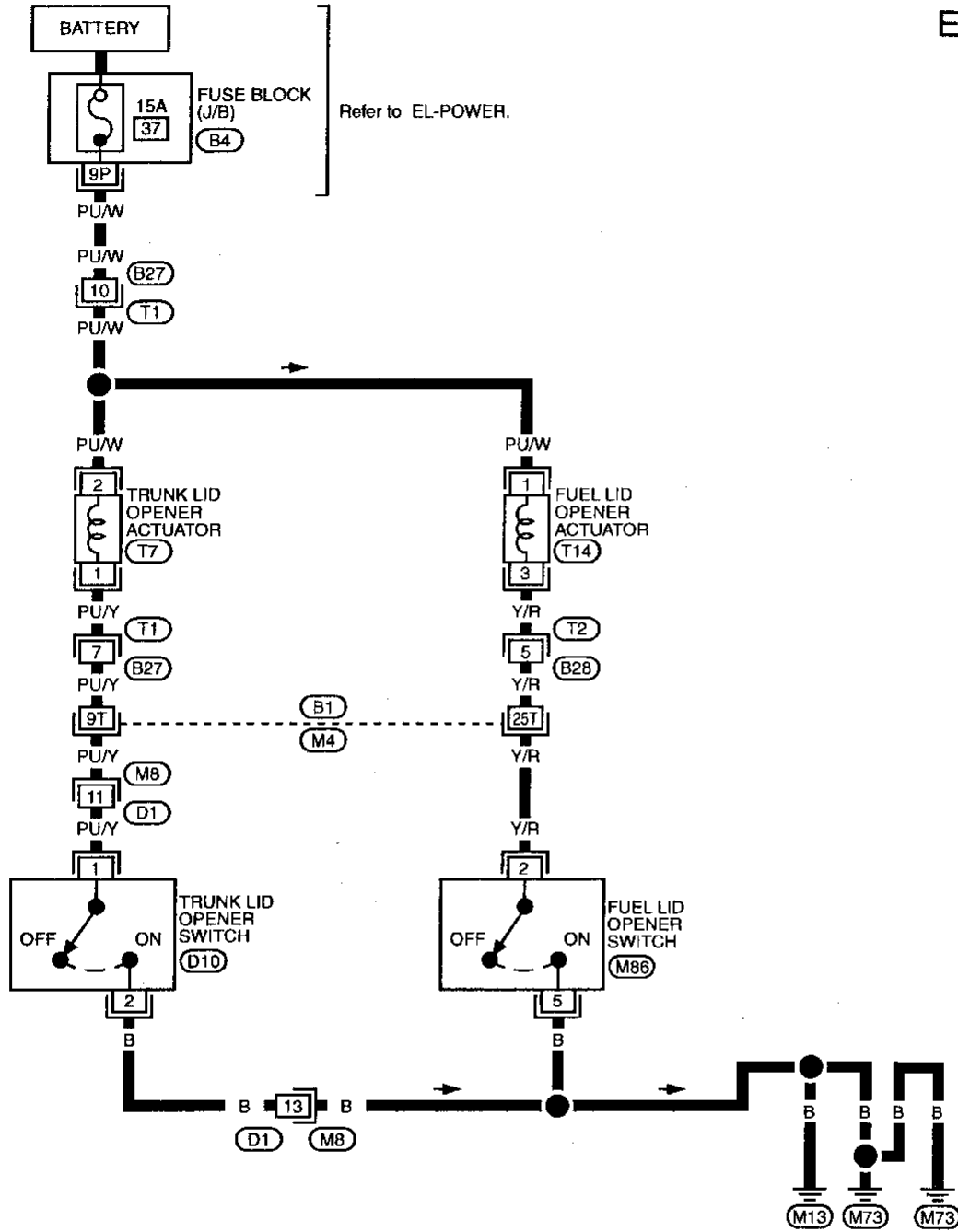
- (M1)
- (E119)



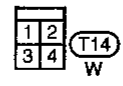
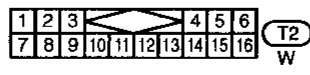
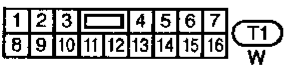
TRUNK LID AND FUEL FILLER LID OPENER

Wiring Diagram — TLID —

EL-TLID-01



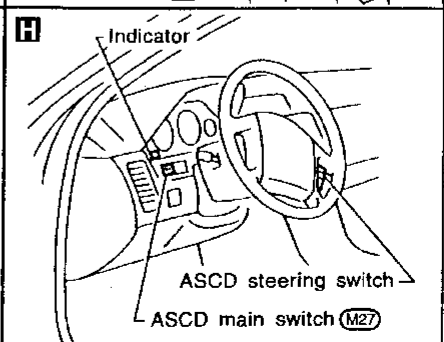
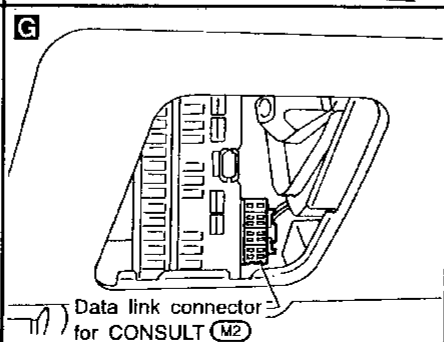
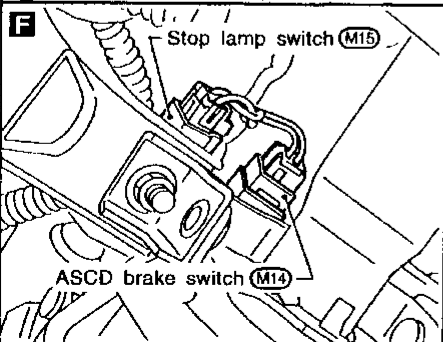
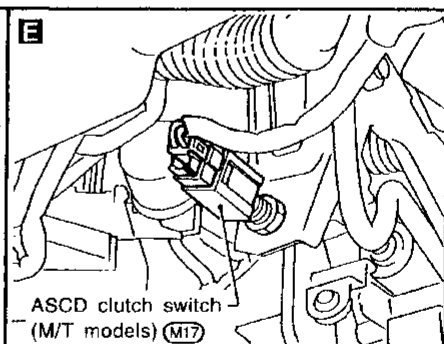
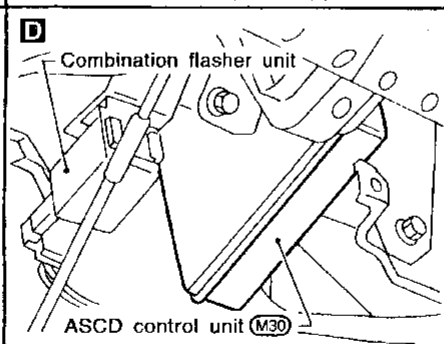
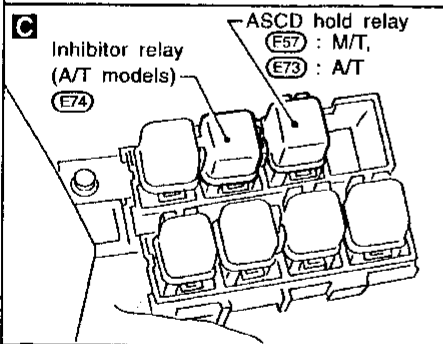
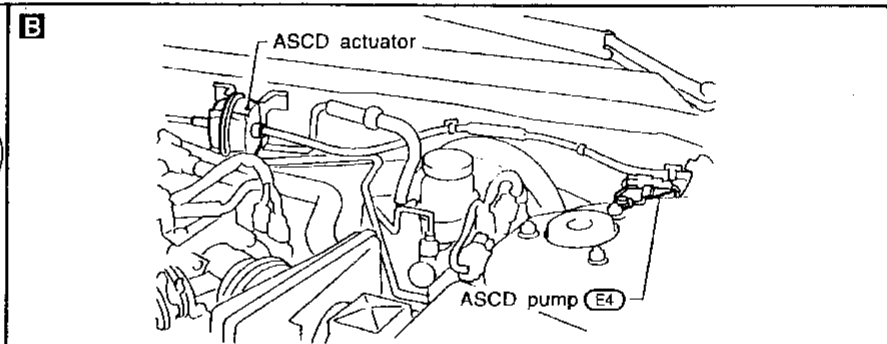
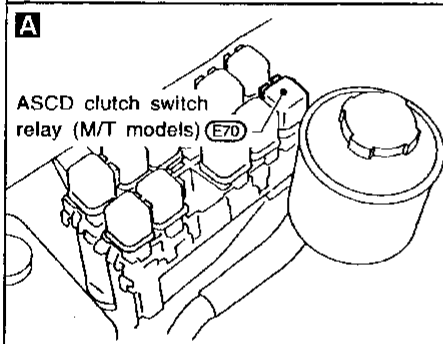
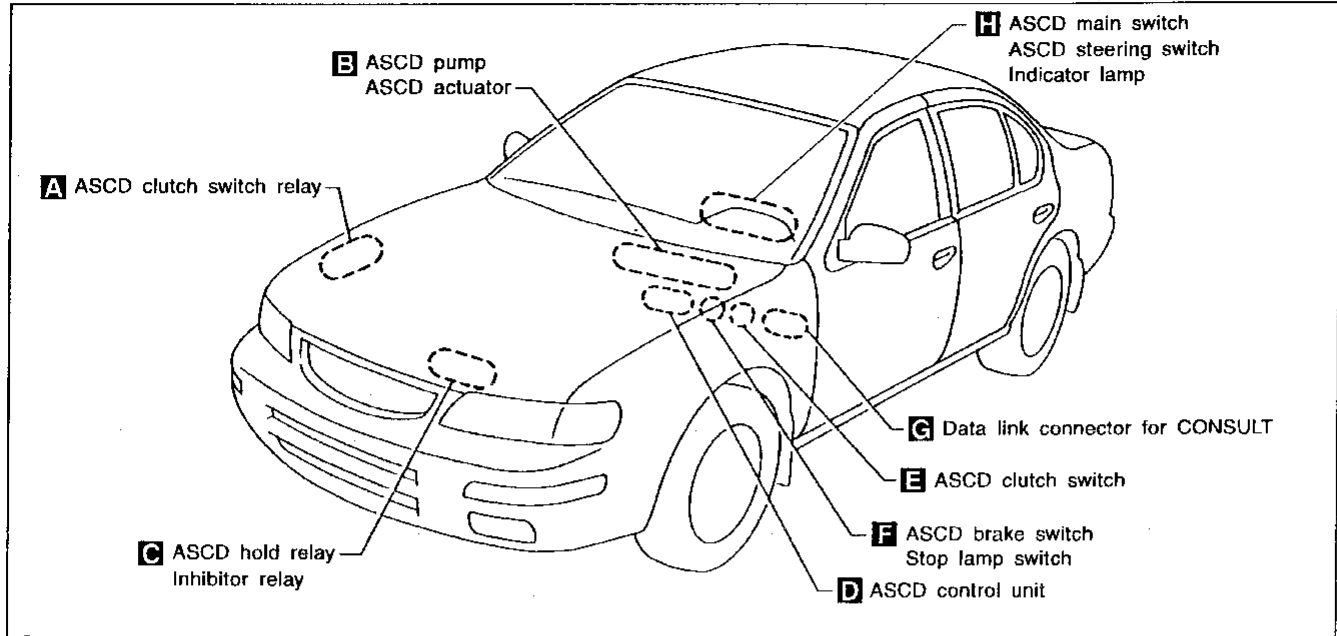
Refer to last page (Foldout page).
 (M4), (B1)
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Component Parts and Harness Connector Location



MEL719G

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description

Refer to Owner's Manual for ASCD operating instructions.

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

- through 7.5A fuse [No. 12], located in the fuse block (J/B)
- to ASCD main switch terminal ①,
- to ASCD hold relay terminal ⑤ and
- ASCD clutch switch relay terminal ① (M/T models) or ASCD brake switch terminal ① (A/T models).

When ASCD main switch is in the ON position, power is supplied

- from terminal ② of the ASCD main switch
- to ASCD control unit terminal ④ and
- from terminal ③ of the ASCD main switch
- to ASCD hold relay terminal ①.

Ground is supplied

- to ASCD hold relay terminal ②
- through body grounds (E5) and (E30).

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

- from terminal ③ of the ASCD hold relay
- to ASCD clutch switch relay terminal ⑥ (M/T models) or
- from terminal ② of ASCD brake switch through ASCD hold relay
- to inhibitor relay terminal ③ (A/T models).

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

Ground is supplied

- to ASCD control unit terminal ③
- through body grounds (M13) and (M73).

Inputs

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

- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- inhibitor relay (A/T models)
- ASCD clutch switch (M/T models) and
- ASCD brake switch.

A vehicle speed input is supplied

- from terminal ⑭ of the combination meter
- to ASCD control unit terminal ⑦

Power is supplied at all times

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

When the brake pedal is depressed, power is supplied

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

Power is supplied at all times

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

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

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

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

- from terminal ③ of the ASCD steering switch
- to ASCD control unit terminal ①.

When the ASCD BRAKE 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 selector lever is placed in P or N (A/T models)
- the clutch pedal is depressed (M/T models) or

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description (Cont'd)

- the brake pedal is depressed.

Outputs

The ASCD actuator controls the throttle drum via the ASCD wire based on inputs from the ASCD control unit.

The ASCD actuator consists of a vacuum motor, an air valve, and a release valve.

Power is supplied

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

Ground is supplied to the vacuum motor

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

Ground is supplied to the air valve

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

Ground is supplied to the release valve

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

When the system is activated, power is supplied

- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ⑧ and
- to A/T control unit terminal ⑳ (A/T models).

Ground is supplied

- to combination meter terminal ⑳
- through body grounds ①⑬ and ①⑦③.

With power and ground supplied, the CRUISE indicator illuminates.

When vehicle speed is approximately 8 km/h (5 MPH) below set speed on A/T models, a signal is sent

- from terminal ⑫ of the ASCD control unit
- to A/T control unit terminal ④.

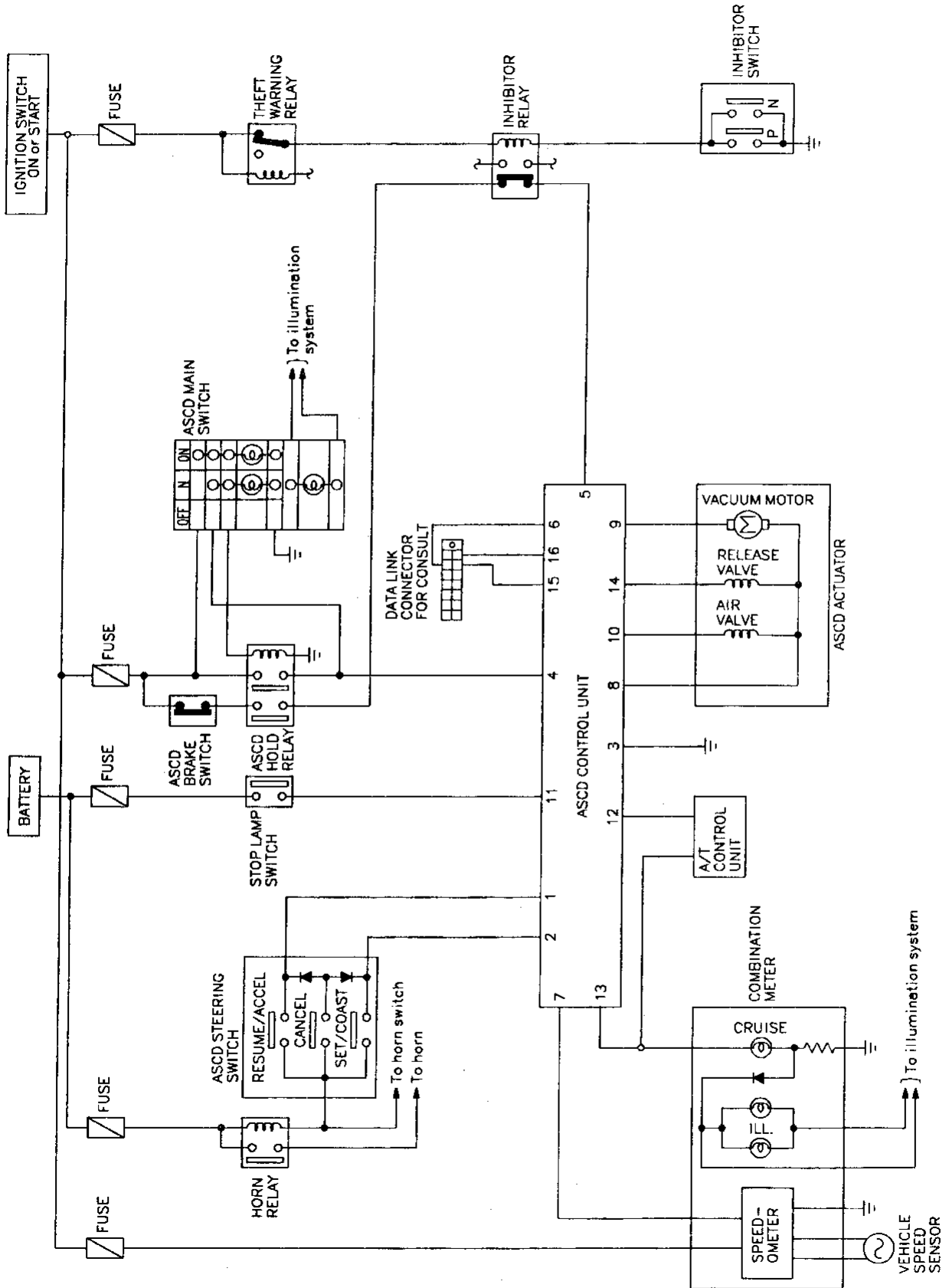
When this occurs, the A/T control unit cancels overdrive.

After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Schematic

A/T MODELS

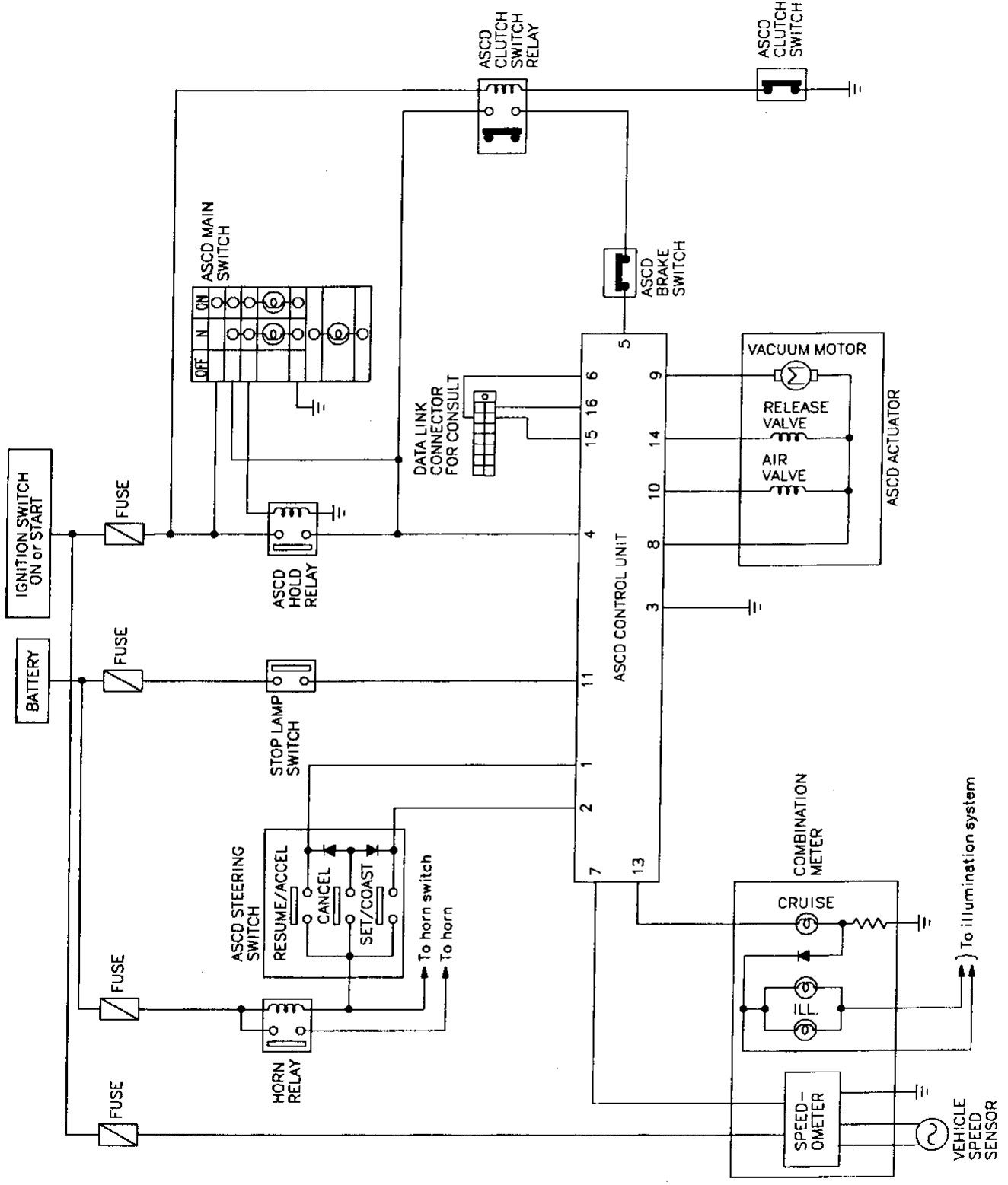


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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Schematic (Cont'd)

M/T MODELS

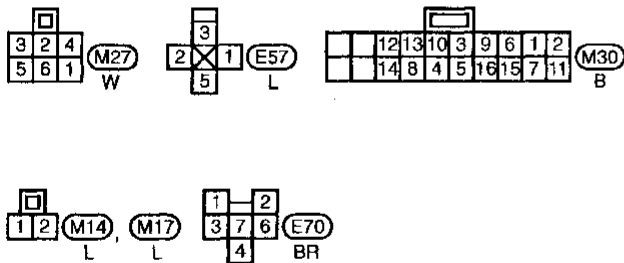
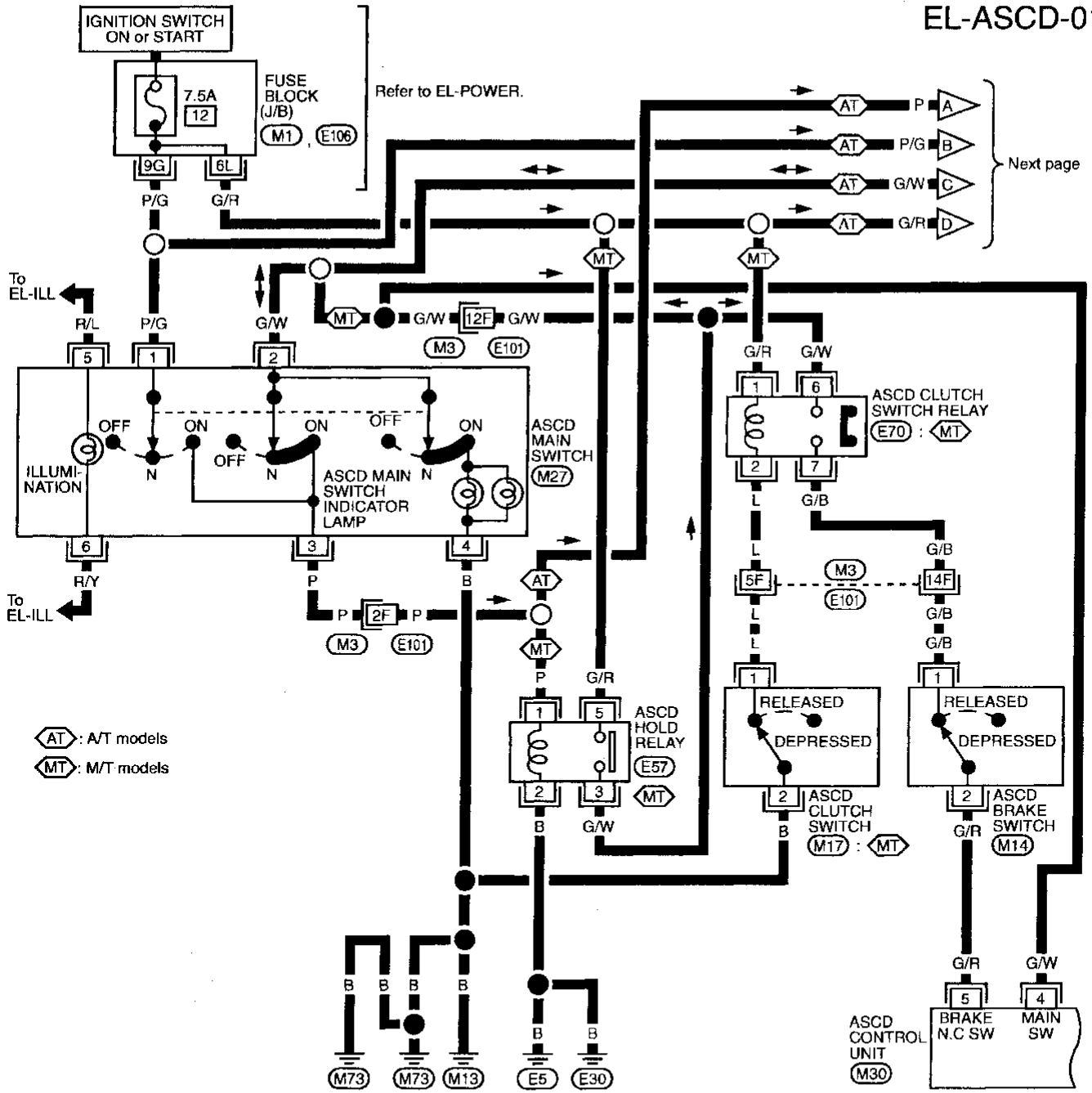


MEL654G

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD —

EL-ASCD-01

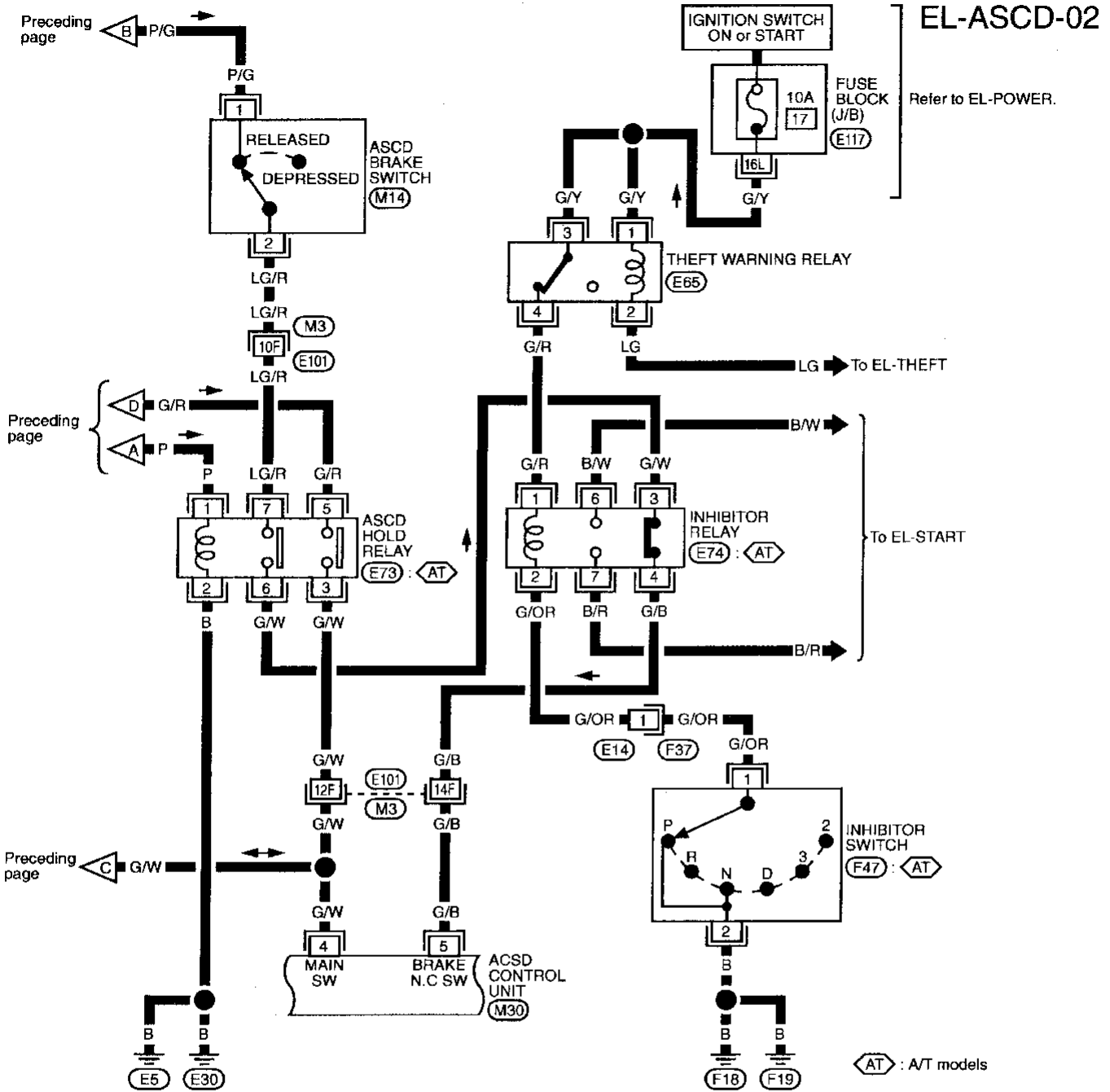


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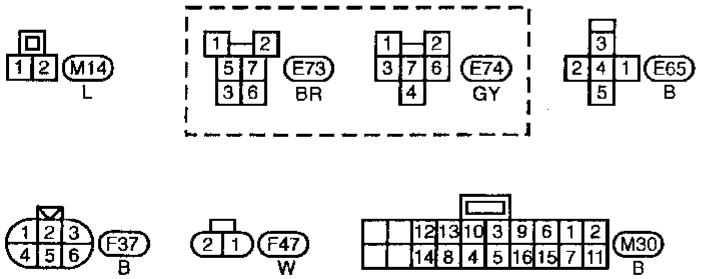
(M3) (E101)
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(E106)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)



⊠ : A/T models



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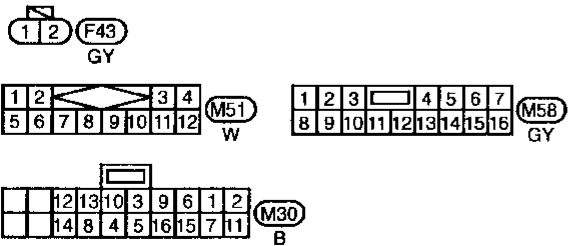
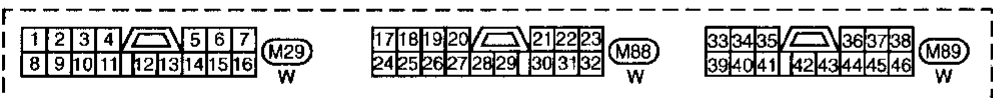
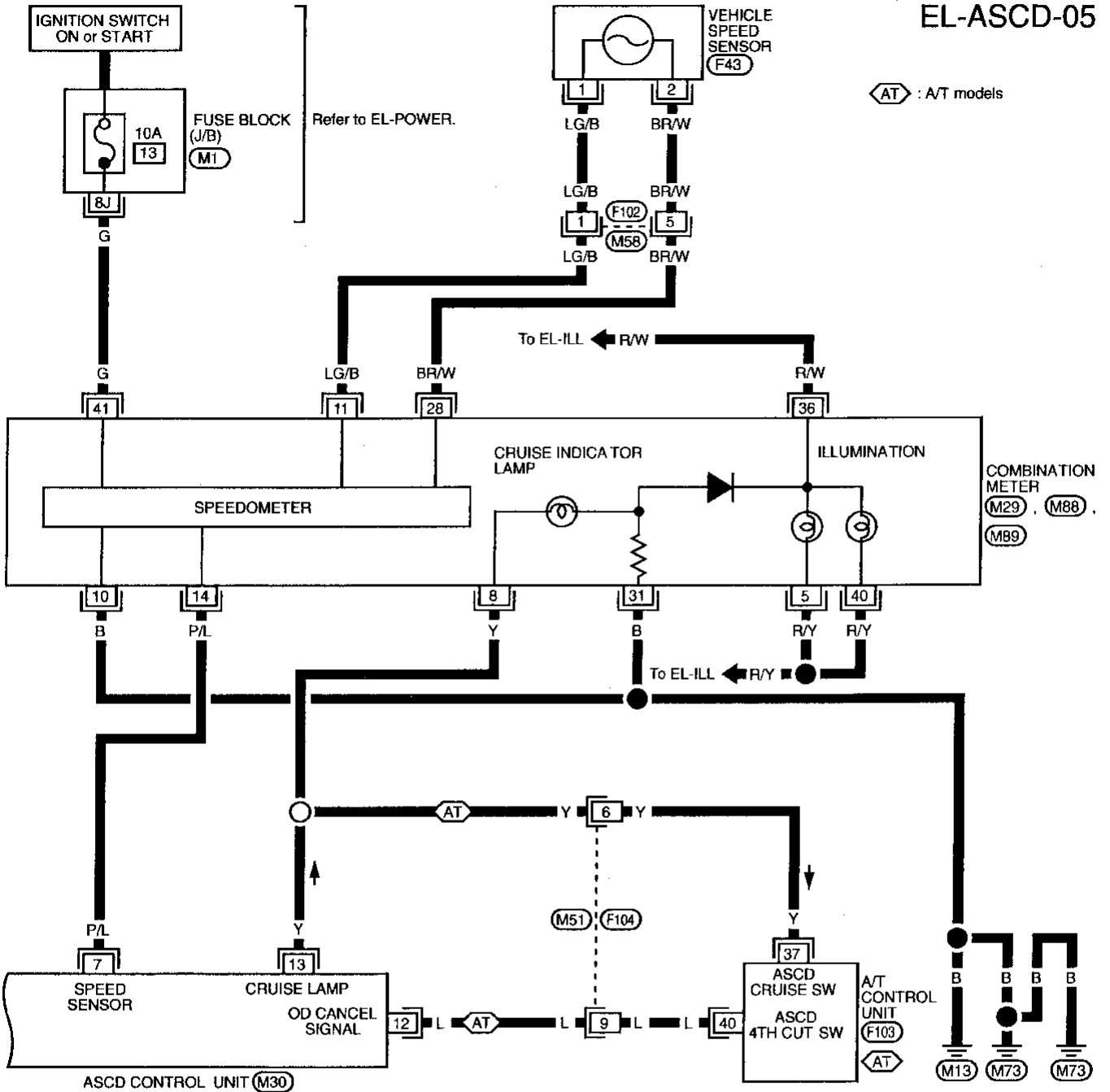
M3, E101
E117

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05

ⓐ : A/T models

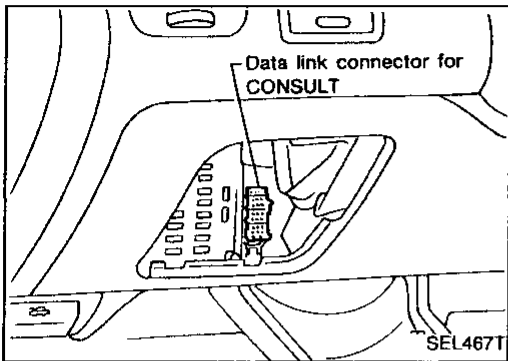


Refer to last page (Foldout page).

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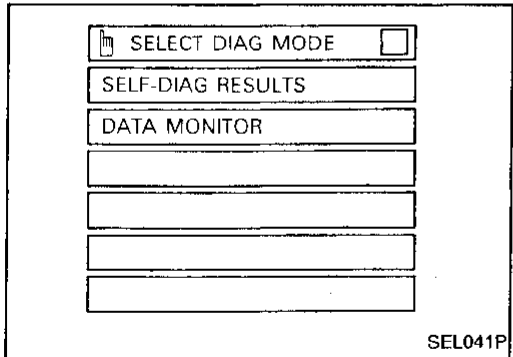
AUTOMATIC SPEED CONTROL DEVICE (ASCD)



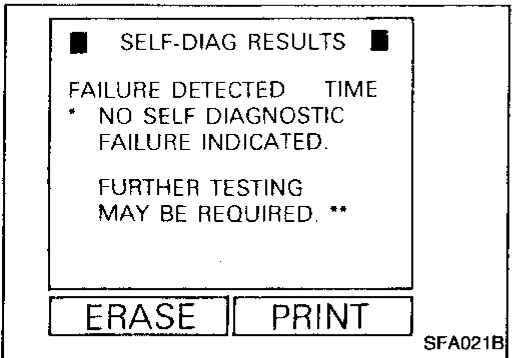
Trouble Diagnoses

CONSULT

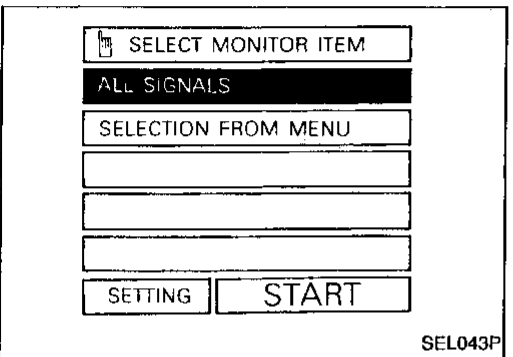
1. Turn off ignition switch.
2. Connect "CONSULT" to Data link connector.



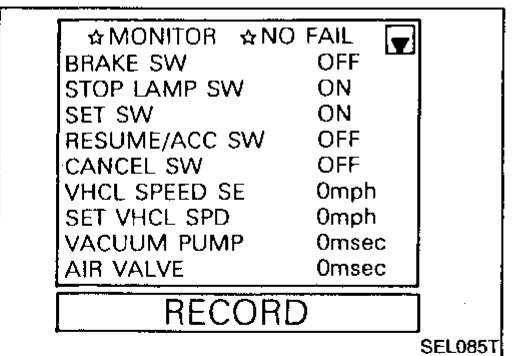
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



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



8. Touch DATA MONITOR.



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

For further information, read the CONSULT Operation Manual.

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 valves is open. (An abnormally high voltage is entered.) 	Diagnostic procedure 7 (EL-168)
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-168)
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-167)
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-168)
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-167)
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-165)

Data monitor

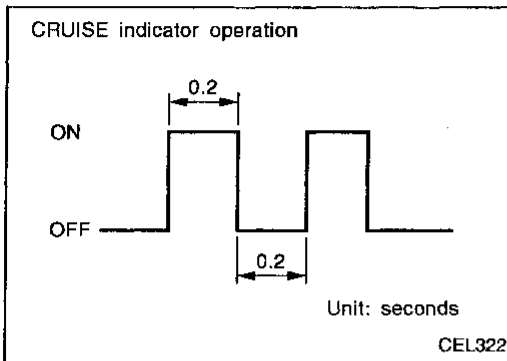
Monitored item	Description
BRAKE SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the brake switch circuit.
STOP LAMP SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	<ul style="list-style-type: none"> Indicates [ON/OFF] condition 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.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

FAIL-SAFE SYSTEM

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



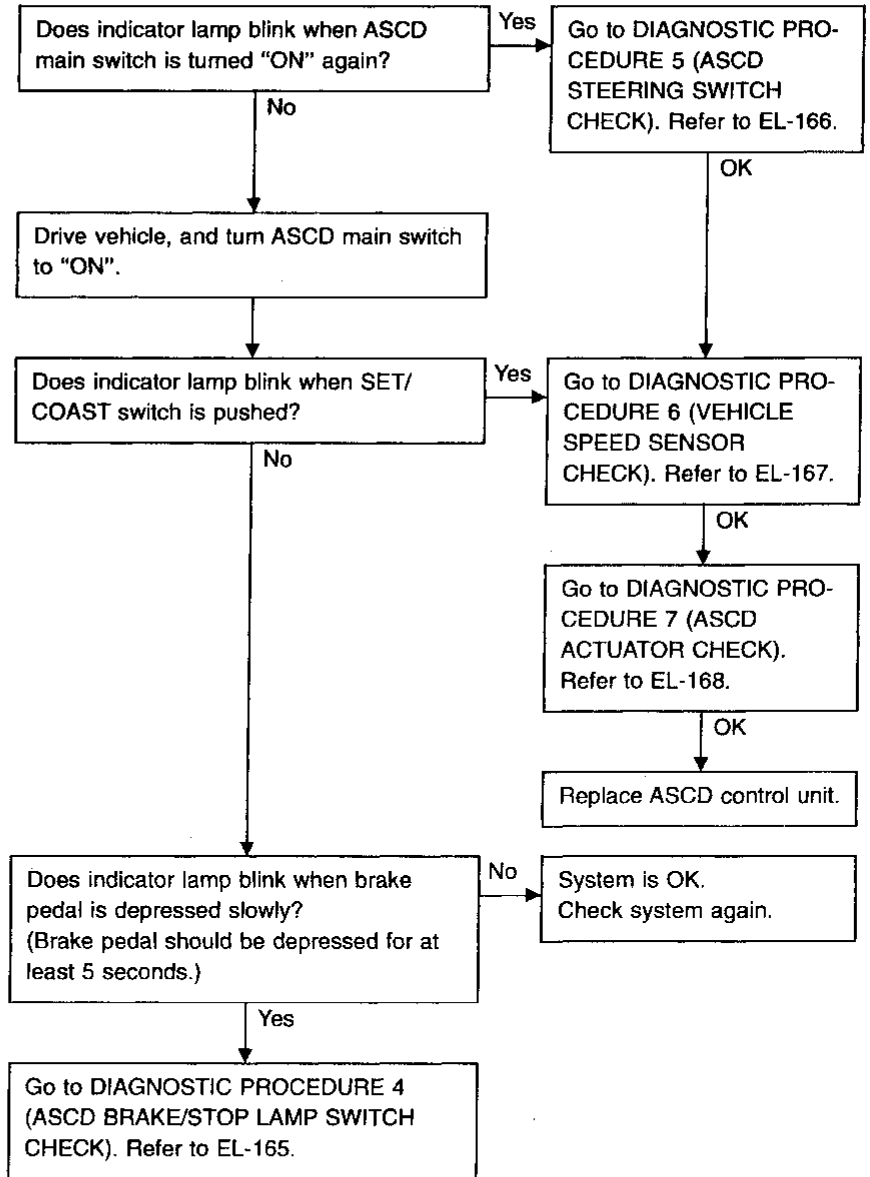
Malfunction detection conditions

Detection conditions	ASCD operation during malfunction detection
<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.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

Fail-safe system check



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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	Diagnostic procedure									
REFERENCE PAGE	EL-158	EL-161	EL-163	EL-163	EL-164	EL-165	EL-166	EL-167	EL-168	EL-169
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.

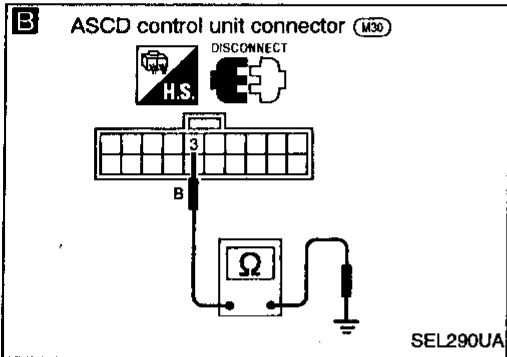
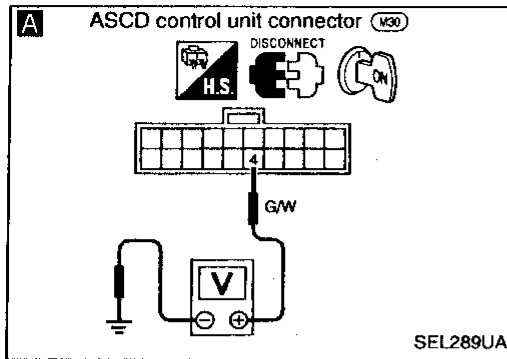
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory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

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).

OK →

A

CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

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

Refer to wiring diagram in EL-153 or 154.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CIRCUIT CHECK). Refer to EL-164.

OK →

B

CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT.

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

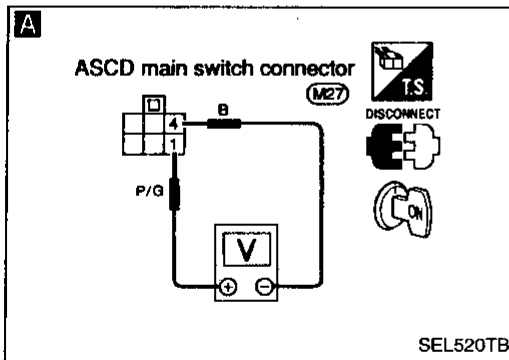
Refer to wiring diagram in EL-156.

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-153.

NG → Check the following.

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

OK →

Check ASCD main switch. Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-170).

NG → Replace ASCD main switch.

OK →

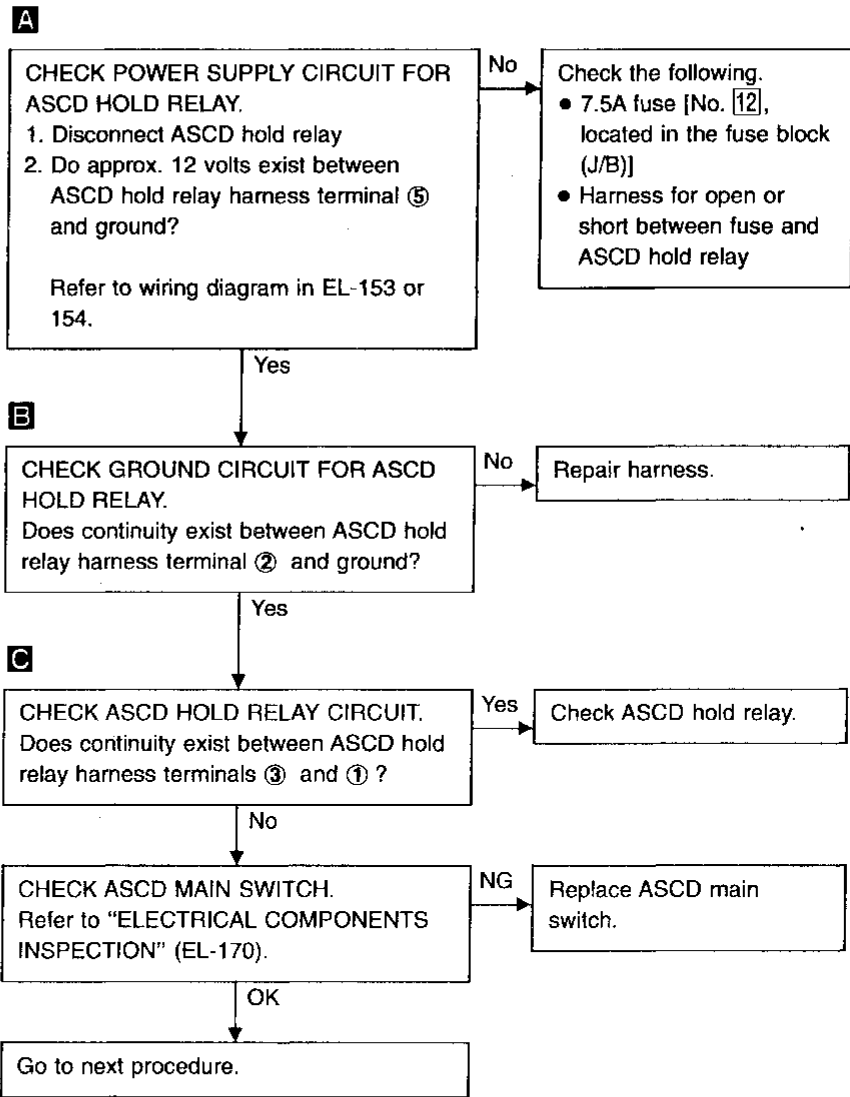
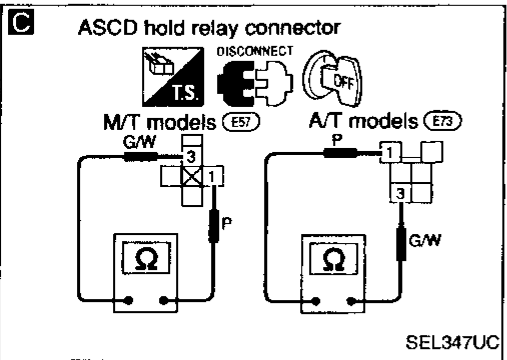
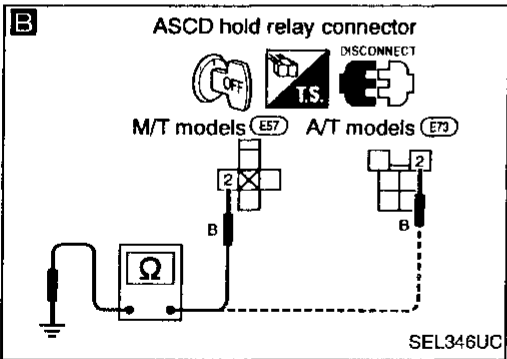
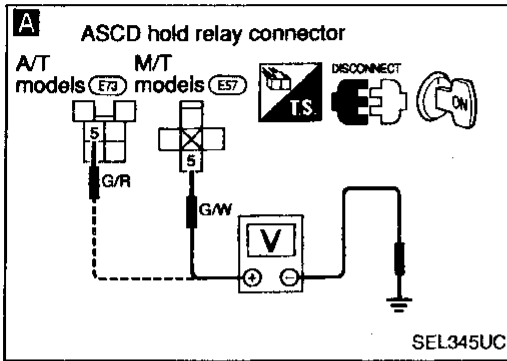
Go to next procedure.

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)

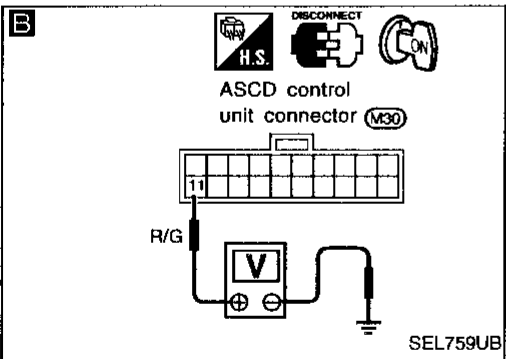
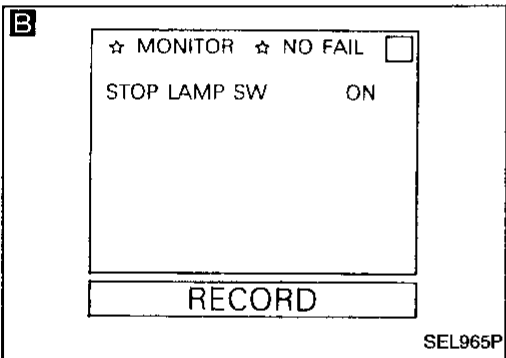
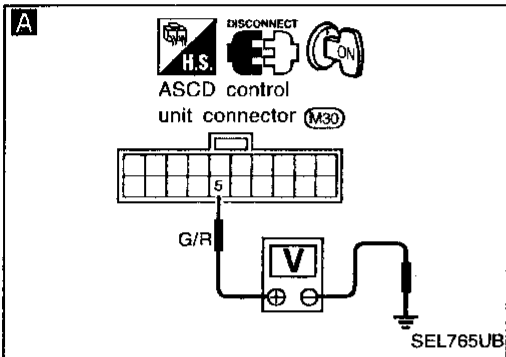
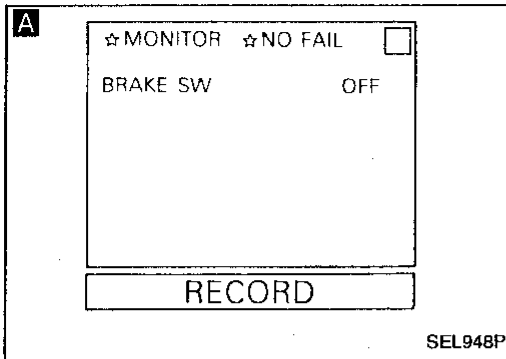


AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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 selector 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 selector 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. Check voltage between control unit connector terminal ⑤ and ground.

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

Approx. 0V

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

Battery voltage should exist.

Refer to wiring diagram in EL-153 or 154.

CHECK THE FOLLOWING.

- ASCD brake switch Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-170).
- ASCD clutch switch (M/T model) Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-170).
- Inhibitor switch (A/T model) Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-170).
- ASCD hold relay
- 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 terminal ⑪ and ground.

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

Refer to wiring diagram in EL-155.

CHECK THE FOLLOWING.

- 15A fuse [No. ⑩, located in the fuse block (J/B)]
- Harness for open or short between ASCD control unit and stop lamp switch
- Stop lamp switch Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-170).

OK

ASCD brake/stop lamp switch is OK.

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(ASCD STEERING SWITCH CHECK)

A

☆ MONITOR ☆ NO FAIL

SET SW ON

RESUME/ACC ON

CANCEL SW ON

RECORD

SEL293U

A

CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT.

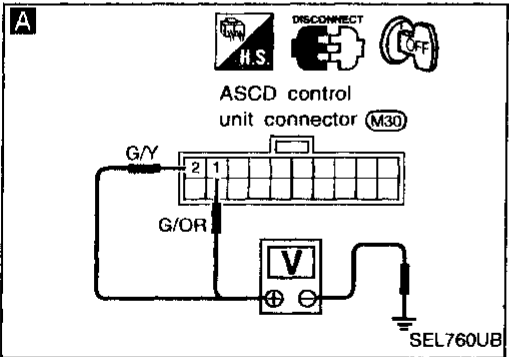
See "SET SW", "RESUME/ACC SW" and "CANCEL SW" in "Data monitor" mode.

SET SW, RESUME/ACC SW and CANCEL SW

When switch is pressed: ON

When switch is released: OFF

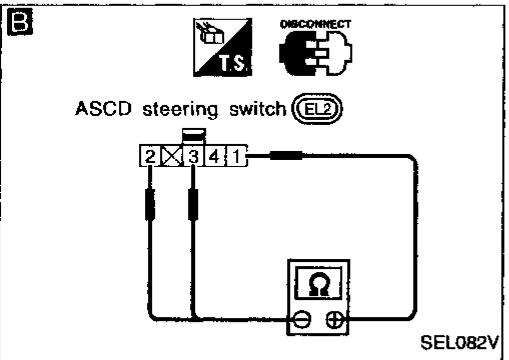
OK → ASCD steering switch is OK.



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

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

Refer to wiring diagram in EL-155.



NG

CHECK POWER SUPPLY FOR ASCD STEERING SWITCH.

Does horn work?

NG → Check the following.

- 10A fuse (No. 64, located in the relay box)
- Horn relay
- Harness for open or short between horn relay and fuse

OK

B

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

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

NG → Replace ASCD steering switch.

OK

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


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.

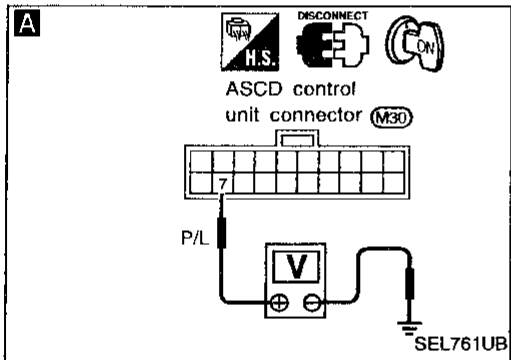
OR

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

Refer to wiring diagram in EL-157.

OK → Vehicle speed sensor is OK.

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Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-87.

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

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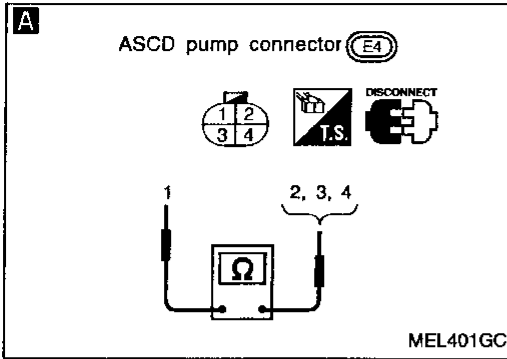
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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-156.

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.

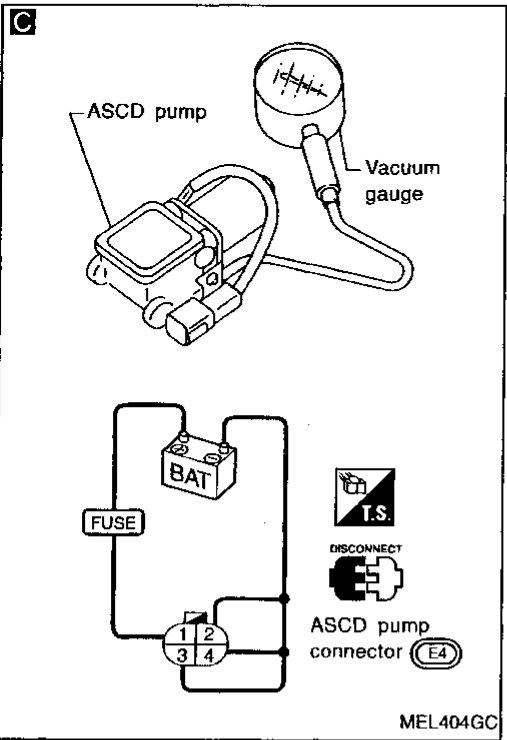
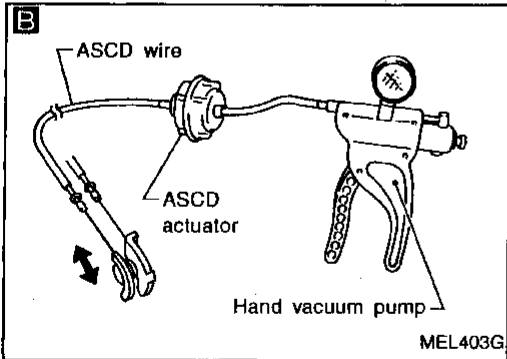
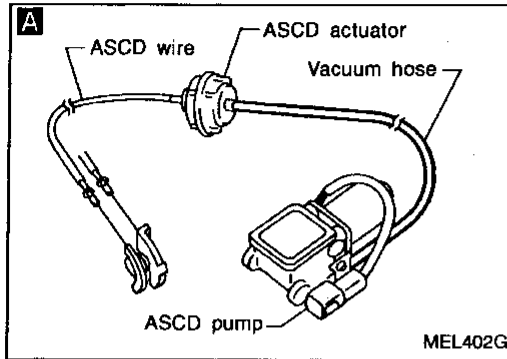
CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑪	③

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-171).

OK

B
CHECK ASCD ACTUATOR.
 1. Disconnect vacuum hose from ASCD actuator.
 2. Apply -40 kPa (-0.41 kg/cm², -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/cm², 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.

NG → Replace ASCD pump.

	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/cm², -5.1 psi) should be generated.

OK

INSPECTION END

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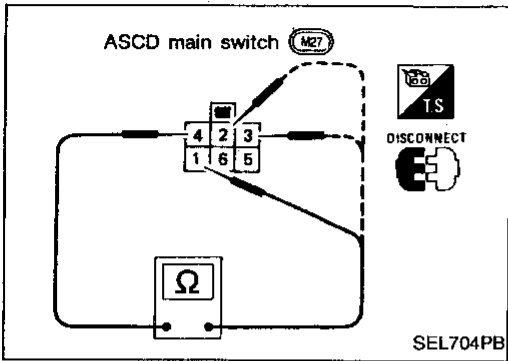
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

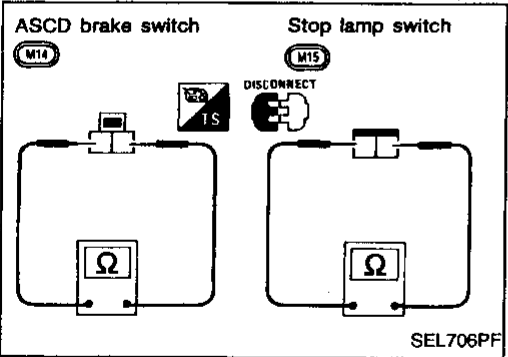
ASCD main switch

Check continuity between terminals by pushing switch to each position.



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

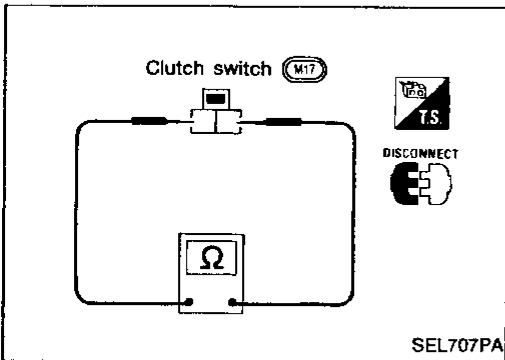
ASCD brake switch and stop lamp switch



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

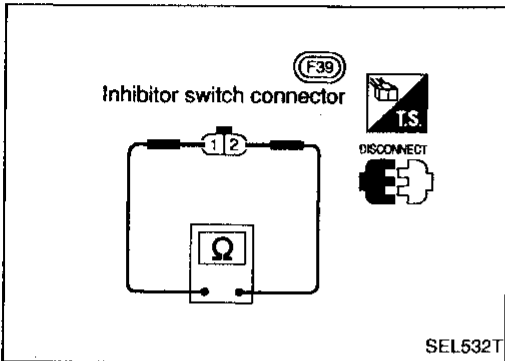
Check each switch after adjusting brake pedal — refer to BR section.

Clutch switch (For M/T models)



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

Inhibitor switch (For A/T models)

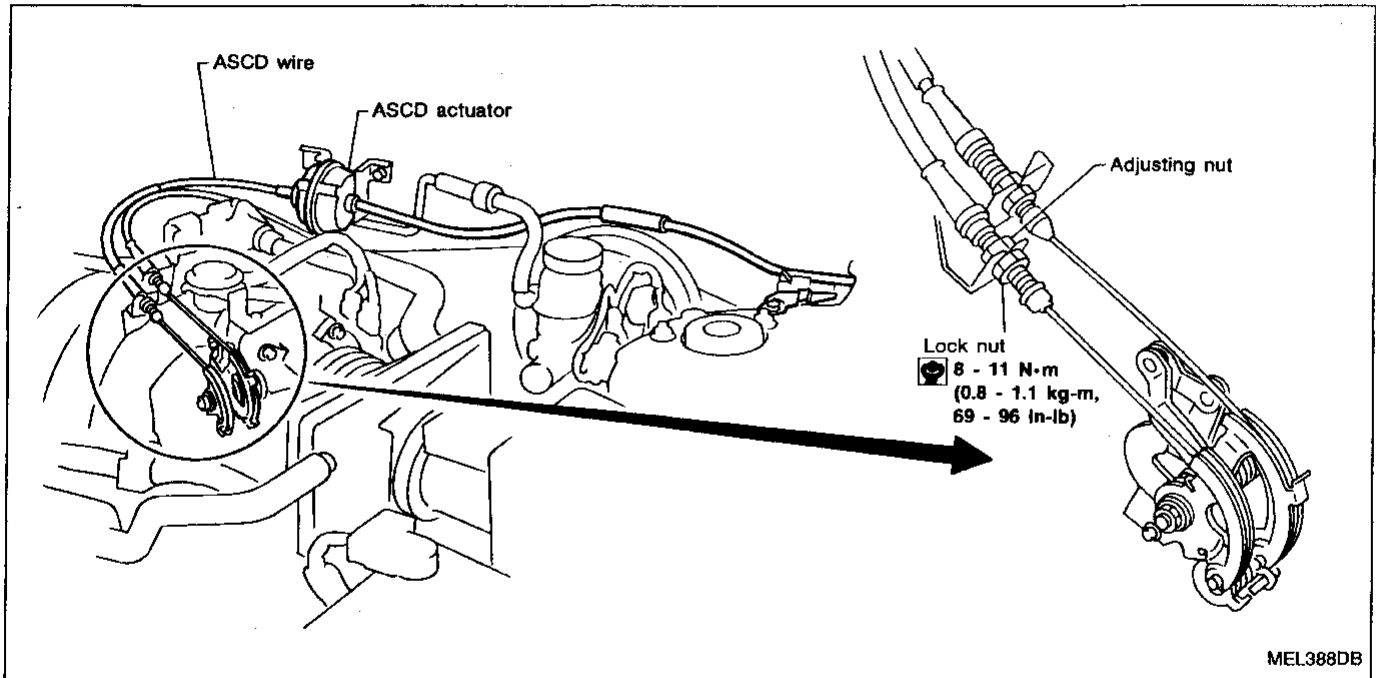


Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is not "N" or "P"	No

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 until throttle drum just starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

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Overall Description

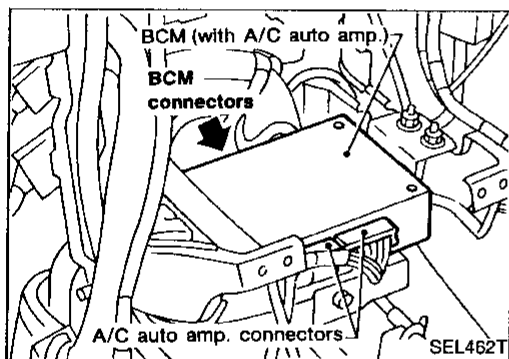
OUTLINE

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

BCM (Body Control Module)

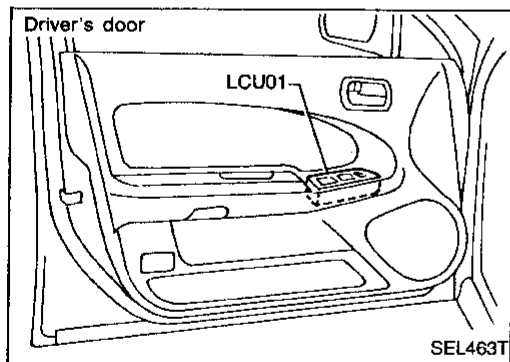
The BCM, which is a master unit of the IVMS (LAN), consists of microprocessor, memory and communication LSI sections and has communication and control functions. It receives data signals from the LCUs and sends electrical load data signals to them.

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



The auto amp. for auto air conditioner, if equipped, is built into the BCM. The BCM connectors are located on the front side of the BCM. Do not be confused with the auto amp. connectors on the rear side of the BCM.

NOTE: The auto amp. function has nothing to do with the IVMS.



LCU (Local Control Unit)

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

IVMS (LAN) — SYSTEM DESCRIPTION

Overall Description (Cont'd)

CONTROLLED SYSTEMS

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

- Power window
- Power door lock
- Multi-remote control system
- Theft warning system
- Step lamps
- Illumination (Rear power window switch illumination)
- Interior lamp and ignition keyhole illumination (Refer to "INTERIOR LAMP CONTROL".)
- Ignition key warning (Refer to "WARNING BUZZER".)
- Light warning (Refer to "WARNING BUZZER".)
- Seat belt warning (Refer to "WARNING BUZZER".)
- Wiper amp. (Refer to "WIPER AND WASHER".)
- Rear window defogger timer (Refer to "REAR WINDOW DEFOGGER".)
- Trouble-diagnosing system
 - with CONSULT
 - ON-BOARD

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

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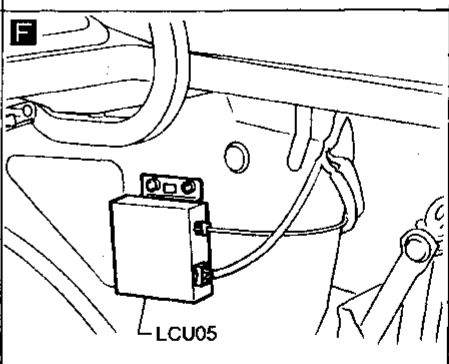
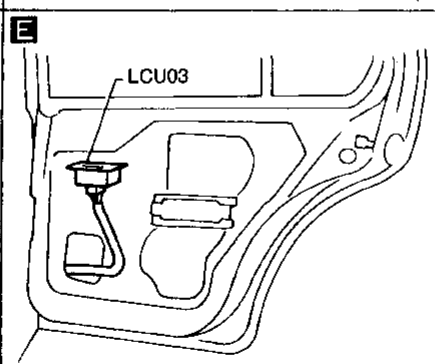
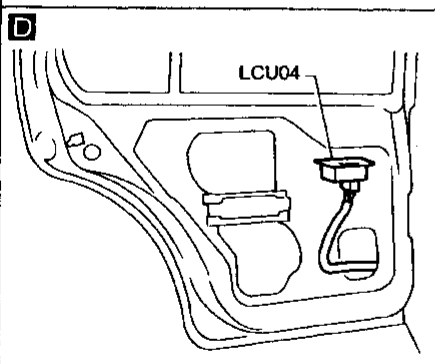
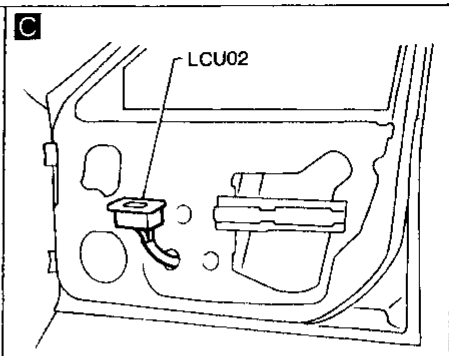
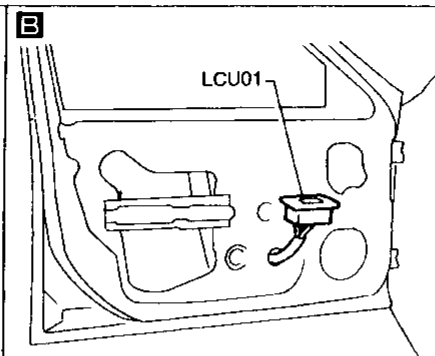
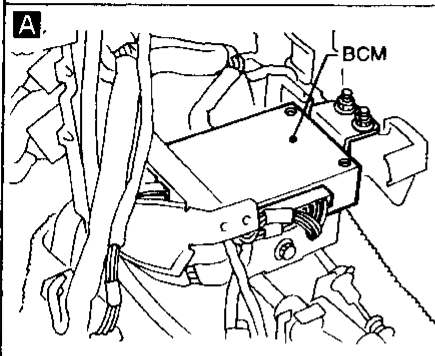
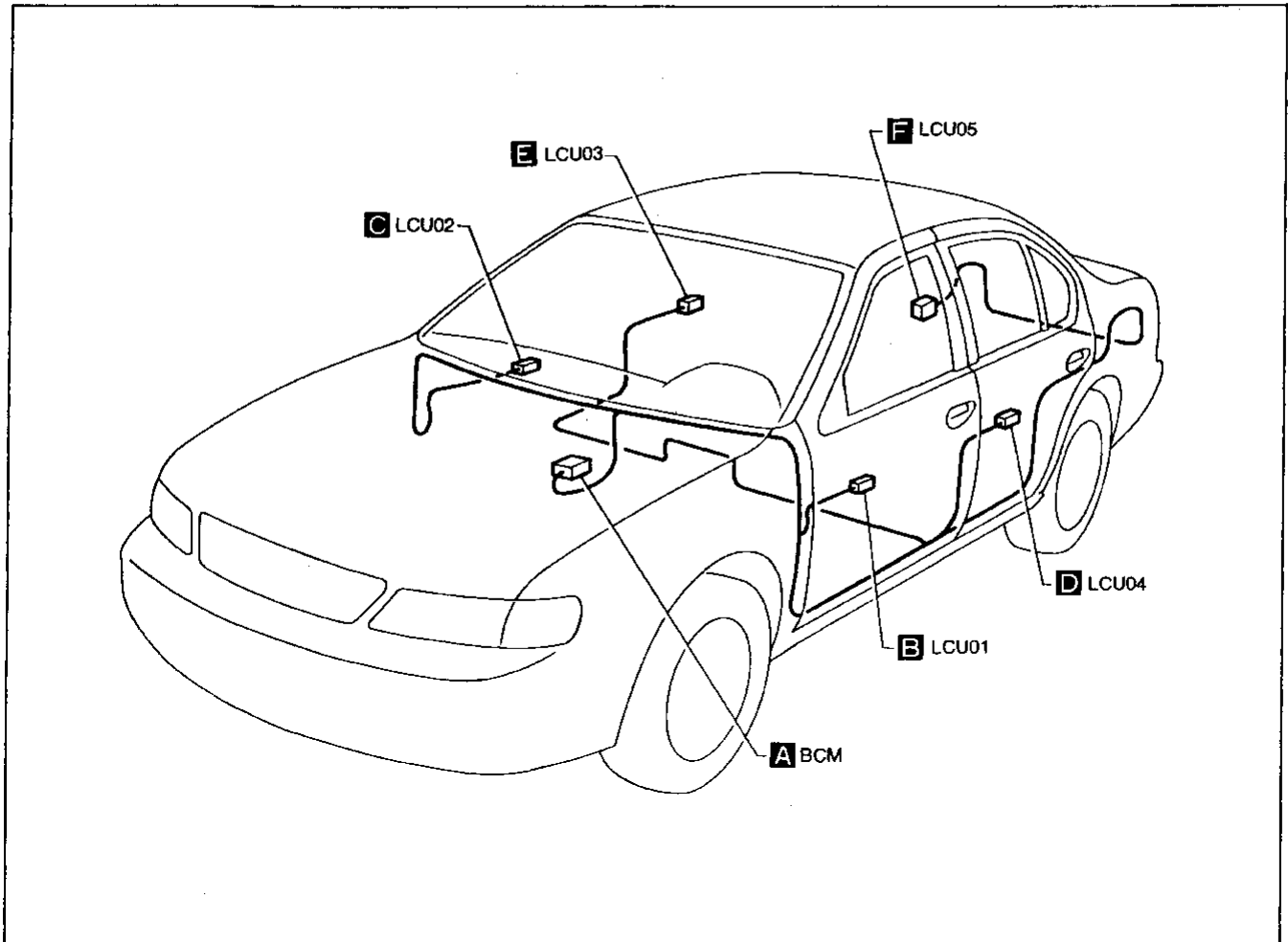
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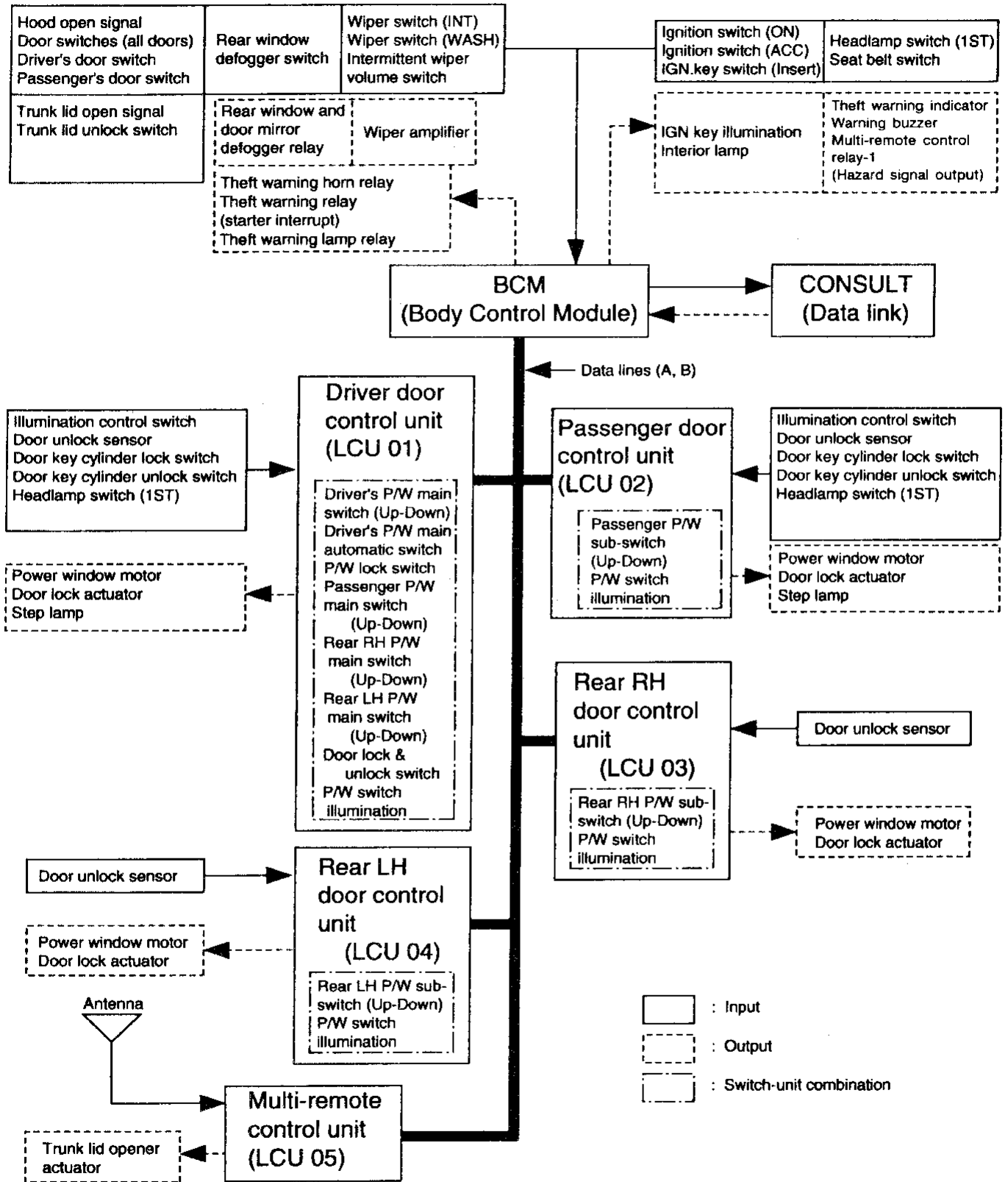
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Component Parts Location



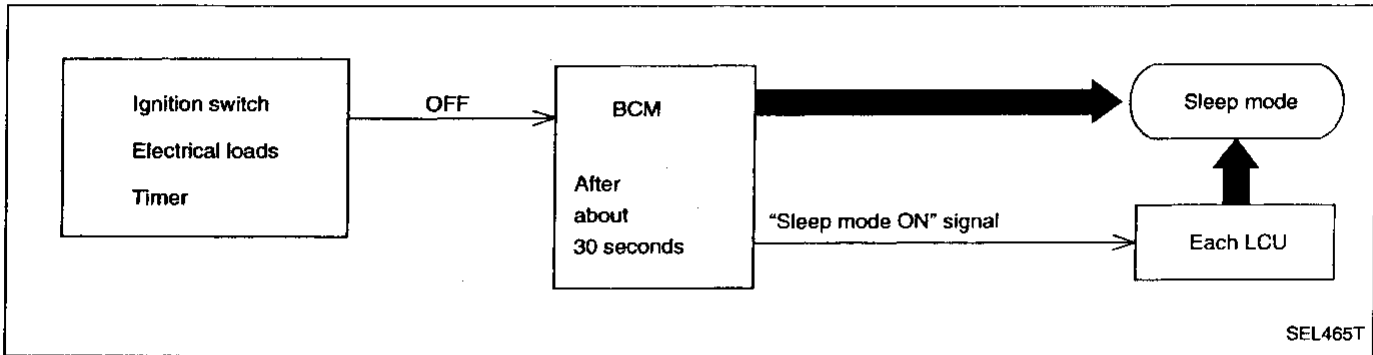
System Diagram



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Sleep/Wake-up Control

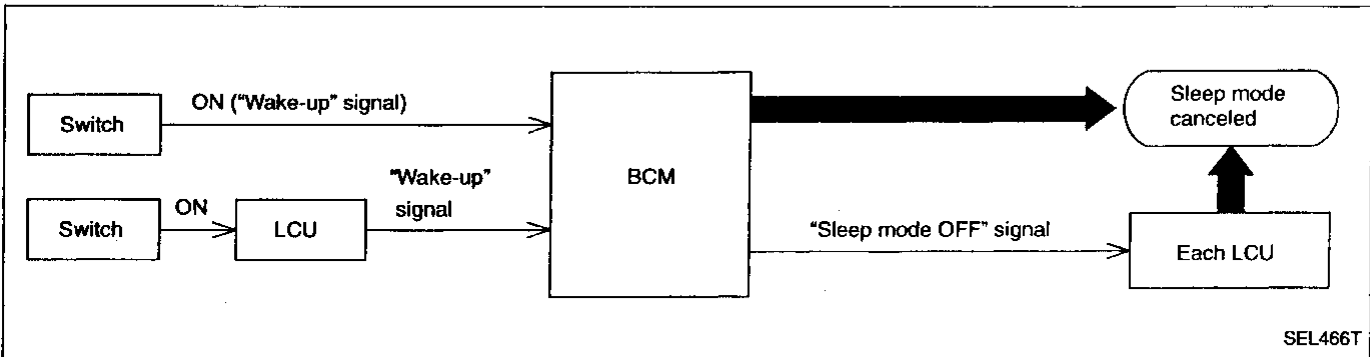
SLEEP CONTROL



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

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

WAKE-UP CONTROL



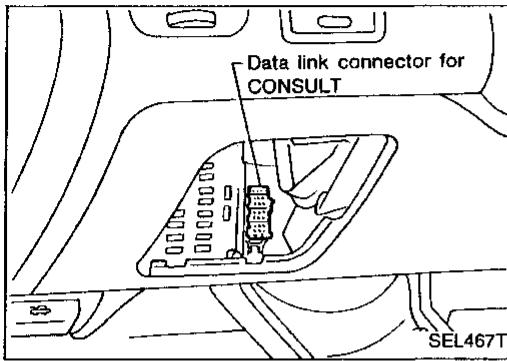
As shown above, when the BCM detects a “wake-up” signal, it wakes up the whole system and starts communicating again. The “sleep” mode of all LCUs is now canceled, and the BCM returns to the normal control mode. When any one of the following switches are turned ON, the “sleep” mode is canceled:

- Ignition key switch (Insert)*
- Ignition switch “ACC” or “ON”
- Lighting switch (1st)
- Door switches (all doors)
- Trunk lid unlock switch
- Trunk room lamp switch
- Hood switch
- Multi-remote controller
- Door unlock sensors (all doors)
- All switches combined or connected with LCU

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

Fail-safe System

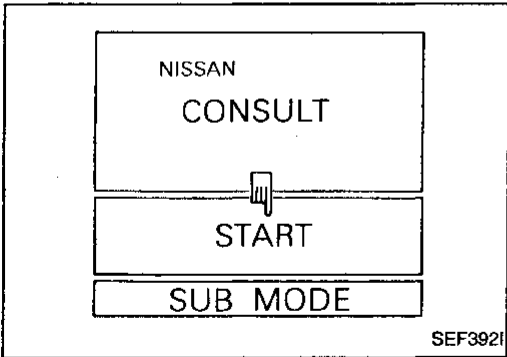
- Fail-safe system operates when the signal from LCU is judged to be malfunctioning by BCM. If LCU sends no signal or an abnormal signal to BCM a certain number of times in succession, the IVMS is set in a fail-safe condition. In the fail-safe condition, no electrical loads on the questionable LCU will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



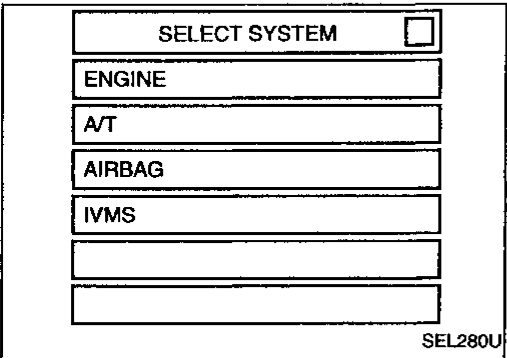
CONSULT

CONSULT INSPECTION PROCEDURE

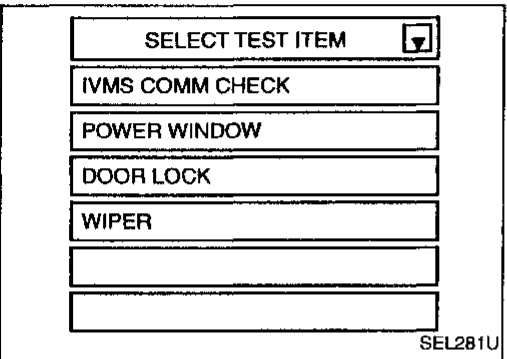
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



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



5. Touch "IVMS".



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

For further information, read the CONSULT Operation Manual.

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IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM

CONSULT (Cont'd)

DIAGNOSTIC ITEMS APPLICATION

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

X: Applicable

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

DIAGNOSTIC ITEMS DESCRIPTION

MODE	Description
IVMS COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the communication interface between the body control module and the local control units, accomplished by transmitting a signal from the body control module to the local control units.
WAKE-UP DIAGNOSIS	Diagnosis of the "wake-up" function of local control units by having a technician input the switch data into the local control unit that is in the temporary "sleep" condition.
SELF-DIAGNOSTIC RESULTS	—
DATA MONITOR	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
ACTIVE TEST	Turns on/off actuators, relay and lamps according to the commands transmitted by the CONSULT unit.

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

CONSULT (Cont'd)

IVMS COMMUNICATION DIAGNOSIS

A

SELECT DIAG ITEM

IVMS COMM DIAGNOSIS

WAKE-UP DIAGNOSIS

SEL282U

B

■ IVMS COMM DIAGNOSIS ■

TOUCH **START**.

DIAGNOSE IVMS COMM BETWEEN BCM AND ALL LCUs.

START

SEL888U

C

■ IVMS COMM DIAGNOSIS ■

FAILURE DETECTED

**** NO FAILURE ****

ERASE **PRINT**

SEL889U

D

■ IVMS COMM DIAGNOSIS ■

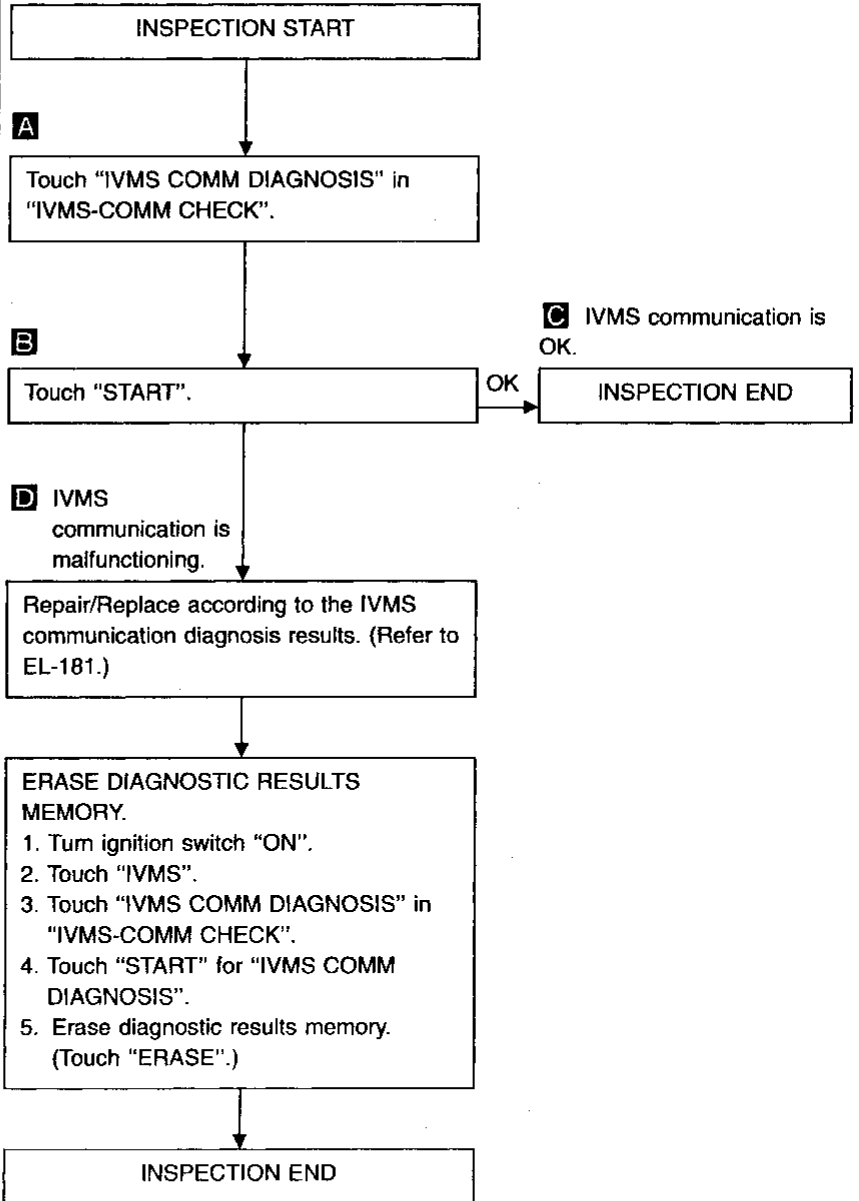
FAILURE DETECTED

POWER WINDOW C/U-RR/LH

[NO RESPONSE]

ERASE **PRINT**

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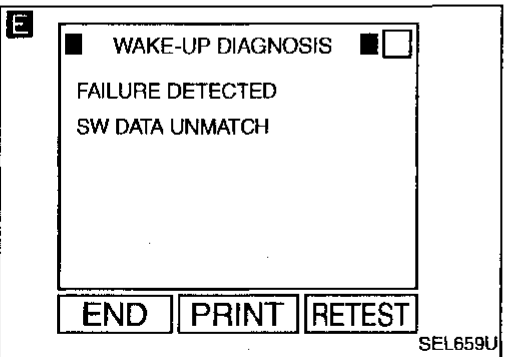
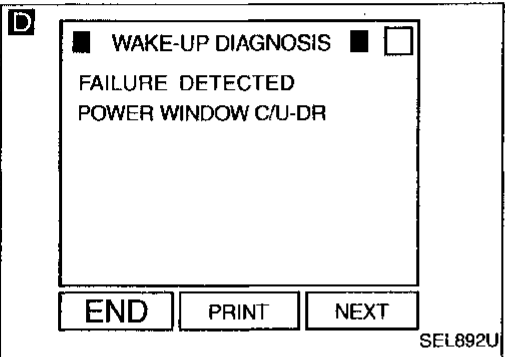
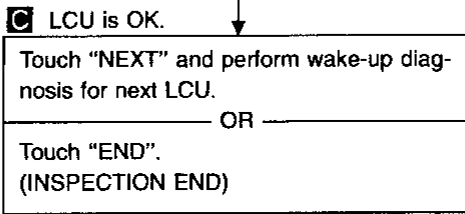
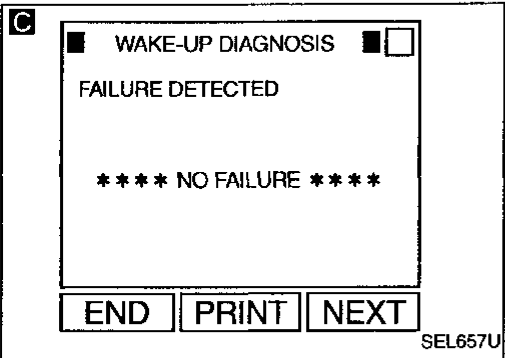
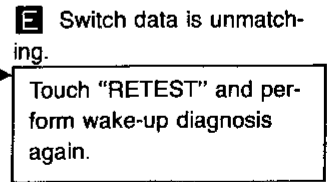
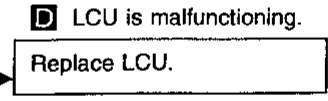
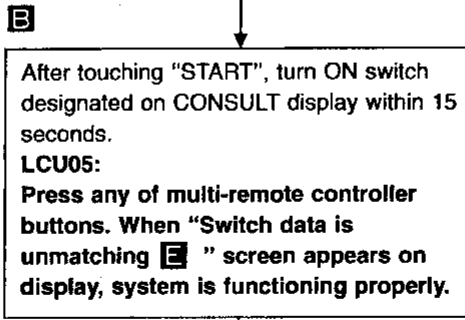
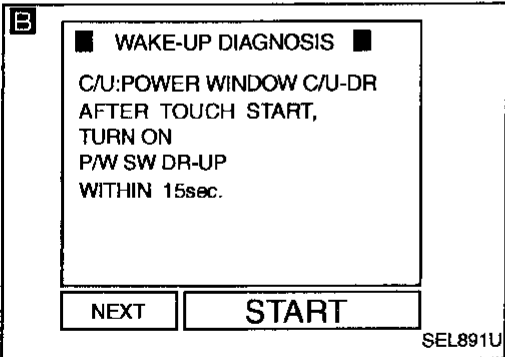
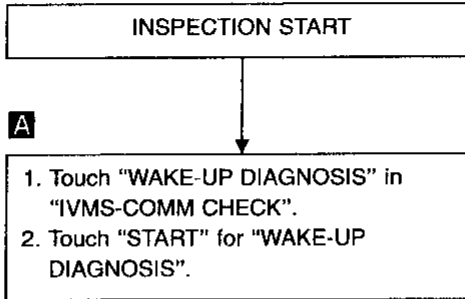
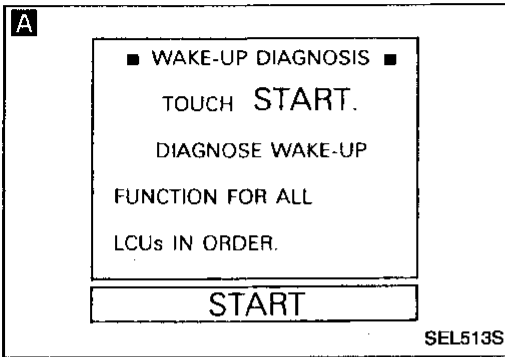


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IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM

CONSULT (Cont'd)

WAKE-UP DIAGNOSIS



IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM CONSULT (Cont'd)

DIAGNOSTIC CHART

Diagnostic item	Diagnostic explanation	Number of malfunctioning LCU's	Expected cause	Service procedure
[COMM FAIL] (Communication malfunctioning)	A communication signal is sent from the BCM to all LCU's. LCU's return a signal to the BCM as they receive the signal above. The signals sent from the BCM and returned from LCU's should be the same. If they are different, LCU's and/or communication between the BCM and LCU's are malfunctioning.	One	<ol style="list-style-type: none"> Poor connection at LCU connector Open or short circuit in the data lines A and/or B Ground circuit of the LCU open Malfunctioning LCU 	<ol style="list-style-type: none"> Check for connector looseness. Check continuity of the data line circuits between the LCU in question and harness-to-harness connector. Check ground circuit of the LCU in question. Replace the LCU in question.
[A-LINE NO RESPONSE]* (Communication via data line A not responded)	A communication signal is sent from the BCM to LCU's via data lines A and B. LCU's return the signal via the data line A. If the signal does not return, the data line A is malfunctioning.	One	<ol style="list-style-type: none"> Poor connection in the data line A at the LCU connector Open circuit in the data line A Malfunctioning LCU 	<ol style="list-style-type: none"> Check for connector looseness. Check for connector looseness. Check continuity of the data line A circuit between the LCU in question and harness-to-harness connector. Replace the LCU in question.
[B-LINE NO RESPONSE]* (Communication via data line B not responded)	A communication signal is sent from the BCM to LCU's via data lines A and B. LCU's return the signal via the data line B. If the signal does not return, the data line B is malfunctioning.	Two or more	<ol style="list-style-type: none"> Poor connections at LCU connectors or harness-to-harness connectors Open circuit in the data line A 	<ol style="list-style-type: none"> Check for connector looseness. Check continuity of the data line A circuit for the LCU's in question.
		All	<ol style="list-style-type: none"> Short circuit in the data line A with ground Poor connection in the data line A at the BCM connectors Open circuit in the data line A between the BCM and harness-to-harness connector Malfunctioning BCM 	<ol style="list-style-type: none"> Check continuity between data line A terminal of BCM connectors and ground. Check for connector looseness. Check continuity of the data line A circuit for the BCM. Replace BCM.
		One	<ol style="list-style-type: none"> Poor connection in the data line B at the LCU connector Open circuit in the data line B 	<ol style="list-style-type: none"> Check for connector looseness. Check continuity of the data line B circuit between the LCU in question and harness-to-harness connector. Replace the LCU in question.
		Two or more	<ol style="list-style-type: none"> Poor connection at LCU connectors or harness-to-harness connectors Open circuit in the data line B 	<ol style="list-style-type: none"> Check for connector looseness. Check continuity of the data line B circuit for the LCU's in question.
		All	<ol style="list-style-type: none"> Short circuit in the data line B with ground Poor connection in the data line B at the BCM connectors Open circuit in the data line B between the BCM and harness-to-harness connector Malfunctioning BCM 	<ol style="list-style-type: none"> Check continuity between data line B terminal of the BCM connectors and ground. Check for connector looseness. Check continuity of the data line B circuit for the BCM. Replace BCM.

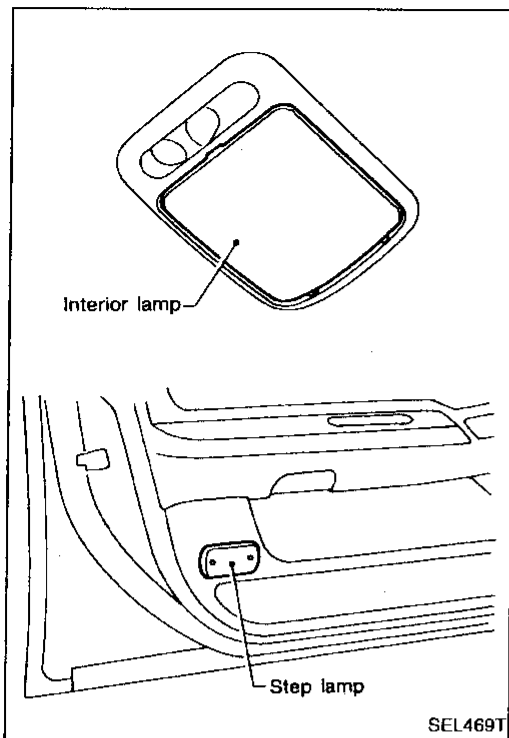
*: There may be cases that a malfunction is detected in one of the two data lines but all systems in the IVMS (such as power window or power door lock) are functioning correctly. In such cases, it is not essential to repair the malfunctioning data line. This is because communication is still accomplished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

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IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM

CONSULT (Cont'd)

Diagnostic item	Diagnostic explanation	Number of malfunctioning LCUs	Expected cause	Service procedure
[A-LINE NO RESPONSE] [B-LINE NO RESPONSE] (Communication via data lines A and B not responded)	A communication signal is sent from the BCM to LCUs via data lines A and B. LCUs return the signal via the data lines A and B. If the signal does not return, the data lines A and B are malfunctioning.	One	<ol style="list-style-type: none"> Open circuit in the power source for the LCU in question. Poor connection at LCU connector Open circuit in the data lines A and B Open circuit in LCU ground Malfunctioning LCU 	<ol style="list-style-type: none"> Check fuse, fusible link, circuit breaker or harness. Check for connector looseness. Check continuity of each data line between the LCU in question and harness-to-harness connectors. Check ground circuit of the LCU in question. Replace the LCU in question.
		Two or more	<ol style="list-style-type: none"> Open circuit in the power source for the LCUs in question Poor connection at LCU connectors or harness-to-harness connectors Open circuit in the data lines A and B Malfunctioning LCUs 	<ol style="list-style-type: none"> Check fuse, fusible link, circuit breaker or harness. Check for connector looseness. Check continuity of each data line between the LCUs in question and harness-to-harness connectors. Replace the LCUs in question.
		All	<ol style="list-style-type: none"> Short circuit between data lines A and B Short circuits in the data lines A and B with ground Poor connection at the BCM connectors Open circuit in the data lines A and B between the BCM and harness-to-harness connectors Malfunctioning BCM 	<ol style="list-style-type: none"> Check continuity between data lines A and B. Check continuity between data line terminals of the BCM connectors and ground. Check for connector looseness. Check continuity of each data line between the BCM and harness-to-harness connectors. Replace the BCM.
		One	<ol style="list-style-type: none"> Open circuit in LCU ground 	<ol style="list-style-type: none"> Check ground circuit of the LCU in question.
[COMM FAIL] [A-LINE NO RESPONSE] [B-LINE NO RESPONSE]	All malfunctions indicated above are evident.	Two or more	<ol style="list-style-type: none"> Open circuits in LCU grounds 	<ol style="list-style-type: none"> Check ground circuits of the LCUs in question.
		All	<ol style="list-style-type: none"> Malfunctioning BCM 	<ol style="list-style-type: none"> Replace BCM.



On-board Diagnosis

ON-BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

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

ON-BOARD DIAGNOSTIC FUNCTION

Mode	Function		Refer page
Mode I	IVMS communication diagnosis	Diagnosing any abnormality or inability of communication between BCM and LCUs (both data lines A and B).	EL-184
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	EL-186
Mode III	Power door lock self-diagnosis	—	EL-228
Mode IV	Power window operation	Operation of driver side window	EL-211

NOTE: ● When ON-BOARD diagnosis is operating, some systems under IVMS control do not operate.
 ● The step lamp of malfunctioning LCU does not blink.

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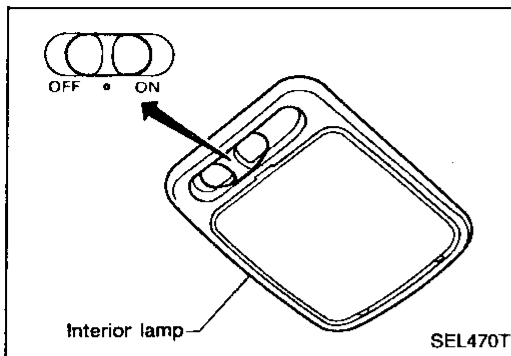
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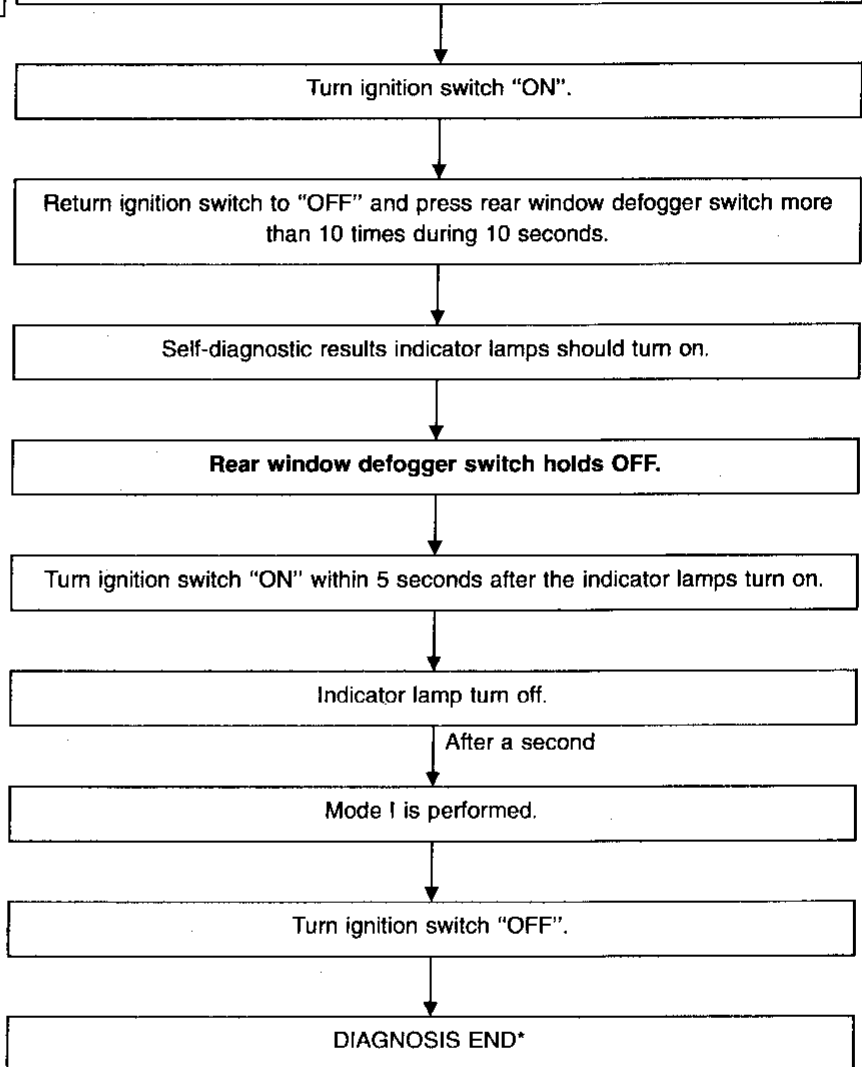


On-board Diagnosis — Mode I (IVMS communication diagnosis)

HOW TO PERFORM MODE I

Condition

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



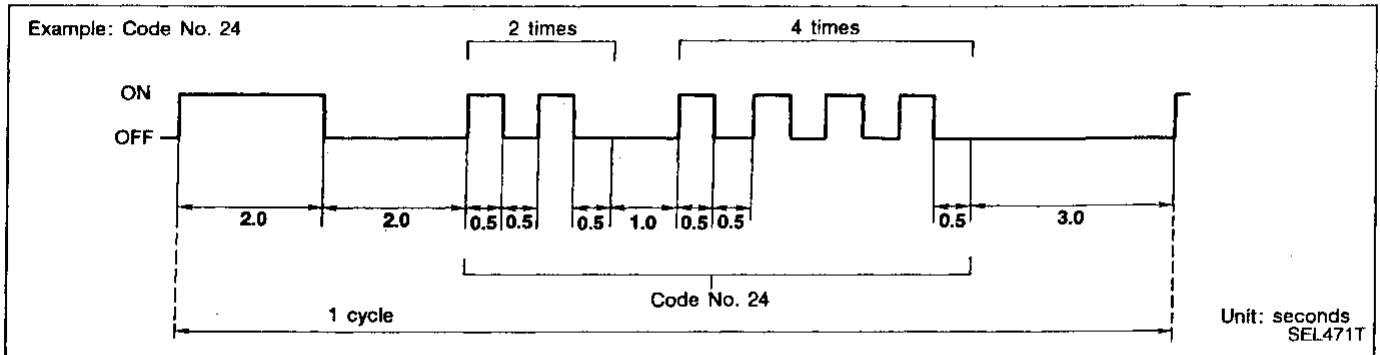
*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM

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

DESCRIPTION

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

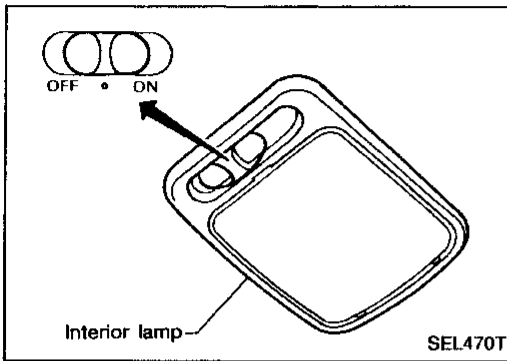


After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the first digit. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the second digit.

For example, the indicator lamp goes on and off for 0.5 seconds twice and after 1.0 seconds, it goes on and off for 0.5 seconds four times. This indicates malfunction code "24".

Malfunction code table

Code No.	Malfunctioning LCU	Detected items	Diagnostic procedure
24	Driver door control unit (LCU01)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-181).
25		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-181).
26		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-181).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-181).
35		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-181).
36		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-181).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-181).
42		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-181).
43		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-181).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-181).
45		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-181).
46		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-181).
54	Multi-remote control unit (LCU05)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-181).
55		No response from data line A	Refer to CONSULT DIAGNOSTIC CHART, "A-LINE NO RESPONSE" (EL-181).
56		No response from data line B	Refer to CONSULT DIAGNOSTIC CHART, "B-LINE NO RESPONSE" (EL-181).
11	No malfunction		—

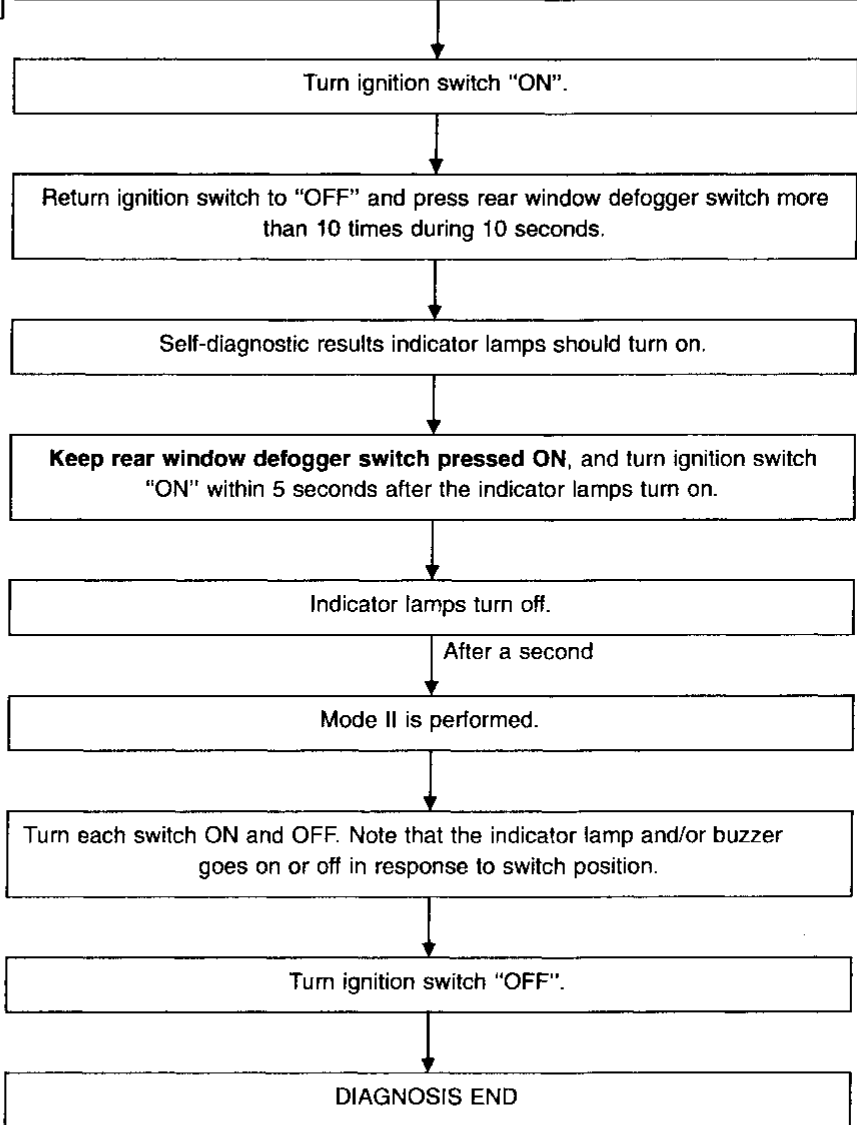


On-board Diagnosis — Mode II (Switch monitor)

HOW TO PERFORM MODE II

Condition

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

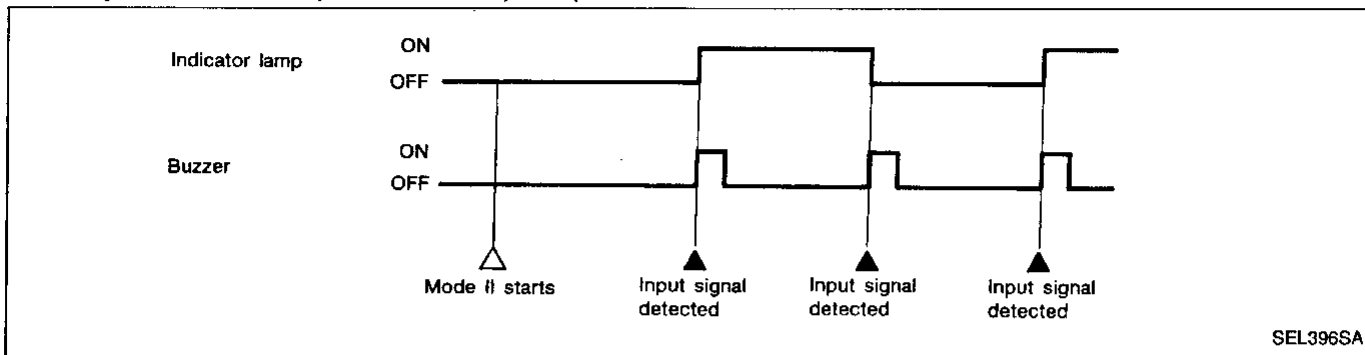


IVMS (LAN) — TROUBLE DIAGNOSES SYSTEM

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

DESCRIPTION

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



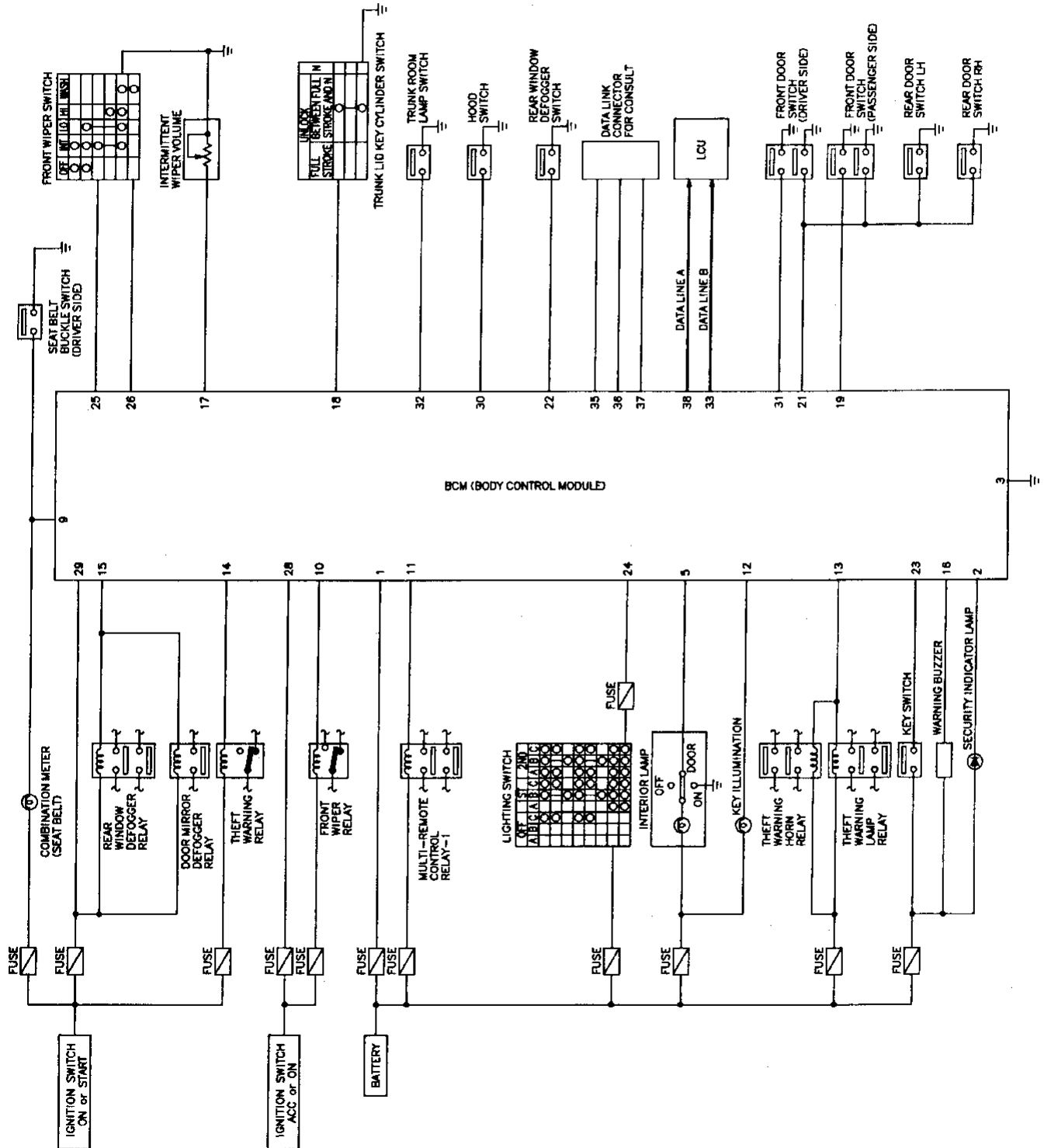
Switch monitor item

BCM	<ul style="list-style-type: none"> ● Hood switch ● Trunk room lamp switch ● Trunk lid unlock switch ● Door switches ● Lighting switch (1st) ● Wiper switch (INT) ● Wiper switch (WASH) ● Door switch (driver's side) ● Door switch (passenger side) ● Seat belt buckle switch 	LCU 02	<ul style="list-style-type: none"> ● Door key cylinder switch (LOCK/UNLOCK) ● Door unlock sensor ● Passenger power window sub-switch (UP/DOWN) 	
LCU 01	<ul style="list-style-type: none"> ● Power window lock switch ● Power window main switches (UP/DOWN) ● Power window automatic switch ● Door lock & unlock switch (LOCK/UNLOCK) ● Door key cylinder switch (LOCK/UNLOCK) ● Door unlock sensor 	LCU 03	<ul style="list-style-type: none"> ● Power window sub-switch (Rear RH) (UP/DOWN) ● Door unlock sensor 	
		LCU 04	<ul style="list-style-type: none"> ● Power window sub-switch (Rear LH) (UP/DOWN) ● Door unlock sensor 	
		LCU 05	<ul style="list-style-type: none"> ● Door lock button ● Door unlock button ● Panic alarm button ● Trunk lid opener button 	Operated by multi-remote controller

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Body Control Module (BCM)

CIRCUIT DIAGRAM



IVMS (LAN) — TROUBLE DIAGNOSES

Body Control Module (BCM) (Cont'd)

INPUT/OUTPUT OPERATION SIGNAL

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

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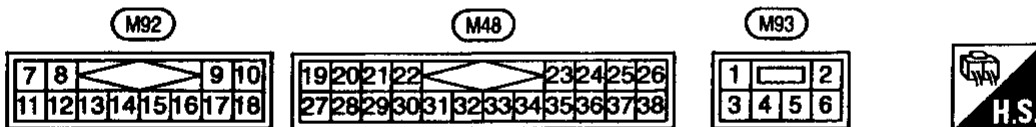
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IVMS (LAN) — TROUBLE DIAGNOSES

Body Control Module (BCM) (Cont'd)

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

BCM (BODY CONTROL MODULE)

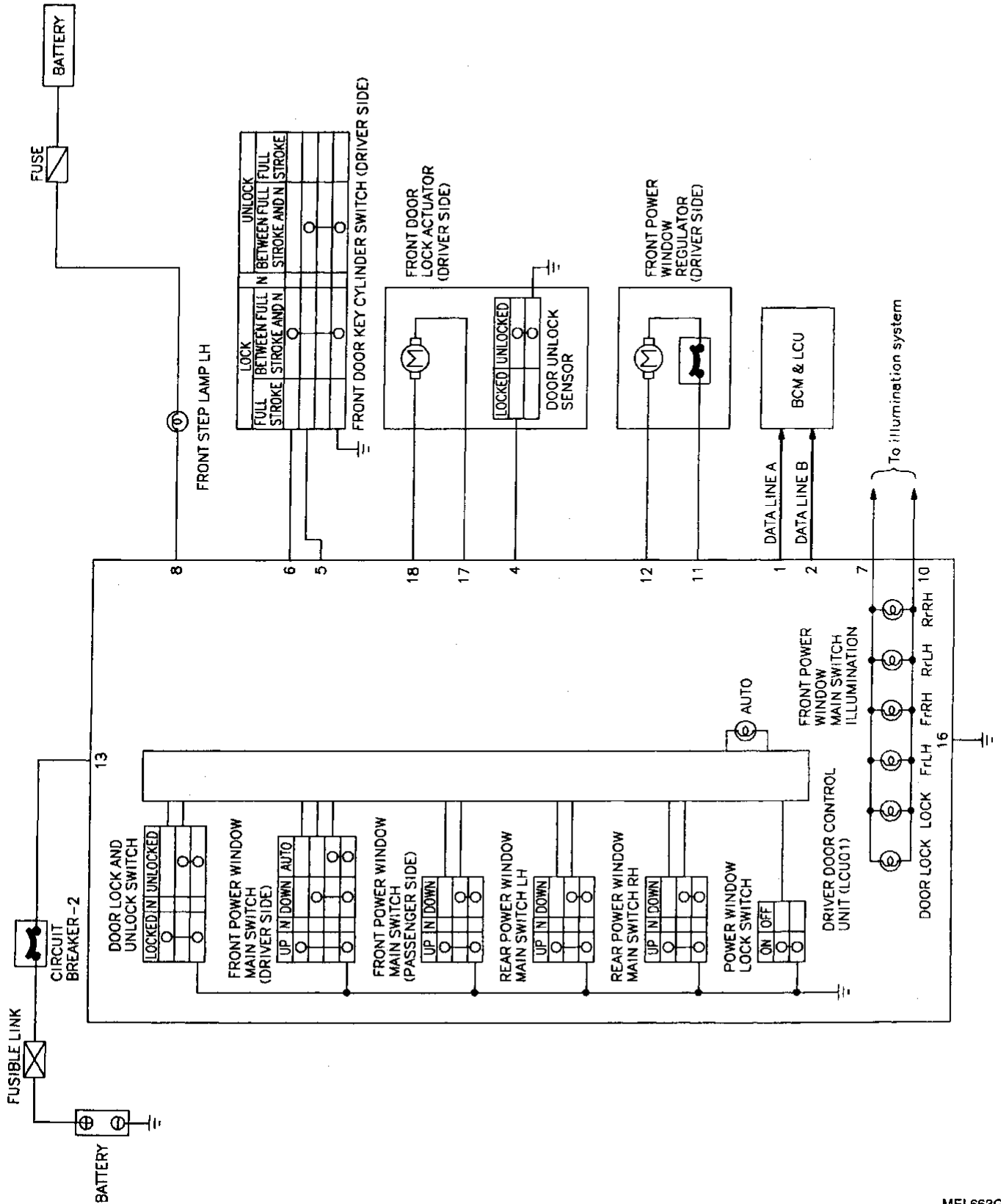


SEL315UB

Local Control Units (LCUs)

CIRCUIT DIAGRAM

Driver door control unit (LCU01)

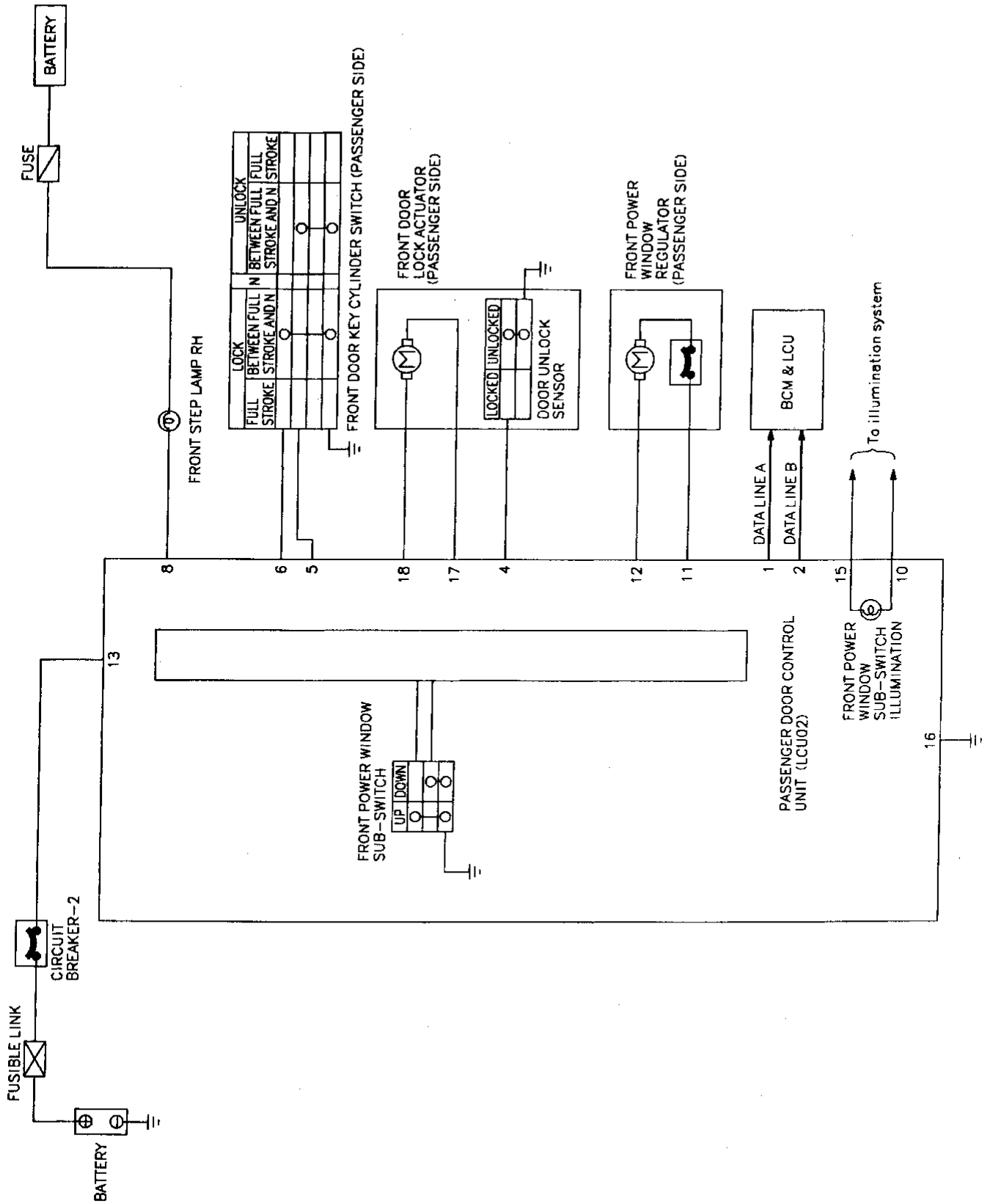


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IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

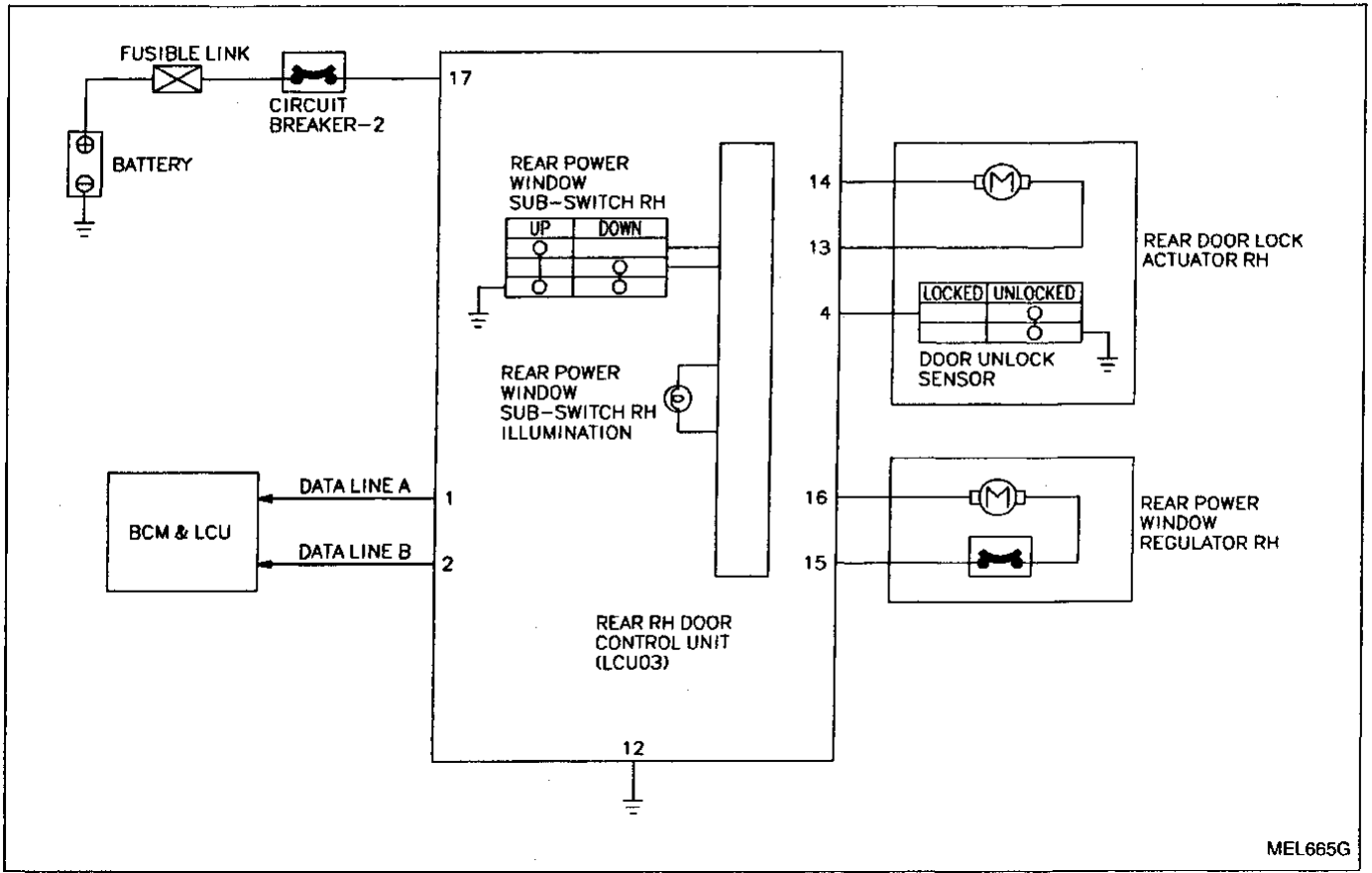
Passenger door control unit (LCU02)



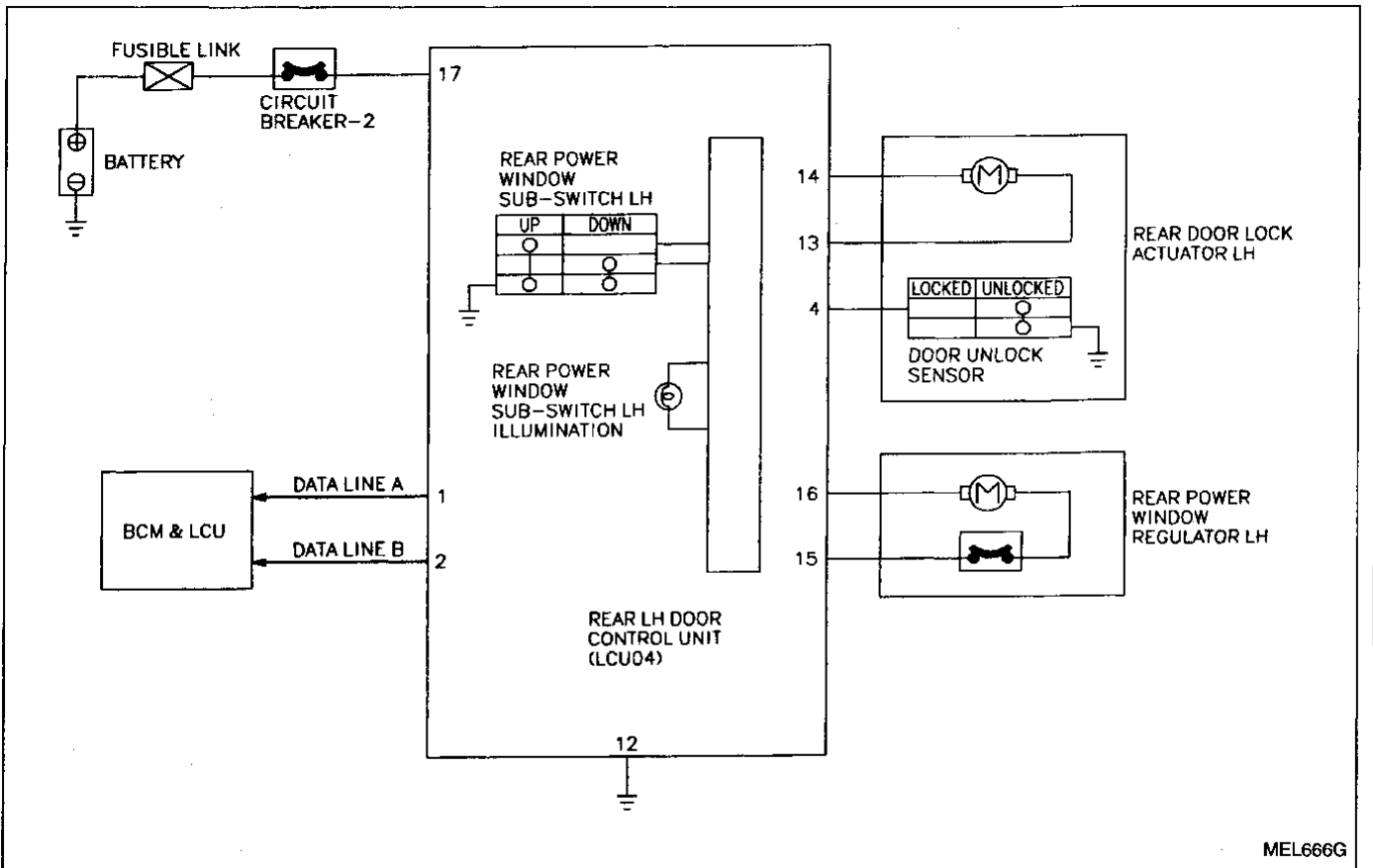
IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

Rear RH door control unit (LCU03)



Rear LH door control unit (LCU04)



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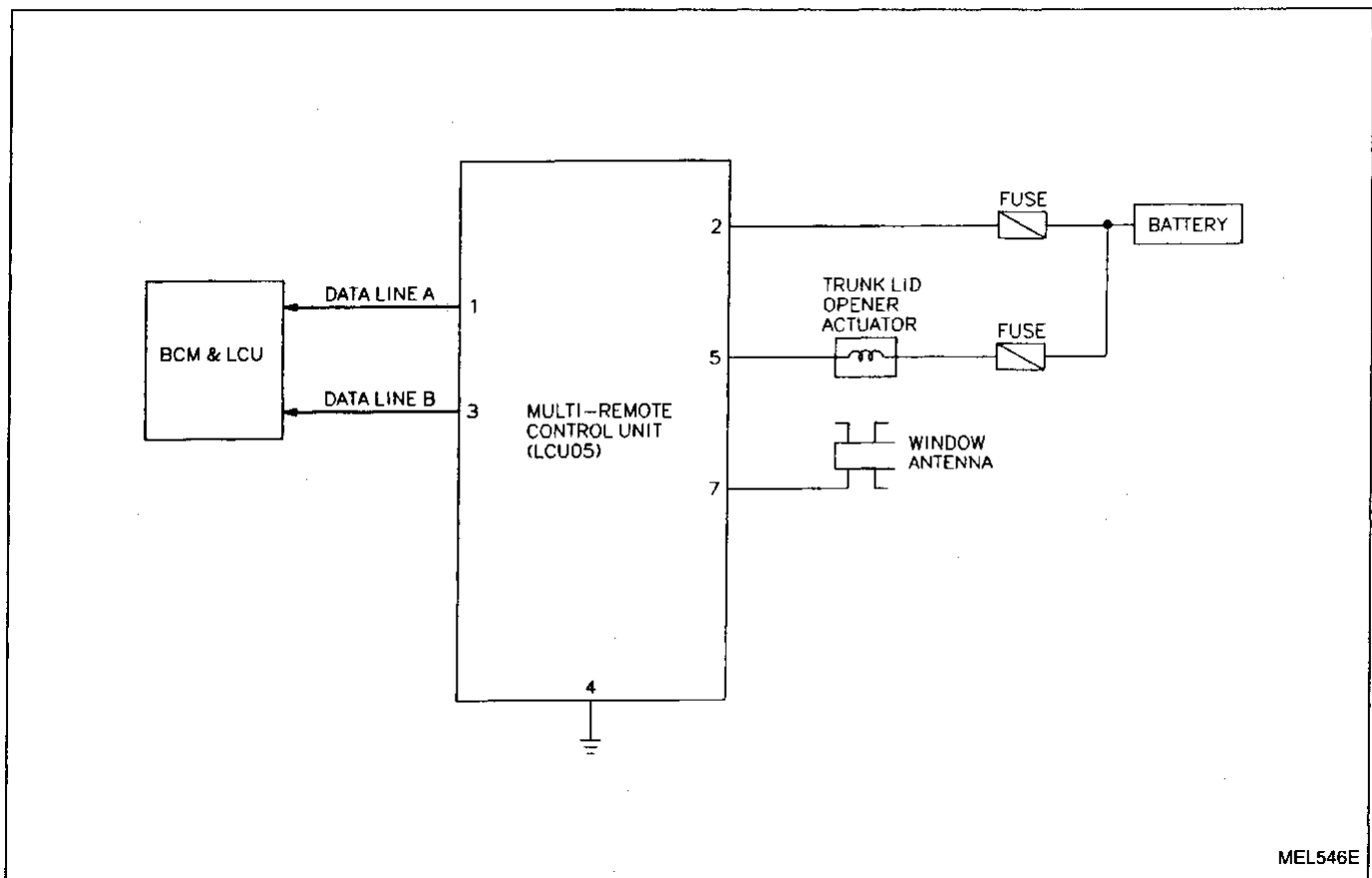
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IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

Multi-remote control unit (LCU05)



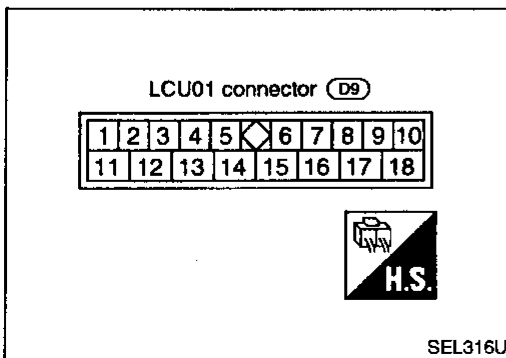
IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

INPUT/OUTPUT OPERATION SIGNAL

Driver door control unit (LCU01)

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

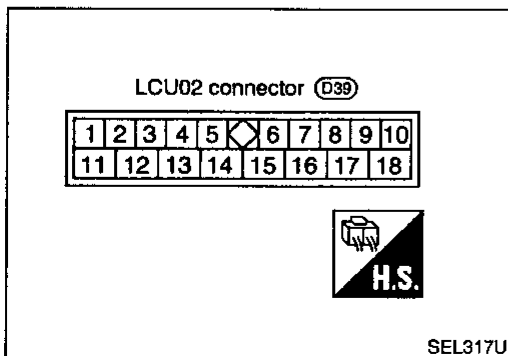


IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

Passenger door control unit (LCU02)

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

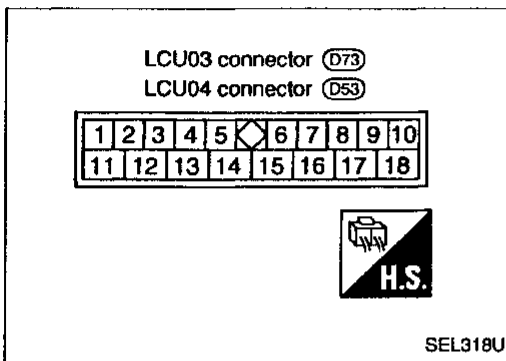


IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

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

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



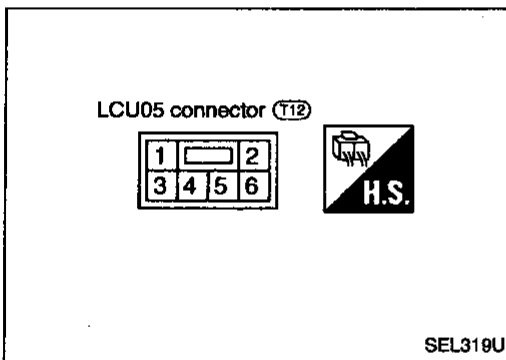
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IVMS (LAN) — TROUBLE DIAGNOSES

Local Control Units (LCUs) (Cont'd)

Multi-remote control unit (LCU05)

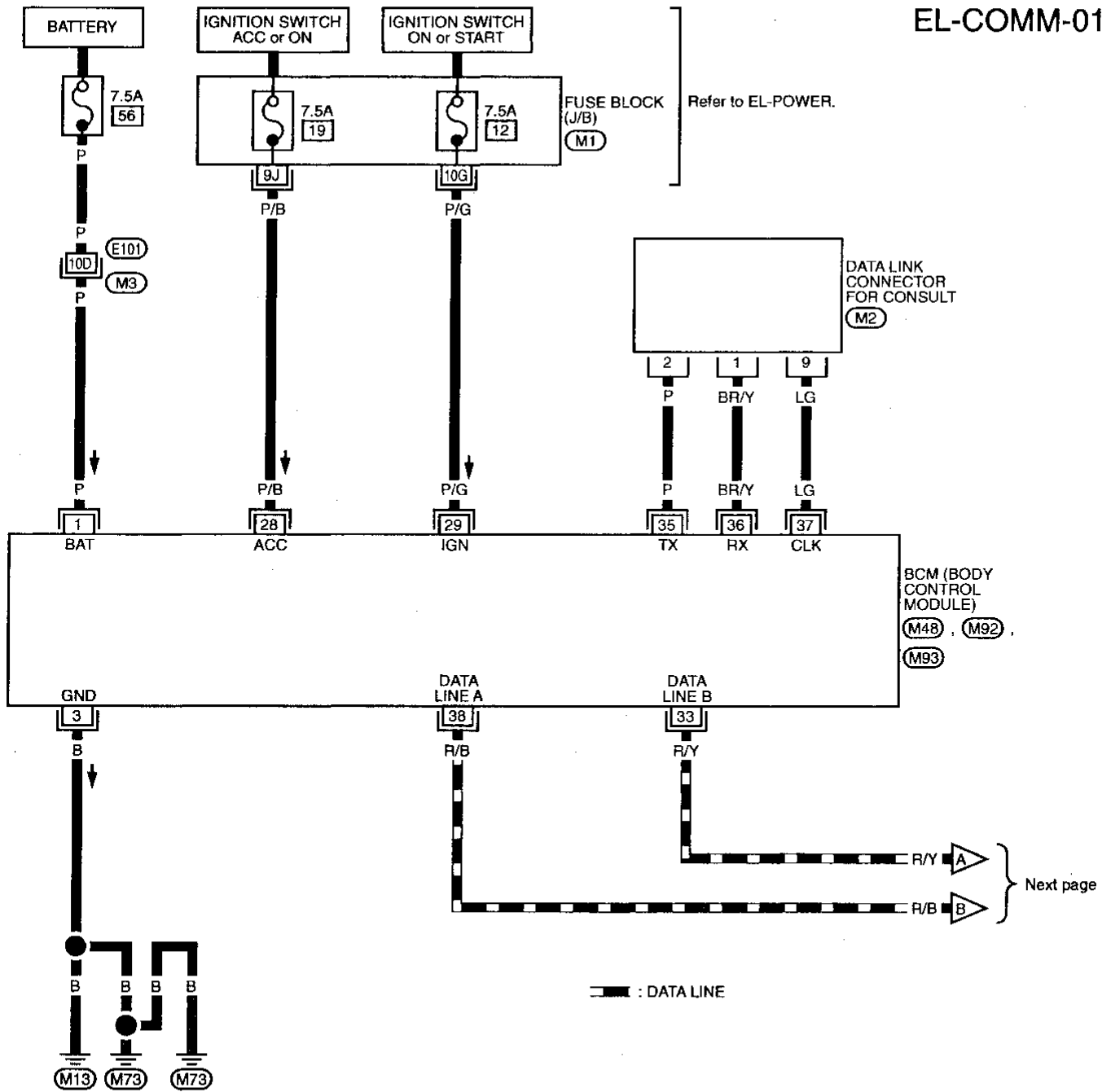
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition	Voltage (V) (Approximate values)
1	Data line (A)	I/O	—	—
2	Power source	—	—	12
3	Data line (B)	I/O	—	—
4	Ground	—	—	—
5	Trunk lid opener actuator	O	Open	0
			OFF	12
6	—	—	—	—



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

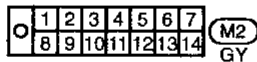
EL-COMM-01

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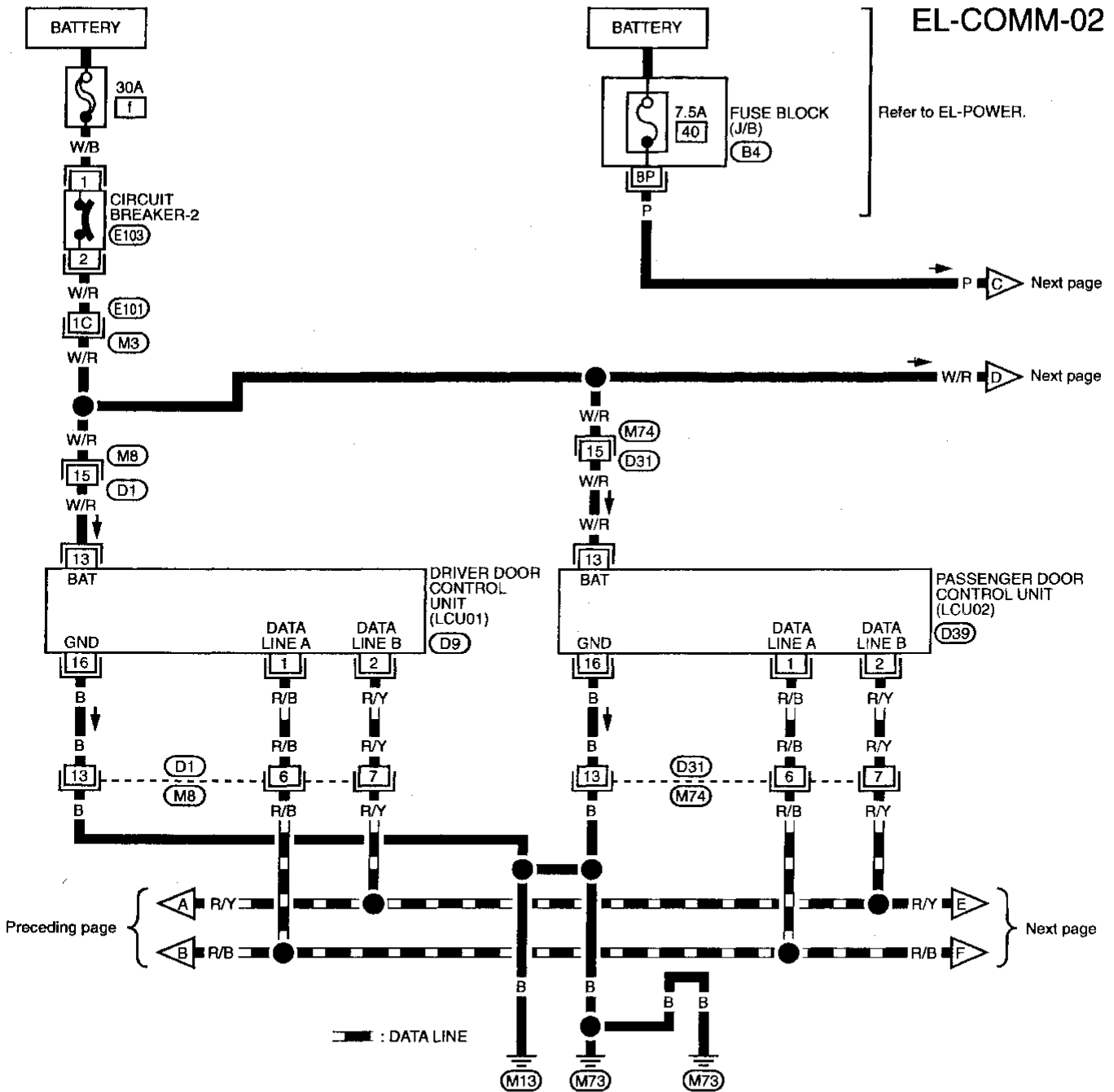
BCM (BODY CONTROL MODULE)
(M48, M92, M93)

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(M3, E101)
(M1)
(M48)
(M92)
(M93)



IVMS (LAN) — TROUBLE DIAGNOSES

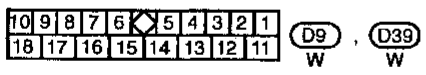
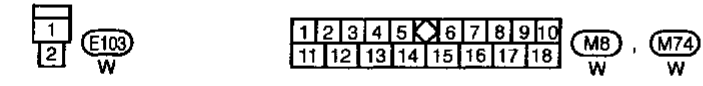
Main Power Supply, Ground and Communication Circuits/Wiring Diagram — COMM — (Cont'd)



EL-COMM-02

Refer to EL-POWER.

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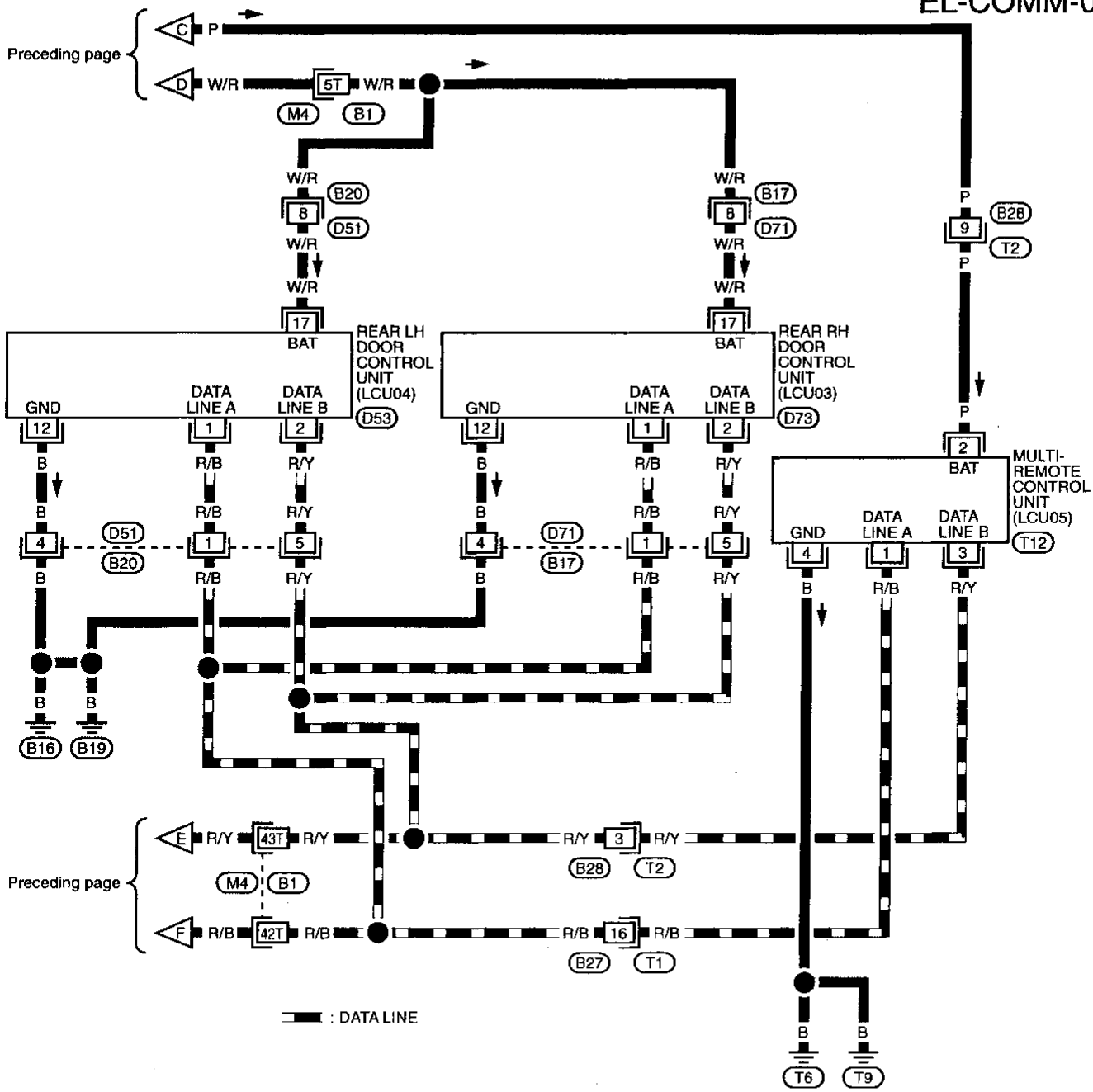


M3, E101
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IVMS (LAN) — TROUBLE DIAGNOSES

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

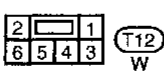
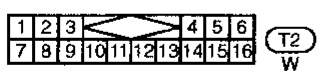
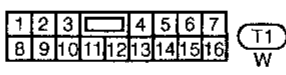
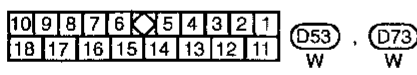
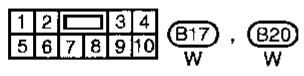
EL-COMM-03



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--- : DATA LINE

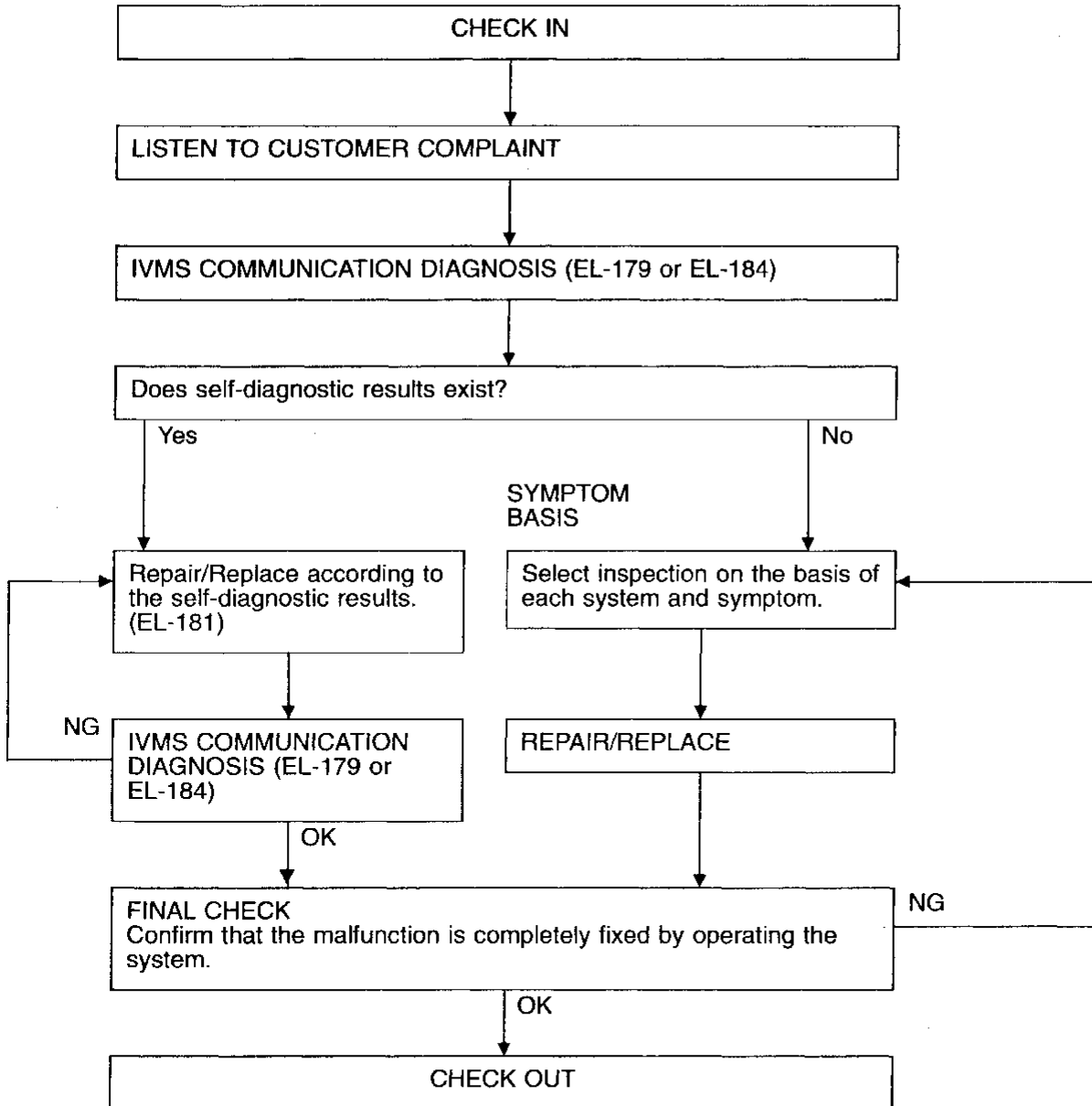


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(M4) (B1)

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IVMS (LAN) — TROUBLE DIAGNOSES

Work Flow



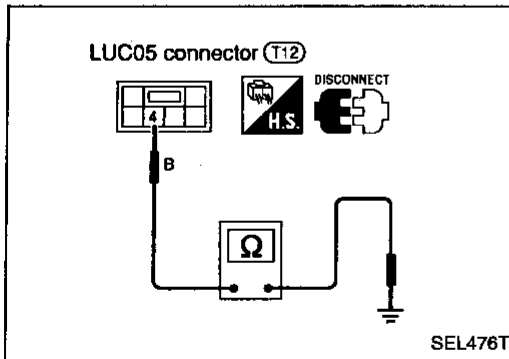
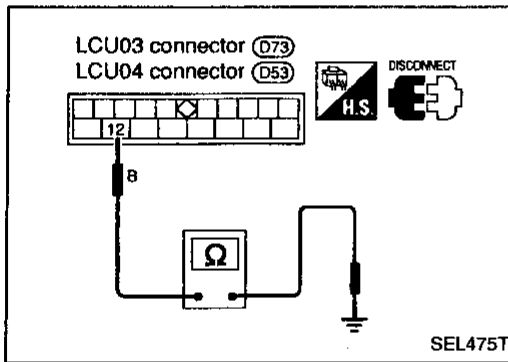
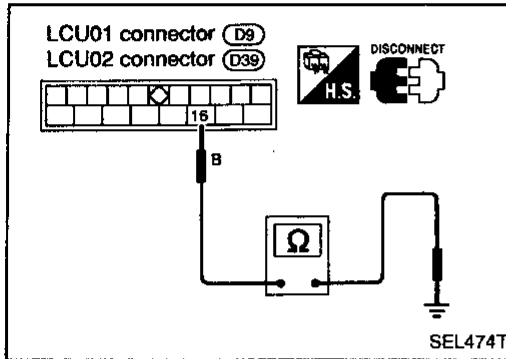
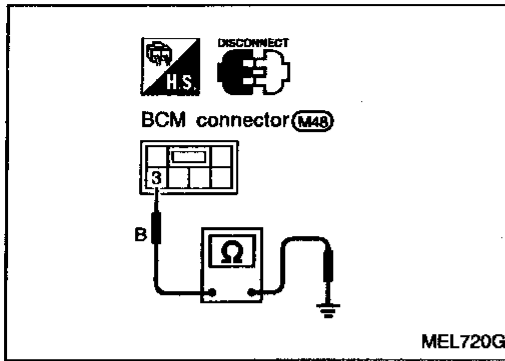
NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

Power Supply and Ground Circuit Check

GROUND CIRCUIT CHECK

Control unit	Terminals	Continuity
BCM	③ - Ground	Yes
LCU01	⑩ - Ground	
LCU02		
LCU03	⑫ - Ground	
LCU04		
LCU05	④ - Ground	



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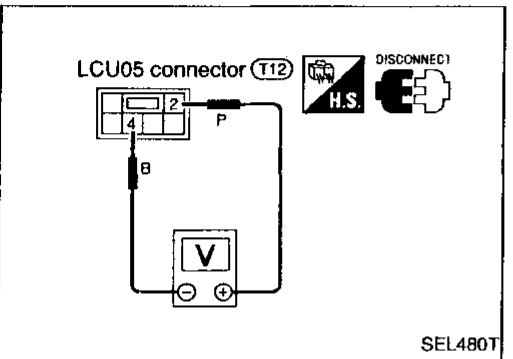
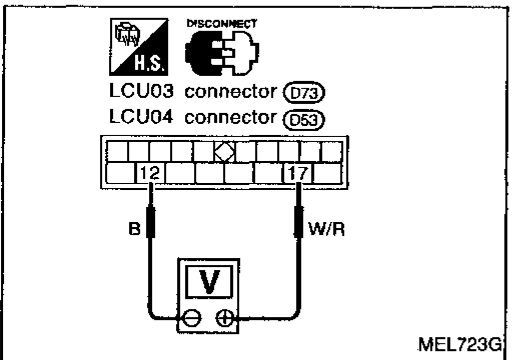
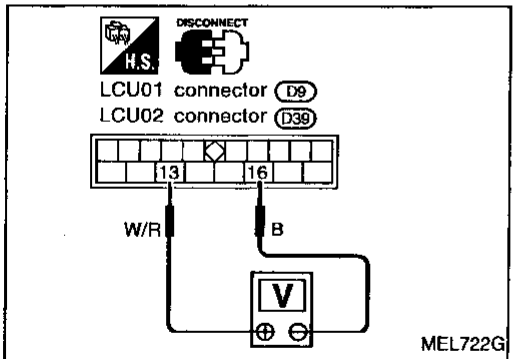
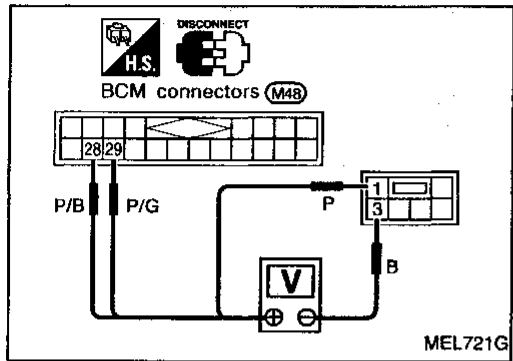
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IVMS (LAN) — TROUBLE DIAGNOSES

Power Supply and Ground Circuit Check (Cont'd)

POWER SUPPLY CIRCUIT CHECK



Control unit	Terminals	Ignition switch position			
		OFF	ACC	ON	START
BCM*	① - ③	Battery voltage			
	②⑨ - ③	Approx. 0V	Battery voltage		Approx. 0V
	②⑨ - ③	Approx. 0V		Battery voltage	
LCU01 and LCU02	⑬ - ⑭	Battery voltage			
LCU03 and LCU04	⑰ - ⑱	Battery voltage			
LCU05	② - ④	Battery voltage			

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

System Description

OUTLINE

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

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

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

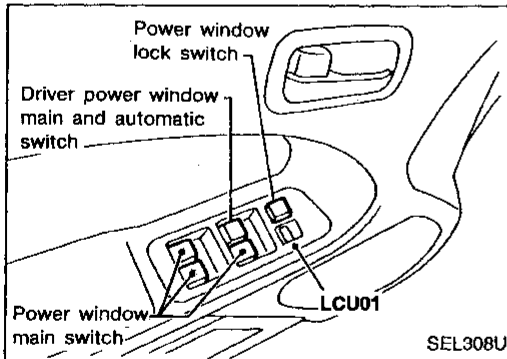
Rear LH door control unit (LCU04) and rear RH door control unit (LCU03) terminals 1 and 2 are connected to BCM terminals 38 and 33 as DATA LINES A and B. Also, rear LH and RH door control unit terminals 15 and 16 are connected to rear power window regulator LH and RH terminals 2 and 1 respectively.

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

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

OPERATION

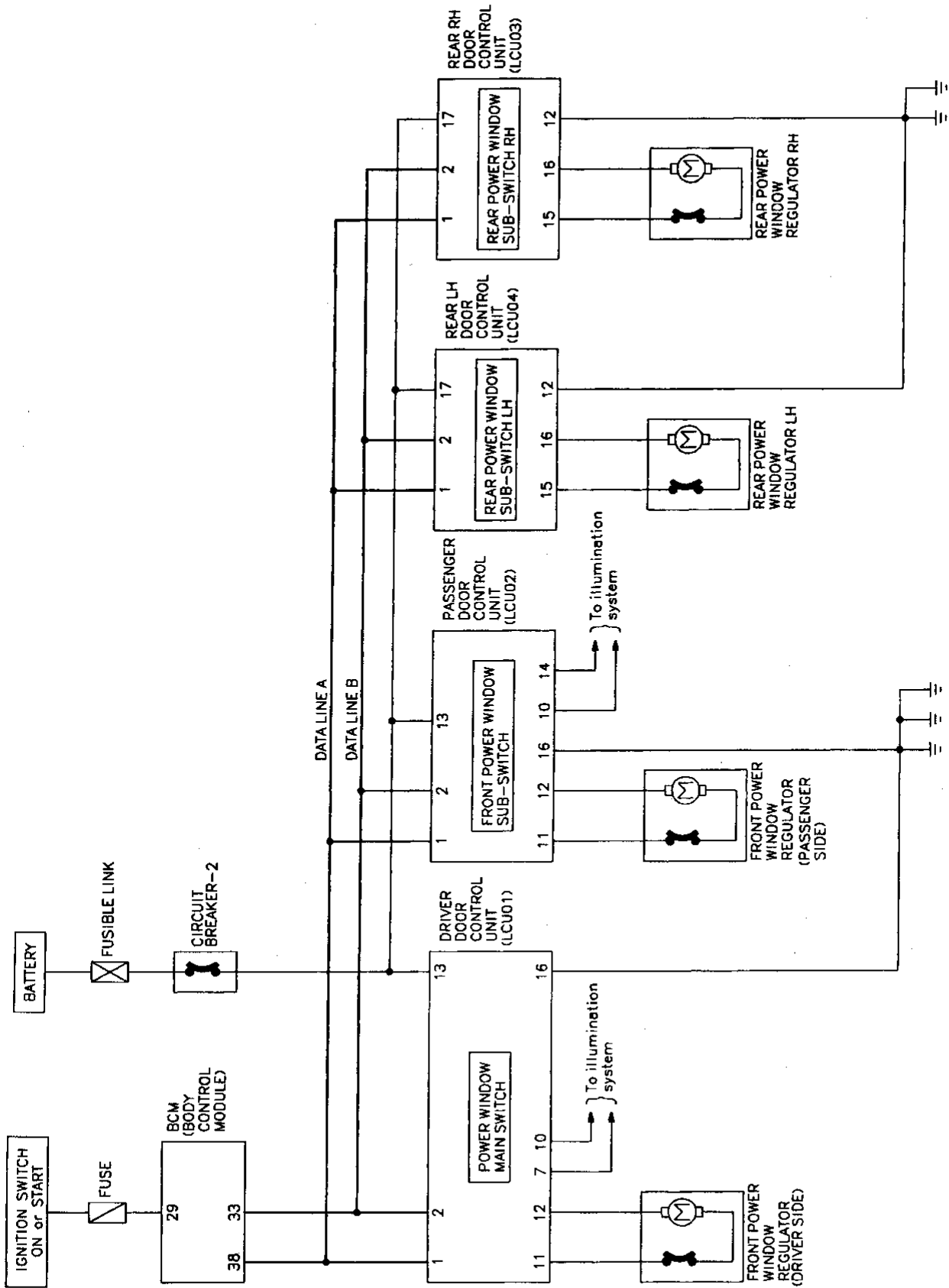
- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the driver's door trim when ignition key is in the "ON" position and power window lock switch on the driver's door trim is unlocked.
- When power window lock switch is locked, no windows can be raised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



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POWER WINDOW — IVMS

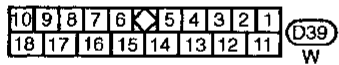
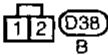
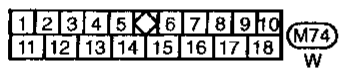
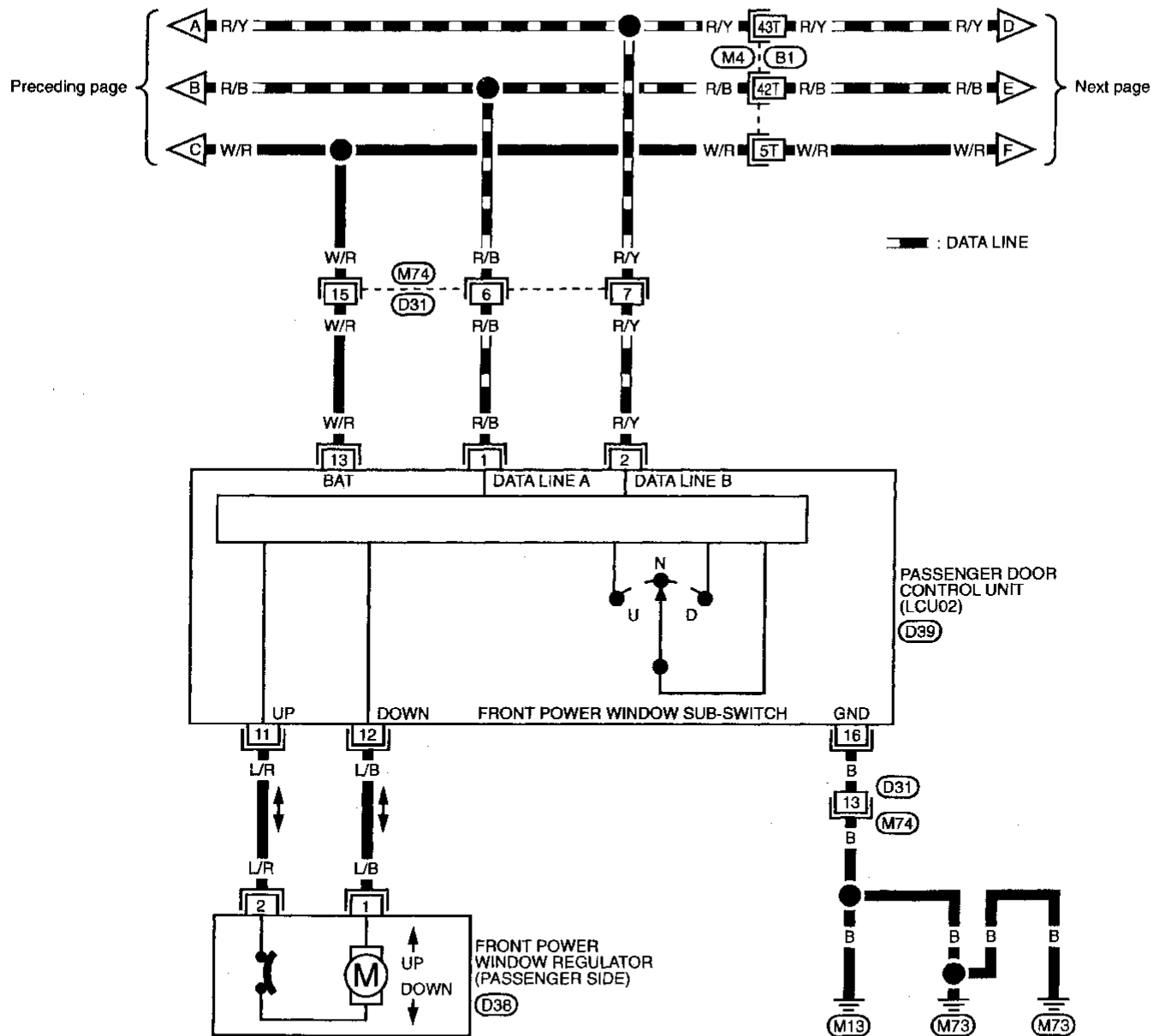
Schematic



POWER WINDOW — IVMS

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02

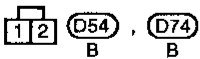
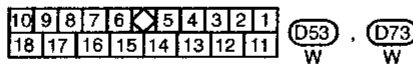
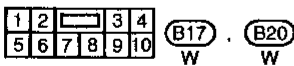
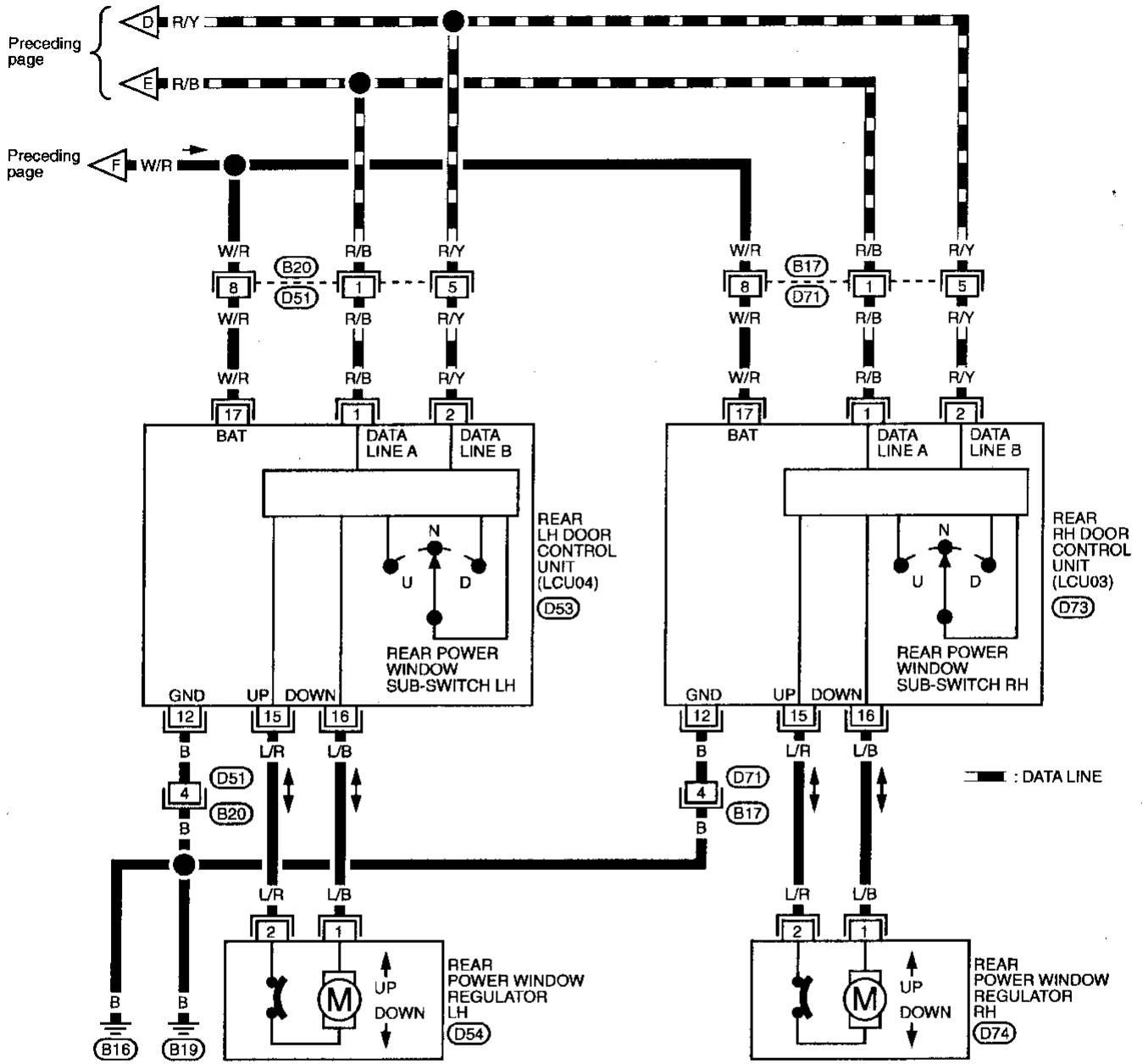


Refer to last page (Foldout page).
(M4), (B1)

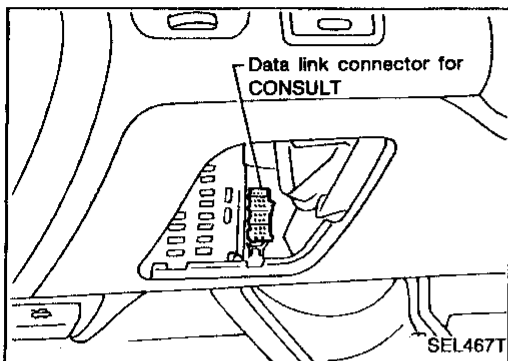
POWER WINDOW — IVMS

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03



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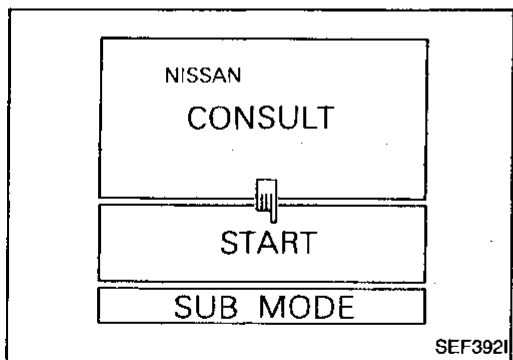


Trouble Diagnoses

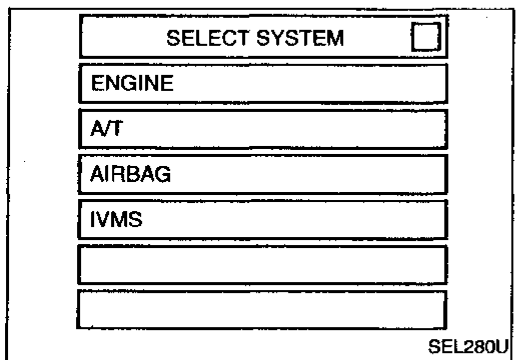
CONSULT

CONSULT inspection procedure

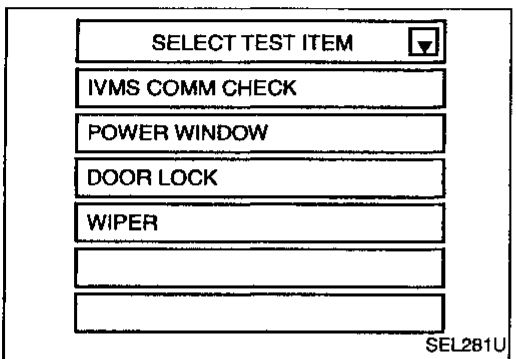
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



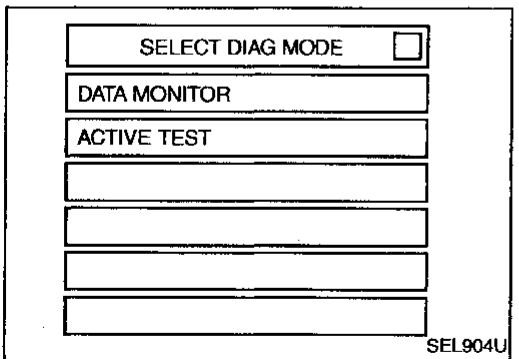
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "POWER WINDOW".



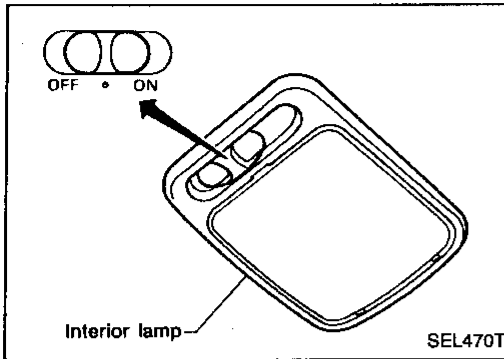
- DATA MONITOR and ACTIVE TEST are available for the power window.

POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

ON-BOARD DIAGNOSIS — MODE IV (DRIVER POWER WINDOW OPERATION)

How to perform mode IV



Condition

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

Turn ignition switch "ON".

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

Self-diagnostic results indicator lamps should turn on.

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

Indicator lamps turn off.

After a second

Mode IV is performed.

Turn ignition switch "OFF".

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

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

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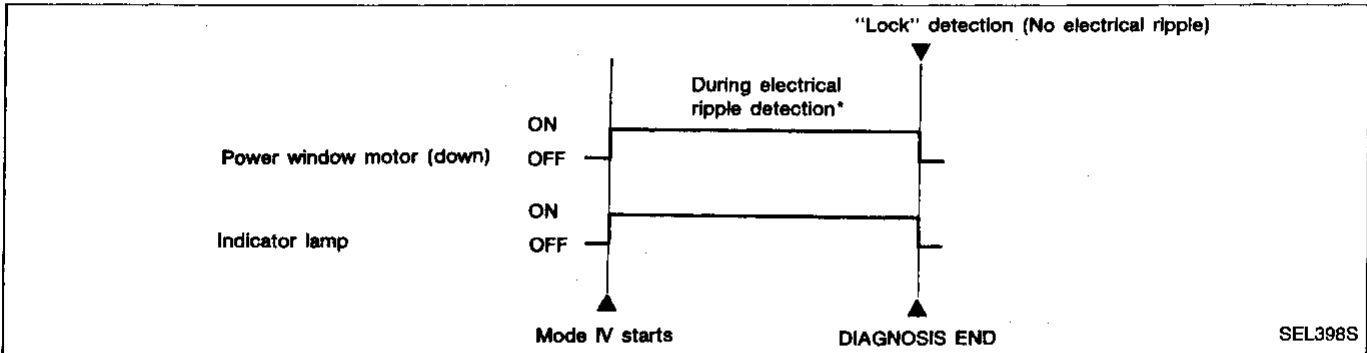
IDX

POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

Description

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

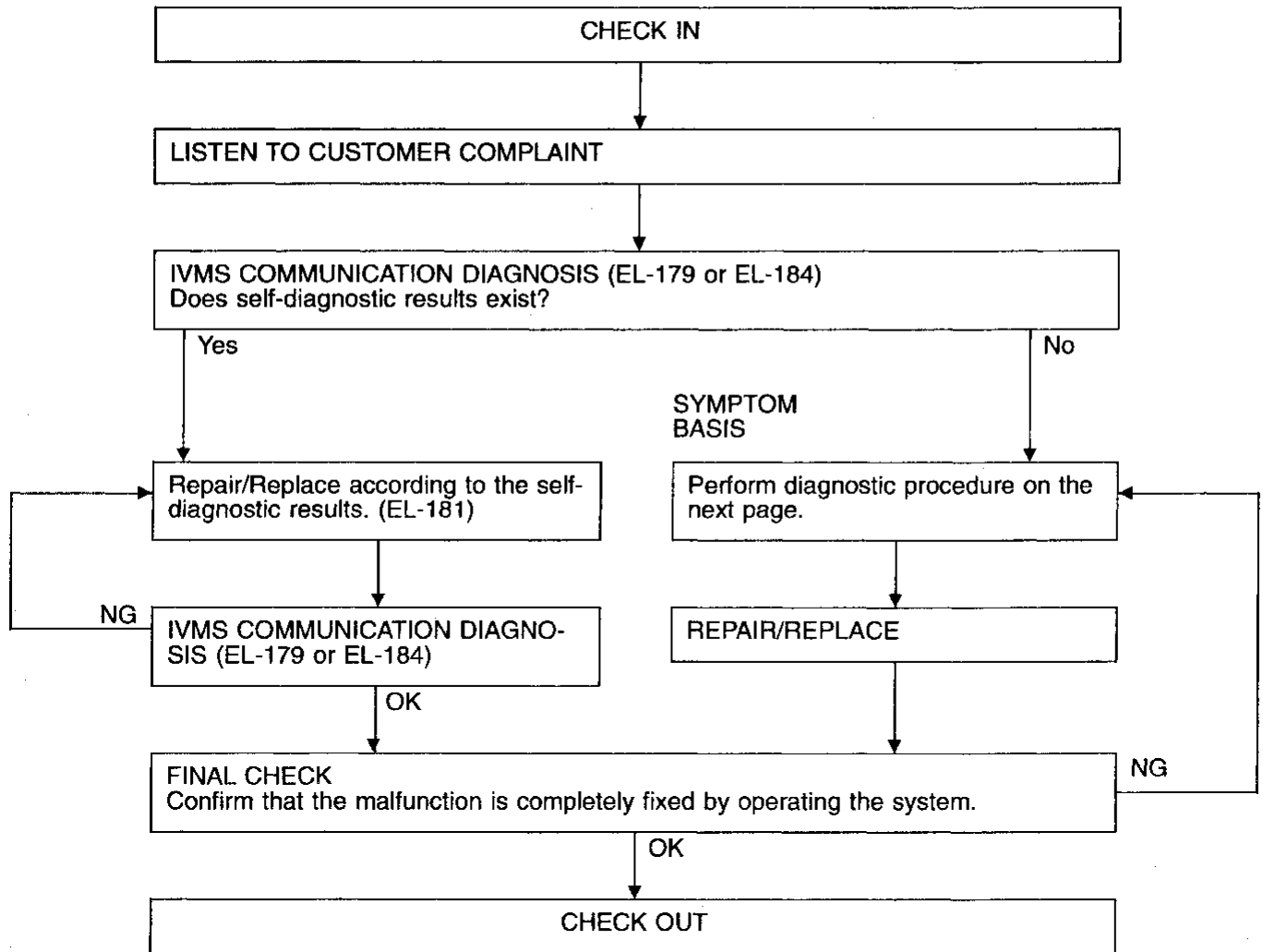


NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor (DOWN) stops and diagnosis ends.

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

Trouble Diagnoses (Cont'd)

WORK FLOW



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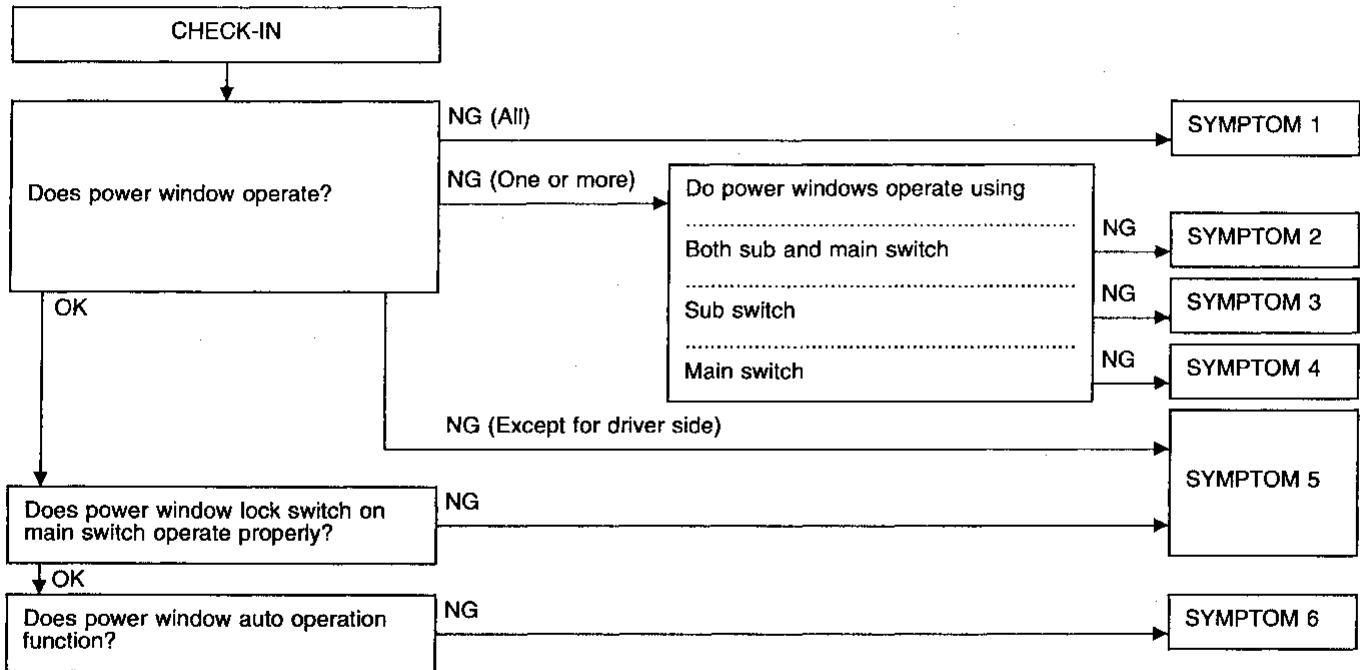
NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK



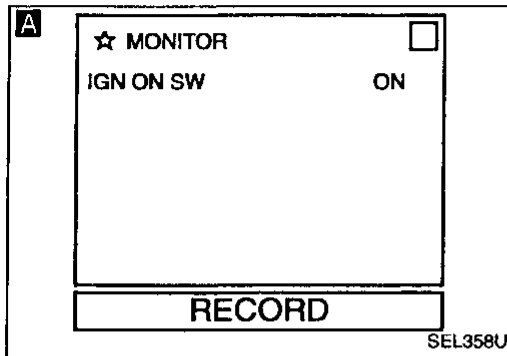
SYMPTOM CHART

PROCEDURE		Diagnostic procedure					
		EL-215	EL-215	EL-216	EL-216	EL-217	EL-218
REFERENCE PAGE							
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 5 (Power window regulator check)	Procedure 6 (Power window automatic switch check)
1	All power window do not operate.	X					
2	One or more of the power windows do not operate by turning either sub or main switch.					X	
3	One or more of the sub-switches do not function.				X		
4	One or more of the main switches on driver's door trim do not function.			X			
5	Power window lock switch on main switch does not lock and/or unlock all windows.		X				
6	Driver power window automatic operation does not function.						X

POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1 (Ignition switch ON signal check)



CHECK IGNITION SWITCH ON SIGNAL.

A CONSULT

See "IGN ON SW" in DATA MONITOR mode.

When ignition switch is ON:

IGN ON SW ON

When ignition switch is ACC or OFF:

IGN ON SW OFF

OR

B TESTER

Check voltage between BCM terminal ② and ground.

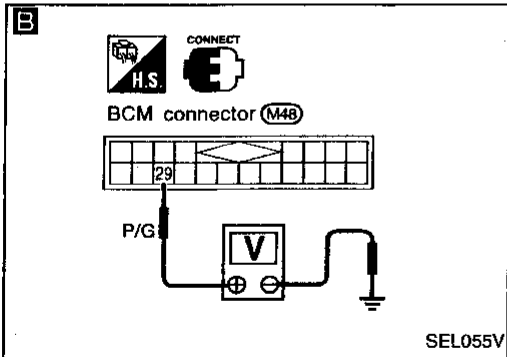
Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

Refer to wiring diagram in EL-207.

NG

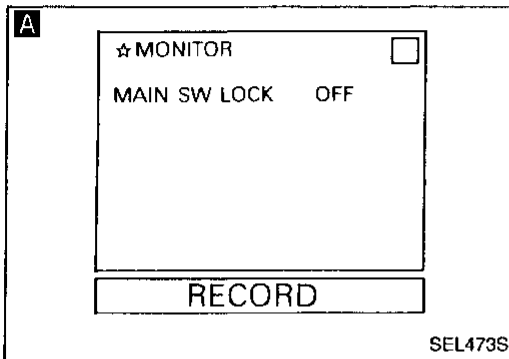
Check the following.

- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM



OK

Ignition switch ON signal is OK.



DIAGNOSTIC PROCEDURE 2

(Power window lock switch check)

CHECK POWER WINDOW LOCK SWITCH CIRCUIT.

A CONSULT

See "MAIN SW LOCK" in DATA MONITOR mode.

"MAIN SW LOCK" should change from "OFF" to "ON" when pushing power window lock switch.

OR

ON-BOARD

Check power window lock switch operation in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

NG

Replace LCU01.

OK

Power window lock switch is OK.

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POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Power window main switch check)


A ☆ MONITOR □

MAIN SW AS-UP	OFF
MAIN/S AS-DWN	OFF
MAIN SW RR-UP	OFF
MAIN/S RR-DWN	OFF
MAIN SW RL-UP	OFF
MAIN/S RL-DWN	OFF
P/W SW DR-UP	OFF
P/W SW DR-DWN	OFF
P/W SW DR-AUT	OFF

RECORD

SEL440T


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

A  CONSULT

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

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

OR

 ON-BOARD

Check power window main switch operation in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

OK

Power window main switch is OK.

NG → Replace LCU01.

A ☆ MONITOR □

P/W SW AS-UP	OFF
P/W SW AS-DWN	OFF
P/W SW RR-UP	OFF
P/W SW RR-DWN	OFF
P/W SW RL-UP	OFF
P/W SW RL-DWN	OFF


RECORD

SEL455T

DIAGNOSTIC PROCEDURE 4

(Power window sub-switch check)


CHECK POWER WINDOW SUB-SWITCH CIRCUIT FOR MALFUNCTIONING PORTION.

A  CONSULT

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

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

OR

 ON-BOARD

Check power window sub-switch operation in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

OK

Power window sub-switch is OK.

NG → Replace LCU for malfunctioning portion.

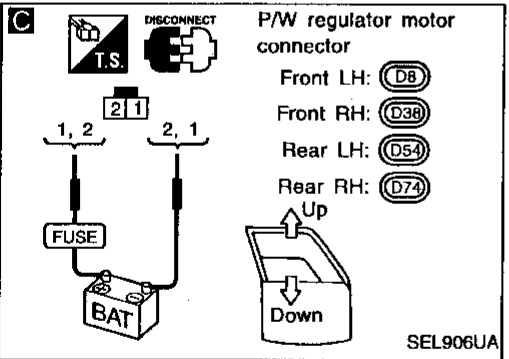
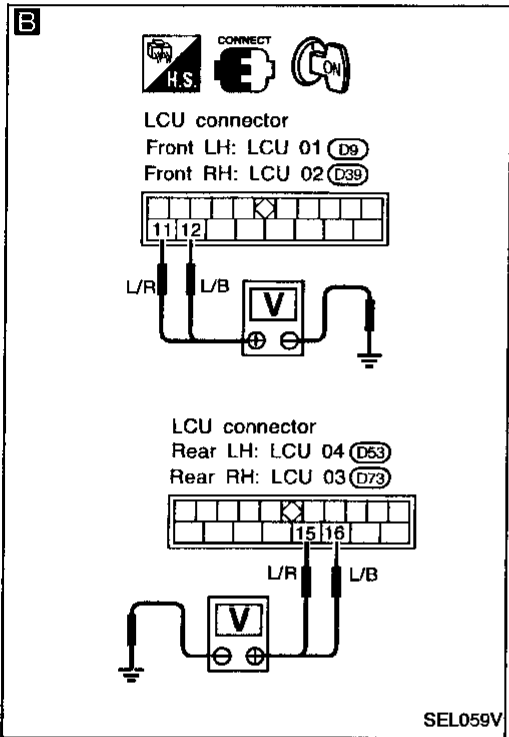
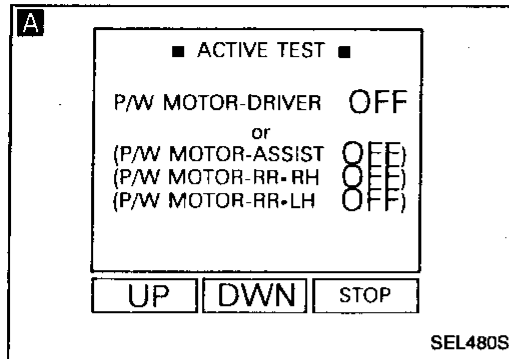
- Passenger: LCU02
- Rear LH: LCU04
- Rear RH: LCU03

POWER WINDOW — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Power window regulator check)



A

CHECK POWER WINDOW REGULATOR CIRCUIT.

CONSULT

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

OK → Power window regulator is OK.

OR

ON-BOARD
 (for driver window)

Check driver power window operation in driver power window operation (Mode IV).
 (Refer to On-board Diagnosis, EL-211.)

NOTE (except for driver window):
If CONSULT is not available, start with the diagnostic procedure B .

NG

B

CHECK LCU OUTPUT SIGNAL TO POWER WINDOW REGULATOR.
 Check voltage between LCU connector terminals and ground.

NG → Replace LCU for malfunctioning portion.

Operation	Terminals		Voltage
	⊕	⊖	
Front (LCU01, LCU02)	Down	⓫	Battery voltage
	Up	⓪	
Rear (LCU03, LCU04)	Down	⓫	
	Up	⓪	

Refer to wiring diagram in EL-207, 208 or 209.

OK

C

CHECK POWER WINDOW REGULATOR MOTOR.

1. Disconnect power window regulator motor connector.
2. Apply 12V DC direct current to motor and check operation.

NG → Replace power window motor.

Terminals		Operation
⊕	⊖	
⓪	⓫	Downward
⓫	⓪	Upward

OK

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

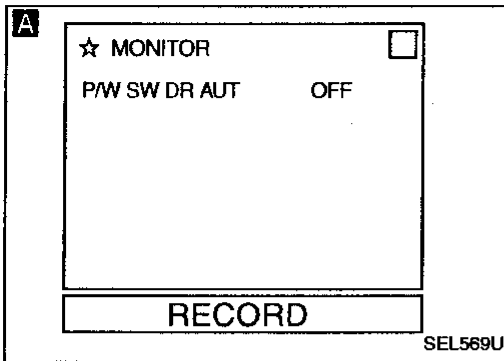
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POWER WINDOW — IVMS


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Power window automatic switch check)




CHECK POWER WINDOW AUTO SWITCH INPUT SIGNAL.

A  CONSULT

See "P/W SW DR AUT" in DATA MONITOR mode.

"P/W SW DR AUT" should change from "ON" to "OFF" when completely pushing in or pulling out driver power window switch.

OR

 ON-BOARD


Check power window switch driver auto operation in switch monitor (Mode II) mode.

(Refer to On-board Diagnosis, EL-186.)

NG → Replace LCU01.

OK


CHECK POWER WINDOW LOCK SIGNAL.

B  CONSULT

See "P/W LOCK SIG" in DATA MONITOR mode.

"P/W LOCK SIG" should change from "ON" to "OFF" when the window is moving.

OR

 ON-BOARD

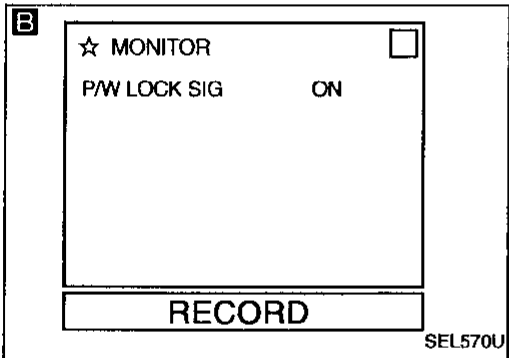
Perform On-board diagnosis Mode IV. (Refer to EL-211.)

Electrical ripple should occur, when the window is moving.

NG → Replace LCU01.

OK

Check the system again.



System Description

POWER SUPPLY AND GROUND

Power is supplied at all times

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

Power is supplied to BCM terminal ②③ through key switch terminal ② when key switch is in ON position (ignition key is inserted in the key cylinder).

BCM terminal ③④ is connected to driver door control unit (LCU01) terminal ①, passenger door control unit (LCU02) terminal ①, rear LH door control unit (LCU04) terminal ① and rear RH door control unit (LCU03) terminal ① by DATA LINE A.

Also, BCM terminal ③⑤ is connected to driver door control unit (LCU01) terminal ②, passenger door control unit (LCU02) terminal ②, rear LH door control unit (LCU04) terminal ② and rear RH door control unit (LCU03) terminal ② by DATA LINE B.

When door switch is in OPEN position, ground is supplied

- to BCM terminal ③⑥ or ①⑨
- from front LH or RH door switch terminal ②
- through front LH or RH door switch terminal ③
- through body grounds (B16) and (B19).

When door is unlocked, ground is supplied

- to each LCU terminal ④
- from terminal ② of each door unlock sensor.

When the door is locked with the key, ground is supplied

- to LCU01 or LCU02 terminal ⑥
- from terminal ① of the door key cylinder switch LH or RH
- through body grounds (M13) and (M73).

When the door is unlocked with the key, ground is supplied

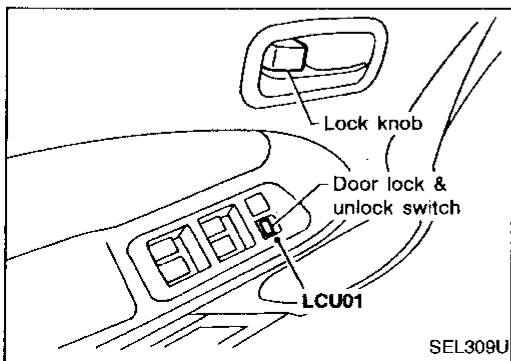
- to LCU01 or LCU02 terminal ⑤
- from terminal ② of the door key cylinder switch LH or RH
- through body grounds (M13) and (M73).

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

OPERATION

- The lock & unlock switch (SW) on driver's door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to "LOCK", all doors are locked.
- With the door key inserted in the key cylinder on front LH or RH door, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 5 seconds after the first unlock operation unlocks all of the other doors.

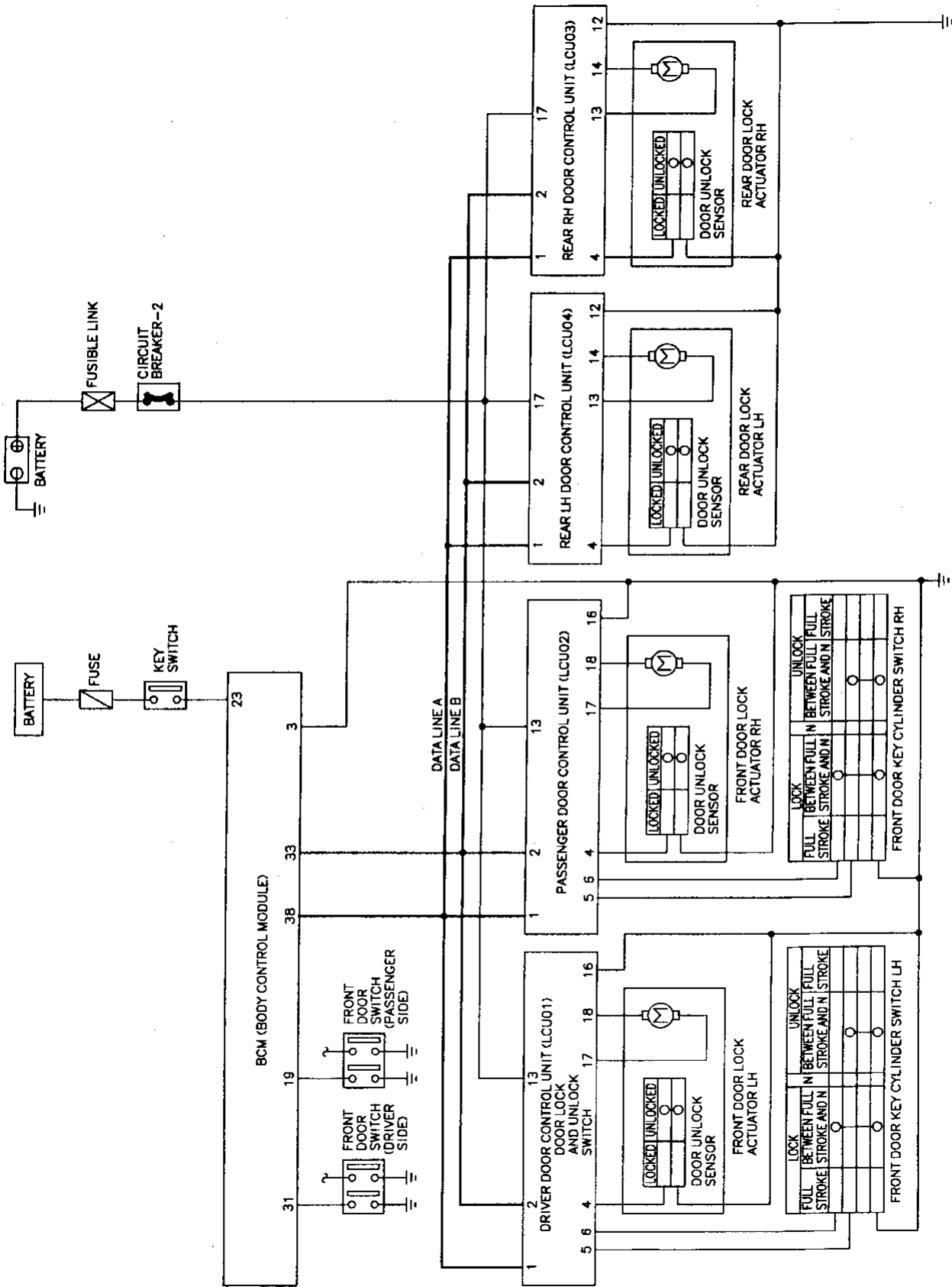
However, if the ignition key is in the ignition key cylinder and one or more of the front doors are open, setting the lock & unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlocks them. — (KEY REMINDER DOOR SYSTEM)



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POWER DOOR LOCK — IVMS

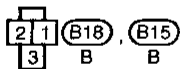
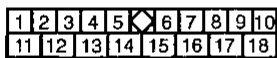
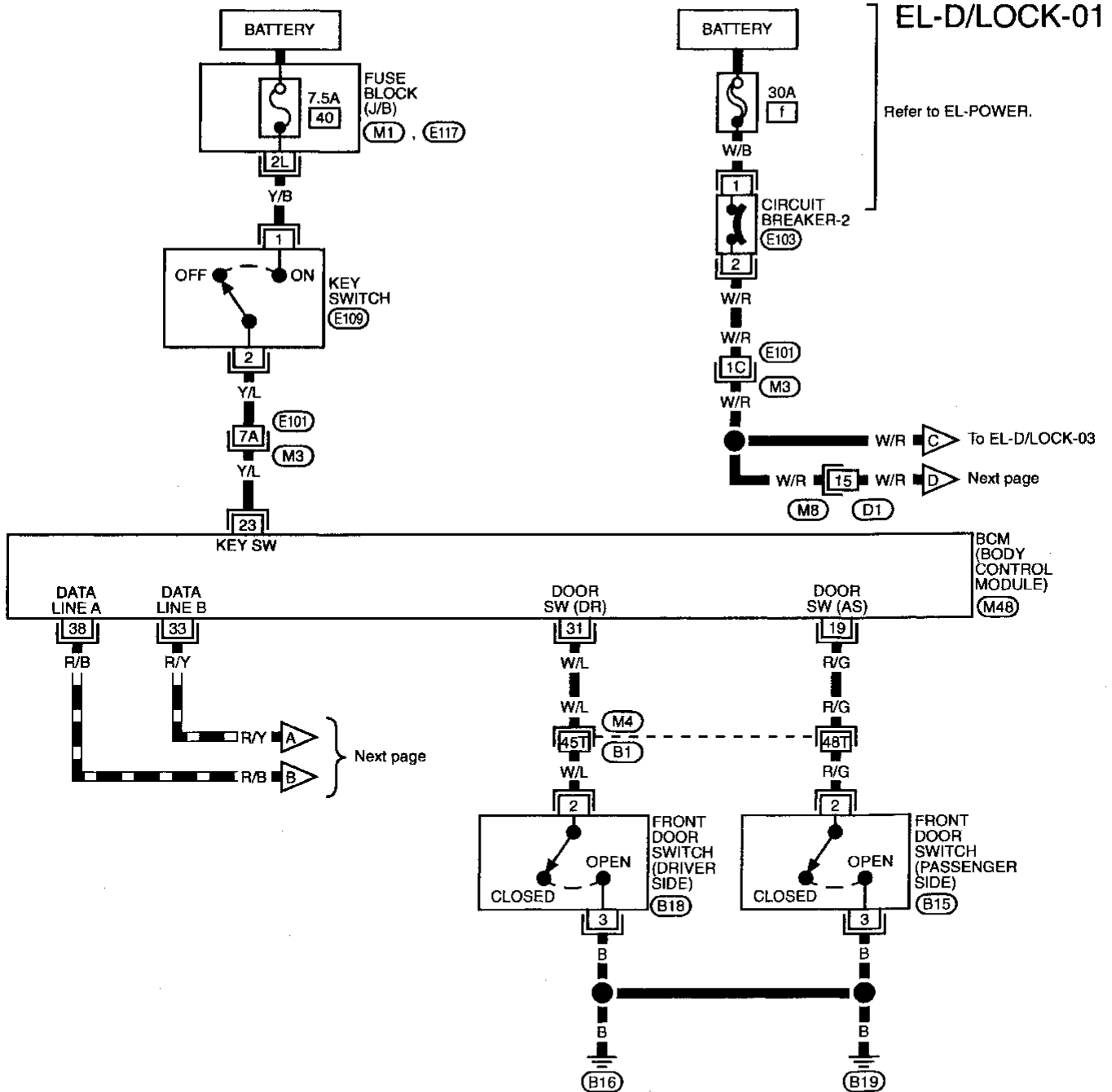
Schematic



MEL674G

POWER DOOR LOCK — IVMS

Wiring Diagram — D/LOCK —



Refer to last page (Foldout page).

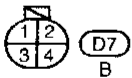
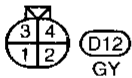
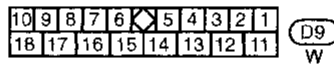
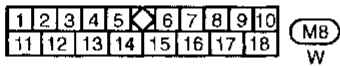
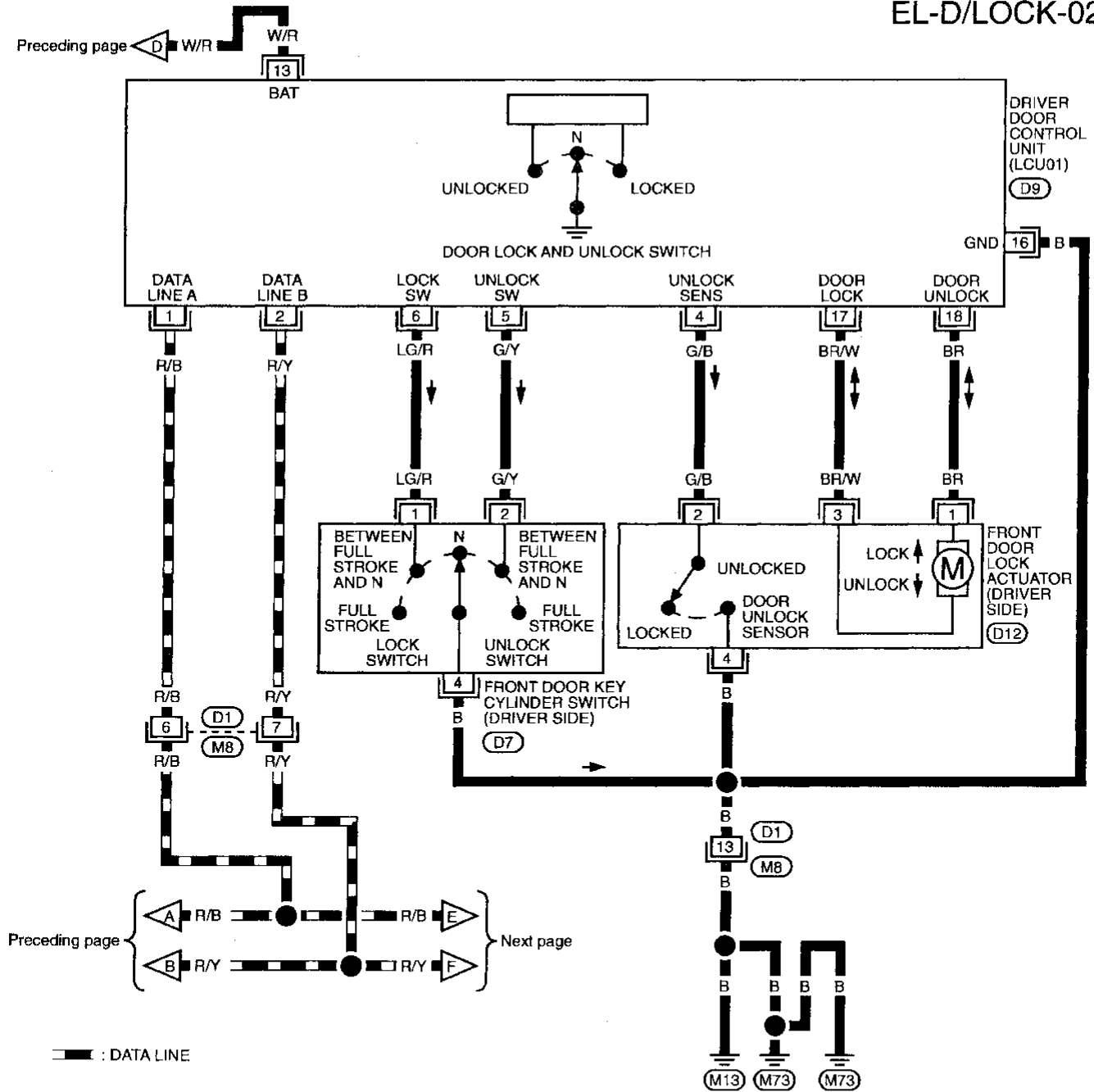
- (M3), (E101)
- (M4), (B1)
- (M1)
- (M48)
- (E117)

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POWER DOOR LOCK — IVMS

Wiring Diagram — D/LOCK — (Cont'd)

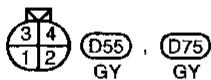
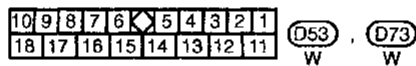
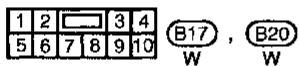
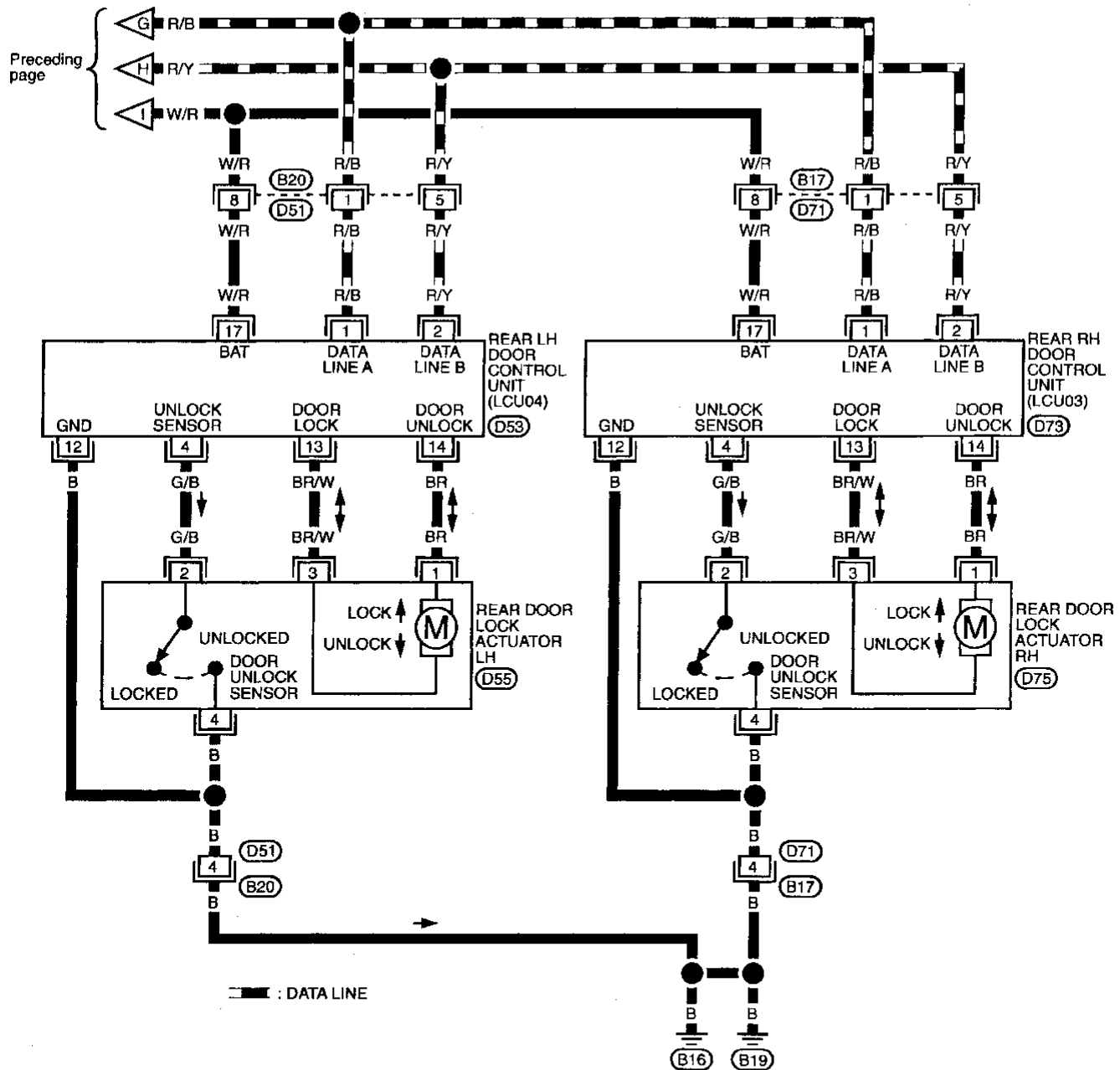
EL-D/LOCK-02

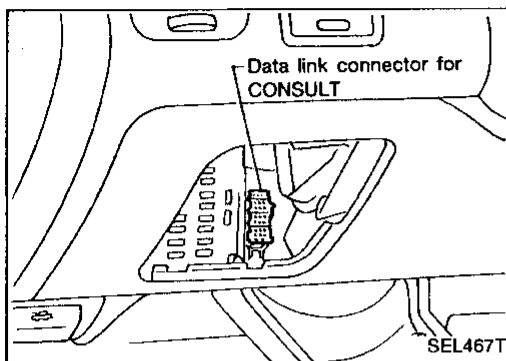


POWER DOOR LOCK — IVMS

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-04





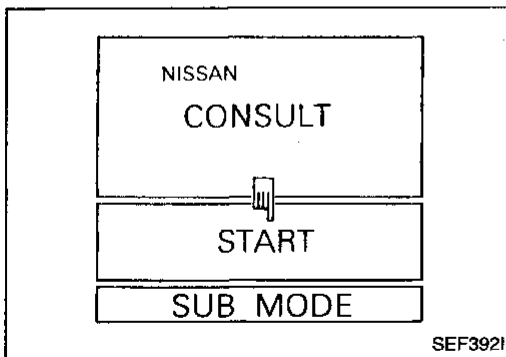
Trouble Diagnoses

CONSULT

CONSULT inspection procedure

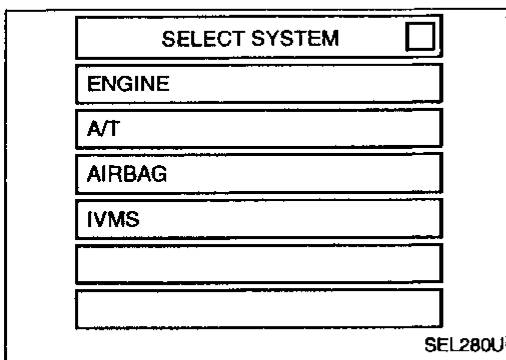
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.
3. Turn ignition switch "ON".
4. Touch "START".

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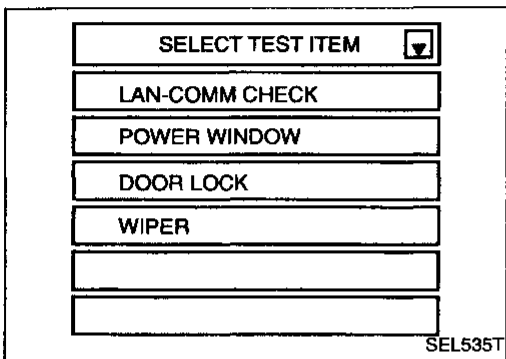


5. Touch "IVMS".

FE
CL

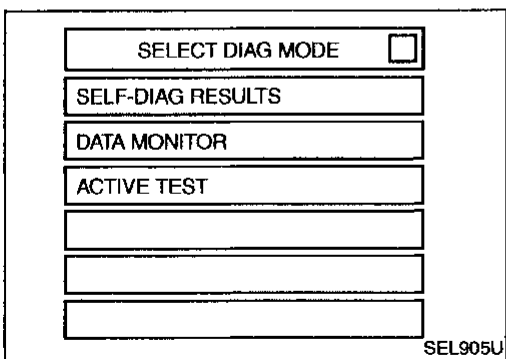


MT
AT
FA



6. Touch "DOOR LOCK".

RA
BR
ST



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

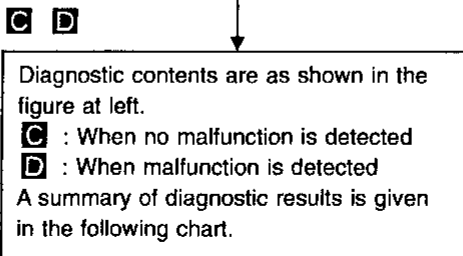
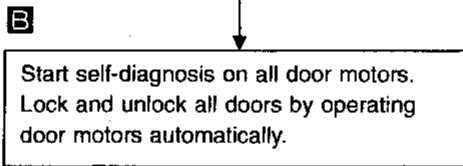
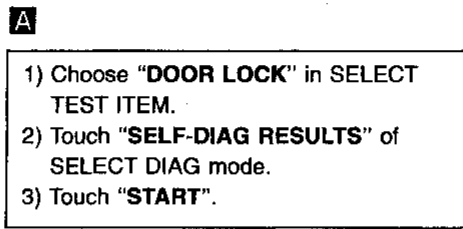
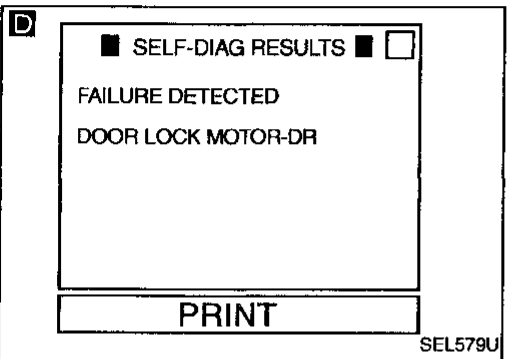
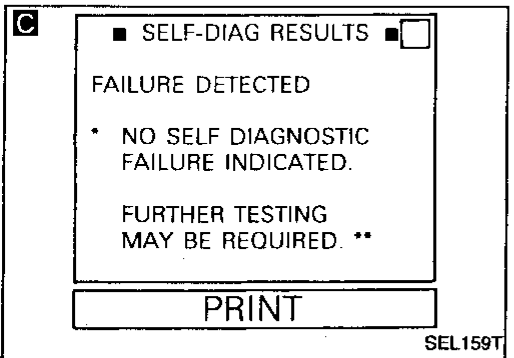
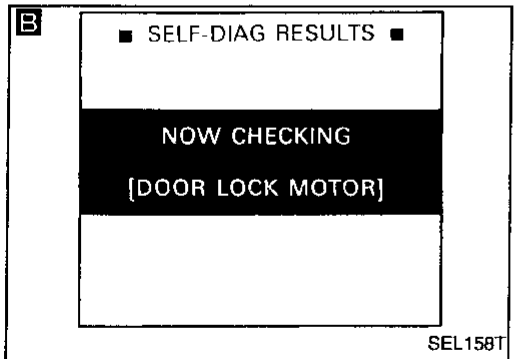
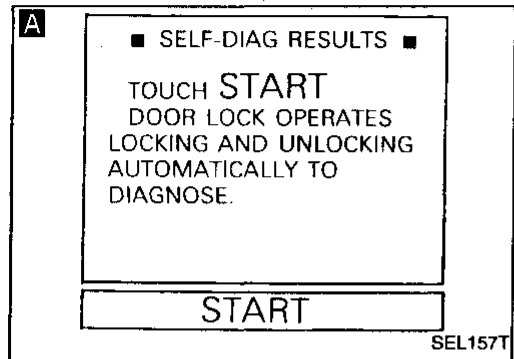
RS
BT
HA

EL
IDX

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

Power door lock — Self-diagnostic results Diagnostic procedure



POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

SELF-DIAGNOSTIC RESULT LIST

Diagnostic result	Explanation	Diagnostic procedure	Reference page
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock actuator/unlock sensor is malfunctioning.	Procedure 5 (Door unlock sensor check) Procedure 6 (Door lock actuator check)	EL-236 EL-237
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock actuator/unlock sensor is malfunctioning.		
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock actuator/unlock sensor is malfunctioning.		
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.		
*NO SELF DIAGNOSTIC FAILURE INDICATED/FURTHER TESTING MAY BE REQUIRED.**	No malfunction in the above items	—	—

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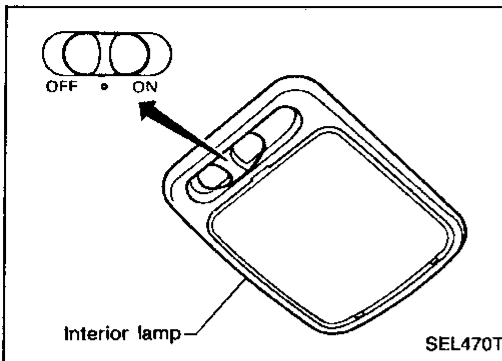
IDX

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

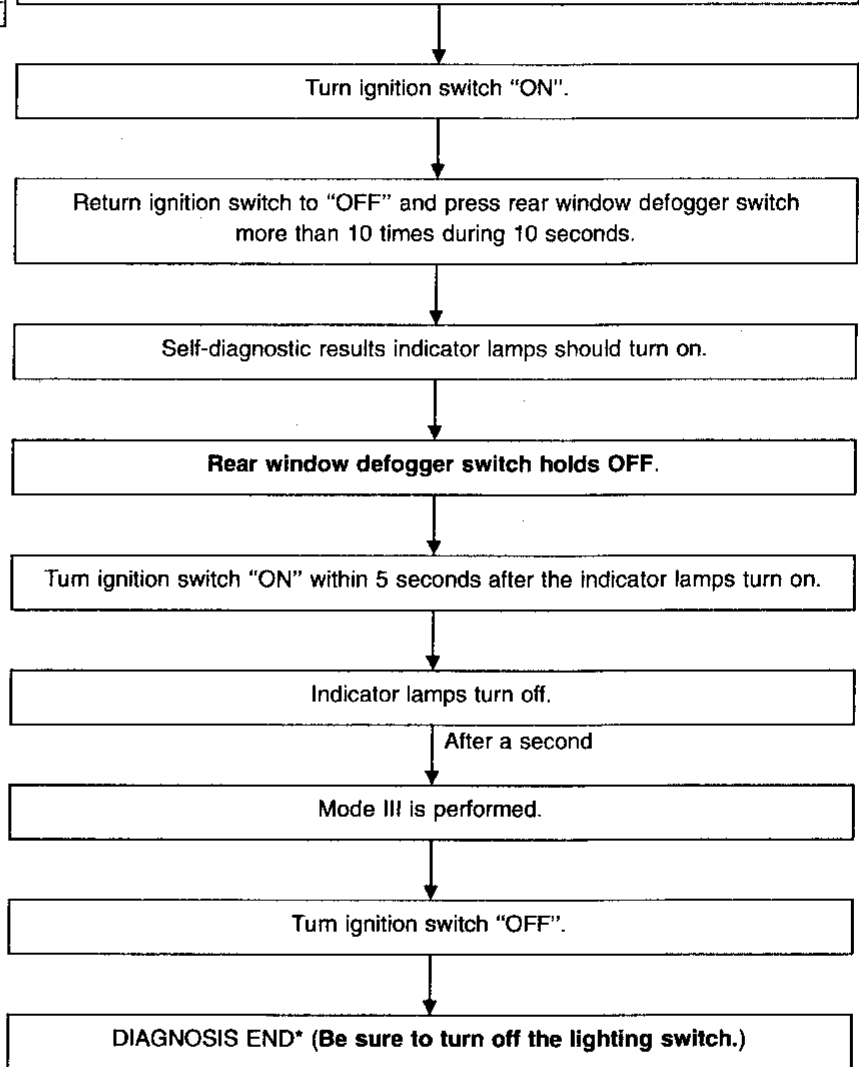
ON-BOARD DIAGNOSIS — MODE III (POWER DOOR LOCK OPERATION)

How to perform mode III



Condition

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



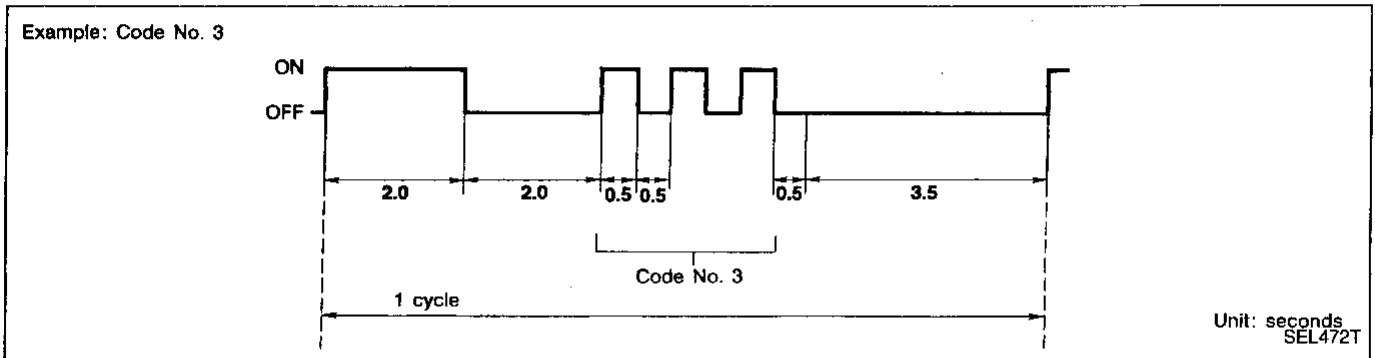
*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

Description

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



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

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

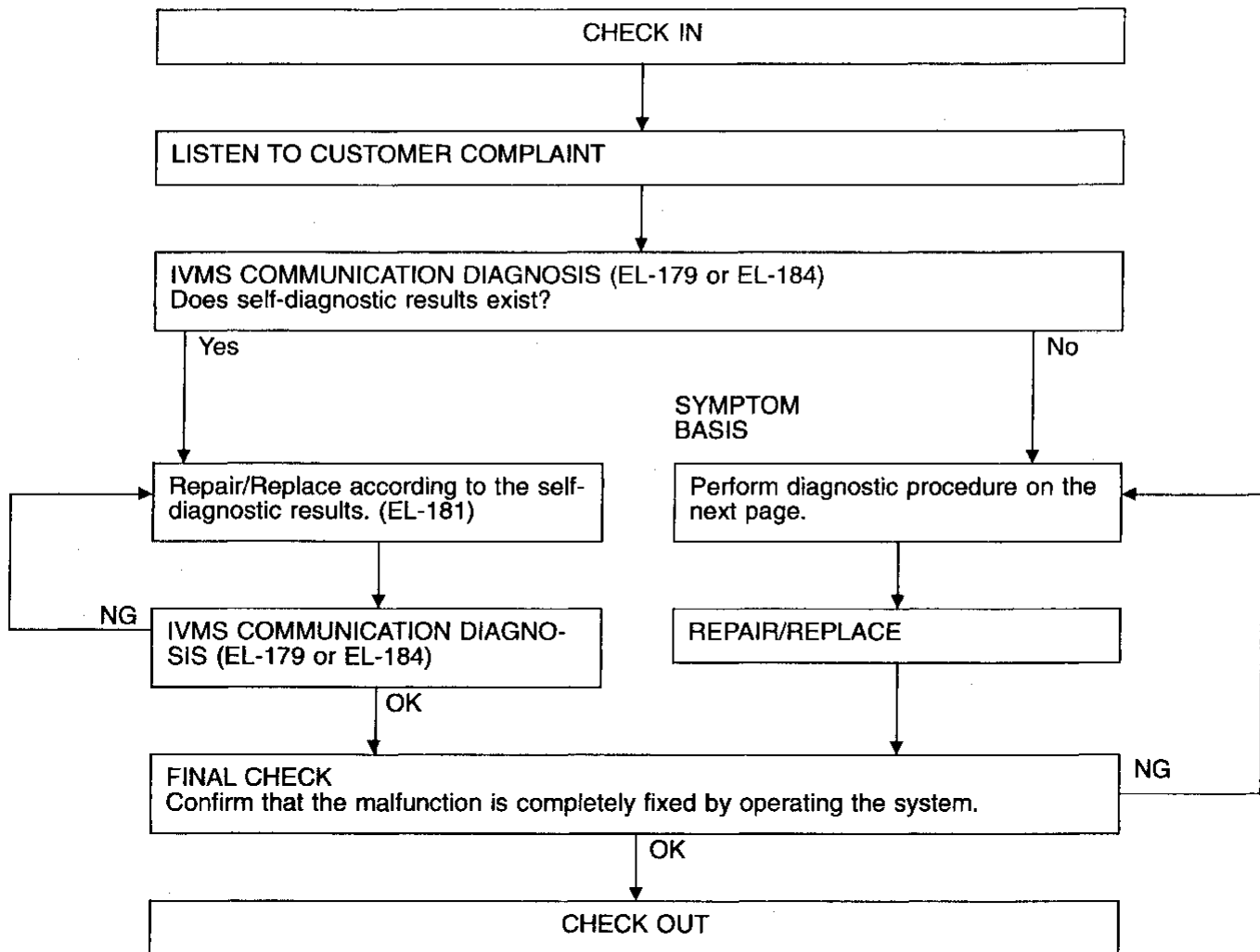
Malfunction code table

Code No.	Detected items	Diagnostic procedure	Reference page
1	Driver door lock actuator/unlock sensor	Procedure 5 (Door unlock sensor check)	EL-236
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-237
4	Rear LH door lock actuator/unlock sensor		
9	No malfunction in the above items	—	—

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

PROCEDURE	Self-diagnosis		Diagnostic procedure							
	EL-226	EL-228	EL-232	EL-233	EL-234	EL-235	EL-236	EL-237	EL-180	
REFERENCE PAGE										
SYMPTOM	CONSULT	On-board diagnosis (Mode III)	Procedure 1 (Front door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door key cylinder switch check)	Procedure 5 (Door unlock sensor check)	Procedure 6 (Door lock actuator check)	Wake-up diagnosis	
Key reminder door system does not operate properly.	X	X	X	X			X	X		
One or more doors are not locked and/or unlocked	X	X					X	X		
Lock & unlock switch does not operate.	X	X			X				X (LCU01)	
None of the doors lock/unlock when operating door key cylinder switch.	X	X				X			X (LCU01, LCU02)	
None of the doors lock when operating front door knob lock switch.	X	X					X		X (LCU01, LCU02)	

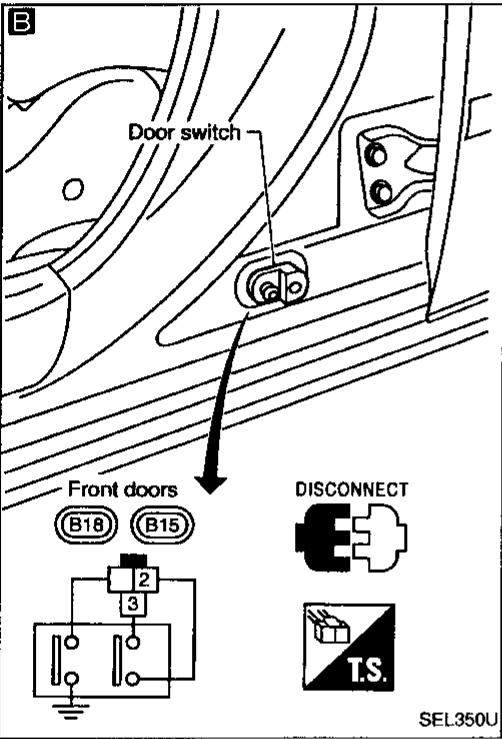
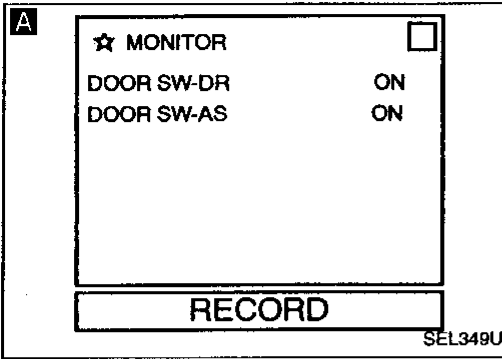
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POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Front door switch check)



A

DOOR SWITCH INPUT SIGNAL CHECK NG → Door switch is OK.

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

When door is closed:
DOOR SW OFF

When door is open:
DOOR SW ON

OR

Check front door switches in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-221.

OK ↓

B

CHECK DOOR SWITCH. NG → Replace door switch.

1. Disconnect door switch connector.
2. Check continuity between terminals.

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

OK ↓

Check the following.

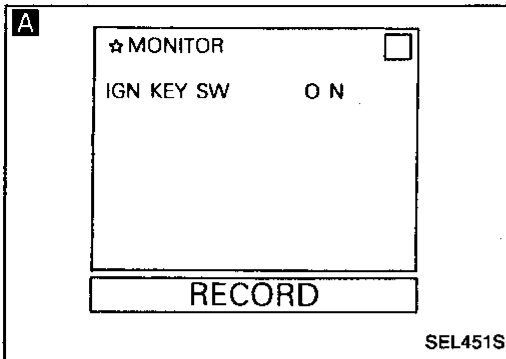
- Door switch ground circuit
- Harness for open or short between door switch and BCM

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Key switch check)



CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:

IGN KEY SW ON

When key is removed from ignition key cylinder:

IGN KEY SW OFF

OR

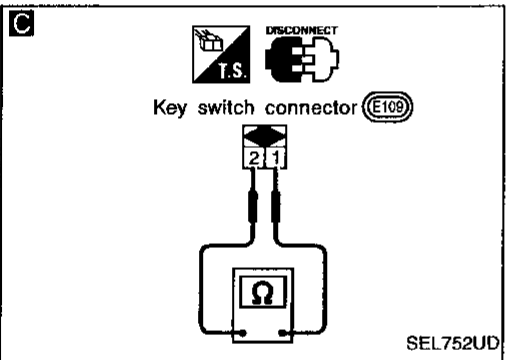
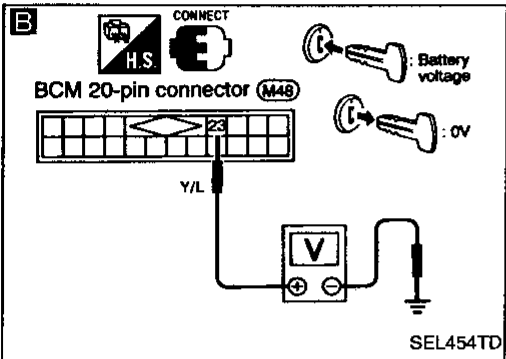
B TESTER

Check voltage between BCM terminal ② and ground.

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

Refer to wiring diagram in EL-221.

OK → Ignition key switch is OK.



C

CHECK KEY SWITCH.

- 1) Disconnect key switch connector.
- 2) Check continuity between key switch (insert) terminals ① and ② when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

Condition	Continuity
Key is inserted	Yes
Key is removed	No

NG → Replace key switch.

OK →

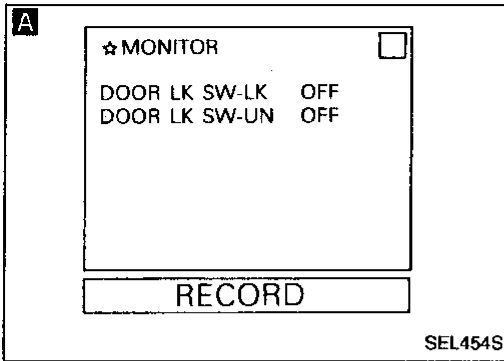
- Check the following.
- 7.5A fuse [No. 40], located in the fuse block (J/B)]
 - Harness for open or short between key switch and fuse
 - Harness for open or short between BCM and key switch

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POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3 (Lock & unlock switch check)




CHECK DOOR LOCK & UNLOCK SWITCH CIRCUIT.

A  **CONSULT**

See "DOOR LK SW-LK or UN" in DATA MONITOR mode.
These signals should be "ON" when door lock switch was operated.

OR

 **ON-BOARD**

Check door lock & unlock switch operation in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

OK → Lock & unlock switch is OK.

NG

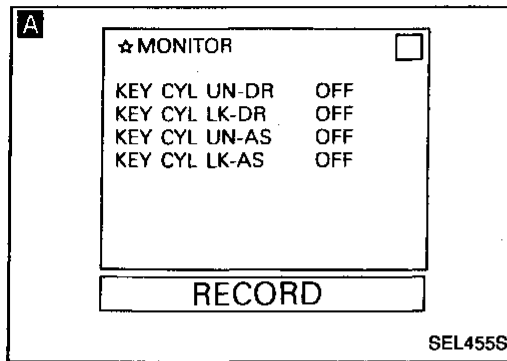
Replace driver door control unit (LCU01).

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)



CHECK DOOR KEY CYLINDER SIGNAL.

A **CONSULT**

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

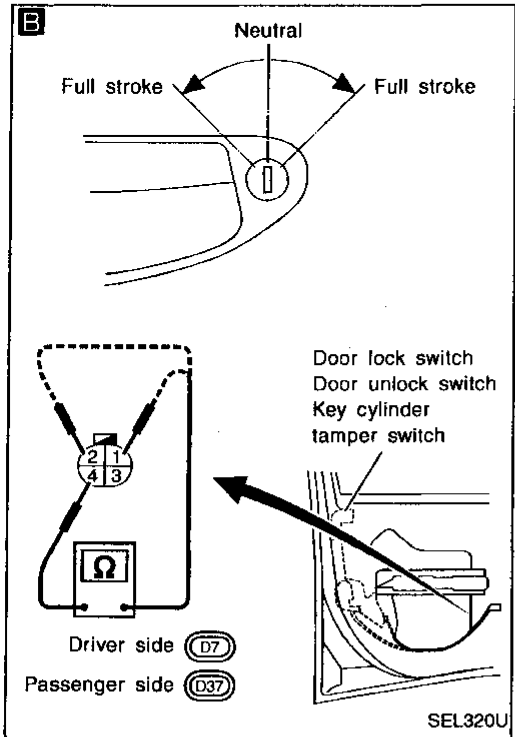
OR

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-222 or 223.

OK → Door key cylinder switch is OK.



B

CHECK DOOR KEY CYLINDER SWITCH.

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

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

NG → Replace door key cylinder switch.

OK →

Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

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POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Door unlock sensor check)

A

☆ MONITOR □

LOCK SIG-DR	UNLK
LOCK SIG-AS	LOCK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK

RECORD

SEL457S

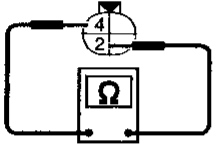
B

DISCONNECT

Door lock actuator connector

Front LH: Rear LH:

Front RH: Rear RH:



SEL060V

CHECK DOOR LOCK KNOB SWITCH CIRCUITS. OK → Door unlock sensor is OK.

A **CONSULT**

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:
LOCK SIG LOCK

When door is unlocked:
LOCK SIG UNLK

B **ON-BOARD**

Check door lock knob operation in switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-222, 223 or 224.

NG ↓

B

CHECK DOOR UNLOCK SENSOR. NG → Repair harness.

- 1) Disconnect door lock actuator connector.
- 2) Check continuity between door lock actuator (door unlock sensor) terminals ② and ④.

Condition	Continuity
Locked	No
Unlocked	Yes

OK ↓

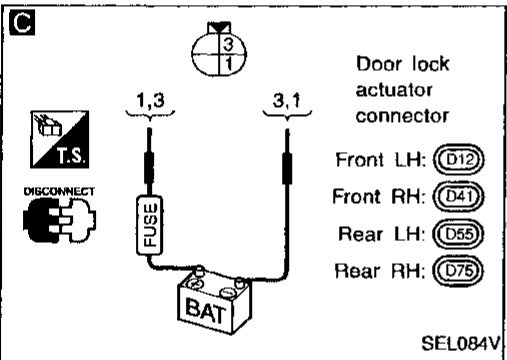
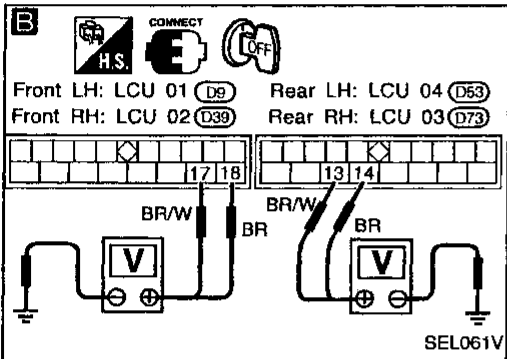
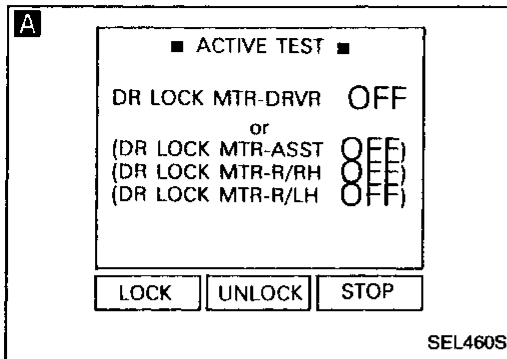
- Check the following.
- Harness for open or short between LCU and door unlock sensor
 - Ground circuit for door unlock sensor

POWER DOOR LOCK — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Door lock actuator check)



A

CHECK DOOR LOCK MOTOR OPERATION.

OK → Door lock actuator is OK.

CONSULT

See "DR LOCK MTR" in ACTIVE TEST mode.

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

NOTE:
If CONSULT is not available, start with the diagnostic procedure **B**.

B

Check voltage between LCU connector terminals and ground.

NG → Replace LCU for malfunctioning portion.

Door lock operation	Terminals		Voltage [V]
	⊕	⊖	
Front (LCU01, LCU02)	Lock	①	Approx. 12
	Unlock	②	
Rear (LCU03, LCU04)	Lock	③	
	Unlock	④	

Refer to wiring diagram in EL-222, 223 or 224.

C

CHECK DOOR LOCK ACTUATOR.

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

NG → Replace door lock actuator.

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

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

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System Description

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 11], located in the fuse block (J/B)]
- to multi-remote control relay-1 terminals ①, ③ and ⑥.

Terminal ② of multi-remote control relay-1 is connected to BCM terminal 11.

Power is supplied at all times

- through 7.5A fuse (No. 65), located in the fuse and fusible link box)
- to theft warning horn relay terminal ① and
- to theft warning lamp relay terminal ①.

Theft warning horn relay terminal ② and theft warning lamp relay terminal ② are connected to BCM terminal 13.

Power is supplied at all times

- through 15A fuse [No. 37], located in the fuse block (J/B)]
- to trunk lid opener actuator terminal ②.

Trunk lid opener actuator terminal ① is connected to multi-remote control unit (LCU05) terminal ⑤

BCM is connected to Multi-remote control unit (LCU05), driver door control unit (LCU01), passenger door control unit (LCU02), rear LH door control unit (LCU04) and rear RH door control unit (LCU03) as DATA LINES A and B.

Power is supplied at all times

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

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

- through key switch terminal ②
- to BCM terminal 23.

When any of the four door switches is in OPEN position, ground is supplied

- to BCM terminal 21
- through door switches body grounds.

When the driver side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied

- to driver door control unit (LCU01) terminal ④
- through driver side door lock actuator (door unlock sensor) terminal ②
- to driver side door lock actuator (door unlock sensor) terminal ④
- through body grounds M13 and M73.

When the passenger side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied

- to passenger door control unit (LCU02) terminal ④
- through passenger side door lock actuator (door unlock sensor) terminal ②
- to passenger side door lock actuator (door unlock sensor) terminal ④
- through body grounds M13 and M73.

When the rear door lock actuator LH and/or RH (door unlock sensor) is in UNLOCKED position, ground is supplied

- to rear LH and/or RH door control unit (LCU04/03) terminal ④
- through rear door lock actuator LH (door unlock sensor) terminal ② and/or
- through rear door lock actuator RH (door unlock sensor) terminal ②
- to rear door lock actuator LH (door unlock sensor) terminal ④ and/or
- to rear door lock actuator RH (door unlock sensor) terminal ④
- through body grounds B18 and B19.

Remote controller signal input

- through window antenna
- to multi-remote control unit (LCU05) terminal 7.

MULTI-REMOTE CONTROL SYSTEM — IVMS

System Description (Cont'd)

The multi-remote control system controls operation of the

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

GI

OPERATING PROCEDURE

Multi-remote control unit (LCU05) can receive signals from remote controller when key switch is in OFF position (key not in cylinder). And it sends the signals to BCM and LCUs as DATA LINES A and B.

MA

EM

Power door lock operation

- Key switch OFF signal (ignition key is not in key cylinder)
- Door switch CLOSE signal (all doors closed)

LC

The two above signals are already input into BCM. At this point, multi-remote control unit (LCU05) receives a LOCK signal from remote controller. Multi-remote control unit (LCU05) will then send a LOCK signal

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

EC

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

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

FE

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

CL

When an UNLOCK signal is sent from remote controller once, driver's door will be unlocked.

Then, if an UNLOCK signal is sent from remote controller again within 3 seconds, all other doors will be unlocked.

MT

For detailed description, refer to "POWER DOOR LOCK — IVMS" (EL-219).

AT

Trunk lid opener operation

Ground is supplied

- to trunk lid opener actuator terminal ①
- through multi-remote control unit (LCU05).

FA

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

RA

Panic alarm operation

Multi-remote control system activates horn and headlamps intermittently when an alarm signal is sent from remote controller to multi-remote control system.

BR

For detailed description, refer to "THEFT WARNING SYSTEM — IVMS" (EL-259).

ST

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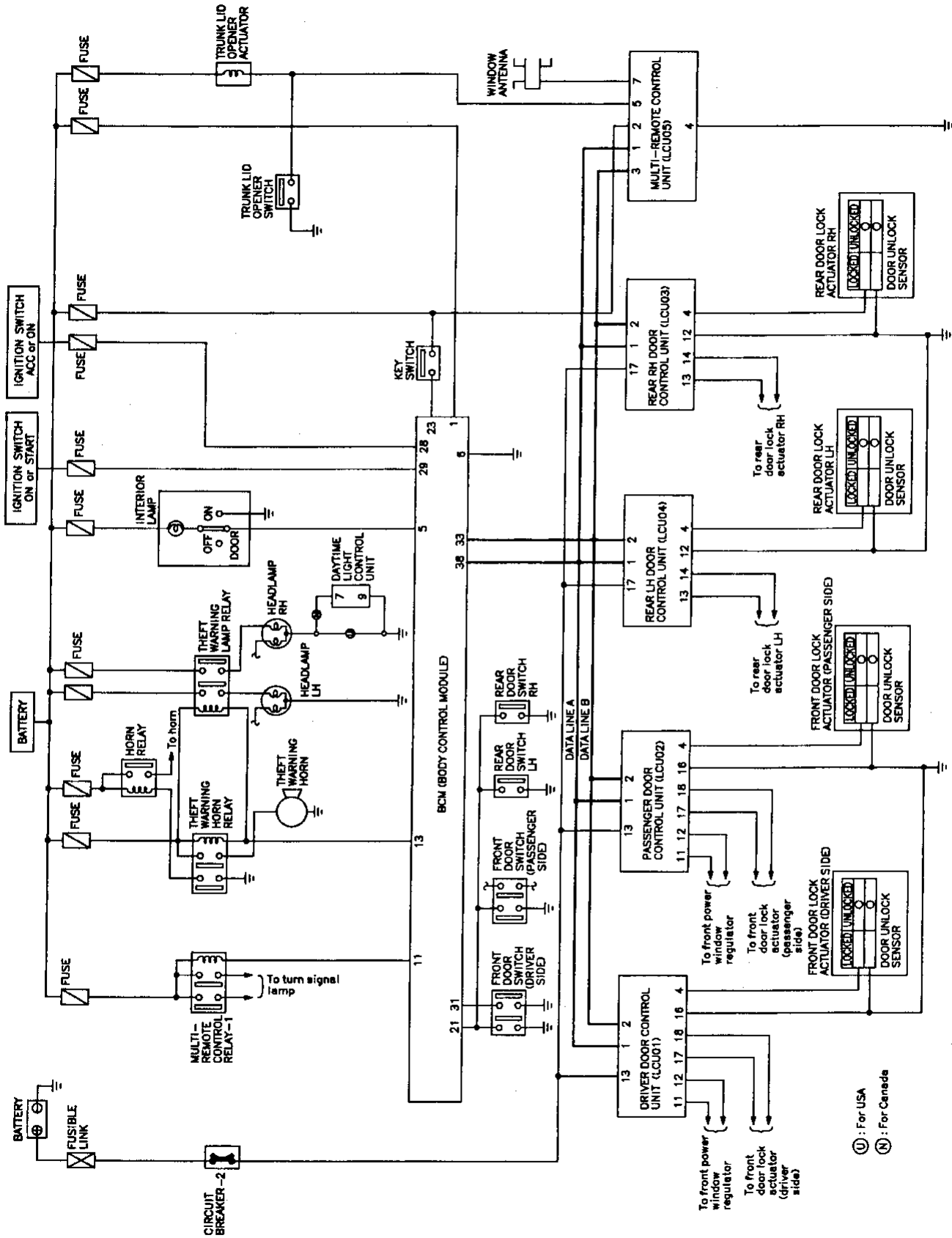
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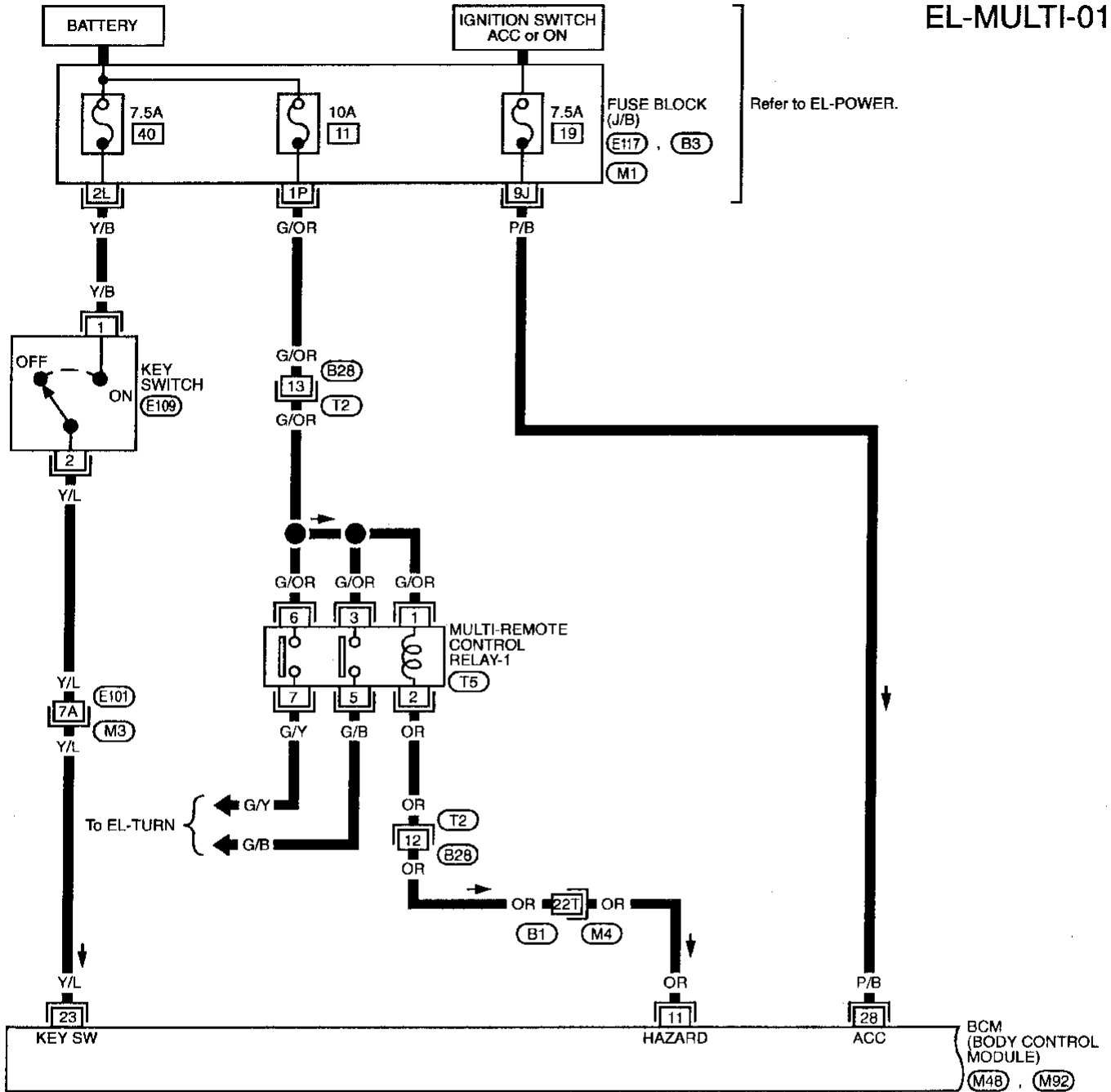
MULTI-REMOTE CONTROL SYSTEM — IVMS

Schematic

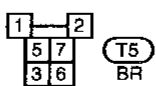
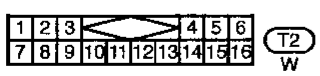


Wiring Diagram — MULTI —

EL-MULTI-01



Refer to EL-POWER.



Refer to last page (Foldout page).

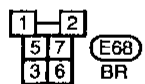
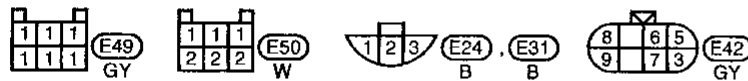
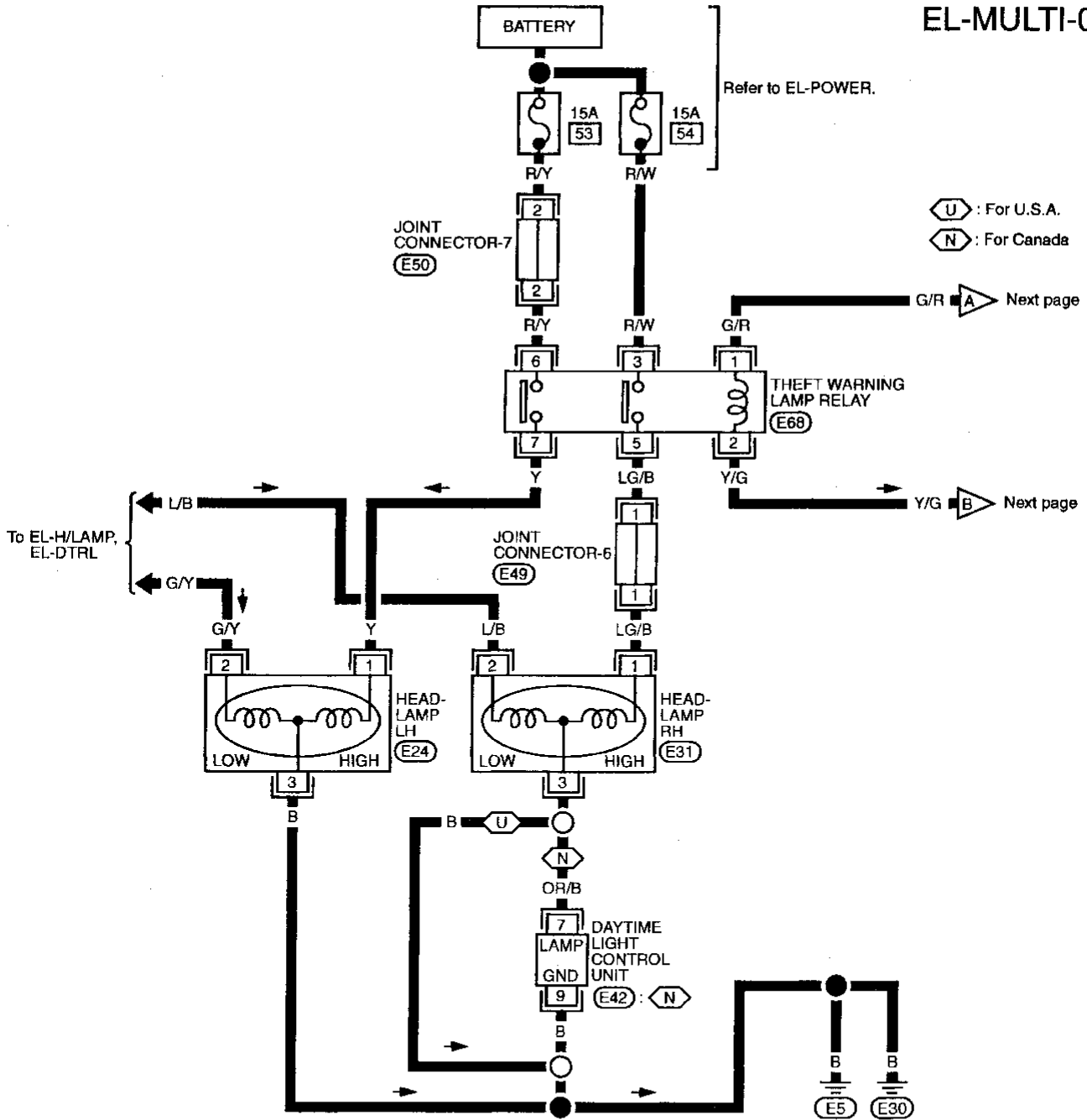
- (M3) , (E101)
- (M4) , (B1)
- (E117)
- (B3)
- (M1)
- (M48) , (M92)

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MULTI-REMOTE CONTROL SYSTEM — IVMS

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02



Refer to last page (Foldout page).

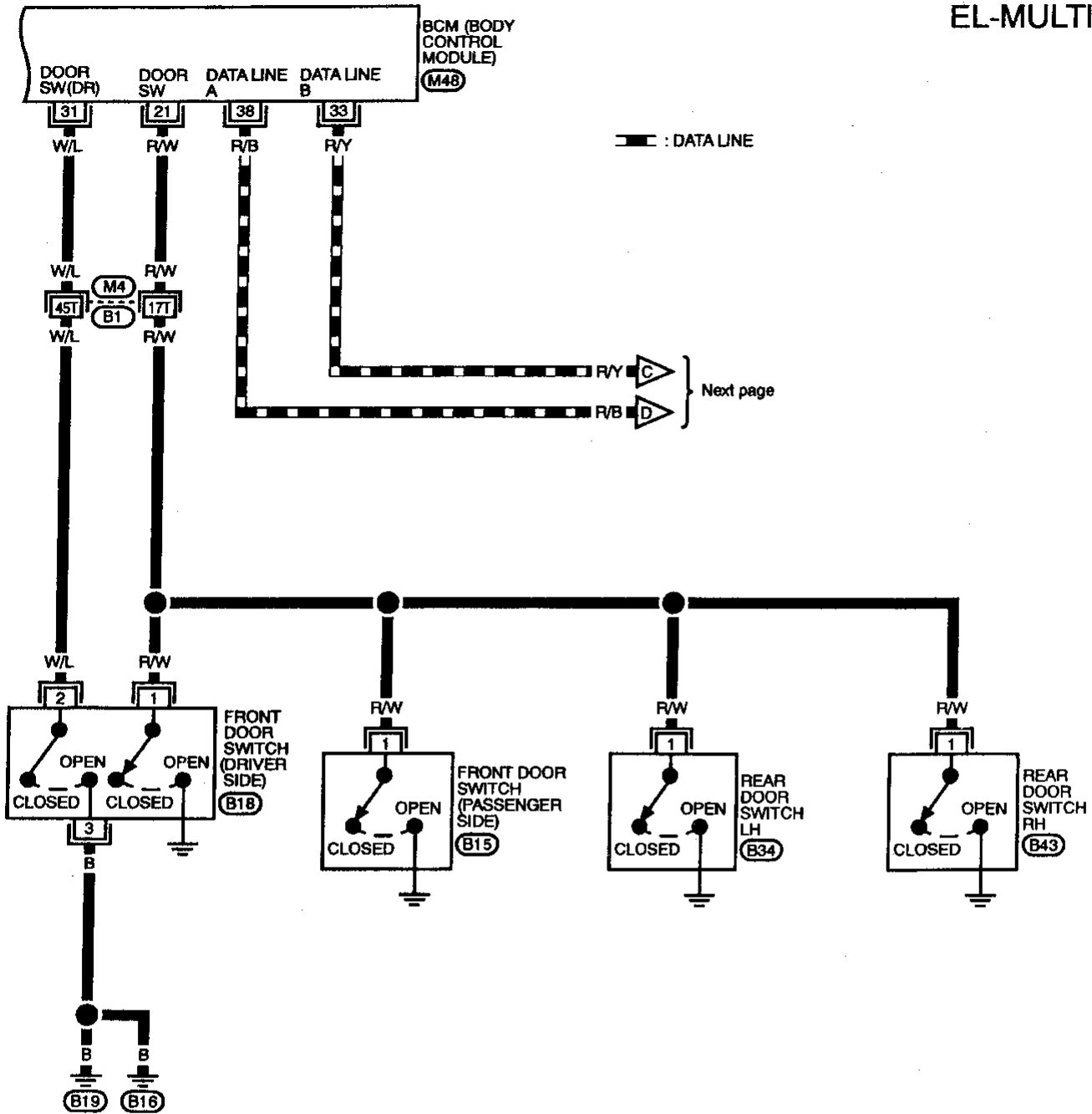
E49

E50

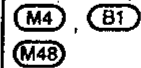
MULTI-REMOTE CONTROL SYSTEM — IVMS

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04



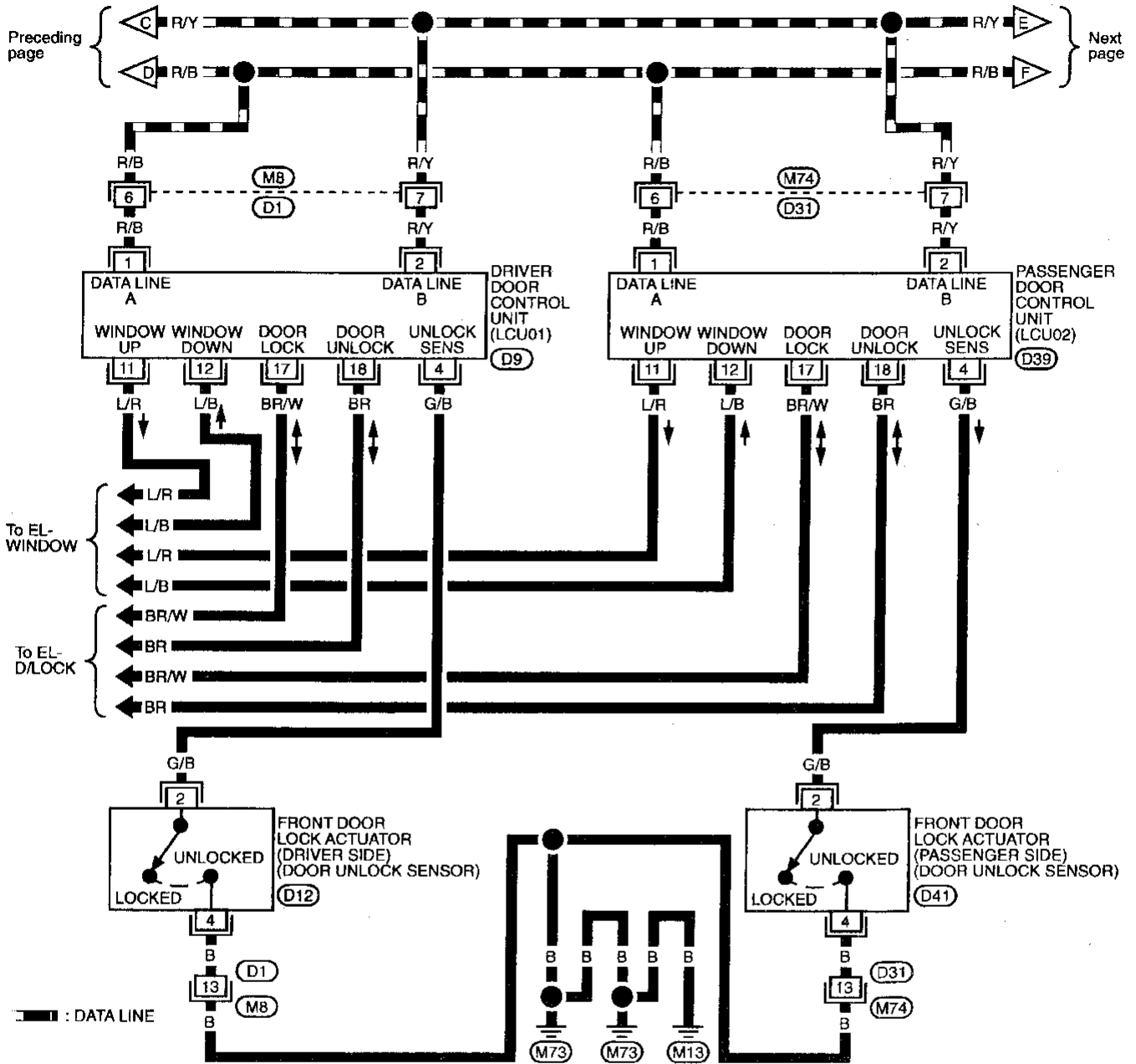
Refer to last page (Foldout page).



MULTI-REMOTE CONTROL SYSTEM — IVMS

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-05

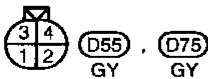
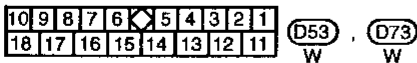
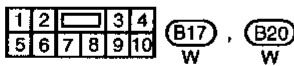
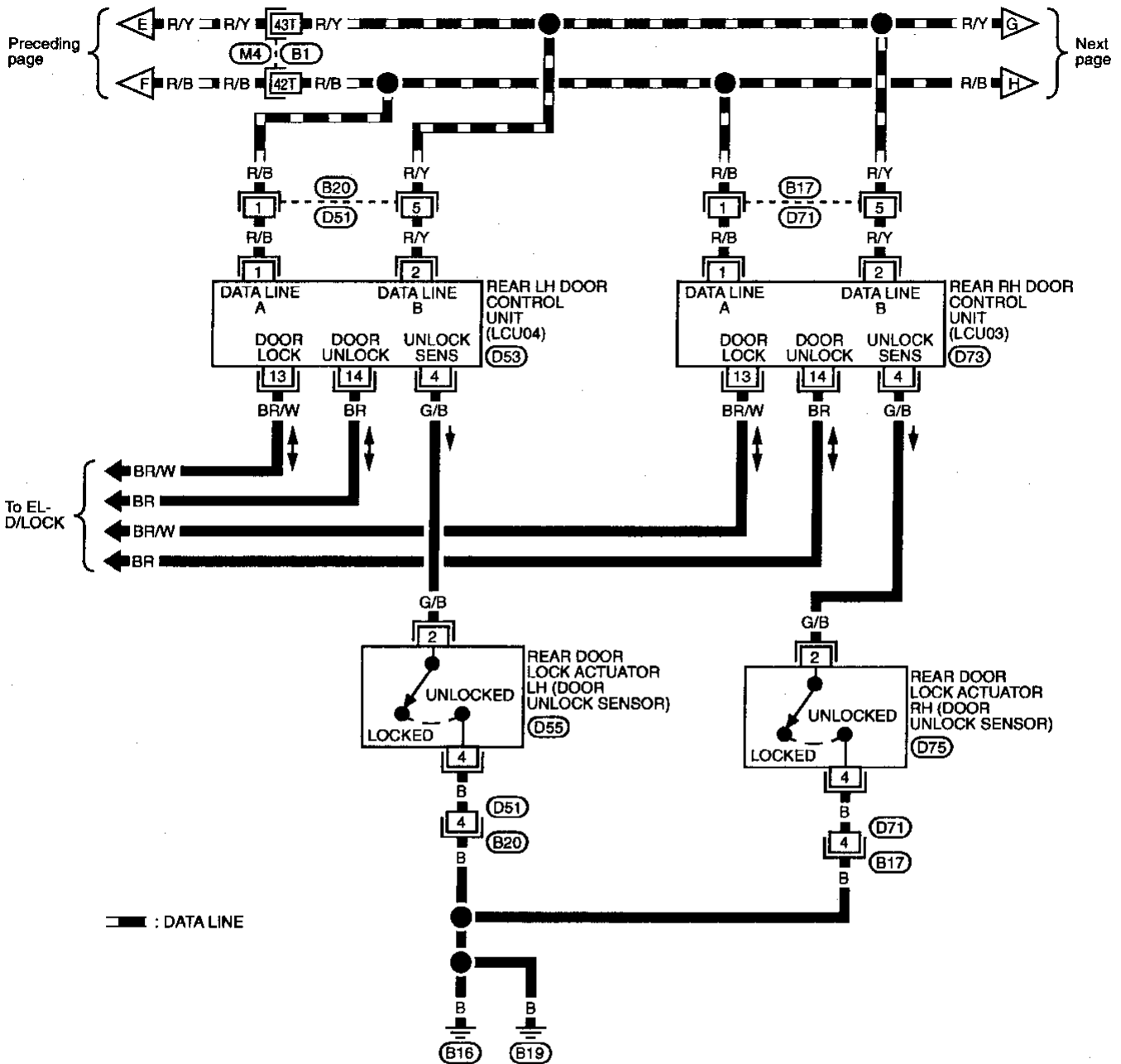


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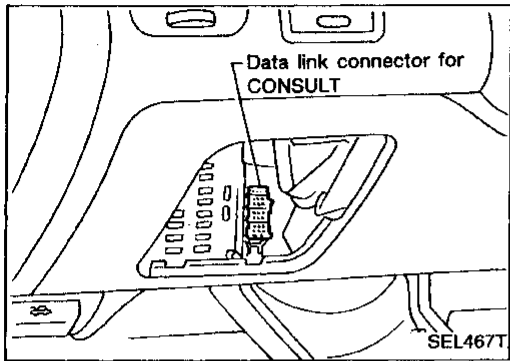
MULTI-REMOTE CONTROL SYSTEM — IVMS

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-06



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

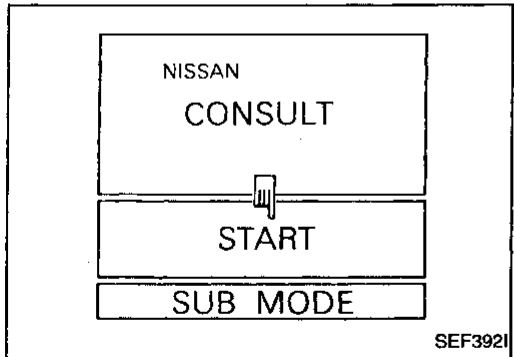


Trouble Diagnoses

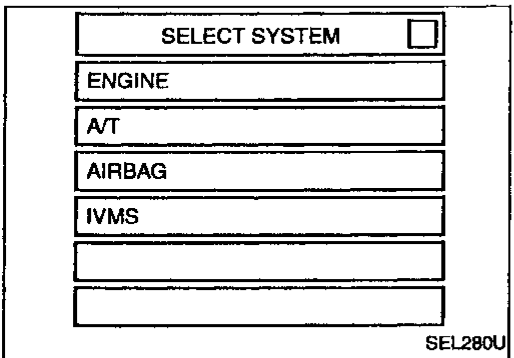
CONSULT

CONSULT inspection procedure

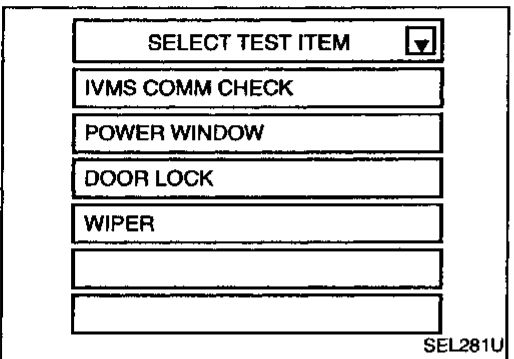
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



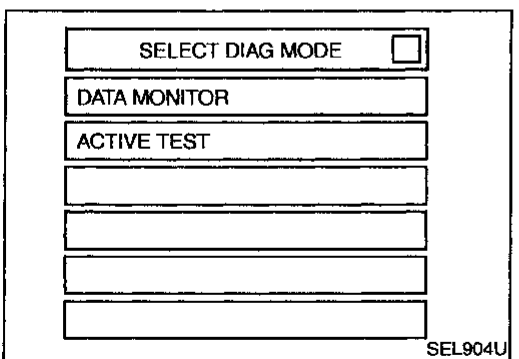
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "MULTI-REMOTE CONT SYS".

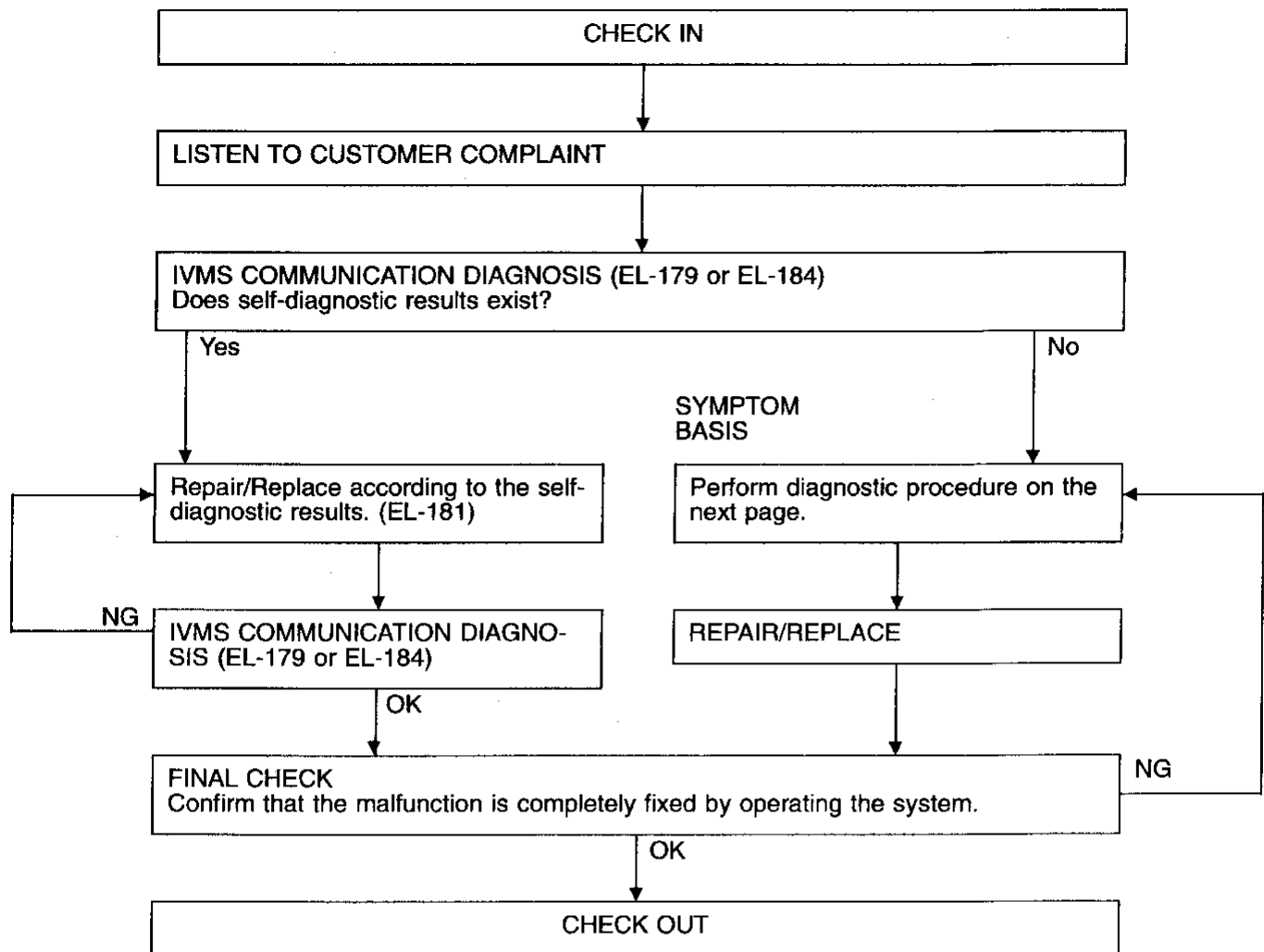


- DATA MONITOR and ACTIVE TEST are available for the multi-remote control system.

MULTI-REMOTE CONTROL SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

WORK FLOW



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NOTICE:

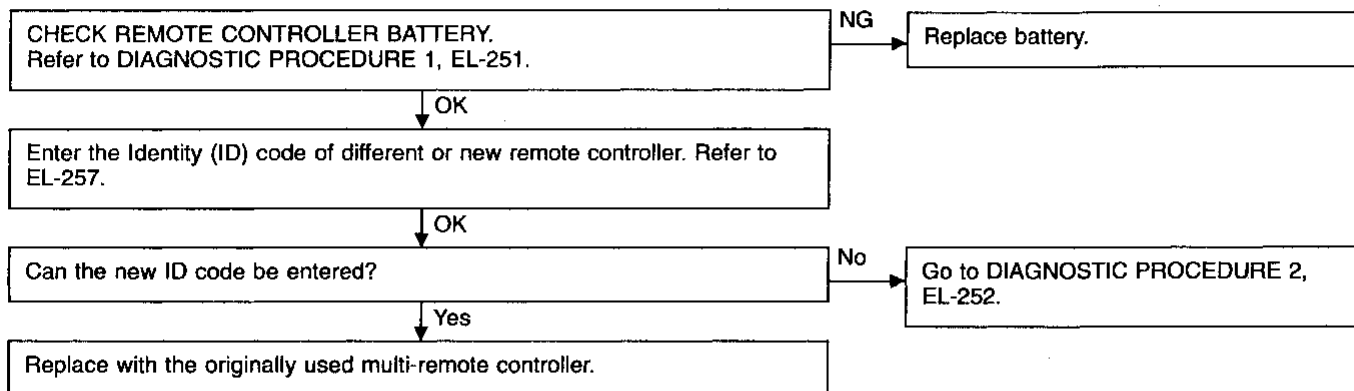
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

MULTI-REMOTE CONTROL SYSTEM — IVMS

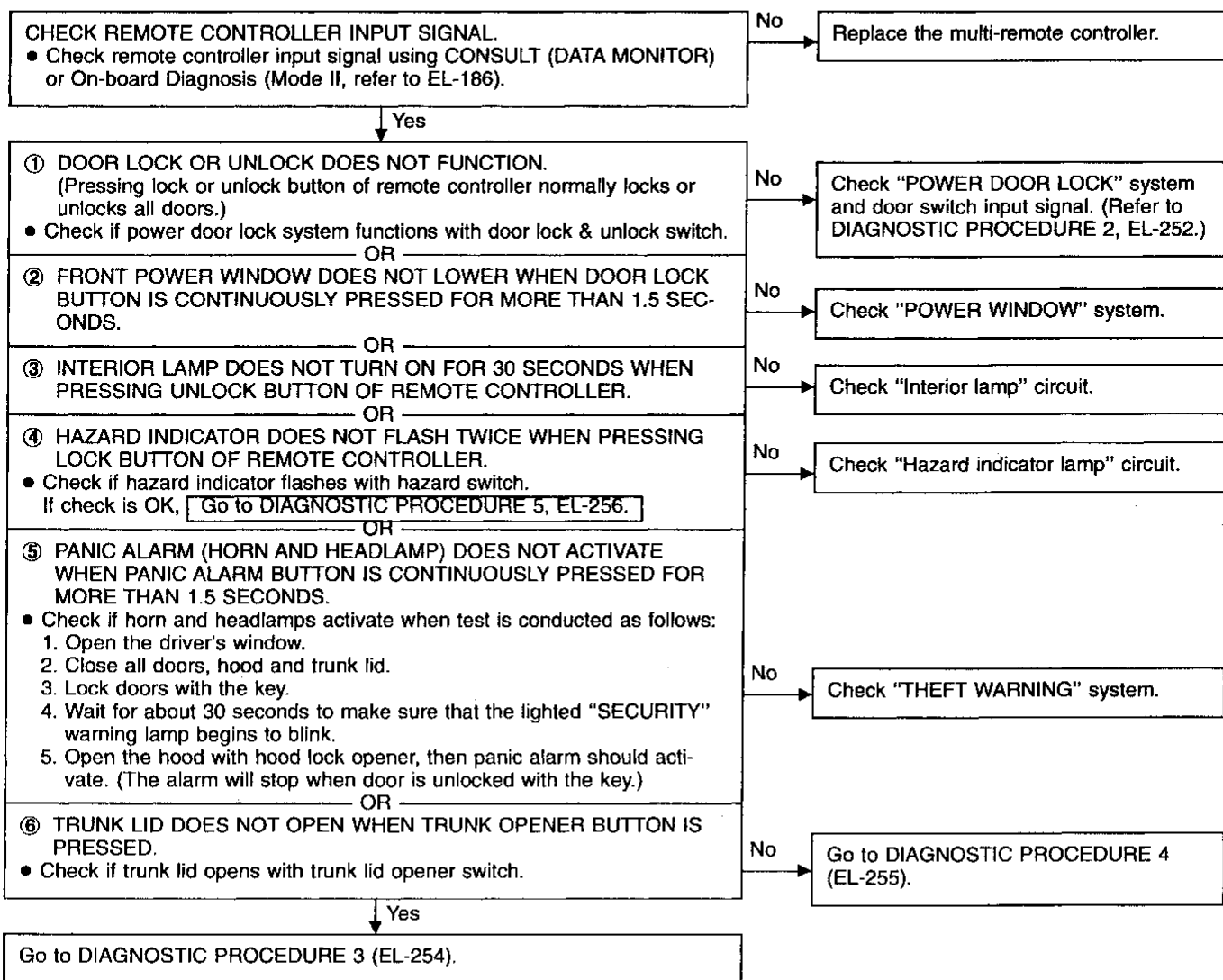
Trouble Diagnoses (Cont'd)

TROUBLE SYMPTOM

- All functions of remote control system do not operate.



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

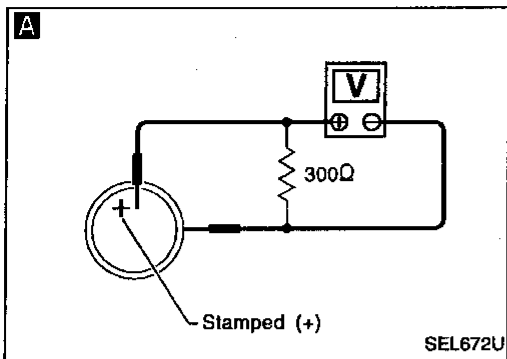


- Note:
- The unlock and trunk open operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.
 - The lock operation of multi-remote control system does not activate with the key inserted in the ignition key cylinder or if one of the doors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

MULTI-REMOTE CONTROL SYSTEM — IVMS

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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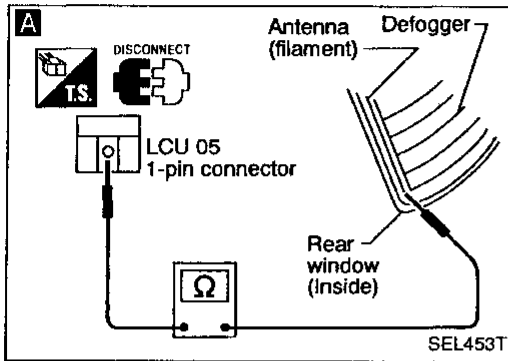
HA

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IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2



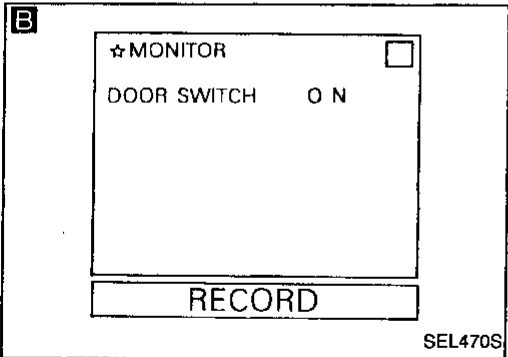
A

CHECK ANTENNA CIRCUIT.

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

NG → Repair antenna circuit. Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-125).

OK ↓



CHECK DOOR SWITCH INPUT SIGNAL.

B **CONSULT**

See "DOOR SWITCH" in DATA MONITOR mode.

When door is open:
DOOR SW ON

When door is closed:
DOOR SW OFF

NG → Check the following.

- Door switch
- Door switch ground condition
- Harness for open or short between BCM and door switch

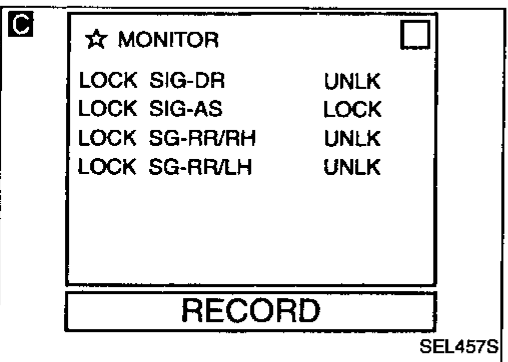
OR

ON-BOARD

Check all doors switches in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-244.

OK ↓



CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

C **CONSULT**

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:
LOCK SIG LOCK

When door is unlocked:
LOCK SIG UNLK

NG → Check the following.

- Door unlock sensor
- Door unlock sensor ground circuit
- Harness for open or short between LCU and unlock sensor

OR

ON-BOARD

Check front door lock knob operation in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

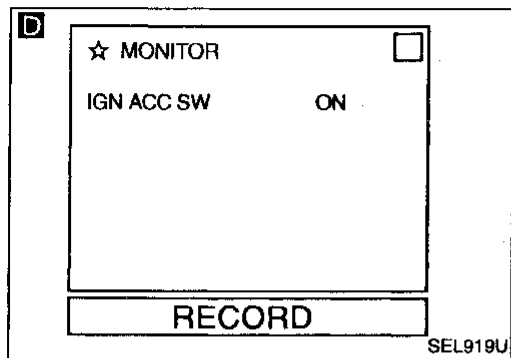
Refer to wiring diagram in EL-245 or 246.

OK ↓

A

MULTI-REMOTE CONTROL SYSTEM — IVMS

Trouble Diagnoses (Cont'd)



④

CHECK IGNITION SWITCH "ACC" CIRCUIT.

D **CONSULT**

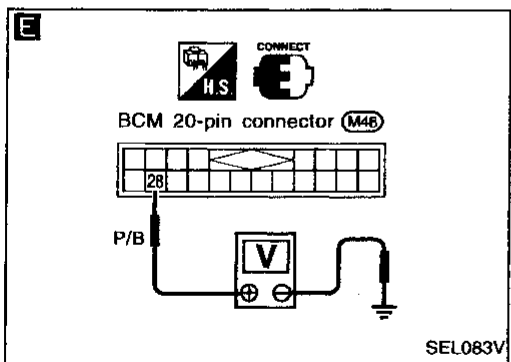
See "IGN ACC SW" in DATA MONITOR mode.

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

When ignition switch is OFF:
IGN ACC SW OFF

OR

- NG
- Check the following.
- 7.5A fuse [No. 19], located in fuse block (J/B)]
 - Harness for open or short between BCM and fuse

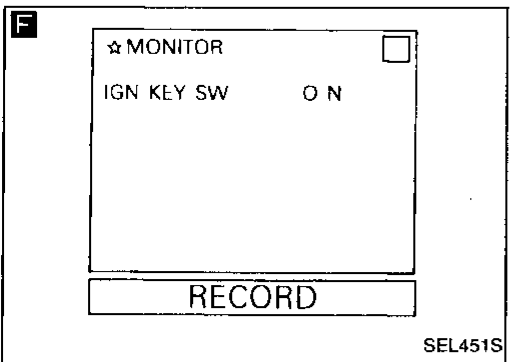


E **TESTER**

Check voltage between BCM terminal ② and ground.

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

Refer to wiring diagram in EL-241.



OK

CHECK KEY SWITCH INPUT SIGNAL.

F **CONSULT**

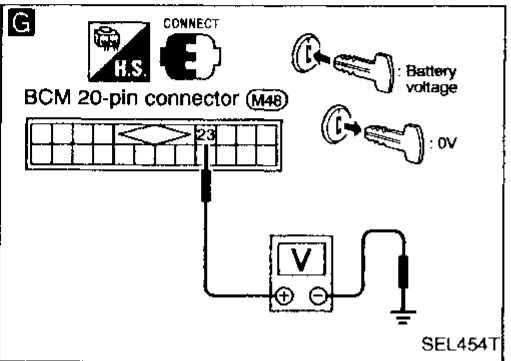
See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:
IGN KEY SW ON

When key is removed from ignition key cylinder:
IGN KEY SW OFF

OR

- NG
- Check the following.
- 7.5A fuse [No. 40], located in fuse block (J/B)]
 - Key switch
 - Harness for open or short between key switch and fuse
 - Harness for open or short between BCM and key switch



G **TESTER**

Check voltage between BCM terminal ② and ground.

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

Refer to wiring diagram in EL-241.

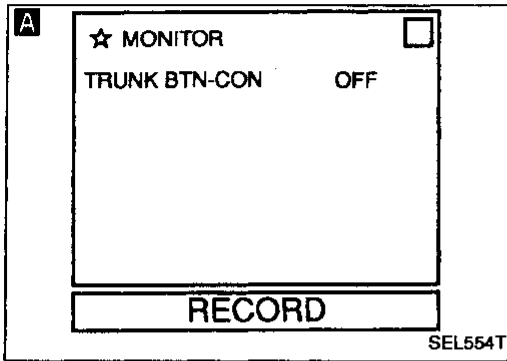
OK

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

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Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3



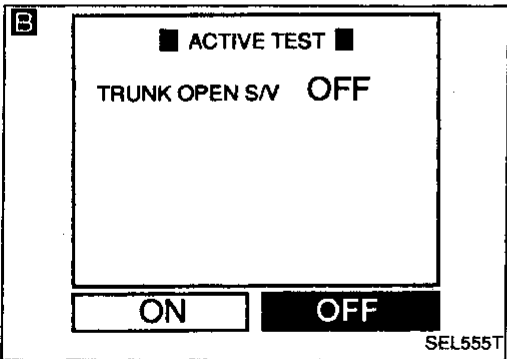
CHECK MULTI-REMOTE CONTROLLER OPERATION.

A CONSULT

See "TRUNK BTN-CON" in DATA MONITOR mode.

"TRUNK BTN-CON" should be "ON" when trunk lid opener button on multi-remote controller is continuously pressed for more than 1 second.

NG → Replace multi-remote controller.



OR

ON-BOARD

Check a trunk open signal from multi-remote controller in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

OK

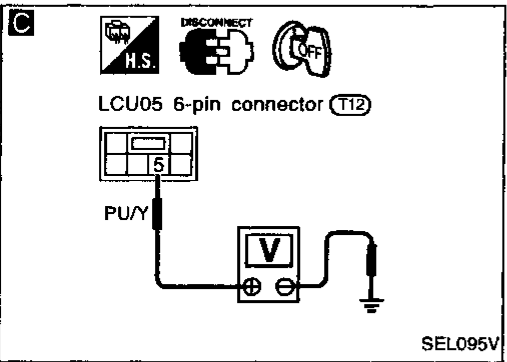
CHECK TRUNK LID OPENER CIRCUIT.

B CONSULT

See "TRUNK OPEN S/V" in ACTIVE TEST mode.

Perform operation shown on display. Trunk lid opener should operate.

OK → Replace LCU05.



OR

C TESTER

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

Battery voltage should exist.

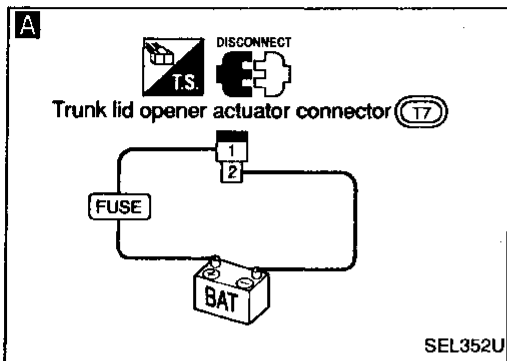
Refer to wiring diagram in EL-247.

NG

Check harness for open or short between LCU05 and trunk lid opener actuator.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4



A

CHECK TRUNK LID OPENER ACTUATOR.

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

Refer to wiring diagram in EL-247.

NG → Replace trunk lid opener actuator.

OK ↓

Check the following.

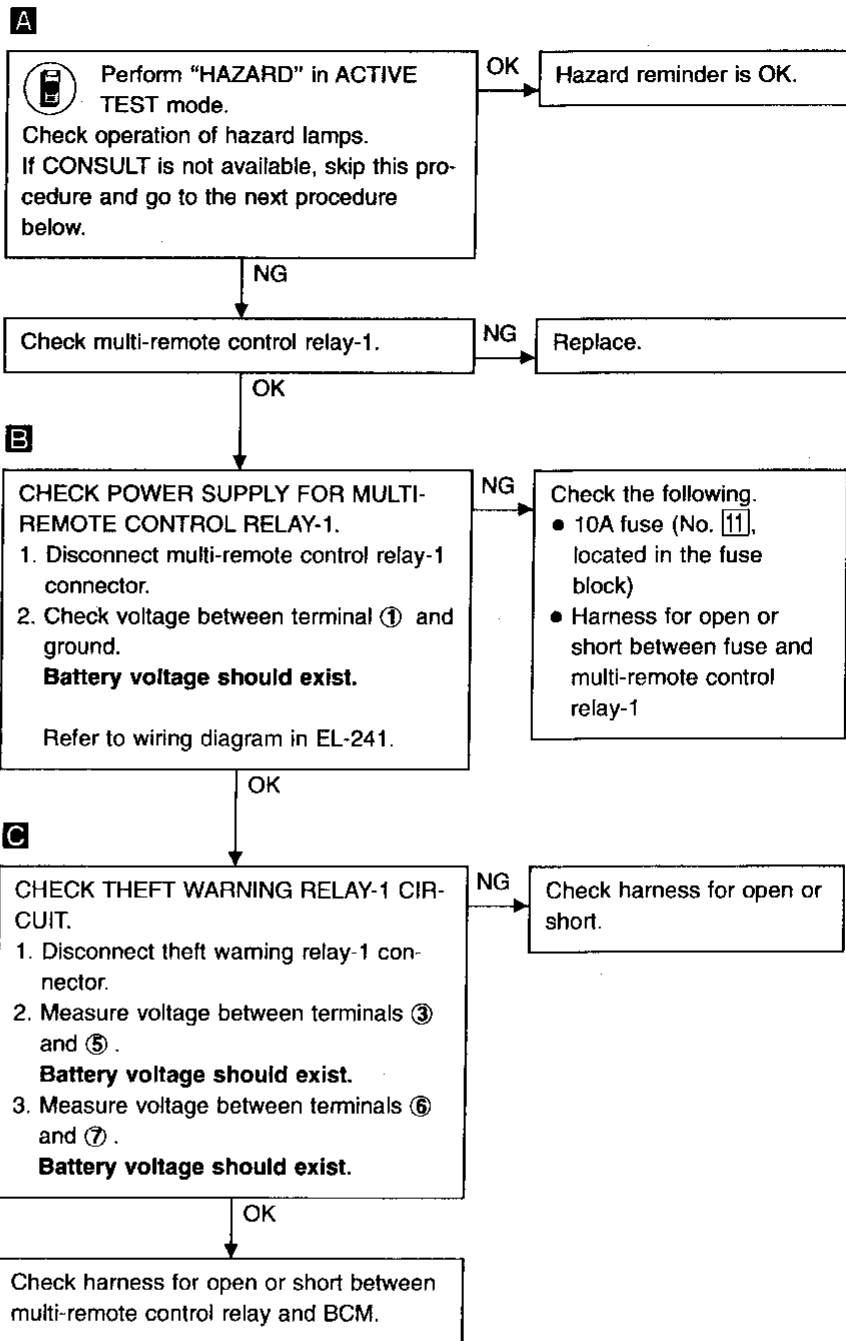
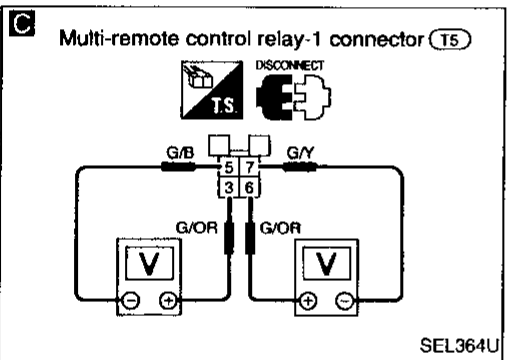
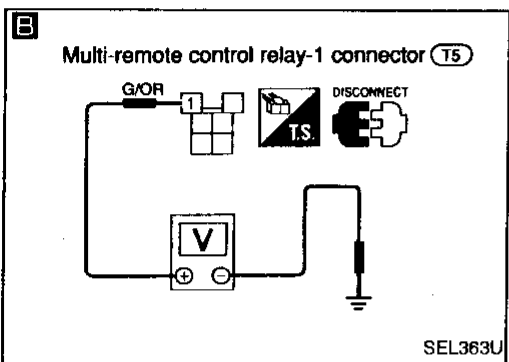
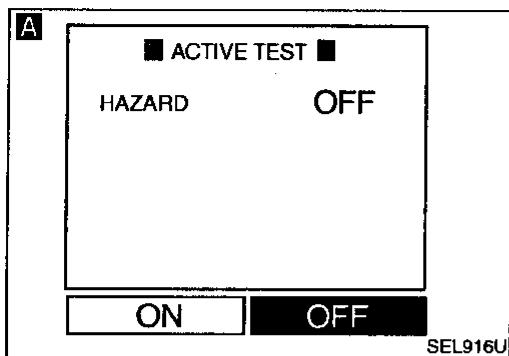
- 15A fuse [No. 37], located in the fuse block (J/B)]
- Harness for open or short between fuse and trunk lid actuator
- Harness for open or short between trunk lid actuator and LCU05

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MULTI-REMOTE CONTROL SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5



Replacing Remote Controller or Control Unit

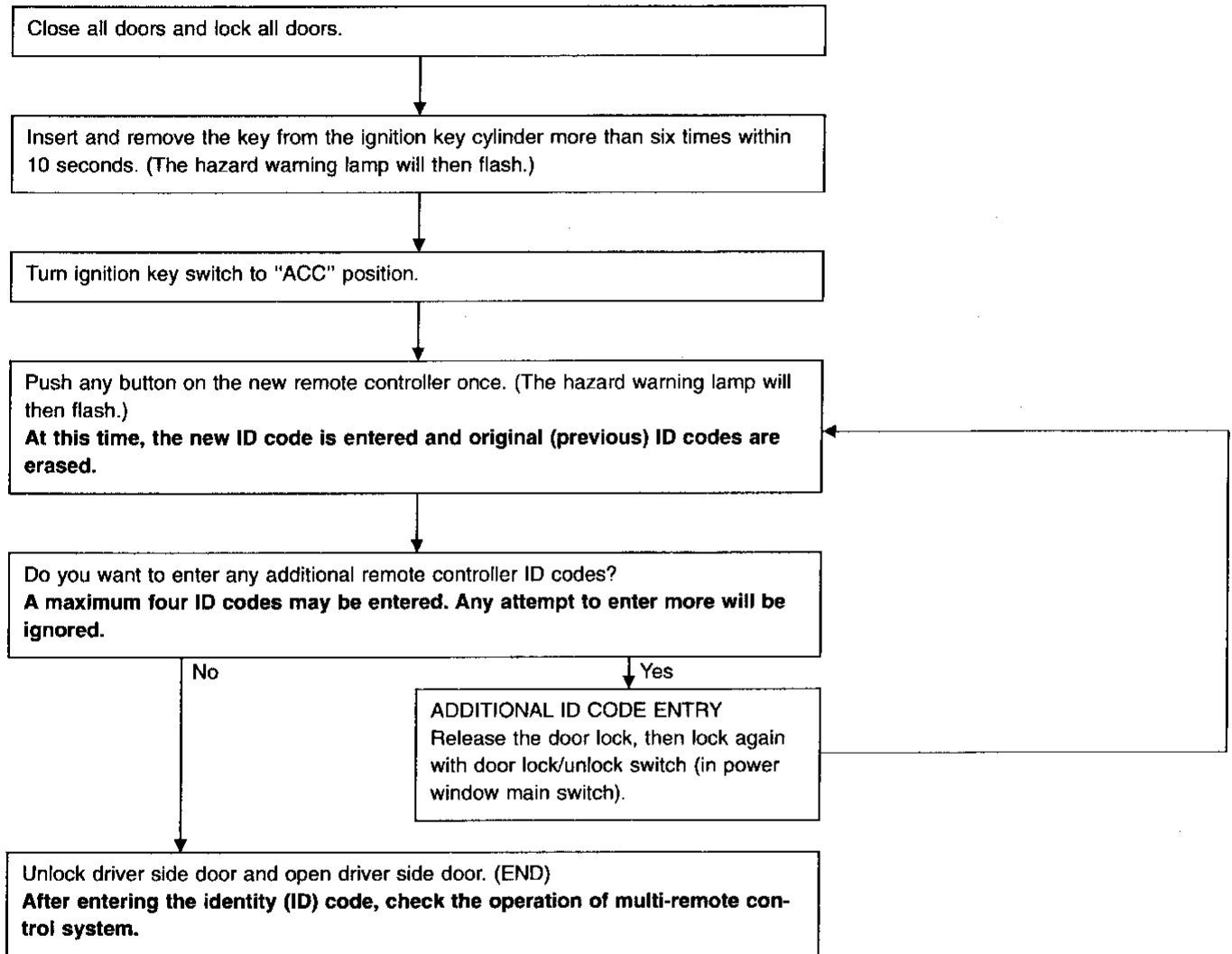
Enter the identity (ID) code manually when:

- remote controller or control unit (LCU05) is replaced.
- an additional remote controller is activated.

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

PROCEDURE

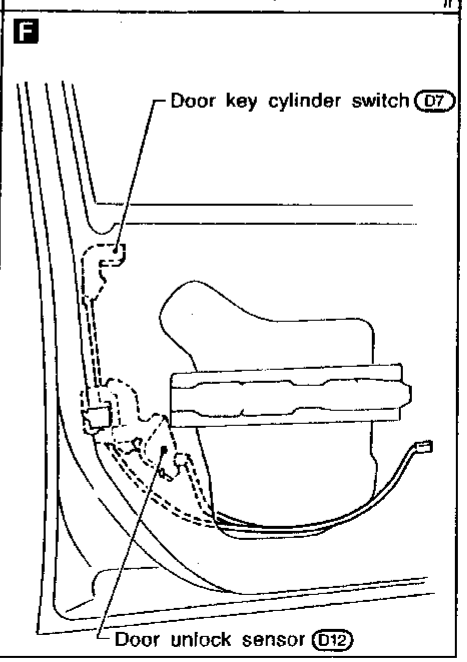
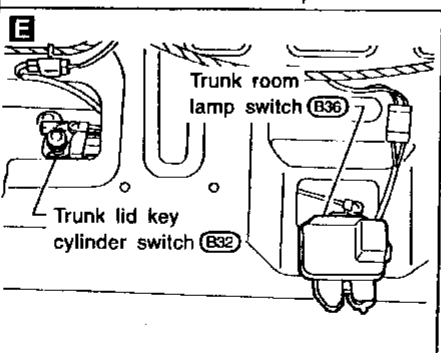
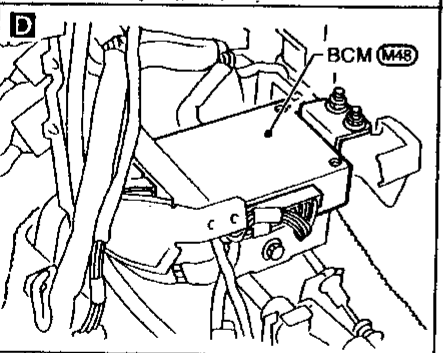
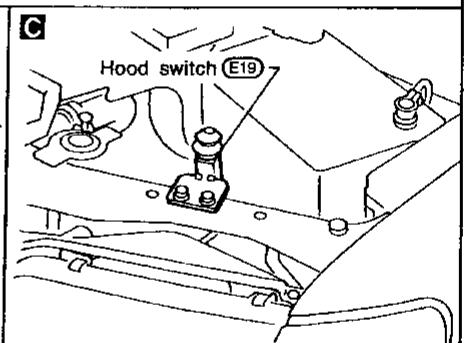
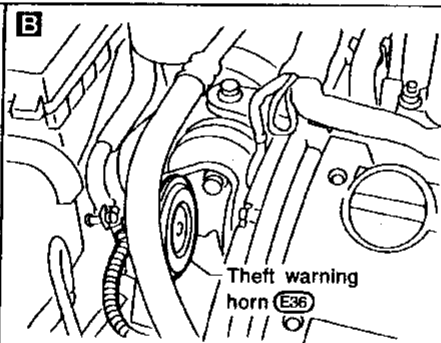
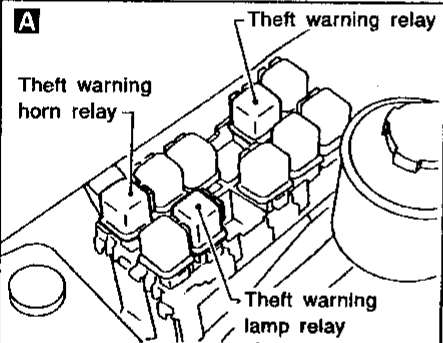
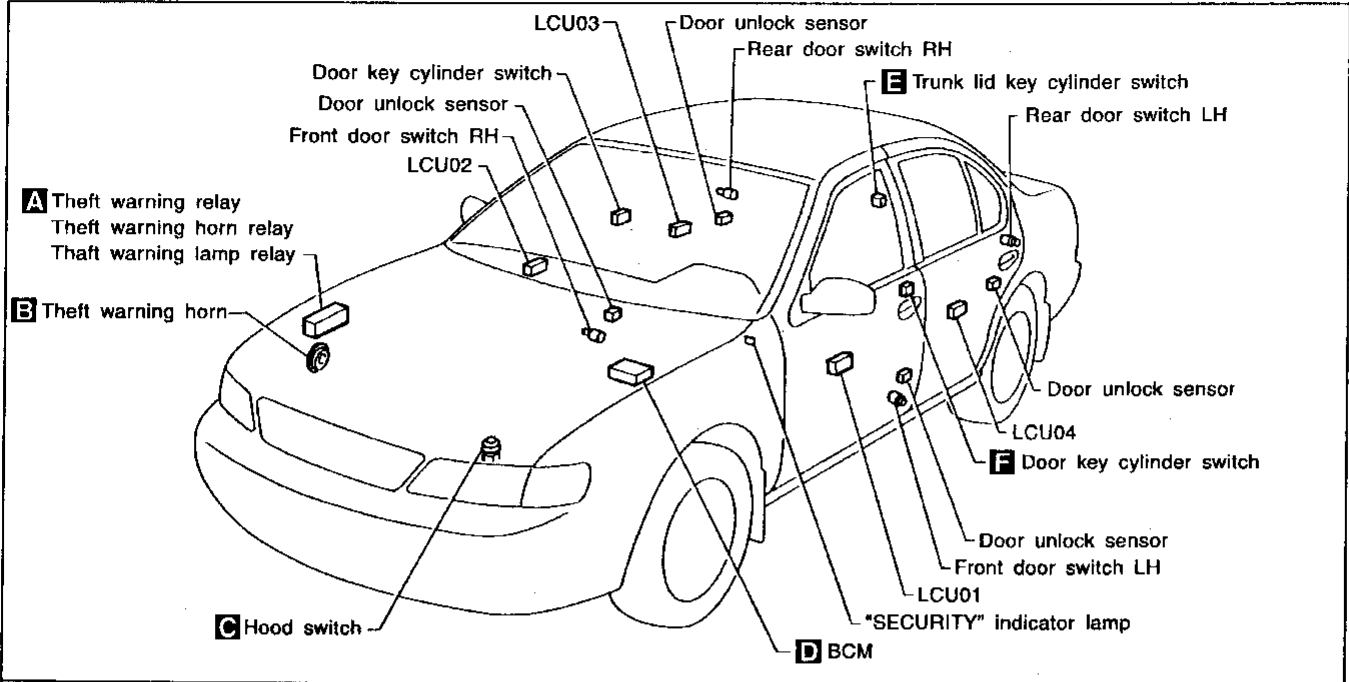


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NOTE

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

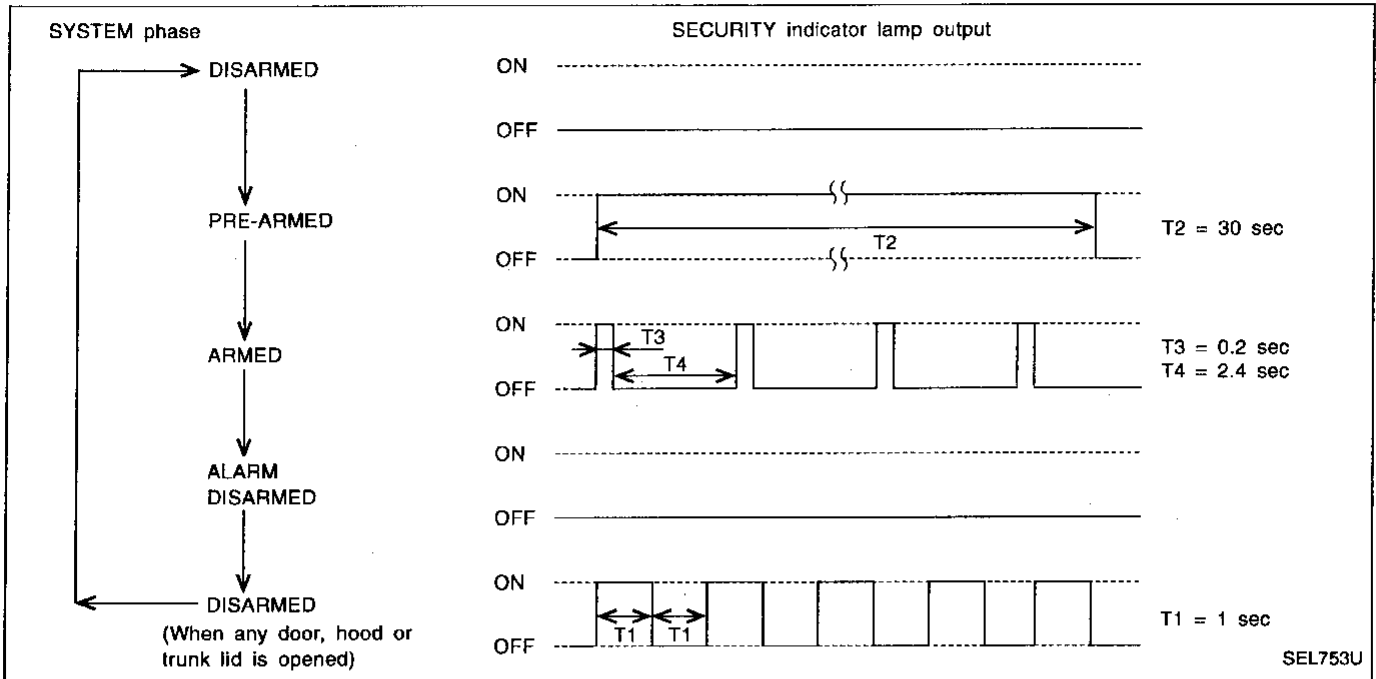
Component Parts and Harness Connector Location



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 — IVMS

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. 40], located in the fuse block (J/B)
- to security indicator lamp terminal ②.

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

- through 7.5A fuse [No. 19], located in the fuse block (J/B)
- to BCM terminal ⑨.

BCM is connected to LCU01, LCU02, LCU03, LCU04 and LCU05 as DATA LINES A and B.

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 BCM must receive signals indicating the doors, hood and trunk lid are closed and the doors are locked.

When a door is open, BCM terminal ⑫ receives a ground signal from each door switch.

When a door is unlocked, each door LCU terminal ④ receives a ground signal from terminal ② of each door unlock sensor.

When the hood is open, BCM terminal ⑩ receives a ground signal

- from terminal ① of the hood switch
- through body grounds E5 and E30.

When the trunk lid is open, BCM terminal ⑬ receives a ground signal

- from terminal ① of the trunk room lamp switch
- through body grounds B16 and B19.

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, LCU01/02 terminal ⑥ receives a ground signal

- from terminal ① of the door key cylinder switch
- through body grounds M13 and M73.

If this signal or lock signal from remote controller is received by the LCU01/02, the theft warning system will activate automatically.

Once the theft warning system has been activated, BCM terminal ② 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 — IVMS

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 the key or multi-remote controller.

Once the theft warning system is in armed phase, if BCM receives a ground signal at terminal ⑫ (door switch), ⑬ (trunk room lamp switch) or ⑭ (hood switch) or LCU receives a ground signal at terminal ④ (door unlock sensor), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently, and the starting system is interrupted.

Power is supplied at all times

- through 10A fuse [No. ⑰], located in the fuse block (J/B).
- to theft warning relay terminal ①.

If the theft warning system is triggered, ground is supplied

- from terminal ④ of the BCM
- to theft warning relay terminal ②.

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

Power is supplied at all times

- through 7.5A fuse (No. ⑱), located in fuse and fusible link box)
- to theft warning lamp relay terminal ① and
- to theft warning horn relay terminal ①.

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

- from terminal ⑬ of the BCM
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamps flash and the horn sounds intermittently.

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

THEFT WARNING SYSTEM DEACTIVATION

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

When the key is used to unlock a door, LCU01/02 terminal ⑤ receives a ground signal

- from terminal ② of the door key cylinder switch.

When the key is used to unlock the trunk lid, BCM terminal ⑮ receives a ground signal from terminal ① of the trunk lid key cylinder switch.

When the BCM/LCUs receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required. When the multi-remote control system is triggered, ground is supplied intermittently.

- from BCM terminal ⑯
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamp flashes and the horn sounds intermittently.

The alarm automatically turns off after 30 seconds or when LCU05 (multi-remote control unit) receives any signal from multi-remote controller.

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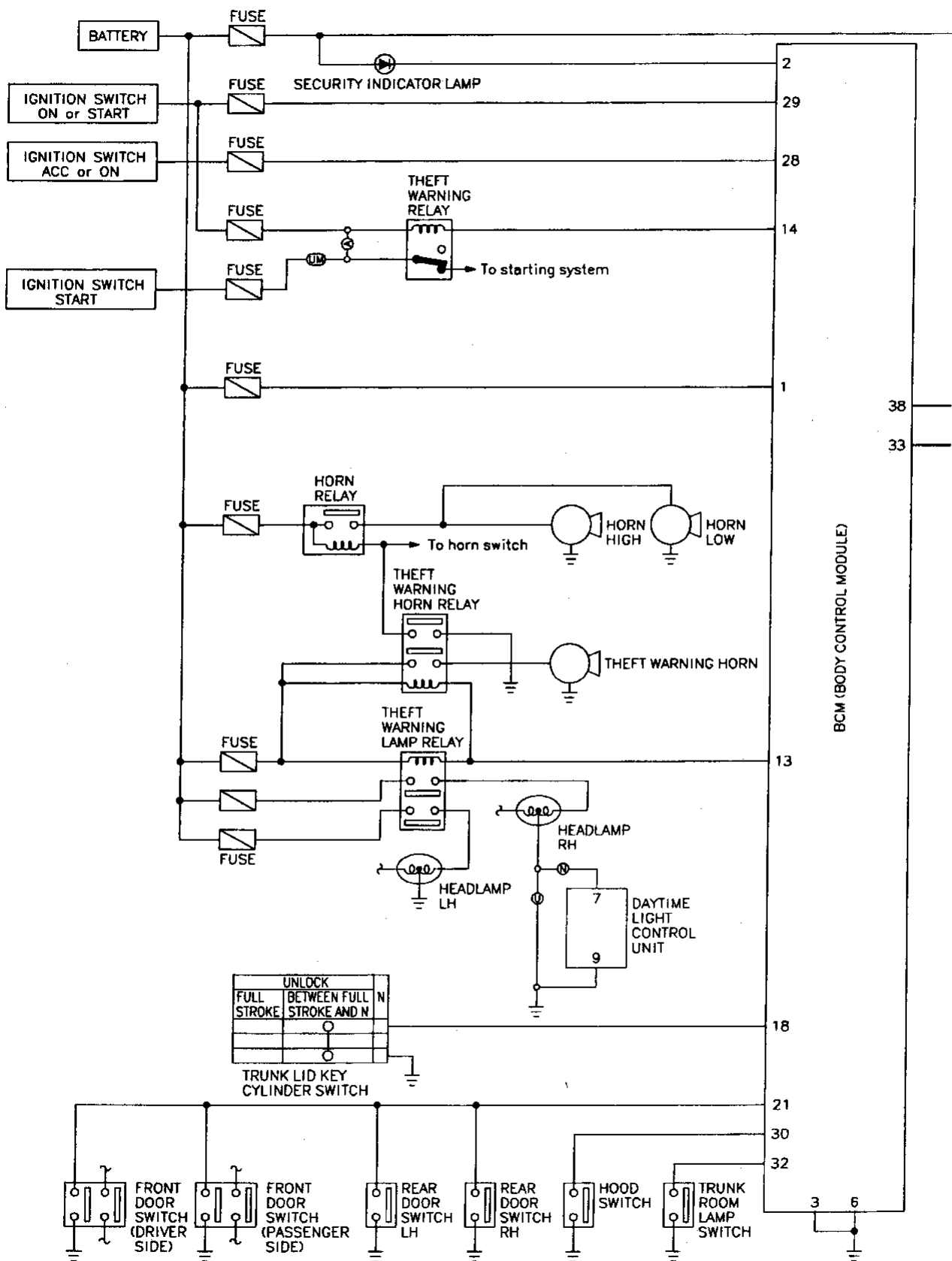
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THEFT WARNING SYSTEM — IVMS

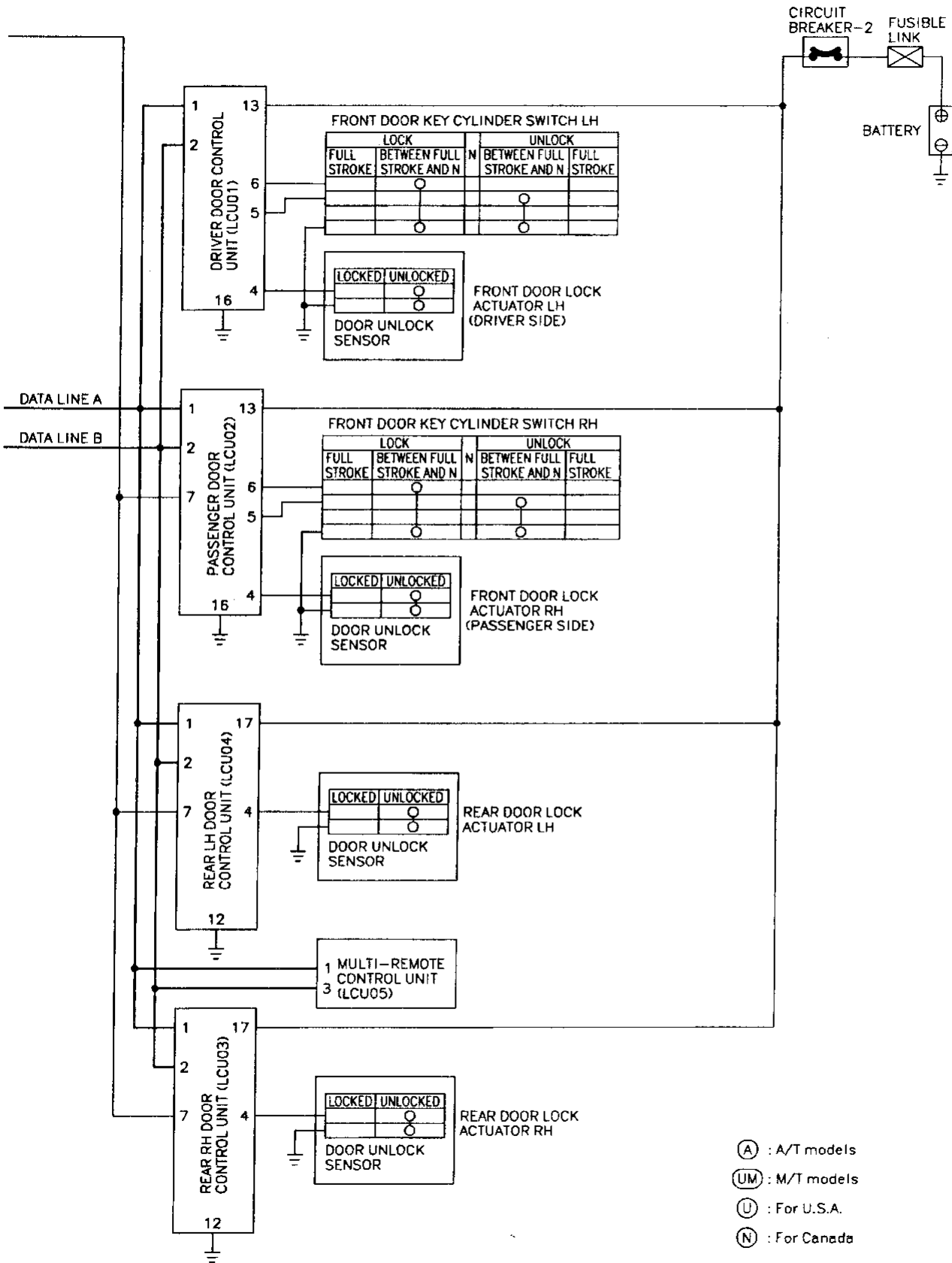
Schematic



MEL685G

THEFT WARNING SYSTEM — IVMS

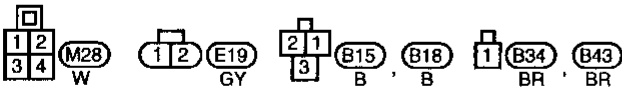
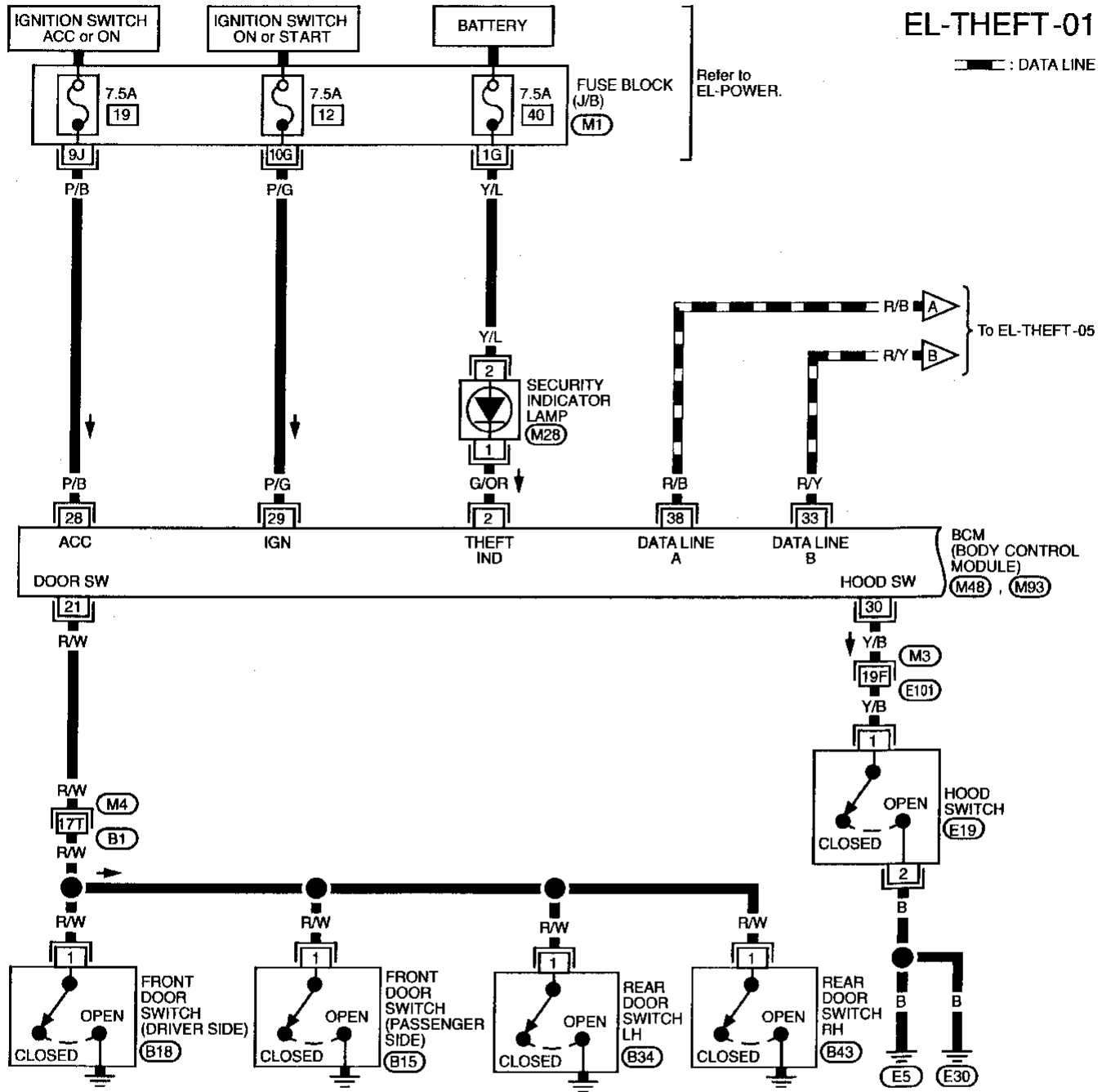
Schematic (Cont'd)



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THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT —



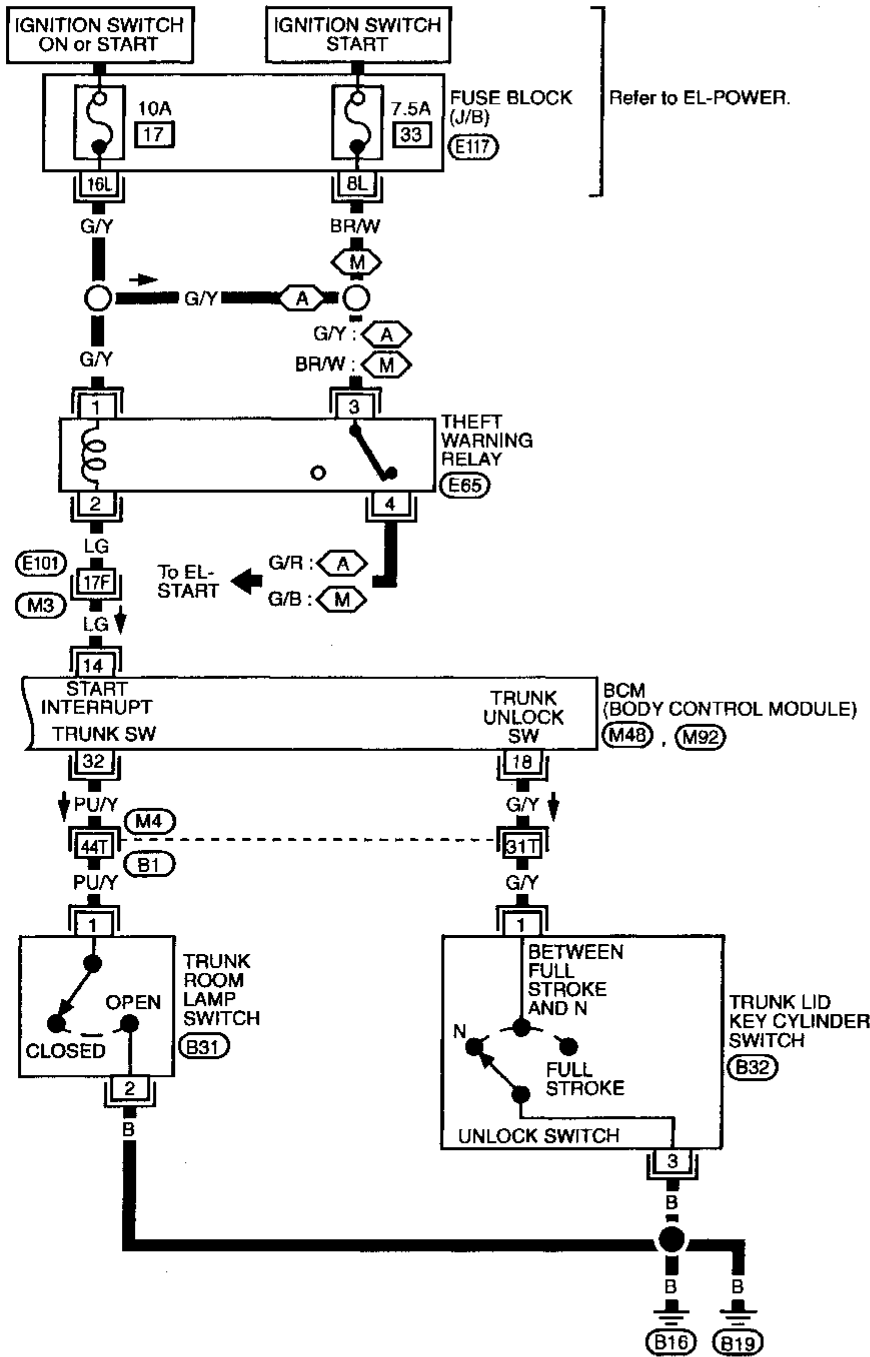
Refer to last page (Foldout page).

- (M3), (E101)
- (M4), (B2)
- (M1)
- (M48)
- (M93)

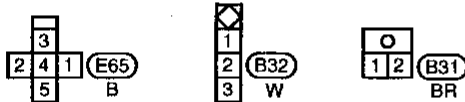
THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-02



A : A/T models
M : M/T models



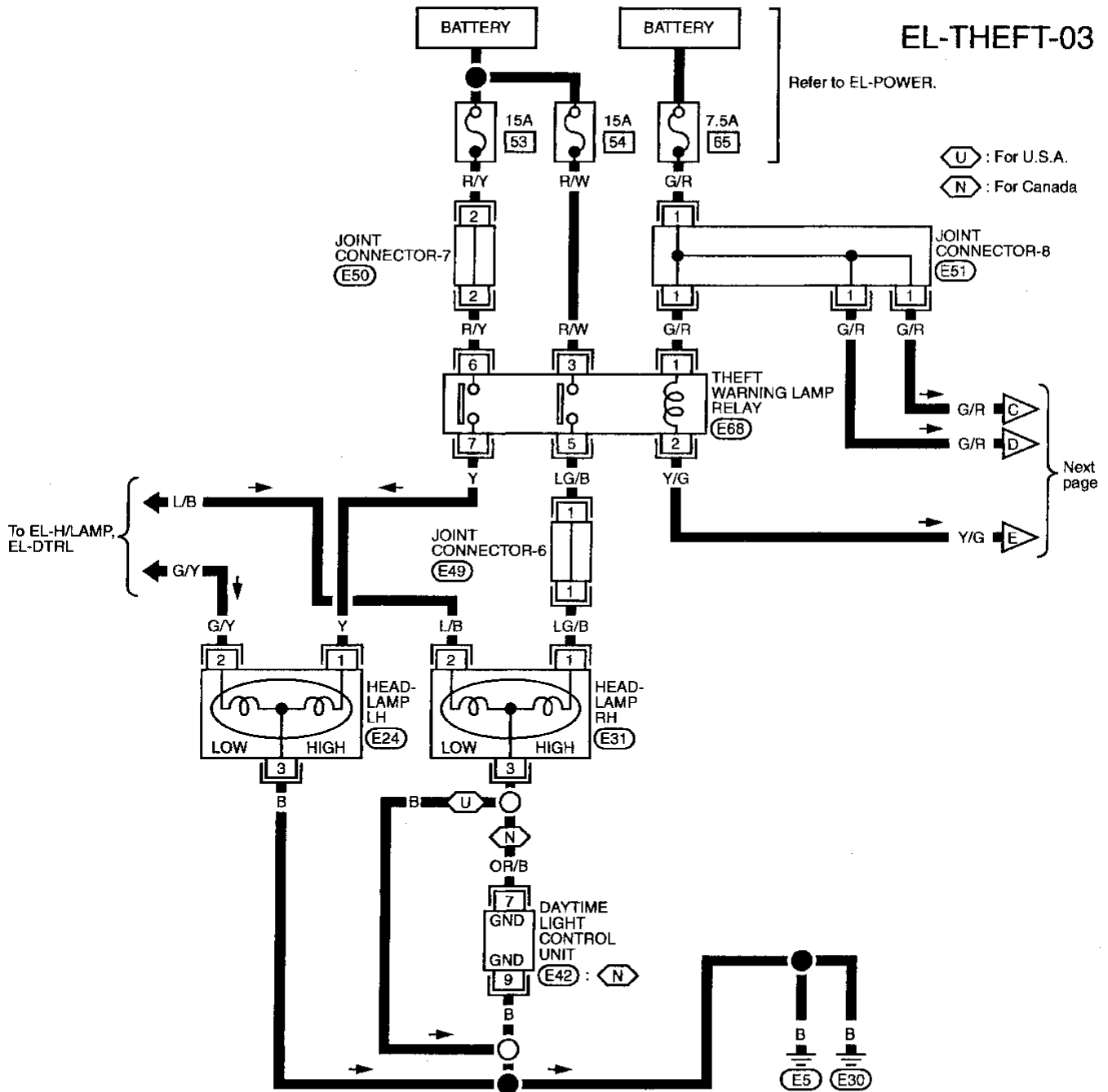
Refer to last page (Foldout page).

M3 , E101
M4 , B1
E117
M48
M92

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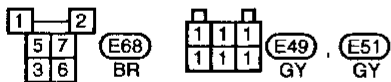
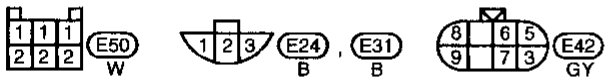
THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT — (Cont'd)



Refer to last page (Foldout page).

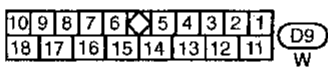
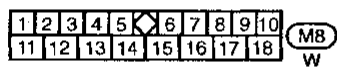
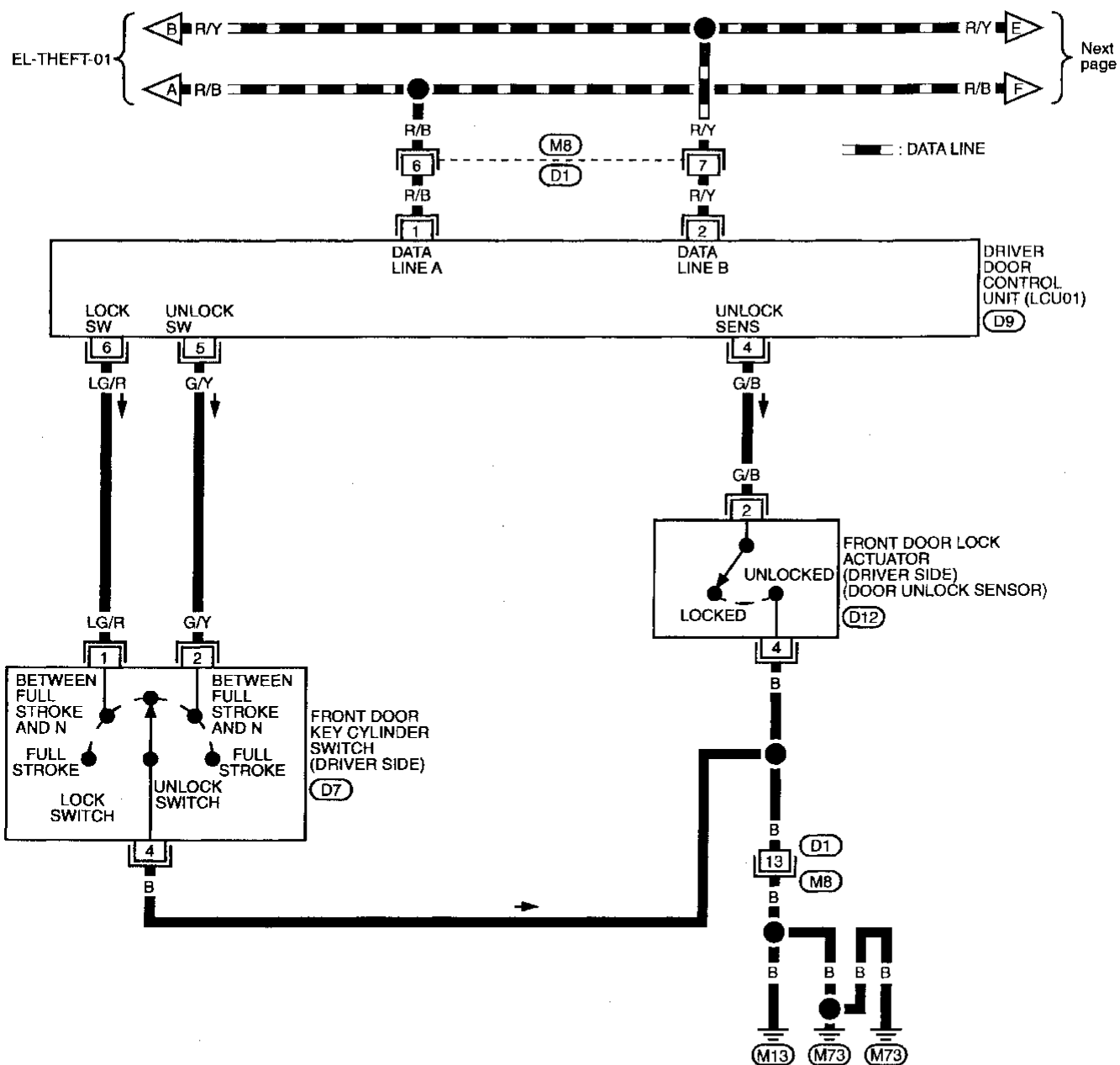
- (E50)
- (E49)
- (E51)



THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT — (Cont'd)

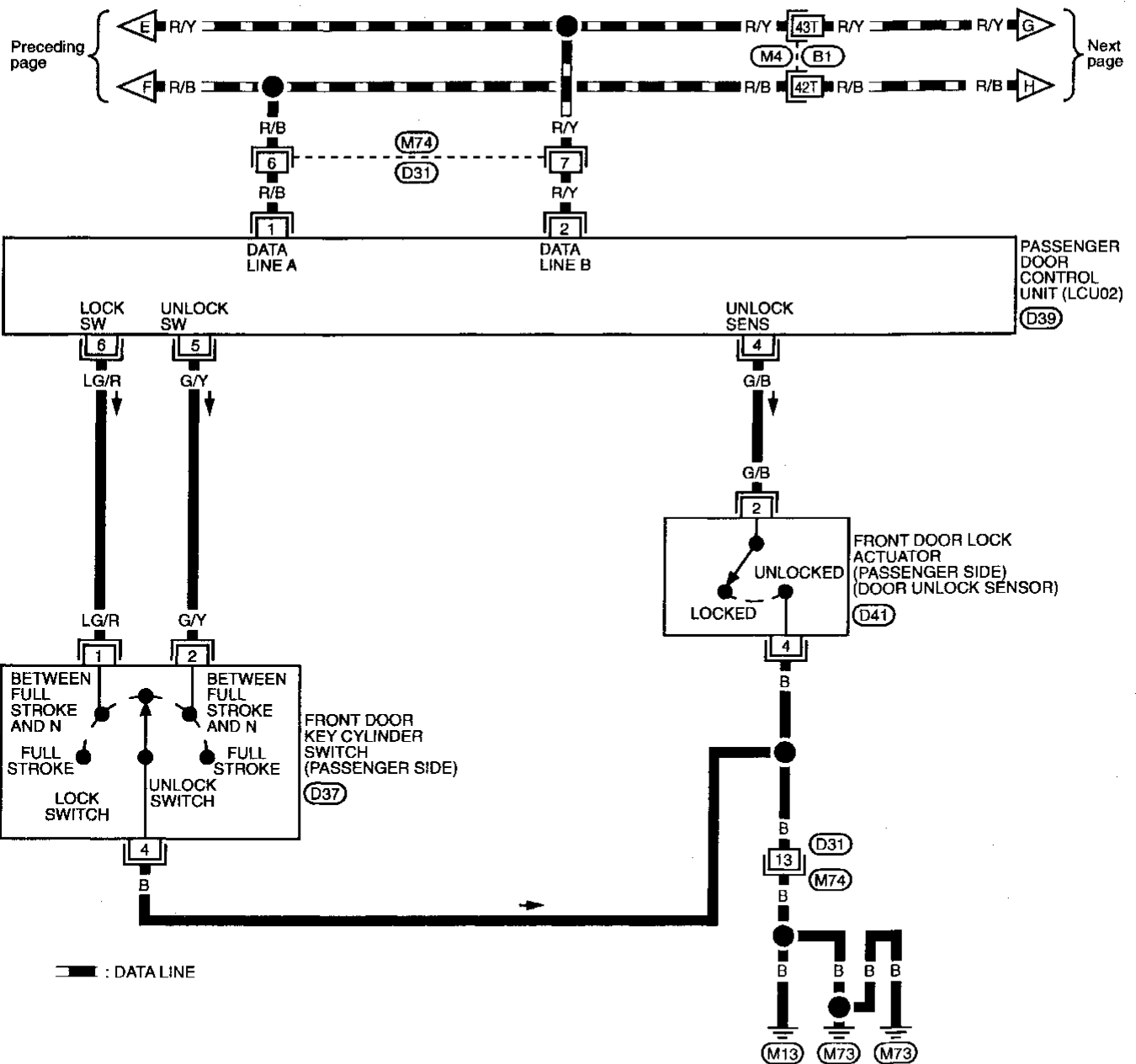
EL-THEFT-05



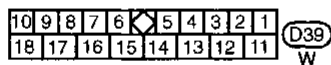
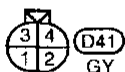
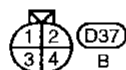
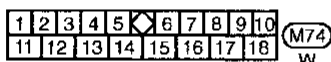
THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-06



— : DATA LINE



Refer to last page (Foldout page).

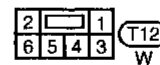
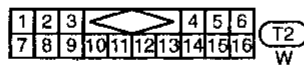
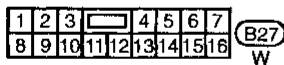
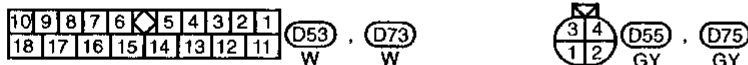
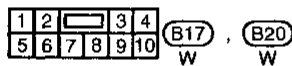
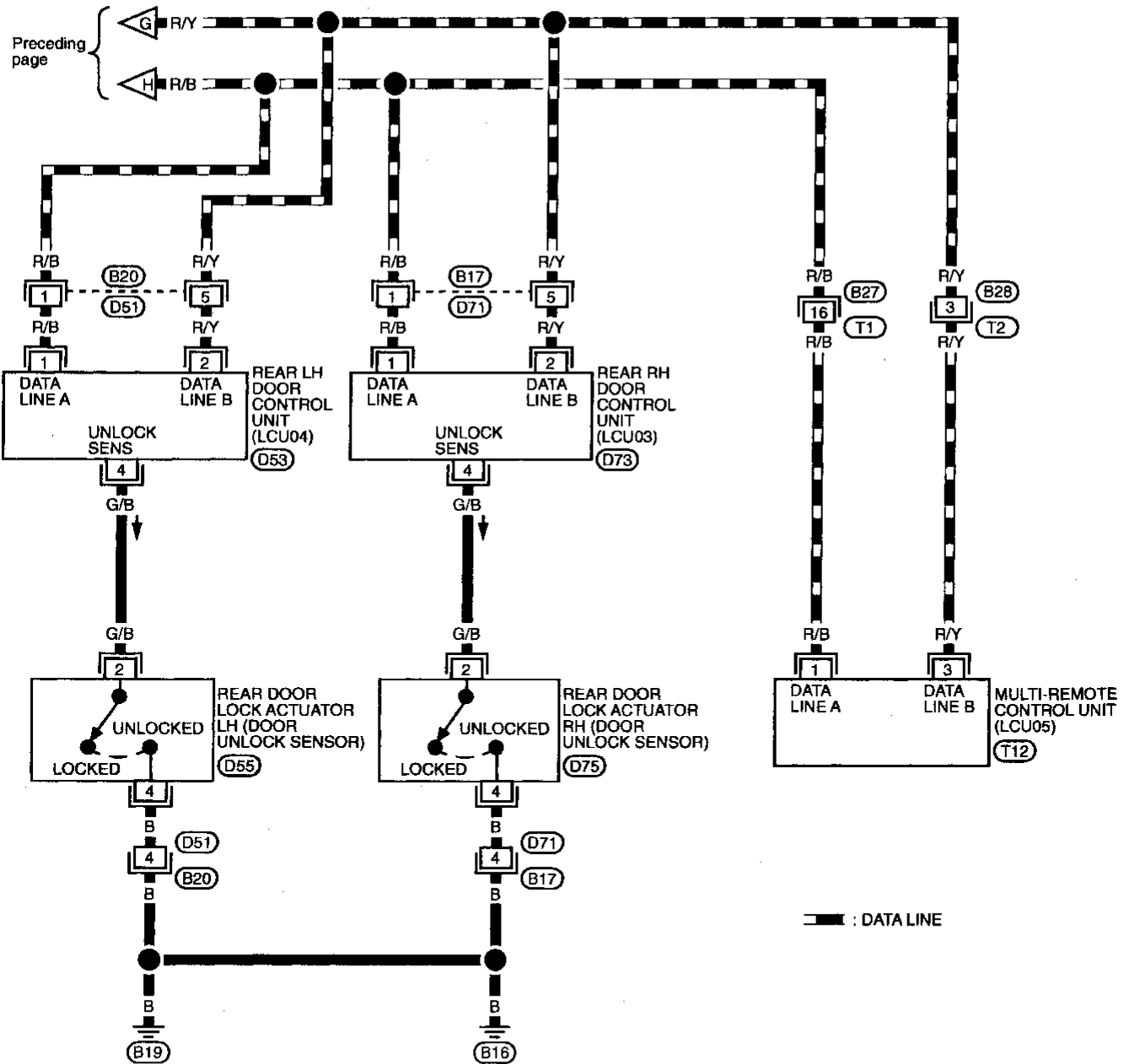
M4, B1

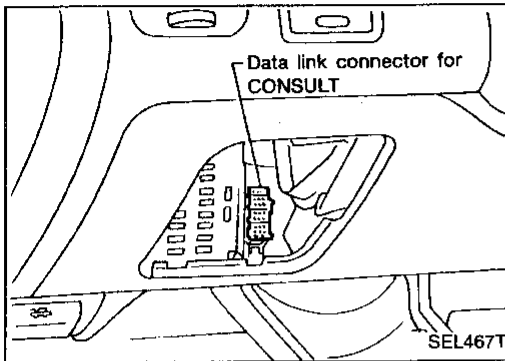
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THEFT WARNING SYSTEM — IVMS

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-07



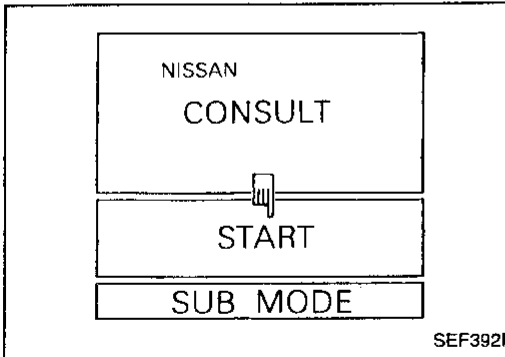


Trouble Diagnoses

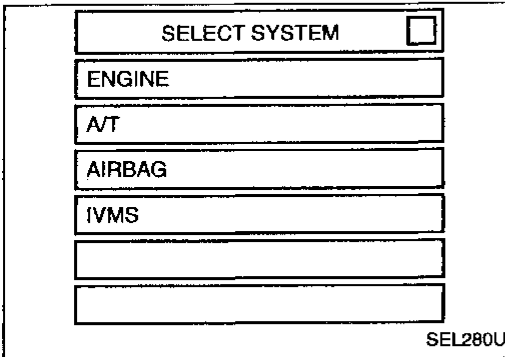
CONSULT

CONSULT inspection procedure

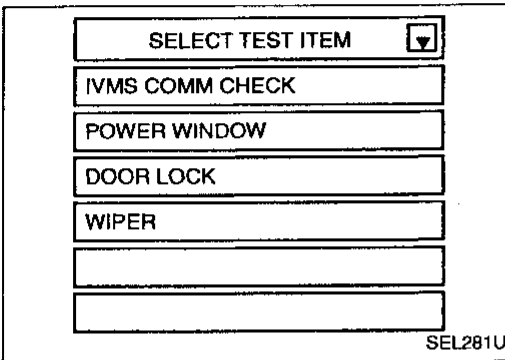
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



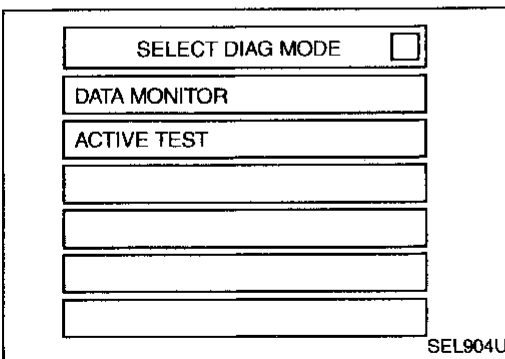
5. Touch "IVMS".



6. Touch "THEFT WARNING SYSTEM".



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



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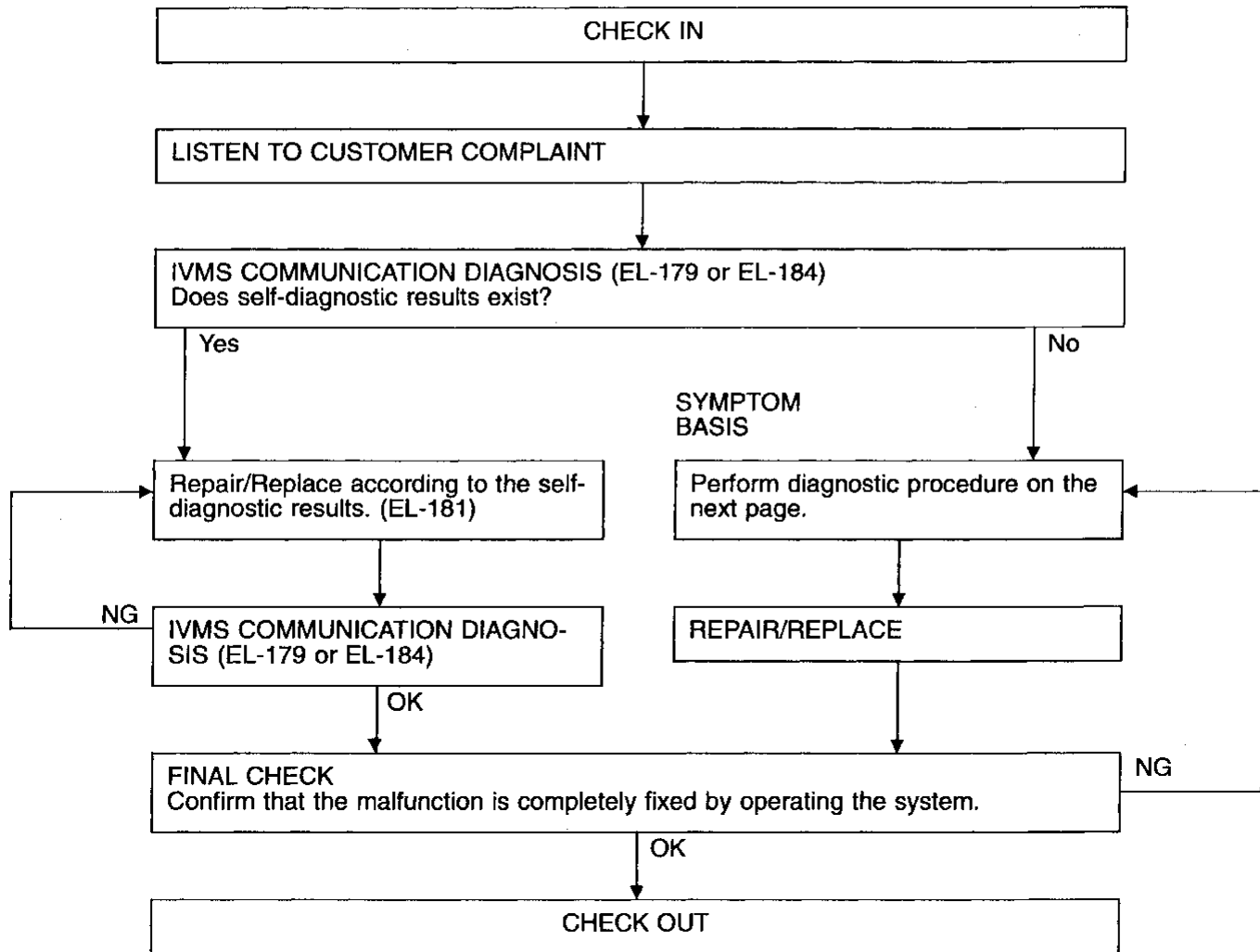
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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

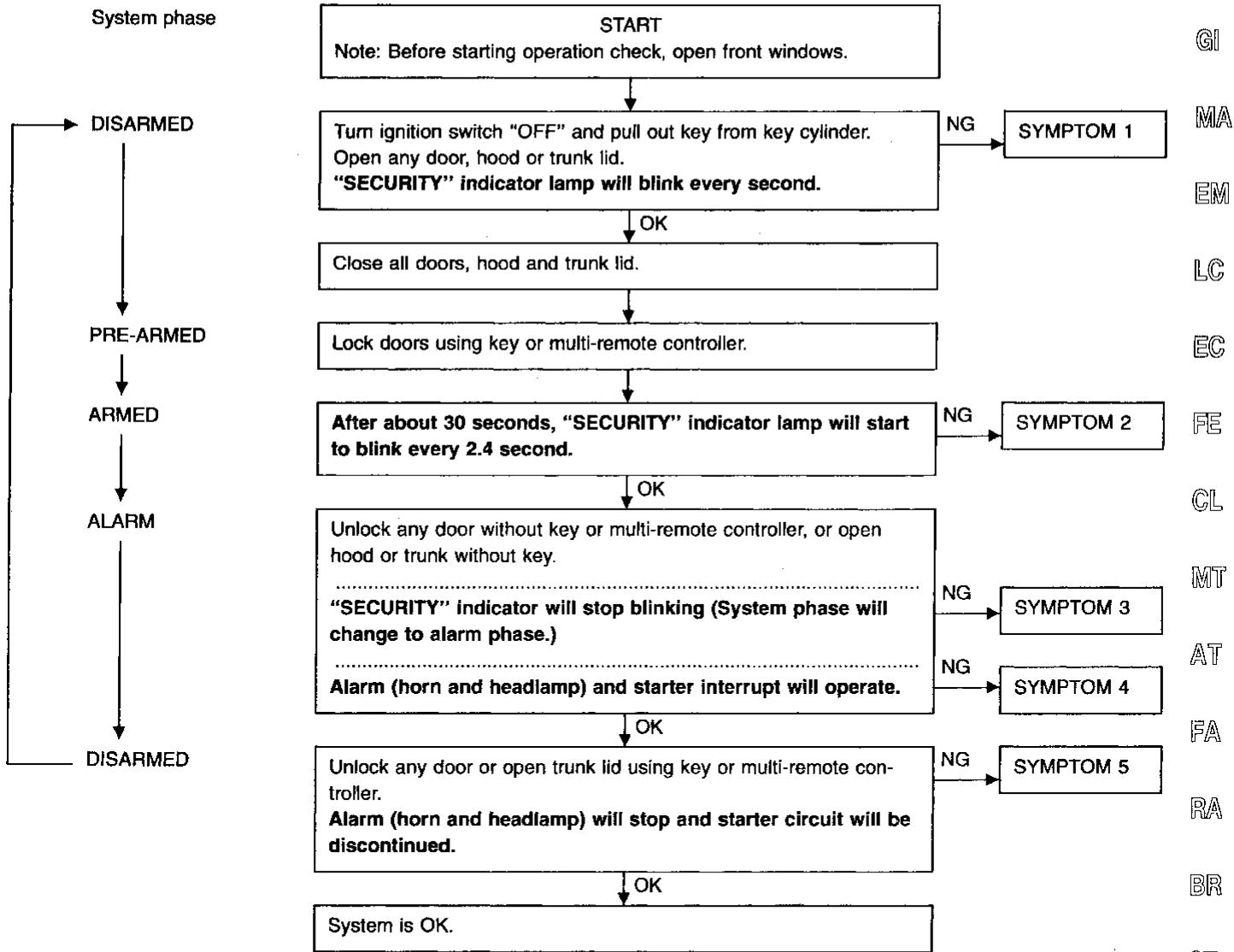
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

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



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

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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-273.

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

SYMPTOM CHART

PROCEDURE		Diagnostic procedure											
		EL-273	EL-204	EL-275	EL-276	EL-277	EL-278	EL-279	EL-280	EL-281	EL-282	EL-250	EL-180
REFERENCE PAGE		EL-273	EL-204	EL-275	EL-276	EL-277	EL-278	EL-279	EL-280	EL-281	EL-282	EL-250	EL-180
SYMPTOM		Preliminary check	Power supply circuit check for BCM	Diagnostic Procedure 1 (Door, hood and trunk room lamp switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Trunk lid key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn alarm check)	Diagnostic Procedure 7 (Headlamp alarm check)	Diagnostic Procedure 8 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.	WAKE-UP DIAGNOSES
1	Theft warning indicator does not turn "ON" or blinking.	X	X		X								
2	Theft warning system cannot be set by ...	All items	X	X	X		X						
		Door out side key	X					X					X (LCU01, LCU02)
		Multi-remote control	X									X	
3	*1 Theft warning system does not alarm when ...	Any door is opened.	X		X								
		Any door is unlocked without using key or multi-remote controller	X				X						X (LCU 01, 02, 03, 04)
4	Theft warning alarm does not activate.	All function	X		X		X						
		Horn alarm	X						X				
		Headlamp alarm	X								X		
		Starter interrupt	X									X	
5	Theft warning system cannot be canceled by ...	Door out side key	X					X					X (LCU01, LCU02)
		Trunk lid key	X					X					
		Multi-remote control	X									X	

X : Applicable

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

THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Door, hood and trunk room lamp switch check)

A

☆ MONITOR

DOOR SWITCH ON

RECORD

SEL299S

B

☆ MONITOR

HOOD SWITCH ON

RECORD

SEL302S

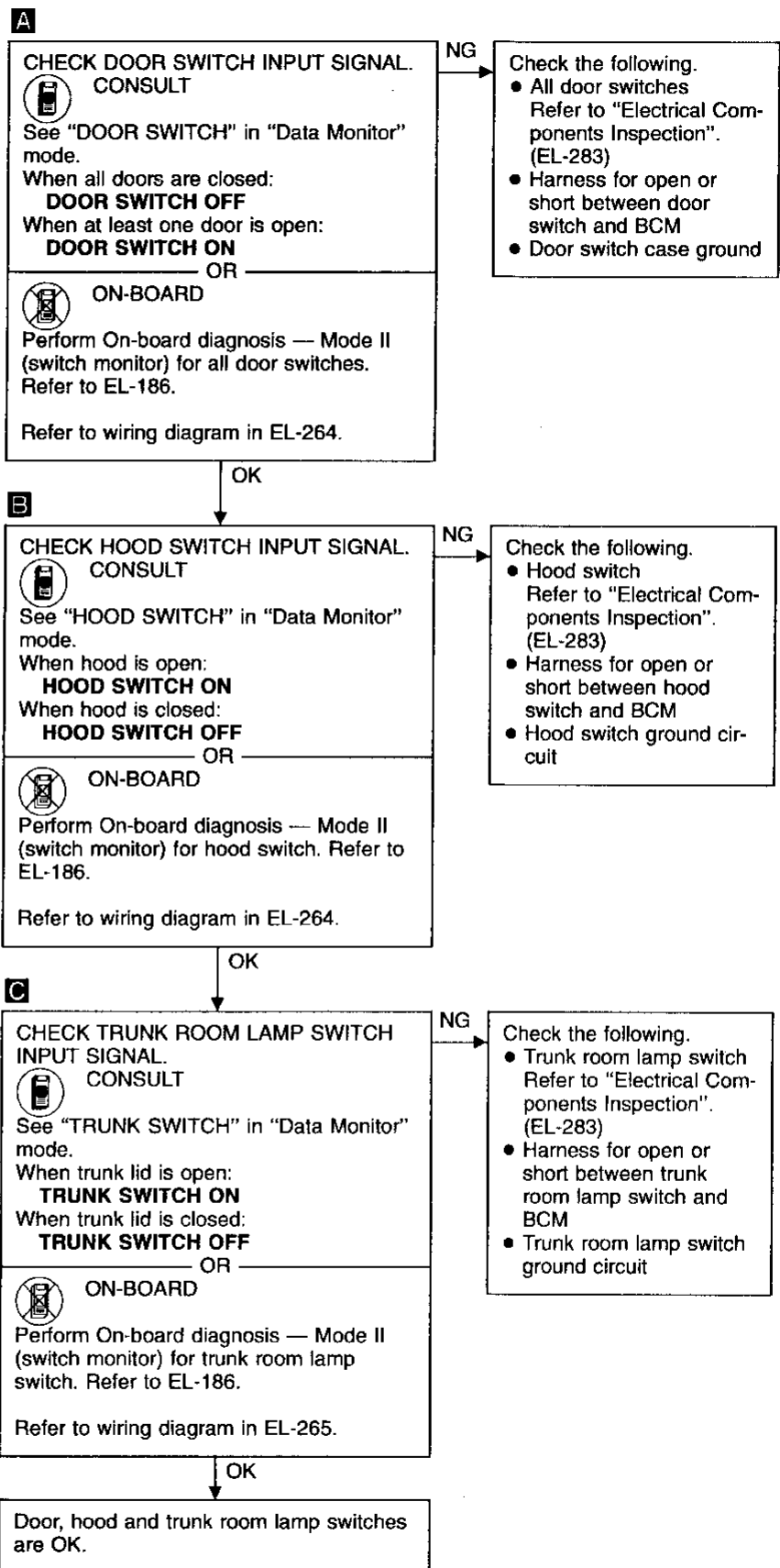
C

☆ MONITOR

TRUNK SWITCH OFF

RECORD

SEL305S



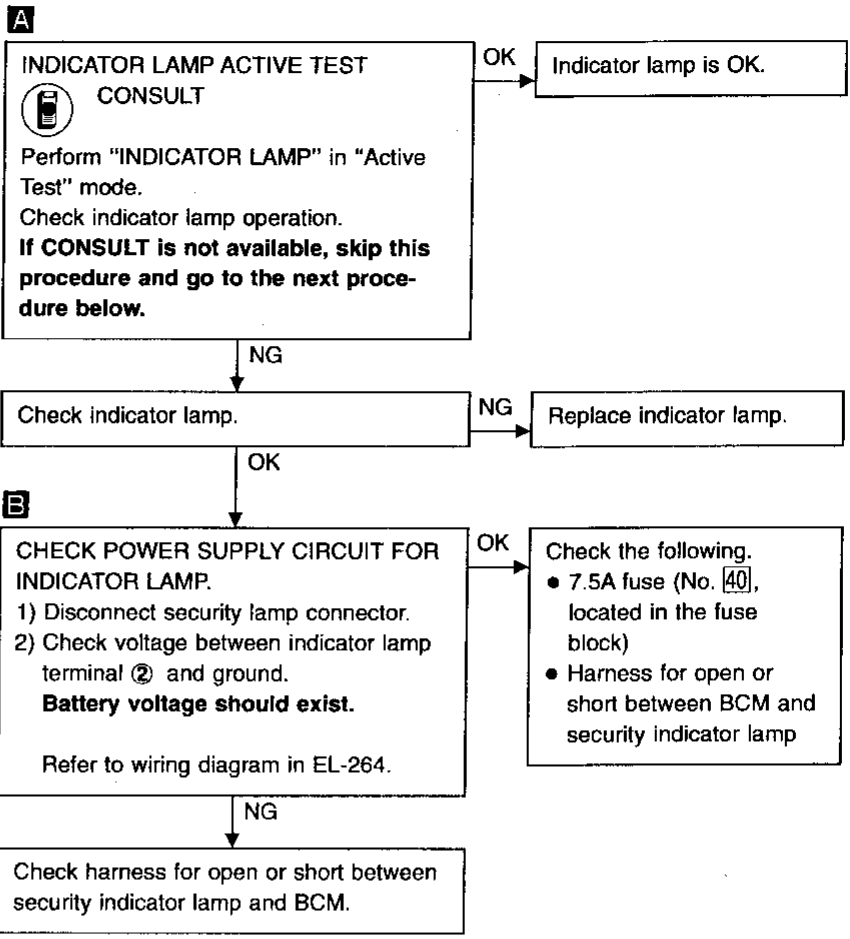
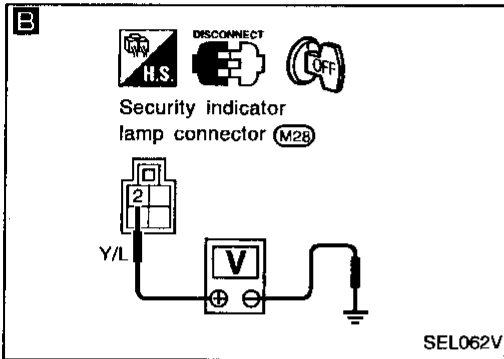
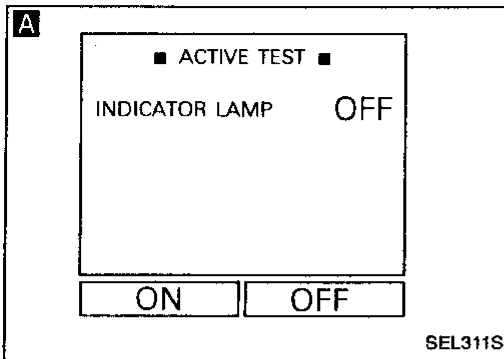
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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Security indicator lamp check)



THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Door unlock sensor check)

A

☆ MONITOR

LOCK SIG-DR	UNLK
LOCK SIG-AS	LOCK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK

RECORD

SEL457S

B

DISCONNECT

Door lock actuator connector

Front LH: (D12)	Rear LH: (D55)
Front RH: (D41)	Rear RH: (D75)

SEL060V

CHECK DOOR LOCK KNOB SWITCH CIRCUITS.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:

LOCK SIG LOCK

When door is unlocked:

LOCK SIG UNLK

OR

ON-BOARD

Check door lock knob operation in switch monitor (Mode II) mode.

(Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-268, 269 or 270.

OK → Door unlock sensor is OK.

NG ↓

B

CHECK DOOR UNLOCK SENSOR.

1) Disconnect door unlock sensor connector.

2) Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
② - ④	Locked	No
	Unlocked	Yes

NG → Replace door unlock sensor.

OK ↓

Check the following.

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

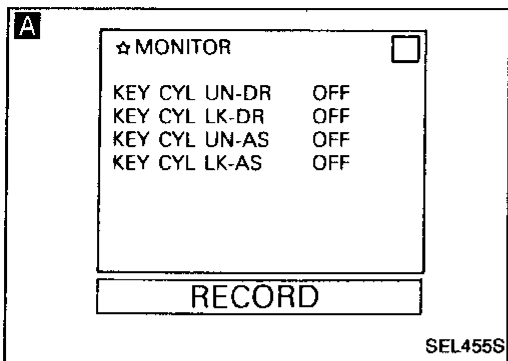
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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)



CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.

These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.

If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.

(Refer to CONSULT OPERATION MANUAL.)

OR

ON-BOARD

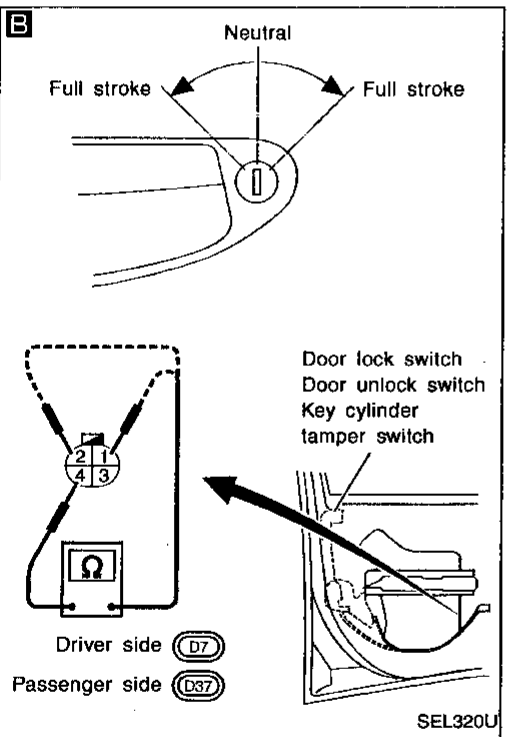
Check front LH or RH door lock key cylinder lock and unlock switch in switch monitor (Mode II) mode.

(Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-268 or 269.

OK

Door key cylinder switch is OK.



B CHECK DOOR KEY CYLINDER SWITCH.

- 1) Disconnect door key cylinder switch connector.
- 2) Check continuity between door key cylinder switch terminals.

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

NG

Replace door key cylinder switch.

OK

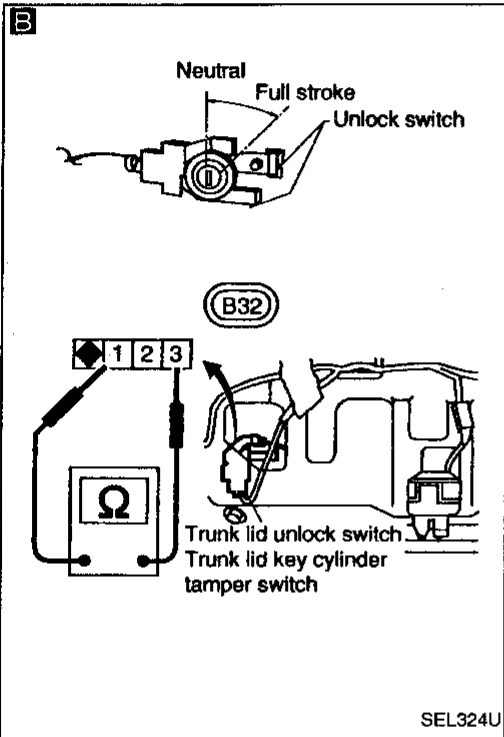
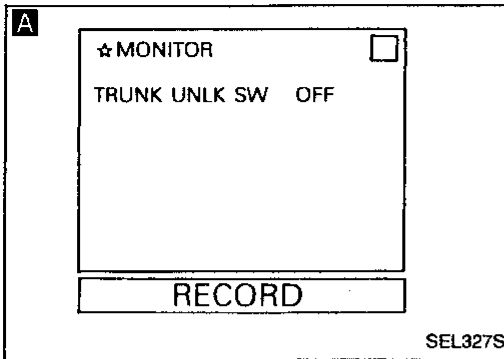
- Check the following.
- Door key cylinder switch ground circuit
 - Harness for open or short between door key cylinder switch and LCU01/02

THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Trunk lid key cylinder switch check)



A

CHECK TRUNK LID KEY CYLINDER INPUT SIGNAL.

CONSULT

See "TRUNK UNLK SW" in DATA MONITOR mode.

When key in key cylinder is at "NEUTRAL" or "UNLOCK" (full stroke) position,

TRUNK UNLK SW OFF

When key is between "NEUTRAL" and "UNLOCK" position,

TRUNK UNLK SW ON

OR

ON-BOARD

Check trunk lid key cylinder switch in switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-186.)

Refer to wiring diagram in EL-265.

OK → Trunk lid key unlock switch is OK.

B

CHECK TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH).

1. Disconnect trunk lid key cylinder switch connector.
2. Check continuity between trunk lid key cylinder switch terminals.

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

NG → Replace trunk lid key unlock switch.

OK →

Check the following.

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

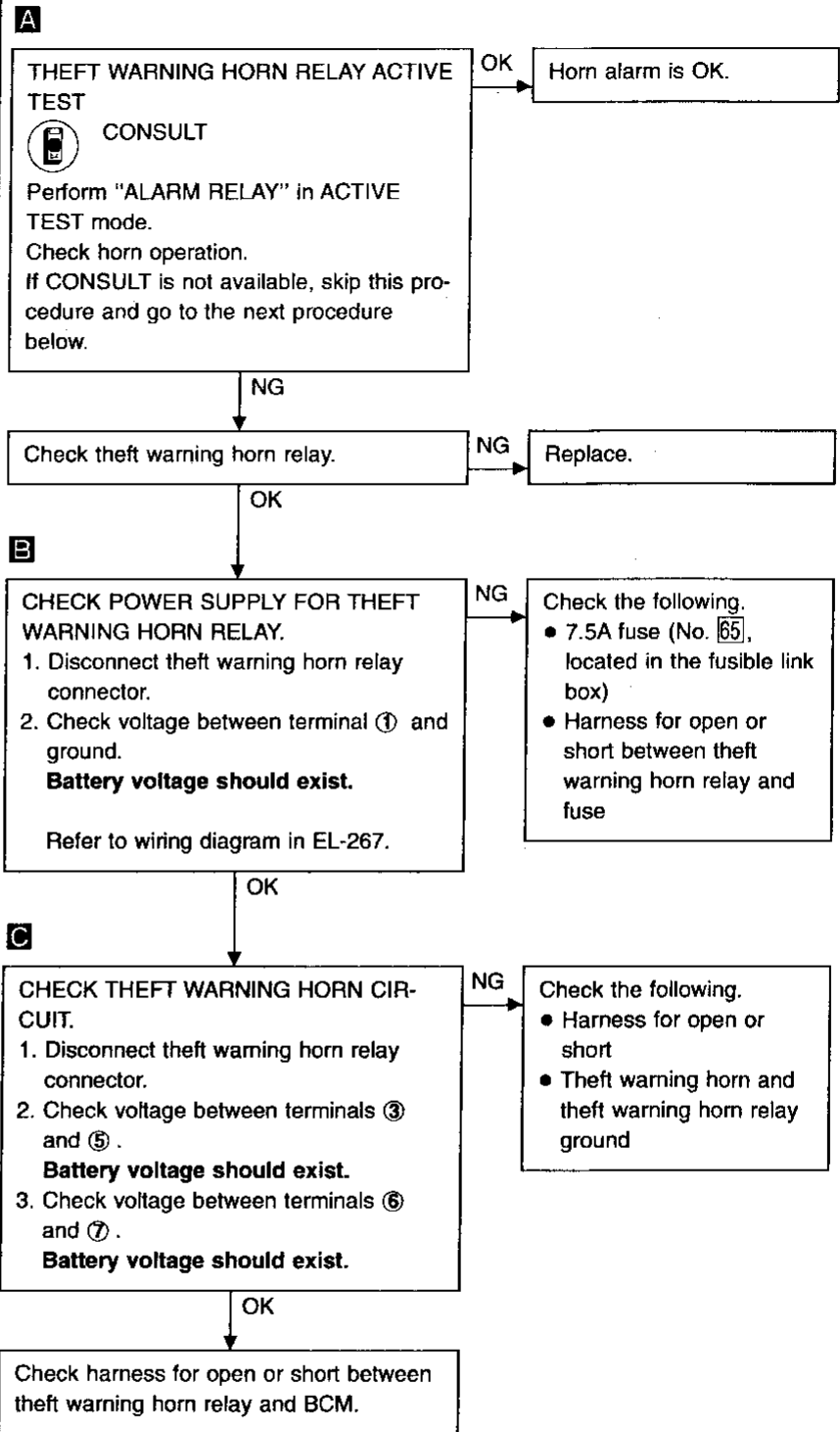
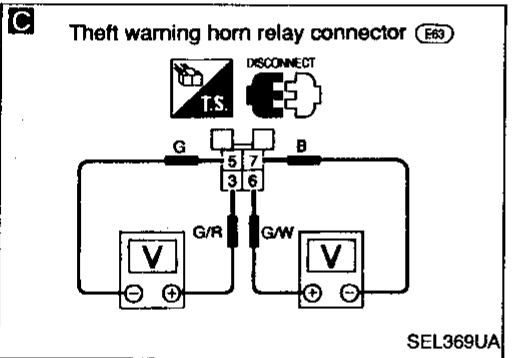
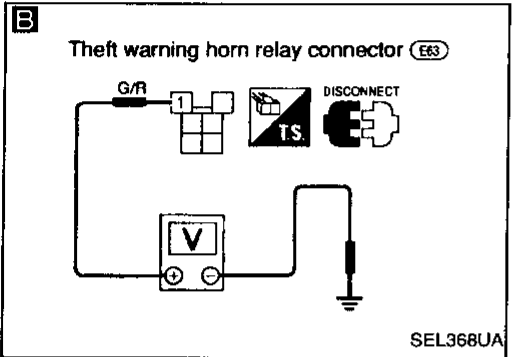
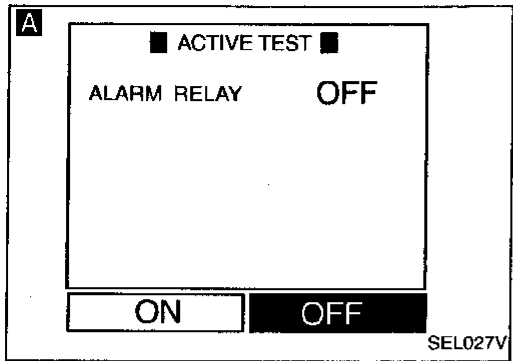
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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Theft warning horn alarm check)

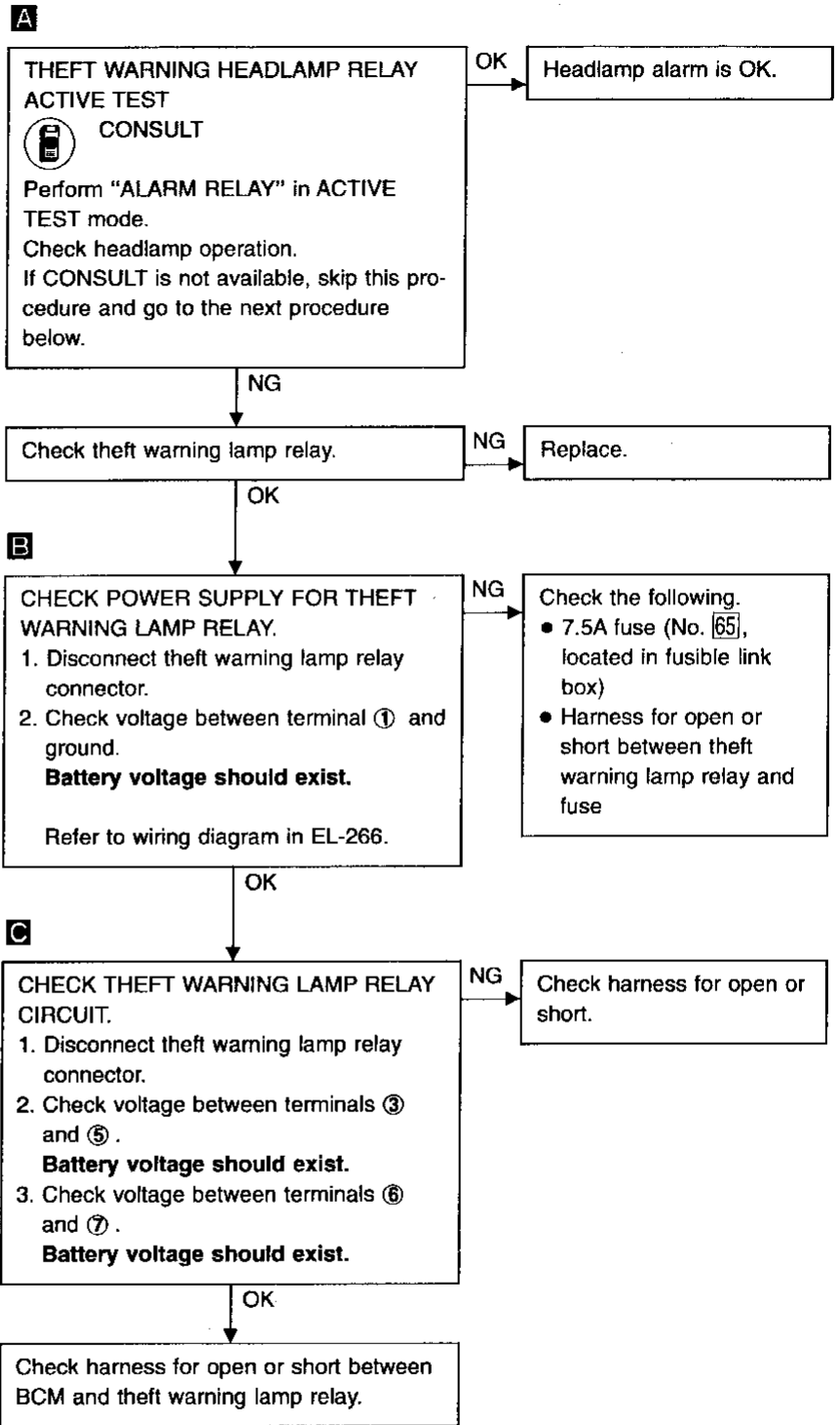
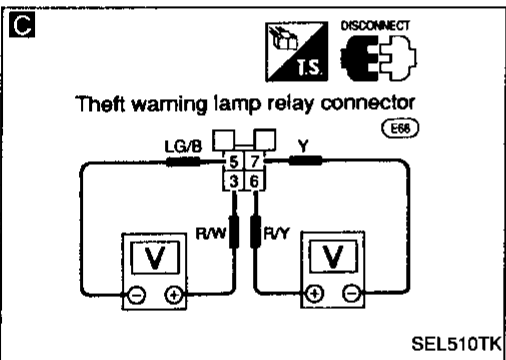
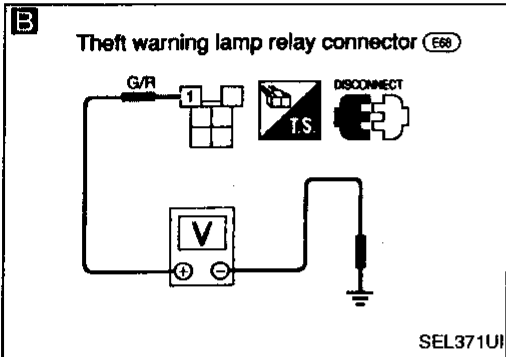
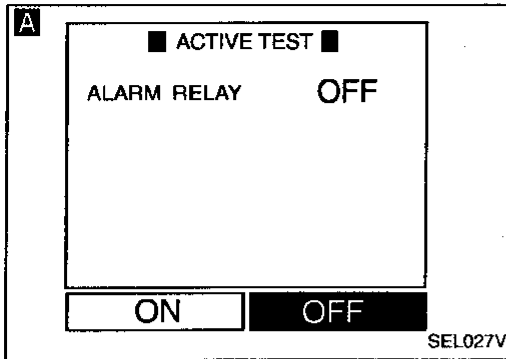


THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(Headlamp alarm check)



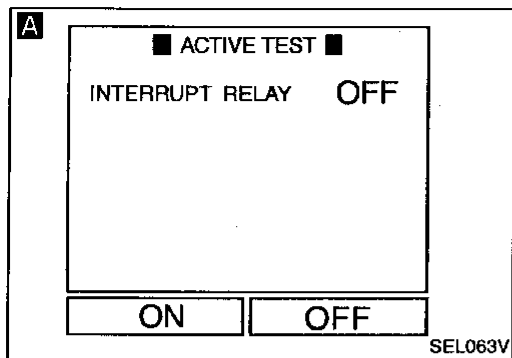
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THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

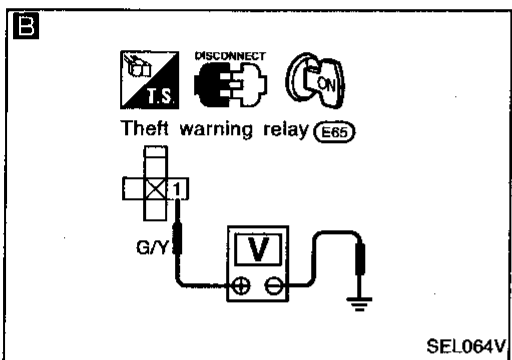
(Starter interrupt system check)



A

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

OK → Starter interrupt system is OK.



NG → Check theft warning relay.

NG → Replace.

B

CHECK POWER SUPPLY FOR STARTER INTERRUPT RELAY.

1. Disconnect theft warning relay connector.
2. Check voltage between theft warning relay terminal ① and ground. **Battery voltage should exist.**

Refer to wiring diagram in EL-265.

NG → Check the following.

- 10A fuse (No. 17, located in fuse block)
- Harness for open or short between theft warning relay and fuse

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

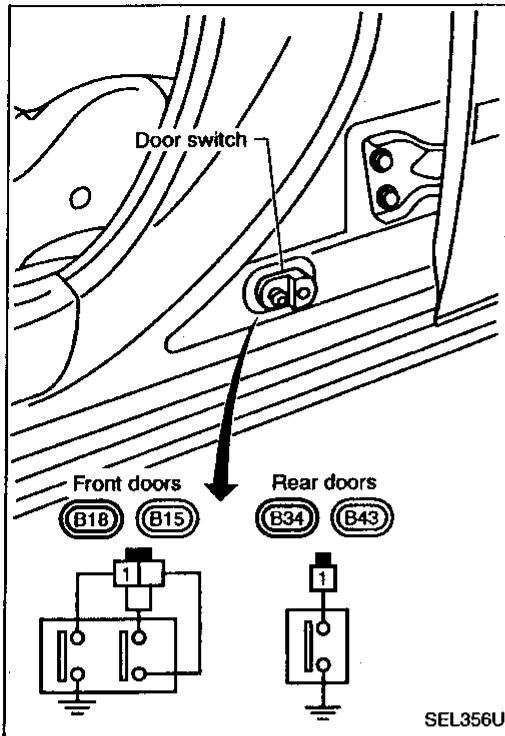
THEFT WARNING SYSTEM — IVMS

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

Door switches

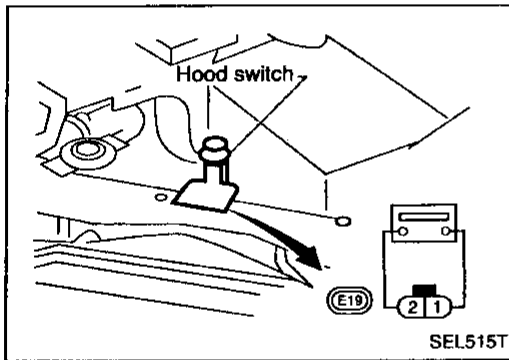
Check continuity between terminal and switch body.



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

Hood switch

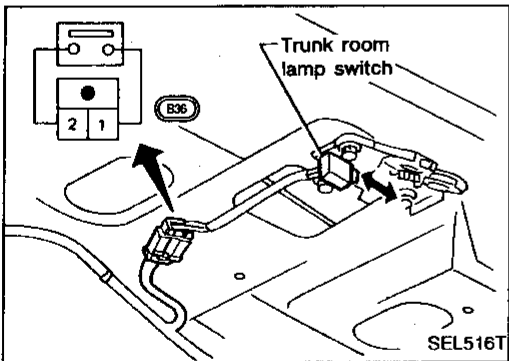
Check continuity between terminals.



Terminals	Condition	Continuity
① - ②	Pressed	No
	Released	Yes

Trunk room lamp switch

Check continuity between terminals.



Terminals	Condition	Continuity
① - ②	Pressed	Yes
	Released	No

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System Description

Power is supplied at all times

- to lighting switch terminal ①
- through 15A fuse (No. 66), located in the fuse and fusible link box).

With the lighting switch in the 1ST or 2ND position, power is supplied

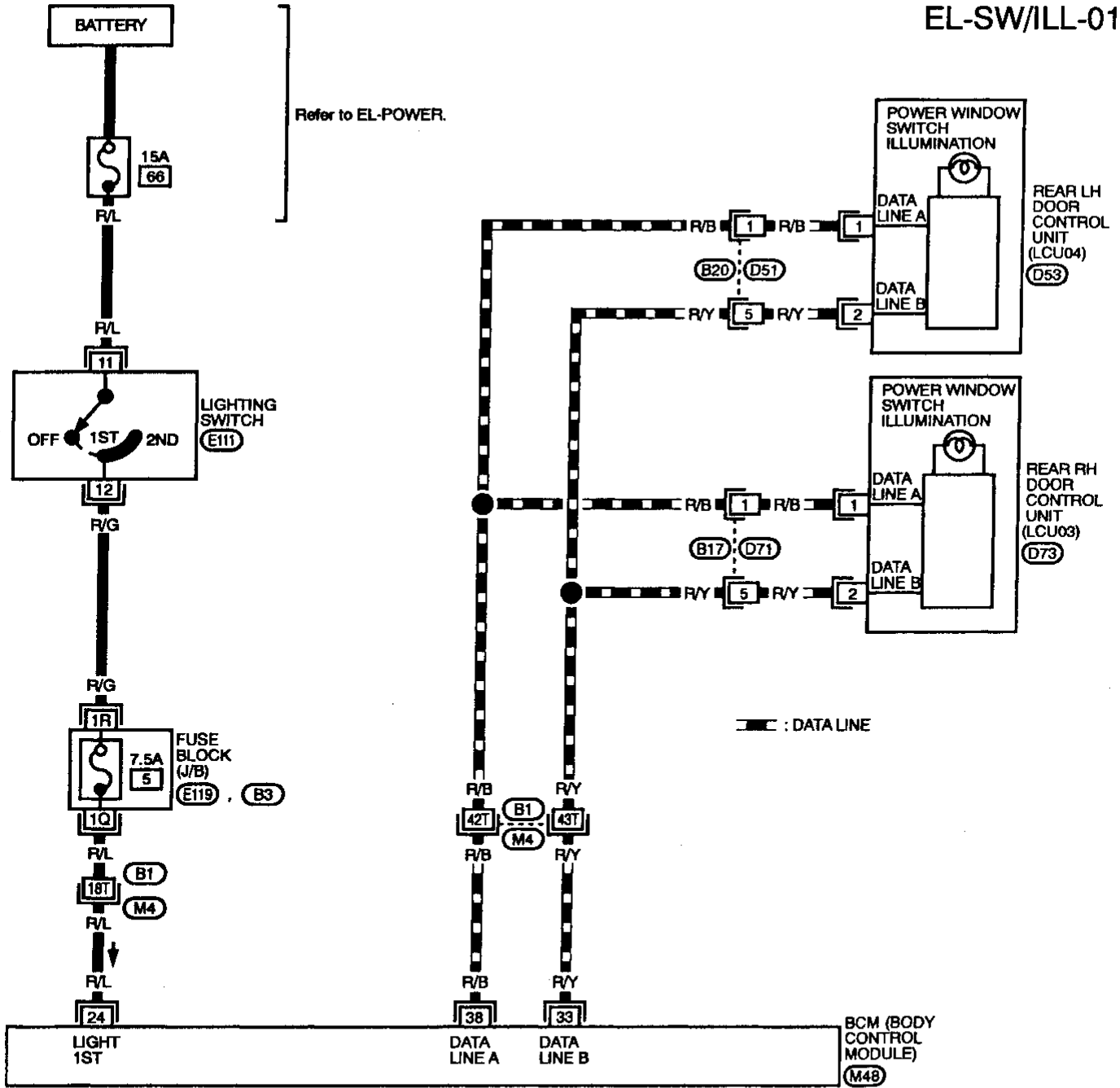
- to BCM terminal 24
- through lighting switch terminal ⑫ and
- 7.5A fuse [No. 5], located in the fuse block (J/B)].

Terminals ① and ② of the power window switch illumination (located in the rear LH and RH door control units) are connected to BCM terminals 38 and 39 as DATA LINES A and B respectively.

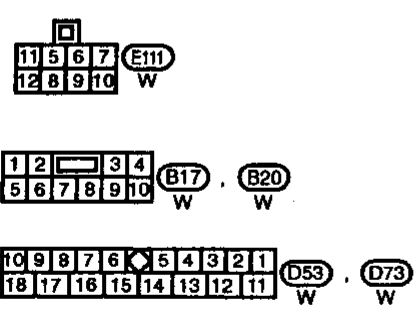
When power is supplied to BCM terminal 24, BCM sends a signal to rear LH and RH door control units to turn on power window switch illumination. Power and ground are supplied to power window switch illumination, then power window switch illumination turns on.

Wiring Diagram — SW/ILL —

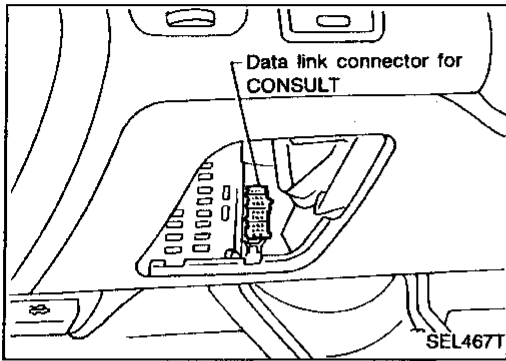
EL-SW/ILL-01



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(M48)
(E119)
(B3)

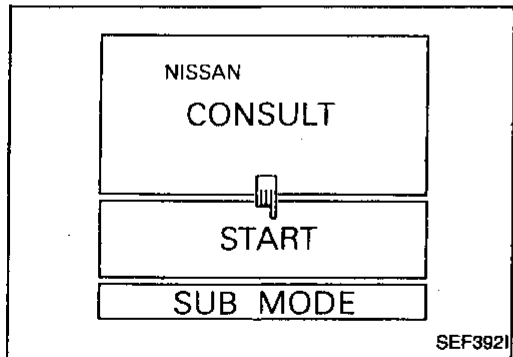


Trouble Diagnoses

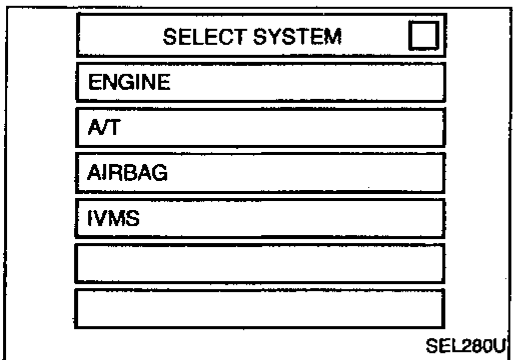
CONSULT

CONSULT inspection procedure

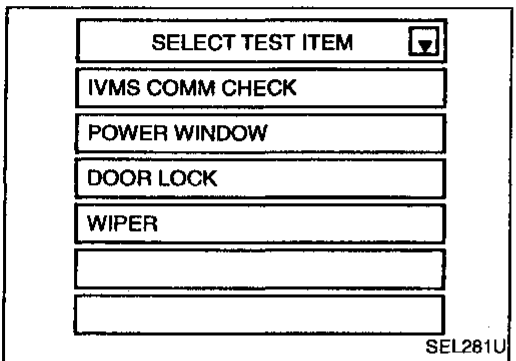
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



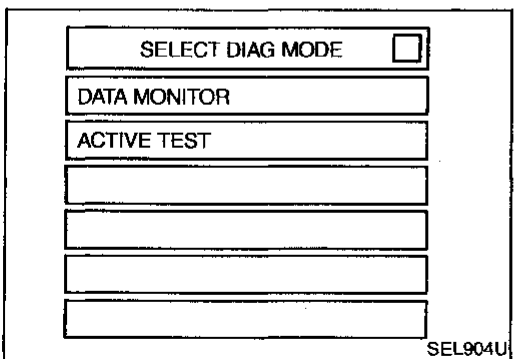
5. Touch "IVMS".



6. Touch "ILLUM LAMP".

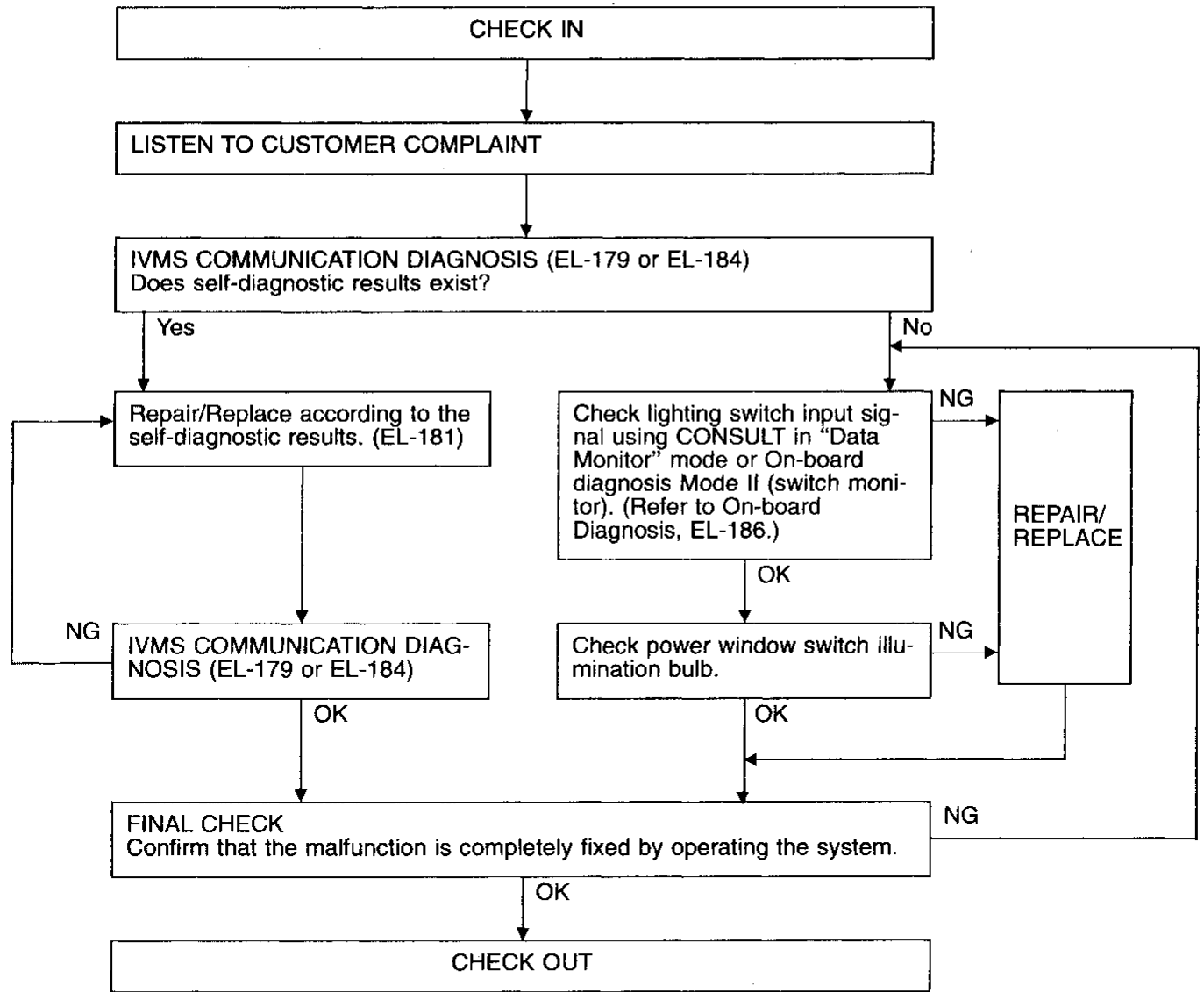


- DATA MONITOR and ACTIVE TEST are available for the illumination.



Trouble Diagnoses (Cont'd)

WORK FLOW



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NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or remove turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box.

System Description

INTERIOR LAMP, IGNITION KEYHOLE ILLUMINATION TIMER CONTROL

Function

Interior lamp timer keeps interior lamp and ignition keyhole illuminated for about 30 seconds when:

- driver's door is unlocked while key is out of ignition,
- key is withdrawn from ignition key cylinder while driver's door is closed, and
- key is withdrawn from ignition key cylinder and driver's door is opened and then closed.

The timer is cancelled, and interior lamp and ignition keyhole illumination turn off when:

- driver's door is locked, or
- ignition switch is turned "ON".

Power supply and ground

Power is supplied at all times

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

Power is also supplied at all times

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

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

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

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

Ground is supplied to driver door control unit terminal ④

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

Timer operation

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

Ground is then supplied to interior lamp terminal ② and ignition key hole illumination terminal ② to illuminate for approx. 30 seconds.

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

INTERIOR LAMP ON-OFF CONTROL

Power is supplied at all times

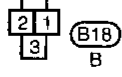
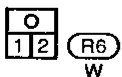
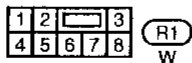
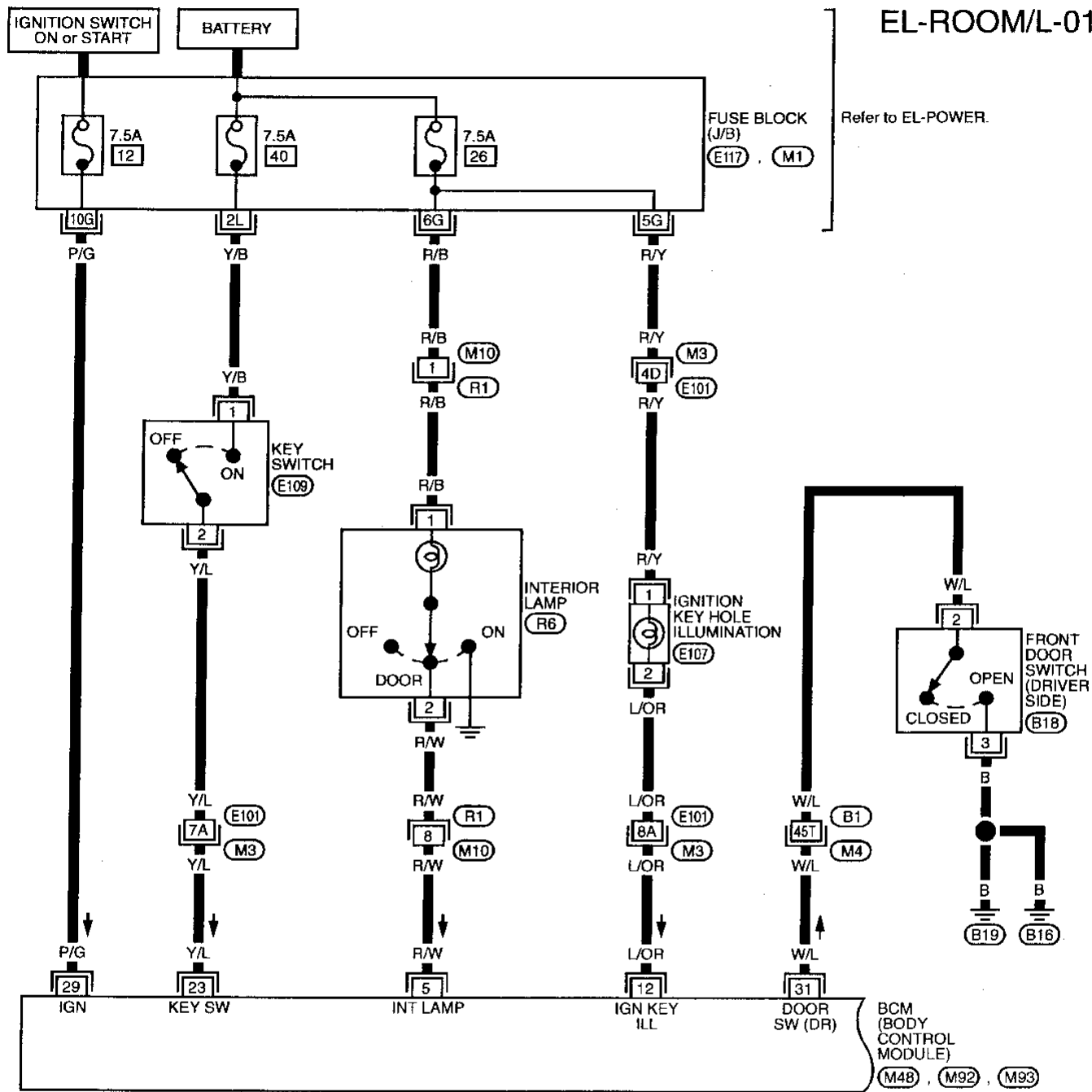
- through 7.5A fuse [No. 26], located in the fuse block (J/B)]
- to interior lamp terminal ① .

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

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

Wiring Diagram — ROOM/L —

EL-ROOM/L-01



Refer to last page (Foldout page).

(M3) (E101)

(M4) (B1)

(M1)

(E117)

(M48)

(M92)

(M93)

GI

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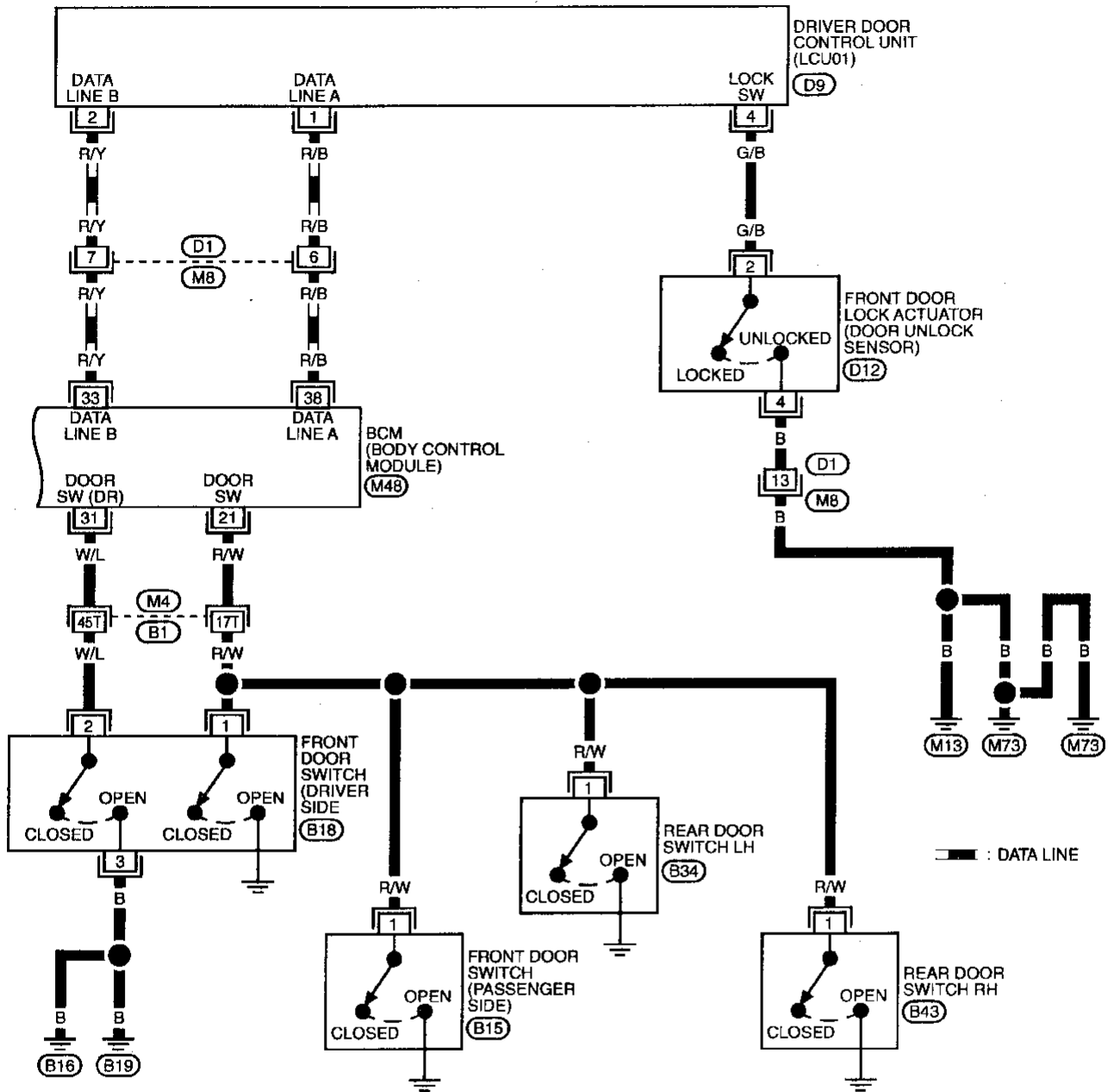
EL

IDX

INTERIOR LAMP CONTROL — IVMS

Wiring Diagram — ROOM/L — (Cont'd)

EL-ROOM/L-02



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

(M8) W

2	1	(B18)	(B15)
3		B	B

1	(B34)	(B43)
	BR	BR

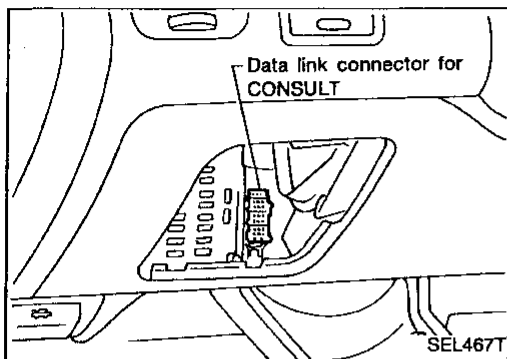
Refer to last page (Foldout page).

(M4)	(B1)
(M48)	

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

(D9) W

3	4	(D12)
1	2	GY

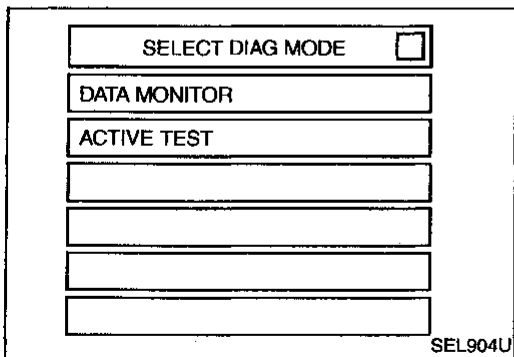
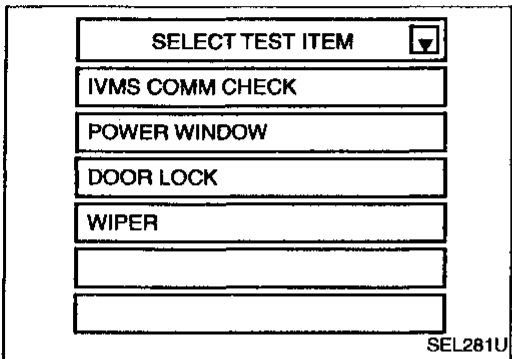
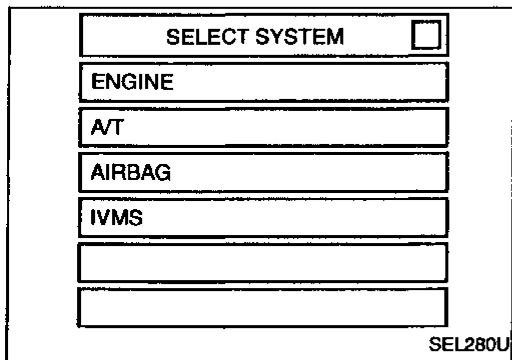
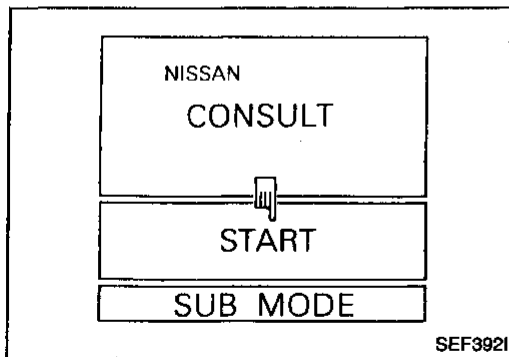


Trouble Diagnoses

CONSULT

CONSULT inspection procedure

1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

6. Touch "ROOM LAMP TIMER".

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

GI

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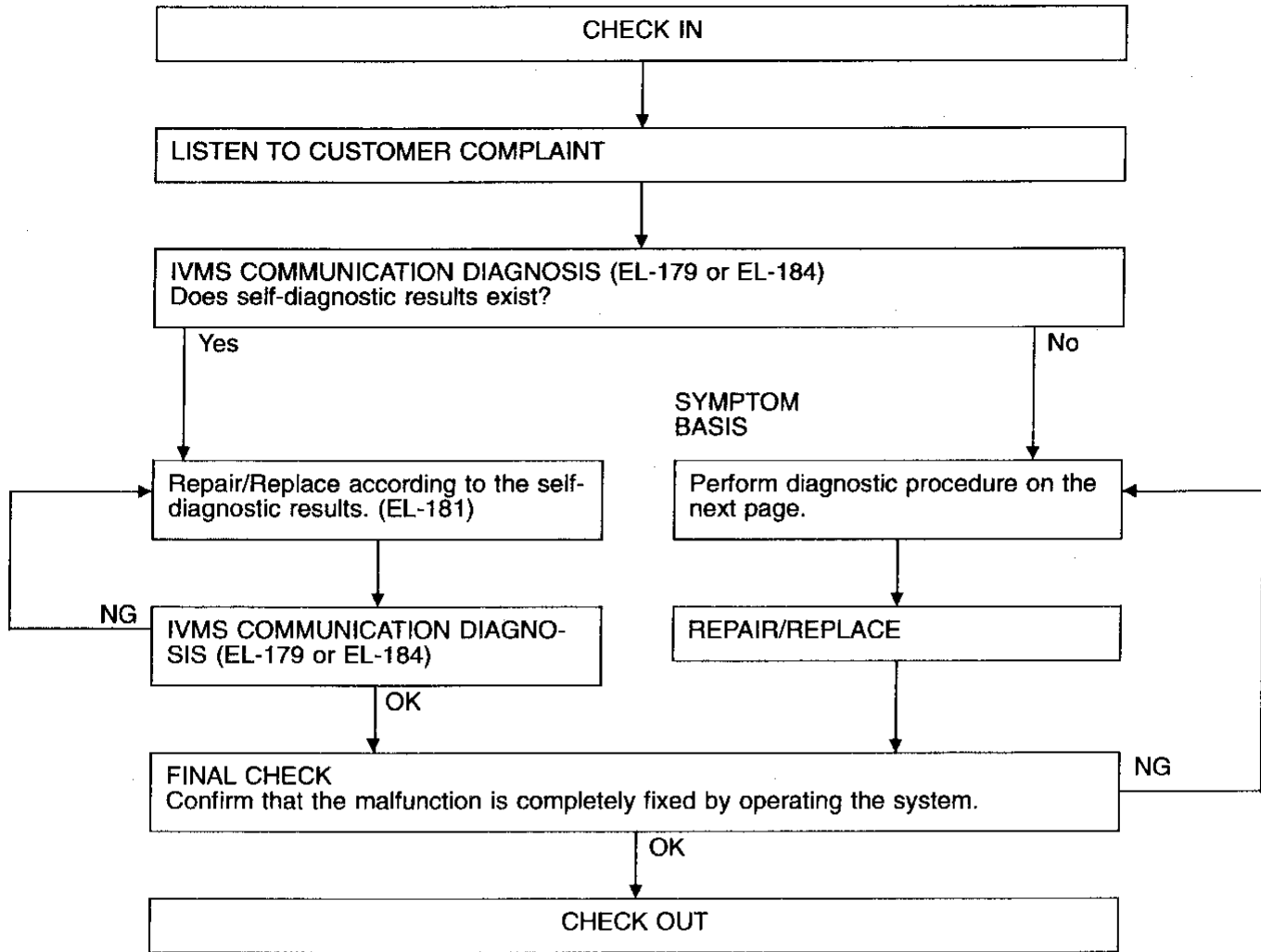
EL

IDX

INTERIOR LAMP CONTROL — IVMS

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

INTERIOR LAMP CONTROL — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

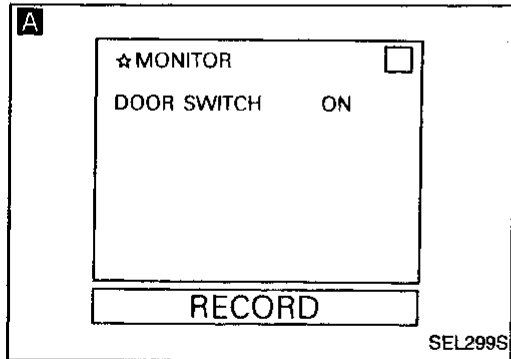
SYMPTOM: Interior lamp does not illuminate/does not turn off when door is opened/closed.

Does interior lamp illuminate manually? NG

OK

Check the following.

- Bulb
- 7.5A fuse (No. 26, located in the fuse block)
- Interior lamp switch



A

CHECK DOOR SWITCH INPUT SIGNAL. NG

CONSULT

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

When all doors are closed:
DOOR SWITCH OFF

When at least one door is open:
DOOR SWITCH ON

OR

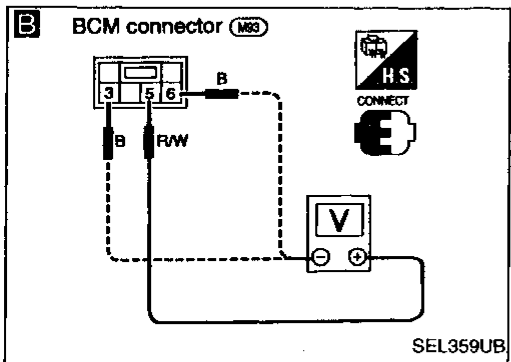
ON-BOARD

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-186.

OK

Check the following.

- All door switches
- Door switch ground condition
- Harness for open or short between door switch and BCM



B

CHECK INTERIOR LAMP SIGNAL. NG

1. Turn interior lamp switch to DOOR (center) position.
2. Check voltage between BCM terminals ⑤ and ③ or ⑥.

Condition of interior lamp switch	Voltage (V)
All doors are closed.	Approx. 12
At least one door is open.	0

OK

Check harness for open or short between BCM and interior lamp.

OK

Replace BCM.

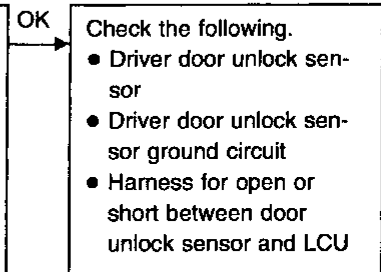
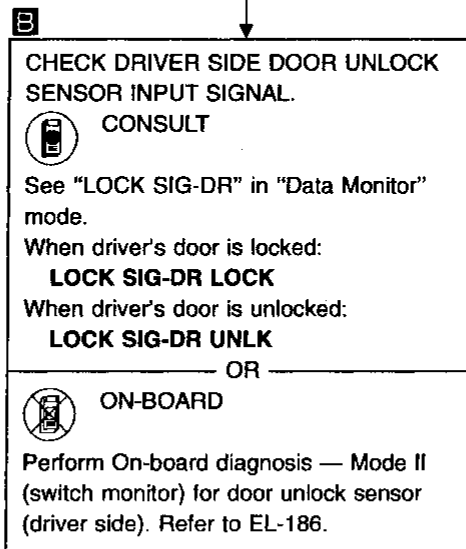
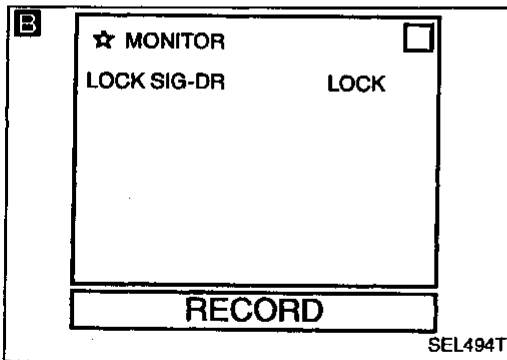
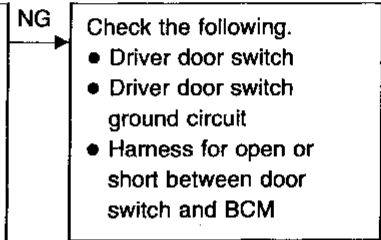
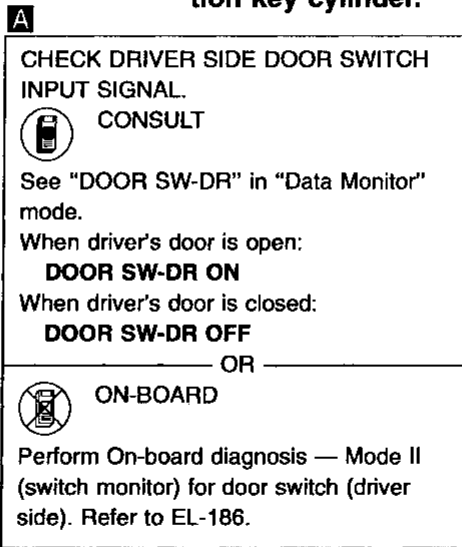
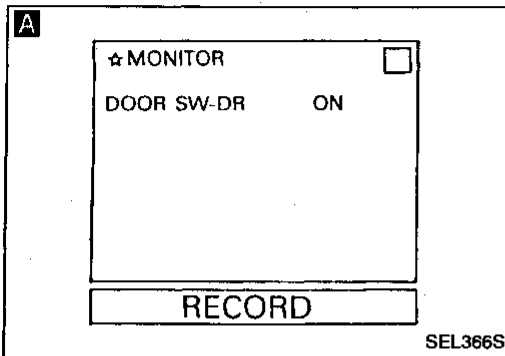
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INTERIOR LAMP CONTROL — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Interior lamp timer does not operate/does not cancel when driver's door is locked, ignition switch is turned ON, key is inserted into/removed from ignition key cylinder.

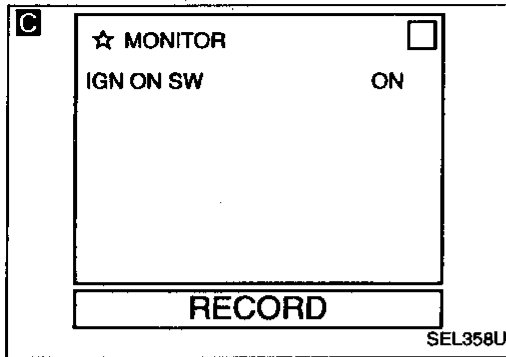


NG

Ⓐ

INTERIOR LAMP CONTROL — IVMS

Trouble Diagnoses (Cont'd)



Ⓐ

CHECK IGNITION ON INPUT SIGNAL.

C **CONSULT**

See "IGN ON SW" in "Data Monitor" mode.

When ignition switch is ON:
IGN ON SW ON

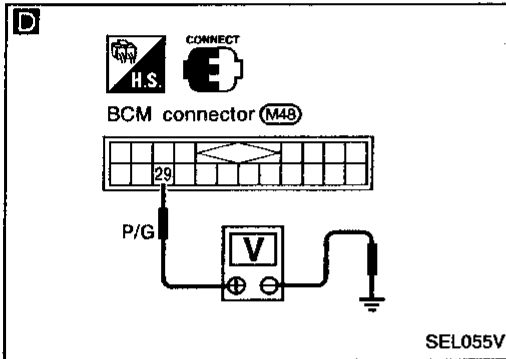
When ignition switch is ACC or OFF:
IGN ON SW OFF

OR

NG

Check the following.

- 7.5A fuse (No. 12, located in the fuse block)
- Harness for open or short between fuse and BCM

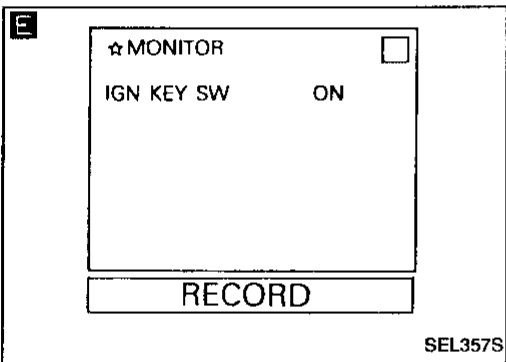


D **TESTER**

Check voltage between BCM terminal 29 and ground.

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

OK



Ⓐ

CHECK KEY SWITCH INPUT SIGNAL.

E **CONSULT**

See "IGN KEY SW" in "Data Monitor" mode.

When key is inserted in ignition key cylinder:
IGN KEY SW ON

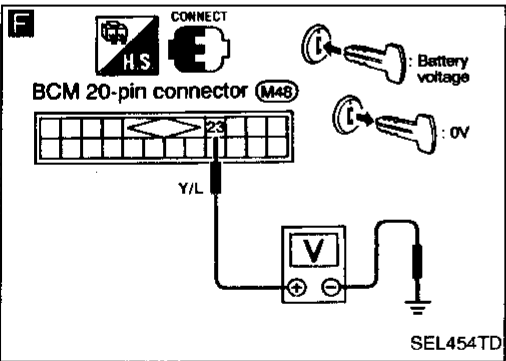
When key is removed from ignition key cylinder:
IGN KEY SW OFF

OR

NG

Check the following.

- 7.5A fuse [No. 40, located in the fuse block (J/B)]
- Key switch (insert)
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch



F **TESTER**

Check voltage between BCM terminal 23 and ground.

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

OK

Replace BCM.

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System Description

Power is supplied at all times

- to BCM terminal ①
- through 7.5A fuse (No. 56), located in the fuse and fusible link box).

Power is supplied at all times

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

Ground is supplied to terminal 16 of LCU01 and LCU02 through body grounds M13 and M73.

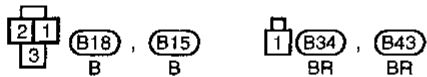
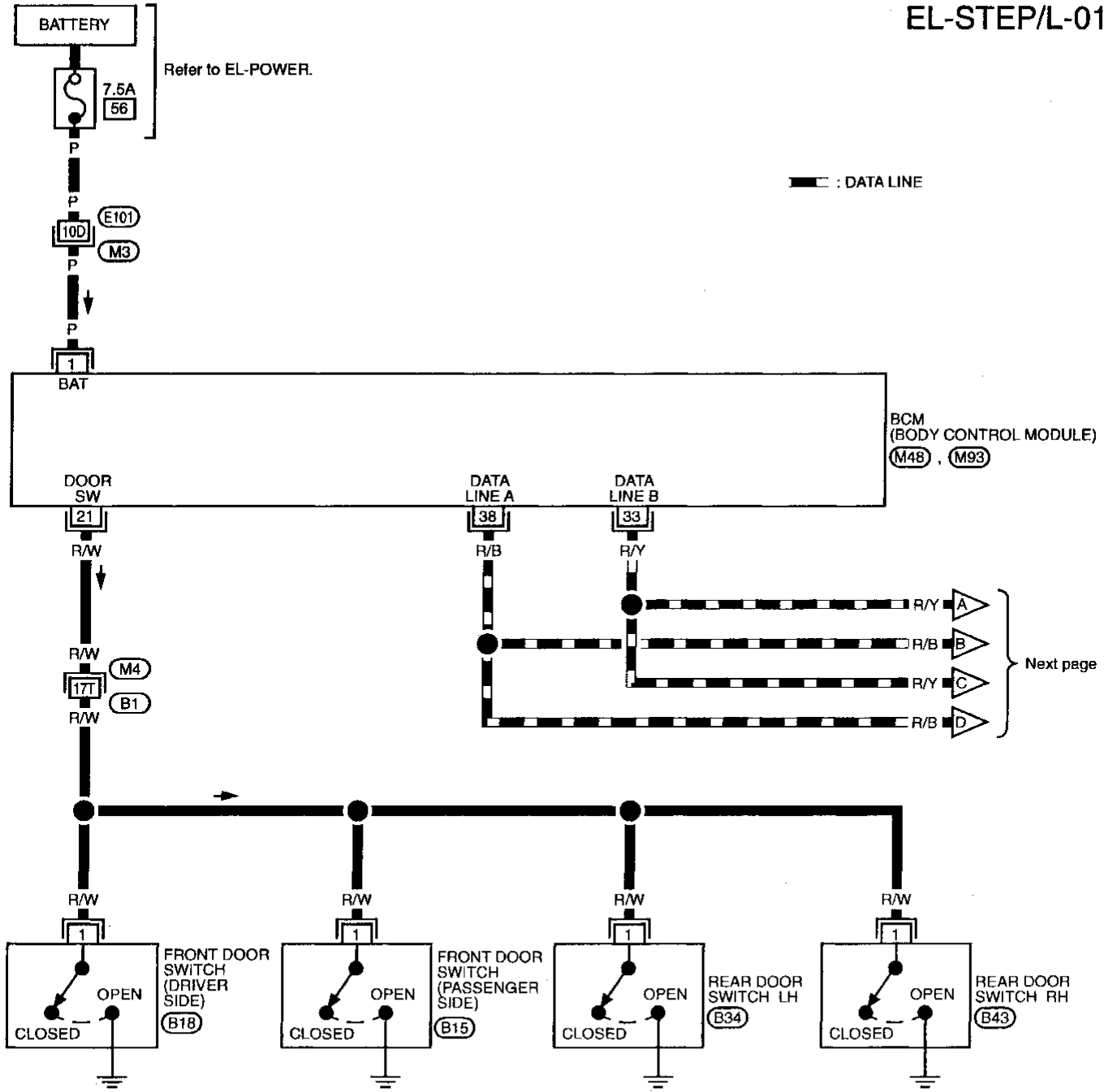
Terminal ① of LCU01 and LCU02 and terminal 39 of BCM are connected as DATA LINE A. Terminal ② of LCU01 and LCU02 and terminal 33 of BCM are connected by DATA LINE B.

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

When the driver door switch, passenger door switch, rear RH door switch, or rear LH door switch is in OPEN position, BCM sends a signal to driver and passenger door control units to turn on front LH and RH step lamps. With power and ground supplied, front step lamps turn on.

Wiring Diagram — STEP/L —

EL-STEP/L-01



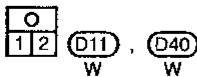
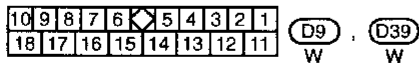
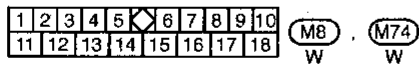
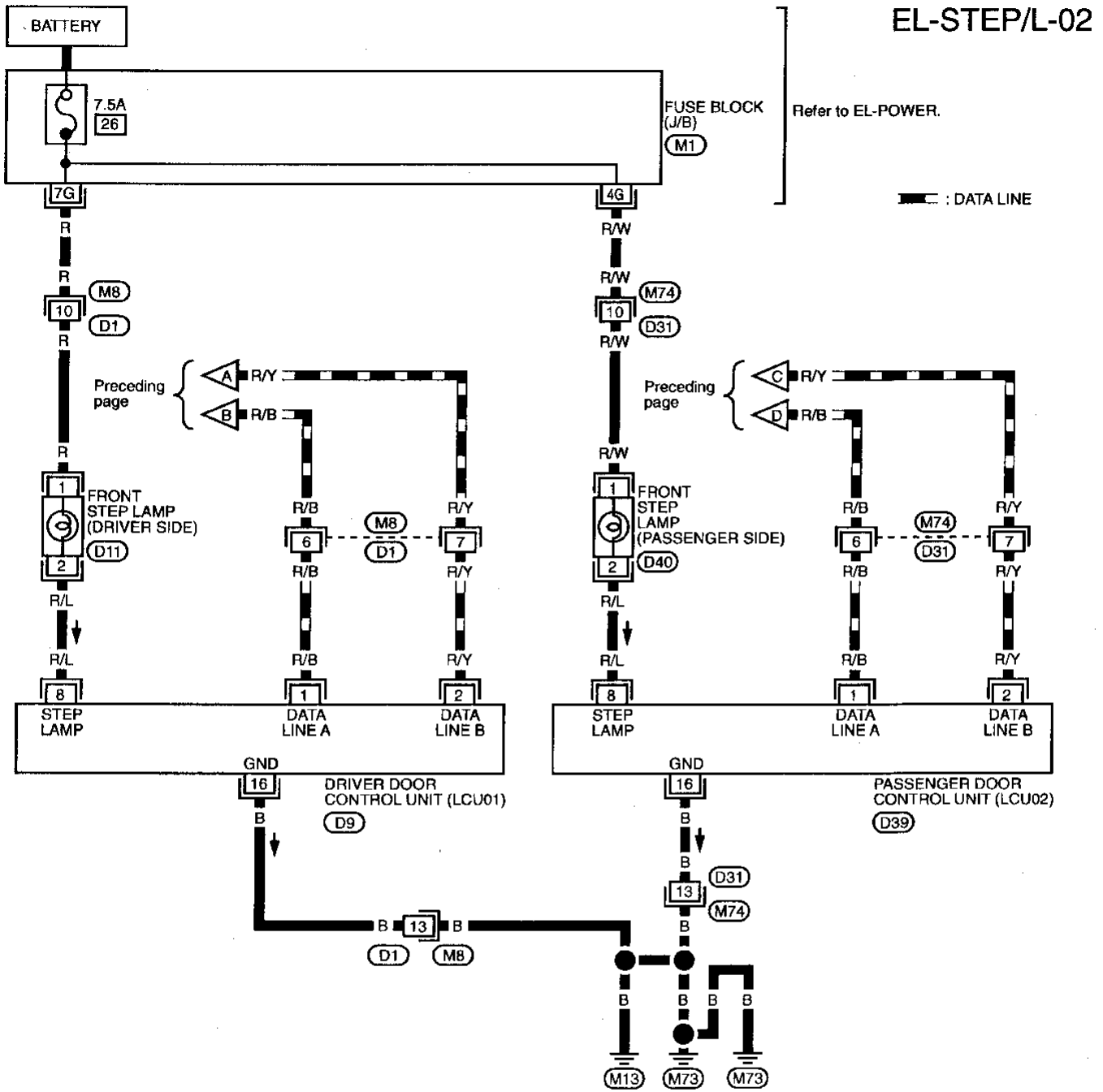
Refer to last page (Foldout page).

- M3, E101
- M4, B1
- M48
- M93

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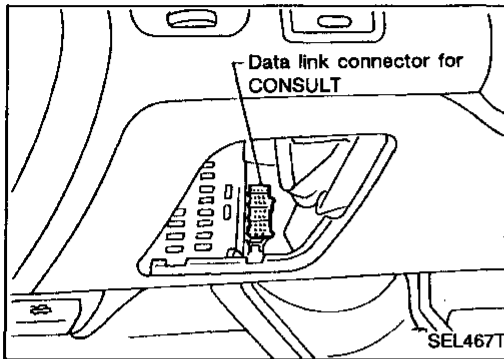
STEP LAMP — IVMS

Wiring Diagram — STEP/L — (Cont'd)



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

STEP LAMP — IVMS

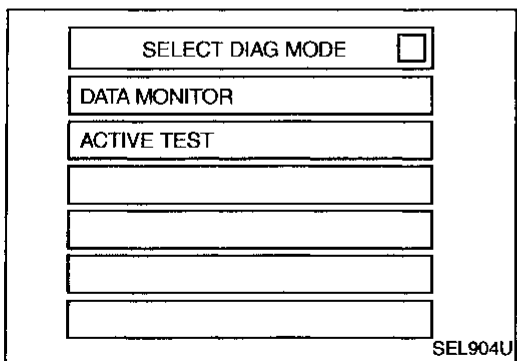
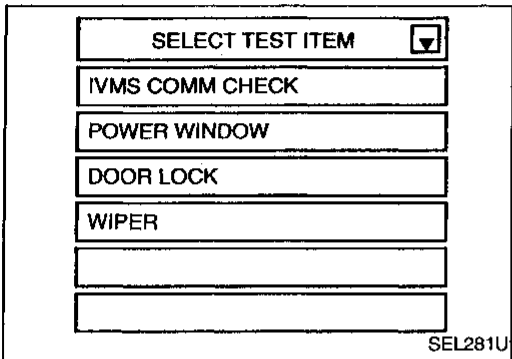
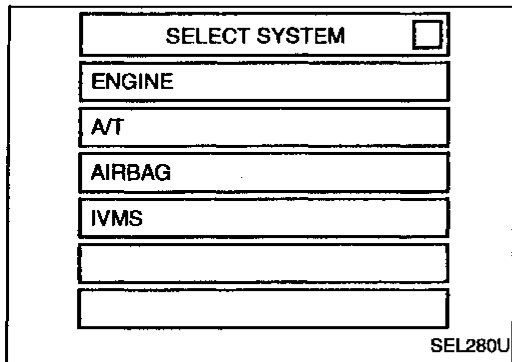
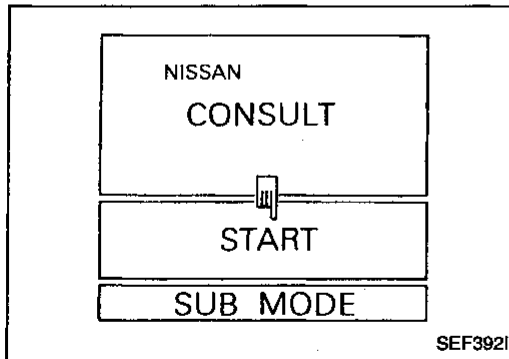


Trouble Diagnoses

CONSULT

CONSULT inspection procedure

1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

6. Touch "STEP LAMP".

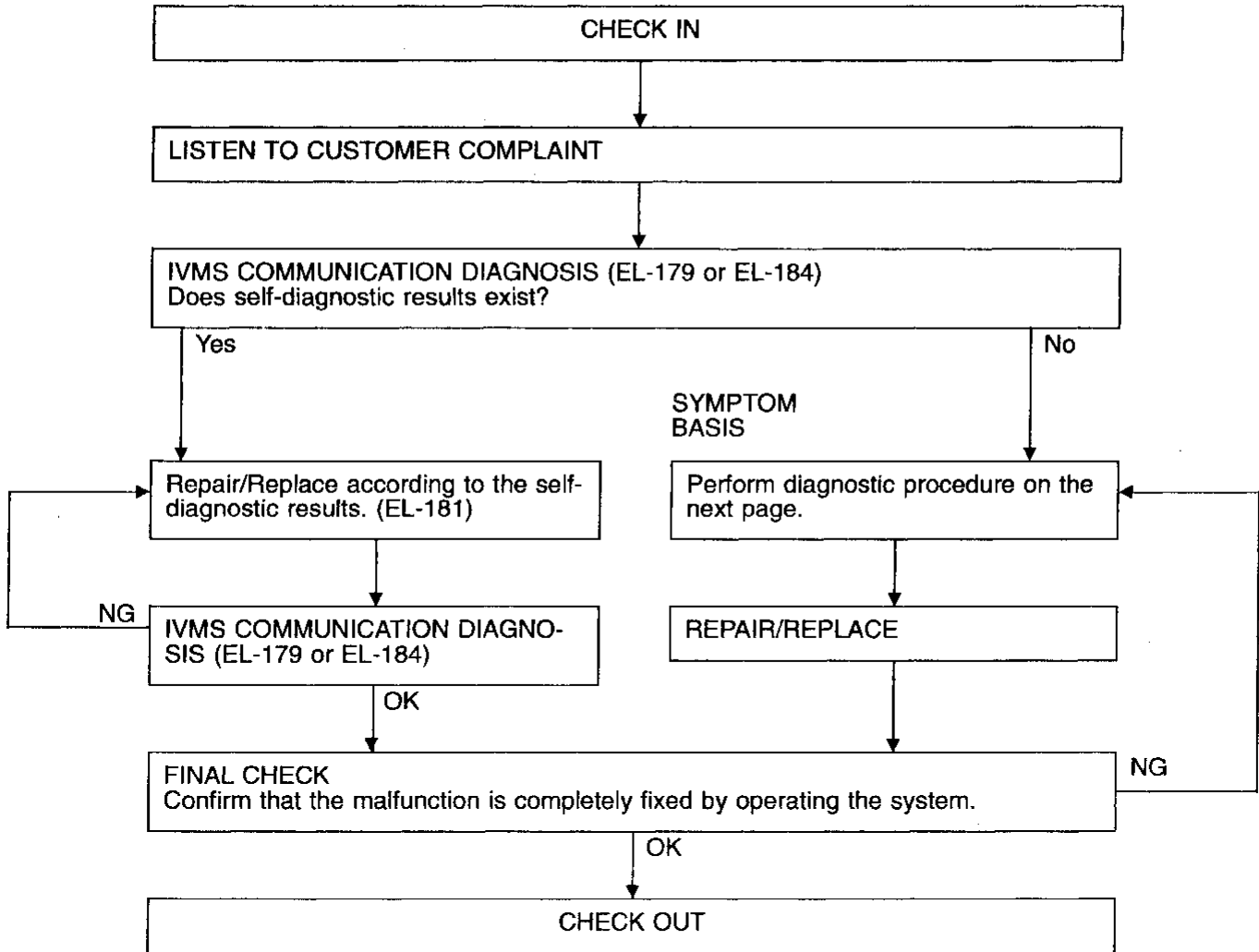
- DATA MONITOR and ACTIVE TEST are available for the step lamp.

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STEP LAMP — IVMS

Trouble Diagnoses (Cont'd)

WORK FLOW



NOTICE:

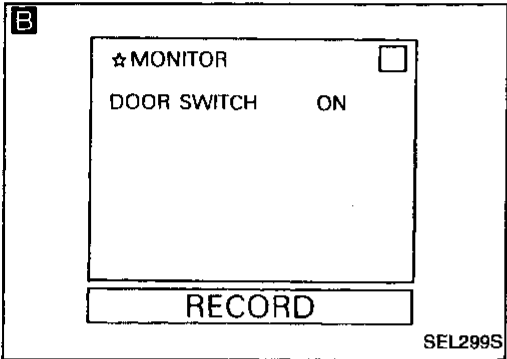
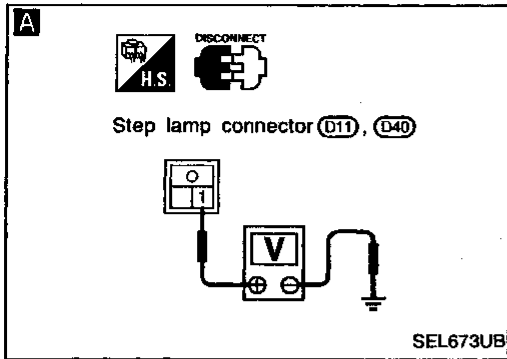
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.
Erase the memory with CONSULT (refer to EL-179) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56) located in the fuse and fusible link box).

STEP LAMP — IVMS

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

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



Check step lamp bulb. NG → Replace bulb.

A

POWER SUPPLY CIRCUIT CHECK

1. Disconnect step lamp connector.
2. Check voltage between step lamp terminal ① and ground.

Battery voltage should exist.

NG → Check the following.

- 7.5A fuse [No. 28], located in the fuse block (J/B)
- Harness for open or short between fuse and step lamp

B

DOOR SWITCH INPUT SIGNAL CHECK

CONSULT

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

When all doors are closed:
DOOR SWITCH OFF

When at least one door is open:
DOOR SWITCH ON

OR

ON-BOARD

Perform On-board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-186.

NG → Check the following.

- Door switch
- Door switch ground condition
- Harness for open or short between door switch and BCM

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

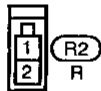
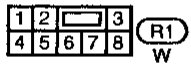
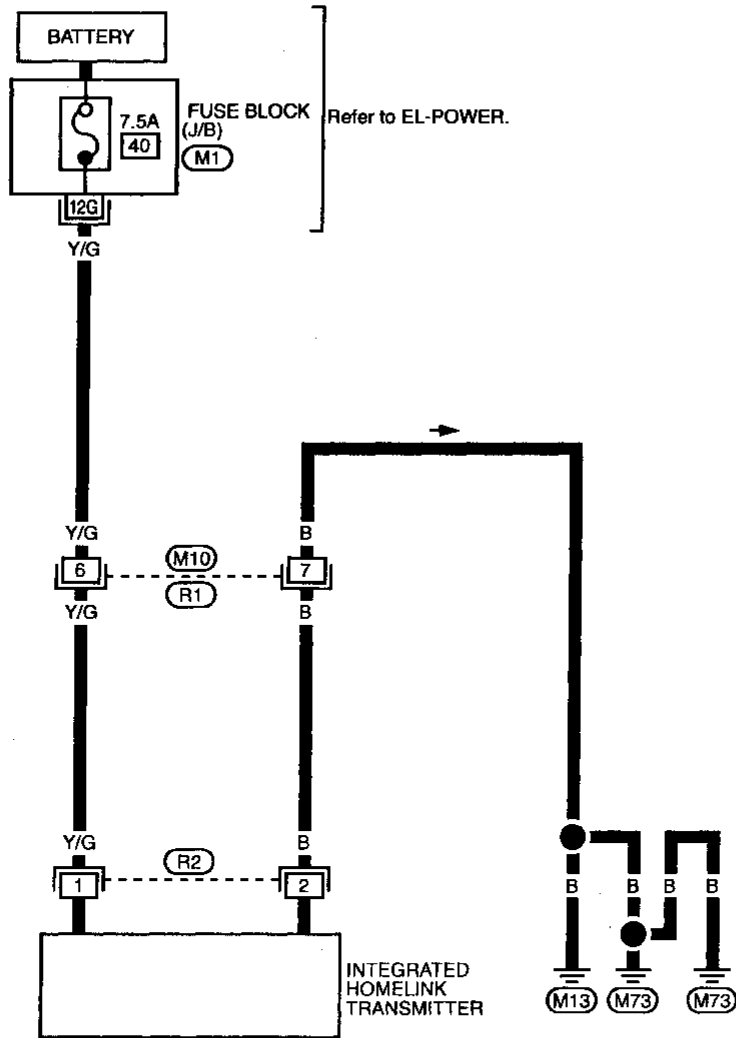
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INTEGRATED HOMELINK TRANSMITTER

Wiring Diagram — TRNSMT —

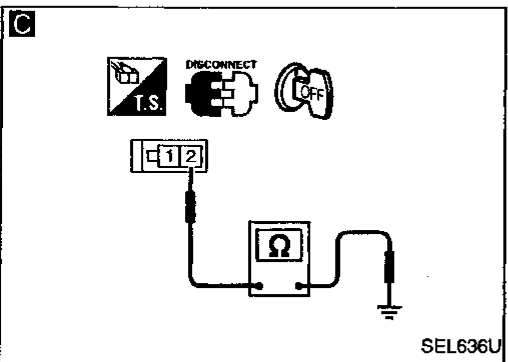
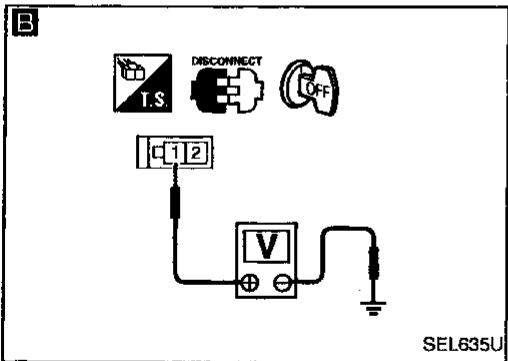
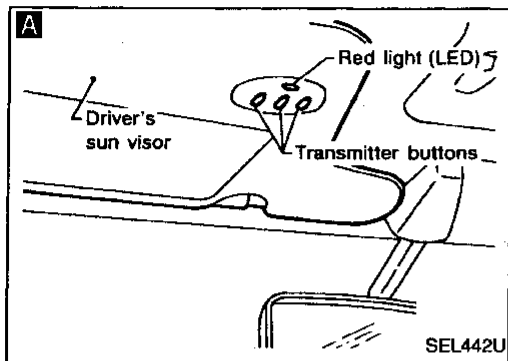
EL-TRNSMT-01



Refer to last page (Foldout page).

M1

INTEGRATED HOMELINK TRANSMITTER

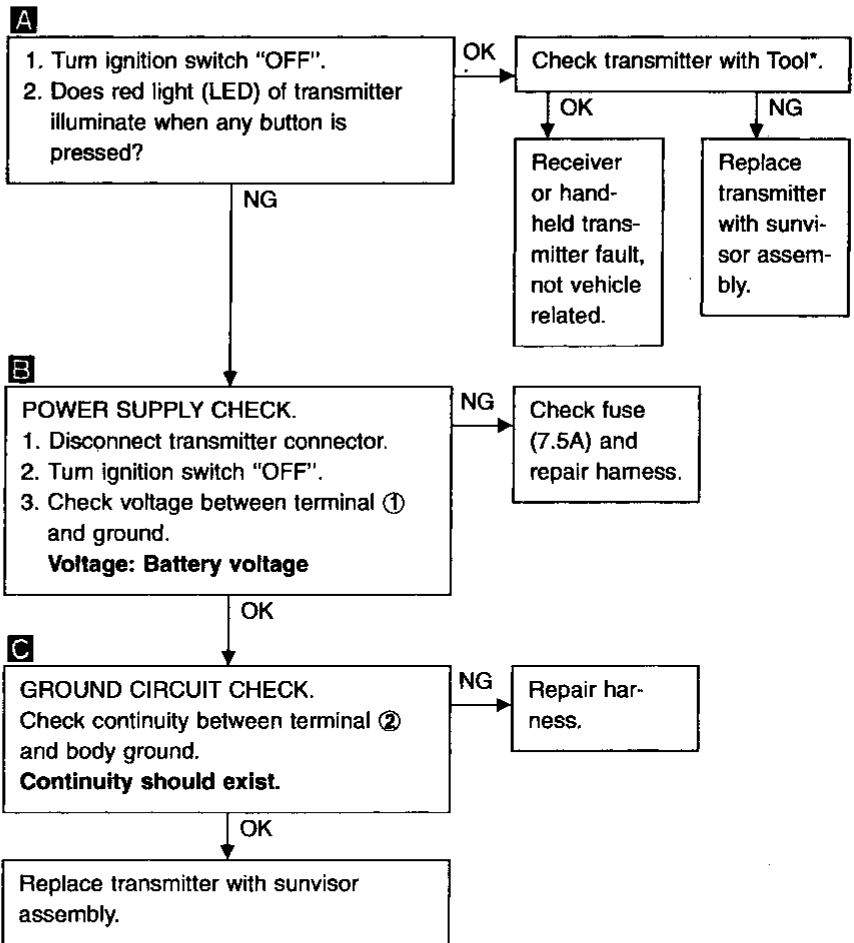


Trouble Diagnoses

DIAGNOSTIC PROCEDURE

SYMPTOM: Transmitter does not activate receiver.

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

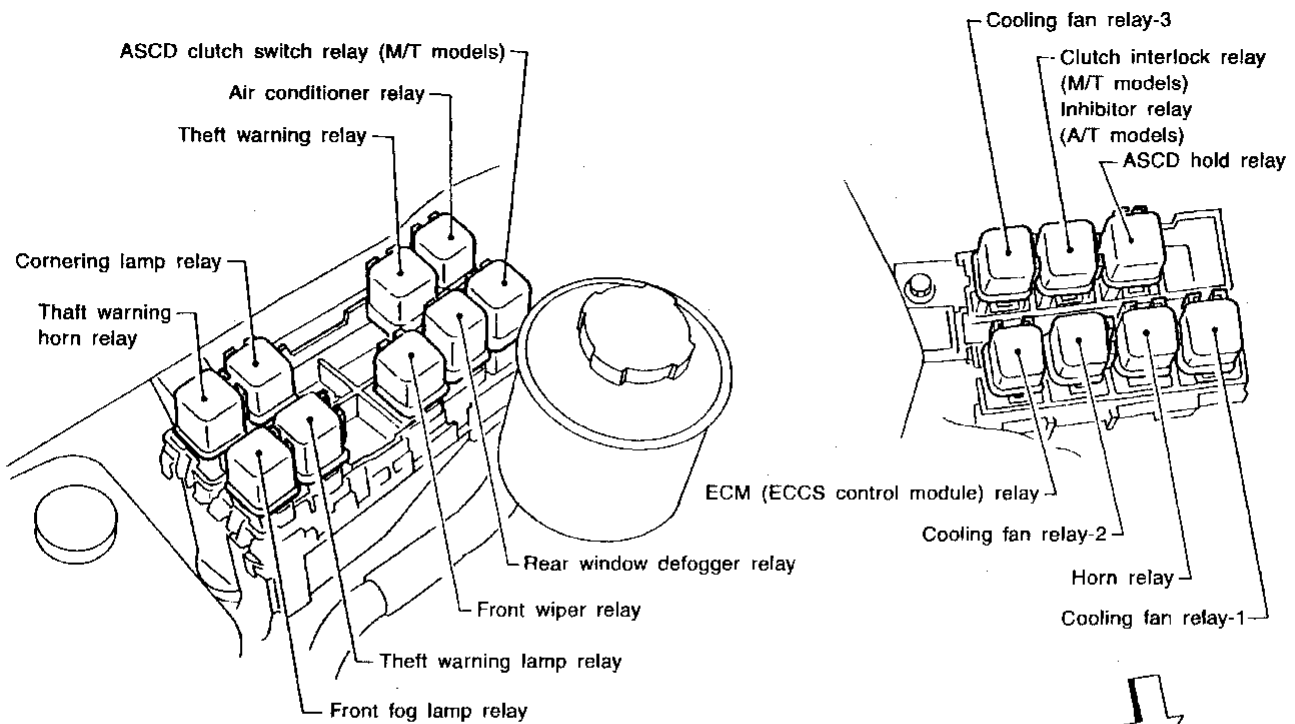
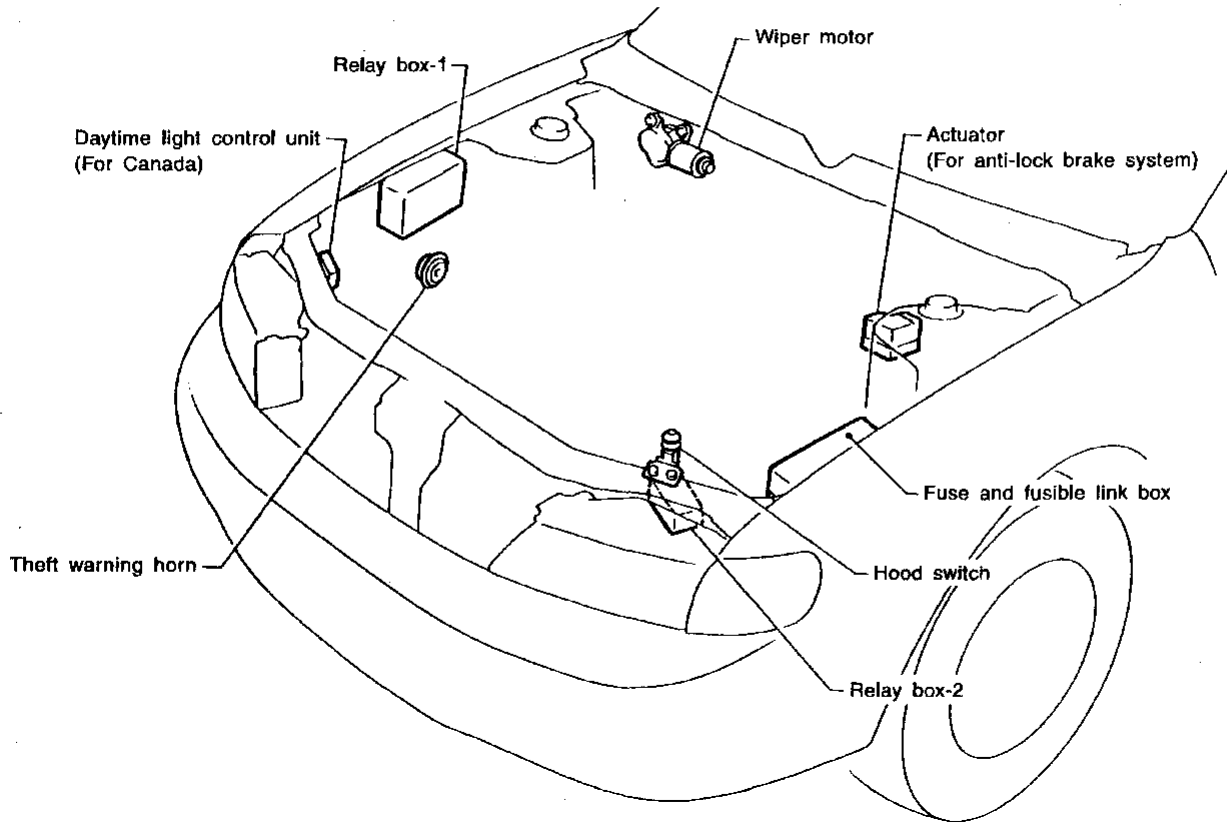


*For details, refer to Technical Service Bulletin.

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LOCATION OF ELECTRICAL UNITS

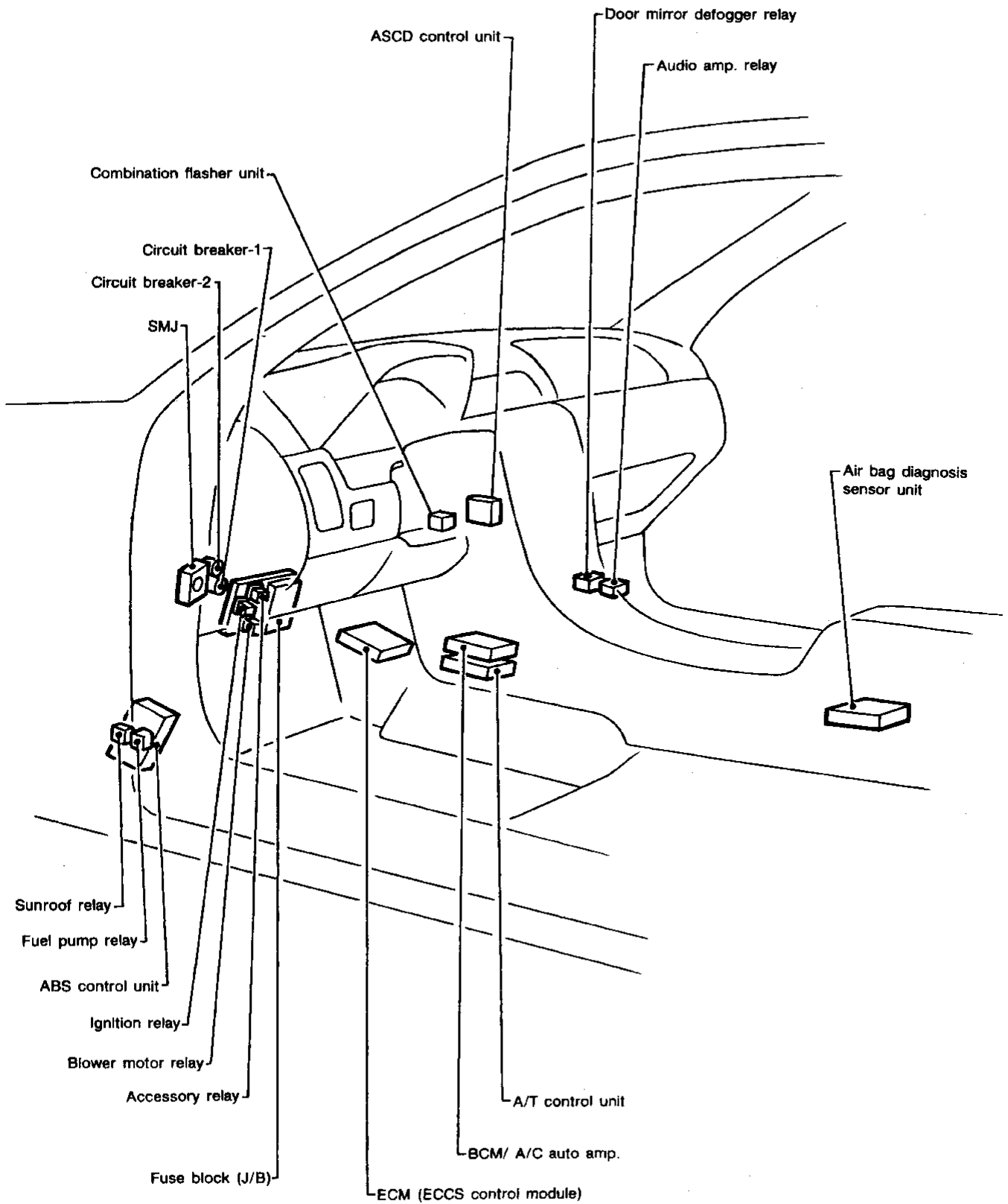
Engine Compartment



FRONT

LOCATION OF ELECTRICAL UNITS

Passenger Compartment



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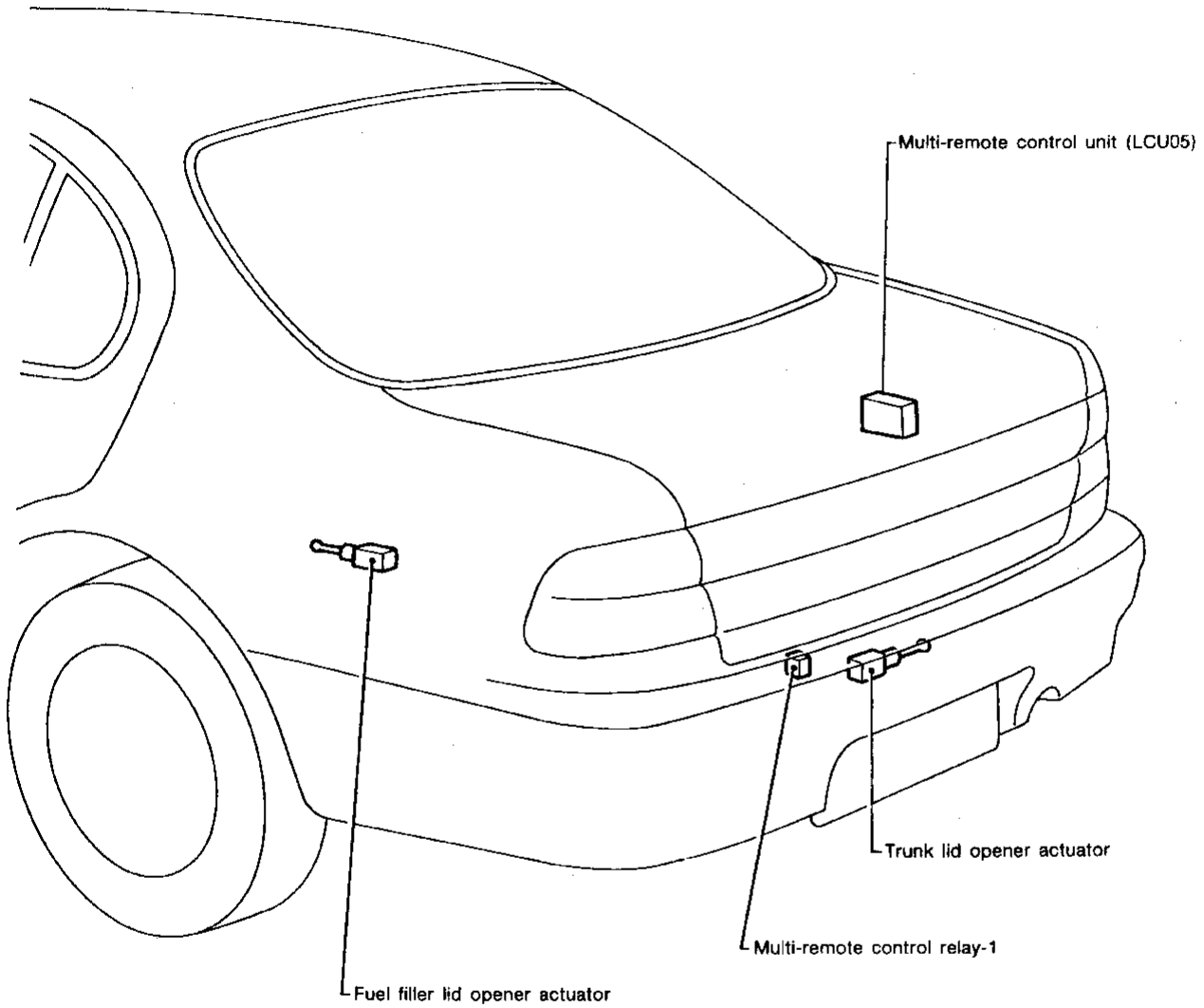
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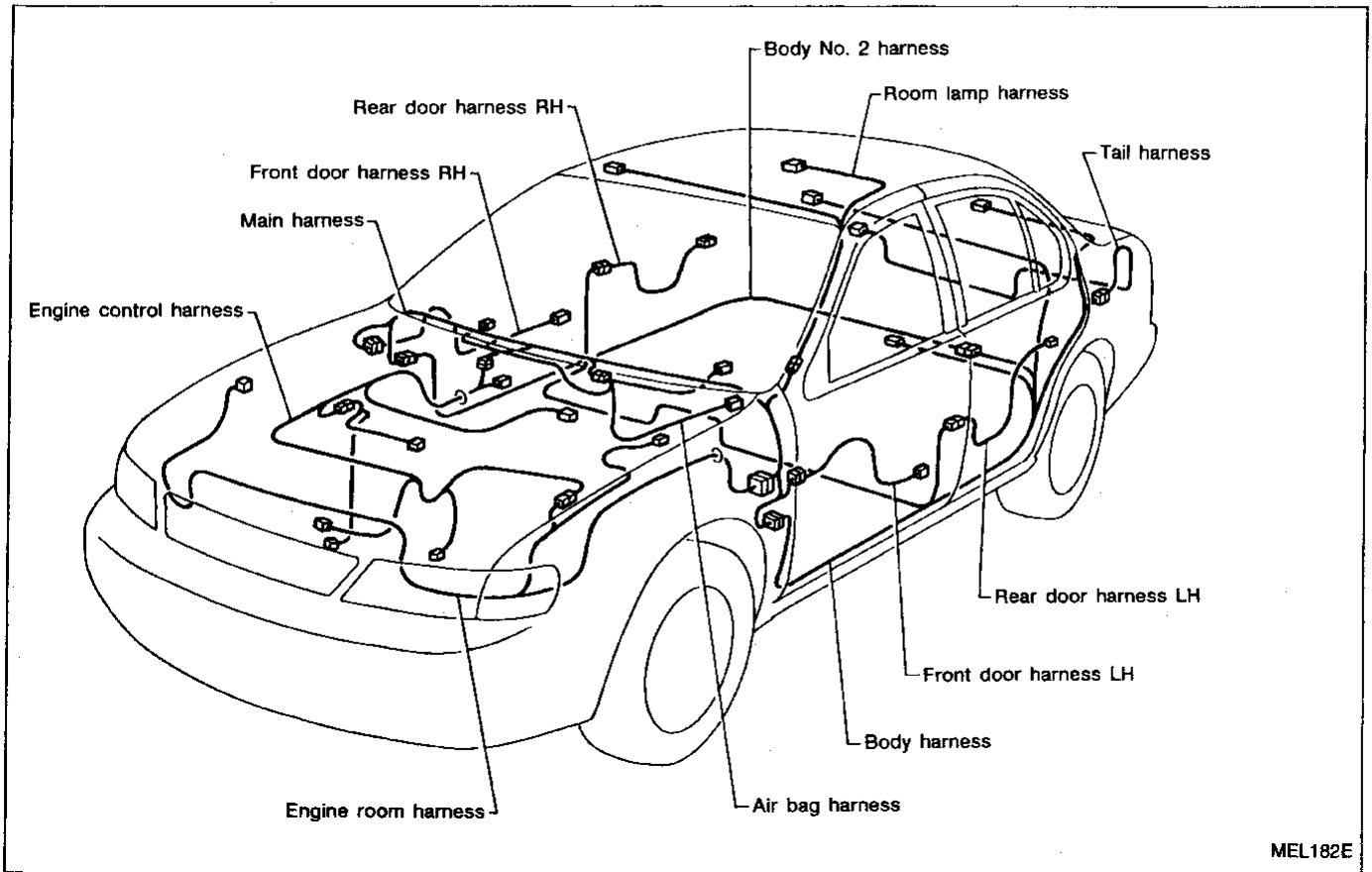
LOCATION OF ELECTRICAL UNITS

Luggage Compartment



HARNESS LAYOUT

Outline

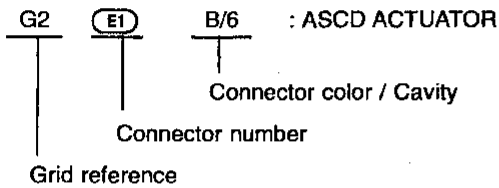


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HARNESS LAYOUT

How to Read Harness Layout

Example:



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

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

To use the grid reference

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

CONNECTOR SYMBOL

Main symbols of connector (in Harness Layout) are indicated in the below.

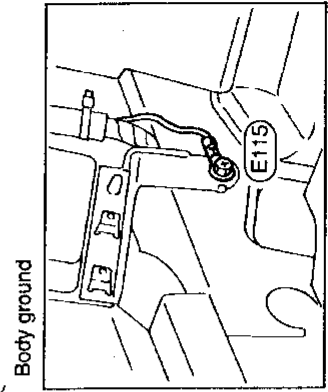
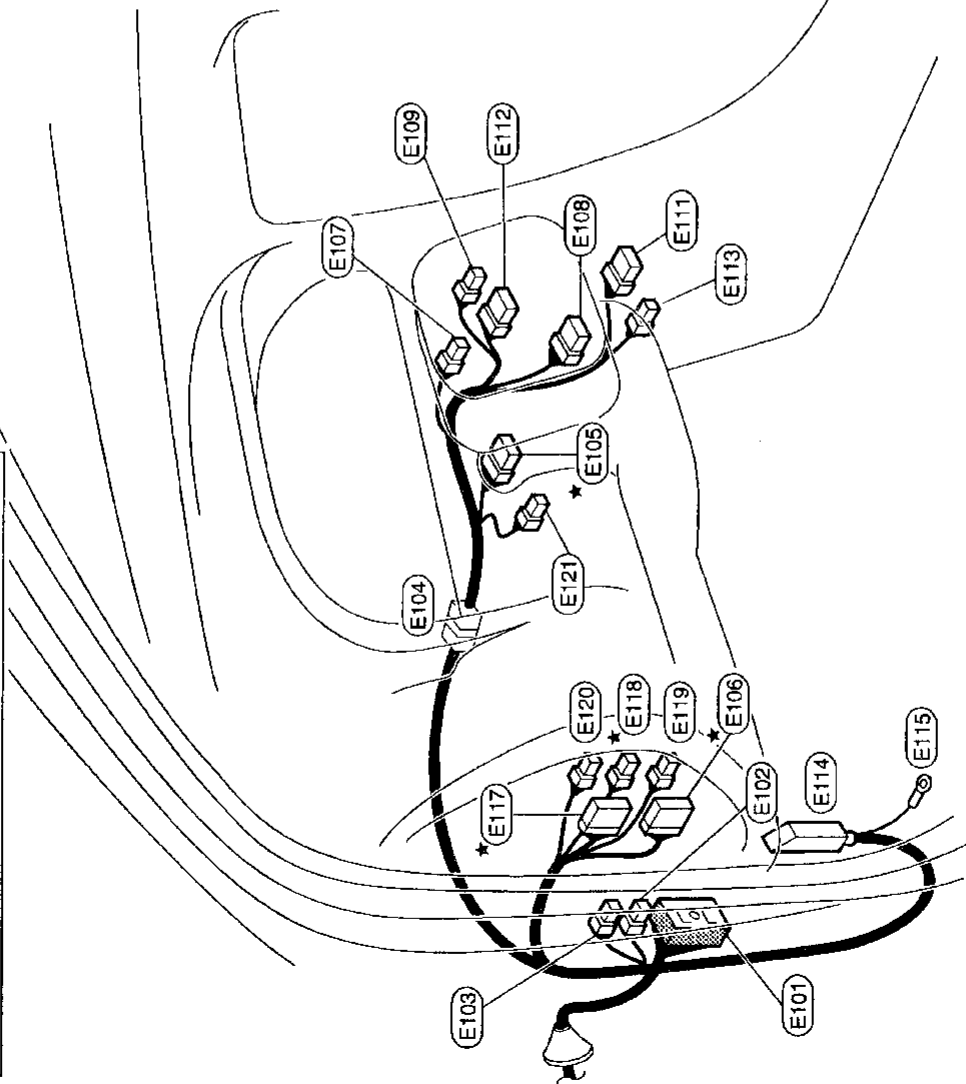
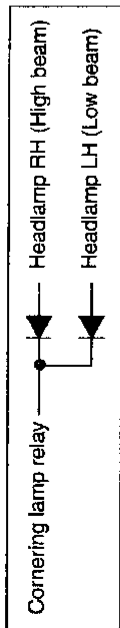
Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
<ul style="list-style-type: none"> ● Cavity: Less than 4 ● Relay connector 				
<ul style="list-style-type: none"> ● Cavity: From 5 to 8 				
<ul style="list-style-type: none"> ● Cavity: More than 9 	—	—		
<ul style="list-style-type: none"> ● Ground terminal etc. 	—			

Engine Room Harness

PASSENGER COMPARTMENT

Engine room harness (Cabin)

(E101)	SMJ	:	To (M3)
(E102)	W/2	:	Circuit breaker-1
(E103)	W/2	:	Circuit breaker-2
(E104)	SB/6	:	Joint connector-9 (Diode)
★ (E105)	W/6	:	Ignition switch
★ (E106)	GY/16	:	Fuse block (J/B)
(E107)	W/2	:	Ignition key hole illumination
(E108)	W/6	:	Turn signal and cornering lamp switch
(E109)	W/2	:	Key switch
(E111)	W/8	:	Lighting switch
(E112)	L/8	:	Front wiper switch
(E113)	B/2	:	Front fog lamp switch
(E114)	L/83	:	ABS control unit
(E115)	-	:	Body ground (Anti-lock brake system)
★ (E117)	W/16	:	Fuse block (J/B)
★ (E118)	B/4	:	Fuse block (J/B)
(E119)	W/4	:	Fuse block (J/B)
(E120)	B/2	:	Fuse block (J/B)
(E121)	W/2	:	Telephone microphone



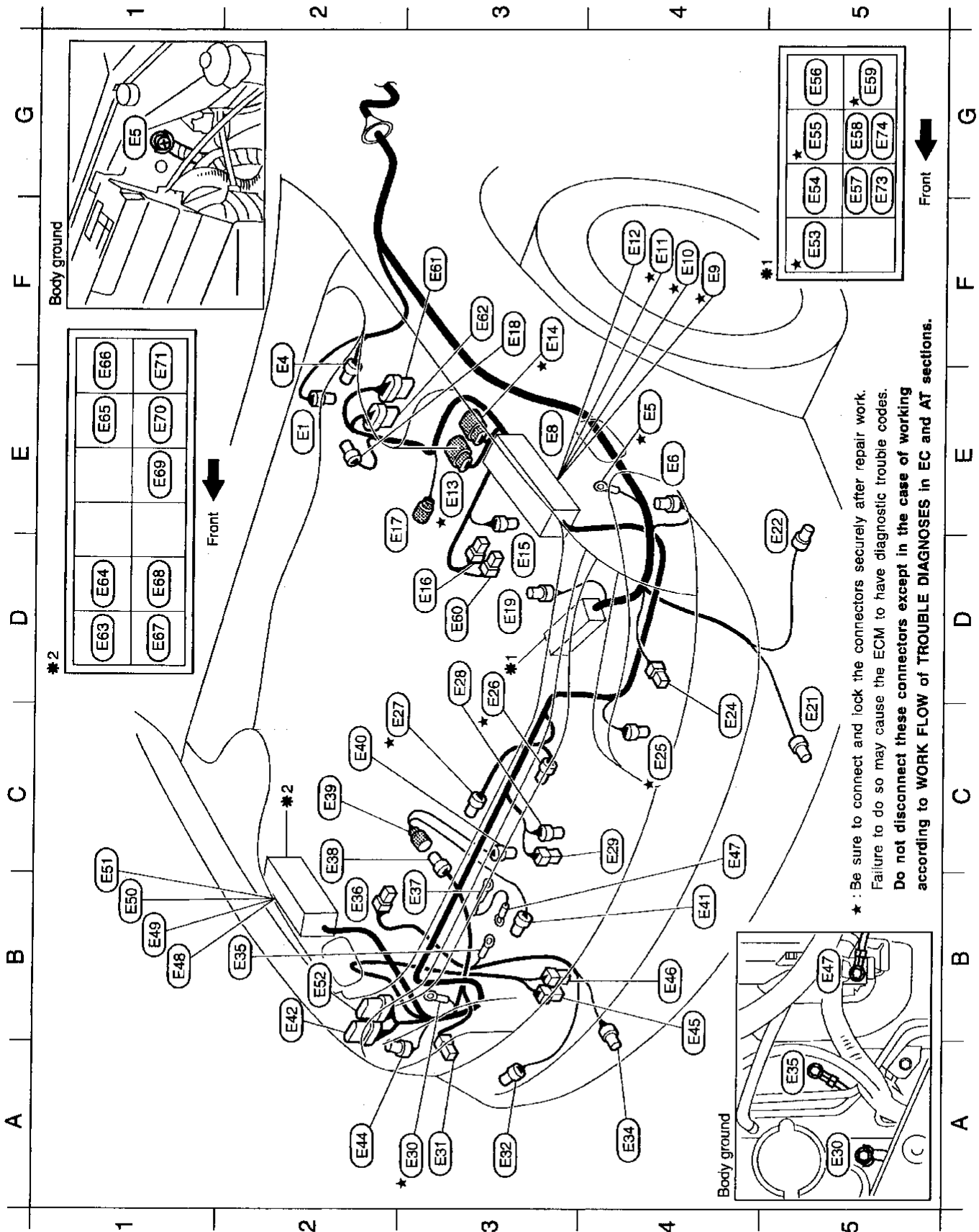
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HARNESS LAYOUT

Engine Room Harness (Cont'd)

ENGINE COMPARTMENT



HARNESS LAYOUT

Engine Room Harness (Cont'd)

Engine room harness (Engine room)

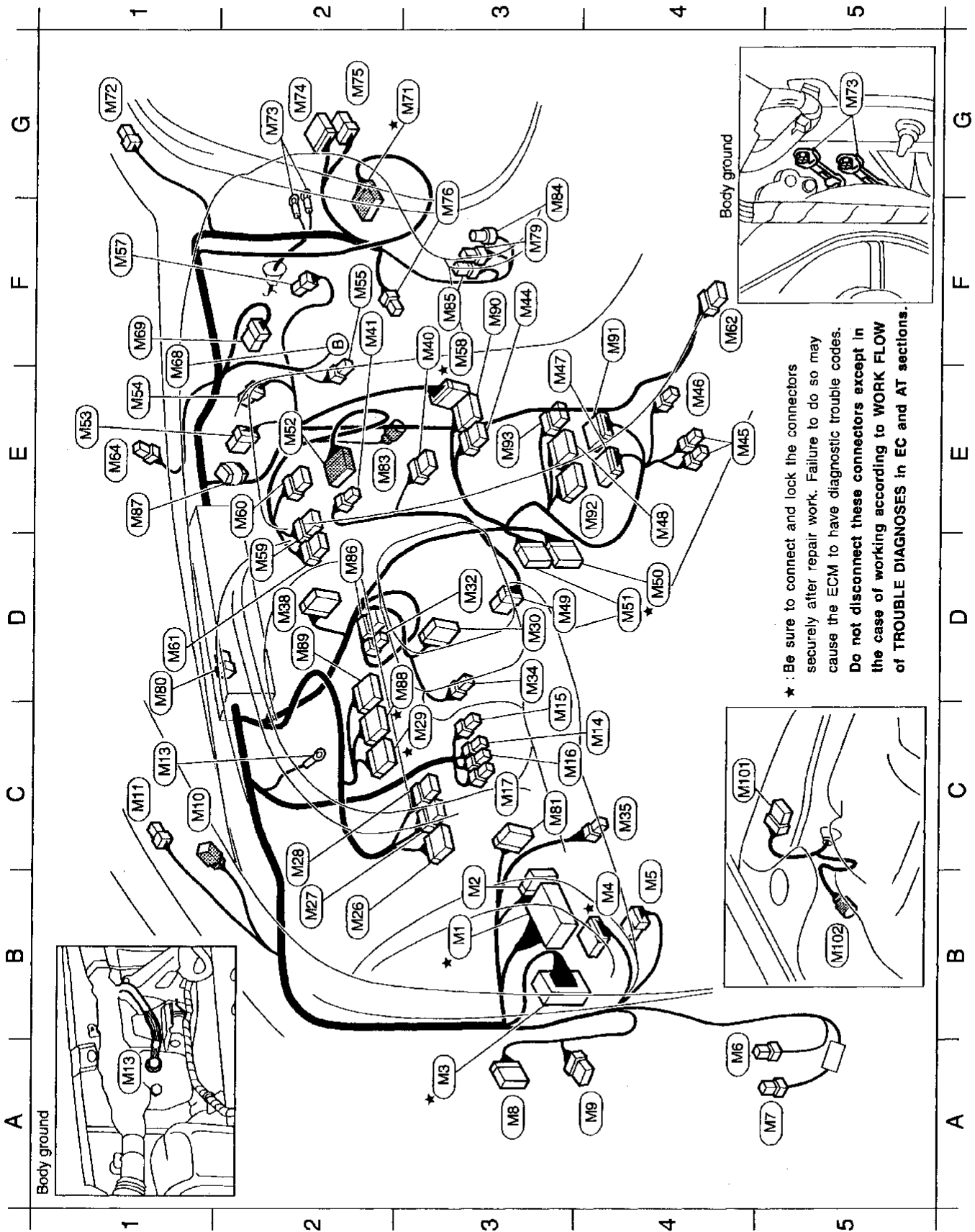
E2	(E1)	GY/2	: Brake fluid level switch	A3	(E30)	-	: Body ground
E2	(E4)	GY/4	: ASCD pump	A3	(E31)	B/3	: Headlamp RH
E4	(E5)	-	: Body ground	A3	(E32)	GY/2	: Cornering lamp RH
E4	(E6)	GY/3	: Parking lamp and Front turn signal lamp LH	A4	(E34)	GY/2	: Front fog lamp RH
E3	(E8)	-	: Fuse and fusible link box	B2	(E35)	-	: Body ground
F4	(E9)	W/6	: Joint connector-1	B2	(E36)	B/1	: Theft warning horn
F4	(E10)	W/6	: Joint connector-2	B3	(E37)	-	: Alternator
F4	(E11)	GY/6	: Joint connector-3	C2	(E38)	GY/4	: To (E39)
F4	(E12)	GY/6	: Joint connector-4	C2	(E39)	GY/4	: To (E38)
E3	(E13)	BR/8	: To (F36)	C2	(E40)	GY/4	: Alternator
F3	(E14)	B/8	: To (F37)	B4	(E41)	B/1	: Compressor (A/C)
D3	(E15)	GY/1	: Starter motor	B2	(E42)	GY/8	: Daytime light control unit (For Canada)
D3	(E16)	B/1	: Battery	A2	(E44)	GY/3	: Clearance lamp and Front turn signal lamp RH
E2	(E17)	BR/2	: Front wheel sensor LH (Anti-lock brake system)	B4	(E45)	BR/2	: Washer level switch (For Canada)
F3	(E18)	W/2	: ABS relay unit	B4	(E46)	GY/2	: Front washer motor
D3	(E19)	GY/2	: Hood switch (Theft warning system)	C4	(E47)	-	: Alternator
C5	(E21)	GY/2	: Front fog lamp LH	B1	(E48)	W/6	: Joint connector-5
E5	(E22)	GY/2	: Cornering lamp LH	B1	(E49)	W/6	: Joint connector-6
C4	(E24)	B/3	: Headlamp LH	B1	(E50)	W/6	: Joint connector-7
C4	(E25)	B/4	: Triple-pressure switch	C1	(E51)	GY/6	: Joint connector-8
D3	(E26)	GY/4	: Cooling fan motor-1	B2	(E52)	GY/6	: Daytime light control unit (For Canada)
C2	(E27)	GY/4	: Cooling fan motor-2	F5	(E53)	L/4	: Cooling fan relay-1
D3	(E28)	B/2	: Ambient sensor	G5	(E54)	W/3	: Horn relay
C4	(E29)	B/1	: Horn	G5	(E55)	BR/6	: Cooling fan relay-2
				G5	(E56)	L/4	: ECM (ECCS control module) relay
				G5	(E57)	L/4	: ASCD hold relay (M/T models)
				G5	(E58)	L/4	: Clutch interlock relay (M/T models)
				G5	(E59)	BR/6	: Cooling fan relay-3
				D3	(E60)	B/1	: Battery
				F3	(E61)	B/6	: ABS relay unit
				F3	(E62)	GY/8	: ABS control actuator
				D1	(E63)	BR/6	: Theft warning horn relay
				D1	(E64)	L/4	: Cornering lamp relay
				E1	(E65)	B/5	: Theft warning relay
				F1	(E66)	L/4	: Air conditioner relay
				D1	(E67)	L/4	: Front fog lamp relay
				D1	(E68)	BR/6	: Theft warning lamp relay
				E1	(E69)	B/5	: Front wiper relay
				E1	(E70)	BR/6	: Rear window defogger relay
				F1	(E71)	BR/6	: ASCD clutch switch relay
				G5	(E73)	BR/6	: ASCD hold relay (A/T models)
				G5	(E74)	BR/6	: Inhibitor relay (A/T models)

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HARNESS LAYOUT

Main Harness

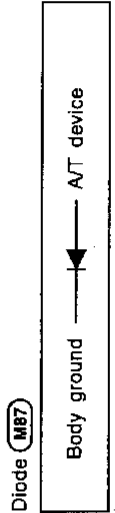


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HARNES LAYOUT

Main Harness (Cont'd)

<p>B3★ (M1) - : Fuse block (J/B)</p> <p>B3 (M2) GY/14 : Data link connector for CONSULT</p> <p>A3★ (M3) SMJ : To (E101)</p> <p>B4★ (M4) W/48 : To (B1)</p> <p>B4 (M5) GY/6 : To (B2)</p> <p>A4 (M6) L/4 : Fuel pump relay</p> <p>A5 (M7) L/4 : Sunroof relay (With yellow tape)</p> <p>A3 (M8) W/18 : To (D1)</p> <p>A4 (M9) GY/6 : To (D2)</p> <p>C1 (M10) W/8 : To (R1)</p> <p>C1 (M11) BR/2 : Tweeter LH</p> <p>C1 (M13) - : Body ground</p> <p>C4 (M14) L/2 : ASCD brake switch</p> <p>C3 (M15) B/2 : Stop lamp switch</p> <p>C3 (M16) L/2 : Clutch interlock switch</p> <p>C3 (M17) L/2 : ASCD clutch switch (For M/T models)</p> <p>B2 (M26) GY/12 : Door mirror remote control switch</p> <p>B2 (M27) W/6 : ASCD main switch</p> <p>C2 (M28) W/4 : Security indicator lamp</p> <p>C3★ (M29) W/16 : Combination meter</p> <p>D3 (M30) B/20 : ASCD control unit</p> <p>D3 (M32) W/3 : Illumination control switch</p> <p>D3 (M34) B/3 : Combination flasher unit</p> <p>C4 (M35) W/3 : Warning buzzer</p> <p>D2 (M38) BR/10 : Mode door motor</p> <p>F3 (M40) W/8 : Push control unit</p> <p>F2 (M41) W/2 : In-vehicle sensor</p> <p>F3 (M44) W/6 : Audio</p> <p>E4 (M45) B/2 : Cigarette lighter socket</p> <p>E4 (M46) W/2 : Ashtray illumination</p> <p>E3 (M47) W/16 : A/C auto amp. (In BCM)</p> <p>E4 (M48) GY/20 : BCM (Body control module)</p> <p>D3 (M49) B/6 : Air mix door motor</p> <p>D4★ (M50) W/20 : To (F105)</p> <p>D4 (M51) W/12 : To (F104)</p> <p>E2 (M52) Y/18 : To (Z1)</p>	<p>(M63) B/6 : Bi-level actuator</p> <p>E1 (M54) W/3 : Intake sensor</p> <p>F2 (M55) BR/2 : Glove box lamp switch</p> <p>F1 (M57) W/4 : Fan control amp.</p> <p>F3★ (M58) GY/16 : To (F102)</p> <p>D2 (M59) BR/6 : Clock</p> <p>E2 (M60) W/6 : Rear window defogger switch</p> <p>D1 (M61) W/8 : Hazard switch</p> <p>F4 (M62) W/6 : A/T device</p> <p>E1 (M64) B/2 : Sunload sensor</p> <p>F1 (M68) Bulb : Glove box lamp</p> <p>F1 (M69) W/8 : Intake door motor</p> <p>G3★ (M71) GY/16 : To (B102)</p> <p>G1 (M72) BR/2 : Tweeter RH</p> <p>G2 (M73) - : Body ground</p> <p>G2 (M74) W/18 : To (D31)</p> <p>G2 (M75) GY/6 : To (D32)</p> <p>F3 (M76) W/2 : Blower motor</p> <p>F3 (M79) L/4 : Audio amp. relay</p> <p>D1 (M80) SB/4 : Joint connector-10 (Diode)</p> <p>C3 (M81) W/16 : Data link connector for GST</p> <p>E2 (M83) DIN6 : Audio</p> <p>F3 (M84) DIN5 : To (B111)</p> <p>F3 (M85) L/4 : Door mirror defogger relay</p> <p>D2 (M86) W/6 : Fuel lid opener switch</p> <p>E1 (M87) B/2 : Diode (For A/T models)</p> <p>C3 (M88) BR/16 : Combination meter</p> <p>D2 (M89) W/14 : Combination meter</p> <p>F3 (M90) W/10 : Audio</p> <p>E3 (M91) W/20 : A/C auto amp. (In BCM)</p> <p>E4 (M92) W/12 : BCM (Body control module)</p> <p>E3 (M93) W/6 : BCM (Body control module)</p> <p>C4 (M101) GY/6 : Front wiper motor</p> <p>B5 (M102) GY/2 : Front wheel sensor RH (Anti-lock brake system)</p>
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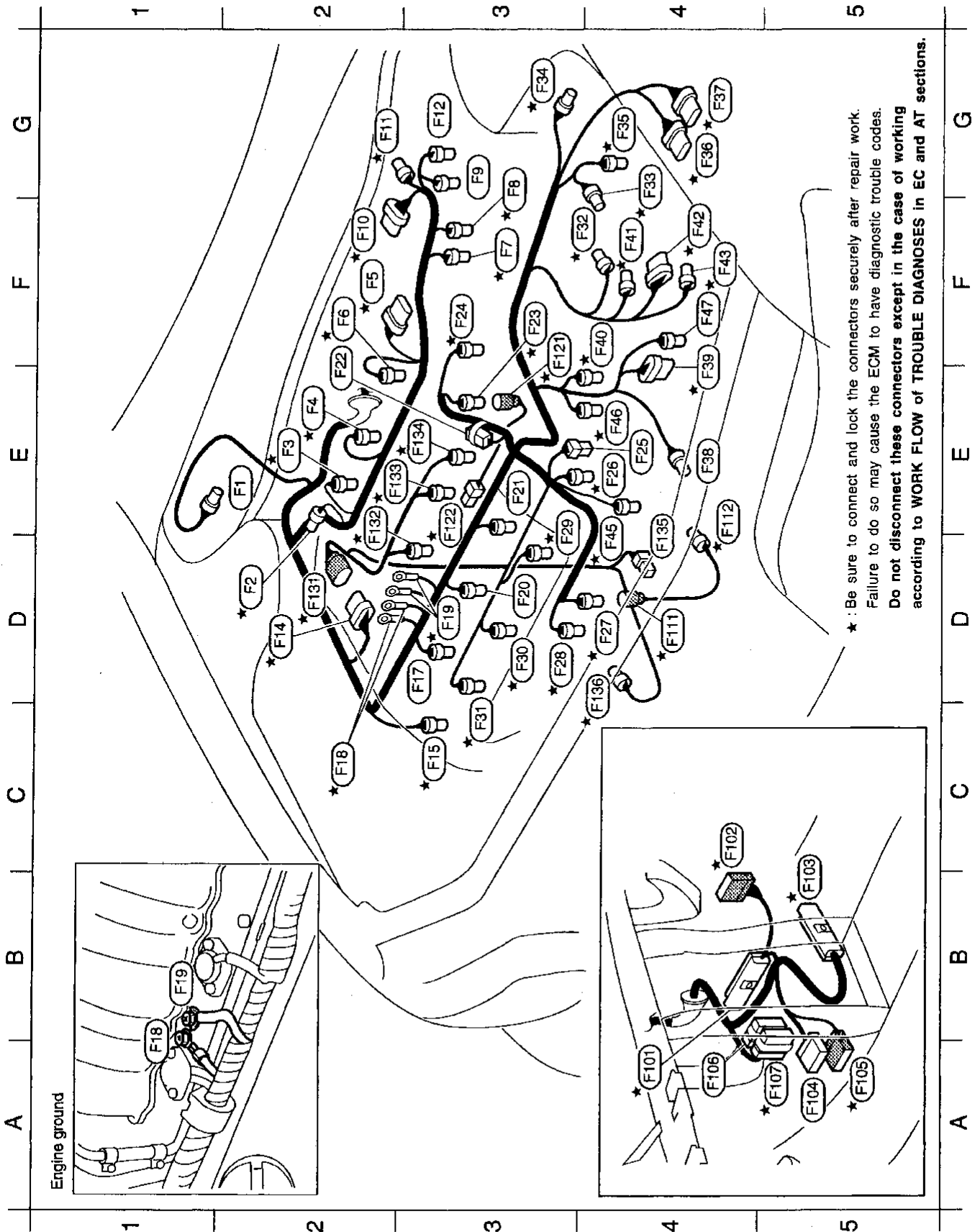


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HARNESS LAYOUT

Engine Control Harness



HARNESS LAYOUT

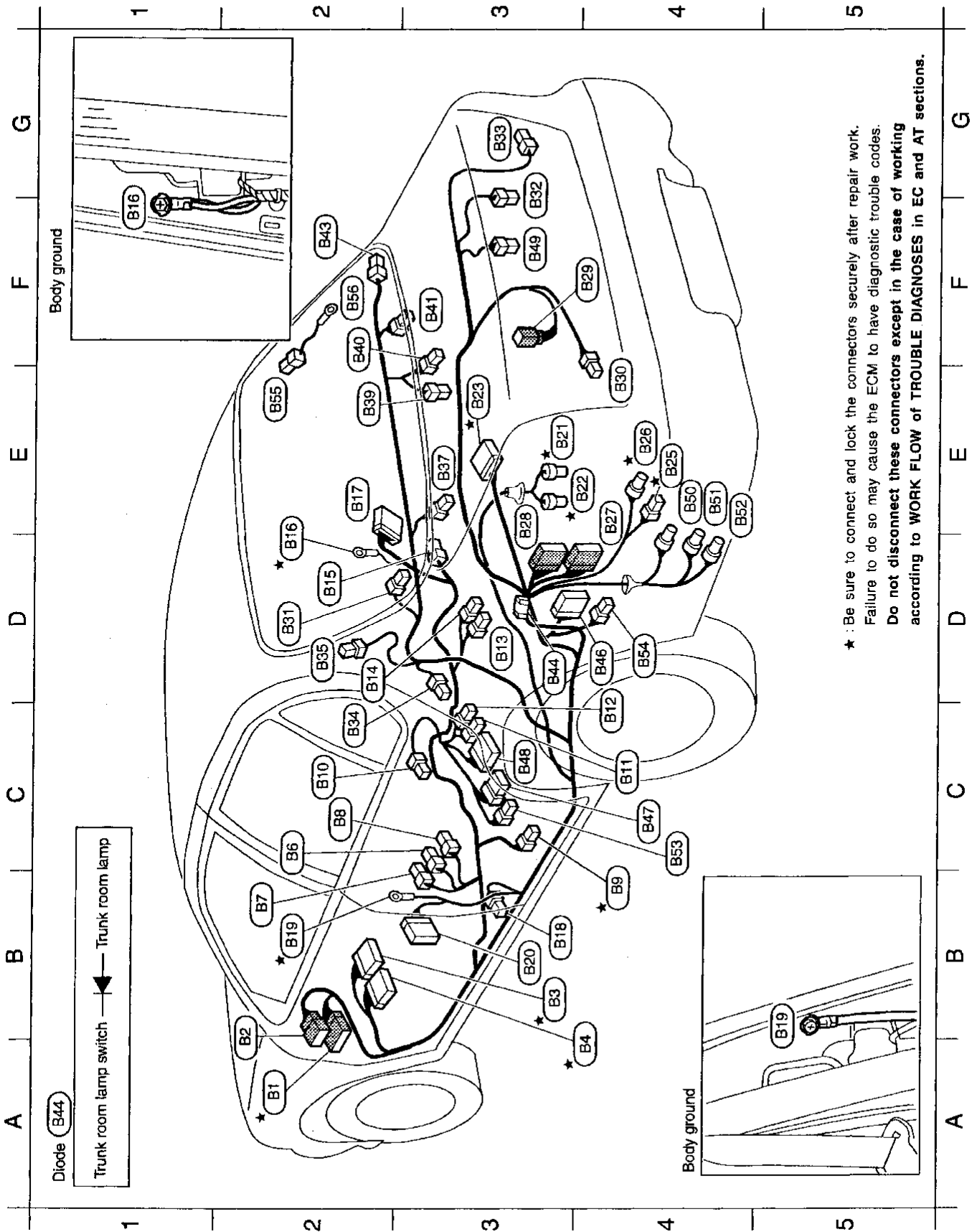
Engine Control Harness (Cont'd)

E2	(F1)	GY/2	: Power steering oil pressure switch	G4	(F33)	GY/3	: Mass air flow sensor
D2	(F2)	GY/3	: Front heated oxygen sensor RH	G3	(F34)	W/2	: Intake air temperature sensor
E2	(F3)	GY/3	: Ignition coil No. 1	G4	(F35)	GY/2	: Dropping resistor (For A/T models)
E2	(F4)	GY/3	: Ignition coil No. 3	G4	(F36)	BR/8	: To (E13)
F2	(F5)	W/6	: EVAP canister purge volume control valve	G4	(F37)	B/8	: To (E14)
F2	(F6)	GY/3	: Ignition coil No. 5	E4	(F38)	BR/3	: Front engine mounting (For A/T models)
F3	(F7)	GY/3	: Throttle position switch	F4	(F39)	GY/8	: Inhibitor switch (For A/T models)
G3	(F8)	BR/3	: Throttle position sensor	F4	(F40)	B/2	: EVAP canister purge control solenoid valve
G3	(F9)	R/2	: IACV-FICD solenoid valve-2	F4	(F41)	GY/3	: Revolution sensor (For A/T models)
F2	(F10)	W/6	: IACV-AAC valve	F4	(F42)	BR/8	: Terminal cord assembly (For A/T models)
G2	(F11)	BR/2	: EGR temperature sensor	F4	(F43)	GY/2	: Vehicle speed sensor
G3	(F12)	PU/2	: IACV-FICD solenoid valve-1	D4	(F45)	GY/3	: Absolute pressure sensor
D2	(F14)	GY/8	: To (F131)	E4	(F46)	BR/2	: MAP/BARO switch solenoid valve
C3	(F15)	GY/2	: Camshaft position sensor (PHASE)	F4	(F47)	W/2	: Inhibitor switch (For A/T models)
D3	(F17)	B/2	: Injector No. 2	A4	(F101)	GY/104	: ECM (ECCS control module)
C2	(F18)	-	: Engine ground	C4	(F102)	GY/16	: To (M58)
D3	(F19)	-	: Engine ground	C5	(F103)	L/48	: A/T control unit
D3	(F20)	B/2	: Injector No. 4	A5	(F104)	W/12	: To (M51)
E3	(F21)	B/2	: Injector No. 6	A5	(F105)	W/20	: To (M50)
F2	(F22)	GY/2	: Condenser	A4	(F106)	GY/6	: Joint connector-11
F3	(F23)	B/2	: To (F121)	A5	(F107)	L/12	: Joint connector-12
F3	(F24)	G/2	: EGRC-solenoid valve (For California)	D4	(F111)	B/4	: To (F27)
			EGR valve and canister control solenoid valve (For Non-California)	E4	(F112)	GY/3	: Crankshaft position sensor (POS)
E4	(F25)	B/1	: Thermal transmitter	F3	(F121)	B/2	: To (F23)
E4	(F26)	GY/2	: Engine coolant temperature sensor	E3	(F122)	B/2	: Knock sensor
D4	(F27)	B/4	: To (F111)	D2	(F131)	GY/8	: To (F14)
D3	(F28)	GY/3	: Front heated oxygen sensor LH	E2	(F132)	B/2	: Injector No. 1
E3	(F29)	GY/3	: Ignition coil No. 6	E2	(F133)	B/2	: Injector No. 3
D3	(F30)	GY/3	: Ignition coil No. 4	E3	(F134)	B/2	: Injector No. 5
C3	(F31)	GY/3	: Ignition coil No. 2	D4	(F135)	B/1	: Oil pressure switch
F4	(F32)	GY/4	: Neutral and reverse position switch (For M/T models)	D4	(F136)	GY/2	: Crankshaft position sensor (REF)

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HARNESS LAYOUT

Body Harness



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HARNES LAYOUT

Body Harness (Cont'd)

A2*	(B1)	W/48	: To (M4)	E3	(B28)	W/16	: To (T2)
B2	(B2)	GY/6	: To (M5)	F4	(B29)	W/2	: To high-mounted stop lamp sub-harness (Models equipped with rear air spoiler)
B3*	(B3)	BR/16	: Fuse block (J/B)	E4	(B30)	W/4	: Trunk lid combination lamp LH
A4	(B4)	W/12	: Fuse block (J/B)	D2	(B31)	BR/2	: Not used
C2	(B6)	W/2	: To power seat harness LH	G3	(B32)	W/3	: Trunk lid key cylinder switch
B2	(B7)	W/3	: Seat belt buckle switch	G3	(B33)	W/4	: Trunk lid combination lamp RH
C2	(B8)	W/3	: Heated seat LH	C2	(B34)	BR/1	: Rear door switch LH
B4*	(B9)	GY/4	: Rear heated oxygen sensor	D2	(B35)	B/1	: Condenser
C2	(B10)	B/1	: Parking brake switch	E3	(B37)	W/4	: Rear speaker LH
C4	(B11)	L/4	: Heated seat switch LH	E2	(B39)	W/2	: Trunk room lamp
C4	(B12)	W/4	: Heated seat switch RH	F2	(B40)	W/2	: High-mounted stop lamp (Models without rear air spoiler)
D3	(B13)	W/3	: Heated seat RH	F3	(B41)	W/4	: Rear speaker RH
D2	(B14)	W/2	: To power seat harness RH	F2	(B43)	BR/1	: Rear door switch RH
D2	(B15)	B/3	: Front door switch RH	D3	(B44)	SB/2	: Diode
D2*	(B16)	-	: Body ground	D4	(B46)	W/16	: Transceiver
E2	(B17)	W/10	: To (D71)	C4	(B47)	B/4	
B3	(B18)	B/3	: Front door switch LH	C3	(B48)	W/12	: Handset
B2*	(B19)	-	: Body ground	F3	(B49)	W/6	: Hand free switch
B3	(B20)	W/10	: To (D51)	E4*	(B50)	B/2	: Trunk room lamp switch
E3	(B21)	GY/2	: Fuel pump	E4*	(B51)	B/2	: EVAP canister vent control valve
E4*	(B22)	GY/4	: Fuel tank gauge unit	E4*	(B52)	G/2	: Vacuum cut valve bypass valve
E3*	(B23)	W/16	: To (B110)	E4*	(B53)	GY/3	: EVAP control system pressure sensor
E4*	(B25)	W/4	: Fuel pump control module	C4	(B54)	W/4	: Telephone pre-wire
E4*	(B26)	GY/2	: Dropping resistor	D4	(B54)	B/4	: Transceiver
E4	(B27)	W/16	: To (T1)	E2	(B55)	B/1	: Rear window defogger
				E2	(B56)	-	: Body ground

★ : Be sure to connect and lock the connectors securely after repair work.

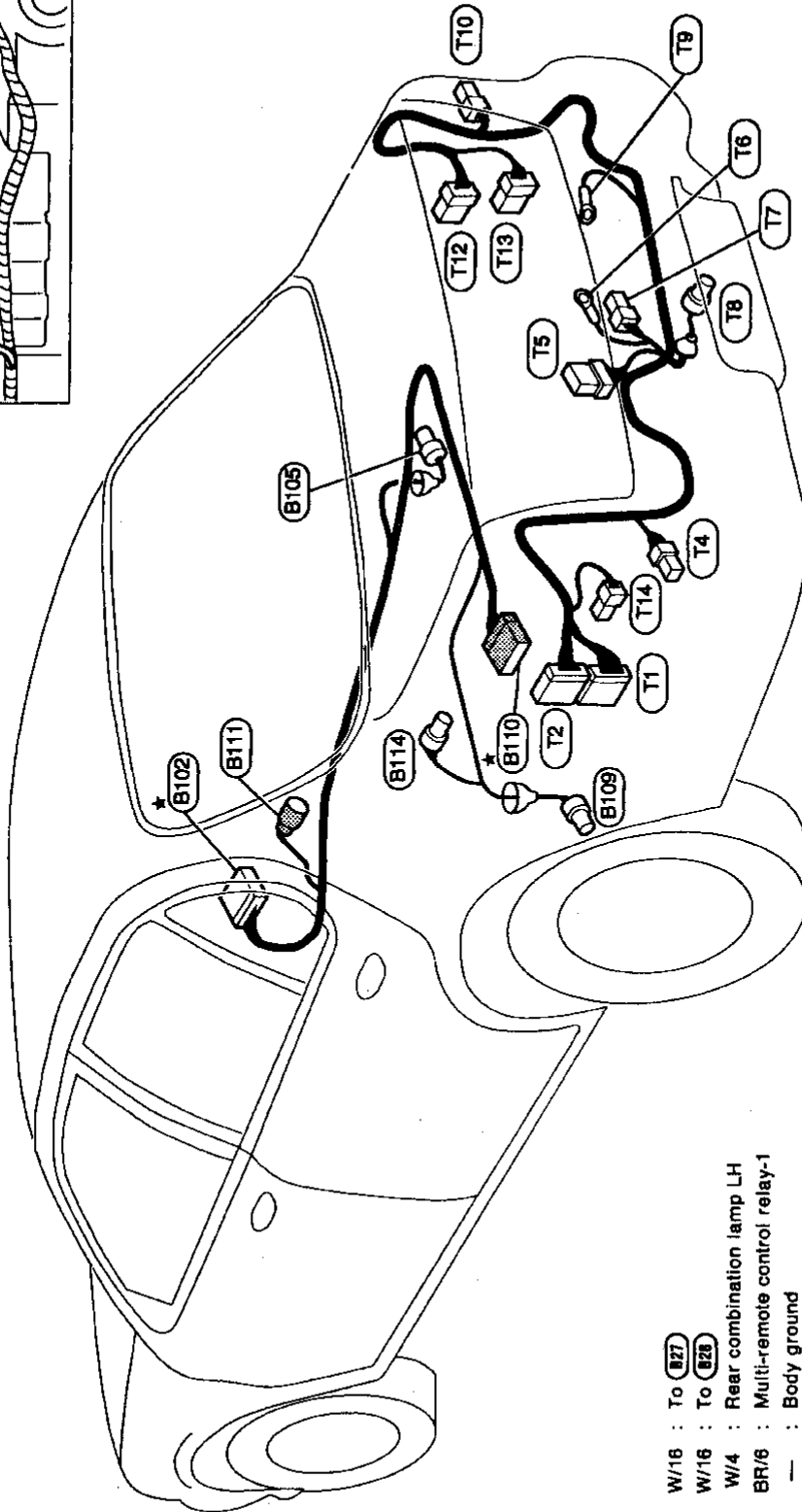
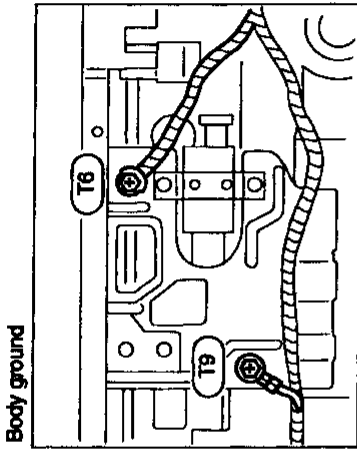
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HARNESS LAYOUT

Body No. 2 Harness and Tail Harness



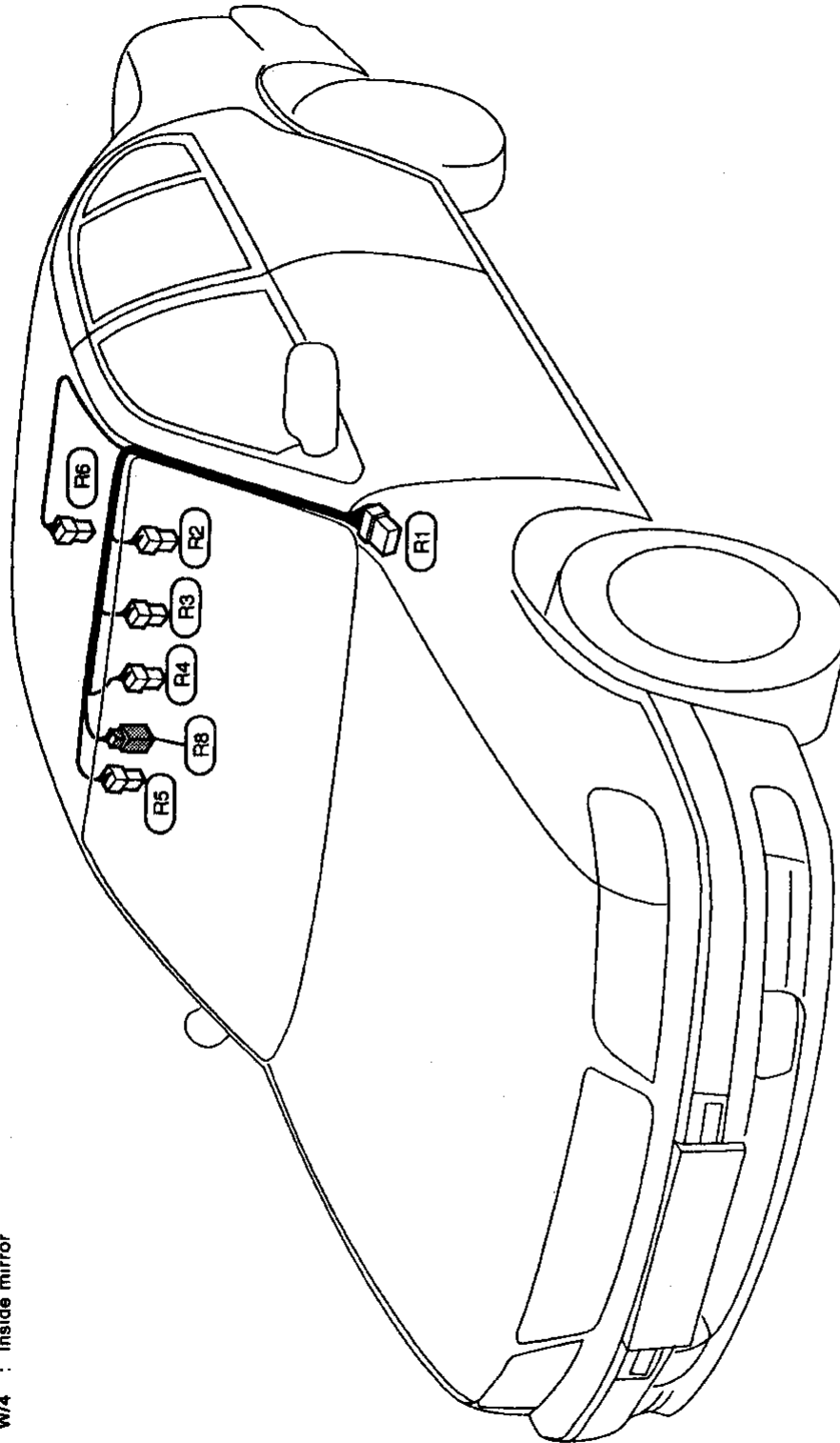
- ★ **B102** : To **M71**
- B105** : Rear wheel sensor RH (Anti-lock brake system)
- B109** : Rear wheel sensor LH (Anti-lock brake system)
- ★ **B110** : To **B23**
- B111** : To **M24**
- B114** : Transceiver

- T1** : To **B27**
- T2** : To **B28**
- T4** : Rear combination lamp LH
- T5** : Multi-remote control relay-1
- T6** : Body ground
- T7** : Trunk lid opener actuator
- T8** : License lamp
- T9** : Body ground
- T10** : Rear combination lamp RH
- T11** : Multi-remote control unit (LCU05)
- T12** : Power antenna timer
- T13** : Fuel lid opener actuator
- T14** : Fuel lid opener actuator

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HARNESS LAYOUT

Room Lamp Harness

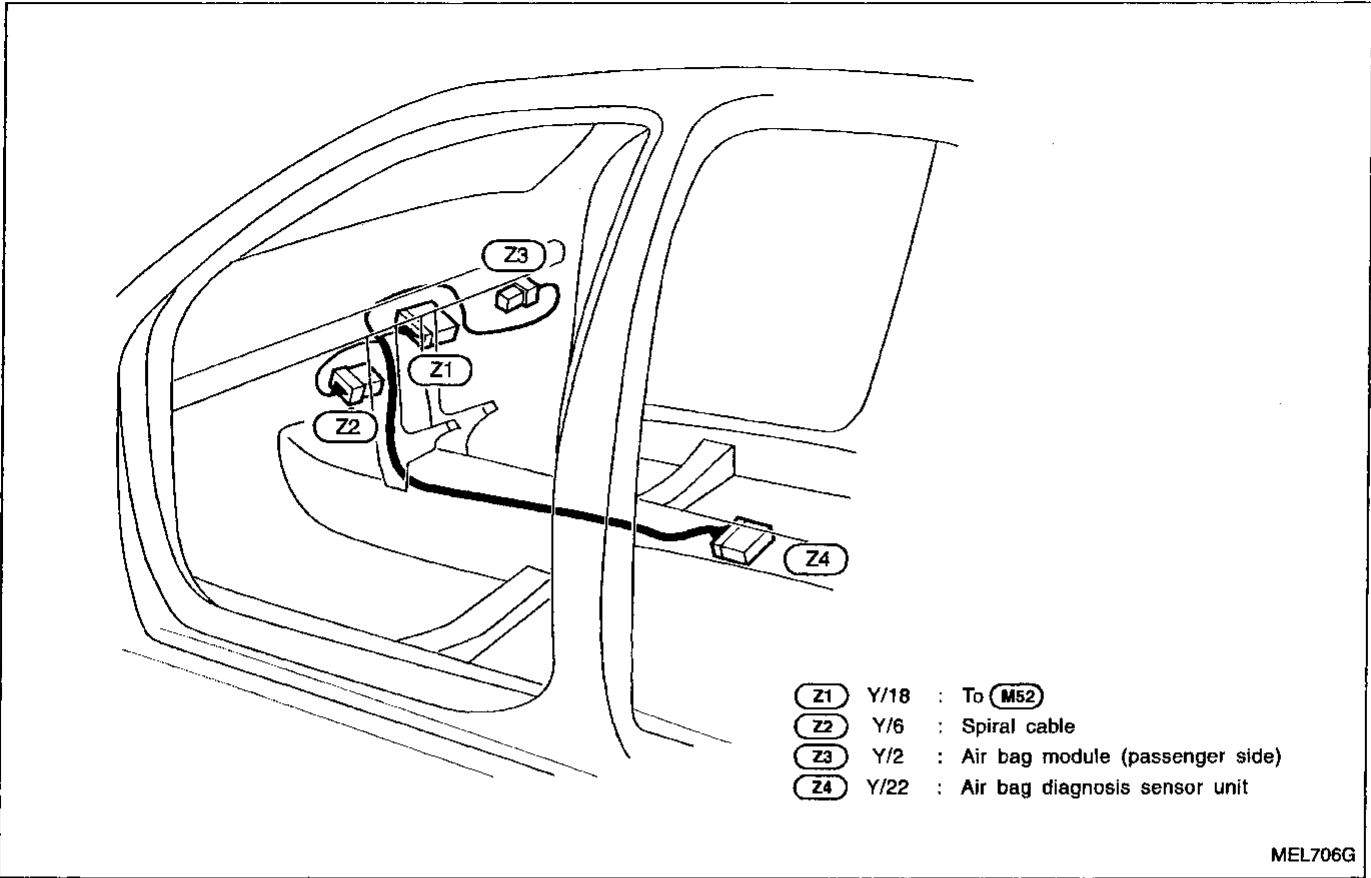


- (R1)** : To (M10)
- (R2)** : Vanity mirror illumination LH
- (R3)** : Sun roof motor
- (R4)** : Spot lamp
- (R5)** : Vanity mirror illumination RH
- (R6)** : Interior lamp
- (R8)** : Inside mirror

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HARNES LAYOUT

Air Bag Harness



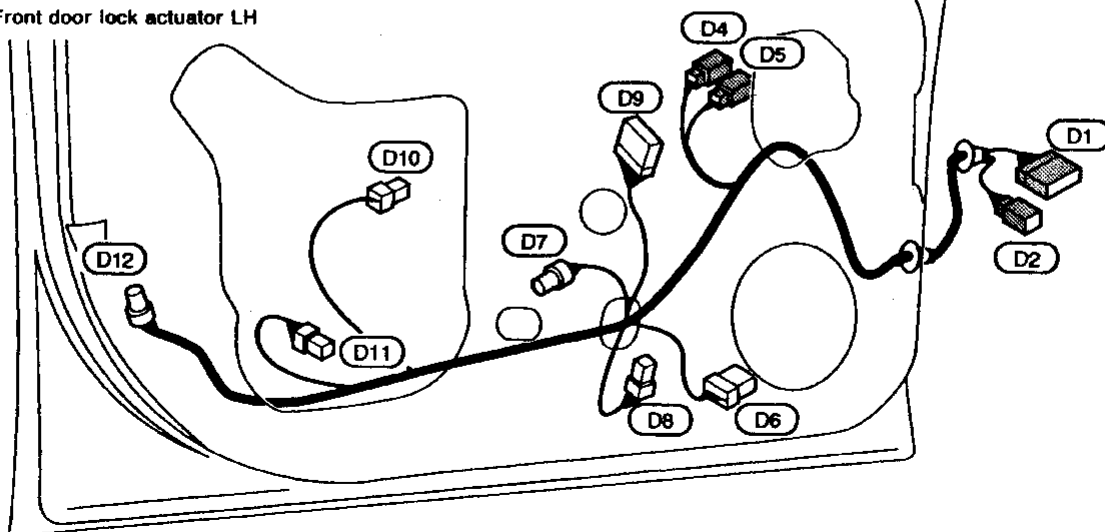
MEL706G

HARNESS LAYOUT

FRONT

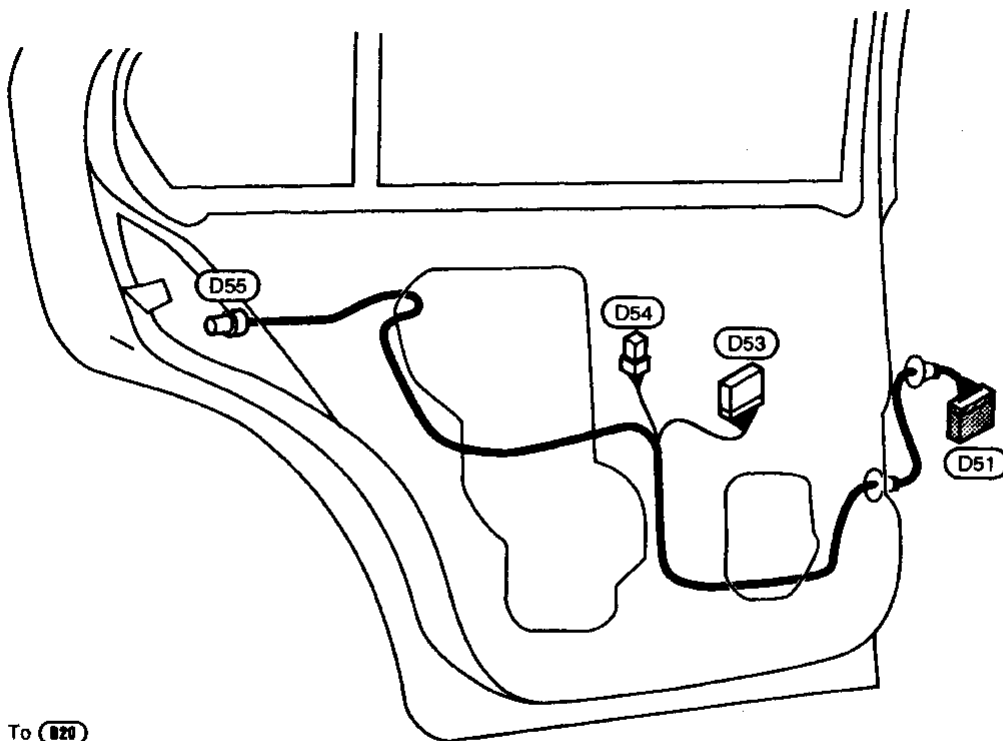
Front Door Harness (LH side)

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



MEL598E

REAR



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

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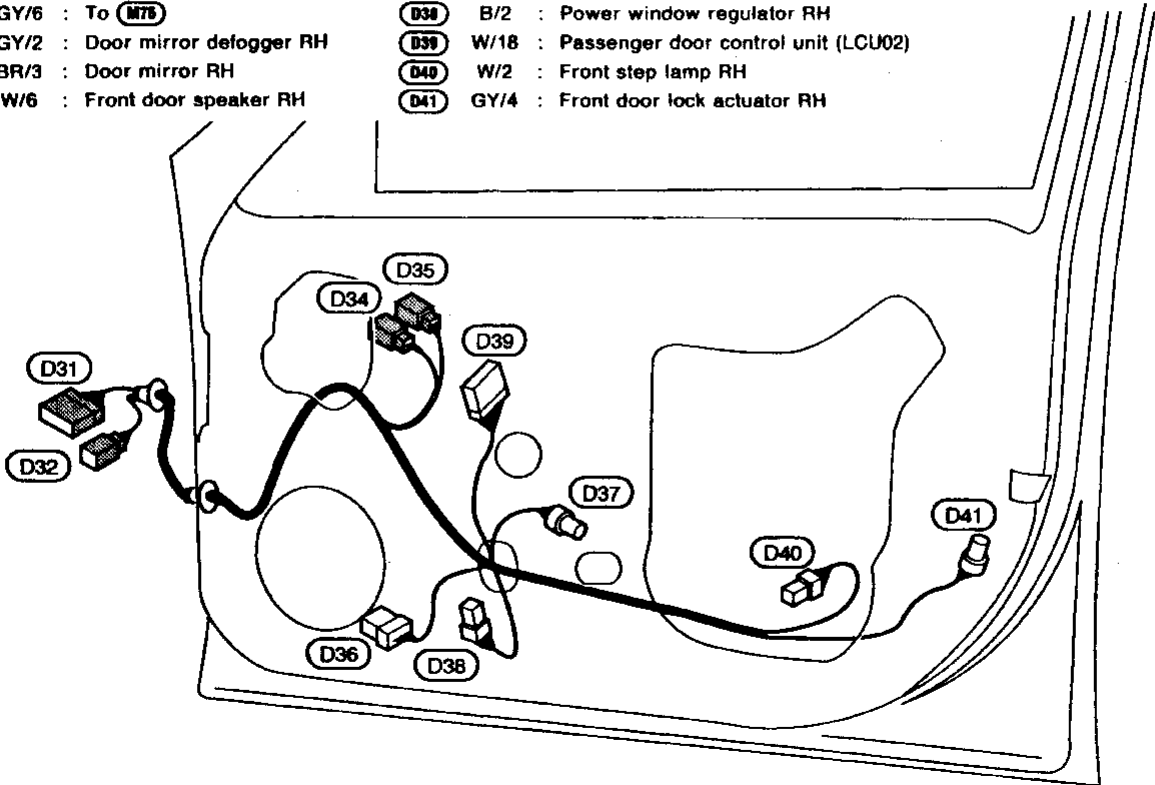
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HARNESS LAYOUT

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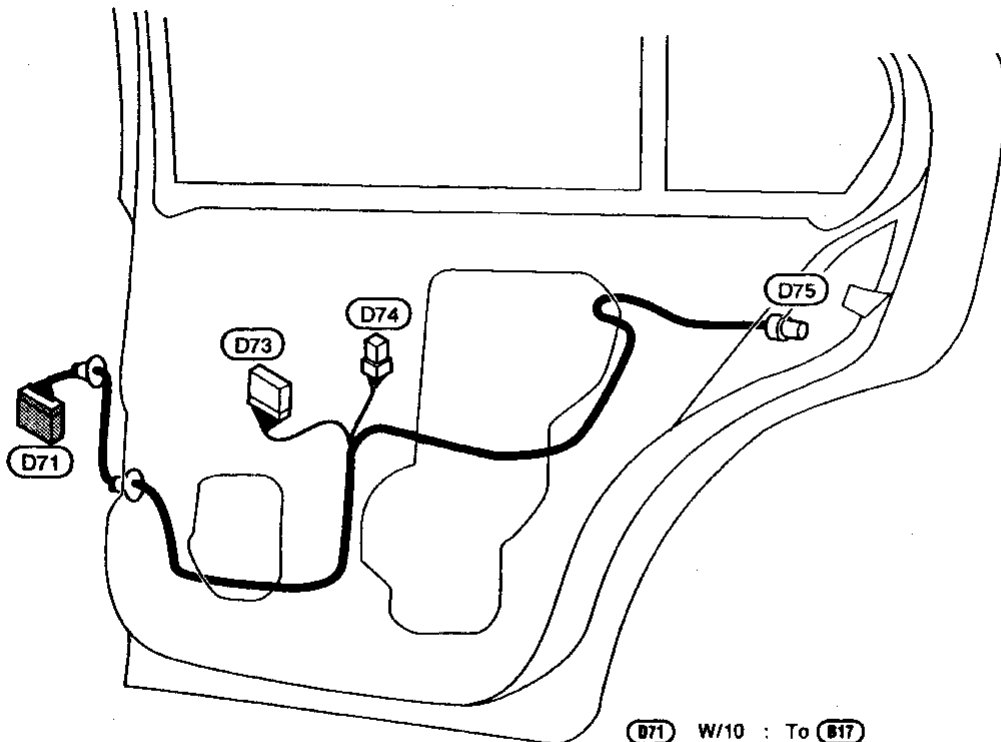
Front Door Harness (RH side)

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|---|---|
| D31 W/18 : To M74 | D37 B/4 : Passenger side key cylinder switch |
| D32 GY/6 : To M78 | D38 B/2 : Power window regulator RH |
| D34 GY/2 : Door mirror defogger RH | D39 W/18 : Passenger door control unit (LCU02) |
| D35 BR/3 : Door mirror RH | D40 W/2 : Front step lamp RH |
| D38 W/6 : Front door speaker RH | D41 GY/4 : Front door lock actuator RH |



MEL600E

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| D71 W/10 : To B17 |
| D73 W/18 : Rear RH door control unit (LCU03) |
| D74 B/2 : Rear door power window regulator RH |
| D75 GY/4 : Rear door lock actuator RH |

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