

ELECTRICAL SYSTEM

SECTION **EL**

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

CONTENTS

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PRECAUTIONS	3	Schematic.....	36
Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER".....	3	Wiring Diagram.....	37
HARNESS CONNECTOR	4	Bulb Replacement.....	38
Description.....	4	Aiming Adjustment.....	38
STANDARDIZED RELAY	5	EXTERIOR LAMP	40
Description.....	5	Clearance, License, Tail and Stop Lamps/Wiring Diagram.....	40
POWER SUPPLY ROUTING	9	Back-up Lamp/Wiring Diagram.....	41
Wiring Diagram.....	9	Turn Signal and Hazard Warning Lamps/Wiring Diagram.....	42
Fuse.....	12	Combination Flasher Unit Check.....	43
Fusible Link.....	12	Bulb Specifications.....	43
HYBRID ELECTRIC CONTROL UNIT (HEC)	13	INTERIOR LAMP	44
Construction and Terminal Arrangement.....	13	Illumination/Wiring Diagram.....	44
Internal Circuit.....	14	Interior and Trunk Room Lamps/Wiring Diagram.....	45
BATTERY	15	METER AND GAUGES	46
How to Handle Battery.....	15	Combination Meter.....	46
Battery Test and Charging Chart.....	18	Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram.....	47
Service Data and Specifications (SDS).....	22	Inspection/Fuel Gauge and Water Temperature Gauge.....	48
STARTING SYSTEM	23	Fuel Tank Gauge Unit Check.....	49
Wiring Diagram.....	23	Fuel Warning Lamp Sensor Check.....	49
Construction.....	24	Thermal Transmitter Check.....	49
Service Data and Specifications (SDS).....	24	Oil Pressure Switch Check.....	49
CHARGING SYSTEM	25	Vehicle Speed Sensor Signal Check.....	50
Wiring Diagram.....	25	WARNING LAMPS AND CHIME	51
Trouble-shooting.....	26	Warning Lamps/Schematic.....	51
Construction.....	27	Diode Check.....	52
Diode Check.....	29	Warning Lamps/Wiring Diagram.....	53
Assembly.....	30	TIME CONTROL SYSTEM	54
Service Data and Specifications (SDS).....	31	Description.....	54
COMBINATION SWITCH	32	Wiring Diagram.....	56
Combination Switch/Check.....	32	Trouble Diagnoses.....	58
Combination Switch/Replacement.....	33		
Steering Switch/Check.....	34		
HEADLAMP	35		
Wiring Diagram.....	35		
Operation (Daytime light system for Canada).....	36		

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CONTENTS (Cont'd.)

WIPER AND WASHER	70	HEATED SEAT	106
Wiper and Washer/Wiring Diagram	70	Wiring Diagram	106
Installation	71	MULTI-REMOTE CONTROL SYSTEM	108
Washer Nozzle Adjustment	72	Wiring Diagram	108
POWER WINDOW	74	Circuit Diagram for Quick Pinpoint Check.....	110
Wiring Diagram	74	Trouble Diagnoses Preliminary Inspection	111
Trouble Diagnoses.....	76	Trouble Diagnoses.....	112
POWER DOOR LOCK	84	Replacing Remote Controller or Control Unit	118
Wiring Diagram	84	AUTOMATIC SPEED CONTROL DEVICE (ASCD)	119
Trouble Diagnoses.....	86	Component Parts and Harness Connector	
POWER DOOR MIRROR	90	Location	119
Wiring Diagram	90	Wiring Diagram	120
INSIDE MIRROR	91	Trouble Diagnoses.....	122
Auto Anti-dazzling Inside Mirror/Wiring		ASCD Wire Adjustment.....	139
Diagram	91	THEFT WARNING SYSTEM	141
ELECTRIC SUN ROOF	92	Component Parts and Harness Connector	
Wiring Diagram	92	Location	141
TRUNK LID AND FUEL FILLER LID OPENER	93	Wiring Diagram	142
Wiring Diagram	93	Trouble Diagnoses.....	144
HORN, CIGARETTE LIGHTER, CLOCK	94	LOCATION OF ELECTRICAL UNITS	162
Wiring Diagram	94	Engine Compartment	162
REAR WINDOW DEFOGGER	95	Passenger Compartment.....	163
Wiring Diagram	95	Luggage Compartment	164
Filament Check	96	HARNES LAYOUT	165
Filament Repair.....	97	Outline	165
AUDIO AND POWER ANTENNA	98	Engine Room Harness	166
Audio/Wiring Diagram	98	Room Lamp Harness	169
Power Antenna/Wiring Diagram	99	Main Harness	170
Location of Antenna.....	100	Body Harness and Tail Harness	172
Radio Fuse Check.....	100	Engine Control Harness and Engine Harness.....	174
Antenna Rod Replacement.....	101	Air Bag Harness	176
Window Antenna Repair	102	Door Harness (LH side).....	177
TELEPHONE	103	Door Harness (RH side)	178
Telephone/Wiring Diagram	103	SUPER MULTIPLE JUNCTION (SMJ)	Foldout
POWER SEAT	104	Terminal Arrangement	Foldout
Wiring Diagram	104		

PRECAUTIONS

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

The Supplemental Restraint System “Air Bag” and “Seat Belt Pre-tensioner”, used along with a seat belt, help to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **RS** section of this Service Manual.

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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 wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS.

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HARNESS CONNECTOR

Description

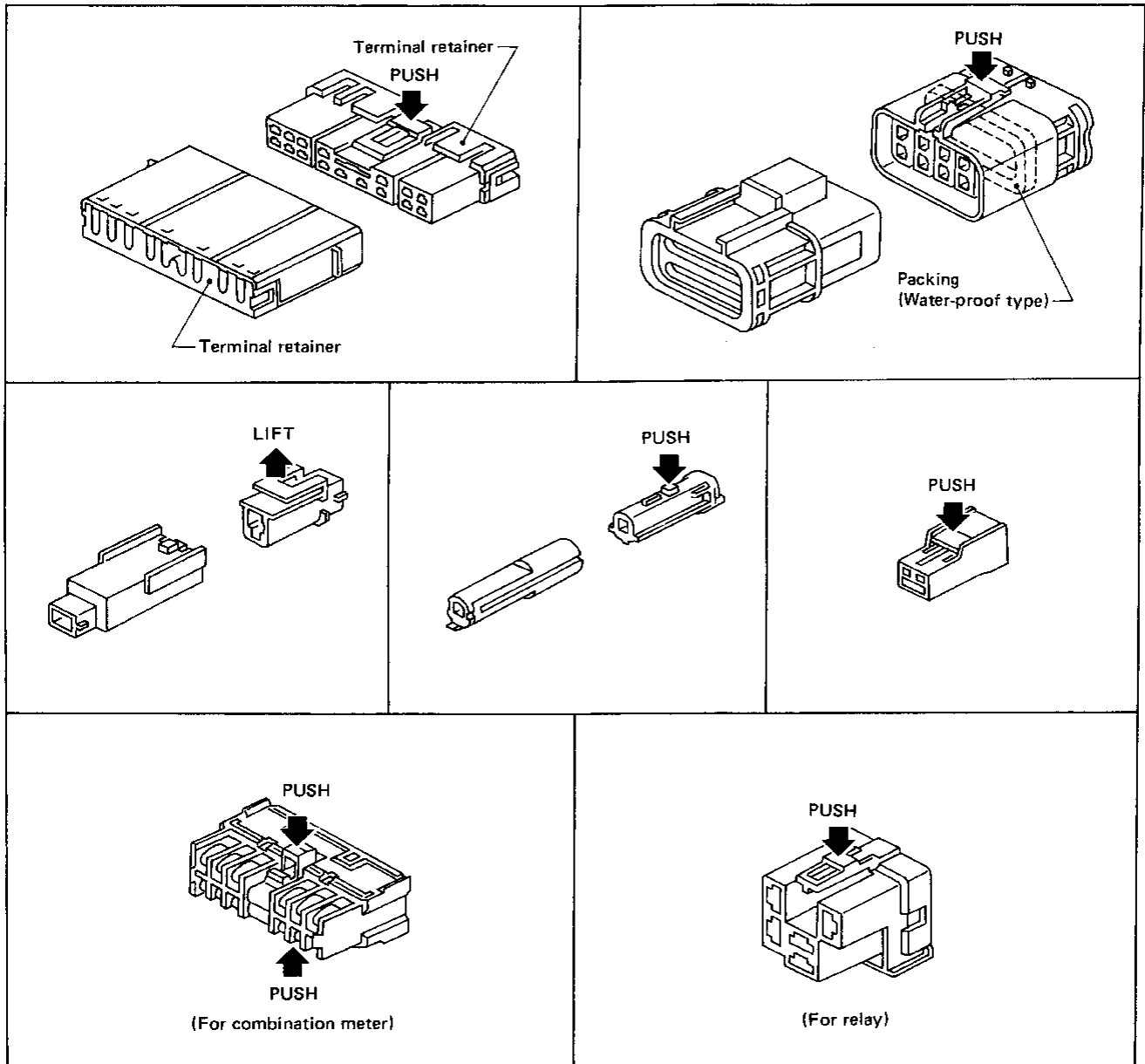
HARNESS CONNECTOR

- 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]



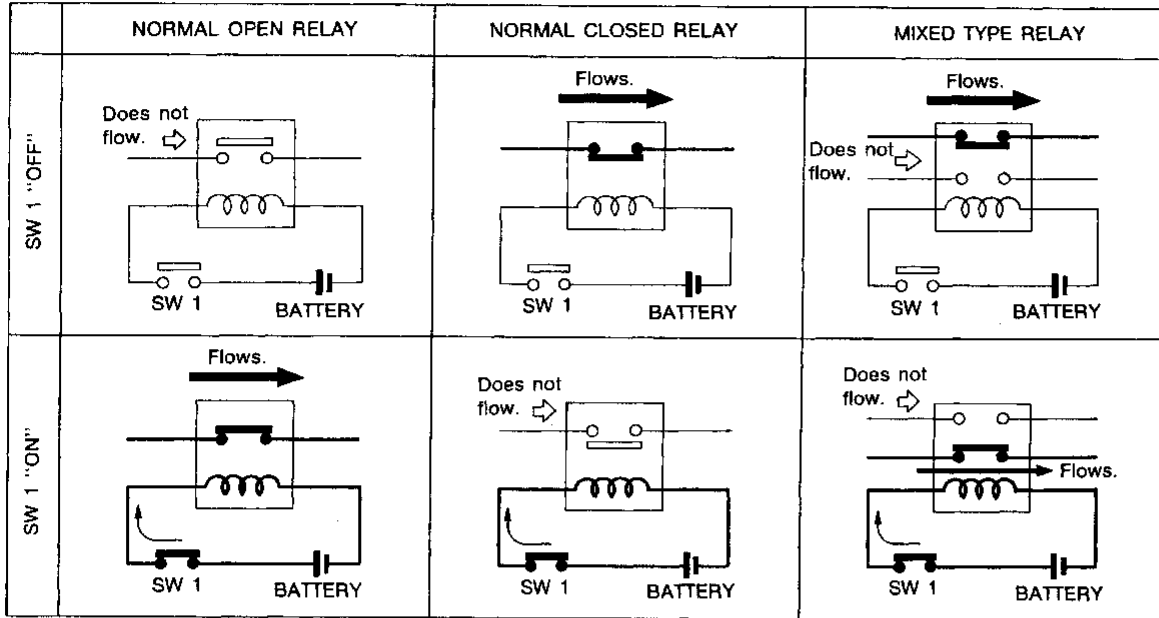
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STANDARDIZED RELAY

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.

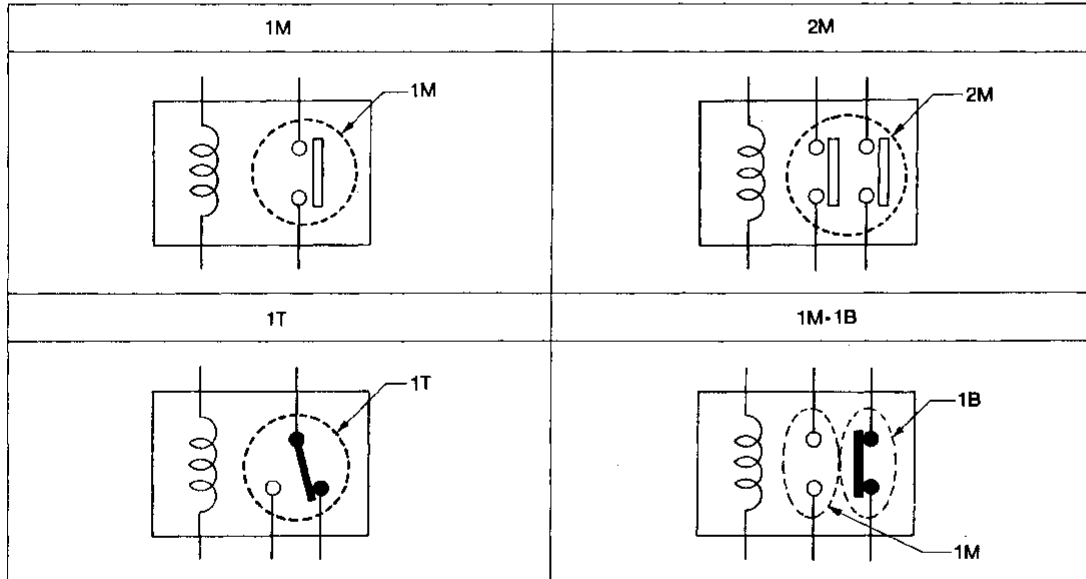


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TYPE OF STANDARDIZED RELAYS

1M ... 1 Make
1T ... 1 Transfer

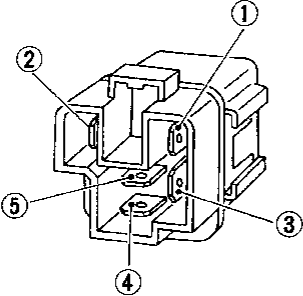
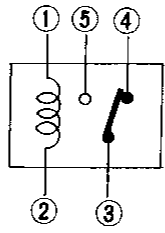
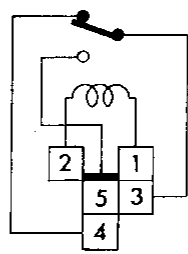
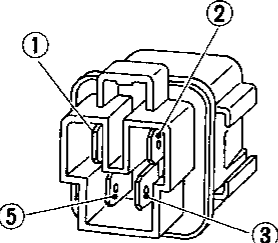
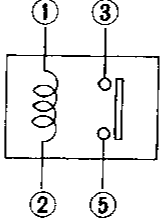
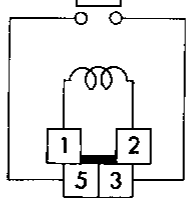
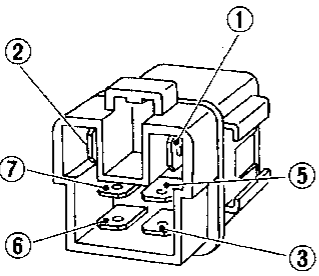
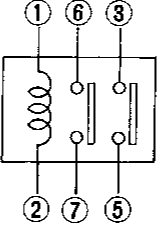
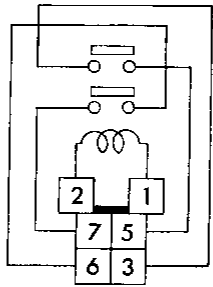
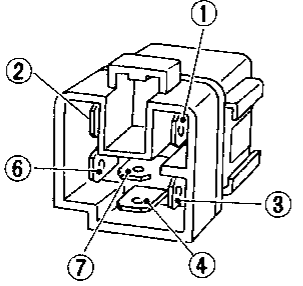
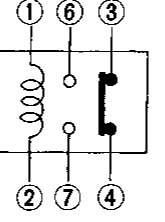
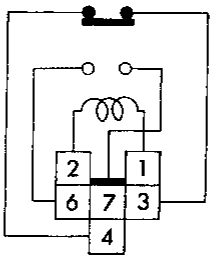
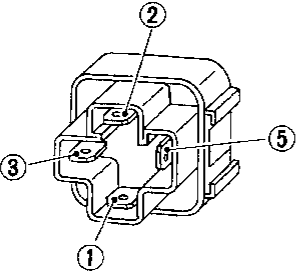
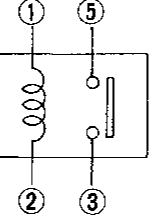
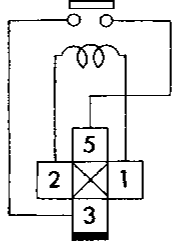
2M ... 2 Make
1M-1T ... 1 Make 1 Break



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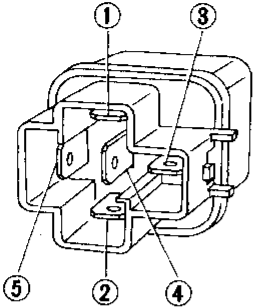
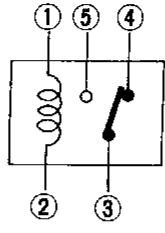
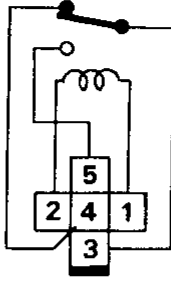
STANDARDIZED RELAY

Description (Cont'd)

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

STANDARDIZED RELAY

Description (Cont'd)

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK

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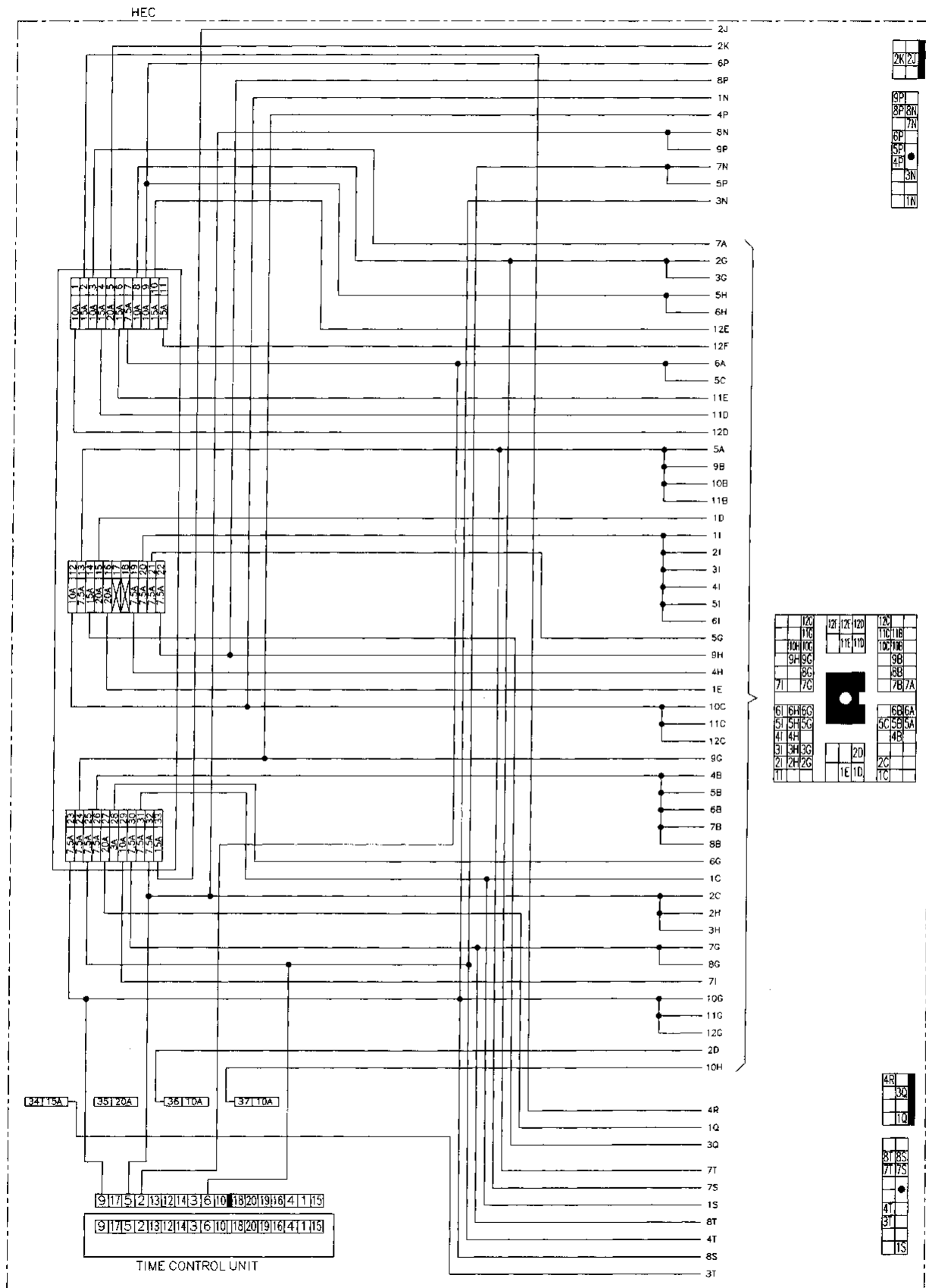
STANDARDIZED RELAY

NOTE

POWER SUPPLY ROUTING

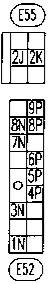
Wiring Diagram (Cont'd)

LOWER FUSE BLOCK INSIDE HEC



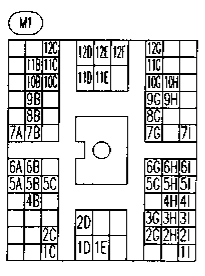
POWER SUPPLY ROUTING

Wiring Diagram (Cont'd)

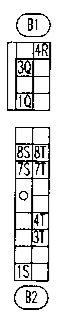


- 2J — B/P — POWER SEAT
- 2K — LG — WIPER AND WASHER
- 6P — NOT USED
- 8P — LG/B — AIR CONDITIONER
- 1N — G/Y — KEY SWITCH
- 4P — L/R — STARTER RELAY
- 8N — NOT USED
- 9P — NOT USED
- 7N — Y/B — CLEARANCE LAMP LH
- 5P — Y/B — CLEARANCE LAMP RH
- 3N — Y/B — KEY ILLUMINATION

- 7A — G/B — TELEPHONE
- 2G — L/OR — DOOR MIRROR
- 3G — NOT USED
- 5H — W — TELEPHONE
- 6H — B/P — AUDIO
- 12E — L/W — BLOWER MOTOR
- 12F — L/W — BLOWER MOTOR
- 6A — NOT USED
- 5C — BR — AIR CONDITIONER
- 11E — R/L — CIGARETTE LIGHTER
- 11D — R/Y — STOP LAMP
- 12D — OR/L — HAZARD WARNING
- 5A — G/OR — CLOCK, POWER ANTENNA
- 9B — P/B — BUZZER
- 10B — L — REMOTE CONTROL DOOR LOCK SYSTEM
- 11B — NOT USED
- 1D — W/PU — POWER WINDOW AND POWER DOOR LOCK
- 1I — B/W — ANTI-LOCK BRAKE SYSTEM
- 2I — G/Y — THEFT WARNING SYSTEM
- 3I — NOT USED
- 4I — NOT USED
- 5I — OR/L — HEADLAMP
- 6I — NOT USED
- 5G — B/R — TURN SIGNAL LAMP
- 9H — W/R — AIR CONDITIONER
- 4H — G/Y — ECM (ECCS CONTROL MODULE)
- 1E — G/W — POWER WINDOW AND POWER DOOR LOCK
- 10C — NOT USED
- 11C — NOT USED
- 12C — NOT USED
- 9G — Y/R — ECM (ECCS CONTROL MODULE)
- 4B — Y/B — METER ILLUMINATION LAMP
- 5B — R/Y — HAZARD SWITCH ILLUMINATION LAMP
- 6B — BR/Y — CLOCK ILLUMINATION LAMP
- 7B — PU/W — GLOVE BOX LAMP
- 8B — W/L — MAIN SWITCH (P/W & P/D LOCK) ILLUMINATION LAMP
- 6G — L — TELEPHONE
- 1C — OR — WARNING LAMP
- 2C — Y/L — ELECTRONIC POWER STEERING SYSTEM
- 2H — NOT USED
- 3H — NOT USED
- 7G — R/PU — A/T CONTROL SYSTEM
- 8G — LG — ECM (ECCS CONTROL MODULE)
- 7I — R/L — SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)
- 10G — BR/W — INTERIOR LAMP
- 11G — W/G — FOOTWELL LAMP LH
- 12G — R/G — FOOTWELL LAMP RH
- 2D — SB — REAR WINDOW DEFOGGER
- 10H — L — SHIFT LOCK CONTROL SYSTEM



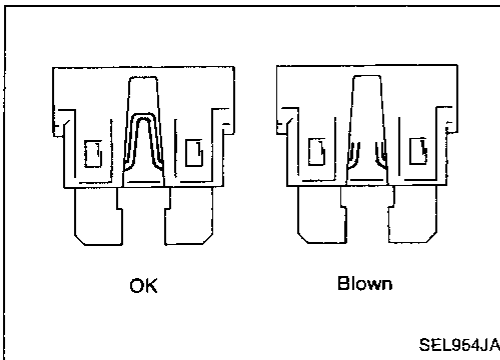
- 9G — Y/R — ECM (ECCS CONTROL MODULE)
- 4B — Y/B — METER ILLUMINATION LAMP
- 5B — R/Y — HAZARD SWITCH ILLUMINATION LAMP
- 6B — BR/Y — CLOCK ILLUMINATION LAMP
- 7B — PU/W — GLOVE BOX LAMP
- 8B — W/L — MAIN SWITCH (P/W & P/D LOCK) ILLUMINATION LAMP
- 6G — L — TELEPHONE
- 1C — OR — WARNING LAMP
- 2C — Y/L — ELECTRONIC POWER STEERING SYSTEM
- 2H — NOT USED
- 3H — NOT USED
- 7G — R/PU — A/T CONTROL SYSTEM
- 8G — LG — ECM (ECCS CONTROL MODULE)
- 7I — R/L — SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)
- 10G — BR/W — INTERIOR LAMP
- 11G — W/G — FOOTWELL LAMP LH
- 12G — R/G — FOOTWELL LAMP RH
- 2D — SB — REAR WINDOW DEFOGGER
- 10H — L — SHIFT LOCK CONTROL SYSTEM



- 4R — W/R — AUDIO
- 1Q — G/R — POWER WINDOW AND POWER DOOR LOCK
- 3Q — W/G — AUDIO
- 7I — NOT USED
- 7S — Y — A/T CONTROL SYSTEM
- 1S — NOT USED
- 8T — G — A/T CONTROL SYSTEM
- 4T — W/L — TAIL LAMP
- 8S — R/Y — TRUNK ROOM LAMP
- 3T — PU/W — TRUNK AND FUEL LID OPENER

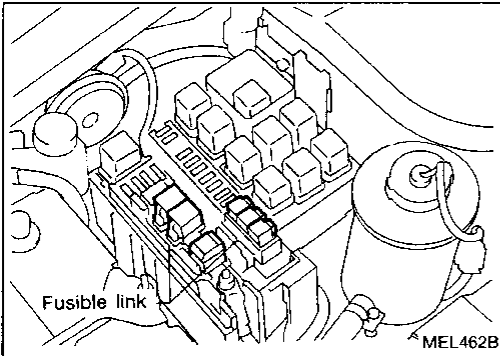
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POWER SUPPLY ROUTING



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 install fuse in oblique direction; always insert it into fuse holder properly.
- Remove fuse for clock if vehicle is not used for a long period of time.



Fusible Link

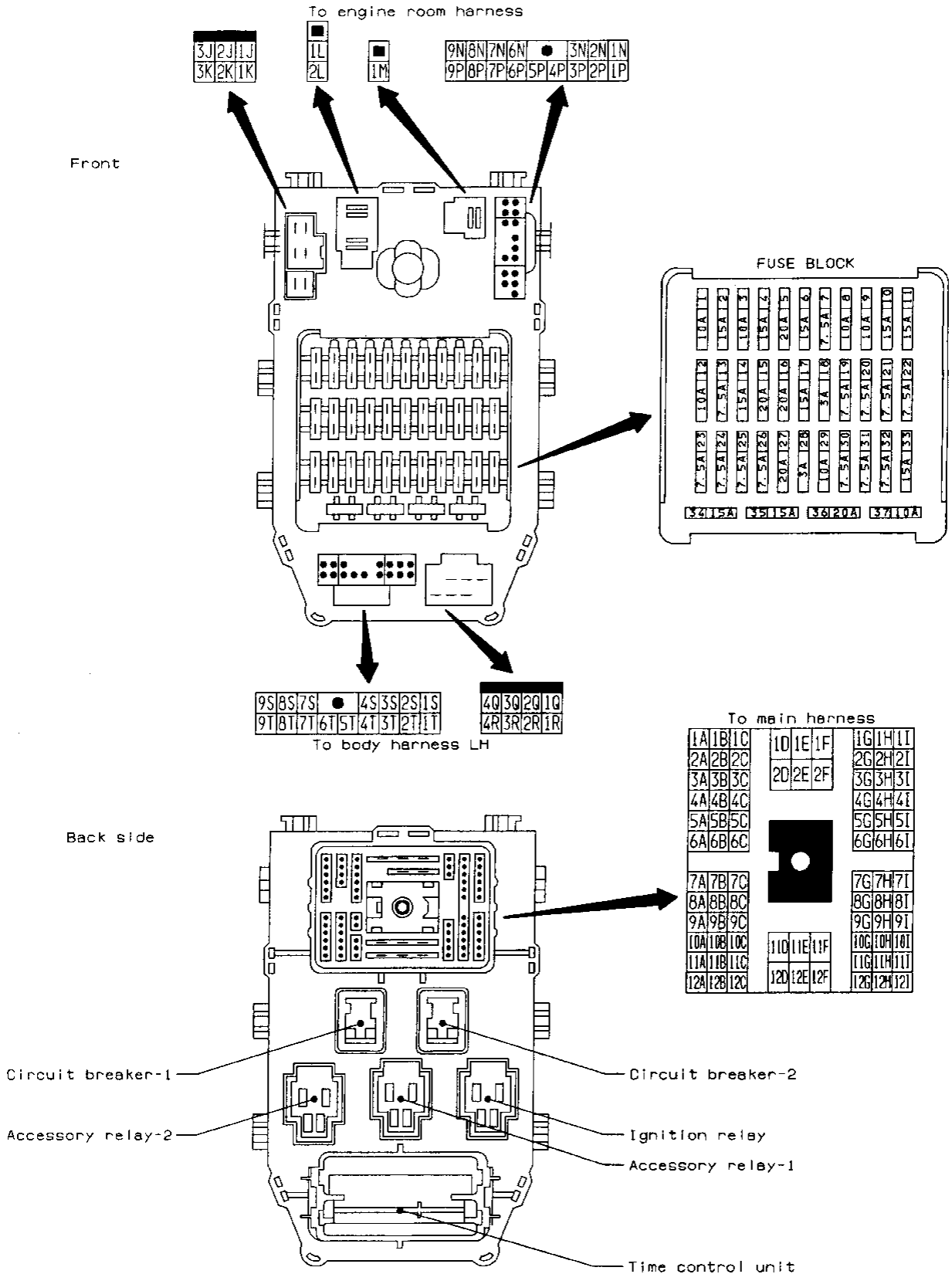
A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

- If fusible link should melt, 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 of problem.
- Never wrap outside of fusible link with vinyl tape. Extreme care should be taken with this link to ensure that it does not come into contact with any other wiring harness, or vinyl or rubber parts.

HYBRID ELECTRIC CONTROL UNIT (HEC)

Construction and Terminal Arrangement



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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.

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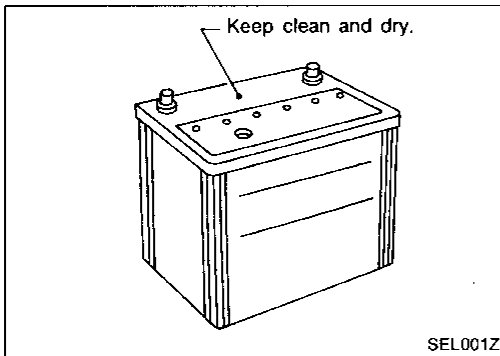
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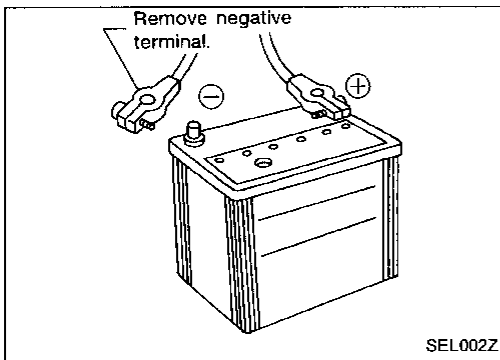
How to Handle Battery

METHODS OF PREVENTING OVER-DISCHARGE

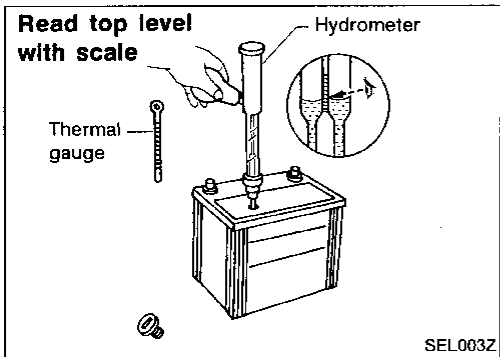
The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.

If the top surface of a battery is wet with electrolyte or water, leakage current will cause the battery to discharge. Always keep the battery clean and dry.



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



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

BATTERY

How to Handle Battery (Cont'd)

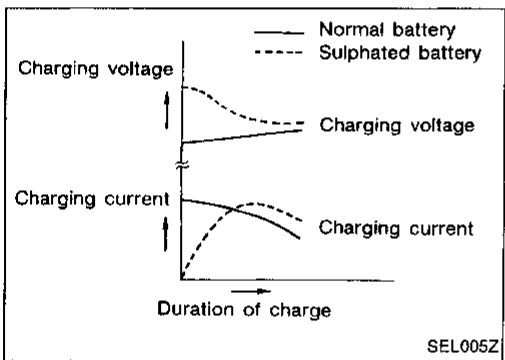
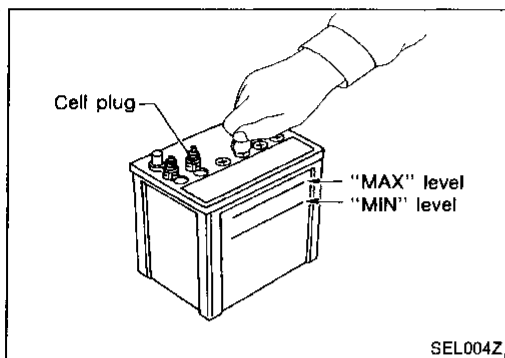
CHECKING ELECTROLYTE LEVEL

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.

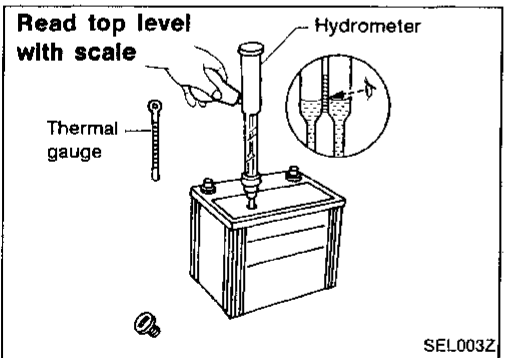
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

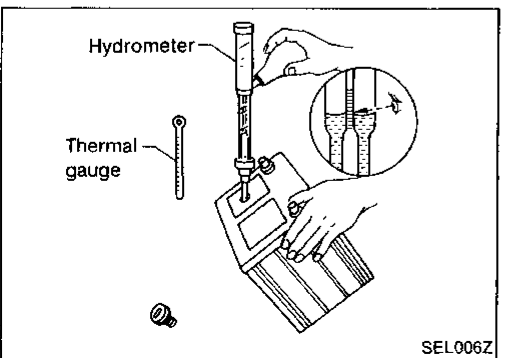
When a battery has been left unattended for a long period of time and has a specific gravity of less than 1.100, it will be completely discharged, resulting in sulphation on the cell plates.

Compared with a battery discharged under normal conditions, the current flow in a "sulphated" battery is not as smooth although its voltage is high during the initial stage of charging, as shown in the figure at the left.



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.



- When electrolyte level is too low, tilt battery case to raise it for easy measurement.

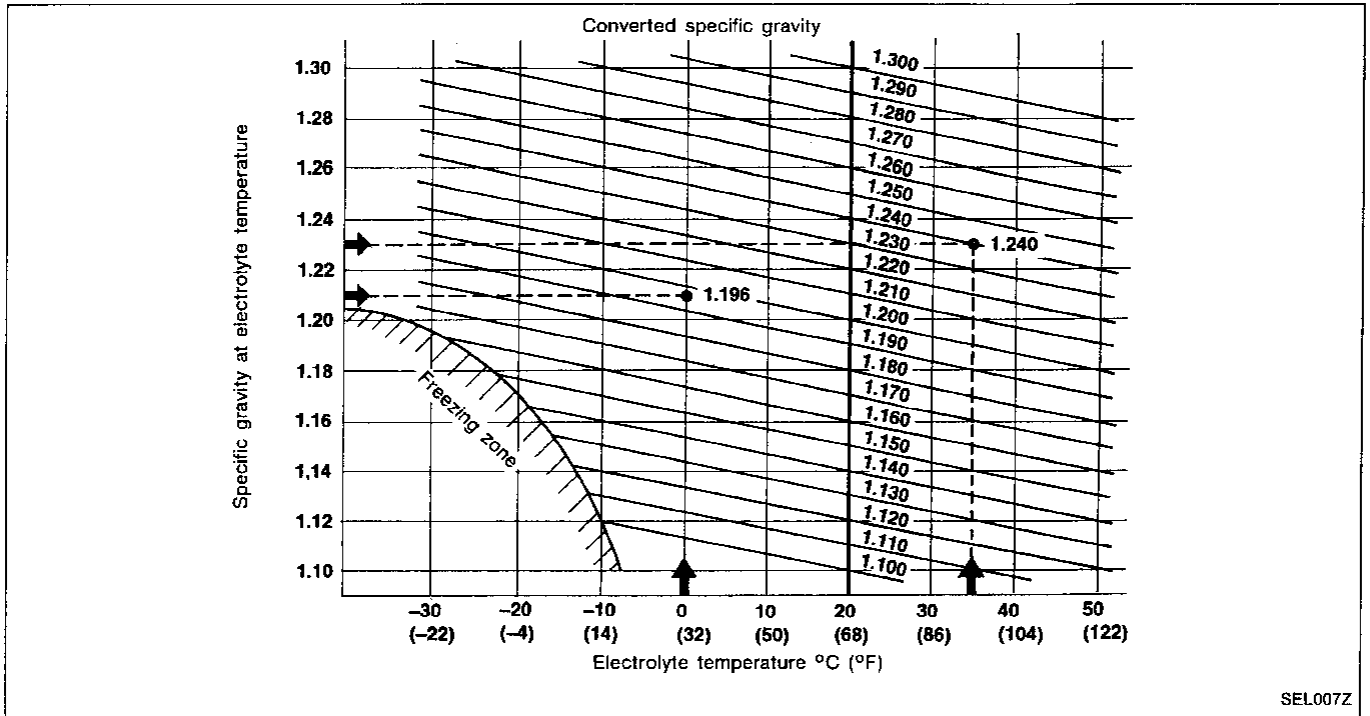
BATTERY

How to Handle Battery (Cont'd)

2. Convert into specific gravity at 20°C (68°F).

Example:

- When electrolyte temperature is 35°C (95°F) and specific gravity of electrolyte is 1.230, converted specific gravity at 20°C (68°F) is 1.240.
- When electrolyte temperature is 0°C (32°F) and specific gravity of electrolyte is 1.210, converted specific gravity at 20°C (68°F) is 1.196.



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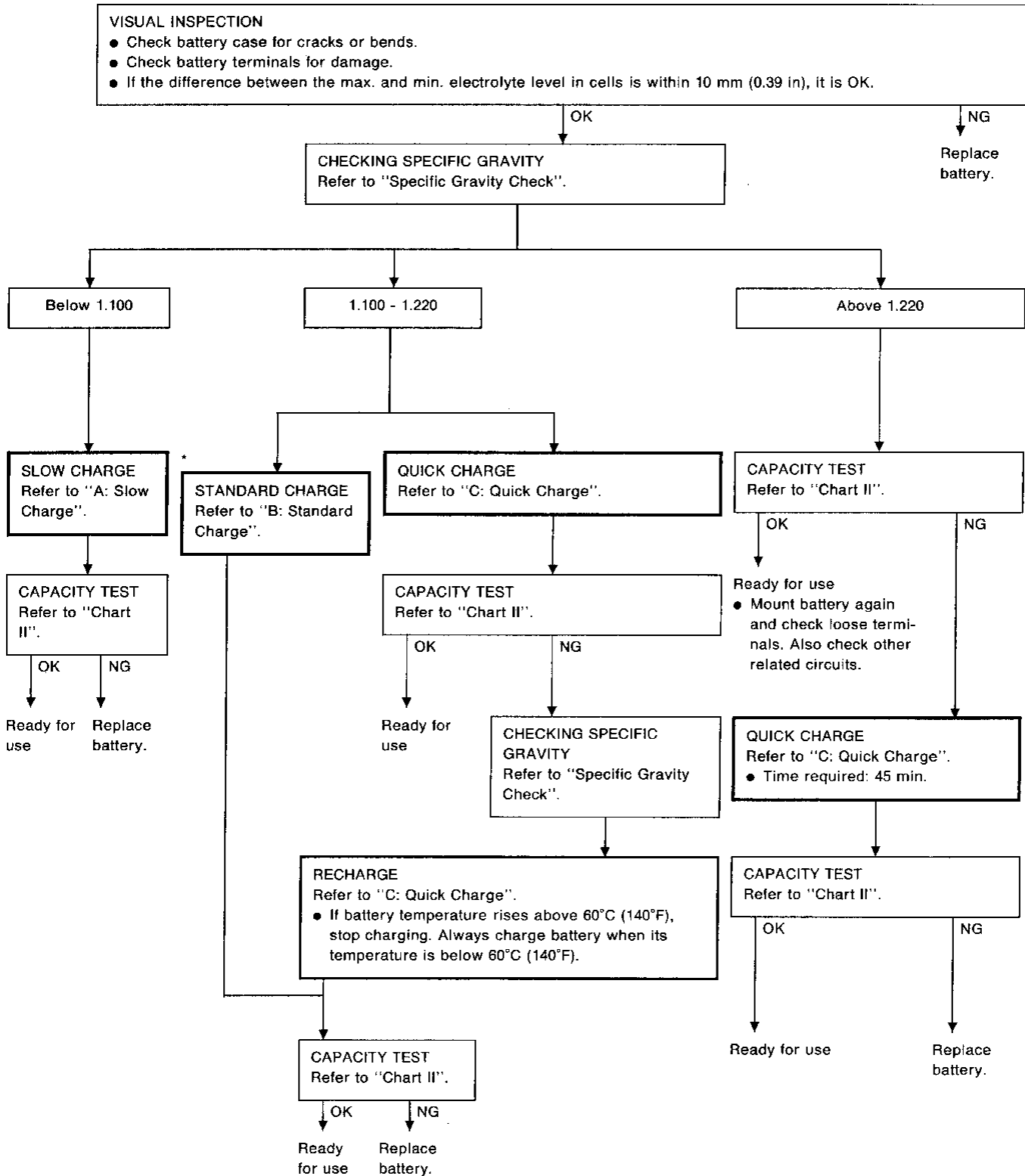
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BATTERY

Battery Test and Charging Chart

Chart I

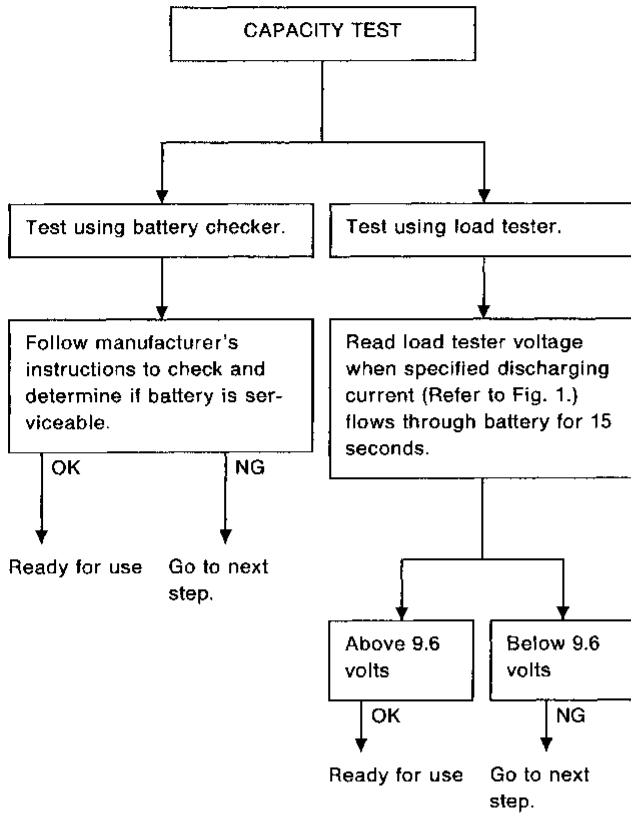


*: "STANDARD CHARGE" is recommended if the vehicle is in storage after charging.

BATTERY

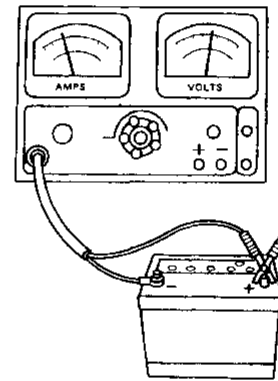
Battery Test and Charging Chart (Cont'd)

Chart II



- Check battery type and determine the specified current using the following table.
- Fig. 1 DISCHARGING CURRENT
(Load tester)

Type	Current (A)
28B19R(L)	90
34B19R(L)	99
46B24R(L)	135
55B24R(L)	135
50D23R(L)	150
55D23R(L)	180
65D26R(L)	195
80D26R(L)	195
75D31R(L)	210
95D31R(L)	240
115D31R(L)	240
95E41R(L)	300
130E41R(L)	330



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BATTERY

Battery Test and Charging Chart (Cont'd)

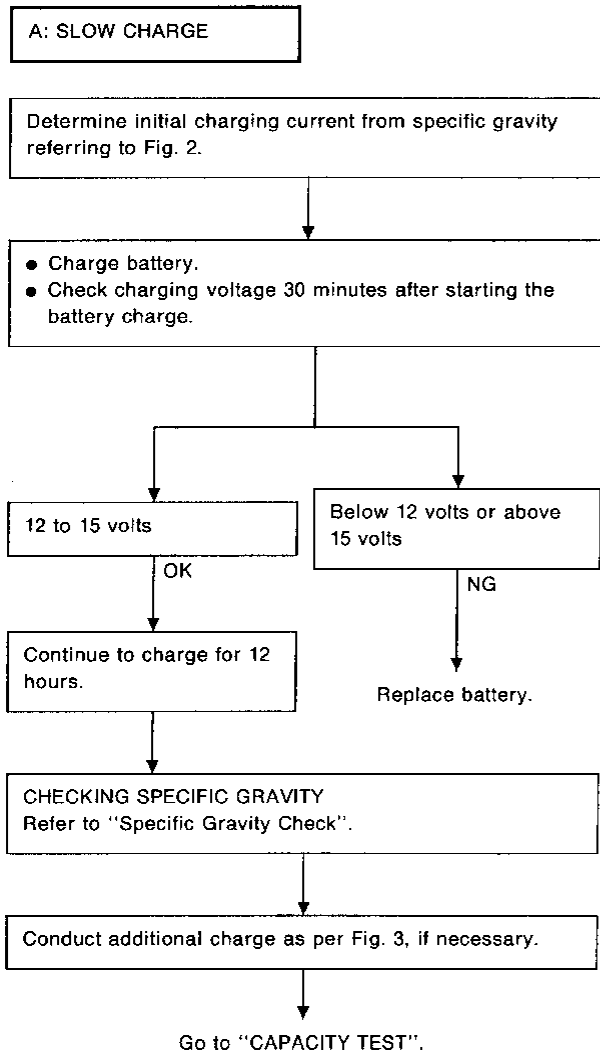
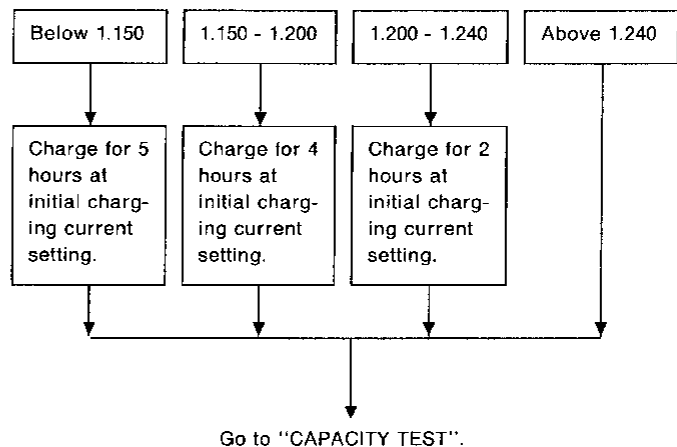


Fig. 2 INITIAL CHARGING CURRENT SETTING (Slow charge)

CON- VERTED SPECIFIC GRAVITY	BATTERY TYPE												
	28B19R(L)	34B19R(L)	46B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(L)	75D31R(L)	95D31R(L)	115D31R(L)	95E41R(L)	130E41R(L)
Below 1.100	4.0 (A)	5.0 (A)	7.0 (A)	8.0 (A)	9.0 (A)	10.0 (A)	14.0 (A)						

- Check battery type and determine the specified current using the table shown above.
- After starting charging, adjustment of charging current is not necessary.

Fig. 3 ADDITIONAL CHARGE (Slow charge)



CAUTION:

- Set charging current to value specified in Fig. 2. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).

BATTERY

Battery Test and Charging Chart (Cont'd)

B: STANDARD CHARGE

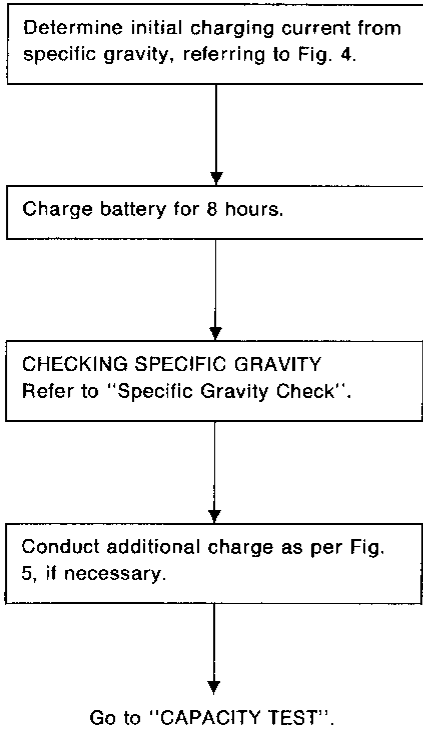
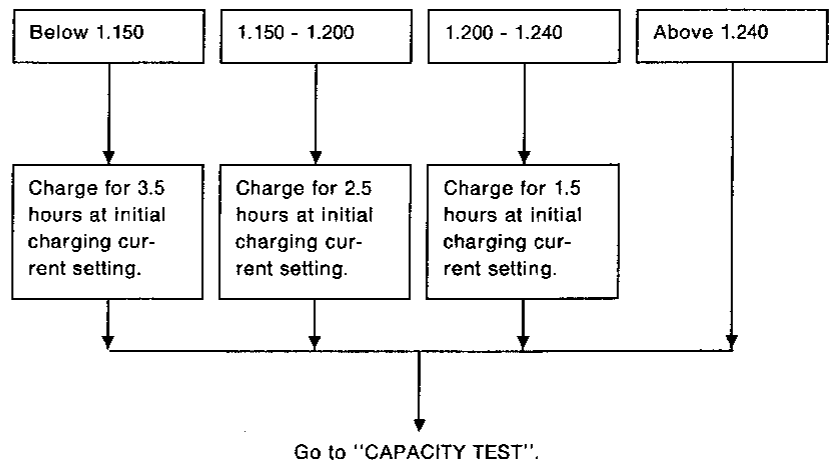


Fig. 4 INITIAL CHARGING CURRENT SETTING
(Standard charge)

CON- VERTED SPECIFIC GRAVITY	BATTERY TYPE												
	28B19R(L)	34B19R(L)	48B24R(L)	55B24R(L)	50D28R(L)	55D28R(L)	65D28R(L)	80D28R(L)	75D31R(L)	95D31R(L)	115D31R(L)	95E41R(L)	130E41R(L)
1.100 - 1.130	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	8.0 (A)	9.0 (A)	13.0 (A)						
1.130 - 1.160	3.0 (A)	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	8.0 (A)	11.0 (A)						
1.160 - 1.190	2.0 (A)	3.0 (A)	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	9.0 (A)						
1.190 - 1.220	2.0 (A)	2.0 (A)	3.0 (A)	4.0 (A)	5.0 (A)	5.0 (A)	7.0 (A)						

- Check battery type and determine the specified current using the table shown above.
- After starting charging, adjustment of charging current is not necessary.

Fig. 5 ADDITIONAL CHARGE (Standard charge)



CAUTION:

- Do not use standard charge method on a battery whose specific gravity is less than 1.100.
- Set charging current to value specified in Fig. 4. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).

BATTERY

Battery Test and Charging Chart (Cont'd)

C: QUICK CHARGE

Determine initial charging current setting and charging time from specific gravity, referring to Fig. 6.

Charge battery.

Go to "CAPACITY TEST".

Fig. 6 INITIAL CHARGING CURRENT SETTING AND CHARGING TIME (Quick charge)

BATTERY TYPE		28B19R(L)	34B19R(L)	46B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(L)	75D31R(L)	95D31R(L)	115D31R(L)	95E41R(L)	130E41R(L)
CURRENT [A]		10 (A)	15 (A)	20 (A)	30 (A)	40 (A)								
CONVERTED SPECIFIC GRAVITY	1.100 - 1.130	2.5 hours												
	1.130 - 1.160	2.0 hours												
	1.160 - 1.190	1.5 hours												
	1.190 - 1.220	1.0 hours												
	Above 1.220	0.75 hours (45 min.)												

- Check battery type and determine the specified current using the table shown above.
- After starting charging, adjustment of charging current is not necessary.

CAUTION:

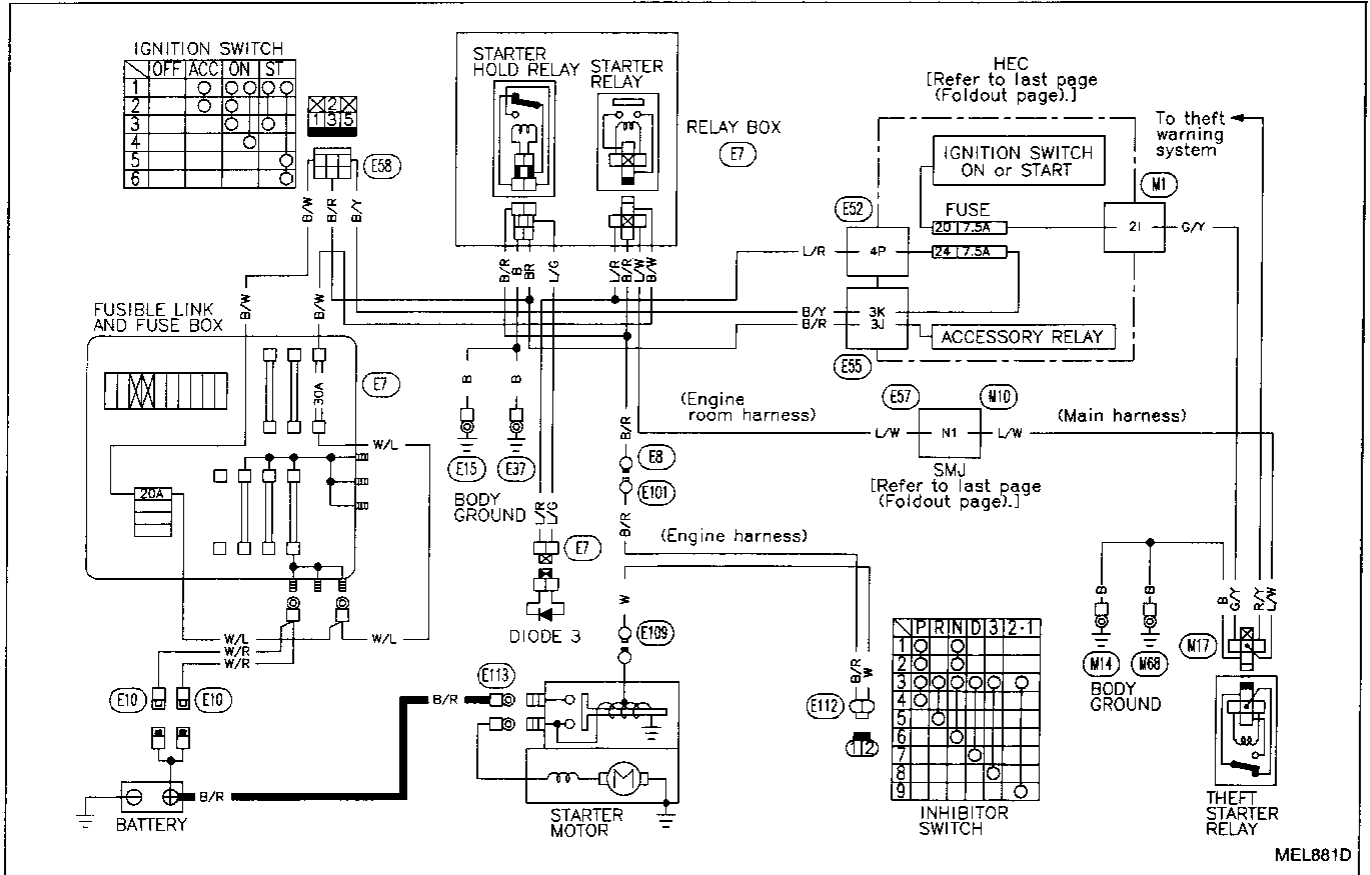
- Do not use quick charge method on a battery whose specific gravity is less than 1.100.
- Set initial charging current to value specified in Fig. 6. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- Be careful of a rise in battery temperature because a large current flow is required during quick-charge operation.
If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).
- Do not exceed the charging time specified in Fig. 6, because charging battery over the charging time can cause deterioration of the battery.

Service Data and Specifications (SDS)

Type		80D26R
Capacity	V-AH	12-65

STARTING SYSTEM

Wiring Diagram



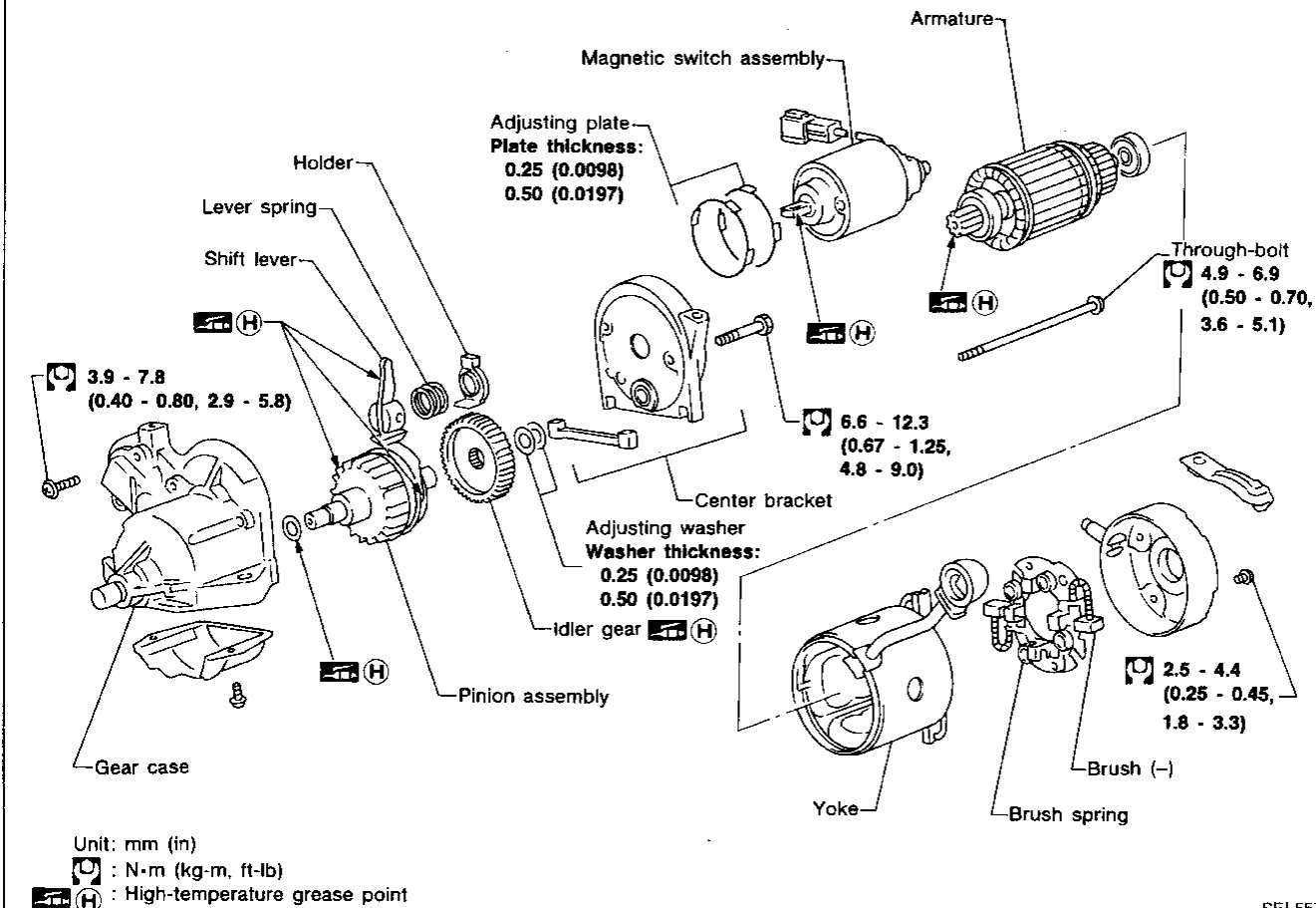
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STARTING SYSTEM

Construction

M2T25282



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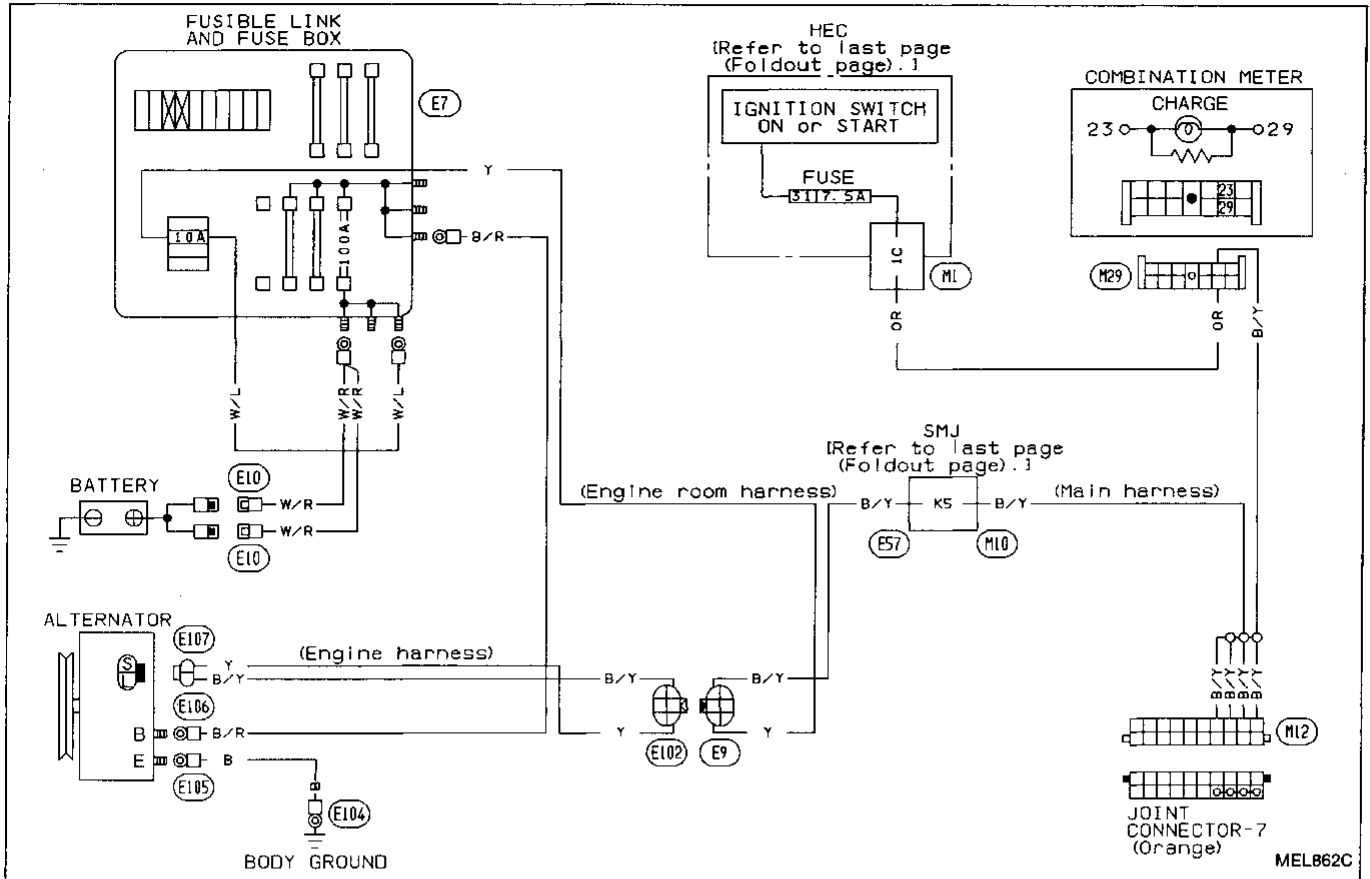
Service Data and Specifications (SDS)

STARTER

Type		M2T25282	
		Reduction gear	
System voltage	V	12	
No-load	Terminal voltage	V	11.0
	Current	A	70
	Revolution	rpm	More than 2,000
Minimum length of brush	mm (in)	11.5 (0.453)	
Brush spring tension (With new brush)	N (kg, lb)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)	
Minimum diameter of commutator	mm (in)	31.4 (1.236)	
Difference "ℓ" in height of pinion assembly	mm (in)	0.3 - 2.0 (0.012 - 0.079)	

CHARGING SYSTEM

Wiring Diagram



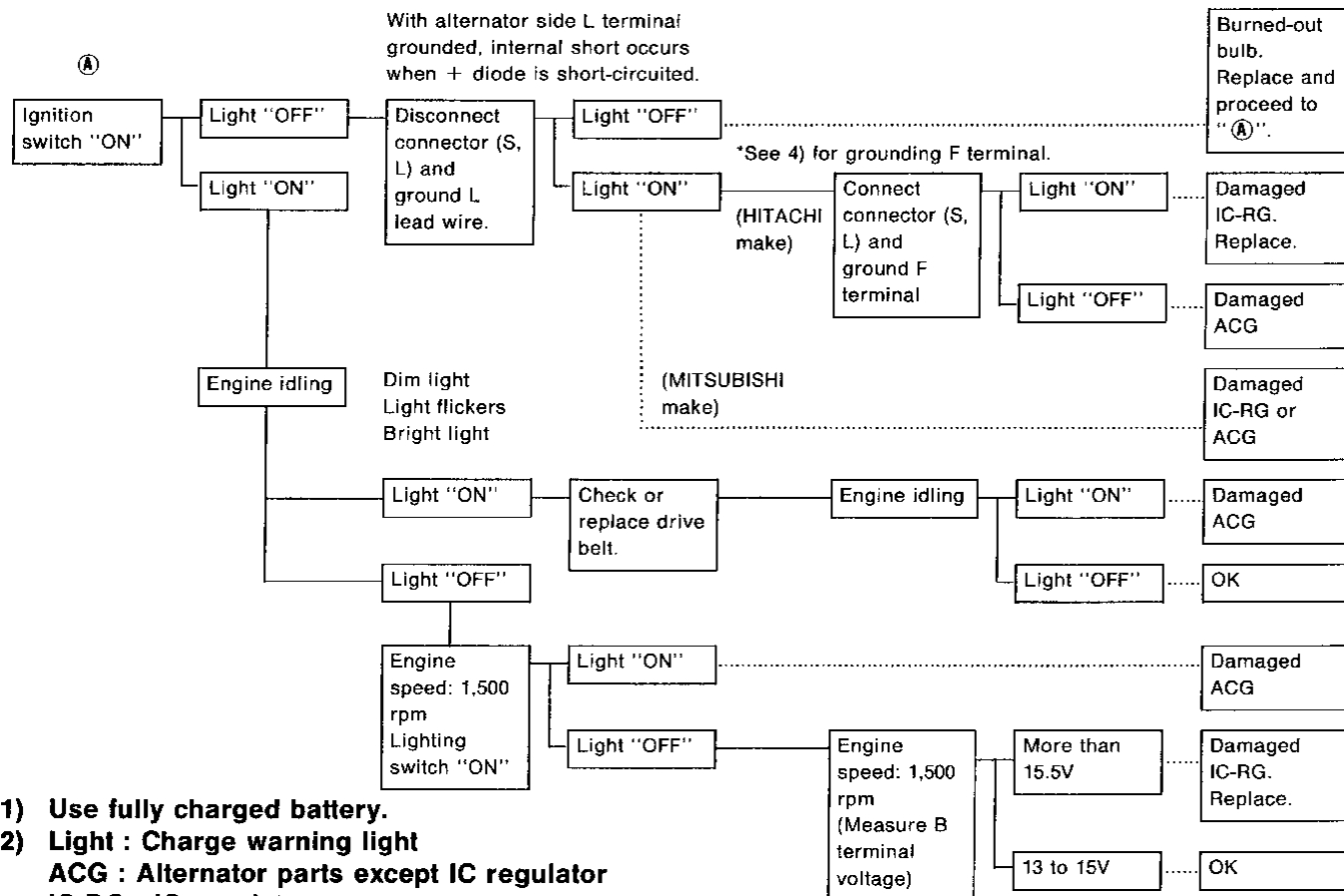
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Trouble-shooting

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 trouble-shooting, inspect the fusible link.

WITH IC REGULATOR

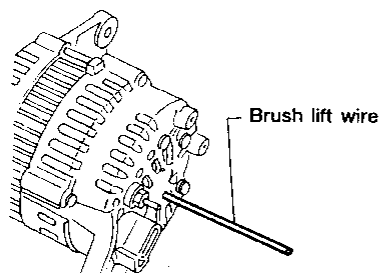


Make sure connector (S, L) is connected correctly.

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

Gasoline engine model

Contact tip of wire with brush and attach wire to alternator body.

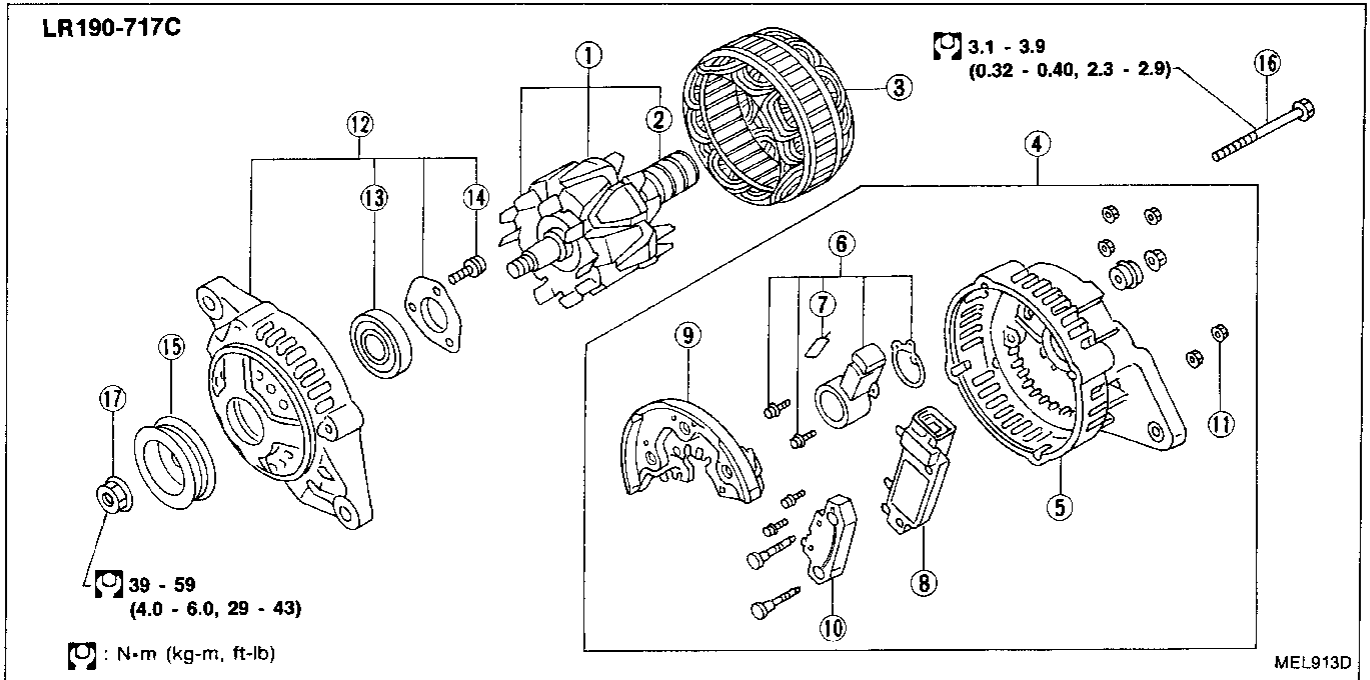


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- 5) Terminals "S", "L", "B" and "E" are marked on rear cover of alternator.

CHARGING SYSTEM

Construction



- ① Rotor assembly
- ② Ball bearing
- ③ Stator assembly
- ④ Rear cover assembly
- ⑤ Rear cover
- ⑥ Brush holder assembly

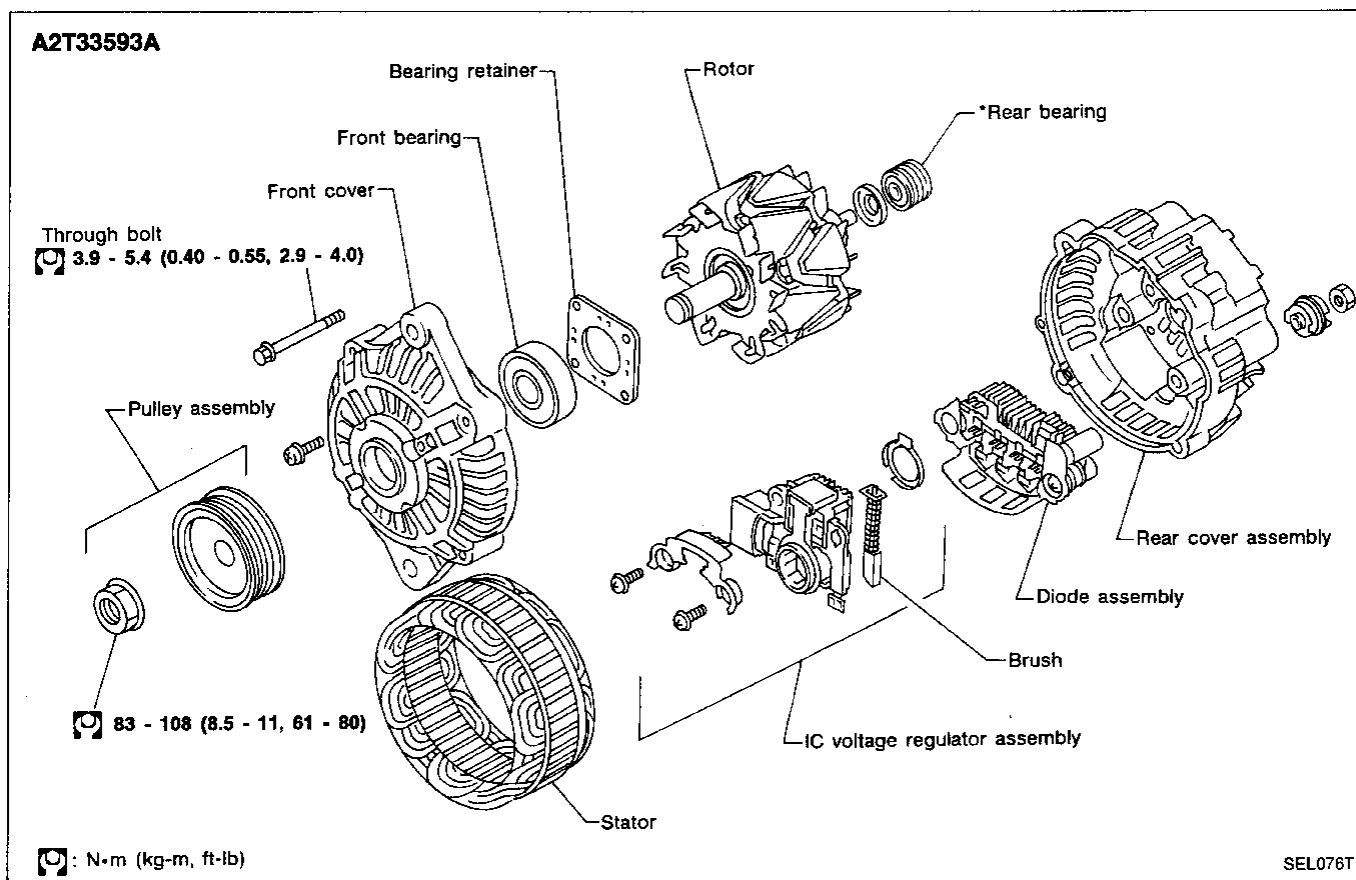
- ⑦ Brush set
- ⑧ Regulator assembly
- ⑨ Diode assembly
- ⑩ Condenser
- ⑪ Nut assembly
- ⑫ Front cover assembly

- ⑬ Ball bearing
- ⑭ Screw kit
- ⑮ Pulley
- ⑯ Through bolt
- ⑰ Pulley nut
- ⑱ Screw kit

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CHARGING SYSTEM

Construction (Cont'd)



***Rear bearing**

CAUTION:

Rear cover may be hard to remove because a ring is used to lock outer race of rear bearing. Be careful not to lose this ring during removal.

CHARGING SYSTEM

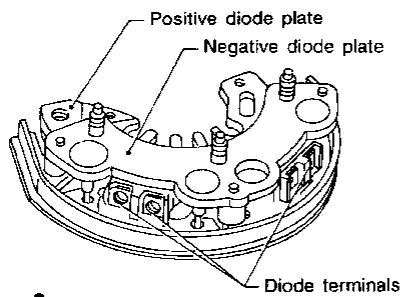
Diode Check

MAIN DIODES

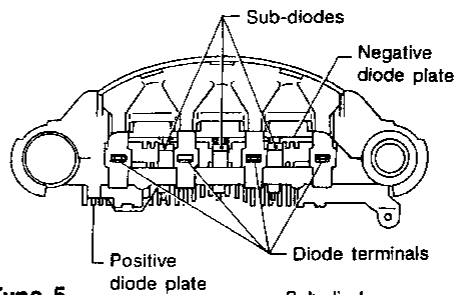
- Use an ohmmeter to check condition of diodes as indicated in chart below.
- If any of the test results is not satisfactory, replace diode assembly.

	Ohmmeter probes		Judgement
	Positive ⊕	Negative ⊖	
Diodes check (Positive side)	Positive diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Positive diode plate	
Diodes check (Negative side)	Negative diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Negative diode plate	

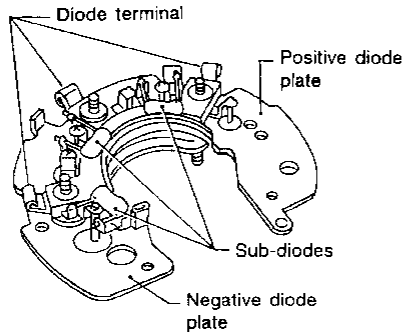
Type 1



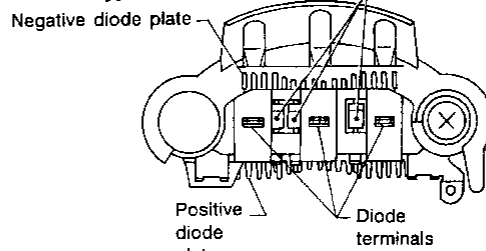
Type 4



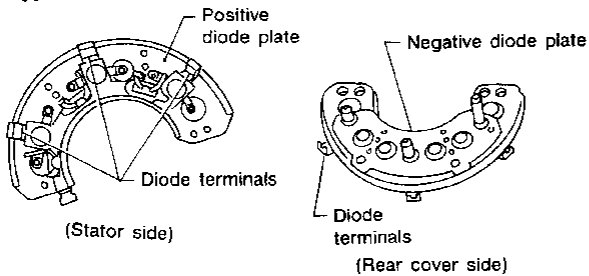
Type 2



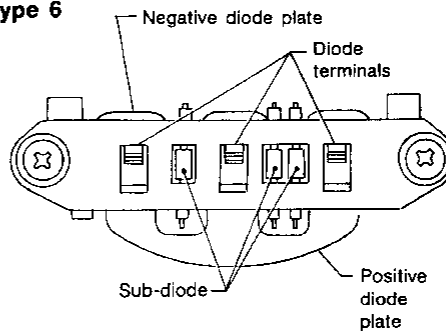
Type 5



Type 3



Type 6



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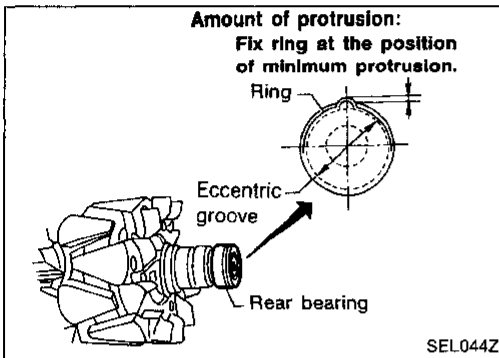
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Assembly

Carefully observe the following instructions.

- When soldering each stator coil lead wire to diode assembly terminal, carry out the operation as fast as possible.

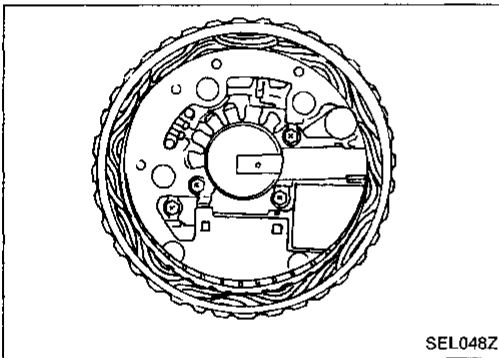


RING FITTING IN REAR BEARING

- Fix ring into groove in rear bearing so that it is as close to the adjacent area as possible.

CAUTION:

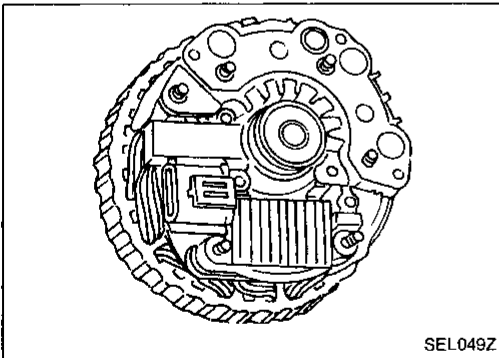
Do not reuse rear bearing after removal.



REAR COVER INSTALLATION

- (1) Fit brush assembly, diode assembly, regulator assembly and stator.
- (2) Push brushes up with fingers and install them to rotor.

Take care not to damage slip ring sliding surface.



CHARGING SYSTEM

Service Data and Specifications (SDS)

ALTERNATOR

Type		LR190-717C	A2T33593A	GI
		HITACHI	mitsubishi	
Nominal rating	V-A	12-90	12-90	MA
Ground polarity		Negative		MA
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000	Less than 1,300	EM
Hot output current	A/rpm	More than 23/1,300 More than 63/2,500 More than 87/5,000	More than 20/1,300 More than 61/2,500	LC
Regulated output voltage	V	14.1 - 14.7		EF & EC
Minimum length of brush	mm (in)	6.0 (0.236)	More than 5.0 (0.197)	FE
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)	4.609 - 5.786 (470 - 590, 16.58 - 20.81)	FE
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)	More than 22.1 (0.870)	AT
Rotor (Field coil) resistance	Ω	3.4	—	PD

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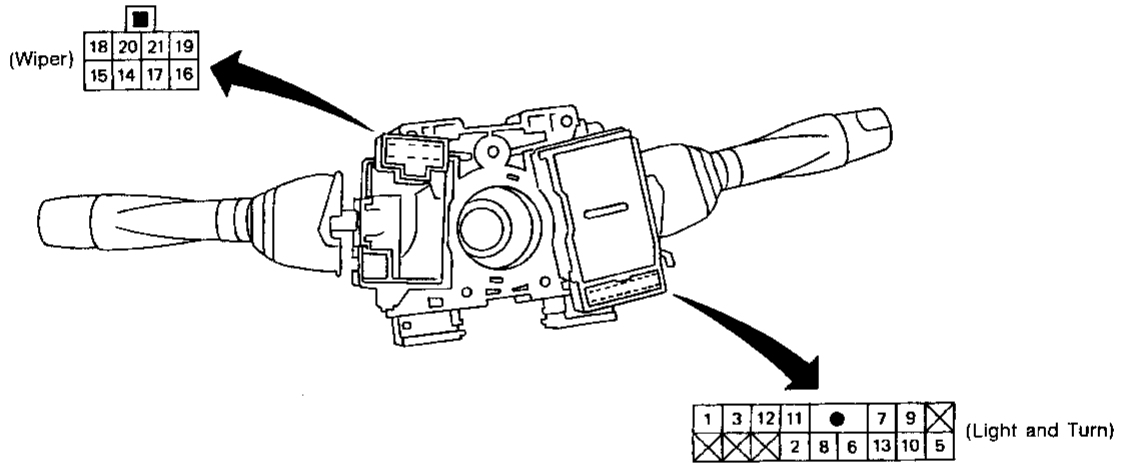
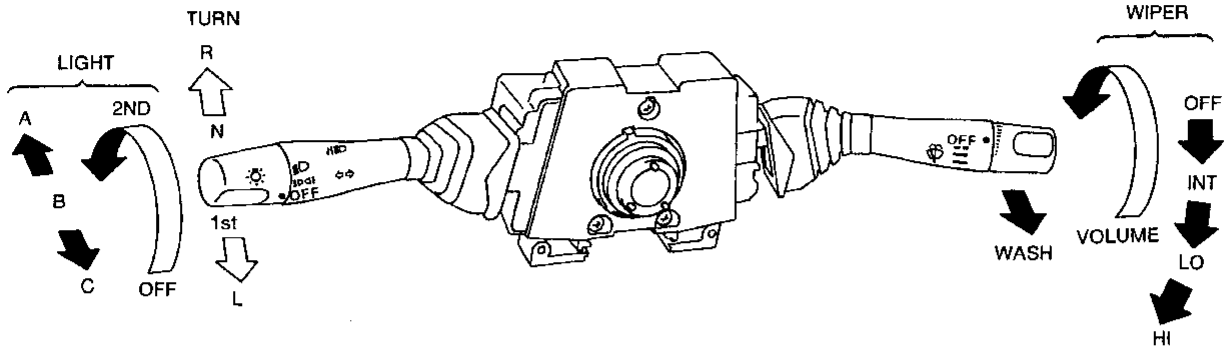
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COMBINATION SWITCH

Combination Switch/Check

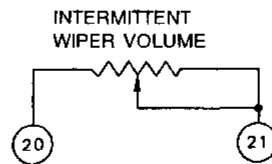


LIGHTING SWITCH

	OFF	1	2
5		○	○
6		○	○
7	○	○	○
8		○	○
9	○	○	○
10		○	○
11	○	○	○
12	○	○	○
13		○	○

WIPER SWITCH

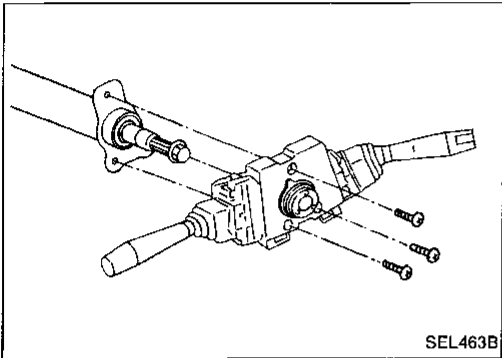
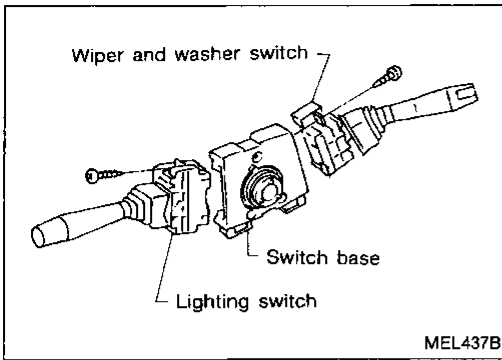
	OFF	INT	LO	HI	WASH
14	○	○			
15	○	○			
16		○	○		
17		○	○	○	
18		○	○	○	○
19					○



TURN SIGNAL SWITCH

	R	N	L
1	○		○
2	○		○
3			○

COMBINATION SWITCH



Combination Switch/Replacement

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

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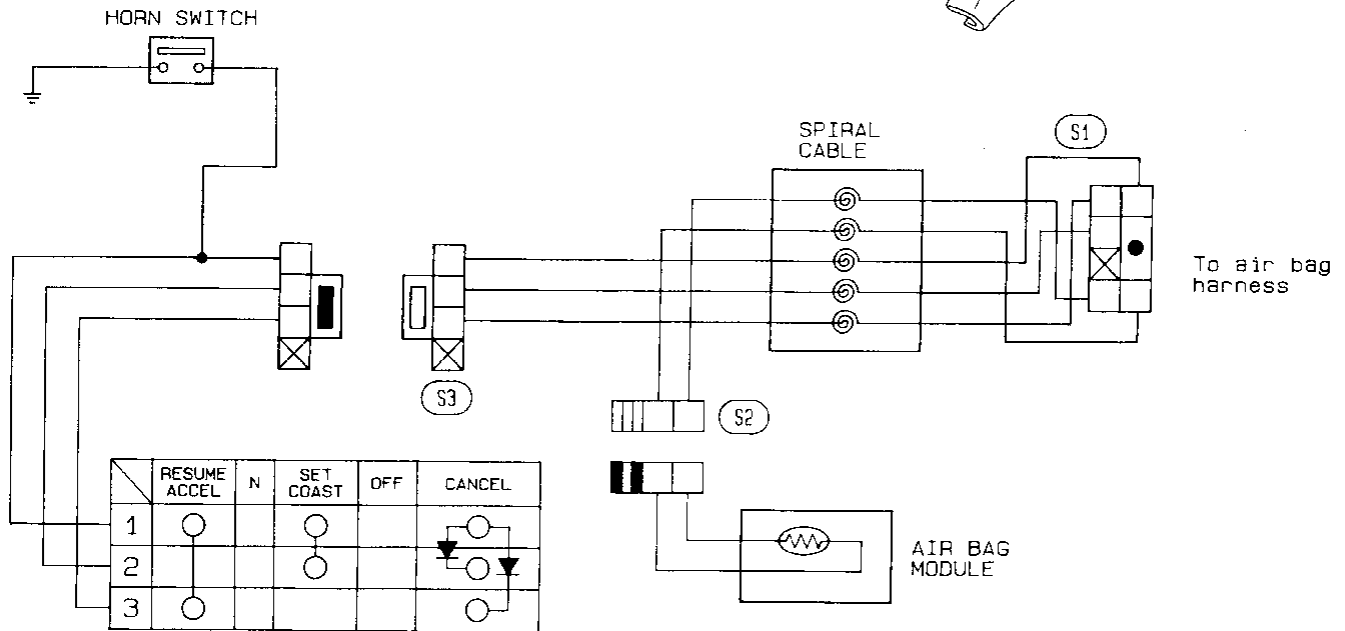
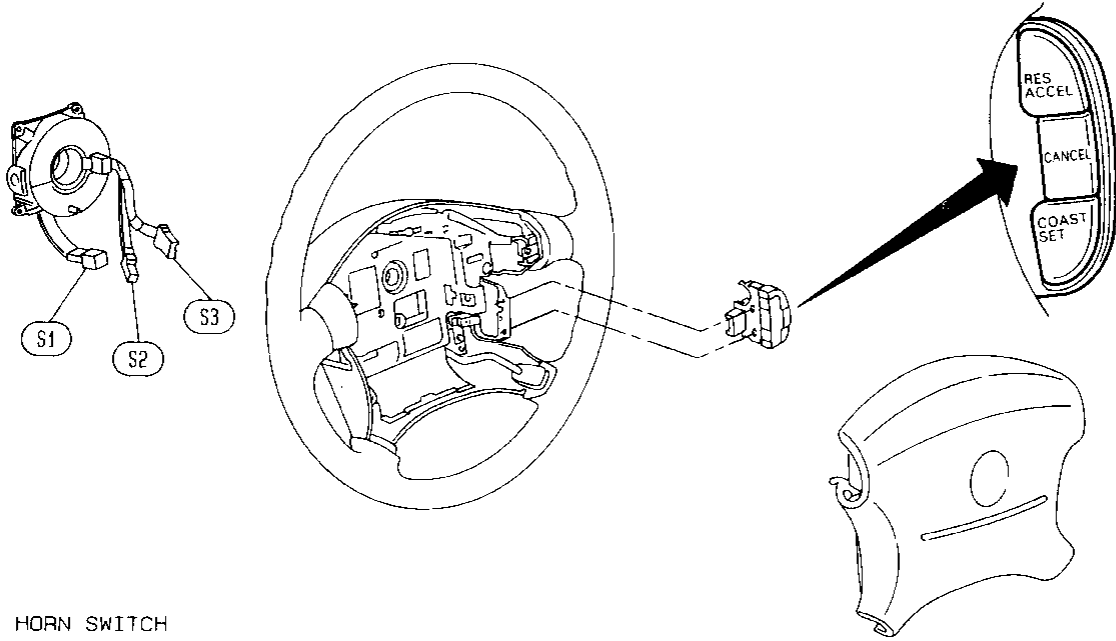
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COMBINATION SWITCH

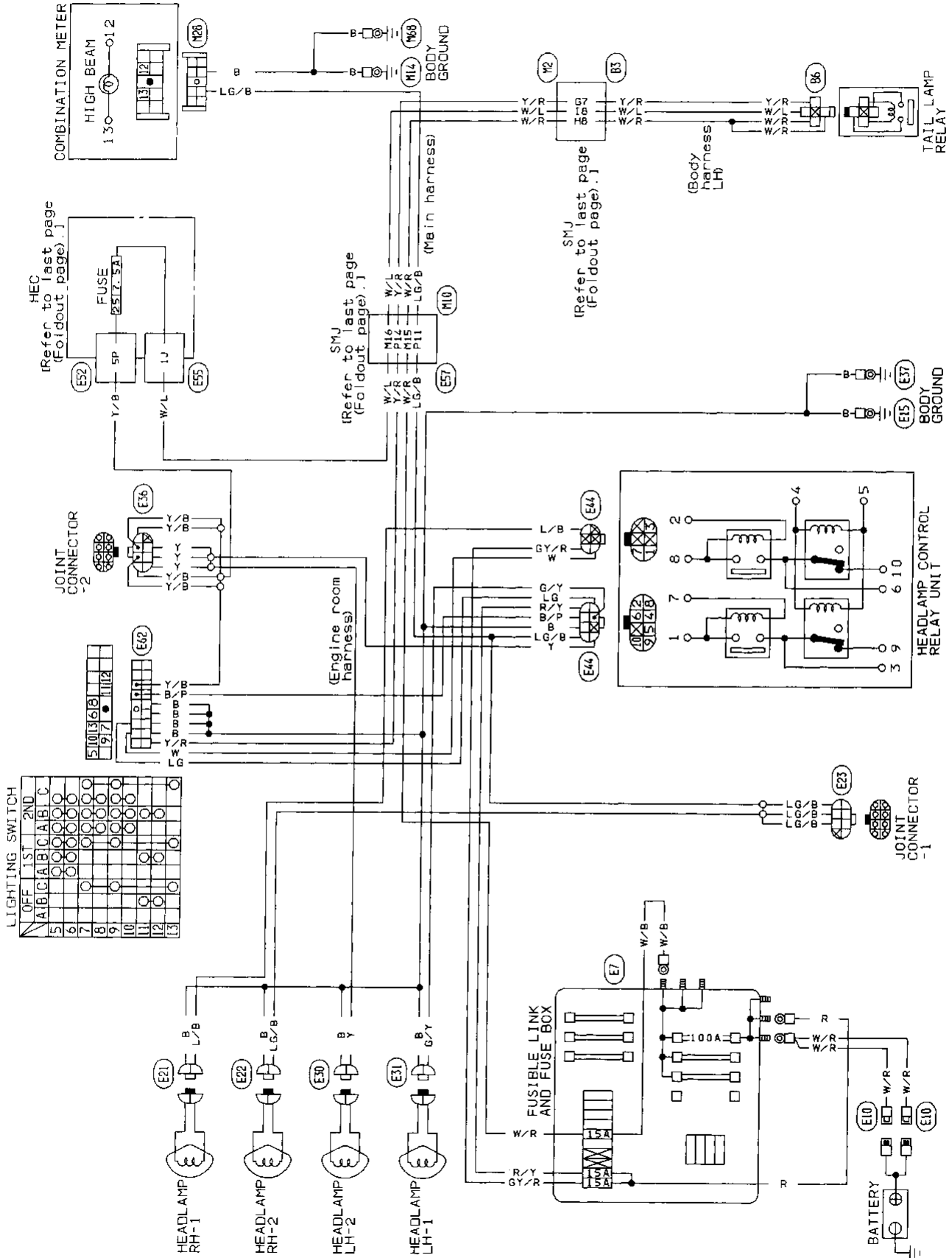
Steering Switch/Check



HEADLAMP

Wiring Diagram

FOR U.S.A.



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HEADLAMP

Operation (Daytime light system for Canada)

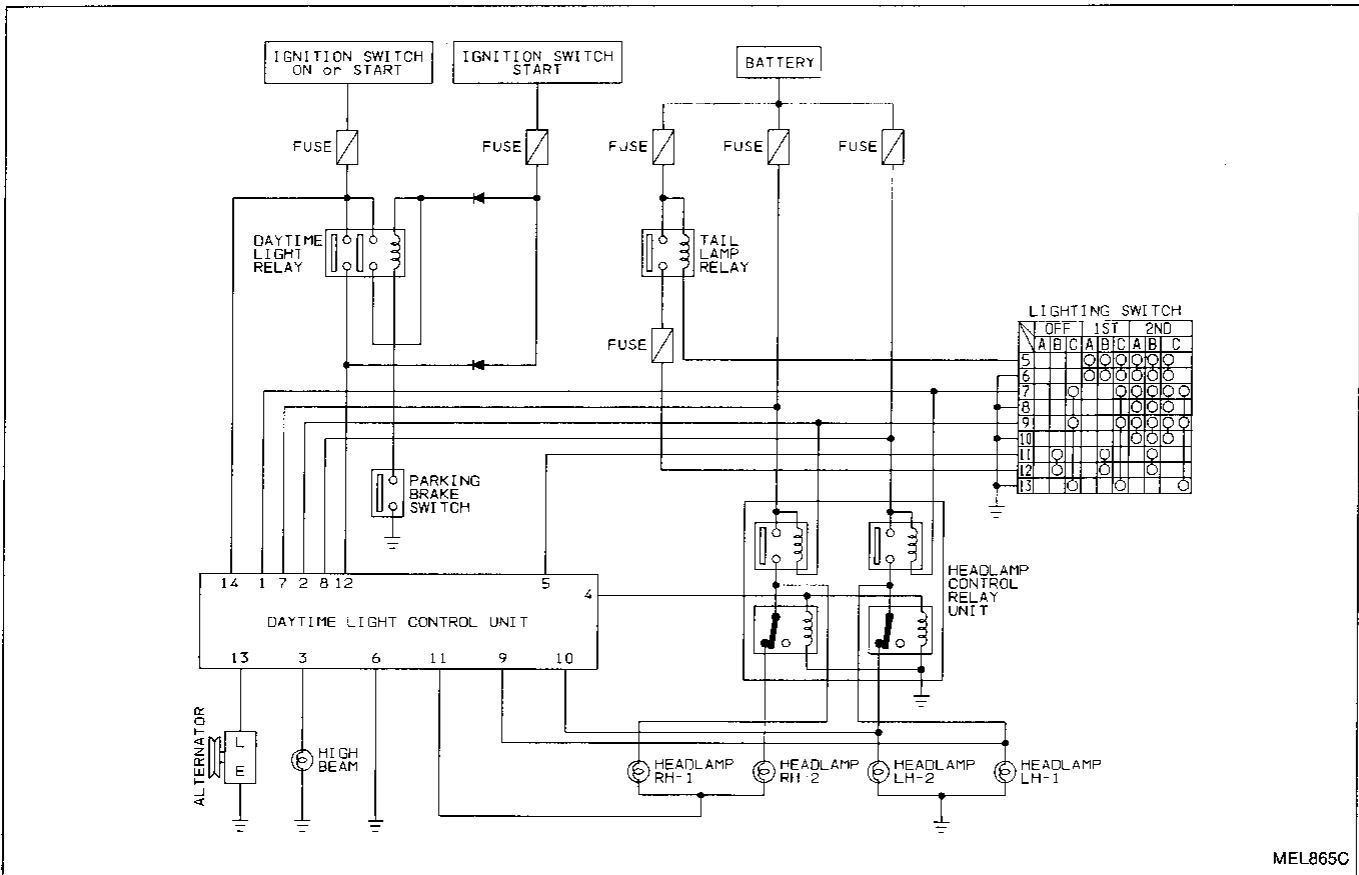
After starting the engine with the lighting switch in the "OFF" position or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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	○	x	x	○	○	x	○	△	△	○	△	△	○	○	x	○
	Low beam	x	x	x	x	x	x	x	○	x	x	x	x	x	x	x	x	○	x
Clearance and tail lamp		x	x	x	○	○	○	○	○	○	x	x	x	○	○	○	○	○	○
License and instrument illumination lamp		x	x	x	○	○	○	○	○	○	x	x	x	○	○	○	○	○	○

- : Lamp "ON"
- x: Lamp "OFF"
- △: Lamp dims.
- : Added functions

Schematic

FOR CANADA

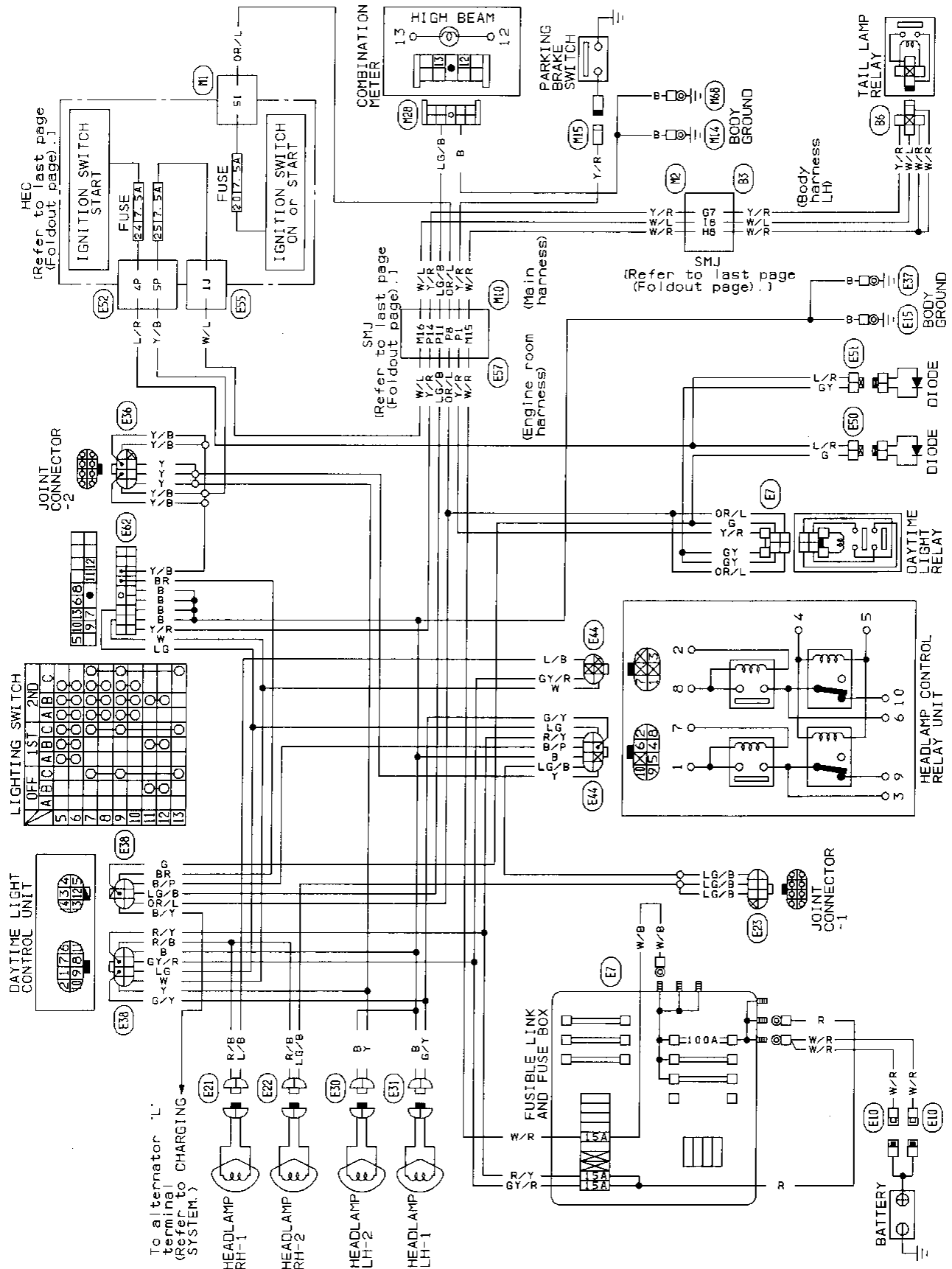


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HEADLAMP

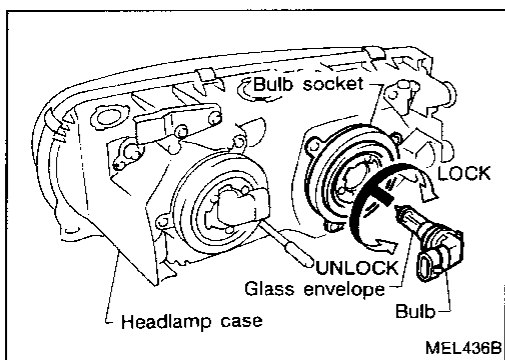
Wiring Diagram

FOR CANADA



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HEADLAMP



Bulb Replacement

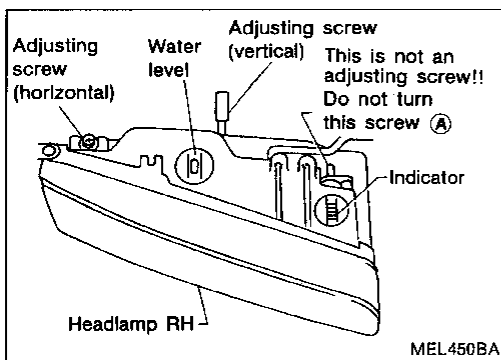
The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

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

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

CAUTION:

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



Aiming Adjustment

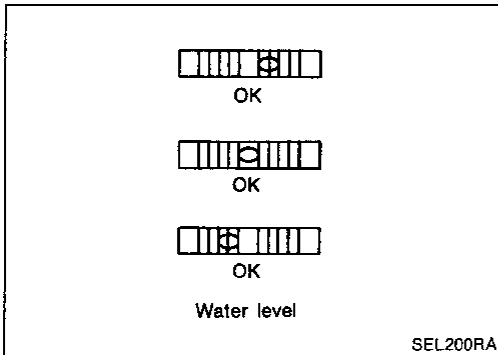
Before performing aiming adjustment, make sure of the following.

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

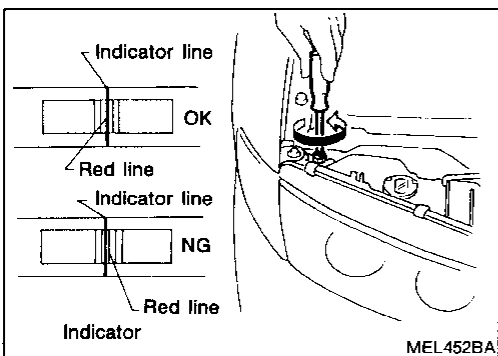
LOW BEAM

1. Open the hood.
2. Adjust water level by turning the adjusting screw (vertical direction).

The bubble should be centered in the gauge as shown in the illustration.



3. Adjust indicator by turning the adjusting screw with a Phillips screwdriver. (horizontal direction)
The inner red line should align with the indicator line.
Never turn screw (A).



HEADLAMP

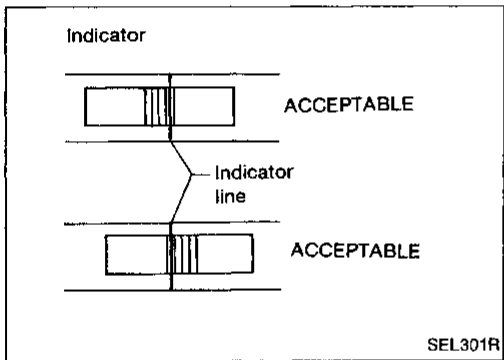
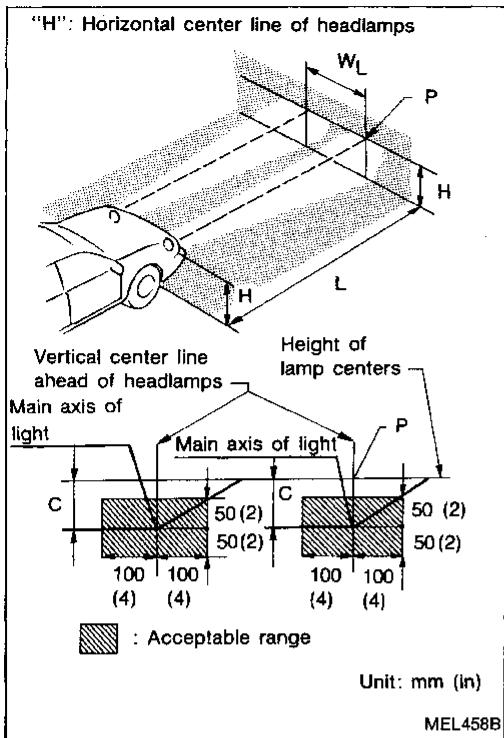
Aiming Adjustment (Cont'd)

ADJUSTMENT AFTER HEADLAMP ASSEMBLY REPLACEMENT

If the vehicle has had front body repair and the headlamp assembly has been replaced, the aiming should be checked using the aiming chart as shown in the illustration.

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

Even if the horizontal indicator does not align with the indicator line after aiming by the chart, the following variations are acceptable.



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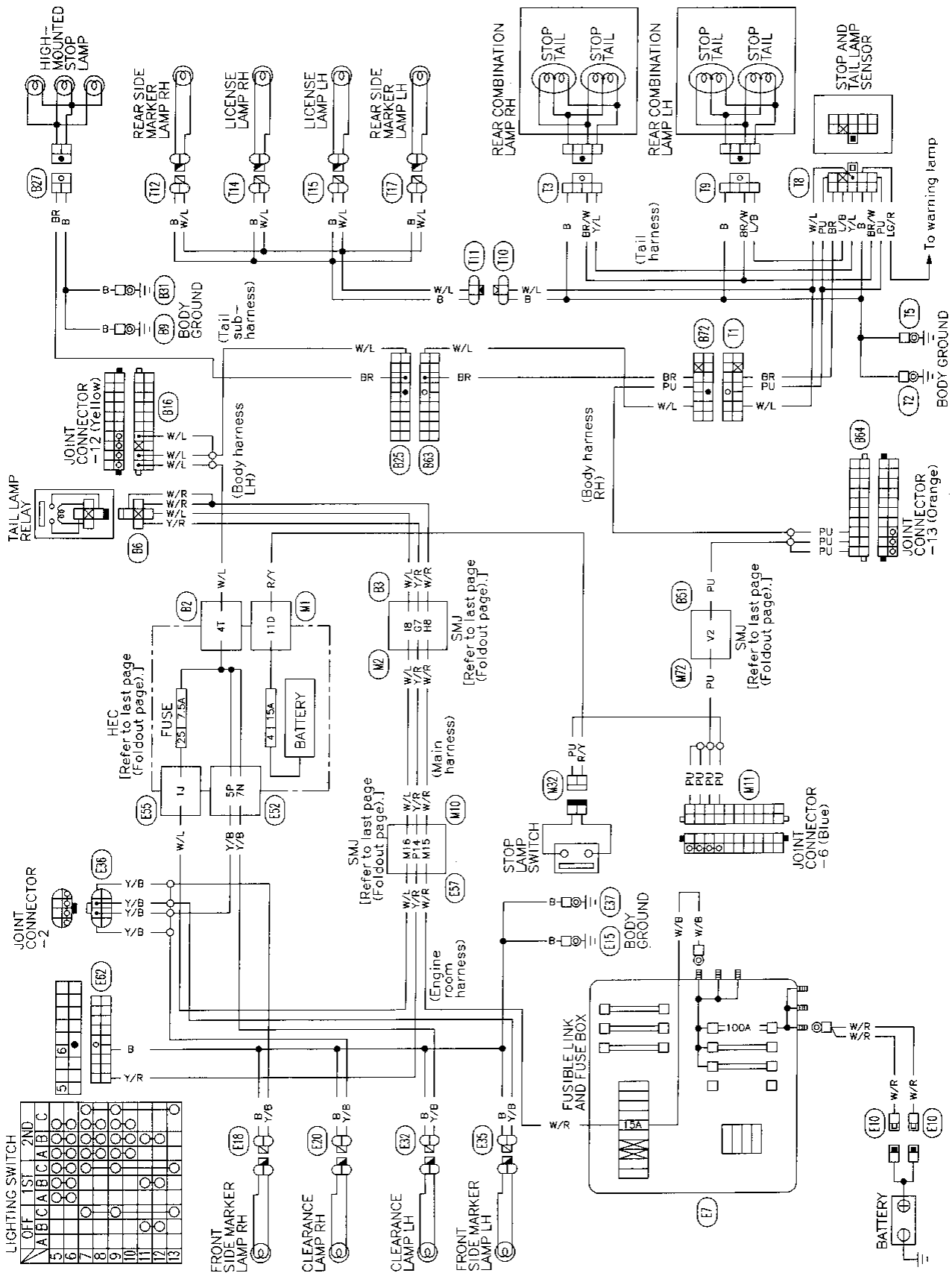
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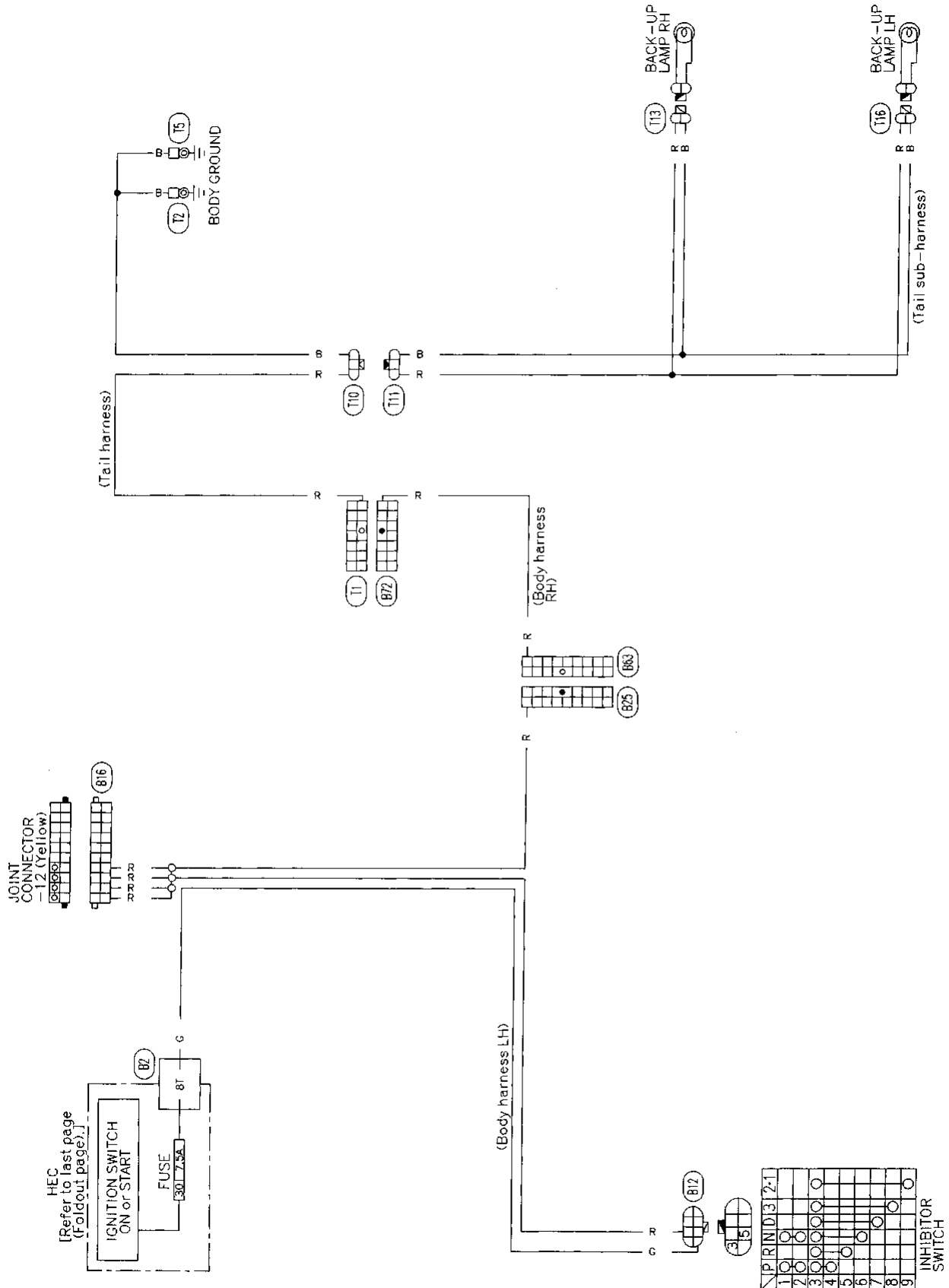
EXTERIOR LAMP

Clearance, License, Tail and Stop Lamps/Wiring Diagram



EXTERIOR LAMP

Back-up Lamp/Wiring Diagram

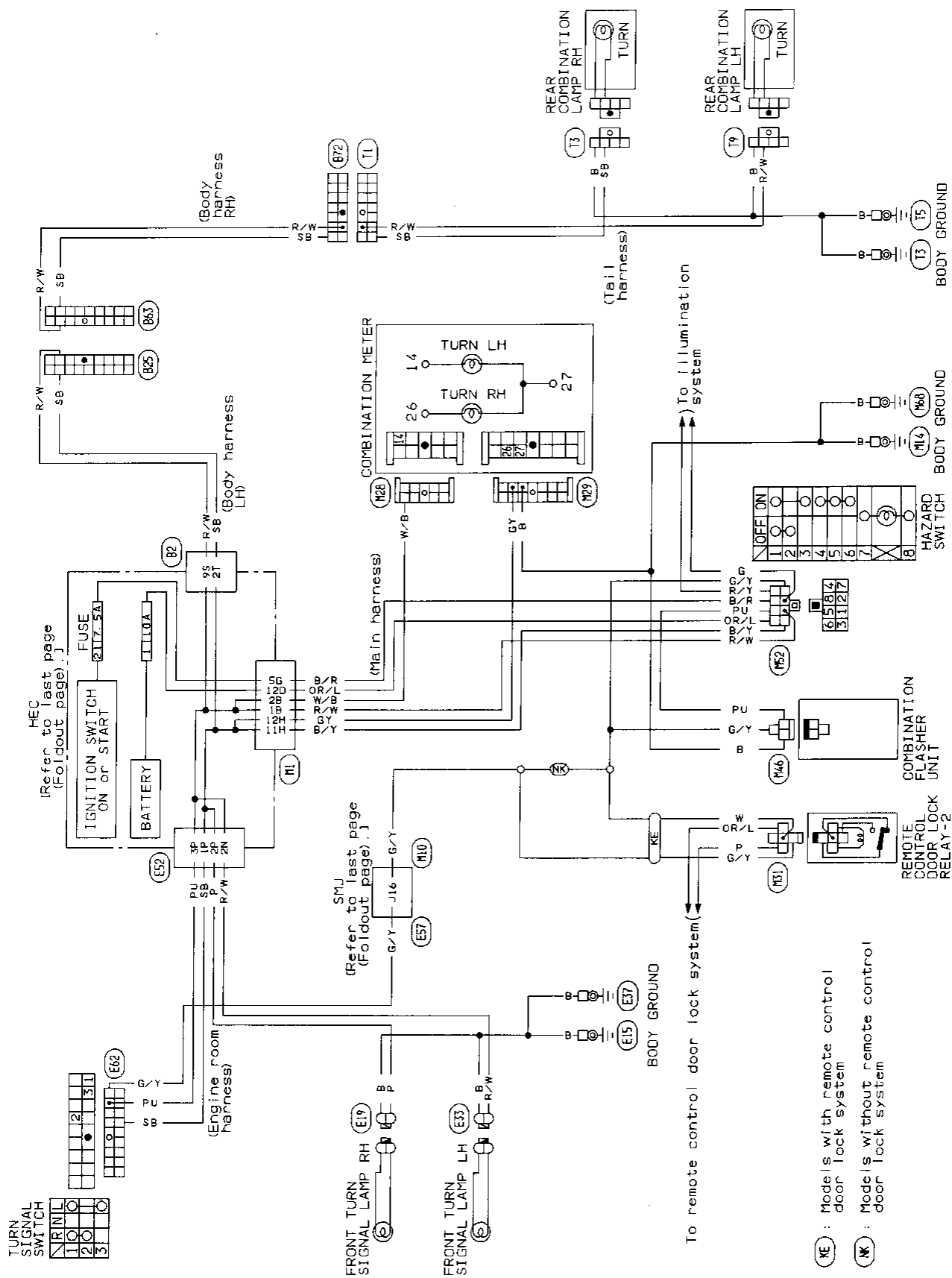


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HEC
[Refer to last page
(Foldout page).]

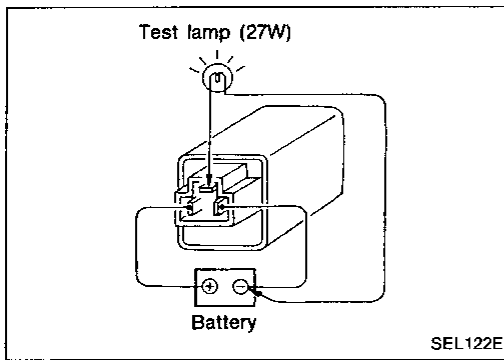
EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram



MEL869C

EXTERIOR LAMP



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.

GI

MA

EM

Bulb Specifications

	Wattage (12 volt)	Bulb No.
Headlamp		
High beam (Inside)	65	9005
Low beam (Outside)	55	9006
Front turn signal	27	1157NA
Front clearance lamp	5	—
Front side marker lamp	3.8	194
Rear combination lamp		
Turn signal	27	1156
Stop/Tail	27/8	1157
Back-up lamp	27	1156
Rear side marker lamp	3.8	194
License plate lamp	5	—
High-mounted stop lamp	18	921
Interior lamp	10	—
Spot lamp		
(Type A)	10	—
(Type B)	8	—
Step lamp	3.4	—
Trunk room lamp	3.4	—

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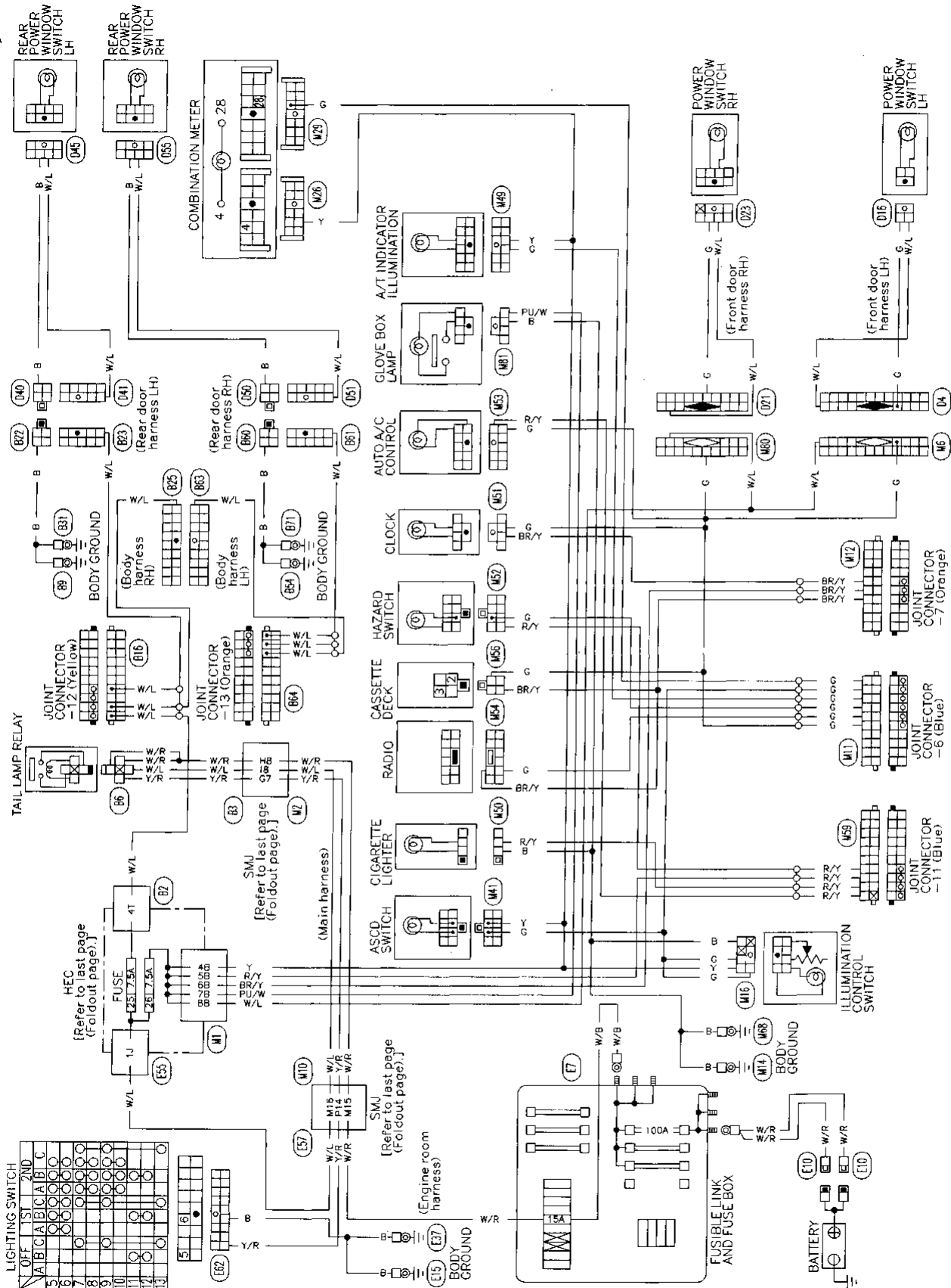
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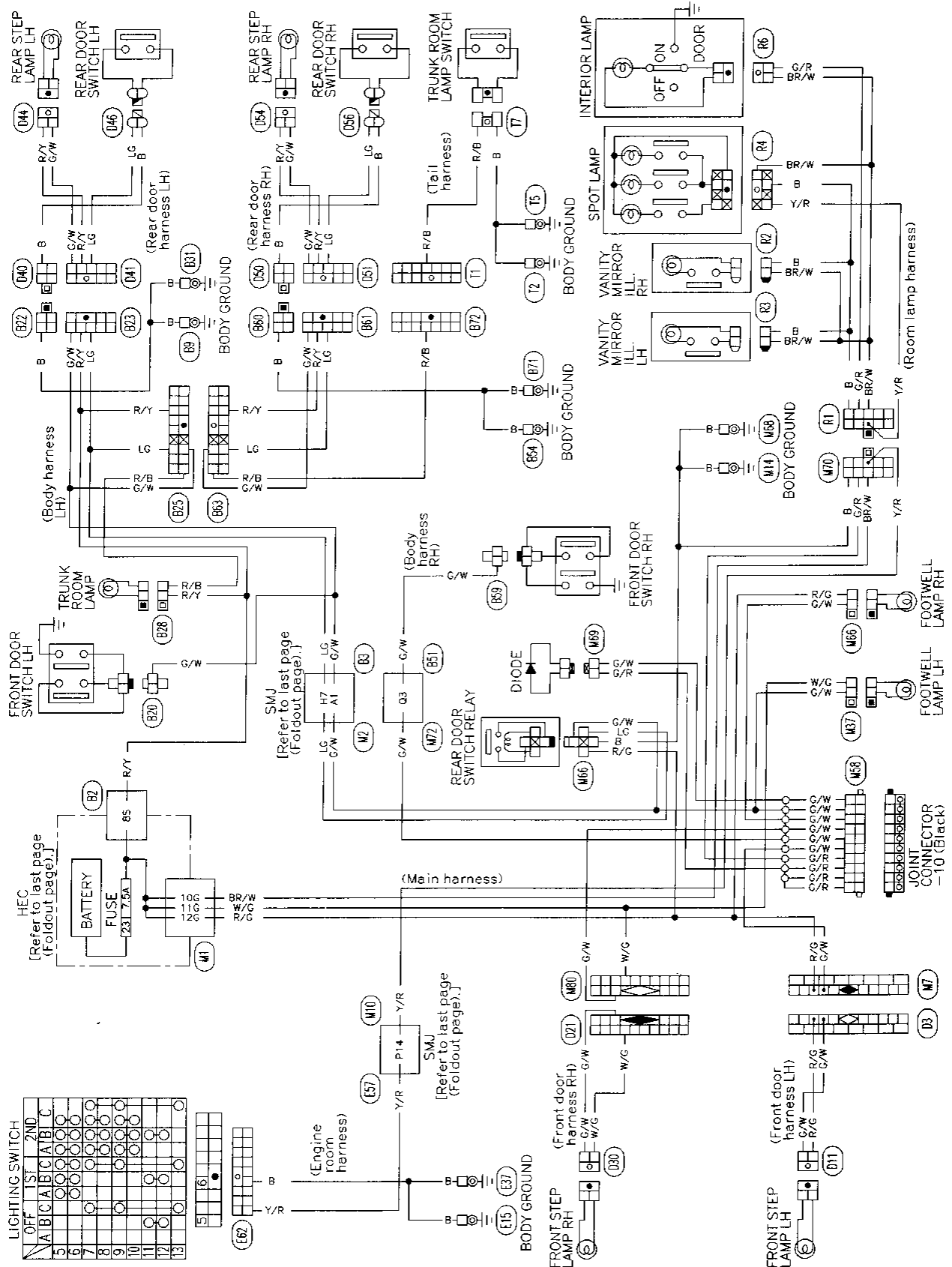
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INTERIOR LAMP

Illumination/Wiring Diagram



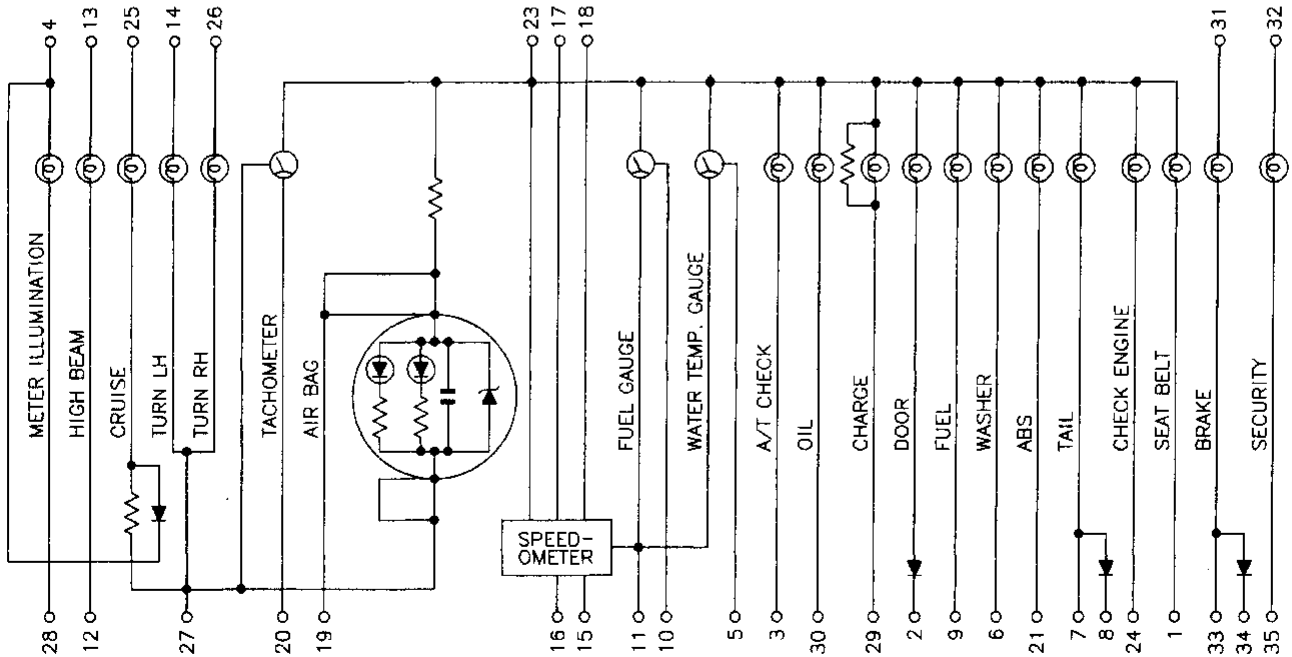
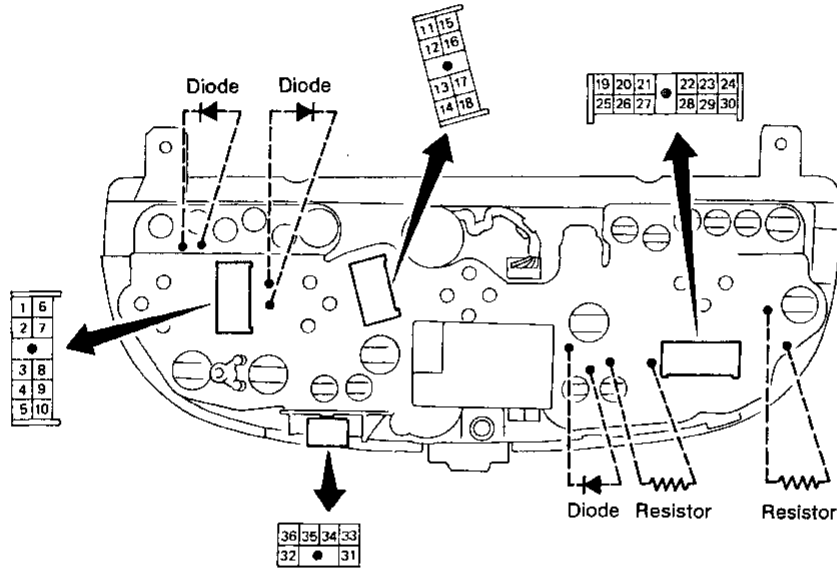
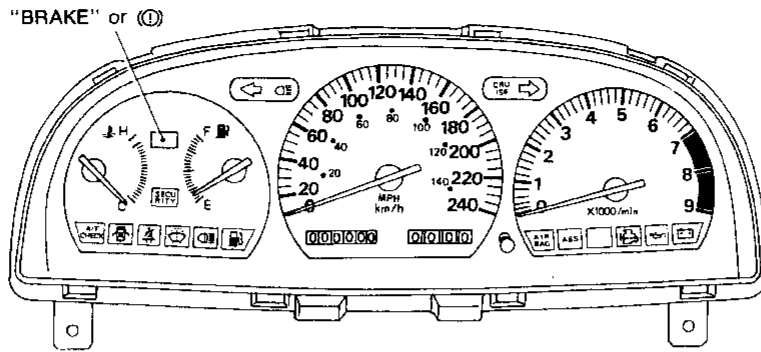
Interior and Trunk Room Lamps/Wiring Diagram



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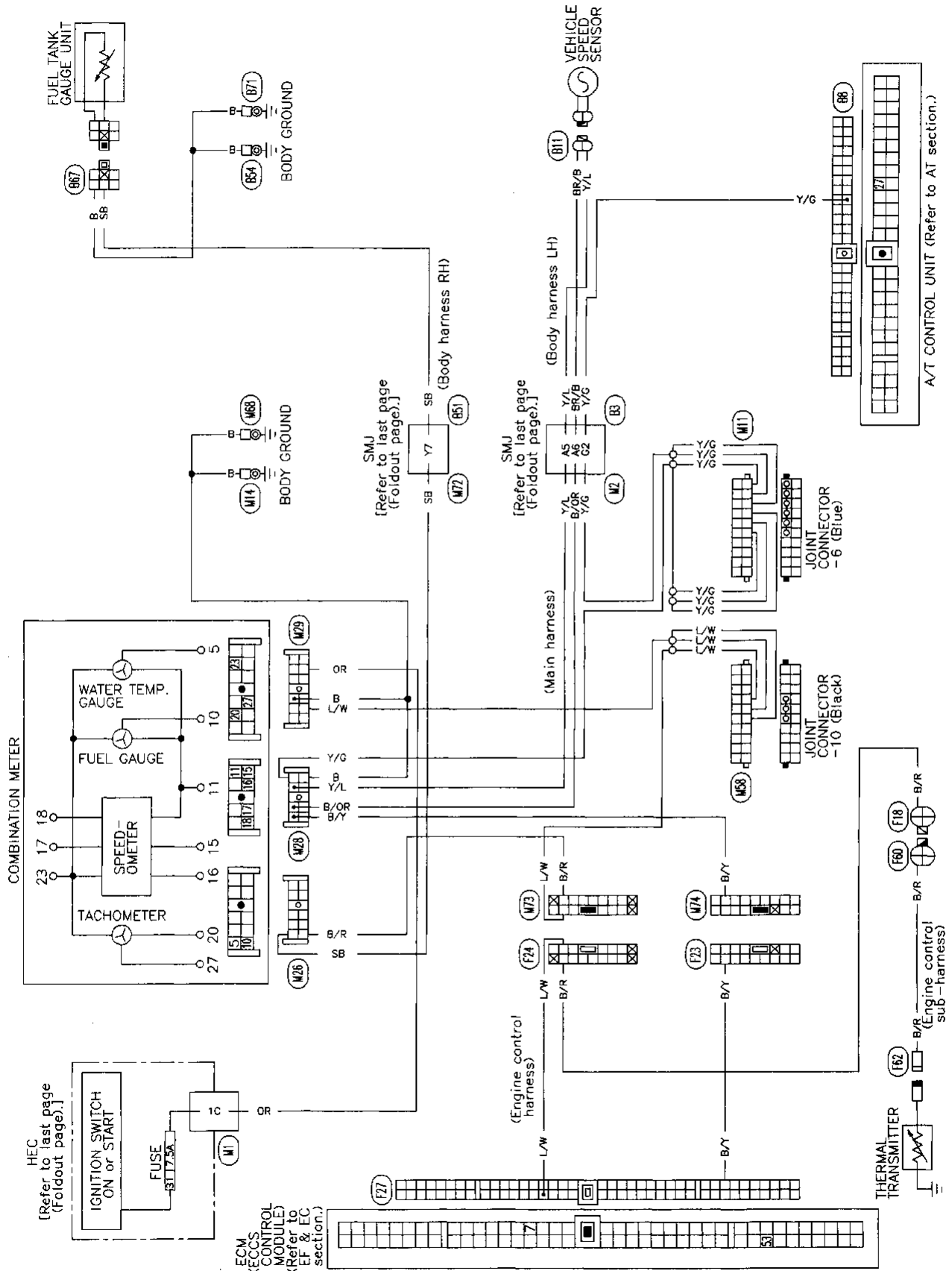
METER AND GAUGES

Combination Meter



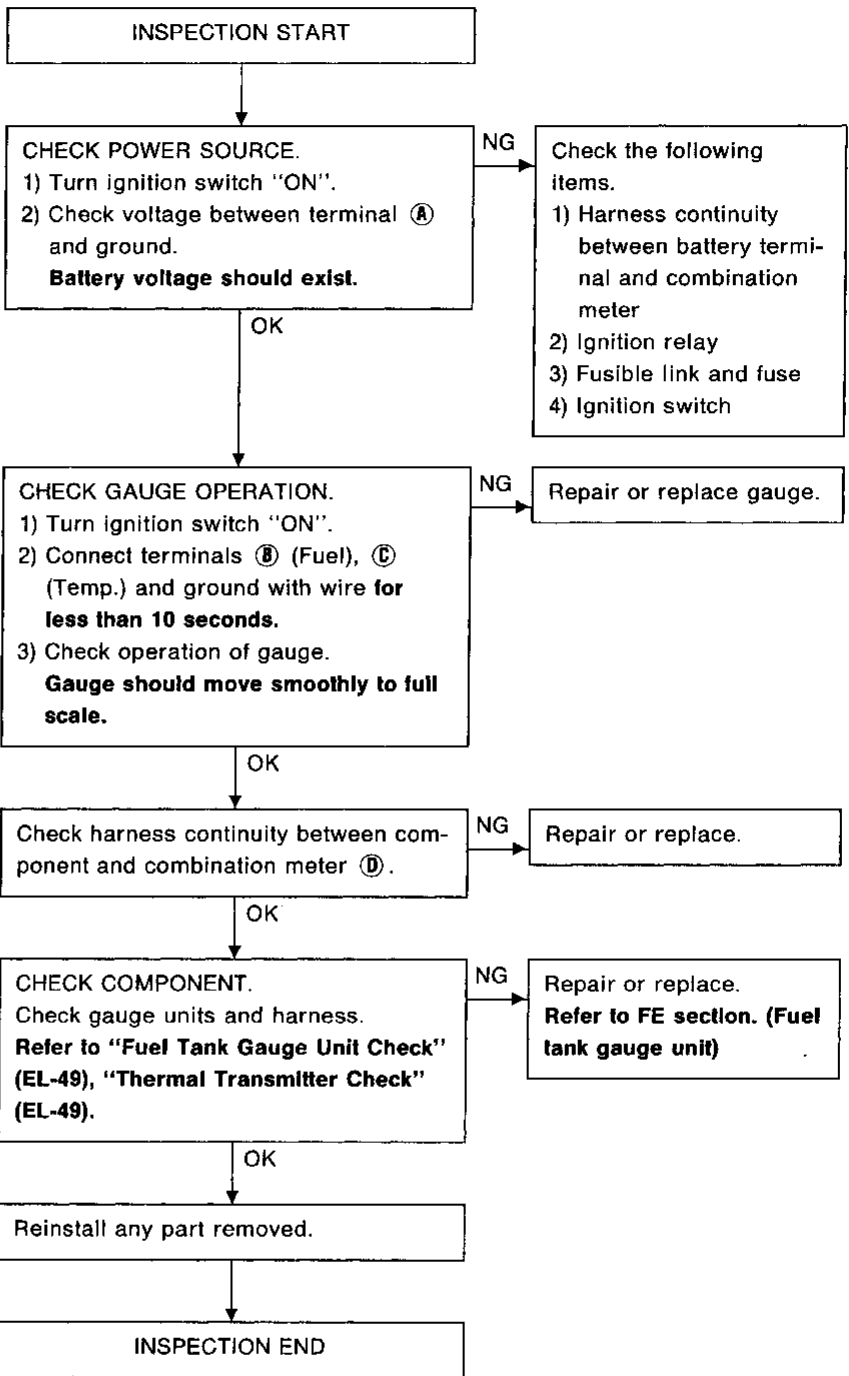
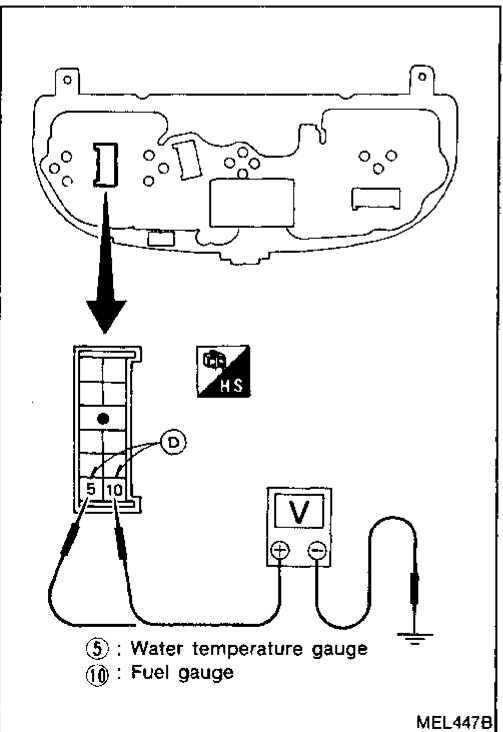
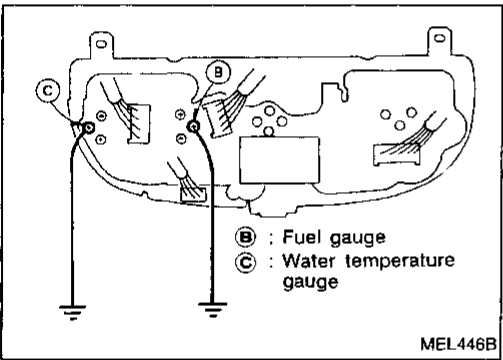
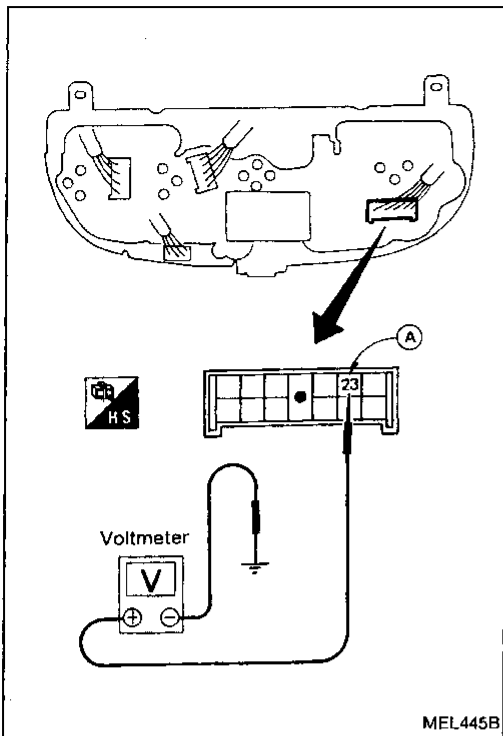
MEL886D

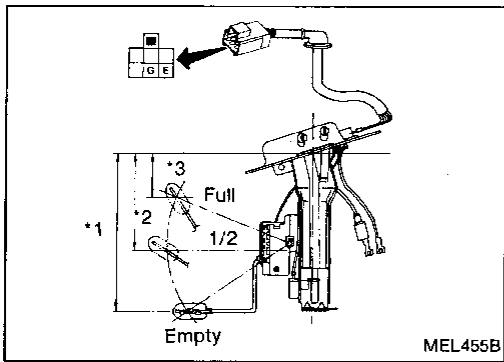
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram



- GI
- MA
- EM
- LC
- EF & EC
- FE
- AT
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Inspection/Fuel Gauge and Water Temperature Gauge





Fuel Tank Gauge Unit Check

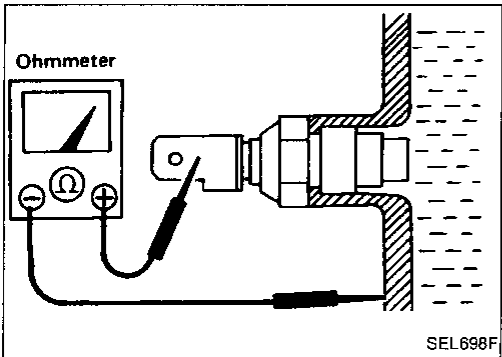
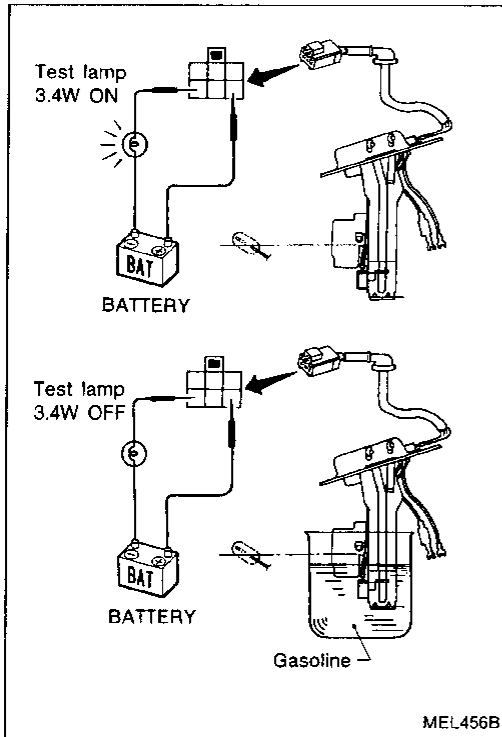
- For removal, refer to FE section.
- Check the resistance between terminals **G** and **E**.

Ohmmeter		Float position		Resistance value (Ω)
(+)	(-)	mm (in)		
G	E	*3	Full	48 (1.89)
		*2	1/2	112 (4.41)
		*1	Empty	172 (6.77)
				Approx. 4 - 6
				27 - 34
				78 - 85

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

Fuel Warning Lamp Sensor Check

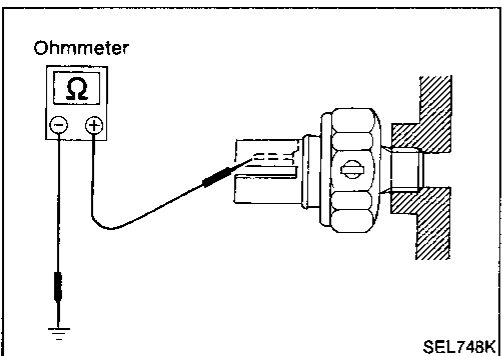
- It will take a short time for the bulb to light.



Thermal Transmitter Check

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

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

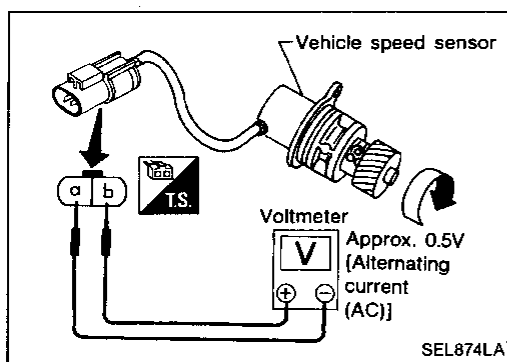


Oil Pressure Switch Check

	Oil pressure kPa (kg/cm ² , psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	NO
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1.4 - 2.8)	YES

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

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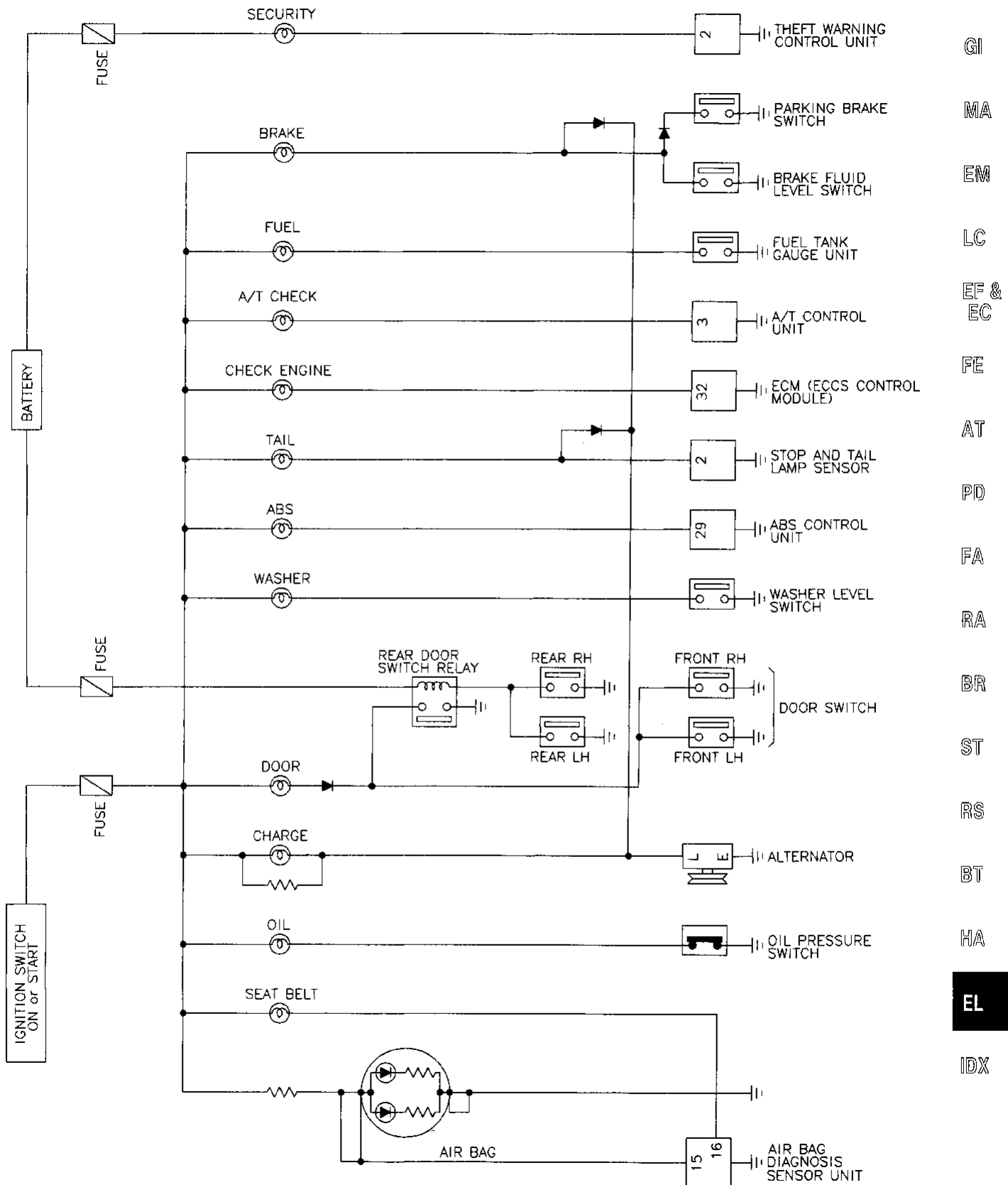


Vehicle Speed Sensor Signal Check

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

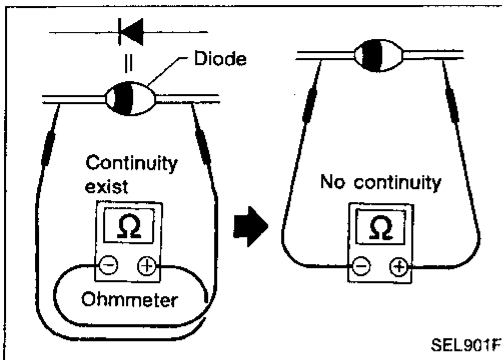
WARNING LAMPS AND CHIME

Warning Lamps/Schematic



MEL888D

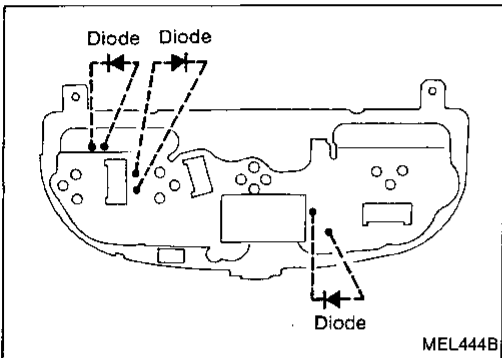
WARNING LAMPS AND CHIME



Diode Check

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

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

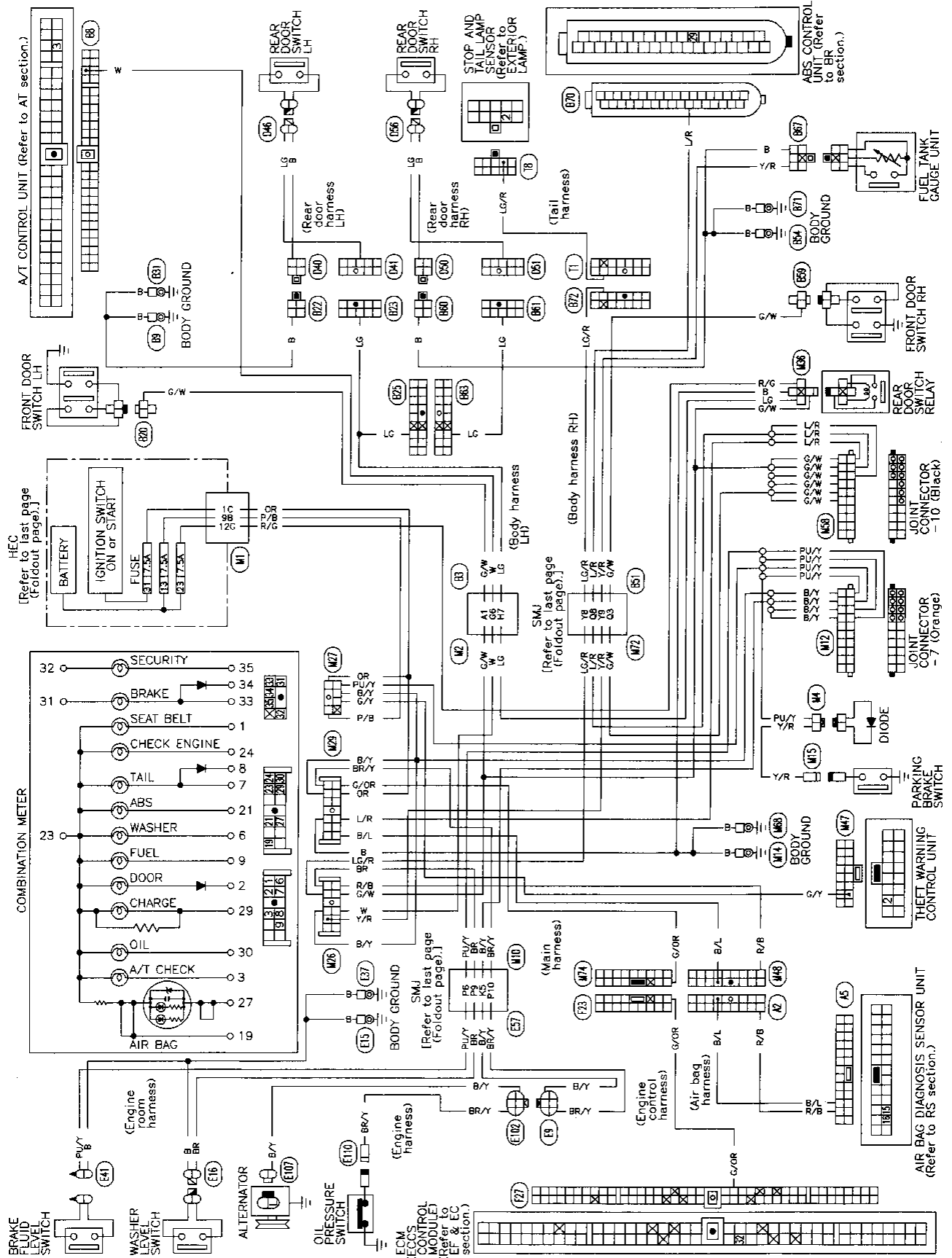


- Diodes for warning lamps are built into the combination meter printed circuit.

Refer to "Combination Meter" (EL-46).

WARNING LAMPS AND CHIME

Warning Lamps/Wiring Diagram



- GF
- MA
- EM
- LC
- EF & EC
- FE
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- EL**
- IDX

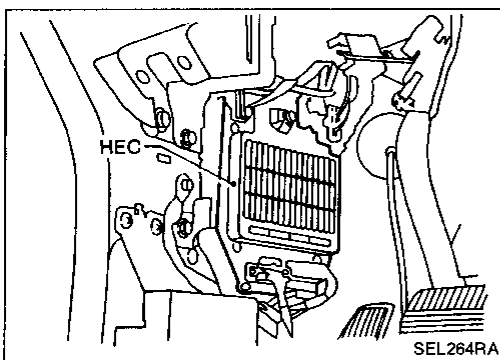
TIME CONTROL SYSTEM

Description

FUNCTION

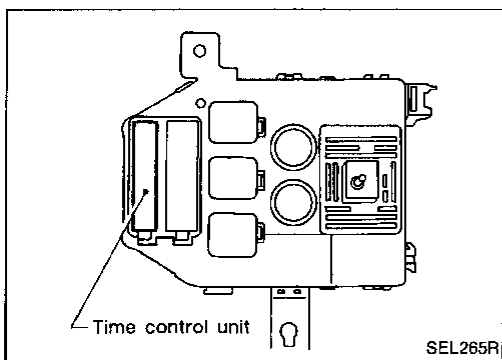
- Time control unit has the following functions.

Item		Details of control
1, 2	Intermittent wiper control	Regulates intermittent time from approximately 3 to 23 seconds depending on the intermittent wiper volume setting.
3	Washer and wiper combination control	Wiper is operated in conjunction with washer switch.
4	Light warning chime timer	When driver's door is opened with light switch ON and ignition switch OFF, warning chime sounds.
5	Ignition key warning chime timer	When driver's door is opened with ignition switch OFF, warning chime sounds.
6	Seat belt warning chime timer	Sounds warning chime for about 7 seconds if ignition switch is turned "ON" when seat belt switch is "ON" (seat belt is unfastened).
7	Seat belt warning lamp timer	Seat belt warning lamp blinks for about 7 seconds when ignition switch is turned to "ON".
8	Rear defogger timer	Rear defogger operates for about 15 minutes when defogger switch is ON.
9	Interior lamp timer	Fades out interior lamp when driver's side door is opened and closed.
10	Door key hole illumination	Illuminates for about 7 seconds when door outside handle is pulled.



UNIT LOCATION

- Time control unit locates behind HEC.



TIME CONTROL SYSTEM

NOTE

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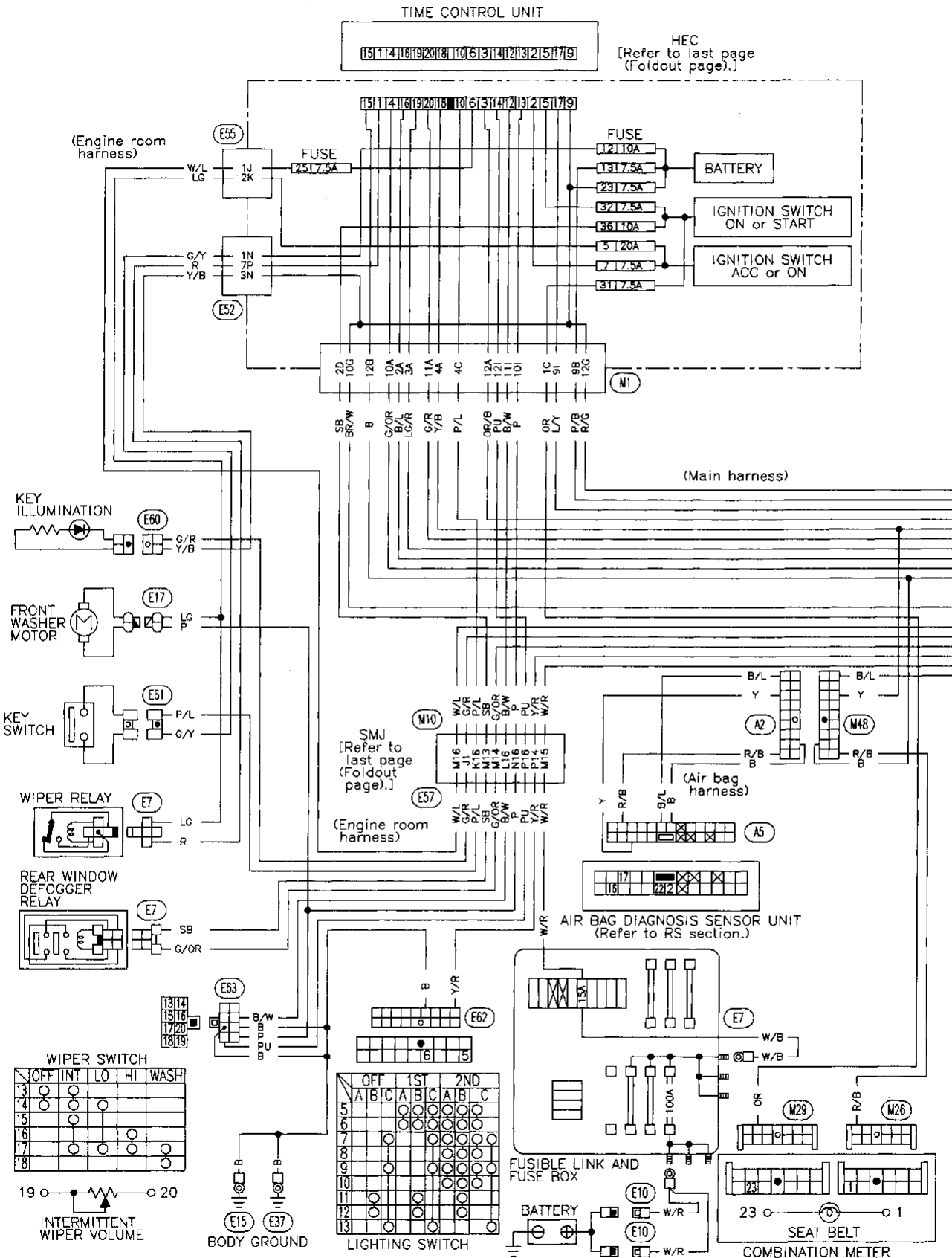
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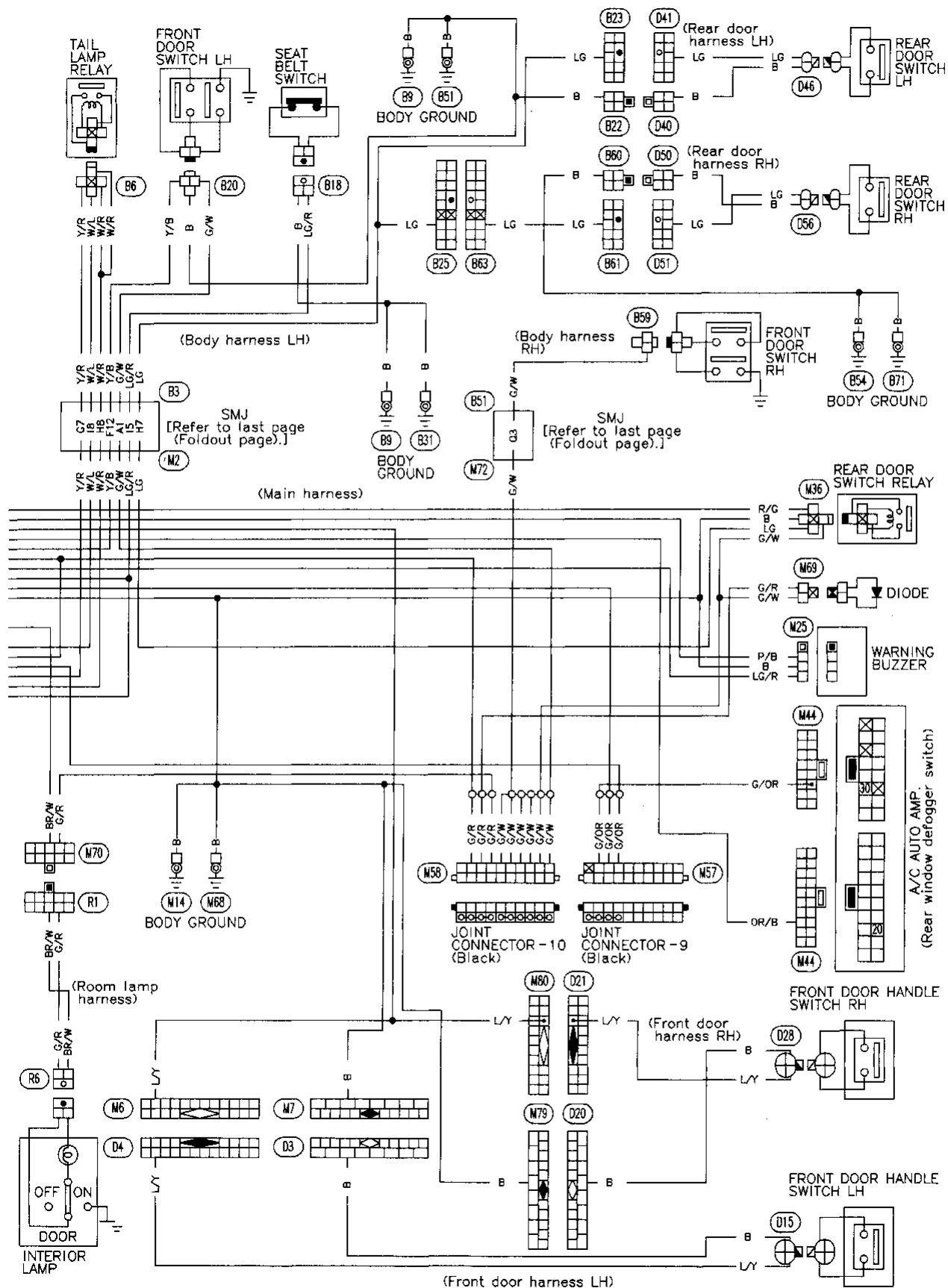
TIME CONTROL SYSTEM

Wiring Diagram



TIME CONTROL SYSTEM

Wiring Diagram (Cont'd)



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TIME CONTROL SYSTEM

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE		Preliminary Check			Main Power Supply and Ground Circuit Check	Diagnostic Procedure									
		EL-59	EL-59	EL-59		EL-61	EL-63	EL-64	EL-64	EL-65	EL-66	EL-67	EL-68	EL-68	EL-69
REFERENCE PAGE															
SYMPTOM		Procedure 1	Procedure 2	Procedure 3	Main power supply and Ground circuit	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	Diagnostic Procedure 9	
Wiper & washer	Intermittent wiper does not operate.				○	○									
	Intermittent time of wiper cannot be adjusted.						○								
	Wiper and washer activate individually but not in combination.							○							
Warning	Light warning chime does not activate.	○			○				○						
	Ignition key warning chime does not activate.		○		○					○					
	Seat belt warning chime does not activate.			○	○						○				
	Seat belt warning lamp does not come on, or does not go off after coming on.				○							○			
Rear defogger	Rear defogger does not activate, or go off after activating.				○								○		
Illumination	Interior lamp does not fade out after driver's door is closed.				○										○

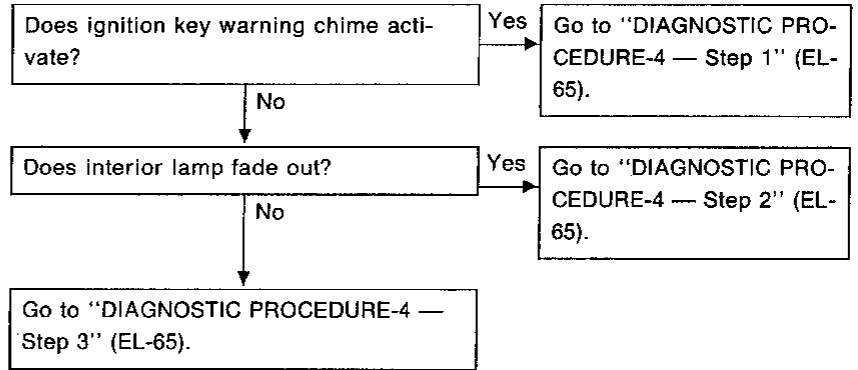
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

Procedure 1

- Light warning chime does not activate.



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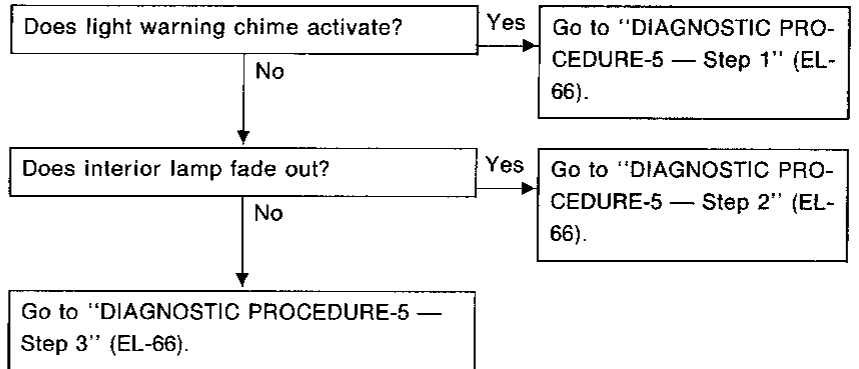
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Procedure 2

- Ignition key warning chime dose not activate.



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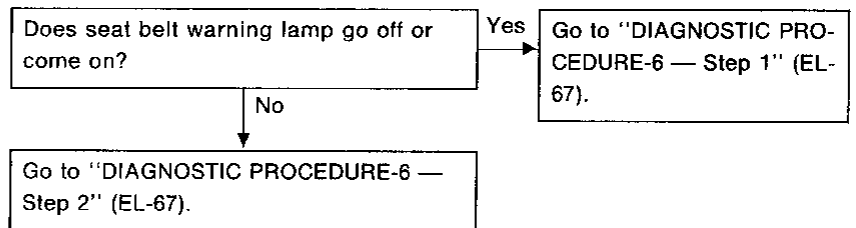
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Procedure 3

- Seat belt warning chime does not activate.



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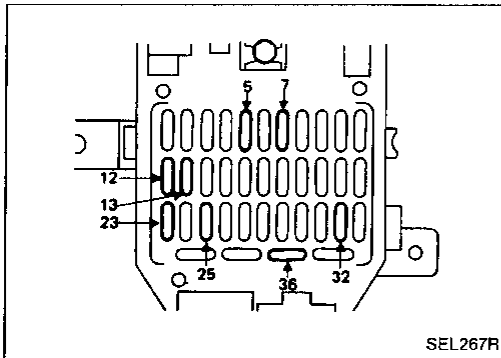
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

PREPARATIONS FOR TROUBLE DIAGNOSES

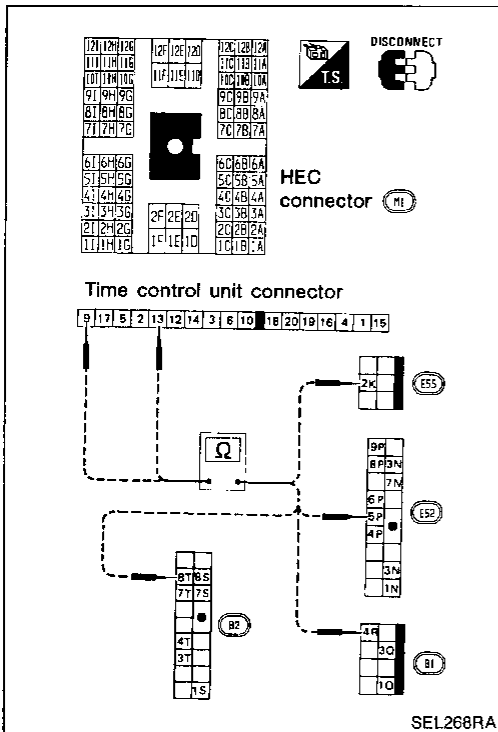
- Check for blown fuses. If necessary, repair or replace harness or related part.
- Check HEC internal circuit (continuity check) before diagnosing. This is because the time control unit is directly connected to the HEC which functions as an intermediate joint for input and output.
- Check the power supply and ground circuits of time control unit. Repair or replace harness if necessary.



FUSE CHECK

Power fuse check in HEC

Fuse	Amperage	Power supply system	Main part generating loads
#5	20A	ACC	Wiper motor
#7	7.5A	ACC	Power antenna, Audio
#12	10A	BAT	Key switch, Air bag, Theft warning system
#13	7.5A	BAT	Clock, A/T control, Remote control door lock
#23	7.5A	BAT	Interior lamp, Footwell lamp
#25	7.5A	BAT	Tail lamp, Clearance lamp
#32	7.5A	IGN	HICAS, Power steering



INTERNAL CIRCUIT CHECK IN HEC (Continuity check)

- Remove HEC from vehicle.
- Remove TCU from HEC.

TIME CONTROL SYSTEM

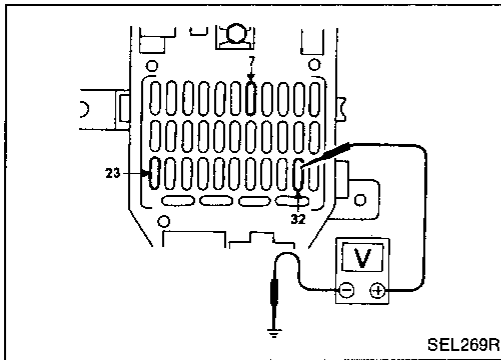
Trouble Diagnoses (Cont'd)

- Check for continuity between TCU connector and connector for the TCU output and input listed below:

TCU connector	Connector for TCU output and input	TCU connector	Connector for TCU output and input
1	7P (E52)	10	4C (M1)
2	2K (E55)	12	11I (M1)
3	12A (M1)	13	10I (M1)
4	10A (M1)	14	12I (M1)
5	2D (M1)	15	12B (M1)
6	1J (E55)	16	2A (M1)
9	1N (E52)	17	9I (M1)
9	3N (E52)	18	4A (M1)
9	10G (M1)	19	3A (M1)
9	9B (M1)	20	11A (M1)

When checking TCU connector terminals ⑤ and ②, apply 12V to (E54) connector terminals ①L and ②L while grounding (M1) connector terminal ⑫B.

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MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

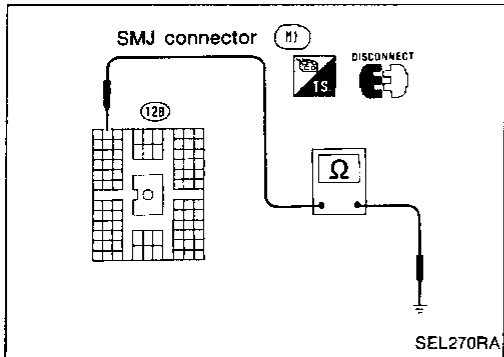
Main power supply

Check the voltage at the back side of each fuse.

Fuse	Battery voltage existence condition		
	Ignition switch position		
	OFF	ACC	ON
#23	Yes	Yes	Yes
#32	No	No	Yes
#7	No	Yes	Yes

Ground circuit

Terminals	Continuity
(12B) - Ground	Yes

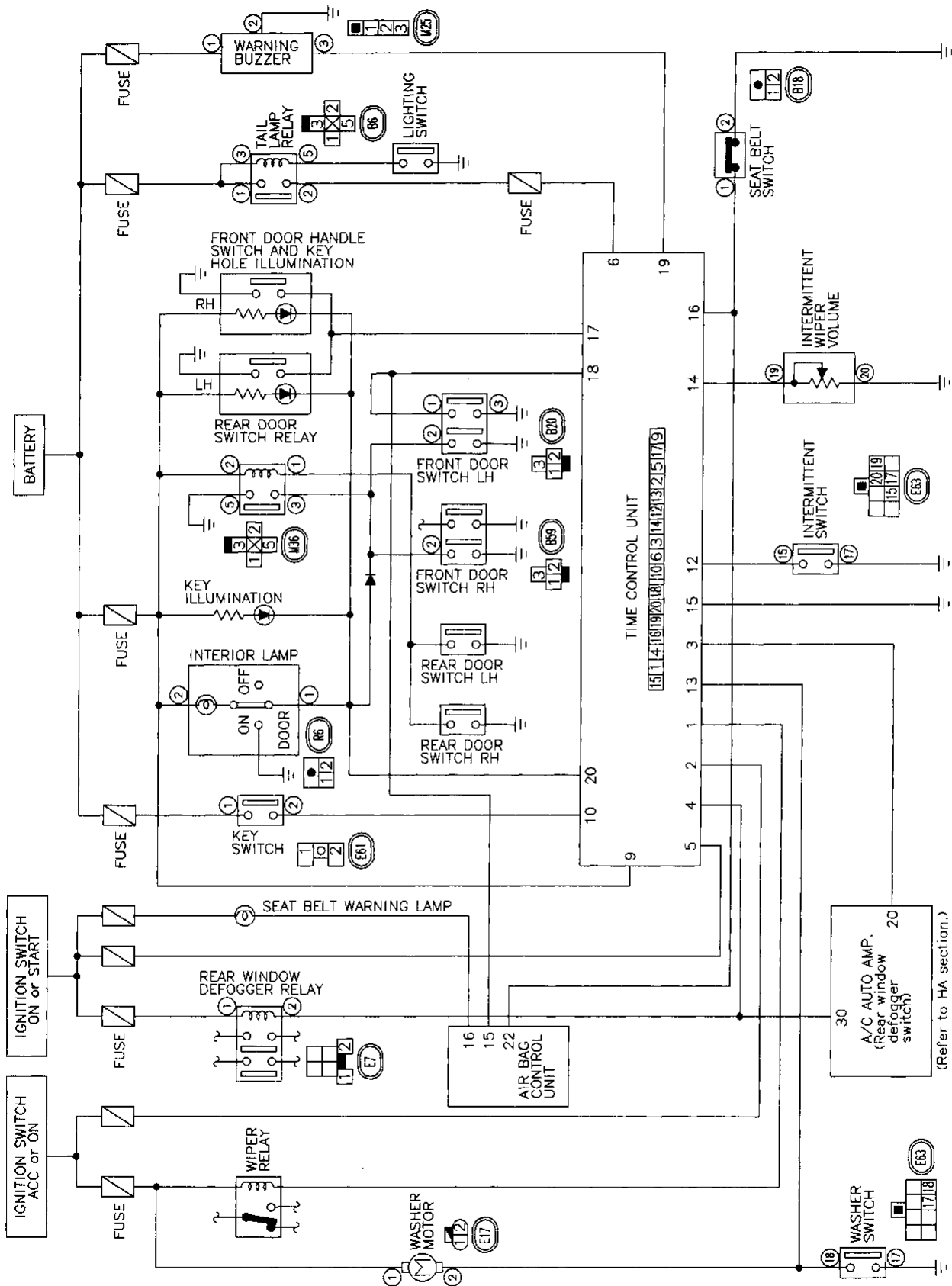


SEL270RA

TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK

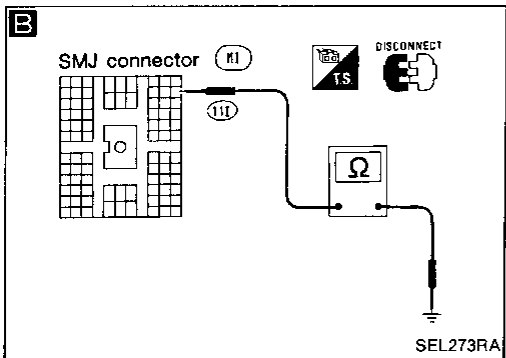
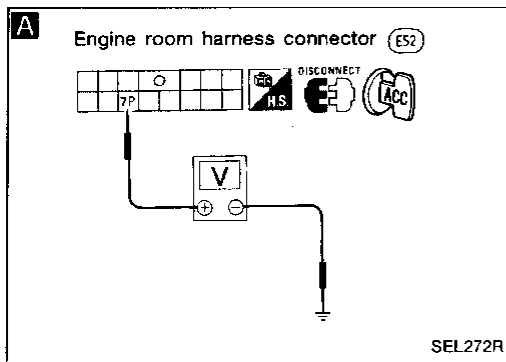


TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

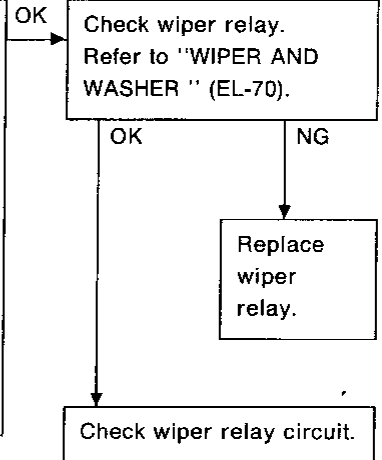


A

WIPER RELAY OUTPUT SIGNAL CHECK

- 1) Turn ignition switch to "ACC".
- 2) Turn wiper switch to "INT" or "OFF".
- 3) Measure voltage between (E52) connector terminal (7P) and ground.

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0 to 12 every 3 to 23 seconds



B

INTERMITTENT SWITCH INPUT SIGNAL CHECK

Measure resistance between SMJ connector (M1) terminal (11I) and ground. Turn wiper switch to "INT" or "OFF".

Condition of wiper switch	Continuity
OFF	No
INT	Yes



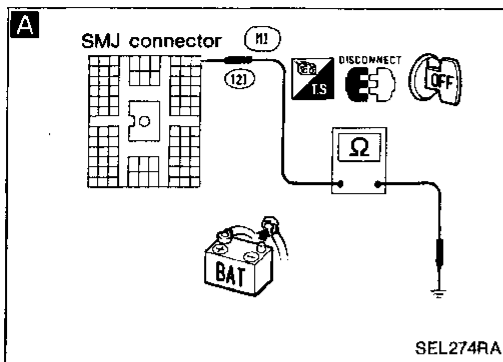
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.



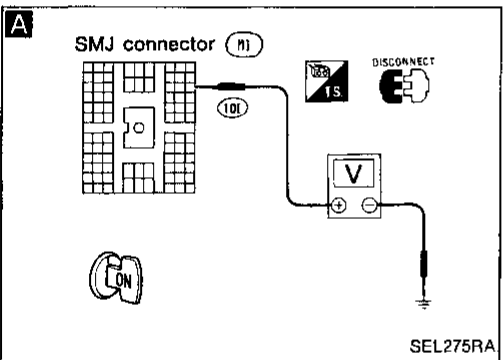
A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK
 Measure resistance between SMJ connector (M1) terminal (121) and ground while turning intermittent wiper volume.

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

OK → Replace control unit.

NG
 Check intermittent wiper volume.
 Check harness continuity between TCU and wiper switch.



DIAGNOSTIC PROCEDURE 3

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

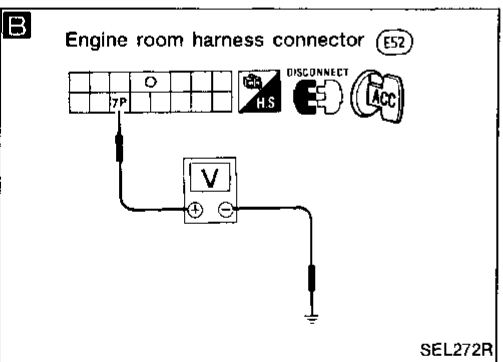
A

WASHER SWITCH INPUT SIGNAL CHECK
 1) Turn ignition switch to "ACC".
 2) Measure voltage between SMJ connector (M1) terminal (101) and ground.

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

NG → Check harness continuity between TCU and washer switch.

OK



B

WIPER RELAY OUTPUT SIGNAL CHECK
 Connect SMJ connector.
 Measure voltage between engine room harness connector (E52) terminal (7P) and ground after operating washer switch.
0V for approx. 3 seconds after washer has operated.

NG → Replace control unit.

OK
 Replace wiper relay.

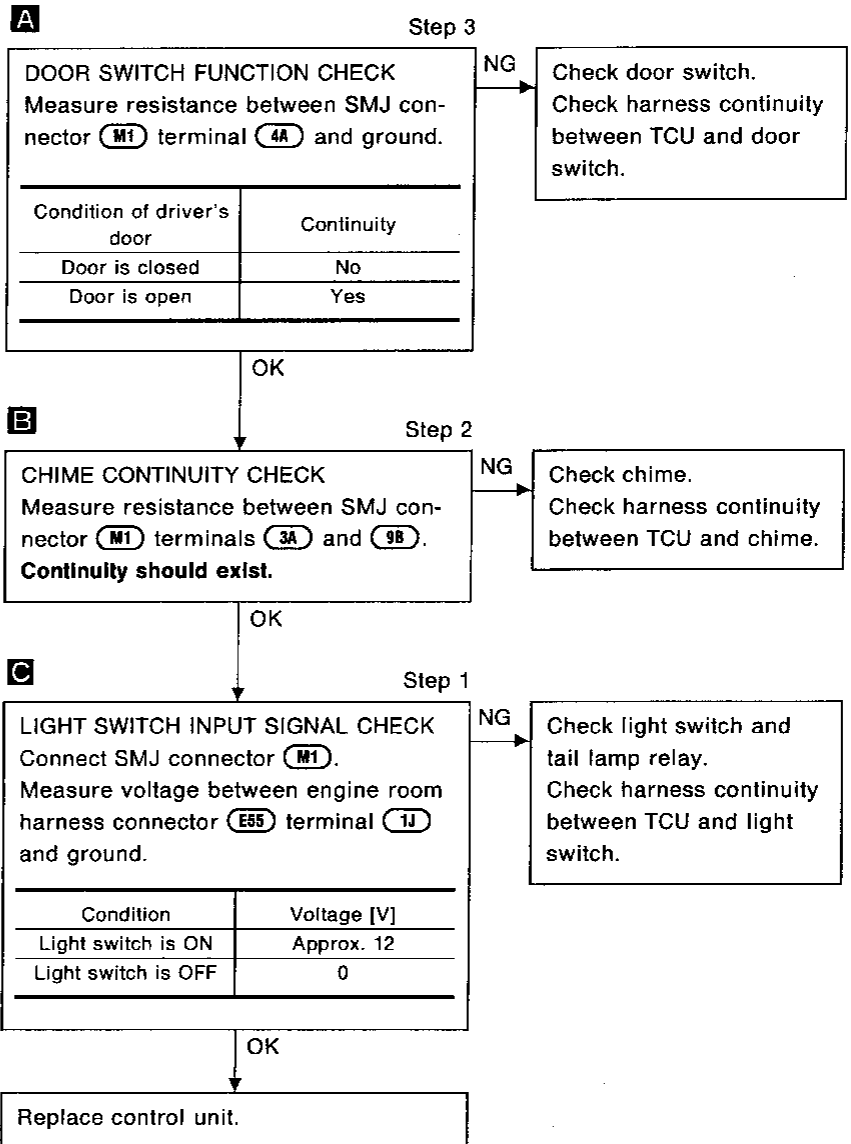
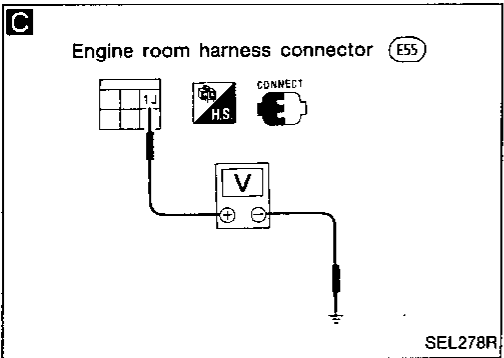
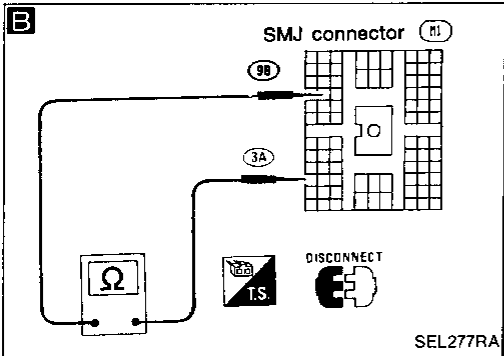
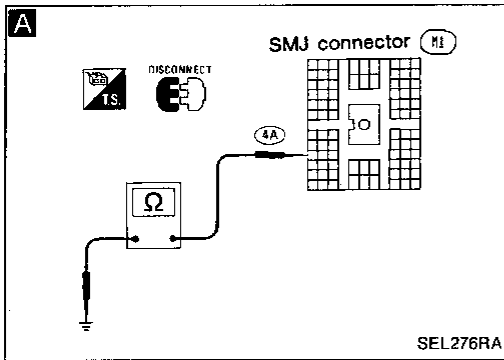
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Light warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 1" before referring to the following flow chart.



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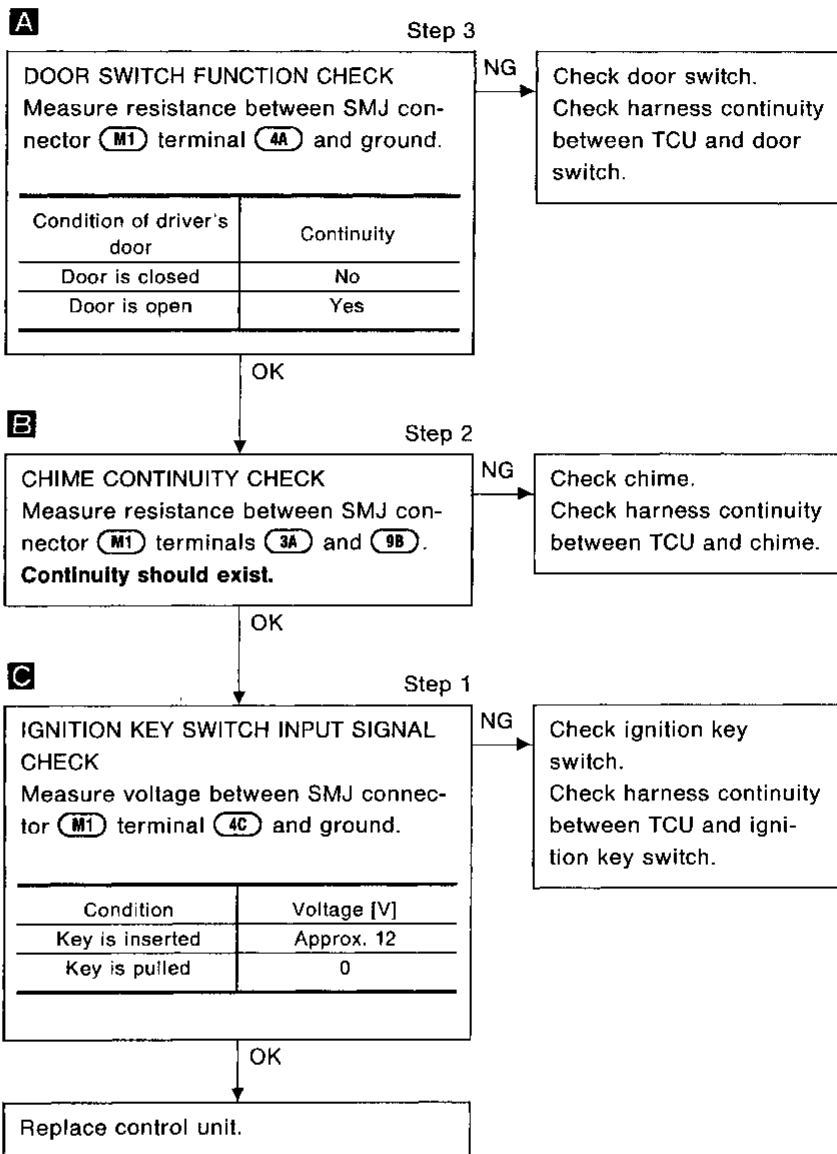
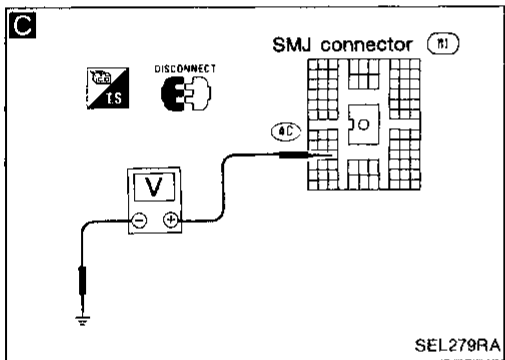
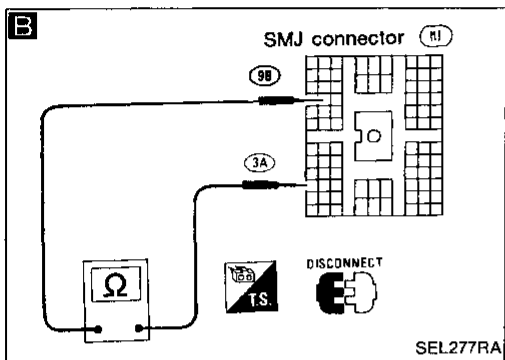
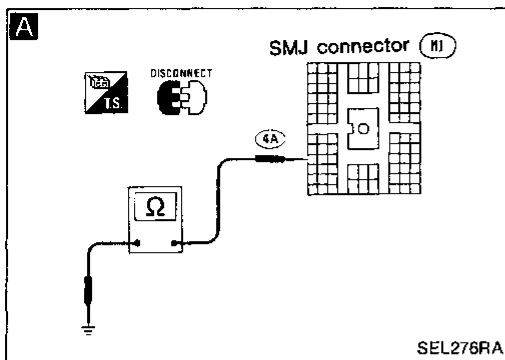
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Ignition key warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 2" before referring to the following flow chart.



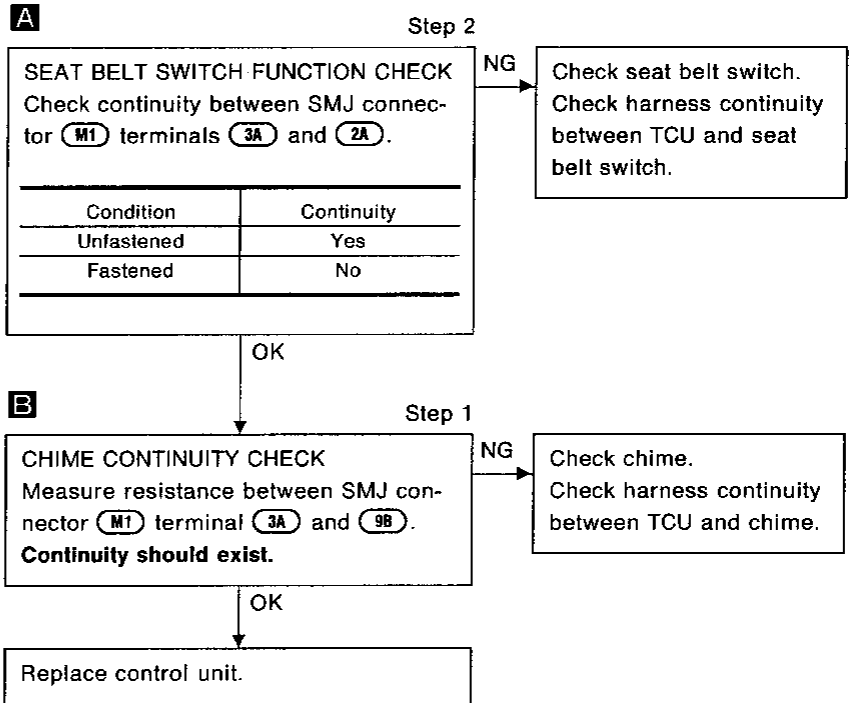
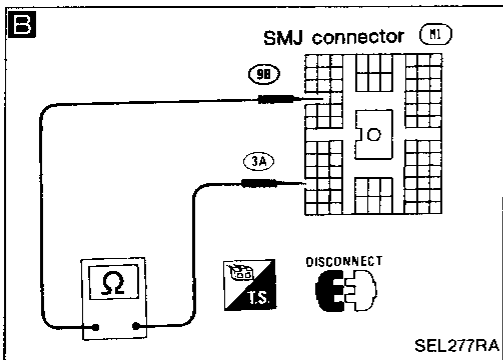
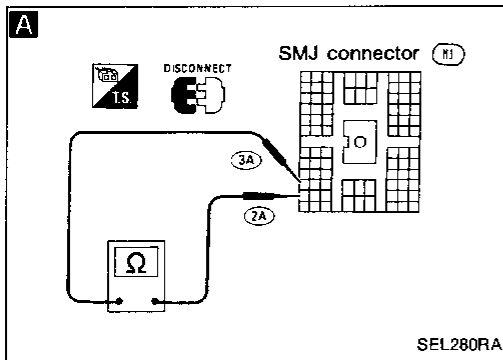
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: Seat belt warning chime does not activate.

- Perform "PRELIMINARY CHECK — Procedure 3" before referring to the following flow chart.



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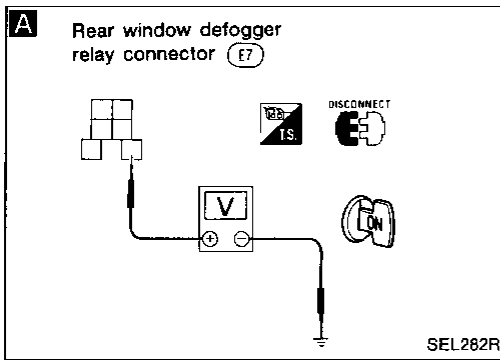
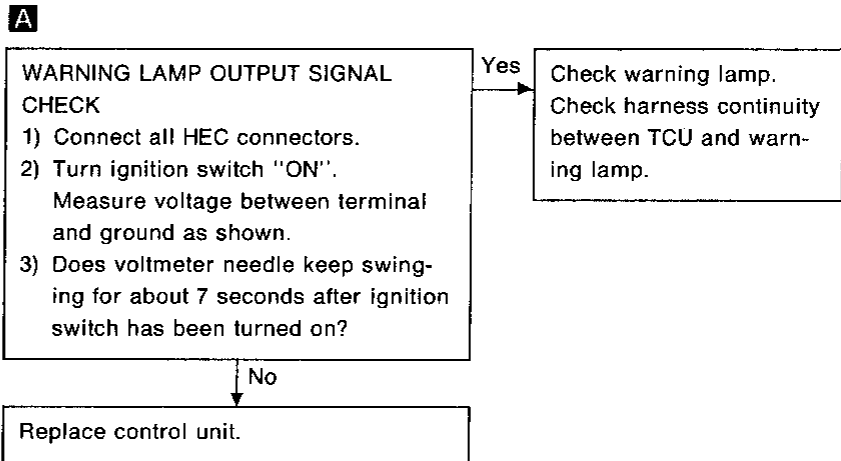
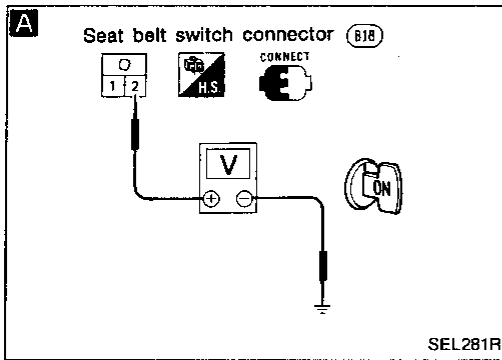
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

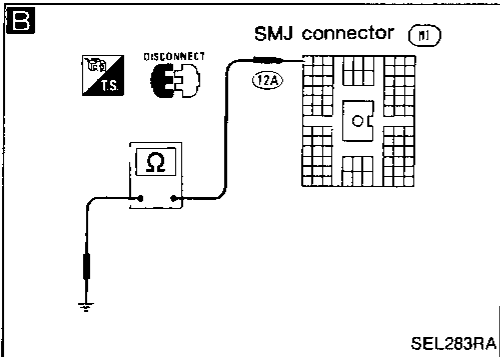
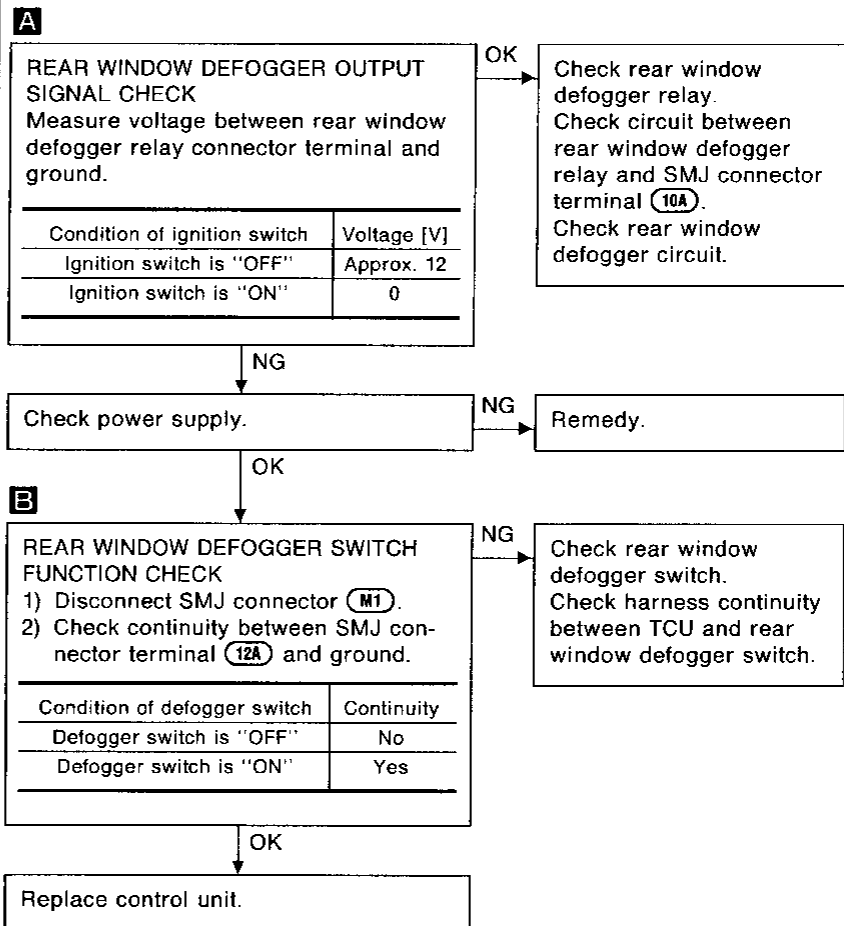
DIAGNOSTIC PROCEDURE 7

SYMPTOM: Seat belt warning lamp does not come on, or does not go off after coming on.



DIAGNOSTIC PROCEDURE 8

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

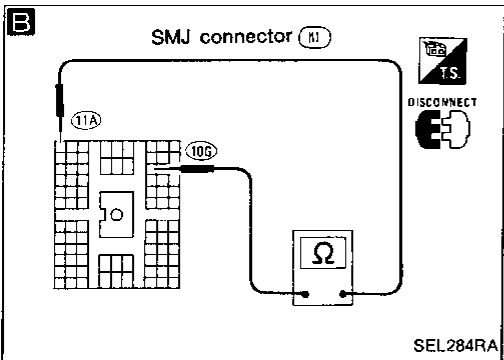
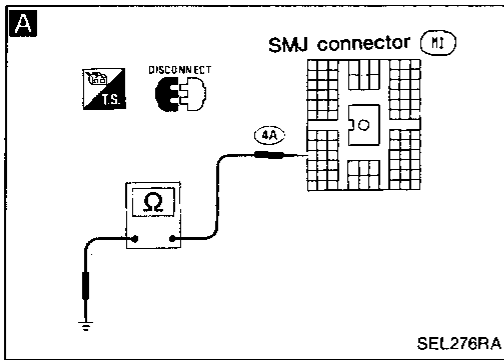


TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 9

SYMPTOM: Interior lamp does not fade out after driver's door is closed.



A

DOOR SWITCH FUNCTION CHECK
Measure resistance between SMJ connector (M1) terminal (4A) and ground.

NG → Check door switch. Check harness continuity between TCU and door switch.

Condition of driver's door	Continuity
Door is closed	Yes
Door is open	No

B

INTERIOR LAMP SIGNAL CHECK
Measure resistance between SMJ connector (M1) terminal (11A) and (10G).

OK → Check interior lamp and harness between TCU and interior lamp.

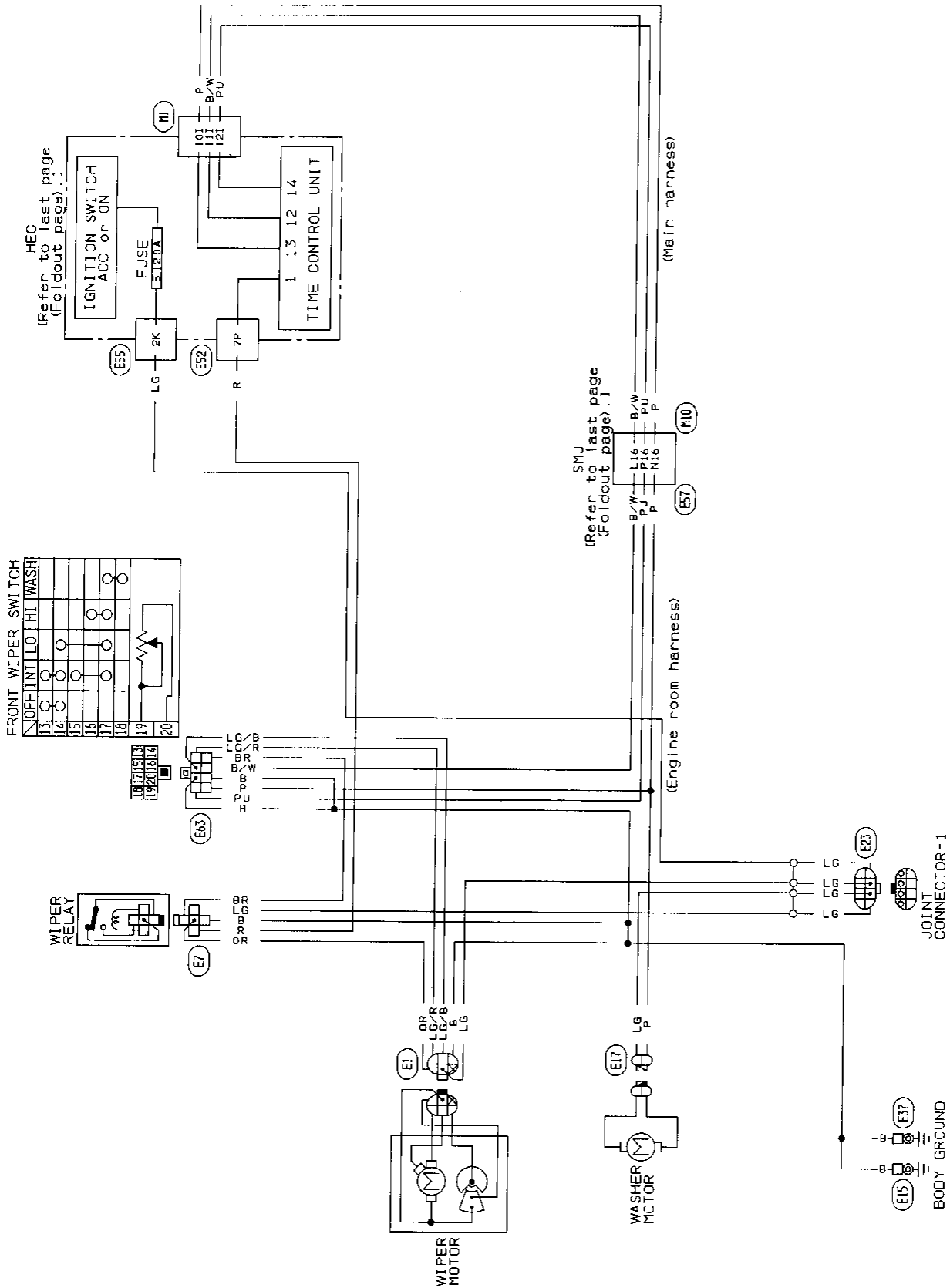
Interior lamp switch position	Continuity
Interior lamp: Door	Yes
Interior lamp: OFF	No

NG → Replace TCU.

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WIPER AND WASHER

Wiper and Washer/Wiring Diagram



WIPER AND WASHER

Installation

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L₁" 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".

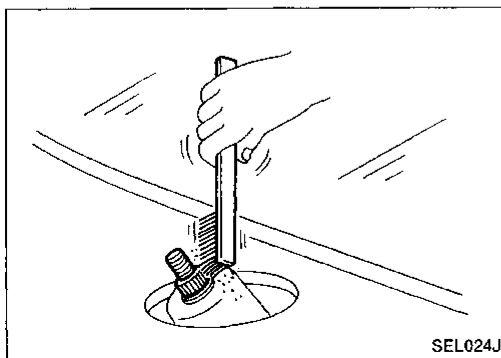
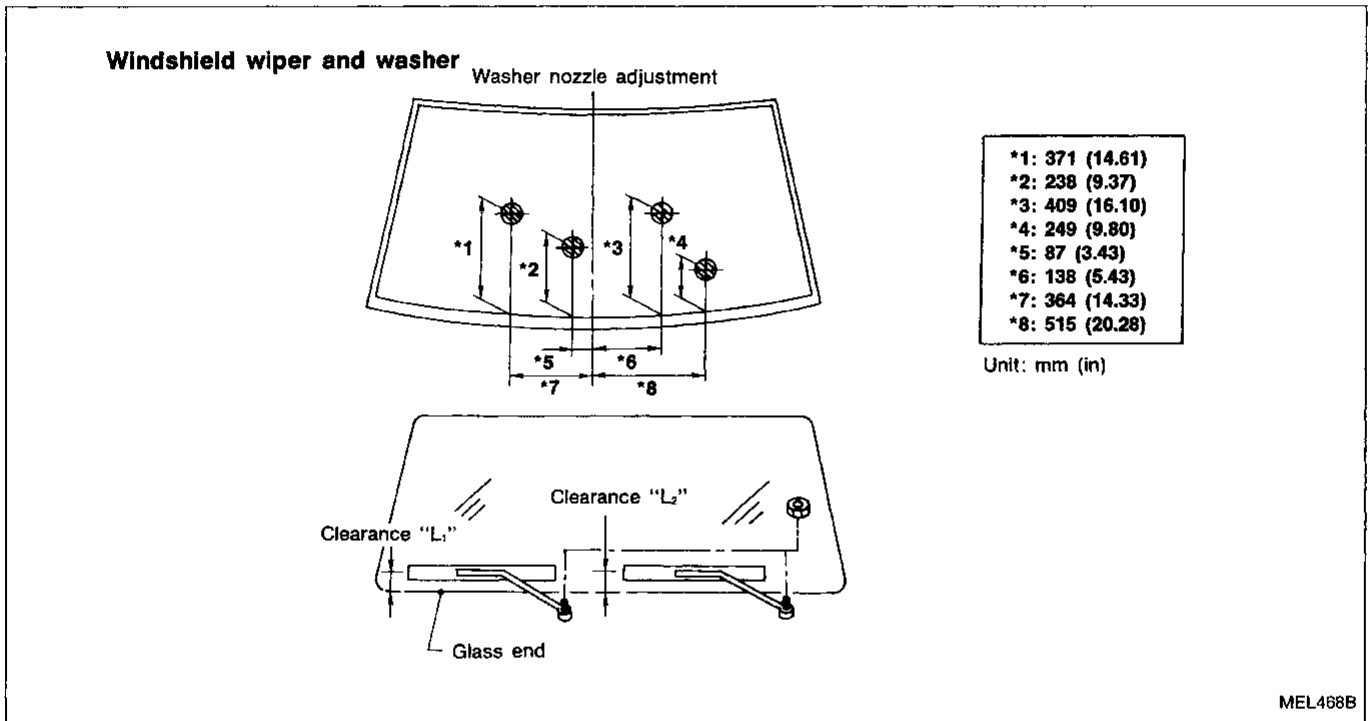
Clearance "L₁": 29 - 44 mm (1.14 - 1.73 in)

Clearance "L₂": 22 - 37 mm (0.87 - 1.46 in)

- Tighten windshield wiper arm nuts to specified torque.

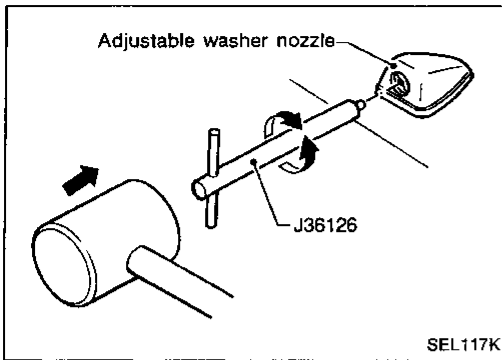
Windshield wiper:

17 - 23 N·m (1.7 - 2.3 kg·m, 12 - 17 ft·lb)



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

WIPER AND WASHER

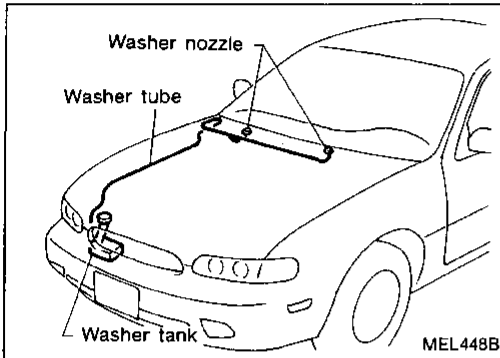


Washer Nozzle Adjustment

- Using Tool J36126, adjust windshield washer nozzle to correct its spray pattern.

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

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



WIPER AND WASHER

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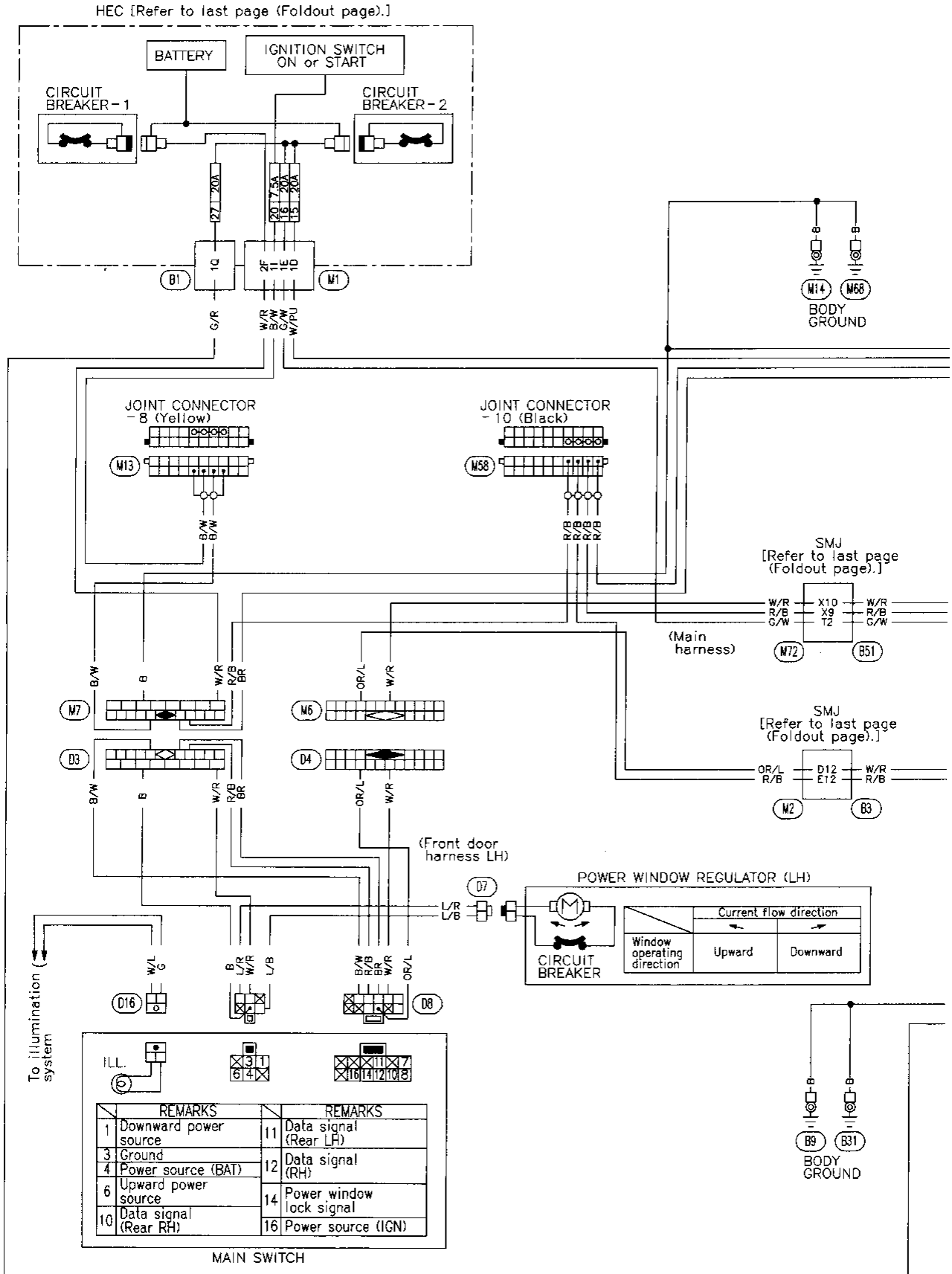
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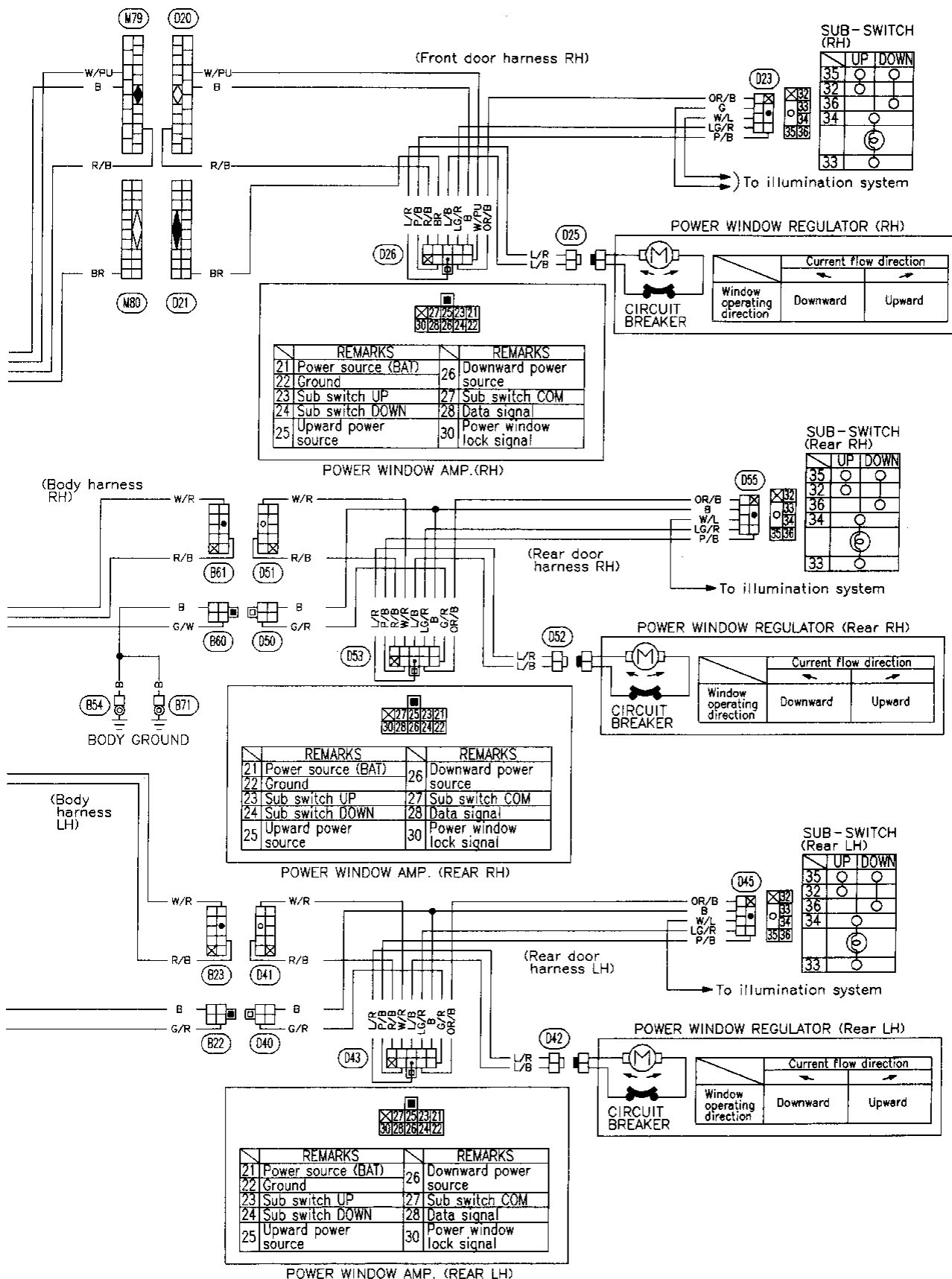
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POWER WINDOW

Wiring Diagram



POWER WINDOW Wiring Diagram (Cont'd)



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POWER WINDOW

Trouble Diagnoses

SYMPTOM CHART

Procedure	Main Power Supply and Ground Circuit Check			Diagnostic Procedure				Electrical Components Inspection	
	EL-77	EL-77	EL-77	EL-79	EL-80	EL-81	EL-82	EL-83	EL-83
Reference Page									
SYMPTOM	Procedure 1	Procedure 2	Procedure 3	Procedure 1	Procedure 2	Procedure 3	Procedure 4	Power window motor	Power window sub-switch
All power windows cannot be operated.	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Passenger power windows cannot be operated.		<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driver's power window cannot be operated but other windows can be operated.				<input type="radio"/>				<input type="radio"/>	
Passenger power windows cannot be operated by main switch but can be operated by passenger's switches.							<input type="radio"/>		

POWER WINDOW

Trouble Diagnoses (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK Procedure 1

Main power supply

Terminals	Battery voltage existence
④ - Ground	Yes

GI

MA

EM

Ground circuit

Terminals	Continuity
③ - Ground	Yes

LC

EF &
EC

FE

AT

Procedure 2

Power supply for power window amp. (front and rear passengers)

Terminals	Battery voltage existence
②① - Ground	Yes

FA

RA

BR

Ground circuit for power window amp. (front and rear passengers)

Terminals	Continuity
②② - Ground	Yes

ST

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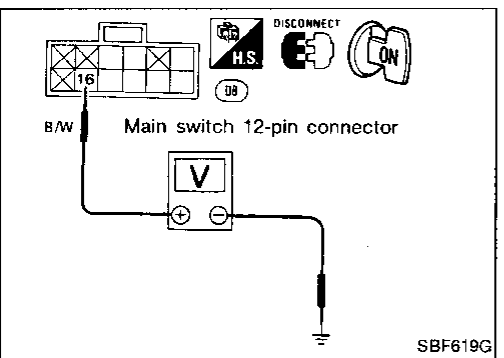
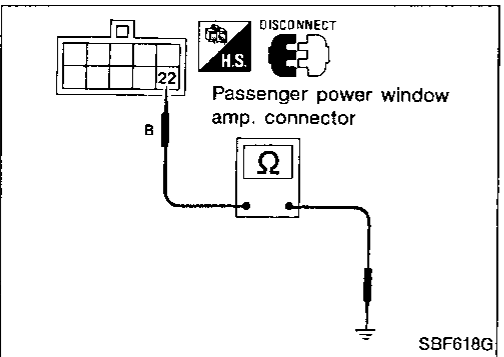
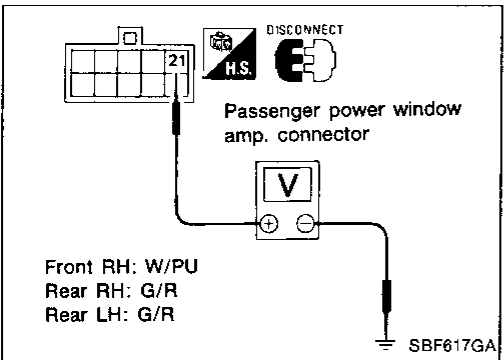
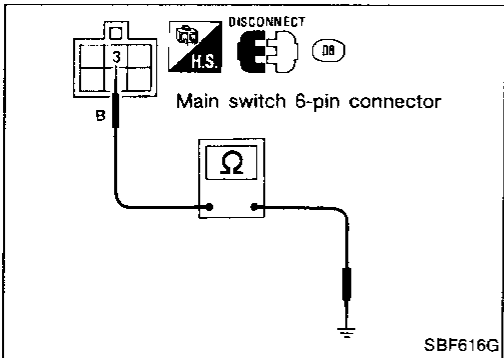
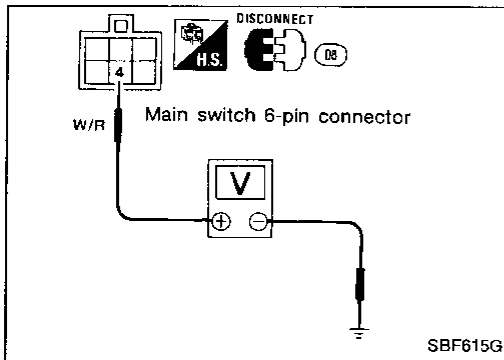
EL

Procedure 3

Power supply for ignition signal

Terminals	Ignition switch	Battery voltage existence
⑩ - Ground	ON	Yes

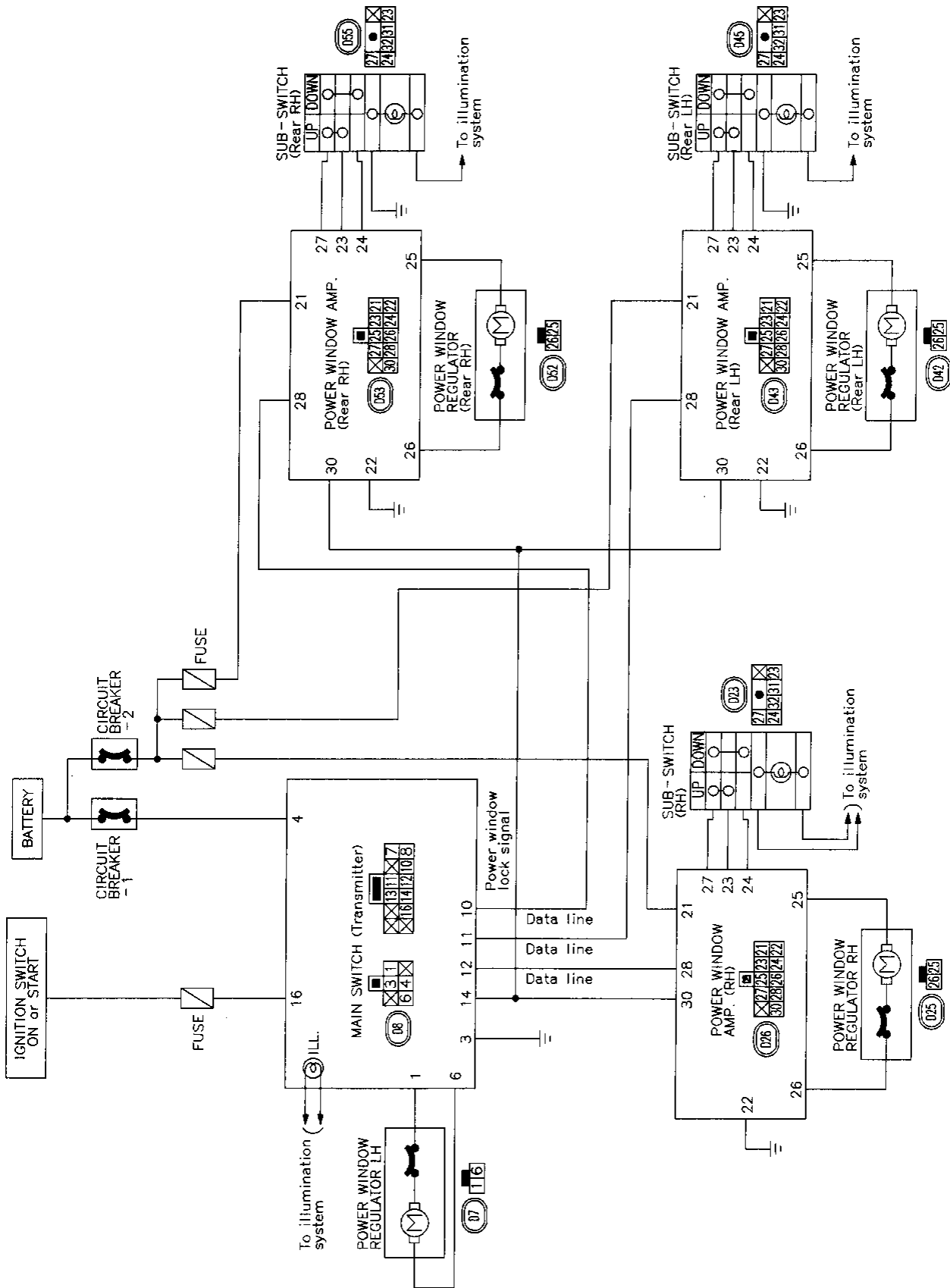
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POWER WINDOW

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



MEL893D

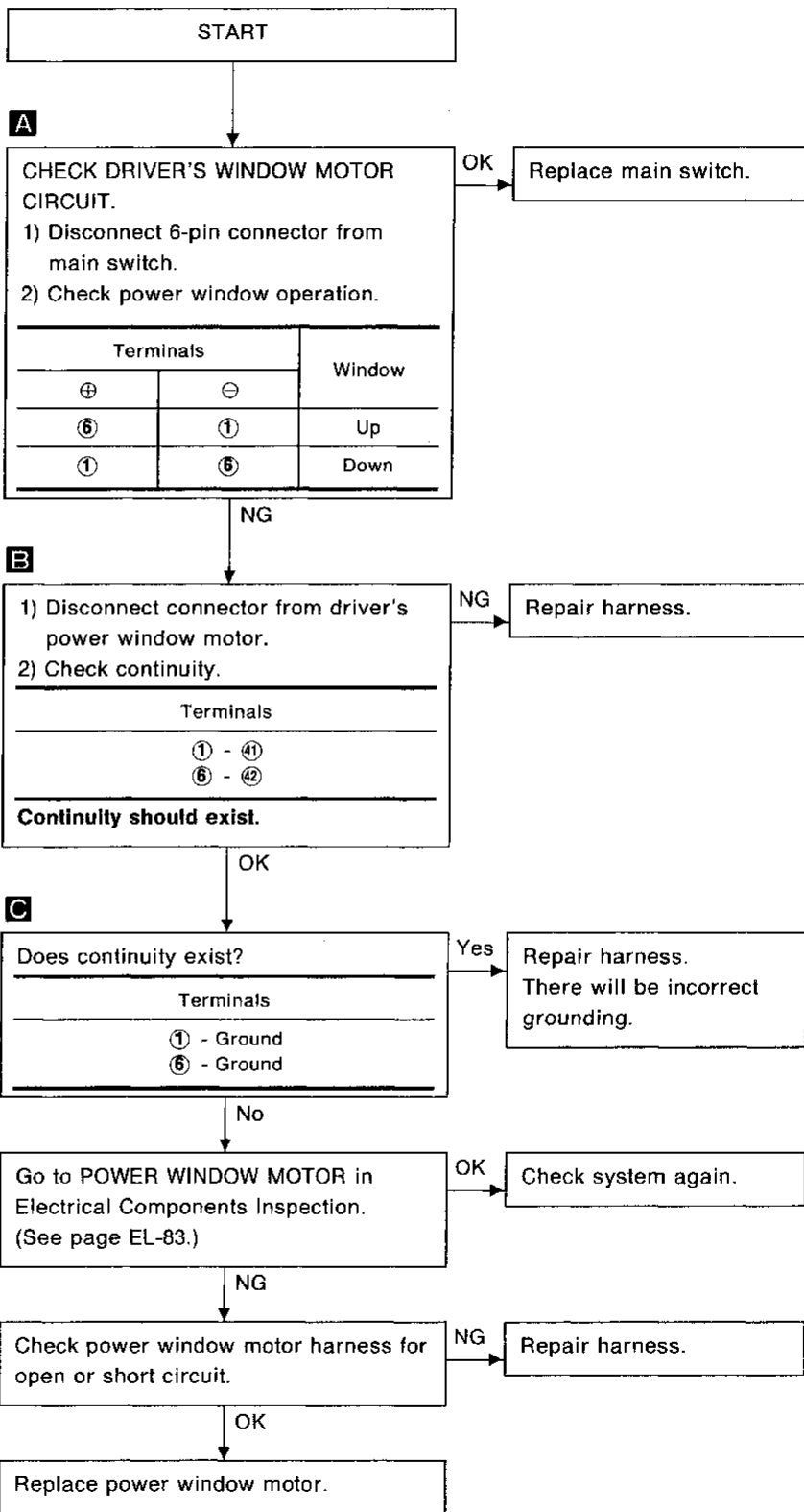
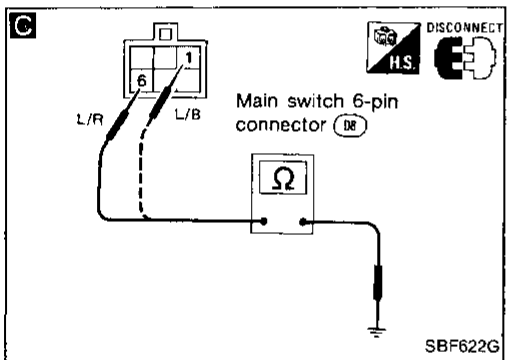
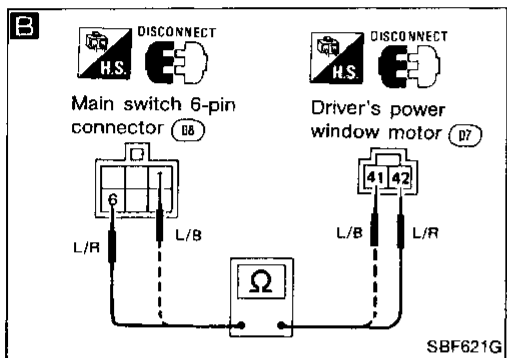
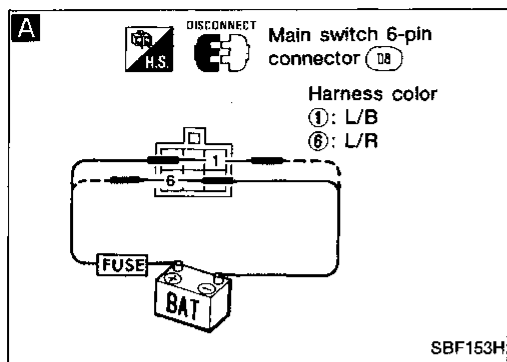
POWER WINDOW

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM:

Driver's power window cannot be operated but other power windows can be operated.



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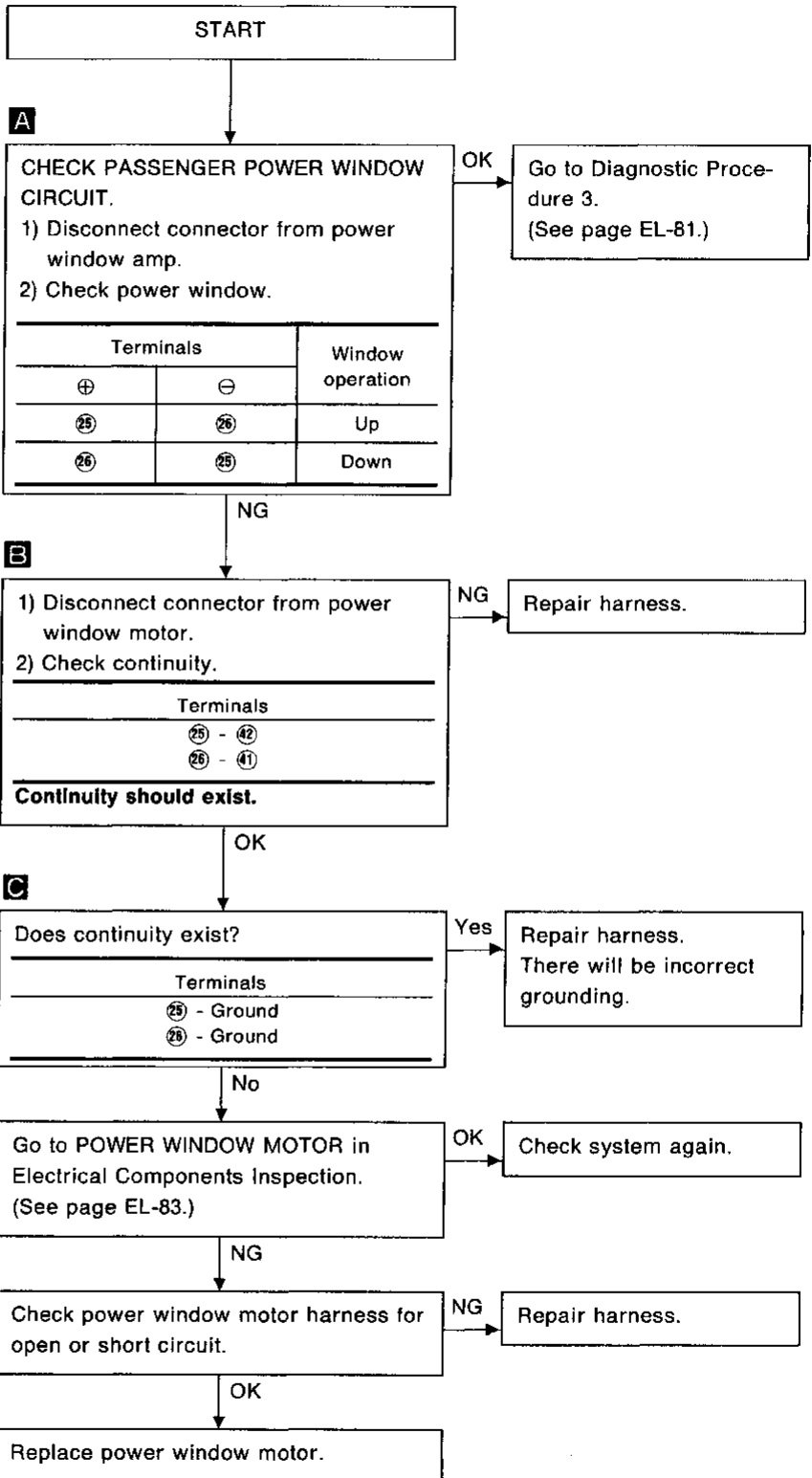
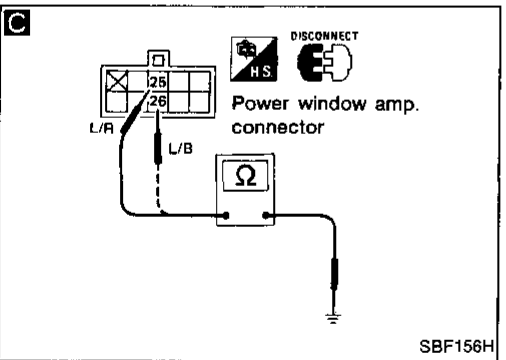
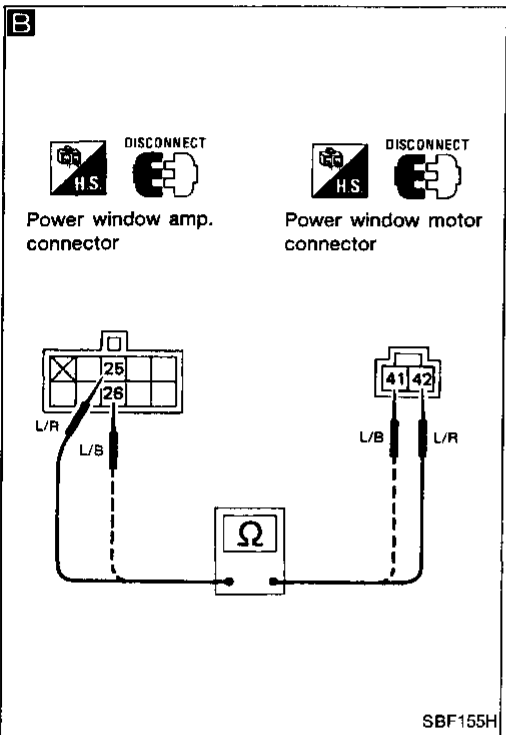
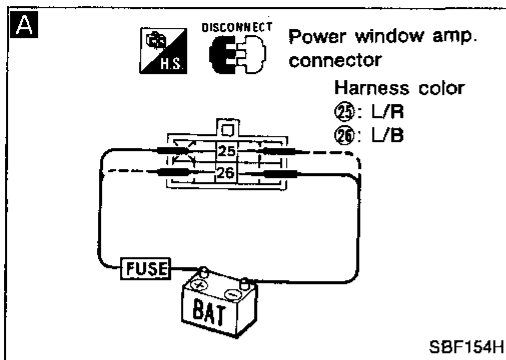
POWER WINDOW

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM:

Passenger power windows cannot be operated.



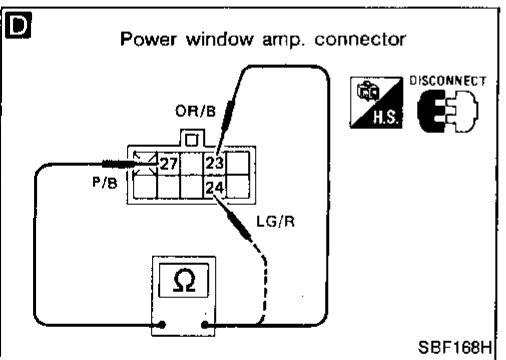
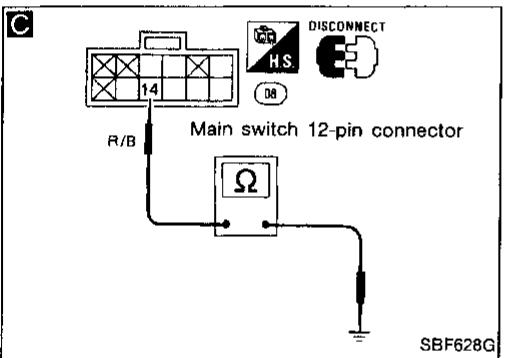
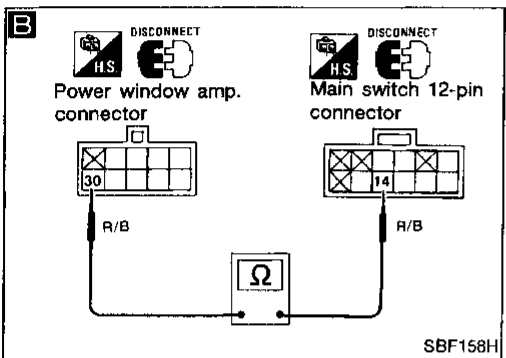
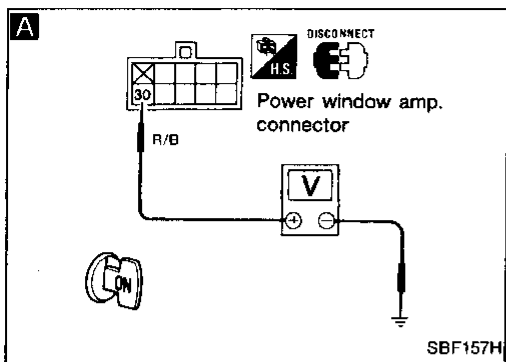
POWER WINDOW

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM:

Passenger power windows cannot be operated but driver's power window can be operated.



A

CHECK POWER WINDOW LOCK SIGNAL CIRCUIT.

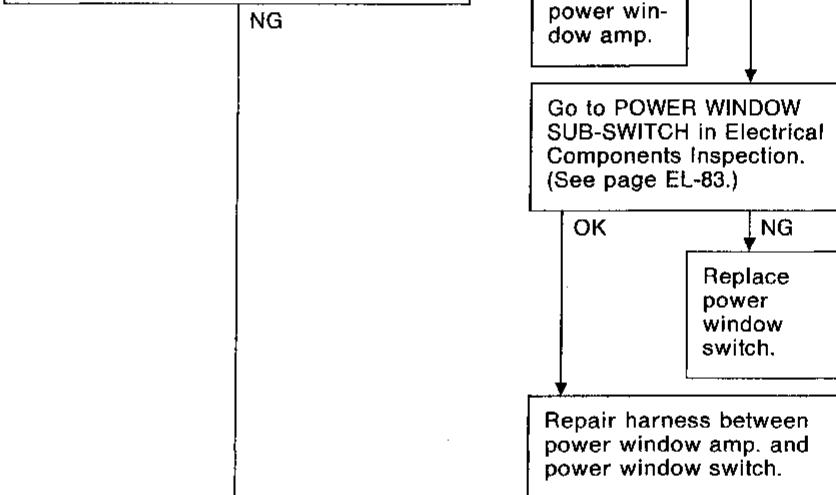
- 1) Disconnect connector from power window amp.
- 2) Check battery voltage between terminal 30 for each connector and ground while ignition switch is "ON".

Terminals	Power window lock switch	Battery voltage exists
30 - Ground	ON	No
	OFF	Yes

D

Check continuity.

Terminals	Passenger switches	Continuity
23 - 27	Up	Yes
	Down	No
24 - 27	Up	No
	Down	Yes

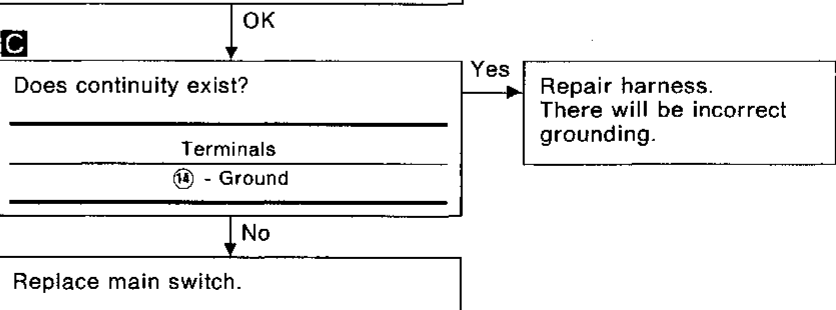


B

- 1) Disconnect 12-pin connector from main switch.
- 2) Check continuity between terminal 30 for each connector and 14 for main switch connector.

Terminals
30 - 14

Continuity should exist.



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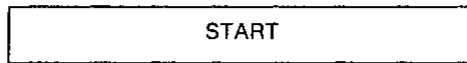
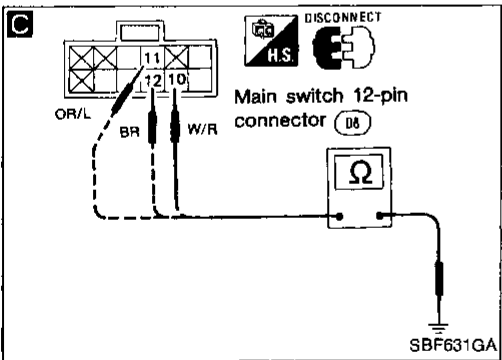
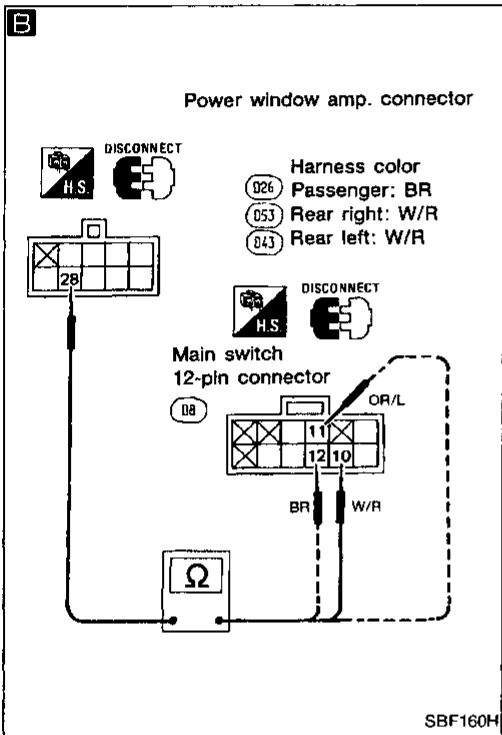
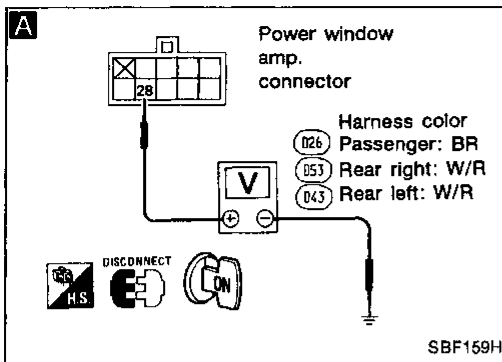
POWER WINDOW

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM:

Passenger power windows cannot be operated by main switch but can be operated by passenger's switches.



A

CHECK DATA LINE SIGNAL CIRCUIT.

- 1) Disconnect connectors from power window amp.
- 2) Check voltage while power window lock switch is "OFF".

Terminals	Main switch operation	Voltage
⑳ - Ground	Up	Above 12V
	Down	Approx. 4V
	No operation	Approx. 0V

OK → Replace switch.

NG

B

- 1) Disconnect 12-pin connector from main switch.
- 2) Check continuity.

	Terminals
Passenger	⑫ - ㉚
Rear left	⑪ - ㉚
Rear right	⑩ - ㉚

Continuity should exist.

NG → Repair harness.

OK

C

Does continuity exist?

	Terminals
Passenger	⑫ - Ground
Rear left	⑪ - Ground
Rear right	⑩ - Ground

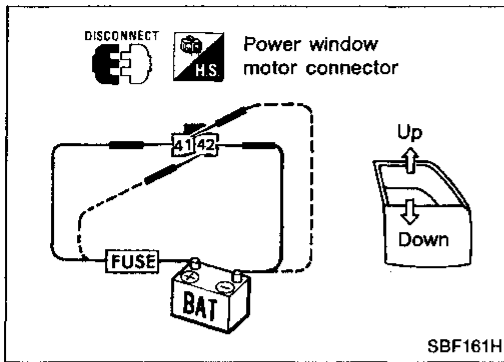
Yes → Repair harness. There will be incorrect grounding.

No → Replace main switch.

POWER WINDOW

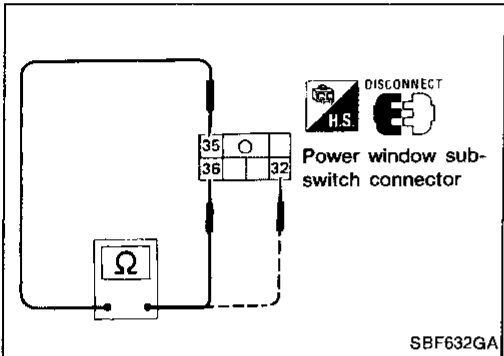
Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION



Power window motor

Terminals		Operation
+	-	Operation
41	42	Downward
42	41	Upward



Power window sub-switch

Terminals	Condition	Continuity
32 - 35	UP	Yes
	Down	No
36 - 35	UP	No
	Down	Yes

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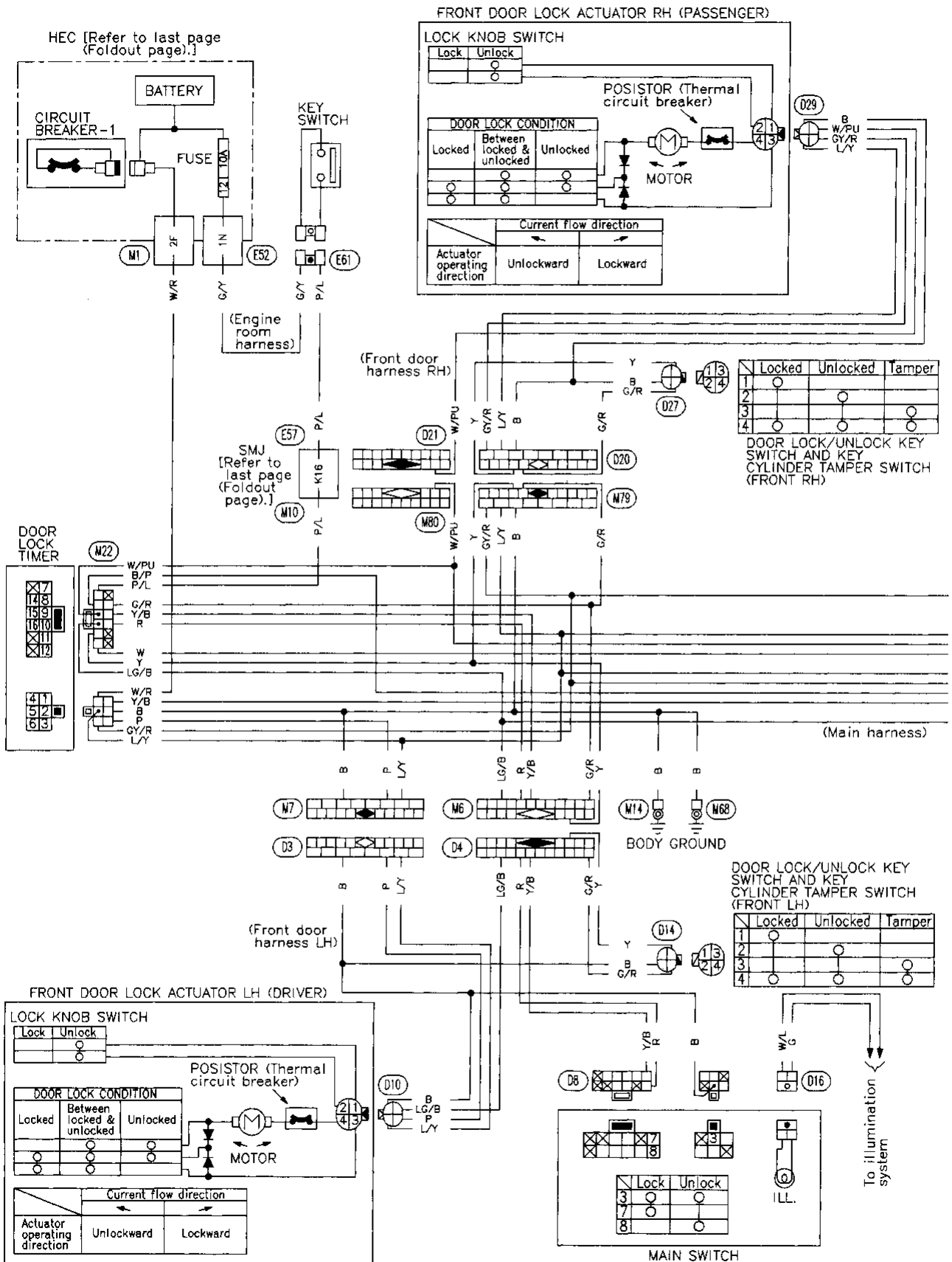
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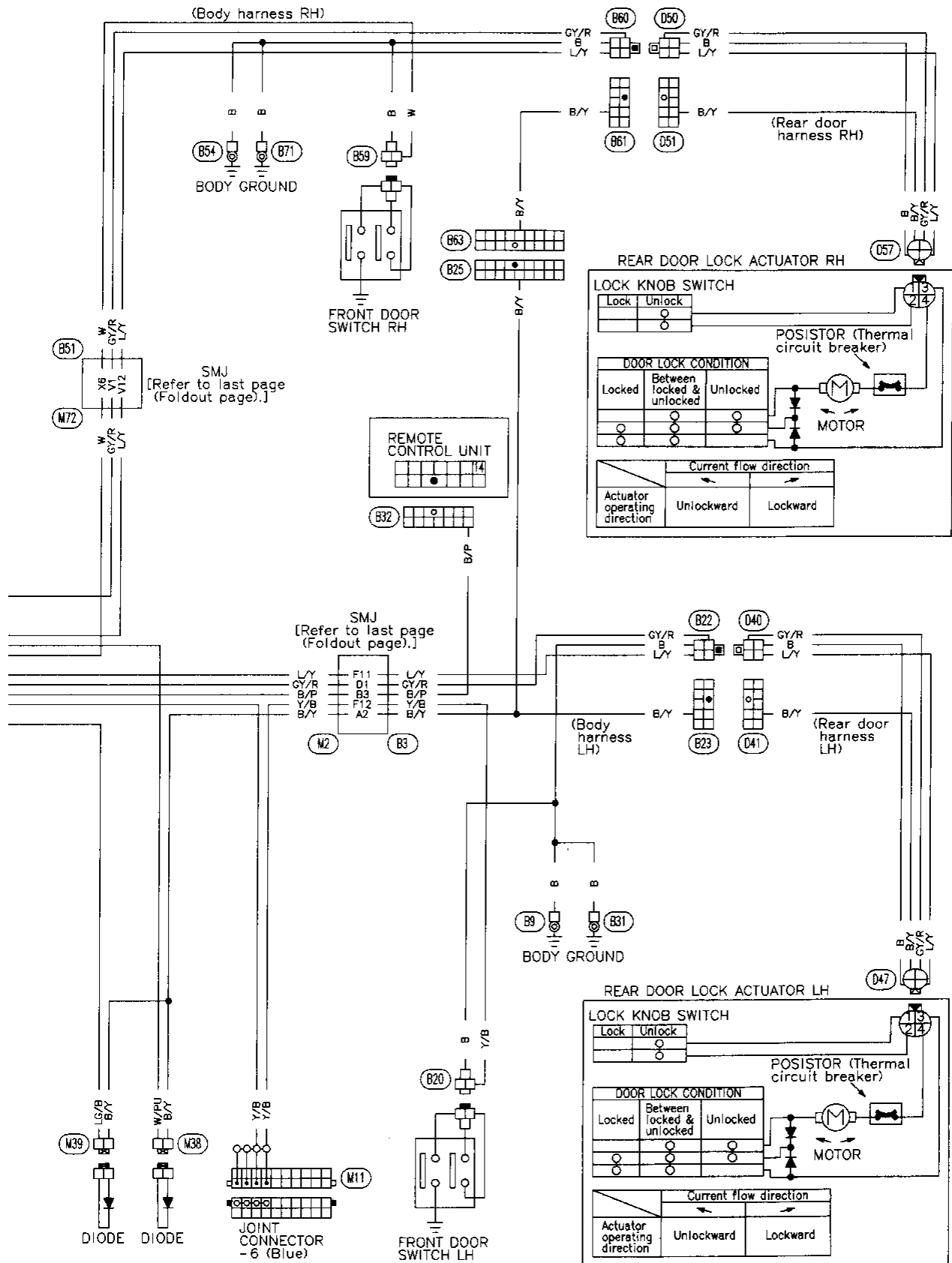
POWER DOOR LOCK

Wiring Diagram



POWER DOOR LOCK

Wiring Diagram (Cont'd)



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POWER DOOR LOCK

Trouble Diagnoses

DOOR LOCK TIMER INSPECTION

- Carry out the following inspections:

(1) Check power source and ground.

(2) Check input signals.

If the input signal is NG, go to ELECTRICAL COMPONENTS INSPECTION.

(3) Check output signals.

If the input signal is OK, and the output signal is NG, replace the door lock timer.

If the input signal and output signal are OK, check door lock actuator in ELECTRICAL COMPONENTS INSPECTION.

Lock & unlock operation by lock knob or main switch

(The voltages are approximate values.)

	Connections		Operations			
			Lock knob switch LH	Lock knob switch RH	Main switch	
			Unlock → Lock	Unlock → Lock	N → Unlock	N → Lock
1	Power source		12V	12V	12V	12V
5	Ground		Ground	Ground	Ground	Ground
7	Input signals	Key switch	Either key switch or door switches are off. (Key is not in the ignition or all doors are closed.)			
4		Door switch LH				
12		Door switch RH				
10		Lock knob switch LH	ON (Ground) → OFF (Open)	—	—	—
9		Lock knob switch RH	—	ON (Ground) → OFF (Open)	—	—
14		Door lock key switch	—	—	—	—
16		Lock & unlock switch (lock)	—	—	—	OFF (Open) → ON (Ground)
15		Lock & unlock switch (unlock)	—	—	OFF (Open) → ON (Ground)	—
2	Output signals	Door lock actuator (Lock power source)	0V → 12V → 0V (Approx. 1.0 sec.)	0V → 12V → 0V (Approx. 1.0 sec.)	0V	0V → 12V → 0V (Approx. 1.0 sec.)
3		Door lock actuator (Unlock power source)	0V	0V	0V → 12V → 0V (Approx. 1.0 sec.)	0V

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

Unlock operation by door lock key switch

(The voltages are approximate values.)

	Connections		Operations			
			Door lock key switch LH			
			N → Unlock → N → Unlock		Unlock → Lock	
1	Lock source	12V	12V	12V		
5	Ground	Ground	Ground	Ground		
7	Input signal	Key switch	Either key switch or door switches are off. (Key is not in the ignition or all doors are closed.)			
4		Door switch LH				
12		Door switch RH				
10		Lock knob switch LH	—	—	ON (Ground) → OFF (Open)	
9		Lock knob switch RH	—	—	—	
14		Door lock key switch	OFF (Open) → ON (Ground) → OFF (Open) → ON (Ground) → OFF (Open)		OFF (Open)	
16		Lock & unlock switch (lock)	—	—	—	
15		Lock & unlock switch (unlock)	—	—	—	
2	Output signal	Door lock actuator (Lock power source)	0V	0V	0V → 12V → 0V (Approx. 1.0 sec.)	
3		Door lock actuator (Unlock power source)	0V	0V → 12V → 0V (Approx. 1.0 sec.)	0V	

- The second unlock signal of door lock key switch is counted when it is within approximately 4 seconds of the first signal.
- Lock operation by key is mechanically transmitted to the lock knob switch.
- Operation of door lock key switch RH is the same as LH.

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POWER DOOR LOCK

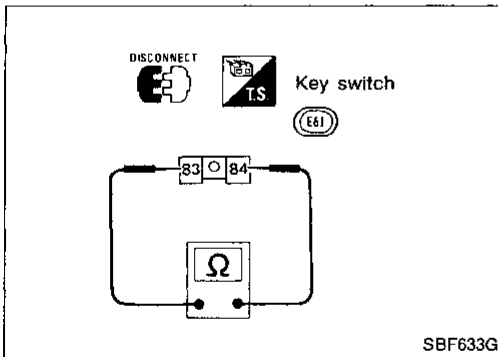
Trouble Diagnoses (Cont'd)

Key reminder operation

(The voltages are approximate values.)

	Connections	Operations						
		Lock knob switch LH			Main switch			
		Unlock	→ Lock	→ Automatically unlocked	N	→ Lock	→ Automatically unlocked	
1	Power source	12V			12V			
5	Ground	0V			0V			
7	Key switch	ON (12V) — Key is in the ignition.						
4	Door switch LH	ON (Ground) — Either door is open.						
12	Door switch RH							
10	Lock knob switch LH	ON (Ground)	→ OFF (Open)	→ ON (Ground)	—			
9	Input signal	Lock knob switch RH	—				—	
14	Door lock key switch	—				—		
16	Lock & unlock switch lock	—				OFF (Open)	→ ON (Ground)	→ OFF (Open)
15	Lock & unlock switch unlock	—				—		
2	Output signal	Door lock actuator (Lock power source)	0V → 12V → 0V (Approx. 0.3 sec.)			0V → 12V → 0V (Approx. 0.3 sec.)		
3	Door lock actuator (Unlock power source)	0V → 12V → 0V (Approx. 1.4 sec.)			0V → 12V → 0V (Approx. 1.4 sec.)			

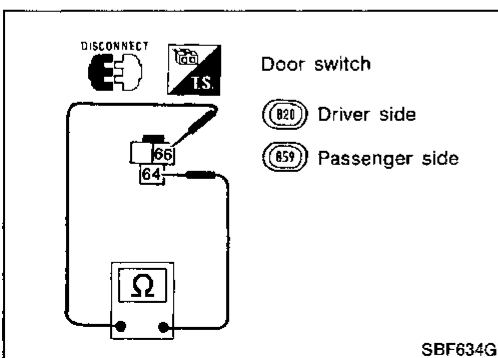
● Operation of lock knob switch RH is the same as LH.



ELECTRICAL COMPONENTS INSPECTION

Key switch

Terminals	Condition	Continuity
83 - 84	Key is in the ignition.	Yes
	Key is not in the ignition.	No



Door switch

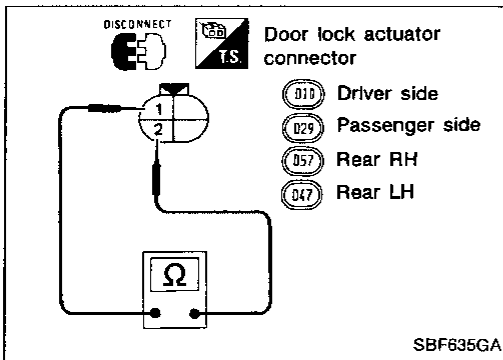
Terminals	Condition	Continuity
64 - 66	Door is closed.	No
	Door is open.	Yes

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

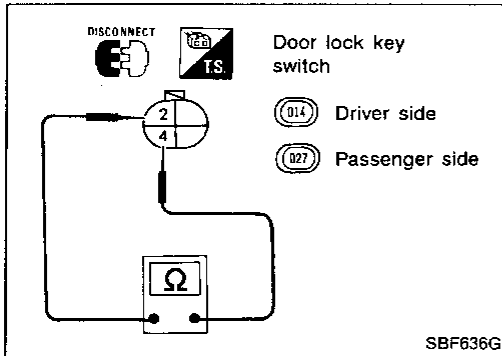
Lock knob switch

Terminals	Condition	Continuity
① - ②	Lock	No
	Unlock	Yes



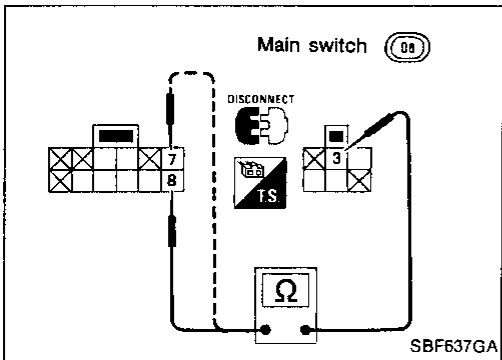
Door unlock key switch

Terminals	Operation	Continuity
② - ④	Key is turned toward unlock	Yes
	Except above	No



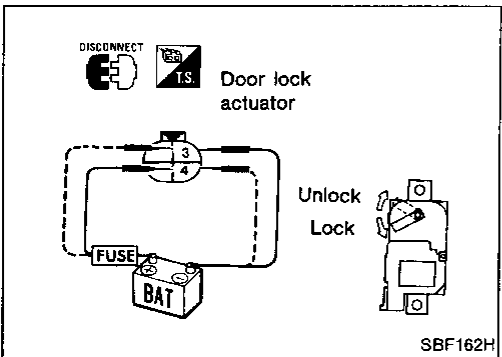
Lock and unlock switch

Terminals	Operation	Continuity
③ - ⑦	Lock	Yes
	Neutral and unlock	No
③ - ⑧	Unlock	Yes
	Neutral and unlock	No



Door lock actuator

Terminals		Operation
⊕	⊖	
③	④	Lock
④	③	Unlock



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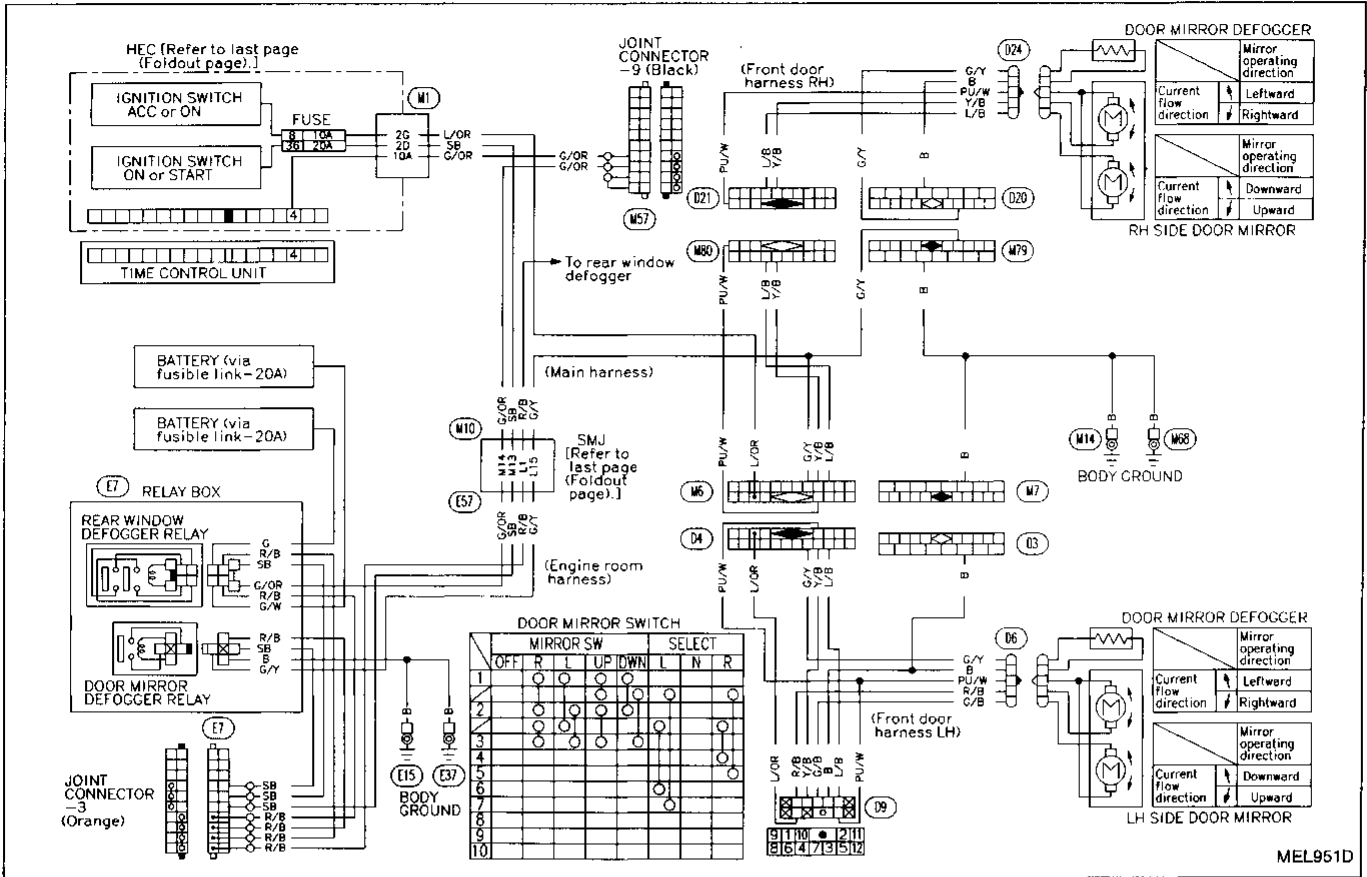
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POWER DOOR MIRROR

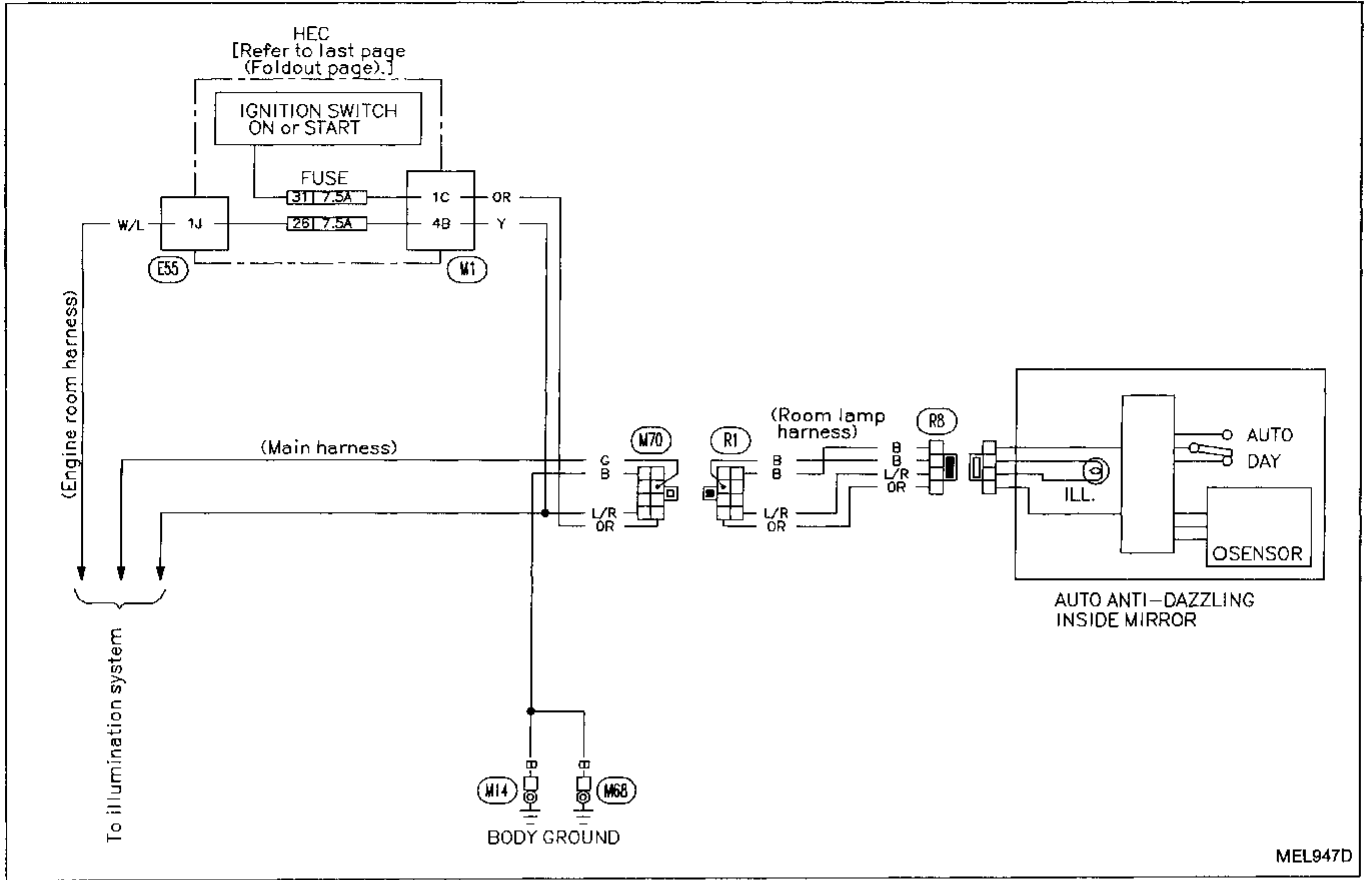
Wiring Diagram



MEL951D

INSIDE MIRROR

Auto Anti-dazzling Inside Mirror/Wiring Diagram



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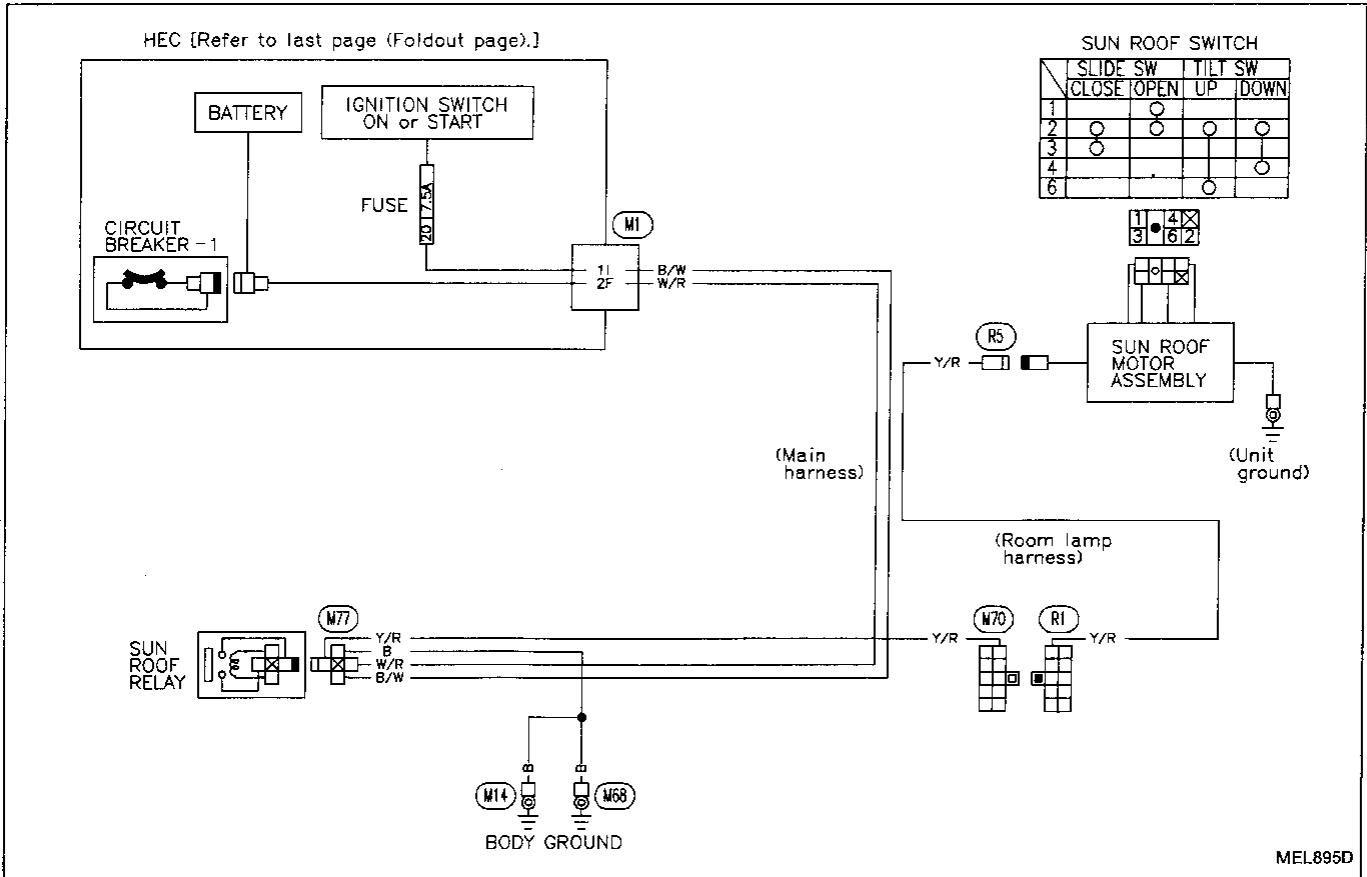
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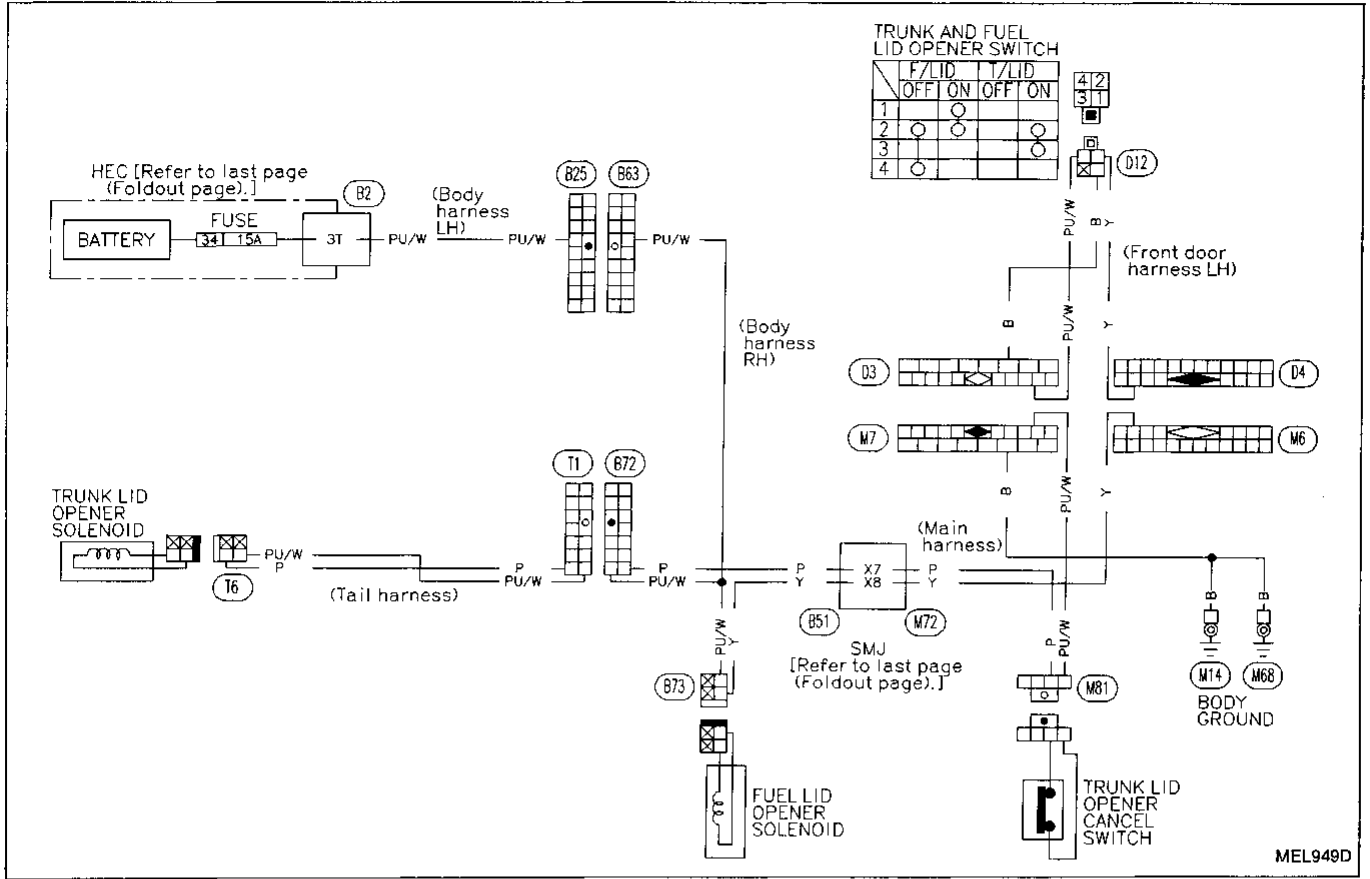
ELECTRIC SUN ROOF

Wiring Diagram



TRUNK LID AND FUEL FILLER LID OPENER

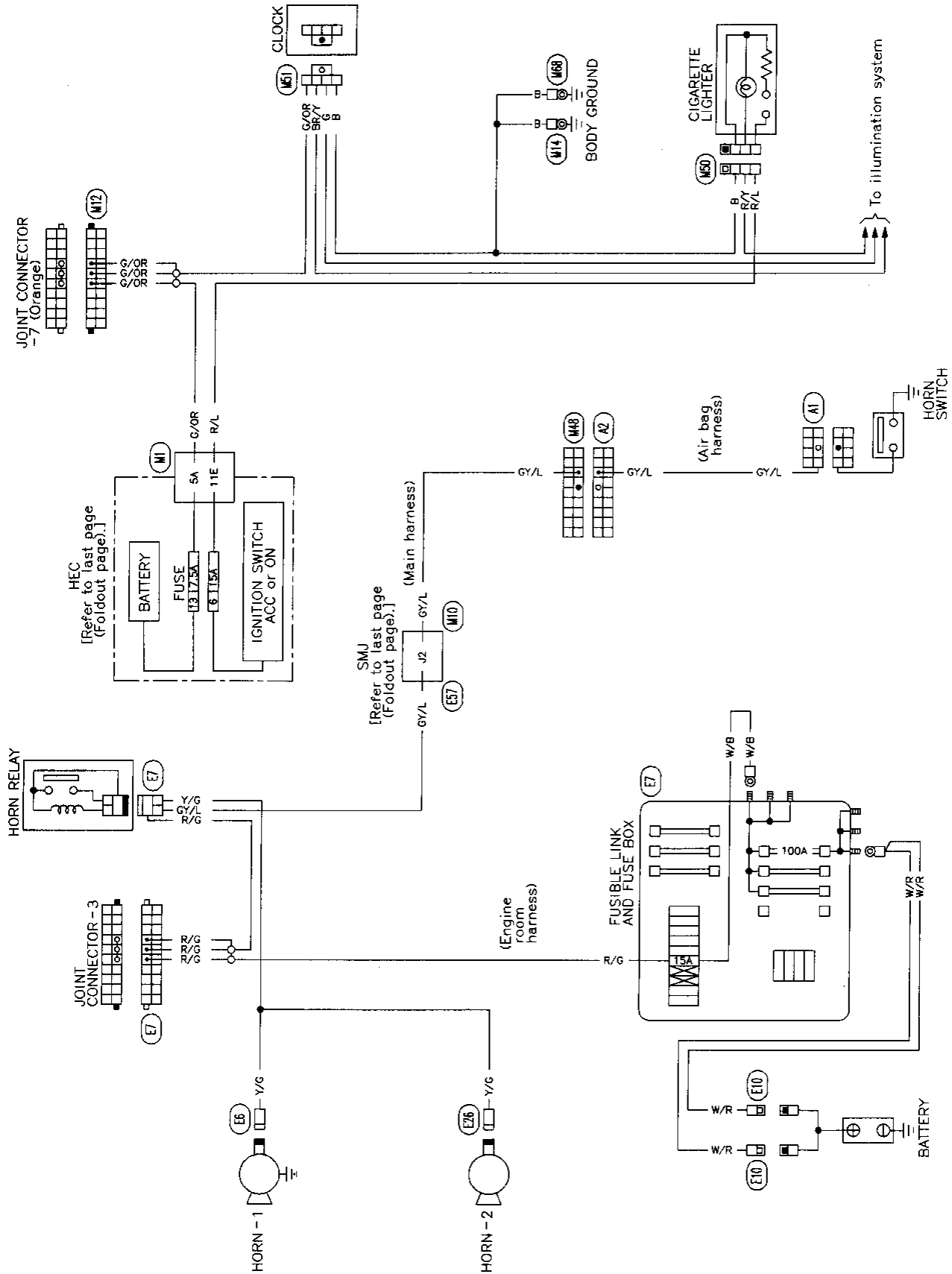
Wiring Diagram



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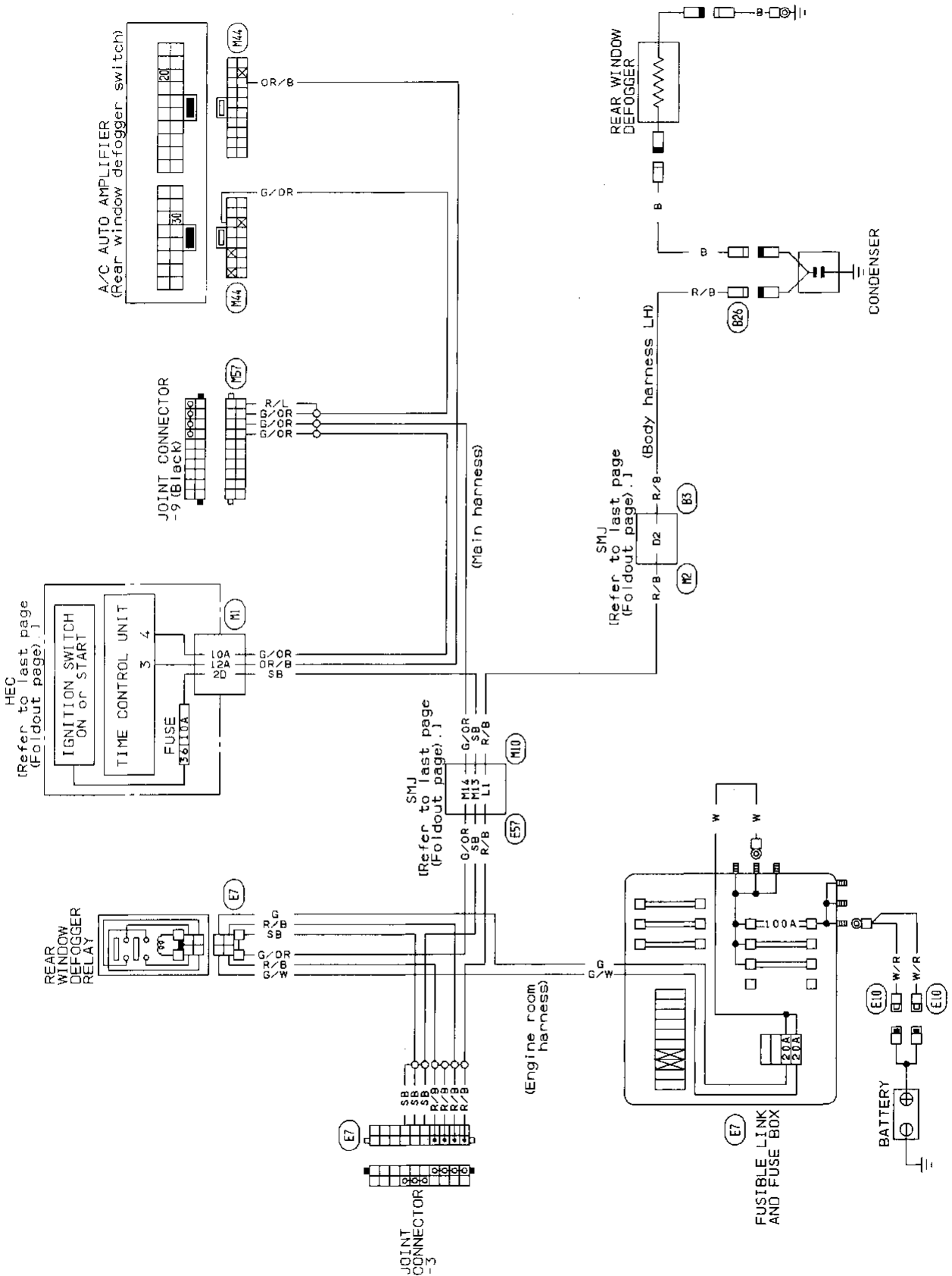
HORN, CIGARETTE LIGHTER, CLOCK

Wiring Diagram



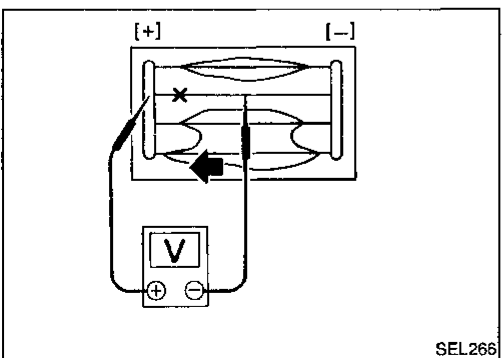
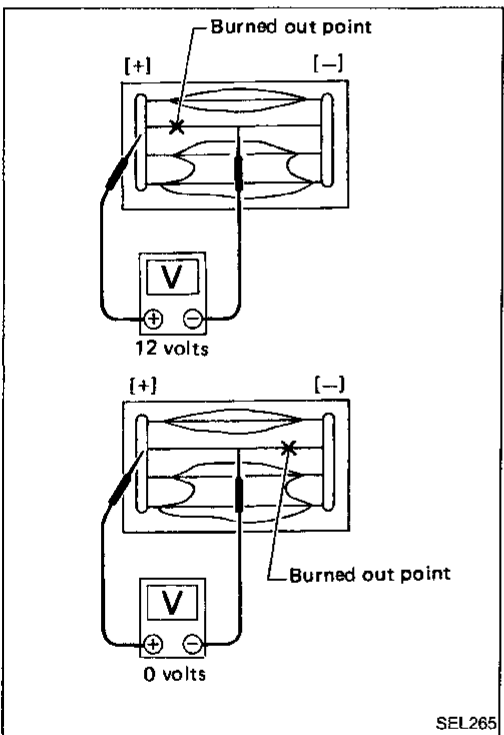
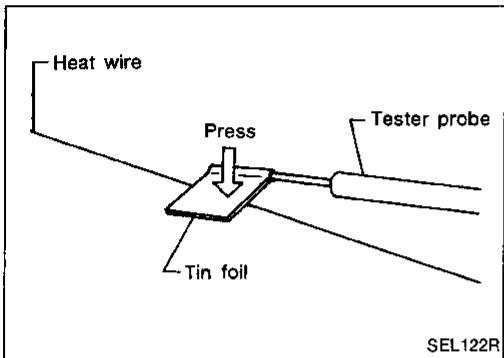
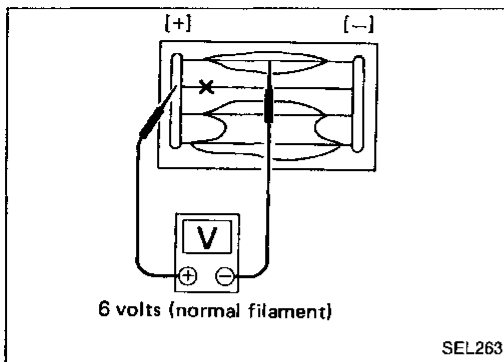
REAR WINDOW DEFOGGER

Wiring Diagram



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REAR WINDOW DEFOGGER



Filament Check

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

- When measuring voltage, wind a piece of tin foil around the top of the negative probe and press the foil against the wire with your finger as shown.

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

3. To locate burned out point, move probe to left and right along filament to determine point where tester needle swings abruptly.

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

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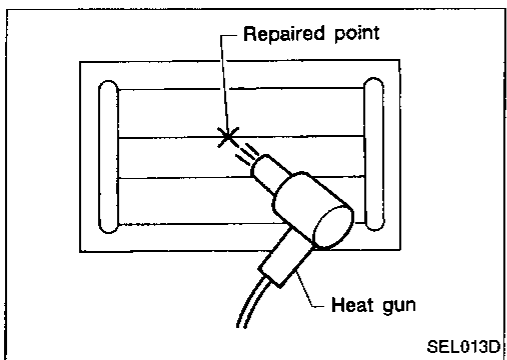
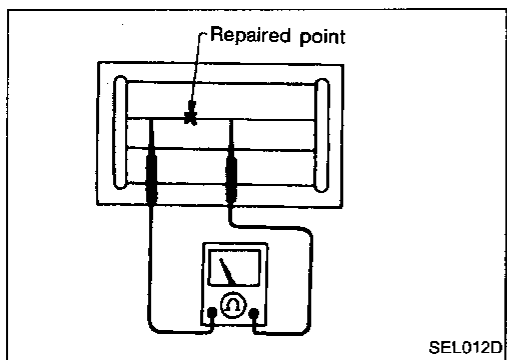
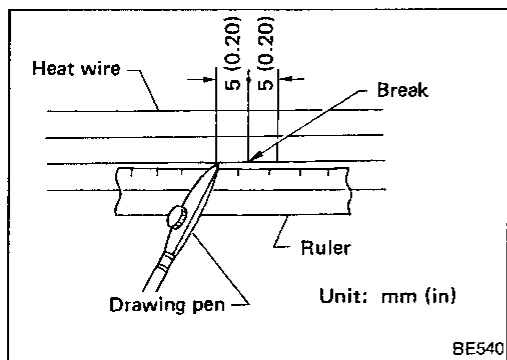
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REPAIRING PROCEDURE

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.

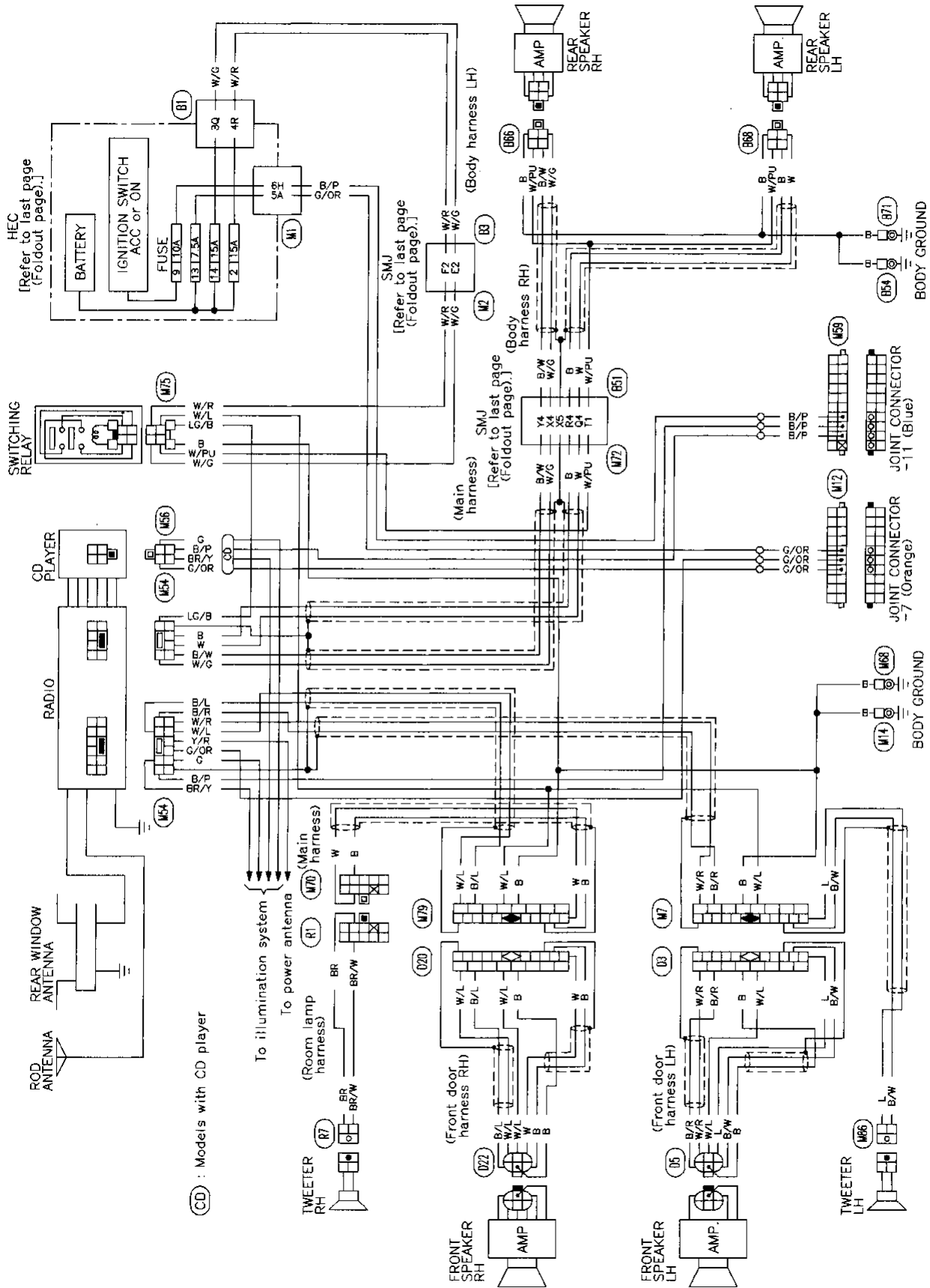
Do not touch repaired area while test is being conducted.

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.

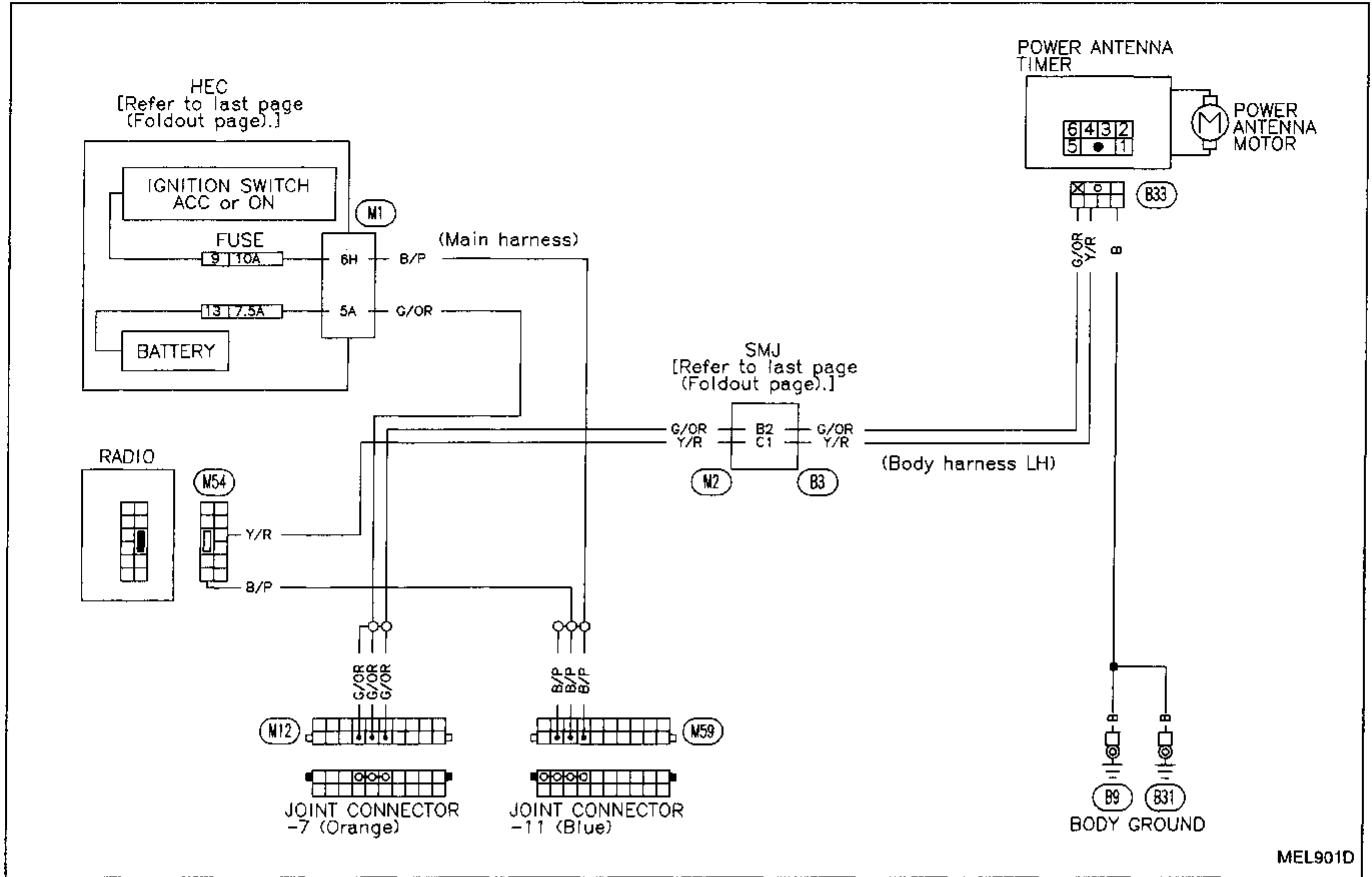
AUDIO AND POWER ANTENNA

Audio/Wiring Diagram

BOSE SYSTEM



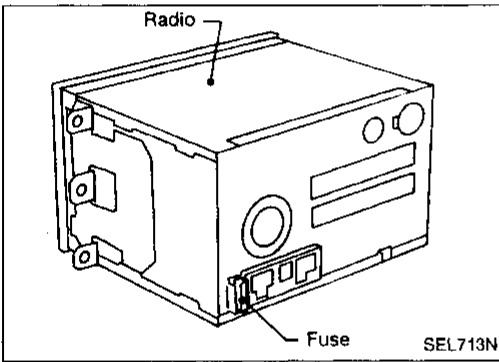
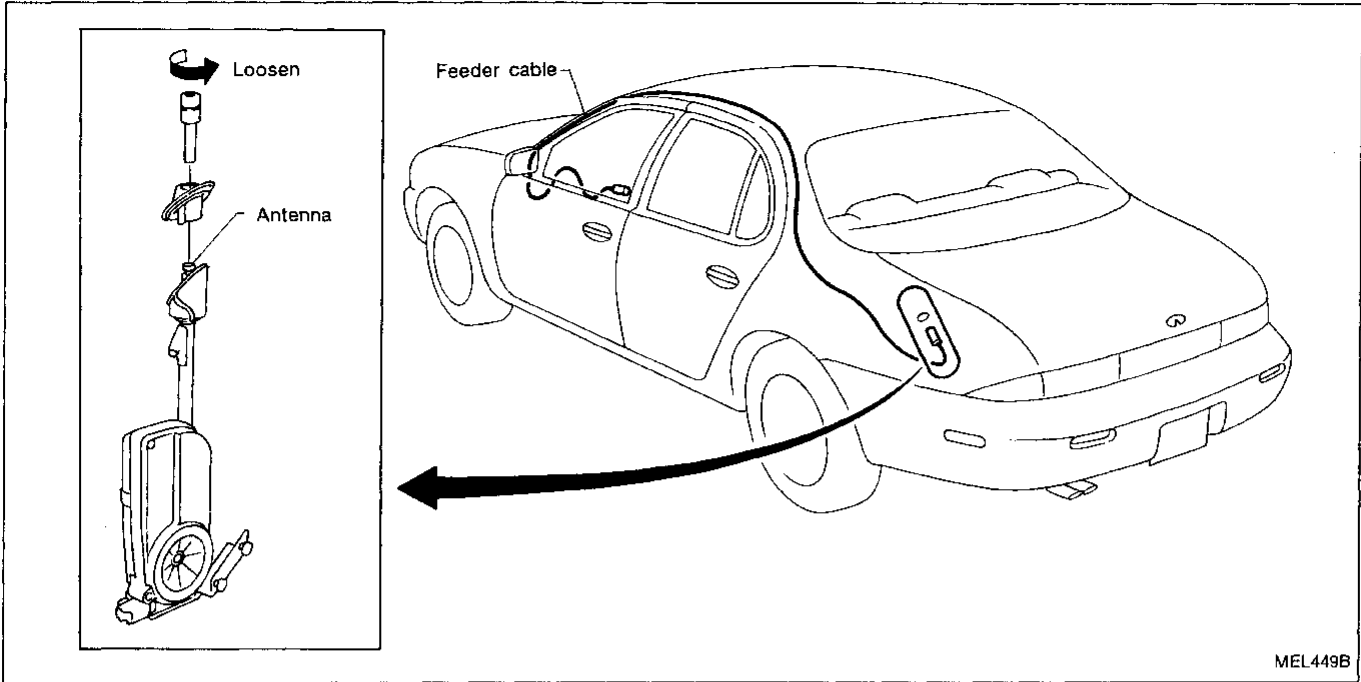
Power Antenna/Wiring Diagram



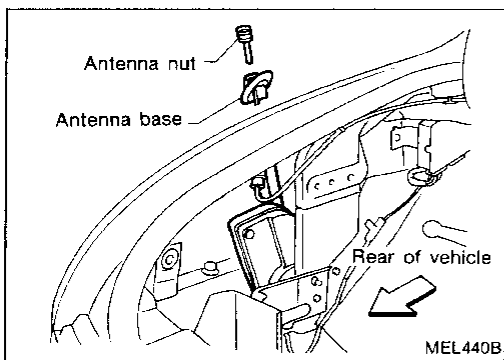
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AUDIO AND POWER ANTENNA

Location of Antenna



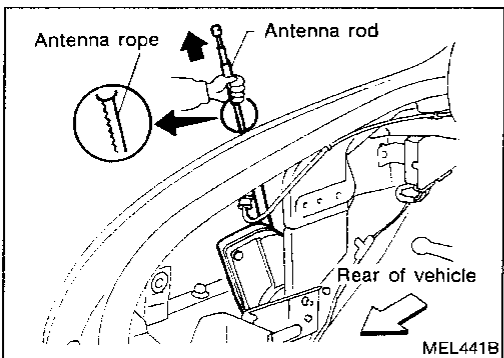
Radio Fuse Check



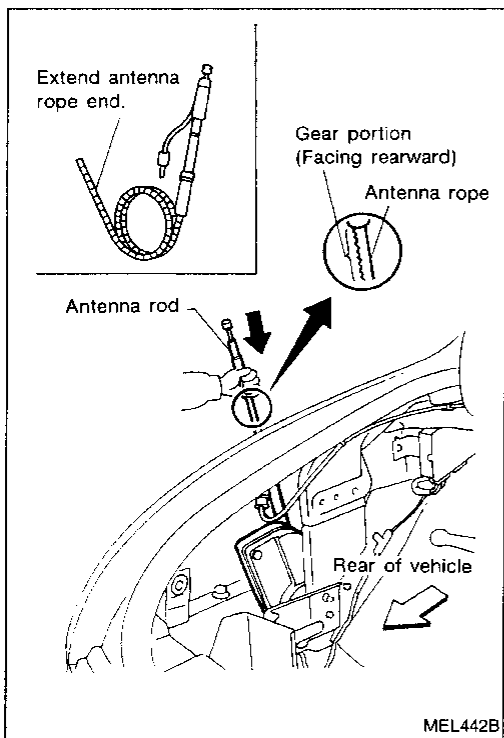
Antenna Rod Replacement

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.

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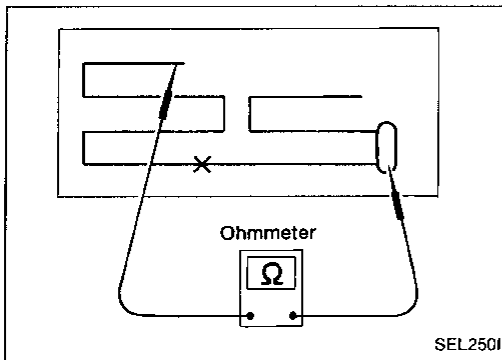
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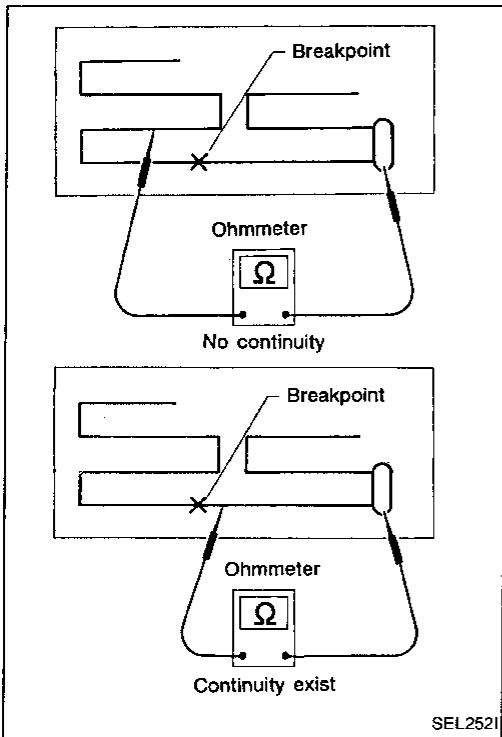
Window Antenna Repair

ELEMENT CHECK

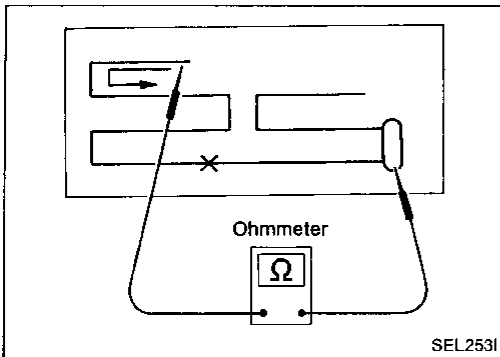
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.



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



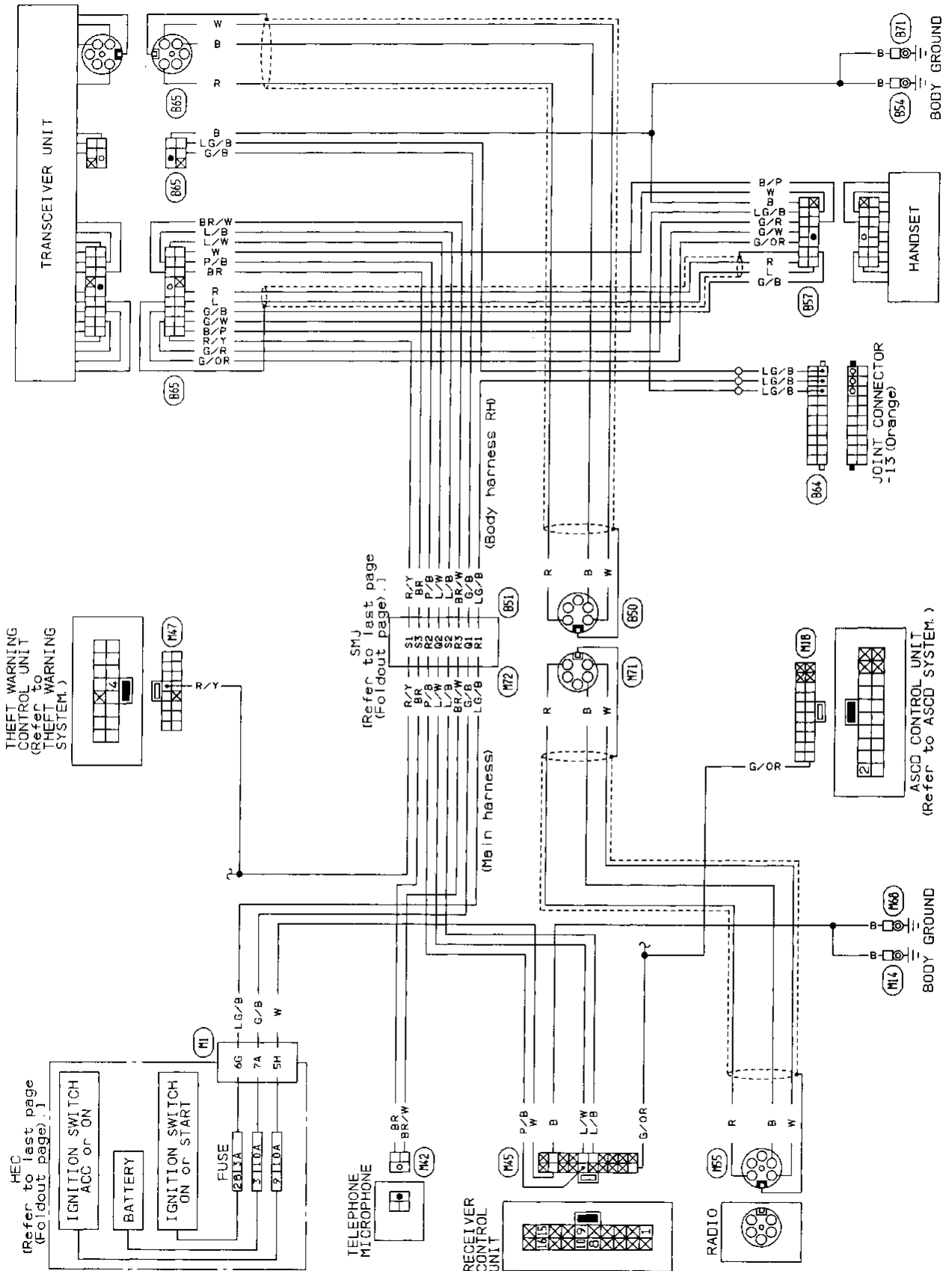
3. To locate broken point, move probe to left and right along element to determine point where tester needle swings abruptly.



ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-97).

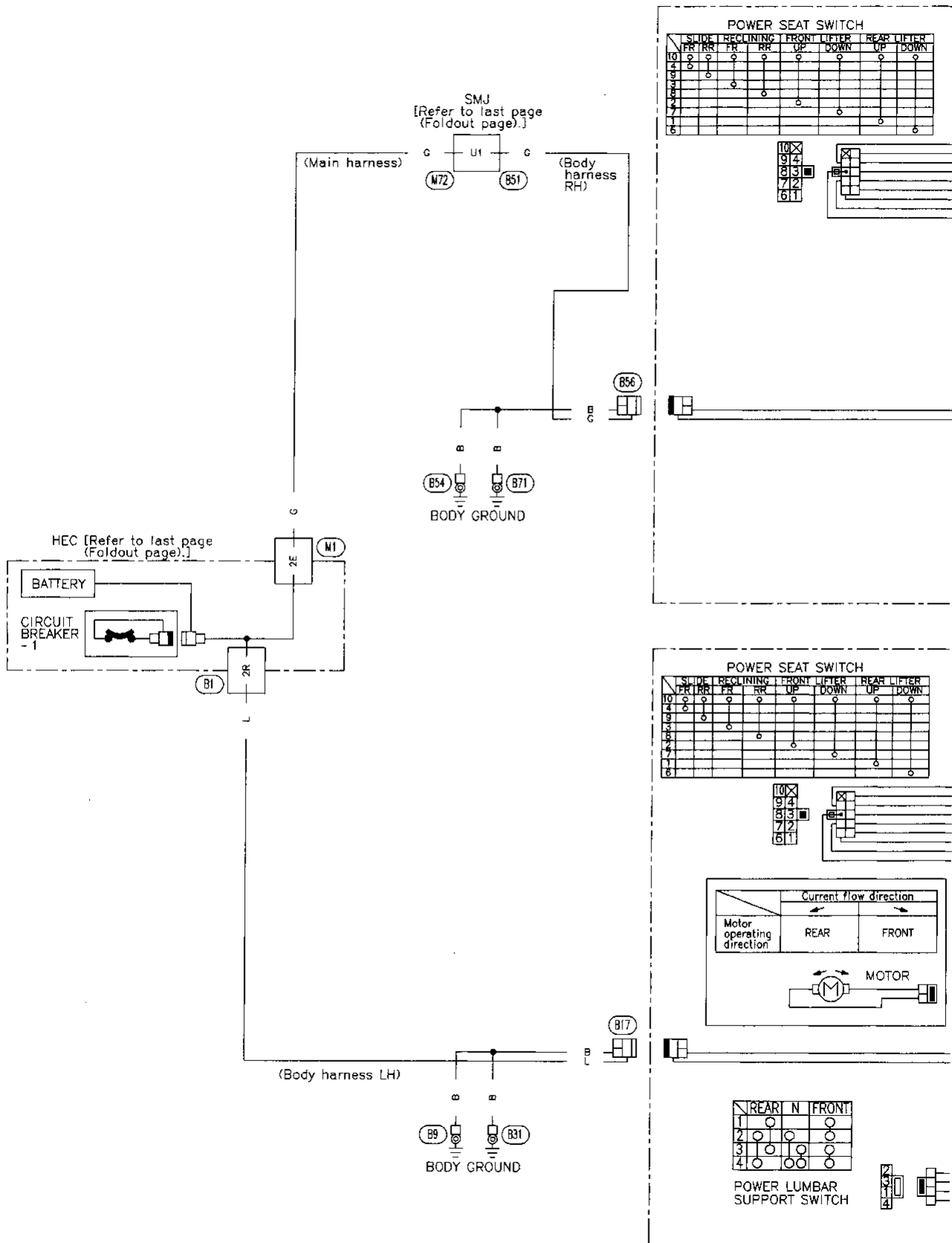
Telephone/Wiring Diagram



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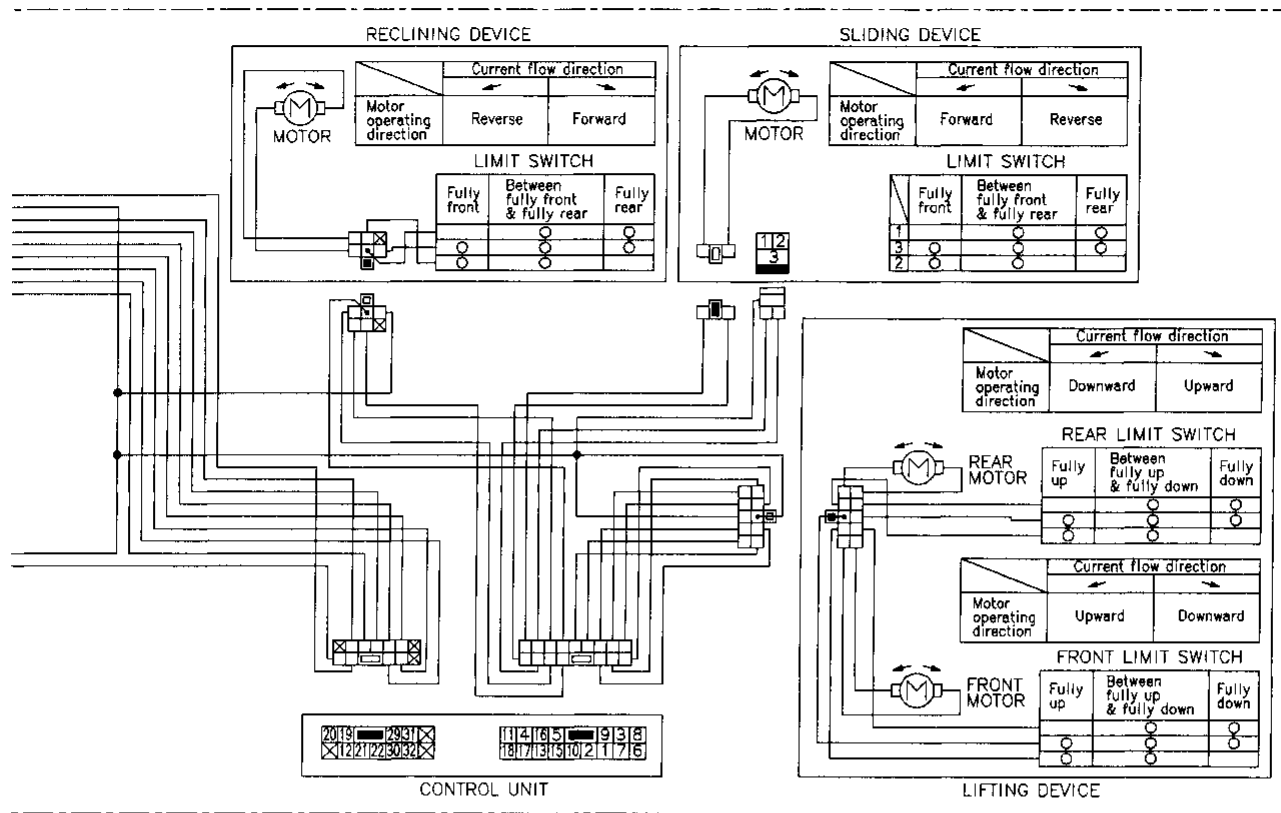
POWER SEAT

Wiring Diagram

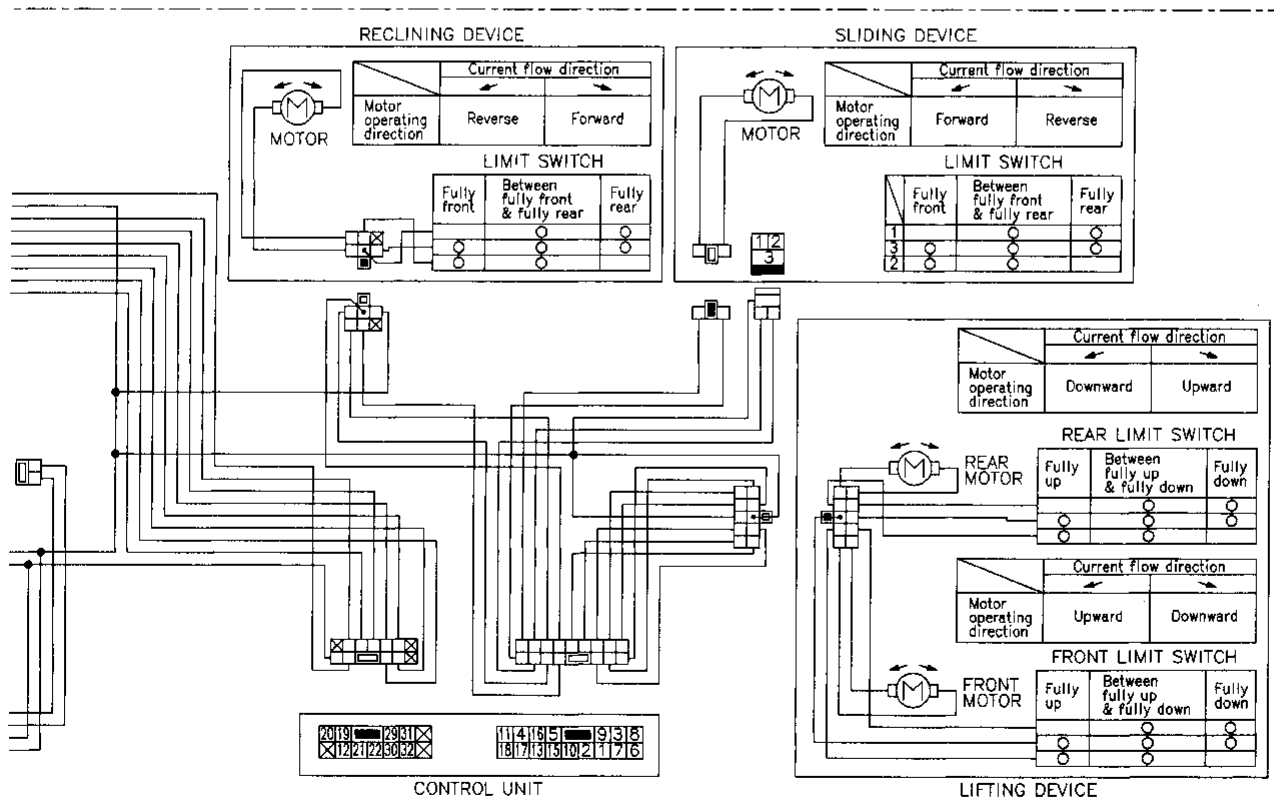


POWER SEAT

Wiring Diagram (Cont'd)



POWER SEAT RH



POWER SEAT LH

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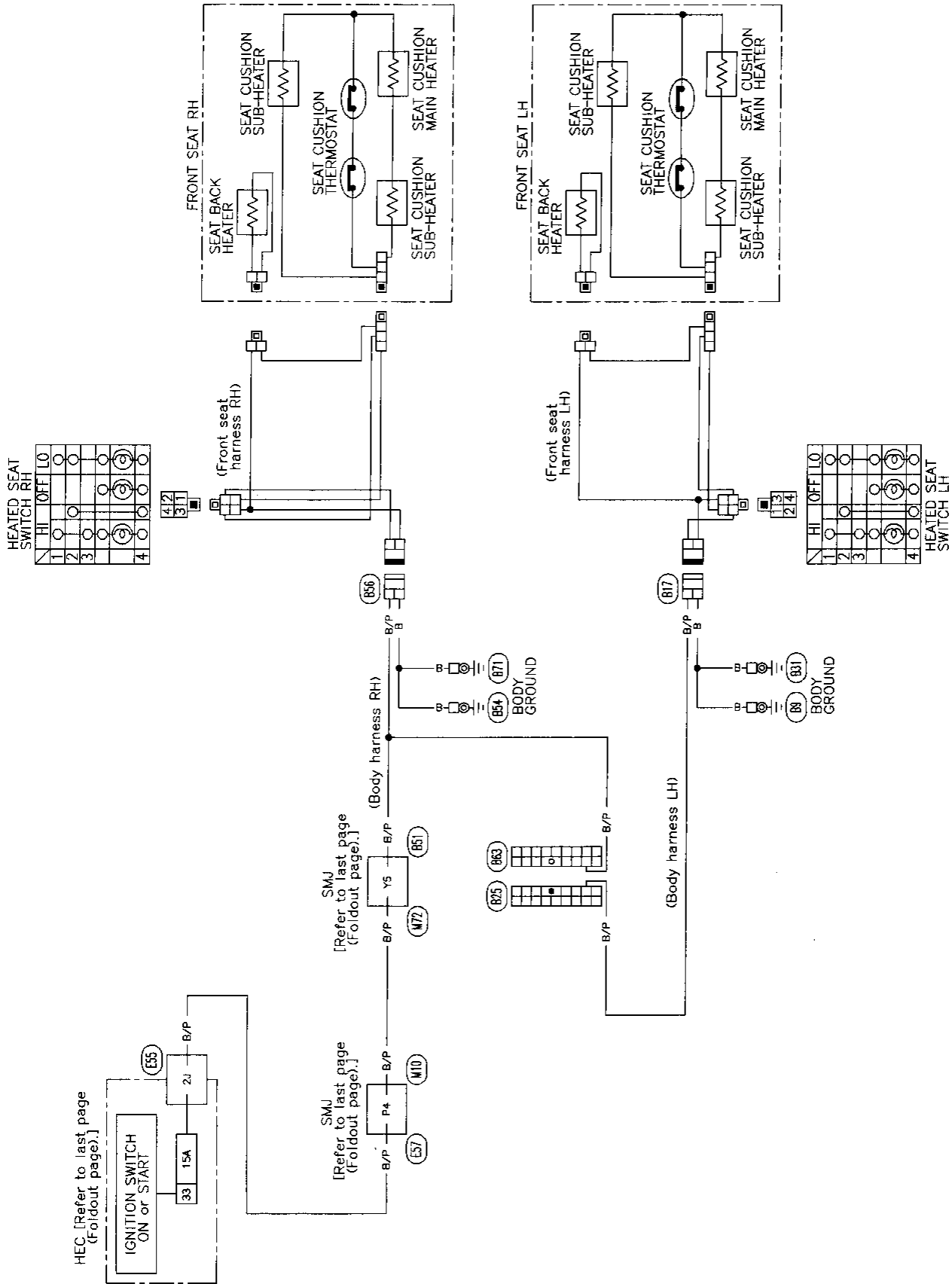
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HEATED SEAT

Wiring Diagram



HEATED SEAT

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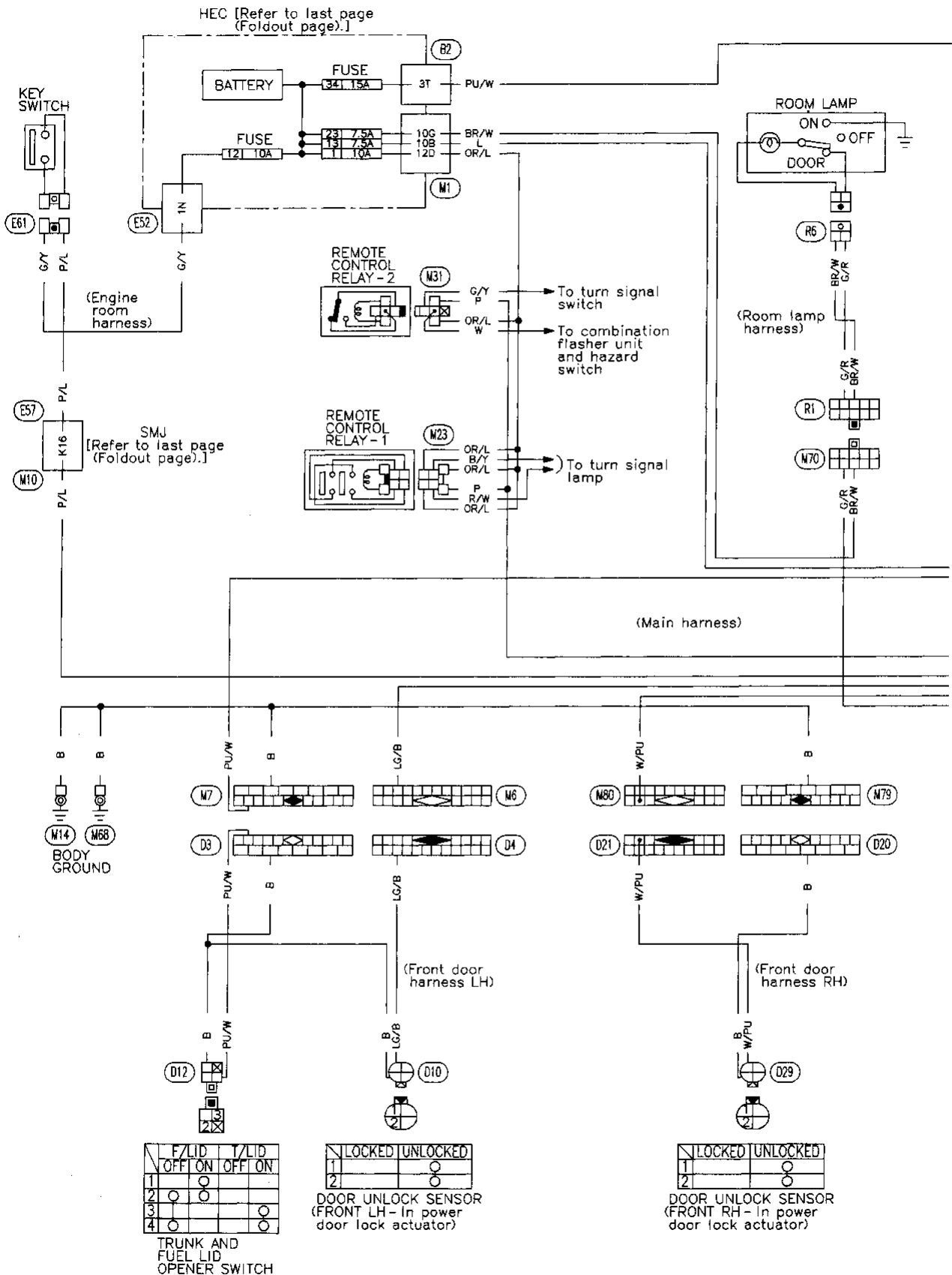
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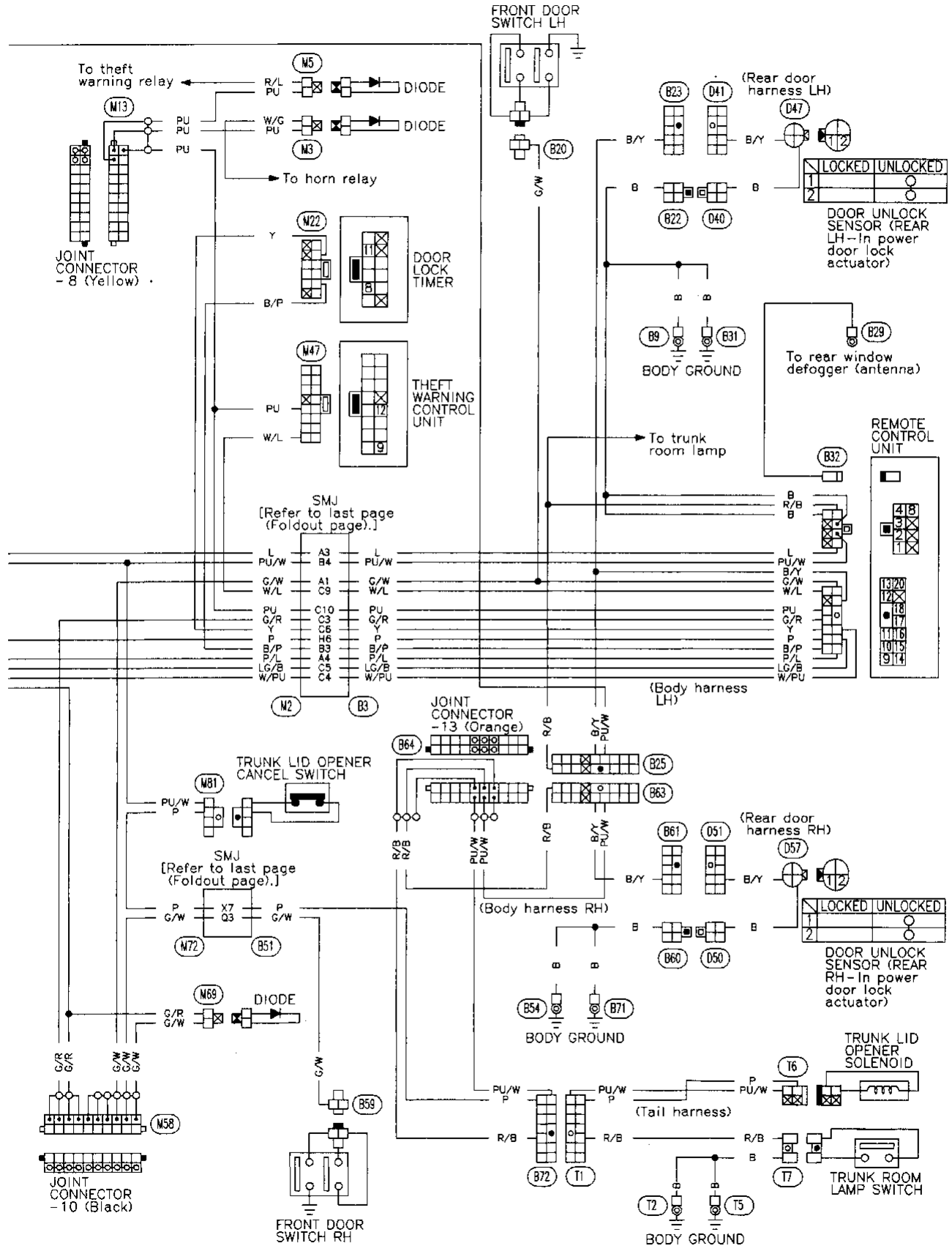
MULTI-REMOTE CONTROL SYSTEM

Wiring Diagram



MULTI-REMOTE CONTROL SYSTEM

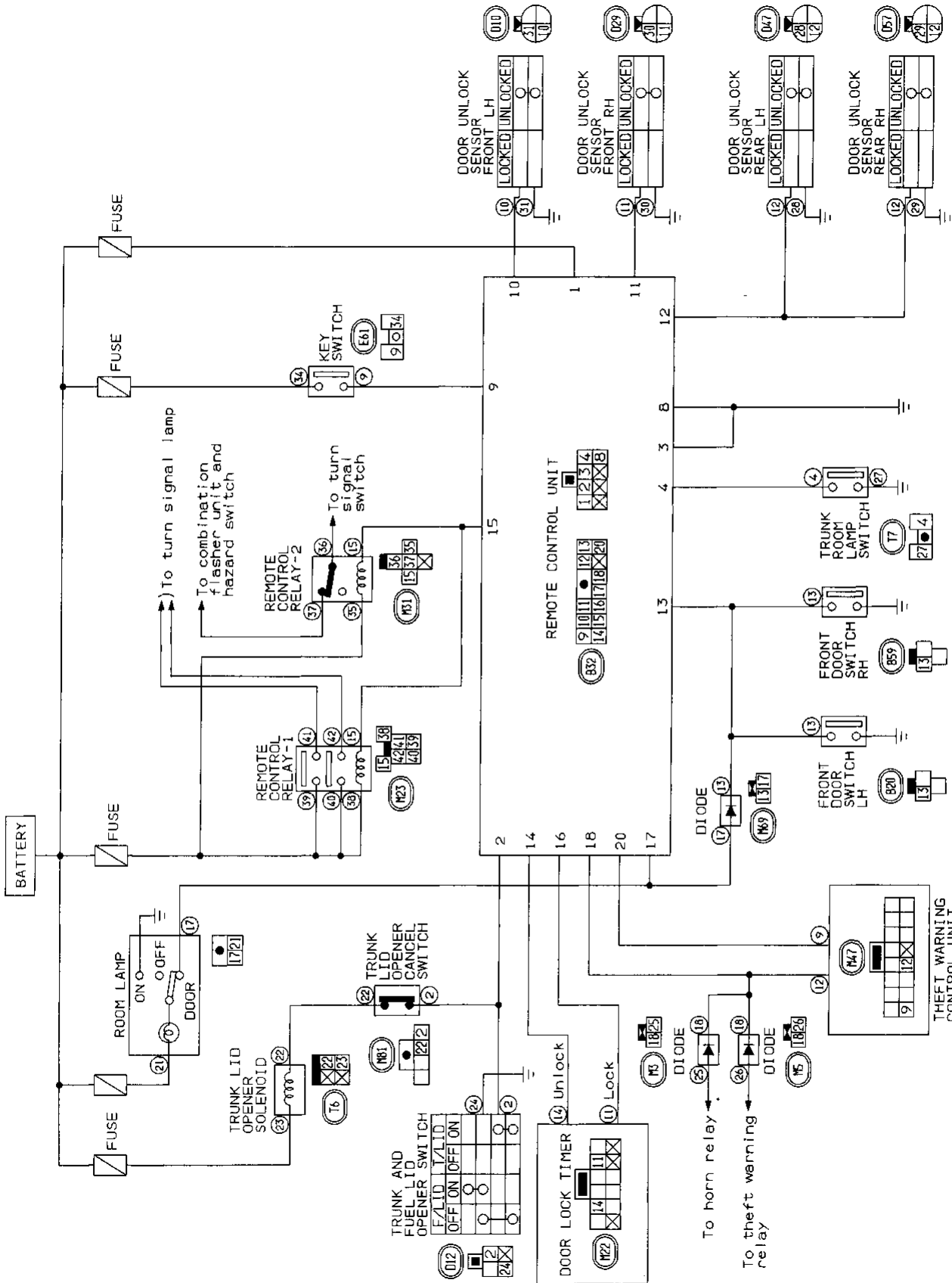
Wiring Diagram (Cont'd)



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MULTI-REMOTE CONTROL SYSTEM

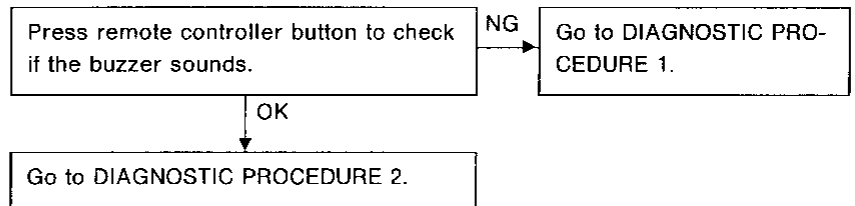
Circuit Diagram for Quick Pinpoint Check



Trouble Diagnoses Preliminary Inspection

PRELIMINARY INSPECTION PROCEDURE 1

All functions of remote control system function.



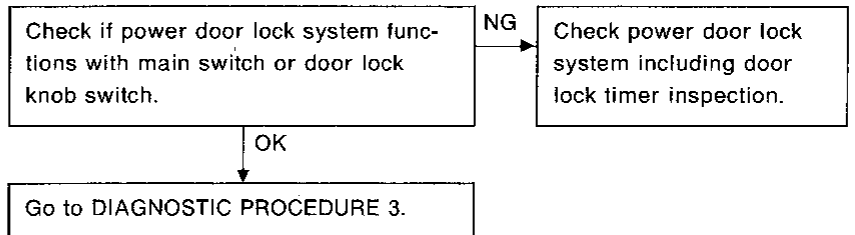
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PRELIMINARY INSPECTION PROCEDURE 2

Door lock and unlock does not function.



LC

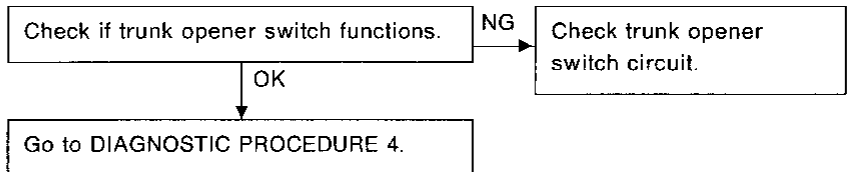
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PRELIMINARY INSPECTION PROCEDURE 3

Trunk open function does not function.



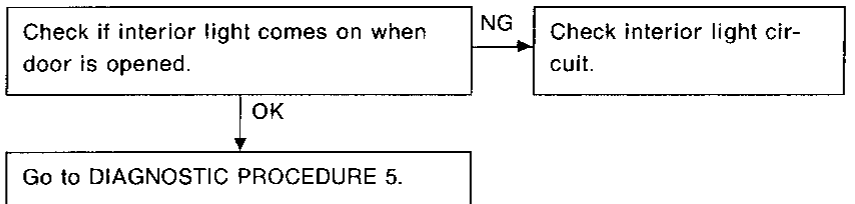
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PRELIMINARY INSPECTION PROCEDURE 4

Interior light does not function.



BR

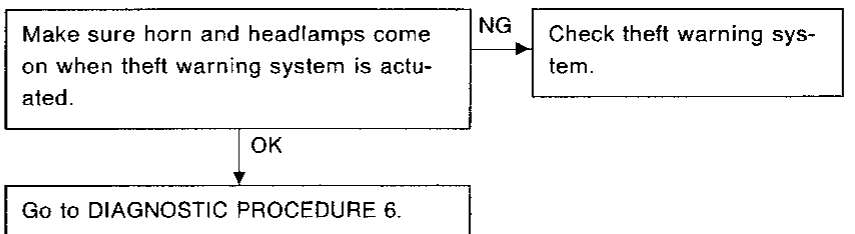
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PRELIMINARY INSPECTION PROCEDURE 5

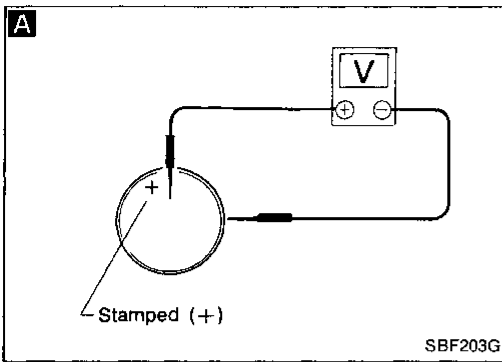
Panic alarm does not function.



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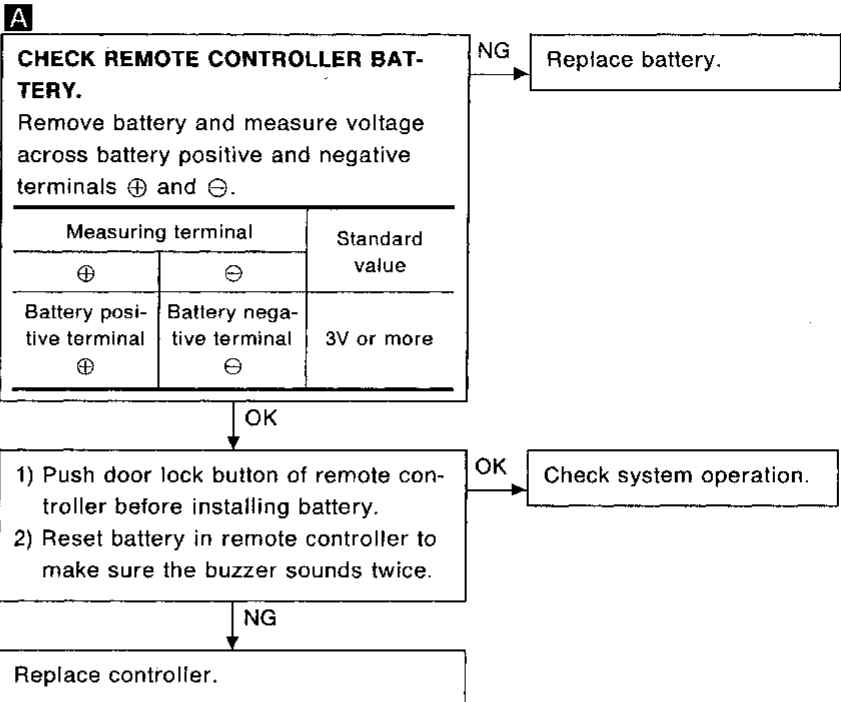
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Trouble Diagnoses

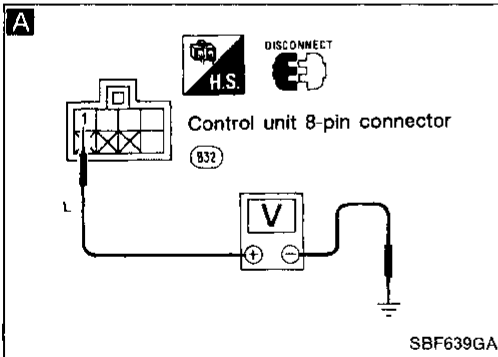
DIAGNOSTIC PROCEDURE 1

Remote controller buzzer does not sound when the button is pressed.



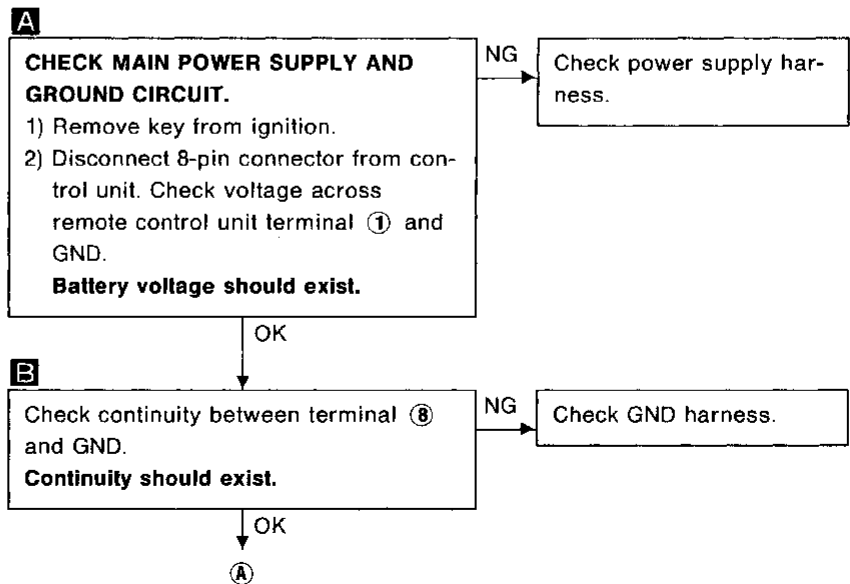
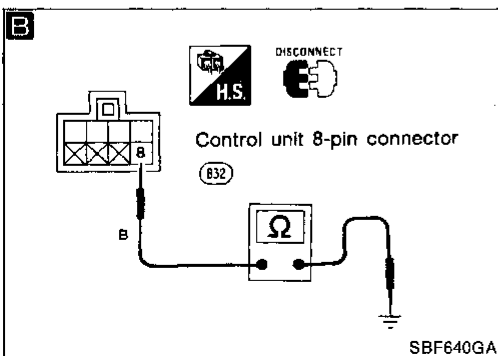
Note:

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



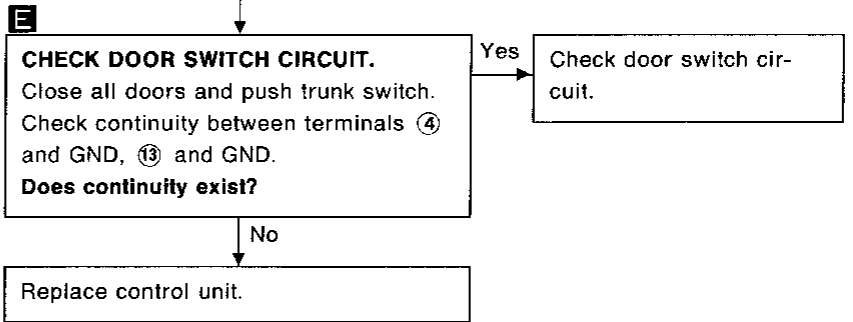
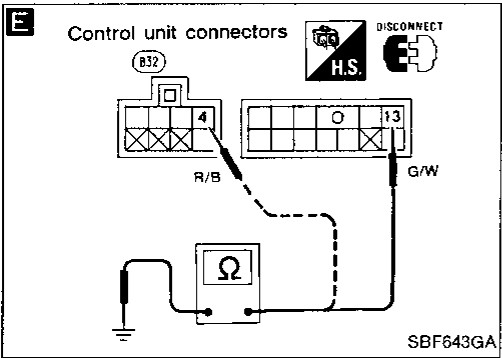
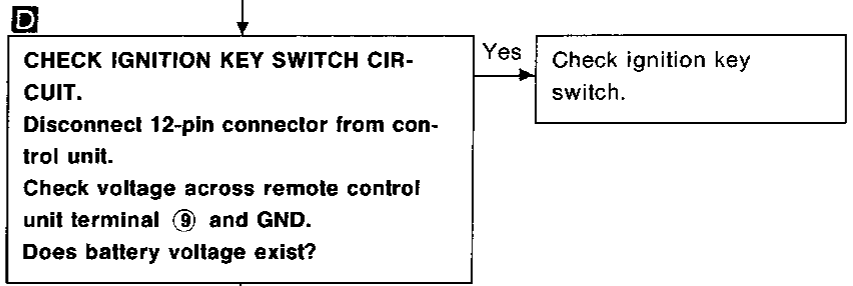
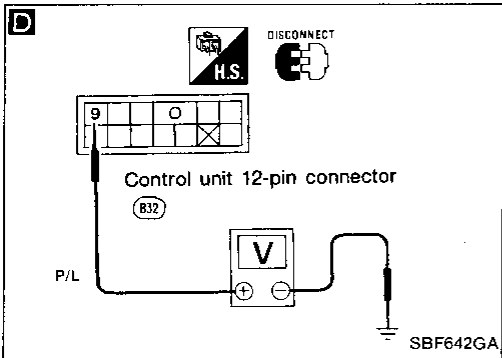
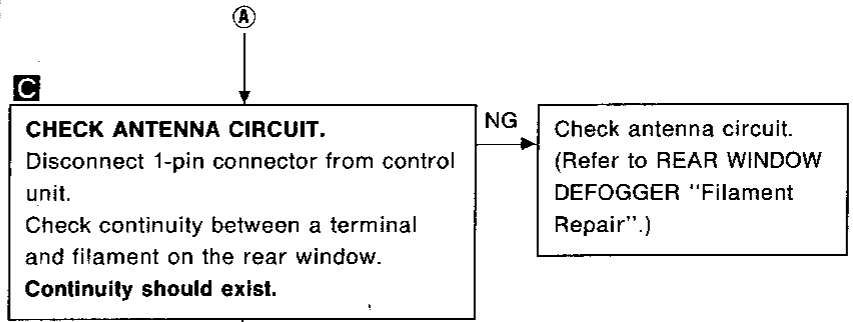
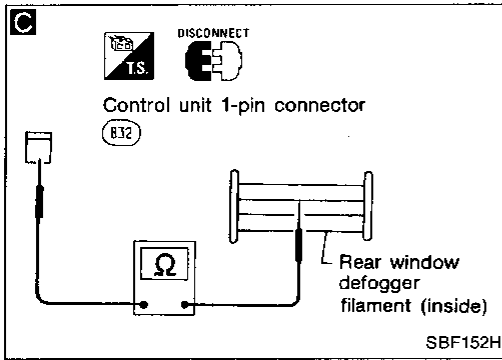
DIAGNOSTIC PROCEDURE 2

All remote controls do not function even if remote controller buzzer does sound.



MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)



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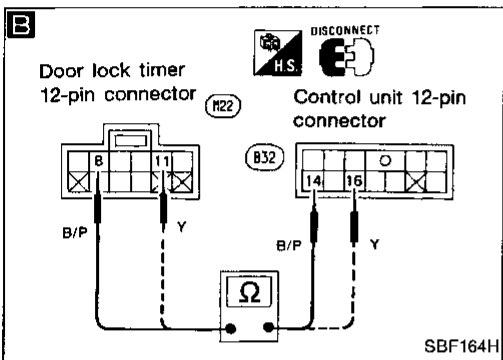
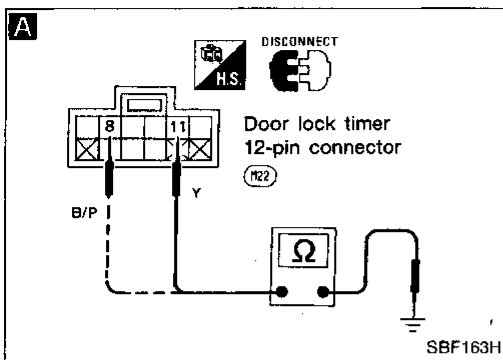
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MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

Door lock and unlock remote control do not function. Everything else does not function.



A

CHECK DOOR LOCK AND UNLOCK SIGNAL FOR DOOR LOCK TIMER.

- 1) Remove key from ignition.
- 2) Close all doors and trunk.
- 3) Remove door lock timer 12-pin connector.

Push remote controller buttons and check continuity between terminals ⑪ and GND, ⑧ and GND.

Terminals	Operation	Continuity
⑪ - GND	Lock	Yes
	Unlock	No
⑧ - GND	Unlock	Yes
	Lock	No

OK → Check power door lock system.

NG

Does continuity exist continually?

Yes → Repair harness. (There might be incorrect grounding.)

No

B

Remove remote control unit 12-pin connector.

Check continuity between remote control unit terminals and door lock timer.

Terminals	
Remote control	Door lock timer
⑭	⑧
⑯	⑪

Continuity should exist.

NG → Repair harness.

OK

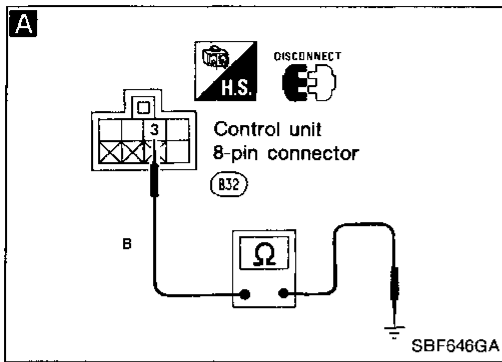
Replace remote control unit.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

Trunk open remote control does not function. Everything else does function.

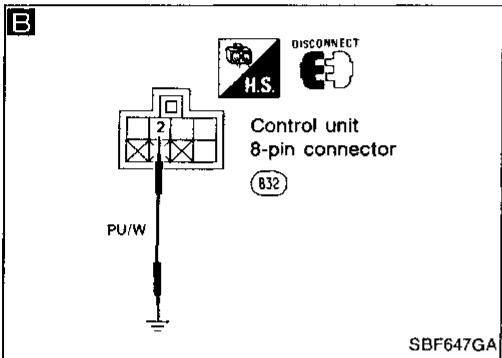


A

CHECK GROUND CIRCUIT FOR TRUNK OPEN FUNCTION.

Disconnect 8-pin connector from remote control unit.
Check continuity between terminal ③ and ground.
Continuity should exist.

NG → Repair harness.



B

Ground remote control unit connector terminal ②.
Does trunk lid opener function?

No → Check trunk lid opener circuit.

Yes

Replace control unit.

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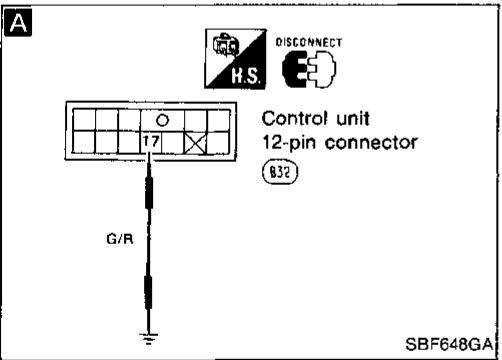
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DIAGNOSTIC PROCEDURE 5

Interior light does not function. Everything else does function.



A

CHECK INTERIOR LIGHT CIRCUIT.

Disconnect remote control unit 12-pin connector.
Ground remote control unit connector terminal ⑰.
Does interior light function?

No → Check interior light circuit.

Yes

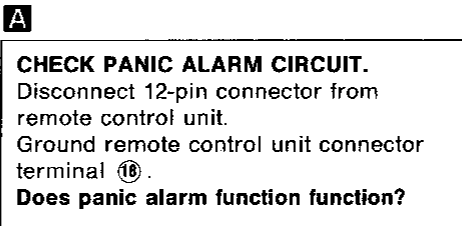
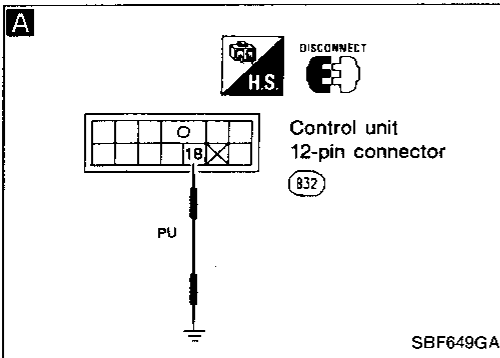
Replace control unit.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

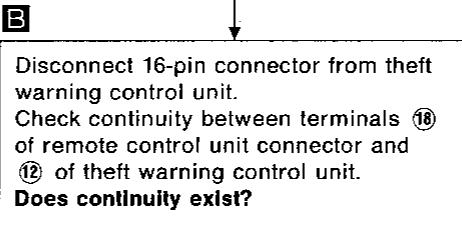
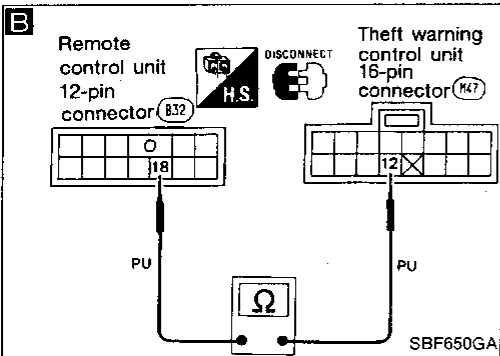
DIAGNOSTIC PROCEDURE 6

Panic alarm function does not function. Everything else does function.



Yes → Replace control unit.

No



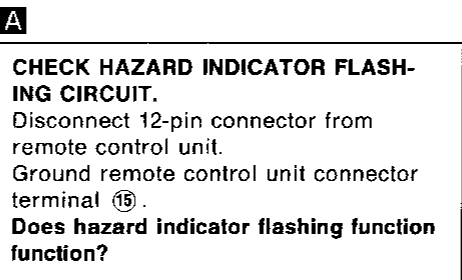
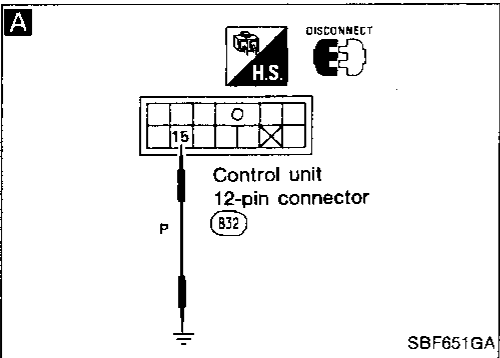
Yes → Check theft warning system.

No

Repair harness.

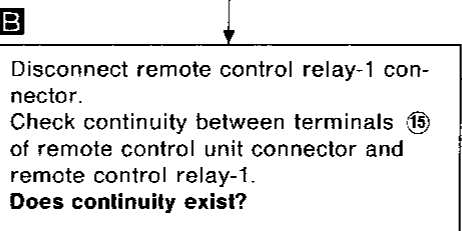
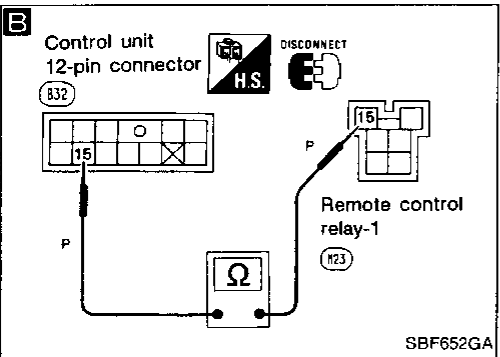
DIAGNOSTIC PROCEDURE 7

Hazard indicator flashing does not function. Everything else does function.



Yes → Replace control unit.

No



Yes → Check remote control relay-1 and harness.

No

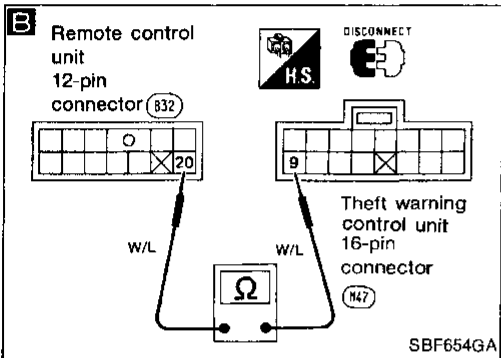
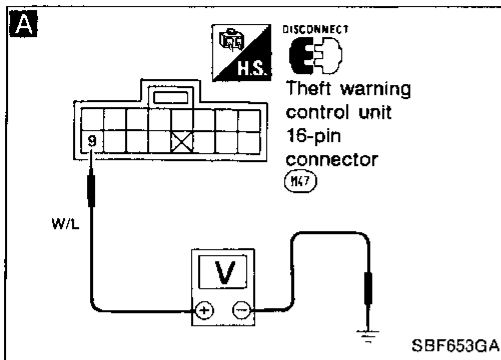
Repair harness.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

Theft warning is actuated when door is unlocked or trunk lid is opened with remote control.



A

CHECK THEFT WARNING CANCEL SIGNAL CIRCUIT.

- 1) Disconnect theft warning control unit 16-pin connector.
- 2) Remove key from ignition.
- 3) Close all doors and trunk lid.

Check voltage between terminal ⑨ and GND when door unlock remote control function is operated.

Terminal	Operation	Voltage
⑨ - GND	Door is unlocked	12V → 0V → 12V

Does voltmeter gauge move when door is unlocked?

Yes → Check theft warning system.

No

B

Disconnect 12-pin connector from remote control unit. Check continuity between terminals ②⑩ of remote control unit and ⑨ of theft warning control unit. Does continuity exist?

Yes → Replace remote control unit.

No

Repair harness.

GI

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IDX

Replacing Remote Controller or Control Unit

If the remote controller or the control unit needs to be replaced or if an additional remote controller needs to be set, enter the Identity (ID) code manually.

ID Code Entry Procedure

To enter the ID code, follow this procedure.

“Setting mode”.

Three steps must be followed to establish the “setting mode”.

- (1) Open the trunk.
- (2) Close and lock all doors.
- (3) Insert and remove the key from the ignition more than six times within 10 seconds.

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

ID code entry:

- (4) Unlock and lock the driver's door inside lock lever once.
- (5) Push lock button on the new remote controller once (for example, if door is locked using the remote controller during this ID code entry enable state, a new ID code can be entered).

- **At this time, the new ID code is entered.**

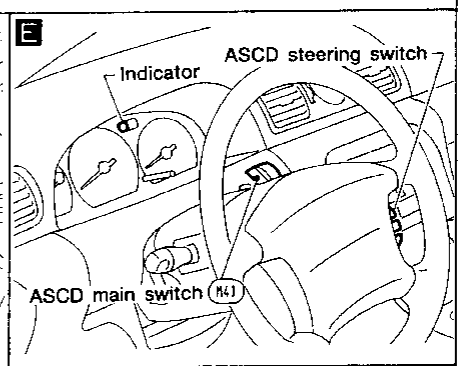
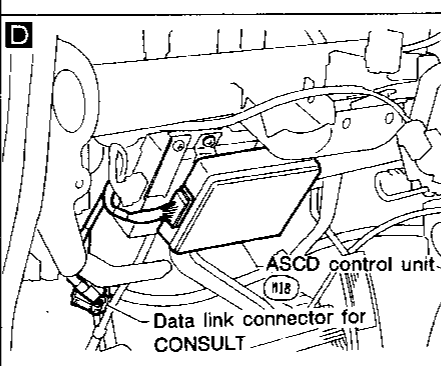
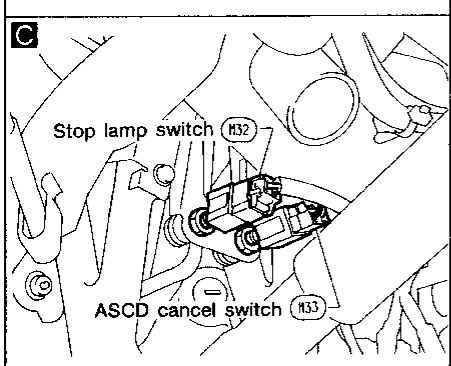
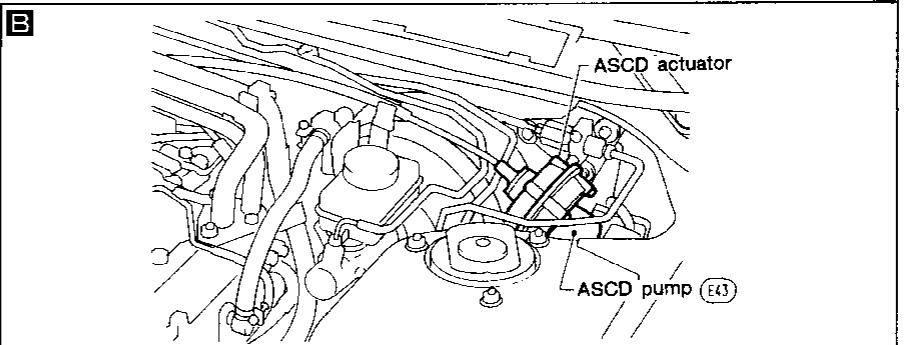
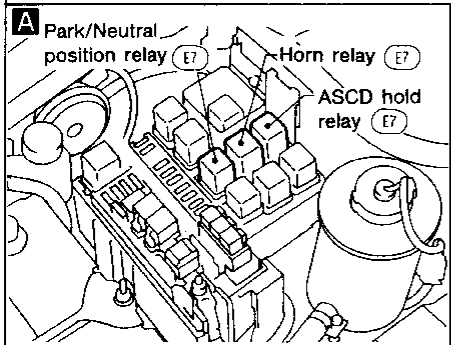
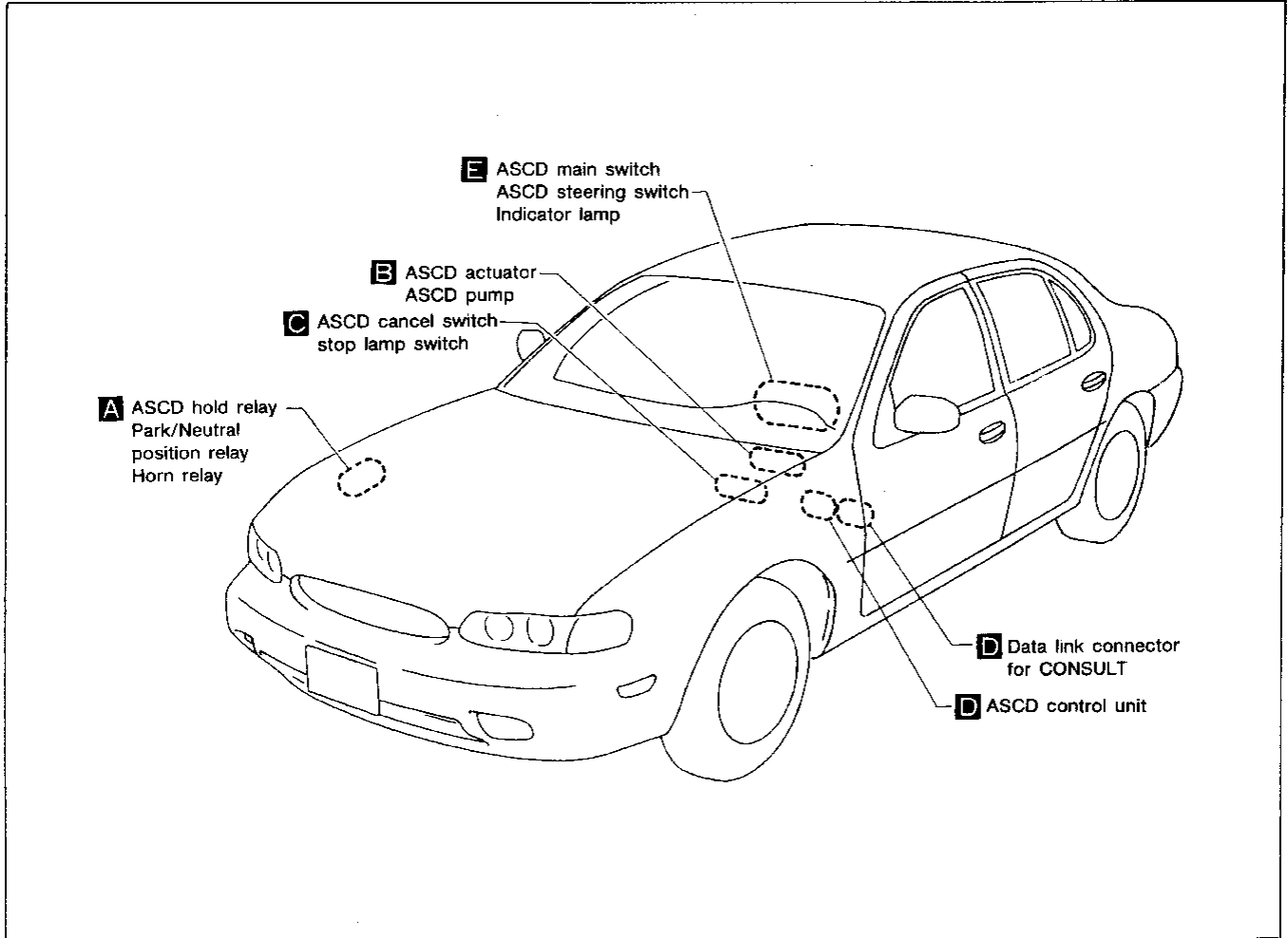
- (6) If you need to enter additional remote controllers (including the original) repeat the step (4) and (5) for each additional controller.
- (7) This ID code entry enable state and setting mode remain until any one of the doors is opened.

Note

- **If the same ID code that existing in the memory is input, the entry is canceled, and no ID code will be entered.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**
- **Any ID codes entered after termination of the “setting” mode will not be accepted. Additionally remote control signals will be inhibited when an ID code has not been entered during the “setting” mode.**

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

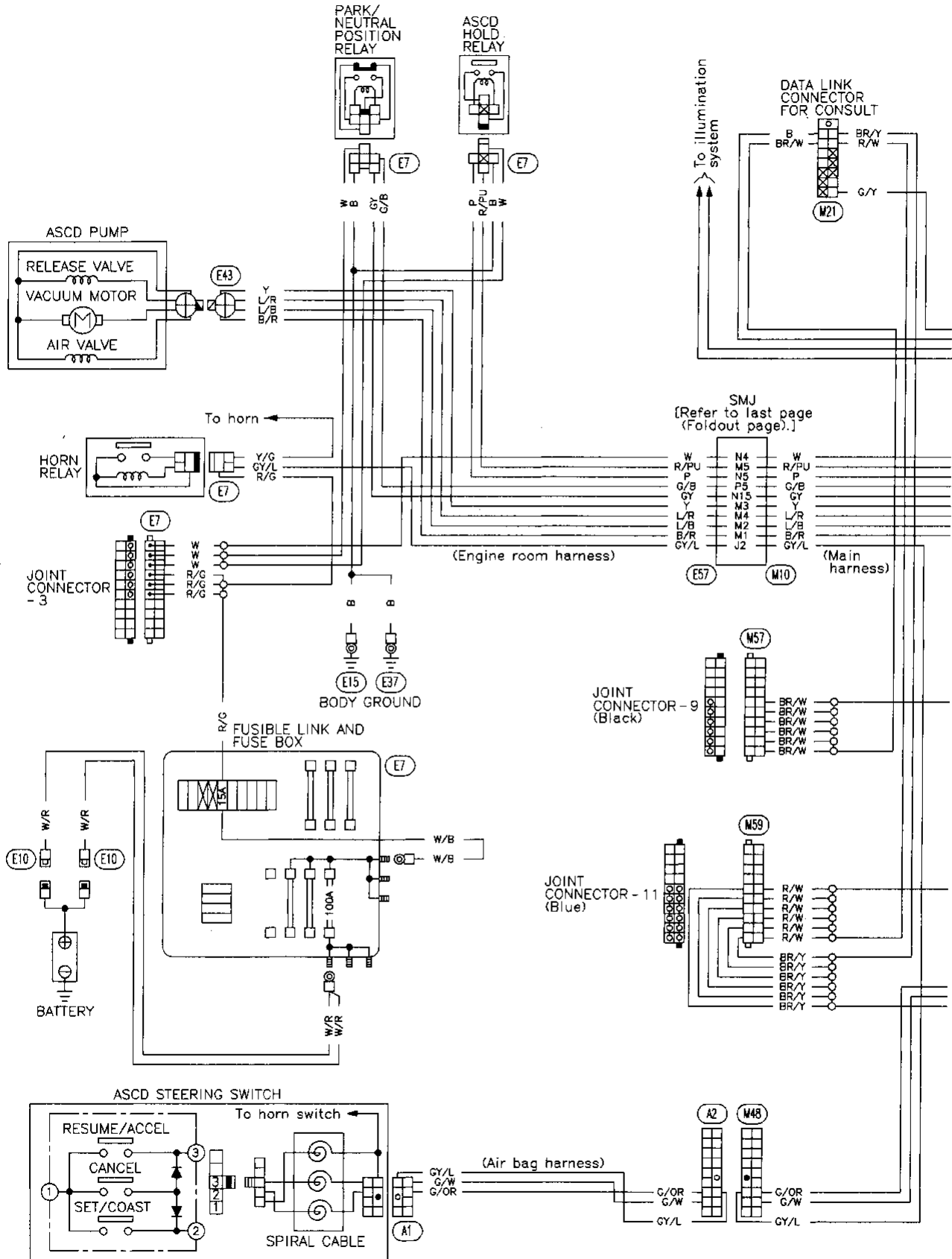
Component Parts and Harness Connector Location



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EF & EC
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IDX

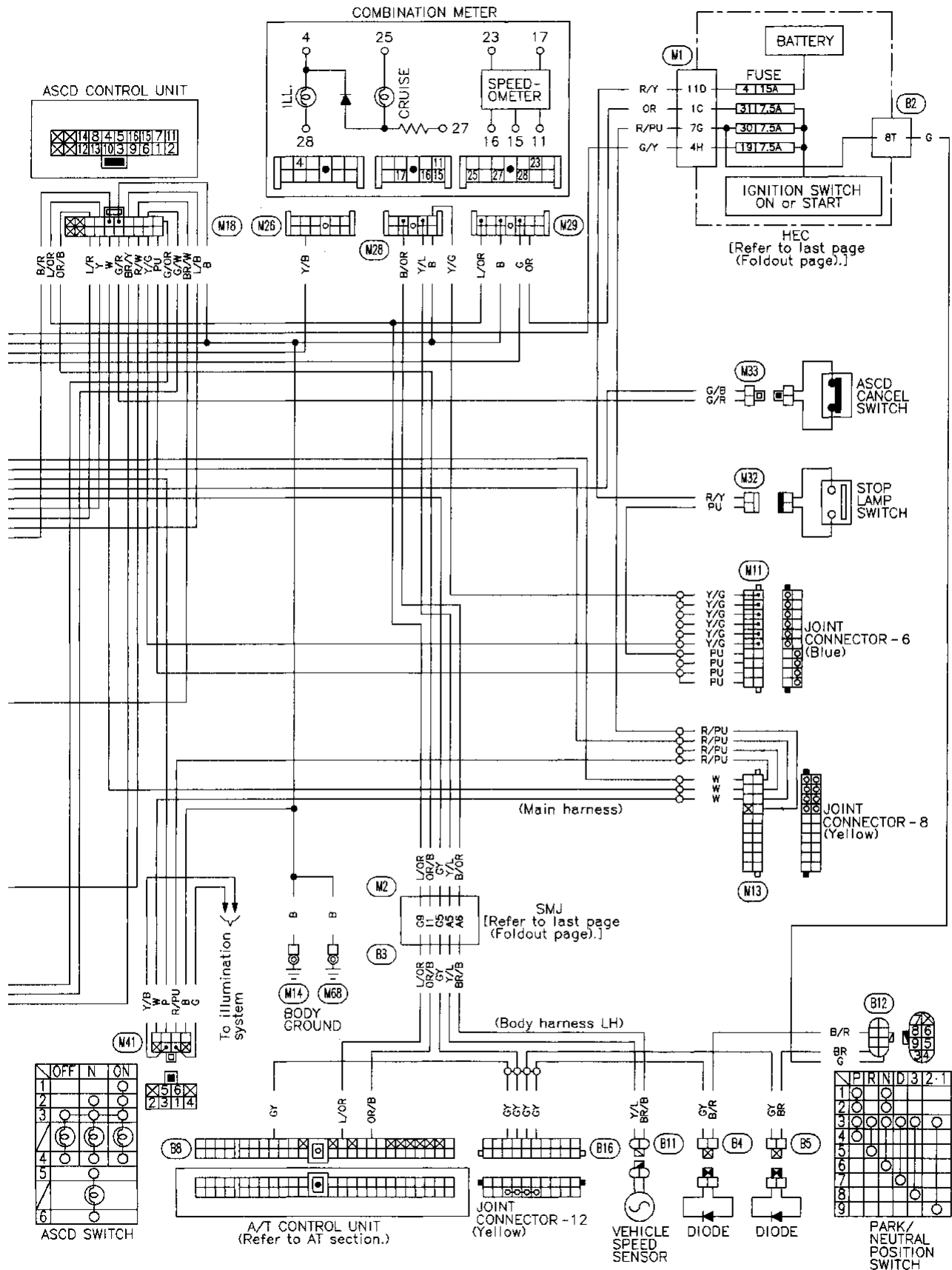
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram



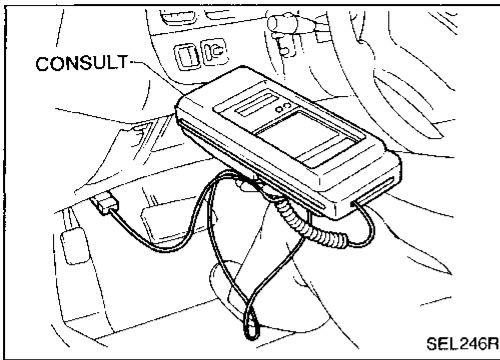
AUTOMATIC SPEED CONTROL DEVICE (ASCD) Wiring Diagram (Cont'd)

Wiring Diagram (Cont'd)



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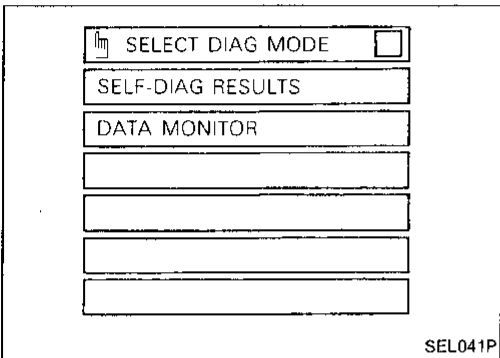
AUTOMATIC SPEED CONTROL DEVICE (ASCD)



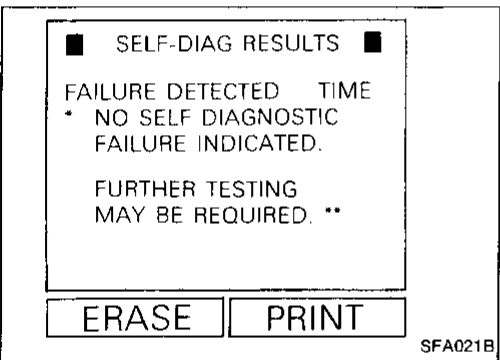
Trouble Diagnoses

CONSULT

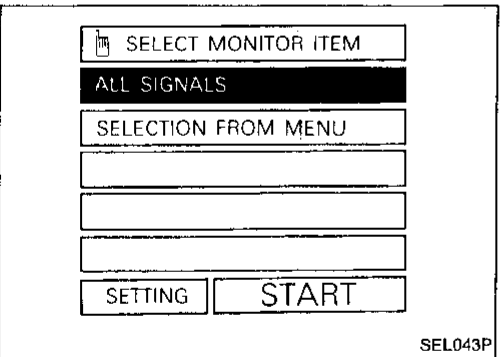
1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector.



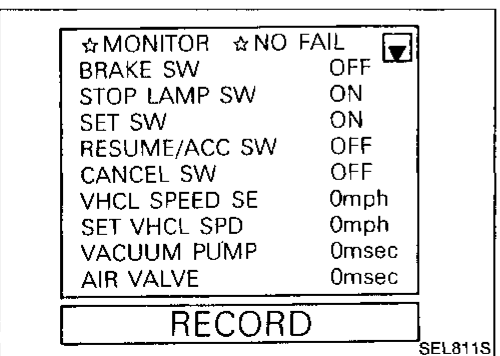
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- Self-diagnostic results are shown on display. Refer to table on page EL-123.



8. Touch DATA MONITOR.



- Touch START.
- Data monitor results are shown on display. Refer to table on page EL-123.

For further information, read the CONSULT Operation Manual.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

Self-diagnostic results

Diagnostic item	Description
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	● Even if no self-diagnostic failure is indicated, further testing may be required as far as the customer complains.
POWER SUPPLY-VALVE	● The power supply circuit for the valves is open. (An abnormally high voltage is entered.)
VACUUM PUMP	● The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.)
AIR VALVE	● The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)
VHCL SP-S/FAILSAFE	● The vehicle speed sensor or the fail-safe circuit is malfunctioning.
CONTROL UNIT	● The ASCD control unit is malfunctioning.
RELEASE VALVE	● The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)
BRAKE SW/STOP/L SW	● The brake (cancel) switch or stop lamp switch is malfunctioning.

Data monitor

Monitored item	Description
BRAKE SW	● Indicates [ON/OFF] condition of the brake (cancel) switch circuit.
STOP LAMP SW	● Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	● Indicates [ON/OFF] condition of the set switch circuit.
RESUME/ACC SW	● Indicates [ON/OFF] condition of the resume/accelerate switch circuit.
CANCEL SW	● Indicates [ON/OFF] condition of the cancel circuit.
VHCL SPEED SE	● The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	● The preset vehicle speed is displayed.
VACUUM PUMP	● The operation time of the vacuum pump is displayed.
AIR VALVE	● The operation time of the air valve is displayed.
PW SUP-VALVE	● Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	● Indicates [ON/OFF] condition of the cruise lamp circuit.
A/T OD CANCEL	● Indicates [ON/OFF] condition of the OD cancel circuit.
FAIL SAFE-LOW	● The fail-safe (LOW) circuit function is displayed.
FAIL SAFE-SPD	● The fail-safe (SPEED) circuit function is displayed.

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

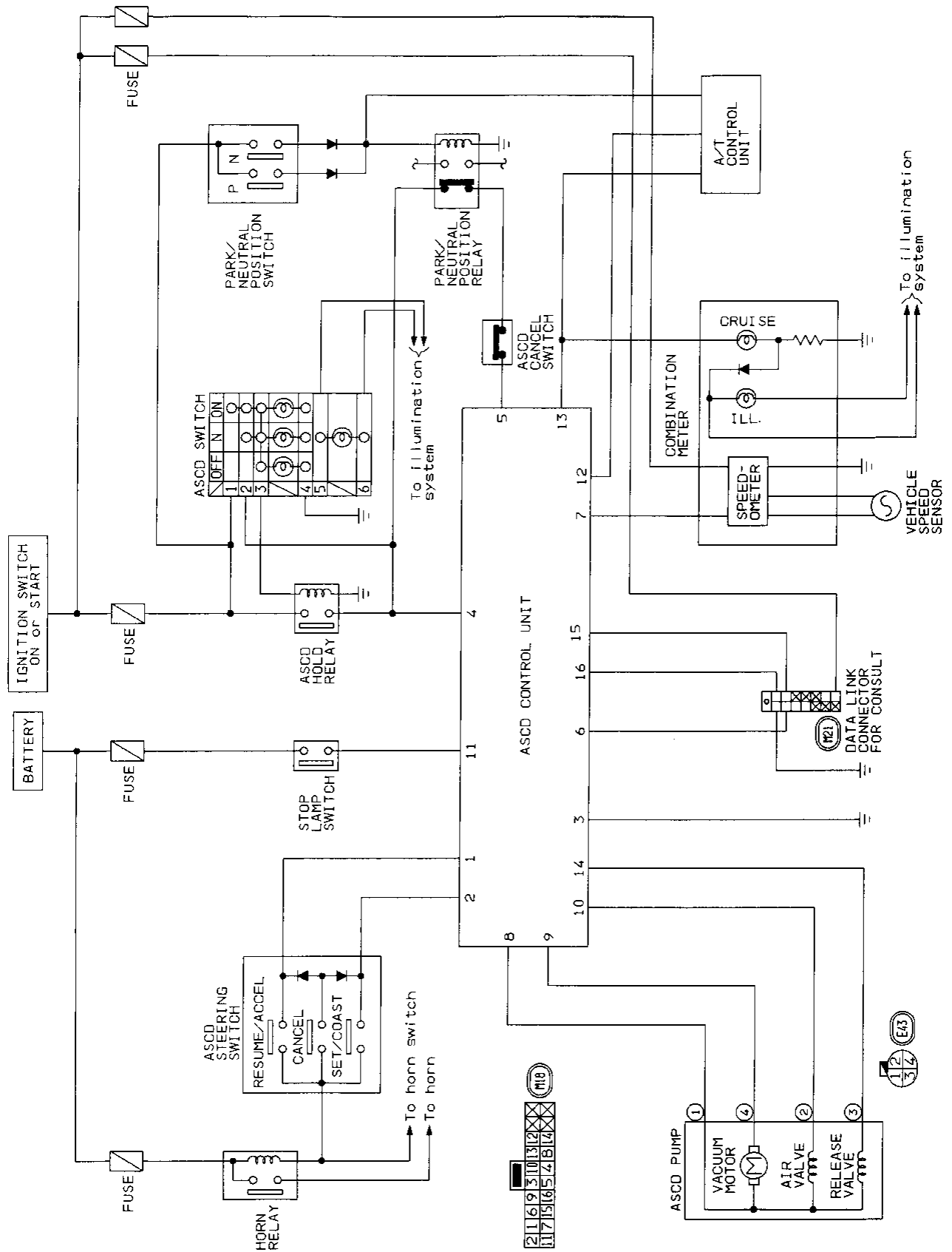
SYMPTOM CHART

PROCEDURE	Diagnostic Procedure								Electrical Components Inspection						
REFERENCE PAGE	EL-126	EL-129	EL-129	EL-130	EL-131	EL-132	EL-134	EL-136	EL-137	EL-138	EL-138	EL-138	EL-138	EL-138	EL-139
SYMPTOM	Diagnostic Procedure 1	Diagnostic Procedure 2	Diagnostic Procedure 3	Diagnostic Procedure 4	Diagnostic Procedure 5	Diagnostic Procedure 6	Diagnostic Procedure 7	Diagnostic Procedure 8	ASCD actuator/ASCD pump	ASCD main switch	ASCD steering switch	ASCD cancel switch and stop lamp switch	Park/Neutral position switch	Vehicle speed sensor	ASCD wire adjustment
ASCD control unit cannot be set properly.	<input type="radio"/>								<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Engine hunts		<input type="radio"/>							<input type="radio"/>						<input type="radio"/>
Large difference between set speed and actual vehicle speed.			<input type="radio"/>						<input type="radio"/>						<input type="radio"/>
Deceleration is greatest immediately after ASCD has been set.				<input type="radio"/>					<input type="radio"/>						<input type="radio"/>
ACCEL switch will not operate.	<input type="radio"/>				<input type="radio"/>						<input type="radio"/>				
RESUME switch will not operate.	<input type="radio"/>					<input type="radio"/>					<input type="radio"/>	<input type="radio"/>			
Set speed cannot be canceled.							<input type="radio"/>		<input type="radio"/>			<input type="radio"/>			<input type="radio"/>
"CRUISE" indicator lamp blinks.								<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>			

AUTOMATIC SPEED CONTROL DEVICE (ASCD) Trouble Diagnoses (Cont'd)

Circuit Diagram for Quick Pinpoint Check

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



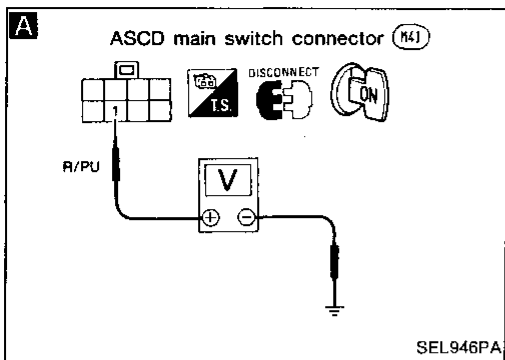
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

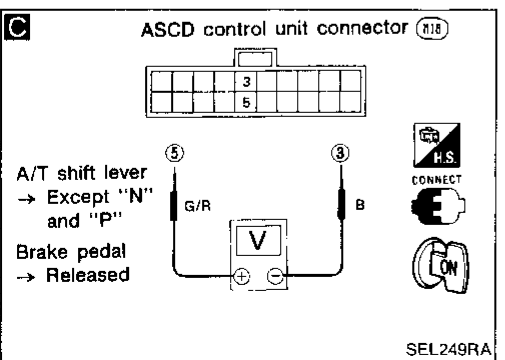
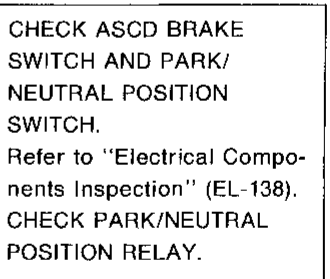
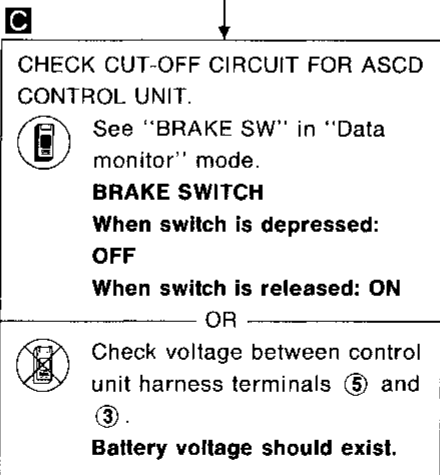
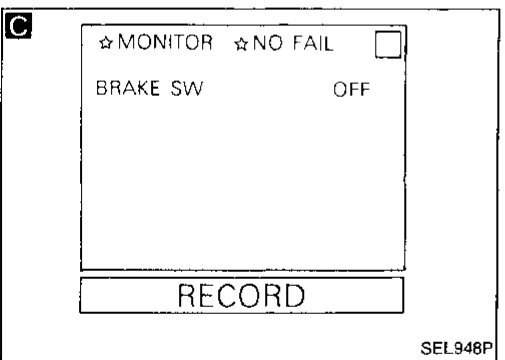
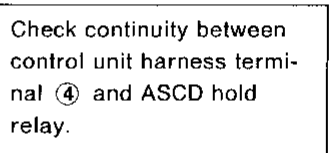
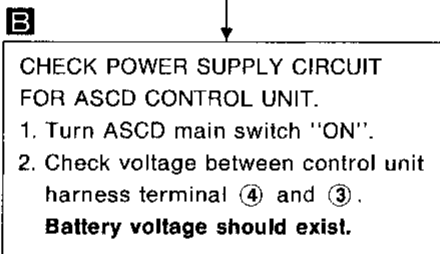
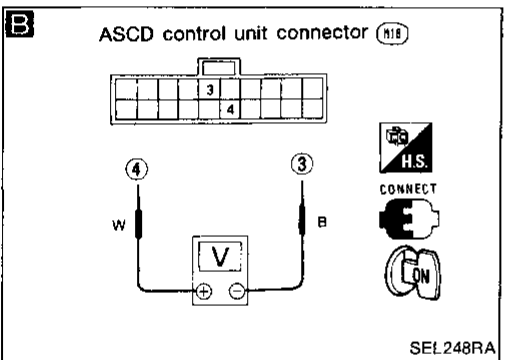
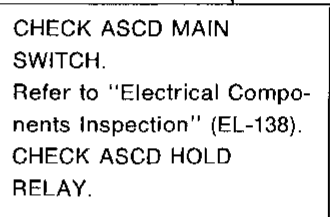
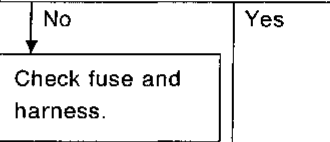
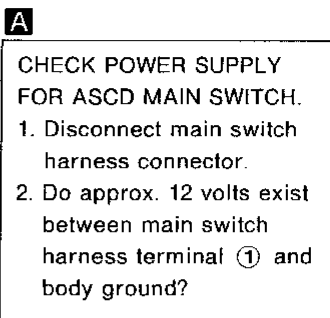
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ASCD control cannot be set.



Turn ASCD main switch "OFF" and "ON" to make sure indicator illuminates.



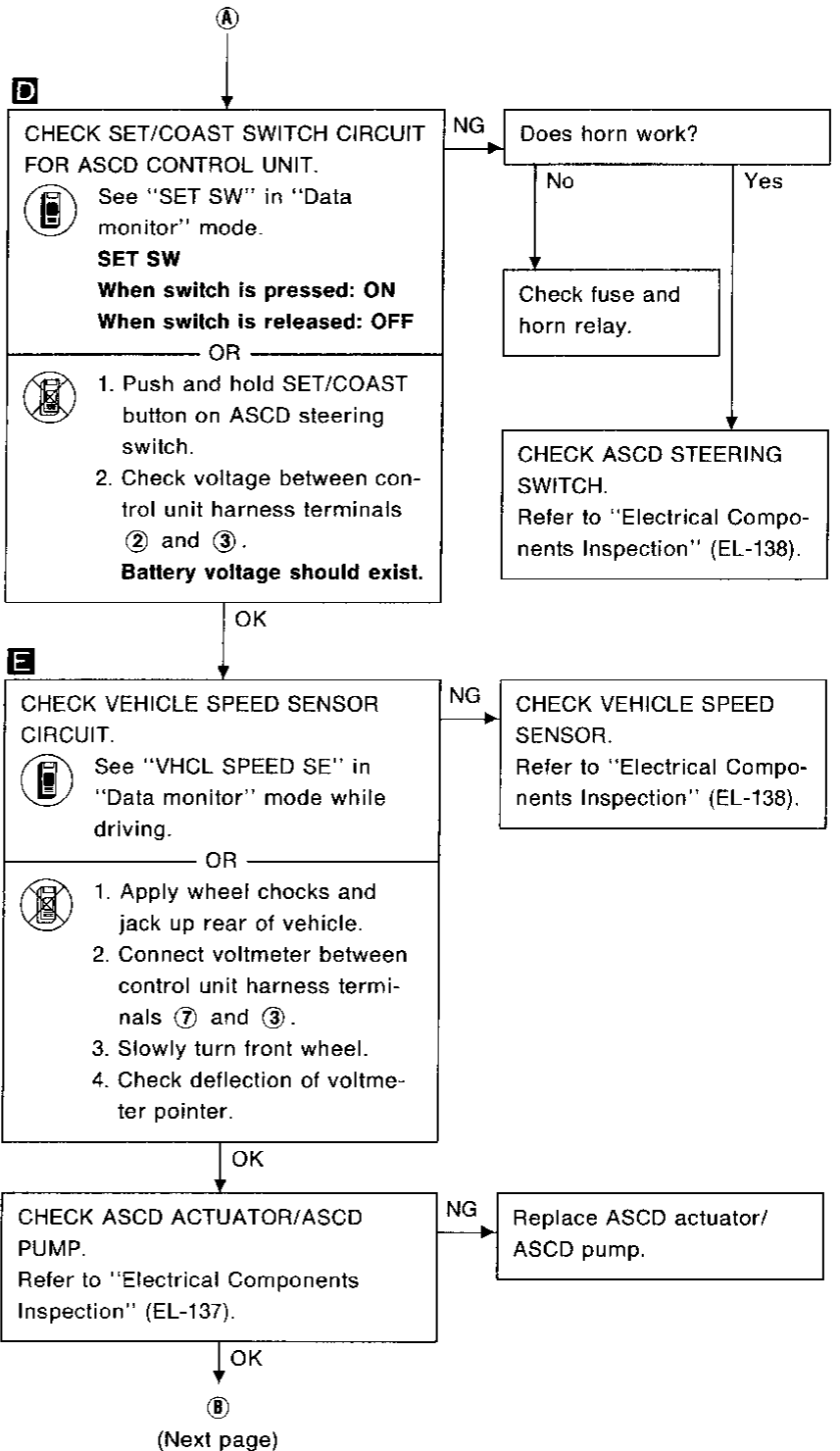
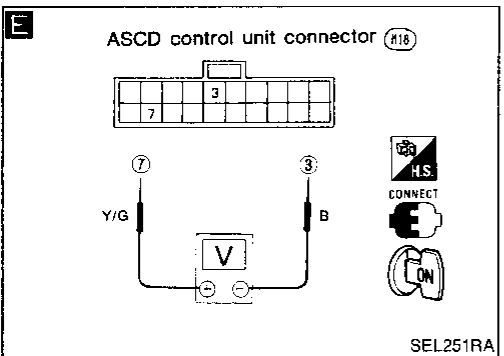
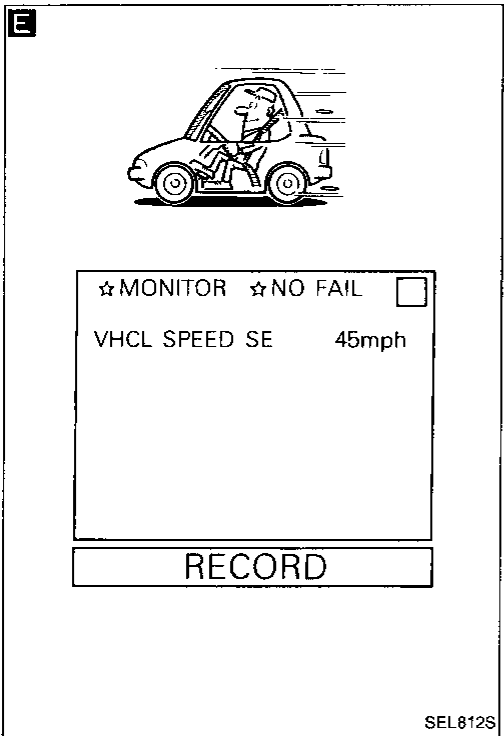
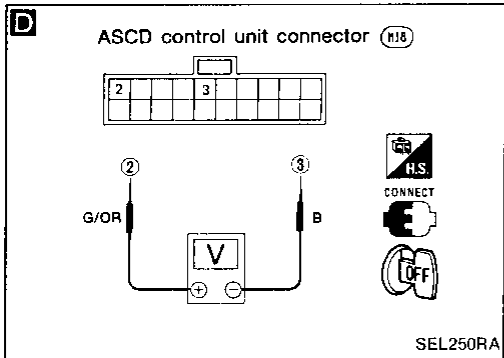
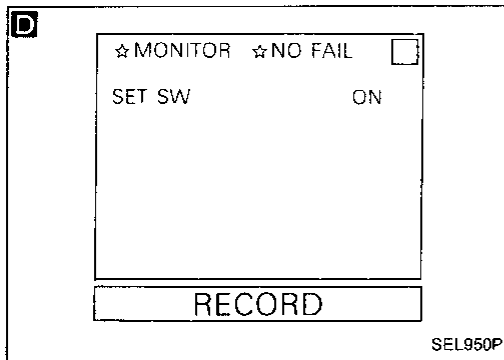
OK

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(Next page)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)




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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

F



☆ MONITOR ☆ NO FAIL

PW SUP-VALVE ON

RECORD

SEL954P

⑧

F

CHECK OUTPUT FOR ASCD ACTUATOR/ASCD PUMP.

1. Read out "PW SUP-VALVE" in "Data monitor" mode while driving.

PW SUP-VALVE:
ON (When ASCD is operating.)
OFF (When ASCD is not operating.)

OR

1. Check voltage between control unit harness terminals ⑧ and ③.

Voltage is 0V

NG →

Replace ASCD control unit.

OK

G

CHECK ASCD ACTUATOR/ASCD PUMP CIRCUIT.

1. Disconnect ASCD control unit connector.

2. Measure resistance between control unit harness terminals ⑧ and ⑨, ⑩, ⑭.

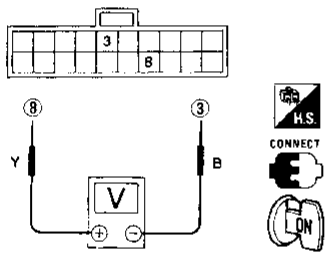
OK →

Replace ASCD control unit.

NG

F

ASCD control unit connector (H18)



SEL252RA

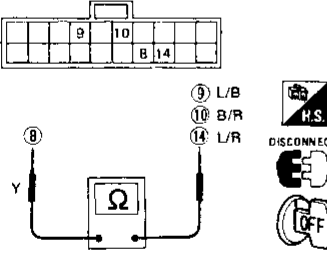
G

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

NG

G

ASCD control unit connector (H18)



SEL253RA

NG

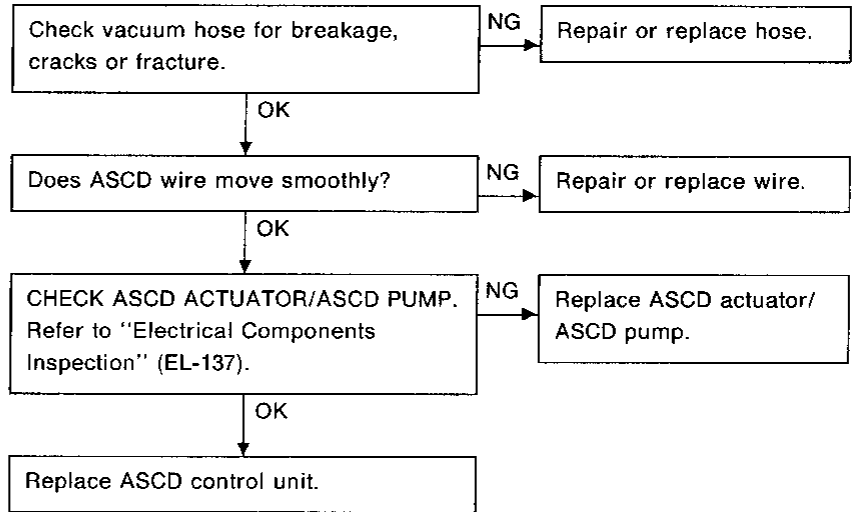
Repair short or open circuit in ASCD actuator/ASCD pump harness.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Engine hunts.



GI

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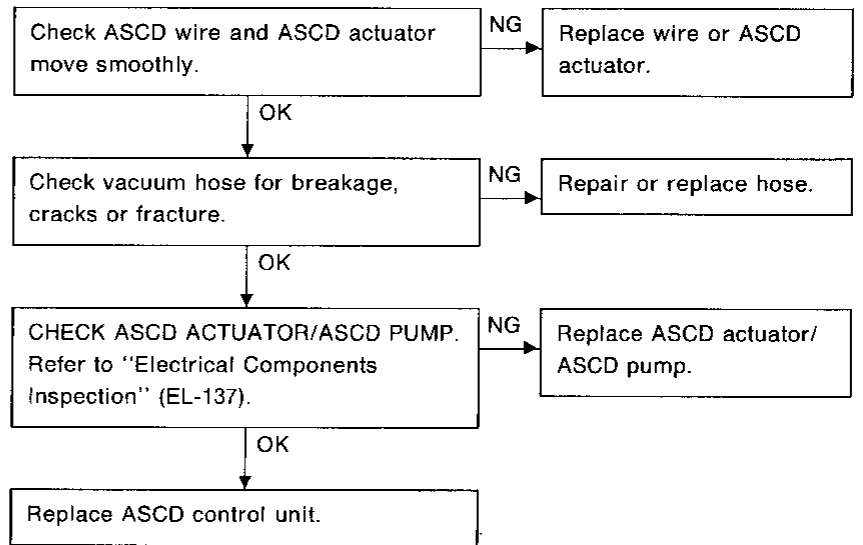
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DIAGNOSTIC PROCEDURE 3

SYMPTOM: Large difference between set vehicle speed and actual speed.



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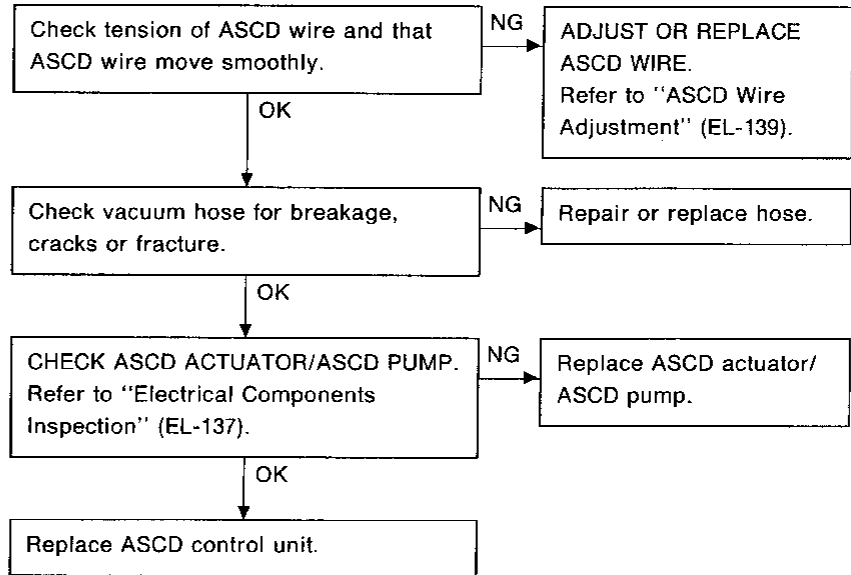
IDX

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Deceleration is greatest immediately after ASCD has been set.




AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: ACCEL switch will not operate.

A



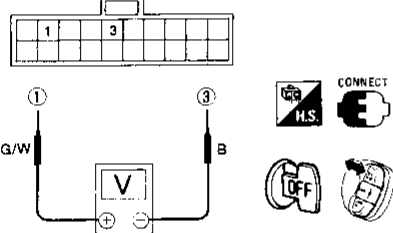
☆ MONITOR ☆ NO FAIL

RESUME/ACC SW ON

RECORD


SEL957P

A ASCD control unit connector (R18)

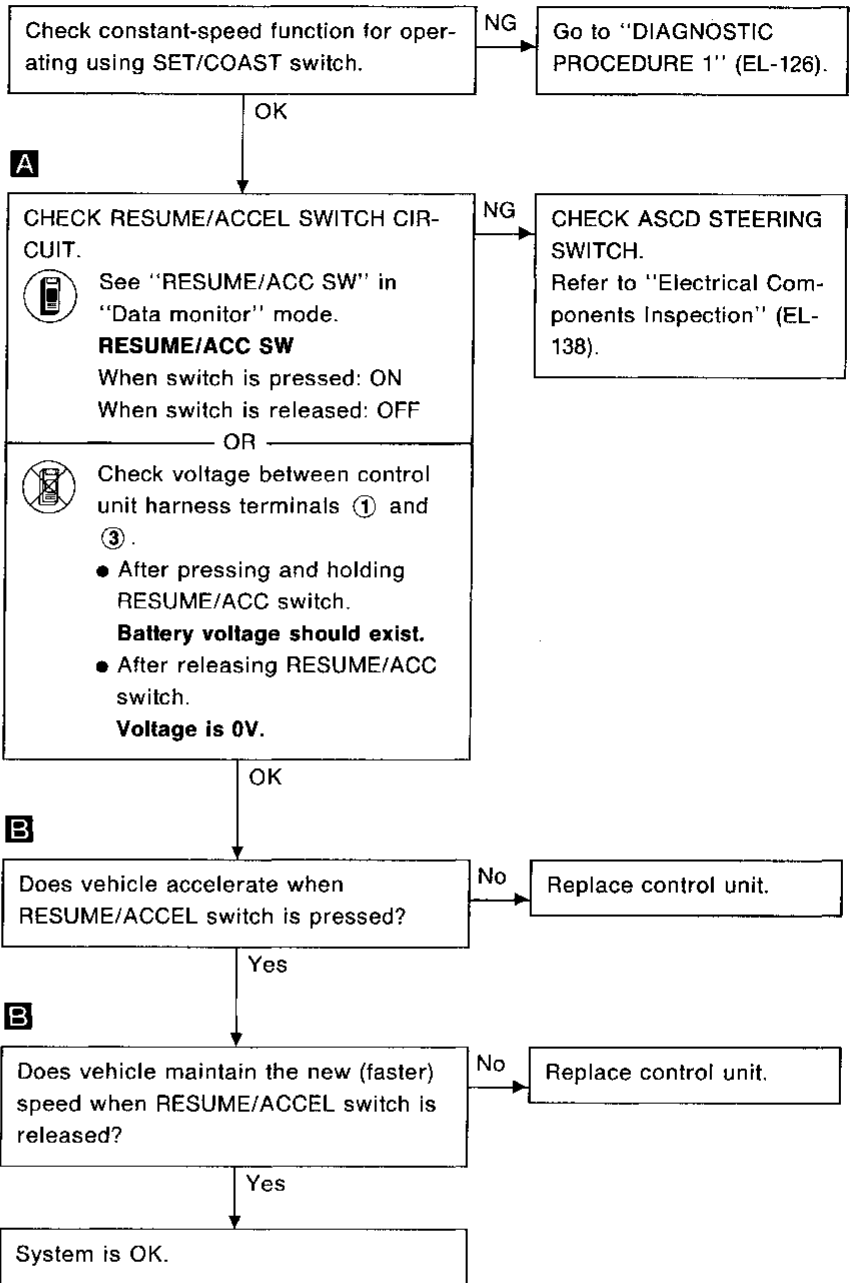


SEL254RA

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SEL959P



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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: RESUME switch will not operate.

A



☆ MONITOR ☆ NO FAIL

RESUME/ACC SW ON

RECORD


SEL957P

Check constant-speed function for operation using SET/COAST switch. NG → Go to "DIAGNOSTIC PROCEDURE 1" (EL-126).

OK ↓


A

CHECK RESUME/ACCEL SWITCH CIRCUIT. NG → CHECK ASCD STEERING SWITCH. Refer to "Electrical Components Inspection" (EL-138).

 See "RESUME/ACC SW" in "Data monitor" mode.

RESUME/ACC SW
When switch is pressed: ON
When switch is released: OFF

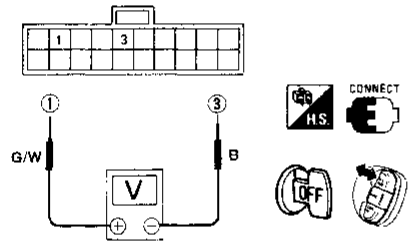
OR

 Check voltage between control unit harness terminals ① and ③.

- After pressing and holding RESUME/ACC switch.
Battery voltage should exist.
- After releasing RESUME/ACC switch.
Voltage is 0V.

OK ↓

A ASCD control unit connector (H18)



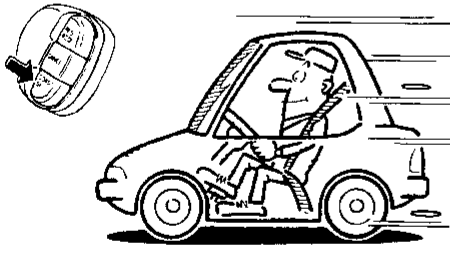
SEL255RA

B

Set vehicle speed at 80 km/h (50 MPH) by pressing SET/COAST switch.

OK ↓

B



SEL961P

C

While cruising at set speed, depress and release brake pedal.

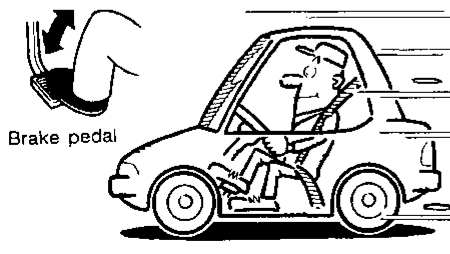
OK ↓

Does speed control disengage and "CRUISE" lamp turn off? No → CHECK STOP LAMP SWITCH AND ASCD CANCEL SWITCH. Refer to "Electrical Components Inspection" (EL-138).

Yes ↓

ⓐ
(Next page)

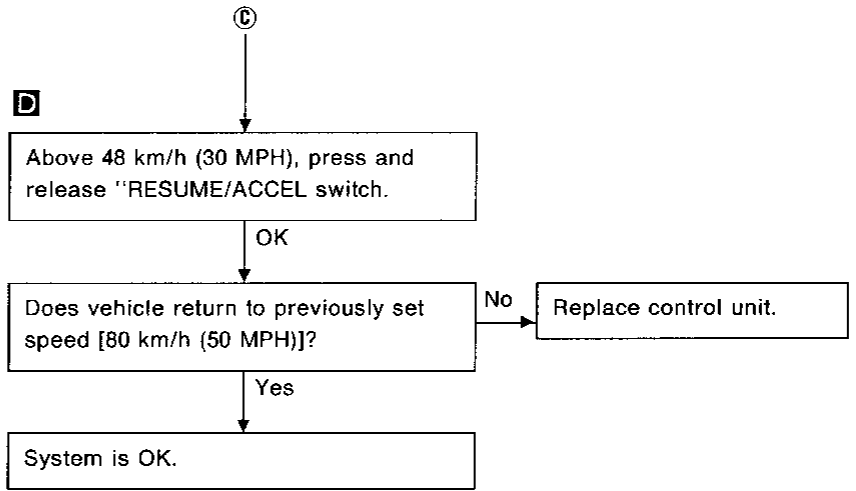
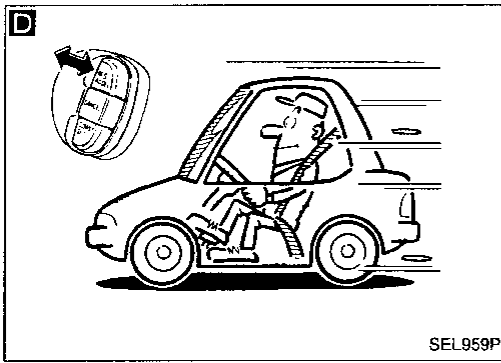
C



SEL962P

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)



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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Set speed cannot be cancelled.

A

☆ MONITOR ☆ NO FAIL

BRAKE SW OFF

RECORD

SEL948P

A

ASCD control unit connector (R16)

SEL256RA

B

☆ MONITOR ☆ NO FAIL

STOP LAMP SW ON

RECORD

SEL965P

B

ASCD control unit connector (R18)

SEL257RA

A

CHECK ASCD CANCEL AND PARK/NEUTRAL POSITION SWITCH CIRCUIT.

- Turn ASCD main switch "ON".
- See "BRAKE SW" in "Data monitor" mode.

BRAKE SW

When brake pedal is released: ON

When brake pedal is depressed: OFF

OR

2. Check voltage between control unit harness terminals ⑤ and ③.

NG → CHECK ASCD CANCEL and PARK/NEUTRAL POSITION SWITCH. Refer to "Electrical Components Inspection" (EL-138).

Condition		Voltage [Ω]
ASCD CANCEL switch	Depressed	0
	Released	Approx. 12
A/T shift lever position is at any position except N or P.		Approx. 12
A/T shift lever position is at N or P.		0

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

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

NG → CHECK STOP LAMP SWITCH. Refer to "Electrical Components Inspection" (EL-138).

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

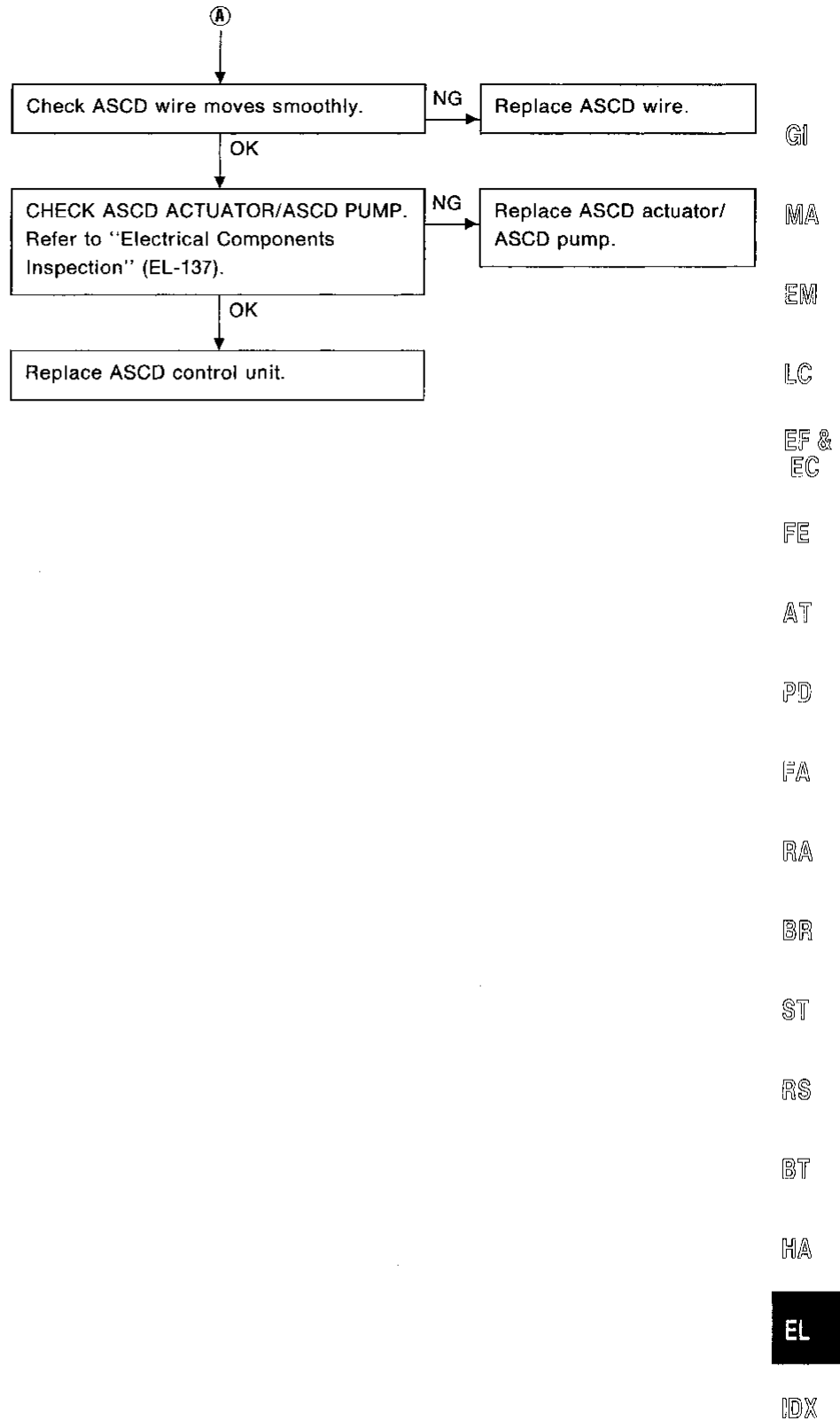
OK

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(Next page)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

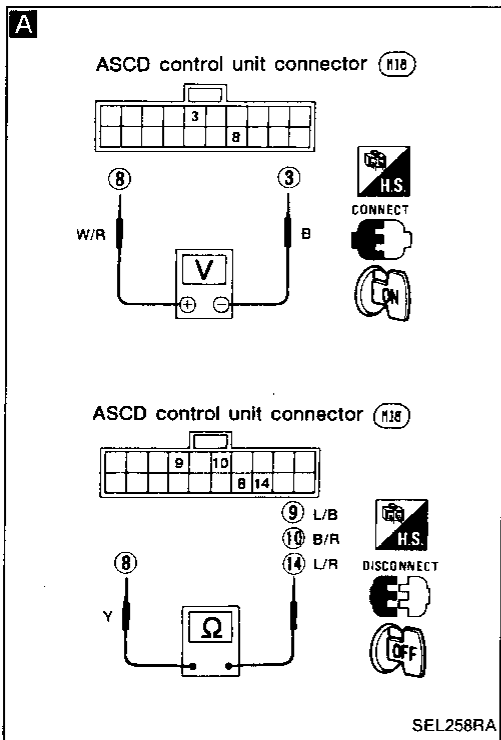
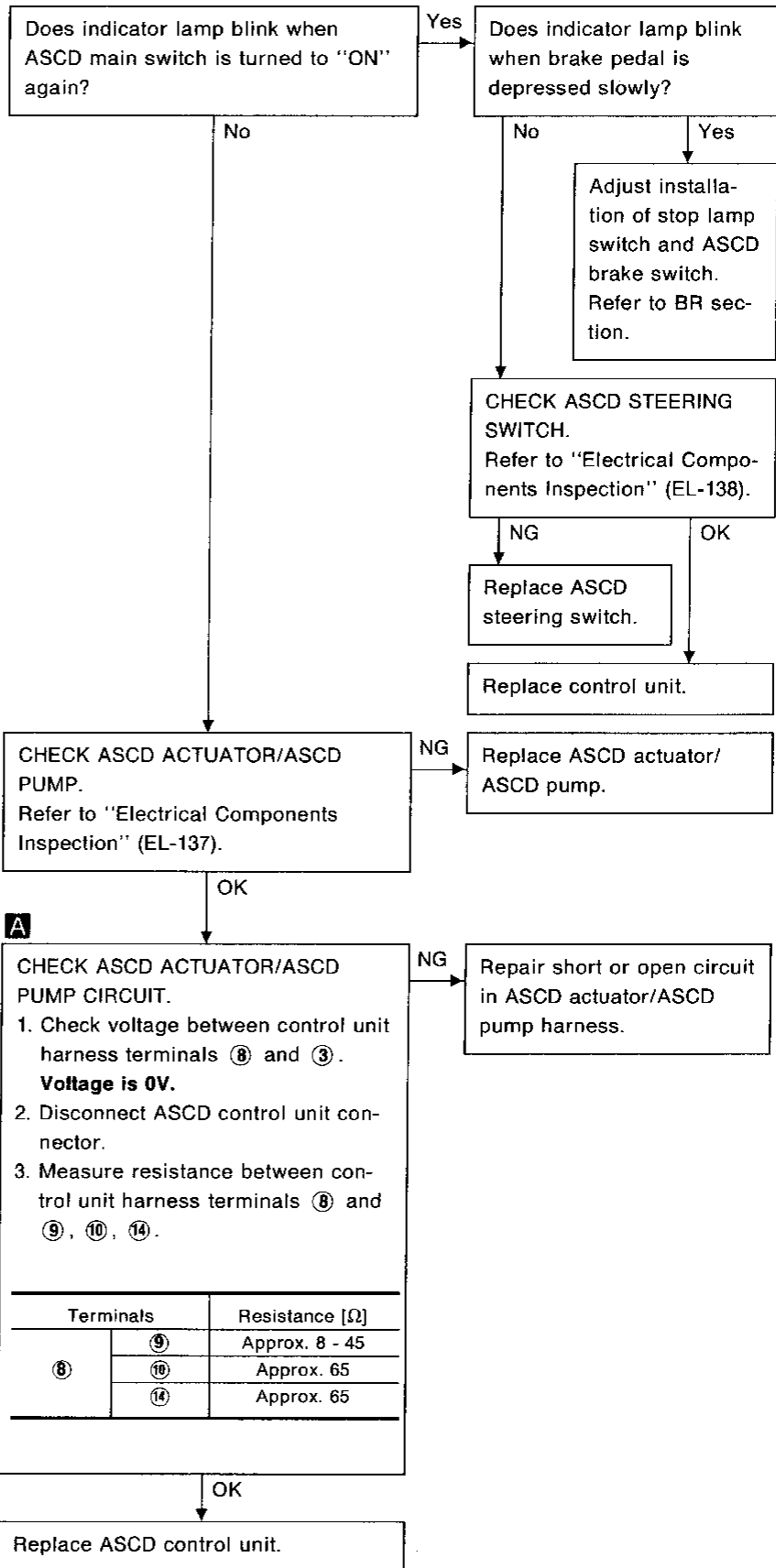


AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: "CRUISE" indicator lamp blinks.



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

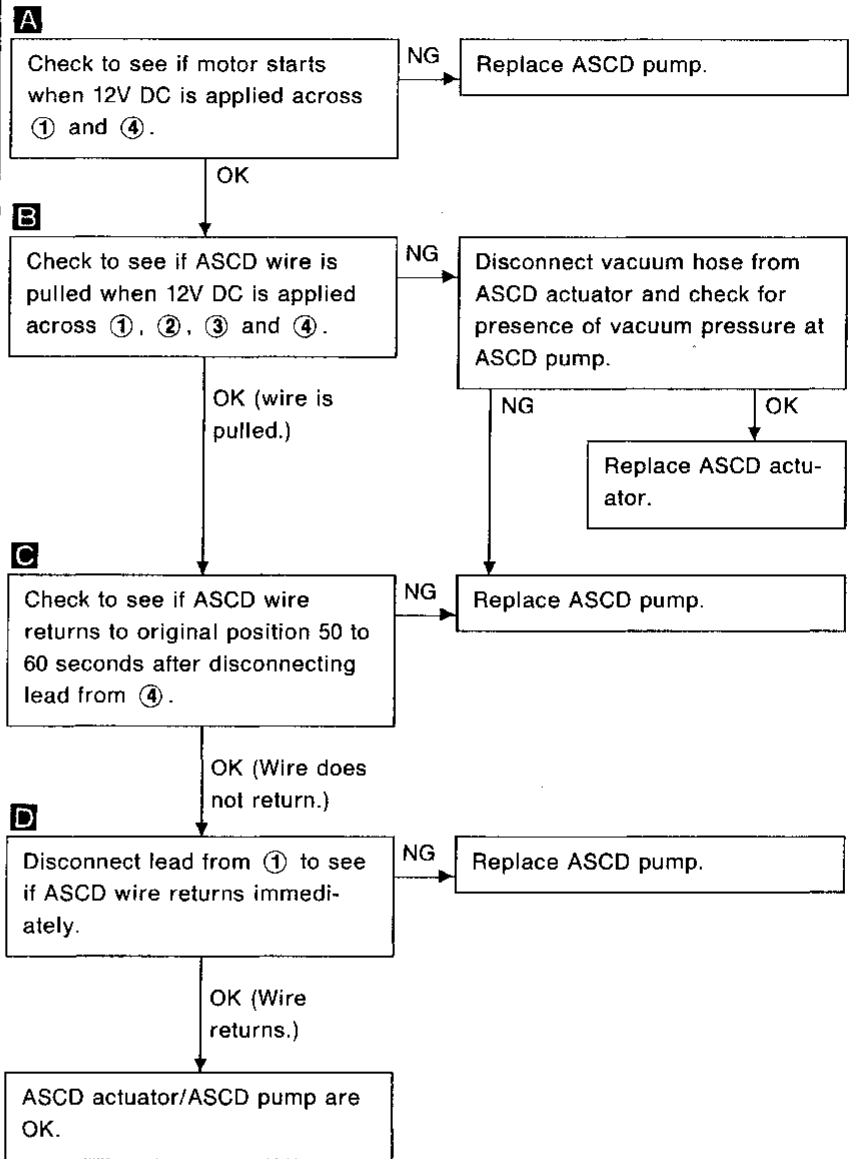
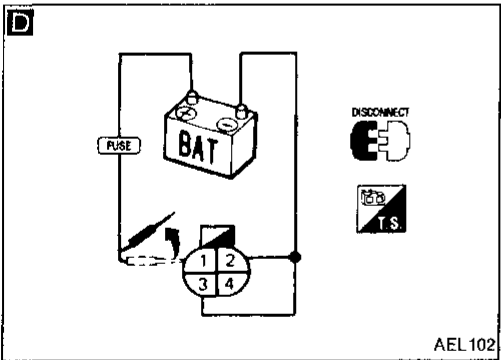
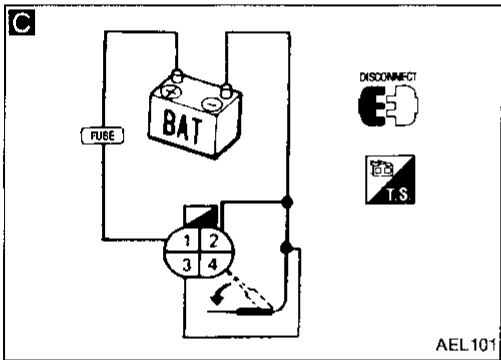
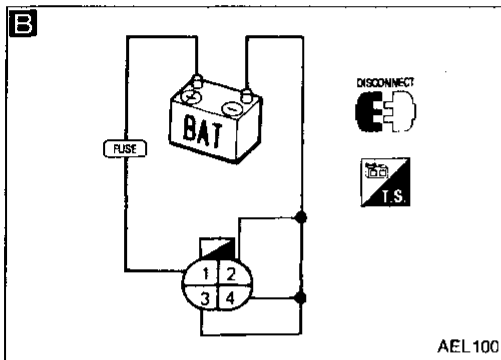
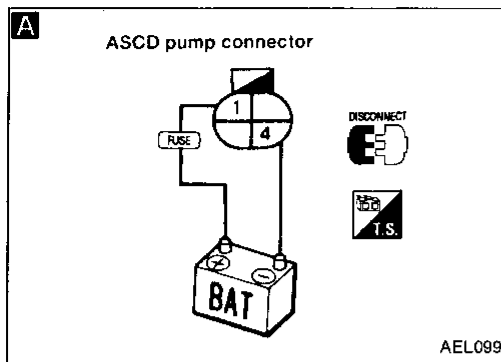
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

ASCD actuator/ASCD pump

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



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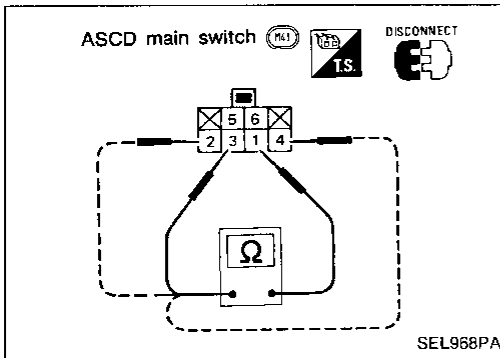
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD main switch

Check continuity between terminals by pushing switch to each position.

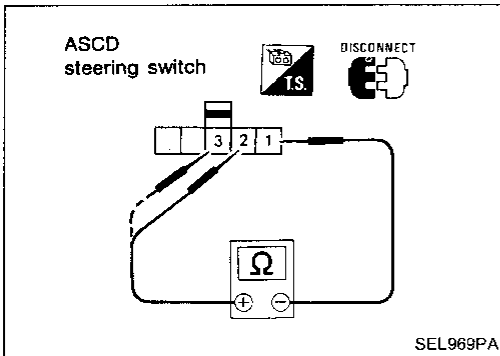
Switch position	Terminals	1	2	3	4	5	6
ON		○	○	○	○		
N			○	○	○		ILL.
OFF				○	○		



ASCD steering switch

Check continuity between terminals by pushing each button.

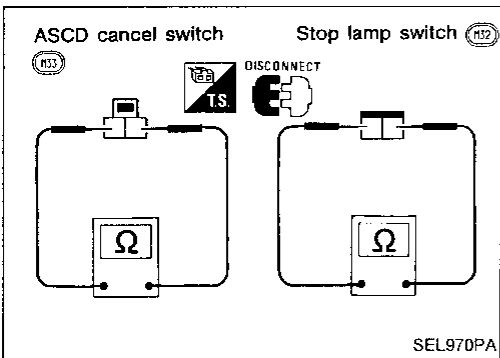
Button	Terminal	1	2	3
SET/COAST		○	○	
RESUME/ACCEL		○		○
CANCEL		○	▶	
		○	▶	○



ASCD cancel switch and stop lamp switch

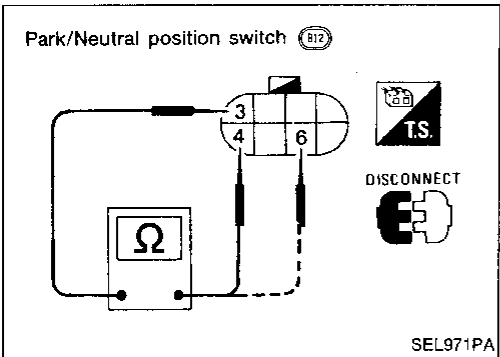
Condition	Continuity	
	ASCD cancel switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

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



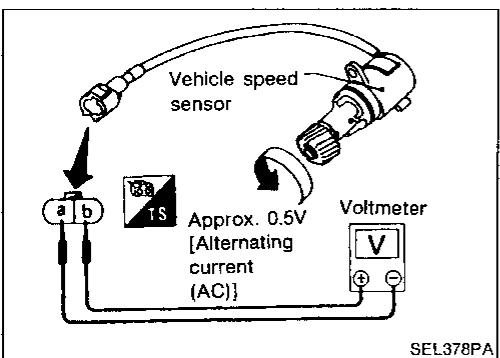
Park/Neutral position switch

Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is any position except "N" or "P"	No

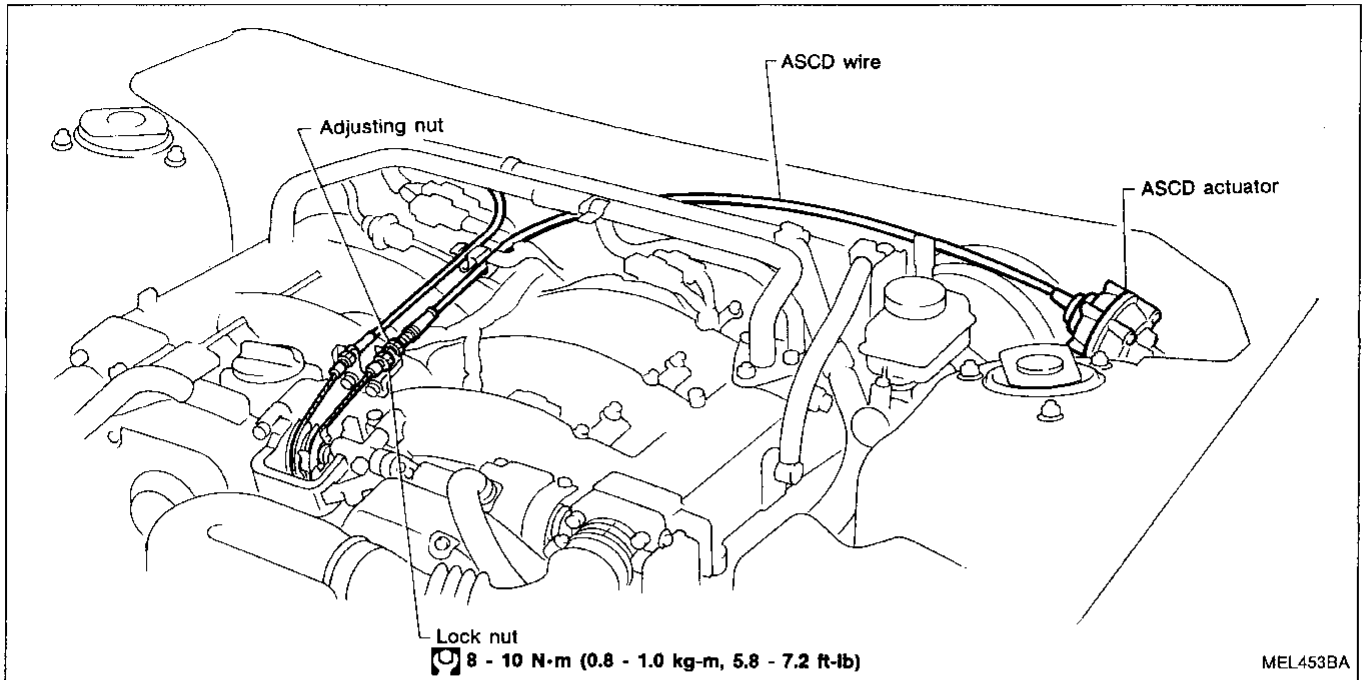


Vehicle speed sensor

1. Remove vehicle speed sensor from transaxle.
2. Turn vehicle speed sensor pinion quickly and measure voltage across (a) and (b).



ASCD Wire Adjustment



CAUTION:

- **Be careful not to twist ASCD wire when removing it.**
 - **Do not tense ASCD wire excessively during adjustment.**
- After confirming that accelerator wire is properly adjusted, adjust the tension of ASCD wire in the following manner.
- (1) After adjusting the length of the accelerator wire, turn a securing nut by 1/2 to 1 turn from throttle open starting position to the wire loosening direction to fix. (Must be securing carried out to prevent response delay of operation of the ASCD)
 - (2) Securely tighten lock nut to hold adjusting nut in place.
- For ASCD cancel switch and clutch switch adjustment, refer to BR and CL sections.

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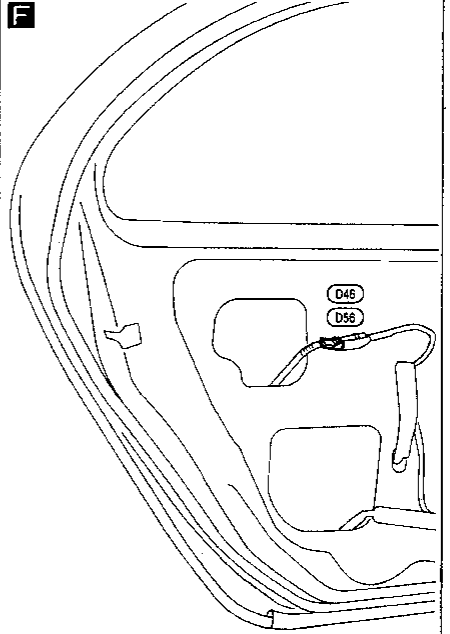
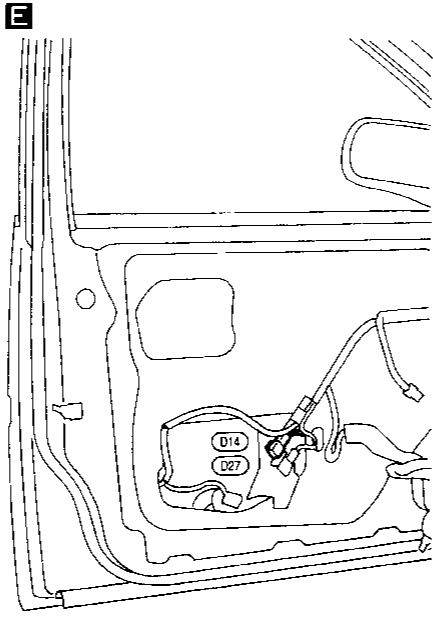
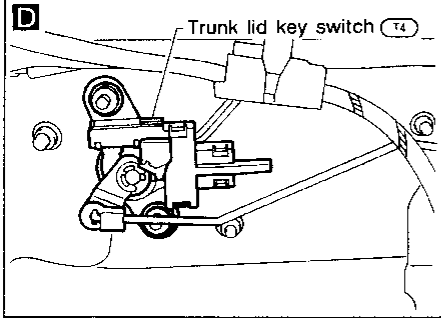
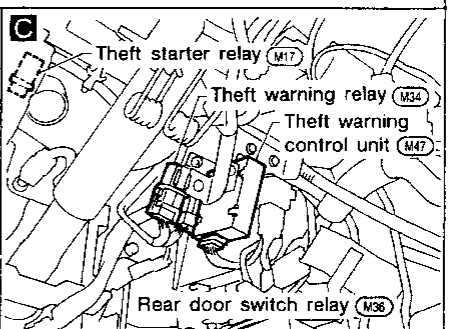
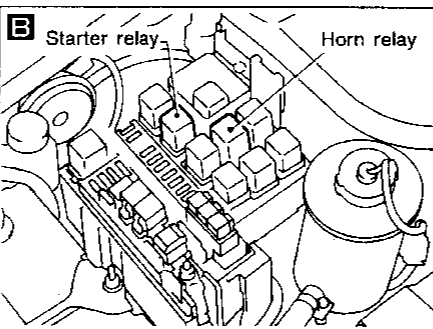
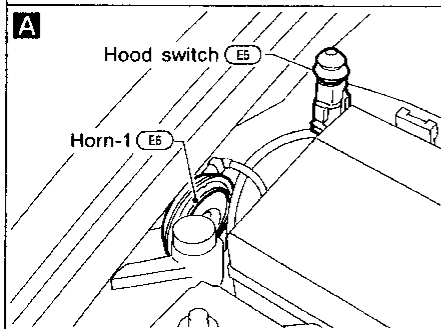
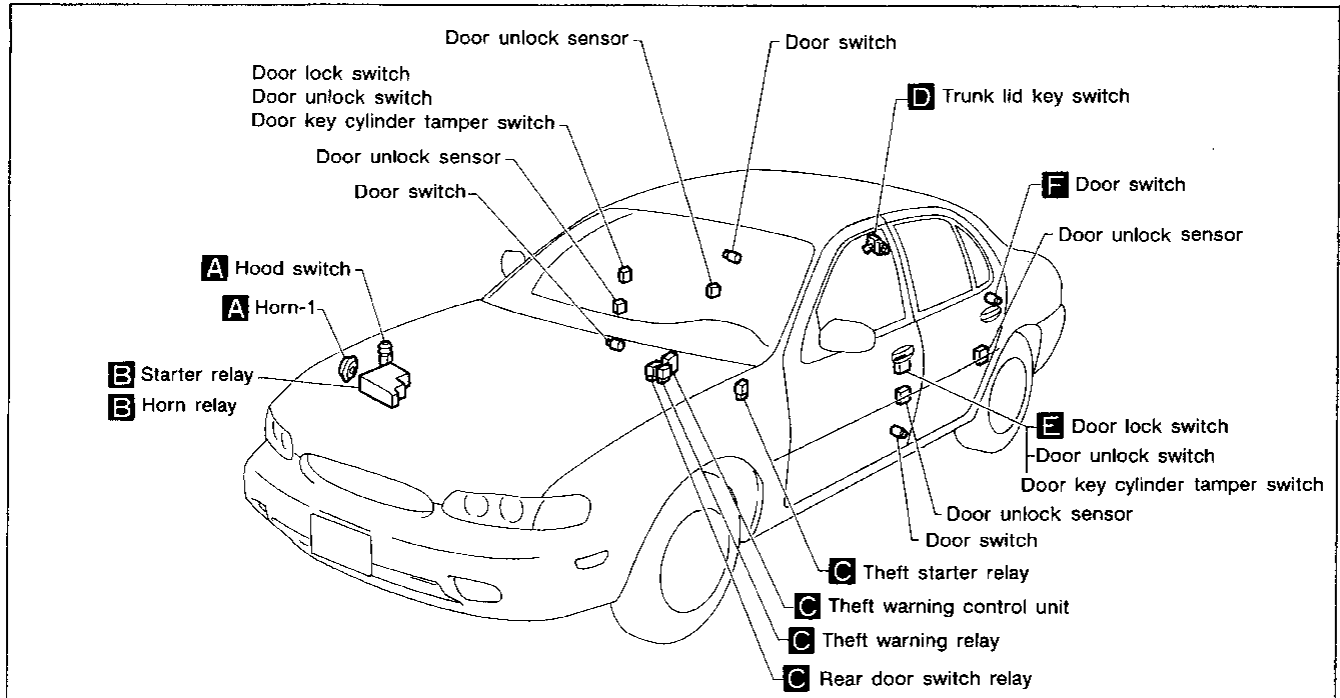
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NOTE

THEFT WARNING SYSTEM

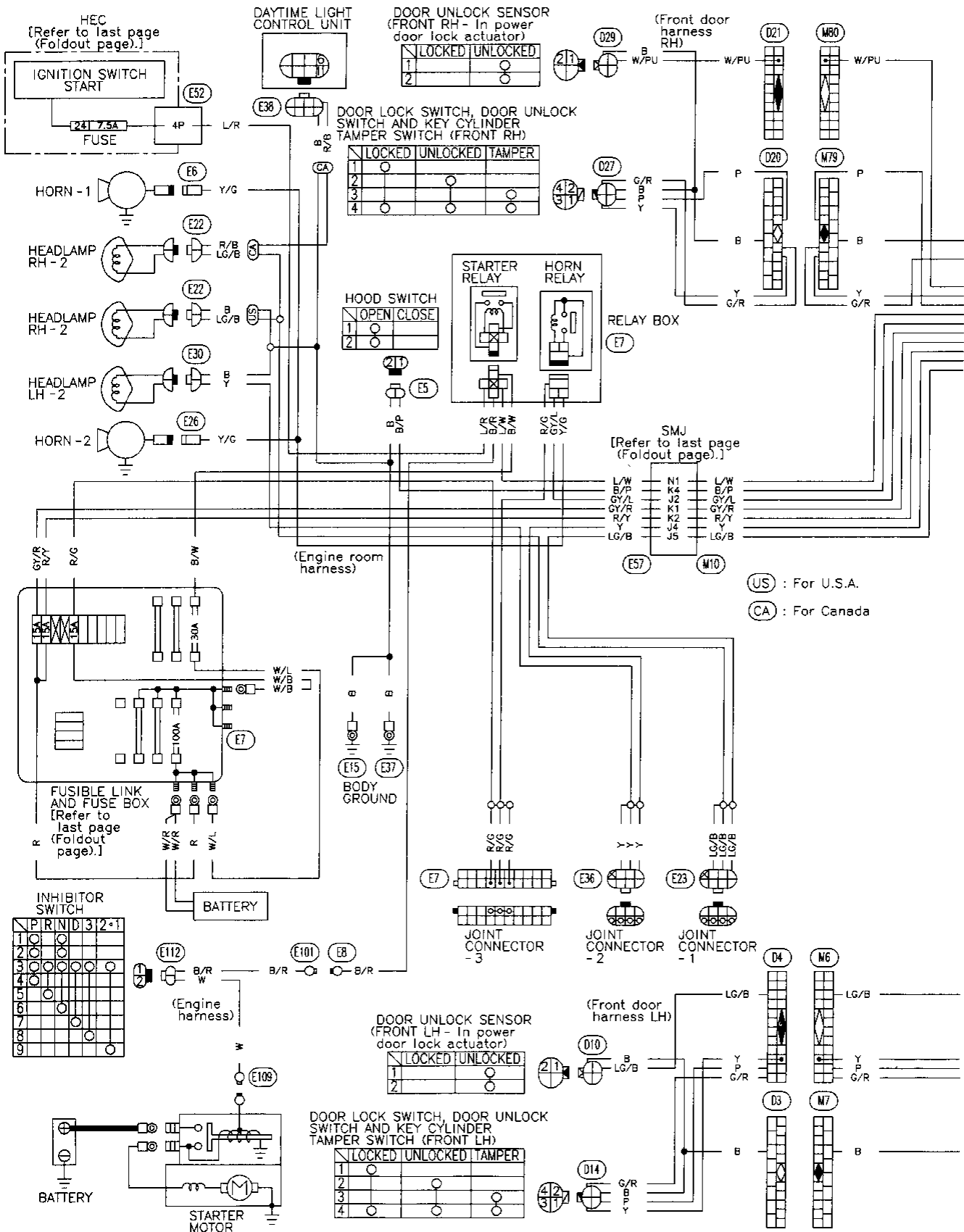
Component Parts and Harness Connector Location



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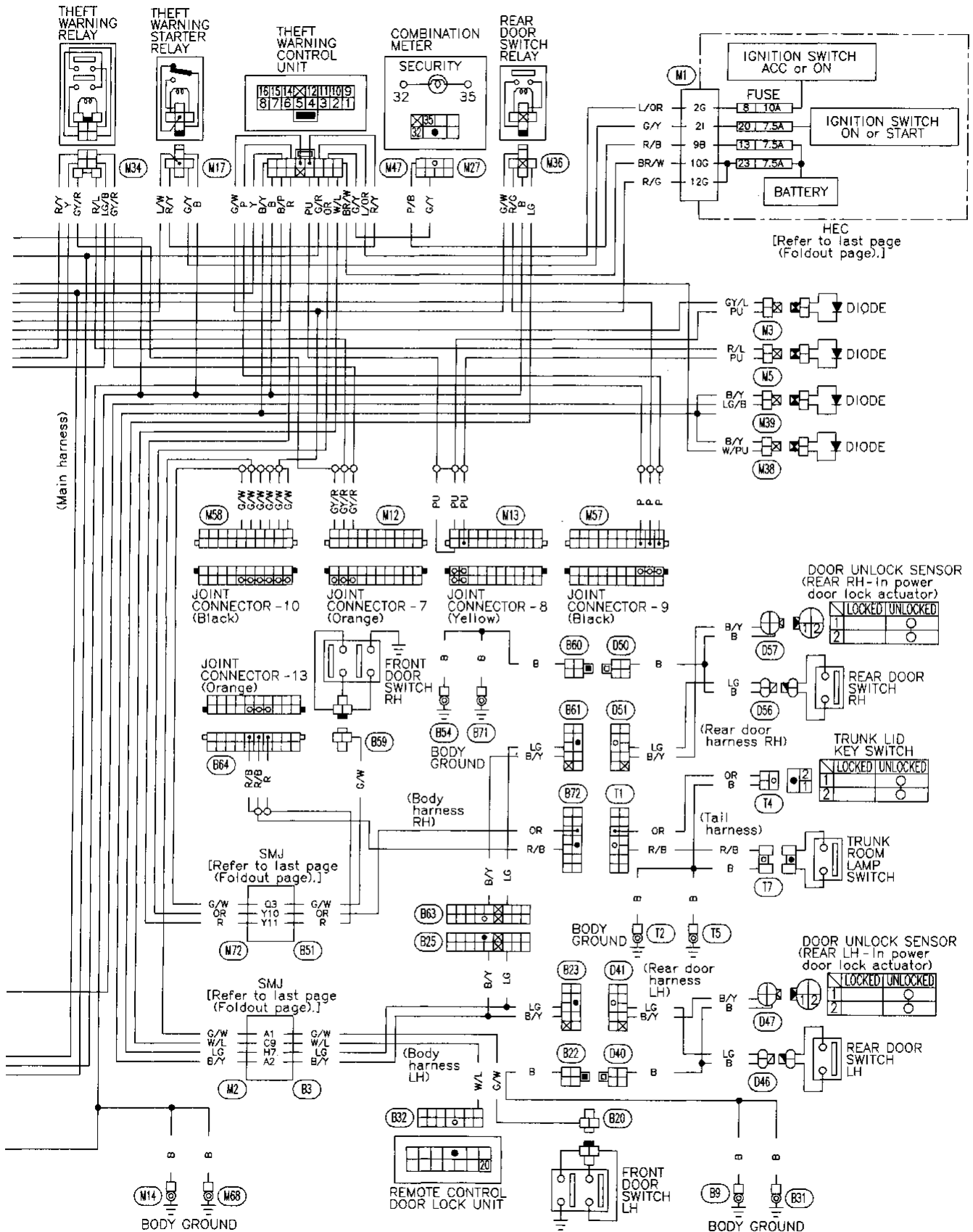
THEFT WARNING SYSTEM

Wiring Diagram



THEFT WARNING SYSTEM

Wiring Diagram (Cont'd)



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THEFT WARNING SYSTEM

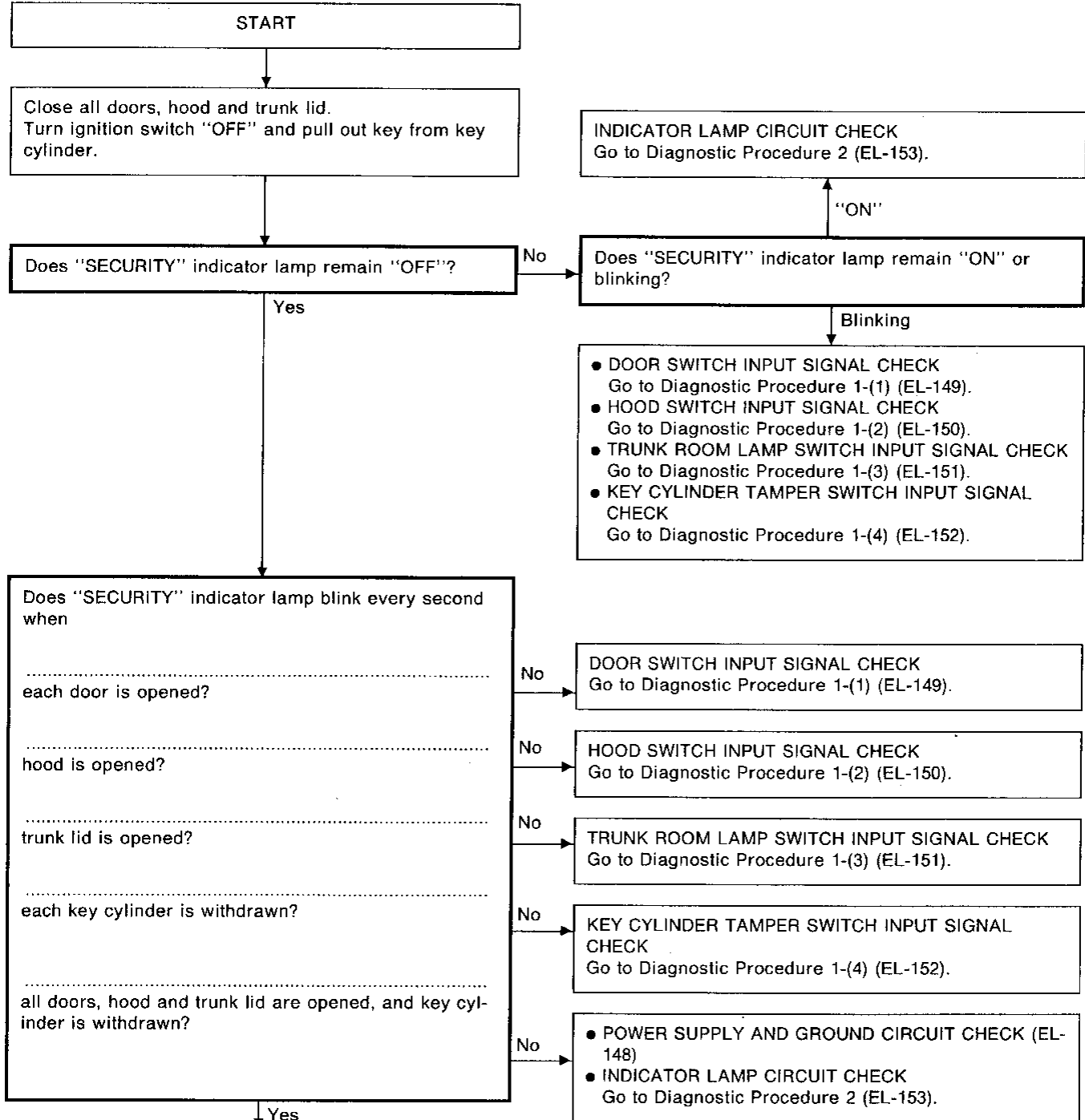
Trouble Diagnoses

SYSTEM OPERATION CHECK

The system operation is canceled by turning ignition switch to "ACC" at any step in the following:

- A step between START and ARMED, or
- In the ARMED phase

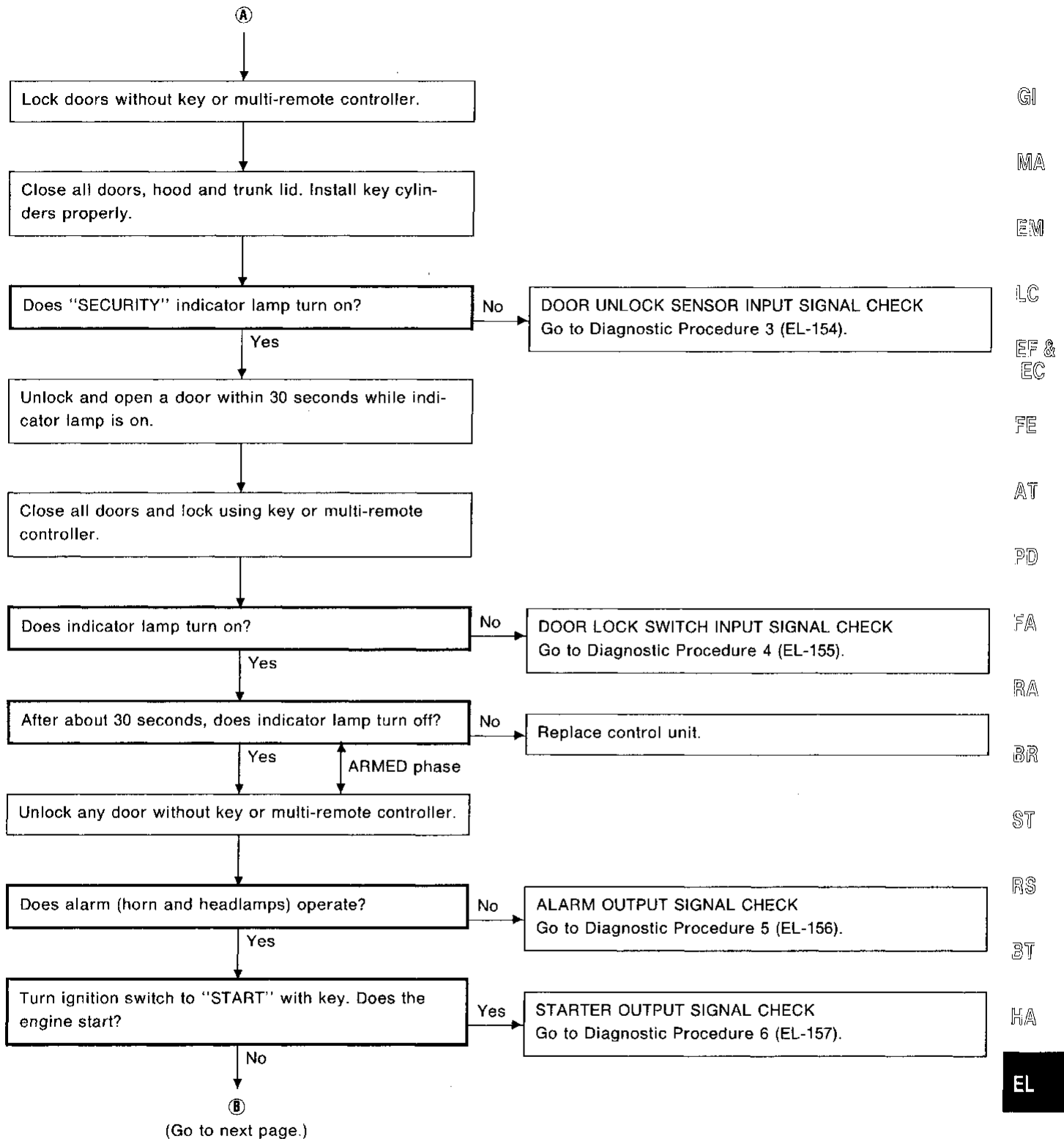
in the following flow chart.



(A)
(Go to next page.)

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)



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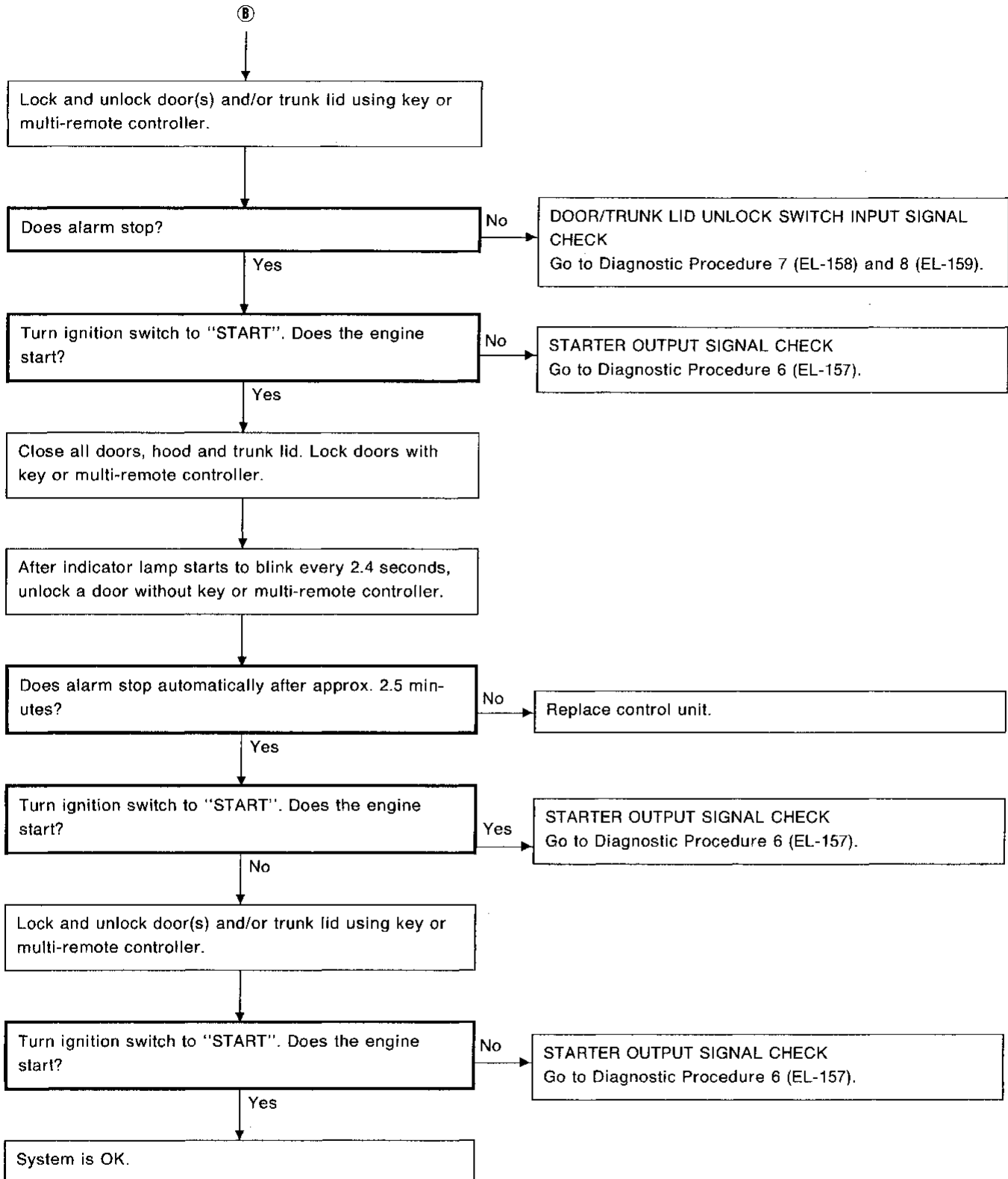
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THEFT WARNING SYSTEM

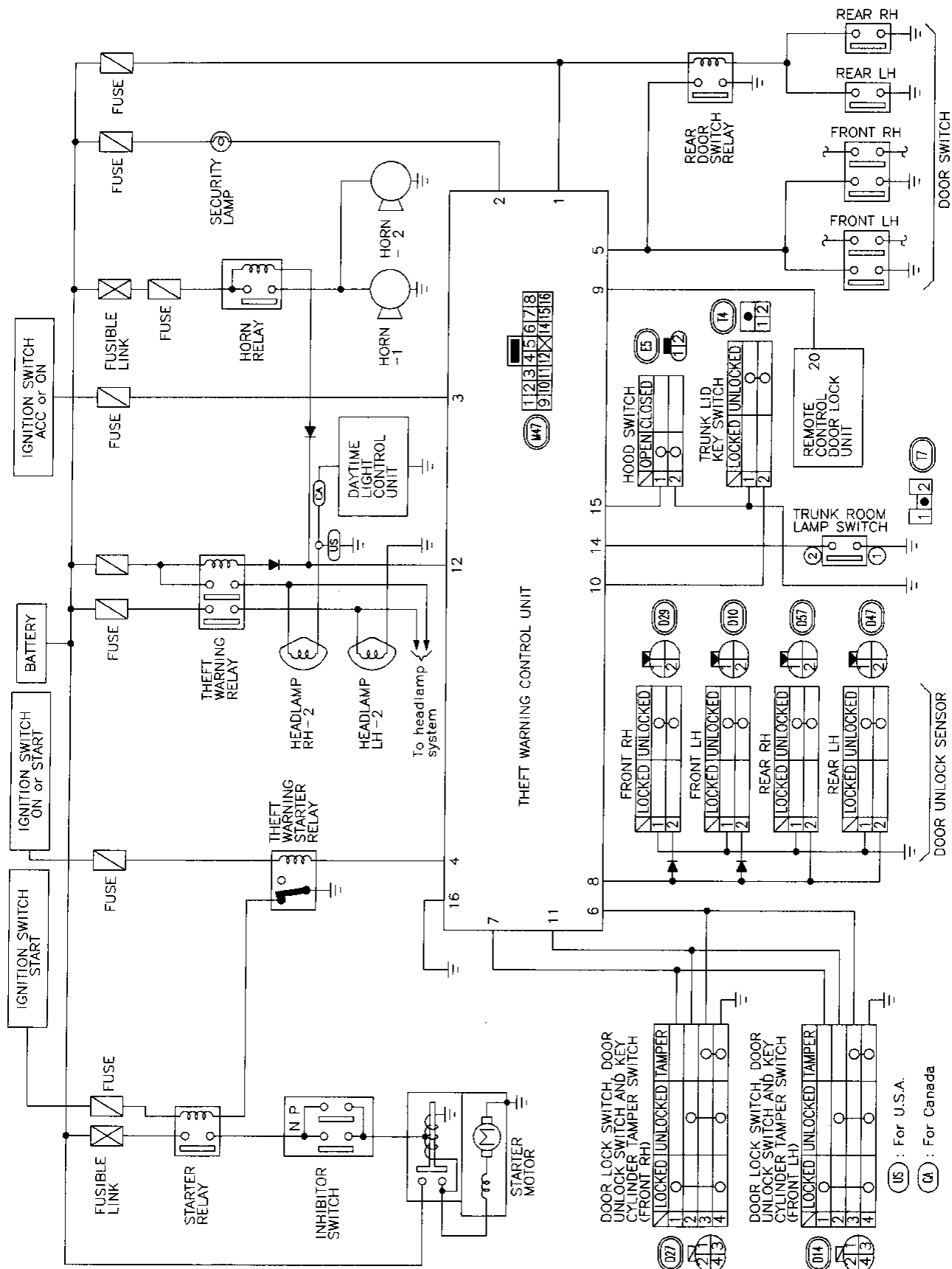
Trouble Diagnoses (Cont'd)



THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



- GI
- WA
- EM
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- FE & EC
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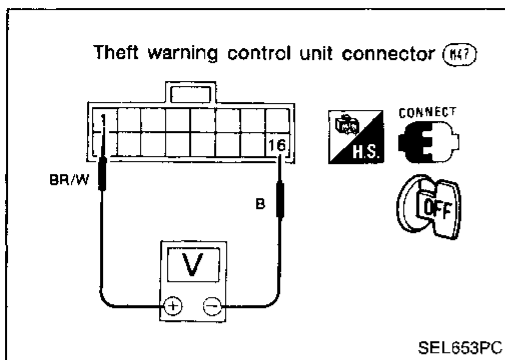
(15) : For U.S.A.
 (CA) : For Canada

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

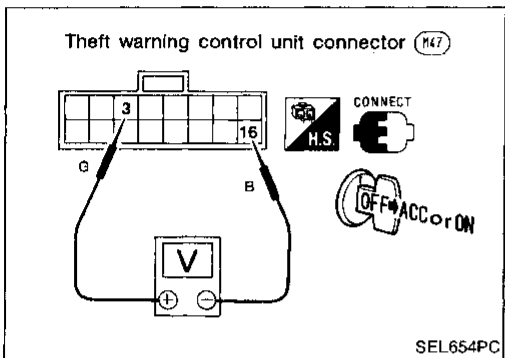
POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply circuit check



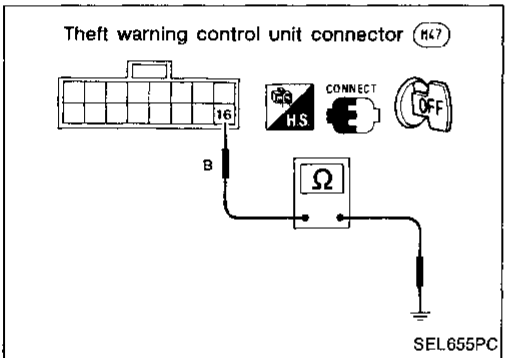
Terminals	Ignition switch position		
	OFF	ACC	ON
① - ⑯	Battery voltage	Battery voltage	Battery voltage

Power supply circuit check for system cancel



Terminals	Ignition switch position		
	OFF	ACC	ON
③ - ⑯	0V	Battery voltage	Battery voltage

Ground circuit check



Terminals	Continuity
⑯ - Ground	Yes

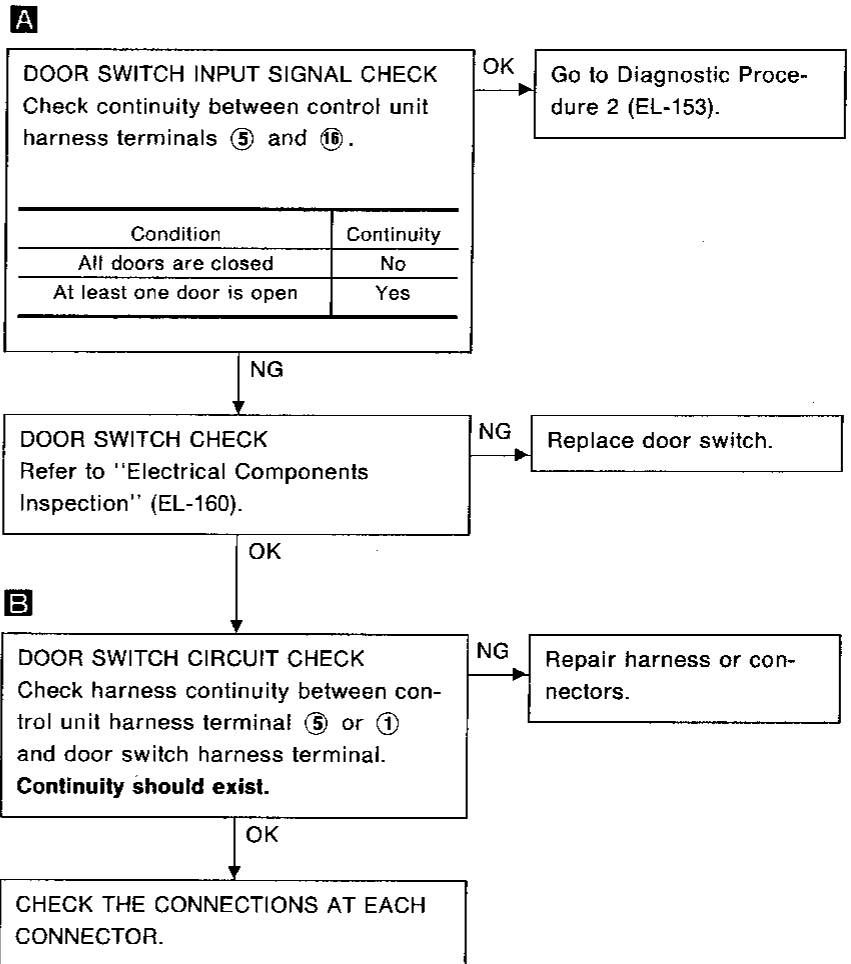
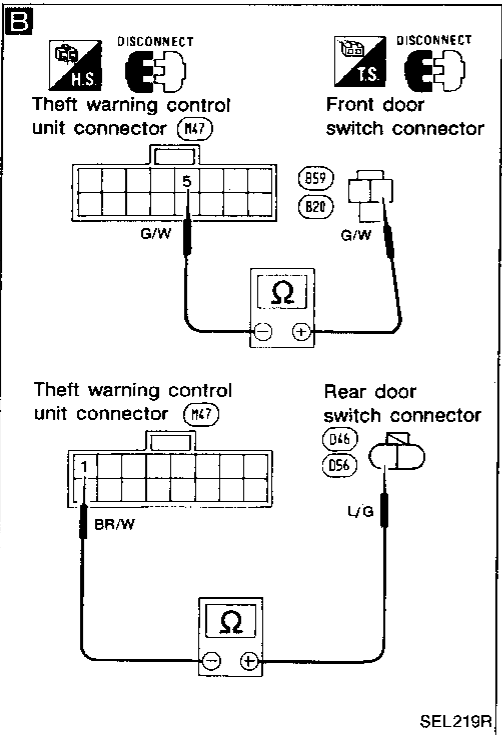
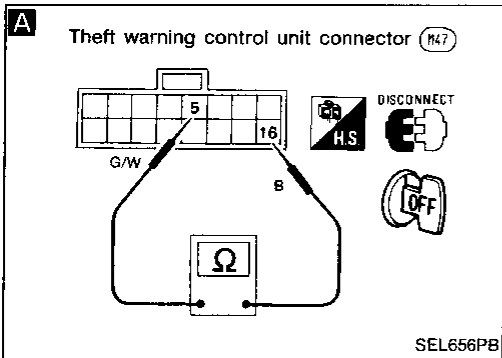
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: ● Indicator lamp does not blink.
● Indicator lamp remains blinking.

Diagnostic procedure 1-(1)



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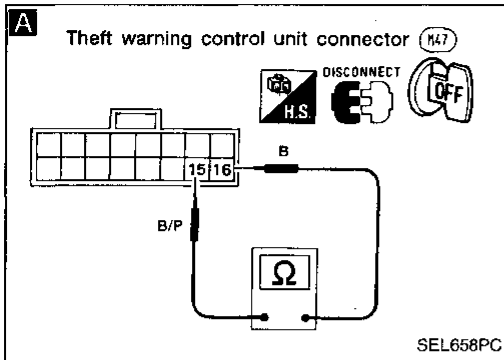
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)

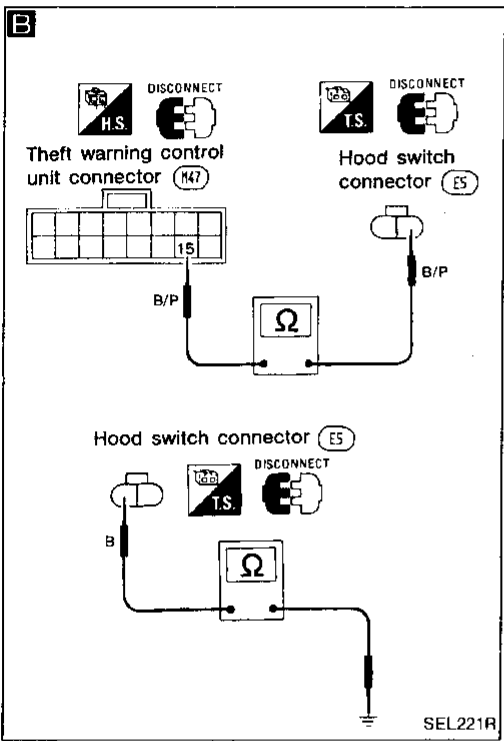


A

HOOD SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑮ and ⑯.

Condition	Continuity
Hood is open	Yes
Hood is closed	No

OK → Go to Diagnostic Procedure 2 (EL-153).



NG → Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK → **HOOD SWITCH CHECK**
Refer to "Electrical Components Inspection" (EL-160).

NG → Replace hood switch.

B

HOOD SWITCH CIRCUIT CHECK

- Check harness continuity between control unit harness terminal ⑮ and hood switch harness terminal.
- Check harness continuity between hood switch terminal and body ground.

Continuity should exist.

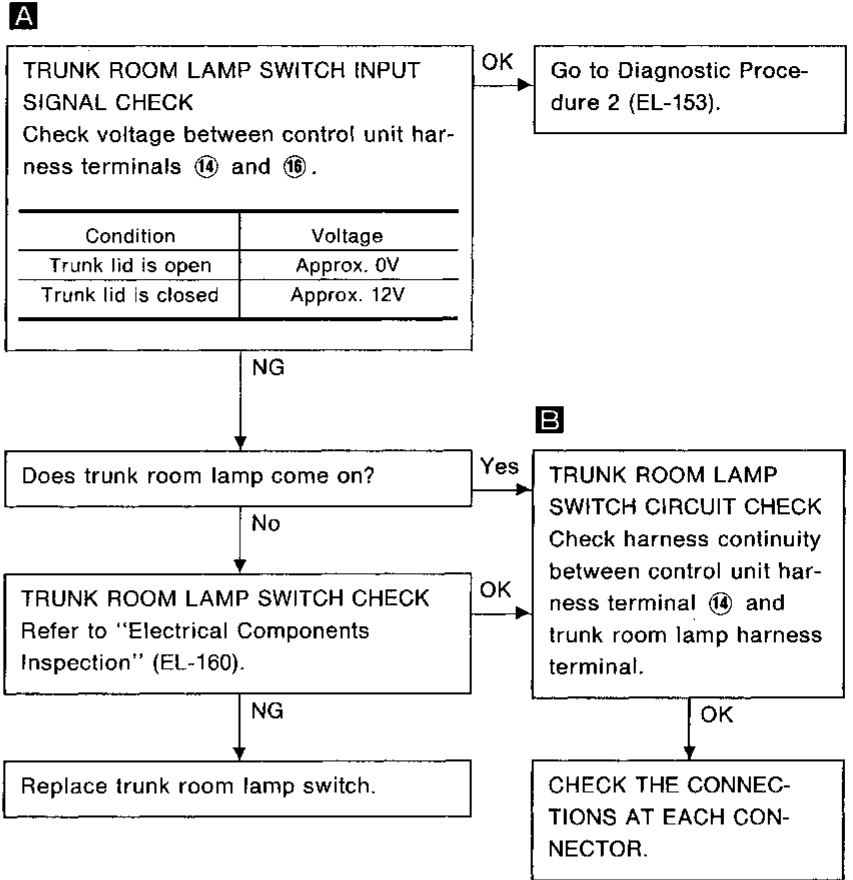
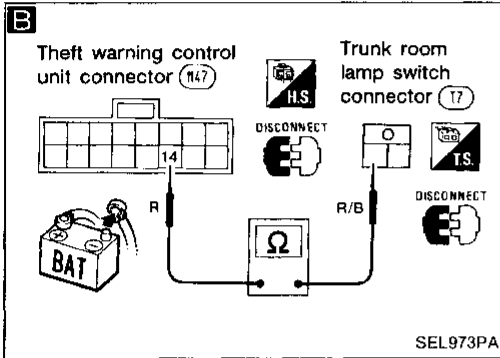
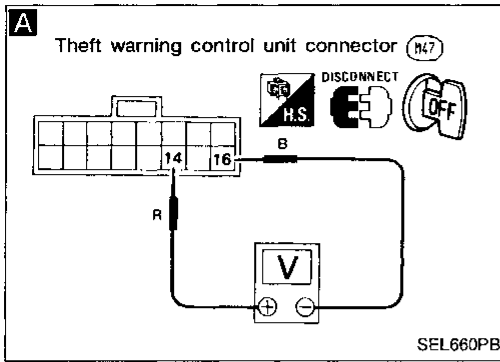
NG → Repair harness or connectors.

OK → **CHECK THE CONNECTIONS AT EACH CONNECTOR.**

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(3)



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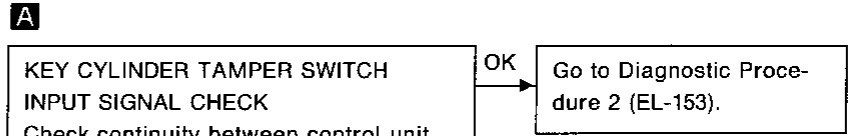
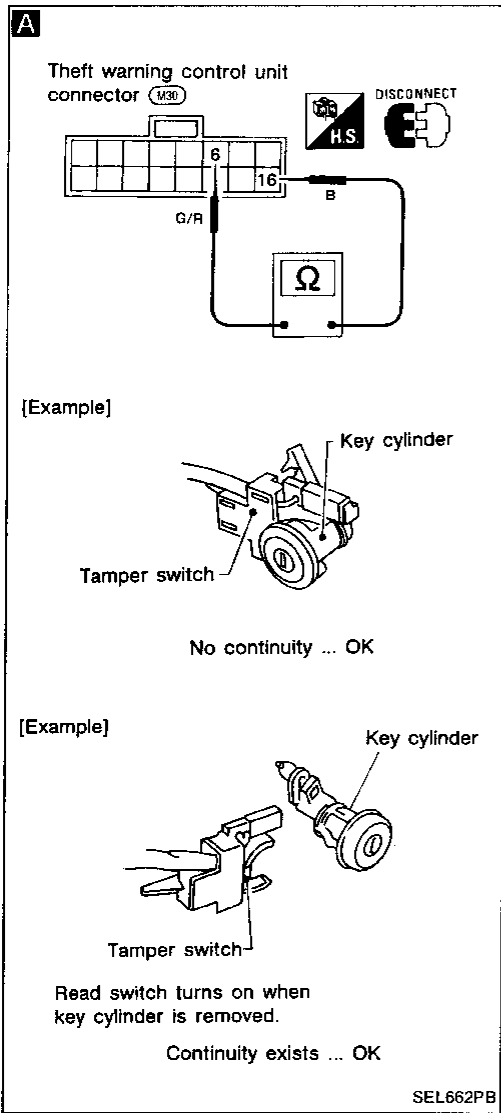
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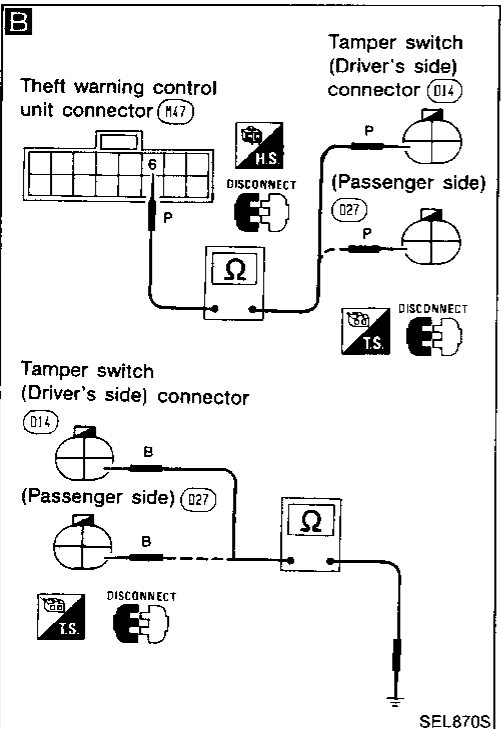
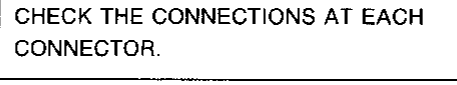
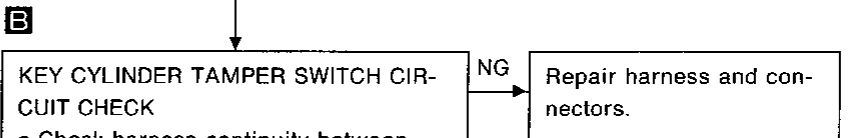
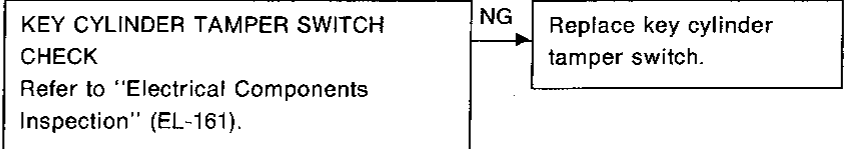
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(4)



Condition	Continuity
Tamper switch is Normal	No
Tamper switch is Removed	Yes

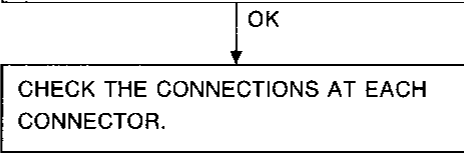
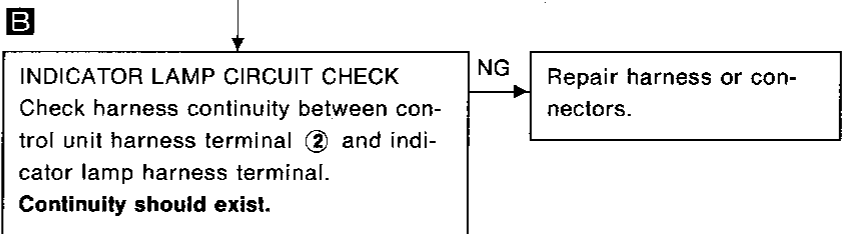
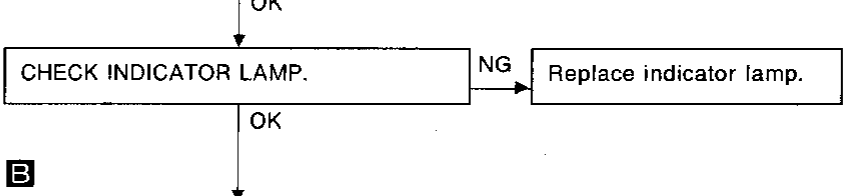
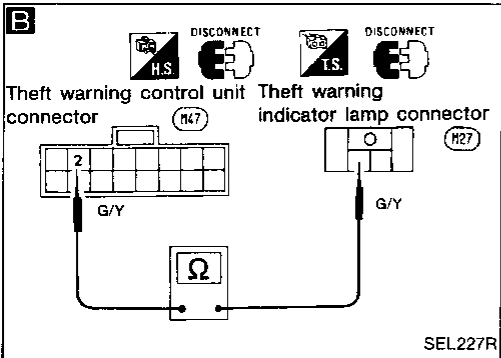
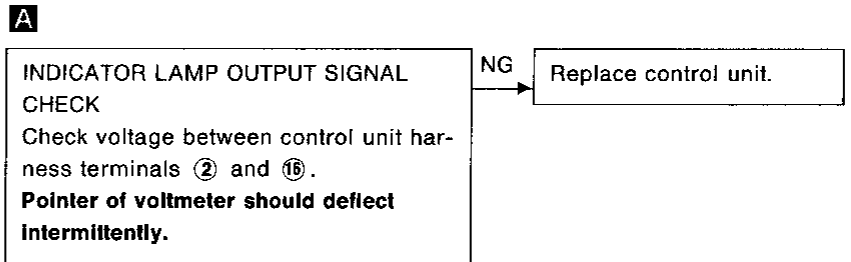
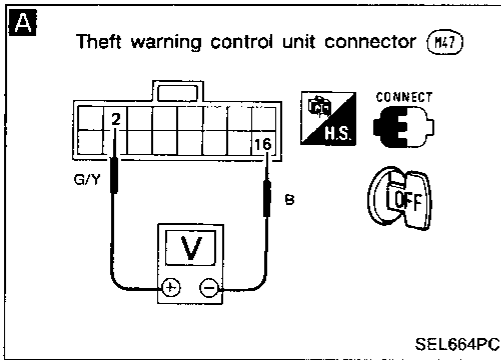


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Indicator lamp does not blink.



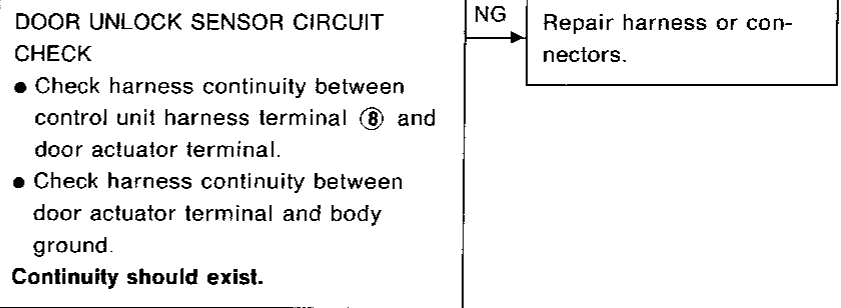
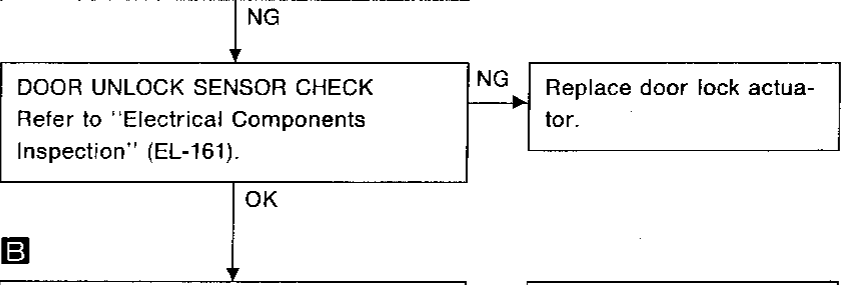
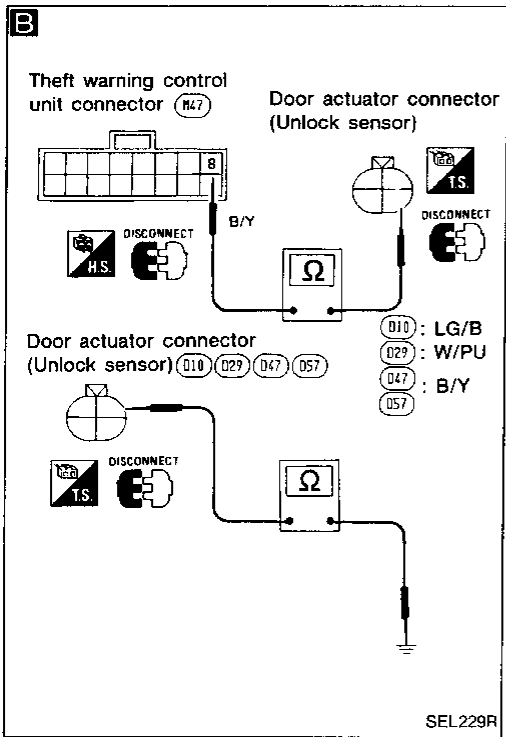
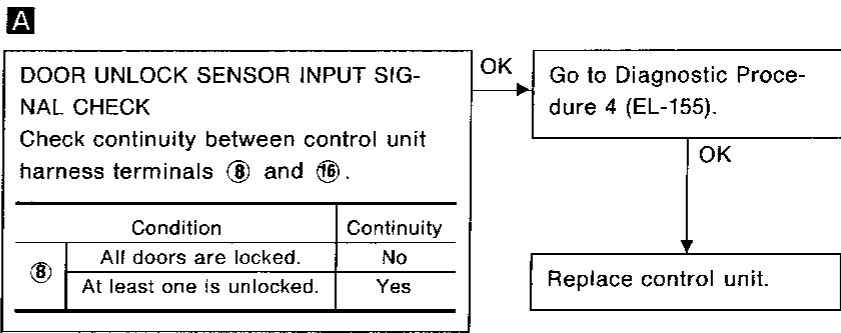
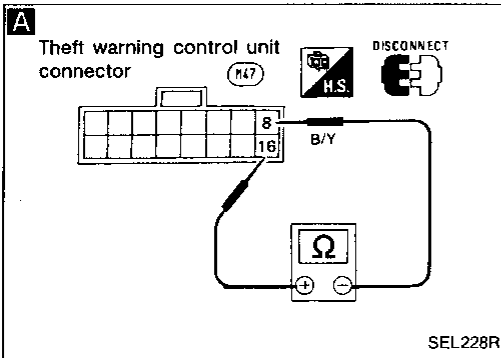
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.



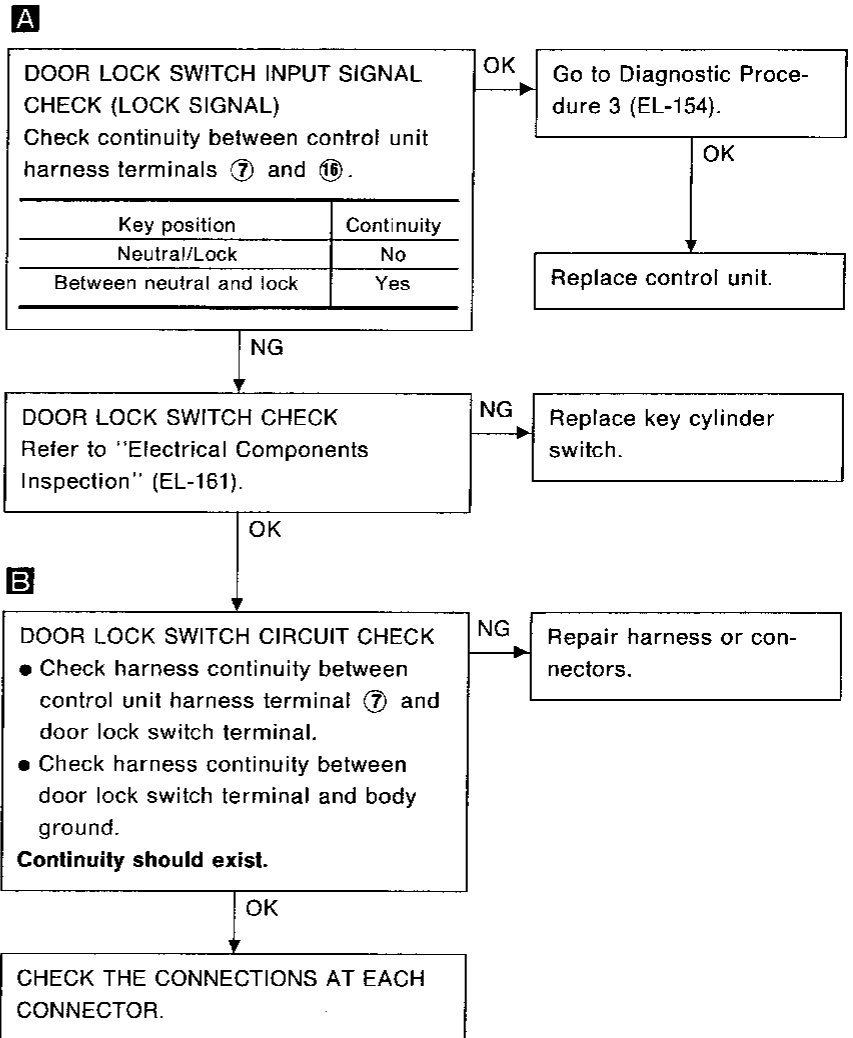
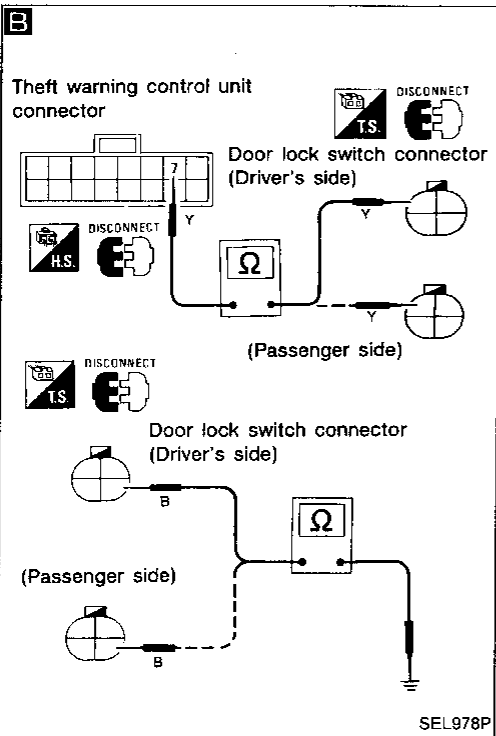
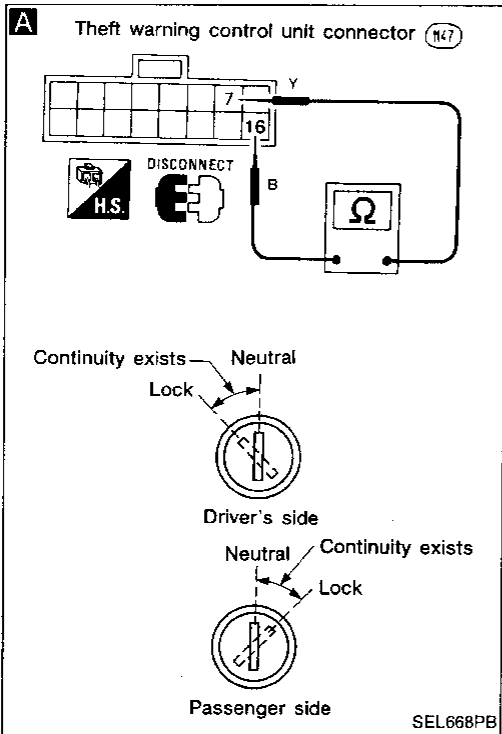
CHECK THE CONNECTIONS AT EACH CONNECTOR.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.



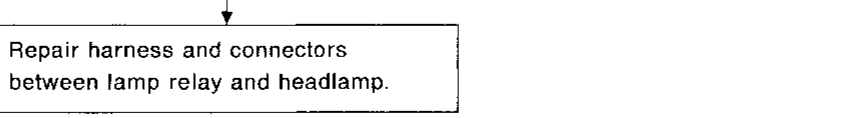
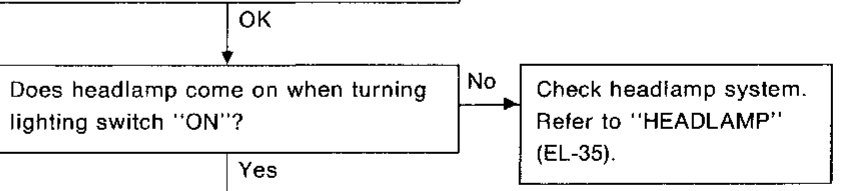
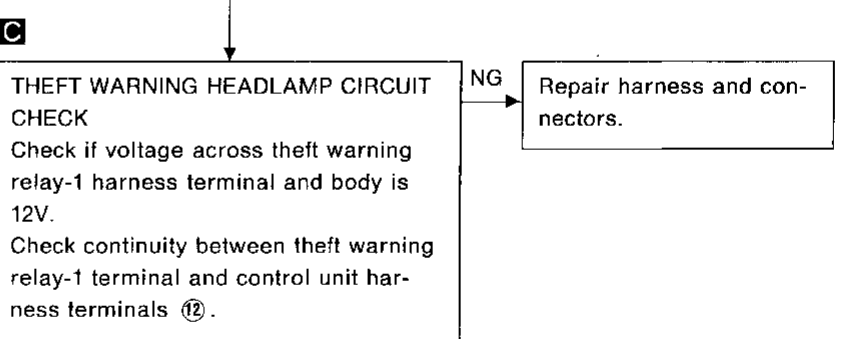
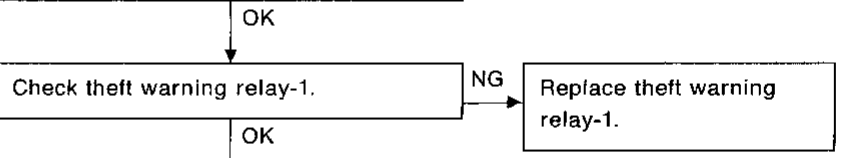
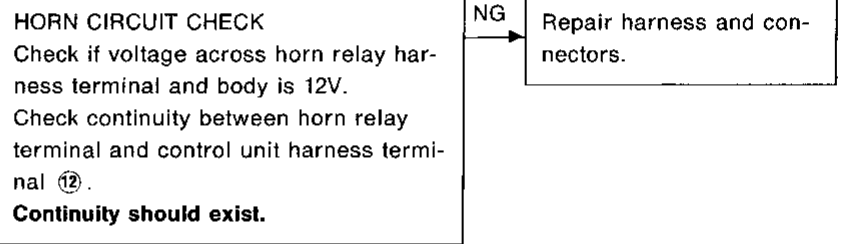
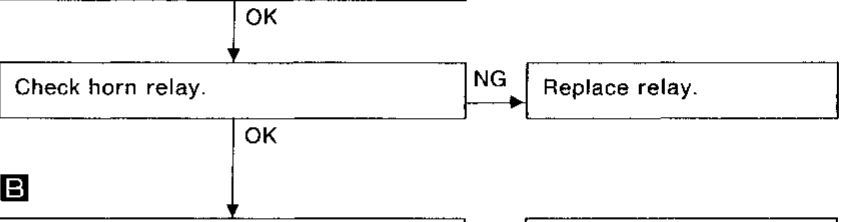
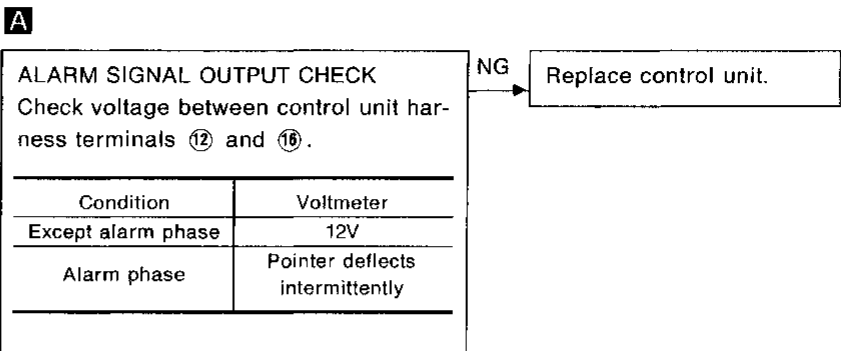
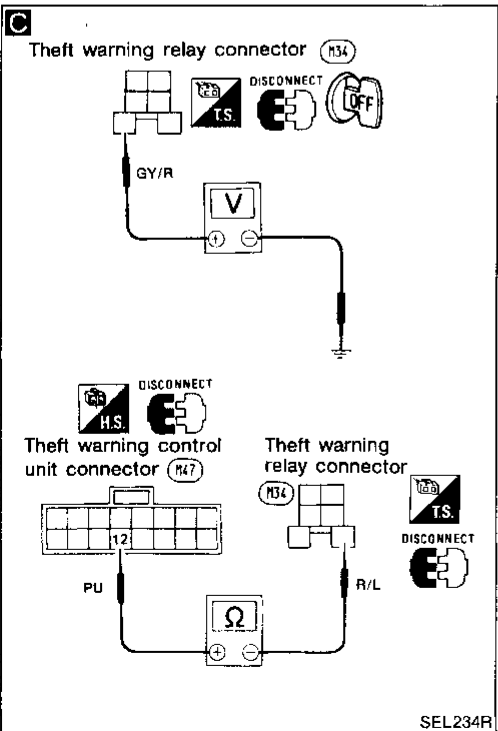
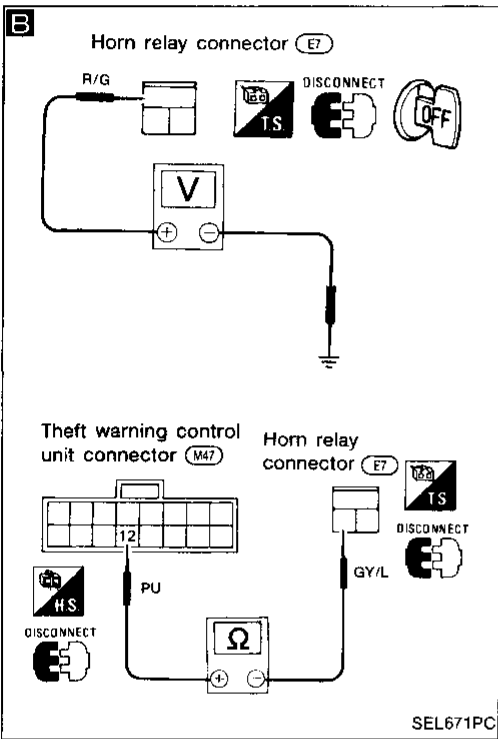
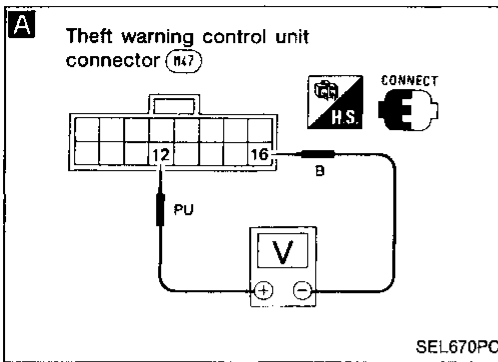
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.

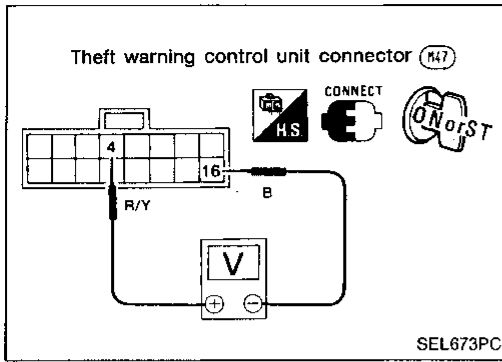


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM: STARTER MOTOR can be operated. (Starter killed phase)



STARTER MOTOR KILL OUTPUT SIGNAL CHECK.
Check voltage between control unit harness terminals ④ and ⑯ when ignition switch is turned to ON or "START".

Approx. 12V

Replace control unit.

Approx. 0V

Check theft warning relay-2.

NG

Replace theft warning relay-2.

OK

Repair harness between control unit and theft warning relay-2.

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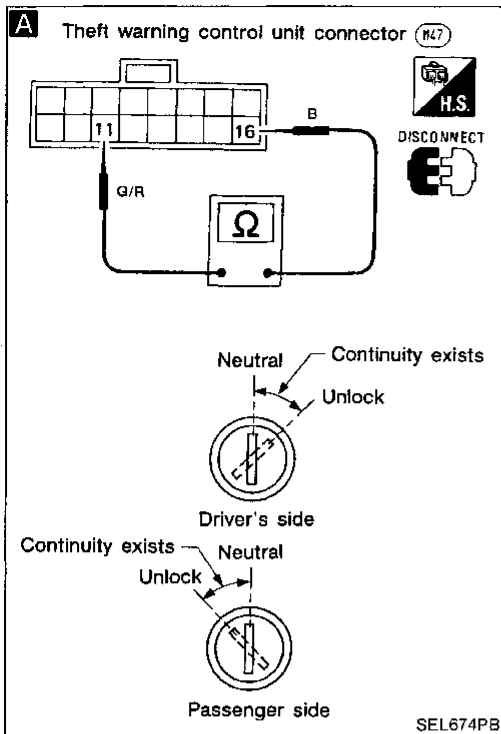
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

SYMPTOM: Alarm does not stop even if stop signal is given.



A

DOOR UNLOCK SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)

Check continuity between control unit harness terminals ⑪ and ⑯.

Key position	Continuity
Neutral/Unlock	No
Between neutral and unlock	Yes

OK → Replace control unit.

NG

DOOR UNLOCK SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-161).

NG → Replace key cylinder switch.

OK

B

DOOR UNLOCK SWITCH CIRCUIT CHECK

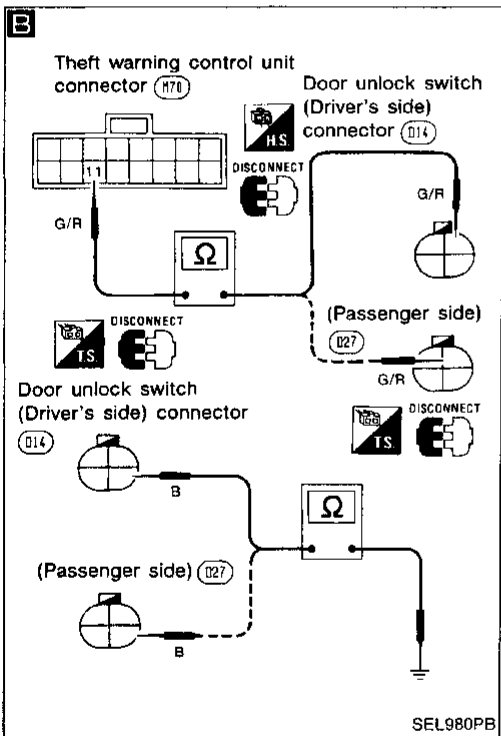
- Check harness continuity between control unit harness terminal ⑪ and door unlock switch terminal.
- Check harness continuity between door unlock switch terminal and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

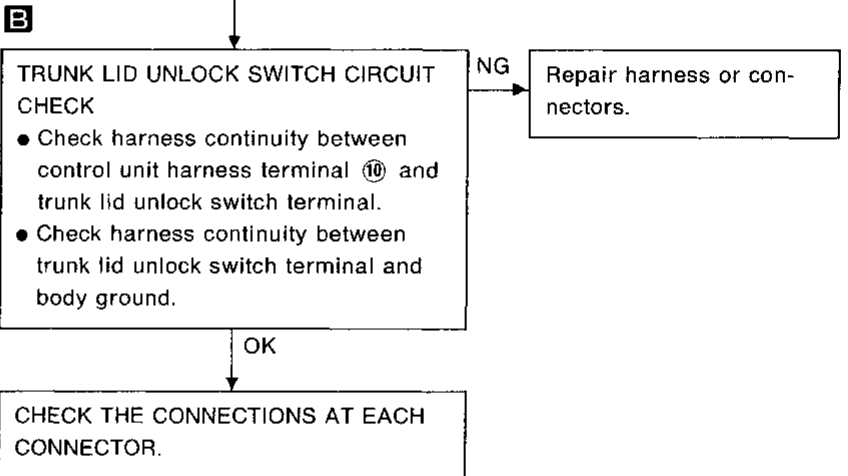
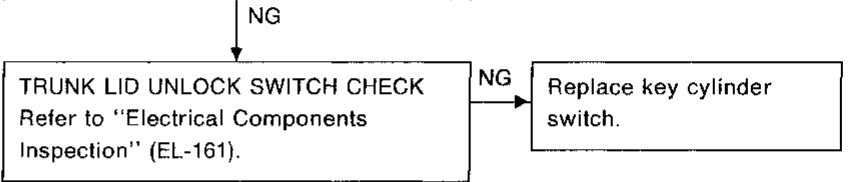
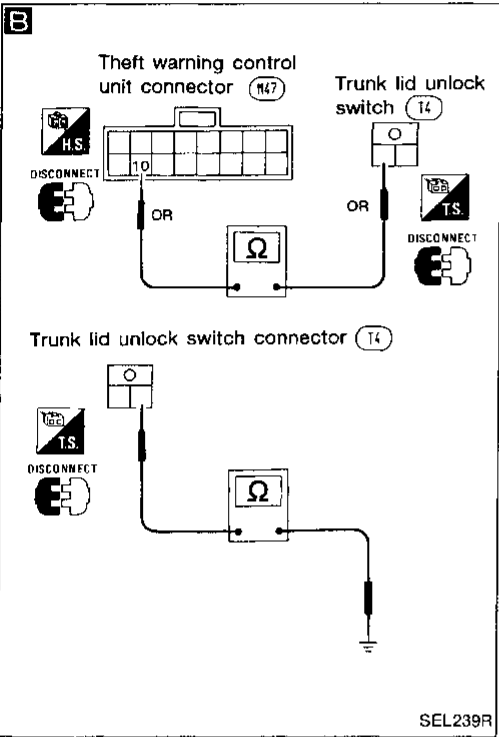
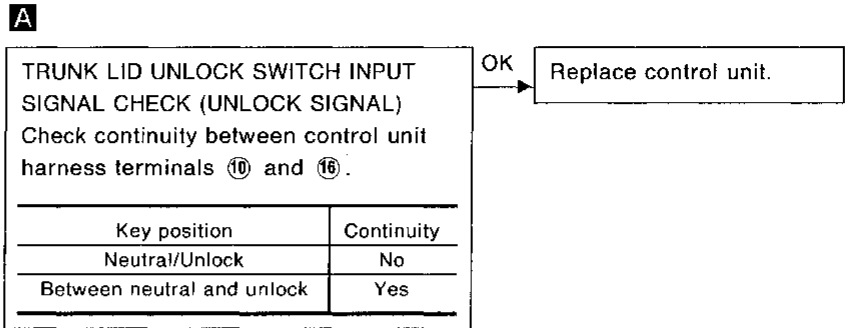
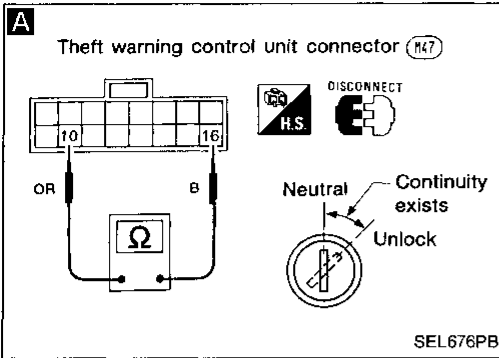


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

SYMPTOM: Alarm does not stop even if stop signal is given.



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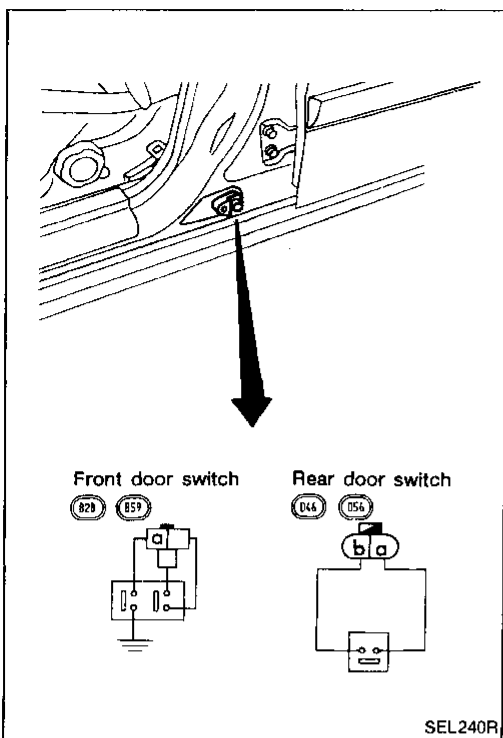
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

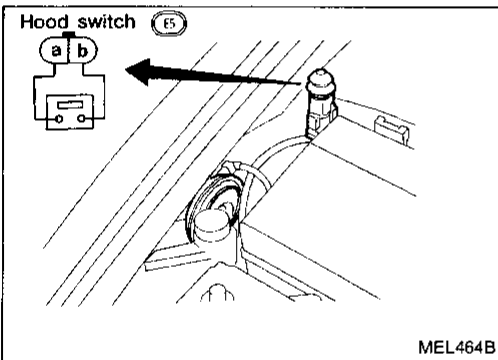
ELECTRICAL COMPONENTS INSPECTION

Door switches

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



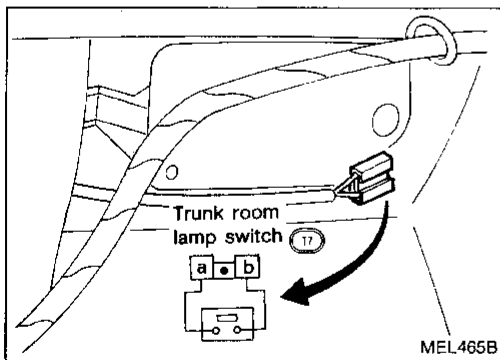
Terminal	Pushed	Released
a		○
b (switch body)		○



Hood switch

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

Terminal	Pushed	Released
a		○
b		○



Trunk room lamp switch

Terminal	Trunk lid	Closed	Open
a			○
b			○

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

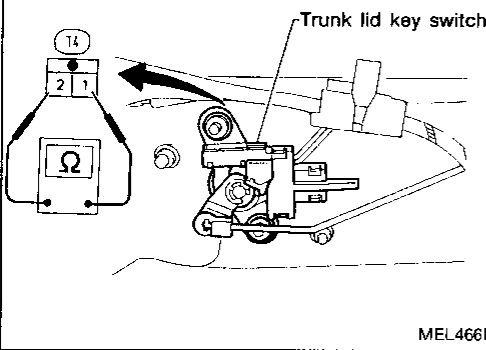
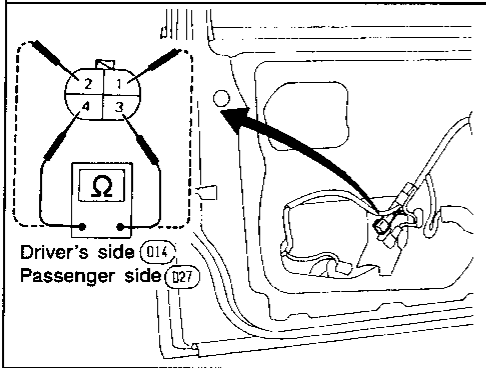
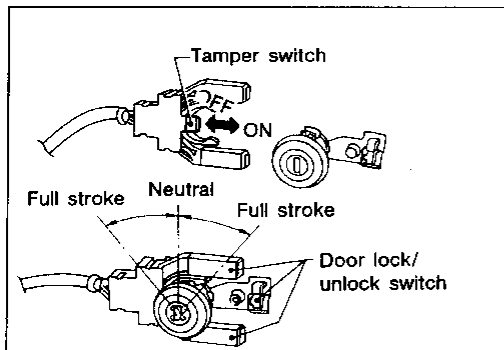
Key cylinder tamper switch, door lock switch and door unlock switch

● Door

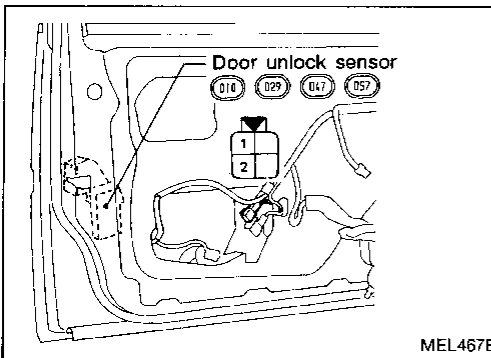
	TAMPER SWITCH		DOOR LOCK SWITCH		DOOR UNLOCK SWITCH		
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral	Between full stroke and neutral	Full stroke
1				○			
2				○		○	
3		○		○			
4		○		○		○	

● Trunk lid

	TAMPER SWITCH		TRUNK LID UNLOCK SWITCH		
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral
1				○	
2		○		○	
3		○		○	



MEL466B



MEL467B

Door unlock sensor

	LOCK	UNLOCK
1		○
2		○

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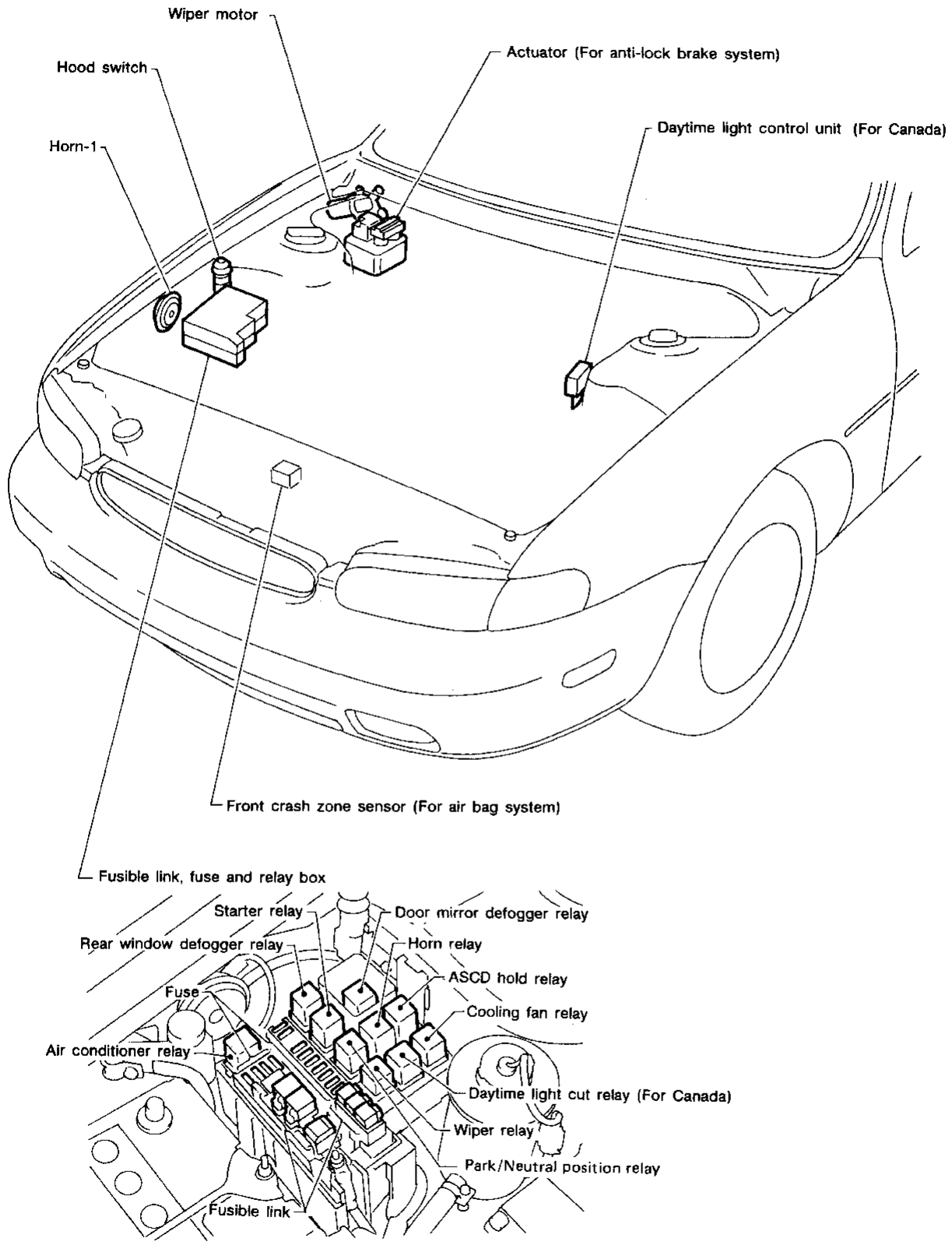
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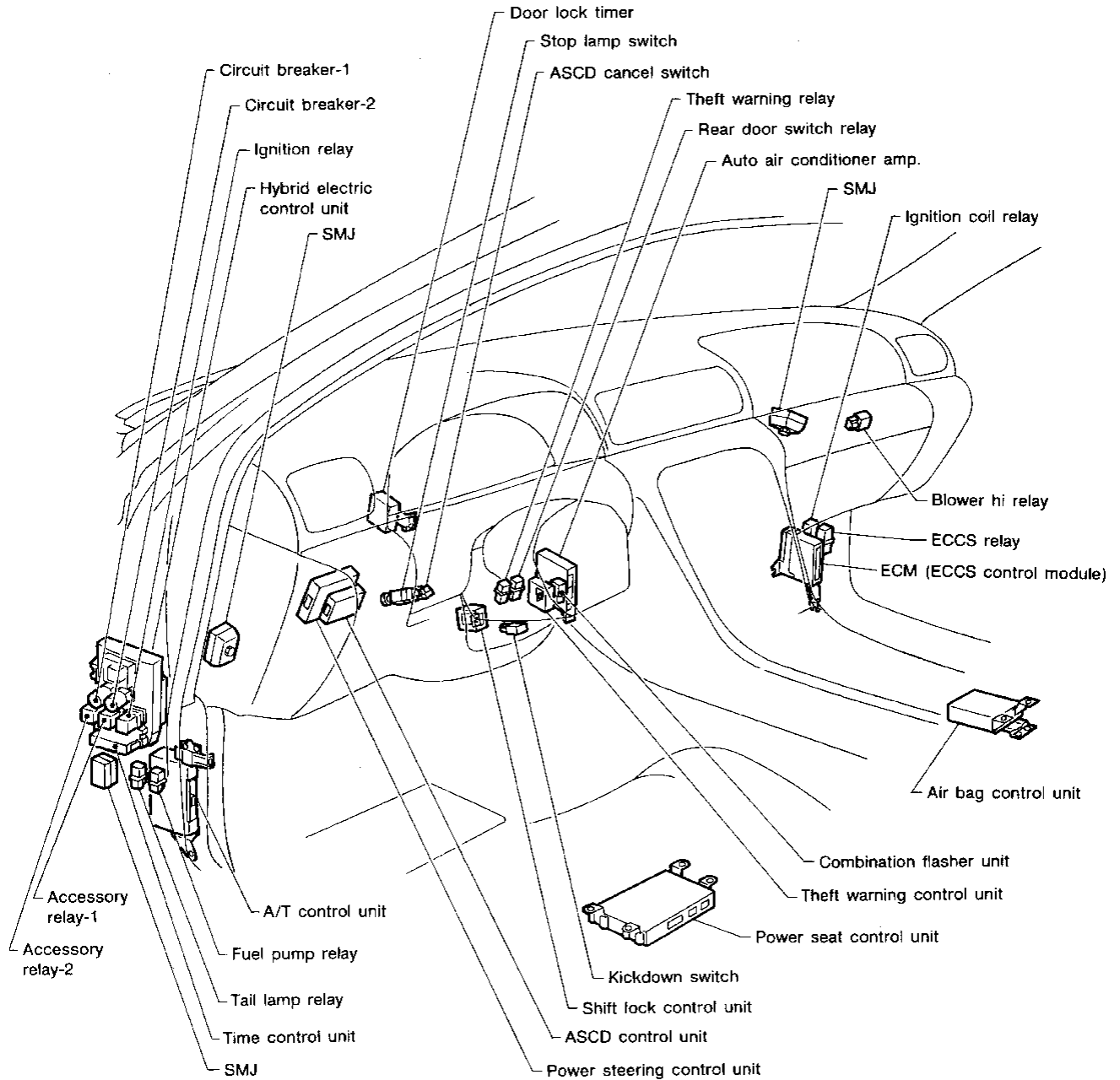
LOCATION OF ELECTRICAL UNITS

Engine Compartment



LOCATION OF ELECTRICAL UNITS

Passenger Compartment



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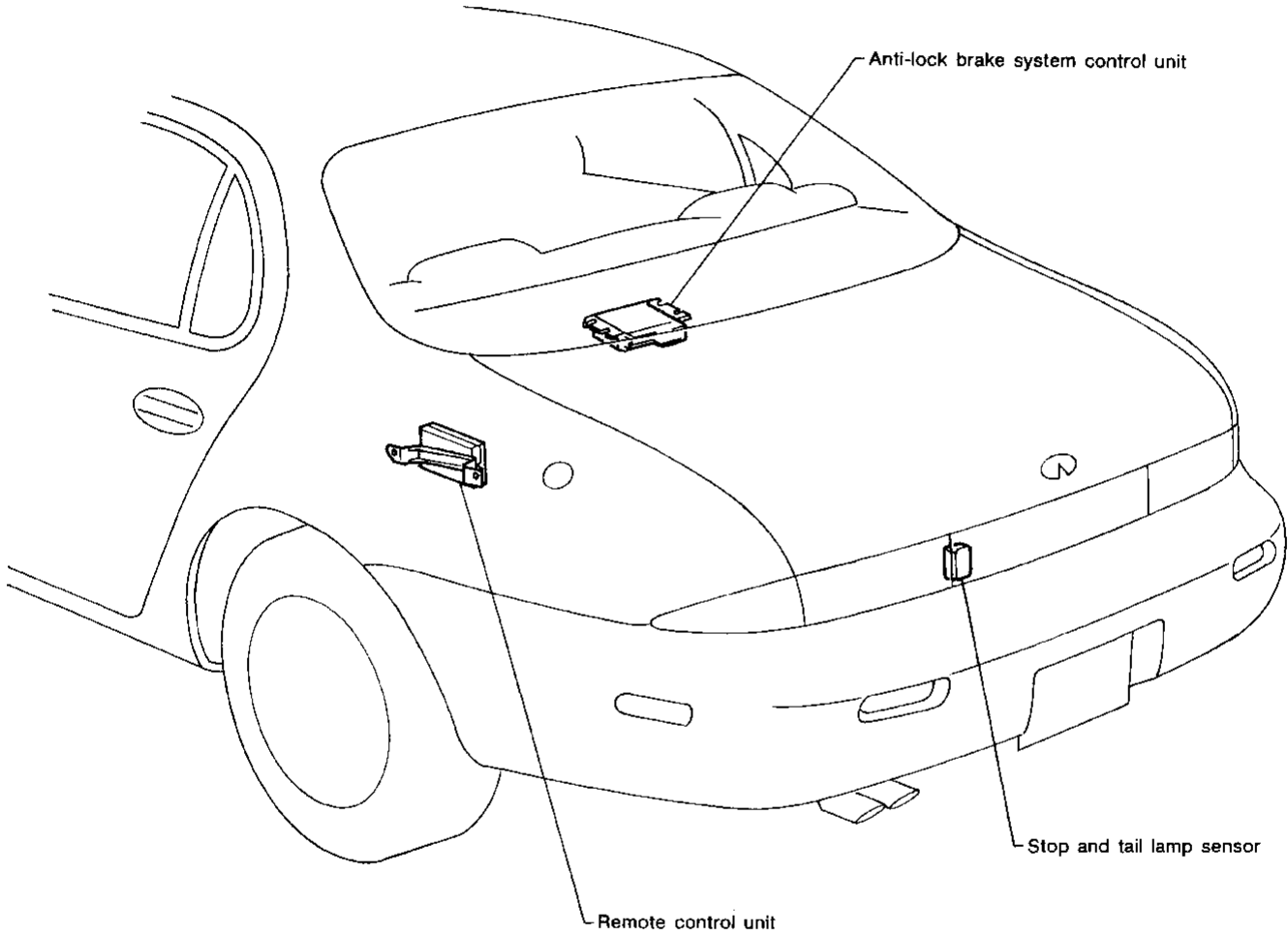
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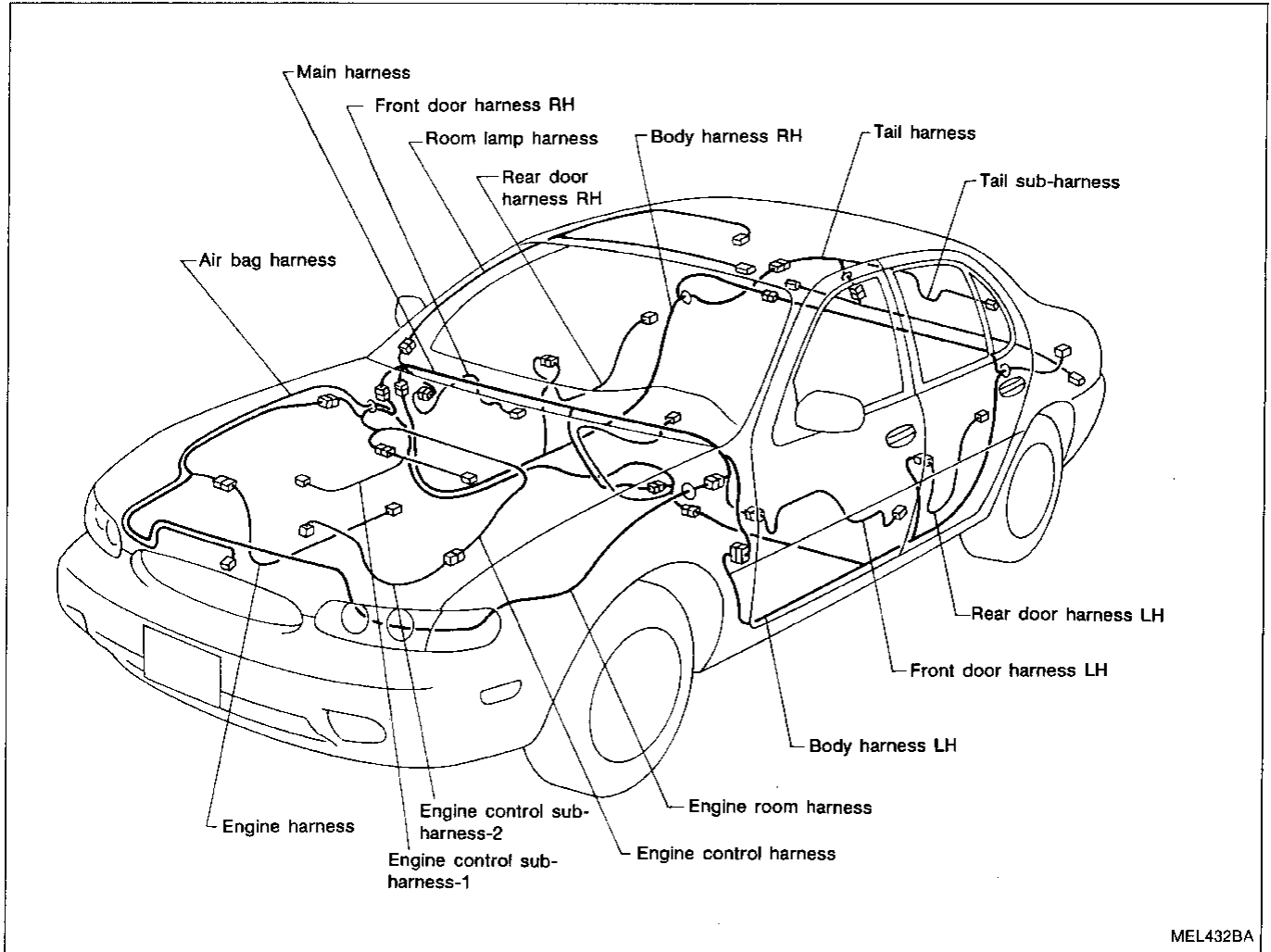
LOCATION OF ELECTRICAL UNITS

Luggage Compartment



HARNESS LAYOUT

Outline

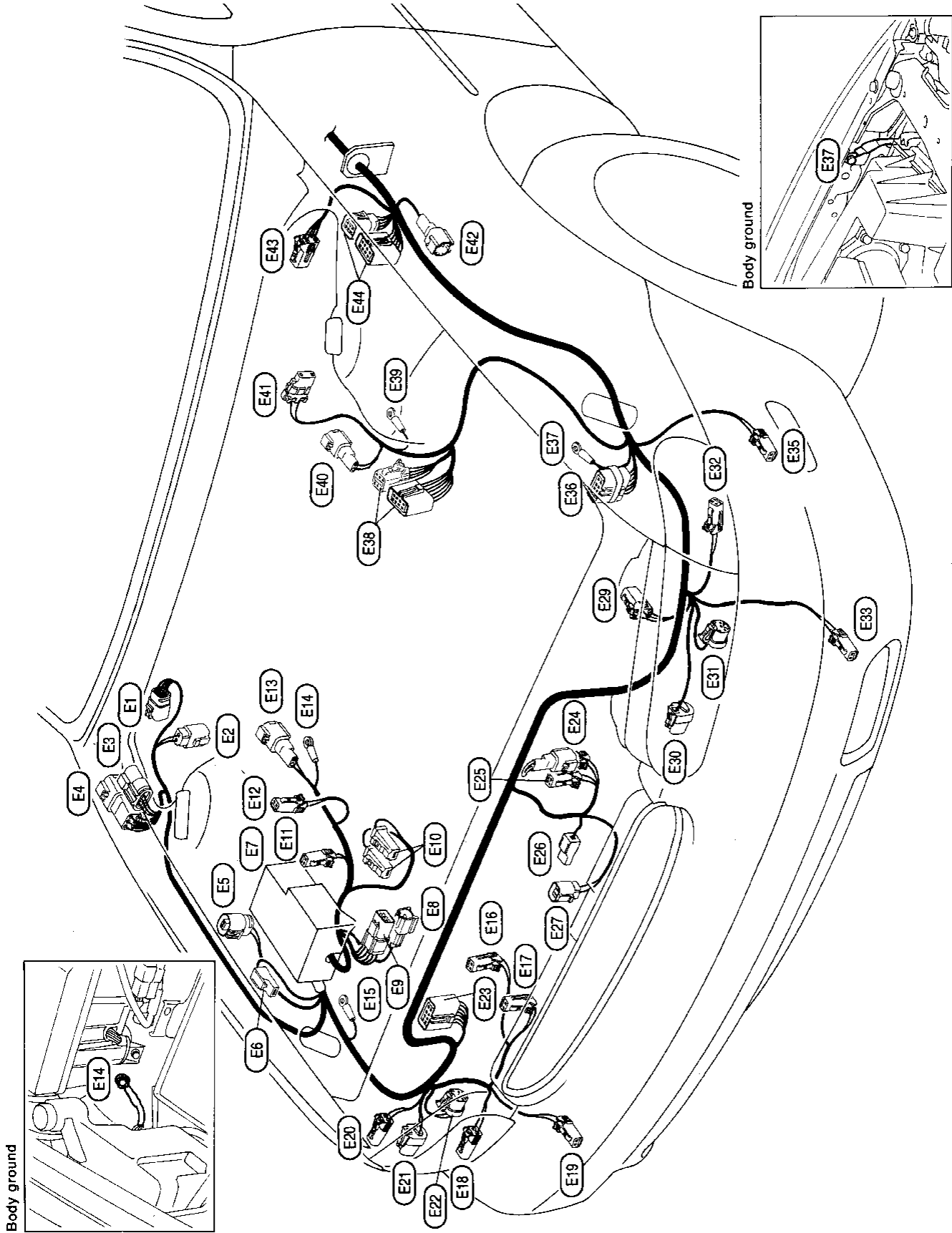


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HARNESS LAYOUT

Engine Room Harness

ENGINE COMPARTMENT

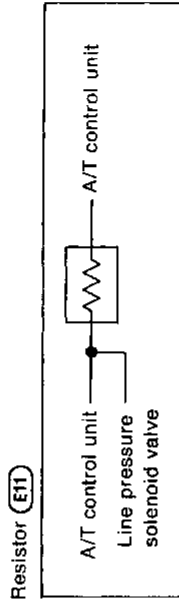


HARNESS LAYOUT

Engine Room Harness (Cont'd)

- E1** : Wiper motor
- E2** : Actuator (For anti-lock brake system)
- E3** : To **F3**
- E4** : To **FA**
- E5** : Hood switch
- E6** : Horn-1
- E7** : Fuse, fusible link and relay box
- E8** : To **E101**
- E9** : To **E102**
- E10** : Battery
- E11** : Dropping resistor
- E12** : Power steering fluid level switch
- E13** : Front sensor RH (For anti-lock brake system)
- E14** : Body ground (For anti-lock brake system)
- E15** : Body ground
- E16** : Washer sensor
- E17** : Washer motor
- E18** : Front side marker lamp RH
- E19** : Front turn signal lamp RH
- E20** : Clearance lamp RH
- E21** : Headlamp RH-1
- E22** : Headlamp RH-2
- E23** : Joint connector-1
- E24** : Short connector
- E25** : Ambient sensor
- E26** : Horn-2
- E27** : Cooling fan motor
- E28** : Triple-pressure switch
- E30** : Headlamp LH-2

- E31** : Headlamp LH-1
- E32** : Clearance lamp LH
- E33** : Front turn signal lamp LH
- E35** : Front side marker lamp LH
- E36** : Joint connector-2
- E37** : Body ground
- E38** : Daytime light control unit (For Canada)
- E39** : Body ground (For anti-lock brake system)
- E40** : Front sensor LH (For anti-lock brake system)
- E41** : Brake fluid level switch
- E42** : Fog lamp
- E43** : ASCD pump
- E44** : Headlamp control relay unit



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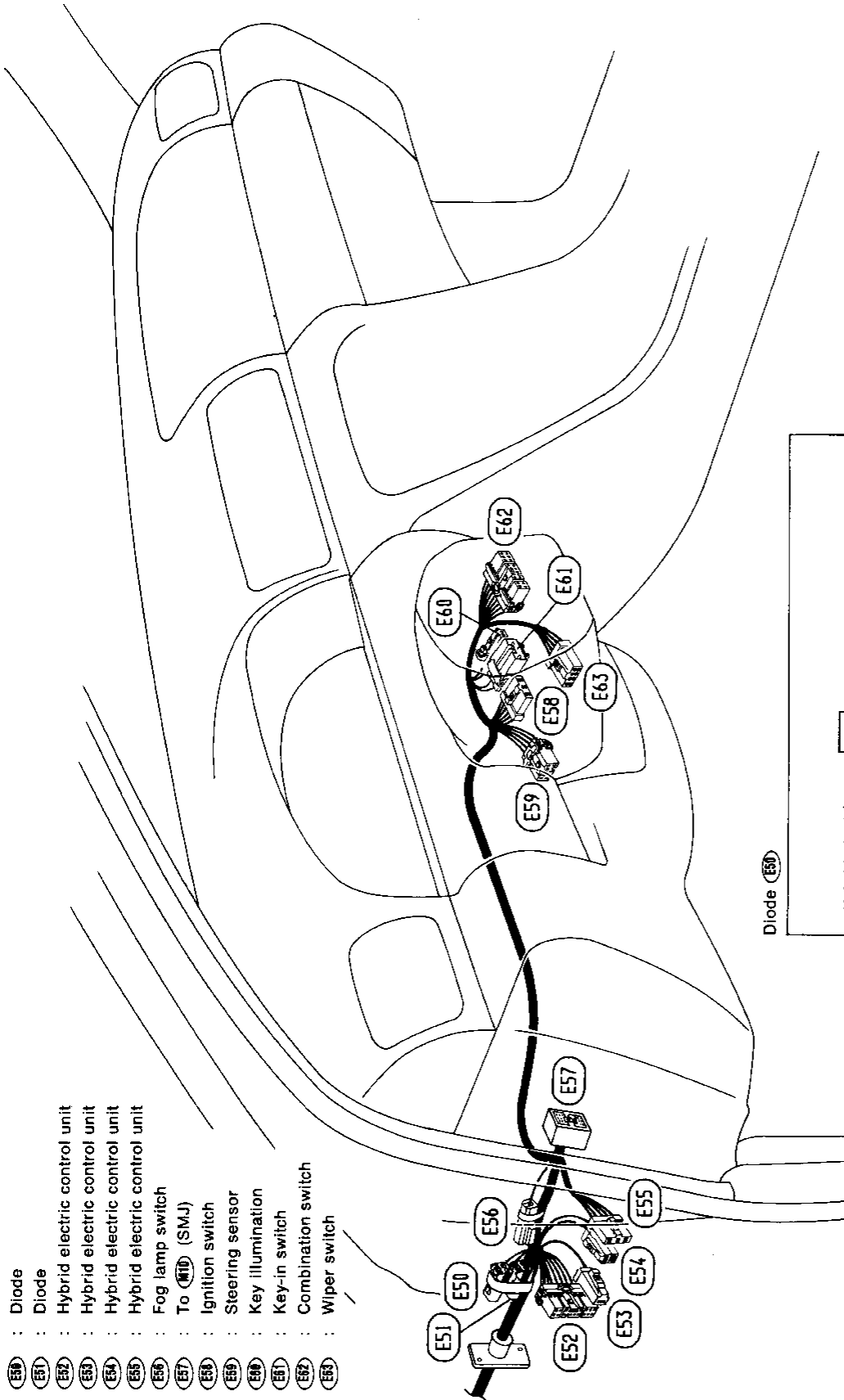
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HARNESS LAYOUT

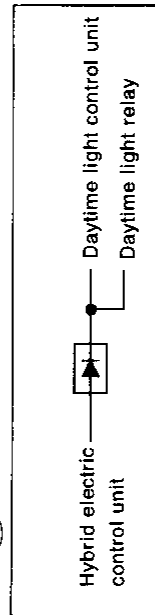
Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT

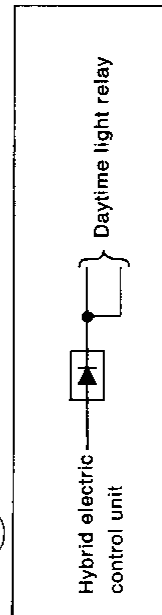
- E50** : Diode
- E51** : Diode
- E52** : Hybrid electric control unit
- E53** : Hybrid electric control unit
- E54** : Hybrid electric control unit
- E55** : Hybrid electric control unit
- E56** : Fog lamp switch
- E57** : To (M) (SMJ)
- E58** : Ignition switch
- E59** : Steering sensor
- E60** : Key illumination
- E61** : Key-in switch
- E62** : Combination switch
- E63** : Wiper switch



Diode **(E50)**

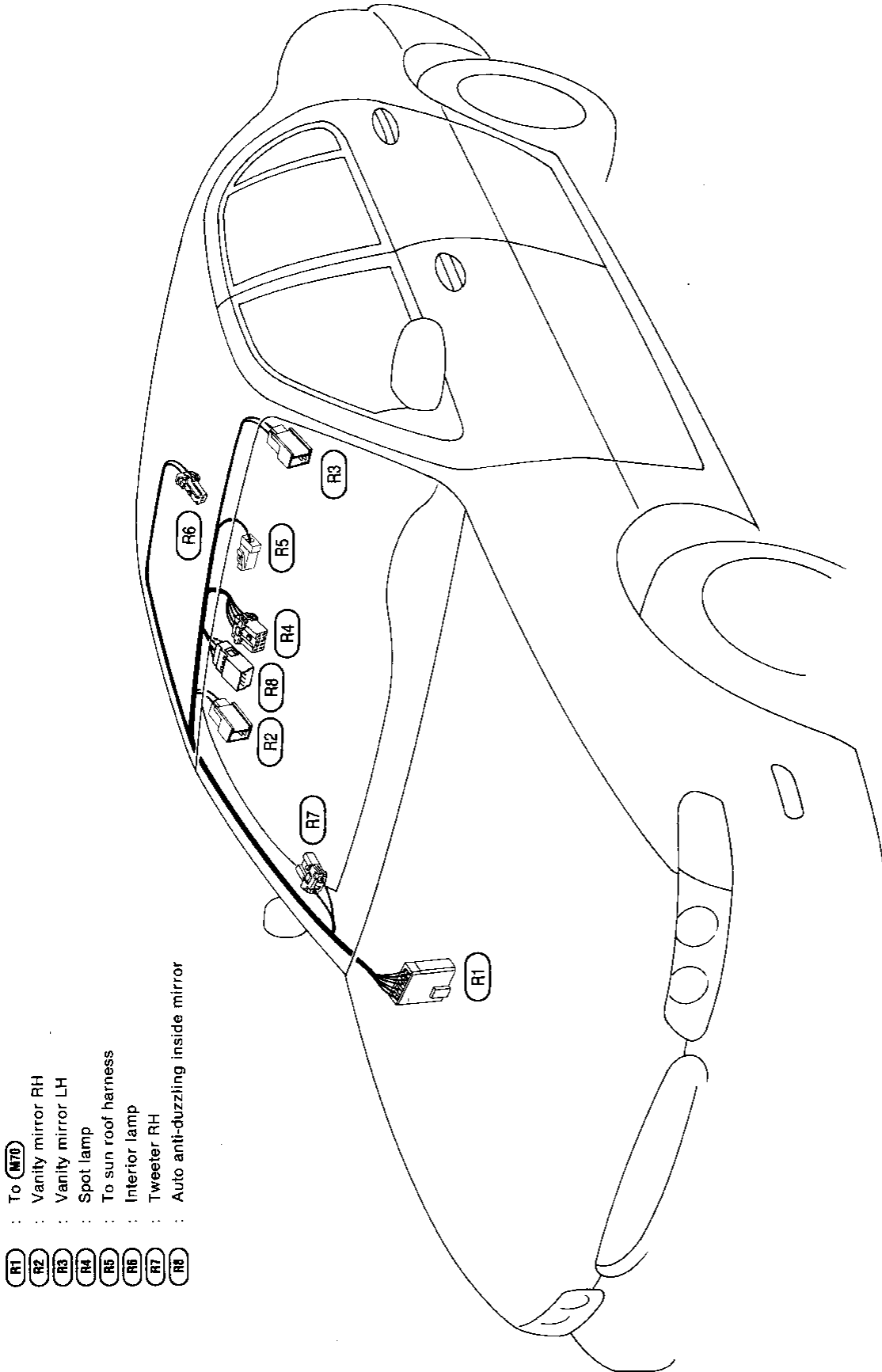


Diode **(E51)**



HARNES LAYOUT

Room Lamp Harness

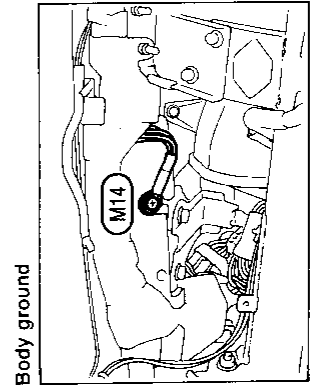
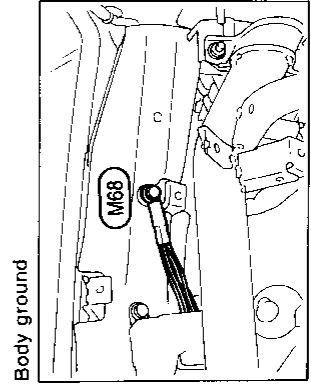
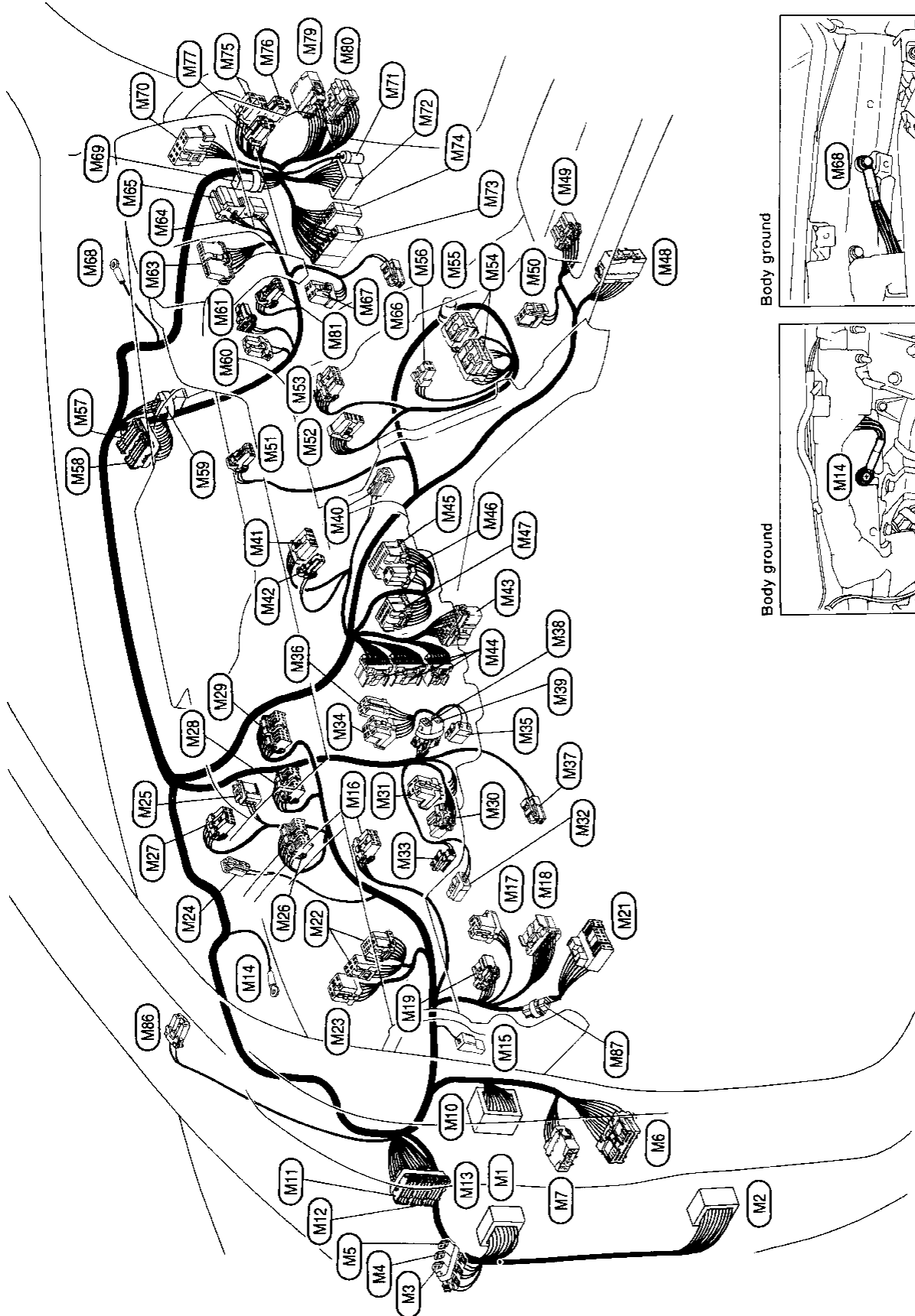


- (R1)** : To (M7B)
- (R2)** : Vanity mirror RH
- (R3)** : Vanity mirror LH
- (R4)** : Spot lamp
- (R5)** : To sun roof harness
- (R6)** : Interior lamp
- (R7)** : Tweeter RH
- (R8)** : Auto anti-dazzling inside mirror

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HARNESS LAYOUT

Main Harness



HARNESS LAYOUT

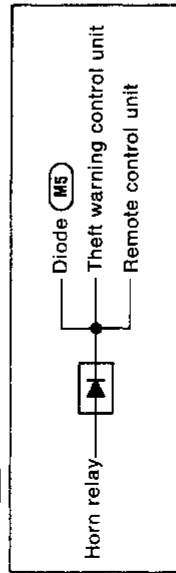
Main Harness (Cont'd)

- M1** : Hybrid electric control unit
- M2** : To **B3** (SMJ)
- M3** : Diode
- M4** : Diode
- M5** : Diode
- M6** : To **D4**
- M7** : To **D3**
- M10** : To **E67** (SMJ)
- M11** : Joint connector-6
- M12** : Joint connector-7
- M13** : Joint connector-8
- M14** : Body ground
- M15** : Parking brake switch
- M16** : Illumination control switch
- M17** : Theft starter relay
- M18** : ASCD control unit
- M19** : EPS control unit
- M21** : Data link connector for CONSULT
- M22** : Door lock control unit
- M23** : Keyless entry relay-1
- M24** : Sunload sensor
- M25** : Buzzer
- M26** : Combination meter
- M27** : Combination meter
- M28** : Combination meter
- M29** : Combination meter

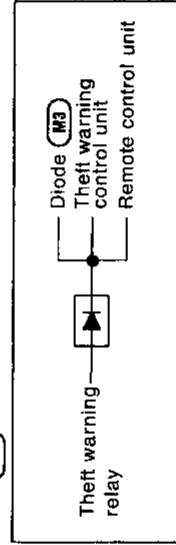
- M30** : Shift lock control unit
- M31** : Keyless entry relay-2
- M32** : Stop lamp switch
- M33** : ASCD cancel switch
- M34** : Theft warning relay
- M35** : Kickdown switch
- M36** : Rear door switch relay
- M37** : Footwell lamp LH
- M38** : Diode
- M39** : Diode
- M40** : In-vehicle sensor
- M41** : ASCD main switch
- M42** : Telephone microphone
- M43** : Auto air conditioner sub-harness
- M44** : Auto air conditioner amp.
- M45** : Receiver control unit
- M46** : Combination flasher unit
- M47** : Theft warning control unit
- M48** : To **A2**
- M49** : Park position switch
- M50** : Cigarette lighter
- M51** : Clock
- M52** : Hazard switch
- M53** : Control unit (For air conditioner system)
- M54** : Radio
- M55** : Radio

- M56** : CD player
- M57** : Joint connector-9
- M58** : Joint connector-10
- M59** : Joint connector-11
- M60** : Intake sensor
- M61** : Thermo amp.
- M63** : Intake door motor
- M64** : Blower motor
- M65** : Blower HI relay
- M66** : Footwell lamp RH
- M67** : Fan control amp.
- M68** : Body ground
- M69** : Diode
- M70** : To **R1**
- M71** : To **B50**
- M72** : To **B51** (SMJ)
- M73** : To **F24**
- M74** : To **F23**
- M75** : Switching relay
- M76** : A/T indicator relay
- M77** : Sun roof relay
- M79** : To **D20**
- M80** : To **D21**
- M81** : Glove box lamp and trunk opener cancel switch
- M86** : Tweeter RH
- M87** : Check connector (For anti-lock brake system)

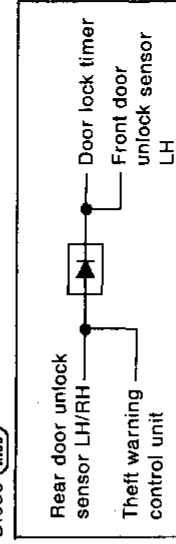
Diode **M3**



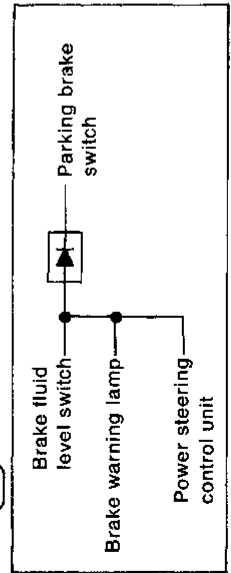
Diode **M5**



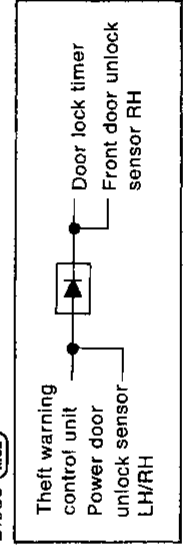
Diode **M39**



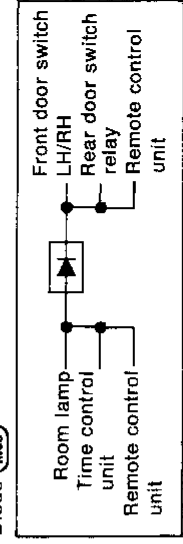
Diode **M4**



Diode **M32**



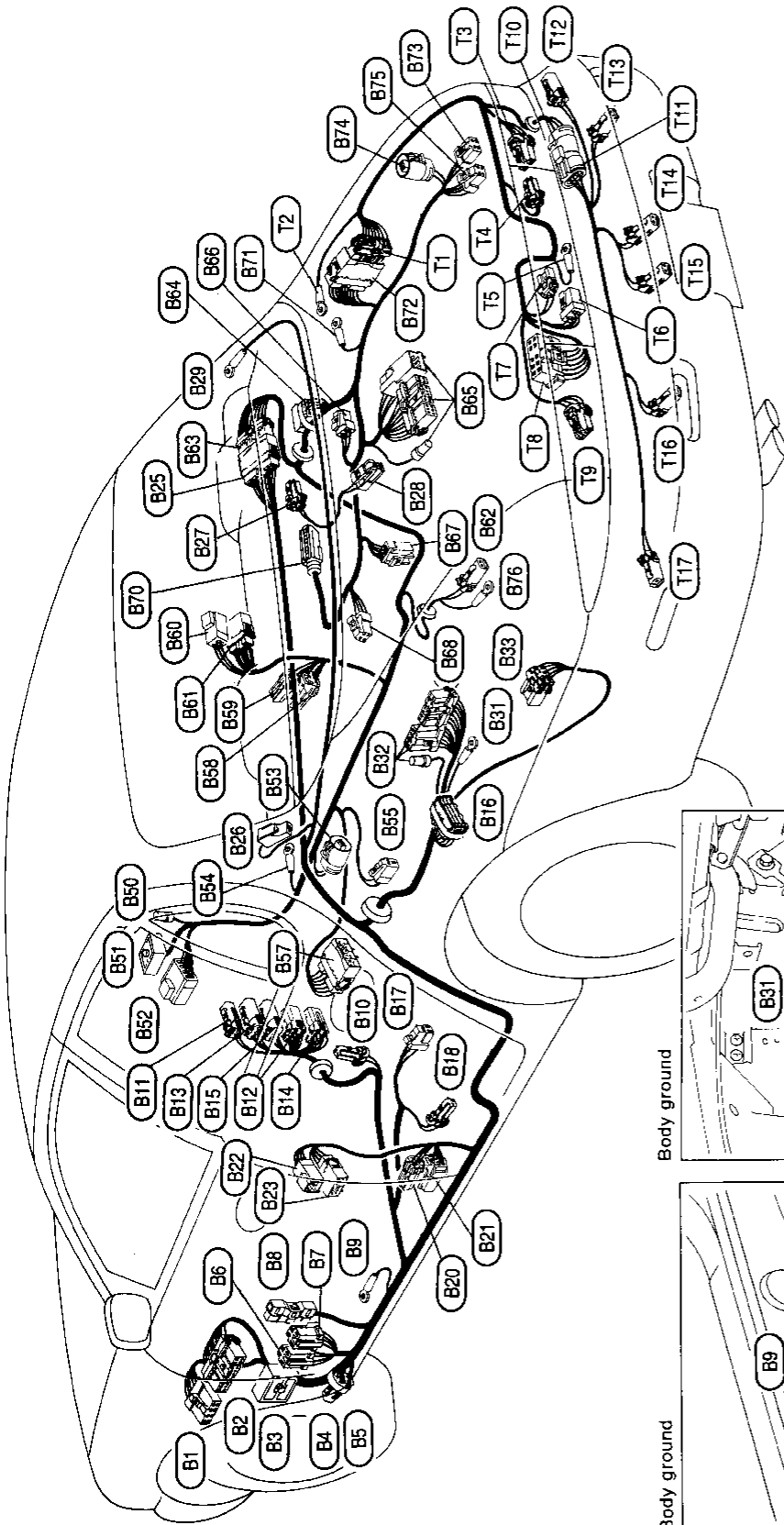
Diode **M69**



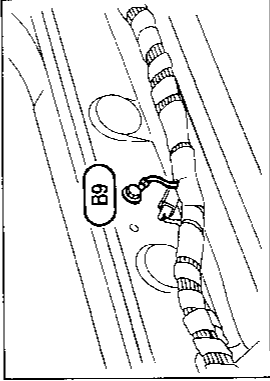
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HARNES LAYOUT

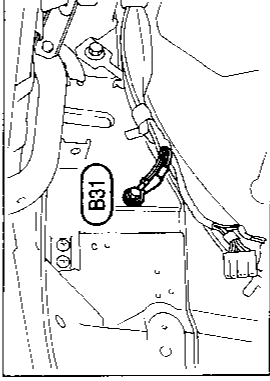
Body Harness and Tail Harness



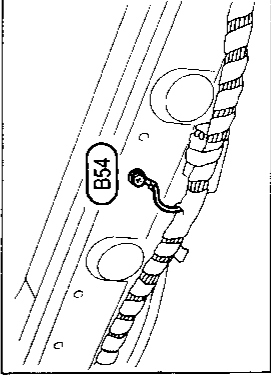
Body ground



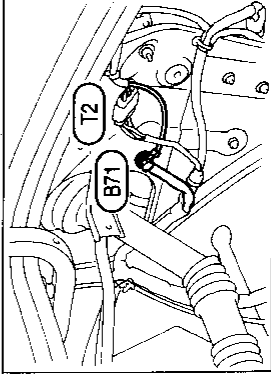
Body ground



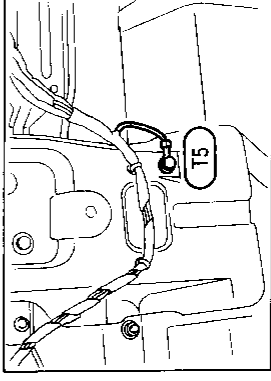
Body ground



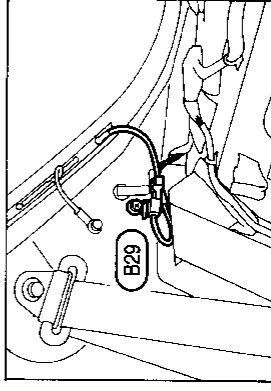
Body ground



Body ground



Antenna (For keyless entry system)



HARNES LAYOUT

Body Harness and Tail Harness (Cont'd)

Body harness LH

- B1** : Hybrid electric control unit
- B2** : Hybrid electric control unit
- B3** : To **M2** (SMJ)
- B4** : Diode
- B5** : Diode
- B6** : Tail lamp relay
- B7** : Fuel pump relay
- B8** : A/T control unit
- B9** : Body ground
- B10** : To **A3**
- B11** : Revolution sensor
- B12** : Park/Neutral position switch
- B13** : Turbine sensor
- B14** : To terminal cord assembly
- B15** : Vehicle speed sensor
- B16** : Joint connector-12
- B17** : To power seat harness LH
- B18** : Seat belt tension lock switch LH
- B20** : Front door switch LH
- B21** : Seat belt pre-tensioner LH
- B22** : To **D40**
- B23** : To **D41**
- B25** : To **B63**
- B26** : Rear window defogger
- B27** : High-mounted stop lamp
- B28** : Trunk room lamp
- B29** : Antenna (For keyless entry system)
- B31** : Body ground
- B32** : Keyless entry control unit
- B33** : Power antenna

Body harness RH

- B50** : To **M71**
- B51** : To **M72** (SMJ)
- B52** : To **F22**
- B53** : To **A6**
- B54** : Body ground
- B55** : To power seat harness RH
- B57** : Telephone
- B58** : Seat belt pre-tensioner RH
- B59** : Front door switch RH
- B60** : To **D50**
- B61** : To **D51**
- B62** : Rear sensor (For anti-lock brake system)
- B63** : To **B25**
- B64** : Joint connector-13
- B65** : Telephone
- B66** : Rear speaker RH
- B67** : Fuel tank unit
- B68** : Rear speaker LH
- B70** : Anti-lock brake system control unit
- B71** : Body ground
- B72** : To **T1**
- B73** : Fuel lid opener solenoid
- B74** : Dropping resistor
- B75** : Fuel pump control unit
- B76** : Body ground

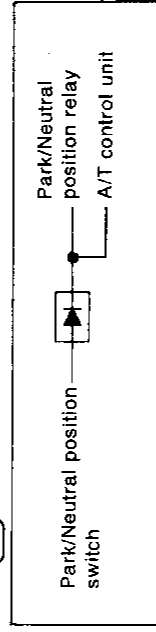
Tail harness

- T1** : To **B72**
- T2** : Body ground
- T3** : Rear combination lamp RH
- T4** : Trunk lid key switch
- T5** : Body ground
- T6** : Trunk lid opener solenoid
- T7** : Trunk room lamp switch
- T8** : Stop and tail lamp sensor
- T9** : Rear combination lamp LH
- T10** : To **T11**

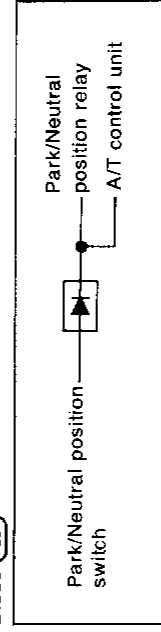
Tail sub-harness

- T11** : To **T10**
- T12** : Rear side marker RH
- T13** : Back-up lamp RH
- T14** : License lamp RH
- T15** : License lamp LH
- T16** : Back-up lamp LH
- T17** : Rear side marker LH

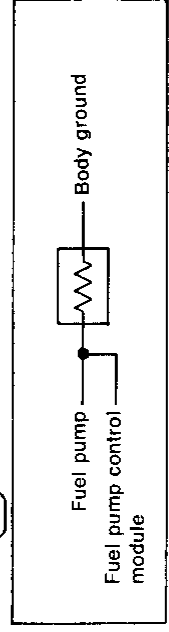
Diode **B4**



Diode **B5**



Resistor **B74**



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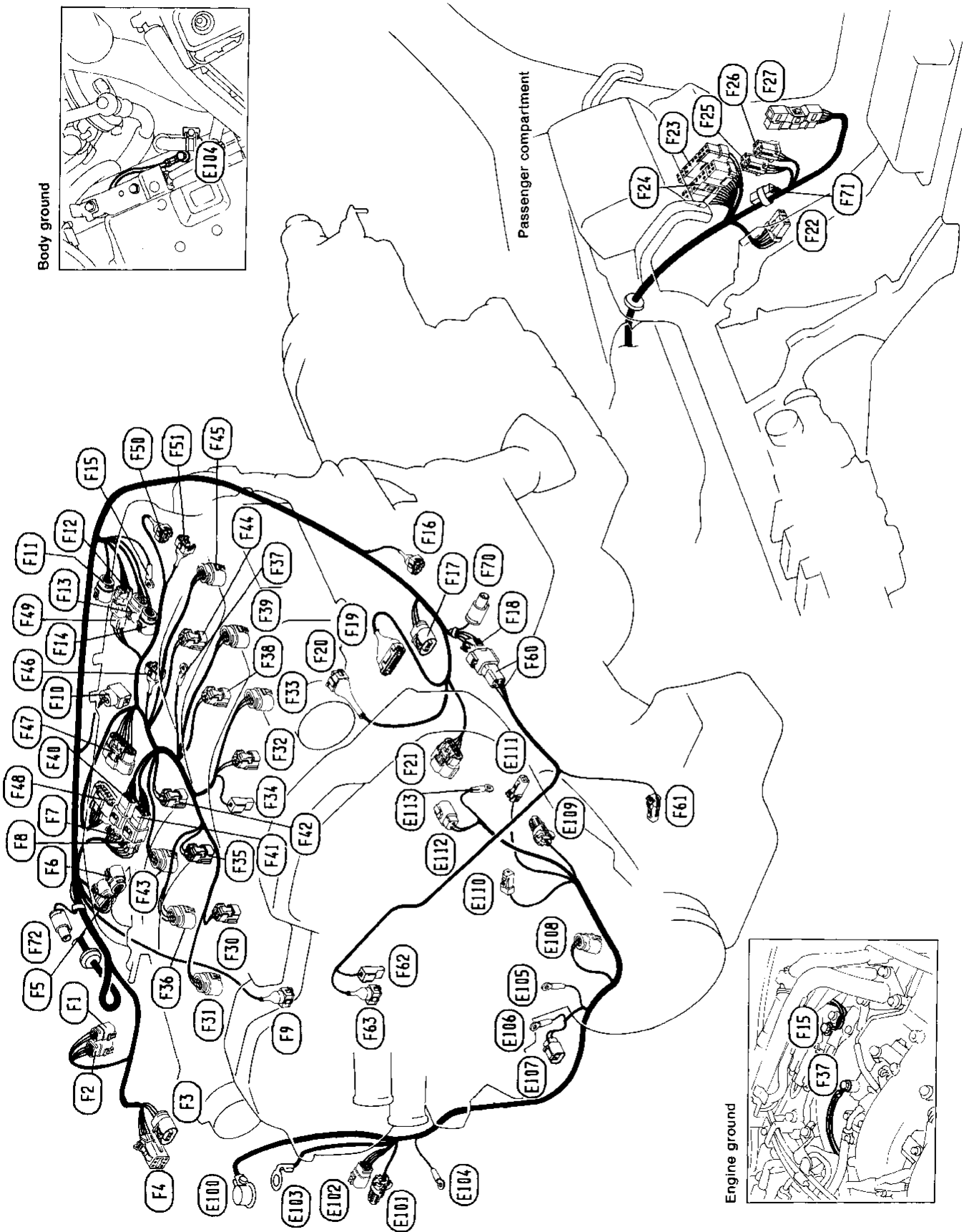
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HARNESS LAYOUT

Engine Control Harness and Engine Harness



HARNESS LAYOUT

Engine Control Harness and Engine Harness (Cont'd)

Engine control harness

- (F1) : Actuator (For anti-lock brake system)
- (F2) : Actuator (For anti-lock brake system)
- (F3) : To (E3)
- (F4) : To (E4)
- (F5) : Oxygen sensor RH
- (F6) : VTC solenoid valve RH
- (F7) : To (F40)
- (F8) : To (F41)
- (F9) : EGR cut solenoid valve
- (F10) : EGR temperature sensor
- (F11) : Knock sensor
- (F12) : To (F49)
- (F13) : Oxygen sensor LH
- (F14) : VTC solenoid valve LH
- (F15) : Engine ground
- (F16) : PRVR solenoid
- (F17) : Throttle position sensor
- (F18) : To (F60)
- (F19) : Mass air flow sensor
- (F20) : Throttle position switch
- (F21) : Camshaft position sensor
- (F22) : To (B52)
- (F23) : To (M74)
- (F24) : To (M75)
- (F25) : Ignition coil relay
- (F26) : ECCS relay
- (F27) : ECM (ECCS control module)
- (F70) : Check connector
- (F71) : Resistor
- (F72) : Check connector

Engine control sub-harness-1

- (F30) : Injector No. 1
- (F31) : Ignition coil No. 1
- (F32) : Injector No. 2
- (F33) : Ignition coil No. 2
- (F34) : Fuel temperature sensor
- (F35) : Injector No. 3
- (F36) : Ignition coil No. 3
- (F37) : Engine ground
- (F38) : Injector No. 4
- (F39) : Ignition coil No. 4
- (F40) : To (F7)
- (F41) : To (F8)
- (F42) : Injector No. 5
- (F43) : Ignition coil No. 5
- (F44) : Injector No. 6
- (F45) : Ignition coil No. 6
- (F46) : Air regulator
- (F47) : Power transistor unit
- (F48) : Power transistor unit
- (F49) : To (F12)
- (F50) : AAC solenoid valve
- (F51) : FICD solenoid valve

Engine control sub-harness-2

- (F60) : To (F18)
- (F61) : Compressor
- (F62) : Thermal transmitter
- (F63) : Engine coolant temperature sensor

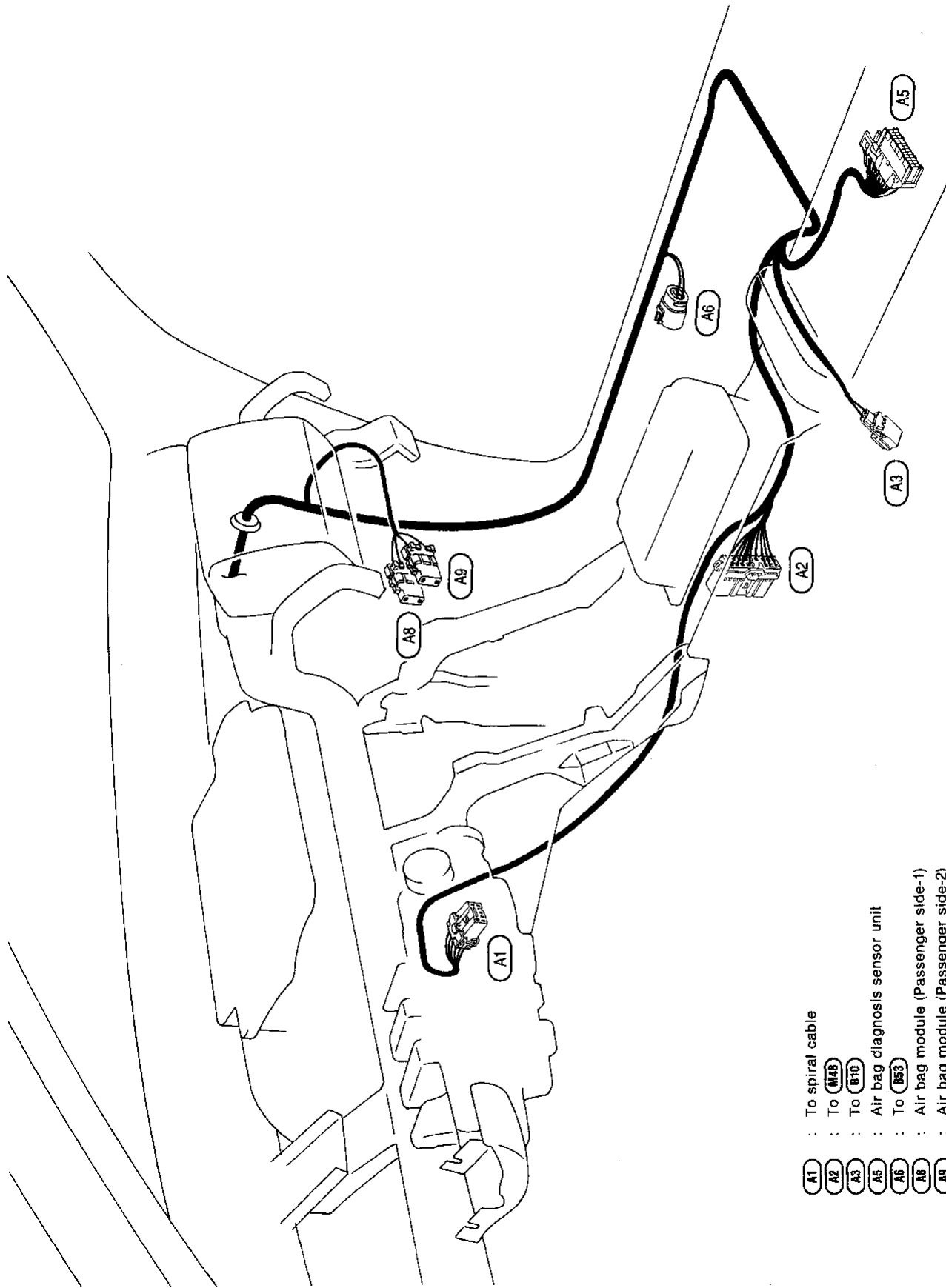
Engine harness

- (E100) : Battery
- (E101) : To (E8)
- (E102) : To (E9)
- (E103) : Hybrid electric control unit
- (E104) : Body ground
- (E105) : Alternator
- (E106) : Alternator
- (E107) : Alternator
- (E108) : Power steering oil pressure switch
- (E109) : Starter motor
- (E110) : Oil pressure switch
- (E111) : EPS solenoid
- (E112) : Park/Neutral position switch
- (E113) : Starter motor

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HARNESS LAYOUT

Air Bag Harness

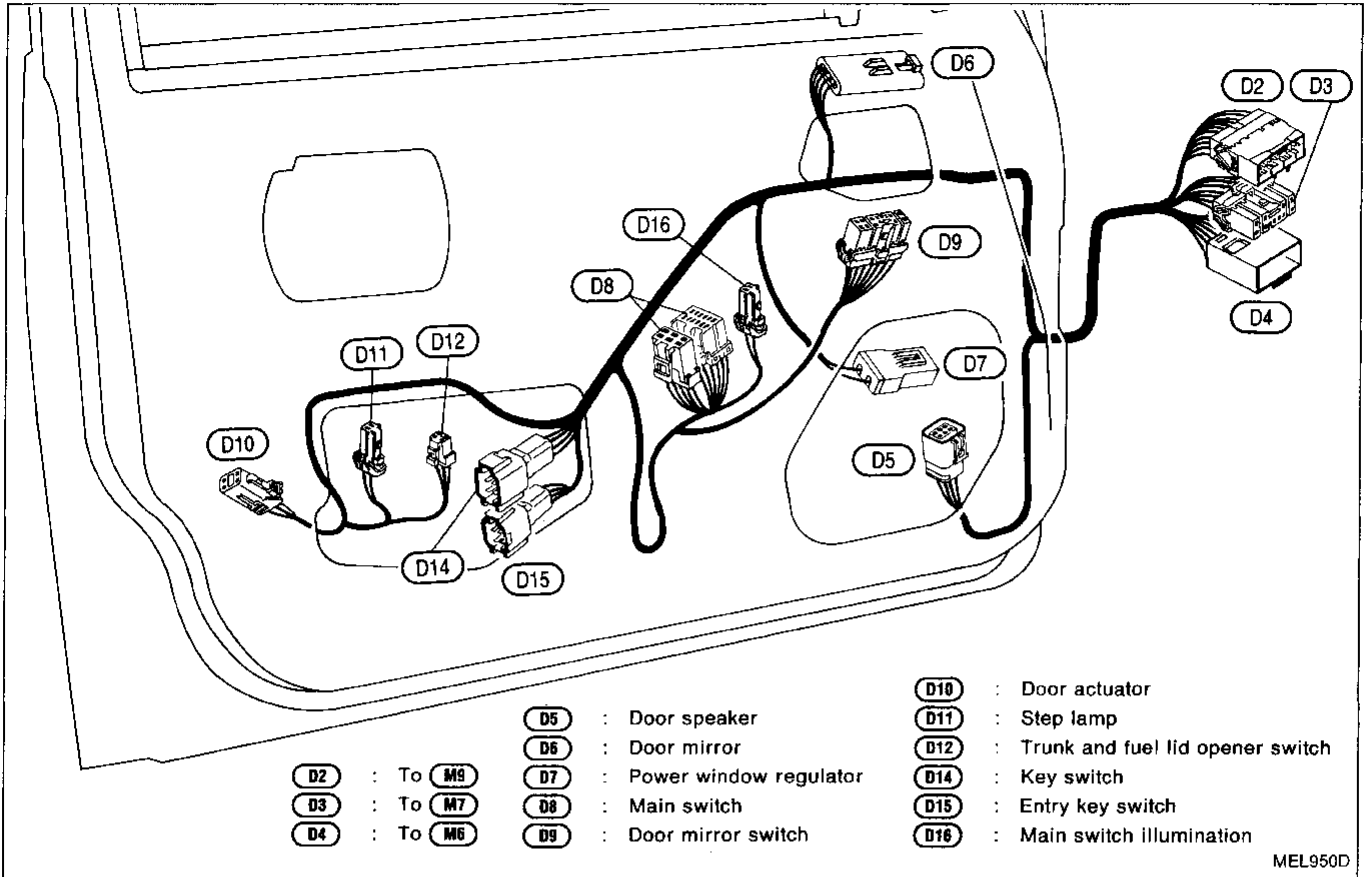


- A1** : To spiral cable
- A2** : To **M48**
- A3** : To **B10**
- A4** : Air bag diagnosis sensor unit
- A5** : To **B53**
- A6** : Air bag module (Passenger side-1)
- A7** : Air bag module (Passenger side-2)
- A8** : Air bag module (Passenger side-2)
- A9** : Air bag module (Passenger side-2)

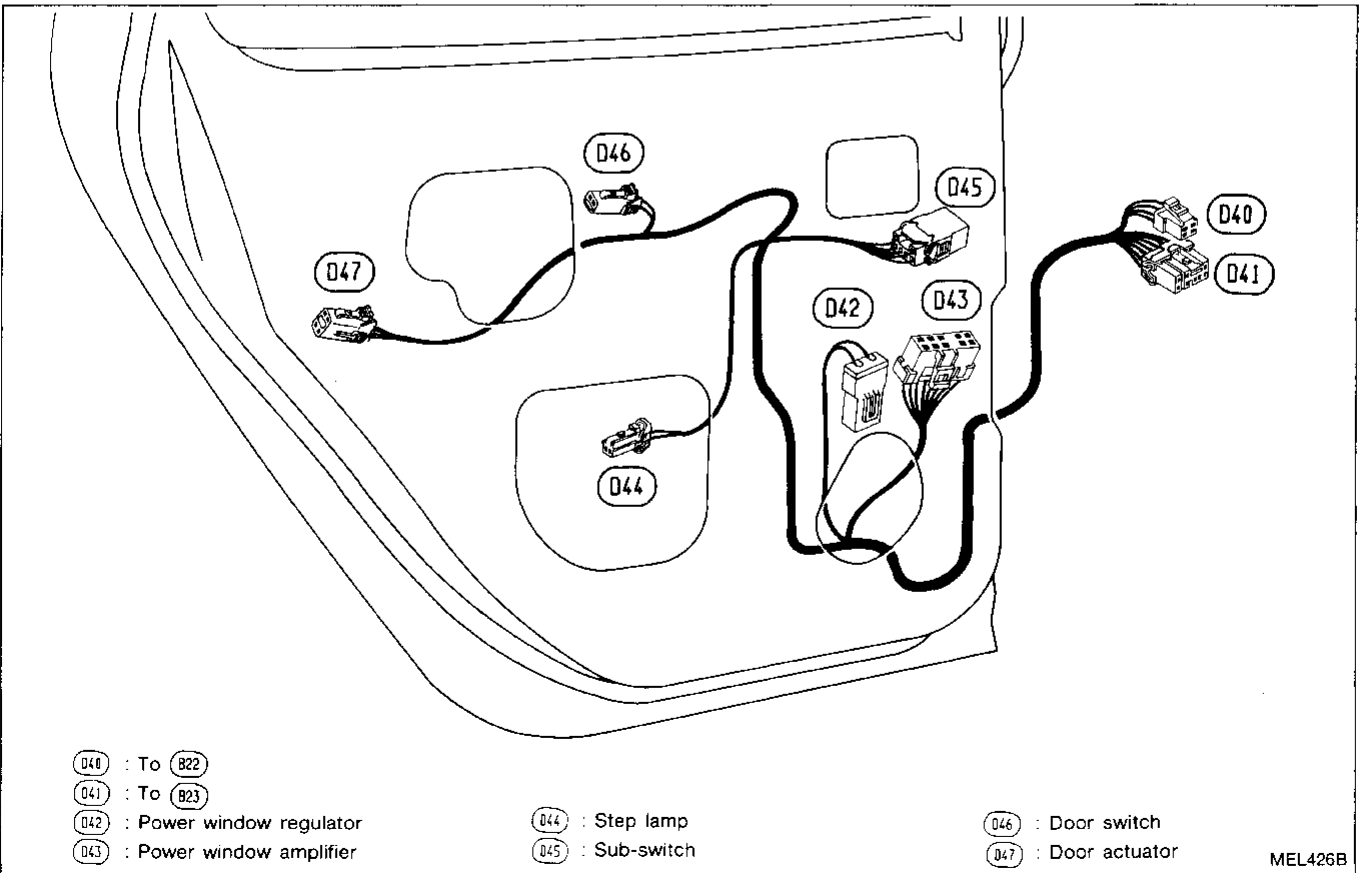
HARNESS LAYOUT

FRONT

Door Harness (LH side)



REAR

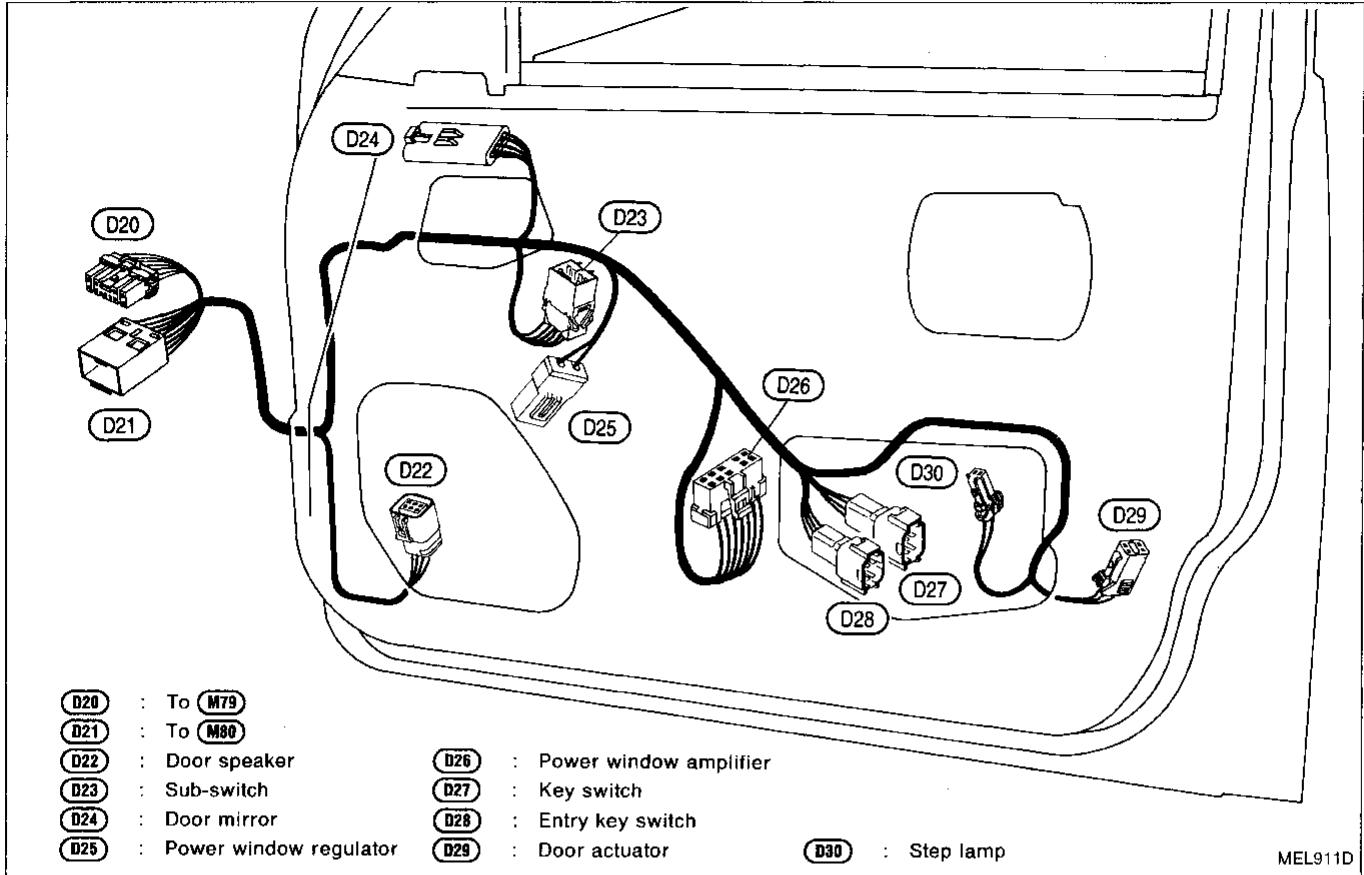


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HARNESS LAYOUT

FRONT

Door Harness (RH side)



REAR

