

ELECTRICAL SYSTEM

SECTION **EL**

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

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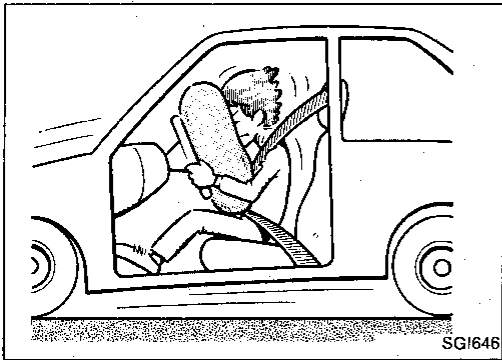
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PRECAUTIONS



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

The Supplemental Restraint System “Air Bag” and “Seat Belt Pre-tensioner” 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 bags (located in the center of the steering wheel and on the instrument panel on the passenger side), seat belt pre-tensioners sensors, a diagnosis unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **BF section** of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, 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 air bag electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS SYSTEM.

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HARNESS CONNECTOR

Description

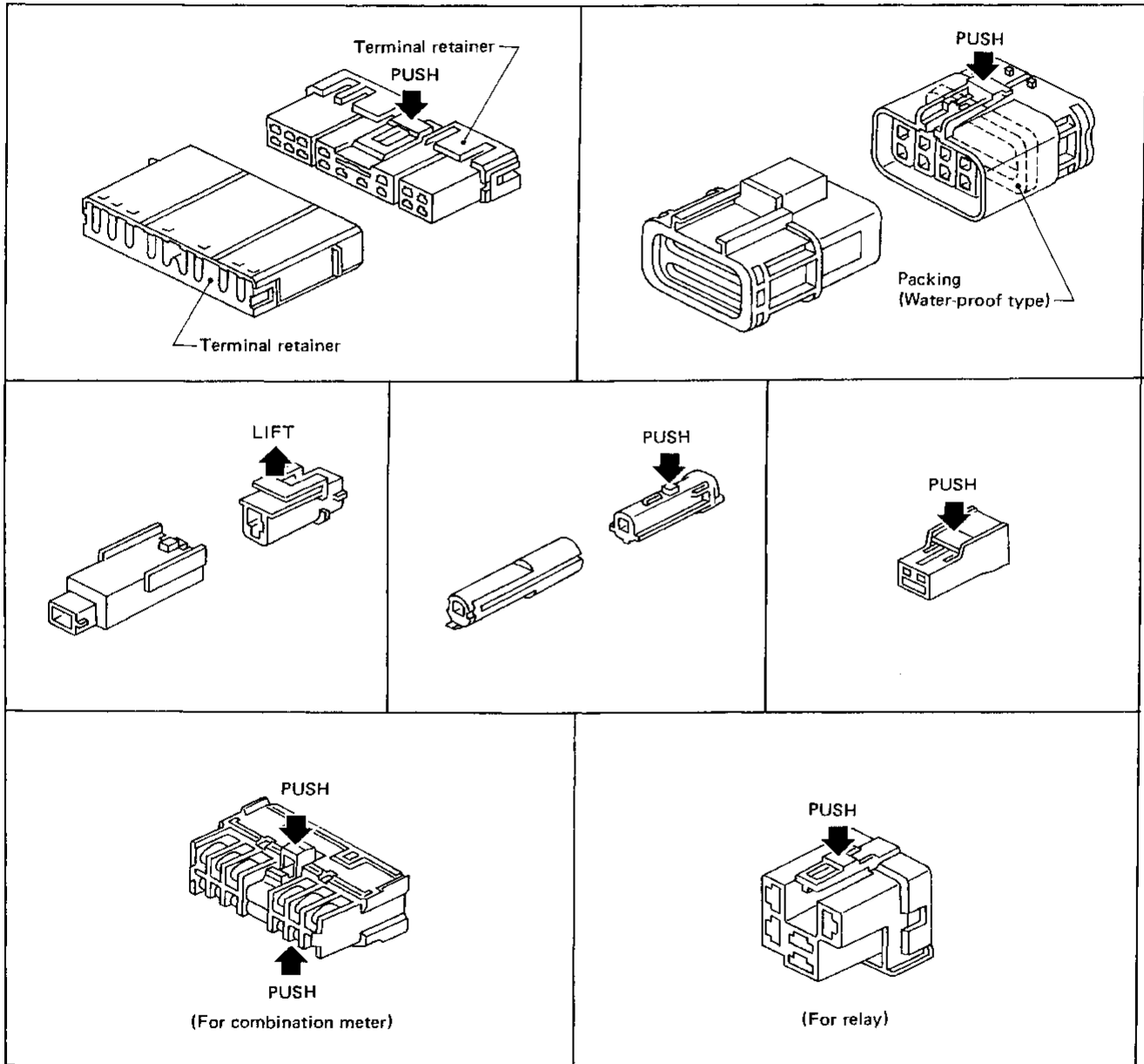
HARNESS CONNECTOR

- 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]



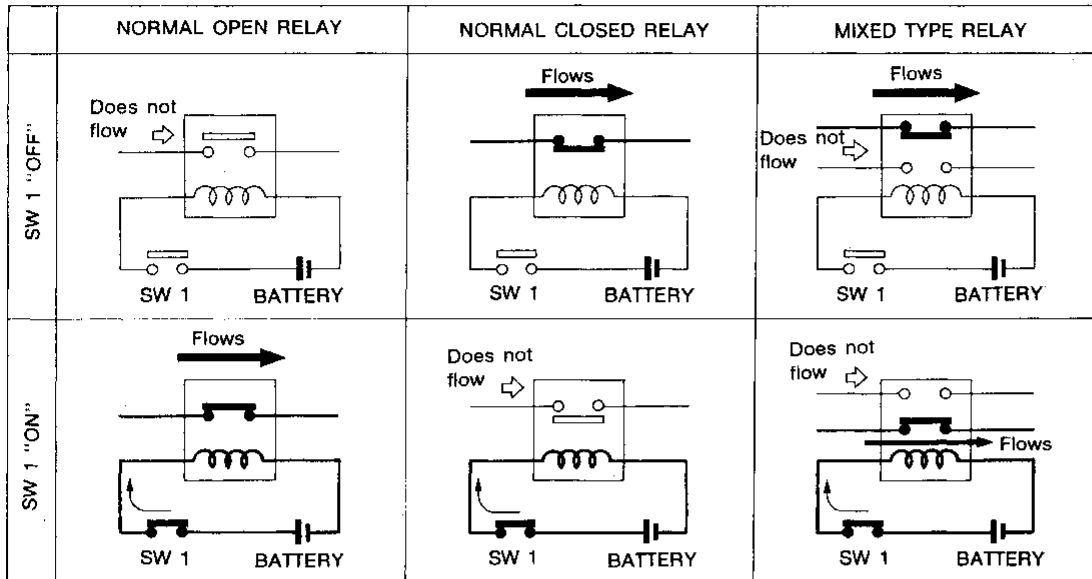
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STANDARDIZED RELAY

Description

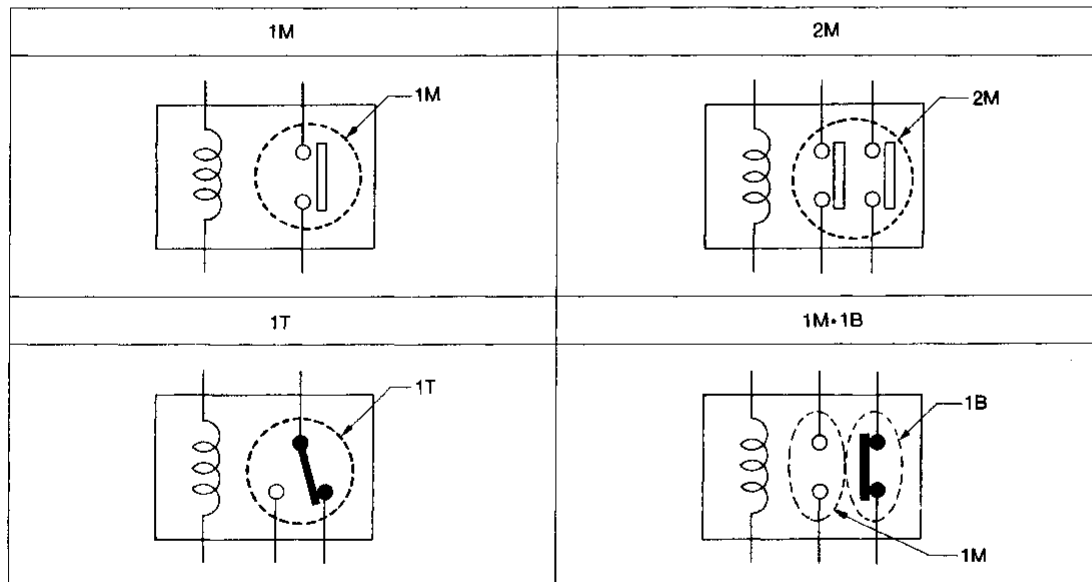
NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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



TYPE OF STANDARDIZED RELAYS

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

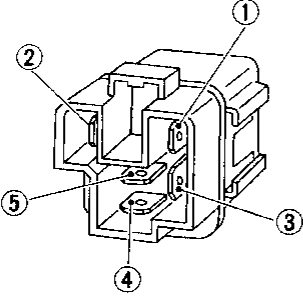
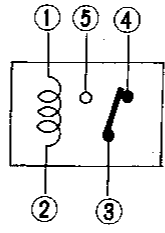
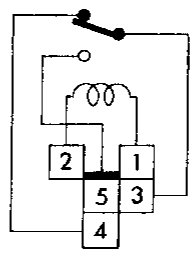
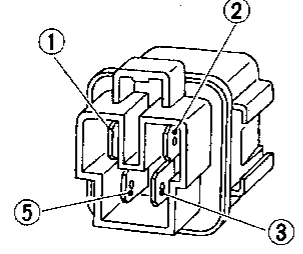
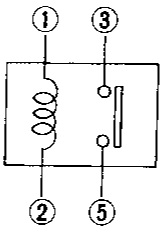
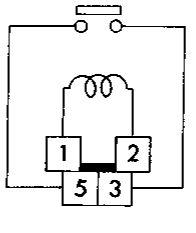
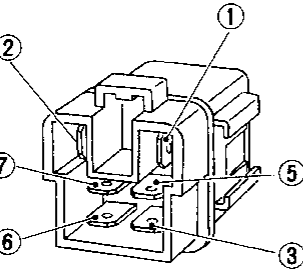
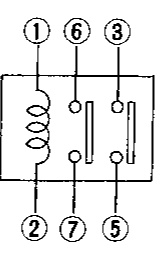
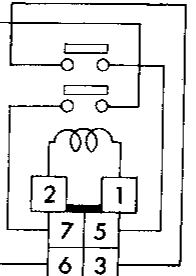
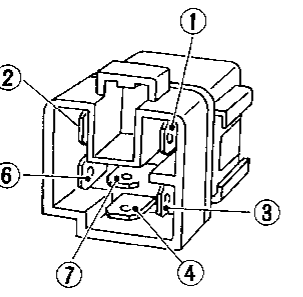
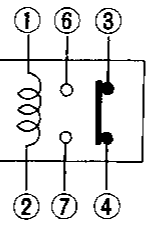
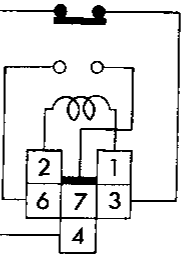
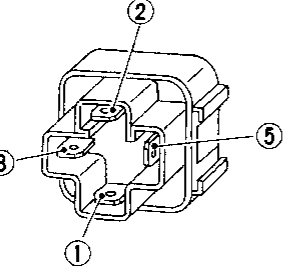
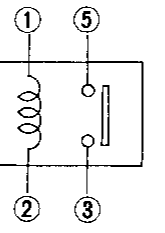
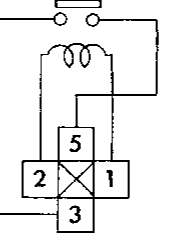


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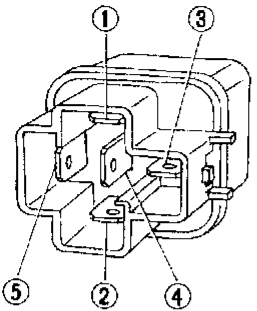
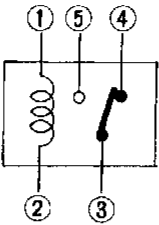
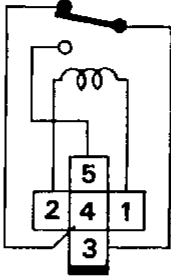
STANDARDIZED RELAY

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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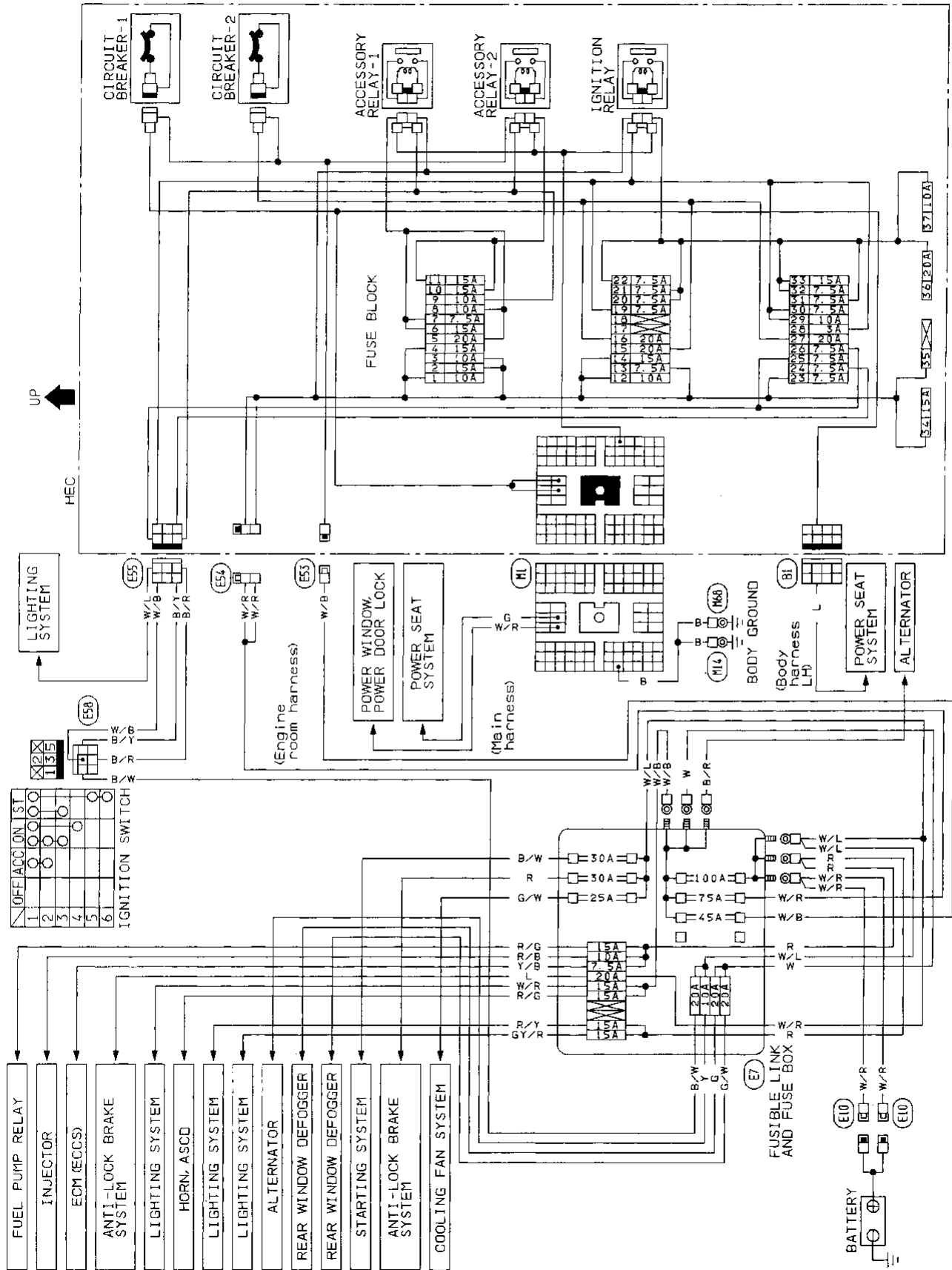
STANDARDIZED RELAY

NOTE

POWER SUPPLY ROUTING

Wiring Diagram

UPPER FUSE BLOCK INSIDE HEC

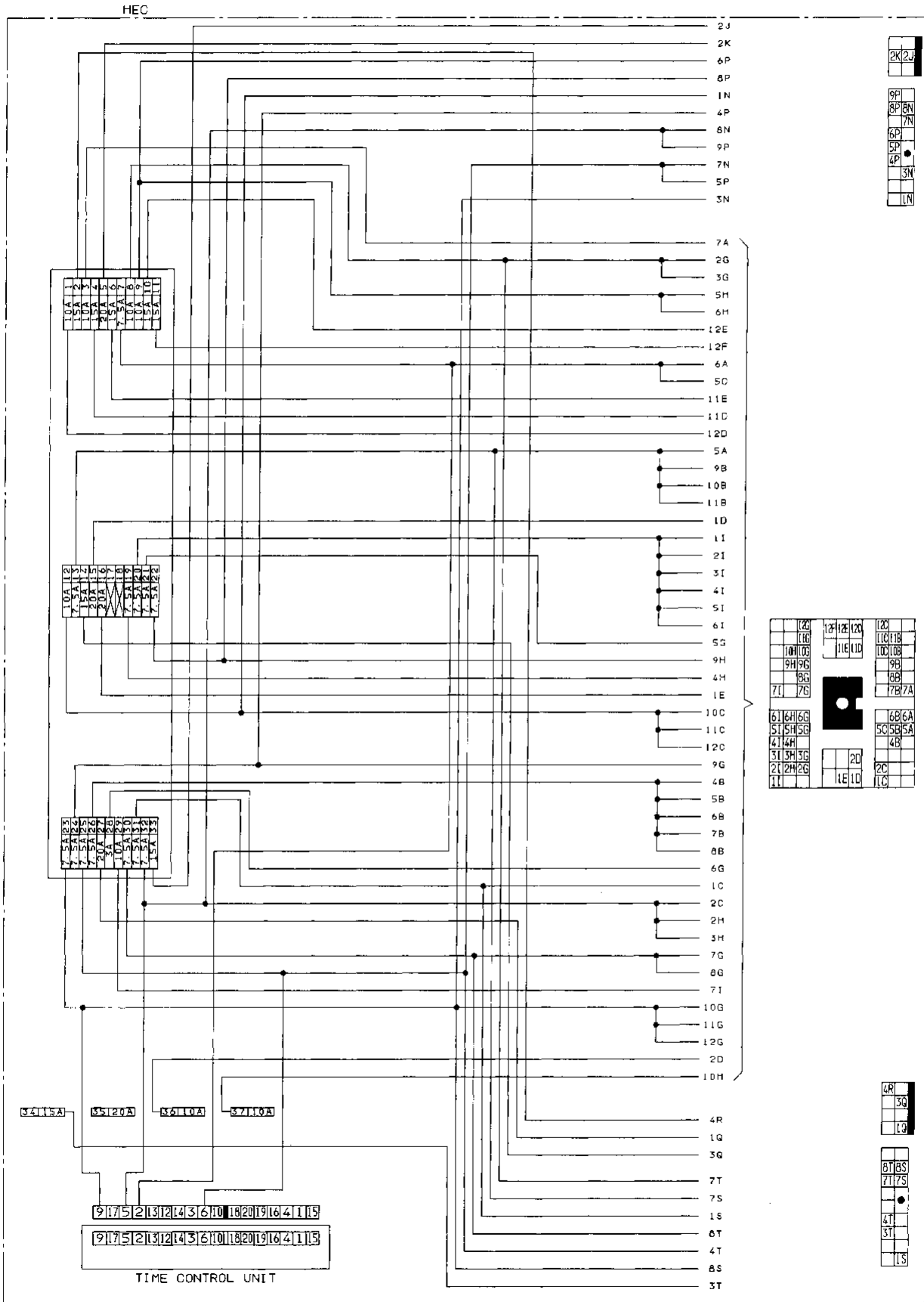


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POWER SUPPLY ROUTING

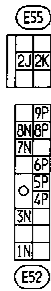
Wiring Diagram (Cont'd)

LOWER FUSE BLOCK INSIDE HEC



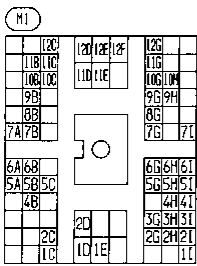
POWER SUPPLY ROUTING

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 — BR — STEERING SENSOR
- 9P — NOT USED
- 7N — Y/B — CLEARANCE LAMP LH
- 5P — Y/B — CLEARANCE LAMP RH
- 3N — Y/B — KEY ILLUMINATION

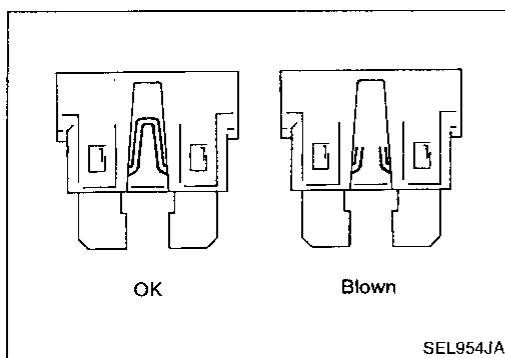
- 7A — G/B — TELEPHONE
- 2G — L/OR — DOOR MIRROR
- 3G — NOT USED
- 5H — W — TELEPHONE
- 6H — B/P — AUDIO
- 12E — L/W — BLOWER MOTOR
- 12F — L/W — BLOWER MOTOR
- 6A — NOT USED
- 5C — BR — POWER ANTENNA
- 11E — R/L — CIGARETTE LIGHTER
- 11D — R/Y — STOP LAMP
- 12D — OR/L — HAZARD WARNING
- 5A — G/OR — CLOCK
- 9B — P/B — BUZZER
- 10B — L — REMOTE CONTROL DOOR LOCK SYSTEM
- 11B — NOT USED
- 1D — W/PU — POWER WINDOW AND POWER DOOR LOCK
- 11 — B/W — ANTI-LOCK BRAKE SYSTEM
- 21 — NOT USED
- 31 — NOT USED
- 41 — NOT USED
- 51 — DR/L — HEADLAMP
- 61 — 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 — G/Y — THEFT WARNING SYSTEM
- 11C — R — SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)
- 12C — NOT USED
- 9E — 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 — DR — WARNING LAMP
- 2C — Y/L — ELECTRONIC POWER STEERING SYSTEM
- 2H — G/Y/R — HICAS CONTROL SYSTEM
- 3H — NOT USED
- 7G — R/PU — A/T CONTROL SYSTEM
- 8G — LG — ECM (ECCS CONTROL MODULE)
- 71 — 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
- 1G — G/R — POWER WINDOW AND POWER DOOR LOCK
- 3G — W/G — AUDIO
- 7T — G — POWER SEAT
- 7S — Y — A/T CONTROL SYSTEM
- 1S — NOT USED
- 8T — B — A/T CONTROL SYSTEM
- 4T — W/L — TAIL LAMP
- 8S — R/Y — TRUNK ROOM LAMP
- 3T — PU/W — TRUNK AND FUEL LID OPENER

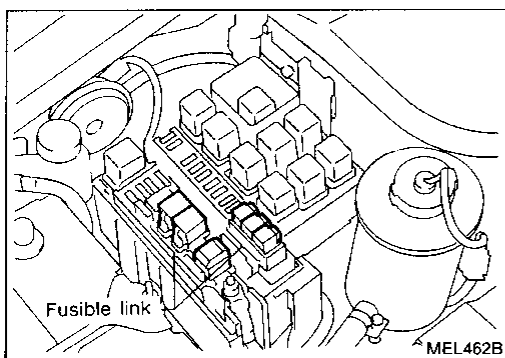
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POWER SUPPLY ROUTING



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

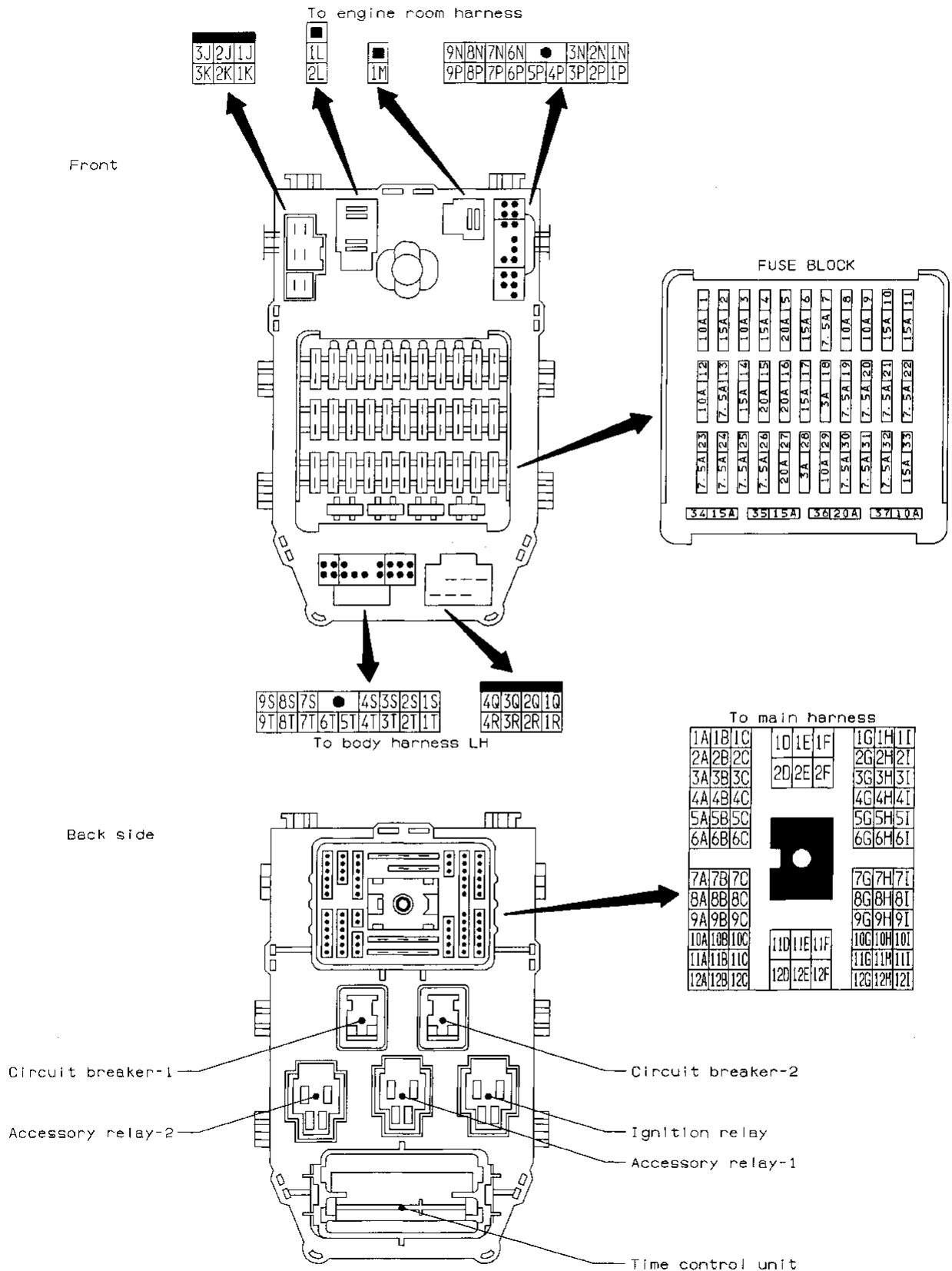
A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

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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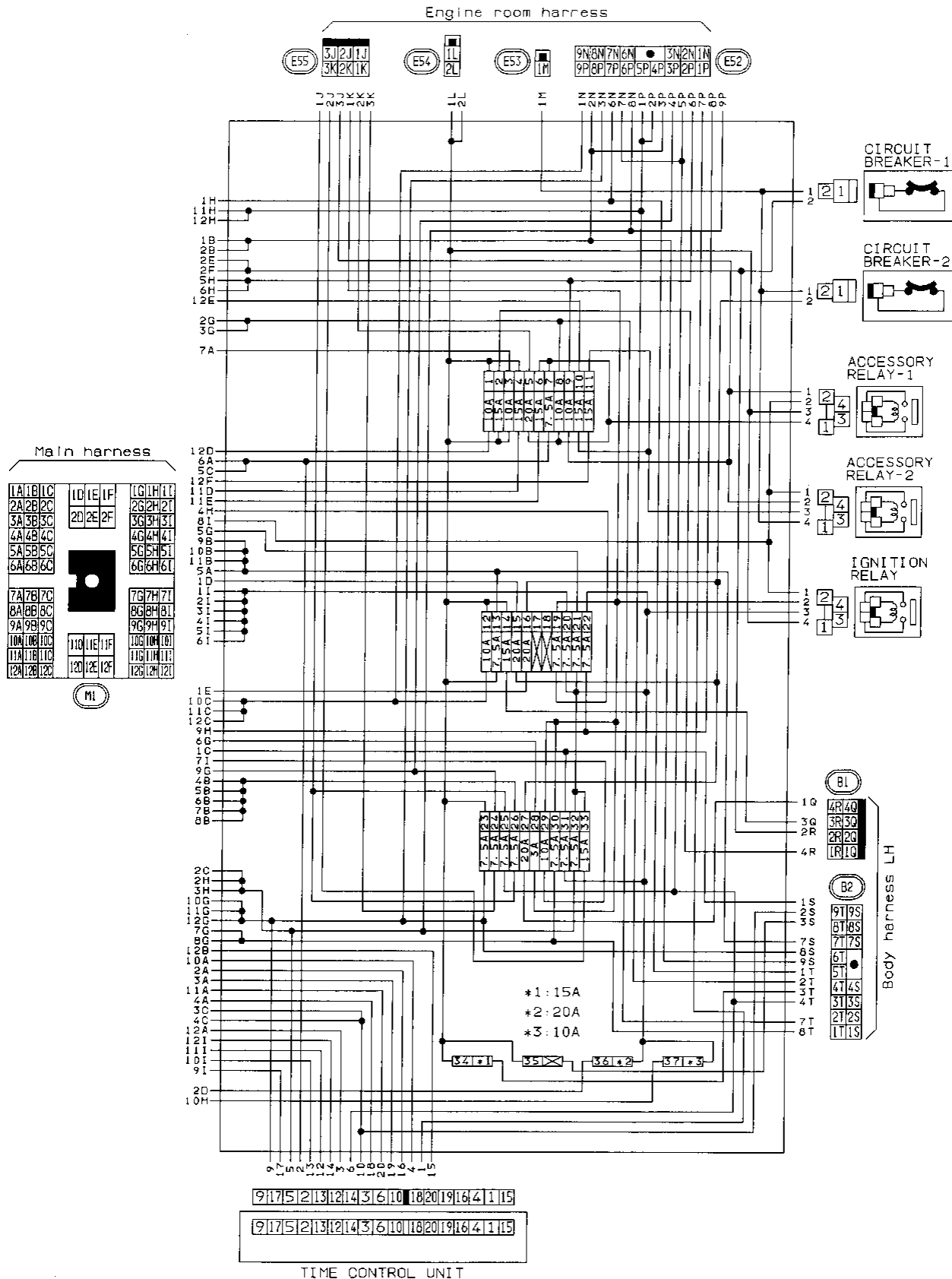
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HYBRID ELECTRIC CONTROL UNIT (HEC)

Internal Circuit



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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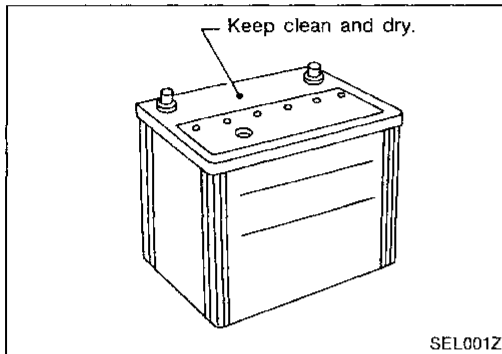
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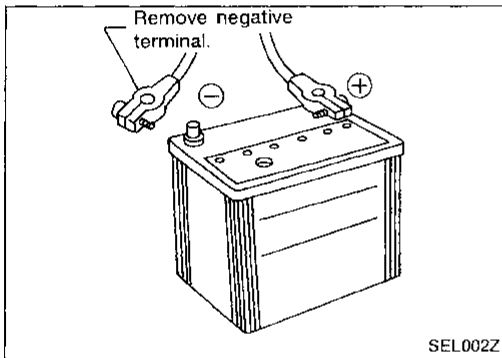
How to Handle Battery

METHODS OF PREVENTING OVER-DISCHARGE

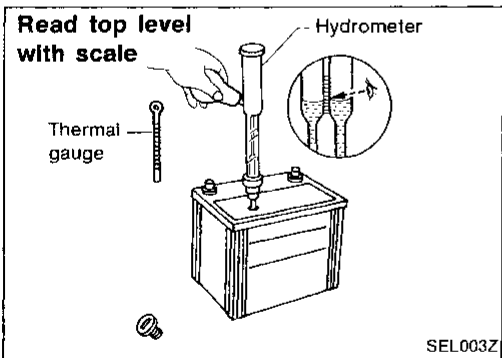
The following precautions must be taken to prevent over-discharging a battery.

- 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)

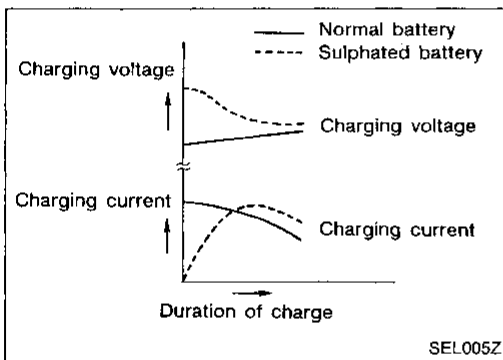
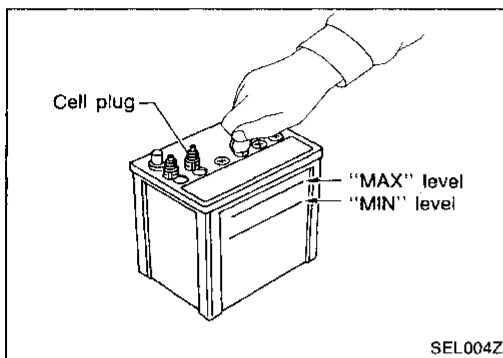
CHECKING ELECTROLYTE LEVEL

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.

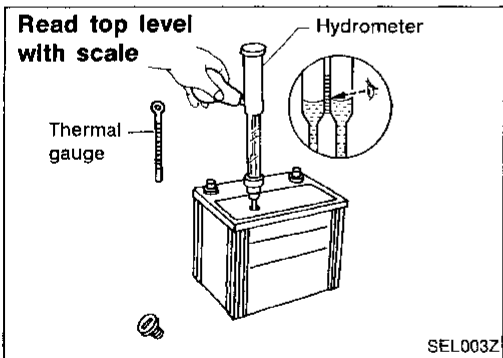
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

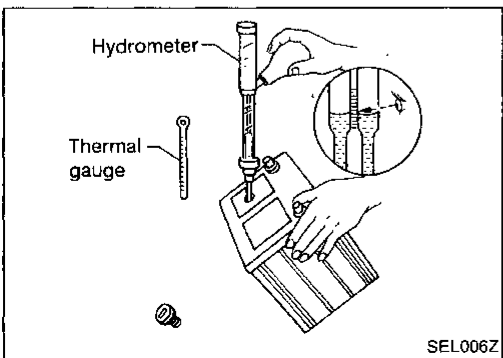
When a battery has been left unattended for a long period of time and has a specific gravity of less than 1.100, it will be completely discharged, resulting in sulphation on the cell plates.

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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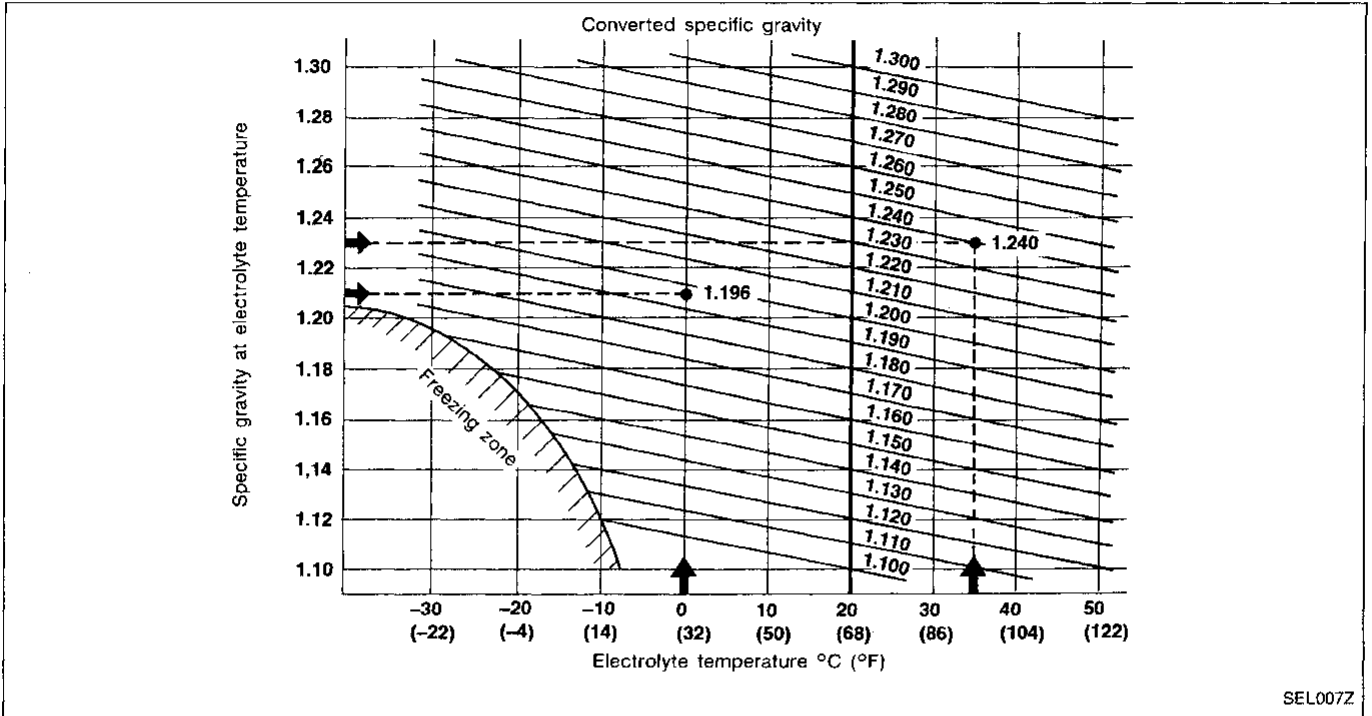
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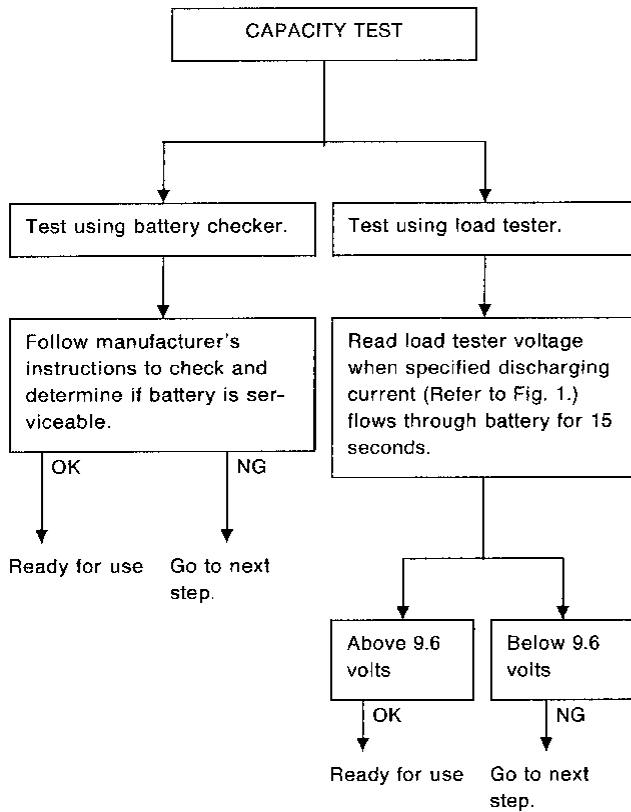
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BATTERY

Battery Test and Charging Chart (Cont'd)

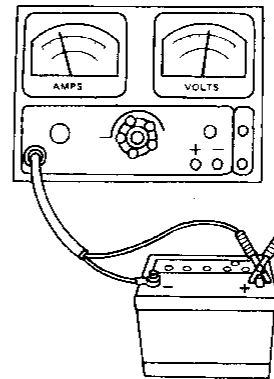
Chart II



- 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)

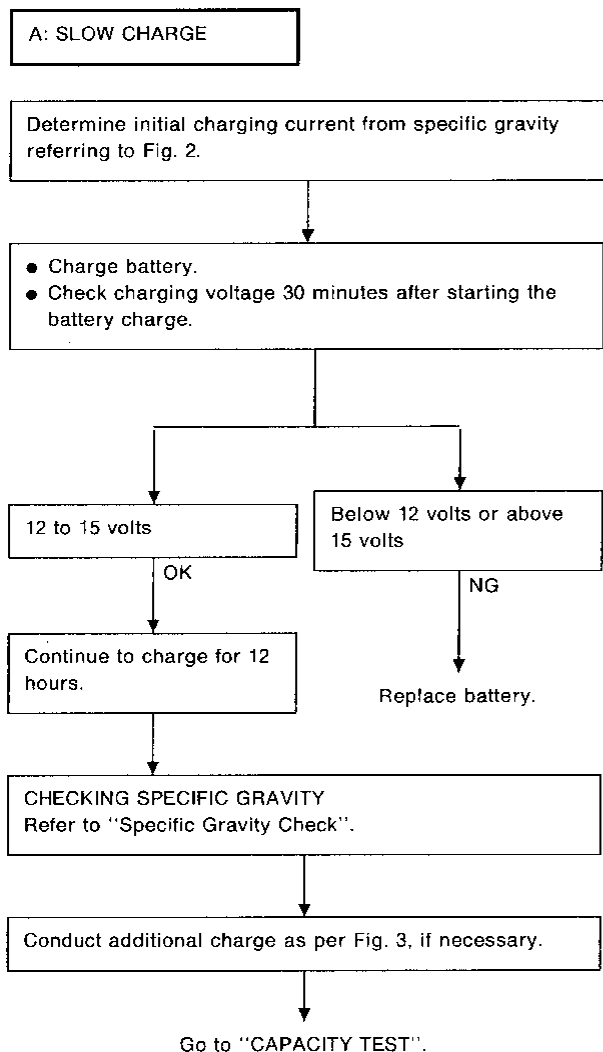
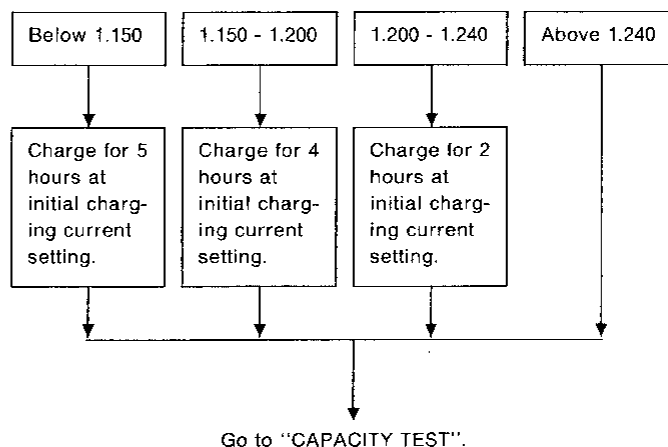


Fig. 2 INITIAL CHARGING CURRENT SETTING (Slow charge)

BATTERY TYPE CON- VERTED SPECIFIC GRAVITY	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

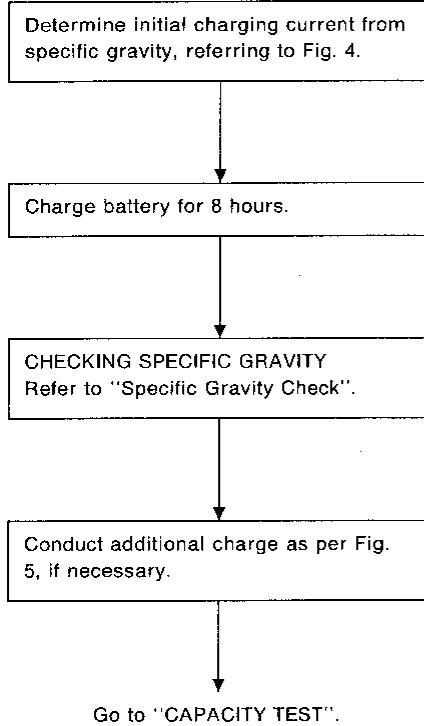
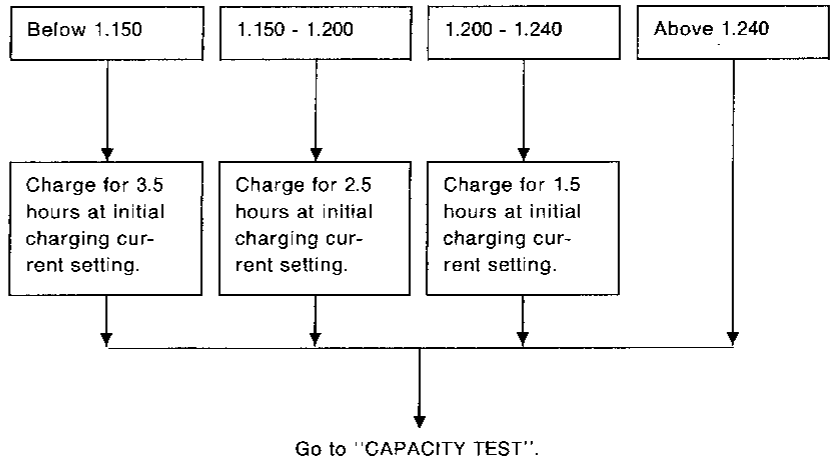


Fig. 4 INITIAL CHARGING CURRENT SETTING
(Standard charge)

BATTERY TYPE CON- VERTED SPECIFIC GRAVITY	28B19R(L)	34B19R(L)	48B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(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

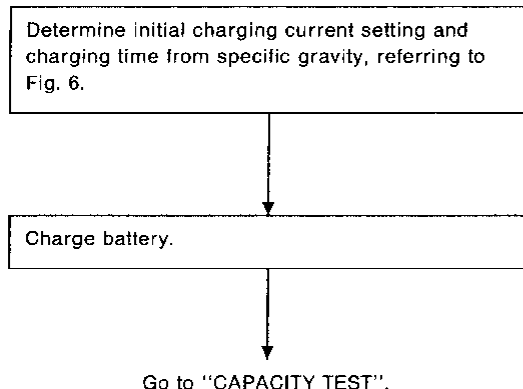


Fig. 6 INITIAL CHARGING CURRENT SETTING AND CHARGING TIME (Quick charge)

BATTERY TYPE CURRENT CONVERTED [A] SPECIFIC GRAVITY	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)
	10 (A)		15 (A)		20 (A)			30 (A)			40 (A)		
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:

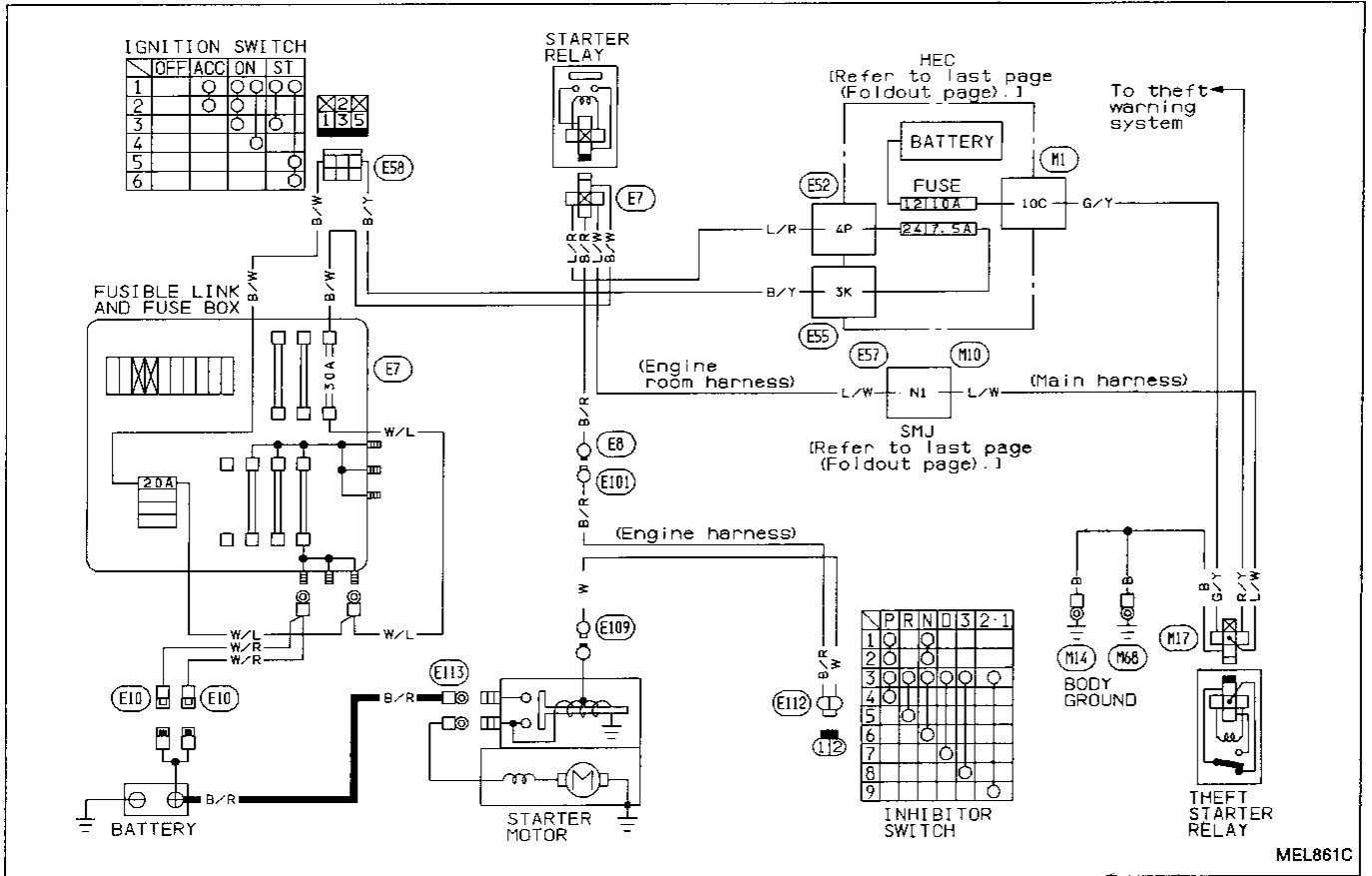
- Do not use quick charge method on a battery whose specific gravity is less than 1.100.
- Set initial charging current to value specified in Fig. 6. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open 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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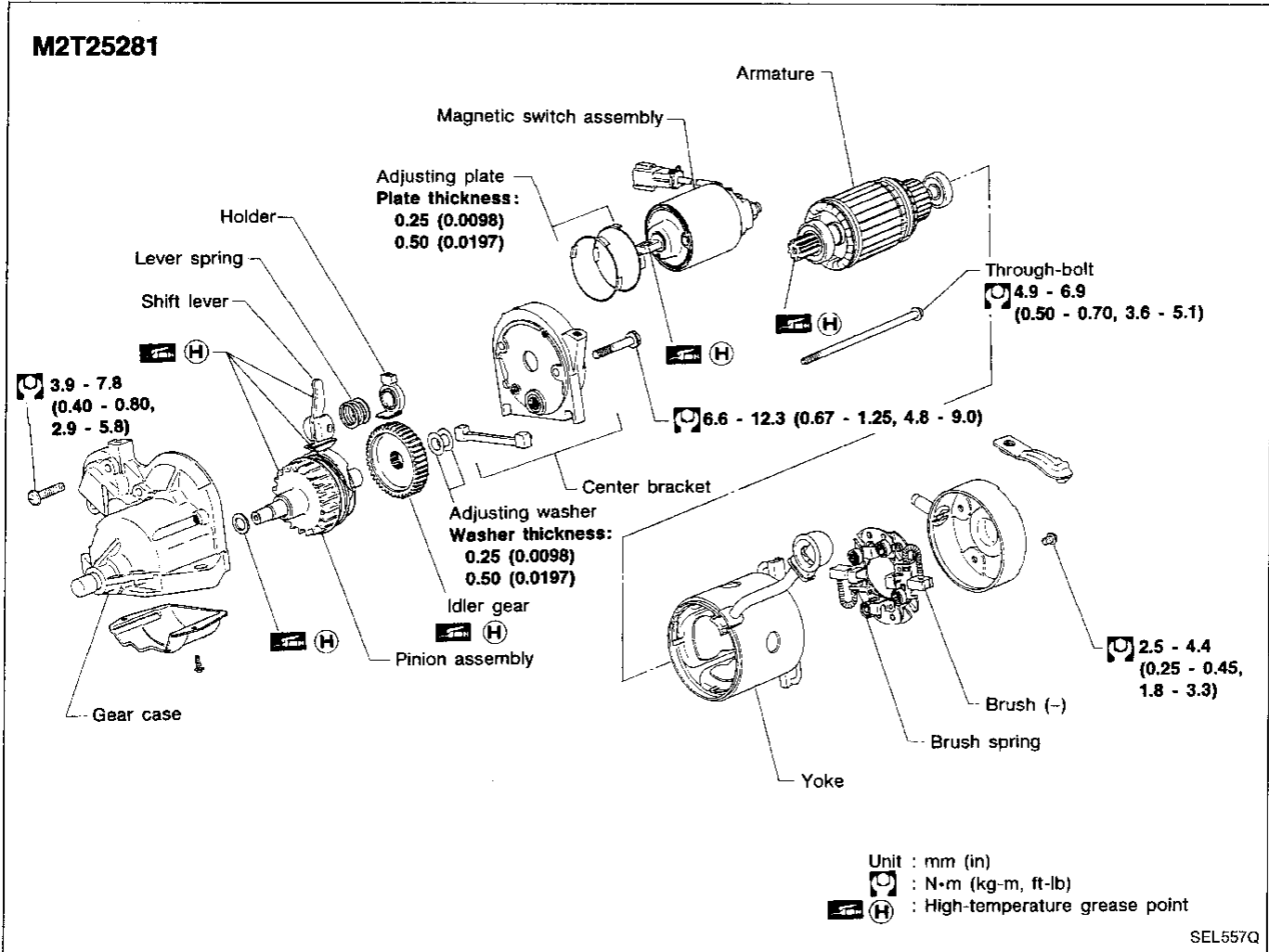
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STARTING SYSTEM

Construction



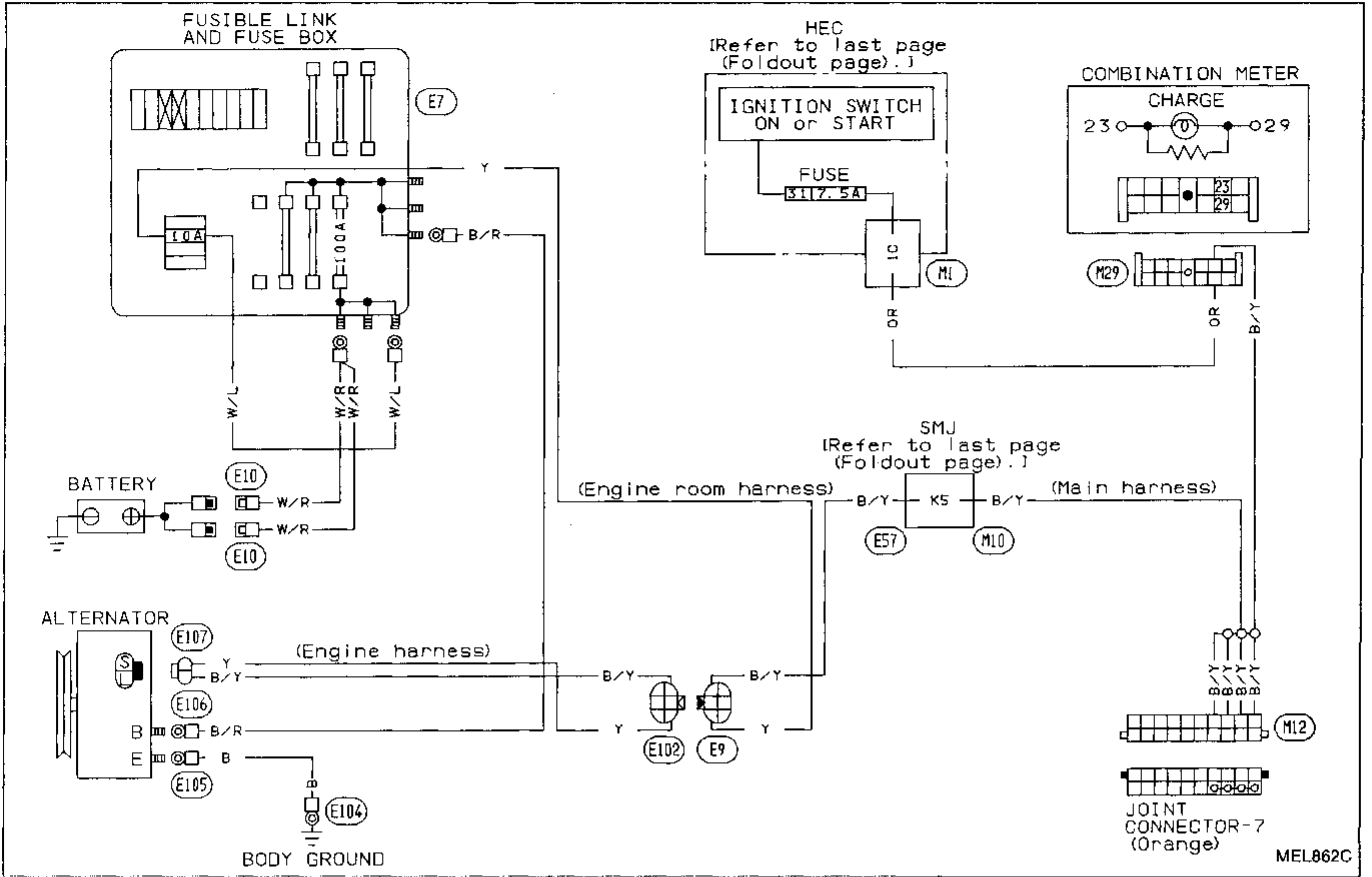
Service Data and Specifications (SDS)

STARTER

Type		M2T25281	
		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



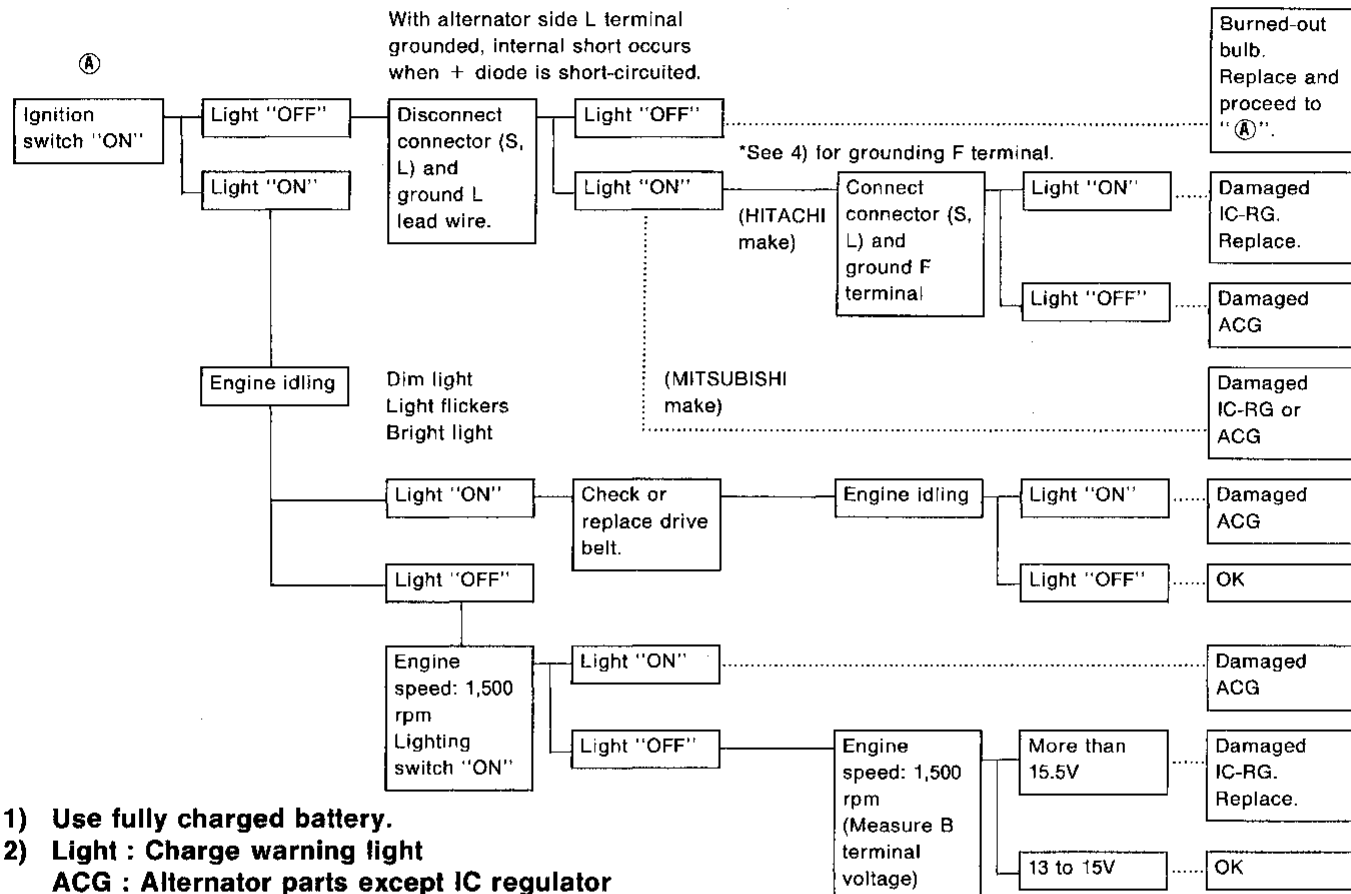
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Trouble-shooting

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.

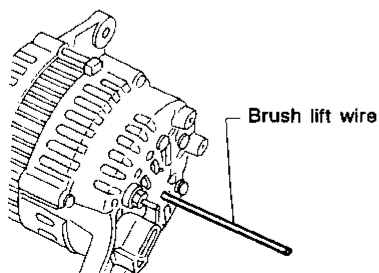
WITH IC REGULATOR



- 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.



SEL030Z

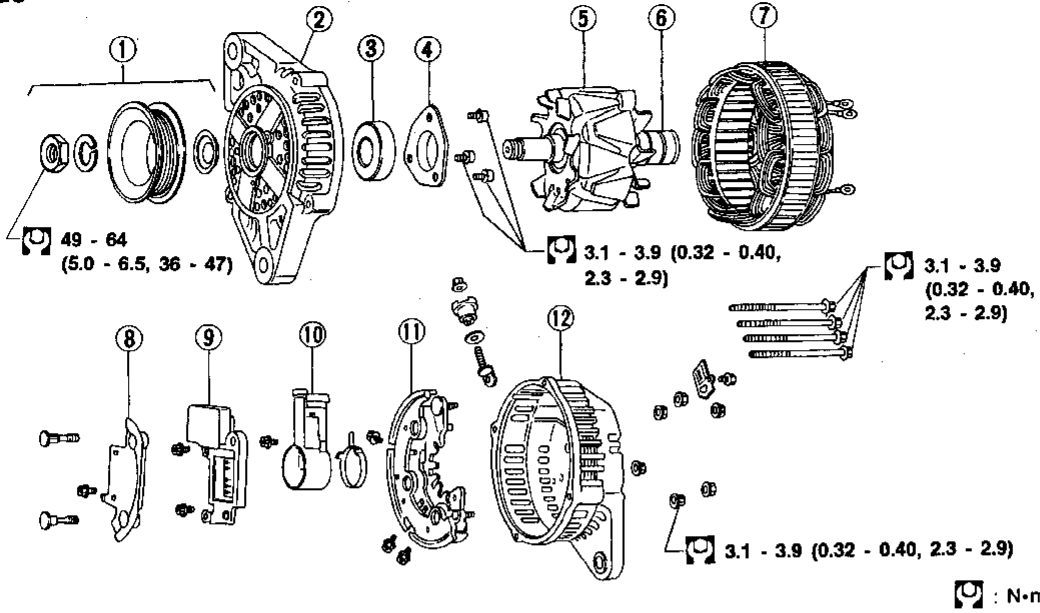
Make sure connector (S, L) is connected correctly.

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

CHARGING SYSTEM

Construction

LR180-725



- ① Pulley assembly
- ② Front cover
- ③ Front bearing
- ④ Retainer

- ⑤ Rotor
- ⑥ Slip ring
- ⑦ Stator
- ⑧ Condenser

- ⑨ IC regulator assembly
- ⑩ Brush holder
- ⑪ Diode assembly
- ⑫ Rear cover

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CHARGING SYSTEM

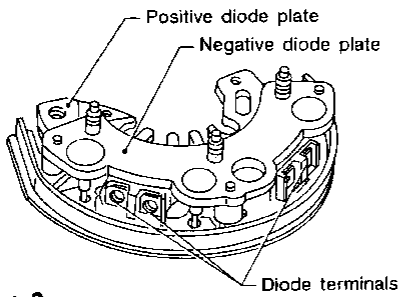
Diode Check

MAIN DIODES

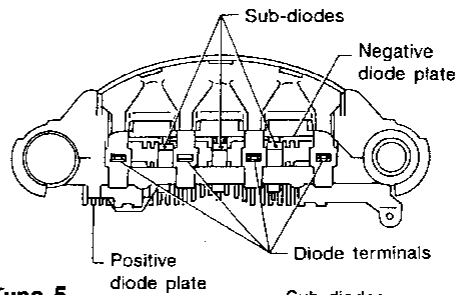
- Use an ohmmeter to check condition of diodes as indicated in chart below.
- If any of the test results is not satisfactory, replace diode assembly.

	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	

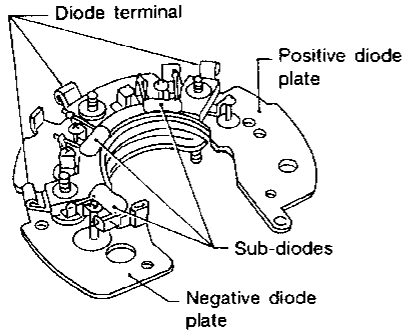
Type 1



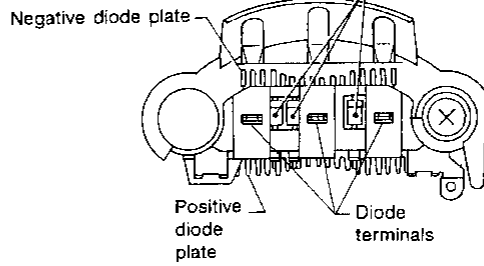
Type 4



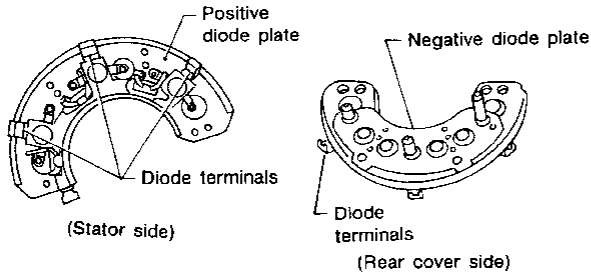
Type 2



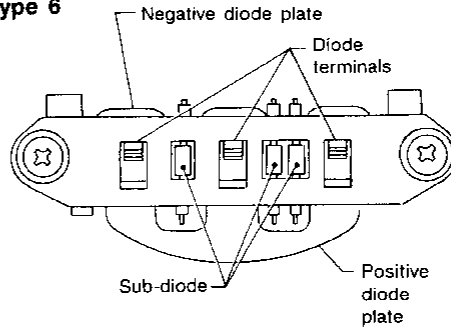
Type 5



Type 3



Type 6



SEL039Z

Assembly

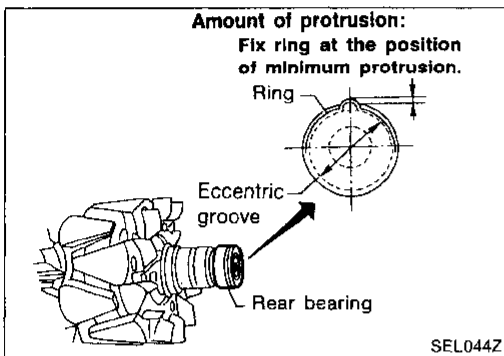
Carefully observe the following instructions.

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

GI

MA

EM



RING FITTING IN REAR BEARING

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

LC

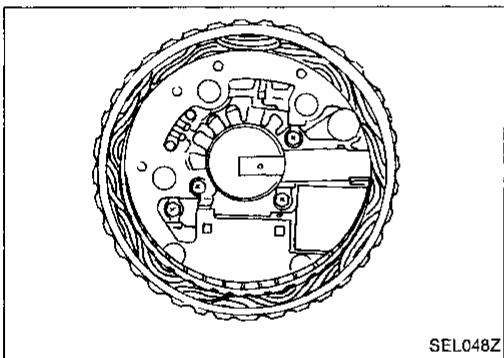
CAUTION:

Do not reuse rear bearing after removal.

EF &
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REAR COVER INSTALLATION

- (1) Fit brush assembly, diode assembly, regulator assembly and stator.

PD

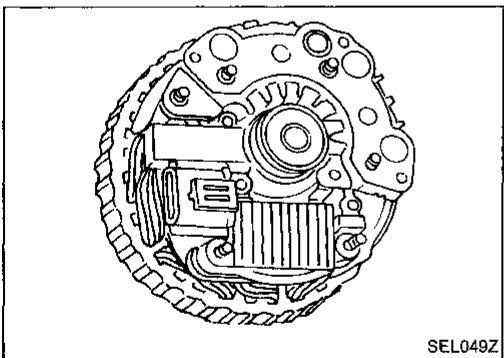
- (2) Push brushes up with fingers and install them to rotor.

Take care not to damage slip ring sliding surface.

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CHARGING SYSTEM

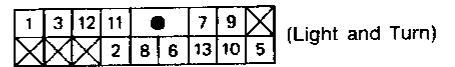
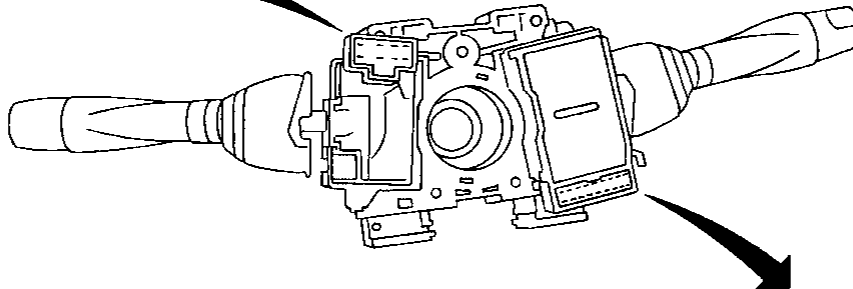
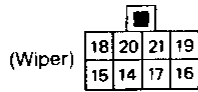
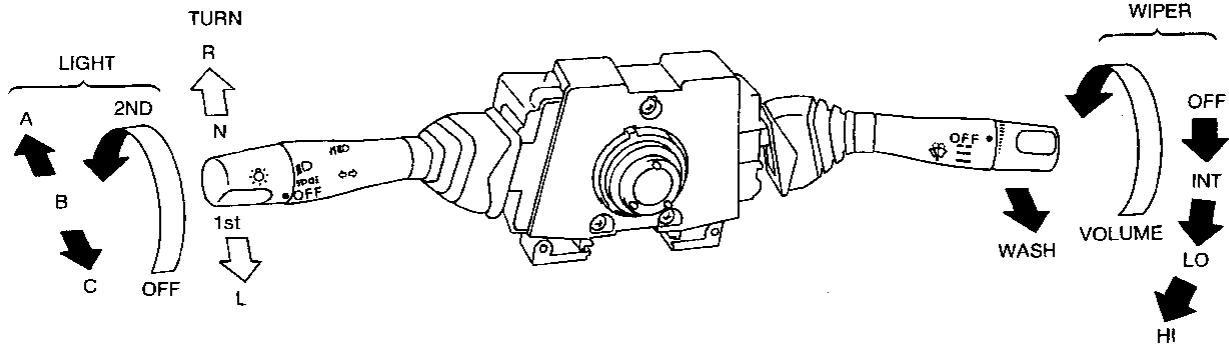
Service Data and Specifications (SDS)

ALTERNATOR

Type		LR190-717
		HITACHI
Nominal rating	V-A	12-90
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current	A/rpm	More than 23/1,300 More than 63/2,500 More than 87/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)
Rotor (Field coil) resistance	Ω	3.4

COMBINATION SWITCH

Combination Switch/Check

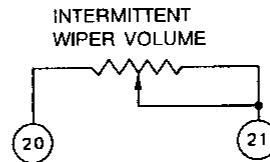


LIGHTING SWITCH

	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					○

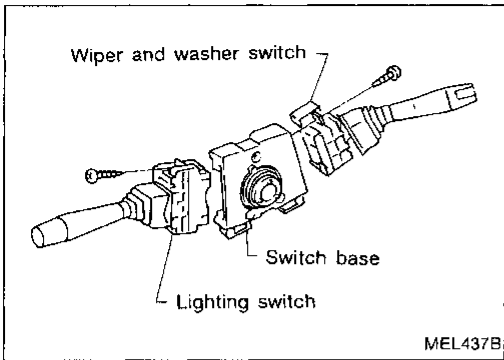


TURN SIGNAL SWITCH

	R	N	L
1	○		○
2	○		
3			○

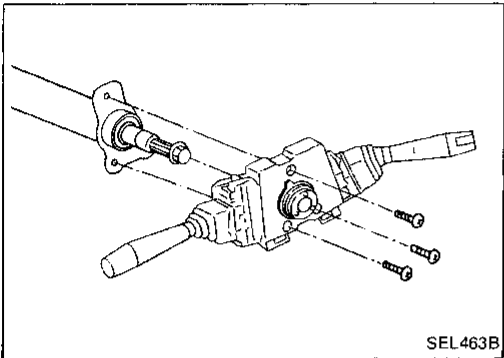
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COMBINATION SWITCH



Combination Switch/Replacement

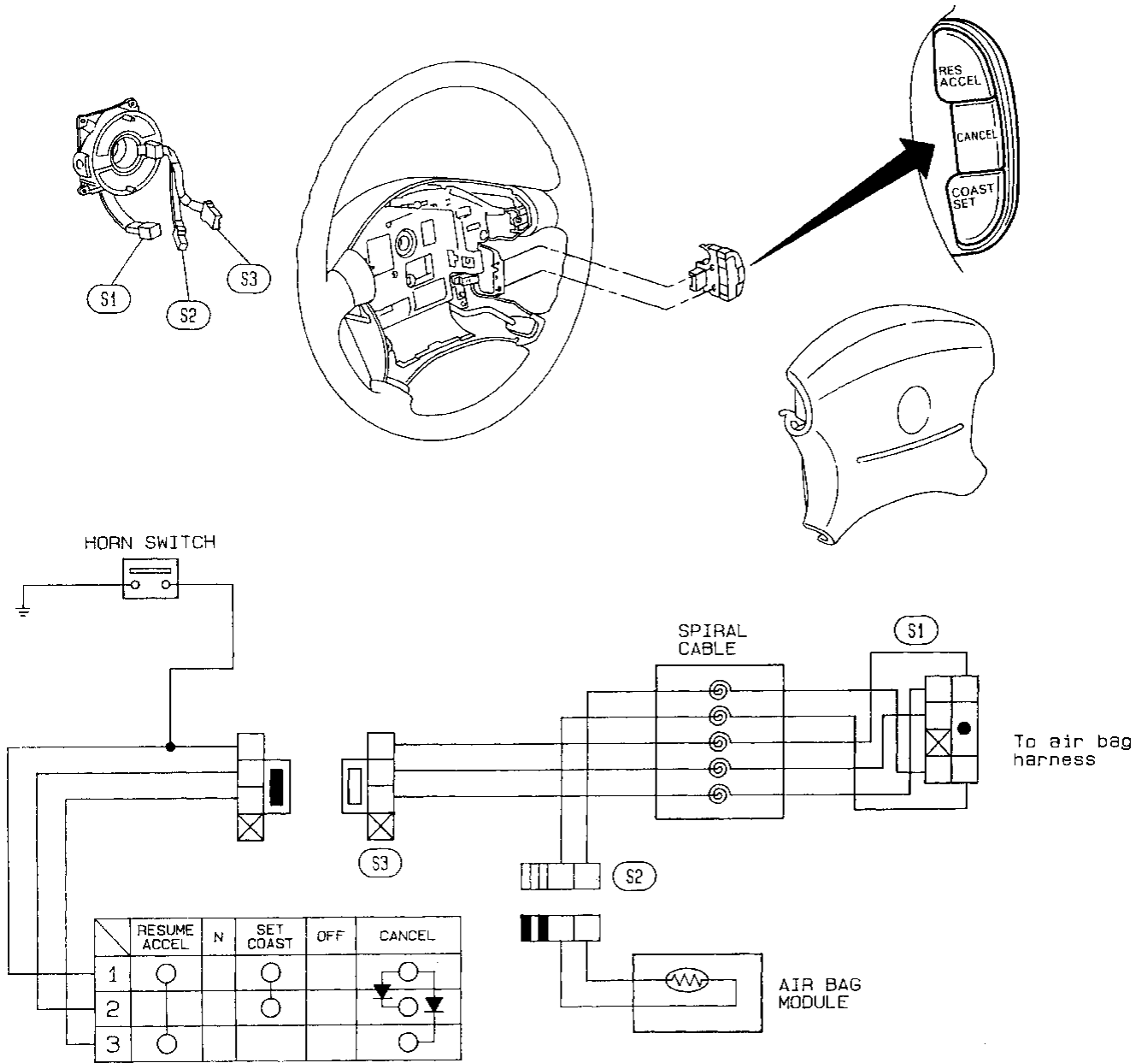
- Each switch can be replaced without removing combination switch base.



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

COMBINATION SWITCH

Steering Switch/Check



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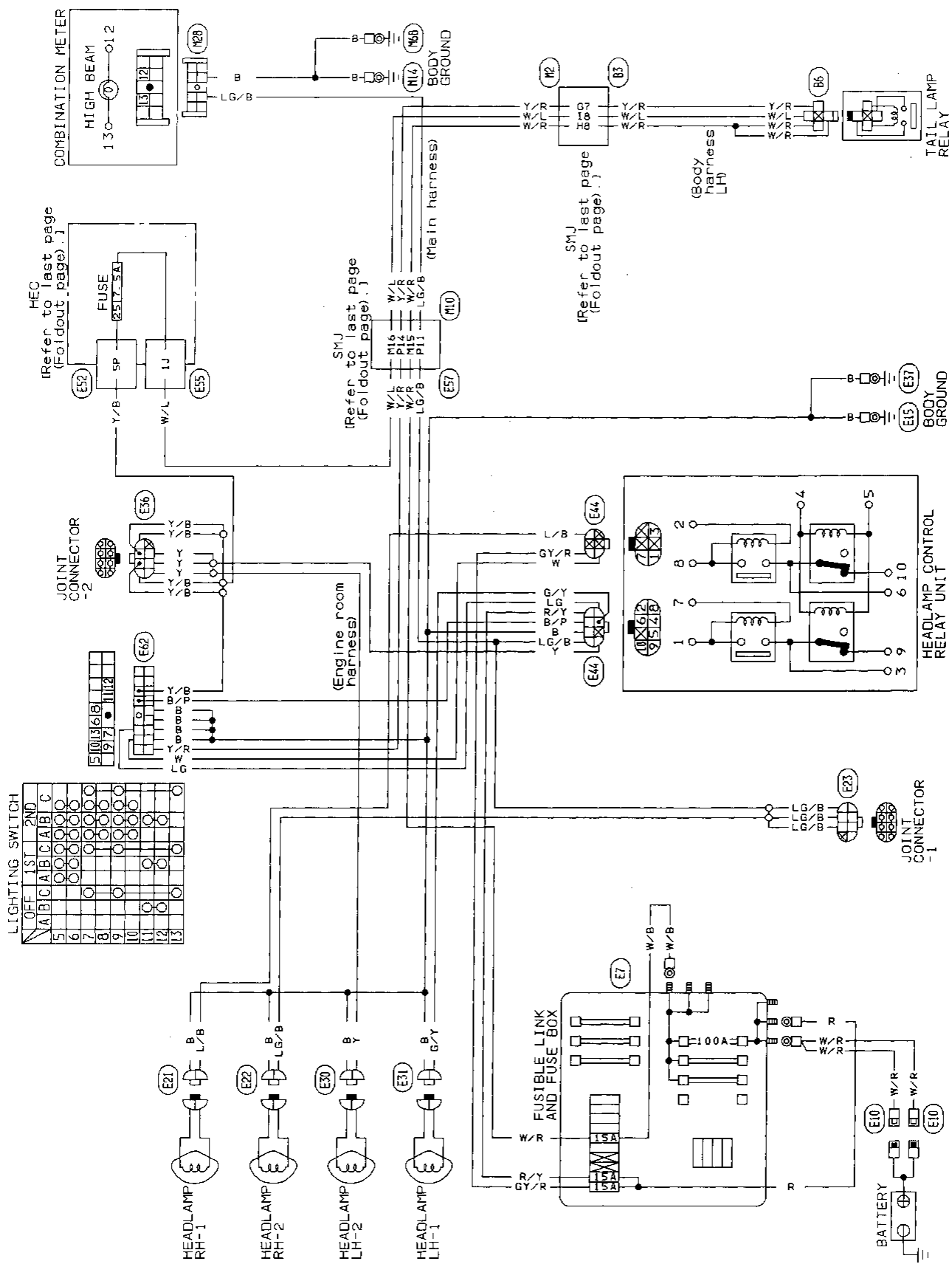
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HEADLAMP

Wiring Diagram

FOR U.S.A.



MEL864C

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.

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Lighting switch		With engine stopped									With engine running								
		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	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
License and instrument illumination lamp		x	x	x	○	○	○	○	○	○	x	x	x	○	○	○	○	○	○

○: Lamp "ON"

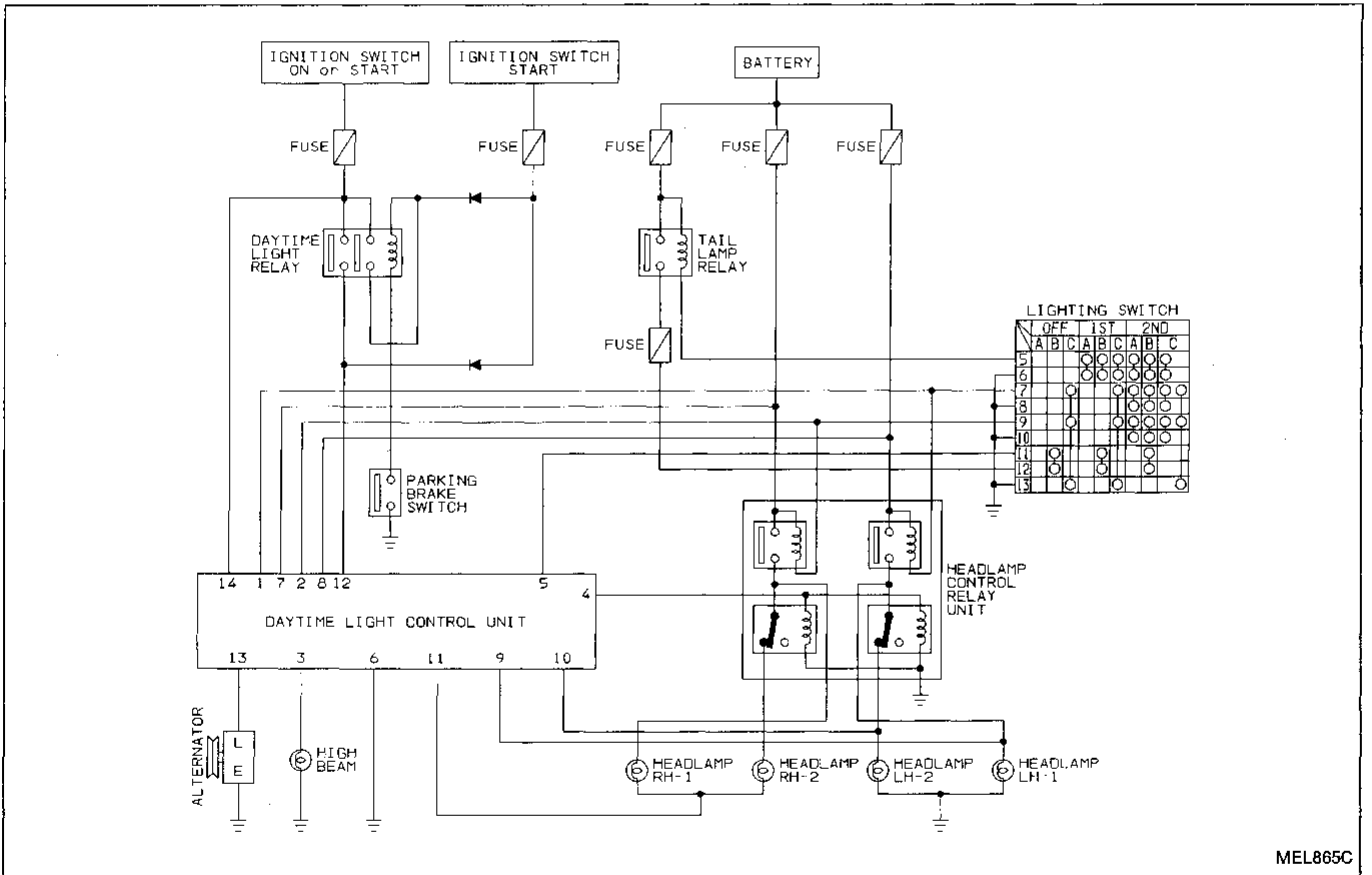
x: Lamp "OFF"

△: Lamp dims.

□: Added functions

Schematic

FOR CANADA

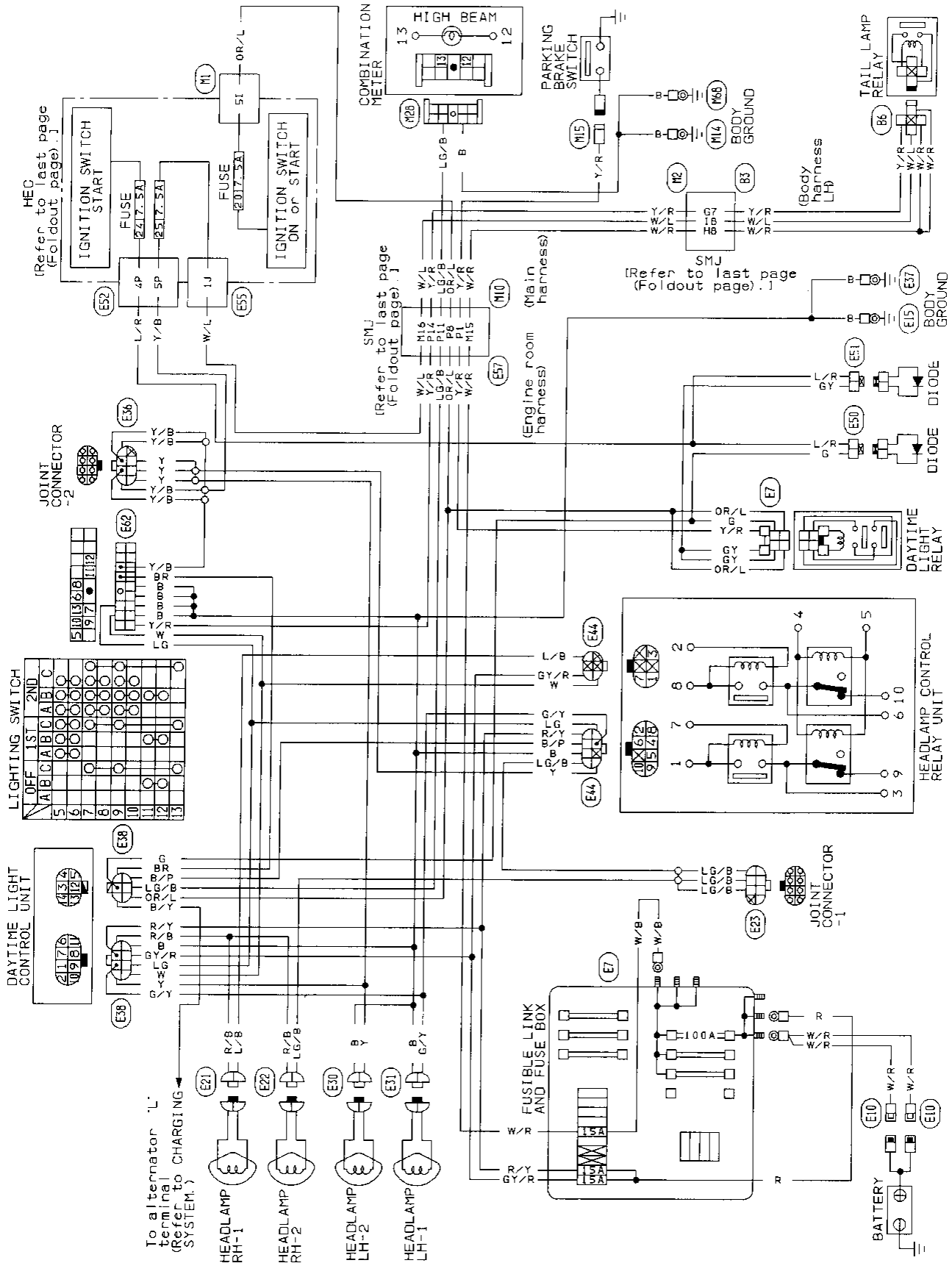


MEL865C

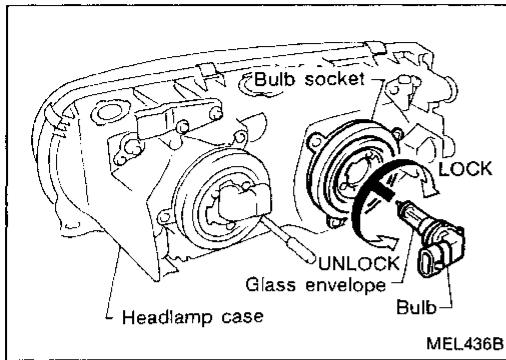
HEADLAMP

Wiring Diagram

FOR CANADA



HEADLAMP



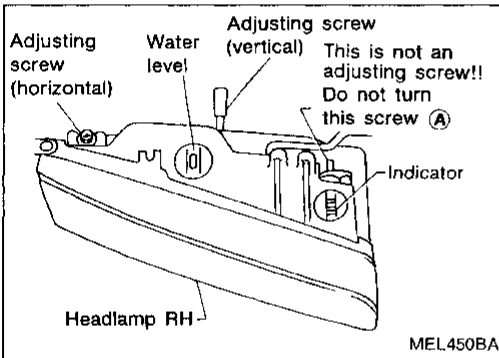
Bulb Replacement

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

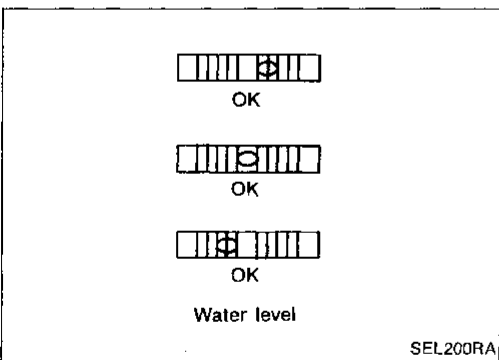
Before performing aiming adjustment, make sure of the following.

- 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.

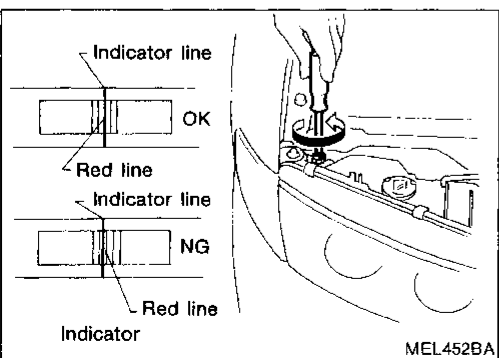
LOW BEAM

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).



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HEADLAMP

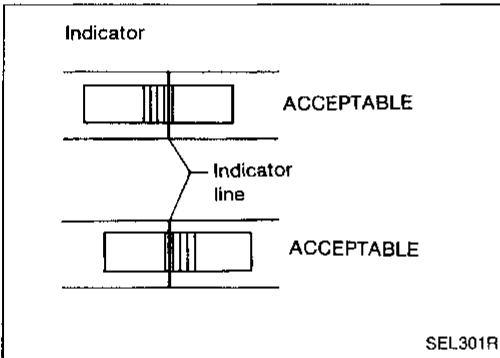
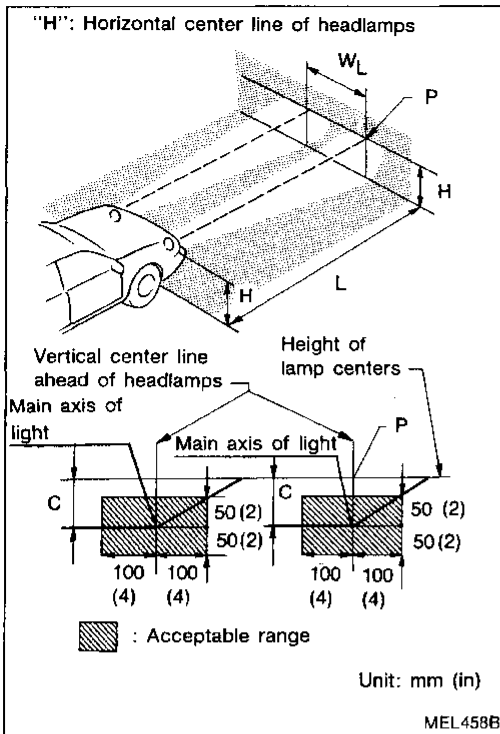
Aiming Adjustment (Cont'd)

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.

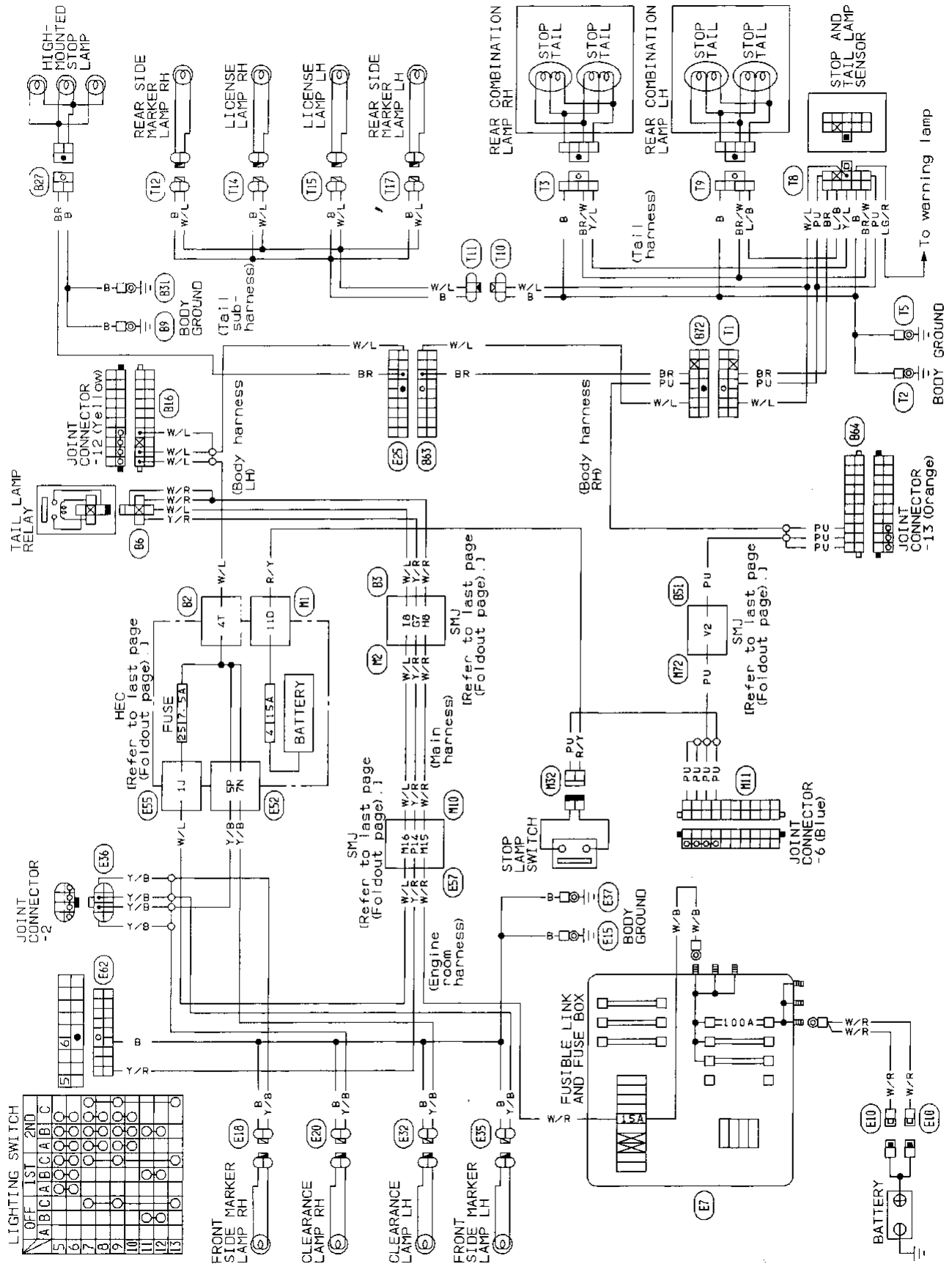
- Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in the illustration.
- Dotted lines in illustration show center of headlamp.
 - "H": Horizontal center line of headlamps
 - "W_L": Distance between each headlamp center
 - "L": 7,620 mm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



EXTERIOR LAMP

Clearance, License, Tail and Stop Lamps/Wiring Diagram



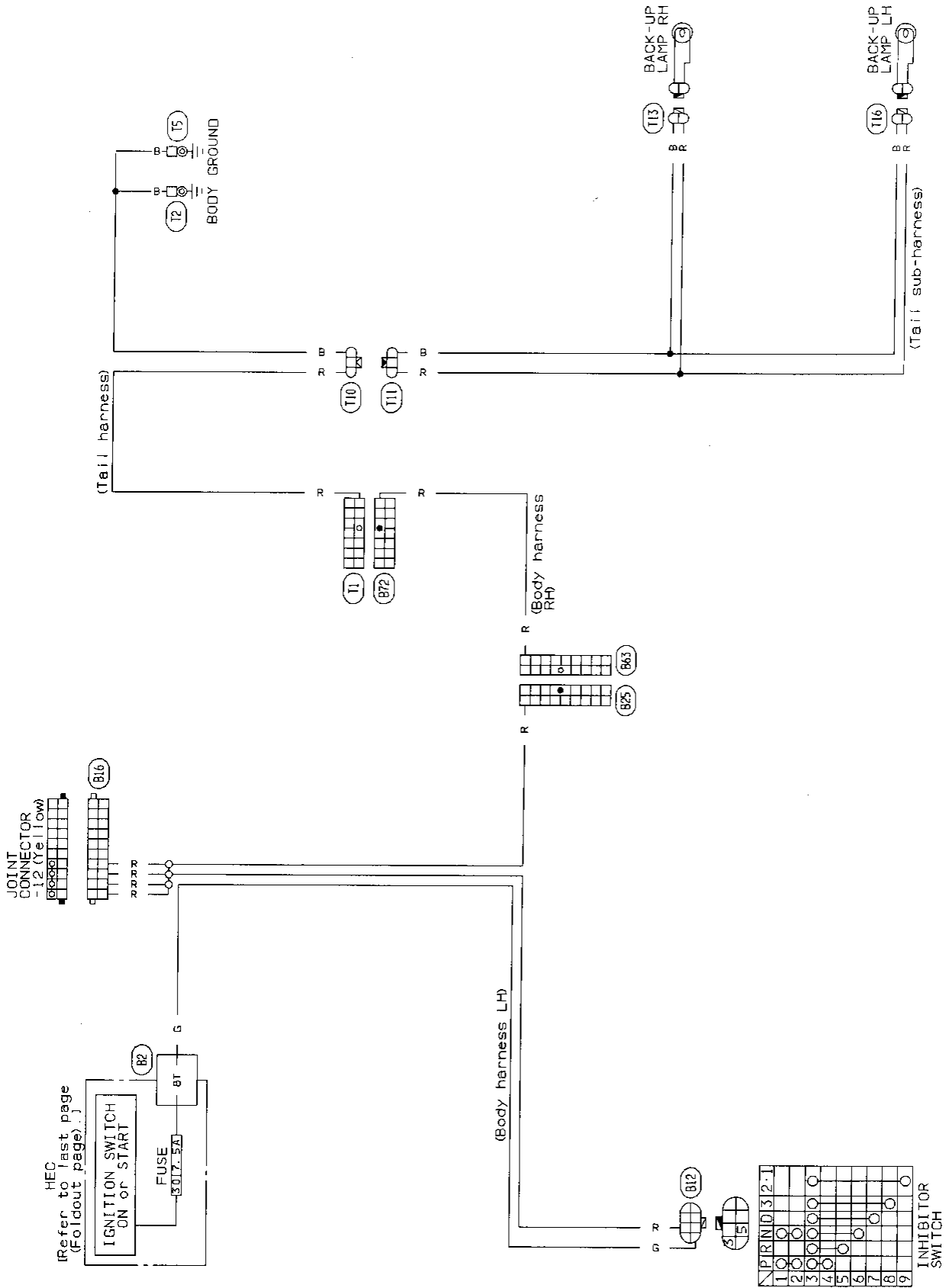
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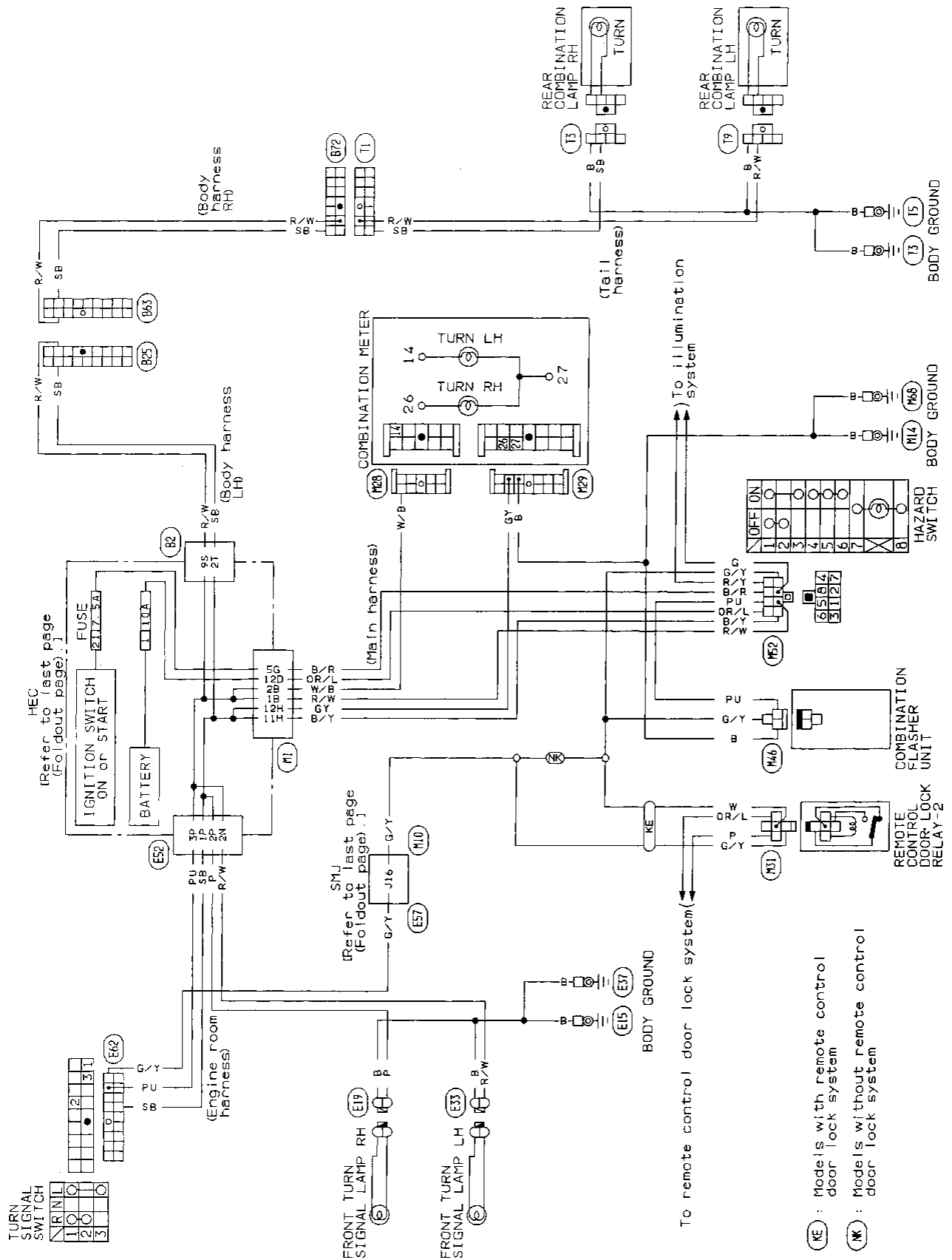
EXTERIOR LAMP

Back-up Lamp/Wiring Diagram



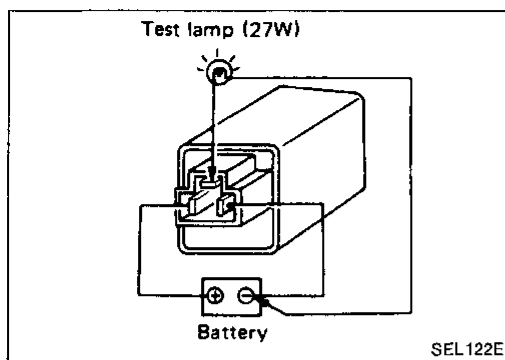
EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram



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EXTERIOR LAMP



Combination Flasher Unit Check

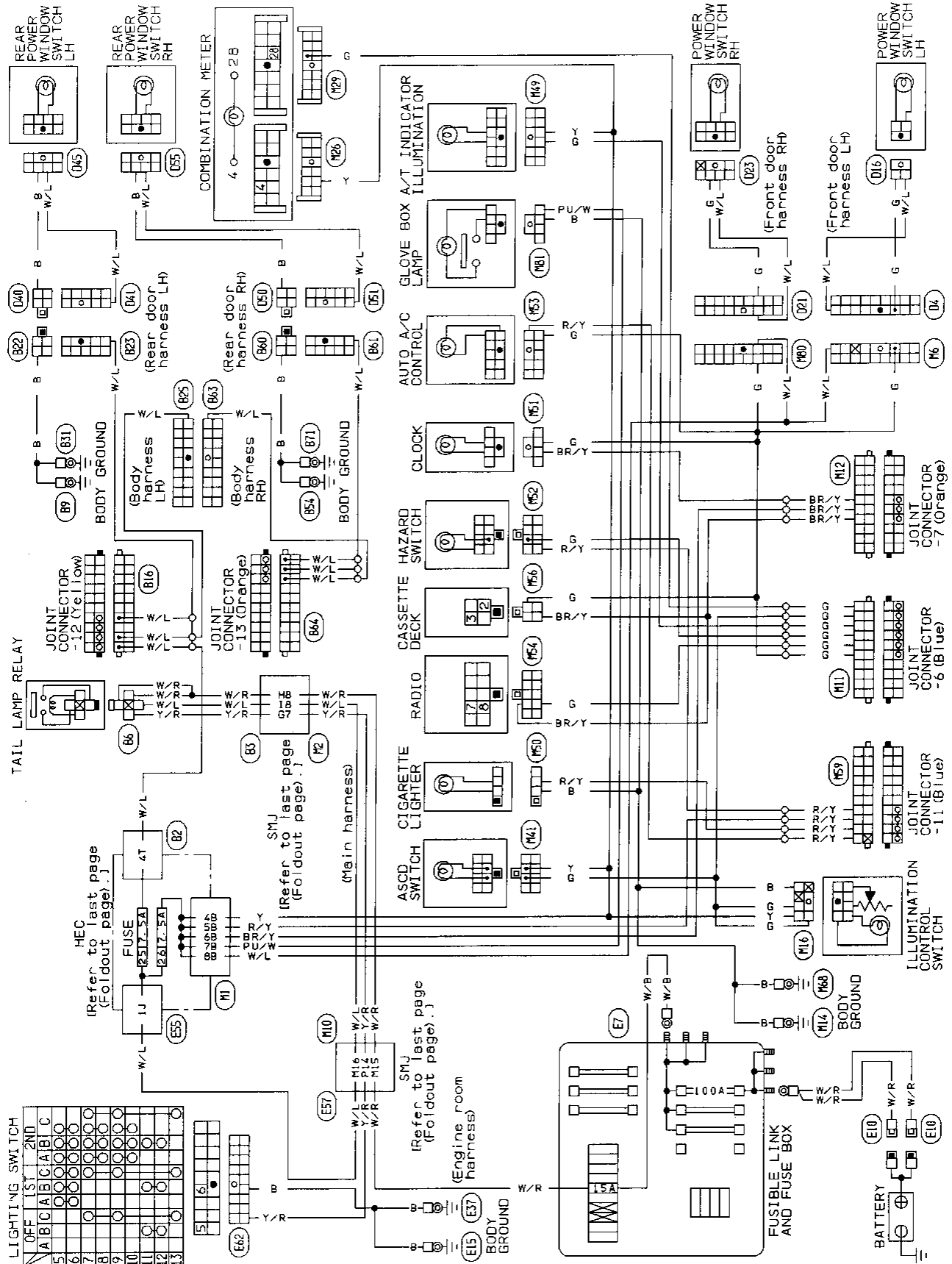
- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.

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	—

INTERIOR LAMP

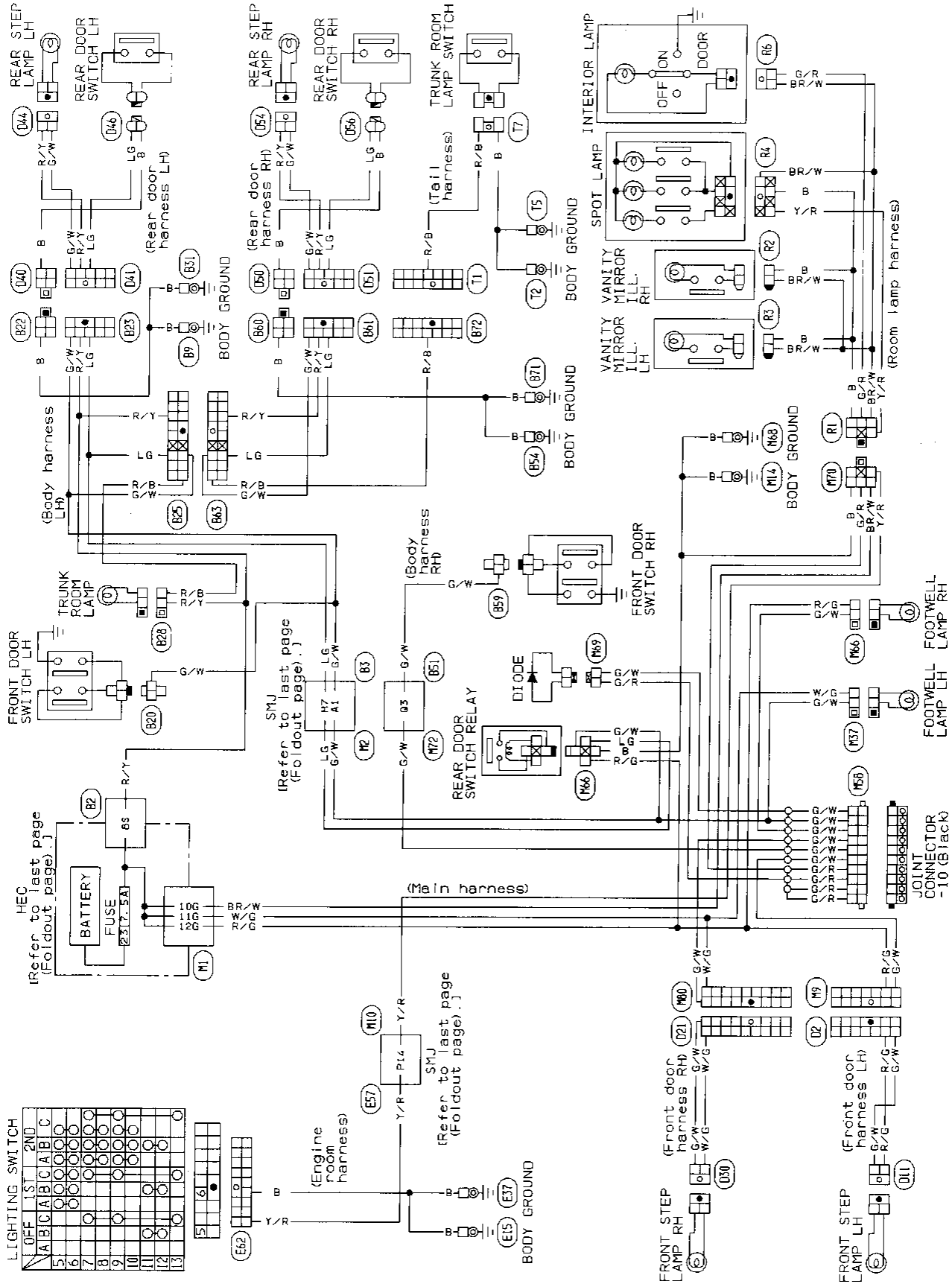
Illumination/Wiring Diagram



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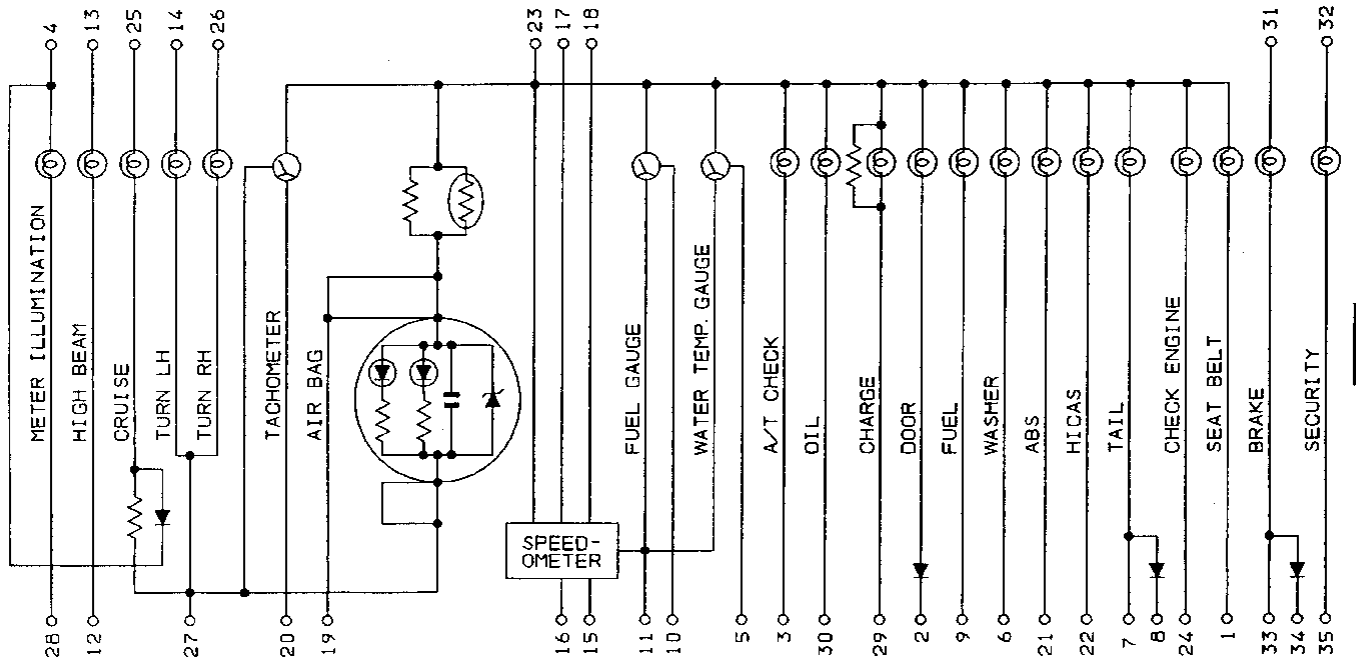
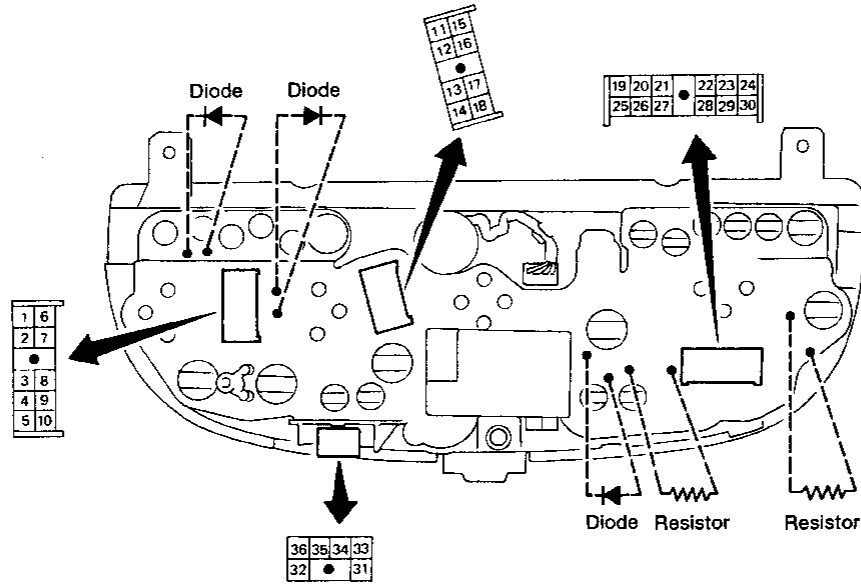
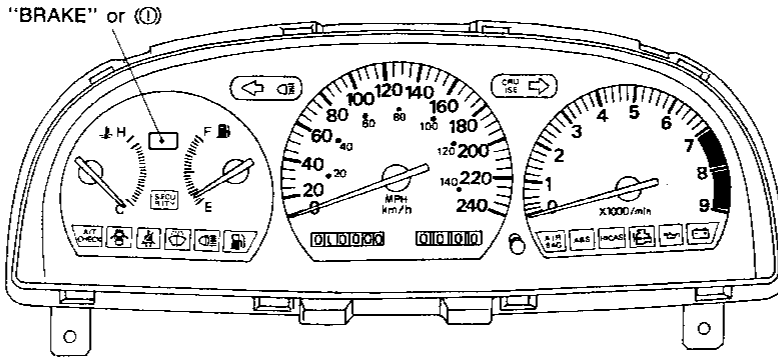
INTERIOR LAMP

Interior and Trunk Room Lamps/Wiring Diagram



METER AND GAUGES

Combination Meter



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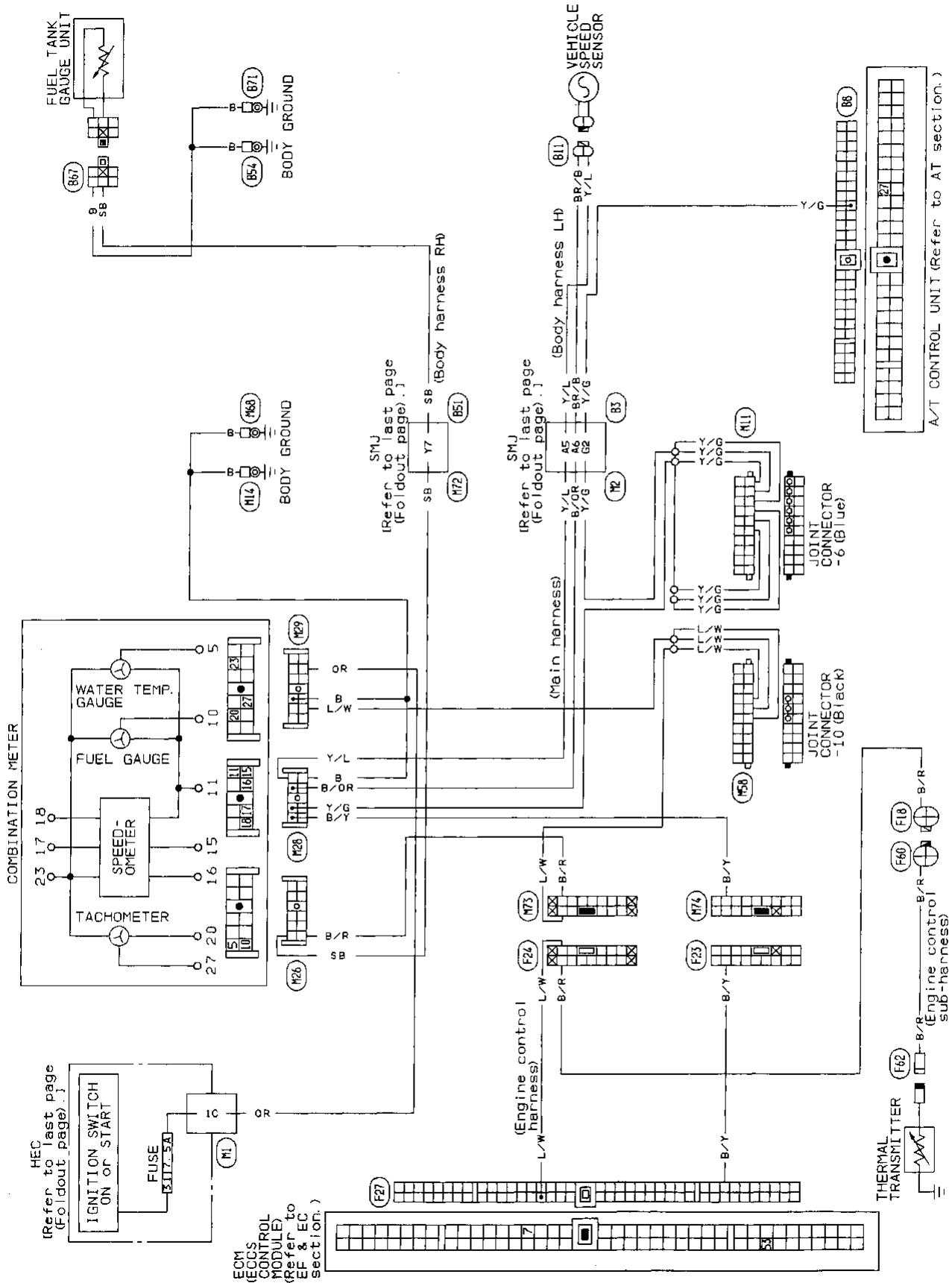
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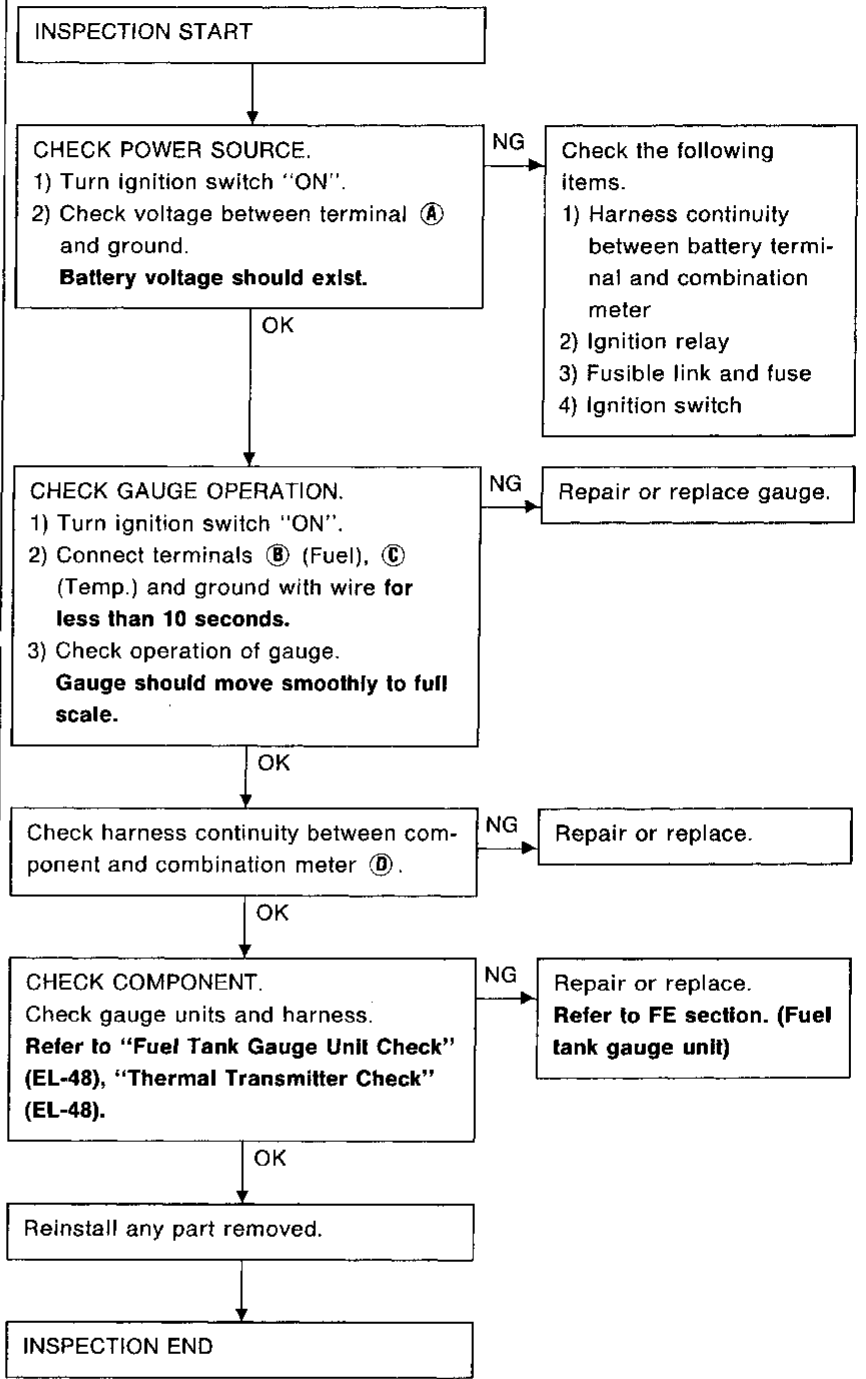
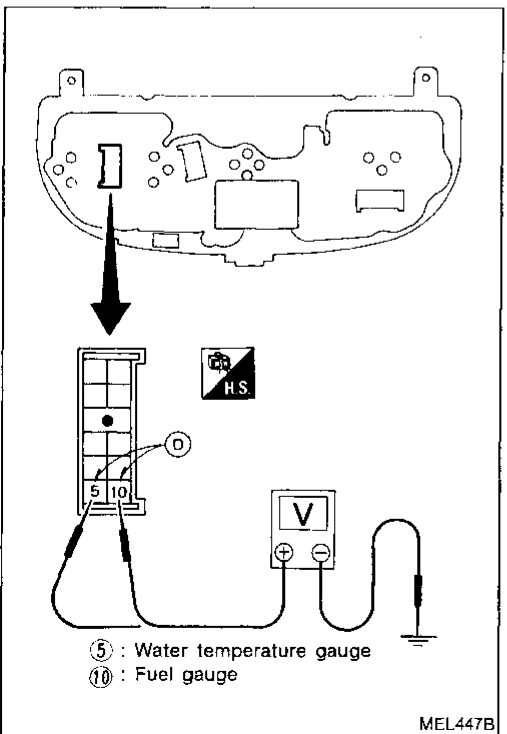
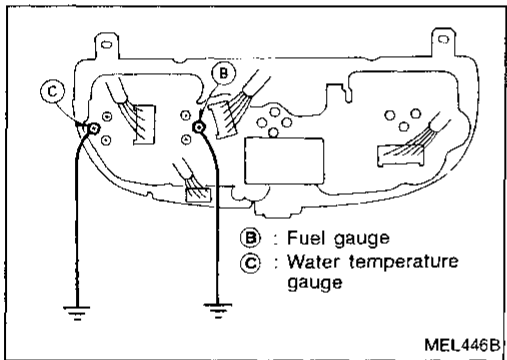
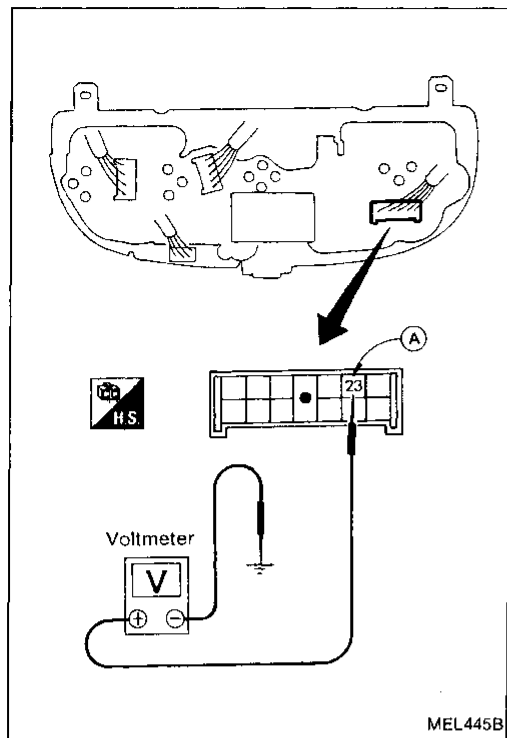
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METER AND GAUGES

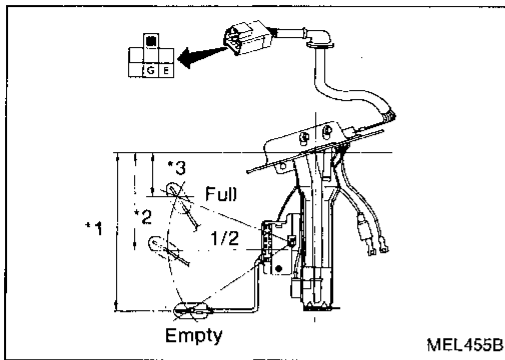
Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram



Inspection/Fuel Gauge and Water Temperature Gauge



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Fuel Tank Gauge Unit Check

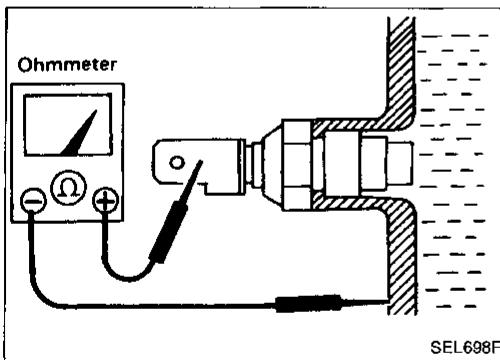
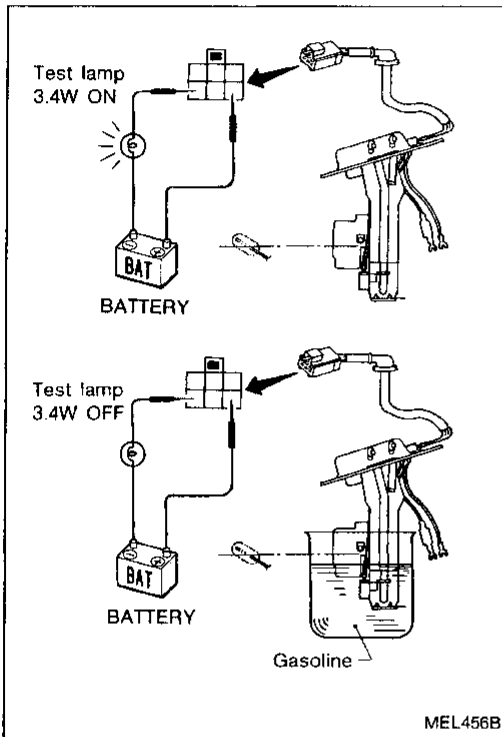
- For removal, refer to FE section.
- Check the resistance between terminals **G** and **E**.

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)

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

Fuel Warning Lamp Sensor Check

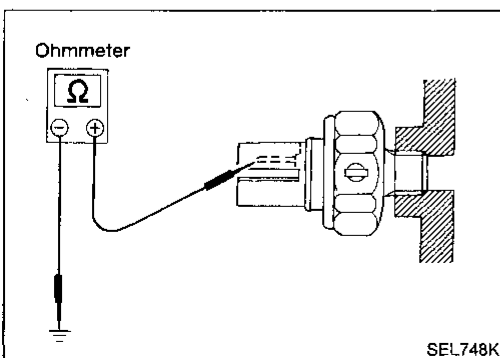
- It will take a short time for the bulb to light.



Thermal Transmitter Check

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

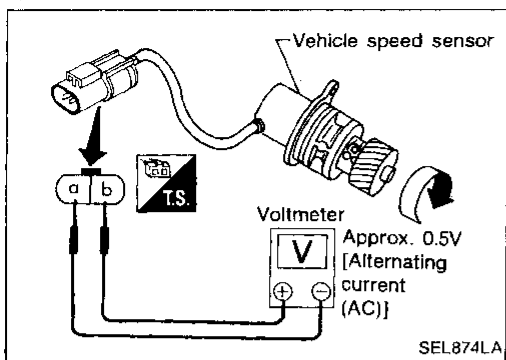
Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90 Ω
100°C (212°F)	Approx. 21 - 24 Ω



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.



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**.

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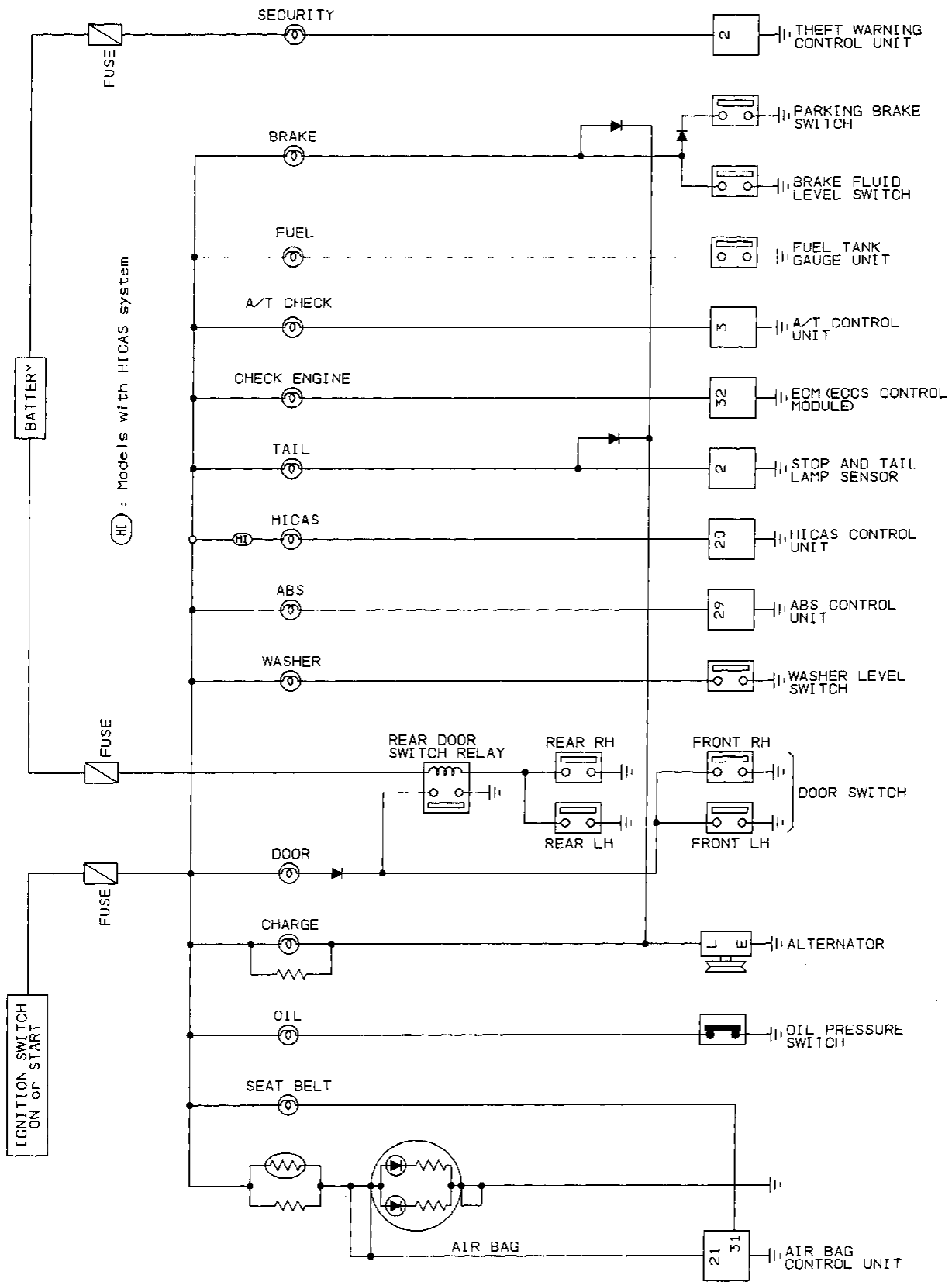
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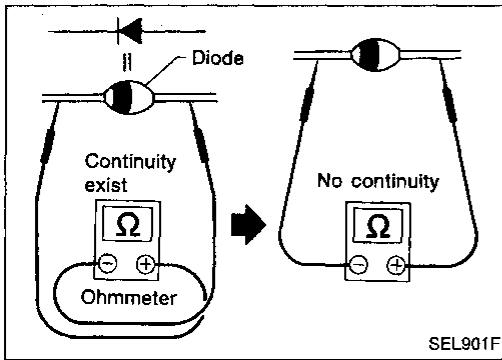
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WARNING LAMPS AND CHIME

Warning Lamps/Schematic

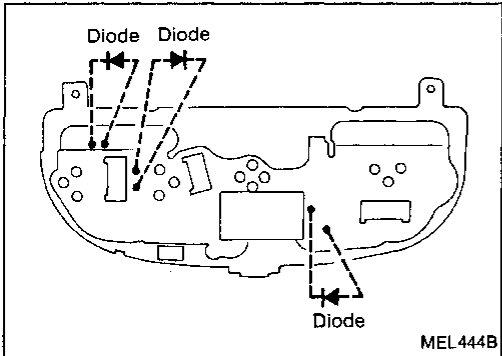




Diode Check

- 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-45).

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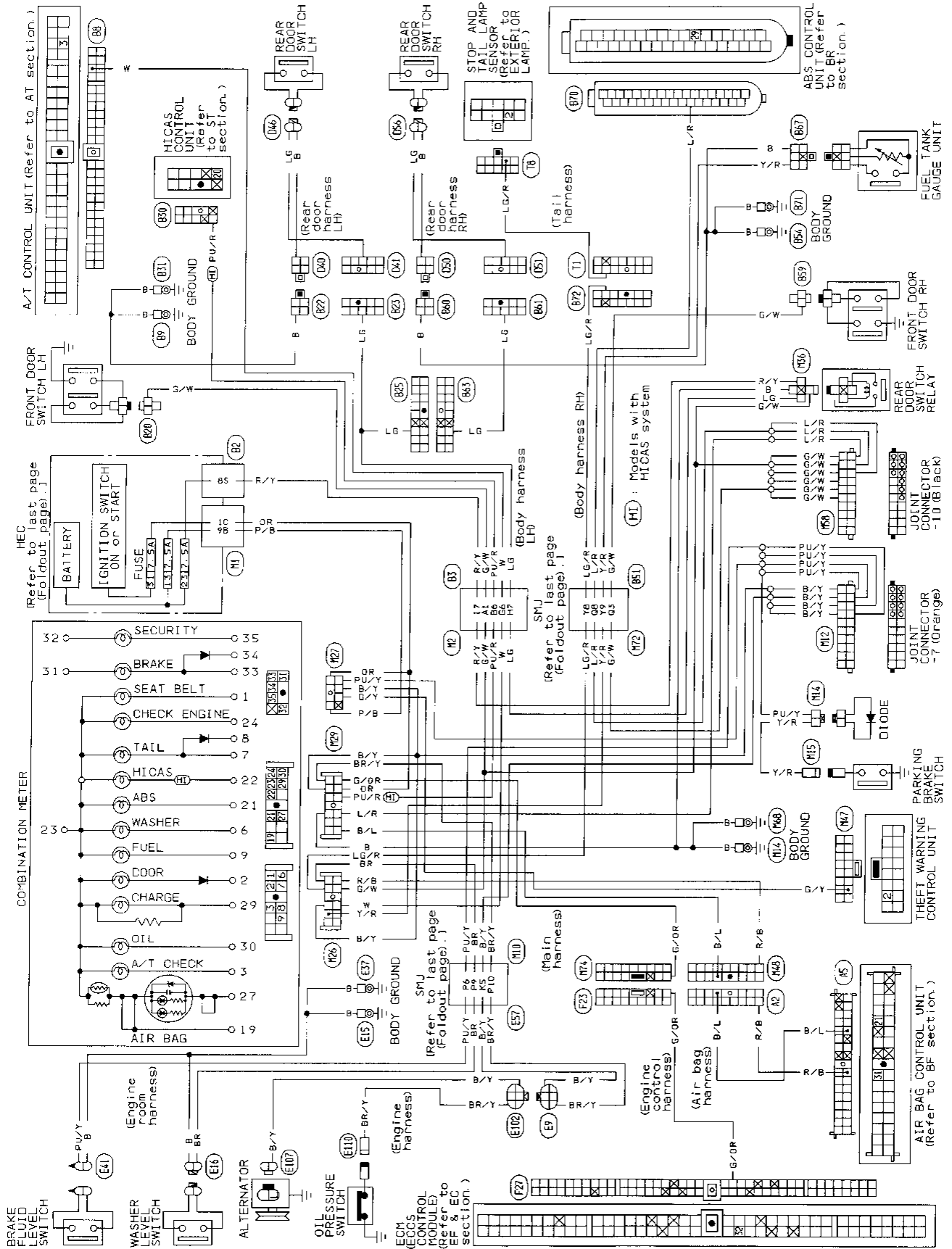
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Warning Lamps/Wiring Diagram



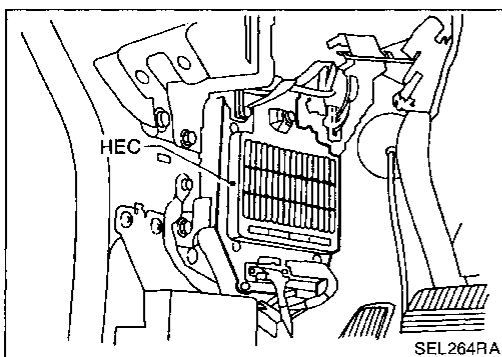
TIME CONTROL SYSTEM

Description

FUNCTION

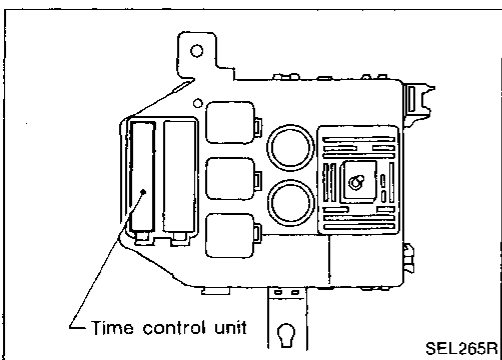
- Time control unit has the following functions.

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.



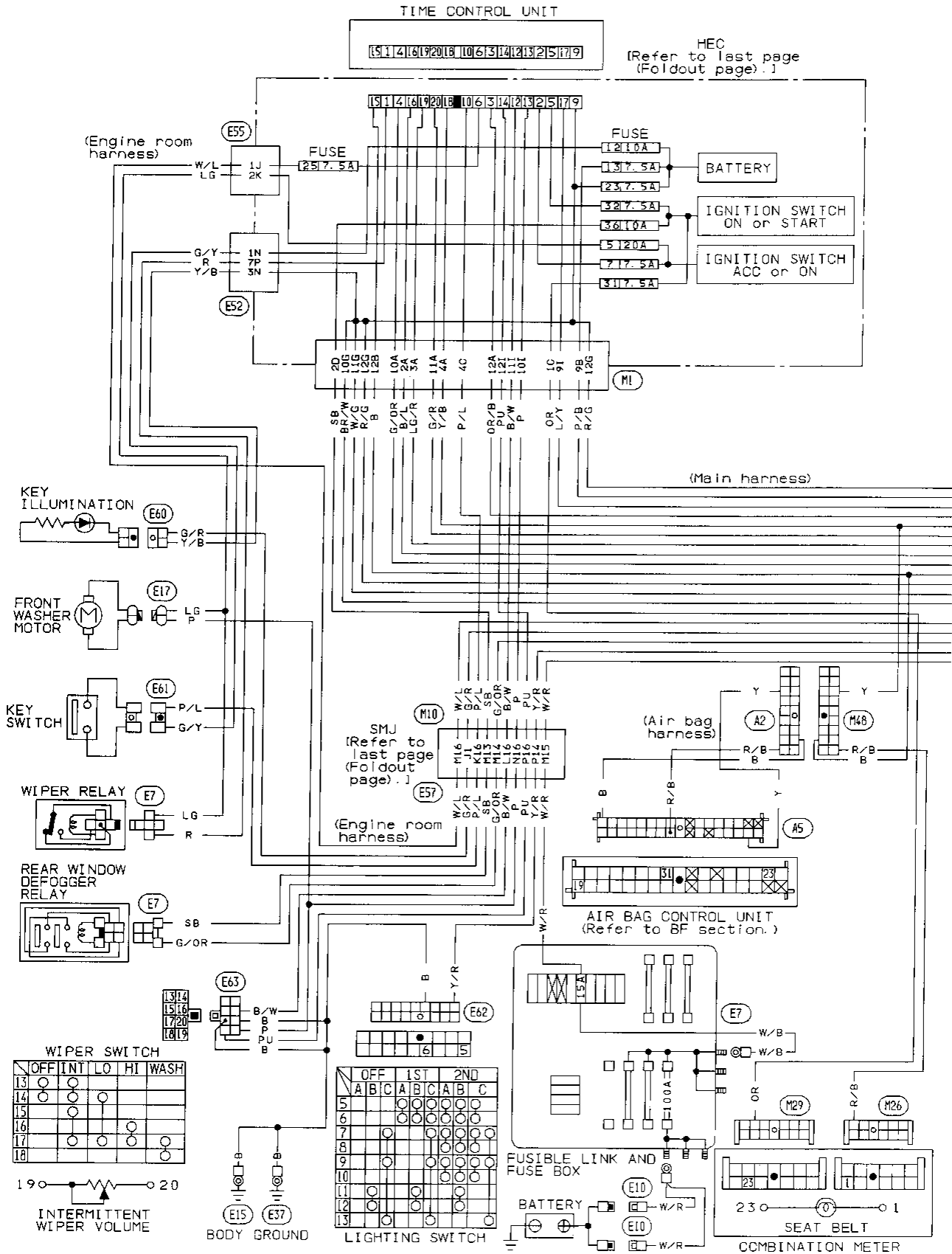
UNIT LOCATION

- Time control unit locates behind HEC.



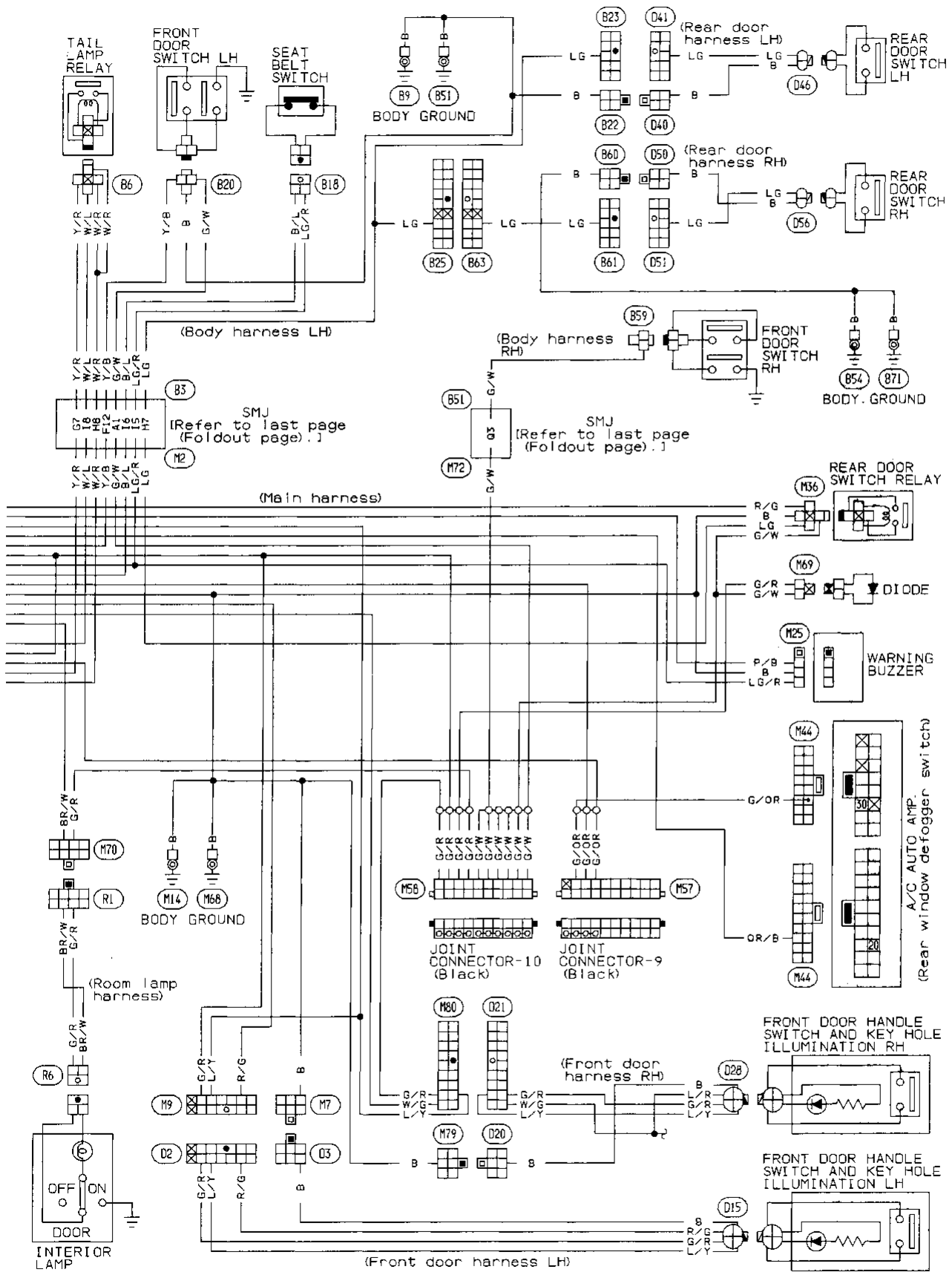
TIME CONTROL SYSTEM

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-57	EL-57	EL-57		EL-59	EL-61	EL-62	EL-62	EL-63	EL-64	EL-65	EL-66	EL-66	EL-67
REFERENCE PAGE		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	Diagnostic Procedure 10
SYMPTOM															
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.				○									○	
	Door key hole illumination does not come on even if door handle is pulled.				○										○

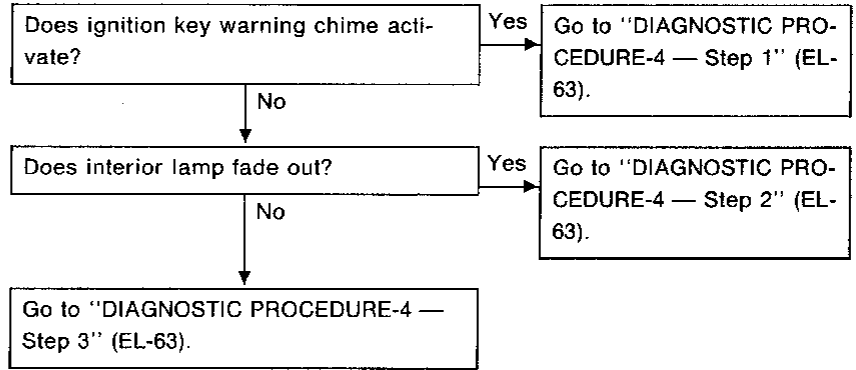
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

Procedure 1

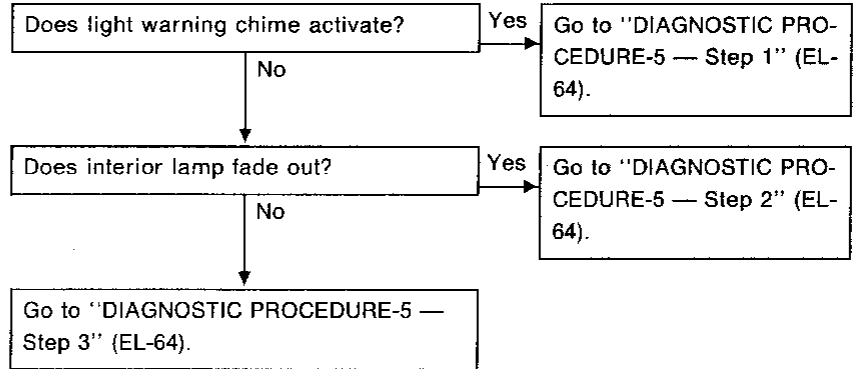
- Light warning chime does not activate.



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Procedure 2

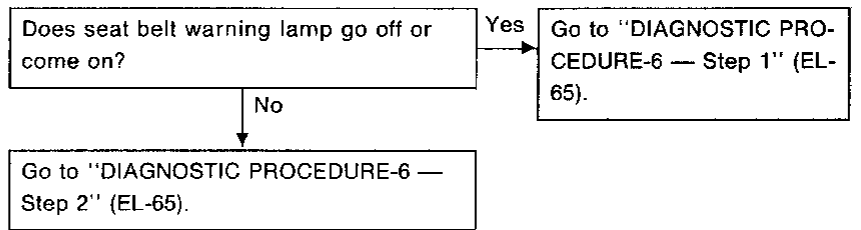
- Ignition key warning chime dose not activate.



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Procedure 3

- Seat belt warning chime does not activate.



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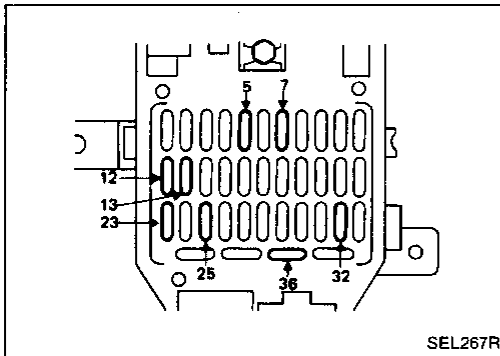
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

PREPARATIONS FOR TROUBLE DIAGNOSES

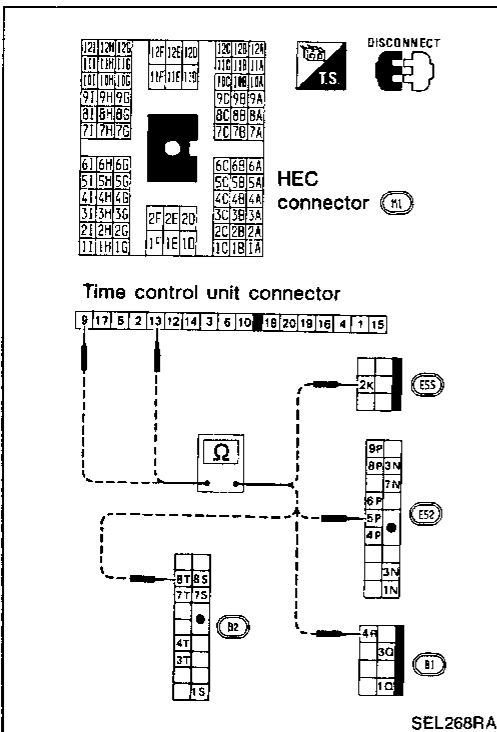
- Check for blown fuses. If necessary, repair or replace harness or related part.
- Check HEC internal circuit (continuity check) before diagnosing. This is because the time control unit is directly connected to the HEC which functions as an intermediate joint for input and output.
- Check the power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

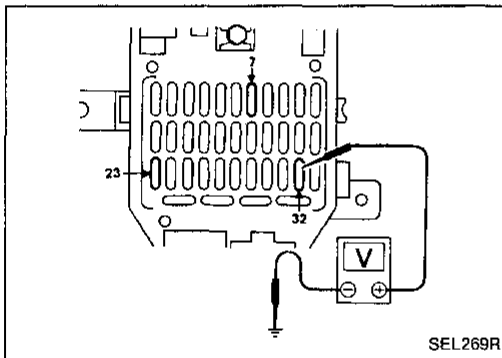
TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

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

TCU con- nector	Connector for TCU out- put and input	TCU con- nector	Connector for TCU out- put and input
1	7P (ES2)	9	9B (M1)
2	2K (ES5)	10	4C (M1)
3	12A (M1)	12	11I (M1)
4	10A (M1)	13	10I (M1)
5	2D (M1)	14	12I (M1)
6	1J (ES5)	15	12B (M1)
9	1N (ES2)	16	2A (M1)
9	3N (ES2)	17	9I (M1)
9	10G (M1)	18	4A (M1)
9	11G (M1)	19	3A (M1)
9	12G (M1)	20	11A (M1)

When checking TCU connector terminals ⑤ and ②, apply 12V to ES4 connector terminals ①L and ②L while grounding M1 connector terminal 12B.

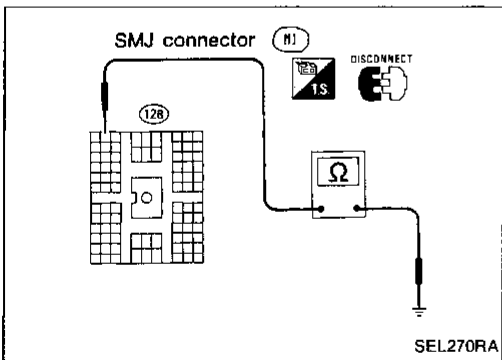


MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

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

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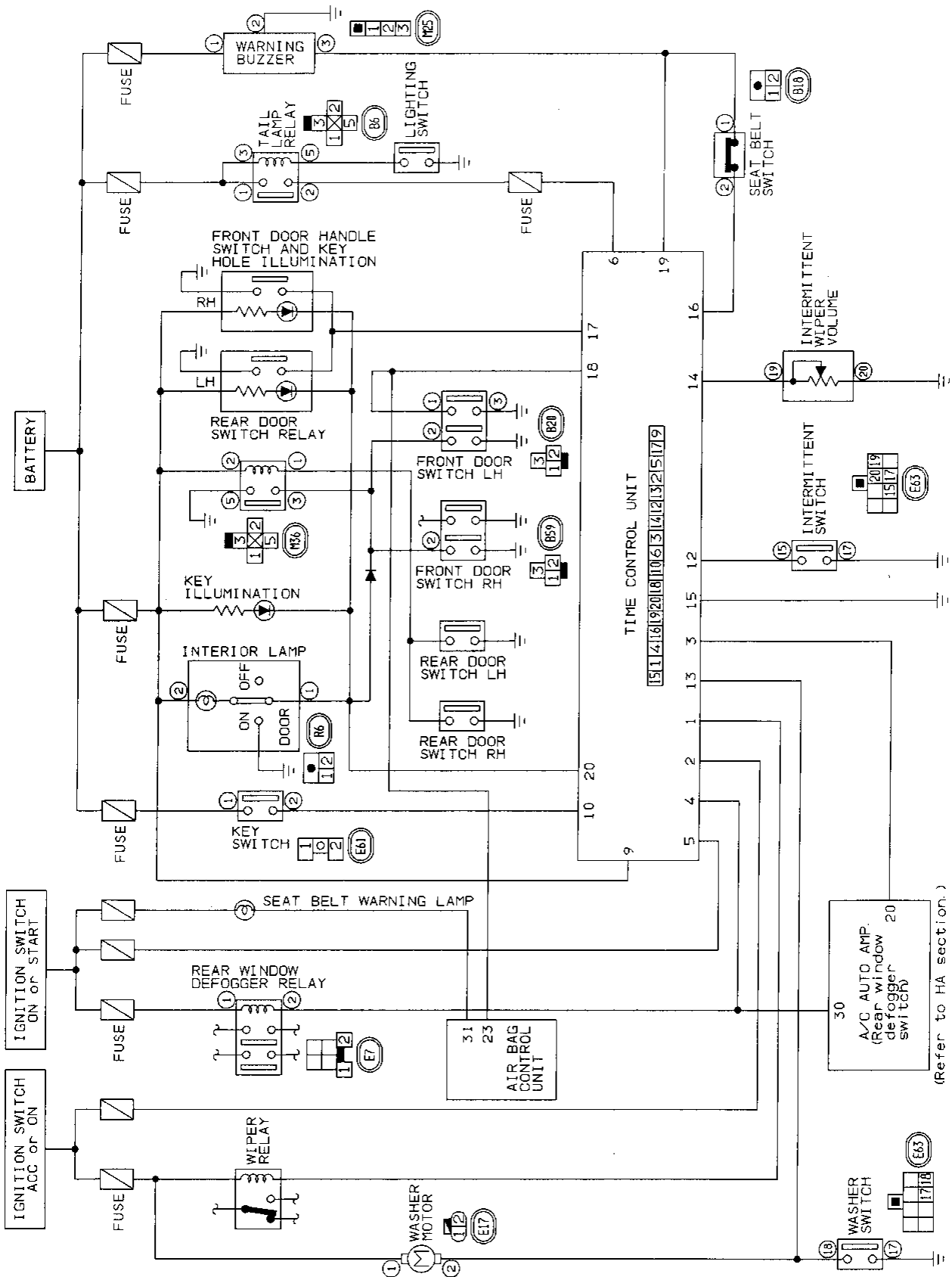
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK

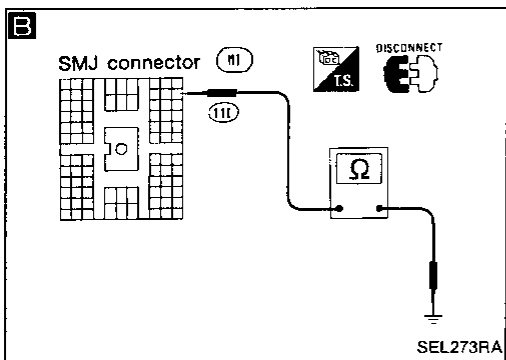
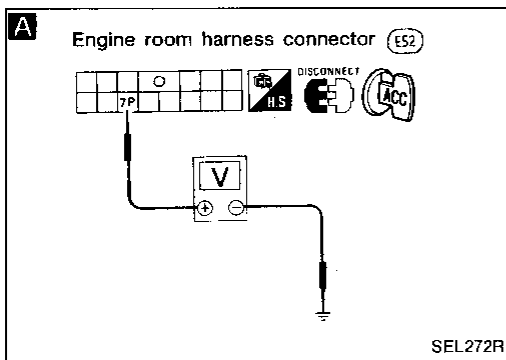


TIME CONTROL SYSTEM

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

Check wiper relay. Refer to "WIPER AND WASHER" (EL-69).

Replace wiper relay.

Check wiper relay circuit.

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

Check wiper switch. Check harness continuity between TCU and wiper switch.

Replace control unit.

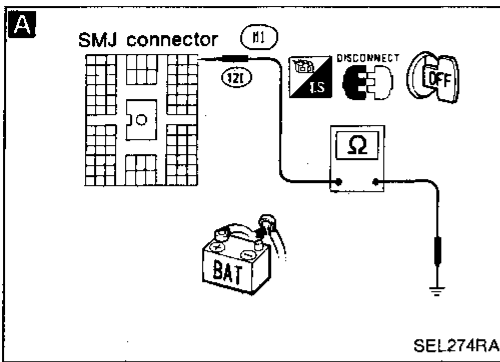
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.

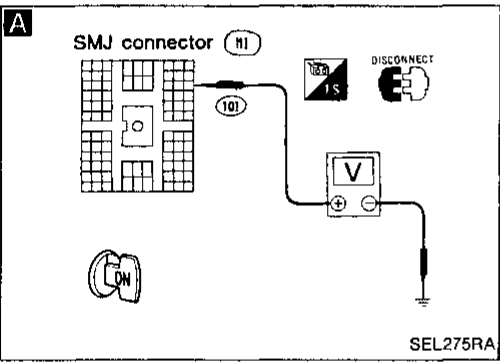


A
INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK
 Measure resistance between SMJ connector (M1) terminal (12L) and ground while turning intermittent wiper volume.

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

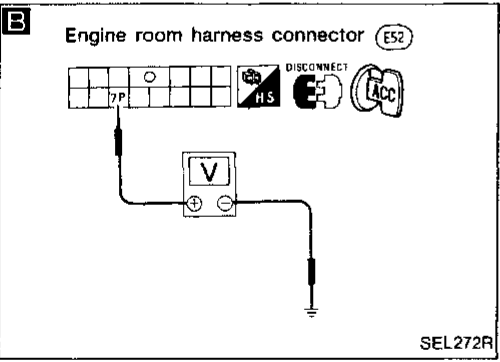
SYMPTOM: Wiper and washer activate individually but not in combination.

A
WASHER SWITCH INPUT SIGNAL CHECK
 1) Turn ignition switch to "ACC".
 2) Measure voltage between SMJ connector (M1) terminal (10I) 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.

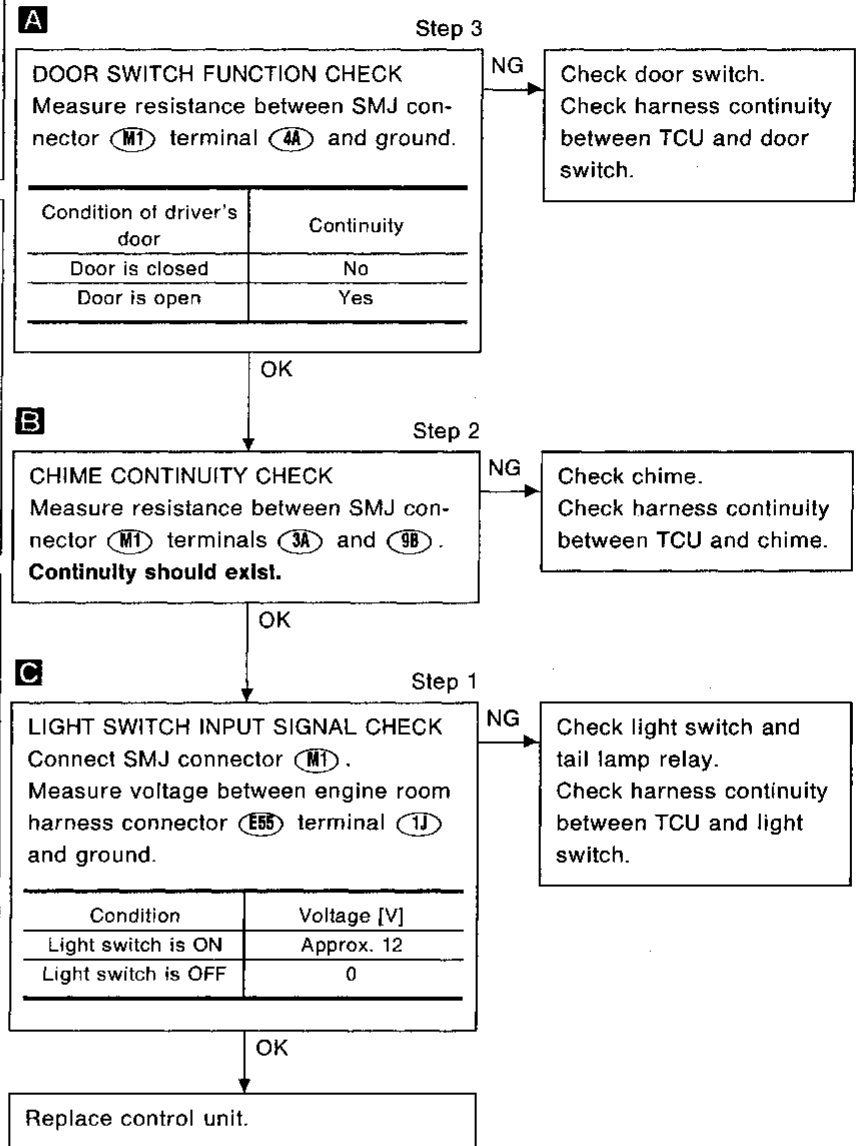
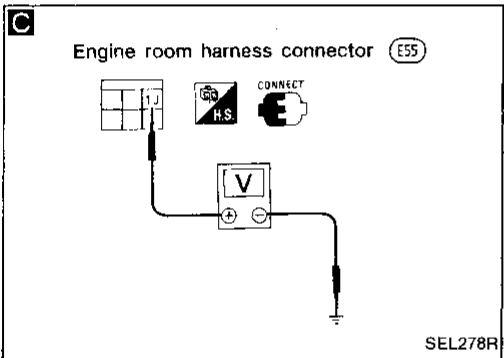
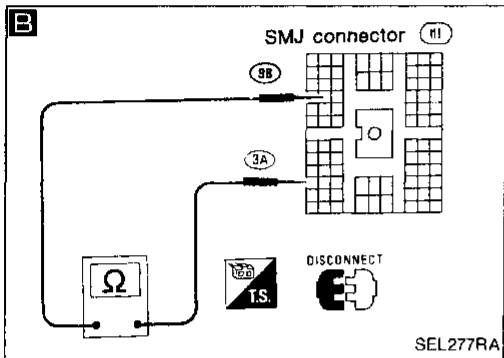
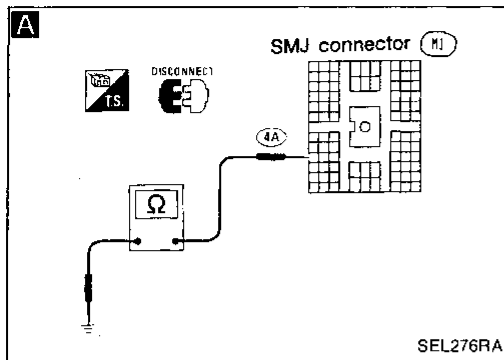
TIME CONTROL SYSTEM

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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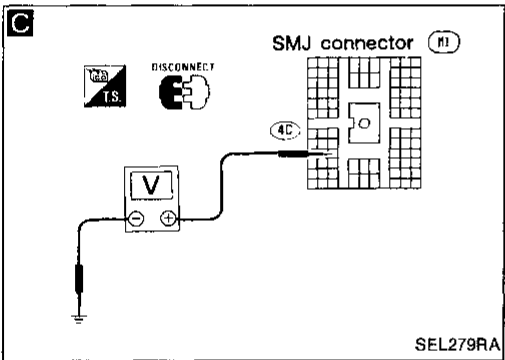
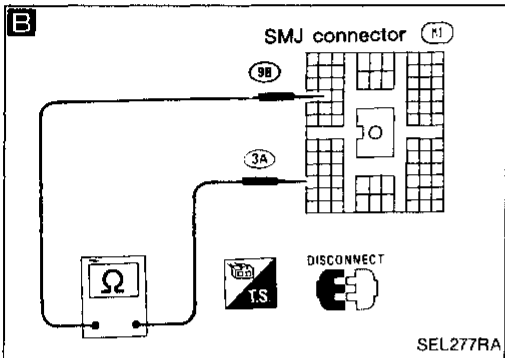
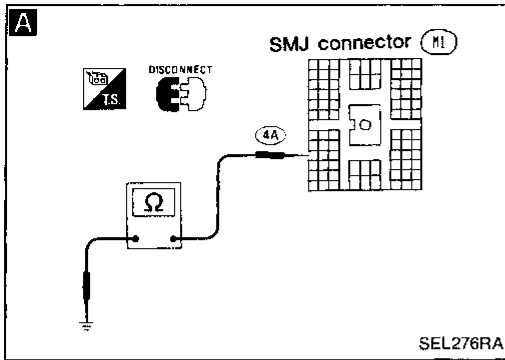
TIME CONTROL SYSTEM

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.



A Step 3

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	No
Door is open	Yes

B Step 2

CHIME CONTINUITY CHECK
Measure resistance between SMJ connector (M1) terminals (3A) and (9B).
Continuity should exist.

NG → Check chime.
Check harness continuity between TCU and chime.

C Step 1

IGNITION KEY SWITCH INPUT SIGNAL CHECK
Measure voltage between SMJ connector (M1) terminal (4C) and ground.

NG → Check ignition key switch.
Check harness continuity between TCU and ignition key switch.

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

OK → Replace control unit.

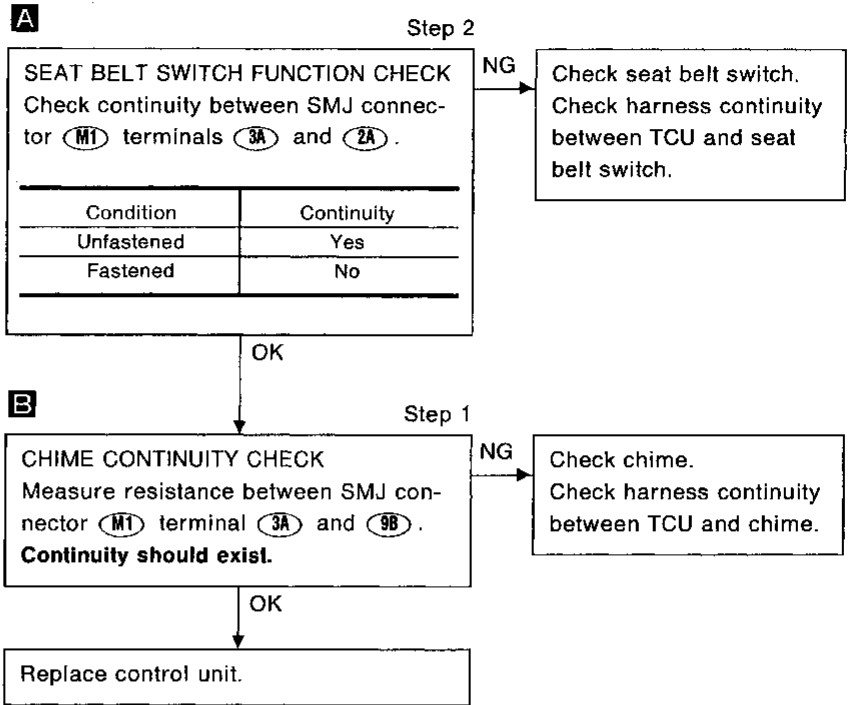
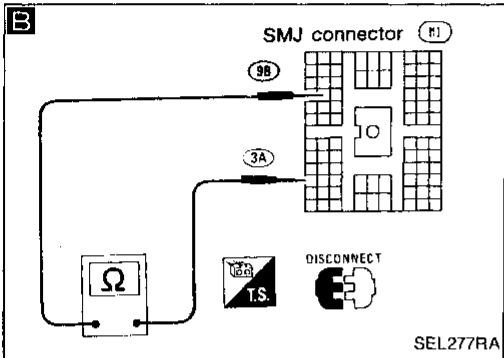
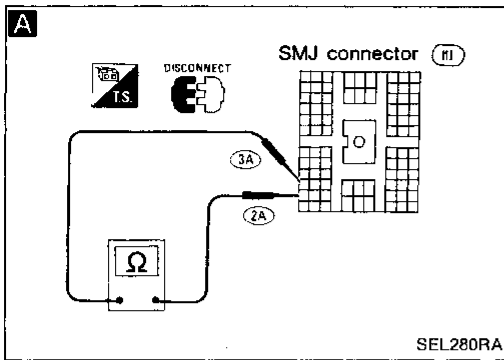
TIME CONTROL SYSTEM

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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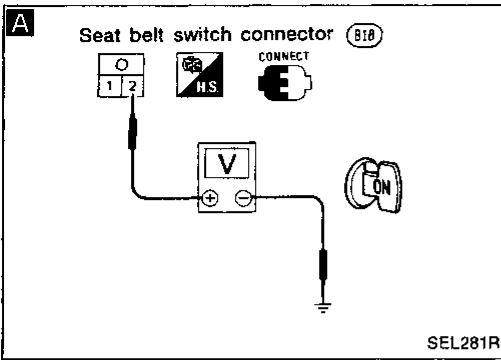
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TIME CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

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



A

WARNING LAMP OUTPUT SIGNAL CHECK

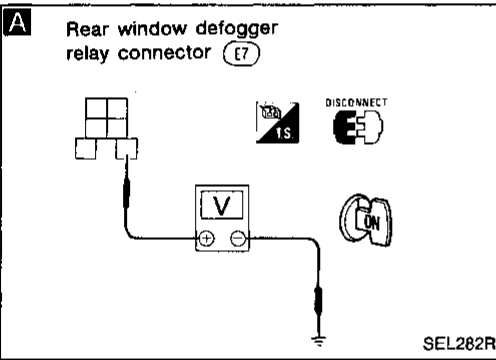
- 1) Connect all HEC connectors.
- 2) Turn ignition switch "ON".
Measure voltage between terminal and ground as shown.
- 3) Does voltmeter needle keep swinging for about 7 seconds after ignition switch has been turned on?

Yes

Check warning lamp.
Check harness continuity between TCU and warning lamp.

No

Replace control unit.



DIAGNOSTIC PROCEDURE 8

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

A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK

Measure voltage between rear window defogger relay connector terminal and ground.

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

OK

Check rear window defogger relay.
Check circuit between rear window defogger relay and SMJ connector terminal (10A).
Check rear window defogger circuit.

NG

Check power supply.

NG

Remedy.

OK

B

REAR WINDOW DEFOGGER SWITCH FUNCTION CHECK

- 1) Disconnect SMJ connector (M1).
- 2) Check continuity between SMJ connector terminal (12A) and ground.

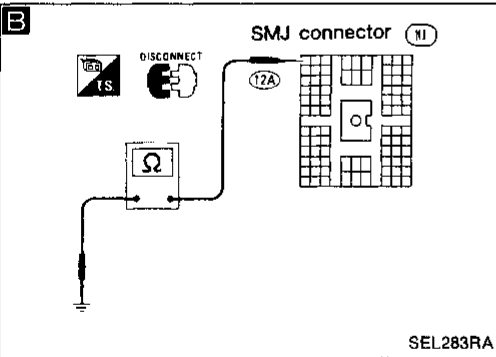
Condition of defogger switch	Continuity
Defogger switch is "OFF"	No
Defogger switch is "ON"	Yes

NG

Check rear window defogger switch.
Check harness continuity between TCU and rear window defogger switch.

OK

Replace control unit.

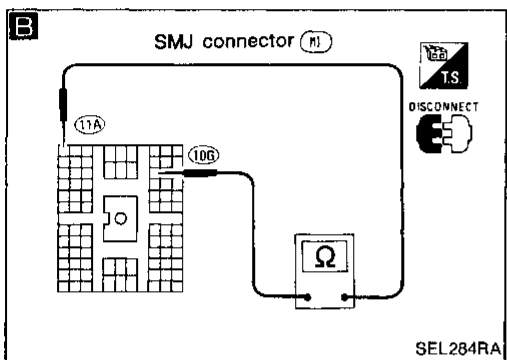
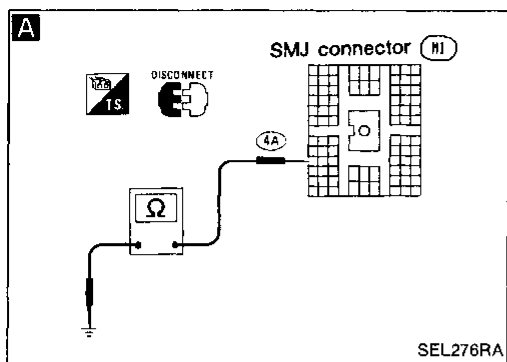


TIME CONTROL SYSTEM

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.

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

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

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

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

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

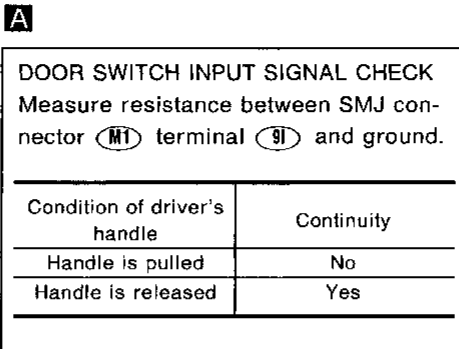
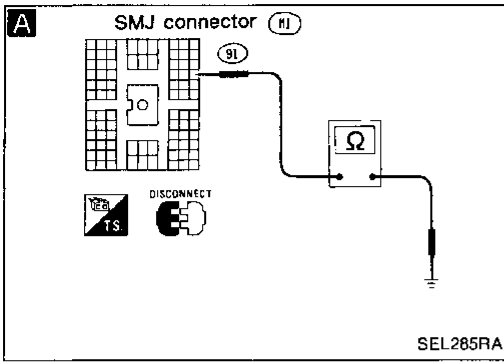
NG → Replace TCU.

TIME CONTROL SYSTEM

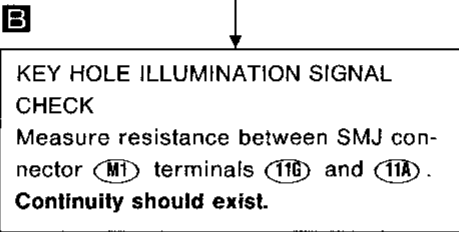
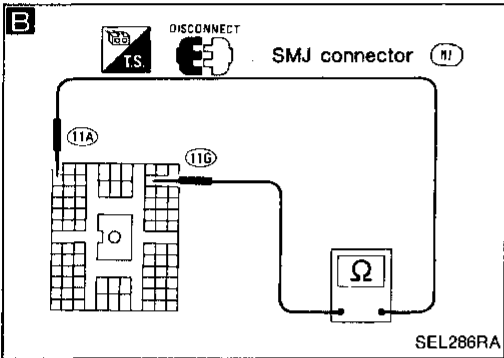
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 10

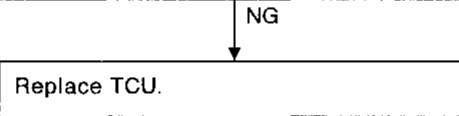
SYMPTOM: Door key hole illumination does not come on even if door handle is pulled.



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

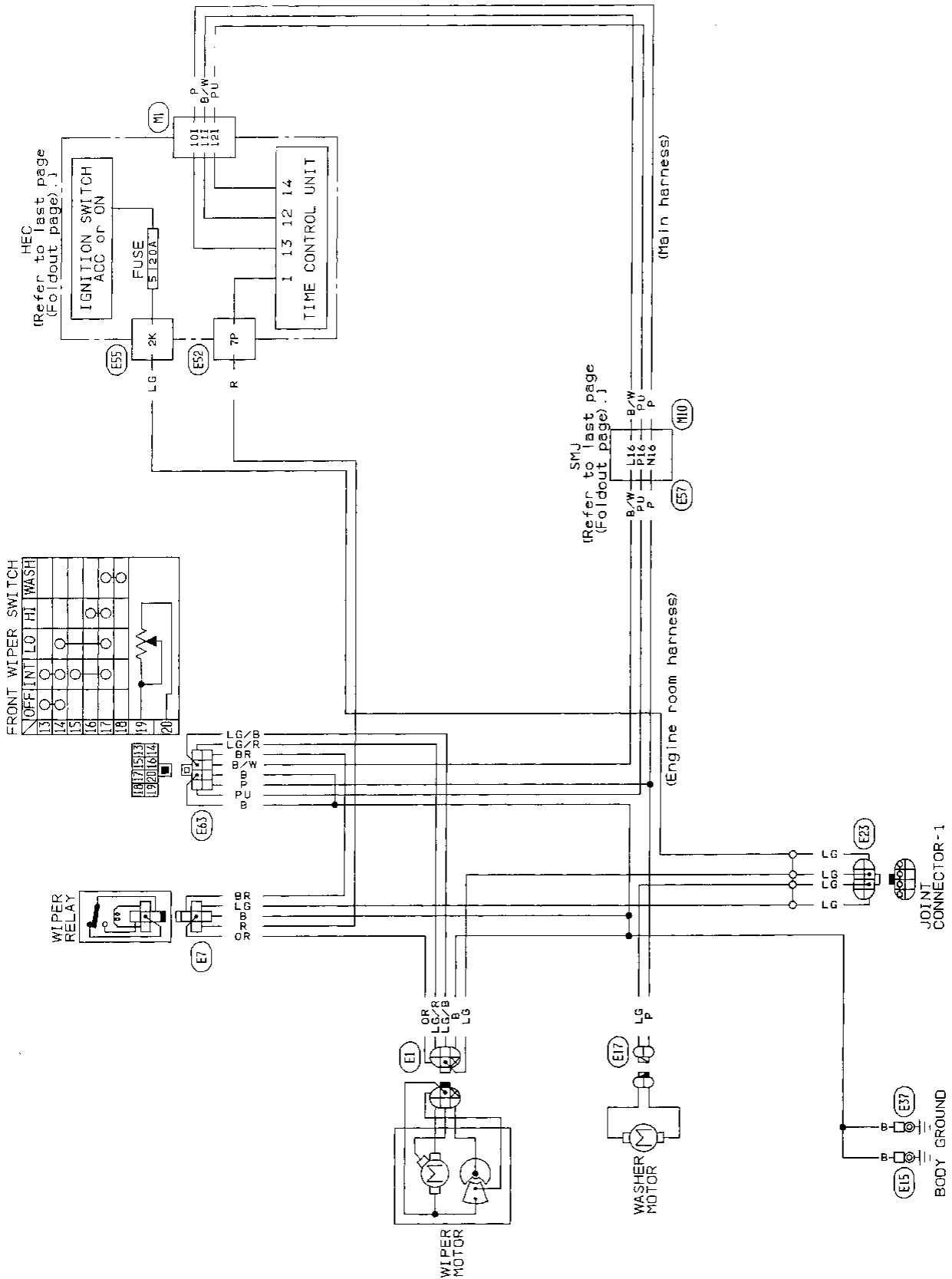


OK → Check key hole illumination and harness between TCU and key hole illumination.



WIPER AND WASHER

Wiper and Washer/Wiring Diagram



- GI
- MA
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- LC
- EF & EC
- FE
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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".

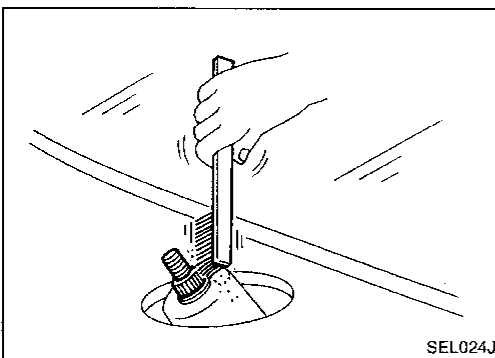
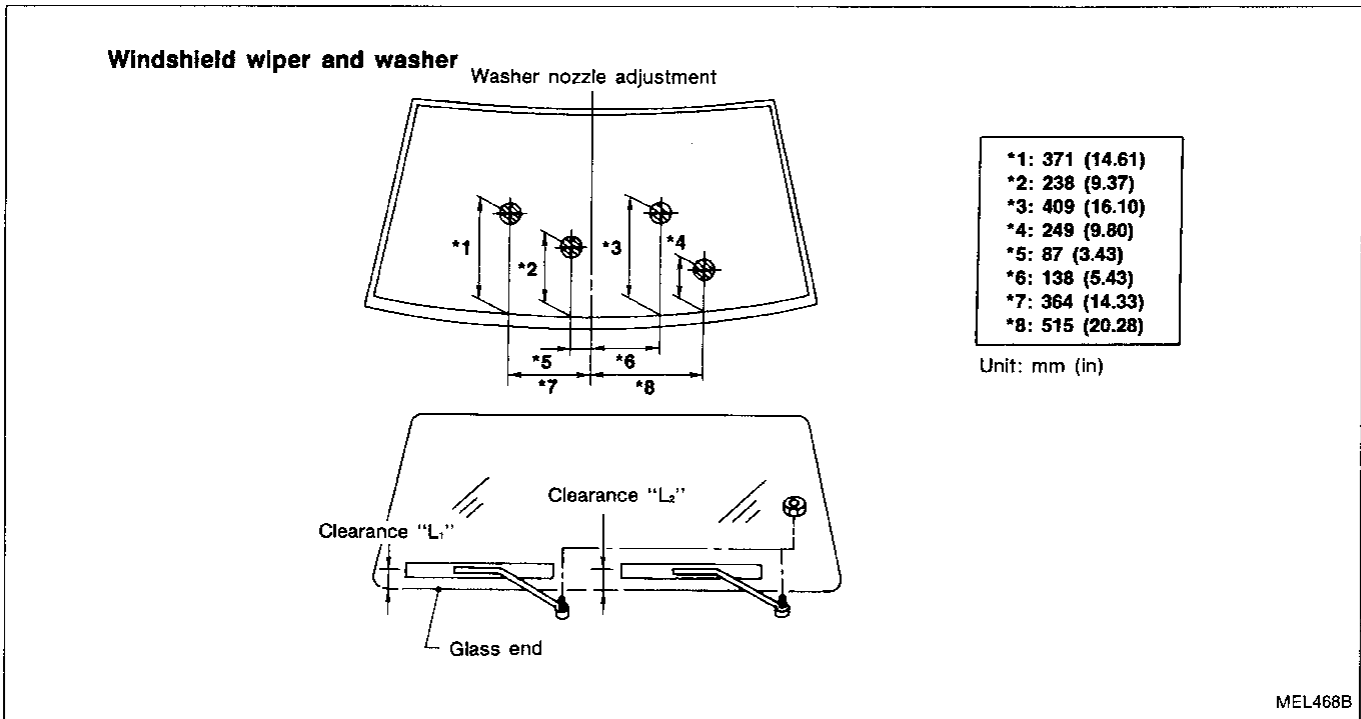
Clearance "L₁": 29 - 44 mm (1.14 - 1.73 in)

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

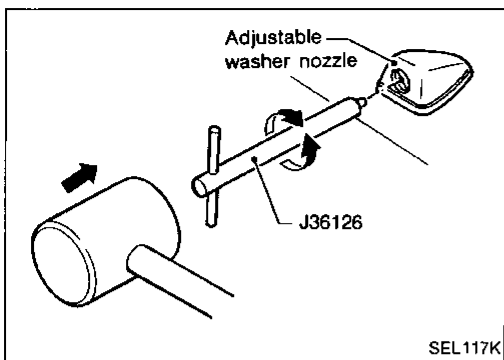
- Tighten windshield wiper arm nuts to specified torque.

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.

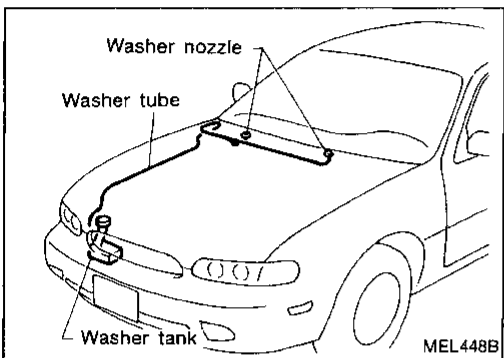


Washer Nozzle Adjustment

- 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.



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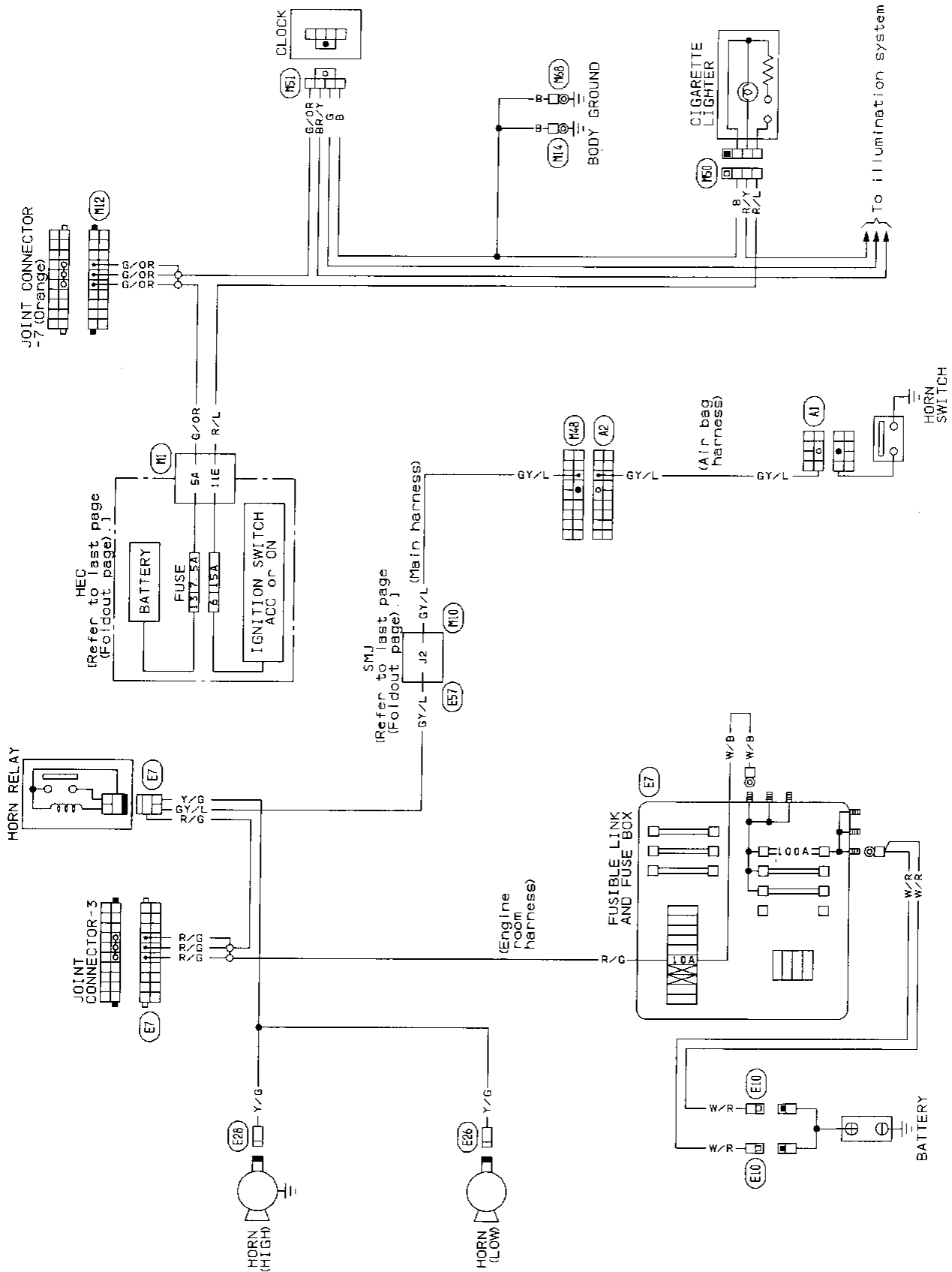
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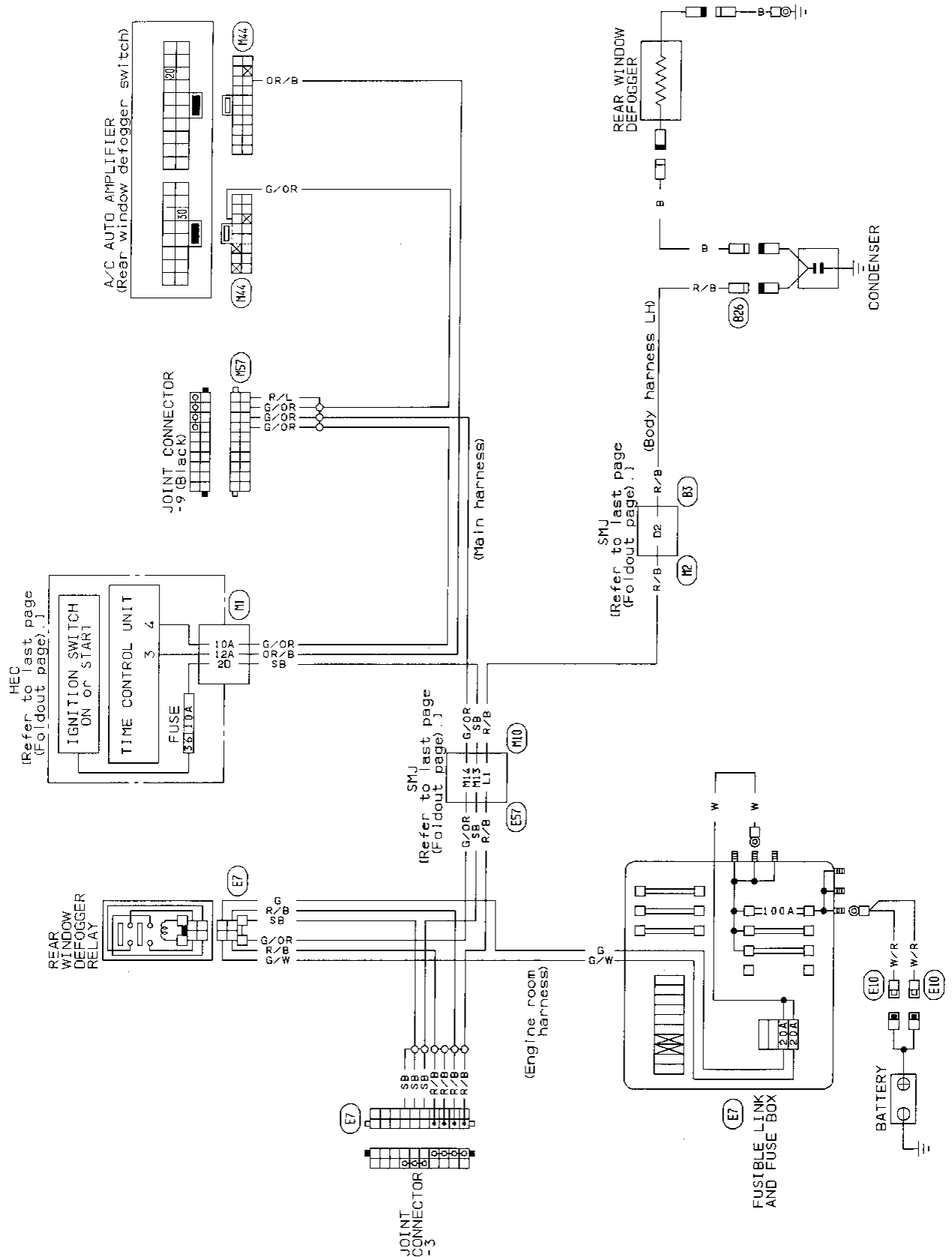
HORN, CIGARETTE LIGHTER, CLOCK

Wiring Diagram



REAR WINDOW DEFOGGER

Wiring Diagram



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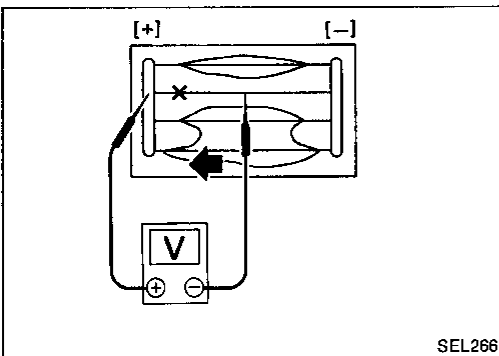
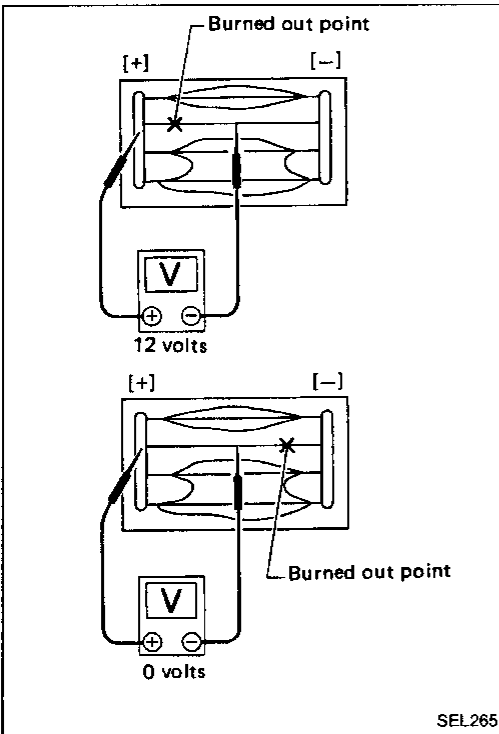
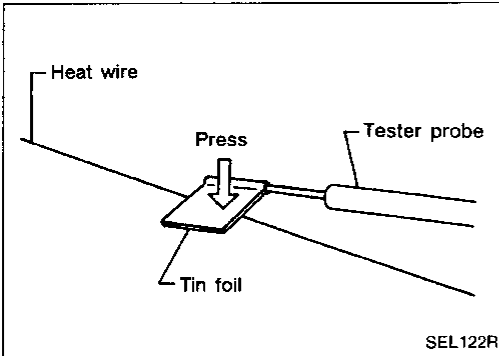
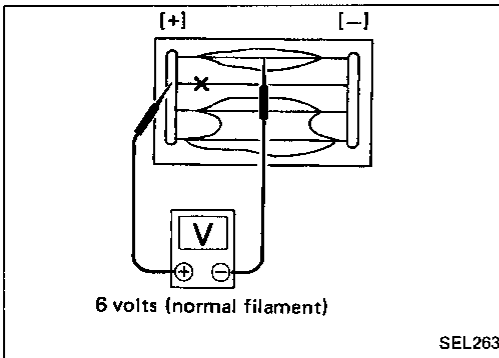
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REAR WINDOW DEFOGGER



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.

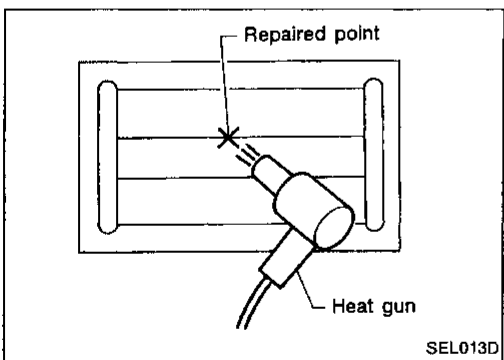
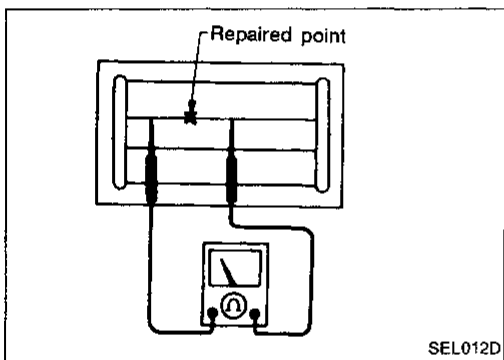
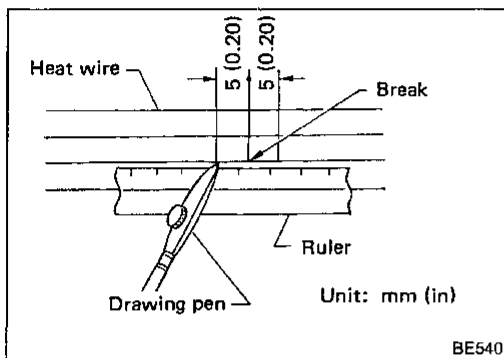
3. To locate burned out point, move probe to left and right along filament to determine point where tester needle swings abruptly.

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



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.

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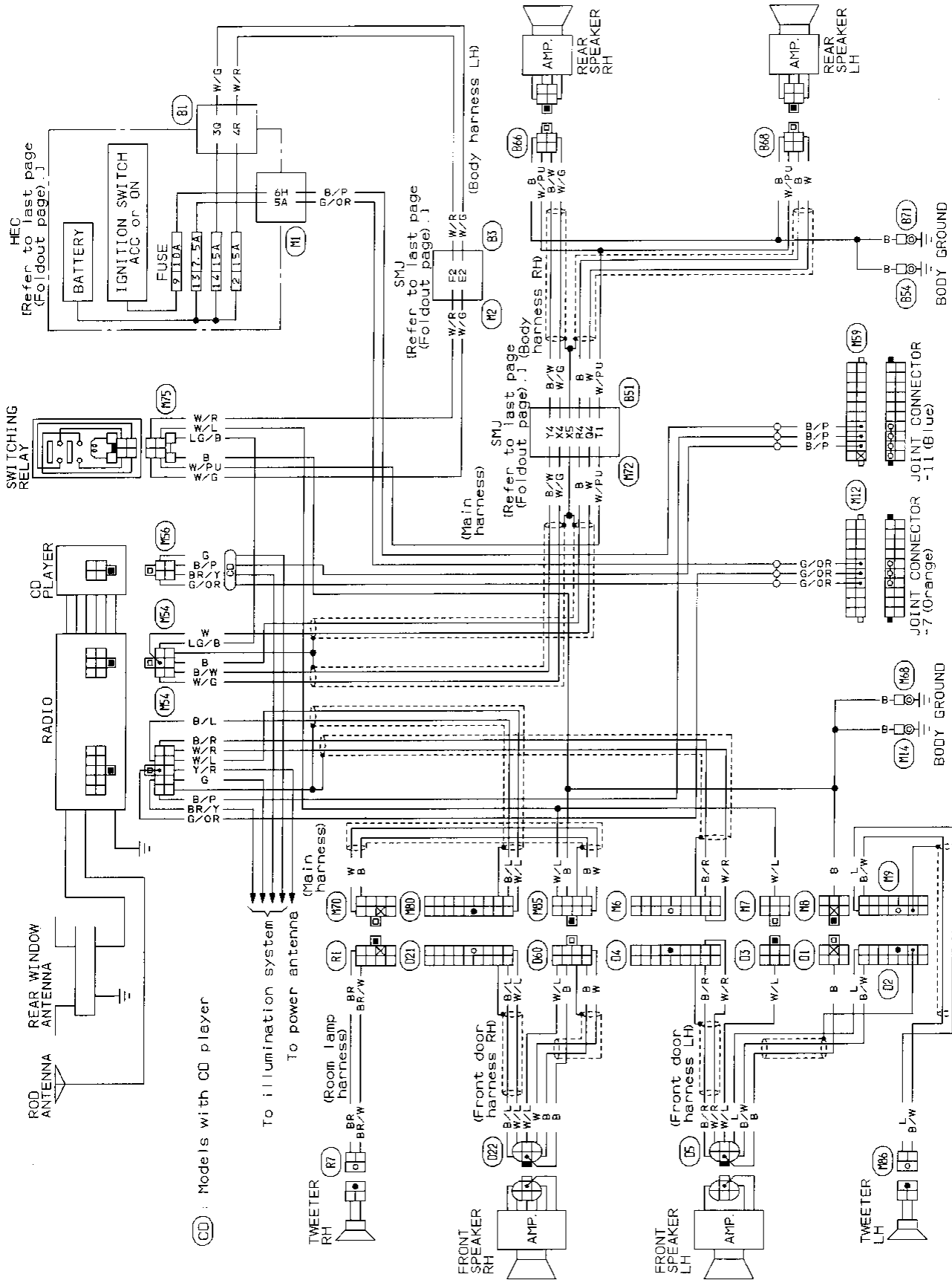
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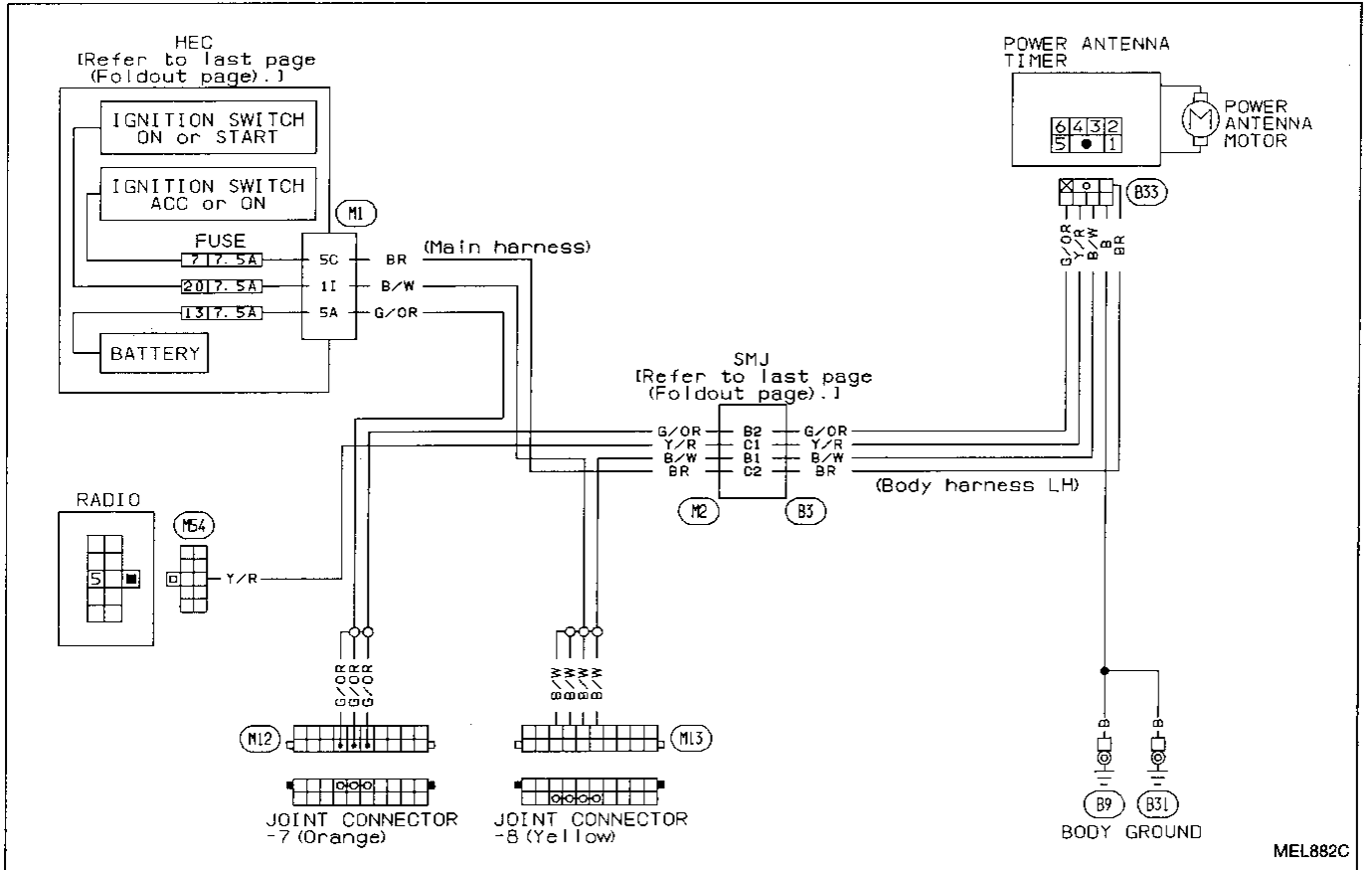
Audio/Wiring Diagram

BOSE SYSTEM



AUDIO AND POWER ANTENNA

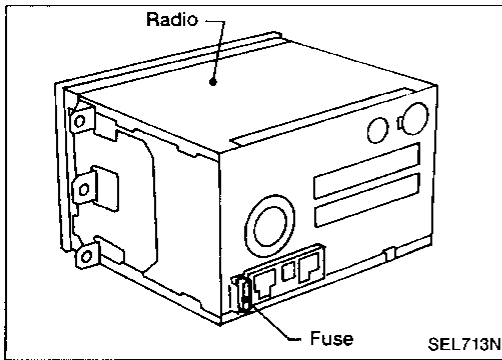
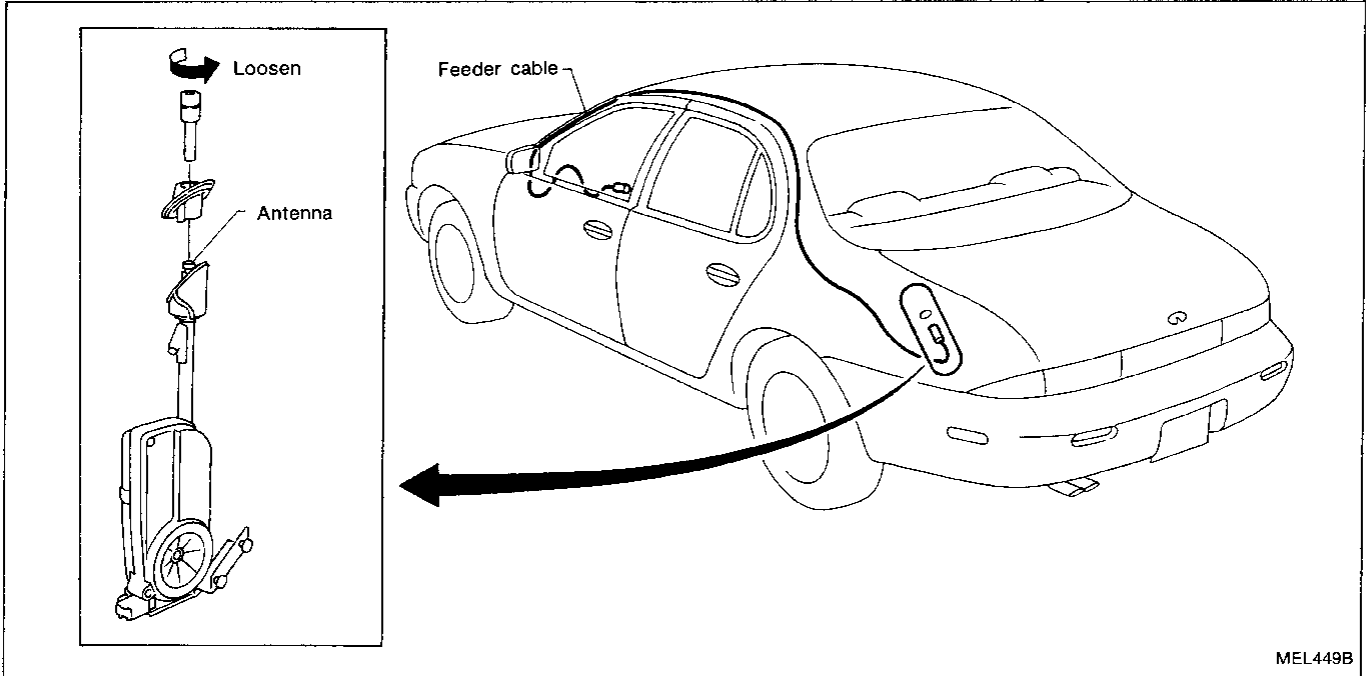
Power Antenna/Wiring Diagram



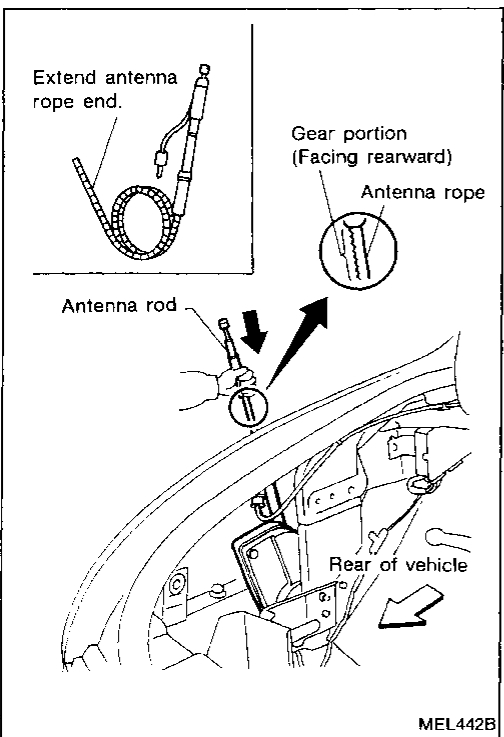
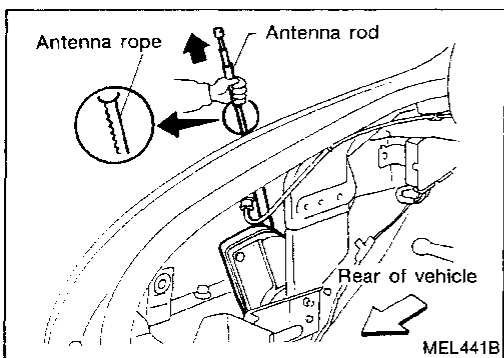
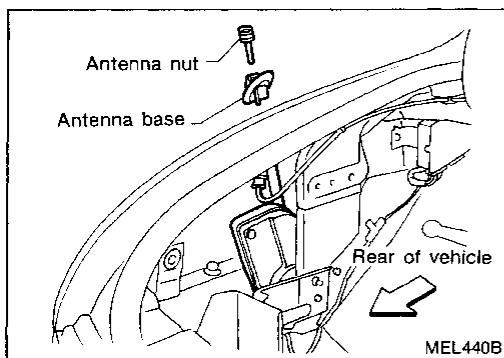
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AUDIO AND POWER ANTENNA

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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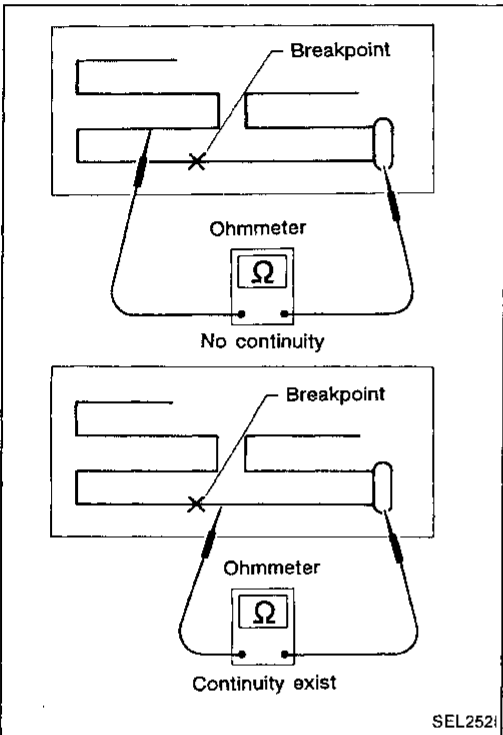
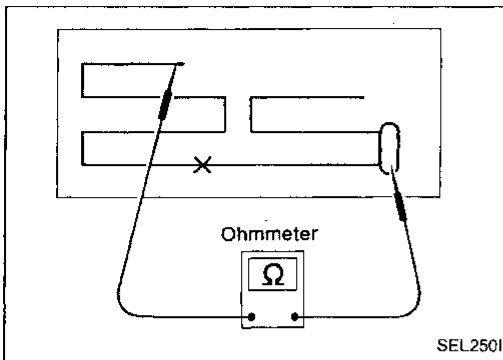
EL

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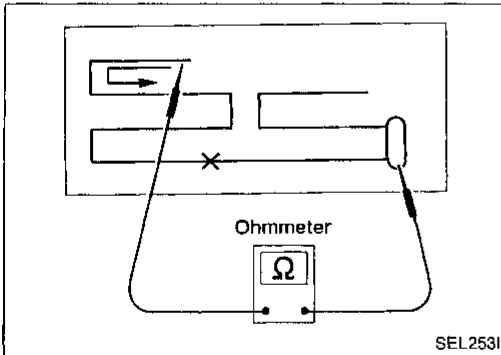
Window Antenna Repair

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.



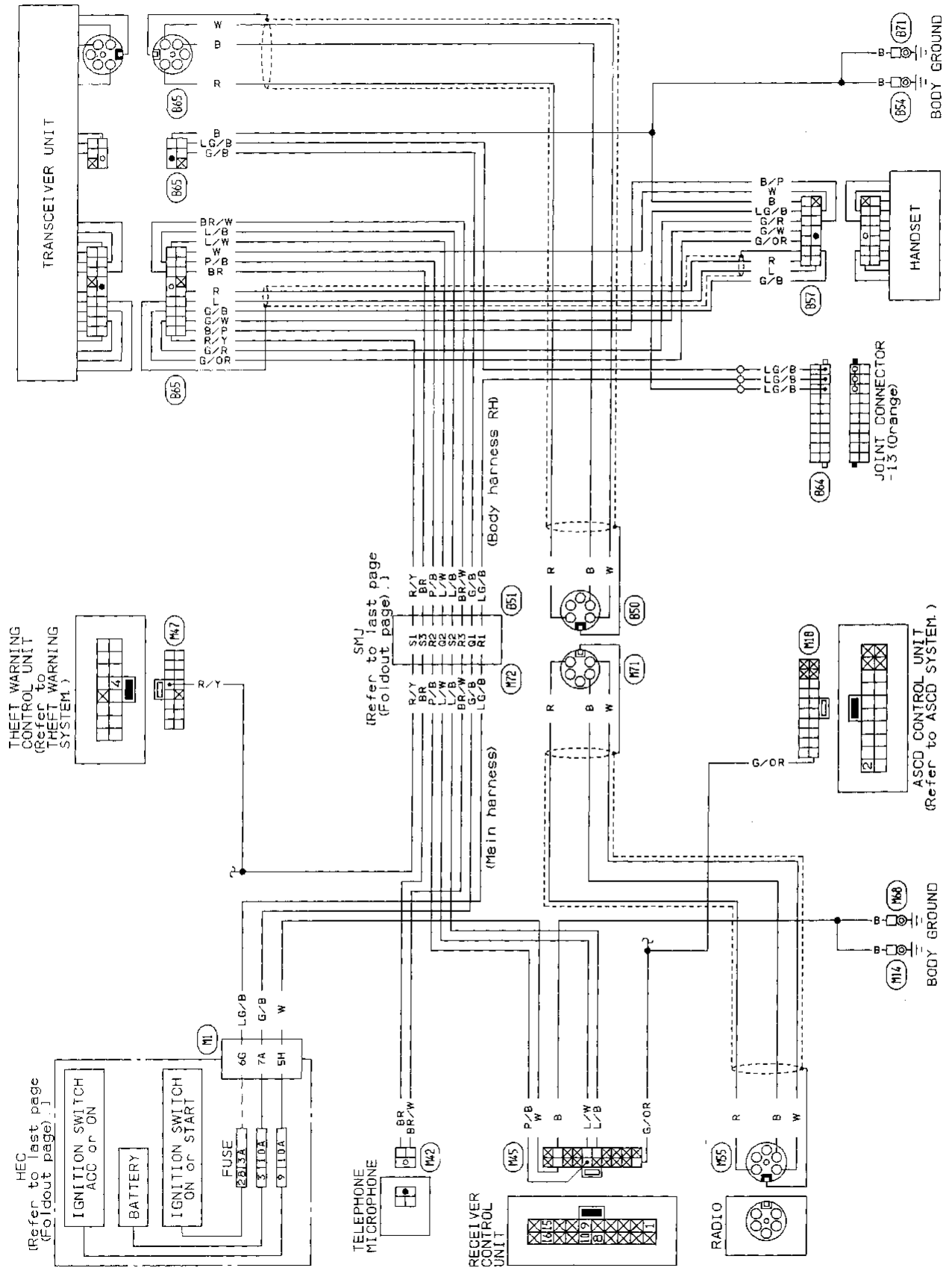
3. To locate broken point, move probe to left and right along element to determine point where tester needle swings abruptly.



ELEMENT REPAIR

Refer to REAR WINDOW DEFOGGER "Filament Repair" (EL-75).

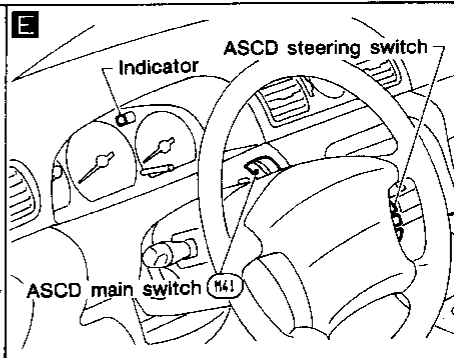
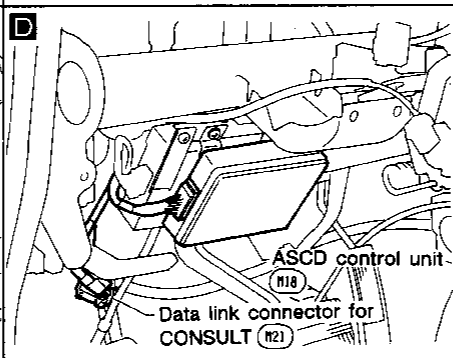
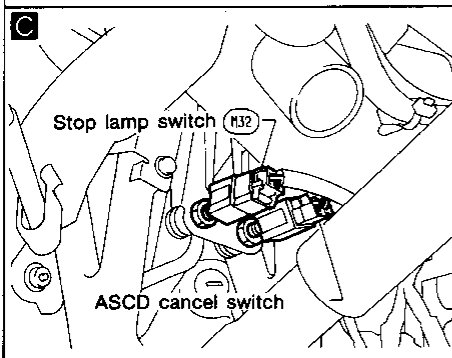
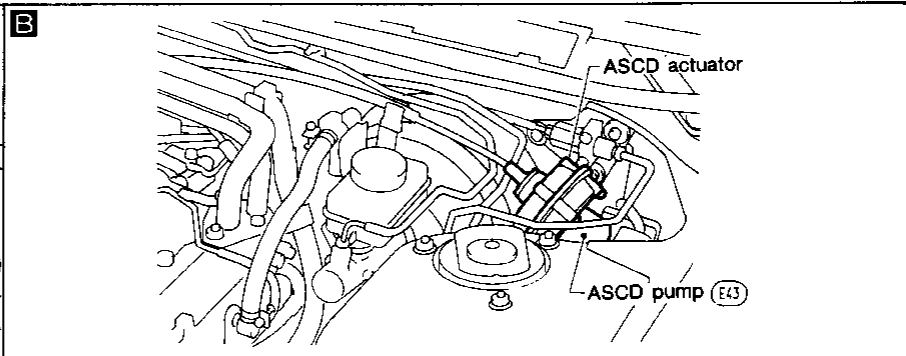
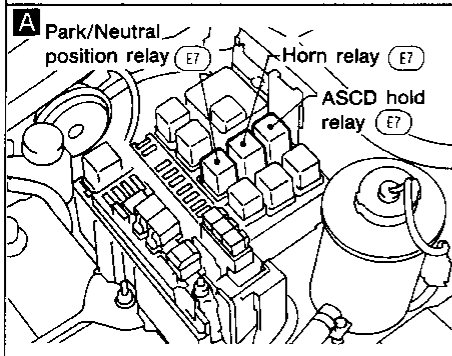
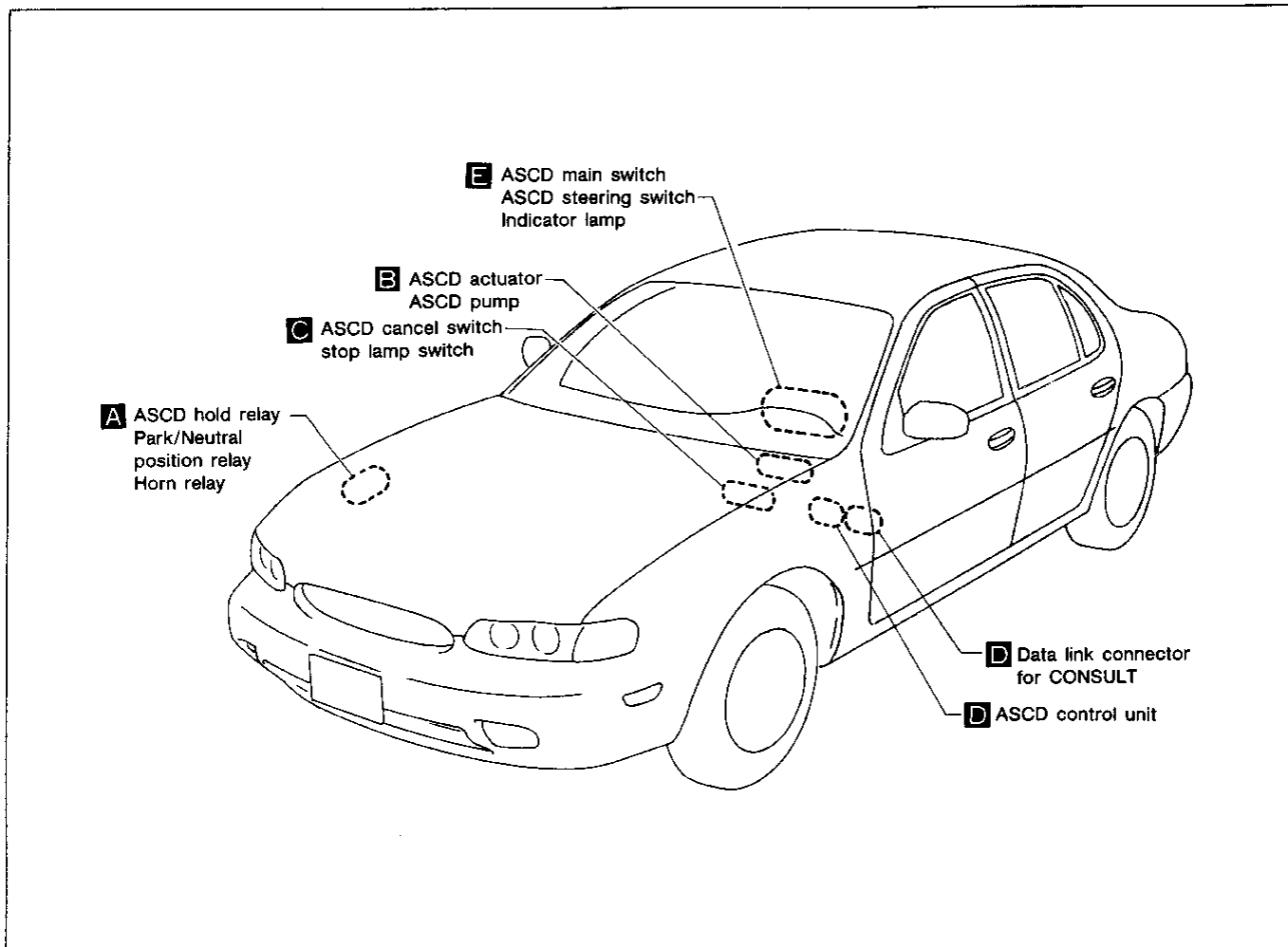
Telephone/Wiring Diagram



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NOTE

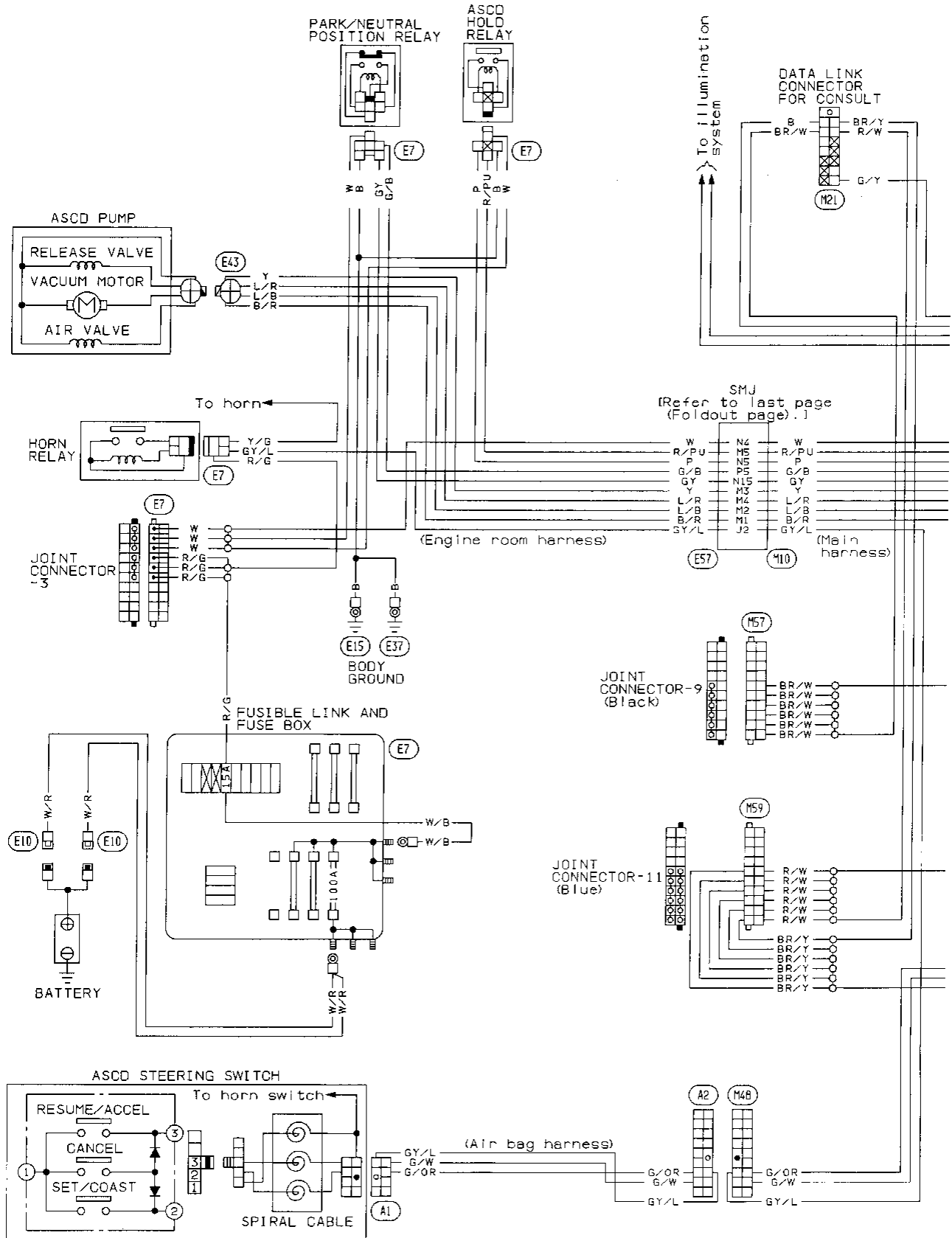
Component Parts and Harness Connector Location



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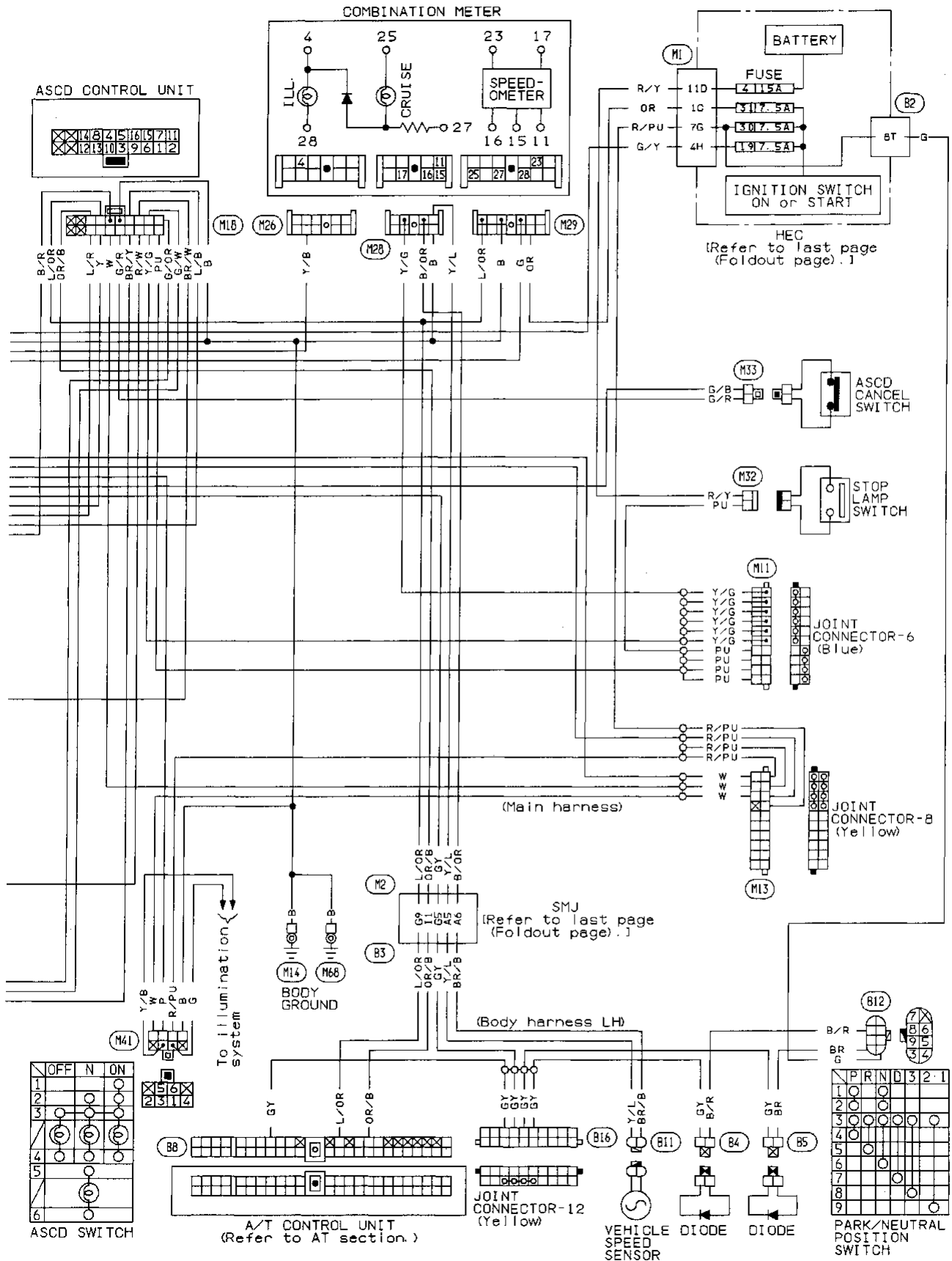
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Wiring Diagram



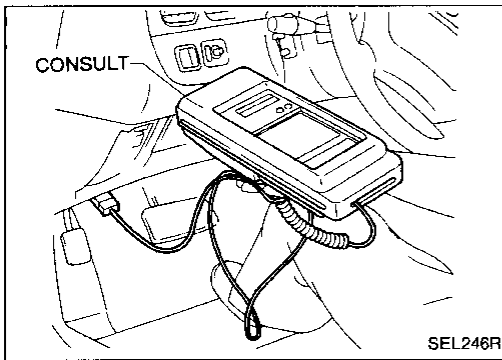
AUTOMATIC SPEED CONTROL DEVICE (ASCD) Wiring Diagram (Cont'd)

Wiring Diagram (Cont'd)



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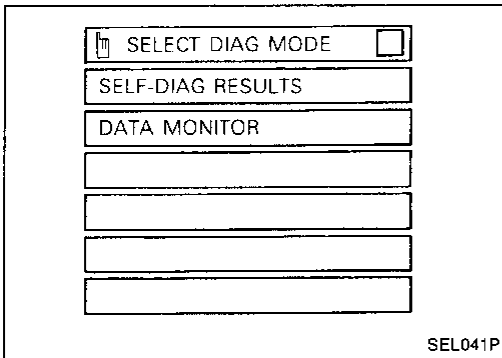
AUTOMATIC SPEED CONTROL DEVICE (ASCD)



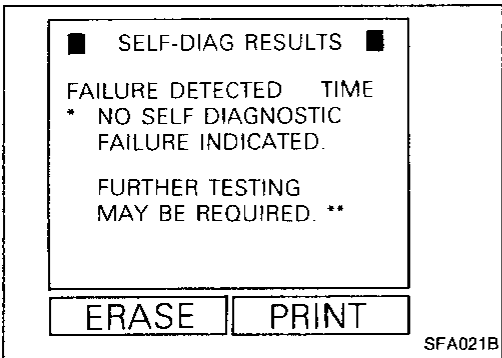
Trouble Diagnoses

CONSULT

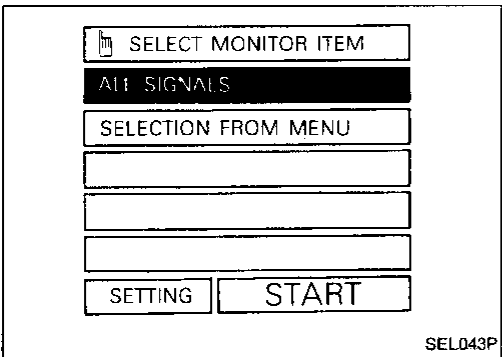
1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector.



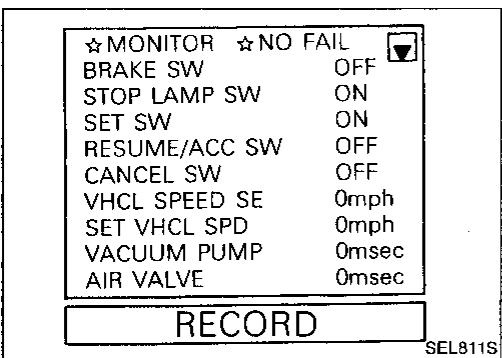
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- Self-diagnostic results are shown on display. Refer to table on page EL-87.



8. Touch DATA MONITOR.



- Touch START.
- Data monitor results are shown on display. Refer to table on page EL-87.

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)

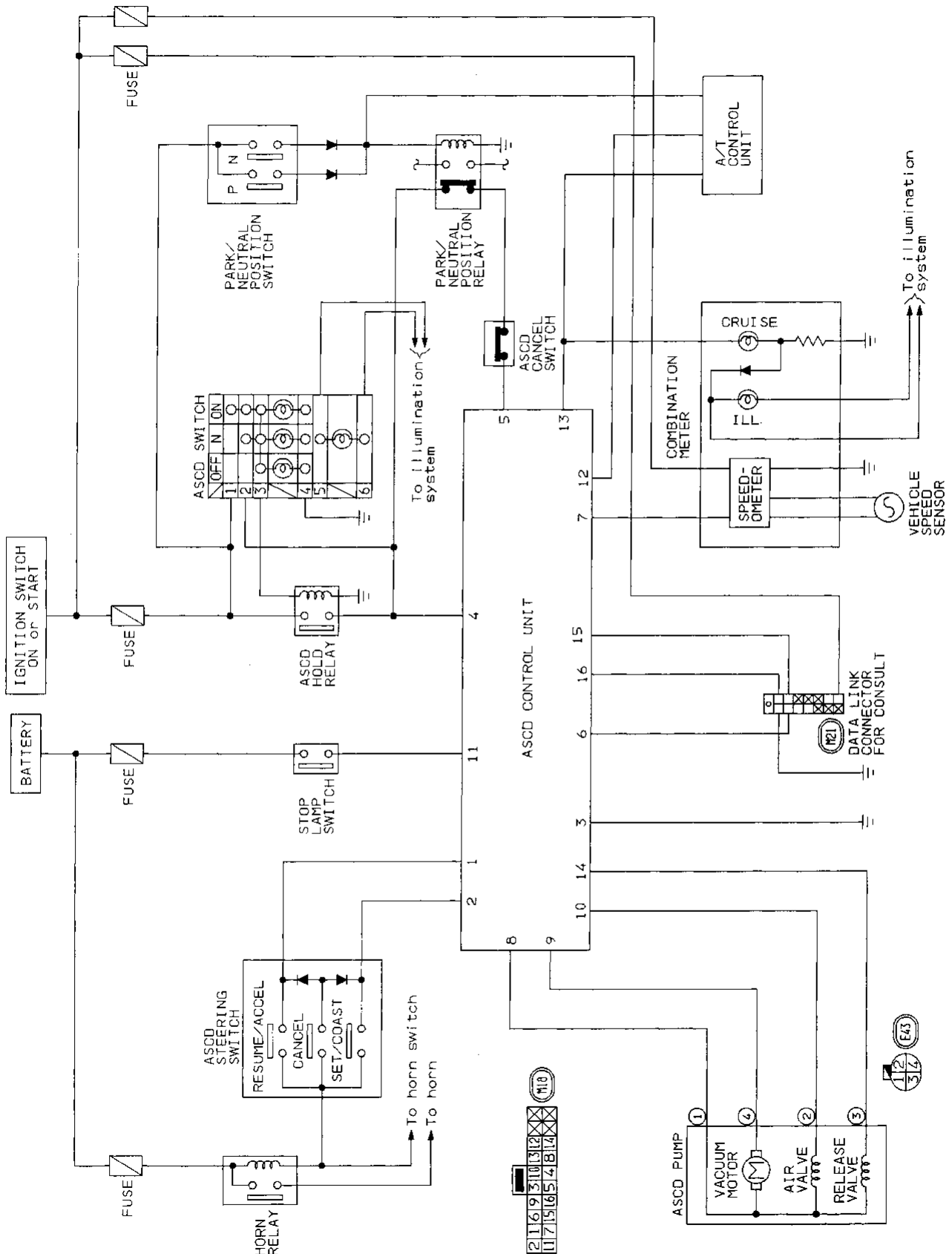
SYMPTOM CHART

PROCEDURE	Diagnostic Procedure								Electrical Components Inspection						
	EL-90	EL-93	EL-93	EL-94	EL-95	EL-96	EL-98	EL-100	EL-101	EL-102	EL-102	EL-102	EL-102	EL-102	EL-103
REFERENCE PAGE	EL-90	EL-93	EL-93	EL-94	EL-95	EL-96	EL-98	EL-100	EL-101	EL-102	EL-102	EL-102	EL-102	EL-102	EL-103
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 brake 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



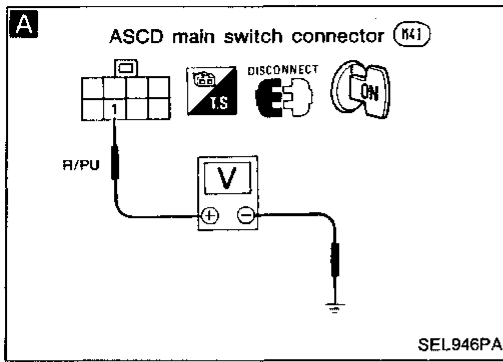
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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.

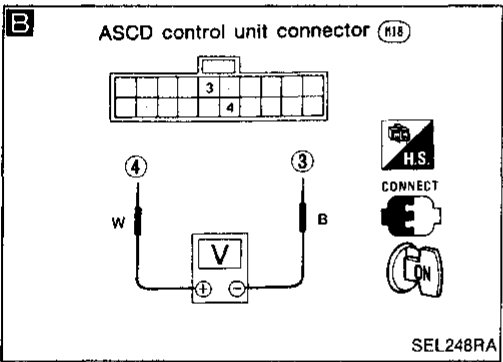
A CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.

1. Disconnect main switch harness connector.
2. Do approx. 12 volts exist between main switch harness terminal ① and body ground?

No → Check fuse and harness.

Yes →

CHECK ASCD MAIN SWITCH.
Refer to "Electrical Components Inspection" (EL-102).
CHECK ASCD HOLD RELAY.

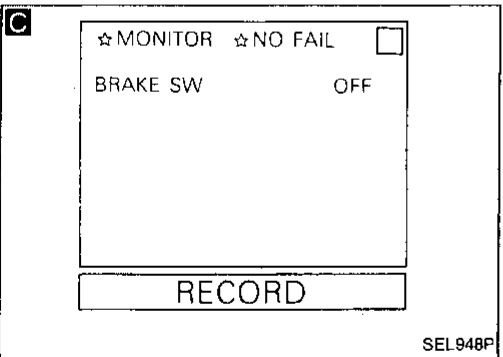


B CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT.

1. Turn ASCD main switch "ON".
2. Check voltage between control unit harness terminal ④ and ③.

Battery voltage should exist.

NG → Check continuity between control unit harness terminal ④ and ASCD hold relay.



C CHECK CUT-OFF CIRCUIT FOR ASCD CONTROL UNIT.

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

BRAKE SWITCH

When switch is depressed:

OFF

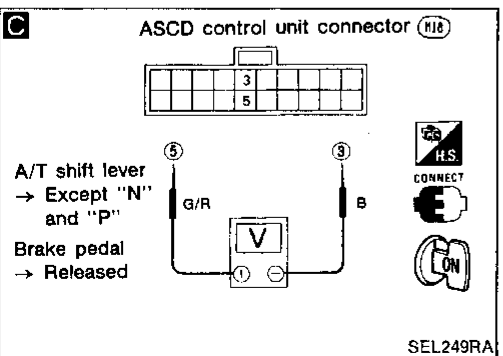
When switch is released: ON

OR

Check voltage between control unit harness terminals ⑤ and ③.

Battery voltage should exist.

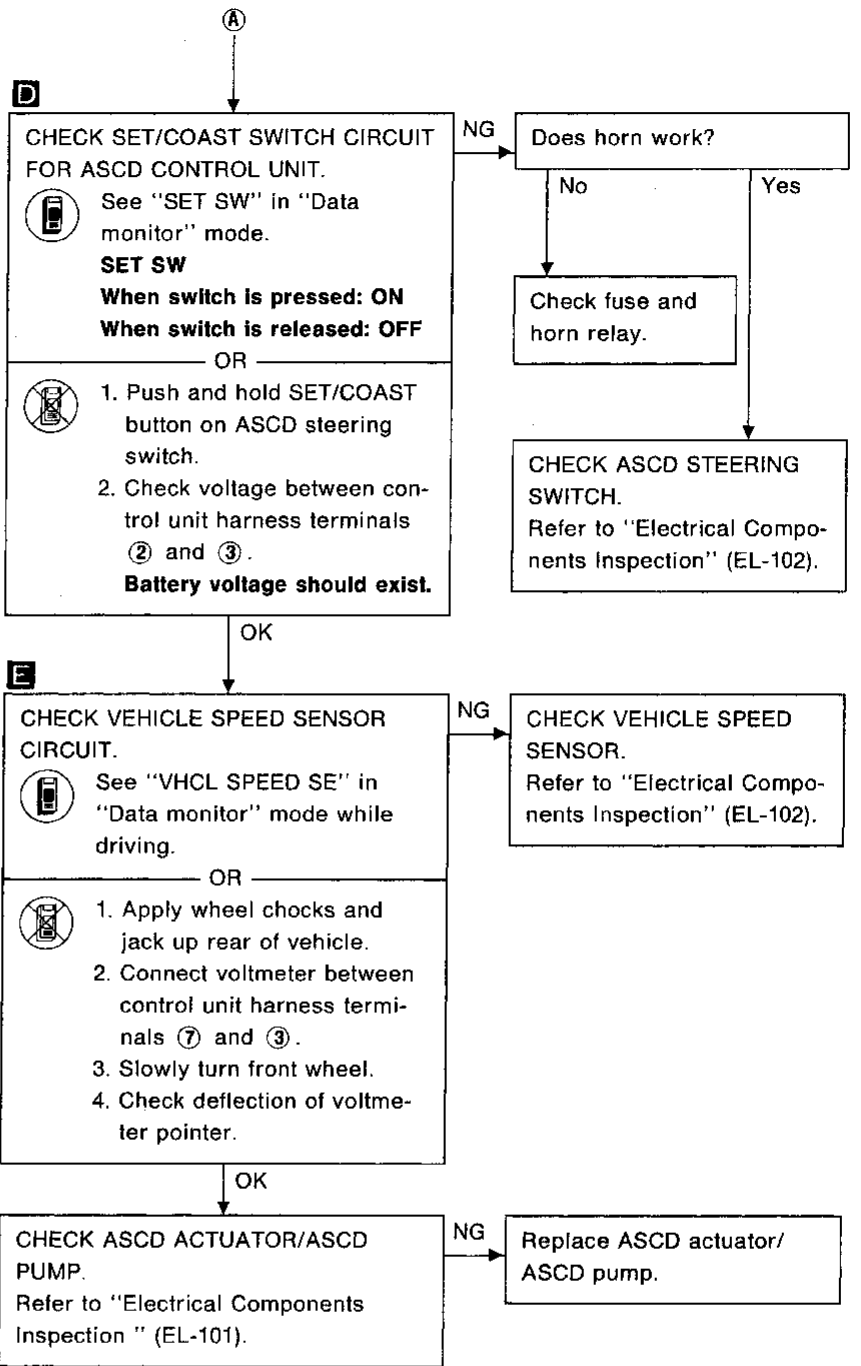
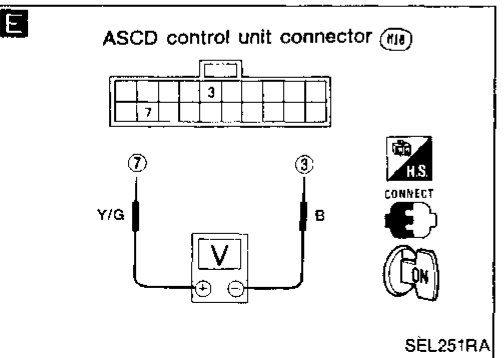
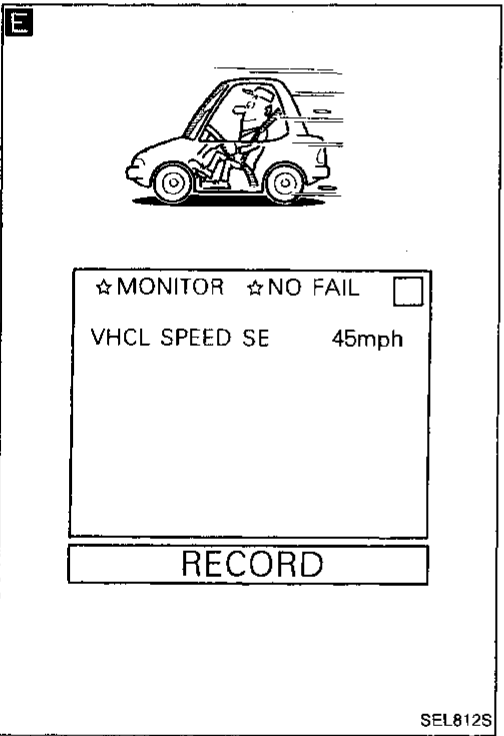
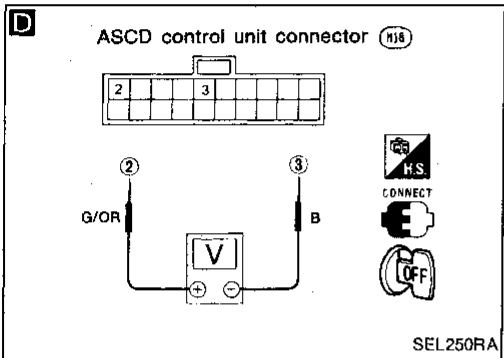
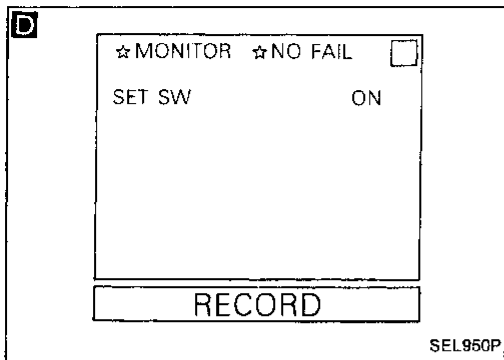
NG → CHECK ASCD BRAKE SWITCH AND PARK/NEUTRAL POSITION SWITCH.
Refer to "Electrical Components Inspection" (EL-102).
CHECK PARK/NEUTRAL POSITION RELAY.



OK → (A)
(Next page)

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)



B
(Next page)

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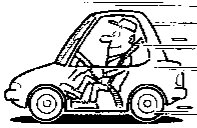
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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.

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

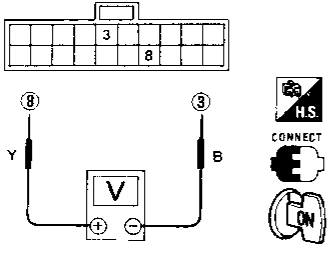
OK → Replace ASCD control unit.

NG

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

F

ASCD control unit connector (H18)



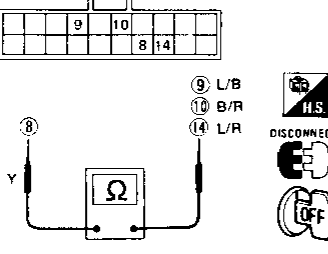
CONNECT

ON

SEL252RA

G

ASCD control unit connector (H18)



DISCONNECT

OFF

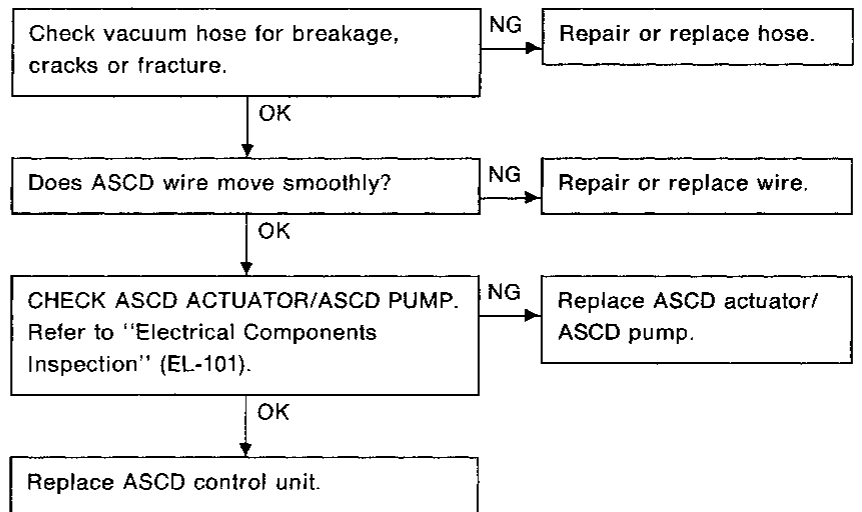
SEL253RA

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Engine hunts.



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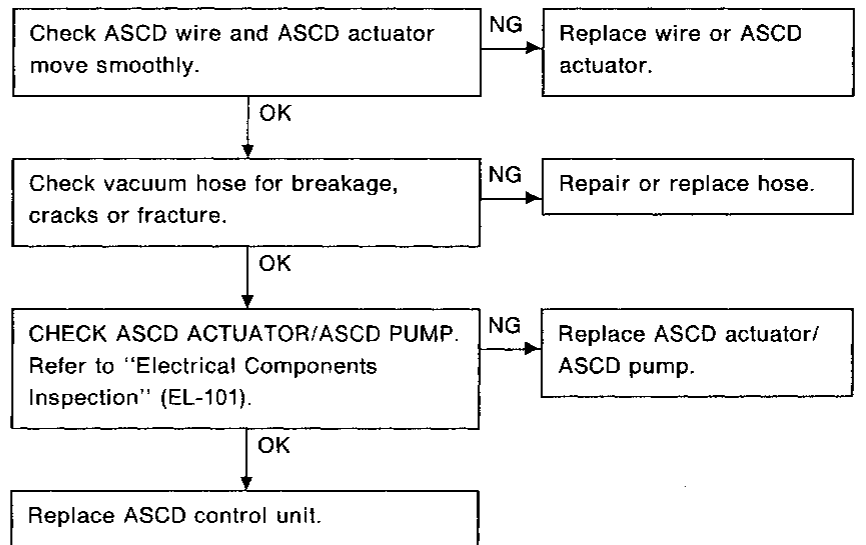
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DIAGNOSTIC PROCEDURE 3

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



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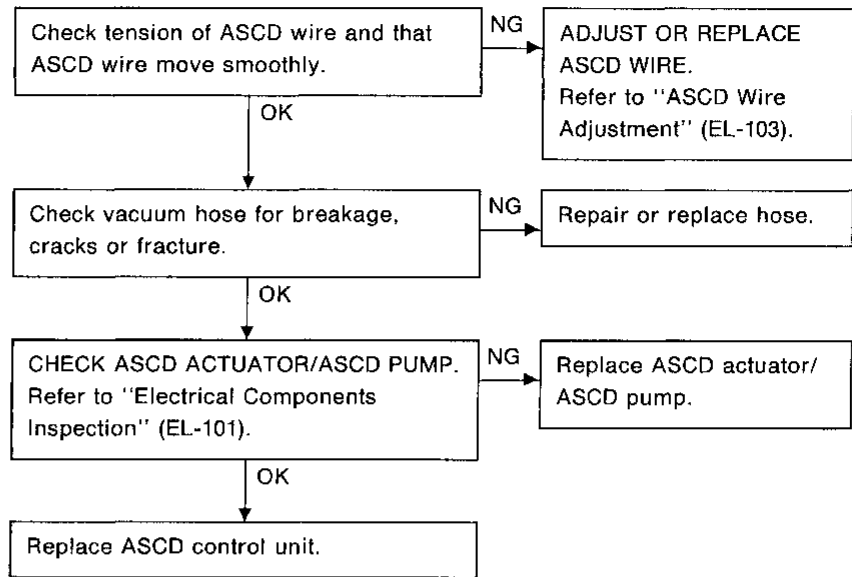
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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



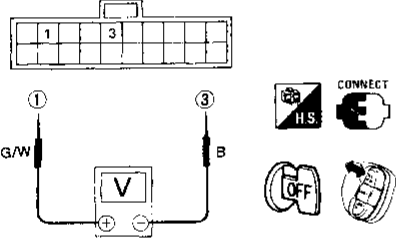
☆ MONITOR ☆ NO FAIL

RESUME/ACC SW ON

RECORD

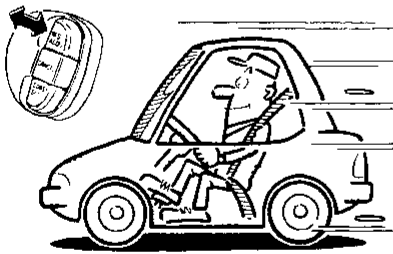
SEL957P

A ASCD control unit connector (11B)

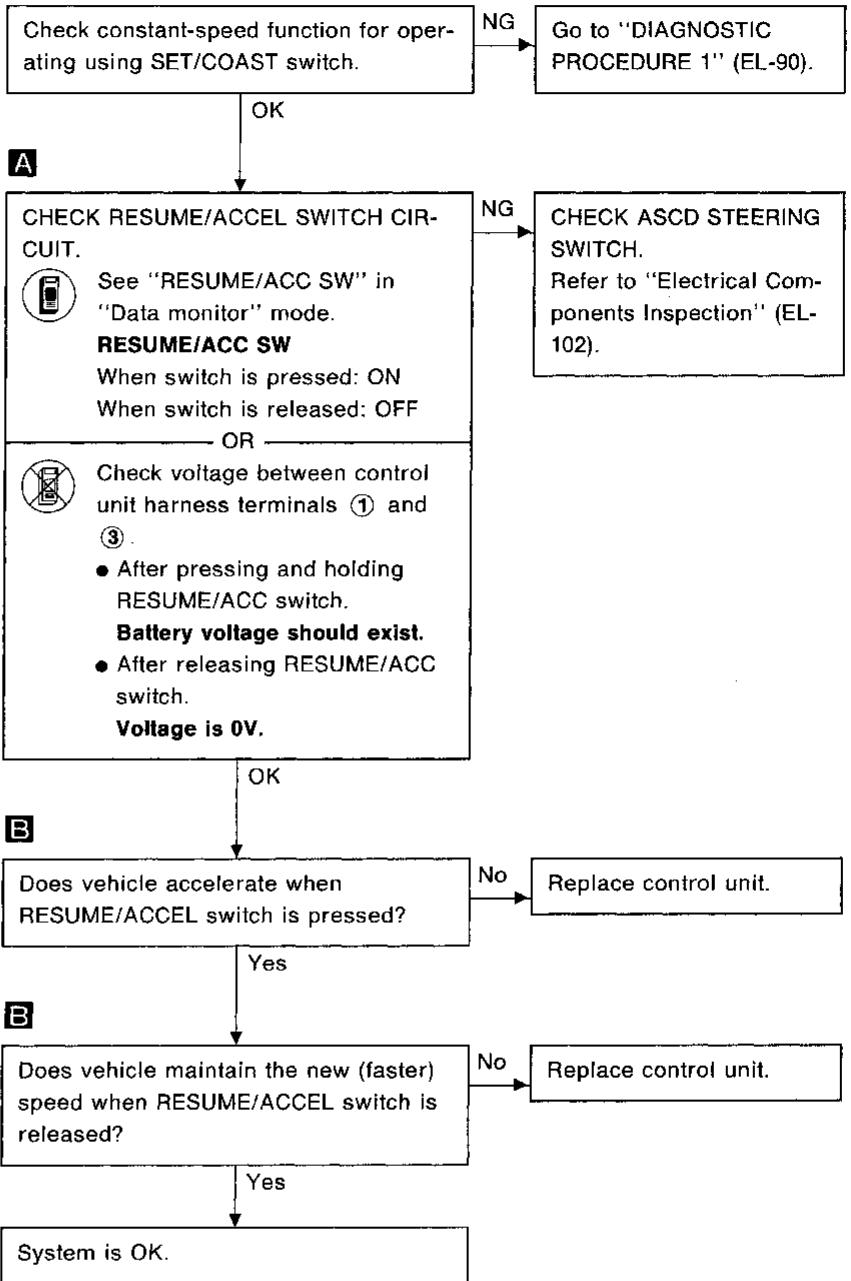


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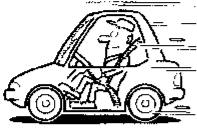
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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-90).

OK ↓

A


CHECK RESUME/ACCEL SWITCH CIRCUIT.

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

RESUME/ACC SW

When switch is pressed: ON
When switch is released: OFF

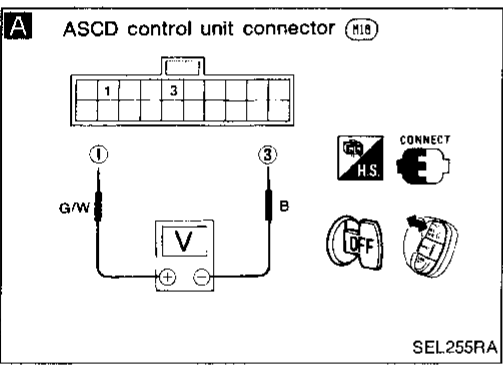
OR

 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.

NG → CHECK ASCD STEERING SWITCH. Refer to "Electrical Components Inspection" (EL-102).

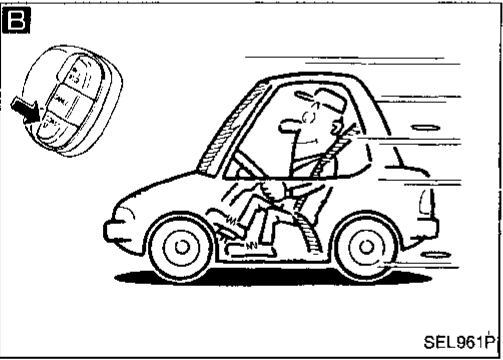
OK ↓



B

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

OK ↓



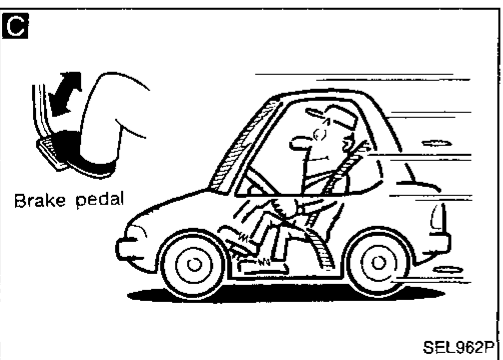
C

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 BRAKE SWITCH. Refer to "Electrical Components Inspection" (EL-102).

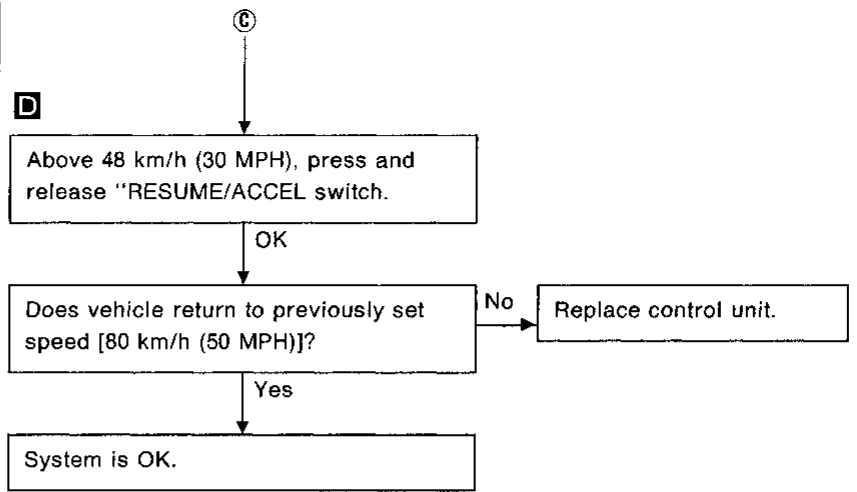
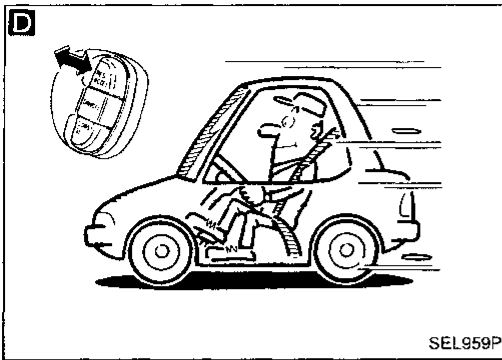
Yes ↓



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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 (N18)

SEL256RA

B

☆ MONITOR ☆ NO FAIL

STOP LAMP SW ON

RECORD

SEL965P

B

ASCD control unit connector (N18)

SEL257RA

A

CHECK ASCD BRAKE 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

NG → CHECK ASCD BRAKE and PARK/NEUTRAL POSITION SWITCH. Refer to "Electrical Components Inspection" (EL-102).

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

Condition		Voltage [Ω]
ASCD brake 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

OK ↓

B

CHECK STOP LAMP SWITCH CIRCUIT.

- See "STOP LAMP SW" in "Data monitor" mode.

STOP LAMP SW

When brake pedal is released: OFF

When brake pedal is depressed: ON

OR
- Check voltage between control unit harness terminals ⑪ and ③.

NG → CHECK STOP LAMP SWITCH. Refer to "Electrical Components Inspection" (EL-102).

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

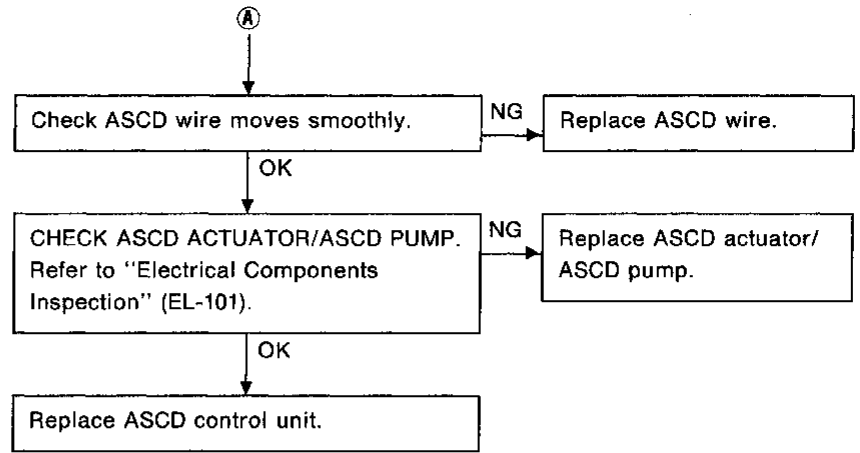
OK ↓

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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)



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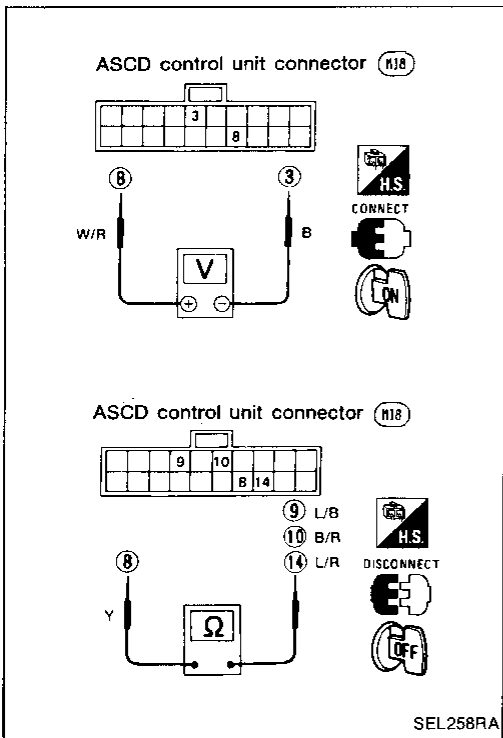
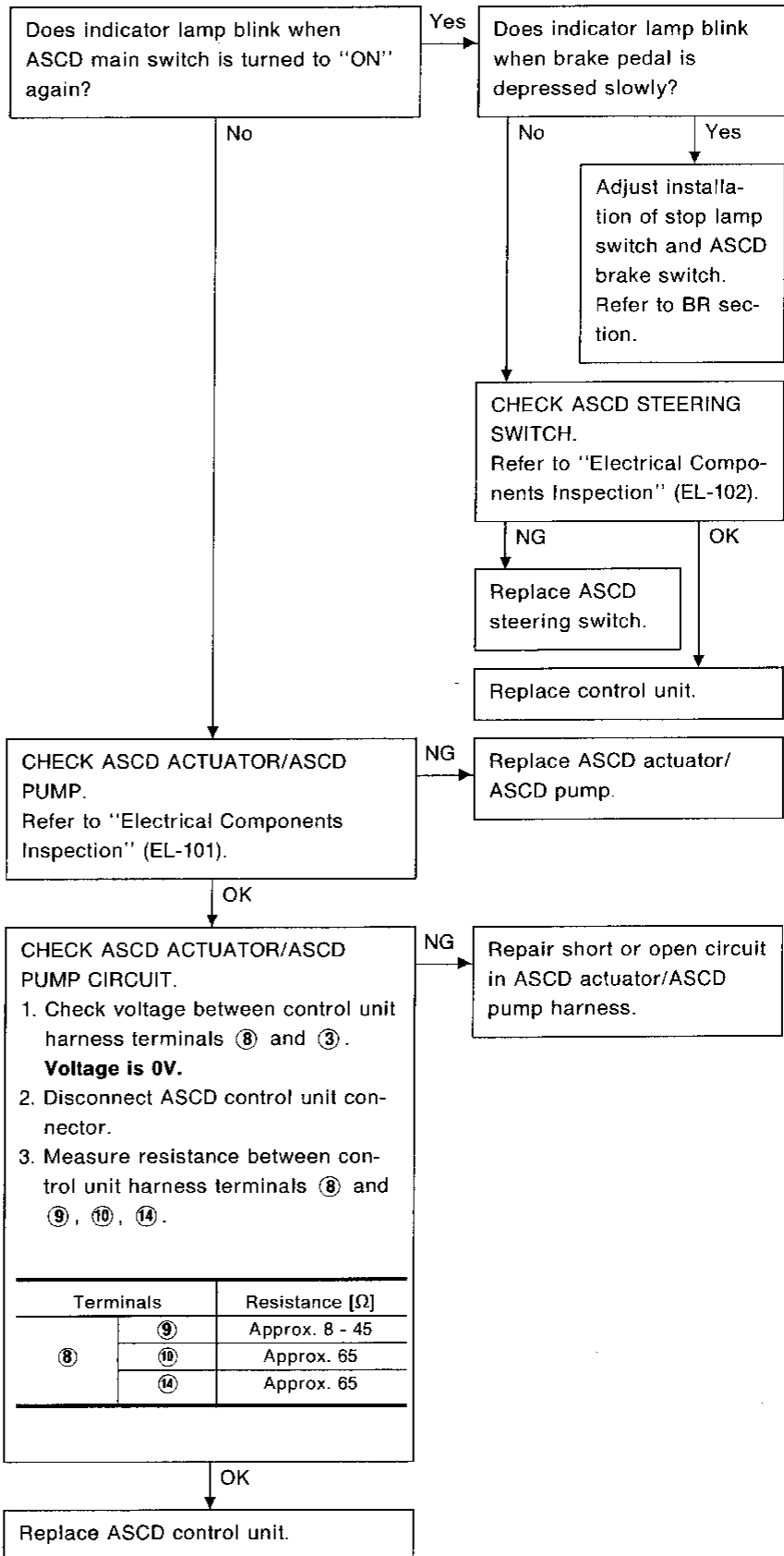
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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

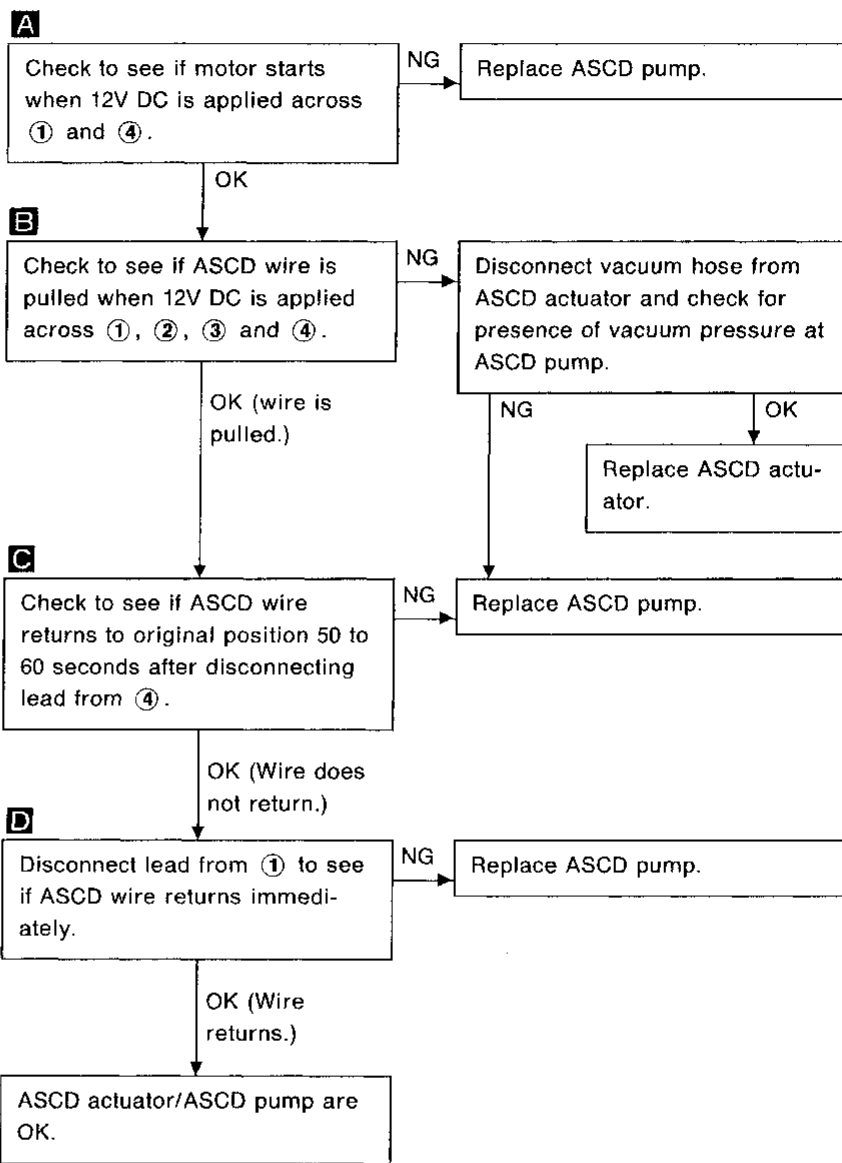
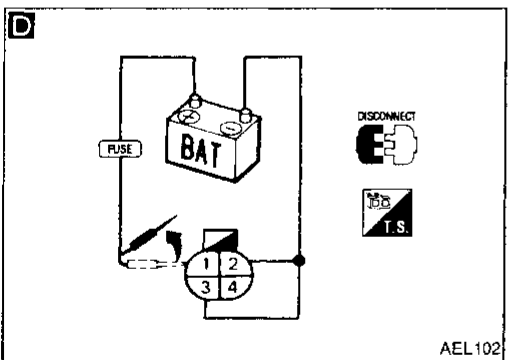
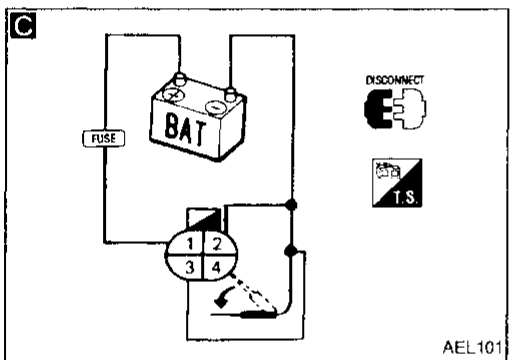
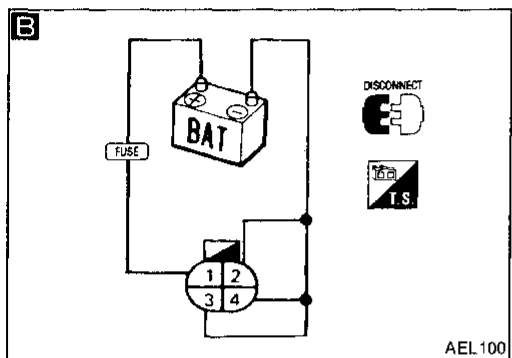
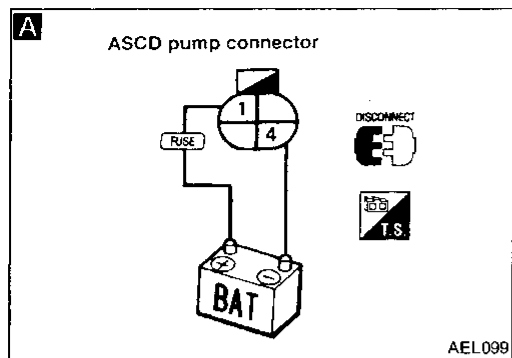
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

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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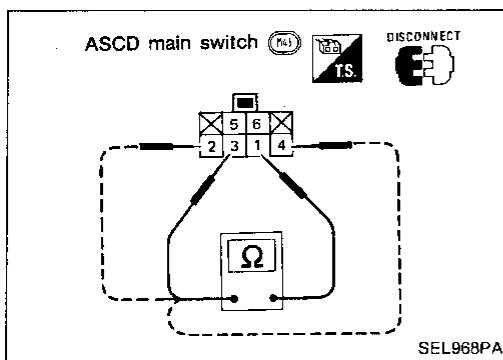
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Trouble Diagnoses (Cont'd)

ASCD main switch

Check continuity between terminals by pushing switch to each position.

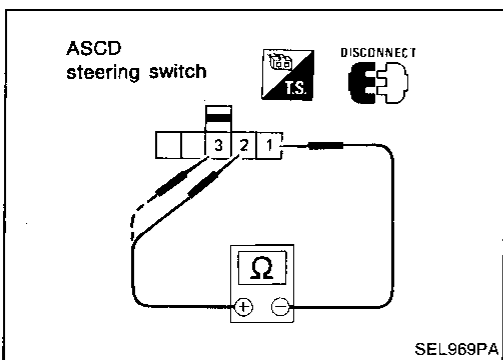
Switch position	Terminals	1	2	3	4	5	6
ON		○	○	○	⊕		
N			○	○	⊕		ILL. ⊕
OFF				○	⊕		



ASCD steering switch

Check continuity between terminals by pushing each button.

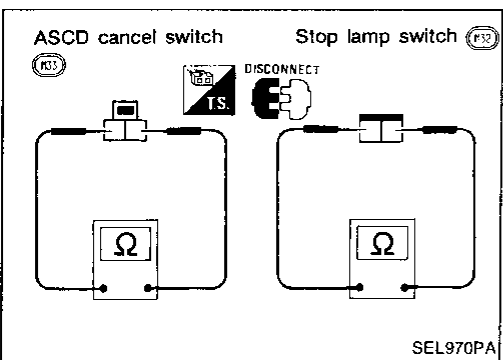
Button	Terminal	1	2	3
SET/COAST		○	○	
RESUME/ACCEL		○		○
CANCEL		○	▶	
		○	▶	○



ASCD cancel switch and stop lamp switch

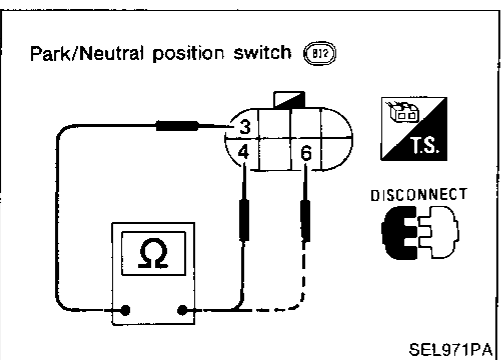
Condition	Continuity	
	ASCD cancel switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

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



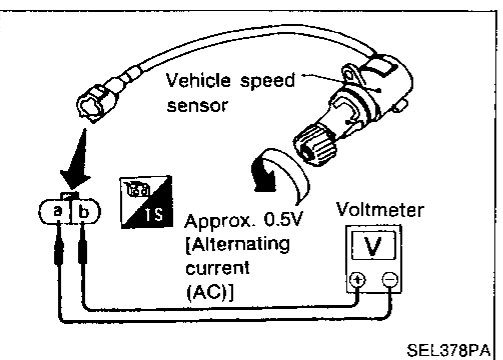
Park/Neutral position switch

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

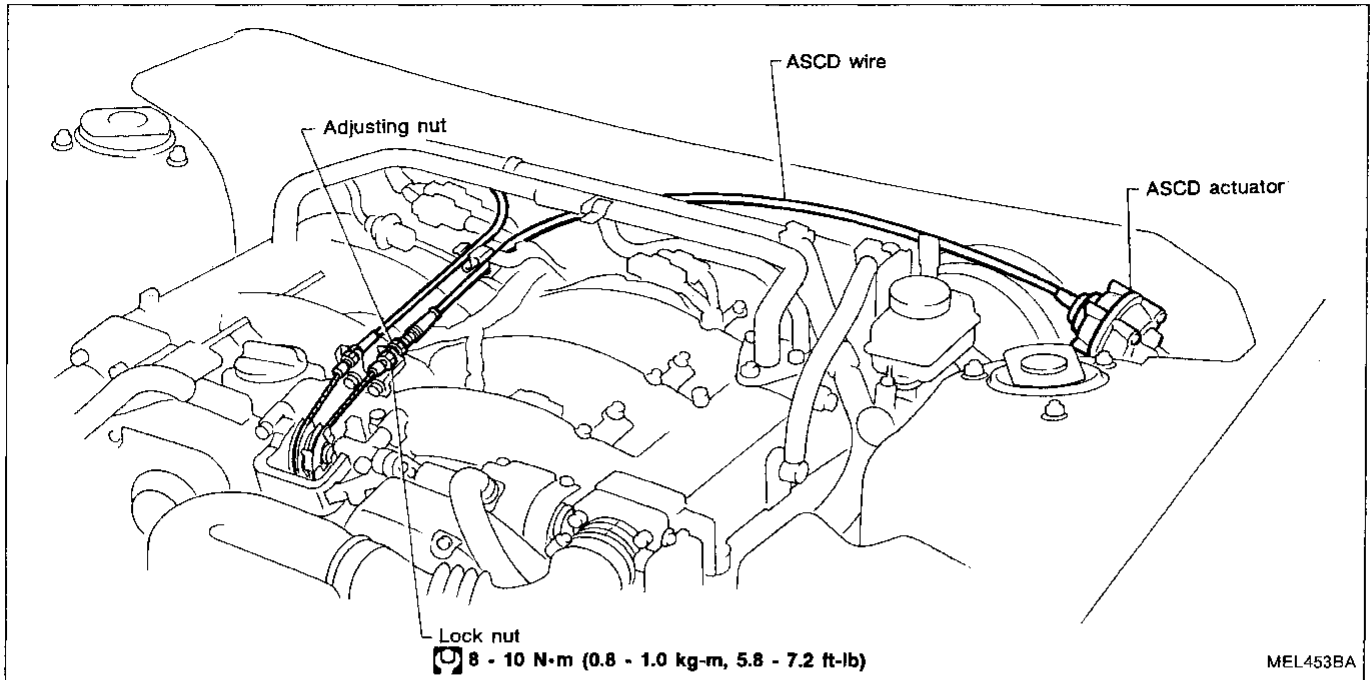


Vehicle speed sensor

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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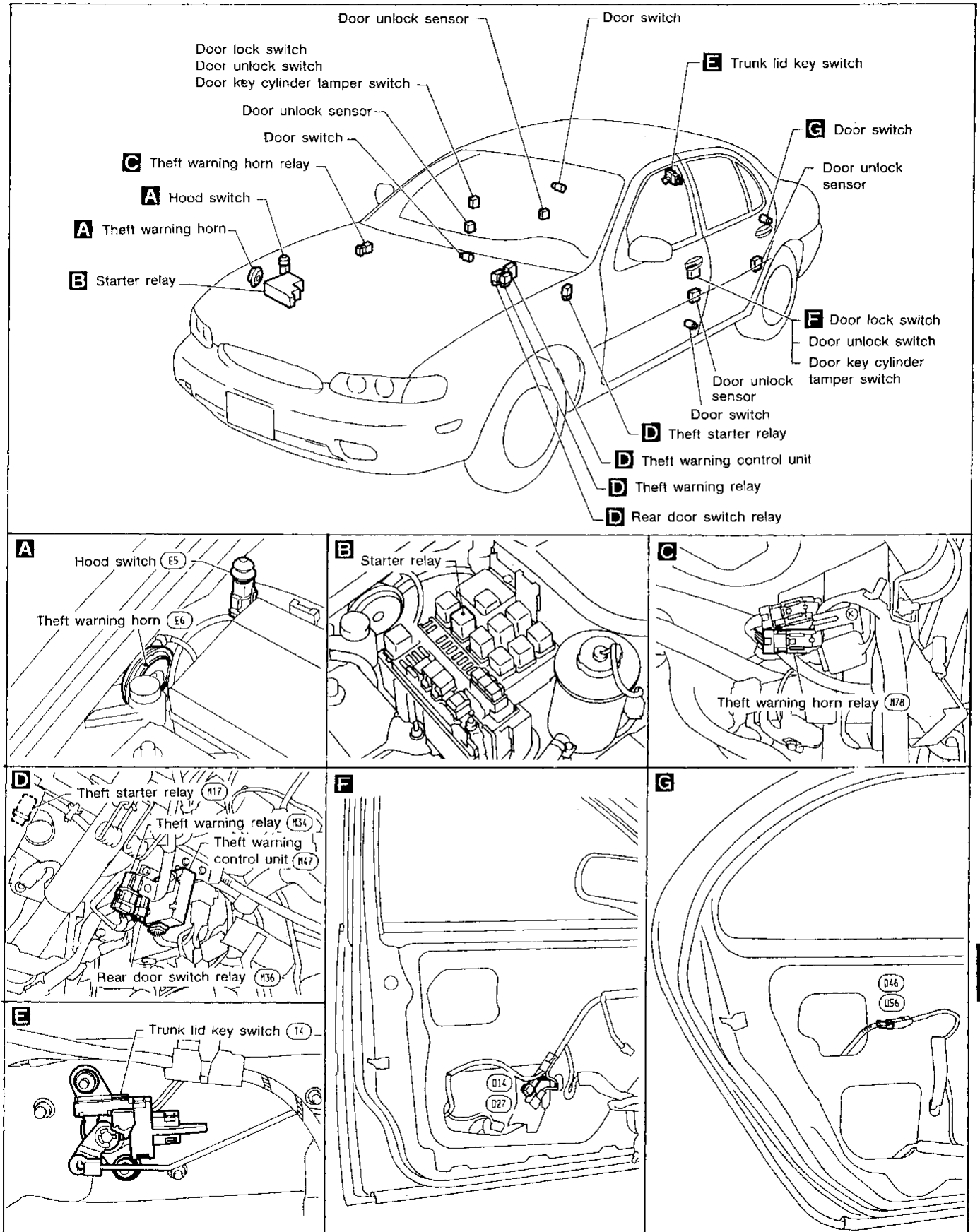
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AUTOMATIC SPEED CONTROL DEVICE (ASCD)

NOTE

THEFT WARNING SYSTEM

Component Parts and Harness Connector Location



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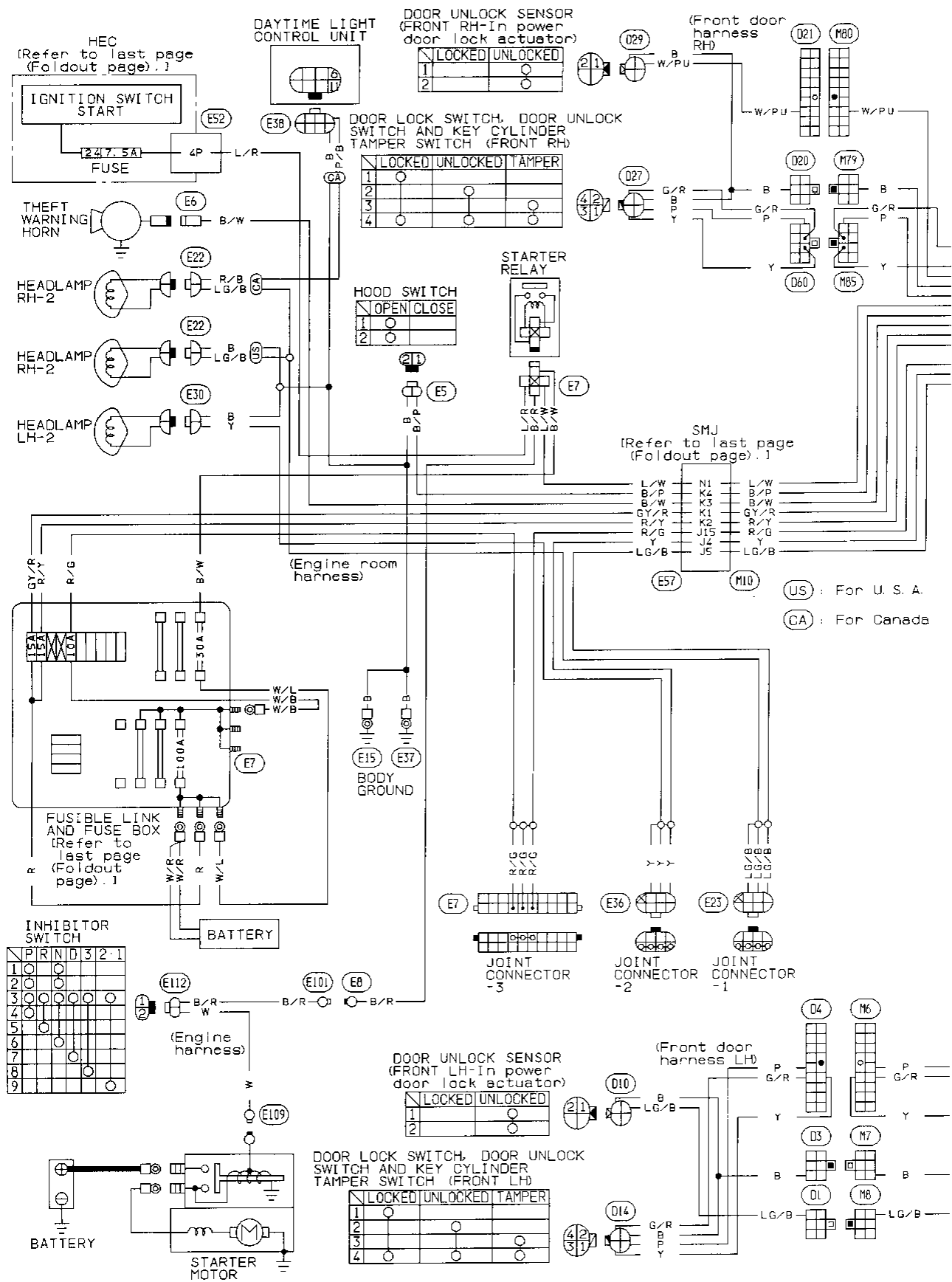
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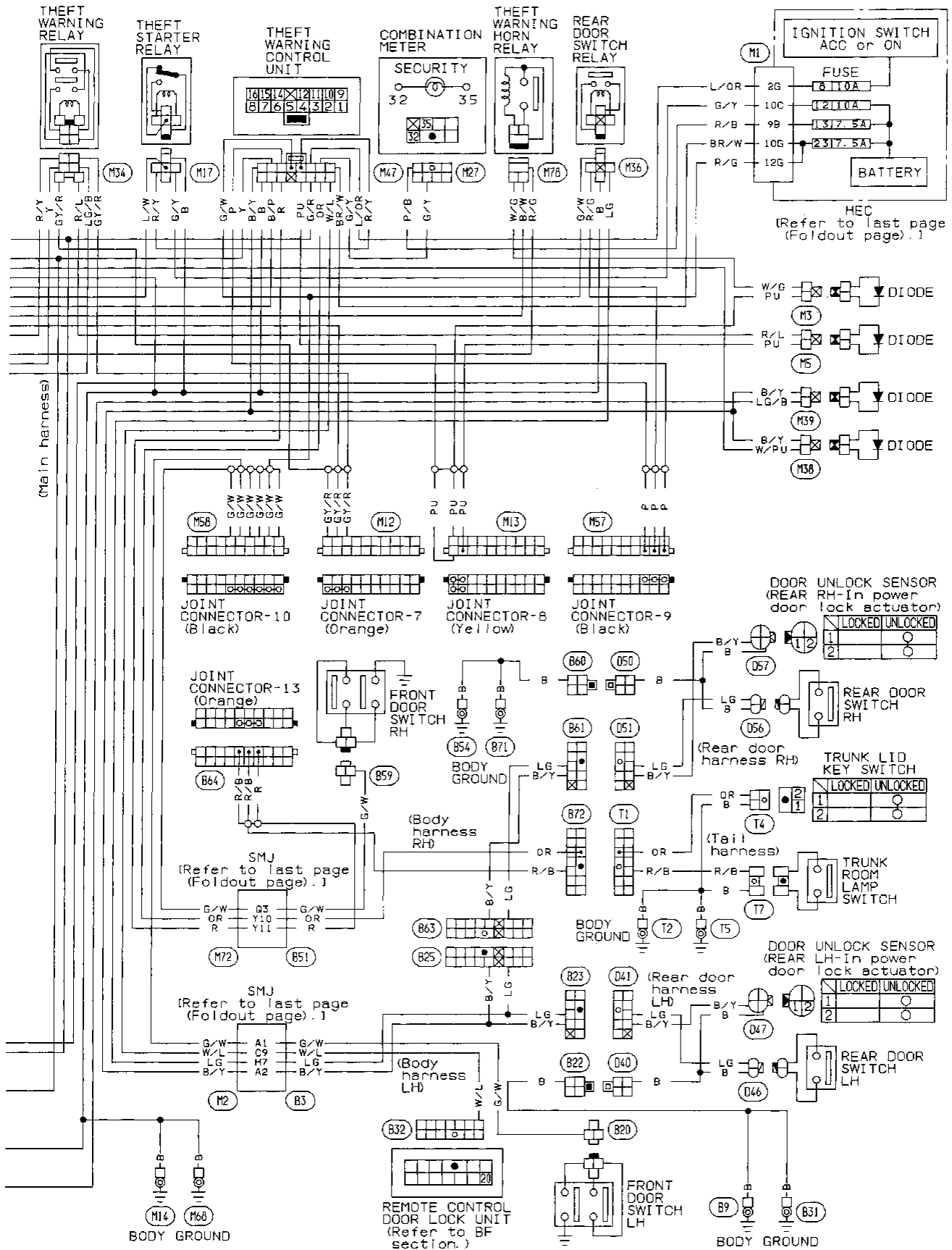
MEL460B

THEFT WARNING SYSTEM

Wiring Diagram



THEFT WARNING SYSTEM Wiring Diagram (Cont'd)



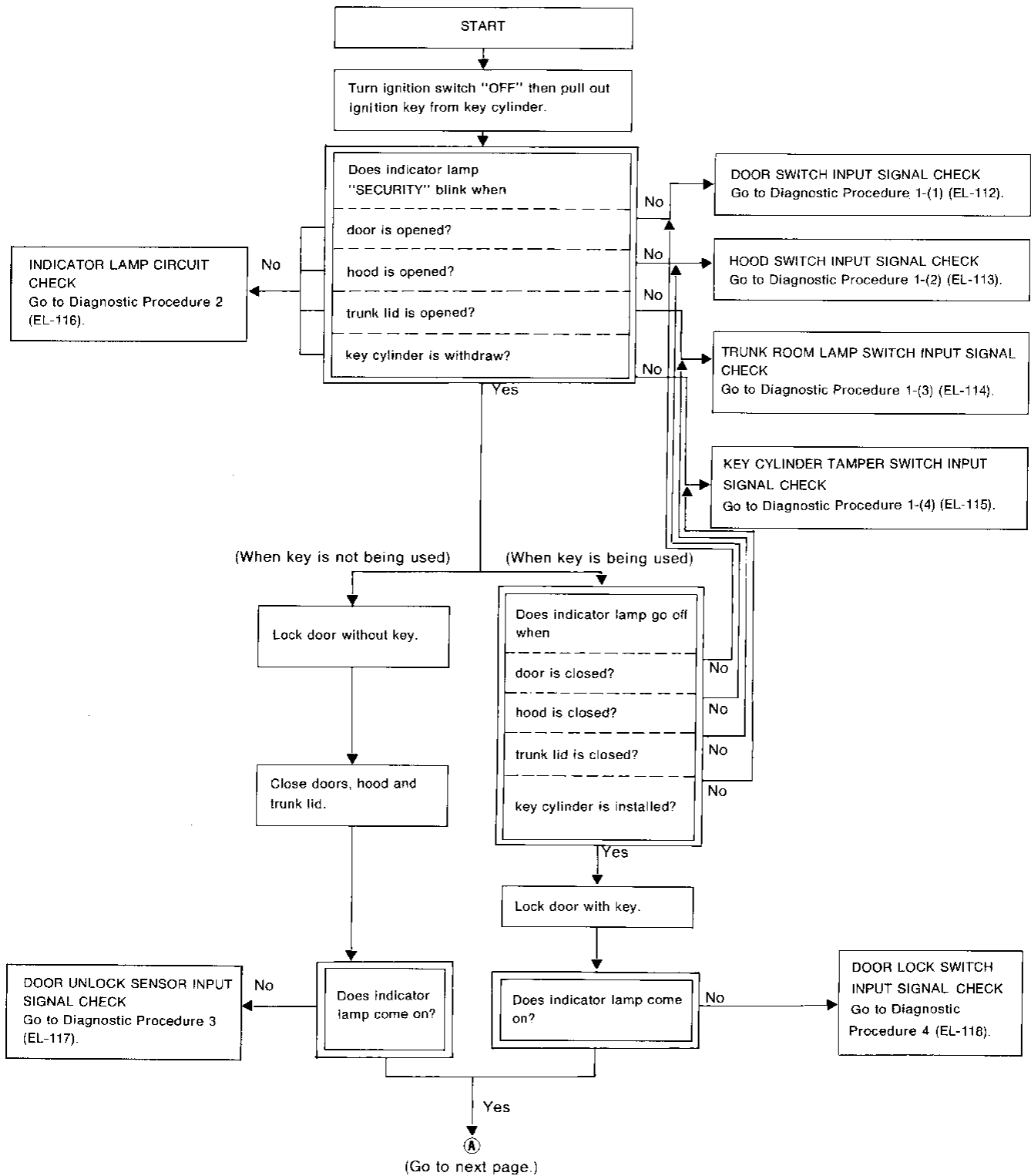
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THEFT WARNING SYSTEM

Trouble Diagnoses

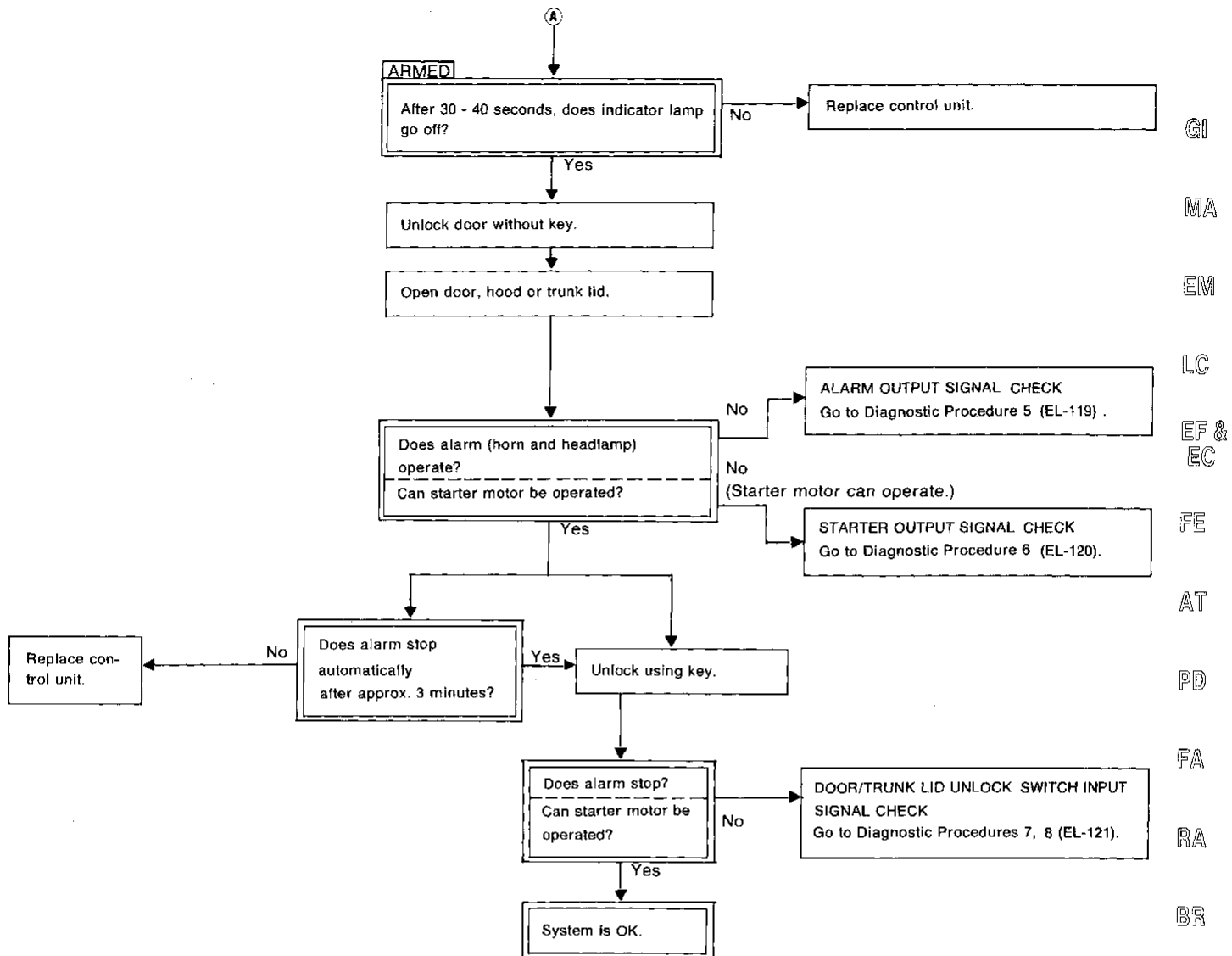
SYSTEM OPERATION CHECK

If ignition switch is set in the "ACC" position in the step of START to ARMED or in the ARMED state shown in this flow chart, the system operation is canceled.



THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

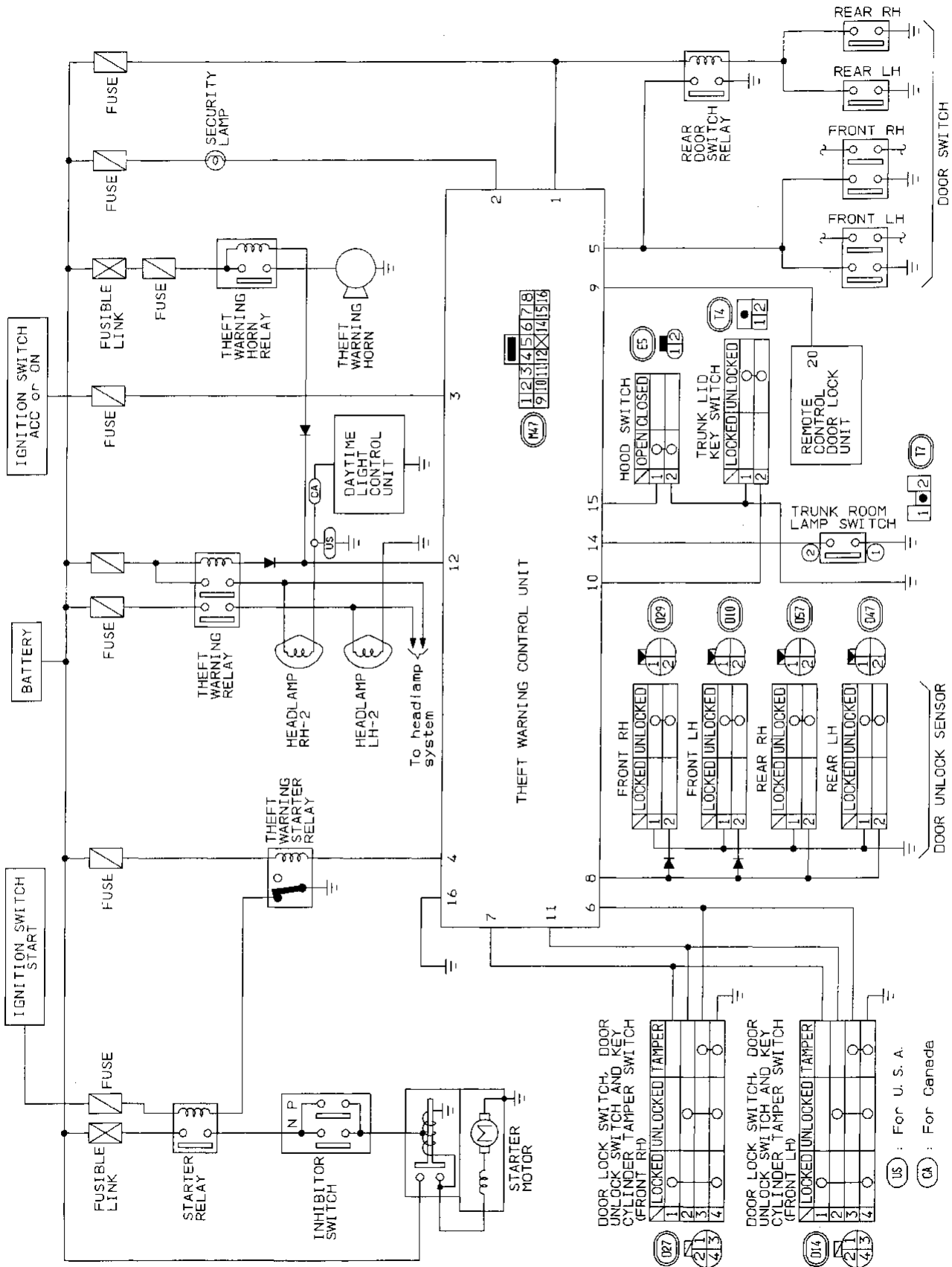


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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK



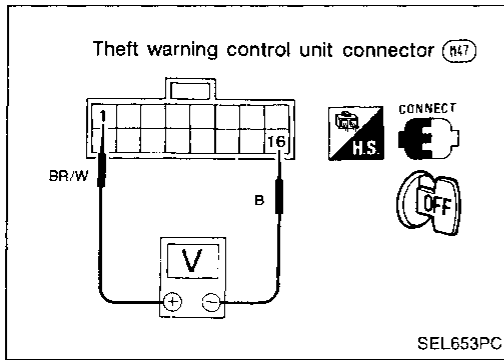
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

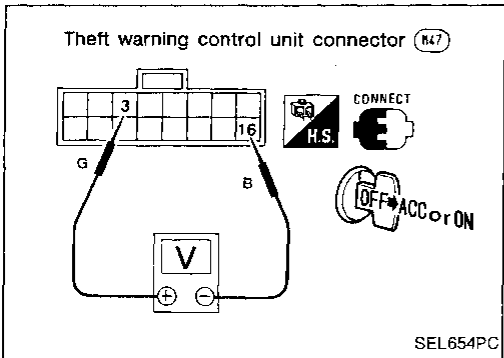
Main power supply circuit check

Terminals	Ignition switch position		
	OFF	ACC	ON
① - ⑩	Battery voltage	Battery voltage	Battery voltage



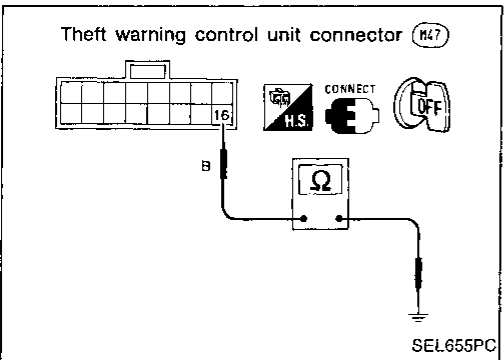
Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
③ - ⑩	0V	Battery voltage	Battery voltage



Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes



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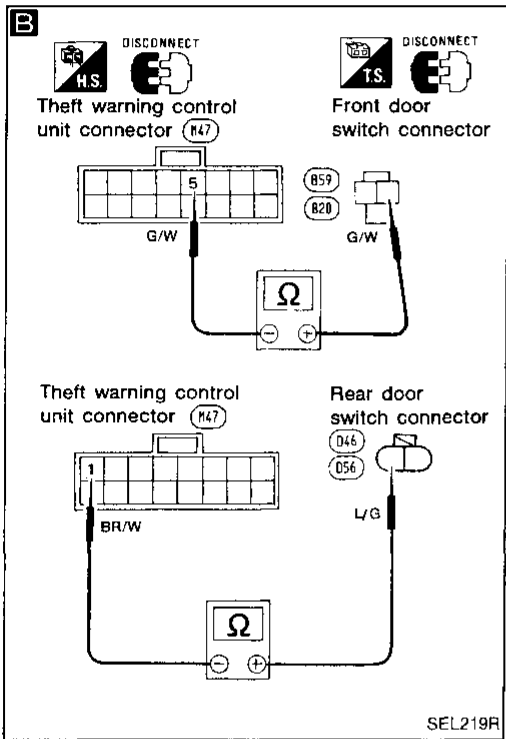
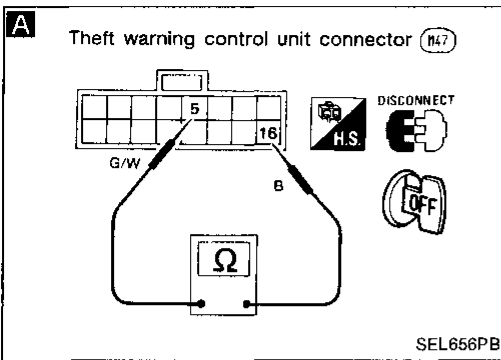
THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

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

Diagnostic procedure 1-(1)



A

DOOR SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑤ and ⑩.

OK → Go to Diagnostic Procedure 2 (EL-116).

Condition	Continuity
All doors are closed	No
At least one door is open	Yes

NG

DOOR SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-123).

NG → Replace door switch.

OK

B

DOOR SWITCH CIRCUIT CHECK
Check harness continuity between control unit harness terminal ⑤ or ① and door switch harness terminal.
Continuity should exist.

NG → Repair harness or connectors.

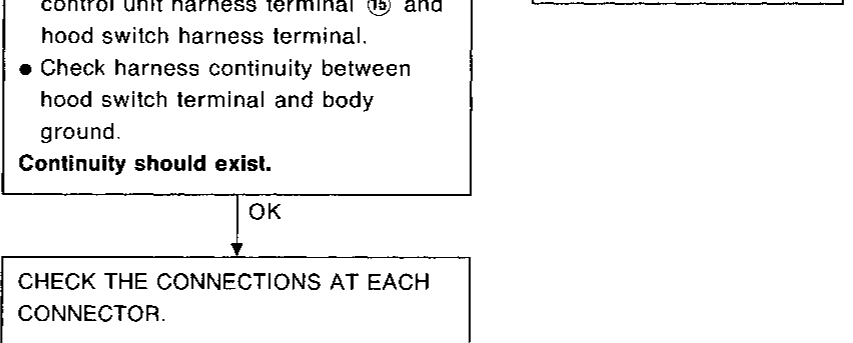
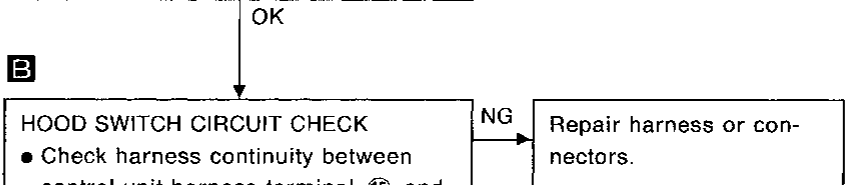
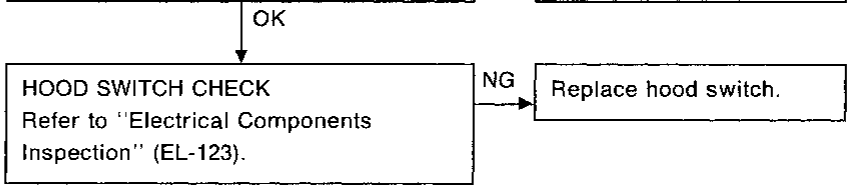
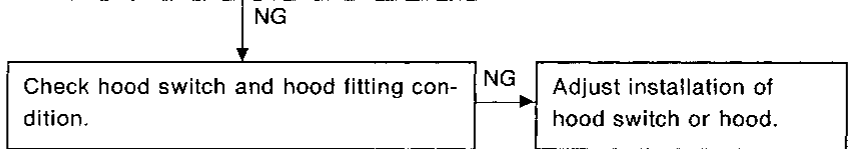
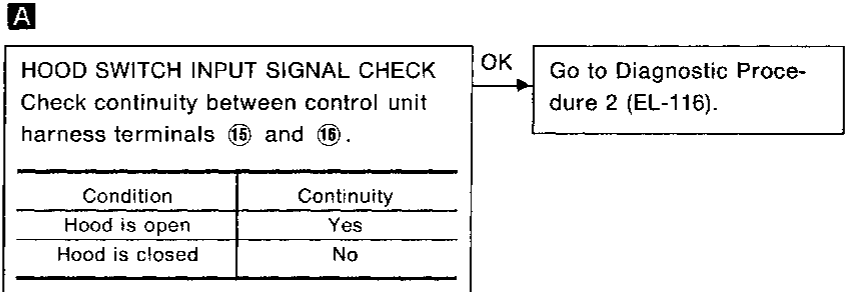
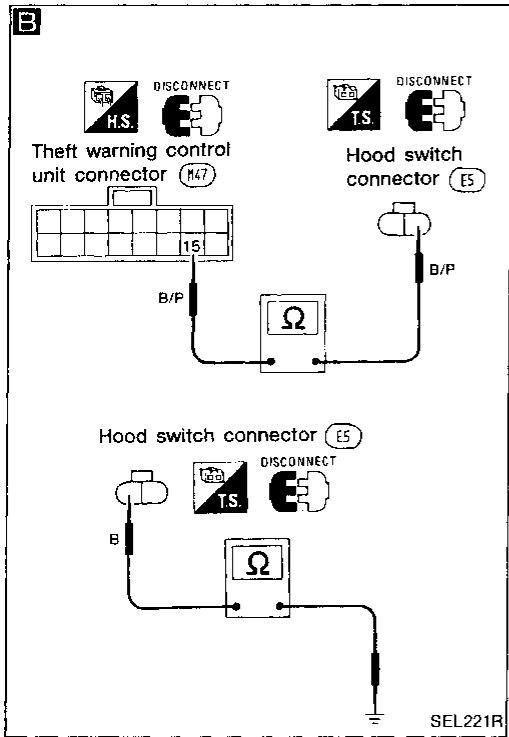
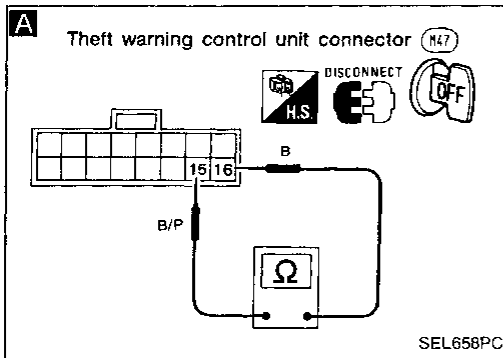
OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)



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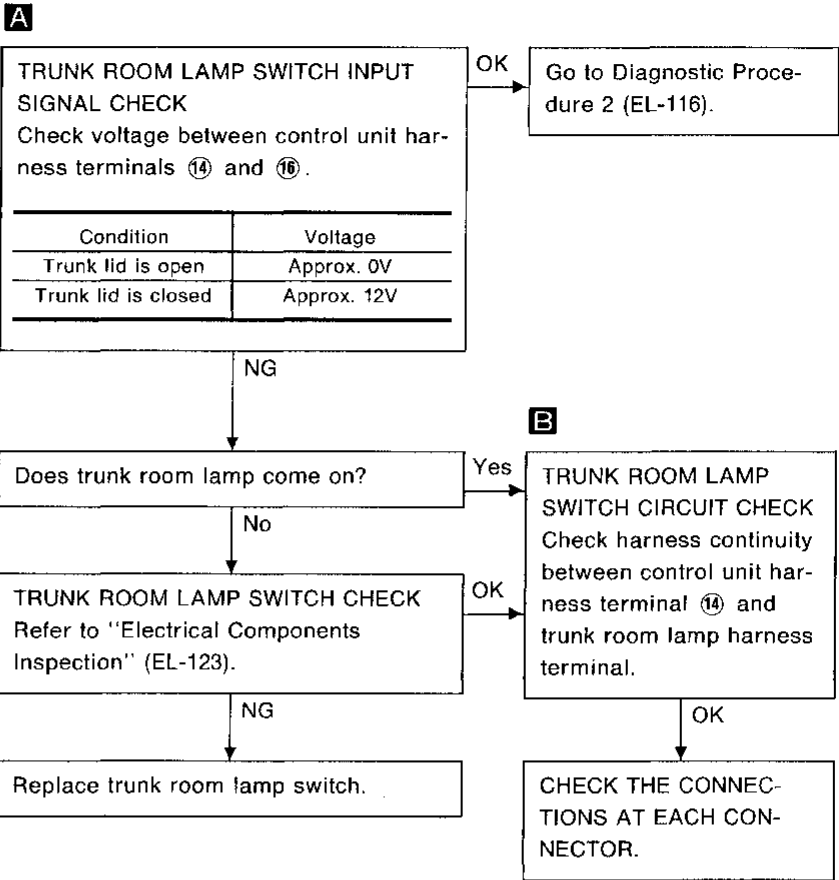
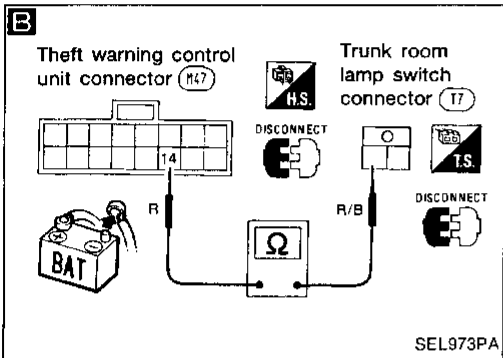
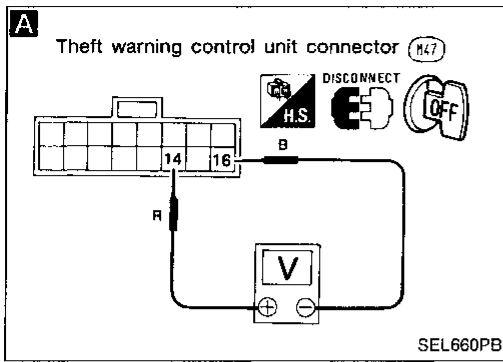
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

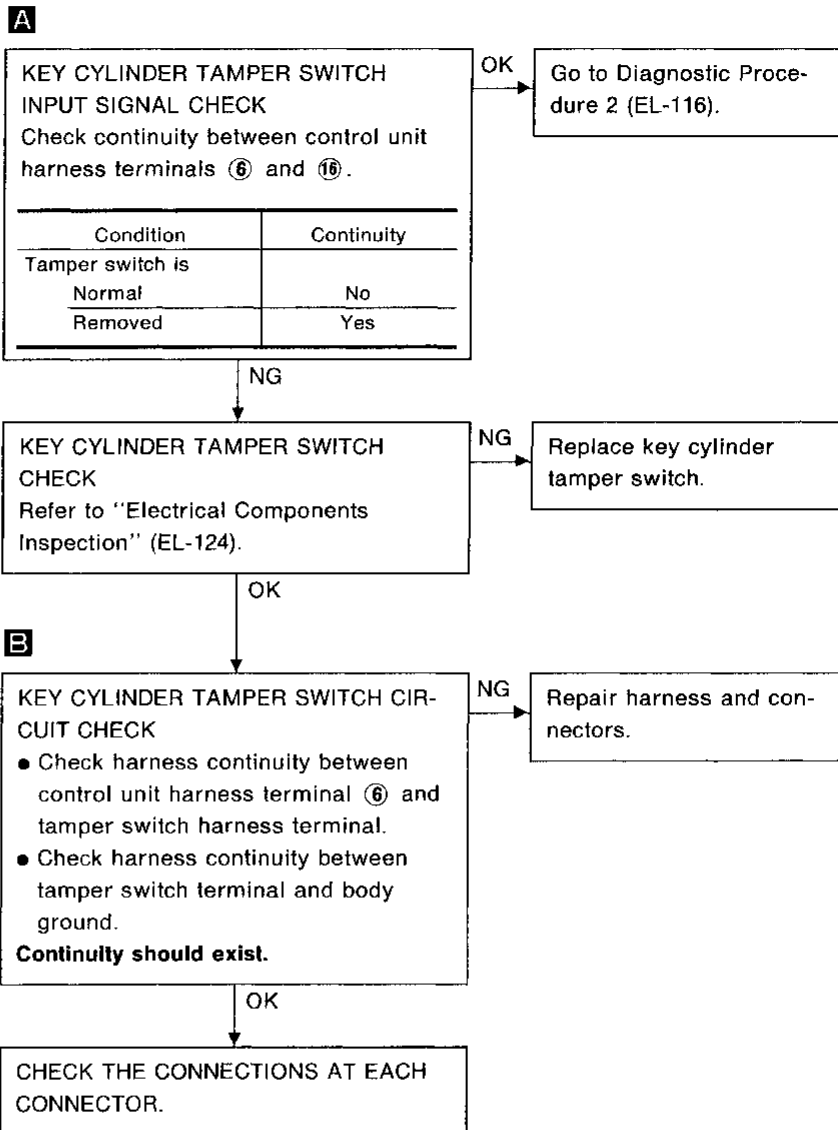
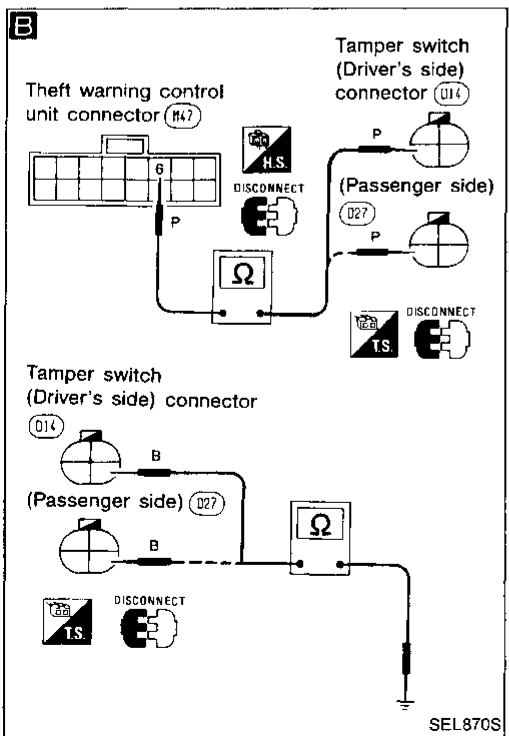
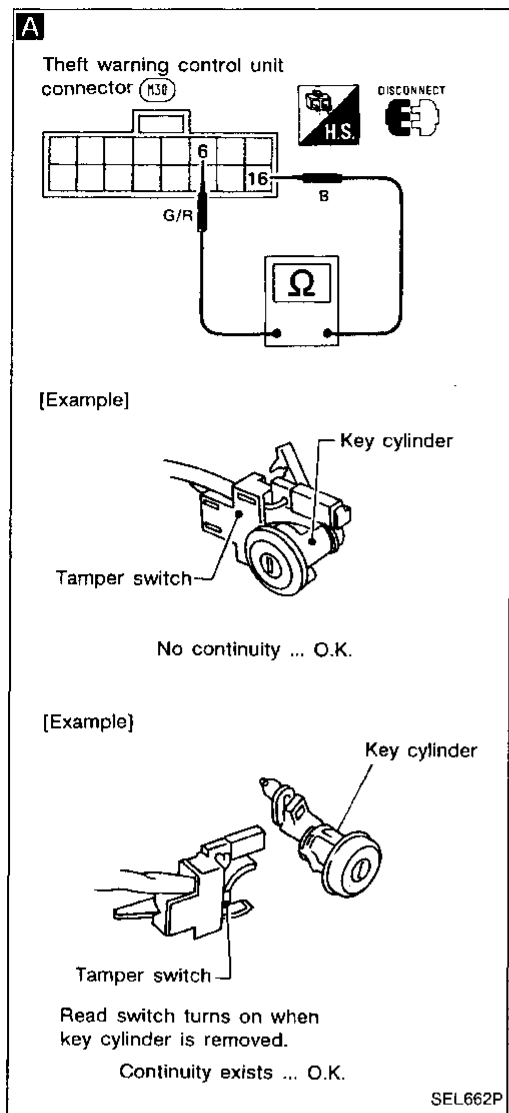
Diagnostic procedure 1-(3)



THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(4)



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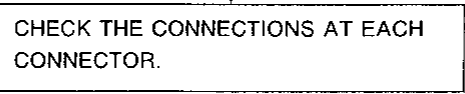
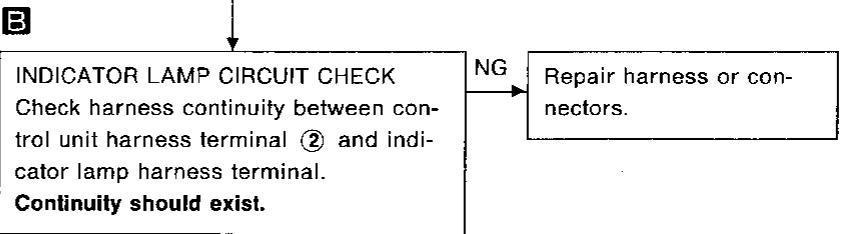
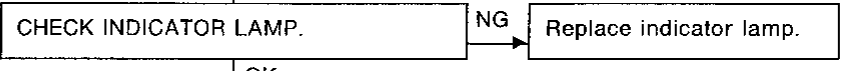
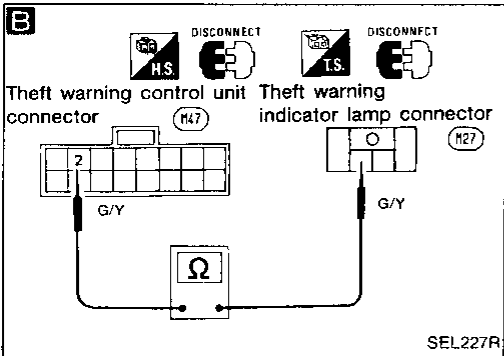
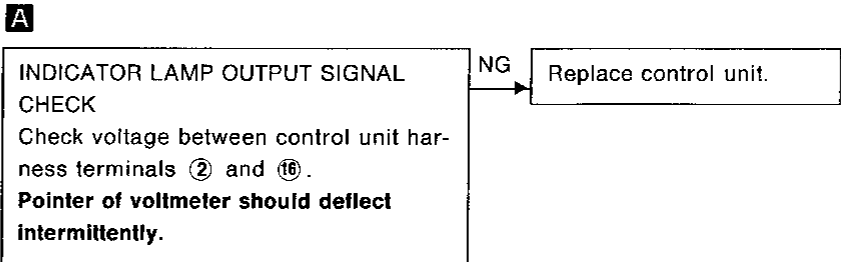
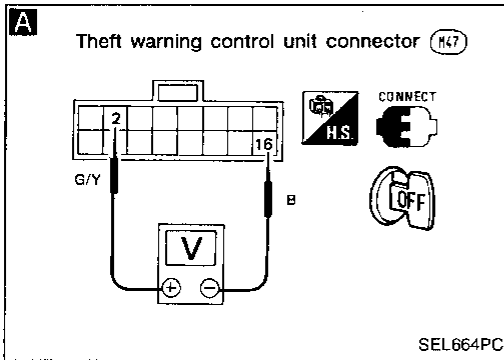
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Indicator lamp does not blink.

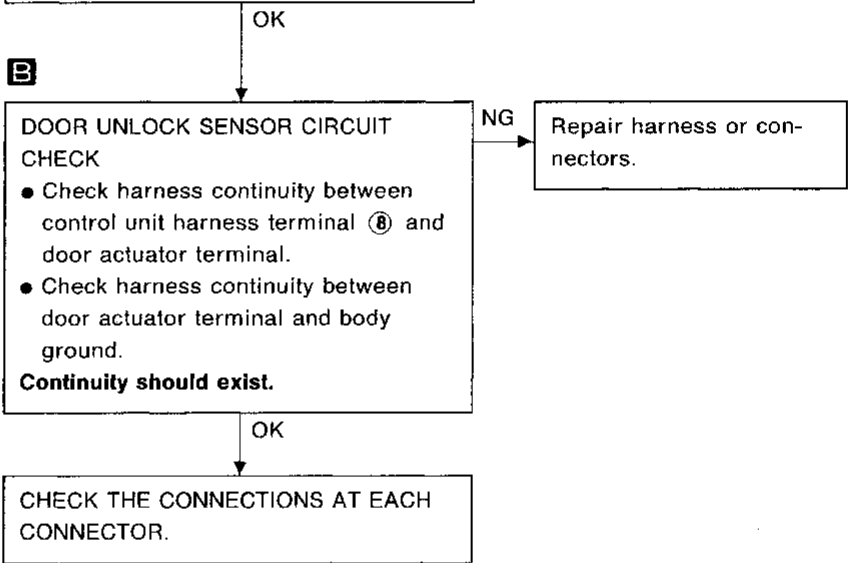
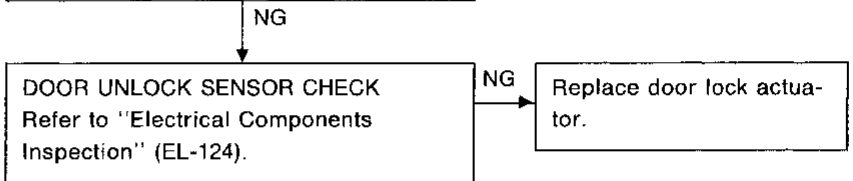
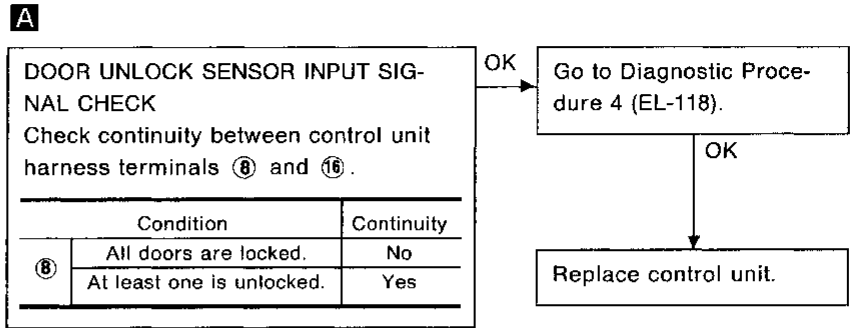
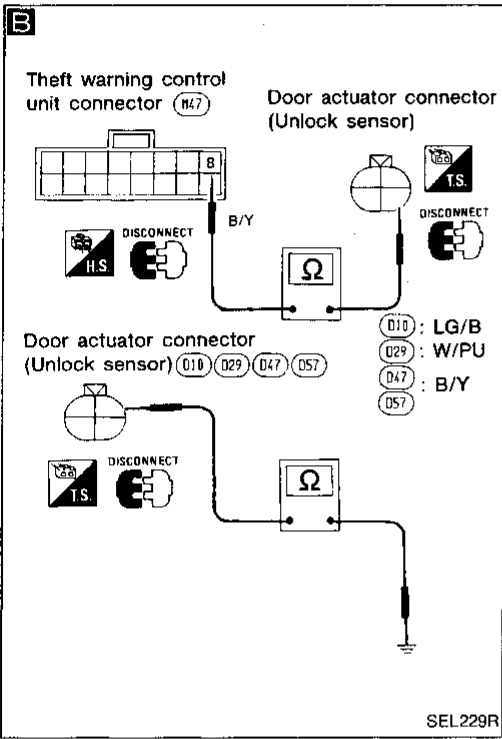
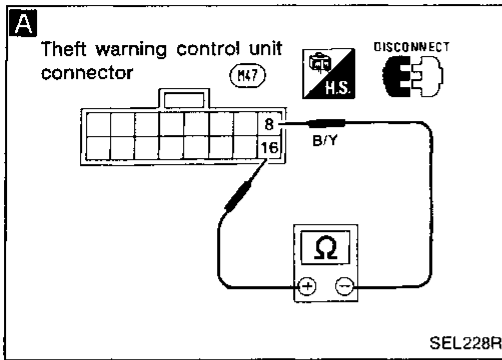


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.



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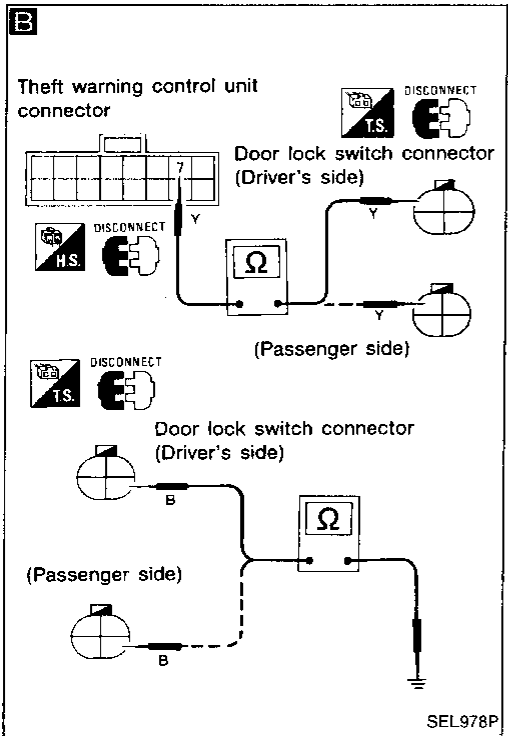
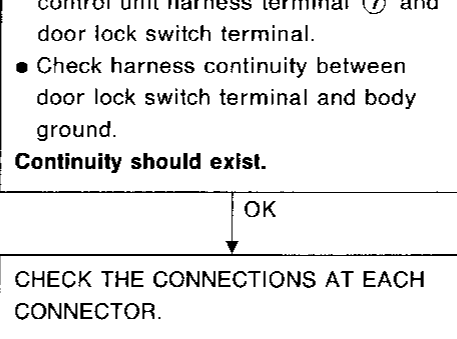
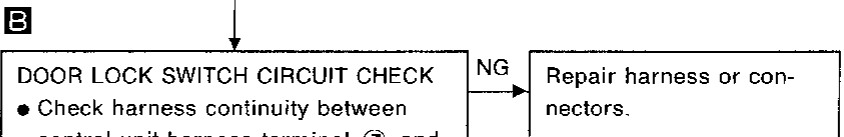
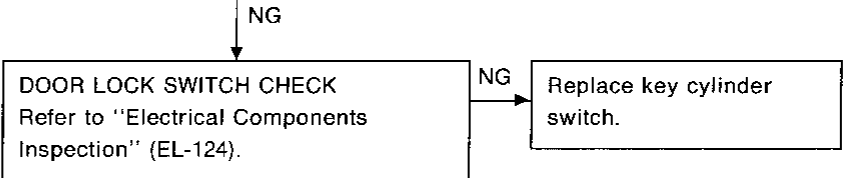
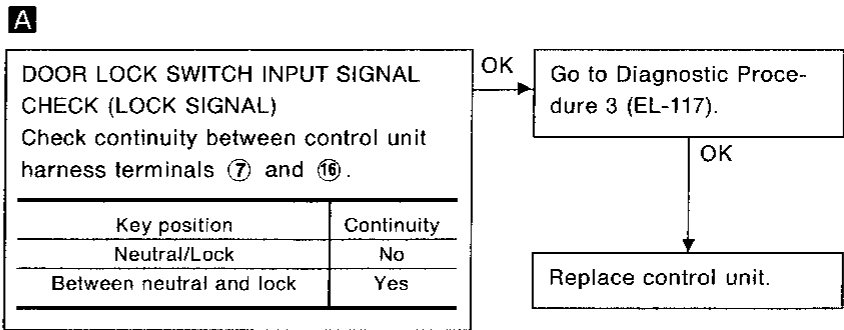
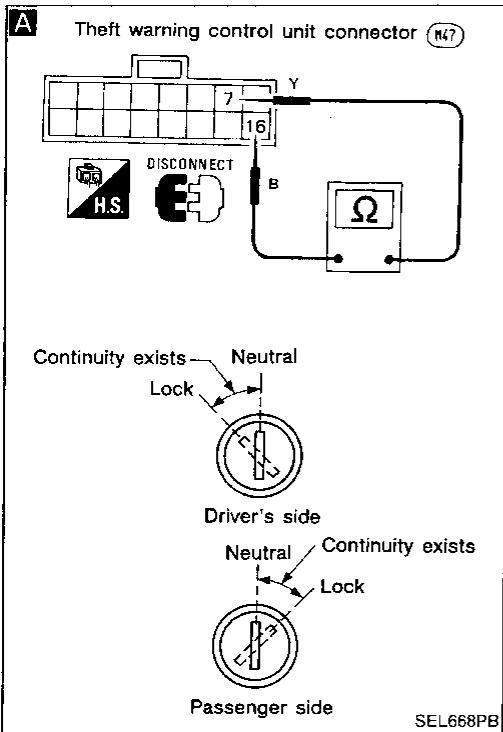
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.

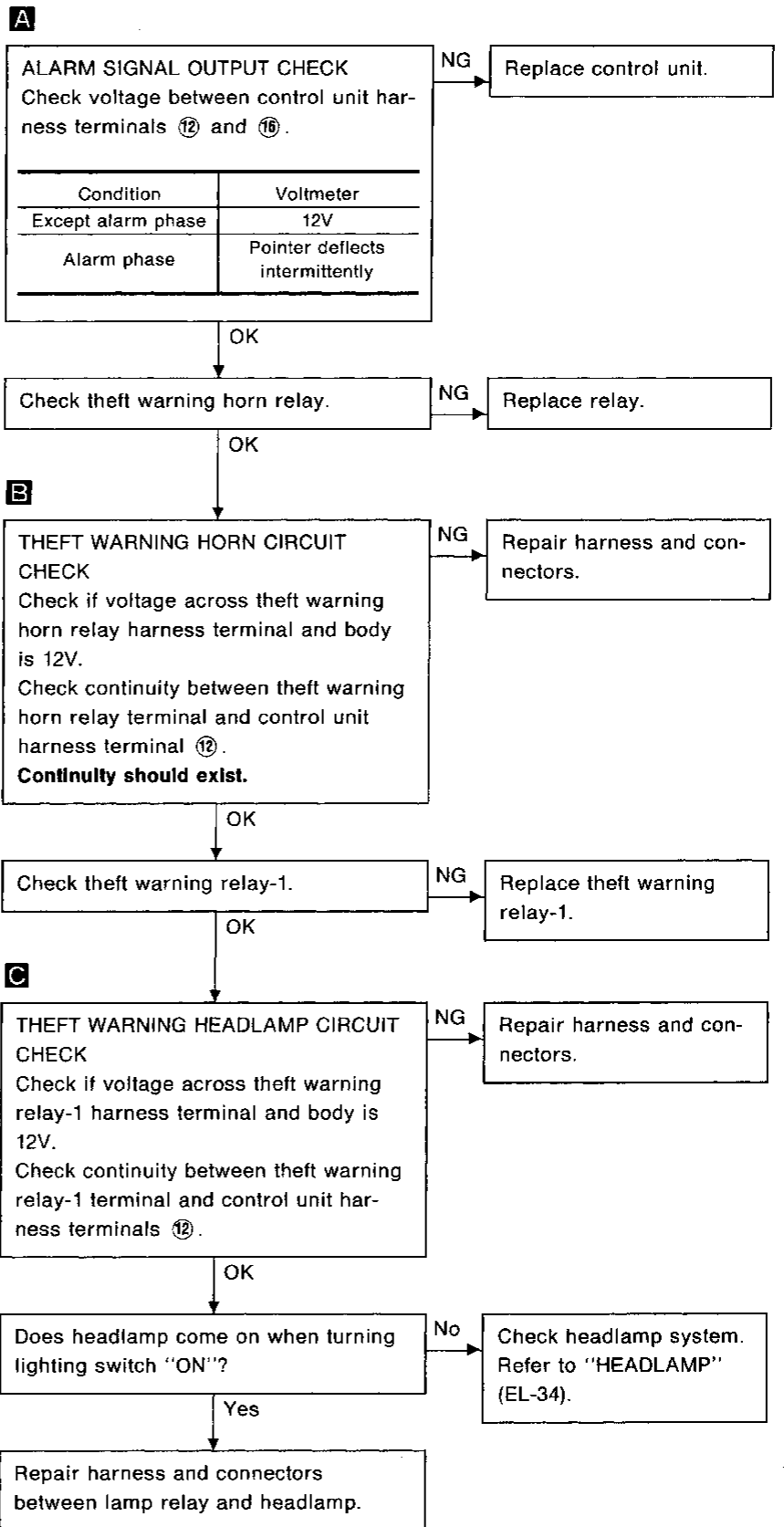
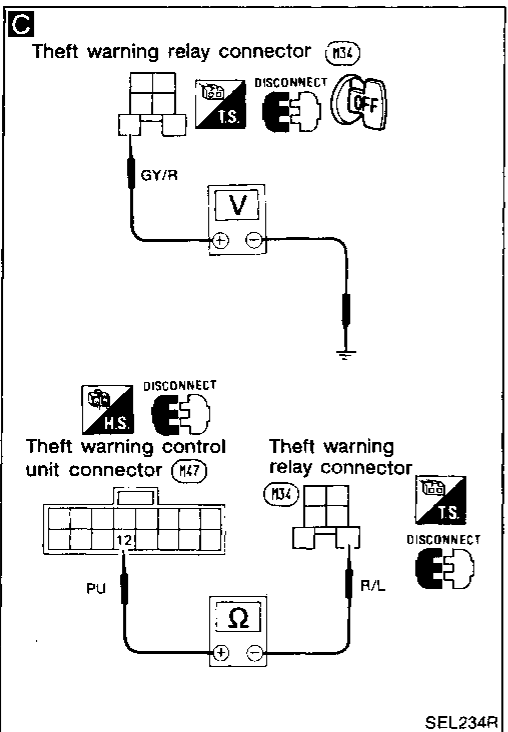
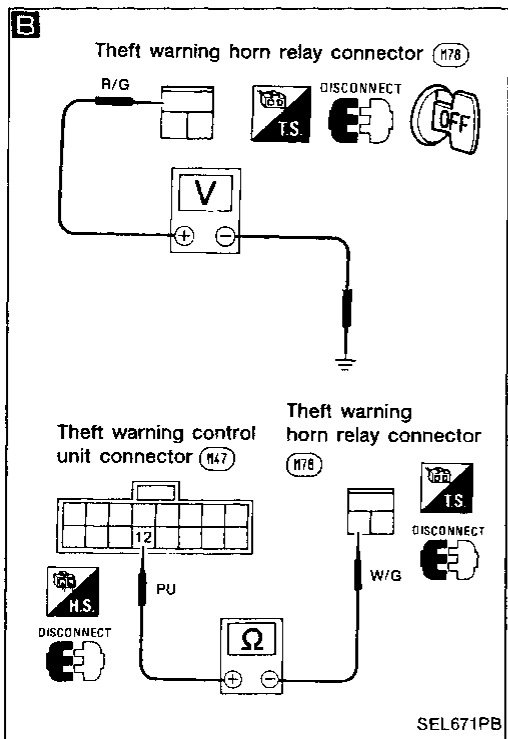
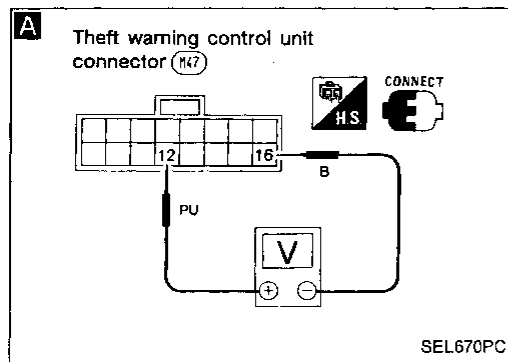


THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.



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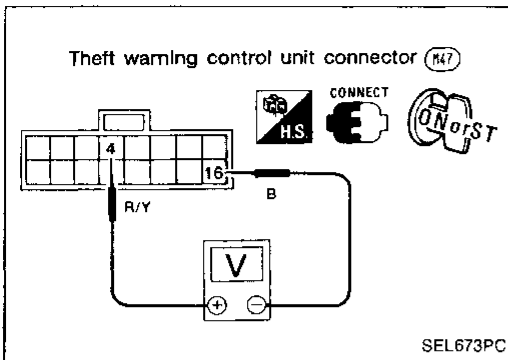
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THEFT WARNING SYSTEM

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

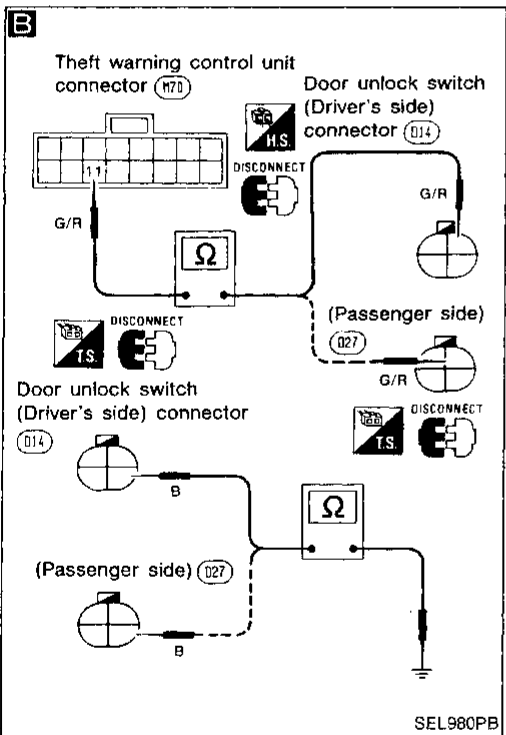
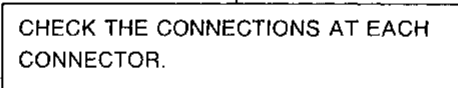
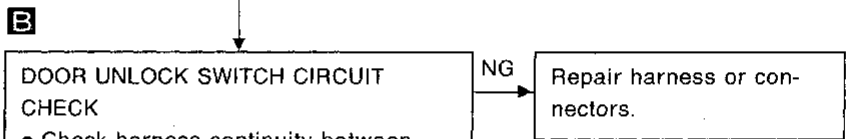
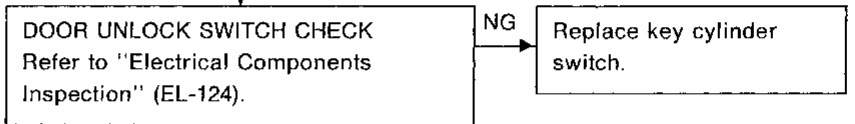
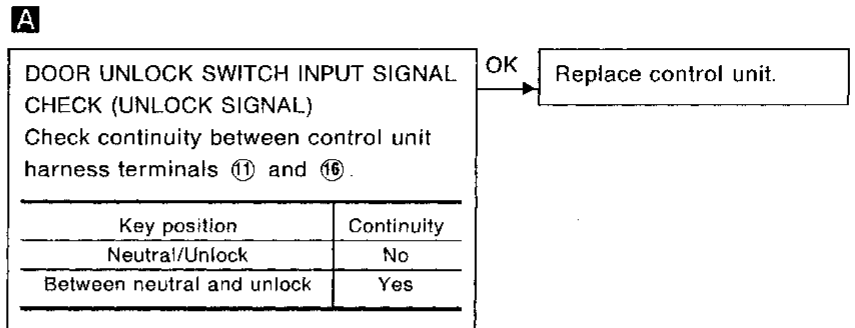
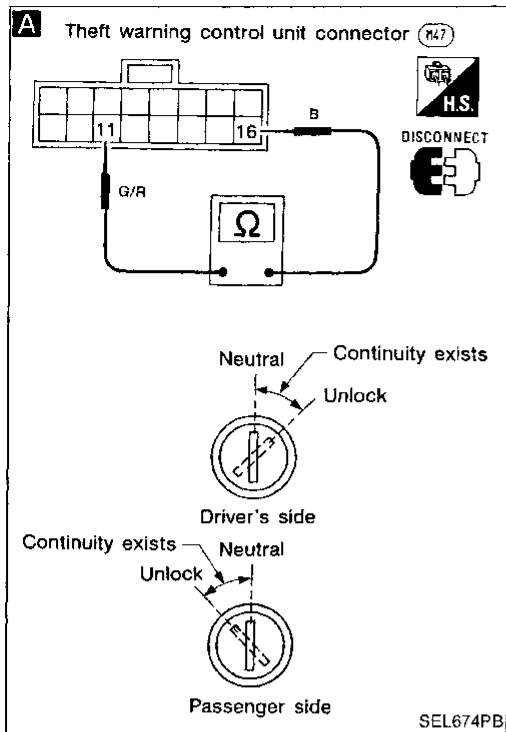
Repair harness between control unit and theft warning relay-2.

THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

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



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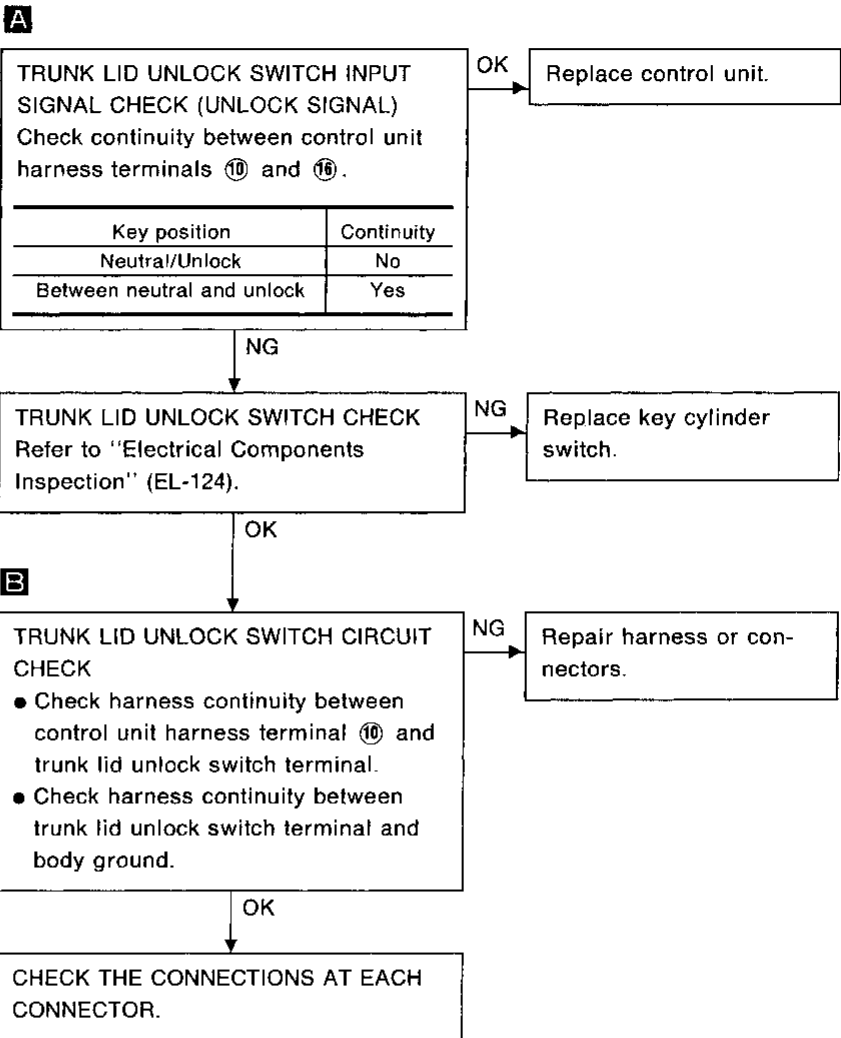
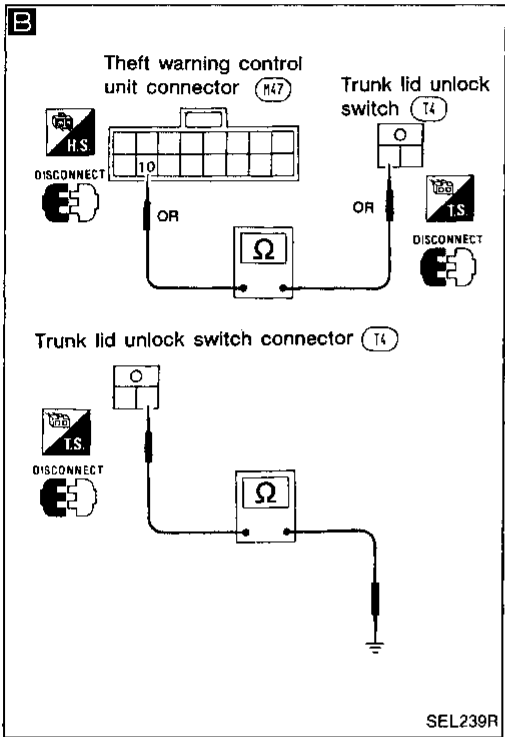
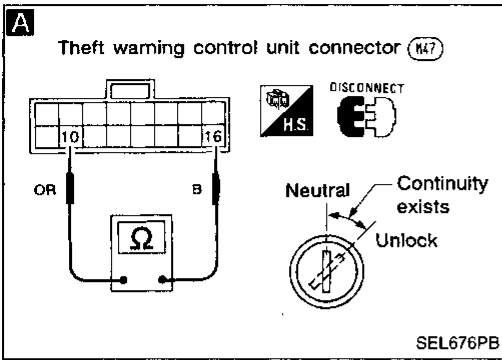
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

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



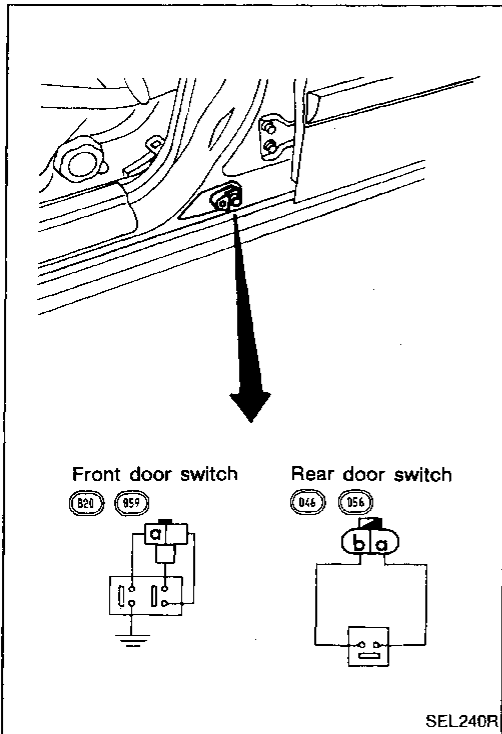
THEFT WARNING SYSTEM

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)		○

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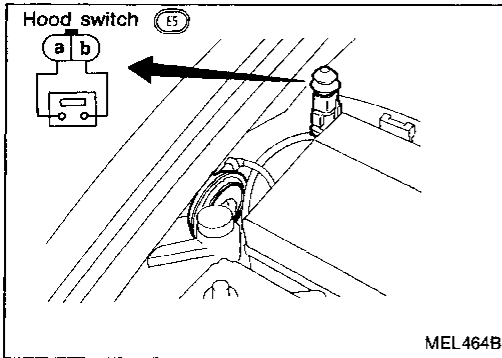
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Hood switch

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

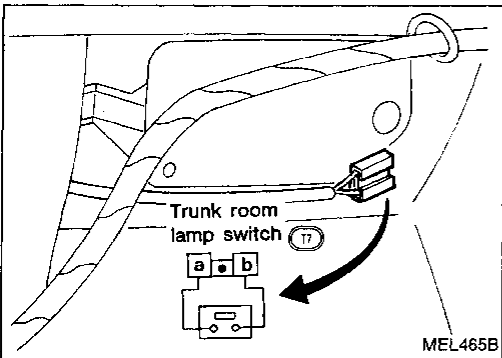
Terminal	Pushed	Released
a		○
b		○

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Trunk room lamp switch

Terminal	Trunk lid Closed	Open
a		○
b		○

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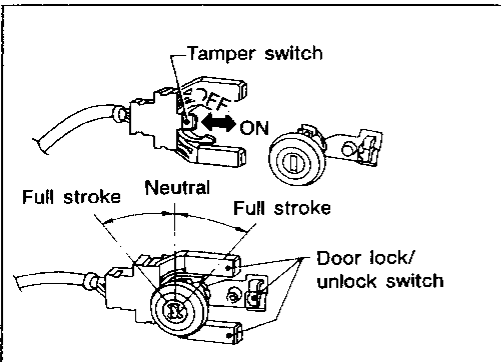
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THEFT WARNING SYSTEM

Trouble Diagnoses (Cont'd)

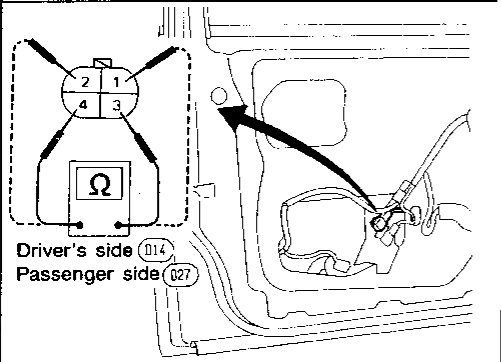
Key cylinder tamper switch, door lock switch and door unlock switch

● Door

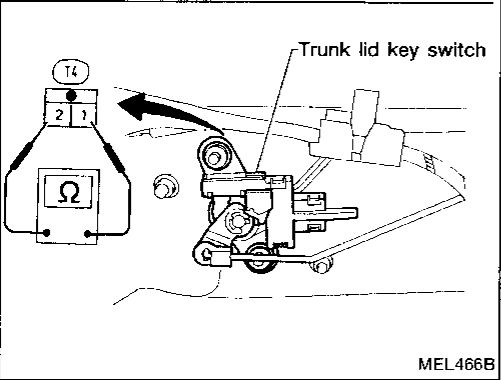


	TAMPER SWITCH		DOOR LOCK SWITCH		DOOR UNLOCK SWITCH		
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral	Between full stroke and neutral	Full stroke
1				○			
2				○			
3		○				○	
4		○		○		○	

● Trunk lid

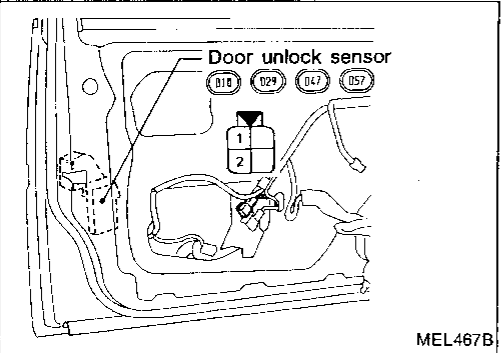


	TAMPER SWITCH		Trunk lid unlock switch		
	Key cylinder is installed	Key cylinder is removed	Full stroke	Between full stroke and neutral	Neutral
1				○	
2		○		○	
3		○		○	



MEL466B

Door unlock sensor

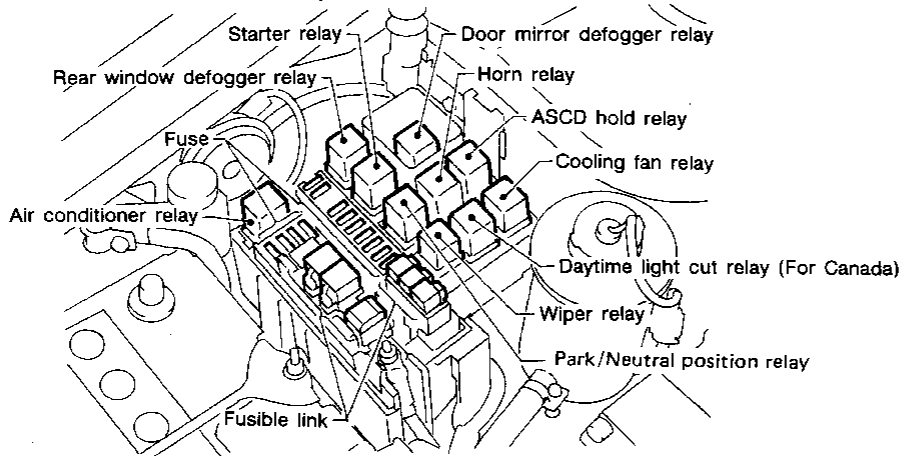
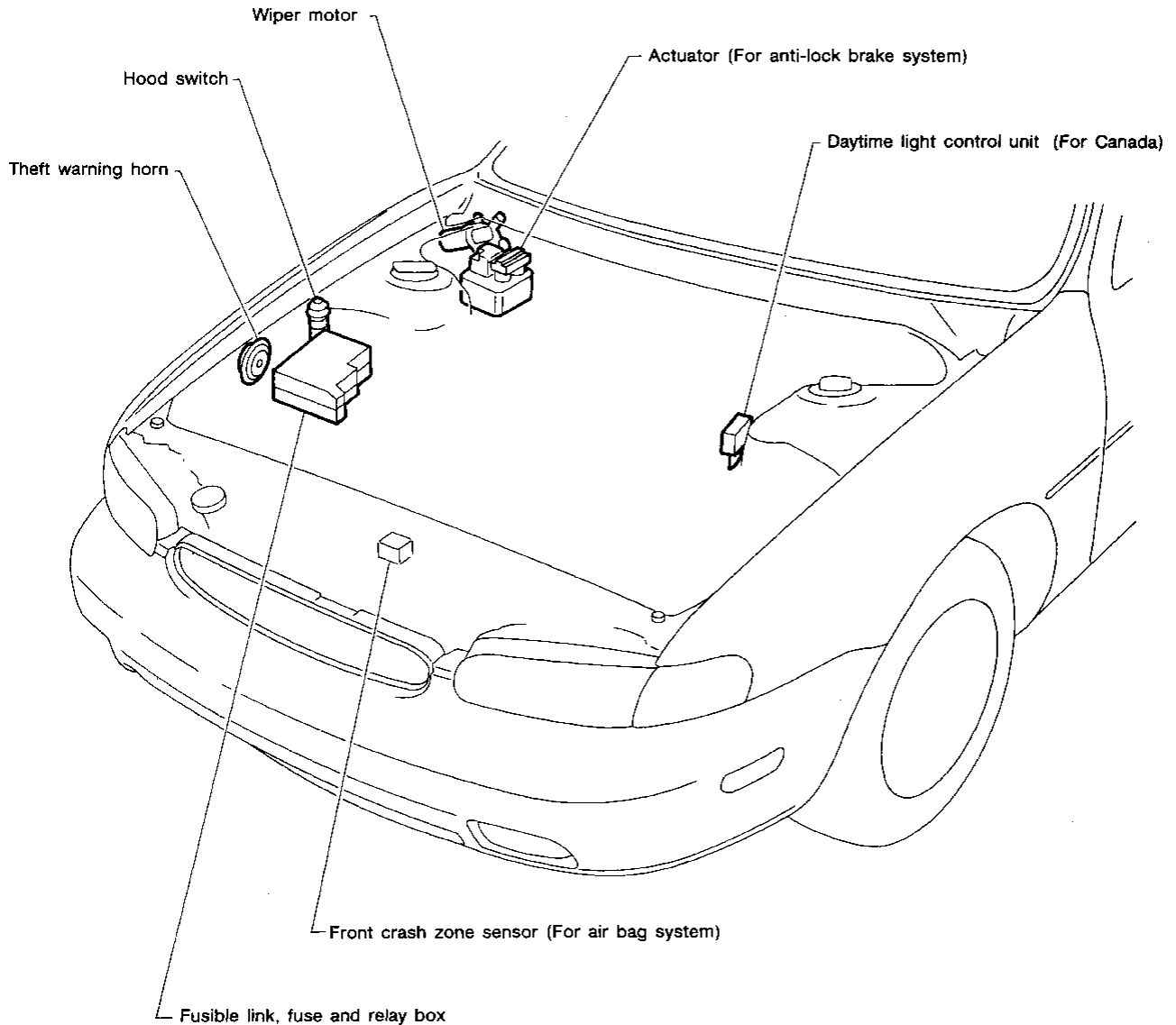


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	LOCK	UNLOCK
1		○
2		○

LOCATION OF ELECTRICAL UNITS

Engine Compartment



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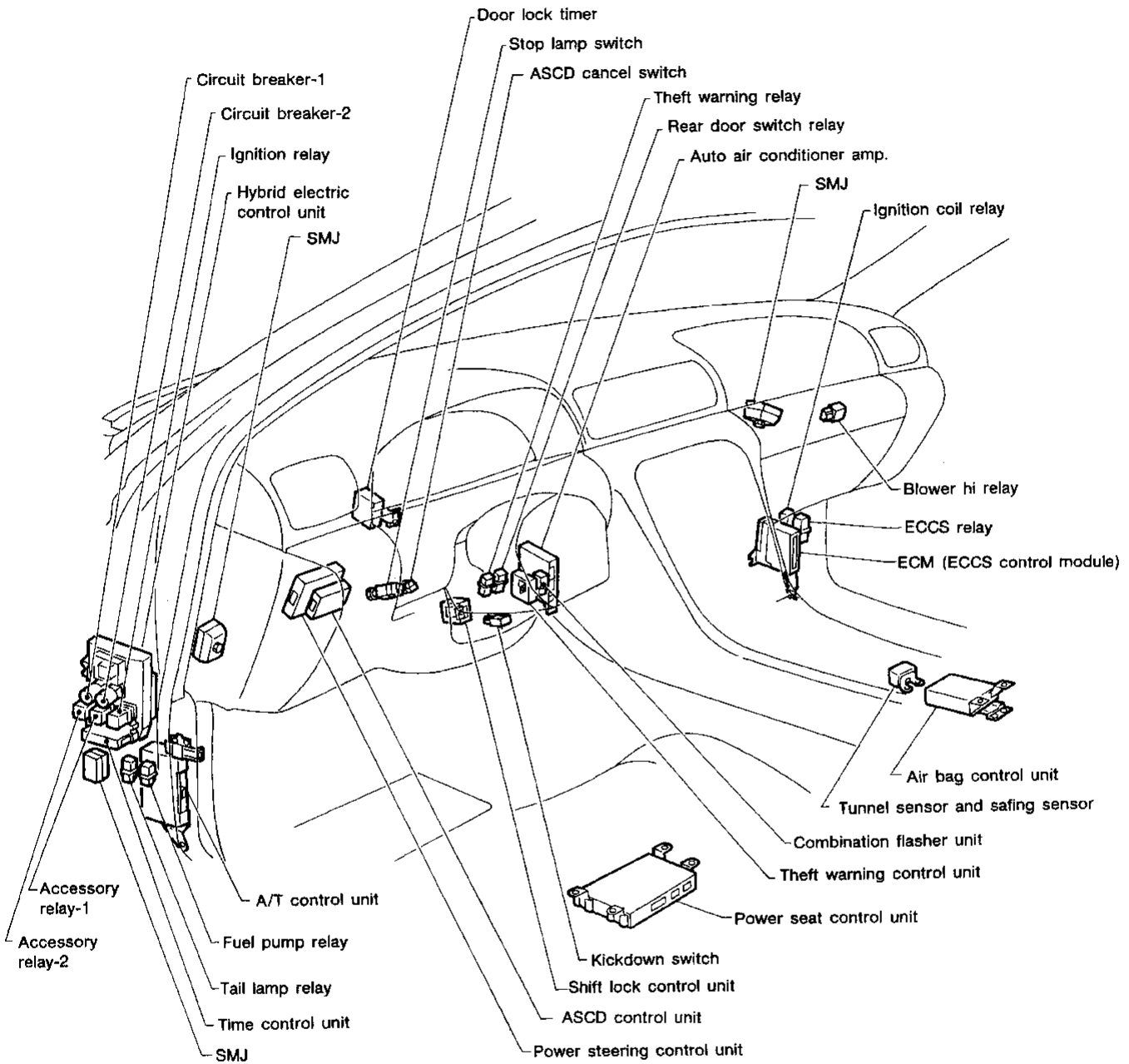
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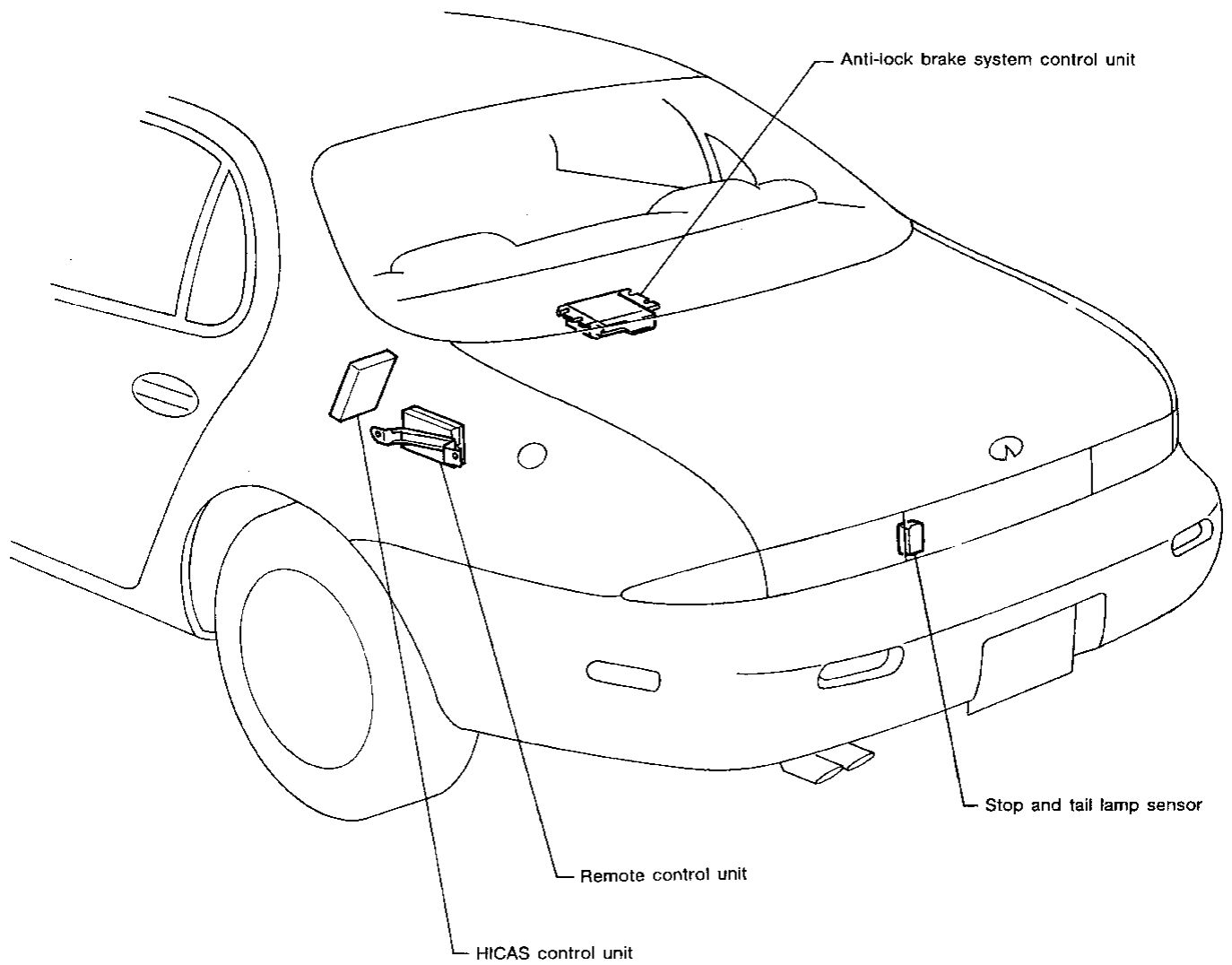
LOCATION OF ELECTRICAL UNITS

Passenger Compartment



LOCATION OF ELECTRICAL UNITS

Luggage Compartment



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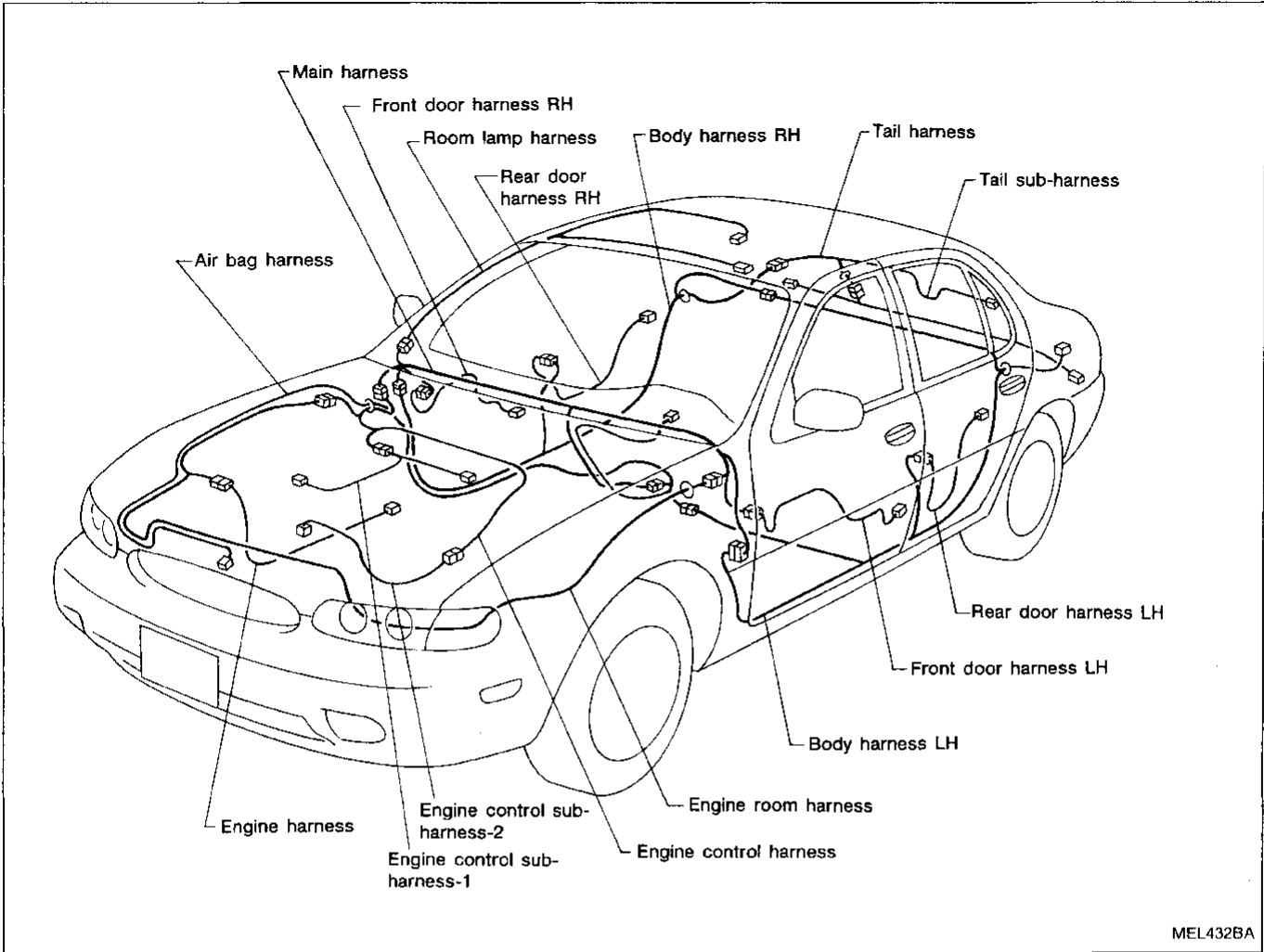
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HARNESS LAYOUT

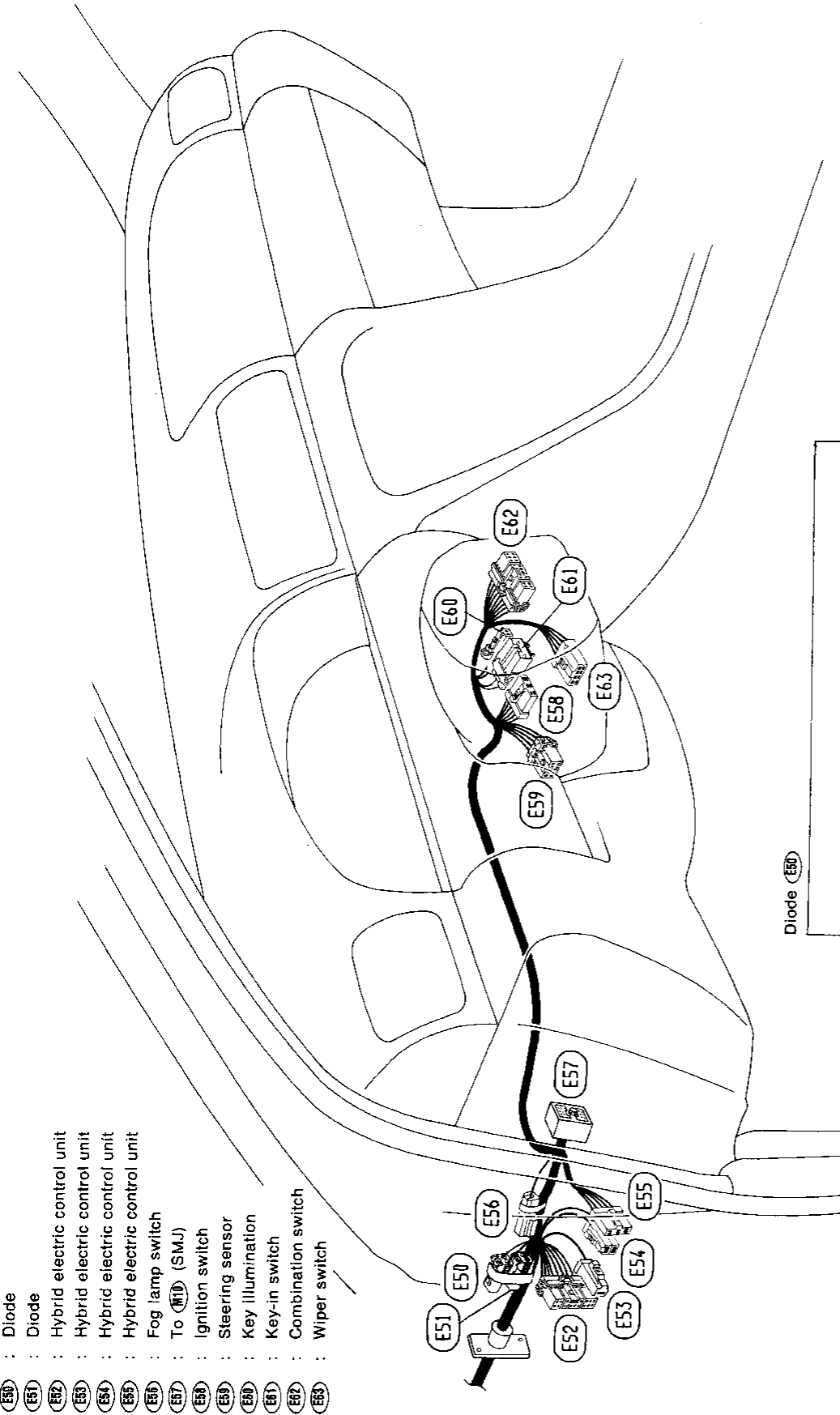
Outline



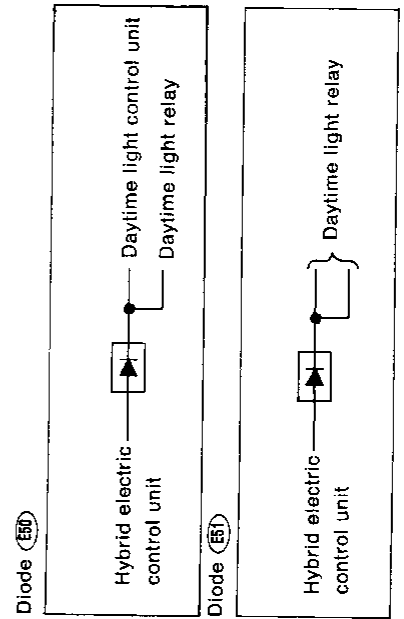
HARNESS LAYOUT

Engine Room Harness

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 (M1) (SMJ)
- (E58) : Ignition switch
- (E59) : Steering sensor
- (E60) : Key illumination
- (E61) : Key-in switch
- (E62) : Combination switch
- (E63) : Wiper switch

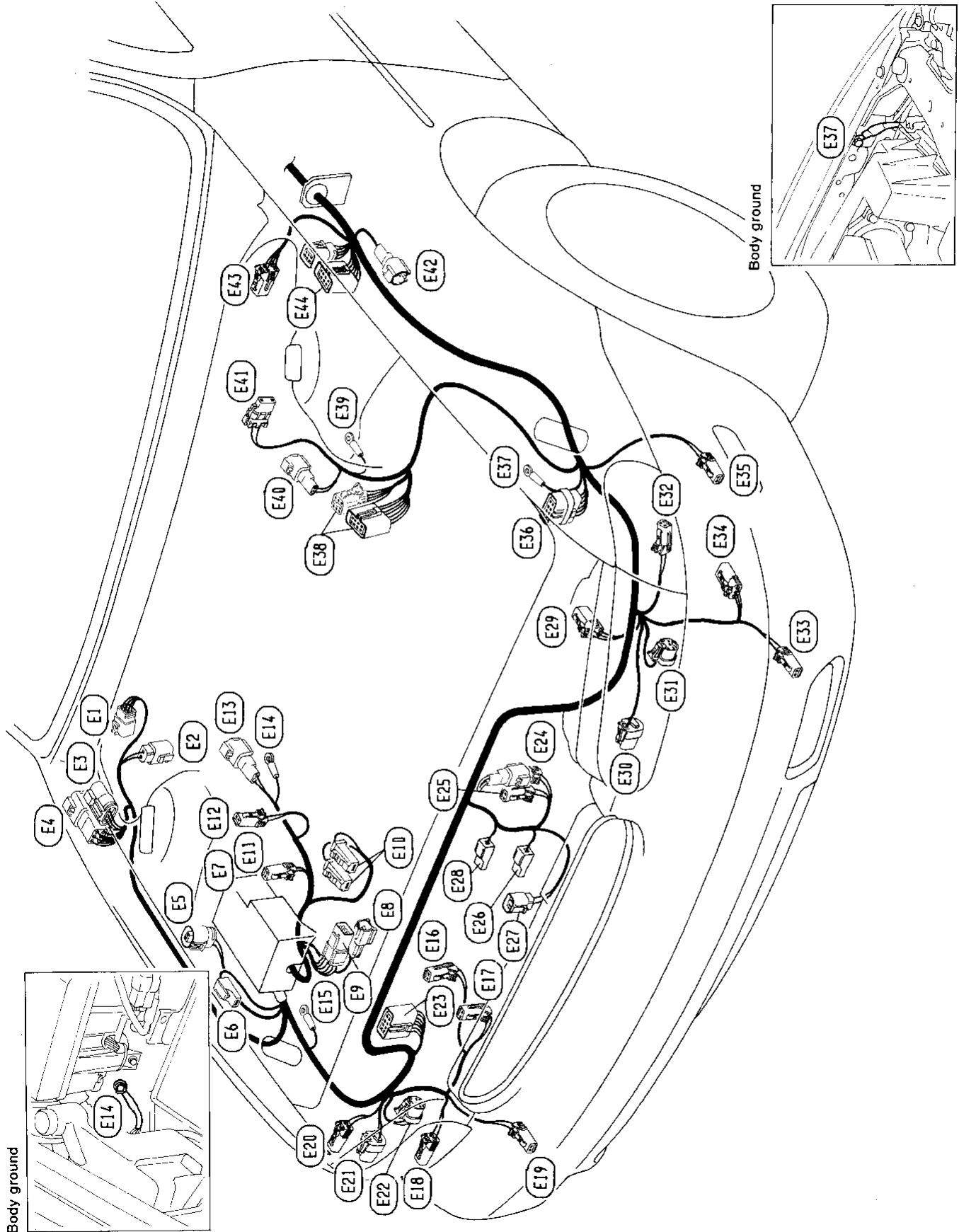


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HARNESS LAYOUT

Engine Room Harness (Cont'd)

ENGINE COMPARTMENT



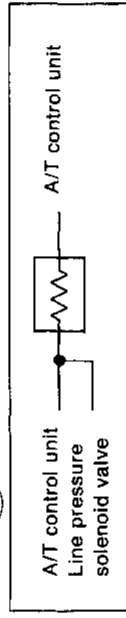
HARNESS LAYOUT

Engine Room Harness (Cont'd)

- (E1) : Wiper motor
- (E2) : Actuator (For anti-lock brake system)
- (E3) : To (E3)
- (E4) : To (E4)
- (E5) : Hood switch
- (E6) : Theft warning horn
- (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 (Low)
- (E27) : Radiator fan motor
- (E28) : Horn (High)
- (E29) : Triple-pressure switch
- (E30) : Headlamp LH-2

- (E31) : Headlamp LH-1
- (E32) : Clearance lamp LH
- (E33) : Front turn signal lamp LH
- (E34) : HICAS solenoid
- (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

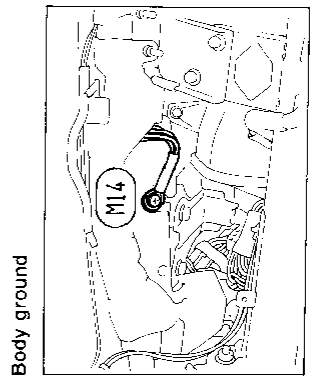
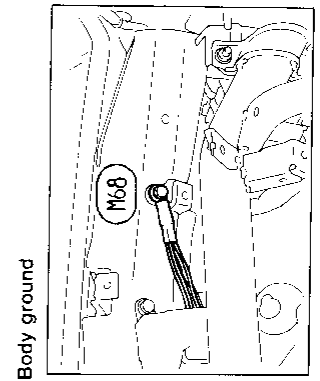
Resistor (E11)



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HARNESS LAYOUT

Main Harness



HARNESS LAYOUT

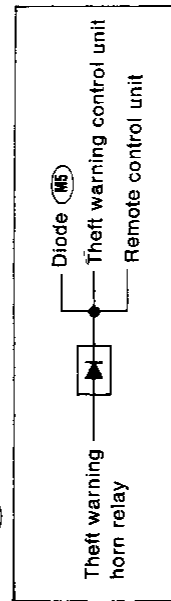
Main Harness (Cont'd)

- (M1) : Hybrid electric control unit
- (M2) : To (B3) (SMU)
- (M3) : Diode
- (M4) : Diode
- (M5) : Diode
- (M6) : To (D4)
- (M7) : To (D3)
- (M8) : To (D1)
- (M9) : To (D2)
- (M10) : To (E57) (SMU)
- (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
- (M20) : Check connector (For SUPER HICAS system)
- (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

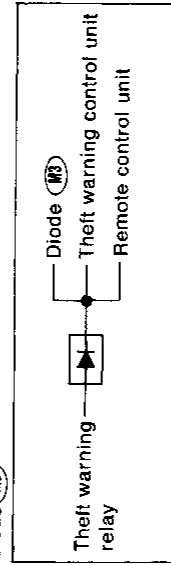
- (M29) : Combination meter
- (M30) : Shift lock control unit
- (M31) : Keyless entry relay-2
- (M32) : Stop lamp switch
- (M33) : ASCD cancel switch
- (M34) : Theft warning relay
- (M35) : Kickdown switch
- (M36) : Rear door switch relay
- (M37) : Footwell lamp LH
- (M38) : Diode
- (M39) : Diode
- (M40) : 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.
- (M62) : Intake door motor
- (M63) : Blower motor
- (M64) : Blower HI relay
- (M65) : Footwell lamp. RH
- (M66) : Fan control amp.
- (M67) : Body ground
- (M68) : Diode
- (M69) : To (R1)
- (M70) : To (B60)
- (M71) : To (B51) (SMU)
- (M72) : To (F24)
- (M73) : To (F23)
- (M74) : Switching relay
- (M75) : A/T indicator relay
- (M76) : Sun roof relay
- (M77) : Theft warning horn relay
- (M78) : To (D20)
- (M79) : To (D21)
- (M80) : Glove box lamp and trunk opener cancel switch
- (M81) : To (D60)
- (M82) : Tweeter RH
- (M83) : Check connector (For anti-lock brake system)

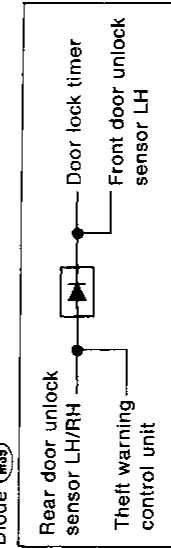
Diode (M3)



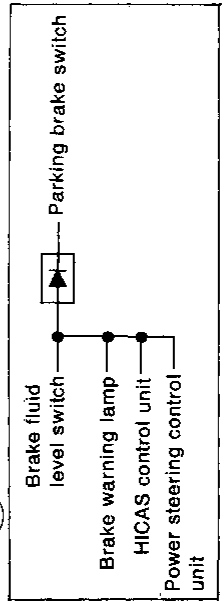
Diode (M6)



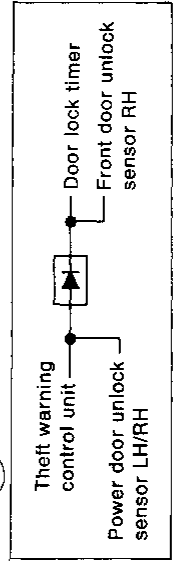
Diode (M33)



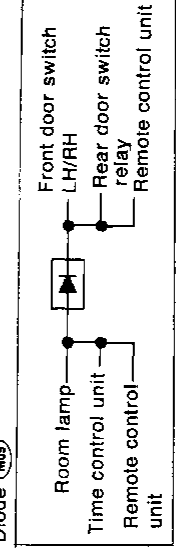
Diode (M4)



Diode (M32)



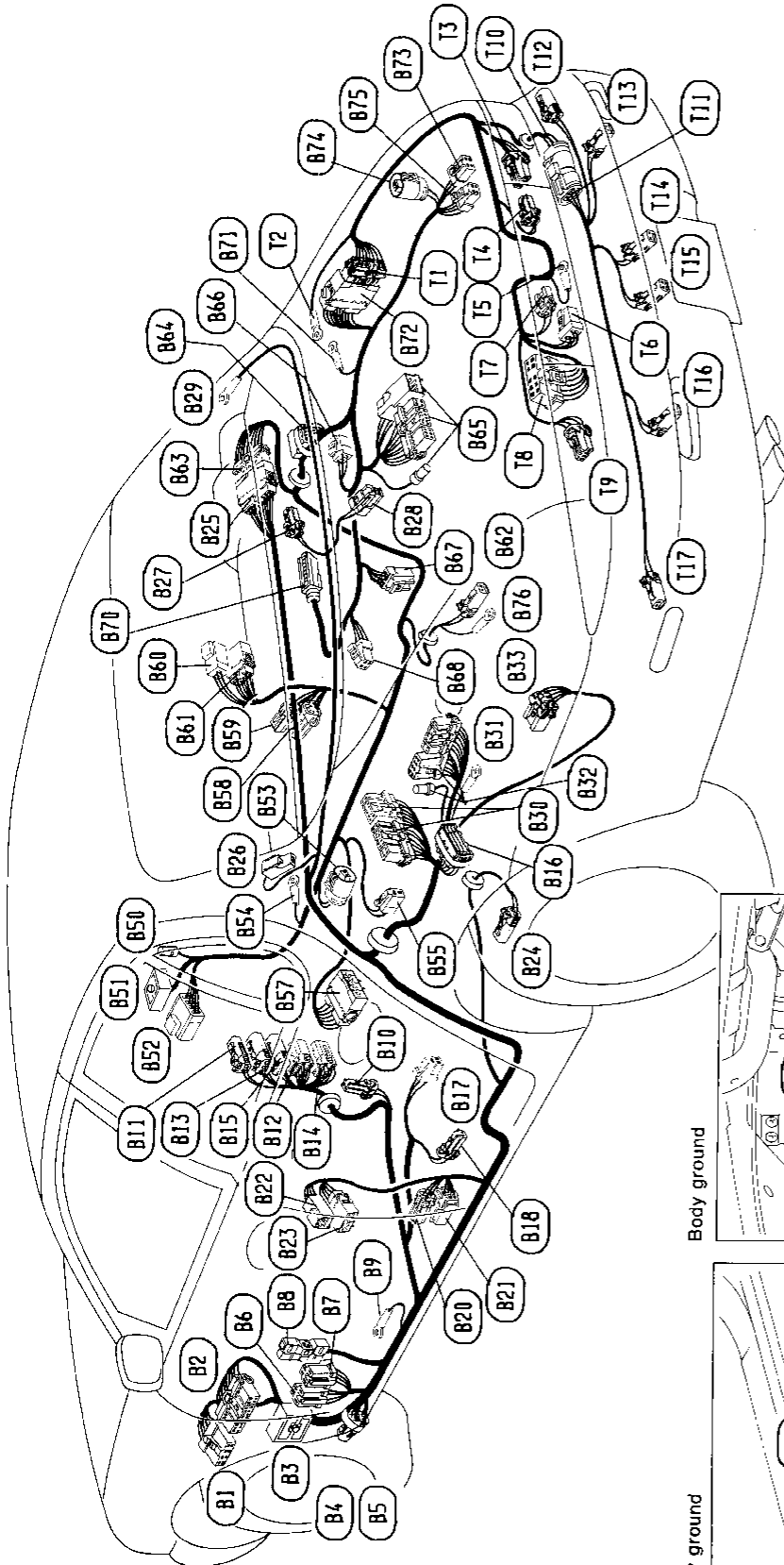
Diode (M65)



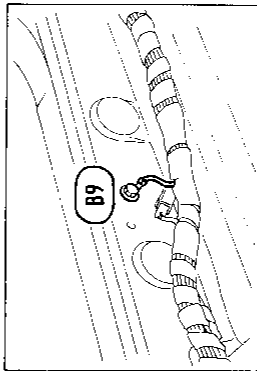
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HARNESS LAYOUT

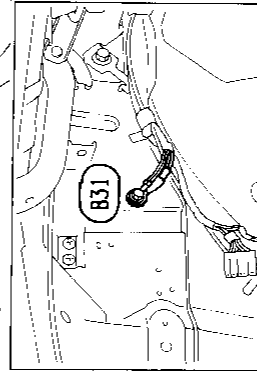
Body Harness and Tail Harness



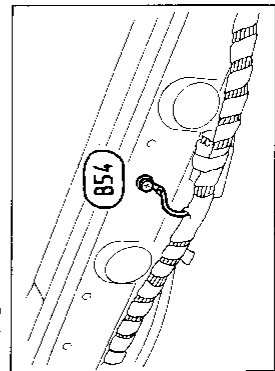
Body ground



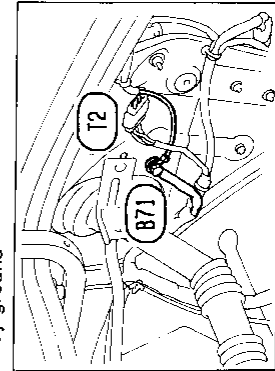
Body ground



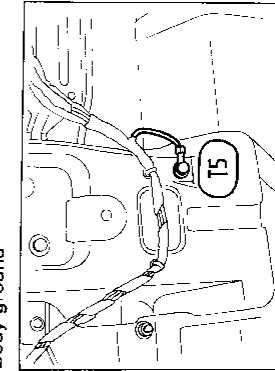
Body ground



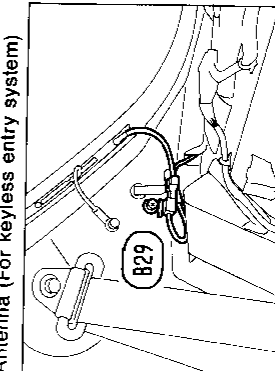
Body ground



Body ground



Antenna (For keyless entry system)



HARNESS 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)
- (B24) : HICAS solenoid
- (B25) : To (B63)
- (B26) : Rear window defogger
- (B27) : High-mounted stop lamp
- (B28) : Trunk room lamp
- (B29) : Antenna (For keyless entry system)
- (B30) : HICAS control unit
- (B31) : Body ground
- (B32) : Keyless entry control unit
- (B33) : Power antenna

Body harness RH

- (B50) : To (M7)
- (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 (B50)
- (B61) : To (B51)
- (B62) : Rear sensor (For anti-lock brake system)
- (B63) : To (B26)
- (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

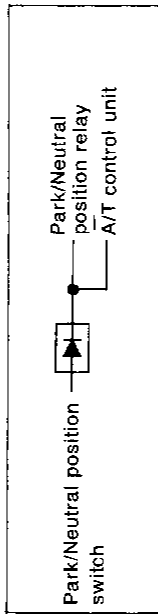
Tail harness

- (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)

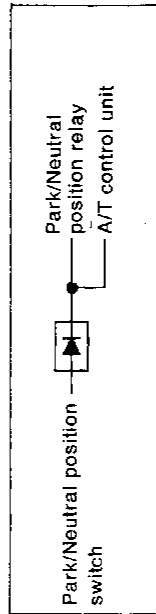
Tail sub-harness

- (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

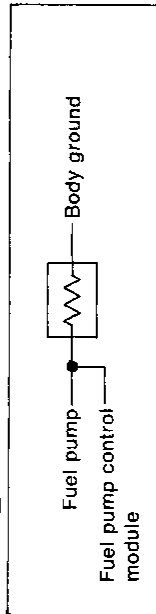
Diode (B4)



Diode (B5)



Resistor (B74)



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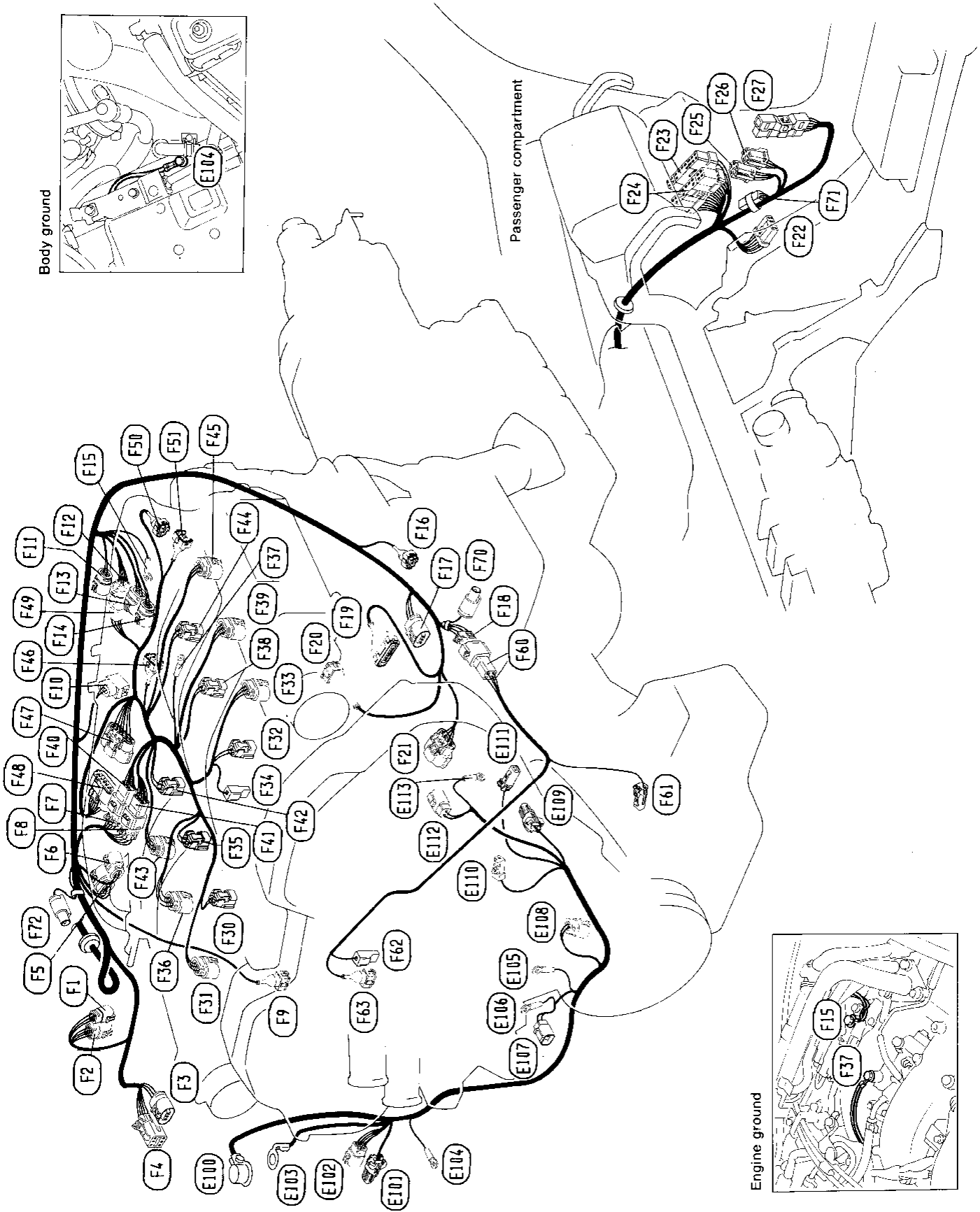
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HARNESS LAYOUT

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 F50
- F19 : Mass air flow sensor
- F20 : Throttle position switch
- F21 : Camshaft position sensor
- F22 : To E62
- F23 : To N74
- F24 : To N75
- 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

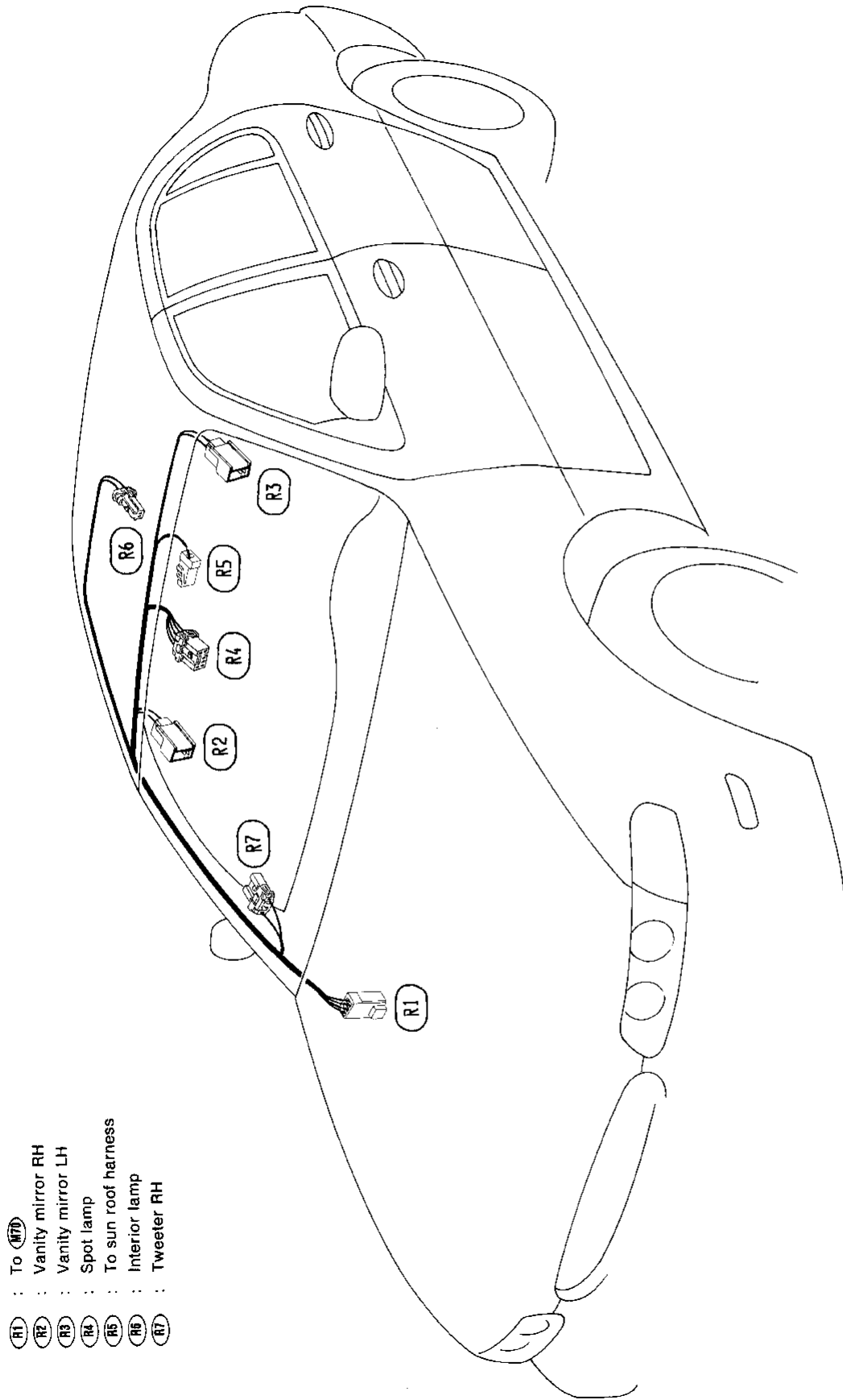
Engine harness

- 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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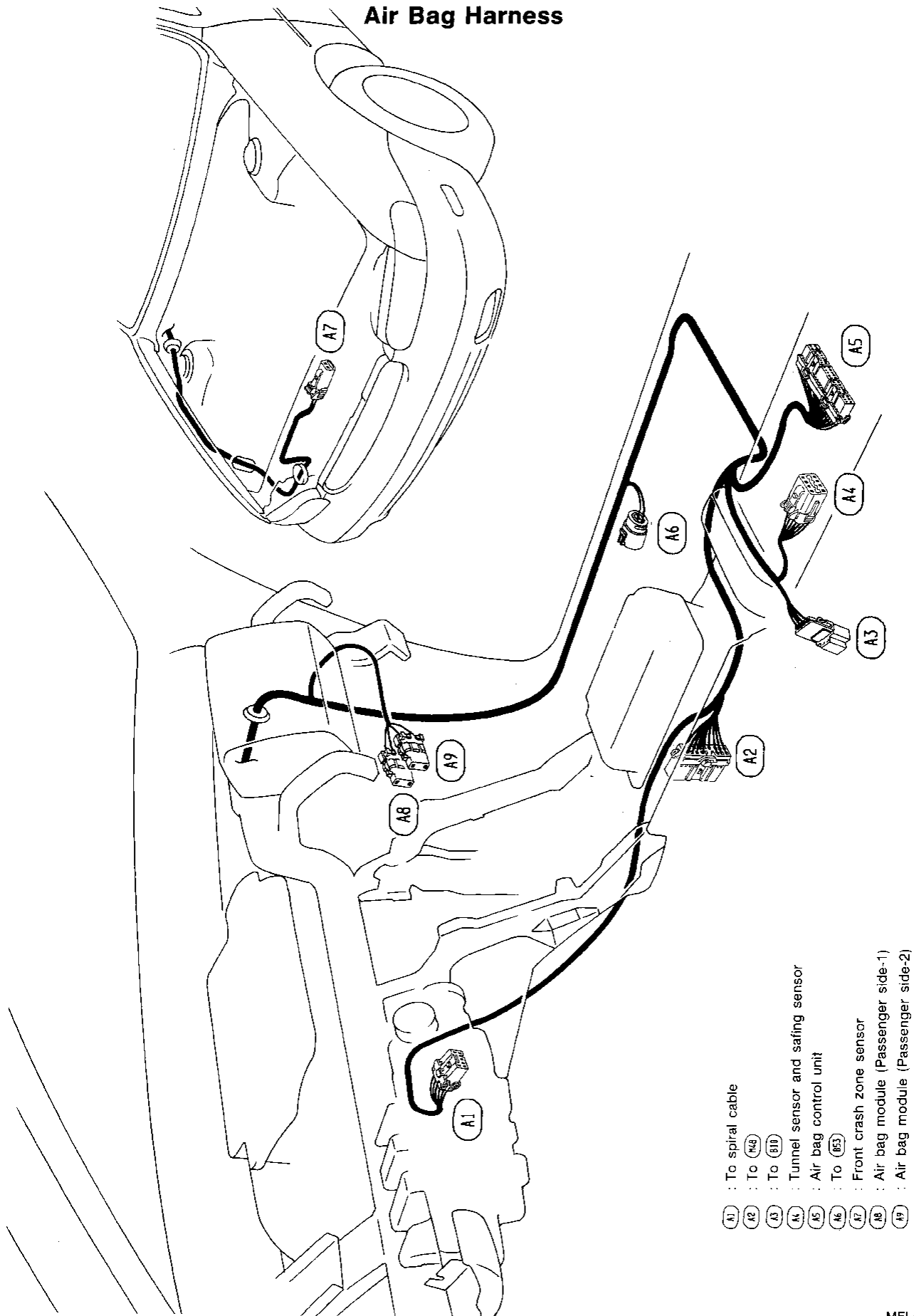
HARNES LAYOUT

Room Lamp Harness



HARNESS LAYOUT

Air Bag Harness



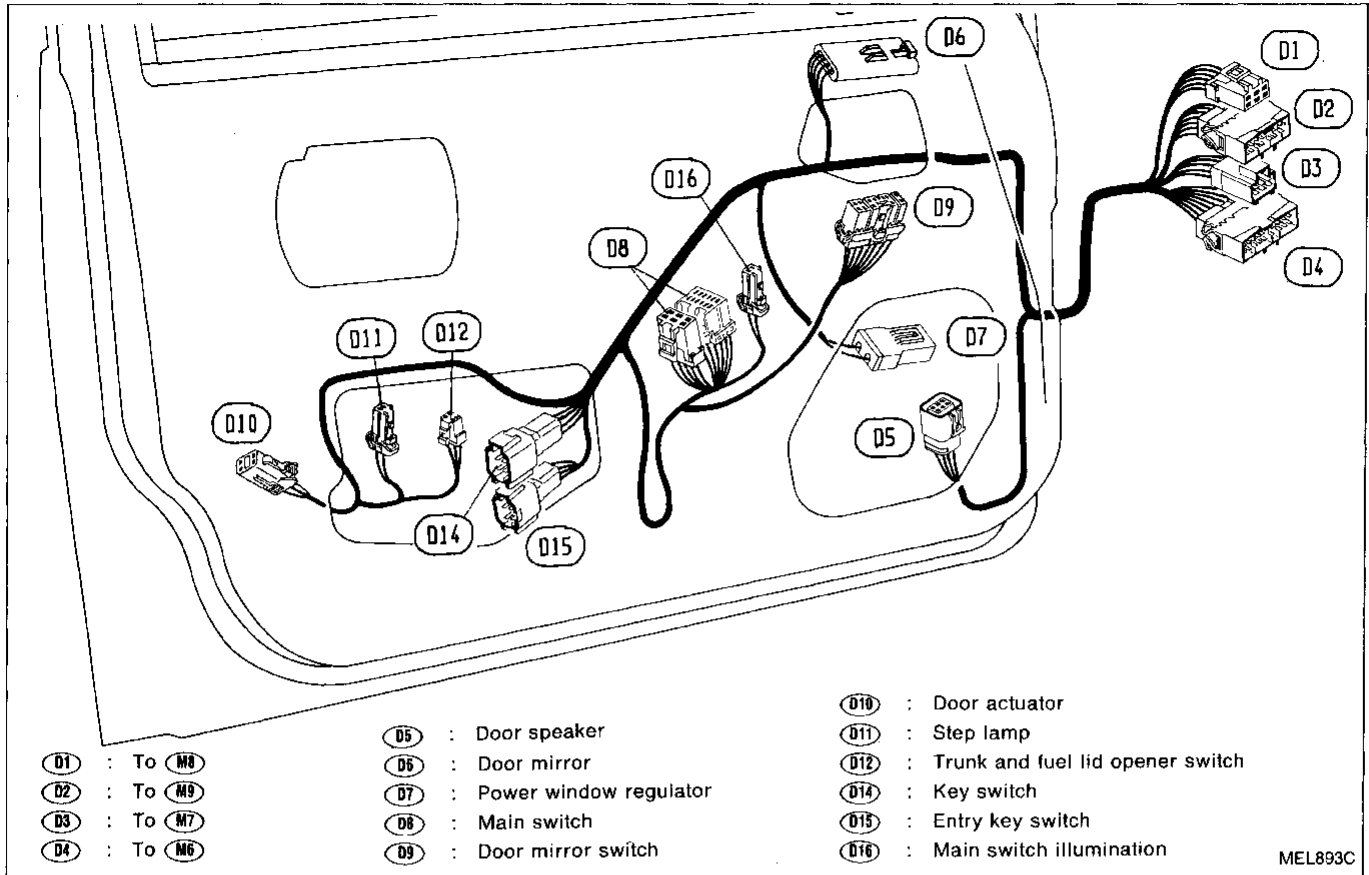
- A1 : To spiral cable
- A2 : To (N4)
- A3 : To (B1)
- A4 : Tunnel sensor and safing sensor
- A5 : Air bag control unit
- A6 : To (B5)
- A7 : Front crash zone sensor
- A8 : Air bag module (Passenger side-1)
- A9 : Air bag module (Passenger side-2)

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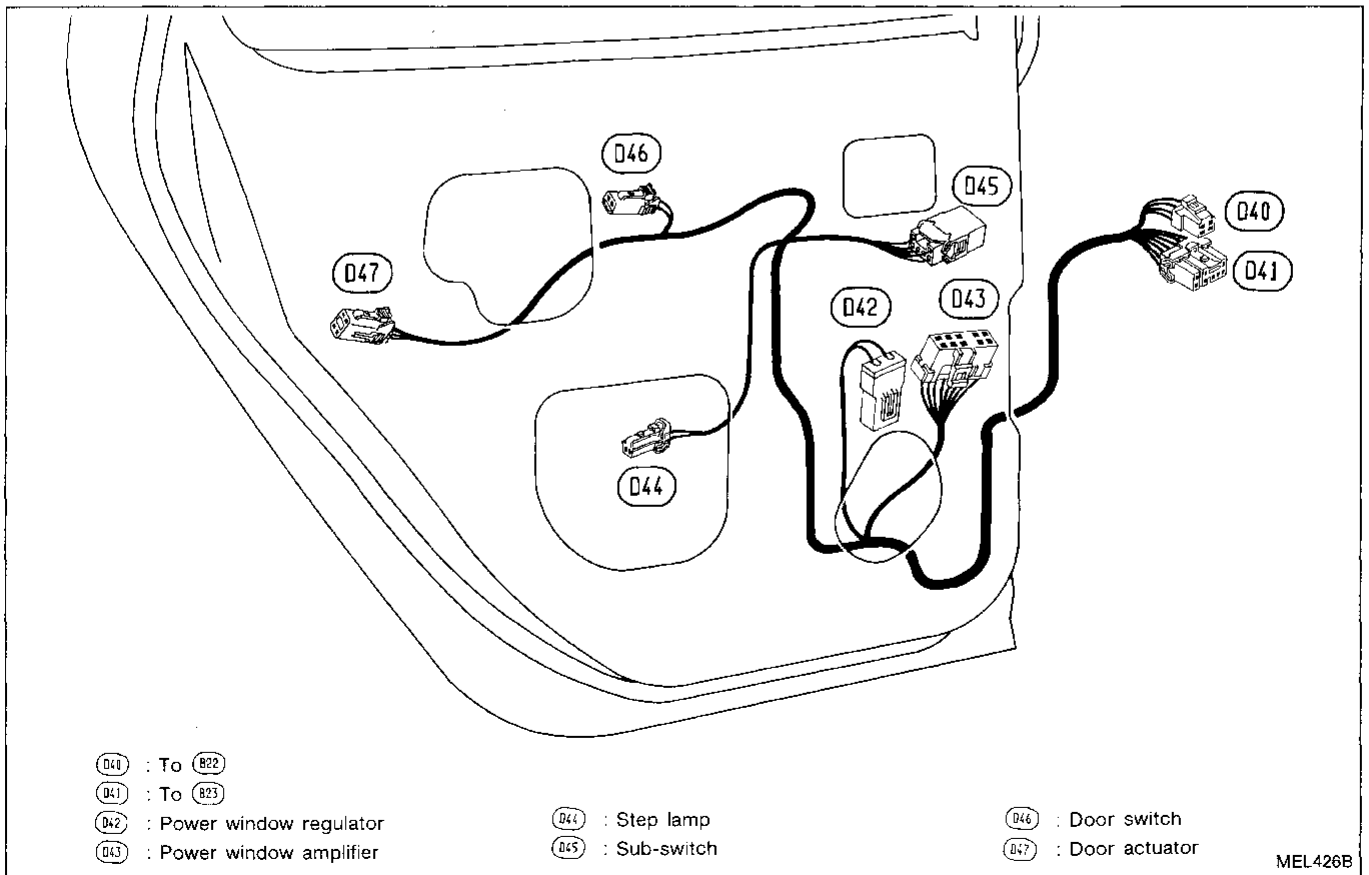
HARNESS LAYOUT

FRONT

Door Harness (LH side)



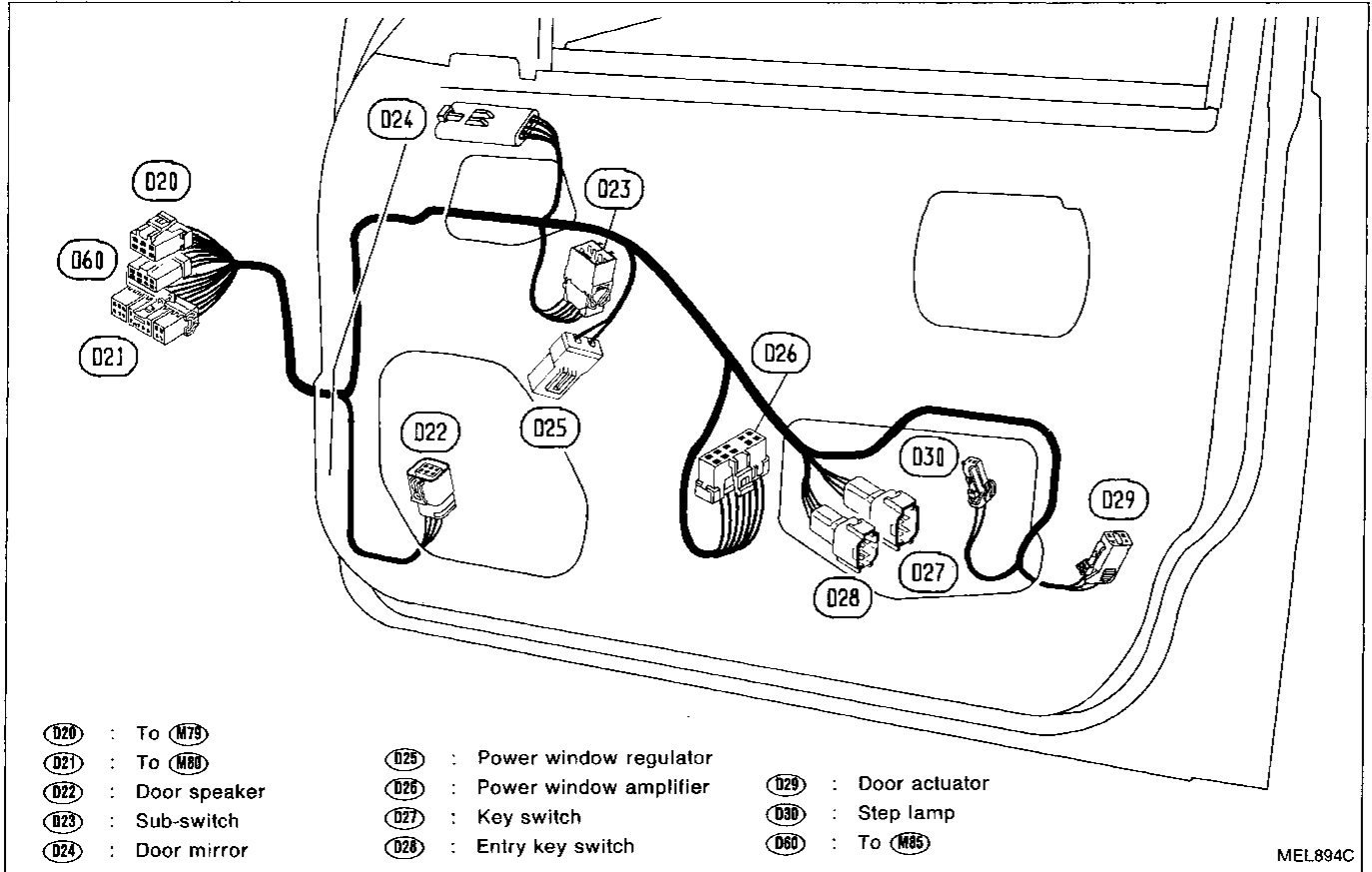
REAR



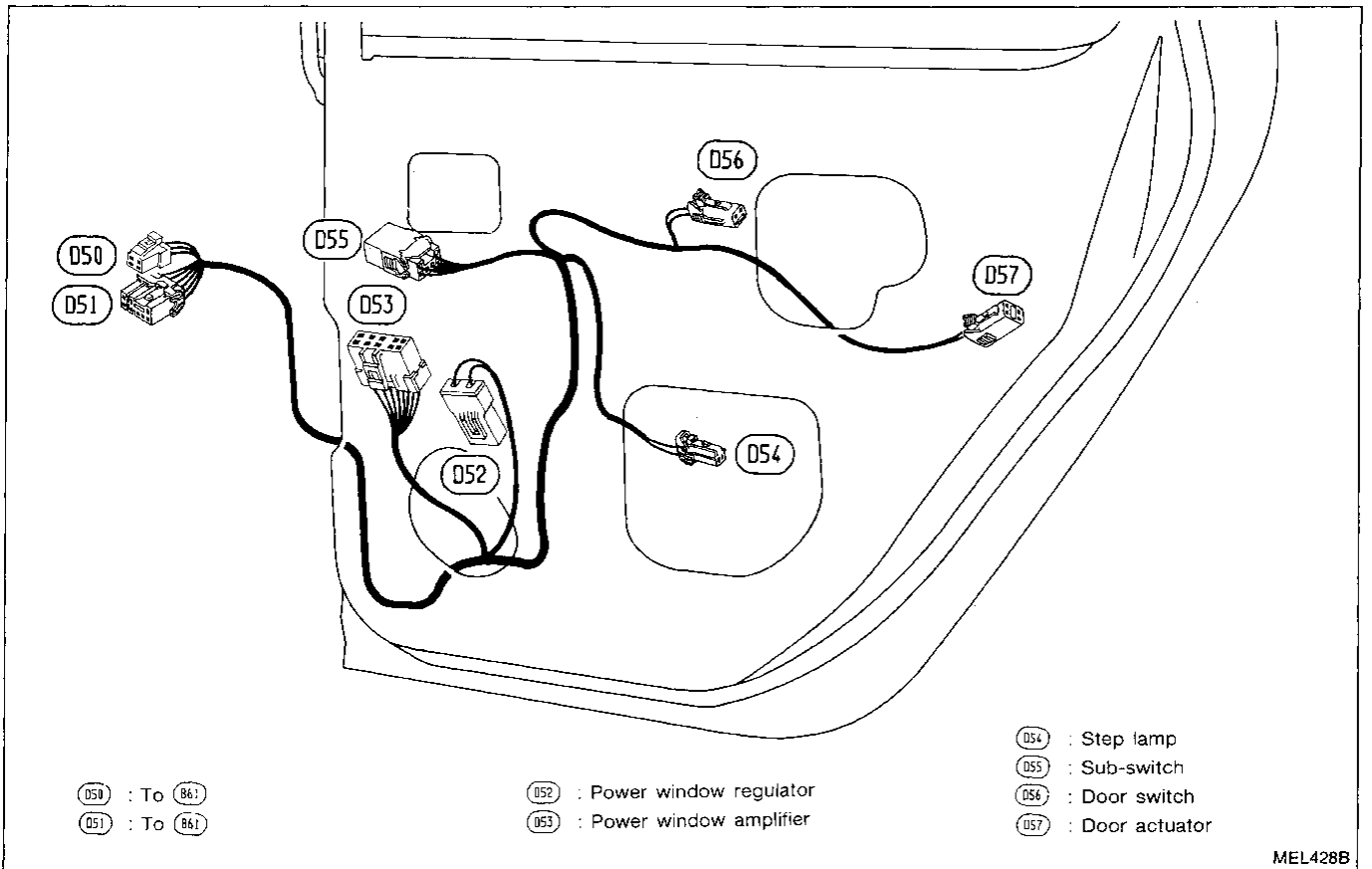
HARNESS LAYOUT

FRONT

Door Harness (RH side)



REAR



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