ELECTRICAL SYSTEM

SECTION EL

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

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

CONTENTS

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

WIRING DIAGRAM REFERENCE CHART

Supplemental Restraint System "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **All SRS electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS SYSTEM.**

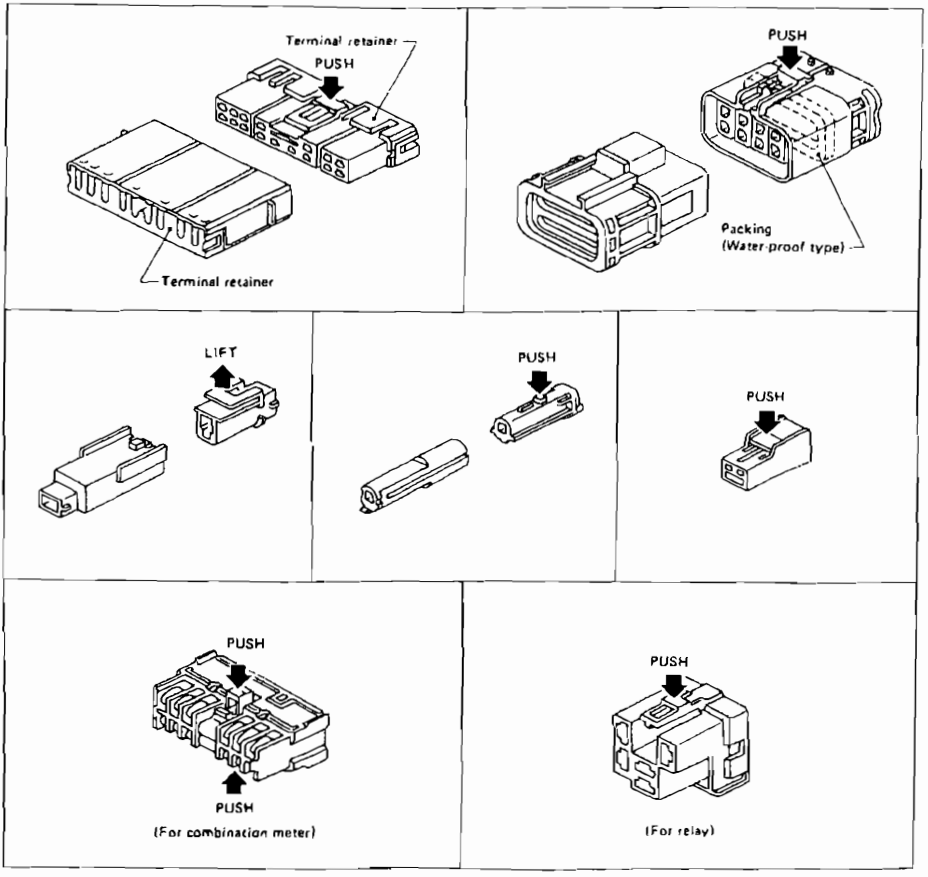
Description

HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental looseness or disconnection.
- The connector can be disconnected by pushing or lifting the locking section.

CAUTION:
Do not pull the harness when disconnecting the connector.

(Example)

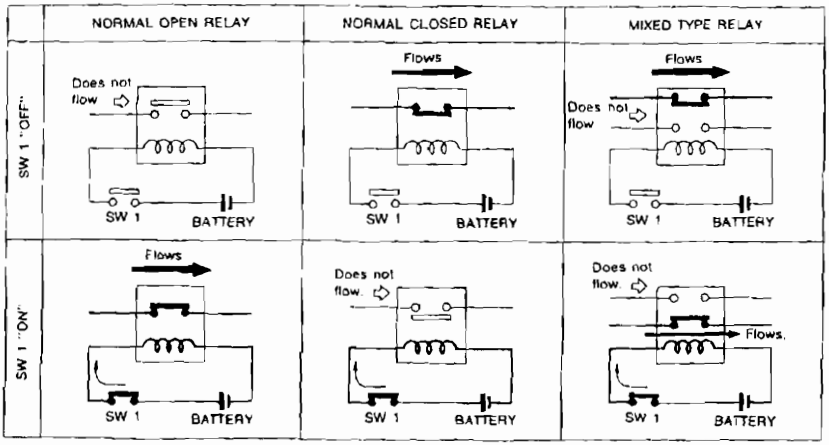


SEL767D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

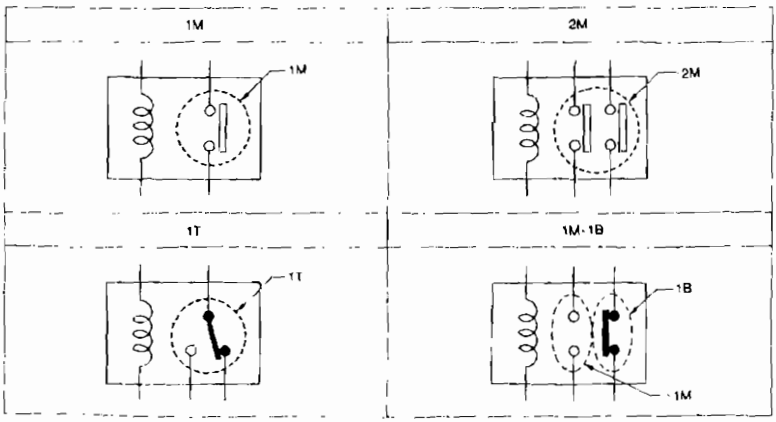
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays



SEL881H

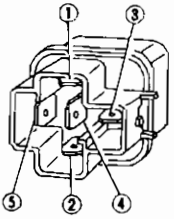
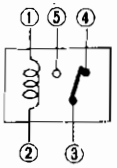
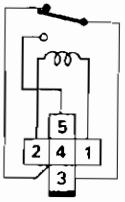
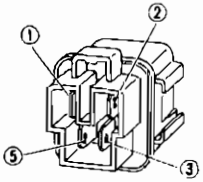
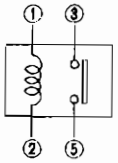
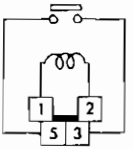
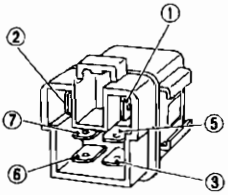
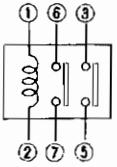
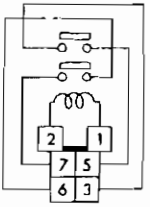
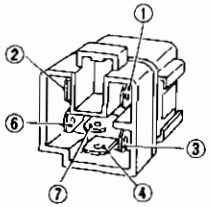
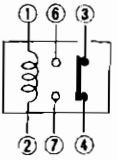
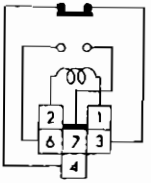
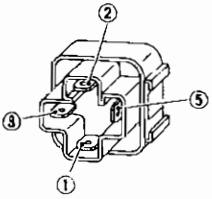
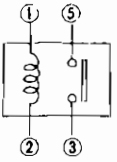
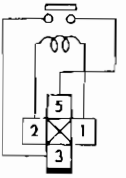
TYPE OF STANDARDIZED RELAYS

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



SEL882H

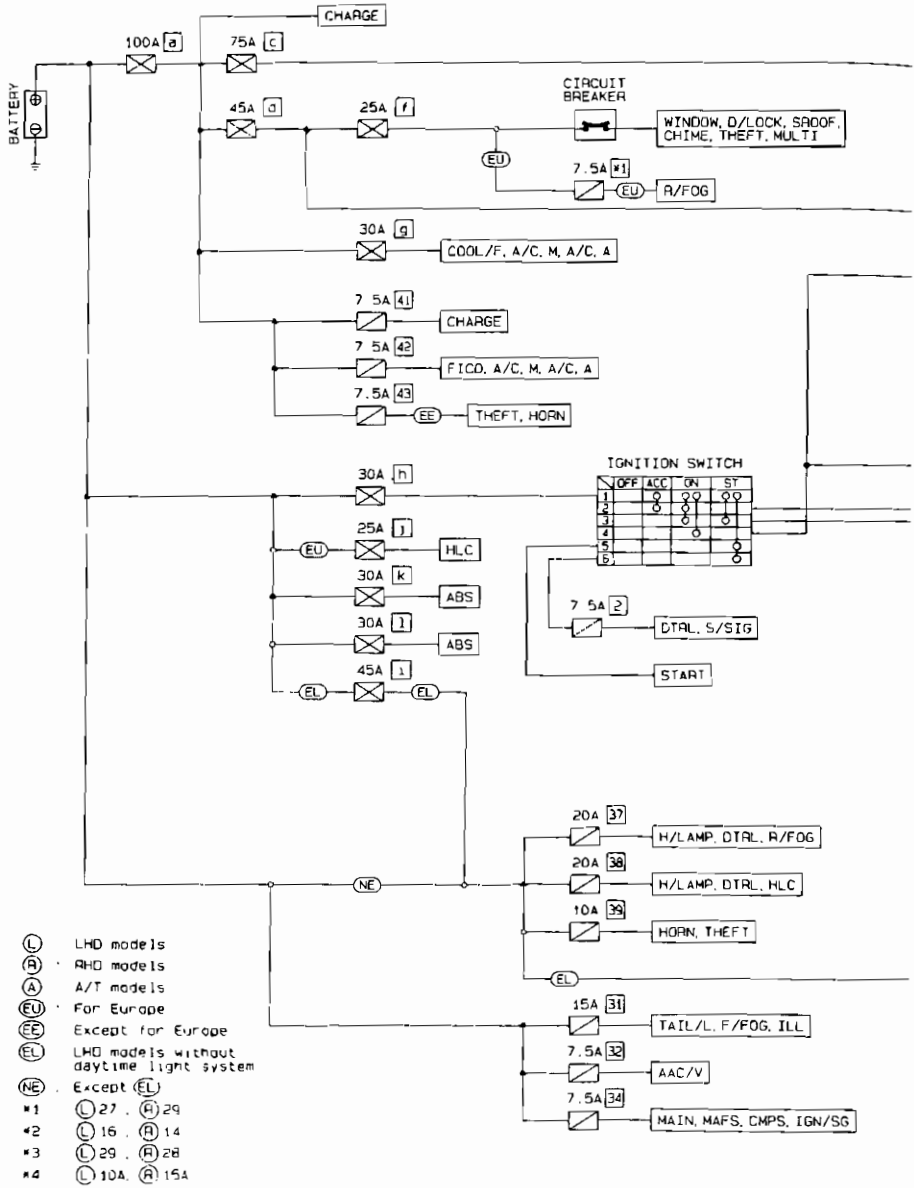
Description (Cont'd)

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

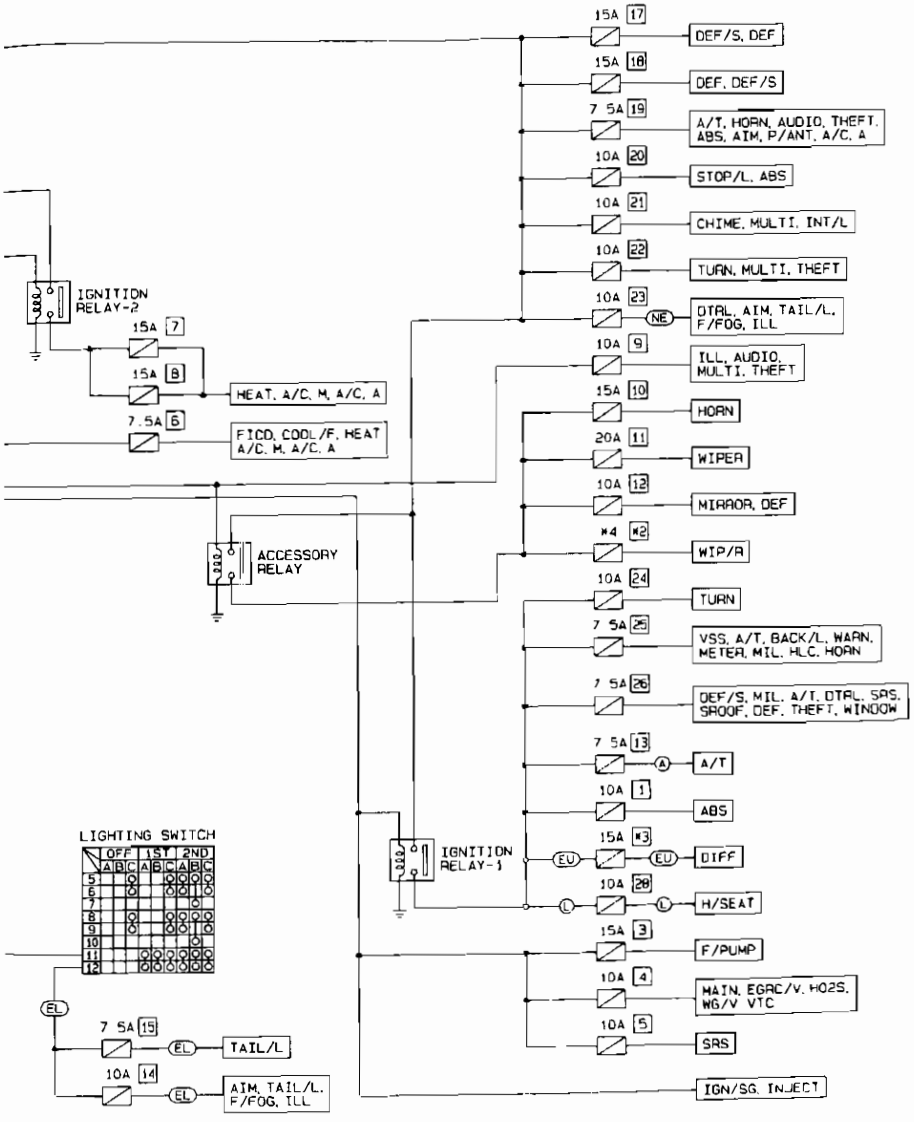
The arrangement of terminal numbers on the actual relays may differ from those shown above.

SEL661F

Schematic

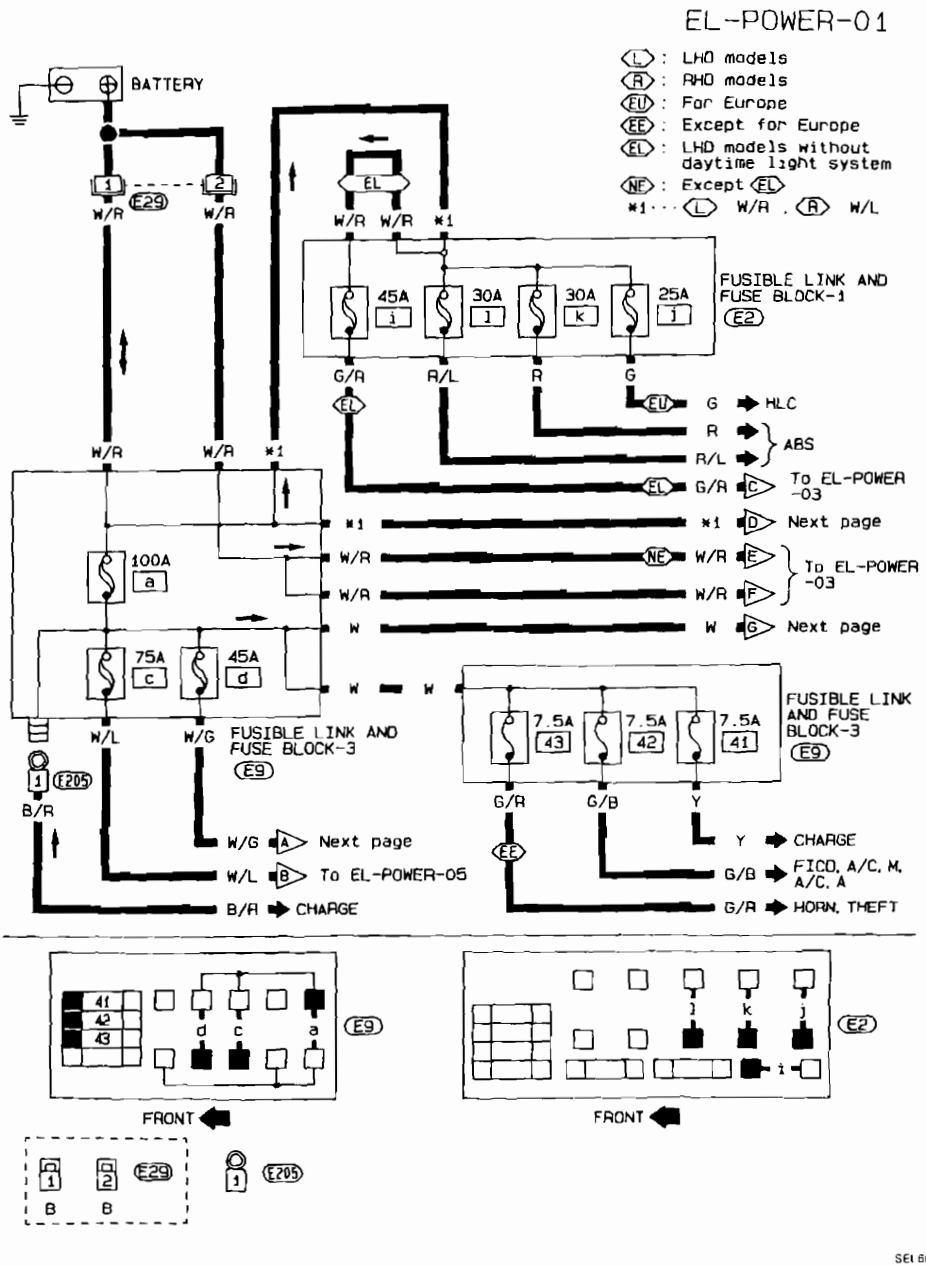

BATTERY
CHARGE
100A a
75A c
45A d
25A f
CIRCUIT BREAKER
WINDOW, D/LOCK, SROOF, CHIME, THEFT, MULTI
EU
7.5A *1
EU
R/FOG
30A g
COOL/F, A/C, M, A/C, A
7.5A 41
CHARGE
7.5A 42
FICD, A/C, M, A/C, A
7.5A 43
EE
THEFT, HORN
IGNITION SWITCH
OFF ACC ON ST
30A h
25A j
EU
HLC
30A k
ABS
30A l
ABS
45A i
EL
EL
7.5A 2
DTRL, S/SIG
START
NE
20A 37
H/LAMP, DTRL, R/FOG
20A 38
H/LAMP, DTRL, HLC
10A 39
HORN, THEFT
EL
15A 31
TAIL/L, F/FOG, ILL
7.5A 32
AAC/V
7.5A 34
MAIN, MAFS, CMPS, IGN/SG
L LHD models
A RHD models
A A/T models
EU For Europe
EE Except for Europe
EL LHD models without daytime light system
NE Except EL
*1 L 27 , A 29
*2 L 16 , A 14
*3 L 29 , A 28
*4 L 10A, A 15A

Schematic (Cont'd)



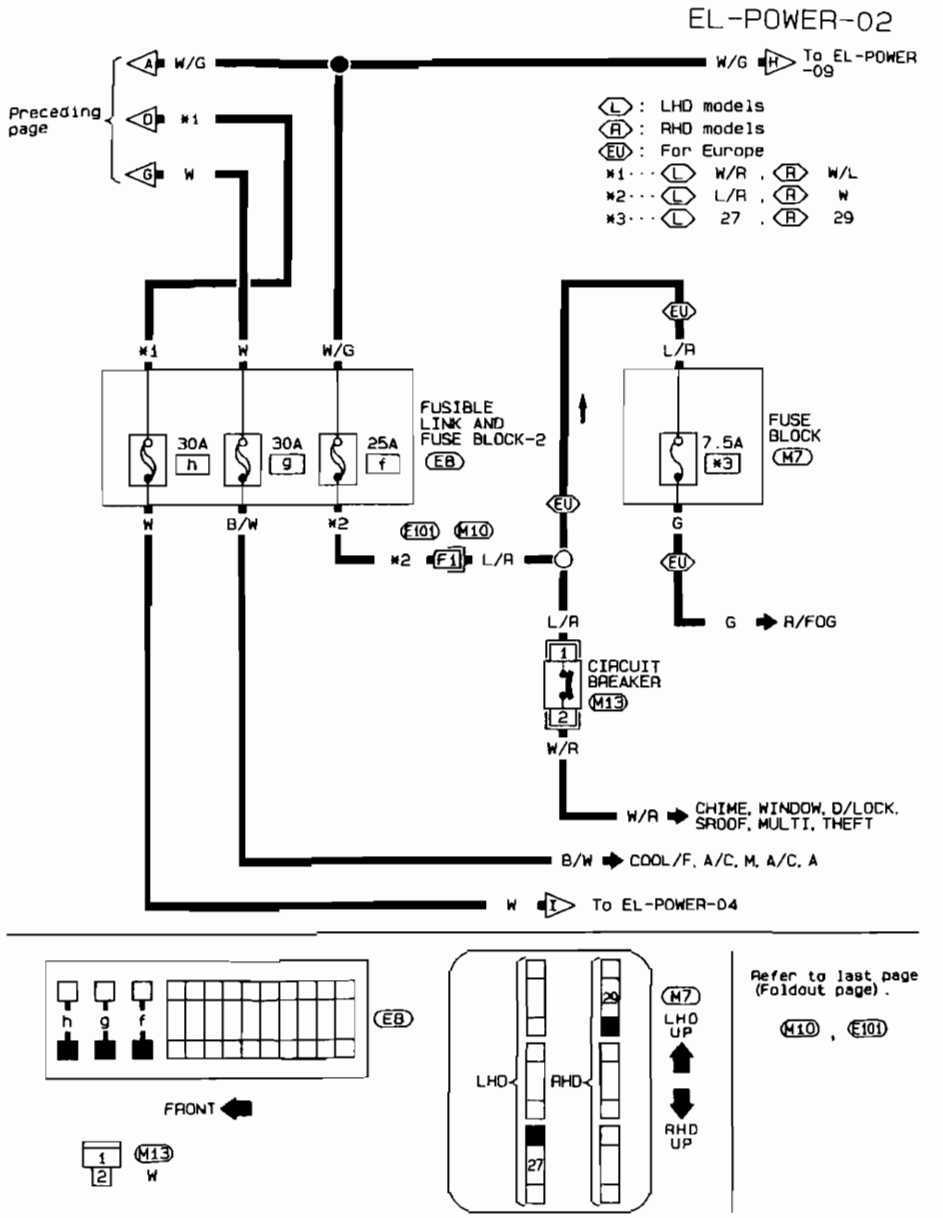
SEL667T

Wiring Diagram — POWER —



SEL 660T

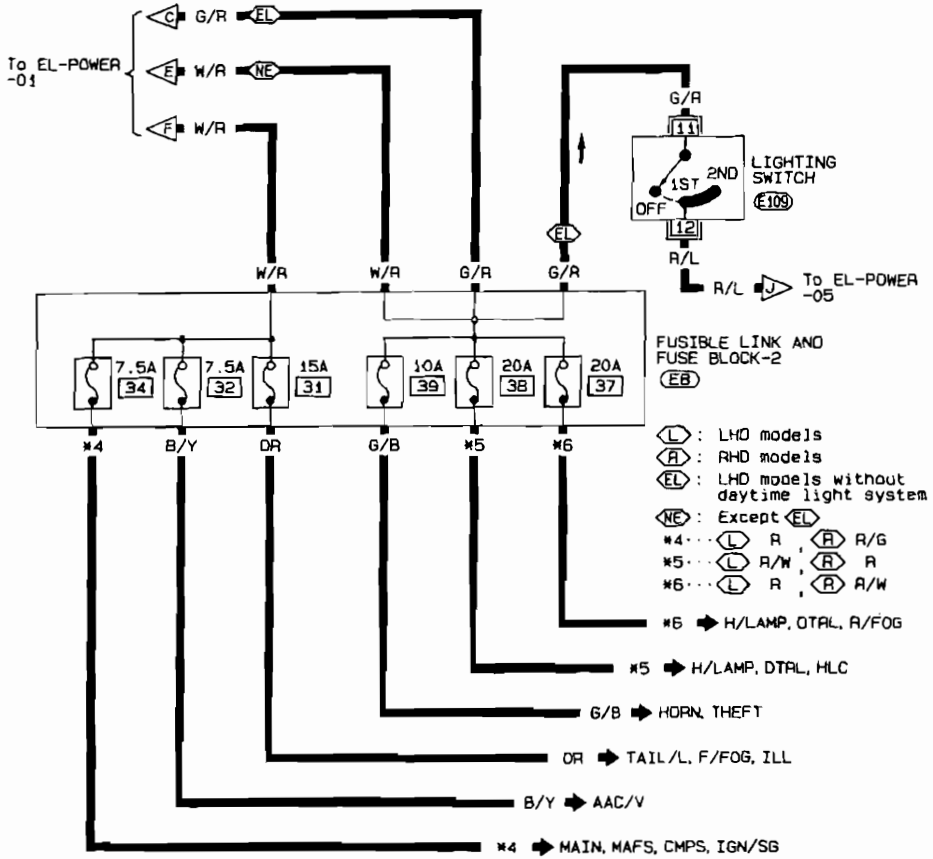
Wiring Diagram — POWER — (Cont'd)

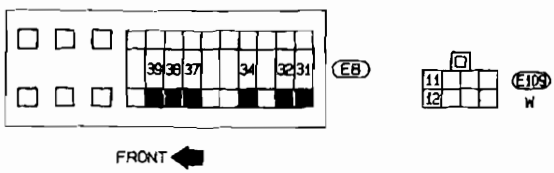


SEI 669T

Wiring Diagram — POWER — (Cont'd)

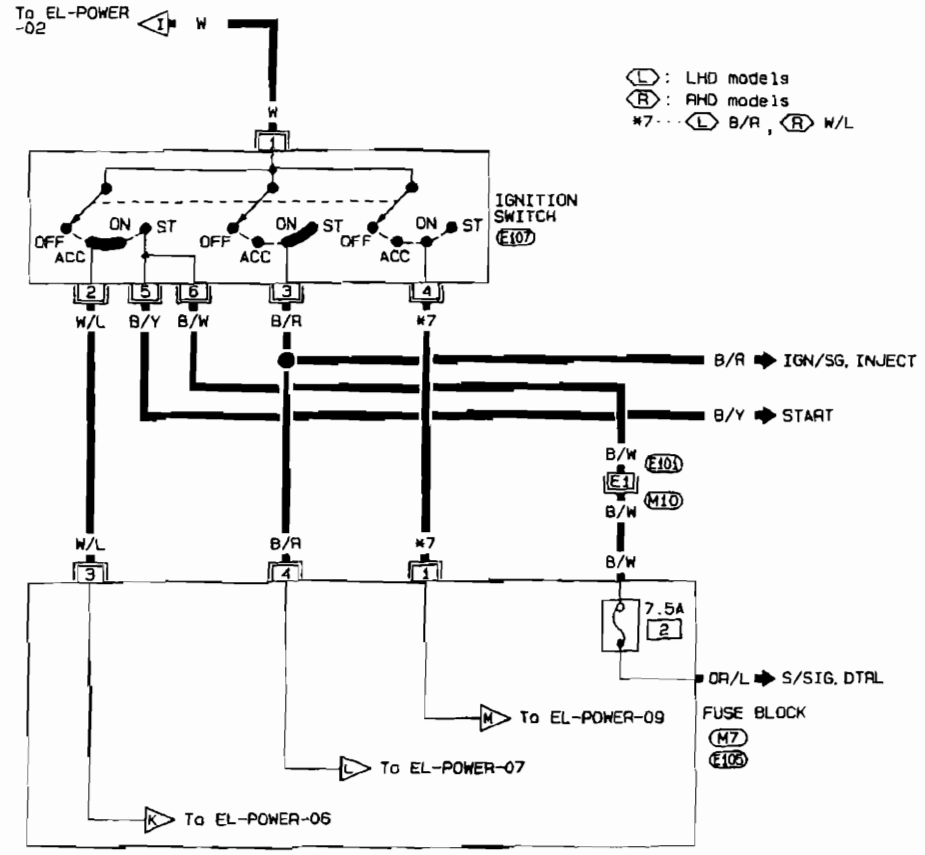
EL-POWER-03

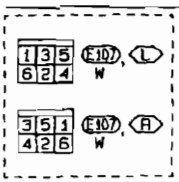


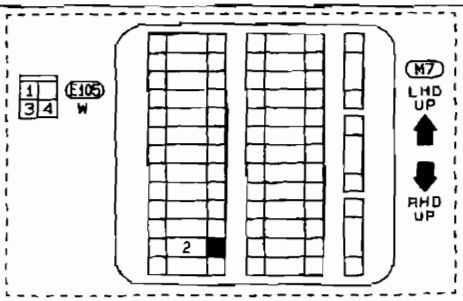


SEL670T

EL-POWER-04





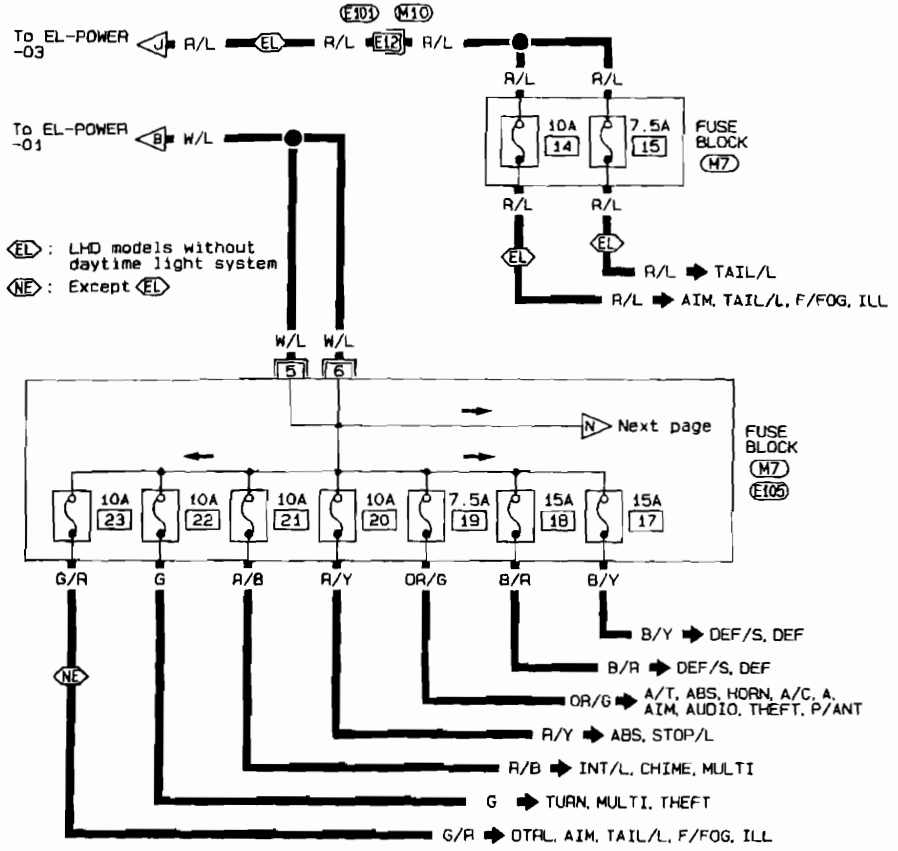


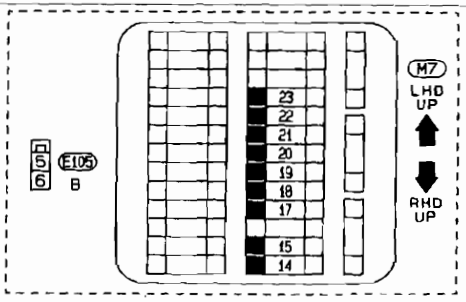
Refer to last page (Foldout page).

M10 , E10

SEL671T

EL-POWER-05



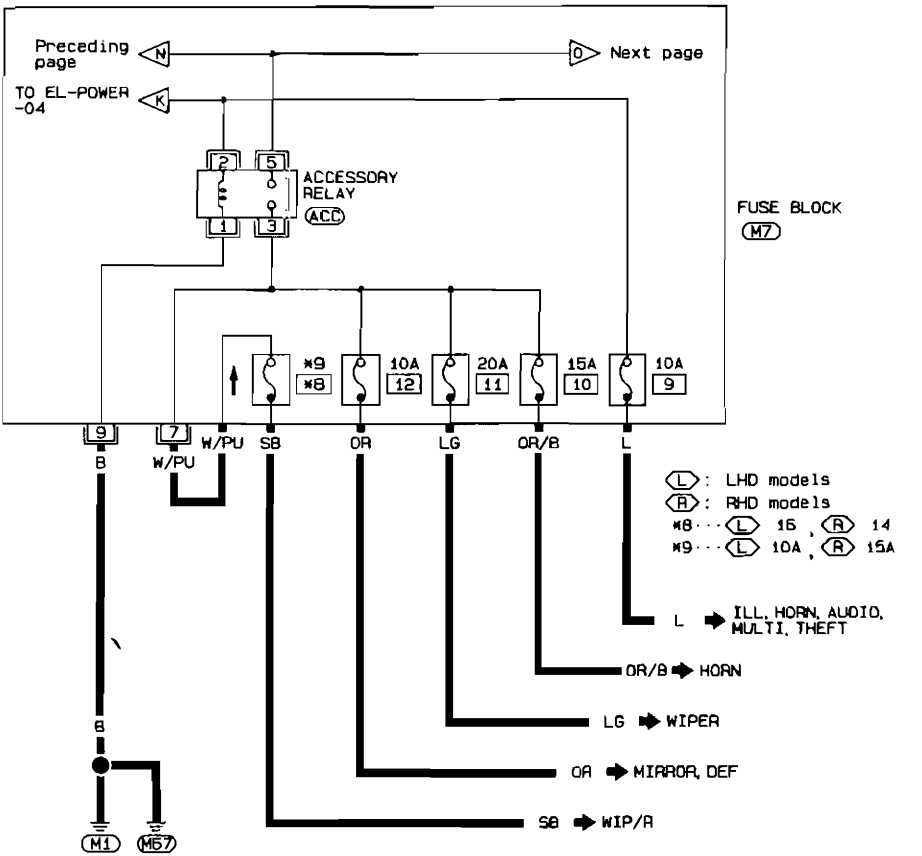


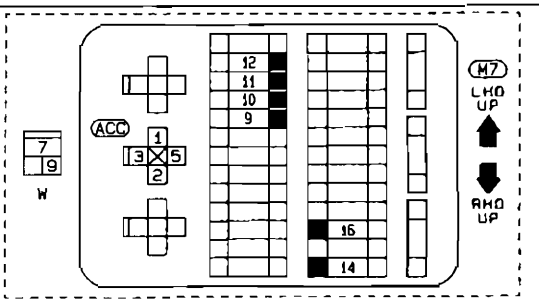
Refer to last page (Foldout page).
M10 , E101

SEL672T

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06

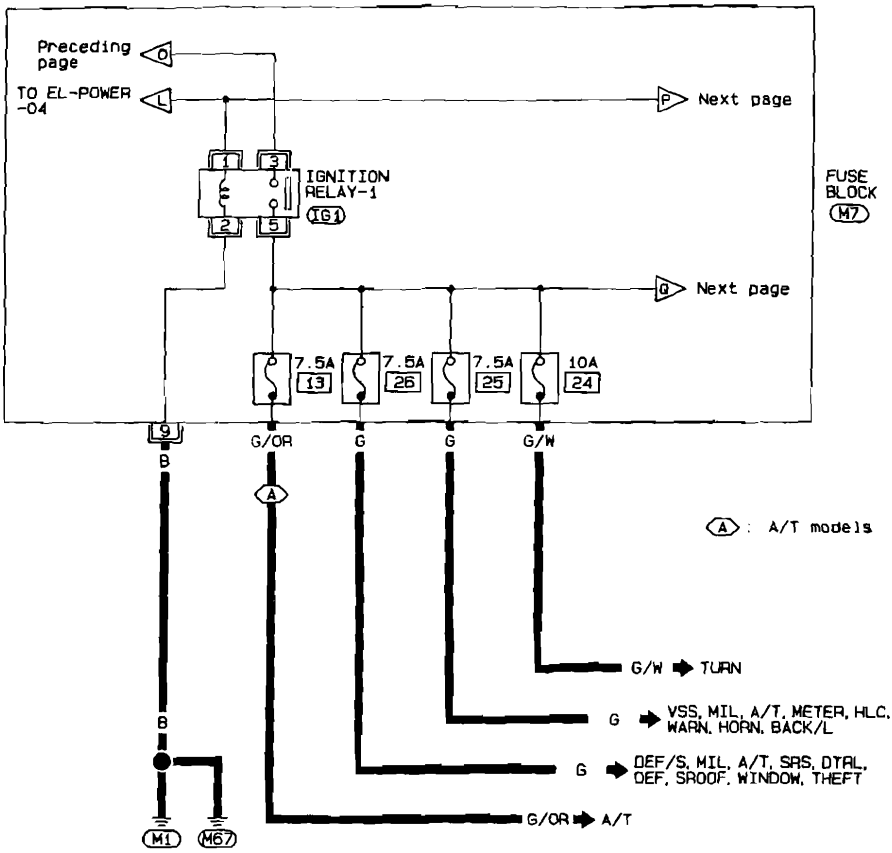


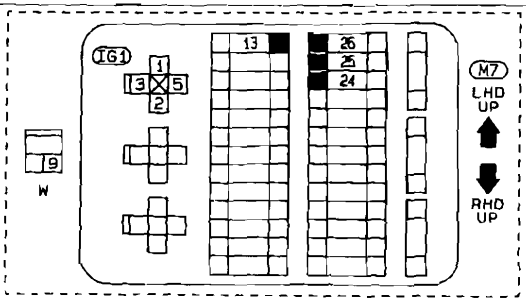


SEL673T

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07



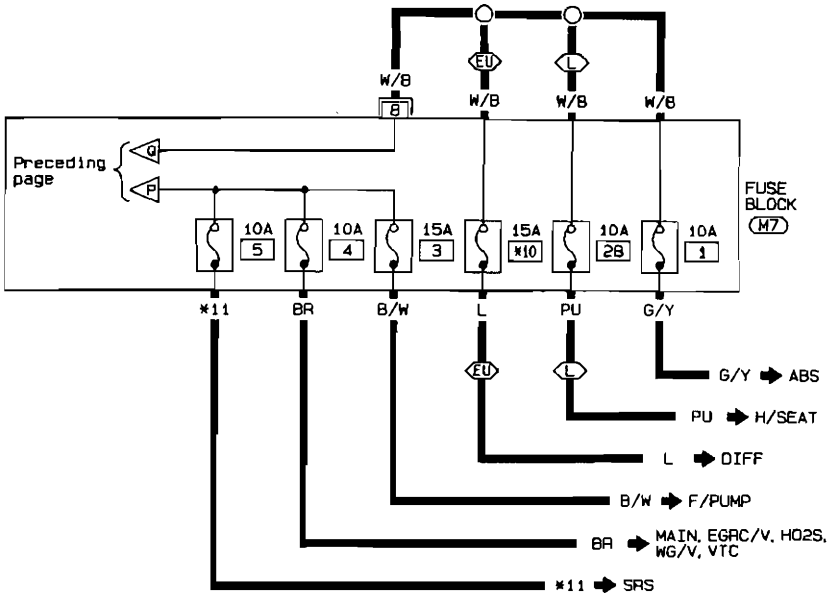


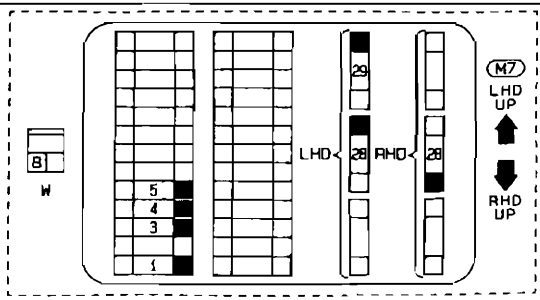
SEL674T

Wiring Diagram — POWER — (Cont'd)

EL-POWER-08

Ⓛ : LHD models
Ⓡ : RHD models
Ⓔⓤ : For Europe
*10 ··· Ⓛ 29 , Ⓡ 28
*11 ··· Ⓛ R/L , Ⓡ L

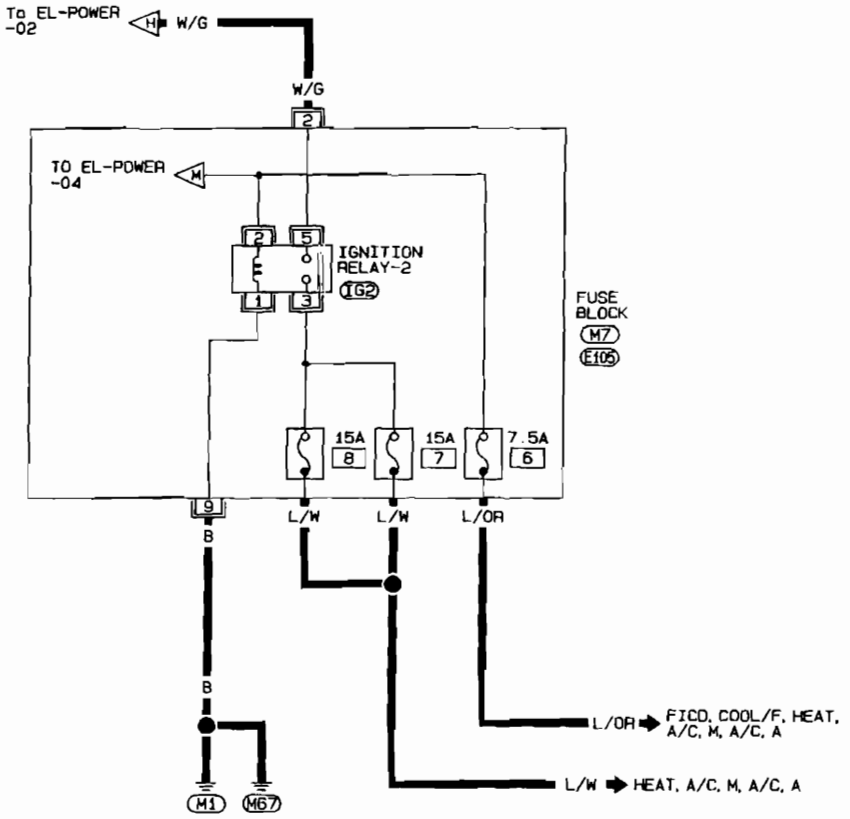


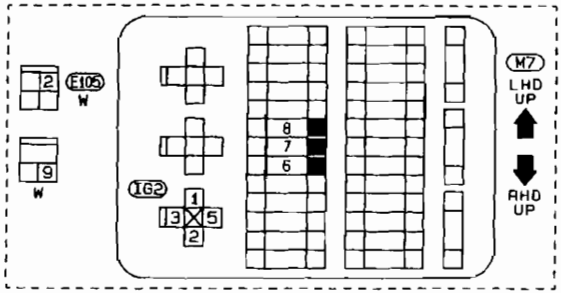


SEL675T

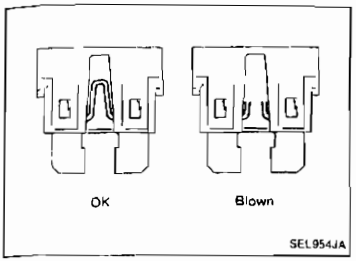
Wiring Diagram — POWER — (Cont'd)

EL-POWER-09



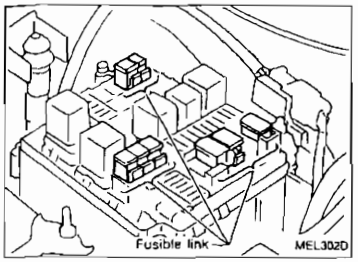


SEL676T



Fuse

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

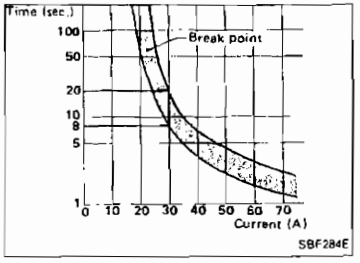


Fusible Link

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



Circuit Breaker

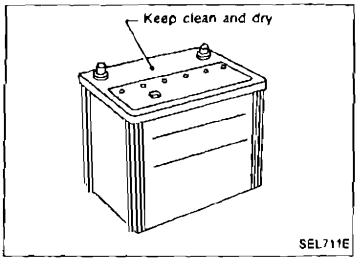
For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

Circuit breakers are used in the following systems.

- Power window
- Power door lock
- Power sun roof
- Multi-remote control
- Theft warning
- Warning buzzer
- Rear window defogger and mirror defogger

CAUTION:

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

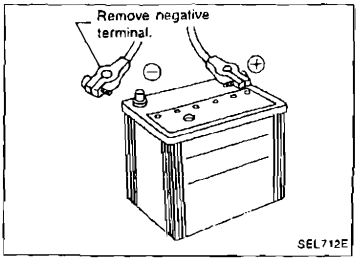


How to Handle Battery

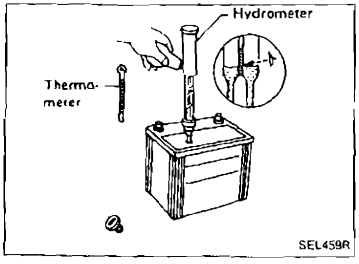
METHODS OF PREVENTING OVER-DISCHARGE

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

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level.



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



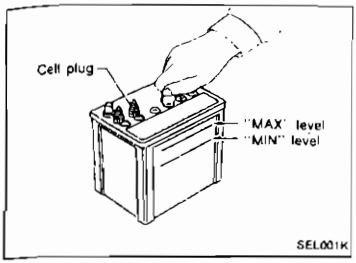
- Check the charge condition of the battery.
  Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent over-discharge.

CHECKING ELECTROLYTE LEVEL

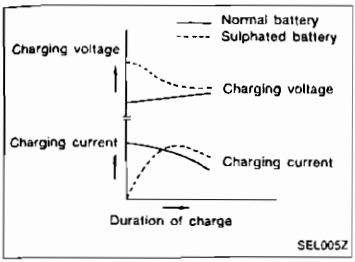
WARNING:

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

How to Handle Battery (Cont'd)

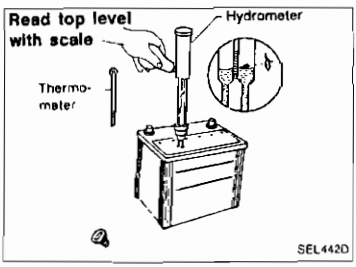


- Remove the cell plug using a suitable tool
- Add distilled water up to the MAX level.



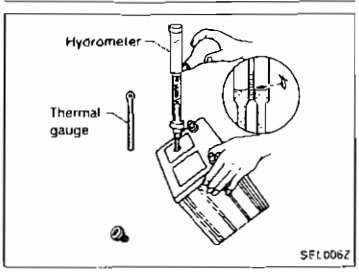
SULPHATION

A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.
To find if a discharged battery has been sulphated, pay attention to its voltage and current when charging it
As shown in the figure at left, if the battery has been "sulphated", less current and higher voltage may be observed in the initial stage of charging



SPECIFIC GRAVITY CHECK

1 Read hydrometer and thermometer indications at eye level



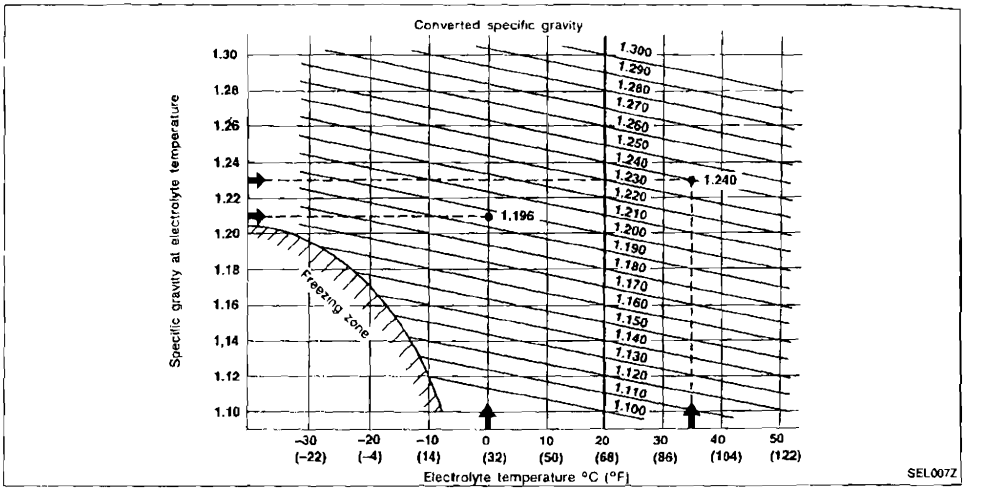
- When electrolyte level is too low, tilt battery case to raise it for easy measurement

How to Handle Battery (Cont'd)

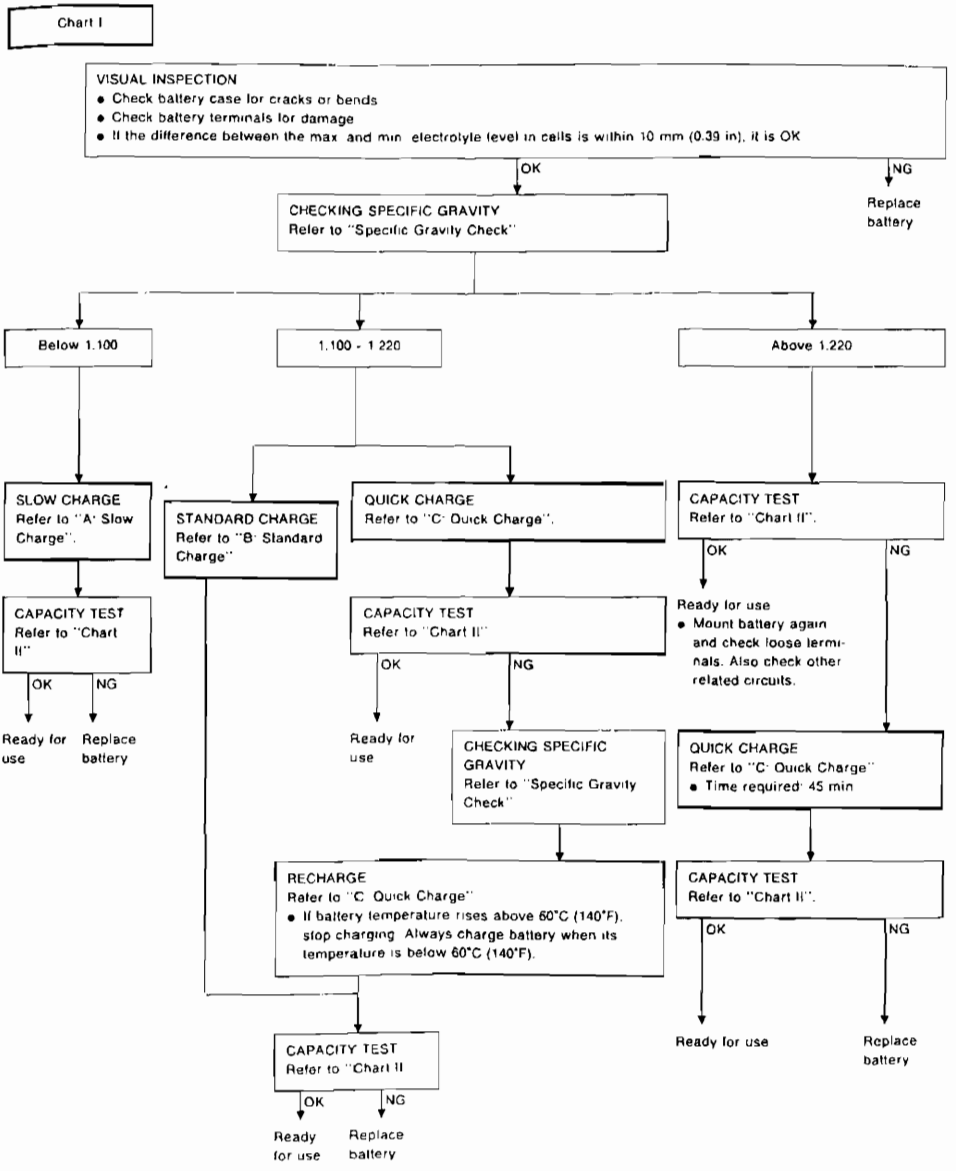
2. Convert into specific gravity at 20°C (68°F).

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.



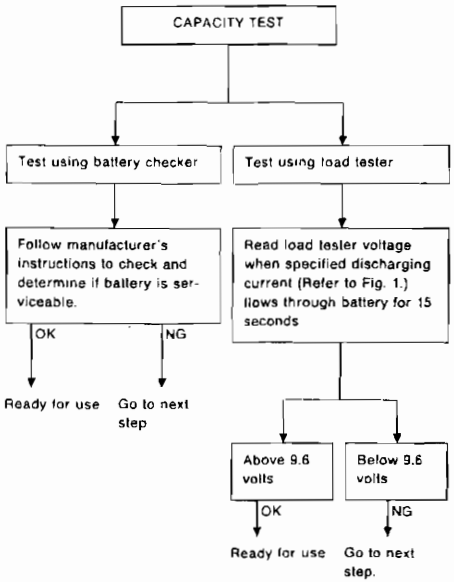
Battery Test and Charging Chart



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

Battery Test and Charging Chart (Cont'd)

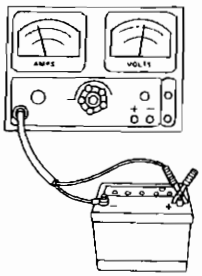
Chart II



- 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 Test and Charging Chart (Cont'd)

A. SLOW CHARGE

Determine initial charging current from specific gravity referring to Fig. 2.

- Charge battery
- Check charging voltage 30 minutes after starting the battery charge

12 to 15 volts — OK → Continue to charge for 12 hours.

Below 12 volts or above 15 volts — NG → Replace battery.

CHECKING SPECIFIC GRAVITY
Refer to "Specific Gravity Check".

Conduct additional charge as per Fig. 3, if necessary

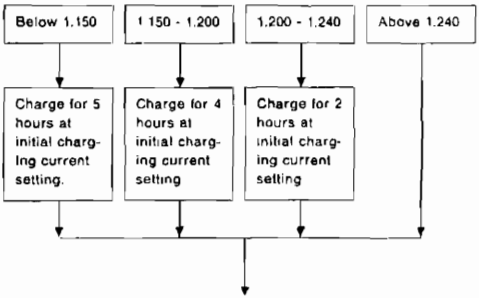
Go to "CAPACITY TEST".

Fig. 2 INITIAL CHARGING CURRENT SETTING (Slow charge)

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

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

Fig. 3 ADDITIONAL CHARGE (Slow charge)



CAUTION:

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

Battery Test and Charging Chart (Cont'd)

B: STANDARD CHARGE

Determine initial charging current from specific gravity, referring to Fig 4 .

↓

Charge battery for 8 hours

↓

CHECKING SPECIFIC GRAVITY
Refer to "Specific Gravity Check"

↓

Conduct additional charge as per Fig 5, if necessary

↓

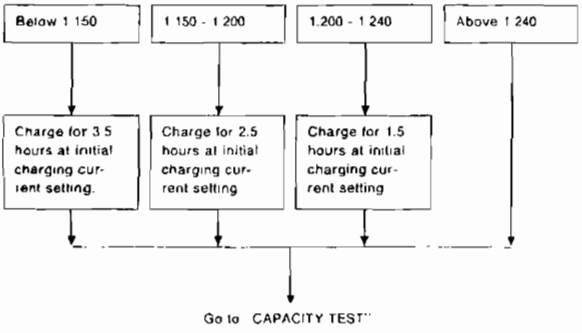
Go to "CAPACITY TEST"

Fig 4 INITIAL CHARGING CURRENT SETTING
(Standard charge)

CONVERTED SPECIFIC GRAVITY	BATTERY TYPE									
	26B19R(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)
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 Test and Charging Chart (Cont'd)

C: QUICK CHARGE

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

↓

Charge battery.

↓

Go to "CAPACITY TEST"

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

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

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

CAUTION:

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

Service Data and Specifications (SDS)

Applied model	For Europe	Except for Europe	Optional on LHD models for Europe
Type	55D23R	65D26R	80D26R
Capacity	12 - 60	12 - 65	12 - 65

System Description

M/T MODELS

Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter [h], located in the fusible link and fuse box).

For models with theft warning system

Power is supplied at all times
- through 7.5A fuse (No [26], located in the fuse block)
- to theft warning relay terminal ①.

With the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to theft warning relay terminal ③

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

When the theft warning system is not operating, power is supplied
- through theft warning relay terminal ④
- to terminal ② of the starter motor windings.

For models without theft warning system

With the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- directly to terminal ② of the starter motor windings.

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

A/T MODELS

Power is supplied at all times
- to ignition switch terminal ①
- through 30A fusible link (letter [h], located in the fusible link and fuse box).

For models with theft warning system

Power is supplied at all times
- through 7.5A fuse (No [26], located in the fuse block)
- to theft warning relay terminal ①.

With the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to theft warning relay terminal ③.

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

When the theft warning system is not operating, power is supplied
- through theft warning relay terminal ④
- to inhibitor switch terminal ②
- through inhibitor switch terminal ①, with the selector lever in the P or N position
- to terminal ② of the starter motor windings.

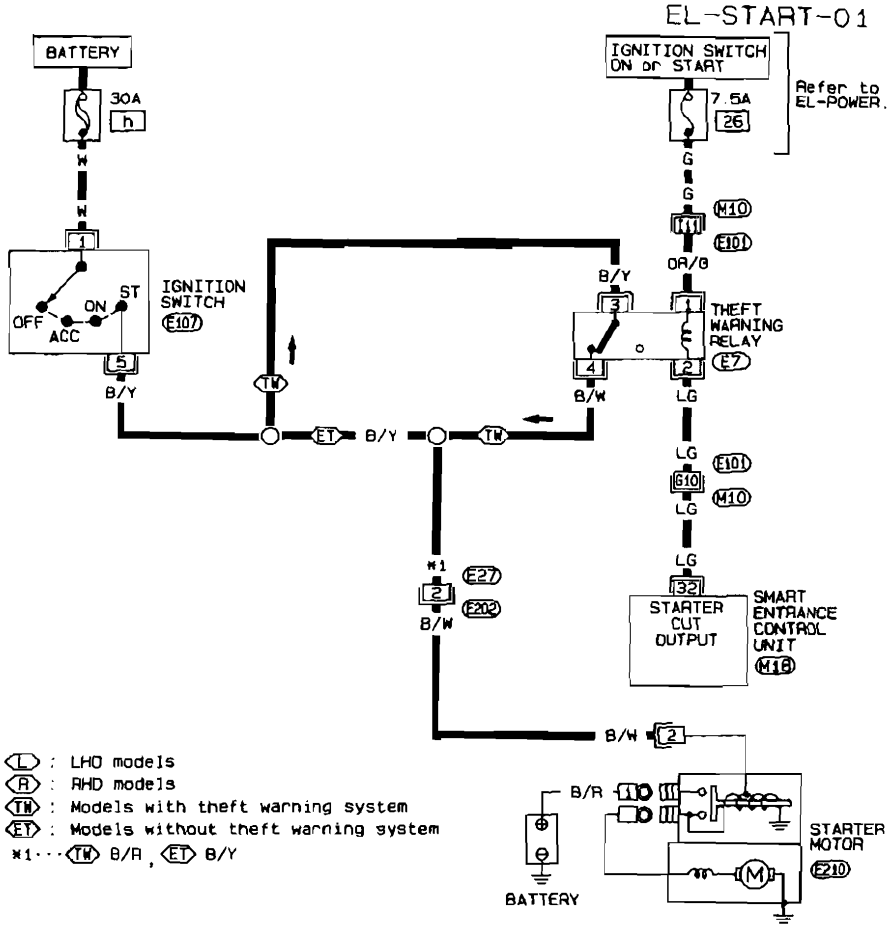
For models without theft warning system

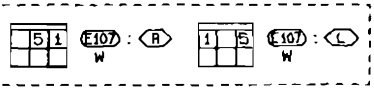
With the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to inhibitor switch terminal ②
- through inhibitor switch terminal ①, with the selector lever in the P or N position
- to terminal ② of the starter motor windings

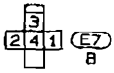
The starter motor plunger closes and provides a closed circuit between the battery and starter motor. The starter motor is grounded to the engine block. With power and ground supplied, cranking occurs and the engine starts.

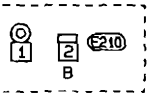
Wiring Diagram — START —

M/T MODELS









Refer to last page (Foldout page).

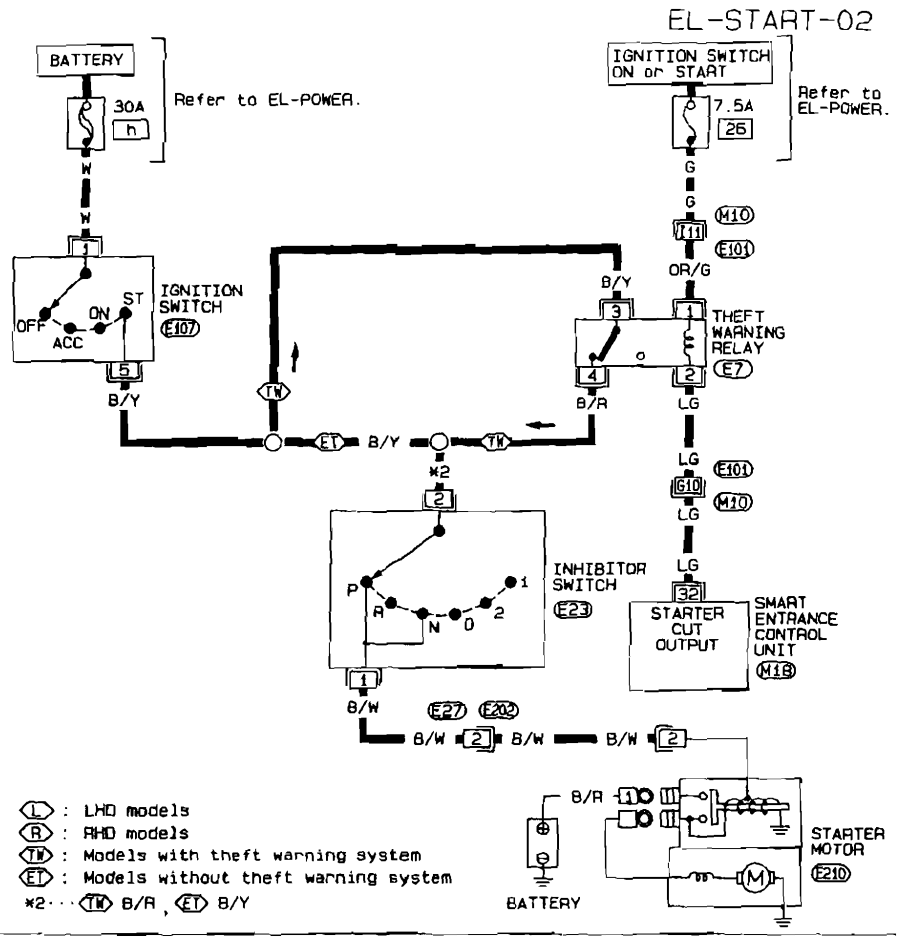
M10, E101

M18

SEL662T

Wiring Diagram — START — (Cont'd)

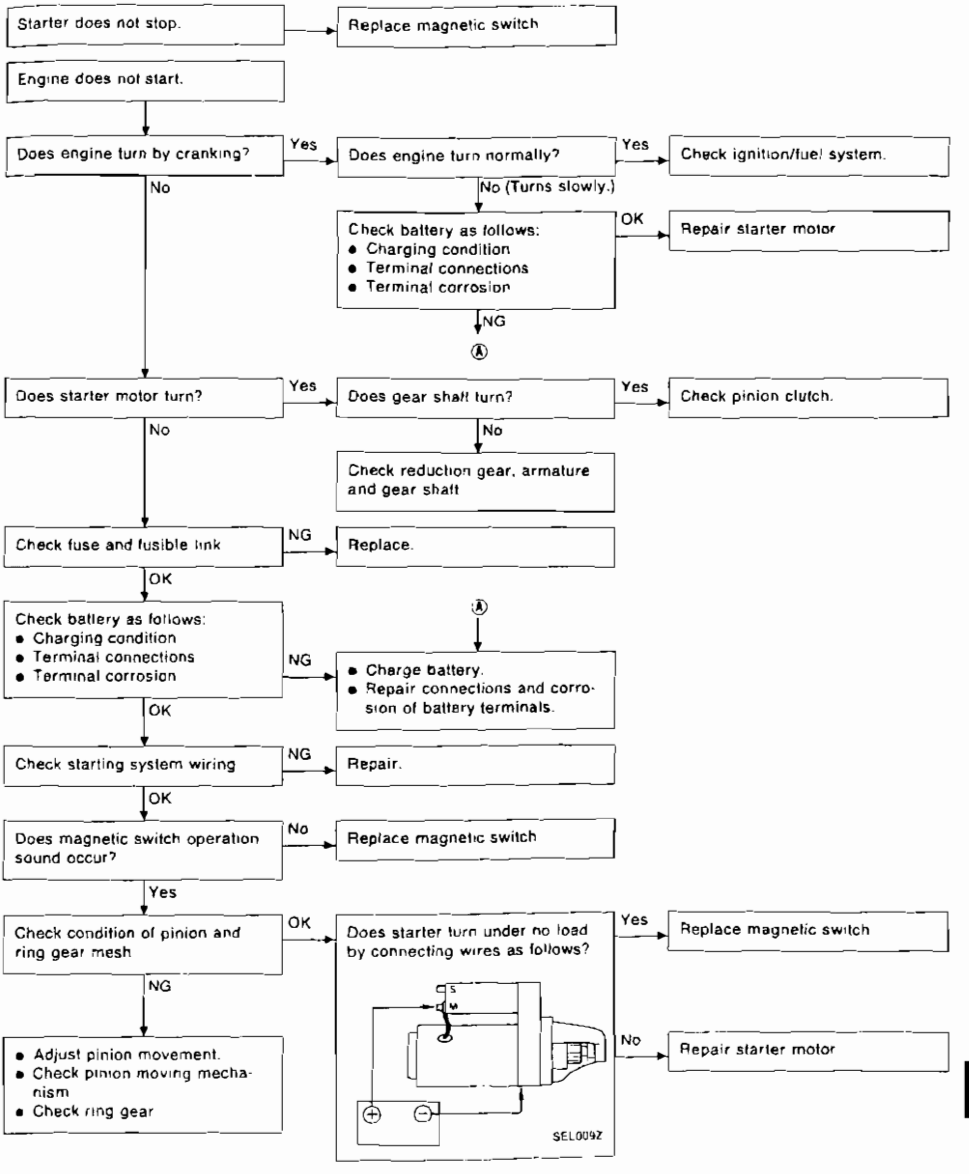
A/T MODELS



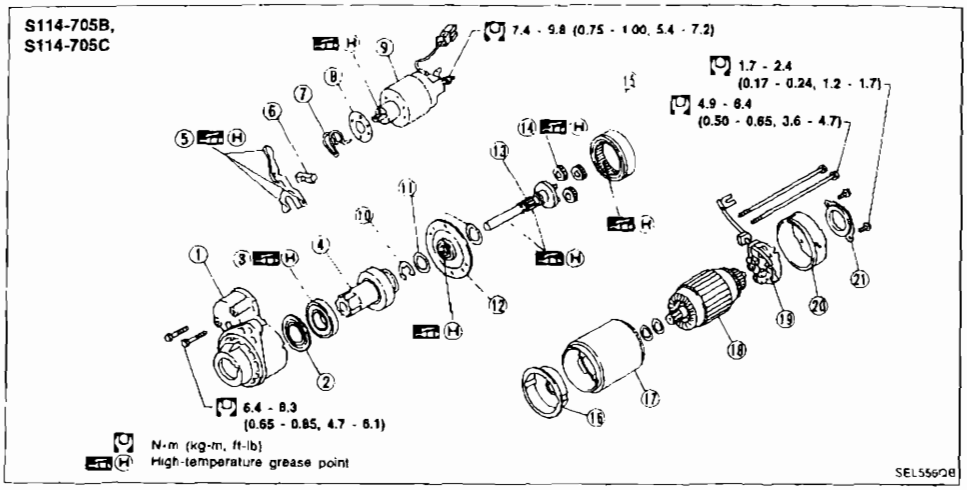
SEL663T

Trouble-shooting

If any abnormality is found, immediately disconnect battery negative terminal.



Construction



1. Gear case
2. Bearing cover
3. Ball bearing
4. Pinion assembly
5. Shift lever
6. Dust cover
7. Torsion spring
8. Adjusting plate
9. Magnetic switch assembly
10. E-ring
11. Thrust washer
12. Center bracket
13. Pinion shaft
14. Planetary gear
15. Internal gear
16. Center bracket
17. Yoke assembly
18. Armature
19. Brush holder assembly
20. Rear cover
21. Dust cover

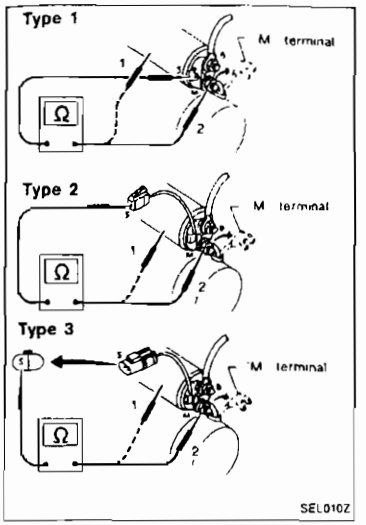
Removal and Installation

REMOVAL

1. Remove battery negative cable from battery.
2. Remove transmission harness bracket
3. Remove battery cable from starter motor.
4. Disconnect harness connector from starter motor harness
5. Remove starter motor from under vehicle.

INSTALLATION

Installation procedure is basically the reverse order of removal.



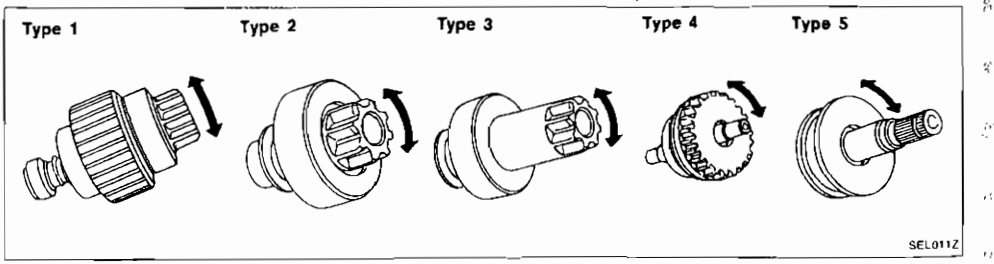
Magnetic Switch Check

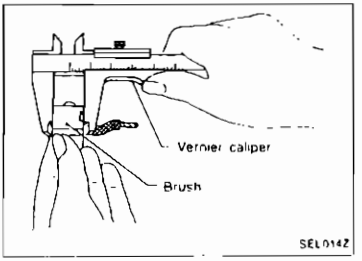
- Before starting to check, disconnect battery ground cable.
- Disconnect "M" terminal of starter motor.

1. Continuity test (between "S" terminal and switch body).
- No continuity ... Replace.
2. Continuity test (between "S" terminal and "M" terminal).
- No continuity ... Replace.

Pinion/Clutch Check

1. Inspect pinion teeth.
- Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Inspect reduction gear teeth.
- Replace reduction gear if teeth are worn or damaged. (Also check condition of armature shaft gear teeth.)
3. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
- If it locks or rotates in both directions, or unusual resistance is evident ... Replace.





Brush Check

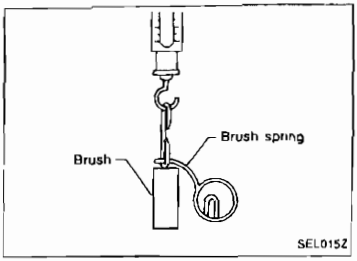
BRUSH

Check wear of brush.

Wear limit length:
Refer to SDS. (EL-37)

- Excessive wear ... Replace.

Brush Check (Cont'd)

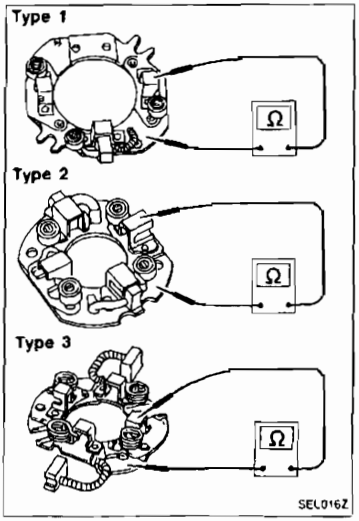


BRUSH SPRING PRESSURE

Check brush spring pressure with brush spring detached from brush.

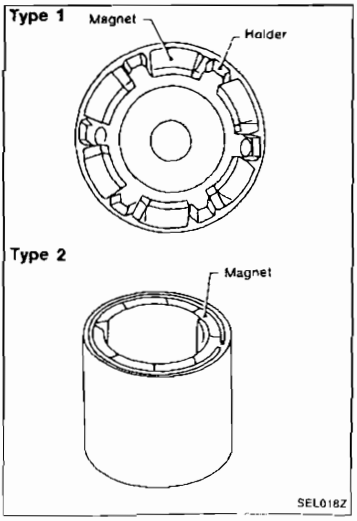
Spring pressure (with new brush):
Refer to SDS. (EL-37)

- Not within the specified values ... Replace.



BRUSH HOLDER

1. Perform insulation test between brush holder (positive side) and its base (negative side).
- Continuity exists. ... Replace.
2. Check brush to see if it moves smoothly.
- If brush holder is bent, replace it; if sliding surface is dirty, clean.



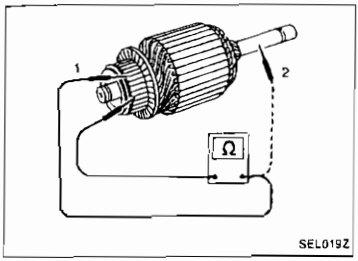
Yoke Check

Magnet is secured to yoke by bonding agent Check magnet to see that it is secured to yoke and for any cracks. Replace malfunctioning parts as an assembly.

Holder may move slightly as it is only inserted and not bonded

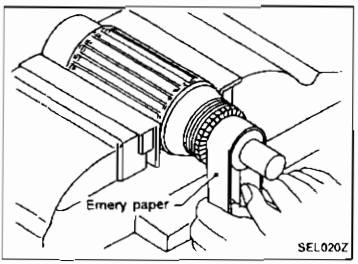
CAUTION:

Do not clamp yoke in a vice or strike it with a hammer.

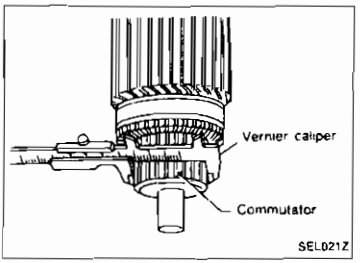


Armature Check

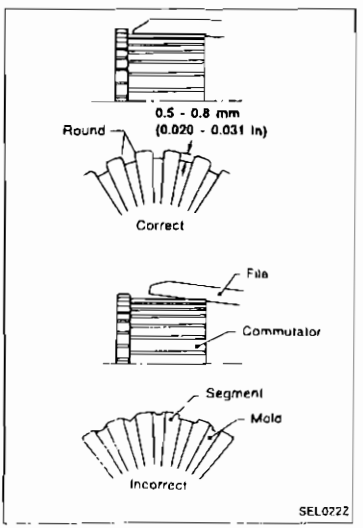
1. Continuity test (between two segments side by side).
- No continuity ... Replace.
2. Insulation test (between each commutator bar and shaft).
- Continuity exists. ... Replace.



3. Check commutator surface.
- Rough ... Sand lightly with No. 500 - 600 emery paper.



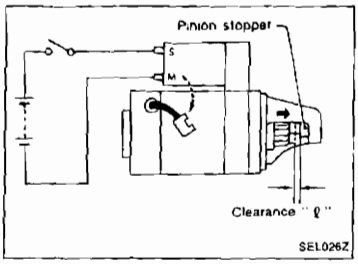
4 Check diameter of commutator.
Commutator minimum diameter:
Refer to SDS. (EL-37)
- Less than specified value ... Replace.



5. Check depth of insulating mold from commutator surface.
- Less than 0.2 mm (0.008 in) .. Undercut to 0.5 to 0.8 mm (0.020 to 0.031 in)

Assembly

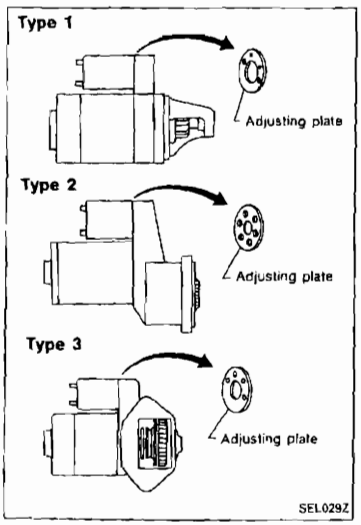
Apply high-temperature grease to lubricate the bearing, gears and frictional surface when assembling the starter.
Carefully observe the following instructions.



PINION PROTRUSION LENGTH ADJUSTMENT

With pinion driven out by magnetic switch, push pinion back to remove slack and measure clearance "ℓ" between the front edge of the pinion and the pinion stopper.

Clearance "ℓ":
Refer to SDS. (EL-37)



- Not in the specified value ... Adjust by adjusting plate.

Service Data and Specifications (SDS)

STARTER

Type			S114-705B S114-705C
			HITACHI make
			Reduction gear
System voltage		V	12
No-load	Terminal voltage	V	11.0
	Current	A	Less than 90
	Revolution	rpm	More than 2,950
Minimum length of brush		mm (in)	11.0 (0.433)
Brush spring tension (With new brush)		N (kg, lb)	17.6 - 21.6 (1.80 - 2.20, 3.96 - 4.86)
Minimum diameter of commutator		mm (in)	32.0 (1.260)
Clearance between pinion front edge and pinion stopper		mm (in)	0.3 - 1.5 (0.012 - 0.059)
Clearance between bearing metal and armature shaft		mm (in)	Less than 0.2 (0.008)

System Description

The alternator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. The voltage output is controlled by the IC regulator.

Power is supplied at all times to alternator terminal Ⓢ through

- 100A fusible link (letter [a], located in the fusible link and fuse box), and
- 7.5A fuse (No. [41], located in the fusible link and fuse box).

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

Terminal Ⓔ of the alternator supplies ground through body ground (E204).

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

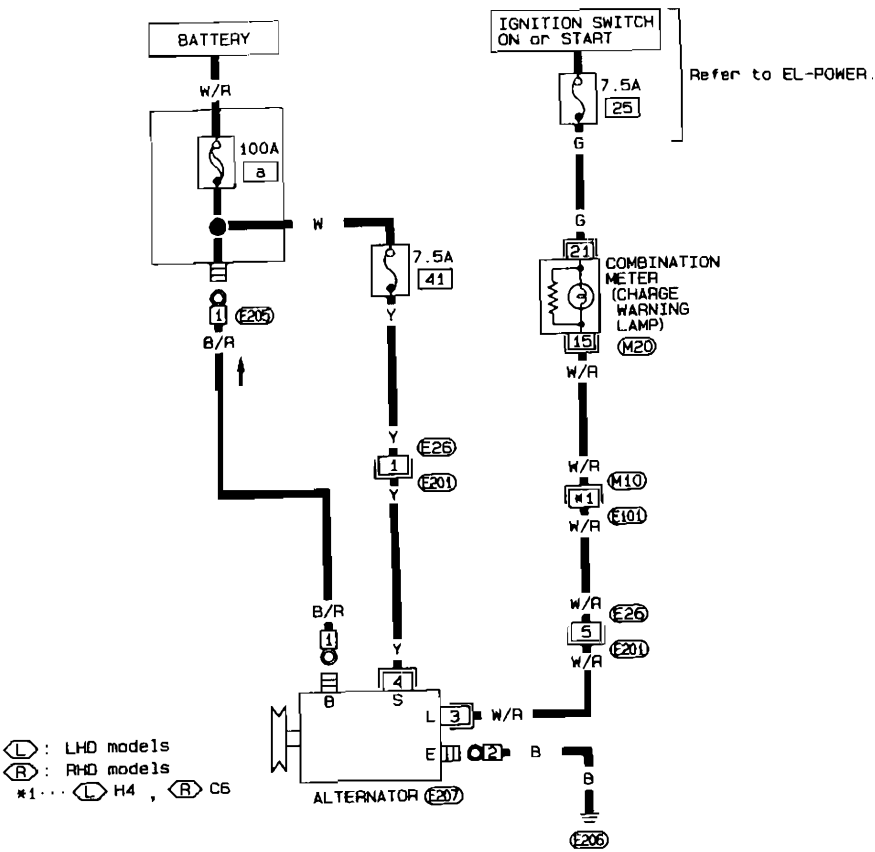
- through 7.5A fuse (No. [25], located in the fuse block)
- to combination meter terminal ㉑ for the charge warning lamp.

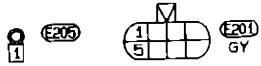
Ground is supplied to terminal ⑮ of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning lamp will illuminate. When the alternator is providing sufficient voltage with the engine running, the ground is opened and the charge warning lamp will go off.

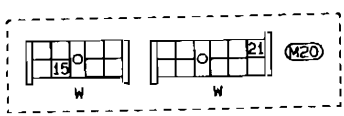
If the charge warning lamp illuminates with the engine running, a fault is indicated.

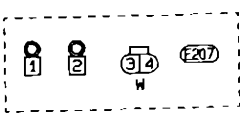
Wiring Diagram — CHARGE —

EL-CHARGE-01









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M10 , E101

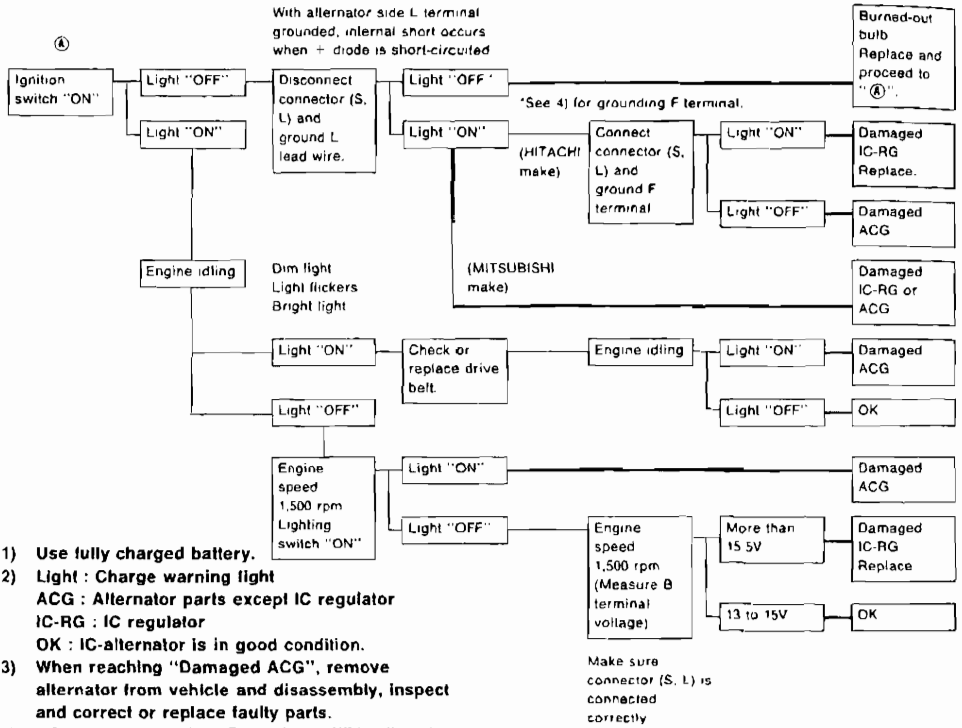
SEL664T

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.

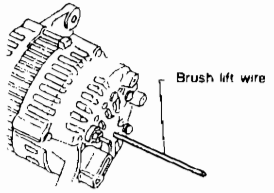
WITH IC REGULATOR



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.



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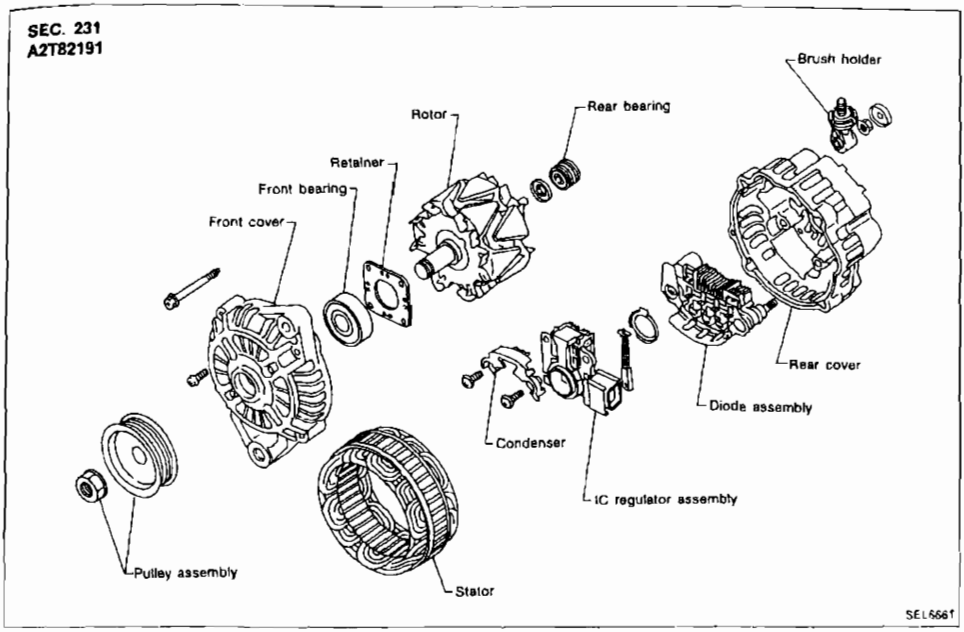
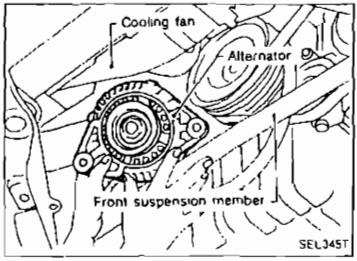
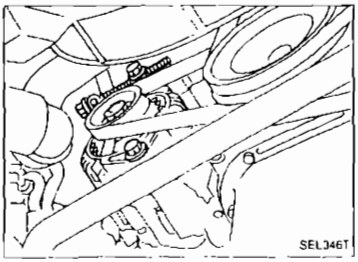
5) **Terminals "S", "L", "B" and "E" are marked on rear cover of alternator.**

Construction







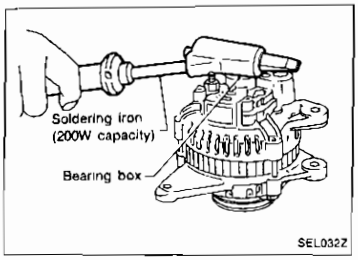
Removal and Installation

REMOVAL

1. Remove engine undercover.
2. Remove stabilizer bracket
3. Remove power steering tube mounting bracket
4. Remove drive belt from alternator.
5. Disconnect harness connector.
6. Remove cooling fan lower shroud
7. Remove alternator

INSTALLATION

To install, reverse the removal procedure.



Disassembly

REAR COVER REMOVAL

CAUTION:

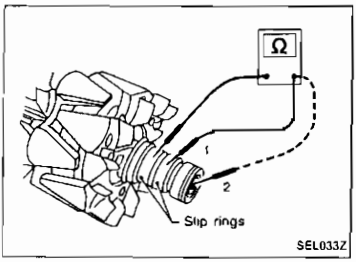
Rear cover may be hard to remove because a ring is used to lock outer race of rear bearing. To facilitate removal of rear cover, heat just bearing box section with a 200W soldering iron.

Do not use a heat gun, as it can damage diode assembly.

REAR BEARING

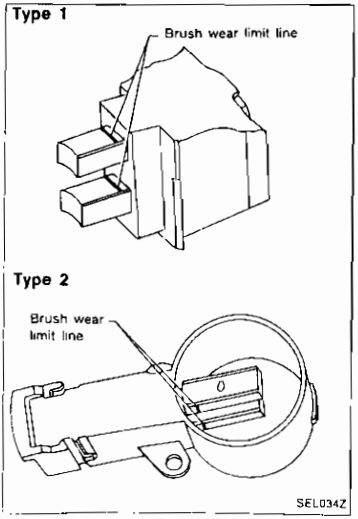
CAUTION:

- **Do not reuse rear bearing after removal. Replace with a new one.**
- **Do not lubricate rear bearing outer race.**



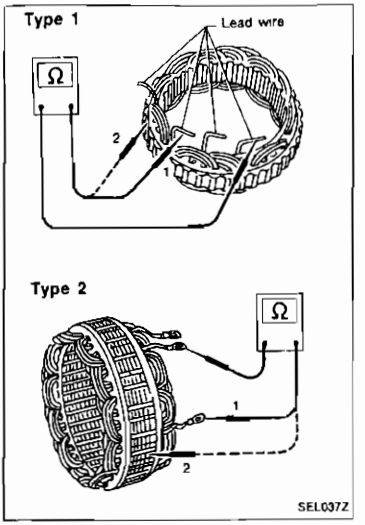
Rotor Check

1. Resistance test
   Resistance: Refer to SDS. (EL-45)
   - Not within the specified values ... Replace rotor.
2. Insulator test
   - Continuity exists ... Replace rotor.
3. Check slip ring for wear.
   Slip ring minimum outer diameter:
   Refer to SDS. (EL-45)
   - Not within the specified values ... Replace rotor.



Brush Check

1. Check smooth movement of brush.
   - Not smooth ... Check brush holder and clean.
2. Check brush for wear.
   - Replace brush if it is worn down to the limit line.



Stator Check

1. Continuity test
   - No continuity ... Replace stator.
2. Ground test
   - Continuity exists ... Replace stator

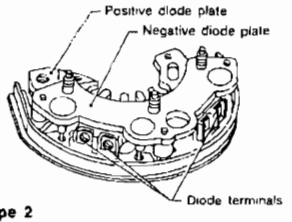
Diode Check

MAIN DIODES

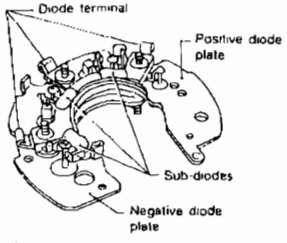
- Use an ohmmeter to check condition of diodes as indicated in chart below
- If any of the test results is not satisfactory, replace diode assembly.

	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	

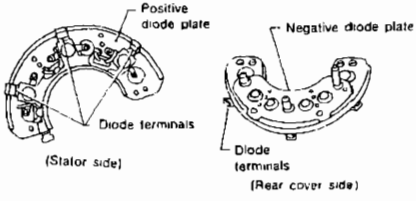
Type 1



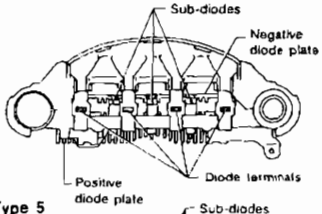
Type 2



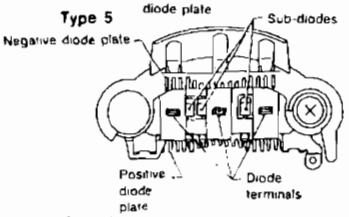
Type 3



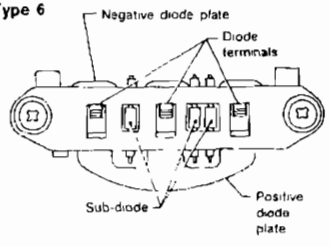
Type 4



Type 5



Type 6



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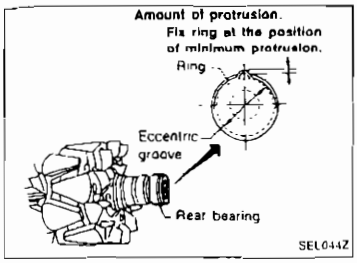
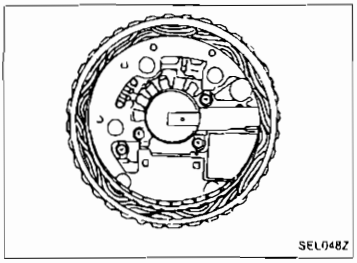
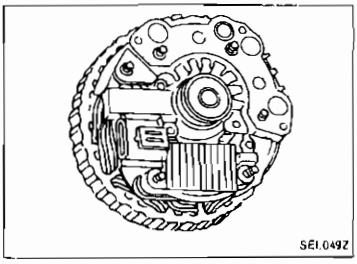






Assembly

RING FITTING IN REAR BEARING

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

CAUTION:

Do not reuse rear bearing after removal.

REAR COVER INSTALLATION

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

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

Take care not to damage slip ring sliding surface.

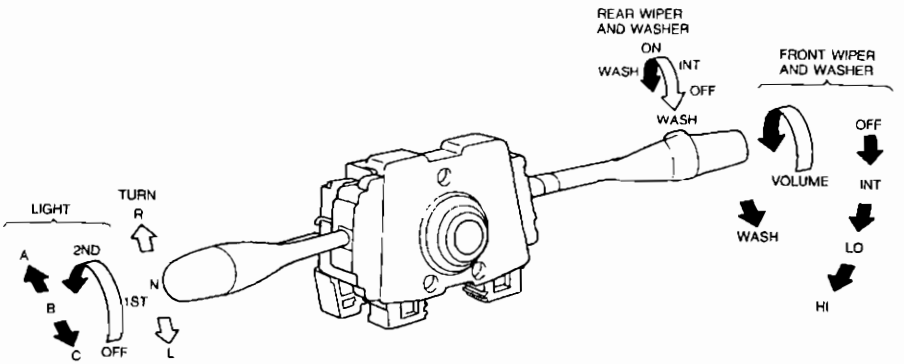
Service Data and Specifications (SDS)

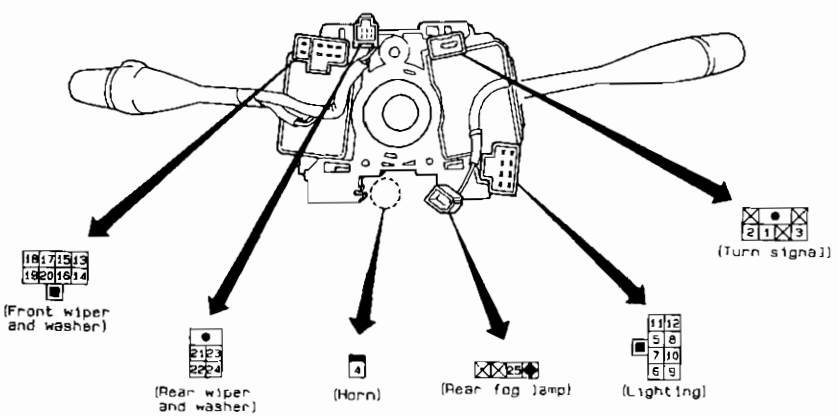
ALTERNATOR

Type		A2TB2191 MITSUBISHI make
Nominal rating	V-A	12-90
Ground polarity		Negative
Minimum revolution under no-load (when 13.5 volts is applied)	rpm	Less than 1,300
Hot output current	A/rpm	More than 22/1,300 More than 67/2,500 More than 90/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	More than 5 (0.20)
Slip ring minimum outer diameter	mm (in)	More than 22.1 (0.870)
Rotor (field coil) resistance	Ω	2.5

Check

FOR EUROPE





LIGHTING SWITCH

	OFF		1ST			2ND		
	A	B	C	A	B	C	B	C
5								
6								
7								
8								
9								
10								
11								
12								

FRONT WIPER AND WASHER SWITCH

	OFF	INT	LO	HI	WASH
13					
14					
15					
16					
17					
18					

REAR WIPER AND WASHER SWITCH

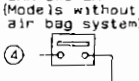
	WASH	OFF	INT	ON	WASH
21					
22					
23					
24					

TURN SIGNAL SWITCH

	R	N	L
1			
2			
3			

INTERMITTENT WIPER VOLUME

HORN SWITCH (Models without air bag system)



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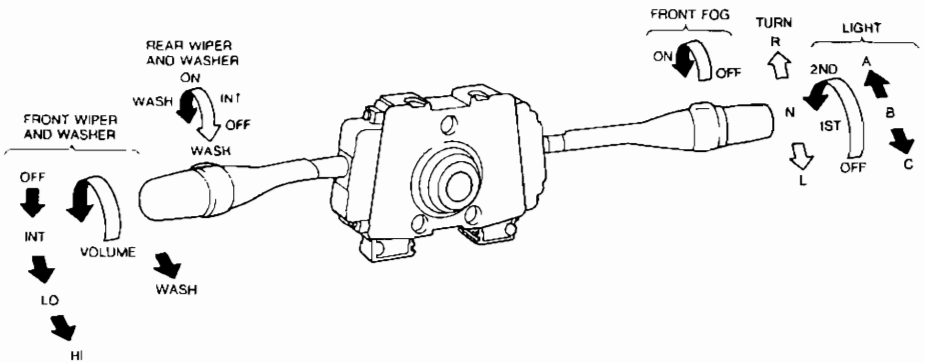
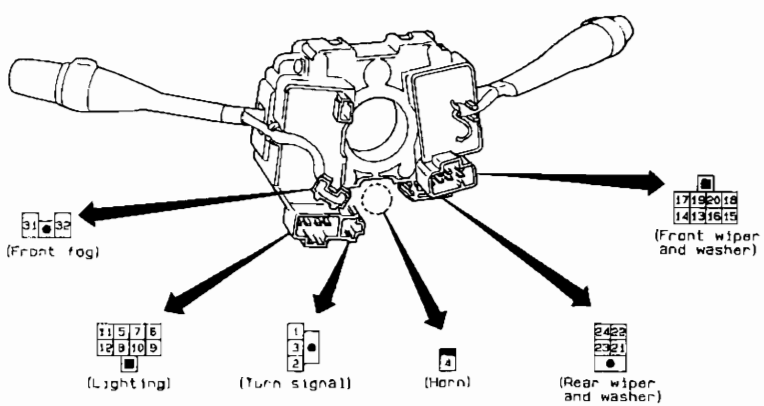
EXCEPT FOR EUROPE





LIGHTING SWITCH

	OFF		1ST		2ND		
	A	B	C	A	B	C	A	B	C
5		○			○	○	○	○	
6		○			○	○	○	○	
7							○		
8		○			○	○	○	○	
9		○			○	○	○	○	
10							○		
11			○	○	○	○	○	○	
12			○	○	○	○	○	○	

TURN SIGNAL SWITCH

	R	N	L
1	○		○
2	○		
3			○

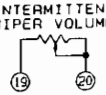
FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

FRONT WIPER AND WASHER SWITCH

	OFF	INT	LO	HI	WASH
13	○	○			
14	○		○		
15		○	○		
16			○	○	
17		○	○	○	
18			○	○	○

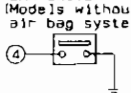
INTERMITTENT WIPER VOLUME



REAR WIPER AND WASHER SWITCH

	WASH	OFF	INT	ON	WASH
21			○		
22				○	○
23	○				○
24	○		○		○

HORN SWITCH
(Models without air bag system)



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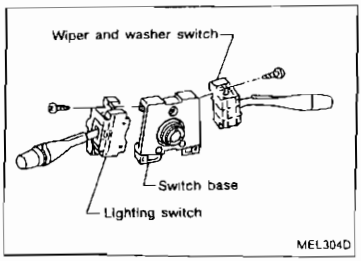
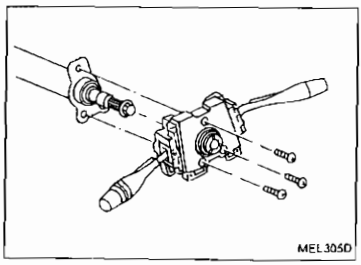


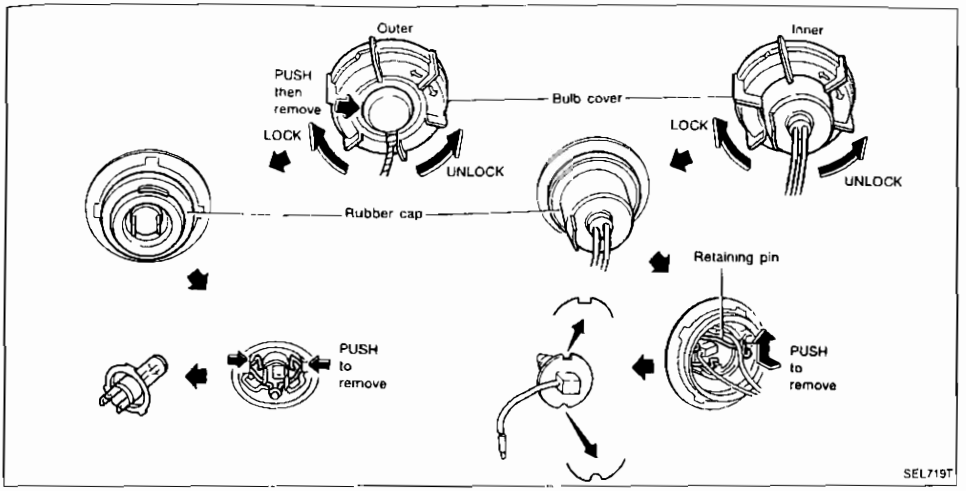
Replacement

- Each switch can be replaced without removing combination switch base



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

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. Disconnect harness connector from rear end of bulb (Outer).
3. Turn bulb cover counterclockwise, then remove it.
4. Pull off rubber cap.
5. Push and turn retaining pin to loosen it.
6. Remove headlamp bulb. Do not shake or rotate bulb when removing it.
7. Disconnect harness connector (Inner).
8. Install in the reverse order of removal.

CAUTION:

- **Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.**

Bulb Specifications

Item	Wattage (W)
Outer (High/Low) (H4 type)	60/55
Inner (Low) (H3 type)	55

System Description

The headlamps are controlled by the lighting switch which is built into the combination switch

MODELS FOR EUROPE

Power is supplied at all times
- to lighting switch terminal ⑤
- through 20A fuse (No. 37, located in the fusible link and fuse box), and
- to lighting switch terminal ⑧
- through 20A fuse (No. 38, located in the fusible link and fuse box).

Low beam operation

When the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to terminal ③ of the LH headlamp, and
- from lighting switch terminal ⑦
- to terminal ③ of the RH headlamp.

Terminal ② of each headlamp supplies ground through body ground E43 or E57.
With power and ground supplied, the low beam headlamps will illuminate.

High beam operation/flash-to-pass operation

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position or PASS ("C") position, power is supplied
- from lighting switch terminal ⑥
- to terminals ① (Outer) and ④ (Inner) of RH headlamp, and
- from lighting switch terminal ⑨
- to terminals ① (Outer) and ④ (Inner) of LH headlamp, and
- to combination meter terminal 37 for the high beam indicator.

Ground is supplied to terminal 36 of the combination meter through body ground M1.
Terminals ② (Outer) and ⑤ (Inner) of headlamp supply ground through body ground E43 or E57.
With power and ground supplied, the high beams and the high beam indicator will illuminate.

MODELS EXCEPT FOR EUROPE

Power is supplied at all times
- to lighting switch terminal ⑤
- through 20A fuse (No. 38, located in the fusible link and fuse box), and
- to lighting switch terminal ⑧
- through 20A fuse (No. 37, located in the fusible link and fuse box).

Low beam operation

When the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied
- from lighting switch terminal ⑦
- to terminal ③ of the LH headlamp, and
- from lighting switch terminal ⑩
- to terminal ③ of the RH headlamp.

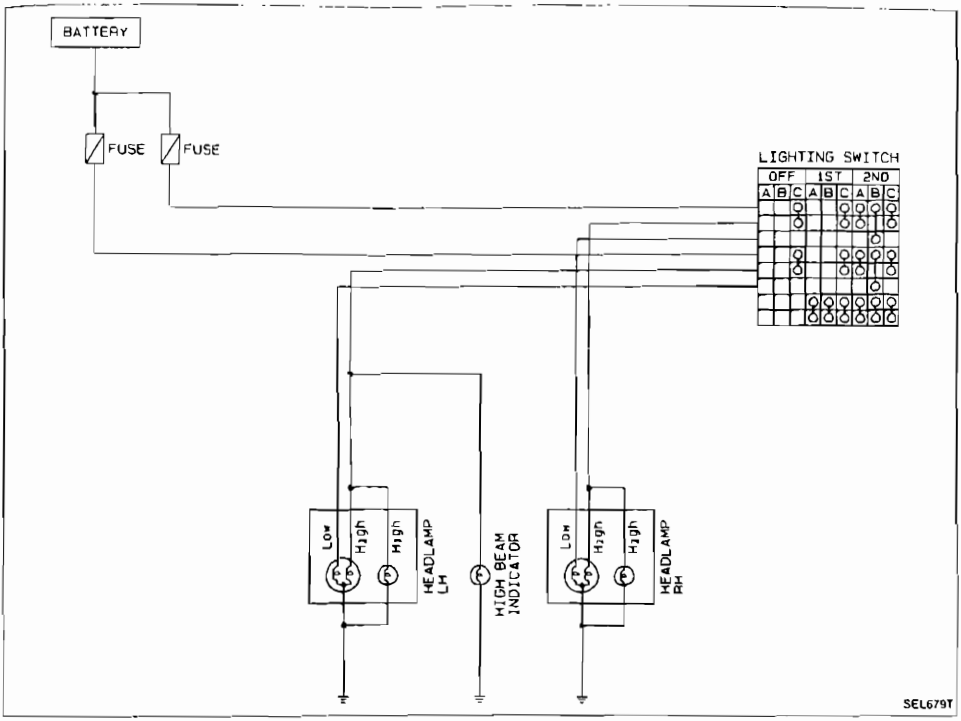
Terminal ② of each headlamp supplies ground through body ground E43 or E57.
With power and ground supplied, the low beam headlamps will illuminate.

High beam operation/flash-to-pass operation

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to terminals ① (Outer) and ④ (Inner) of each RH headlamp, and
- from lighting switch terminal ⑥
- to terminals ① (Outer) and ④ (Inner) of each LH headlamp, and
- to combination meter terminal 37 for the high beam indicator.

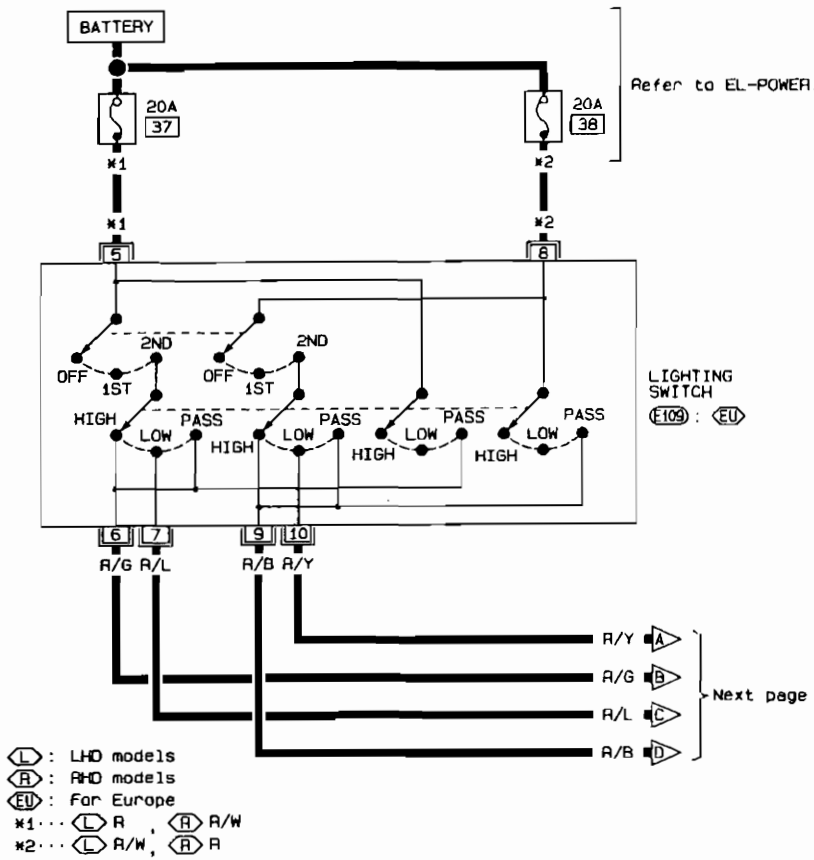
Ground is supplied to terminal 36 of the combination meter through body ground M1.
Terminals ② (Outer) and ⑤ (Inner) of each headlamp supply ground through body ground E43 or E57.
With power and ground supplied, the high beams and the high beam indicator will illuminate

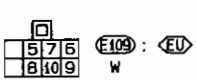
Schematic


BATTERY
FUSE
FUSE
LIGHTING SWITCH
OFF
1ST
2ND
A B C A B C A B C
Low
High
High
HEADLAMP LH
HIGH BEAM INDICATOR
Low
High
High
HEADLAMP RH
SEL679T

Wiring Diagram — H/LAMP —

EL-H/LAMP-01





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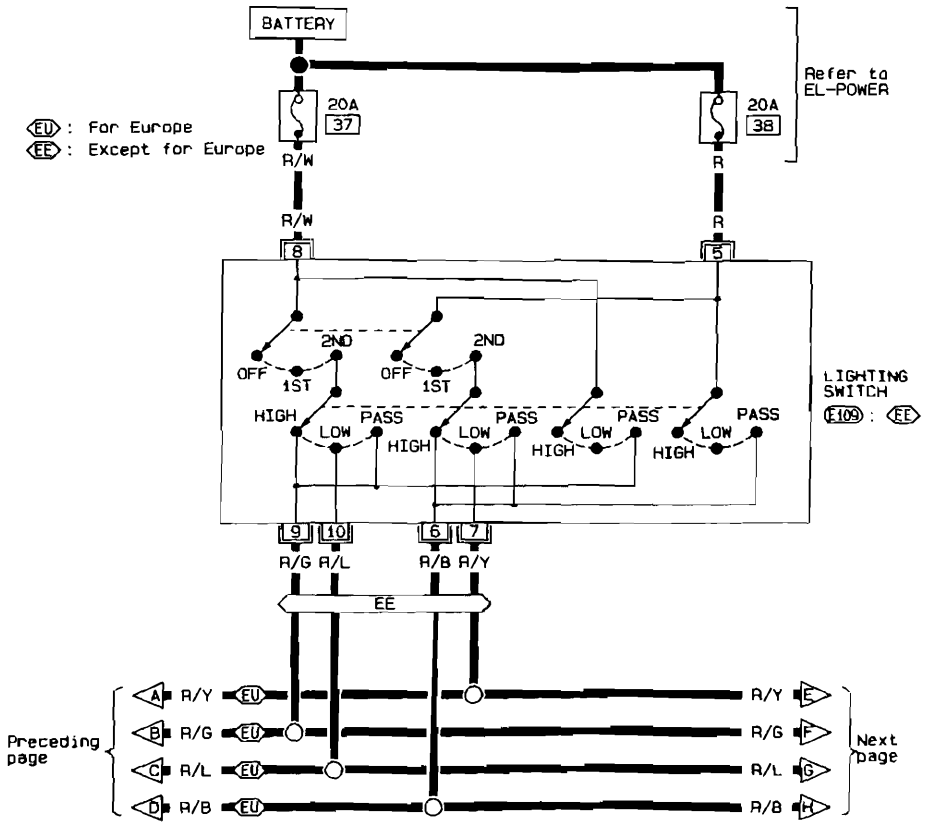
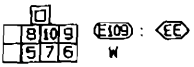
Wiring Diagram — H/LAMP — (Cont'd)

EL-H/LAMP-02





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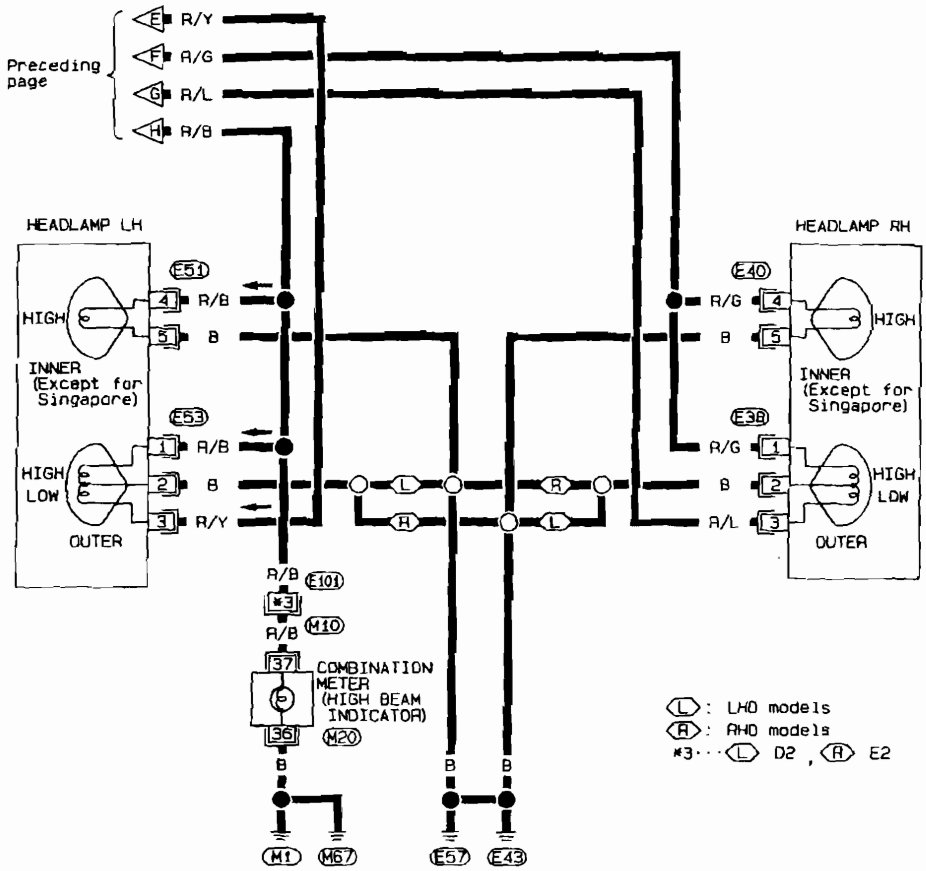
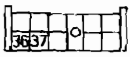
Wiring Diagram — H/LAMP — (Cont'd)

EL-H/LAMP-03





Refer to last page (Foldout page).
M10, E101

SEL682T

Trouble Diagnoses

Symptom	Possible cause	Repair order
LH headlamps do not operate	1 Bulb 2 Ground (E43) or (E57) 3 20A fuse 4 Lighting switch	1 Check bulb. 2 Check ground (E43) or (E57) 3 Check 20A fuse (No 38, located in fusible link and fuse box). Verify battery positive voltage is present at terminal *1 of lighting switch. 4 Check lighting switch
RH headlamps do not operate	1 Bulb 2 Ground (E43) or (E57) 3 20A fuse 4 Lighting switch	1 Check bulb 2 Check ground (E43) or (E57) 3 Check 20A fuse (No 37, located in fusible link and fuse box). Verify battery positive voltage is present at terminal *2 of lighting switch 4 Check lighting switch
LH high beams do not operate, but LH low beam operates	1 Bulbs 2. Open in LH high beams circuit 3. Lighting switch	1 Check bulbs 2. Check R/B wire between lighting switch and LH headlamps for an open circuit 3 Check lighting switch
LH low beam does not operate, but LH high beam operates.	1 Bulb 2. Open in LH low beam circuit 3. Lighting switch	1 Check bulb 2 Check R/Y wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beams do not operate, but RH low beam operates.	1 Bulbs 2. Open in RH high beams circuit 3. Lighting switch	1 Check bulbs. 2 Check R/G wire between lighting switch and RH headlamps for an open circuit 3. Check lighting switch
RH low beam does not operate, but RH high beam operates.	1 Bulb 2 Open in RH low beam circuit 3 Lighting switch	1 Check bulb. 2 Check R/L wire between lighting switch and RH headlamp for an open circuit 3 Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Ground (M1) 3 Open in high beam circuit	1. Check bulb in combination meter 2. Check ground (M1) 3 Check R/B wire between lighting switch and combination meter for an open circuit

*1 (8) Models for Europe
(5) Models except for Europe

*2 (5) Models for Europe
(8) Models except for Europe

System Description

The headlamp system on vehicles for Norway and Sweden contains a daytime light unit. The unit activates the following whenever the engine is running with the lighting switch in the OFF position:

- Low beam headlamps
- Clearance, license, tail and illumination lamps

Power is supplied at all times

- through 20A fuse (No 37 , located in the fusible link and fuse box)
- to daytime light unit terminal ③ and
- to lighting switch terminal ⑤.

Power is also supplied at all times

- through 20A fuse (No 38 , located in the fusible link and fuse box)
- to daytime light unit terminal ② and
- to lighting switch terminal ⑥.

Power is also supplied at all times

- through 10A fuse (No. 23 , located in the fuse block)
- to daytime light unit terminal ① and
- to lighting switch terminal ⑪.

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

- through 7.5A fuse (No. 25 , located in the fuse block)
- to daytime light unit terminal ⑦.

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

- through 7.5A fuse (No. 2 , located in the fuse block)
- to daytime light unit terminal ⑥.

Ground is supplied to daytime light unit terminal ⑨ through body ground (E43).

HEADLAMP OPERATION

Low beam operation

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

- from lighting switch terminal ⑦ or
- from daytime light unit terminal ④
- to RH headlamp terminal ③.

Ground is supplied to RH headlamp terminal ② through body ground (E43).

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

- from lighting switch terminal ⑩ or
- from daytime light unit terminal ⑤
- to LH headlamp terminal ③.

Ground is supplied to LH headlamp terminal ② through body ground (E57).

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

High beam operation/flash-to-pass operation

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

- from lighting switch terminal ⑥
- to terminals ① (Outer) and ④ (Inner) of RH headlamp, and
- from lighting switch terminal ⑨
- to terminals ① (Outer) and ④ (Inner) of LH headlamp, and
- to combination meter terminal ㊼ for the high beam indicator.

Ground is supplied to terminal ㊱ of the combination meter through body ground (M1).

Terminals ② (Outer) and ⑤ (Inner) of headlamp supply ground through body ground (E43) or (E57)

With power and ground supplied, the high beams and the high beam indicator will illuminate.

System Description (Cont'd)

DAYTIME LIGHT OPERATION

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

- to daytime light unit terminal ②
- through daytime light unit terminal ⑤
- to terminal ③ of LH headlamp
- to daytime light unit terminal ③
- through daytime light unit terminal ④
- to terminal ③ of RH headlamp

Ground is supplied to terminal ② of each headlamp through body ground E43 or E57
Ground is also supplied to terminal ⑨ of daytime light unit through body ground E43.

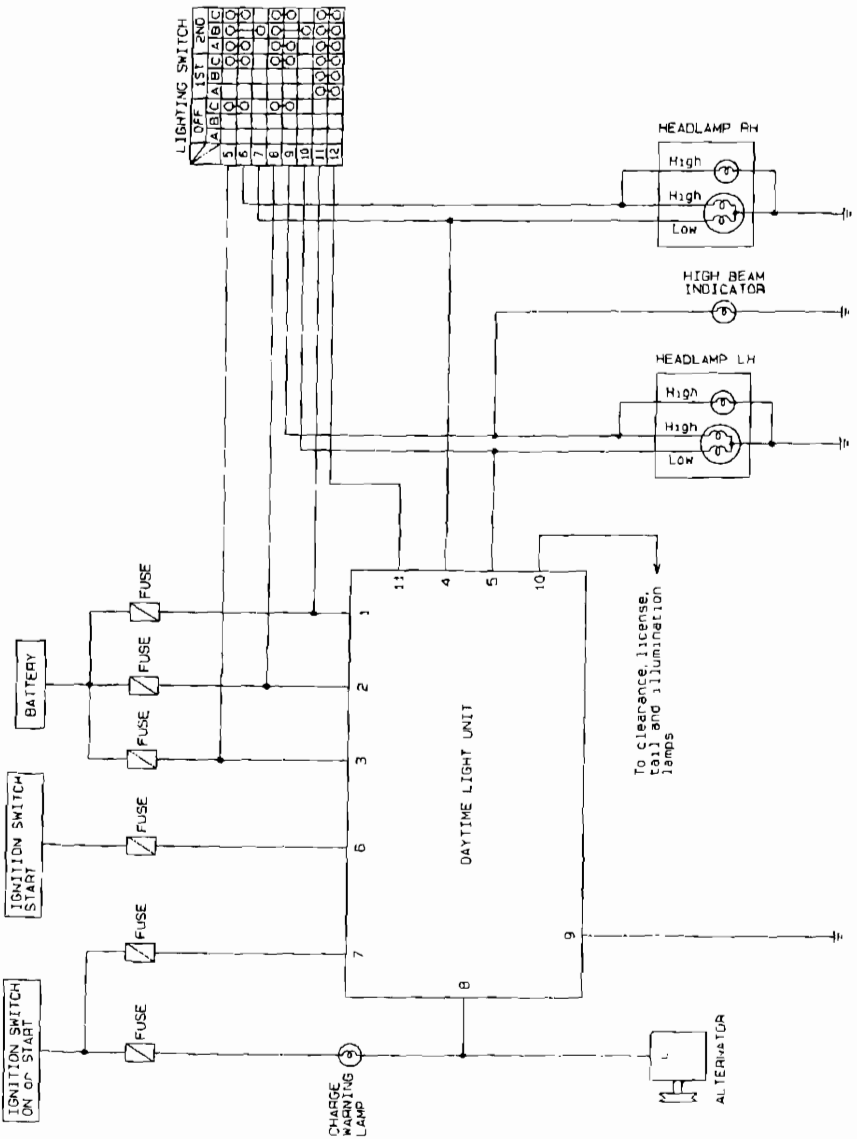
Operation (Daytime light system)

The headlamps' low beam and clearance, license, tail and illumination lamps automatically turn on after starting the engine with lighting switch in "OFF" position.
Lighting switch operations other than the above are the same as conventional light systems

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

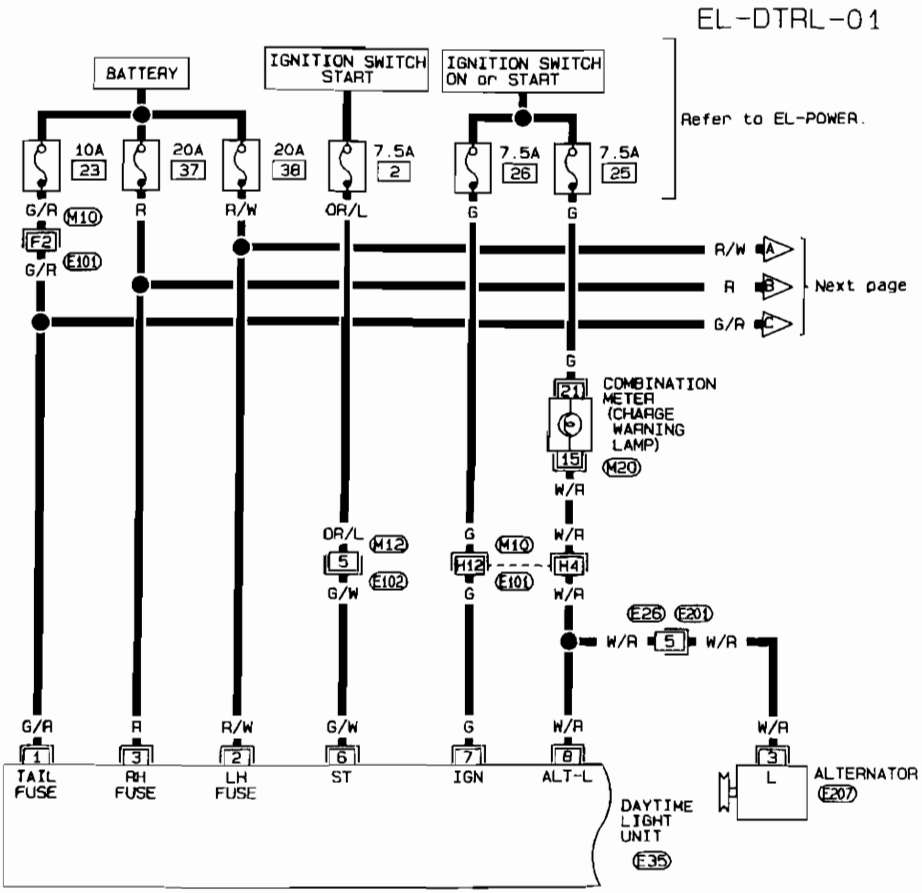
O: Lamp "ON"
X: Lamp "OFF"
□ Added functions

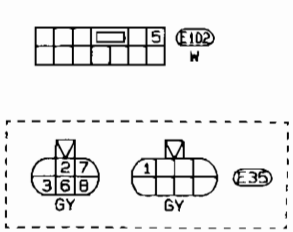
Schematic

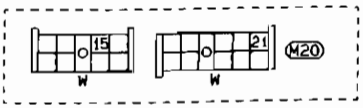


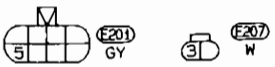
SFI 683T

Wiring Diagram — DTRL —





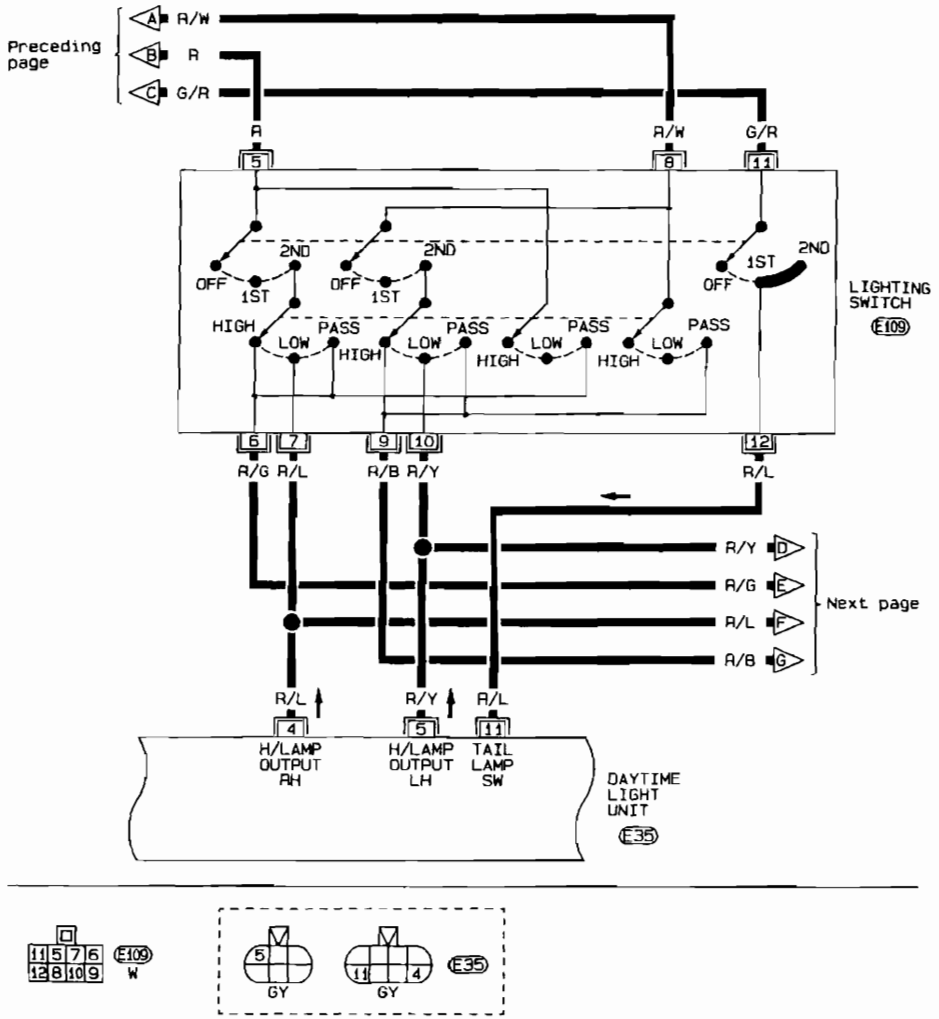




Refer to last page (Foldout page).

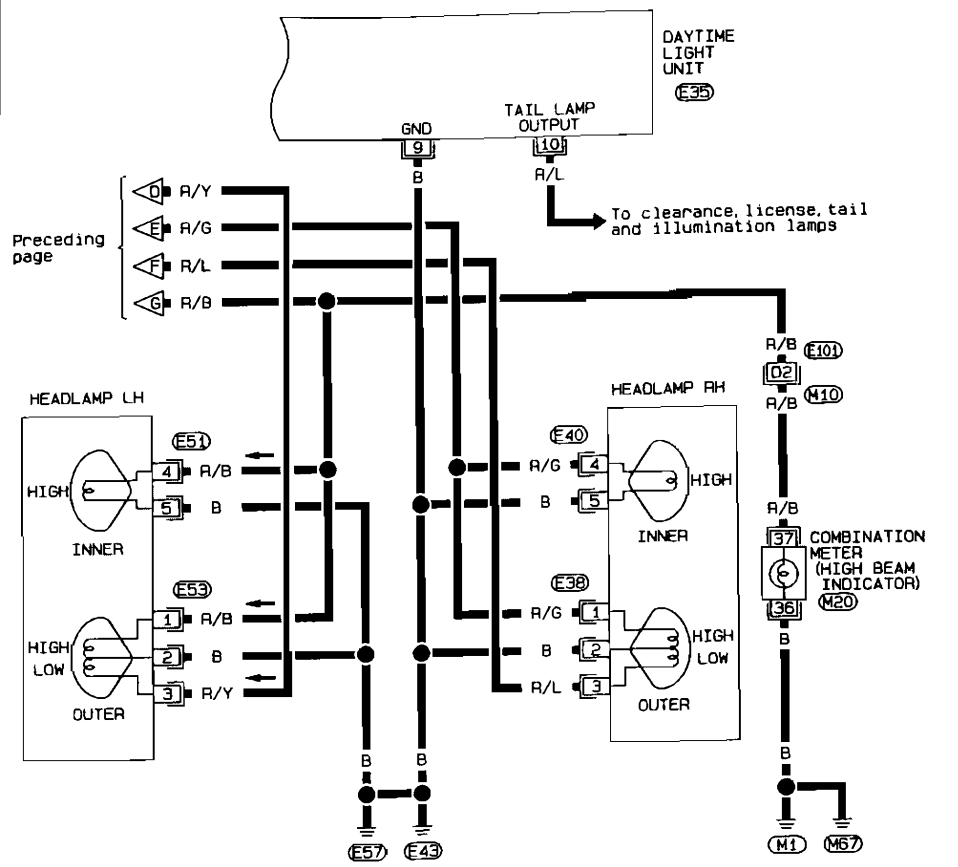
M10 , E101

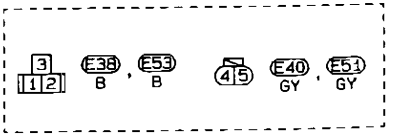
EL-DTRL-02

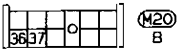


SEL685T

EL-DTRL-03







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M10 , E101

SEL686T

Trouble Diagnoses

DAYTIME LIGHT UNIT INSPECTION TABLE

(Data are reference va ues.)

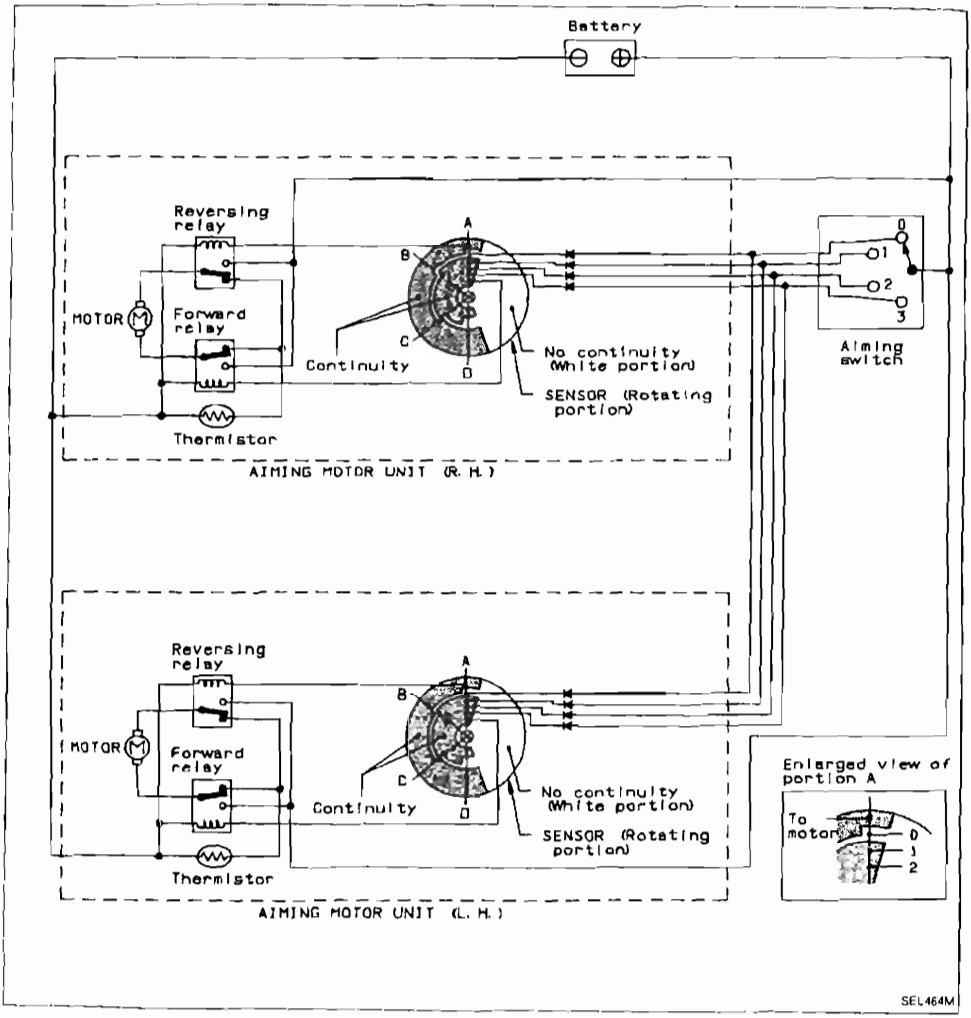
Terminal No	Item	Condition		Judgement standard
1	Power source (BAT)		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "OFF"	Battery positive voltage
2	Power source (BAT)		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "OFF"	Battery positive voltage
3	Power source (BAT)		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "OFF"	Battery positive voltage
4	RH lo beam (Lighting switch)		When turning lighting switch to "HEAD" and 2ND positions	Battery positive voltage
			When turning lighting switch to "OFF" with engine running (daytime light operation)	Battery positive voltage
5	LH lo beam (Lighting switch)		When turning lighting switch to "HEAD" and 2ND positions	Battery positive voltage
			When turning lighting switch to "OFF" with engine running (daytime light operation)	Battery positive voltage
6	Start signal		When turning ignition switch to "ST"	Battery positive voltage
			When turning ignition switch to "ON" from "ST"	1V or less
			When turning ignition switch to "OFF"	1V or less
7	Power source (IGN)		When turning ignition switch to "ON"	Battery positive voltage
			When turning ignition switch to "ST"	Battery positive voltage
			When turning ignition switch to "OFF"	1V or less
8	Alternator		When turning ignition switch to "ON"	More than 5V
			When engine is running	Battery positive voltage
			When turning ignition switch to "OFF"	1V or less

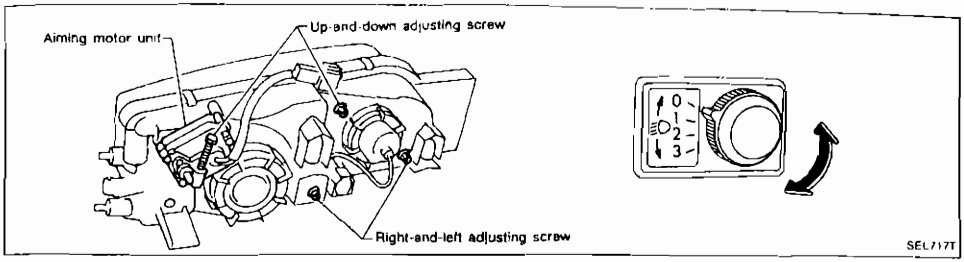
Trouble Diagnoses (Cont'd)

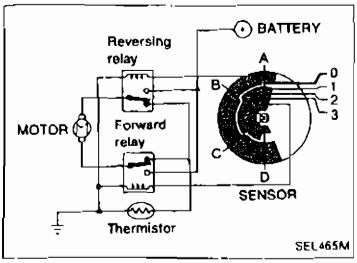
Terminal No	Item	Condition		Judgement standard
9	Ground		—	—
10	Small lamps		Wher turning lighting switch to 1ST or 2ND position	Battery positive voltage
			Wher turning lighting switch to "OFF" with engine running (daytime light operation)	Battery positive voltage
11	Lighting switch		When turning lighting switch to 1ST or 2ND position	Battery positive voltage
			When turning lighting switch to "OFF"	1V or less

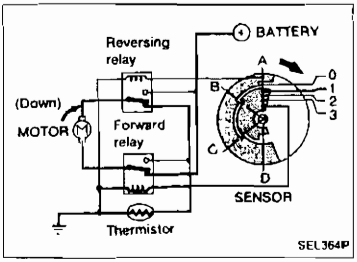
Description

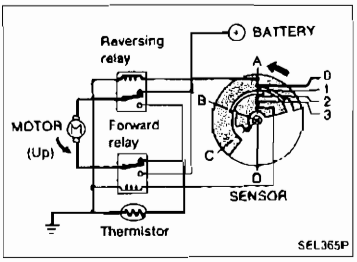
- The vertical direction of the headlamp beam can be adjusted from inside the vehicle. This prevents the headlamp beam axis from facing upward due to changes in number of occupants and vehicle load conditions











CIRCUIT OPERATION

[Example]

Aiming switch "0"

- When the aiming switch is set to "0", the motor will not start. This is because the power terminals are positioned at the nonconductive section of the sensor's rotary unit

Aiming switch "0" → "1"

- When the aiming switch is moved from "0" to "1", the sensor's conductive section activates the relay. Power is supplied through the relay to the motor. The headlamps will then move in the "DOWN" direction.
- The motor continues to rotate while the rotary unit of the sensor moves from point A to point B.
- The power terminals will then be positioned at the nonconductive section, disconnecting the power to the motor. The motor will then stop.

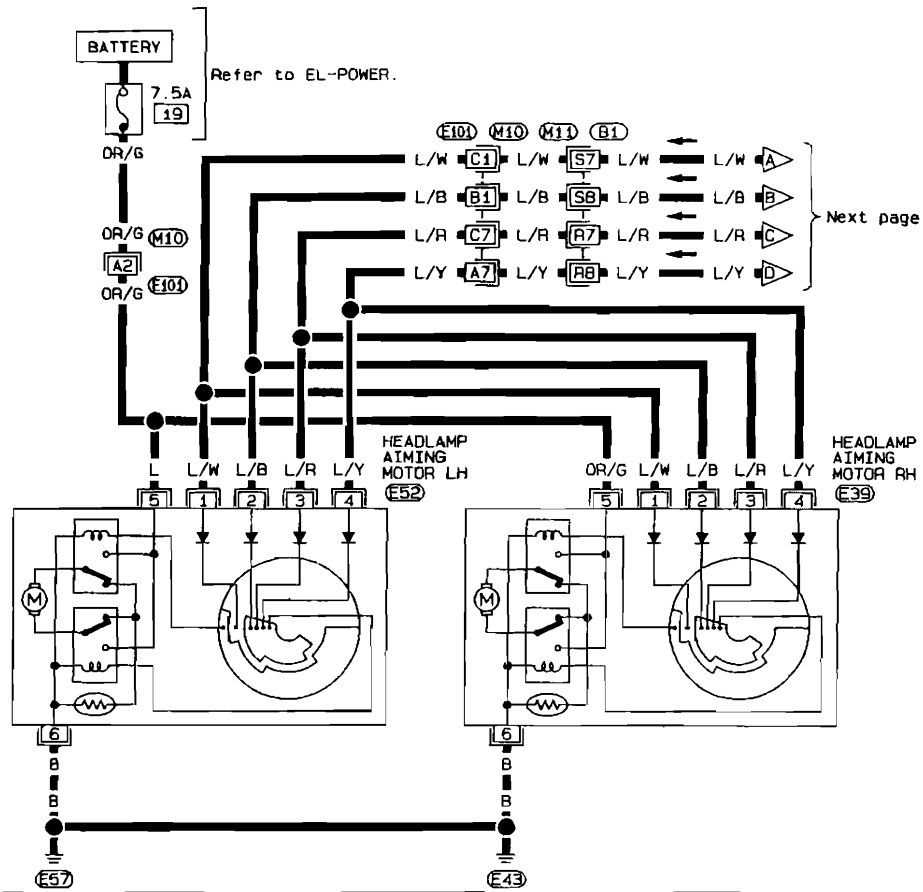
Aiming switch "1" → "0"

- When the aiming switch is moved from "1" to "0", the sensor's conductive section activates the relay. Power is supplied through the relay to the motor. The motor will rotate to move the headlamps in the "UP" direction.
- When the rotary unit of the sensor moves from point B to point A, the motor will stop.

Wiring Diagram — AIM —

LHD MODELS

EL-AIM-01



1 2 3 4 5 6 E39 GY , E52 GY

Refer to last page (Foldout page).

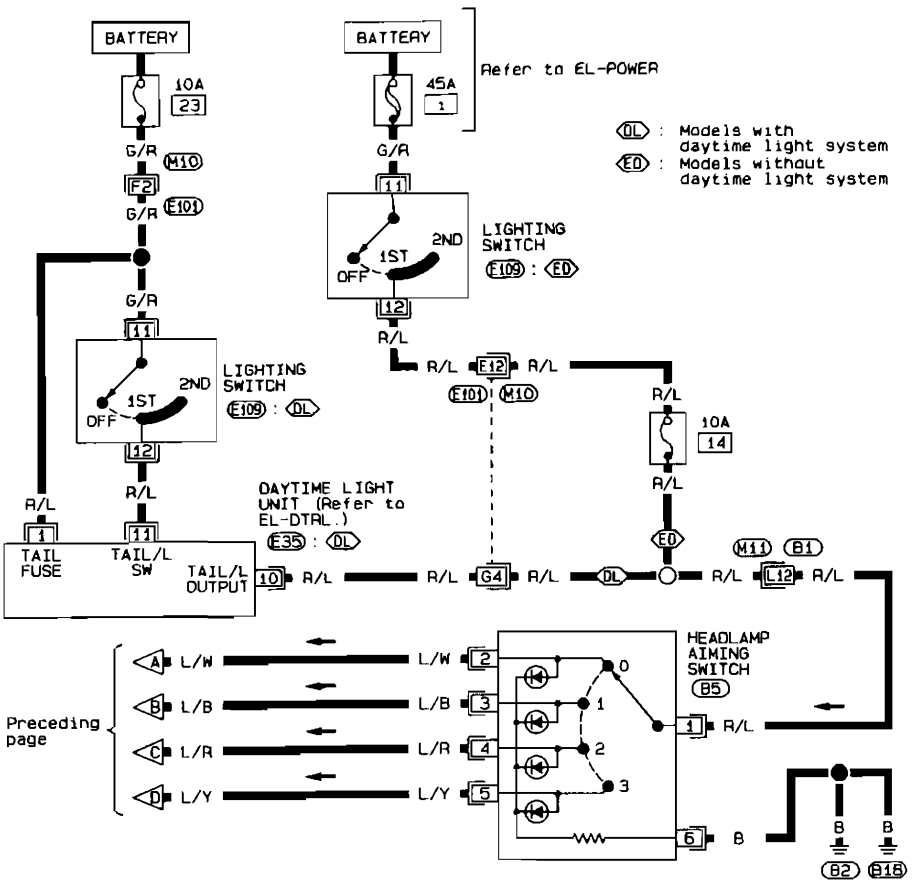
M10 , E101

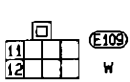
M11 , B1

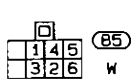
SEL687T

Wiring Diagram — AIM — (Cont'd)

EL-AIM-02







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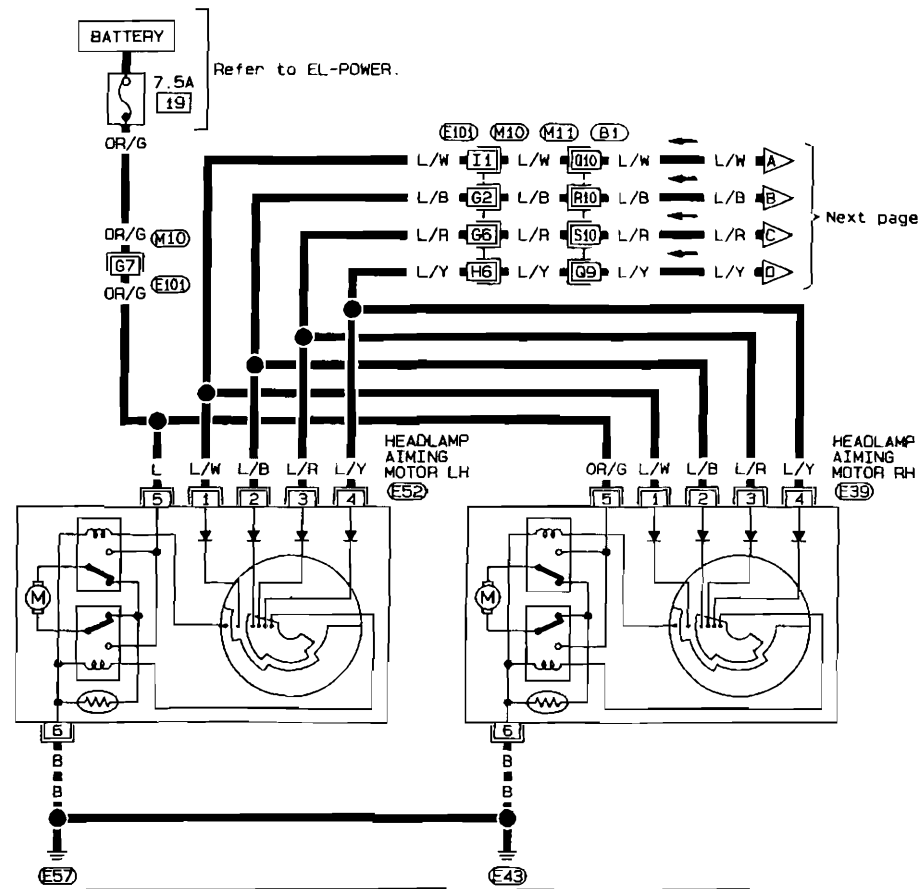
M10 , E101

M11 , B1

SEL688T

RHD MODELS

EL-AIM-03



1 2 3
4 5 6
E39 GY , E52 GY

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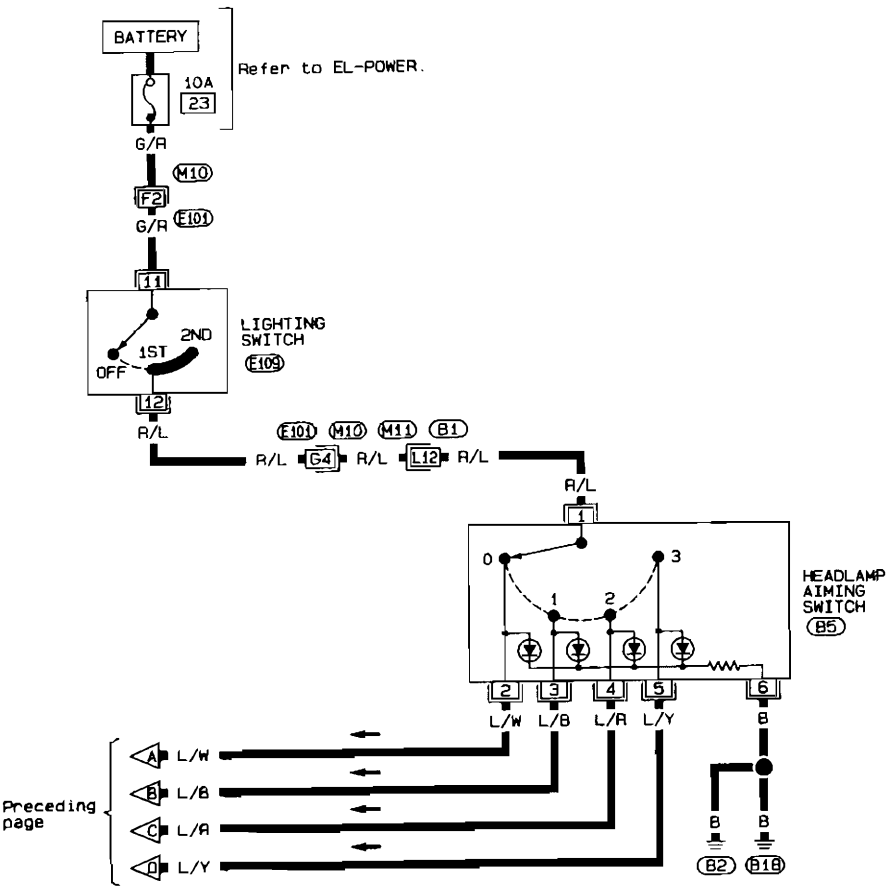
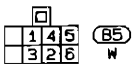
M10 , E101

M11 , B1

SEL689T

EL-AIM-04





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M10, E101

M11, B1

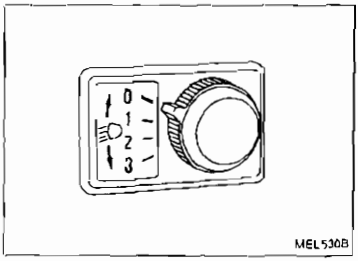
SEL690T

Aiming Adjustment

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

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

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

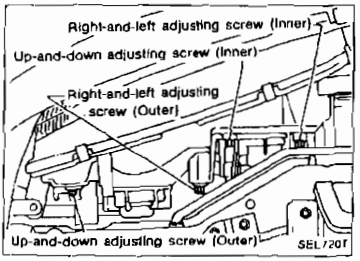


CAUTION:

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

CAUTION:

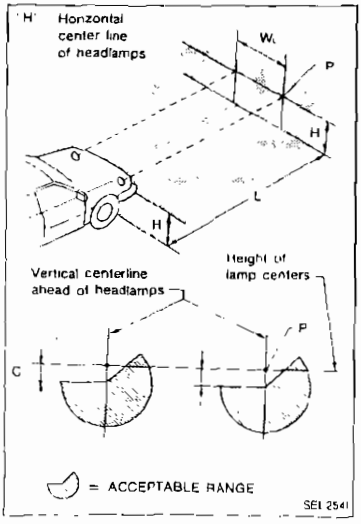
Be sure aiming switch is set to "0" when performing aiming adjustment on vehicles equipped with headlamp aiming control.



LOW BEAM

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

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

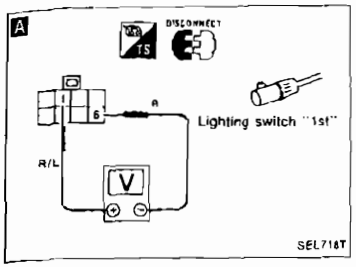


- **Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in illustration.**
- **Figure to the left shows headlamp aiming pattern for driving on right side of road; for driving on left side of road, aiming pattern is reversed.**
- **Dotted lines in illustration show center of headlamp.**

"H": Horizontal center line of headlamps
"W_L": Distance between each headlamp center
"L": 5,000 mm (196.85 in)
"C": 65 mm (2.56 in)

Trouble Diagnoses

SYMPTOM: Headlamp aiming does not operate.

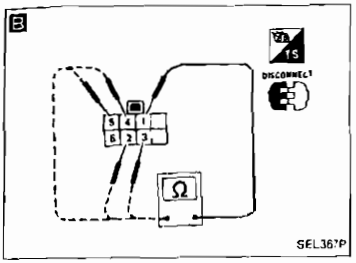


A POWER SUPPLY CIRCUIT CHECK (For aiming switch)
Check if 12 volts exist between terminals ① and ⑥.

Voltmeter terminals (+)	Voltmeter terminals (−)	Voltage [V]
①	⑥	Approx. 12

NG → Check 10A fuse at fuse block. (Refer to "POWER SUPPLY ROUTING".)

OK ↓

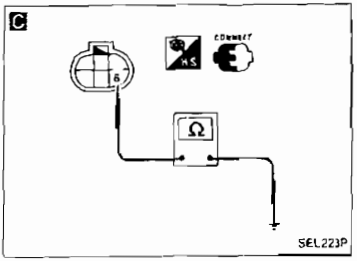


B AIMING SWITCH CHECK
Check continuity between terminals at each switch position

Switch position	Terminal ①	②	③	④	⑤
0	○	○			
1	○		○		
2	○			○	
3	○				○

NG → Replace aiming switch.

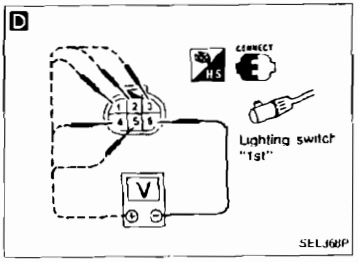
OK ↓



C GROUND CIRCUIT CHECK FOR AIMING MOTOR
Check continuity between terminals ⑥ and body ground.
Continuity exists ... OK

NG → Repair harness between aiming motor and body ground

OK ↓



D POWER SUPPLY CIRCUIT CHECK (For aiming motor unit)
Check if 12 volts exist between terminals ①, ②, ③, ④, ⑤ and ⑥.

Voltmeter terminals (+)	Voltmeter terminals (−)	Voltage [V]	Aiming switch position
①	⑥	Approx. 12	"0"
		0	Except "0"
②		Approx. 12	"1"
		0	Except "1"
③		Approx. 12	"2"
		0	Except "2"
④		Approx. 12	"3"
		0	Except "3"
⑤		Approx. 12	—

NG → Check harness between aiming switch and aiming motor unit

OK ↓

Replace aiming motor unit

Clearance, License and Tail Lamps/System Description

LHD MODELS WITH DAYTIME LIGHT SYSTEM

The clearance, license and tail lamps on vehicles for Norway and Sweden contain a daytime light unit. The unit activates the small lamps whenever the engine and lighting switch are under the following conditions.

- Engine running
- Lighting switch in the OFF position

(For daytime light system, refer to "HEADLAMP — Daytime Light System —".)

Operation (when daytime light system is triggered.)

Power is supplied at all times

- through 10A fuse (No. 23 , located in the fuse block)
- to daytime light unit terminal ①.

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

- through daytime light unit terminal ⑩
- to terminal ① of each lamp.

Ground is supplied to terminal ② of clearance lamps through body ground E43 or E57.
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground T19.
With power and ground supplied, the clearance, license and tail lamps illuminate.

Operation (when daytime light system is not triggered.)

Power is supplied at all times

- through 10A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal ⑪.

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

- through lighting switch terminal ⑫
- to daytime light unit terminal ⑪
- through daytime light unit terminal ⑩
- to terminal ① of each lamp.

Ground is supplied to terminal ② of clearance lamps through body ground E43 or E57
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground T19.
With power and ground supplied, the clearance, license and tail lamps illuminate.

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

Power is supplied at all times

- through 45A fusible link (letter i, located in the fusible link and fuse box)
- to lighting switch terminal ⑪.

Operation

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

- from lighting switch terminal ⑫
- through 10A fuse (No. 14 , located in the fuse block)
- to terminal ① of clearance, license and RH tail lamps.

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

- from lighting switch terminal ⑫
- through 7.5A fuse (No. 15 , located in the fuse block)
- to LH tail lamp terminal ①.

Ground is supplied to terminal ② of clearance lamps through body ground E43 or E57.
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground T19.
With power and ground supplied, the clearance, license and tail lamps illuminate

Clearance, License and Tail Lamps/System Description (Cont'd)

RHD MODELS FOR EUROPE

Power is supplied at all times
- through 10A fuse (No. 23, located in the fuse block)
- to lighting switch terminal ⑪

Operation

With the lighting switch in the 1ST or 2ND position, power is supplied
- through the lighting switch terminal ⑫
- to terminal ① of each lamp.

Ground is supplied to terminal ② of clearance lamps through body ground (E43) or (E57)
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground (T19)
With power and ground supplied, the clearance, license and tail lamps illuminate.

RHD MODELS EXCEPT FOR EUROPE

Power is supplied at all times
- through 10A fuse (No. 23, located in the fuse block)
- to lighting switch terminal ⑫, and
- to front fog lamp relay terminal ⑥.

Operation (when front fog lamp system is not triggered.)

With the lighting switch in the 1ST or 2ND position, power is supplied
- through lighting switch terminal ⑪
- to terminal ① of each lamp.

Ground is supplied to terminal ② of clearance lamps through body ground (E43) or (E57).
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground (T19).

Operation (when front fog lamp system is triggered.)

With the front fog lamp switch in the ON position.
- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch and body ground (E43).

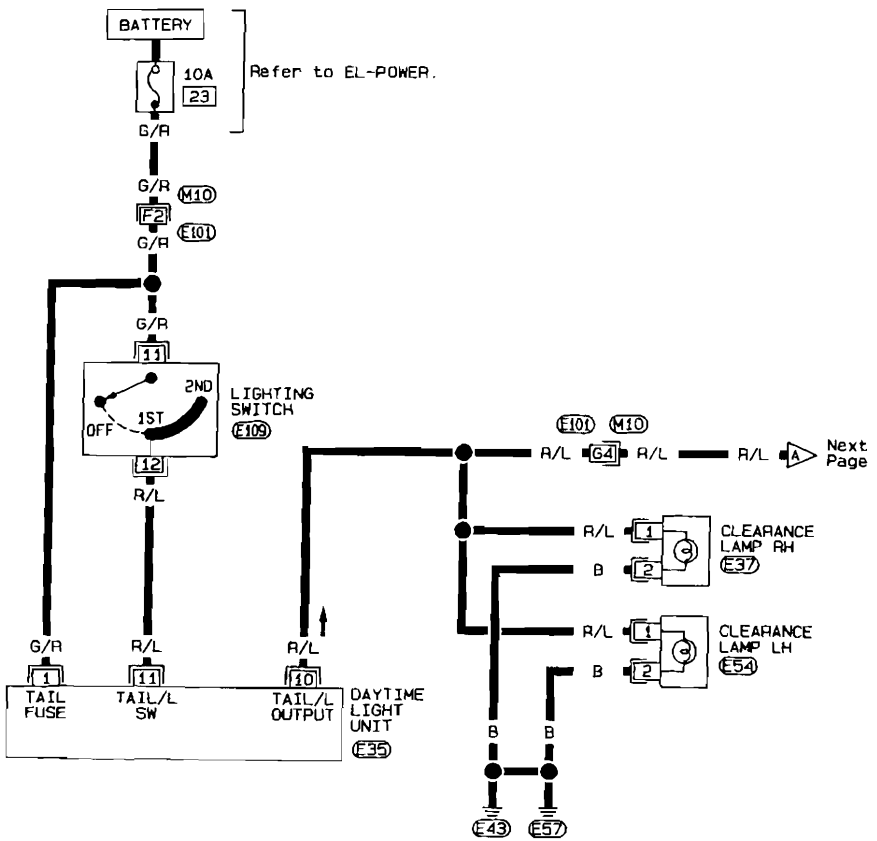
The front fog lamp relay is energized and power is supplied
- through front fog lamp relay terminal ⑦
- to terminal ① of each lamp.

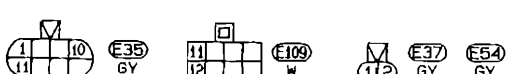
Ground is supplied to terminal ② of clearance lamps through body ground (E43) or (E57).
Ground is also supplied to terminal ② of license lamp and to terminal ④ of tail lamps through body ground (T19)
With power and ground supplied, the clearance, license and tail lamps illuminate.

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

LHD MODELS WITH DAYTIME LIGHT SYSTEM

EL-TAIL/L-01



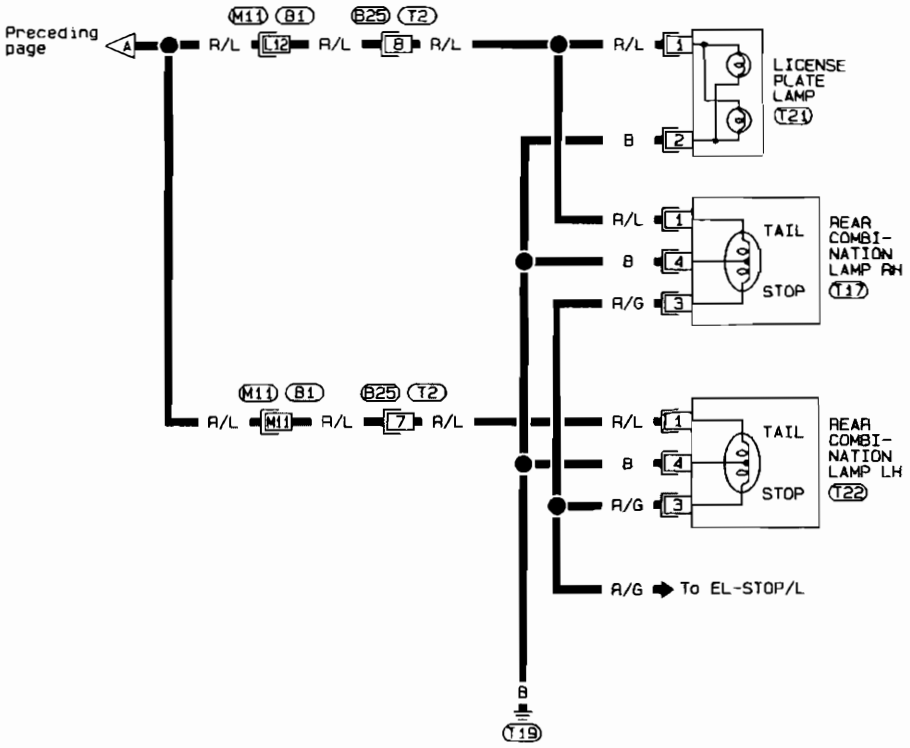


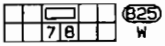
Refer to last page (Foldout page).
M10, E101

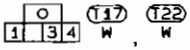
SEL691T

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

EL-TAIL/L-02







Refer to last page (Foldout page).

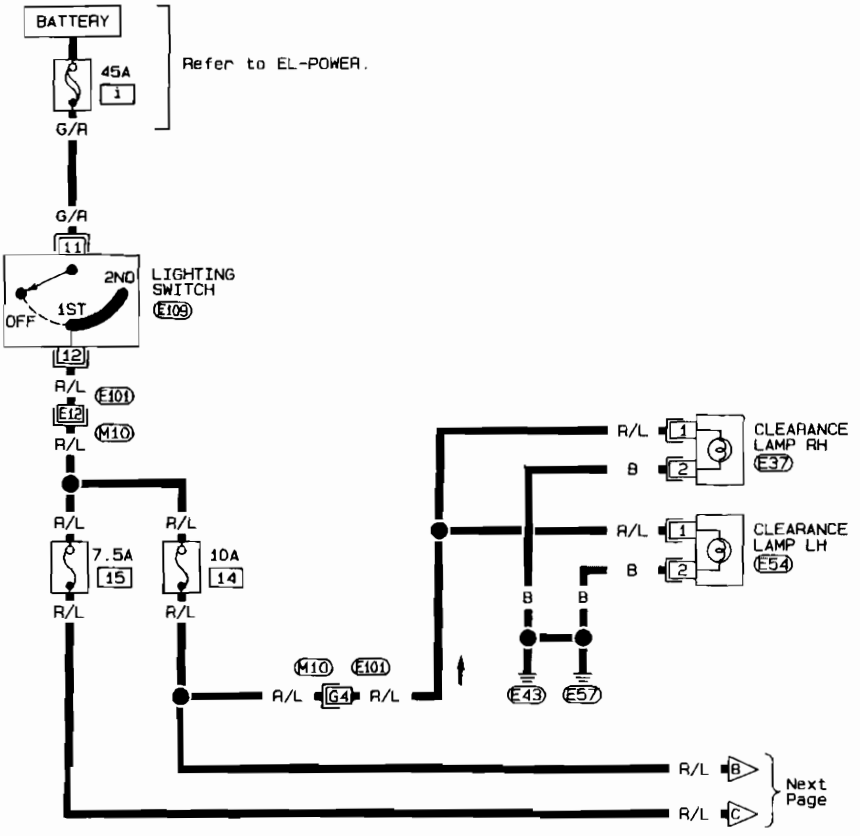
M11, B1

SEL692T

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

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

EL-TAIL/L-03



E109 W

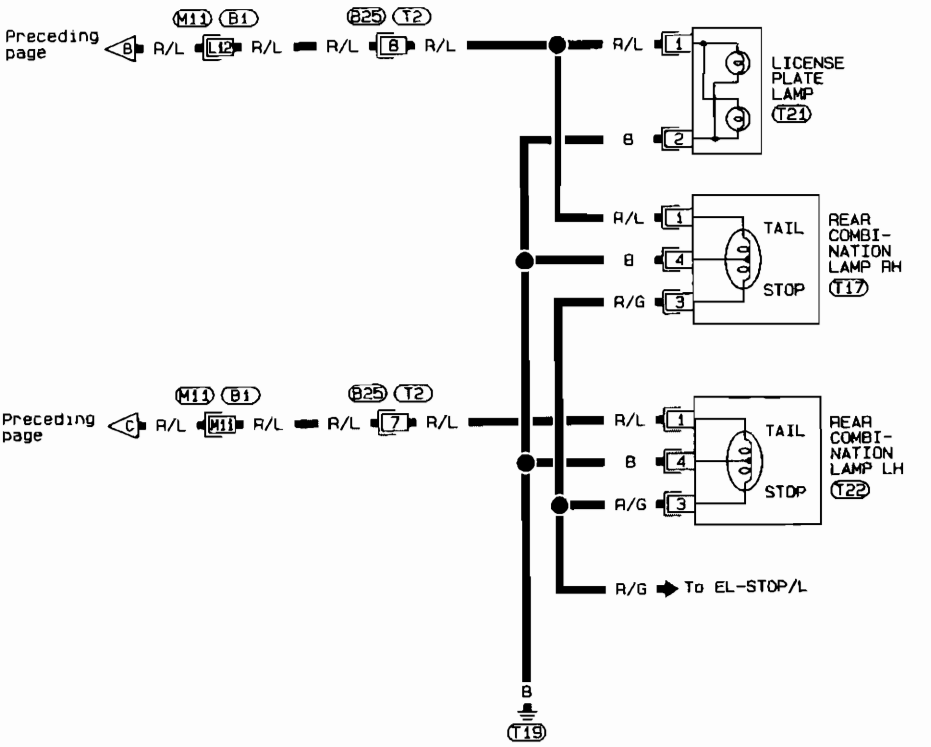
E37 GY , E54 GY

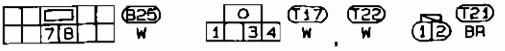
Refer to last page (Foldout page).

M10 , E101

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

EL-TAIL/L-04





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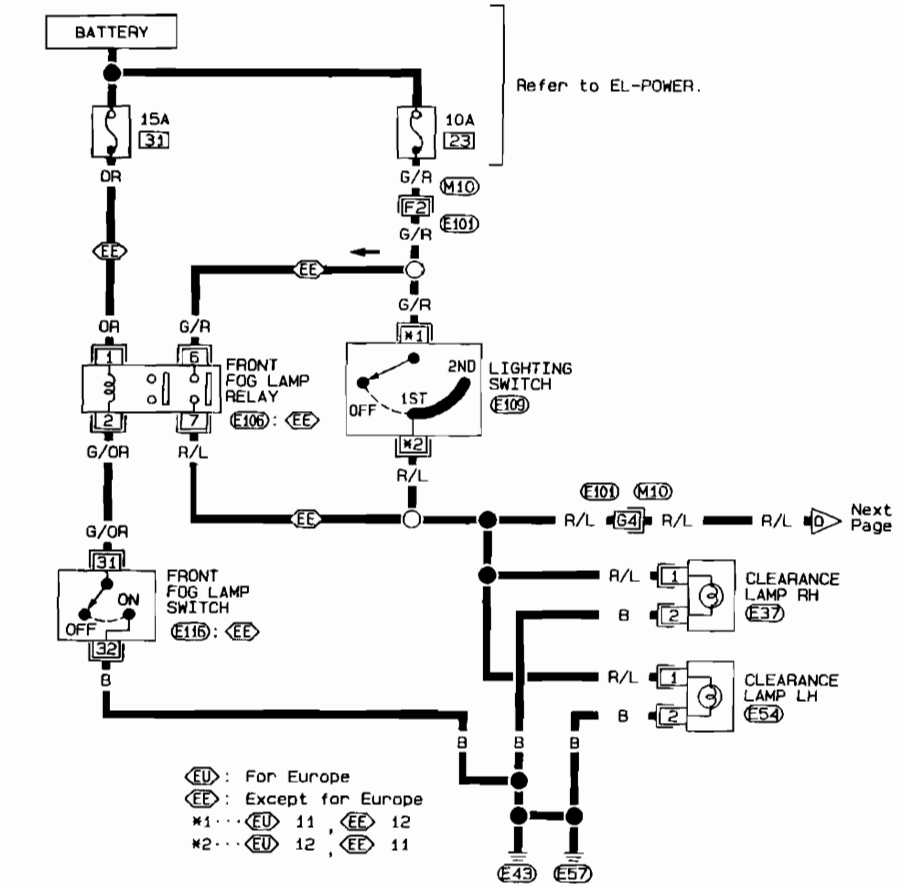
M11, B1

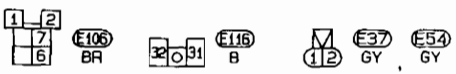
SEL694T

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

RHD MODELS

EL-TAIL/L-05





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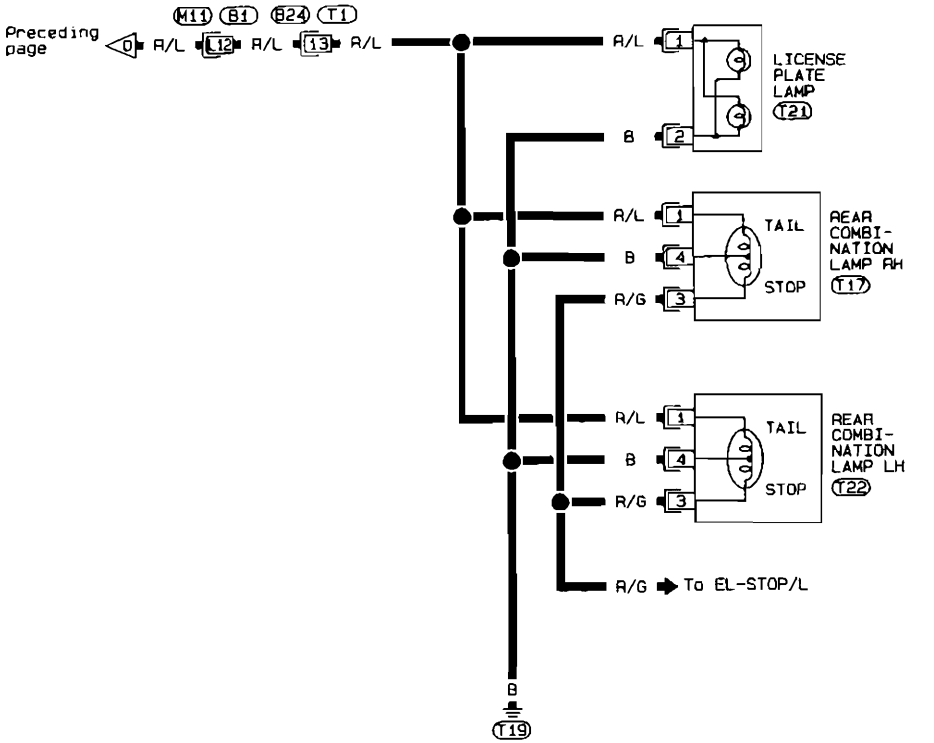
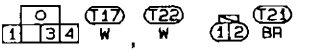
M10, E101

SEI 695T

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

EL-TAIL/L-06





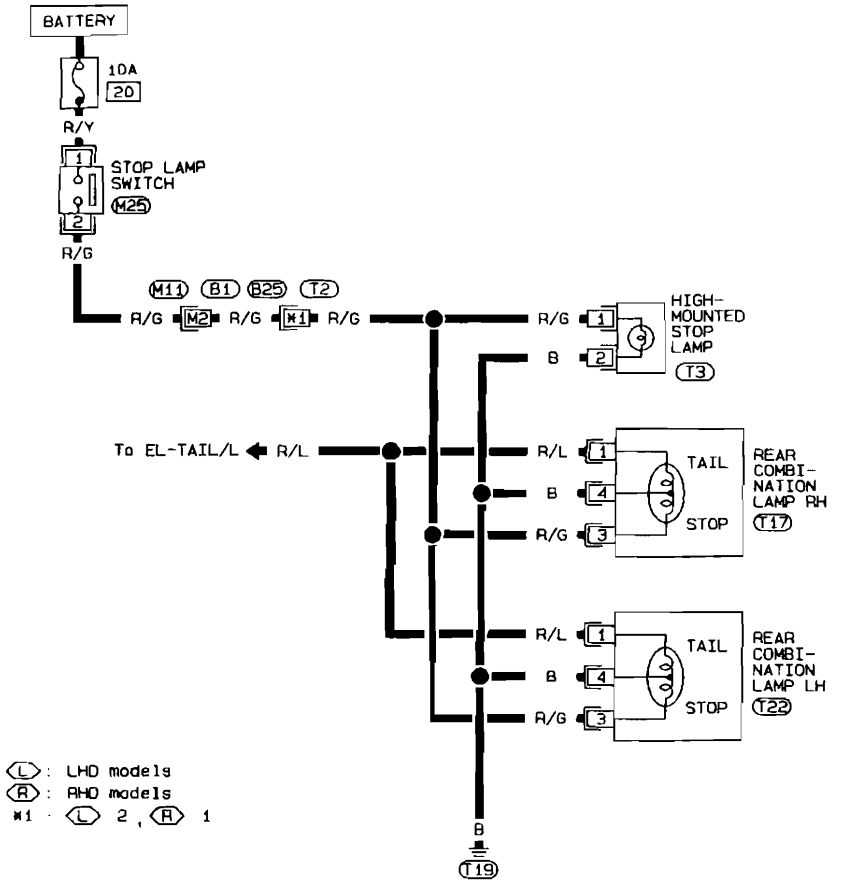
Refer to last page (Foldout page).

M11, B1

SEL696T

Stop Lamp/Wiring Diagram — STOP/L —

EL-STOP/L-01



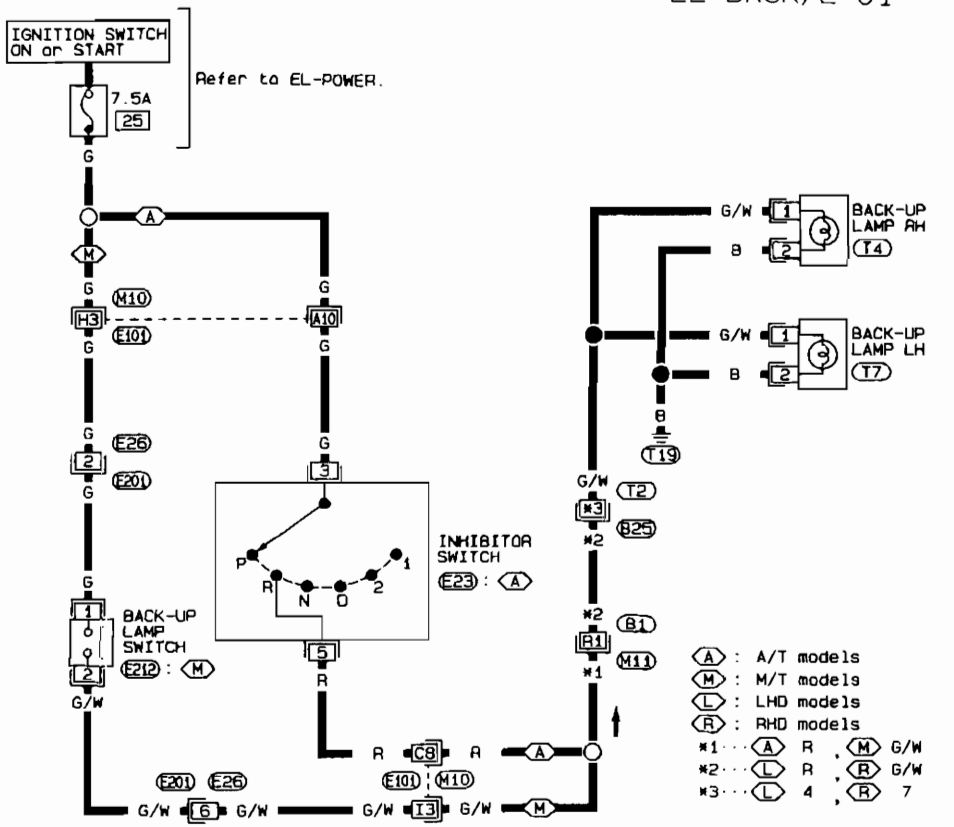
M25 B · B25 W · T3 W · T17 W , T22 W

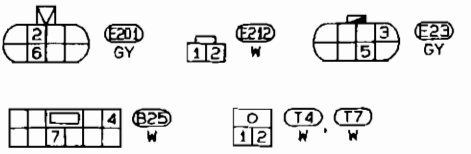
Refer to last page (Foldout page)
M11 , B1

SEL836T

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

EL-BACK/L-01





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M10 , E101

M11 , B1

Front Fog Lamps/System Description

LHD MODELS WITH DAYTIME LIGHT SYSTEM

Power is supplied at all times
- through 15A fuse (No. 31 , located in the fusible link and fuse box)
- to front fog lamp relay terminal ③.

Power is also supplied at all times
- through 10A fuse (No. 23 , located in the fuse block)
- to lighting switch terminal ⑪, and
- to daytime light unit terminal ①.

When the daytime light system is triggered, power is supplied
- through daytime light unit terminal ⑩
- to front fog lamp relay terminal ①, or

With the lighting switch in the 1ST or 2ND position, power is supplied
- through lighting switch terminal ⑫
- to daytime light unit terminal ⑪
- through daytime light unit terminal ⑩
- to front fog lamp relay terminal ①.

Front fog lamp operation

If the rear fog lamp system is triggered, terminal ② of rear fog lamp relay is grounded and power to the front fog lamp switch is interrupted.
When the rear fog lamp system is not operating, ground is supplied
With the front fog lamp switch in the ON position:
- ground is supplied to front fog lamp relay terminal ②
- from rear fog lamp relay terminal ④
- to rear fog lamp relay terminal ③
- through front fog lamp switch and body ground (B2) or (B18).

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

Ground is supplied to terminal ② of each fog lamp through body ground (E43) or (E57).
With power and ground supplied, the front fog lamps illuminate.

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

Power is supplied at all times
- through 15A fuse (No. 31 , located in the fusible link and fuse box)
- to front fog lamp relay terminal ③.

With the lighting switch in the 1ST or 2ND position, power is supplied
- through 45A fusible link (letter i, located in the fusible link and fuse box)
- to lighting switch terminal ⑪
- from lighting switch terminal ⑫
- through 10A fuse (No. 14 , located in the fuse block)
- to front fog lamp relay terminal ①.

Front fog lamp operation

The lighting switch must be in the 1ST or 2ND position for front fog lamp operation.
With the front fog lamp switch in the ON position:
- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch and body ground (B2) or (B18).

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

Ground is supplied to terminal ② of each fog lamp through body ground (E43) or (E57)
With power and ground supplied, the front fog lamps illuminate.

RHD MODELS FOR EUROPE

Power is supplied at all times
- through 15A fuse (No. 31, located in the fusible link and fuse block)
- to front fog lamp relay terminal ③

With the lighting switch in the 1ST or 2ND position, power is supplied
- through 10A fuse (No. 23, located in the fuse block)
- to lighting switch terminal ⑪
- through terminal ⑫ of lighting switch
- to front fog lamp relay terminal ②.

Front fog lamp operation

The lighting switch must be in the 1ST or 2ND position for front fog lamp operation.
With the front fog lamp switch in the ON position,
- ground is supplied to front fog lamp relay terminal ① through the front fog lamp switch and body ground (B2) or (B18).

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

Ground is supplied to terminal ② of each front fog lamp through body ground (E43) or (E57)
With power and ground supplied, the front fog lamps illuminate.

RHD MODELS EXCEPT FOR EUROPE

Power is supplied at all times
- through 15A fuse (No. 31, located in the fusible link and fuse box)
- to front fog lamp relay terminals ① and ③.

Front fog lamp operation

The front fog lamp switch is built into the combination switch.
With the front fog lamp switch in the ON position,
- ground is supplied to front fog lamp relay terminal ② through front fog lamp switch and body ground (E43).

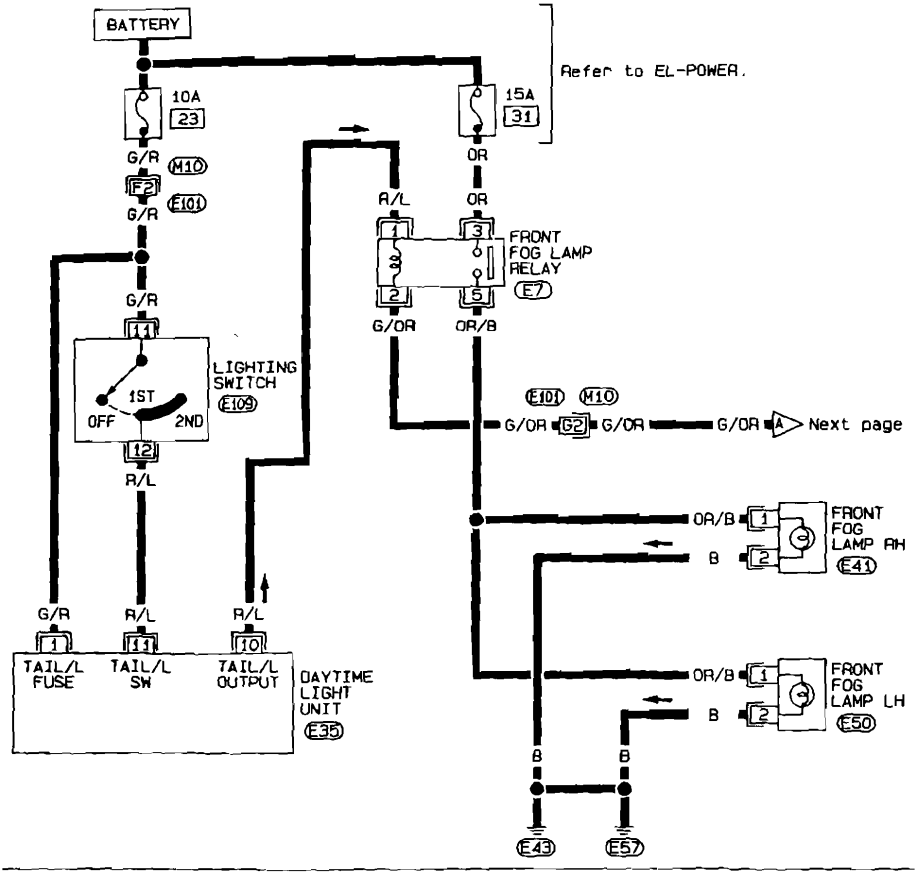
The front fog lamp relay is energized and power is supplied
- from front fog lamp relay terminal ⑤
- to terminal ① of each front fog lamp.

Ground is supplied to terminal ② of each front fog lamp through body ground (E43) or (E57)
With power and ground supplied, the front fog lamps illuminate.

Front Fog Lamp/Wiring Diagram — F/FOG —

LHD MODELS WITH DAYTIME LIGHT SYSTEM

EL-F/FOG-01



E109 W

E35 GY

E7 L

E41, E50 GY, GY

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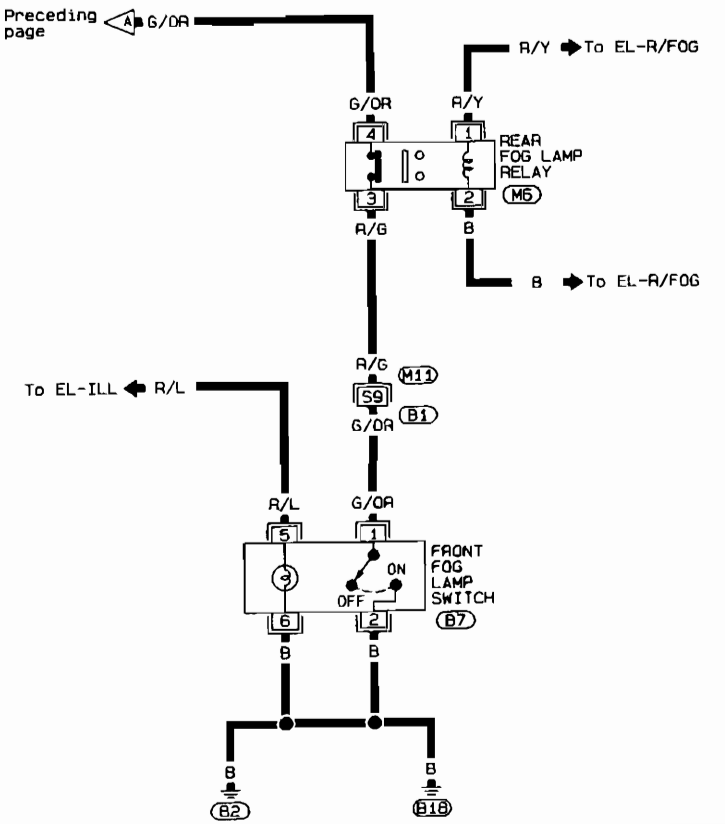
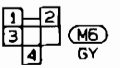
M10, E101

SEL898T

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

EL-F/FOG-02





Refer to last page (Foldout page).

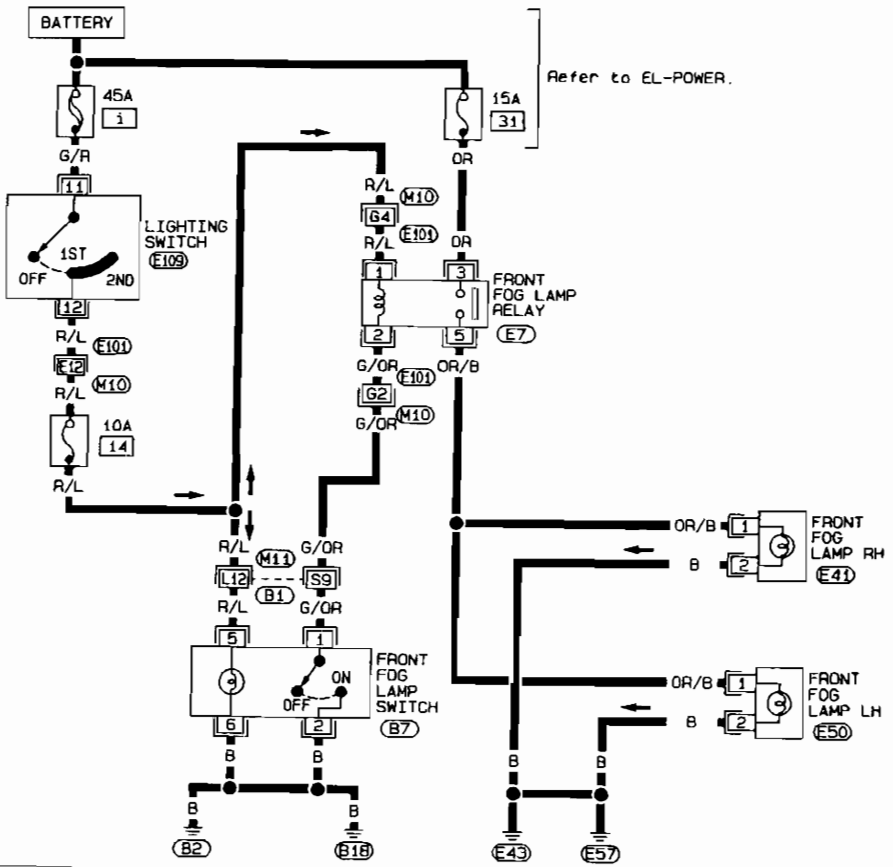
M11, B1

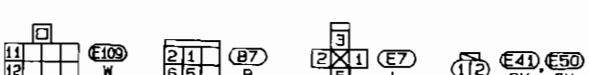
SEL699T

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

EL-F/FOG-03





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M10, E101

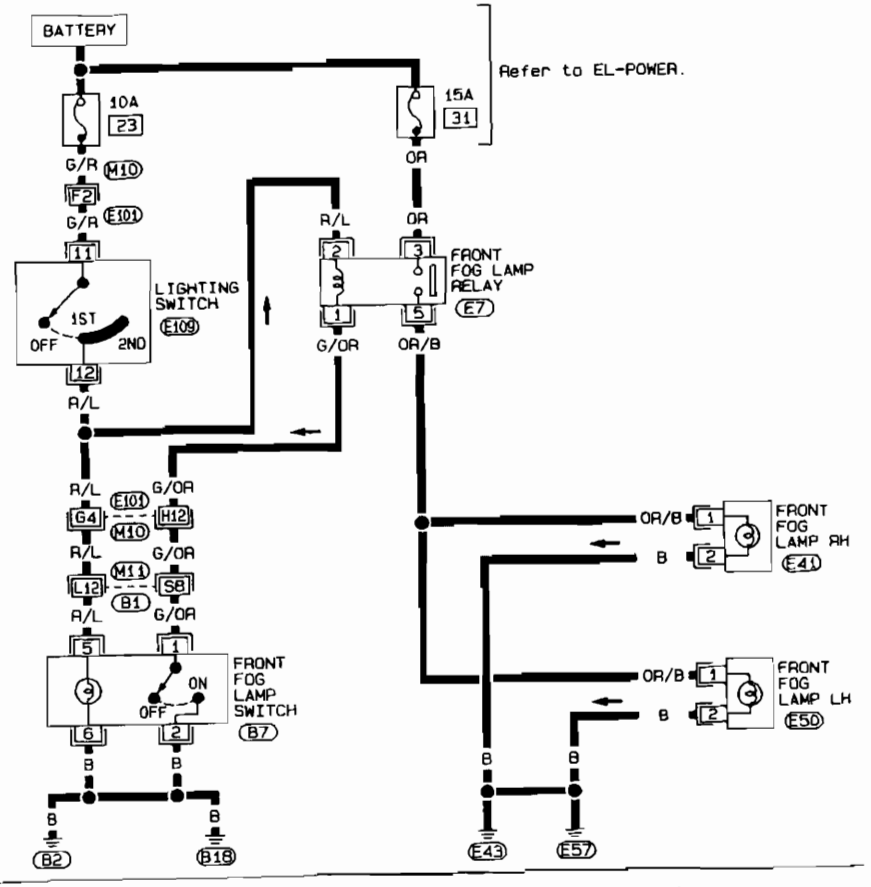
M11, B1

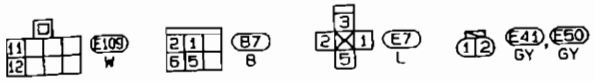
SEL700T

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

RHD MODELS FOR EUROPE

EL-F/FOG-04





Refer to last page (Foldout page).

M10, E101

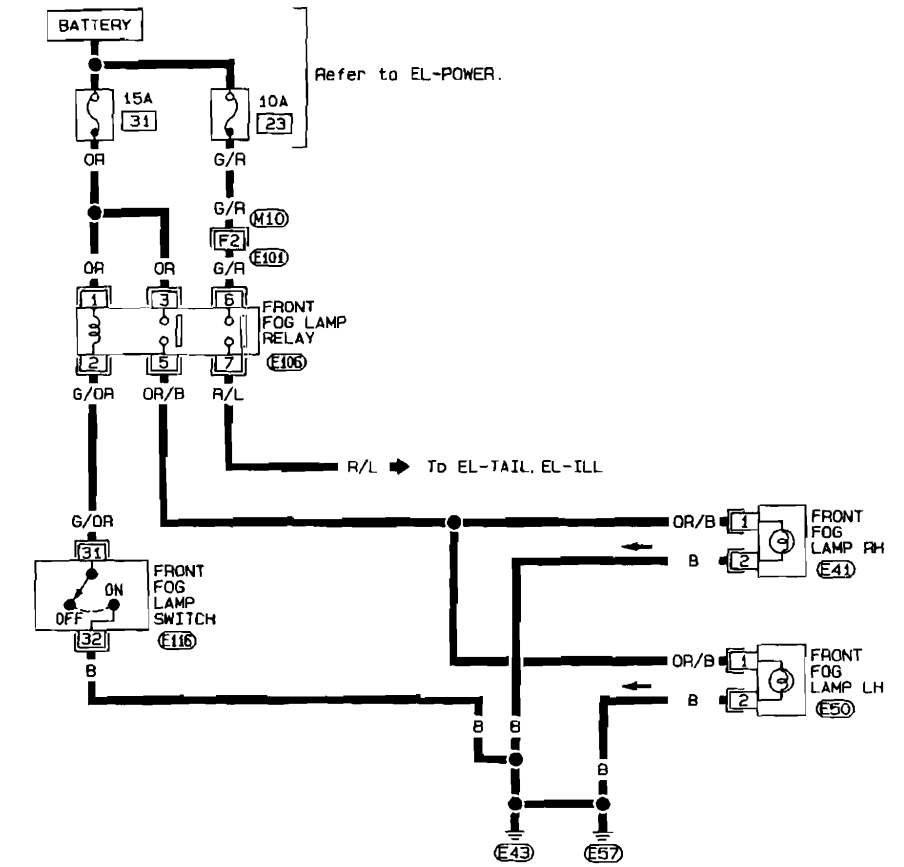
M11, B1

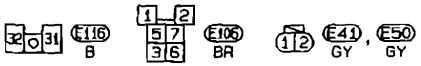
SEL701T

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

RHD MODELS EXCEPT FOR EUROPE

EL-F/FOG-05





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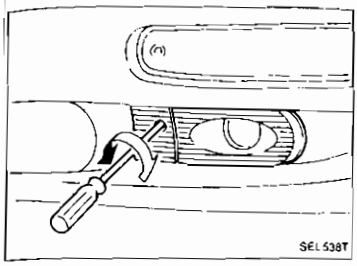
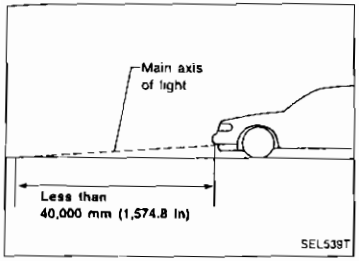
M10, E101

SEL702T





Front Fog Lamp Aiming Adjustment

Before performing aiming adjustment, make sure of the following.

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

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

Check the distance between the vehicle and the ground point where the main axis of light of fog lamp reaches. Keep the distance within 40,000 mm (1,574.8 in)

Rear Fog Lamp/System Description

Power is supplied at all times
- through 7.5A fuse (No. 27 for LHD models, No 29 for RHD models, located in the fuse block)
- to rear fog lamp relay terminal ⑦ (with daytime light system) or ③ (without daytime light system)

With the lighting switch in the 2ND position, power is supplied
- through 20A fuse (No. 37 , located in the fusible link and fuse box)
- to lighting switch terminal ⑤
- through lighting switch terminal ㉕
- to rear fog lamp relay terminal ①.

Rear fog lamp operation

The lighting switch must be in the 2ND position for rear fog lamp operation.
Ground is supplied to rear fog lamp relay terminal ② through body ground (M1)
With the lighting switch in the 2nd position, the rear fog lamp relay is energized and power is supplied
- through rear fog lamp relay terminal ⑥ (with daytime light system) or ⑤ (without daytime light system)
- to rear fog lamp switch terminal ②

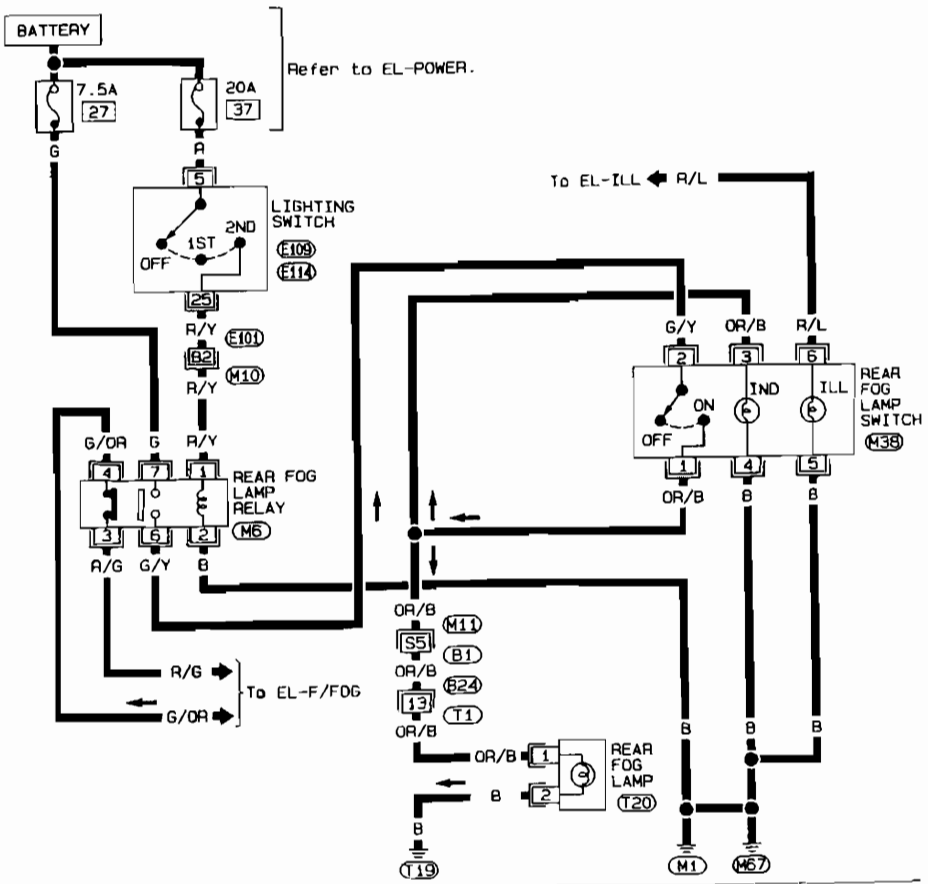
With the rear fog lamp switch in the ON position, power is supplied
- through rear fog lamp switch terminal ①
- to terminal ① of rear fog lamp.

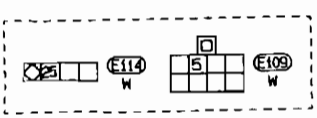
Ground is supplied to terminal ② of rear fog lamp through body ground (T19)
With power and ground supplied, the rear fog lamp illuminates.

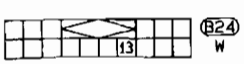
Rear Fog Lamp/Wiring Diagram — R/FOG —

WITH DAYTIME LIGHT SYSTEM

EL-R/FOG-01







Refer to last page (Foldout page).

M10, E101

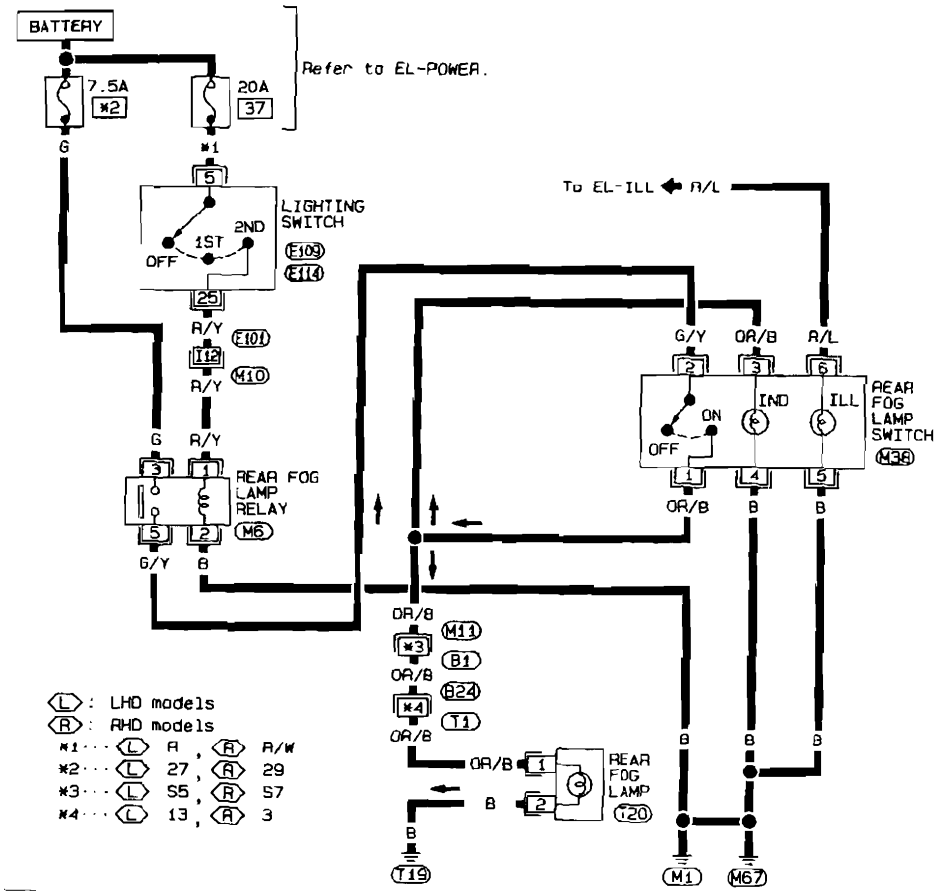
M11, B1

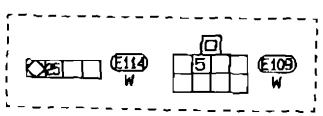
SFL703T

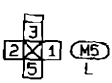
Rear Fog Lamp/Wiring Diagram — R/FOG — (Cont'd)

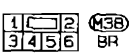
WITHOUT DAYTIME LIGHT SYSTEM

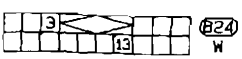
EL-R/FOG-02











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M10, E101

M11, B1

SEL704T

Turn Signal and Hazard Warning Lamps/System Description

TURN SIGNAL OPERATION

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

- through 10A fuse (No. 24 , located in the fuse block)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ②
- through terminal ③ of the combination flasher unit
- to turn signal switch terminal ①

Ground is supplied to combination flasher unit terminal ① through body ground (M1) or (M67).

LH turn

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

- front turn signal lamp LH terminal ①
- side turn signal lamp LH terminal ①
- rear combination lamp LH terminal ②
- combination meter terminal ⑰

Ground is supplied to the front turn signal lamp LH terminal ② through body ground (E57).
Ground is supplied to the side turn signal lamp LH terminal ② through body ground (E57) (LHD models) or (F37) (RHD models).
Ground is supplied to the rear combination lamp LH terminal ④ through body ground (T19).
Ground is supplied to combination meter terminal ⑱ through body ground (M1).
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH turn

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

- front turn signal lamp RH terminal ①
- side turn signal lamp RH terminal ①
- rear combination lamp RH terminal ②
- combination meter terminal ⑲.

Ground is supplied to the front turn signal lamp RH terminal ② through body ground (E43).
Ground is supplied to the side turn signal lamp RH terminal ② through body ground (F26) (LHD models) or (E43) (RHD models)
Ground is supplied to the rear combination lamp RH terminal ④ through body ground (T19).
Ground is supplied to combination meter terminal ⑱ through body ground (M1).
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps

HAZARD LAMP OPERATION

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

- 10A fuse (No. 22 , located in the fuse block).

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

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

Ground is supplied to combination flasher unit terminal ① through body ground (M1) or (M67).
Power is supplied through terminal ⑤ of the hazard switch to

- front turn signal lamp LH terminal ①
- side turn signal lamp LH terminal ①
- rear combination lamp LH terminal ②
- combination meter terminal ⑰

Power is supplied through terminal ⑥ of the hazard switch to

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

- front turn signal lamp RH terminal ①
- side turn signal lamp RH terminal ①
- rear combination lamp RH terminal ②
- combination meter terminal ⑲.

Ground is supplied to terminal ② of each front turn signal lamp through body ground (E43) or (E57).
Ground is supplied to terminal ② of driver's side turn signal lamp through body ground (E43) or (E57).
Ground is supplied to terminal ② of passenger side turn signal lamp through body ground (F26) or (F37).
Ground is supplied to terminal ④ of the rear combination lamps through body ground (T19).
Ground is supplied to combination meter terminal ⑱ through body ground (M1).
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

WITH MULTI-REMOTE CONTROL SYSTEM

Power is supplied at all times

- through 10A fuse (No. 22 located in the fuse block)
- to multi-remote control relay-1 terminals ①, ⑥ and ③.

Ground is supplied to multi-remote control relay-1 terminal ②, when the multi-remote control system or theft warning system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM" or "THEFT WARNING SYSTEM".
The multi-remote control relay-1 is energized
Power is supplied through terminal ⑦ of the multi-remote control relay-1

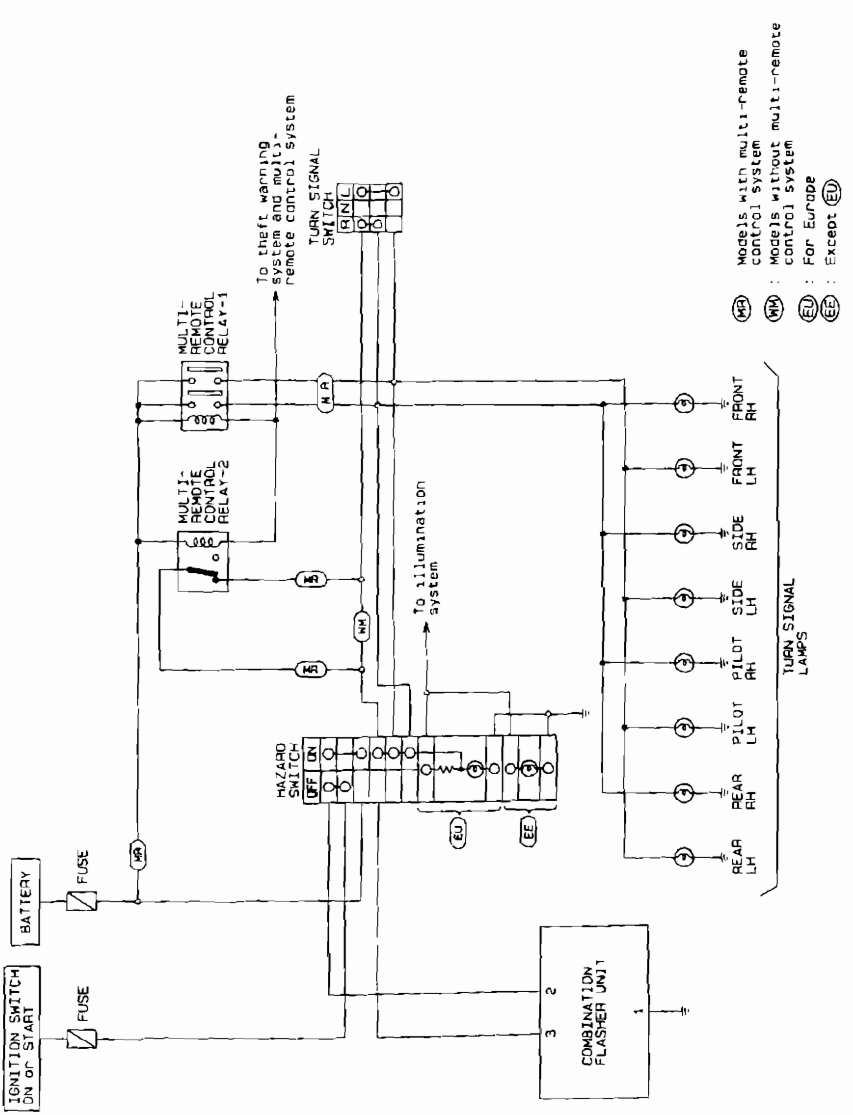
- to front turn signal lamp LH terminal ①
- to side turn signal lamp LH terminal ①
- to rear combination lamp LH terminal ②
- to combination meter terminal ⑰

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

- to front turn signal lamp RH terminal ①
- to side turn signal lamp RH terminal ①
- to rear combination lamp RH terminal ②
- to combination meter terminal ⑲.

Ground is supplied to terminal ② of each front turn signal lamp through body ground (E43) or (E57).
Ground is supplied to terminal ② of driver's side turn signal lamp through body ground (E43) or (E57).
Ground is supplied to terminal ② of passenger side turn signal lamp through body ground (F26) or (F37).
Ground is supplied to terminal ④ of the rear combination lamps through body ground (T19).
Ground is supplied to combination meter terminal ⑱ through body ground (M1).
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps

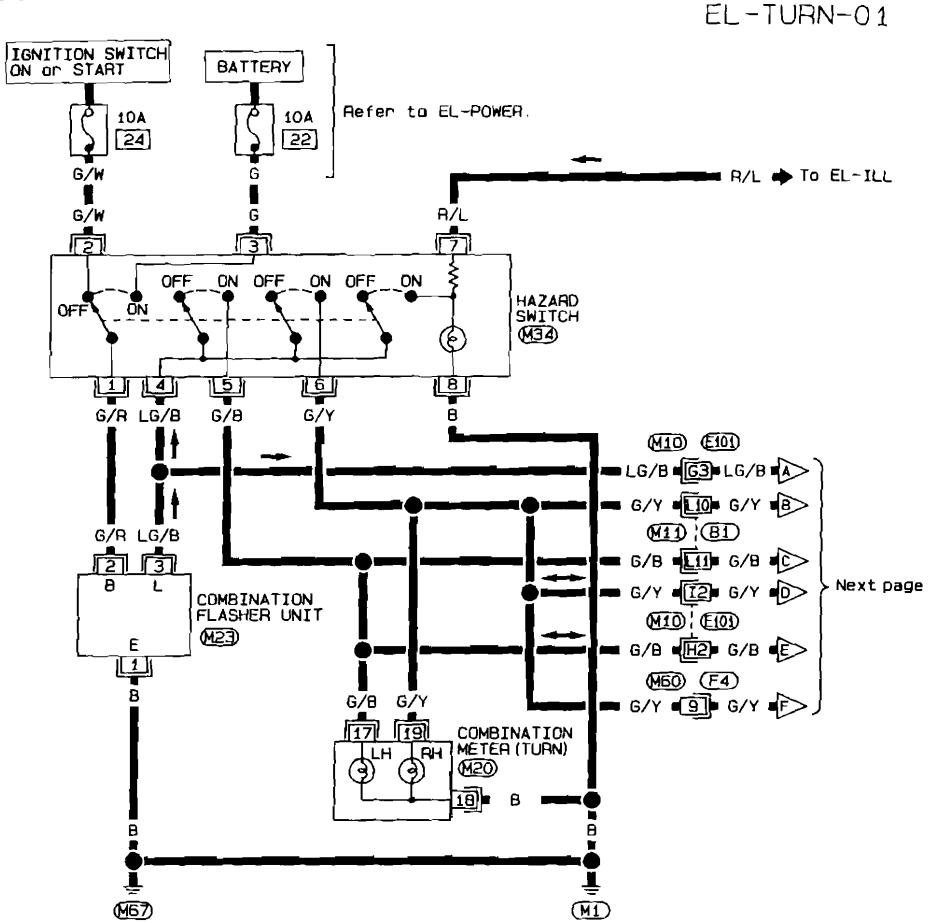
Turn Signal and Hazard Warning Lamps/Schematic

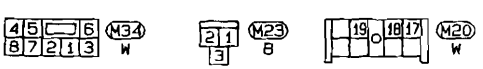


SEL705T

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

LHD MODELS





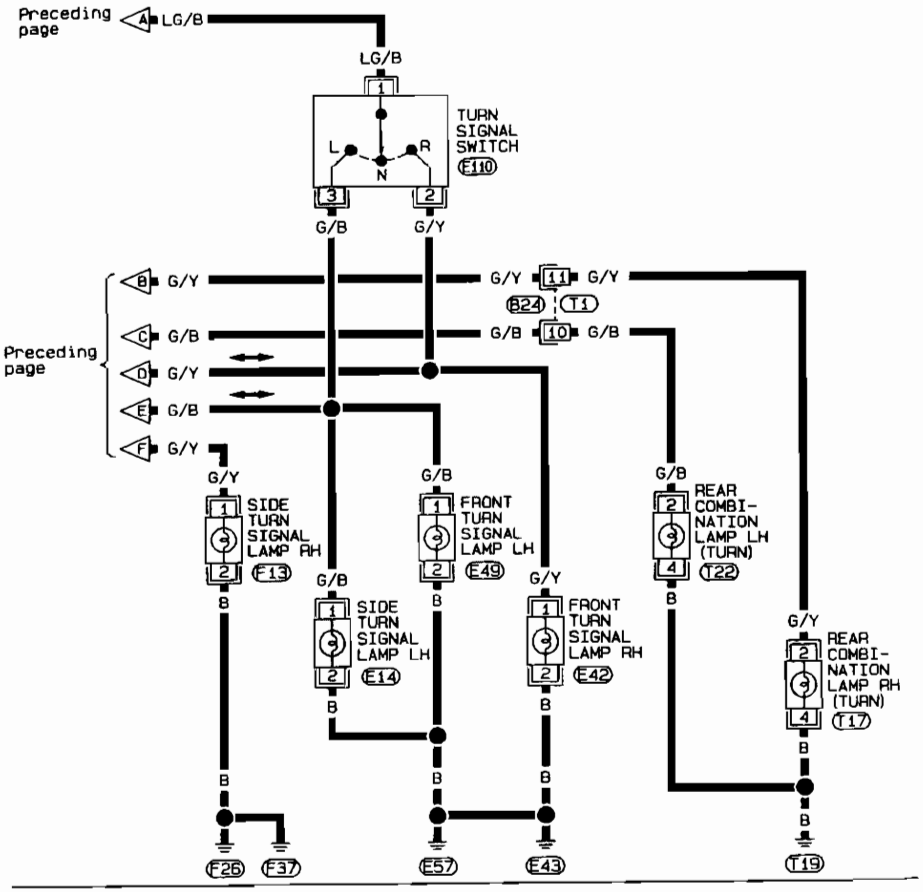
Refer to last page (Foldout page).

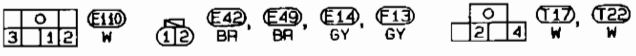
M10, E101
M11, B1
M60, F4

SEL706T

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

EL-TURN-02

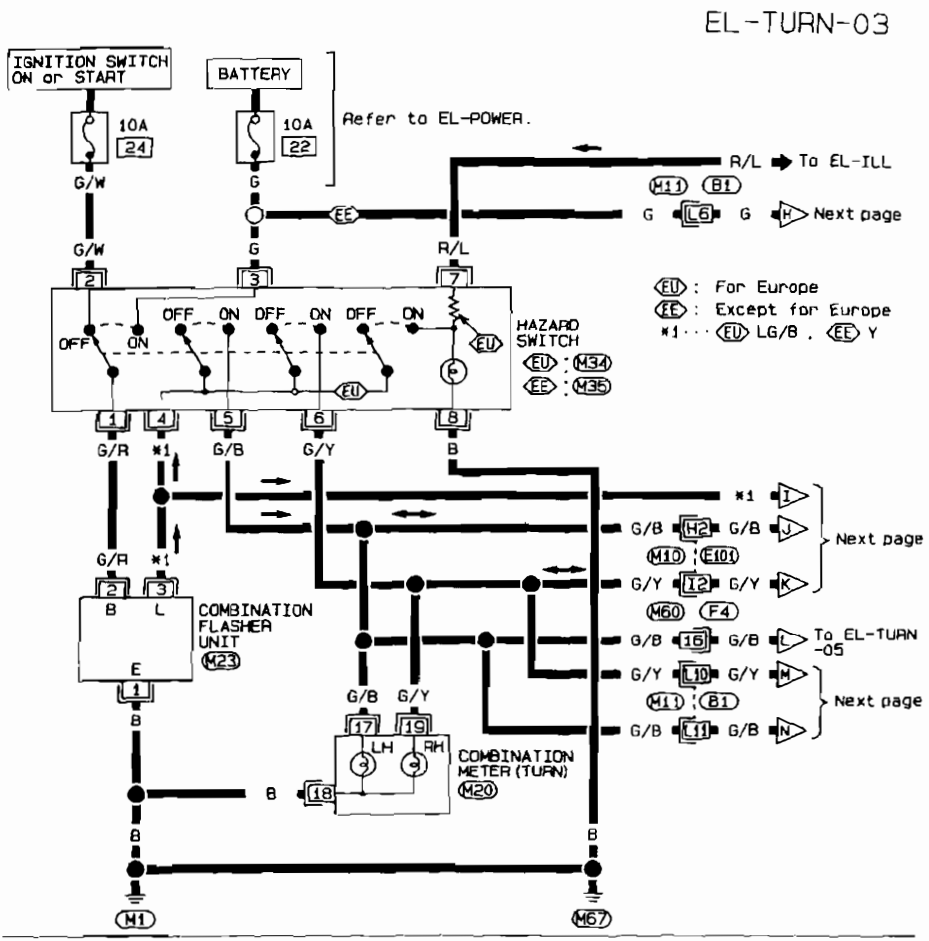


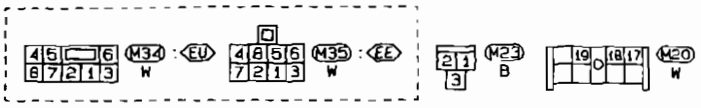


SEL707T

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

RHD MODELS





Refer to last page (Foldout page).

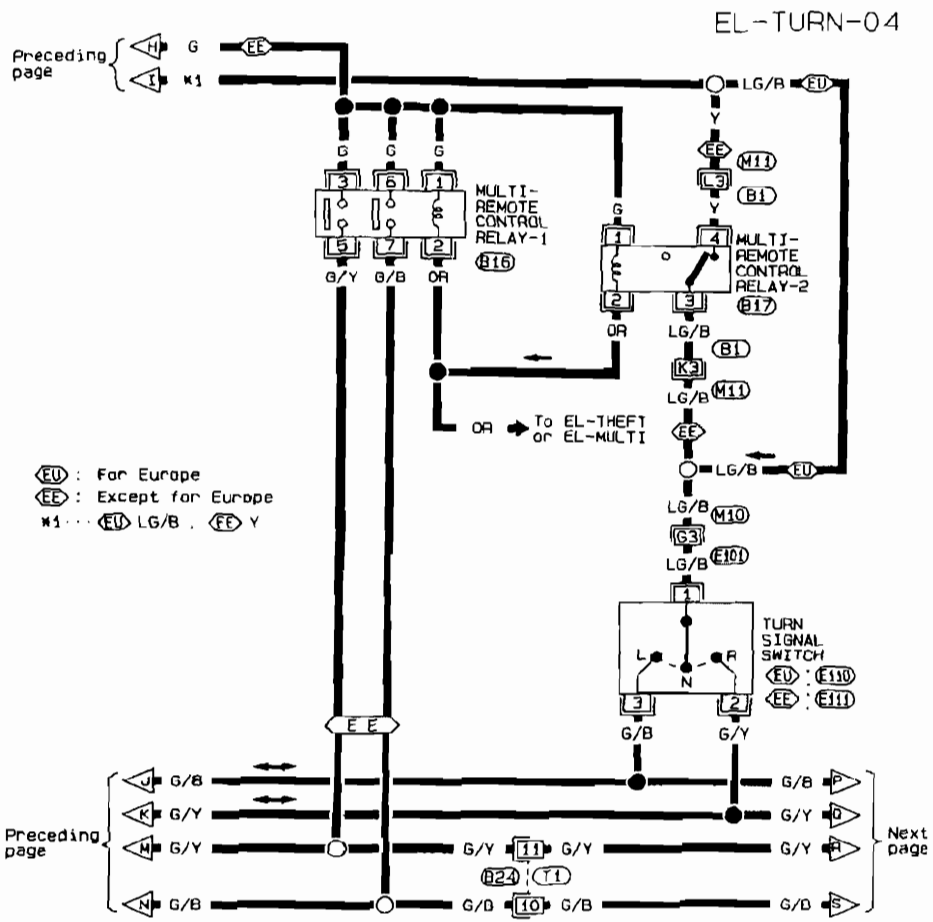
M10 , E101

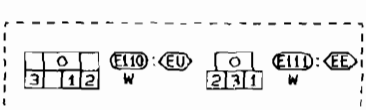
M11 , B1

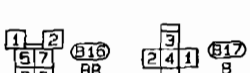
M60 , F4

SEL706T

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



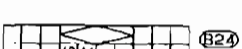




Refer to last page (Foldout page).

M10 , E101

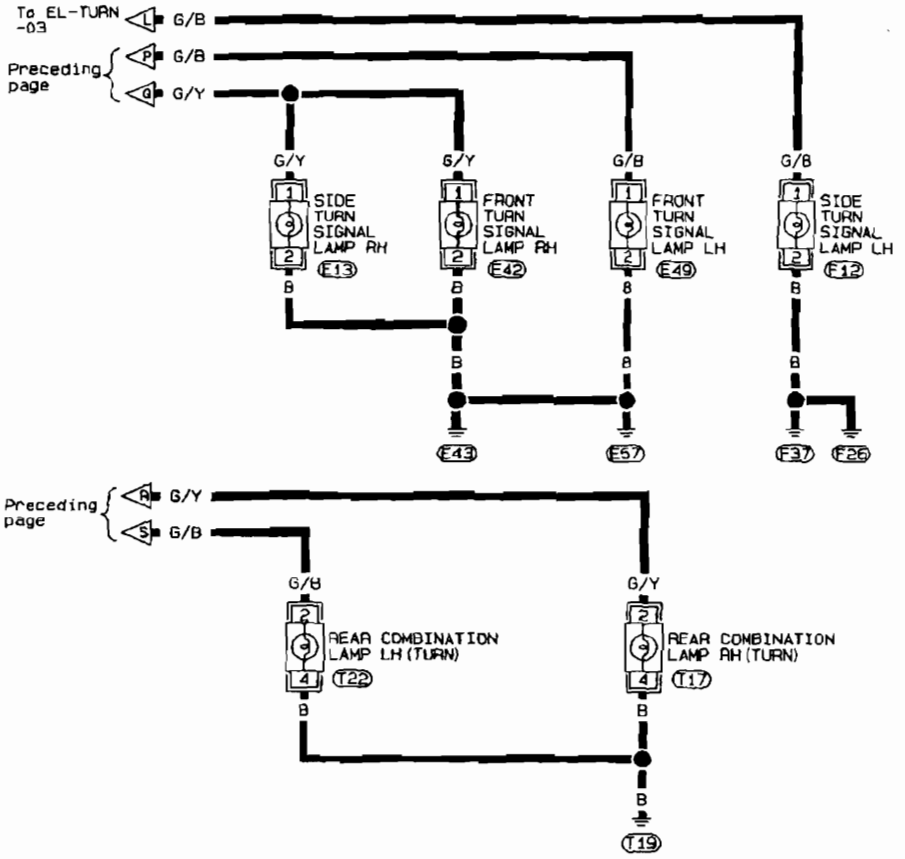
M11 , B1



SEL709T

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

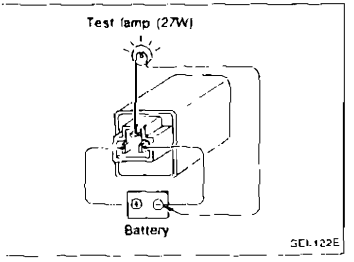
EL-TURN-05



SEL710T

Turn Signal and Hazard Warning Lamps/Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate	1 Hazard switch 2. Combination flasher unit 3 Open in combination flasher unit circuit	1 Check hazard switch 2 Refer to combination flasher unit check (EL-101) 3. Check wiring to combination flasher unit for open circuit
Turn signal lamps do not operate but hazard warning lamps operate	1 10A fuse 2 Hazard switch 3 Turn signal switch 4 Open in turn signal switch circuit	1. Check 10A fuse (No [24], located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2 Check hazard switch 3. Check turn signal switch 4 Check wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2 Hazard switch 3 Open in hazard switch circuit	1. Check 10A fuse (No [22], located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch 2 Check hazard switch 3. Check wire between combination flasher unit and hazard switch for open circuit
Front turn signal lamp LH or RH does not operate.	1 Bulb 2 Ground (E43) or (E57)	1 Check bulb. 2 Check ground (E43) or (E57).
Side turn signal lamp on driver's side does not operate.	1 Bulb 2 Ground (E43) or (E57)	1 Check bulb. 2 Check ground (E43) or (E57).
Side turn signal lamp on passenger side does not operate.	1 Bulb 2 Ground (F26) or (F37)	1 Check bulb. 2 Check ground (F26) or (F37)
Rear turn signal lamp LH or RH does not operate	1 Bulb 2. Ground (T19)	1 Check bulb 2. Check ground (T19)
LH and RH turn indicators do not operate.	1 Ground	1 Check ground (M1)
LH or RH turn indicator does not operate	1 Bulb	1 Check bulb in combination meter.



Combination Flasher Unit Check

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

Bulb Specifications

Item	Wattage (W)
Front fog lamp	55
Front turn signal lamp	21
Clearance lamp	5
Side turn signal lamp	5
Rear combination lamp	
Turn signal lamp	21
Stop/Tail lamp	21/5
Back-up lamp	21
License plate lamp	5
Rear fog lamp	21
High-mounted stop lamp	5

Illumination/System Description

Power supply routing for illumination lamps are the same as that of clearance, license and LH tail lamp. Refer to "Clearance, License and Tail Lamps"

On vehicles for Europe and Australia, illumination of combination meter and clock is controlled by illumination control switch

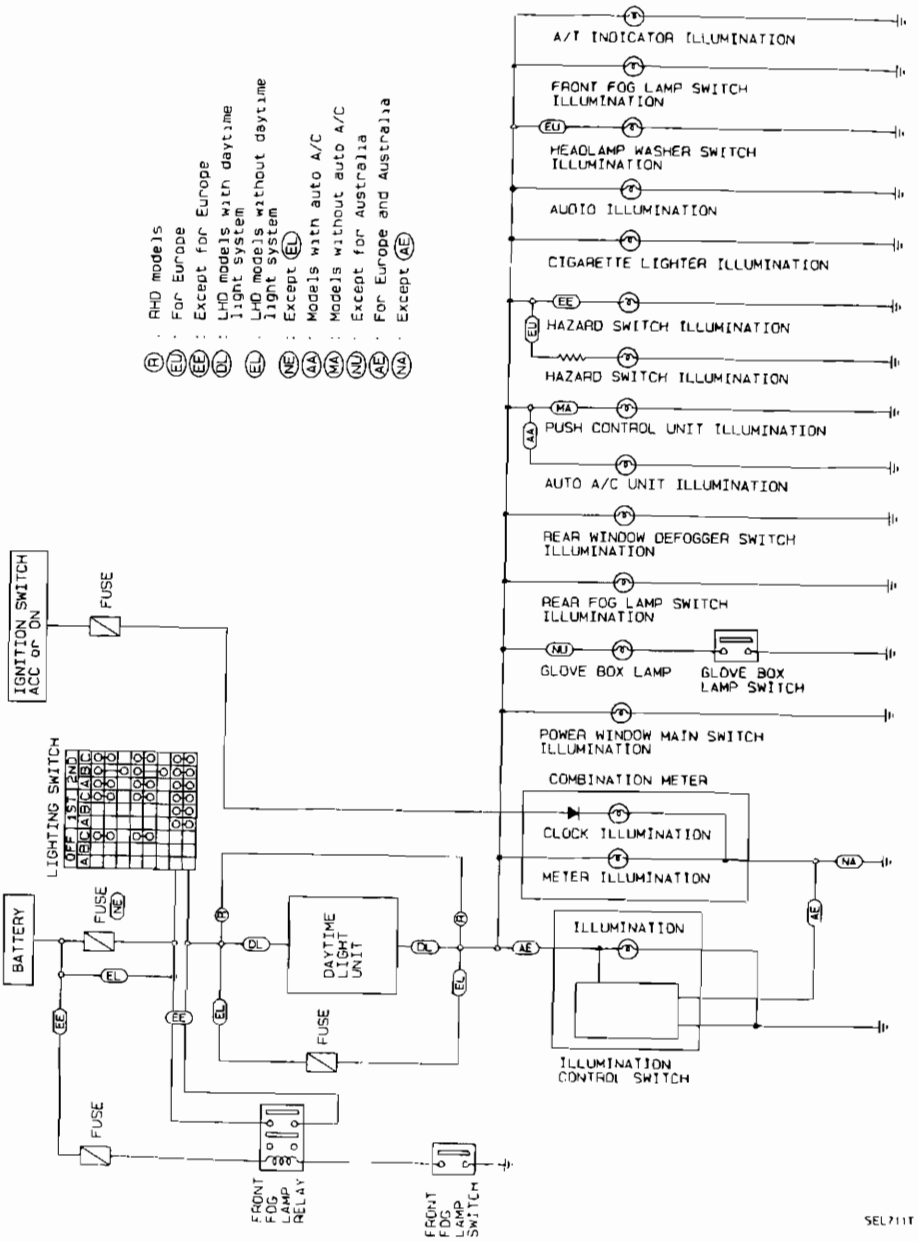
The illumination control switch that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.

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

Component	Connector No.	Power terminal	Ground terminal	Ground
Audio	M40	8	— (Unit ground)	—
Push control unit	M32	15	16	(M1) or (M67)
Auto A/C unit	M31	13	14	(M1) or (M67)
A/T indicator	B8	7	6	(B2) or (B18)
Power window main switch	D9	15	16	(M1) or (M67)
Cigarette lighter	M42	3	1	(M1) or (M67)
Combination meter	M20	6	33	(*1)
Clock	M20	6	33	(*1)
Hazard switch (For Europe)	M34	7	8	(M1) or (M67)
Hazard switch (Except for Europe)	M35	7	8	(M1) or (M67)
Glove box lamp (switch)	M103	2	1	(M1) or (M67)
Front fog lamp switch	B7	5	6	(B2) or (B18)
Rear fog lamp switch	M38	6	5	(M1) or (M67)
Headlamp washer switch	M36	4	3	(M1) or (M67)
Rear window defogger switch	M37	5	6	(M1) or (M67)
Illumination control switch	M21	1	3	(M1) or (M67)

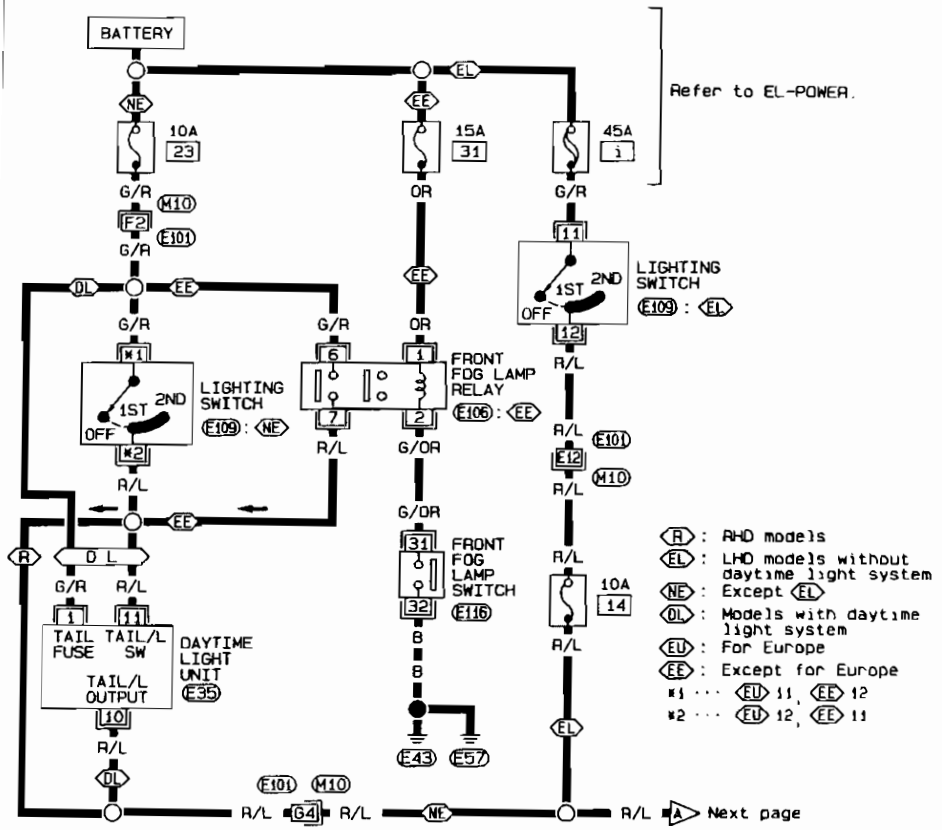
*1: For Europe and Australia models . Illumination control switch
Except for Europe and Australia models (M1) or (M67)

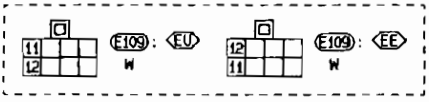
Illumination/Schematic

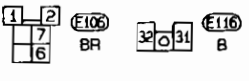


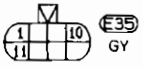
Illumination/Wiring Diagram — ILL —

EL-ILL-01









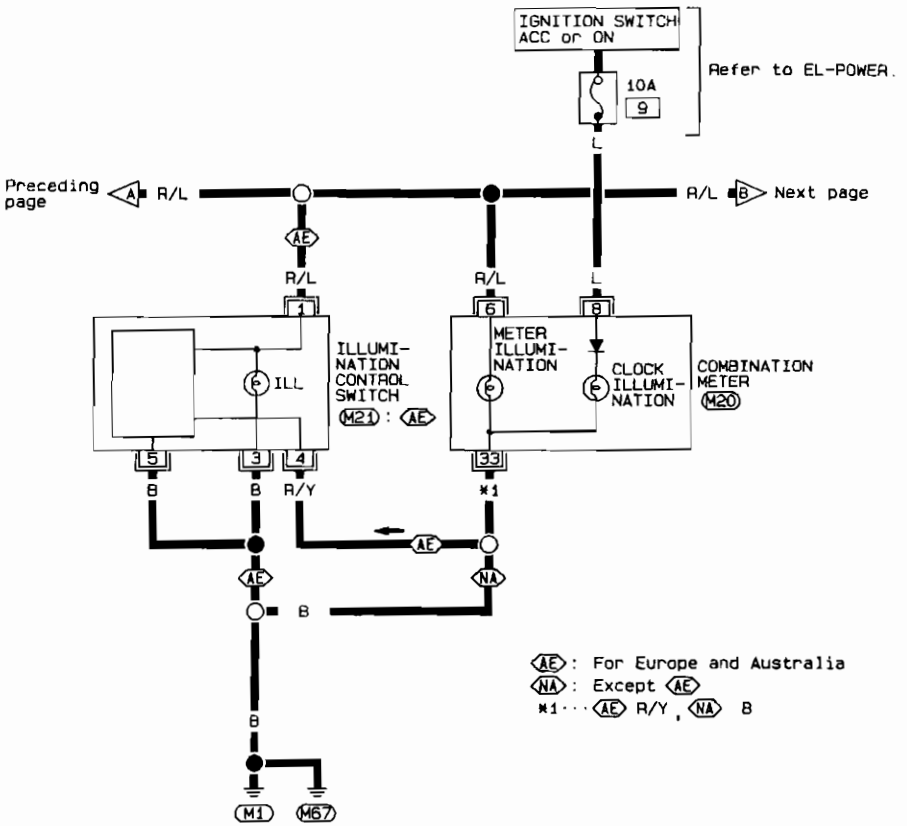
Refer to last page (Foldout page).

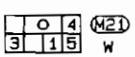
M10 , E101

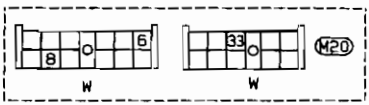
SEL712T

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

EL-ILL-02



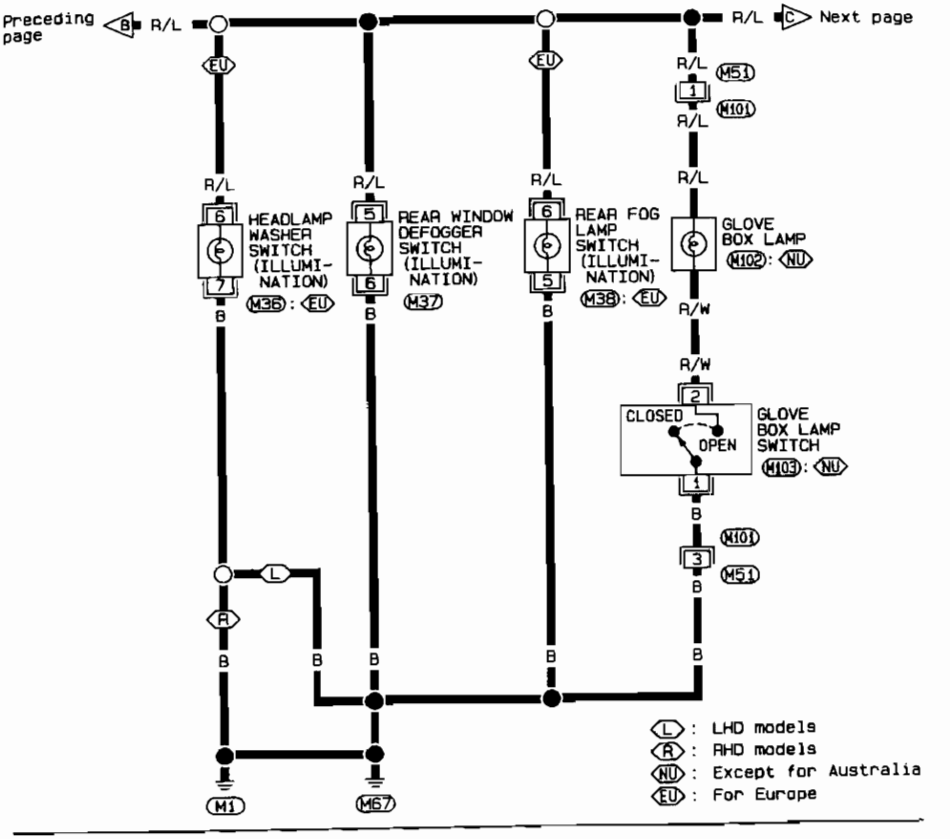


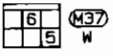


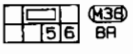
SEL713T

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

EL-ILL-03

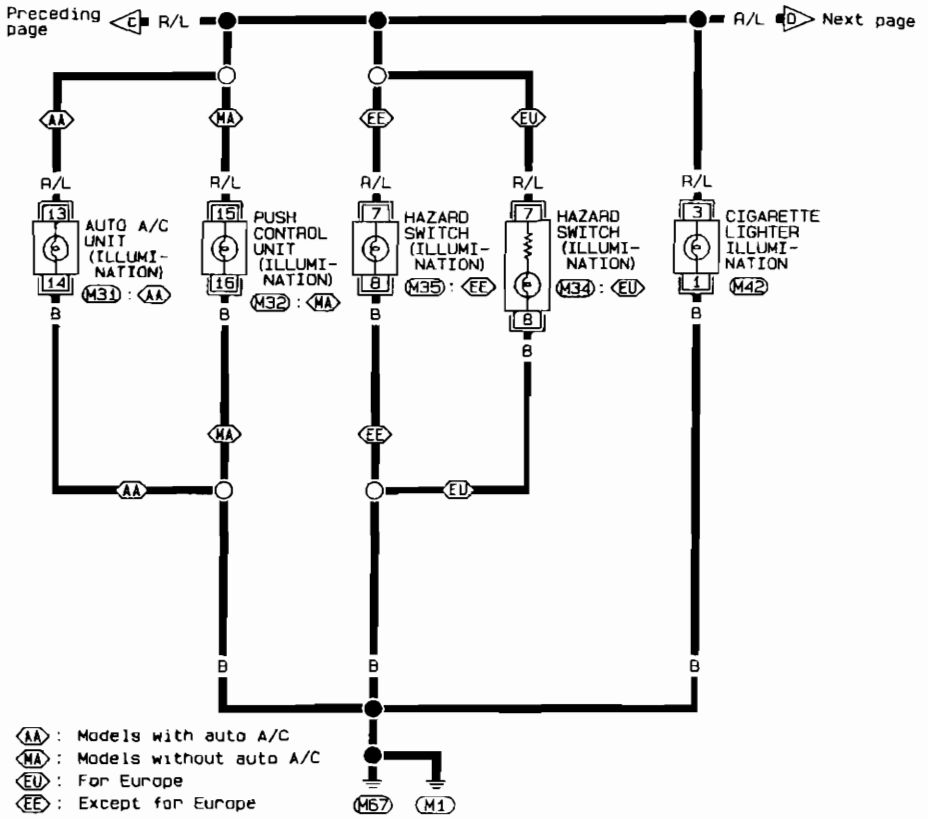


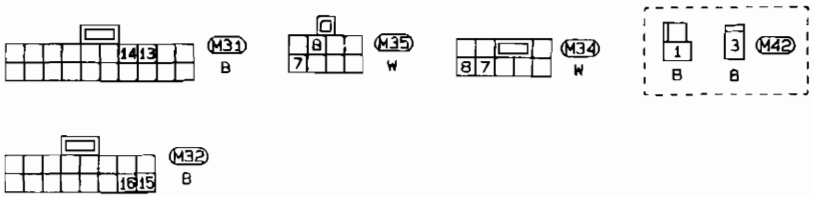




SEL714T

EL-ILL-04

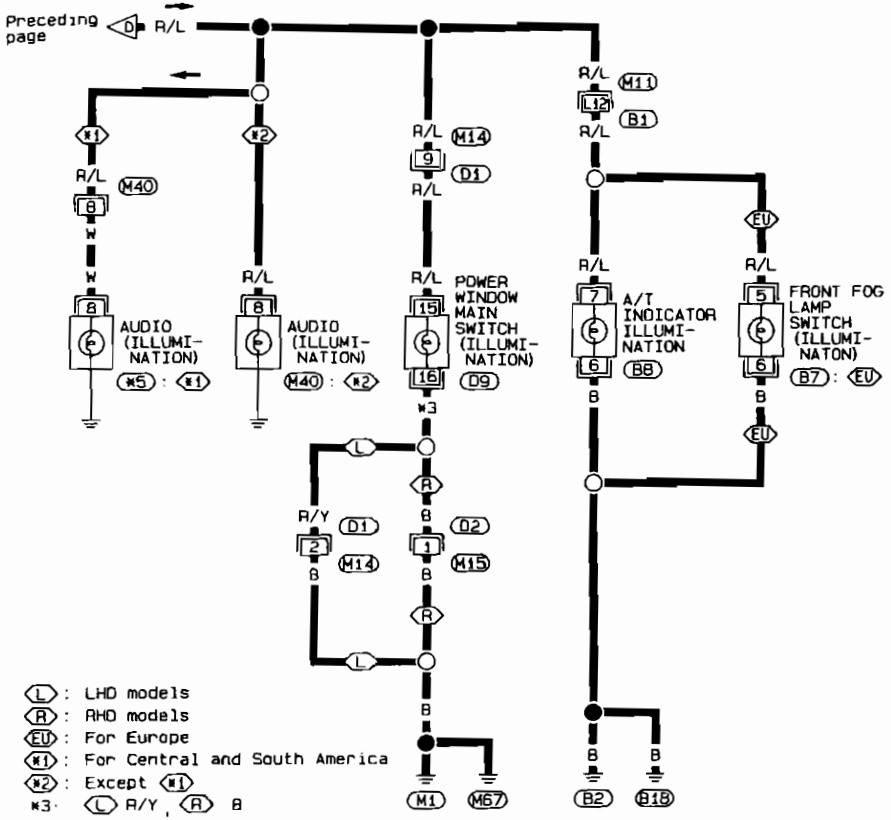


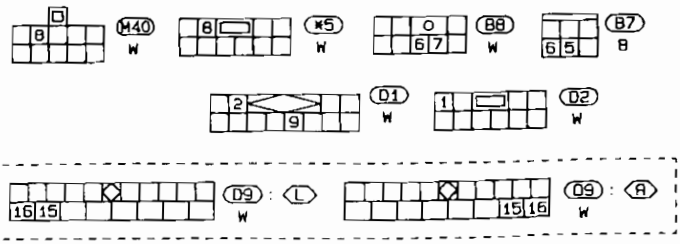


SEL715T

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

EL-ILL-05





Refer to last page (Foldout page).

M11 , B1

SEL716T

Interior, Spot and Trunk Room Lamps/System Description

Power is supplied at all times
- through 10A fuse (No. 21 located in the fuse block)
- to interior lamp terminal ①.
- to spot lamp terminal ① and
- to trunk room lamp terminal ①.

INTERIOR LAMP

Switch operation

With interior lamp switch in the ON position, ground is supplied to turn interior lamp on.
When a door switch is set to OPEN with interior lamp switch in the DOOR position, ground is supplied
- to interior lamp terminal ②
- through diode (M43) terminal ① (Except for Europe models)
- to diode (M43) terminal ② (Except for Europe models)
- through diode (M44) terminal ① (Except for Europe models)
- to diode (M44) terminal ② (Except for Europe models)
- through door switch passenger side terminal ① or
- through door switch driver's side terminal ②,
- through door switch unit ground.

Interior lamp control by multi-remote control system

When the smart entrance control unit receives a signal from multi-remote controller to unlock the door with interior lamp switch set in DOOR position, ground is supplied
- to interior lamp terminal ②
- through smart entrance control unit terminal ⑨,
- through smart entrance control unit terminal ⑩ and
- through body ground (M1).

With power and ground supplied, the interior lamp illuminates.
For smart entrance control unit, refer to "MULTI-REMOTE CONTROL SYSTEM".

TRUNK ROOM LAMP

When the trunk room lamp switch is set to OPEN, ground is supplied
- to trunk room lamp terminal ②
- through trunk room switch terminal ①,
- through trunk room lamp switch terminal ② and
- through body ground (T19).

With power and ground supplied, the trunk room lamp illuminates.

SPOT LAMP

With the spot lamp switch in the ON position, ground is supplied
- to spot lamp terminal ②
- through body ground (M1) or (M67).

With power and ground supplied, the spot lamp illuminates.

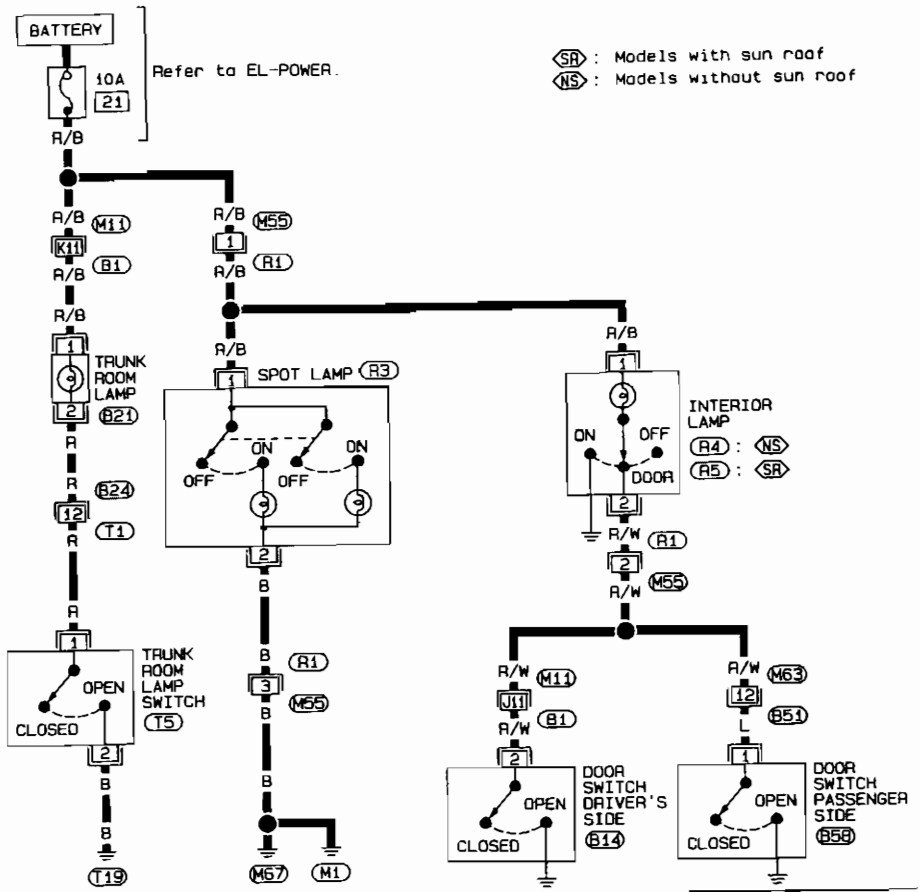
Bulb Specifications

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

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

LHD MODELS

EL-INT/L-01



SR : Models with sun roof
NS : Models without sun roof

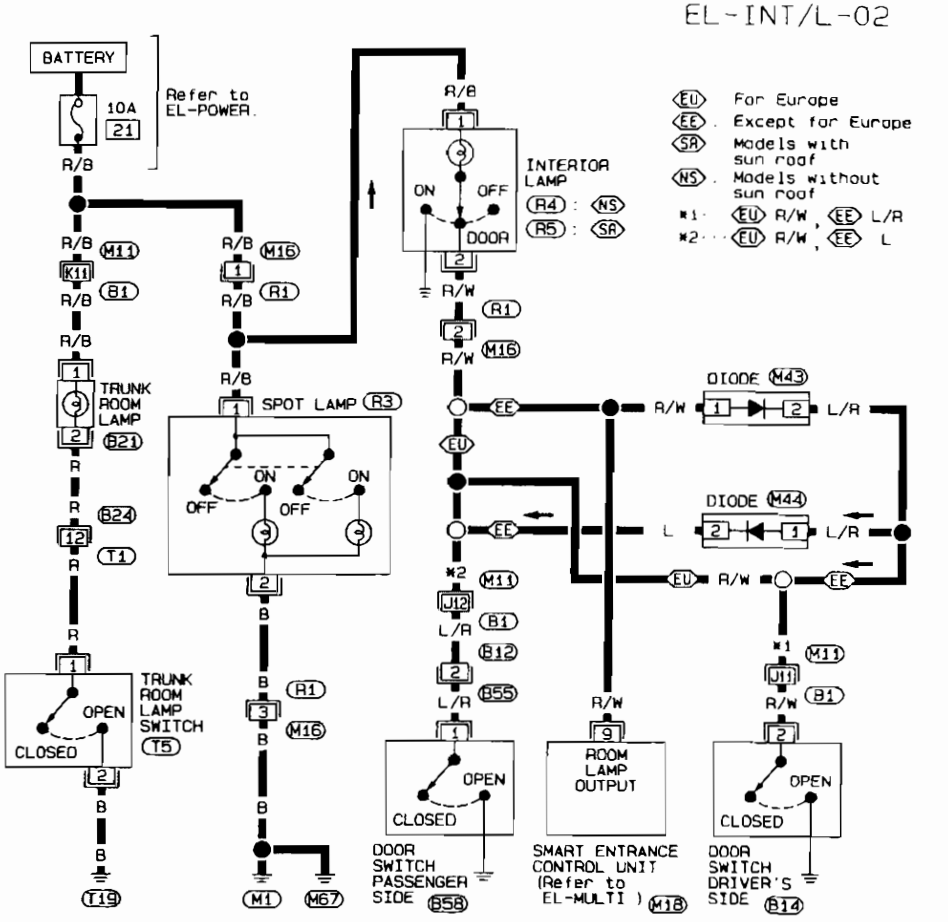
T5 B
R1 W
R3 W, R4 W, R5 W
B21 W
B24 W
B14 B
B58 BR
B51 W

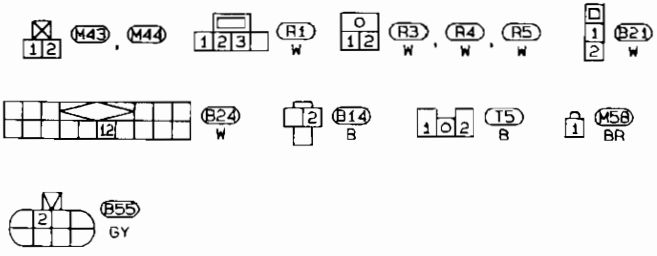
Refer to last page (Foldout page).
M11, B1

SEL815T

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

RHD MODELS





Refer to last page (Foldout page)
M11, B1
M18

SEL816T

System Description

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse (No. [25] , located in the fuse block)
- to combination meter terminal (21).

Ground is supplied
- to combination meter terminal (22)
- through body ground (M1).

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.
As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal (13) of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal
- from terminal (7) of the ECM (ECCS control module)
- to combination meter terminal (12) for the tachometer.

FUEL GAUGE

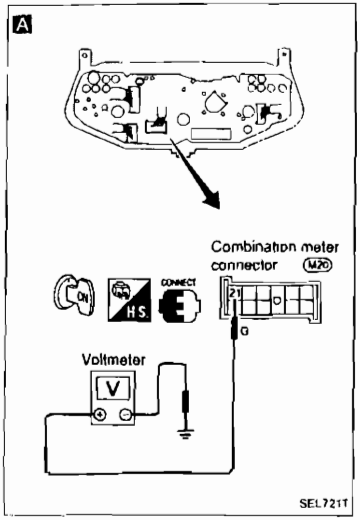
The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied
- to combination meter terminal (20) for the fuel gauge
- from terminal (1) of the fuel tank gauge unit
- through terminal (3) of the fuel tank gauge unit and
- through body grounds (T19), (B2) and (B18).

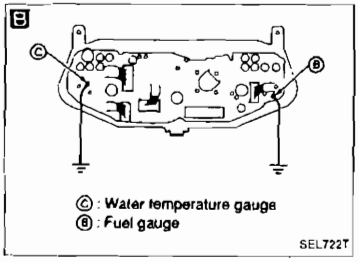
SPEEDOMETER

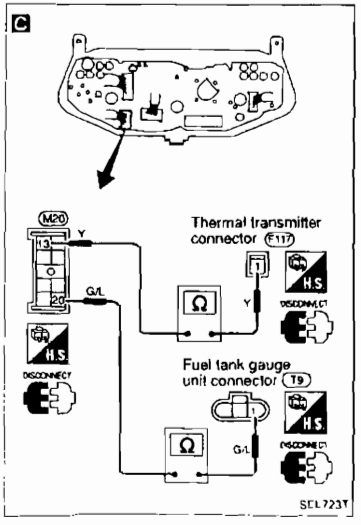
The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
The voltage is supplied
- to combination meter terminals (28) and (35) for the speedometer
- from terminals (1) and (2) of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

Inspection/Fuel Gauge and Water Temperature Gauge







INSPECTION START

A

CHECK POWER SOURCE
1) Turn ignition switch "ON".
2) Check voltage between terminal (21) and ground
Battery voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

OK ↓

B

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

NG → Repair or replace gauge

OK ↓

C

Check harness continuity between combination meter harness terminal (13) and thermal transmitter harness terminal (1).
Check harness continuity between combination meter harness terminal (20) and fuel tank gauge unit harness terminal (1).
Continuity should exist.

NG → Repair or replace

OK ↓

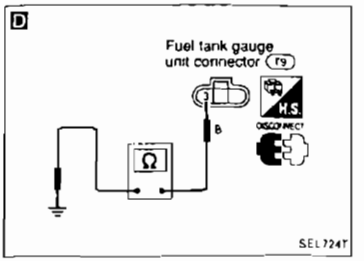
CHECK COMPONENT
Check gauge units and harness
Refer to "Fuel Tank Gauge Unit Check" (EL-120) or "Thermal Transmitter Check" (EL-120).

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

OK ↓

(Go to Ⓐ on next page)

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



Ⓐ

D

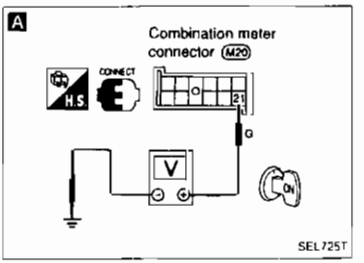
Check harness continuity between fuel tank gauge unit harness terminal ③ and body ground
Continuity should exist.

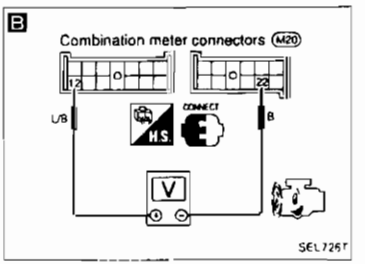
NG → Repair harness or connector

OK ↓

Reinstall any part removed

INSPECTION END





Inspection/Tachometer

INSPECTION START

A

CHECK POWER SOURCE.
1) Turn ignition switch "ON".
2) Check voltage between terminal (21) and ground
Battery voltage should exist.

NG → Check the following items.
1) Harness continuity between battery terminal and combination meter
2) Ignition relay
3) Fusible link and fuse
4) Ignition switch

OK ↓

B

CHECK ECM OUTPUT
1) Start engine.
2) Check voltage between terminals (12) and (22) at idle and 2,000 rpm
Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

NG → Check harness and connector between ECM and combination meter, or check ground.

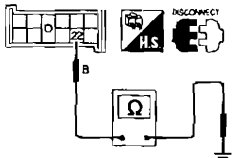
OK ↓

Replace tachometer

INSPECTION END

A

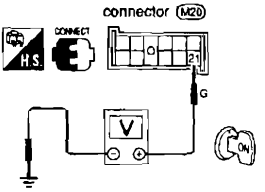
Combination meter connector (M20)



SEL727T

B

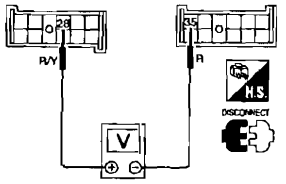
Combination meter connector (M20)

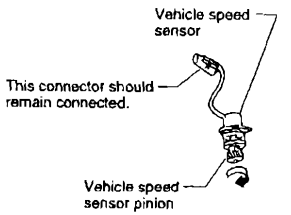


SEL728T

C

Combination meter connectors (M20)

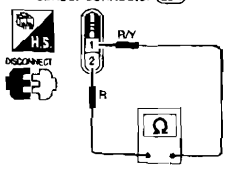




SEL729T

D

Vehicle speed sensor connector (E211)



SEL730T

Inspection/Speedometer and Vehicle Speed Sensor

SYMPTOM: Speedometer stays at 0 km/h (0 MPH).

INSPECTION START

A

CHECK GROUND CIRCUIT OF SPEEDOMETER.
Check continuity between terminal (23) and body ground
Continuity should exist.

NG → Repair harness or connector

OK

B

CHECK SPEEDOMETER CIRCUIT.
1) Turn ignition switch "ON".
2) Check voltage between terminal (21) and body ground.
Battery voltage should exist.

NG → Repair harness or connector

OK

C

CHECK VEHICLE SPEED SENSOR OUTPUT
1) Remove vehicle speed sensor from transaxle.
2) Check voltage between terminal (28) and (35) while quickly turning speed sensor pinion.
Voltage: Approx. 0.5V

OK → Replace speedometer.

NG

D

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

NG → Replace vehicle speed sensor.

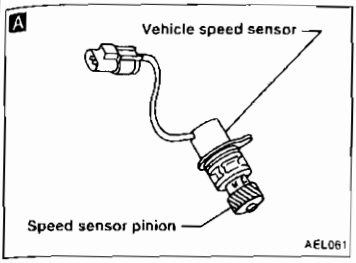
OK

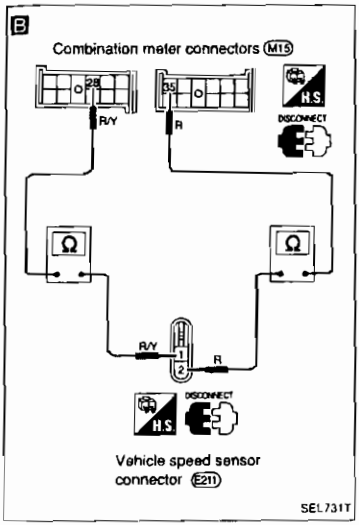
Repair harness or connector between speedometer and vehicle speed sensor.

INSPECTION END

Inspection/Speedometer and Vehicle Speed Sensor (Cont'd)

SYMPTOM: Speedometer indication flutters.





INSPECTION START

↓

Is vehicle speed sensor installed properly? Check looseness and so on. — NG → Install vehicle speed sensor properly.

↓ OK

A

Do you feel resistance when turning vehicle speed sensor pinion? — No → Replace vehicle speed sensor.

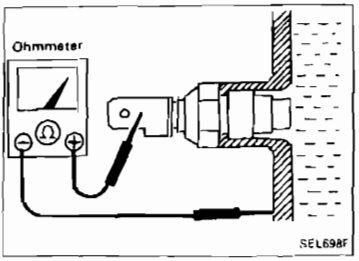
↓ Yes

B

Check continuity between speedometer terminal (28) and vehicle speed sensor terminal (1), and between (35) and (2). **Continuity should exist.** — NG → Repair harness and connector

↓ OK

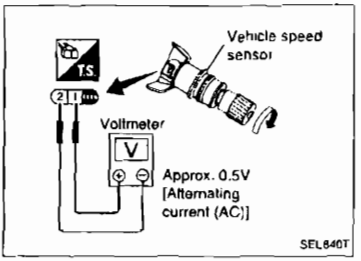
Replace speedometer.



Thermal Transmitter Check

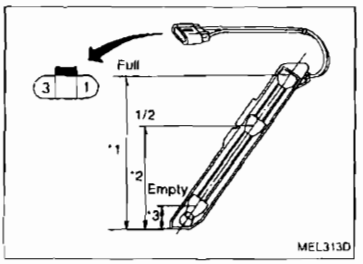
Check the resistance between the terminals of thermal transmitter and body ground

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



Vehicle Speed Sensor Signal Check

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



Fuel Tank Gauge Unit Check

Sending unit

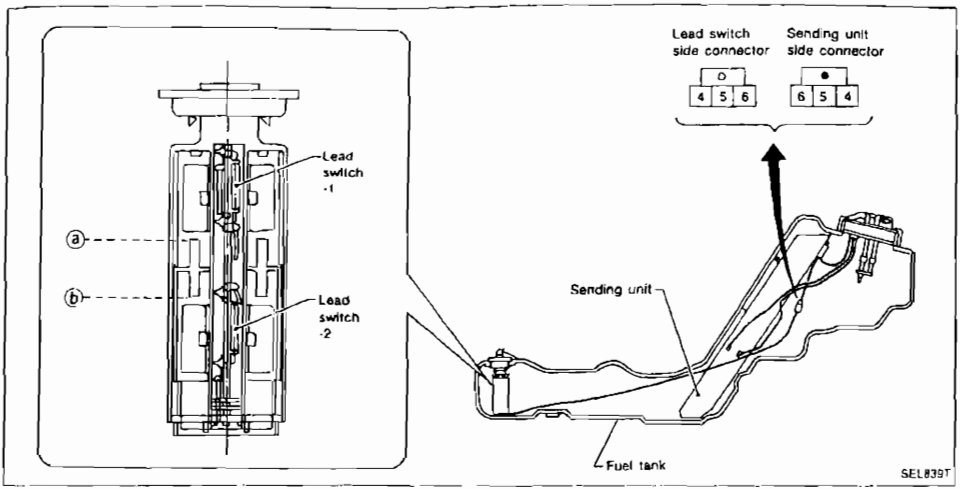
- For removal, refer to FE section.

Check the resistance between terminals ① and ③.

Ohmmeter (+)	Ohmmeter (−)	Float position	mm (in)		Resistance value (Ω)
①	③	*1	Full	358 (14.09)	Approx. 4 - 6
		*2	1/2	245 (9.65)	30 - 35
		*3	Empty	42 (1.65)	85 - 93

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

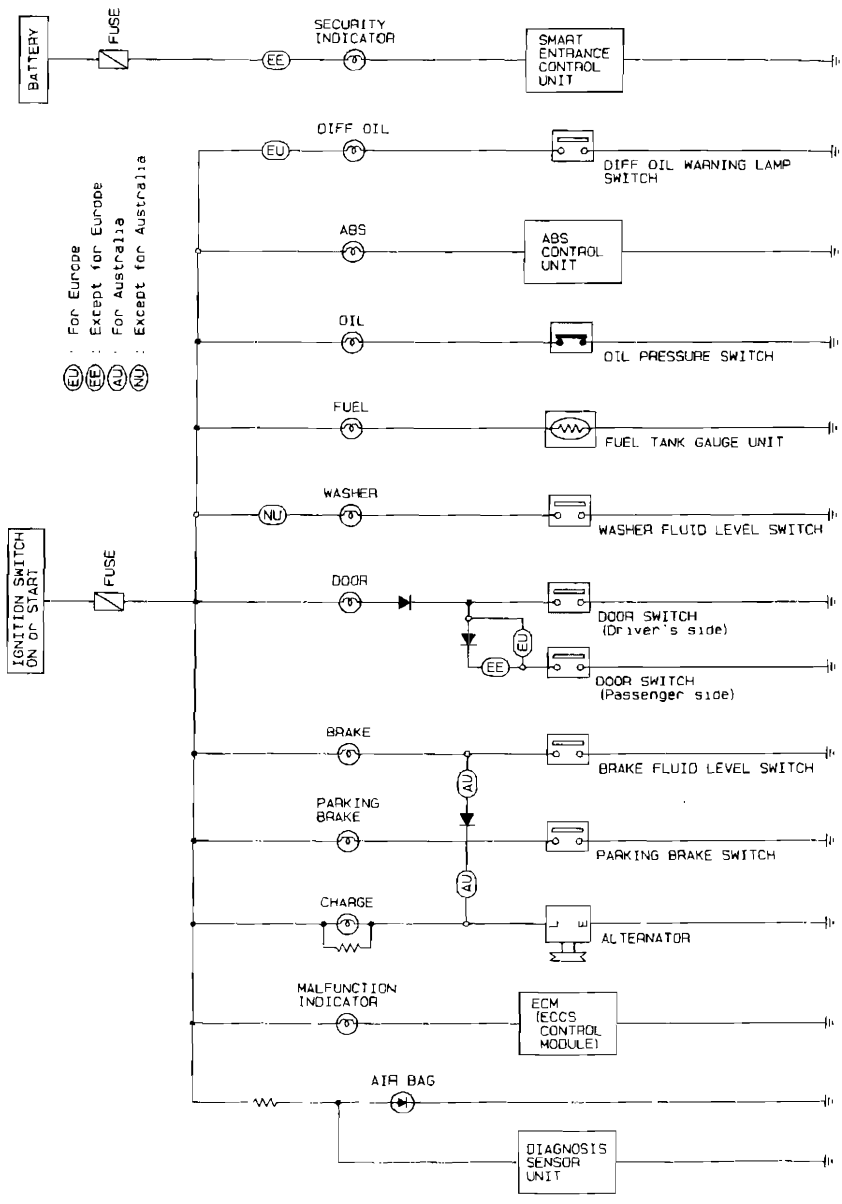
Lead Switch



Lead switch is built into the fuel tank.
Check the continuity between terminals ④ and ⑤ or ④ and ⑥

Terminals			Lead switch condition		Fuel level line	Fuel capacity (Approximate values) ℓ (Imp qt)
④	⑤	⑥	SW1	SW2		
○—○		○	ON	ON	Above ⓐ	More than 6.8 (6)
○—○			OFF	ON	ⓐ - ⓑ	2.5 - 6.8 (2-1/4 - 6)
			OFF	OFF	Below ⓑ	Less than 2.5 (2-1/4)

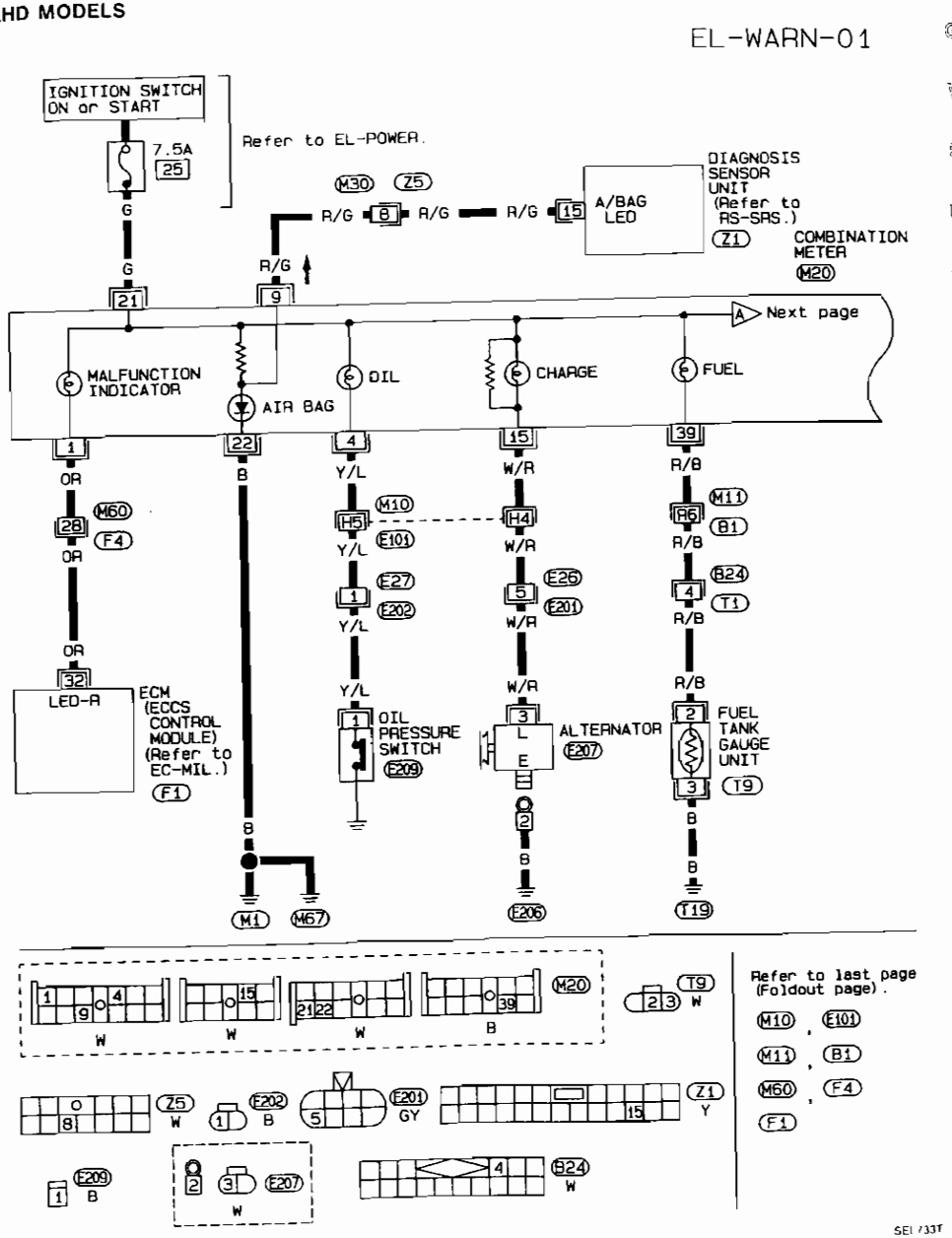
Warning Lamps/Schematic



SEL732T

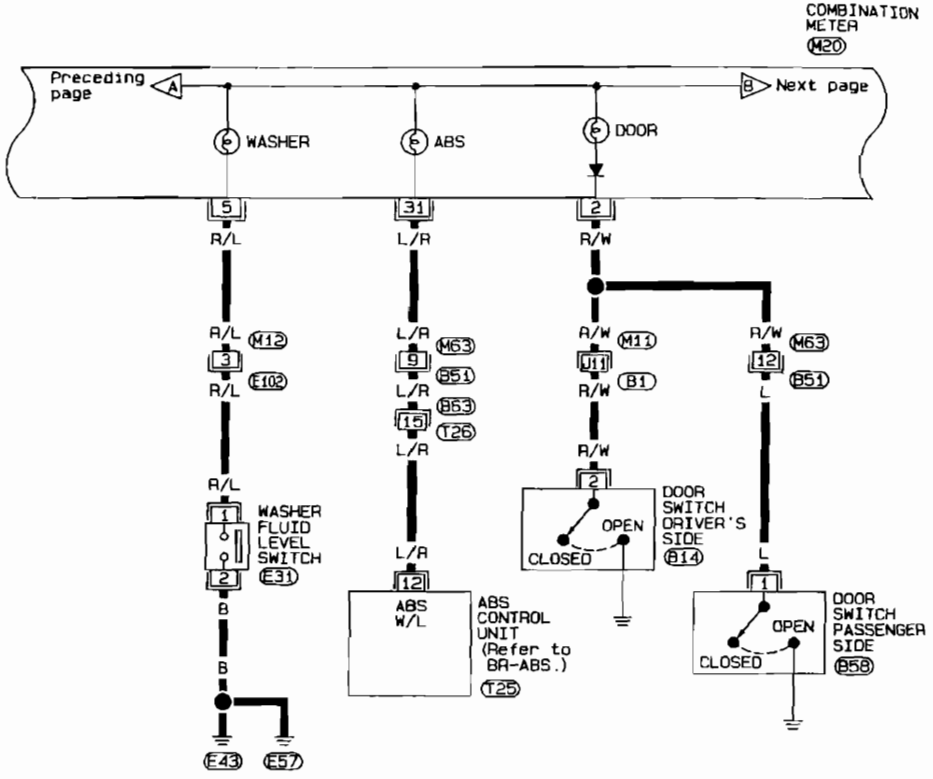
Warning Lamps/Wiring Diagram — WARN —

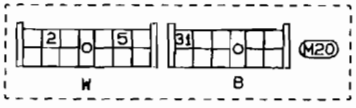
LHD MODELS

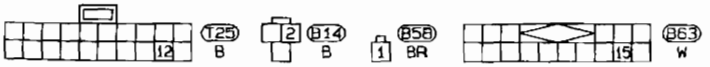


Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-02







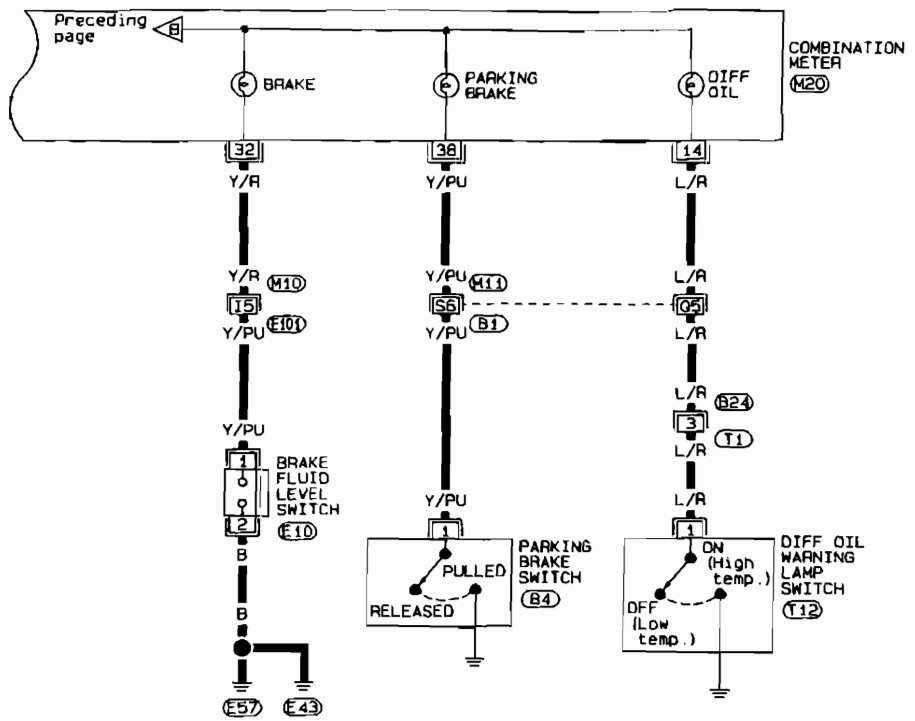
Refer to last page (Foldout page).

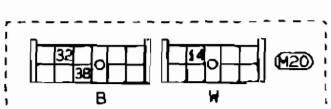
M11, B1

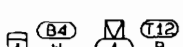
SEI734T

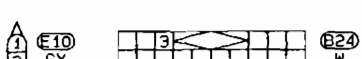
Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-03









Refer to last page (Foldout page).

M10, E101

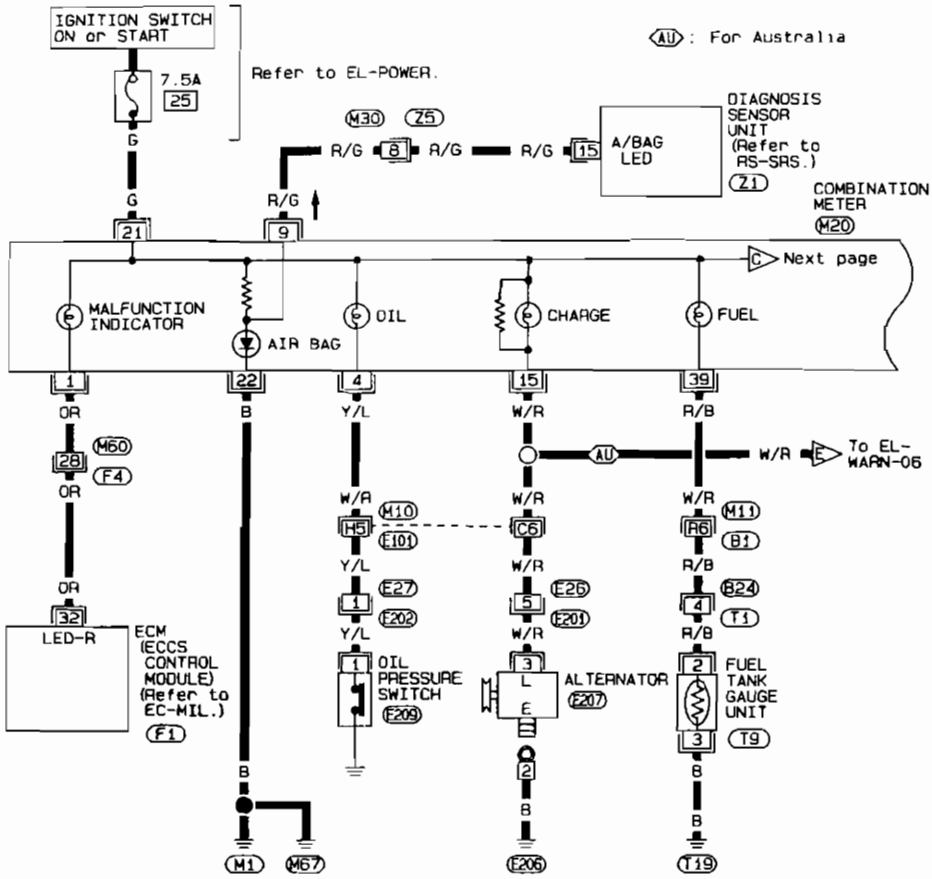
M11, B1

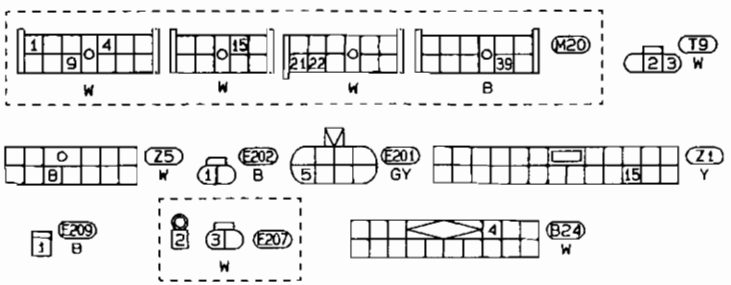
SEL735T

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

RHD MODELS

EL-WARN-04





Refer to last page (Foldout page).

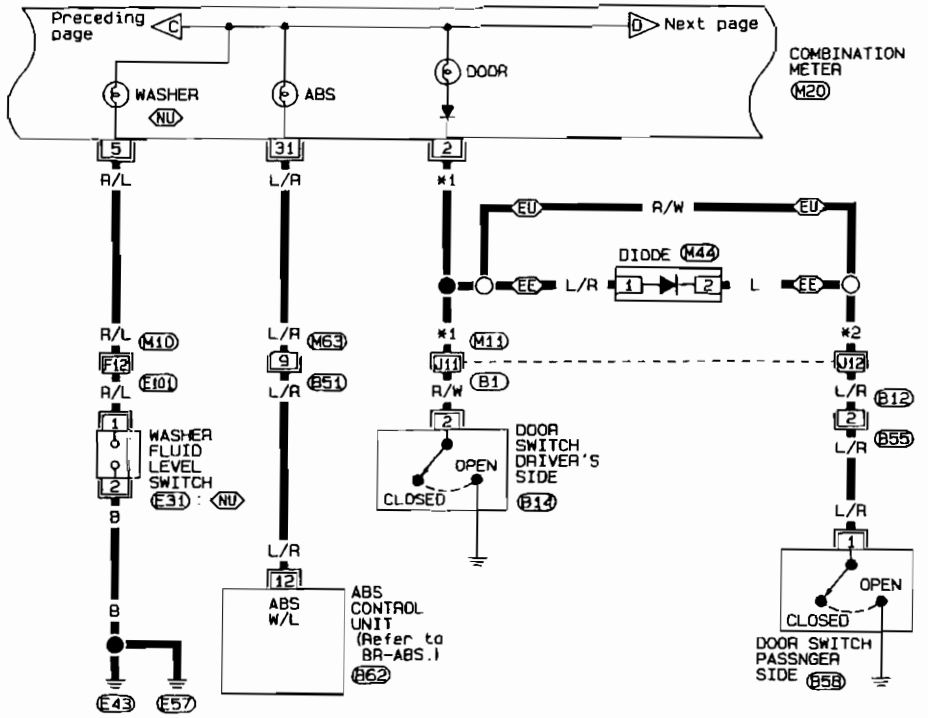
M10, E101
M11, B1
M60, F4
F1

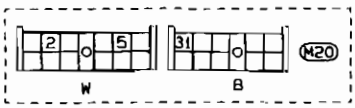
SEL736T

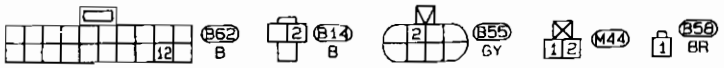
Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-05

NU : Except for Australia
EU : For Europe
EE : Except for Europe
*1 ··· EU R/W , EE L/R
*2 ··· EU R/W , EE L





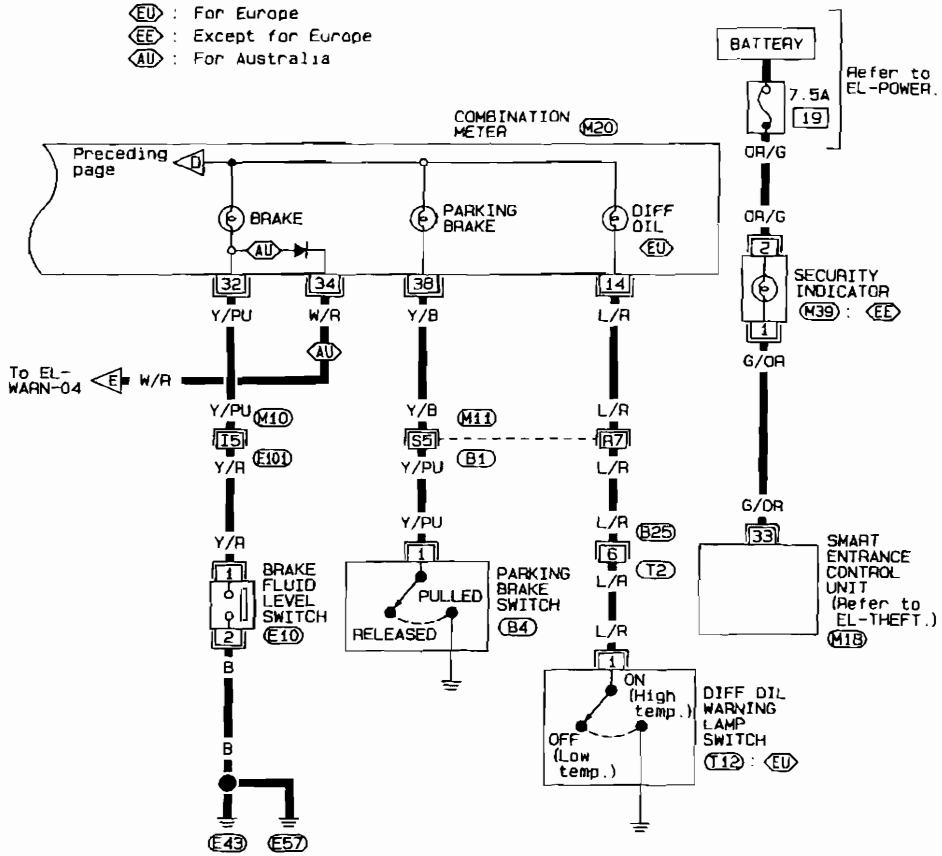


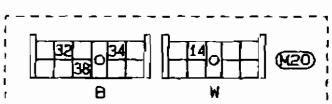
Refer to last page (Foldout page).
M10 , E101
M11 , B1

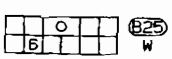
SEL737T

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

EL-WARN-06

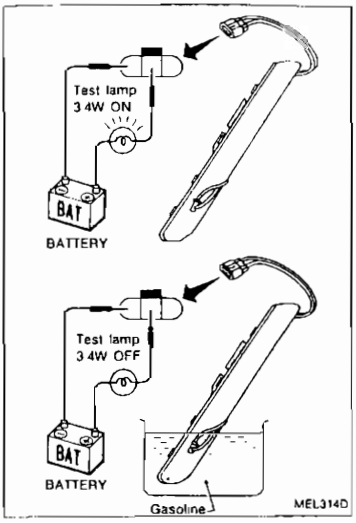






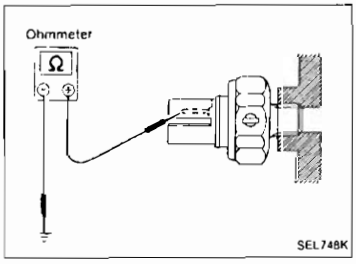
Refer to last page (Foldout page).
M10, E101
M11, B1
M18

SEL738T



Fuel Warning Lamp Sensor Check

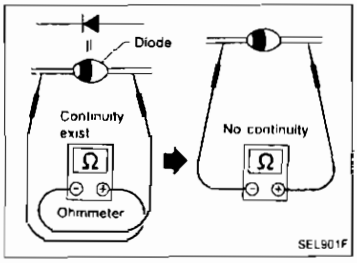
- It will take a short time for the bulb to light.



Oil Pressure Switch Check

	Oil pressure kPa (bar, kg/cm², psi)	Continuity
Engine start	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	NO
Engine stop	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	YES

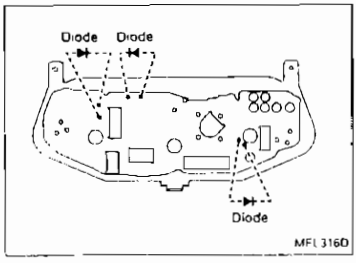
Check the continuity between the terminals of oil pressure switch and body ground.



Diode Check

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

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



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

Warning Buzzer/System Description

The warning buzzer is controlled by the smart entrance control unit
Power is supplied at all times
- through 10A fuse (No. 21, located in the fuse block)
- to warning buzzer terminal ③
- to key switch terminal ①

Power is supplied at all times
(LHD models without daytime light system)
- through 45A fusible link (letter i, located in the fusible link and fuse box).
- to lighting switch terminal ⑪

(LHD models with daytime light system and RHD models)
- through 10A fuse (No. 23, located in the fuse block)
- to lighting switch terminal ⑪ (For Europe) or ⑫ (Except for Europe)

Power is supplied at all times
- through 25A fusible link (letter f, located in the fusible link and fuse box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse (No. 26, located in the fuse block)
- to smart entrance control unit terminal ⑪.

Ground is supplied to smart entrance control unit terminal ⑩ through body ground (M1).
When a signal, or combination of signals, is received by the smart entrance control unit, ground is supplied
- through smart entrance control unit terminal ㉓
- to warning buzzer terminal ①.

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

Ignition key warning buzzer (Except for Europe models)

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

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

Driver side door switch terminal ③ is grounded through body grounds (B2) and (B18).

Light warning buzzer

With ignition switch OFF, driver's door open, and lighting switch in 1ST or 2ND position, warning buzzer will sound. A battery positive voltage is supplied
(LHD models without daytime light system)
- from lighting switch terminal ⑫
- through 10A fuse (No. 14, located in the fuse block)
- to smart entrance control unit terminal ㉕

(LHD models with daytime light system)
- from lighting switch terminal ⑫
- to daytime light unit terminal ⑪
- through daytime light unit terminal ⑩
- to smart entrance control unit terminal ㉕

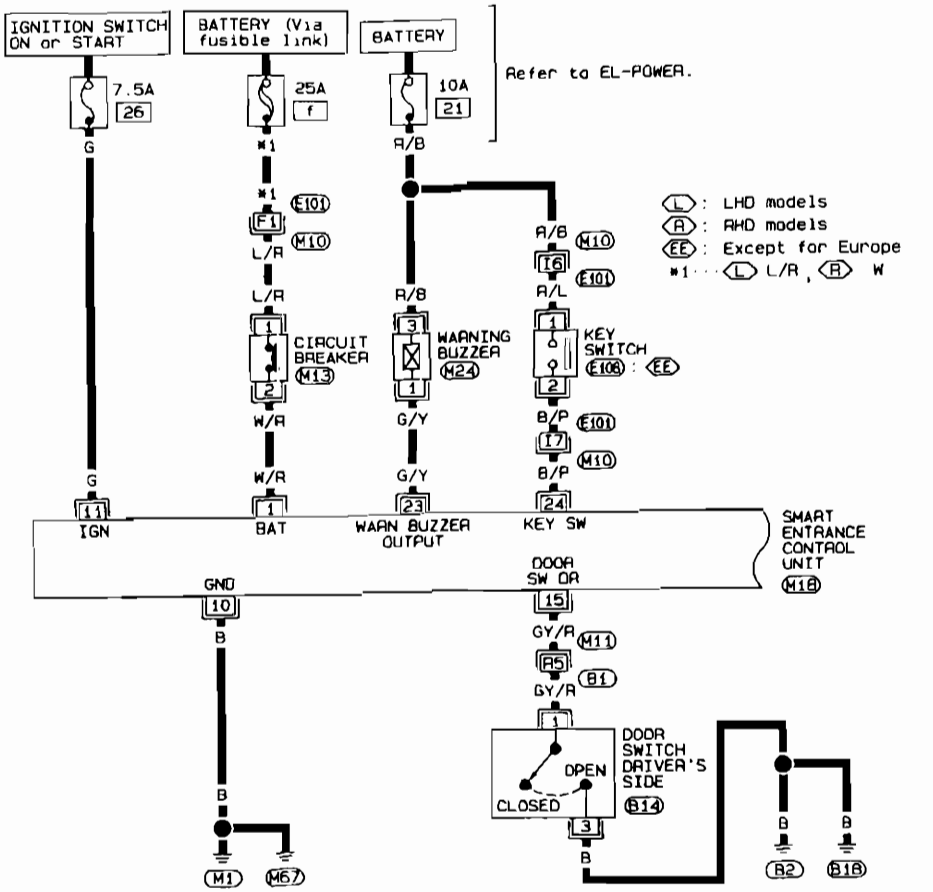
(RHD models)
- from lighting switch terminal ⑫ (For Europe) or ⑪ (Except for Europe)
- to smart entrance control unit terminal ㉕

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

Driver side door switch terminal ③ is grounded through body grounds (B2) and (B18).

Warning Buzzer/Wiring Diagram — CHIME —

EL-CHIME-01



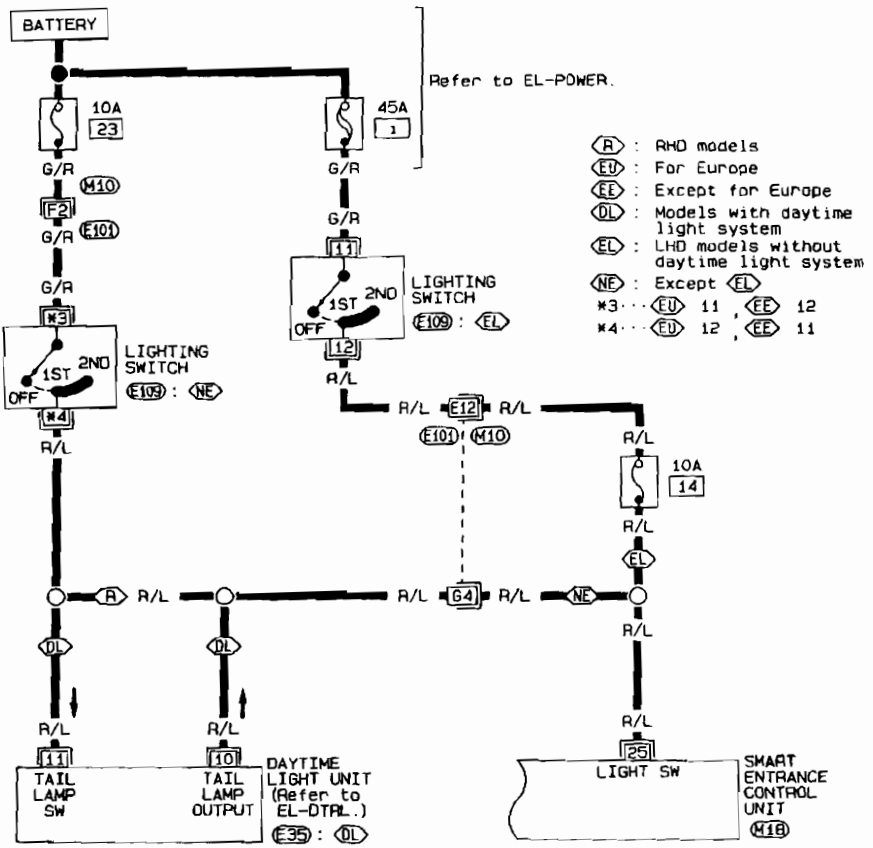
Refer to last page (Foldout page).

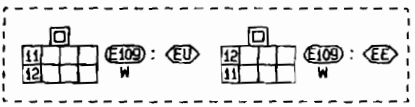
M10, E101
M11, B1
M18

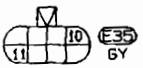
SEL739T

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

EL-CHIME-02







Refer to last page (Foldout page).

M10 , E101

M18

SEL740T

Trouble Diagnoses — Warning Buzzer

SYMPTOM CHART

PROCEDURE	Preliminary Check		Main Power Supply and Ground Circuit Check	Diagnostic Procedure	
REFERENCE PAGE	EL-133	EL-133	EL-134	EL-135	EL-136
SYMPTOM	Preliminary check 1	Preliminary check 2	Main power supply and Ground circuit	Diagnostic Procedure 1	Diagnostic Procedure 2
Light warning buzzer does not activate					
Ignition key warning buzzer does not activate (Except for Europe model)					

PRELIMINARY CHECK

Preliminary check 1

- **Light warning buzzer does not activate.**

Does ignition key warning buzzer activate? — Yes → Go to "DIAGNOSTIC PROCEDURE 1 — Step 1" (EL-135)

No ↓

Does interior lamp come on when door is open? — Yes → Go to "DIAGNOSTIC PROCEDURE 1 — Step 2" (EL-135)

No ↓

Go to "DIAGNOSTIC PROCEDURE 1 — Step 3" (EL-135)

Preliminary check 2

- **Ignition key warning buzzer does not activate.**

Does light warning buzzer activate? — Yes → Go to "DIAGNOSTIC PROCEDURE 2 — Step 1" (EL-136).

No ↓

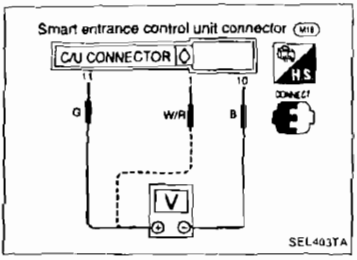
Does interior lamp come on when door is open? — Yes → Go to "DIAGNOSTIC PROCEDURE 2 — Step 2" (EL-136)

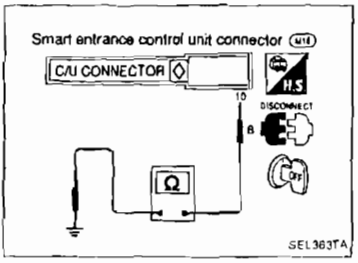
No ↓

Go to "DIAGNOSTIC PROCEDURE 2 — Step 3" (EL-136)

Trouble Diagnoses — Warning Buzzer (Cont'd)

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK





Main power supply

Terminals	Battery voltage existence condition		
	Ignition switch position		
	OFF	ACC	ON
⑪ - ⑫	No	No	Yes
① - ⑩	Yes	Yes	Yes

Ground circuit

Terminals	Continuity
⑩ - Ground	Yes

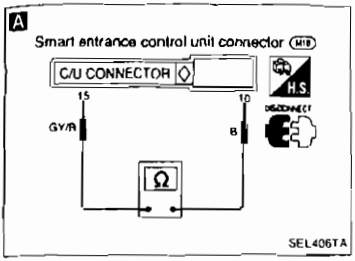
Trouble Diagnoses — Warning Buzzer (Cont'd)

DIAGNOSTIC PROCEDURE 1

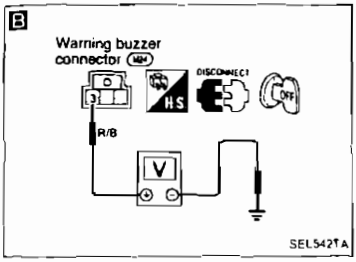
SYMPTOM: Light warning buzzer does not activate.

- Perform "Preliminary check 1" before referring to the following flow chart.

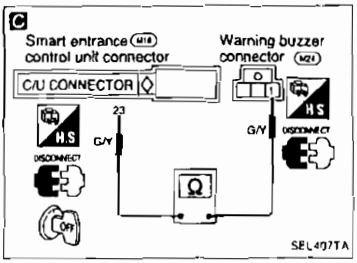
A



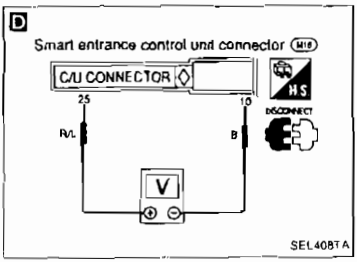
B



C



D



A Step 3

DOOR SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑮ and ⑩.

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

NG →
- Check door switch (Refer to EL-246.)
- Check harness continuity between control unit harness terminal ⑮ and driver side door switch harness terminal ①.
  Continuity should exist.
- Check harness continuity between driver side door switch harness terminal ③ and body ground
  Continuity should exist.

OK ↓

B Step 2

BUZZER POWER SUPPLY CHECK
Measure voltage between warning buzzer harness terminal ③ and body ground
Battery voltage should exist.

NG → Check 10A fuse [21] harness and connector

OK ↓

C

BUZZER OUTPUT SIGNAL CHECK
Check continuity between warning buzzer harness terminal ① and control unit harness terminal ㉓
Continuity should exist.

NG → Repair harness or connectors.

OK ↓

WARNING BUZZER CHECK
Refer to EL-137

NG → Replace warning buzzer

OK ↓

D Step 1

LIGHTING SWITCH INPUT SIGNAL CHECK
Measure voltage between control unit harness terminals ㉕ and ⑩.

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

NG →
- Check lighting switch
- Check harness continuity between control unit harness terminal ㉕ and lighting switch harness terminal ⑫
  Continuity should exist.
- Measure voltage between lighting switch harness terminal ⑪ and body ground
  Battery voltage should exist.

OK ↓

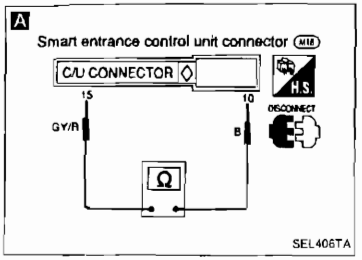
Replace control unit

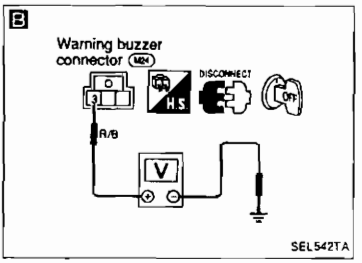
Trouble Diagnoses — Warning Buzzer (Cont'd)

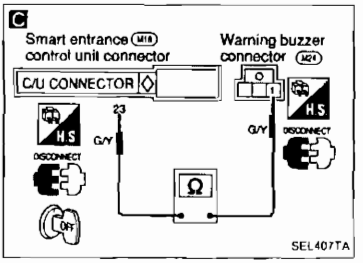
DIAGNOSTIC PROCEDURE 2

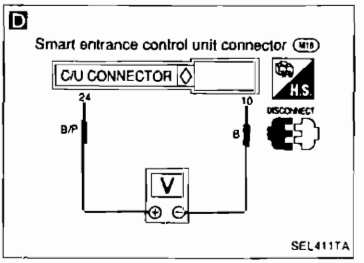
SYMPTOM: Ignition key warning buzzer does not activate. (Except Europe model)

- Perform "Preliminary check 2" before referring to the following flow chart.









A Step 3

DOOR SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑮ and ⑩.

Condition of driver's door	Continuity
Driver side door is closed.	No
Driver side door is open	Yes

NG →
- Check door switch (Refer to EL-246.)
- Check harness continuity between control unit harness terminal ⑮ and driver side door switch harness terminal ①.
  Continuity should exist.
- Check harness continuity between driver side door switch harness terminal ③ and body ground
  Continuity should exist.

OK ↓

B Step 2

BUZZER POWER SUPPLY CHECK
Measure voltage between warning buzzer harness terminal ③ and body ground.
Battery voltage should exist.

NG → Check 10A fuse [21], harness and connector

OK ↓

C

BUZZER OUTPUT SIGNAL CHECK
Check continuity between warning buzzer harness terminal ① and control unit harness terminal ㉓.
Continuity should exist.

NG → Repair harness or connectors

OK ↓

WARNING BUZZER CHECK
Refer to EL-137

NG → Replace warning buzzer

OK ↓

D Step 1

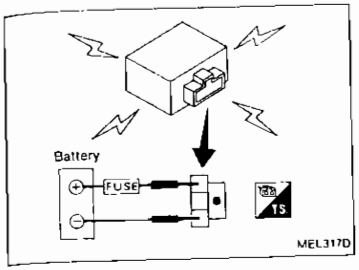
IGNITION KEY SWITCH INPUT SIGNAL CHECK
Measure voltage between control unit harness terminals ㉔ and ⑩

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

NG →
- Check ignition key switch
- Check harness continuity between control unit harness terminal ㉔ and key switch harness terminal ②.
  Continuity should exist.
- Measure voltage between key switch harness terminal ① and body ground
  Battery voltage should exist.

OK ↓

Replace control unit



Warning Buzzer Check

Supply battery voltage to warning buzzer as shown in the illustration.

Warning buzzer should operate.

Front Wiper and Washer/System Description

WIPER OPERATION

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

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse (No. 11 , located in the fuse block)
- to front wiper motor terminal ②

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body ground (F43) or (E57).
When the wiper switch is placed in the LO position, ground is supplied

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

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

- through terminal ⑯ of the wiper switch
- to wiper motor terminal ⑤.

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

Auto stop operation

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

- from terminal ⑭ of the wiper switch
- to wiper motor terminal ④, in order to continue wiper motor operation at low speed.

Ground is also supplied

- through terminal ⑬ of the wiper switch
- to wiper amplifier terminal ②
- through terminal ⑦ of the wiper amplifier
- to wiper motor terminal ①
- through terminal ⑥ of the wiper motor, and
- through body ground (F37).

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

Intermittent operation

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

- to wiper amplifier terminal ①
- from wiper switch terminal ⑮
- through wiper switch terminal ⑰ and body ground (E43) or (E57).
- to wiper motor terminal ④
- through the wiper switch terminal ⑭
- to wiper switch terminal ⑬
- through wiper amplifier terminal ②
- to wiper amplifier terminal ③
- through body ground (F37)

The desired interval time is input

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

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

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

WASHER OPERATION

With the ignition switch in the ACC or ON position, power is supplied
- through 20A fuse (No. 11, located in the fuse block)
- to washer motor terminal ①

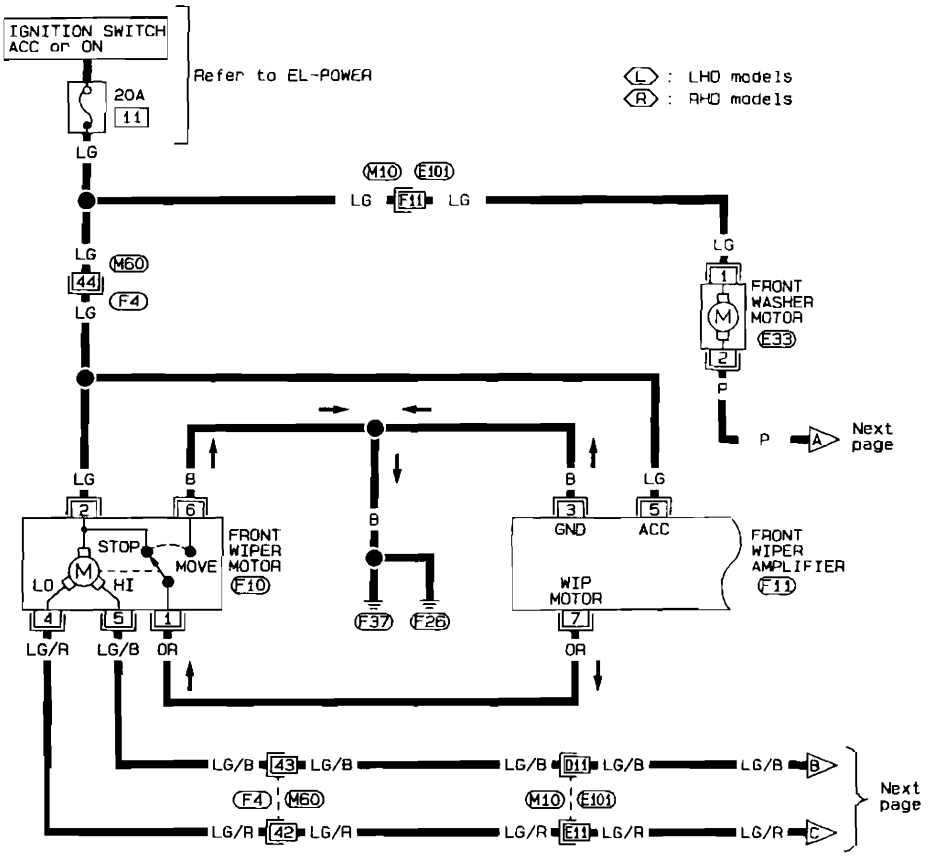
When the lever is pulled to the WASH position, ground is supplied
- to washer motor terminal ②, and
- to wiper amplifier terminal ⑥
- from terminal ⑱ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body ground E43 or E57.

With power and ground supplied, the washer motor operates.

The wiper motor operates when the lever is pulled to the WASH position for one second or more and for approximately 3 seconds after the lever is released. This feature is controlled by the wiper amplifier in the same manner as the intermittent operation.

Front Wiper and Washer/Wiring Diagram — WIPER —

EL-WIPER-01



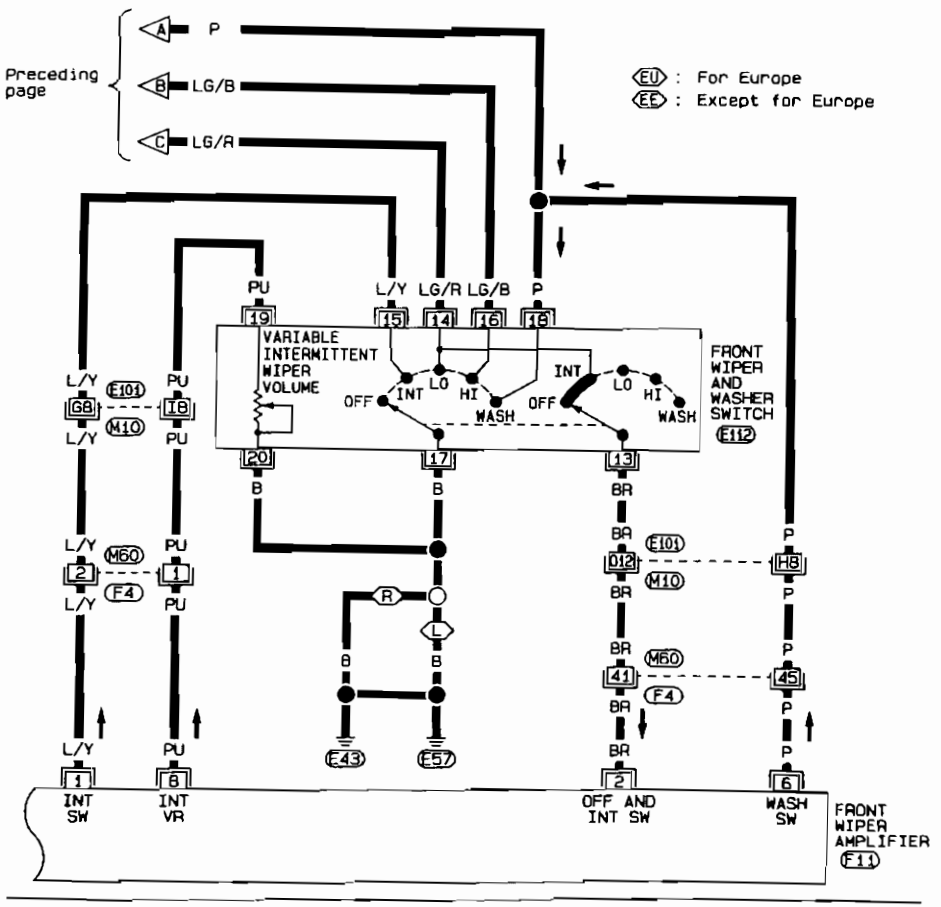
(L) 1 2 4 5 6 GY : F10
(R) 2 1 6 5 4 W : F10
1 2 E33 W
3 7 5 F11 (L) GY , (R) W

Refer to last page (Foldout page).
M10 , E101
M60 , F4

SEL741I

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

EL-WIPER-02



F11 (L) GY, (R) W

EU : E112 L

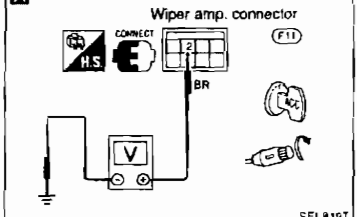
EE : E112 L

Refer to last page (Foldout page).

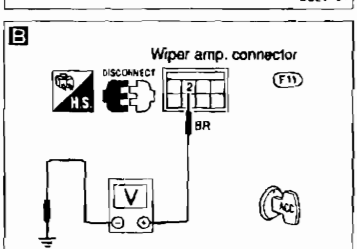
M10, E101

M60, F4

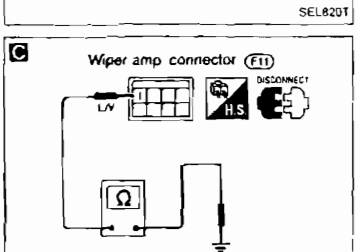
A



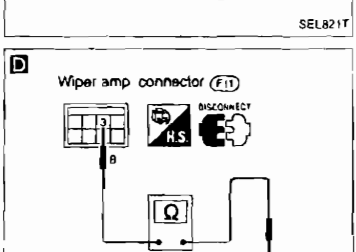
B



C



D



Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A

WIPER AMP. OUTPUT SIGNAL CHECK
1) Turn ignition switch to "ACC".
2) Turn wiper switch to "INT" or "OFF".
3) Measure voltage between wiper amp. harness terminal ② and body ground

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0 to 12 every 3 to 13 seconds

OK → Check wiper motor

NG

B

Measure voltage between wiper amp harness terminal ② and body ground
Battery voltage should exist.

NG →
- Check wiper switch
- Check wiper motor
- Check harness continuity between wiper amp harness terminal ② and wiper switch harness terminal ⑬
  Continuity should exist.
- Check harness continuity between wiper switch harness terminal ⑭ and wiper motor harness terminal ④
  Continuity should exist.

OK

C

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

Condition of wiper switch	Continuity
OFF	No
INT	Yes

NG →
- Check wiper switch
- Check harness continuity between wiper amp harness terminal ① and wiper switch harness terminal ⑮
  Continuity should exist.
- Check harness continuity between wiper switch harness terminal ⑰ and body ground
  Continuity should exist.

OK

D

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

NG → Repair harness or connector

OK

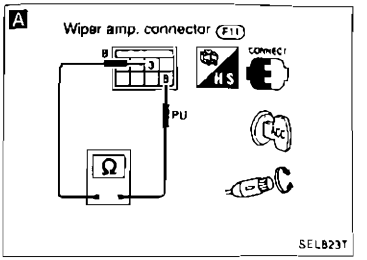
Replace wiper amp.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



A

INTERMITTENT WIPER VOLUME INPUT SIGNAL CHECK
Measure resistance between wiper amp. harness terminals (8) and (3) while turning intermittent wiper volume

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

OK → Replace wiper amp.

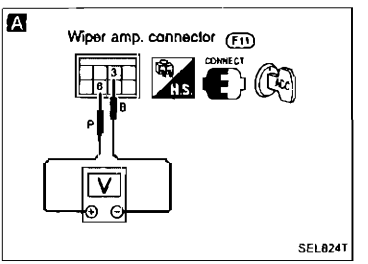
NG

Check intermittent wiper volume.
Check harness continuity between wiper amp. harness terminal (8) and wiper switch harness terminal (19).
Check harness continuity between wiper switch harness terminal (20) and body ground.

DIAGNOSTIC PROCEDURE 3

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

A



A

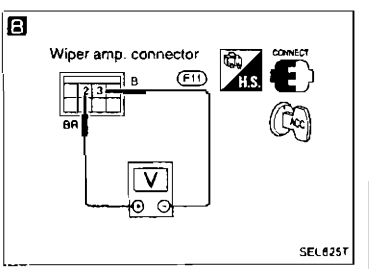
WASHER SWITCH INPUT SIGNAL CHECK
1) Turn ignition switch to "ACC"
2) Measure voltage between wiper amp. harness terminals (6) and (3)

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

NG → Check harness continuity between wiper amp. harness terminal (6) and wiper switch harness terminal (19)

OK

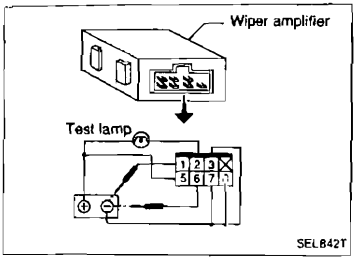
B



B

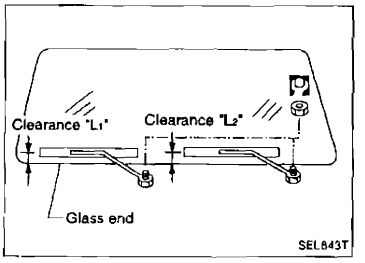
WIPER AMP. OUTPUT SIGNAL CHECK
Measure voltage between wiper amp harness terminals (2) and (3) after operating washer switch
0V for approx. 3 seconds after washer has operated.

NG → Check wiper switch.
OK → Replace wiper amp



Front Wiper Amplifier Check

1. Connect as shown in the figure at left.
2. If test lamp comes on when connected to terminal ① or ⑥ and battery ground, wiper amplifier is normal.



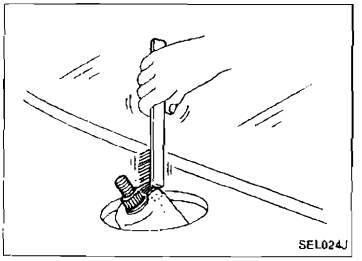
Front Wiper Installation and Adjustment

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

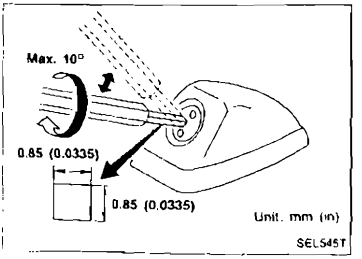
Clearance "L_1": 18 - 33 mm (0.71 - 1.30 in)
Clearance "L_2": 17 - 32 mm (0.67 - 1.26 in)

- Tighten wiper arm nuts to specified torque.

Front wiper:
16.7 - 22.6 N·m (1.70 - 2.31 kg-m, 12.32 - 16.67 ft-lb)



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



Front Washer Nozzle Adjustment

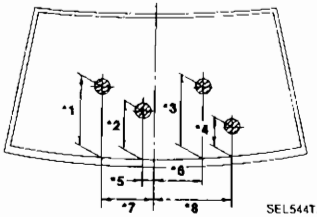
- Using a suitable tool, adjust windshield washer nozzle to correct its spray pattern.

Adjustable range: ±10° (in any direction)

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.

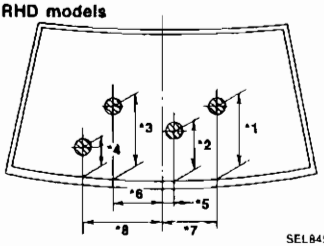
Front Washer Nozzle Adjustment (Cont'd)

LHD models



SEL544TA

RHD models



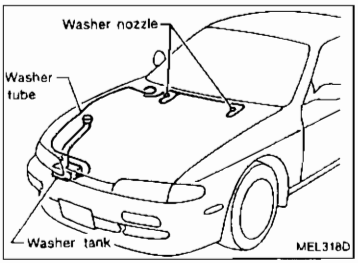
SEL845T

Unit: mm (in)

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

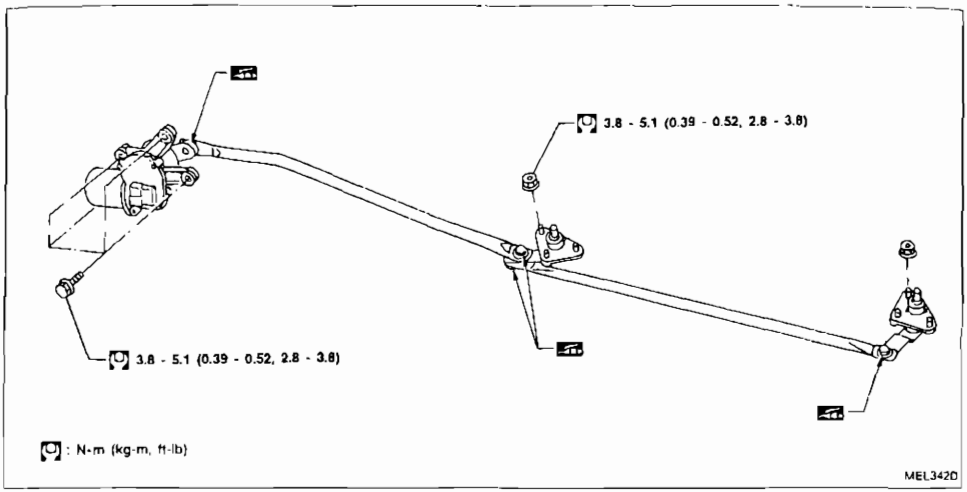
* The diameters of these circles are less than 80 mm (3.15 in)

Front Washer Tube Layout



MEL318D

Front Wiper Linkage



This illustration is for LHD models. For RHD models, these units are installed on the opposite side.

REMOVAL

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

Be careful not to break ball joint rubber boot.

INSTALLATION

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.

Rear Wiper and Washer/System Description

WIPER OPERATION

The rear wiper switch is controlled by a ring built into the combination switch.
There are two wiper switch positions.

- ON (LO speed)
- INT (Intermittent)

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

- through 10A (LHD models) or 15A (RHD models) fuse (No. 16 (LHD models) or 14 (RHD models), located in the fuse block)
- to rear wiper motor terminal ④, and
- to rear wiper relay terminal ①.

Low speed wiper operation

Ground is supplied to rear wiper switch terminal ㉔ through body ground E43 or E57.
When the rear wiper is placed in the ON position, ground is supplied

- through rear wiper switch terminal ㉒
- to rear wiper relay terminal ②.

The rear wiper relay is energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ⑤
- through body ground T19.

Auto stop operation

With the rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear window base.
When wiper arm is not located at base of rear window with rear wiper switch OFF, rear wiper relay is not energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ④
- through rear wiper motor terminal ③, in order to continue rear wiper motor operation at low speed.

Ground is also supplied

- to rear wiper motor terminal ②
- through body ground B2 or B18.

When wiper arm reaches base of rear window, rear wiper motor terminals ① and ④ are connected instead of terminals ① and ③. Rear wiper motor will then stop wiper arm at the PARK position.

Intermittent operation

The rear wiper motor operates the wiper arm one time at low speed at an interval of approximately 7 seconds. This feature is controlled by rear wiper amplifier.
With the ignition switch in the ACC or ON position, power is supplied

- through 10A (LHD models) or 15A (RHD models) fuse (No. 16 (LHD models) or 14 (RHD models), located in the fuse block)
- to rear wiper relay terminal ①.

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

- to rear wiper amplifier terminal ②
- from rear wiper switch terminal ㉑
- through body ground E43 or E57.

Ground is also supplied

- to rear wiper relay terminal ②
- through rear wiper amplifier terminal ⑥
- to rear wiper amplifier terminal ⑤
- through body ground M1

Then the rear wiper relay is energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ⑤
- through body ground T19.

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

With power and ground supplied, the rear wiper motor operates intermittently.

WASHER OPERATION

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

- through 10A (LHD models) or 15A (RHD models) fuse (No 16 (LHD models) or 14 (RHD models), located in the fuse block)
- to rear washer motor terminal ①.

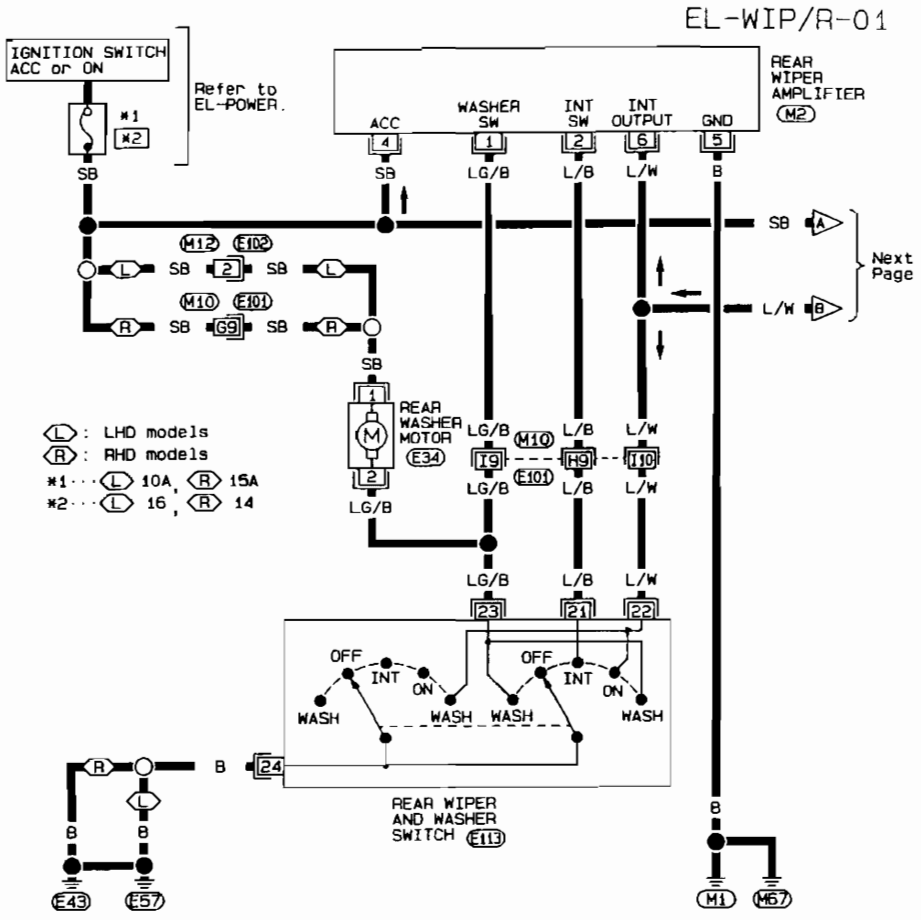
When the ring is turned WASH position, ground is supplied

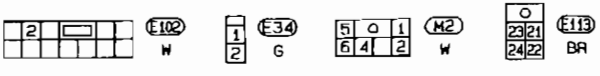
- to rear washer motor terminal ②, and
- to rear wiper amplifier terminal ①
- from terminal ㉓ of rear wiper switch
- through terminal ㉔ of rear wiper switch, and
- through body ground E43 or E57

With power and ground is supplied, the rear washer motor operates.

The rear wiper motor operates when the ring is turned to WASH position for one second or more and for approximately 3 seconds after the ring is released. This feature is controlled by the rear wiper amplifier in the same manner as the intermittent operation.

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



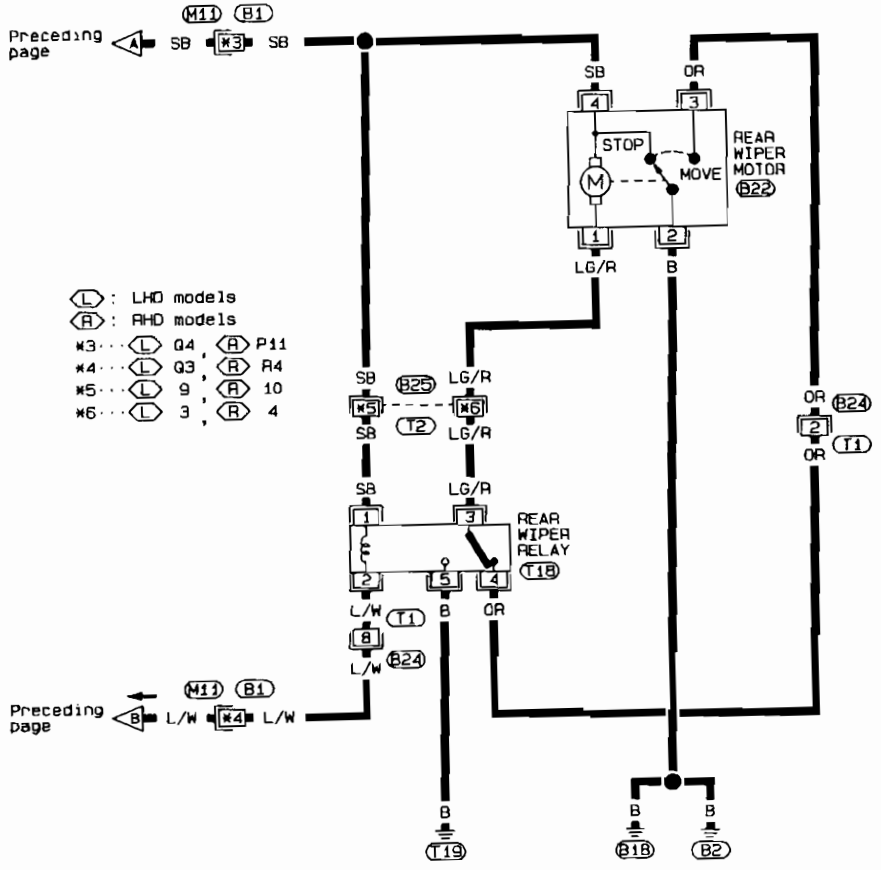


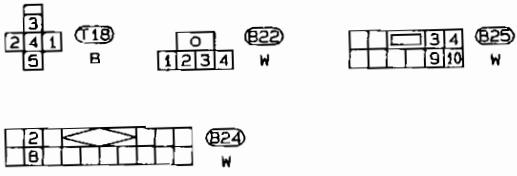
Refer to last page (Foldout page).

(M10), (E101)

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

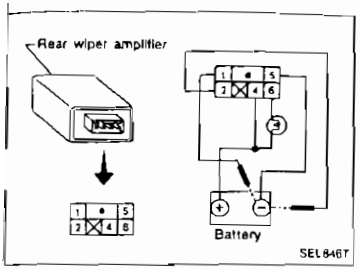
EL-WIP/R-02





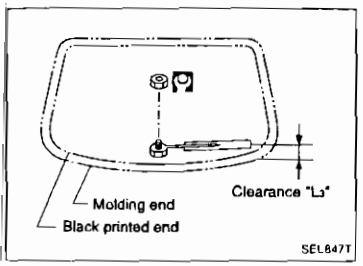
Refer to last page (Foldout page).
M11, B1

SEL744T



Rear Wiper Amplifier Check

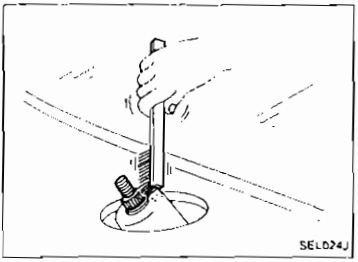
1. Connect as shown in the figure at left.
2. If test lamp comes on when connected to terminal ① or ② and battery ground, wiper amplifier is normal.



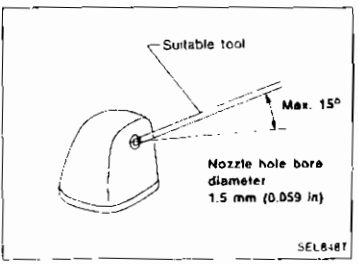
Rear Wiper Installation and Adjustment

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L_3" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L_3".
   Clearance "L_3": 26 - 42 mm (1.02 - 1.65 in)

- Tighten wiper arm nuts to specified torque.
  Rear wiper:
  12.7 - 17.7 N·m (1.30 - 1.81 kg-m, 9.37 - 13.06 ft-lb)



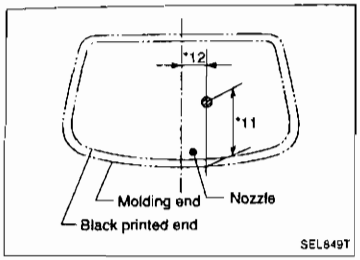
- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**



Rear Washer Nozzle Adjustment

- Using a suitable tool, adjust rear window washer nozzle to correct its spray pattern.
  Adjustable range: ±15° (in any direction)

Rear Washer Nozzle Adjustment (Cont'd)

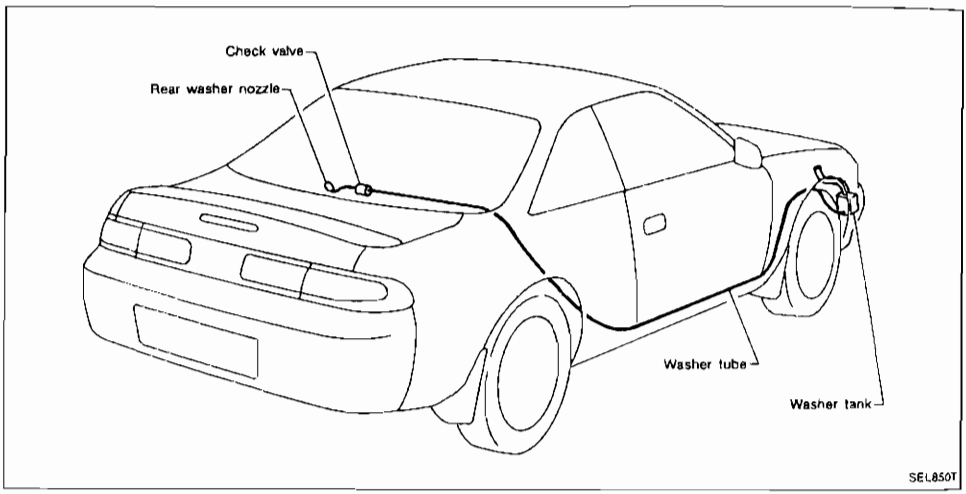


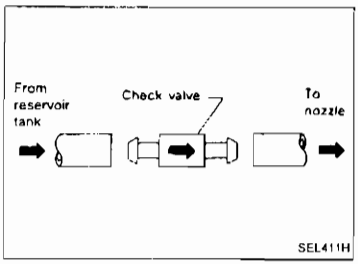
Unit: mm (in)

*11	219 (8.62)	*12	45 (1.77)

* The diameters of these circles are less than 90 mm (3.54 in)

Rear Washer Tube Layout





Check Valve (For rear washer)

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

Headlamp Washer/System Description

ower is supplied at all times
- through 25A fusible link (letter [J], located in the fusible link and fuse box)
- to headlamp washer motor terminal ①

ower is also supplied at all times
- through 20A fuse (No. [38], located in the fusible link and fuse box)
- to lighting switch terminal ⑧.

leadlamp washer operation

he headlamp washer operates for approximately 1 second at one time. This feature is controlled by eadlamp washer amplifier.

or headlamp washer operation, the lighting switch must be in the 2ND position and ignition switch in ne ON or START position.

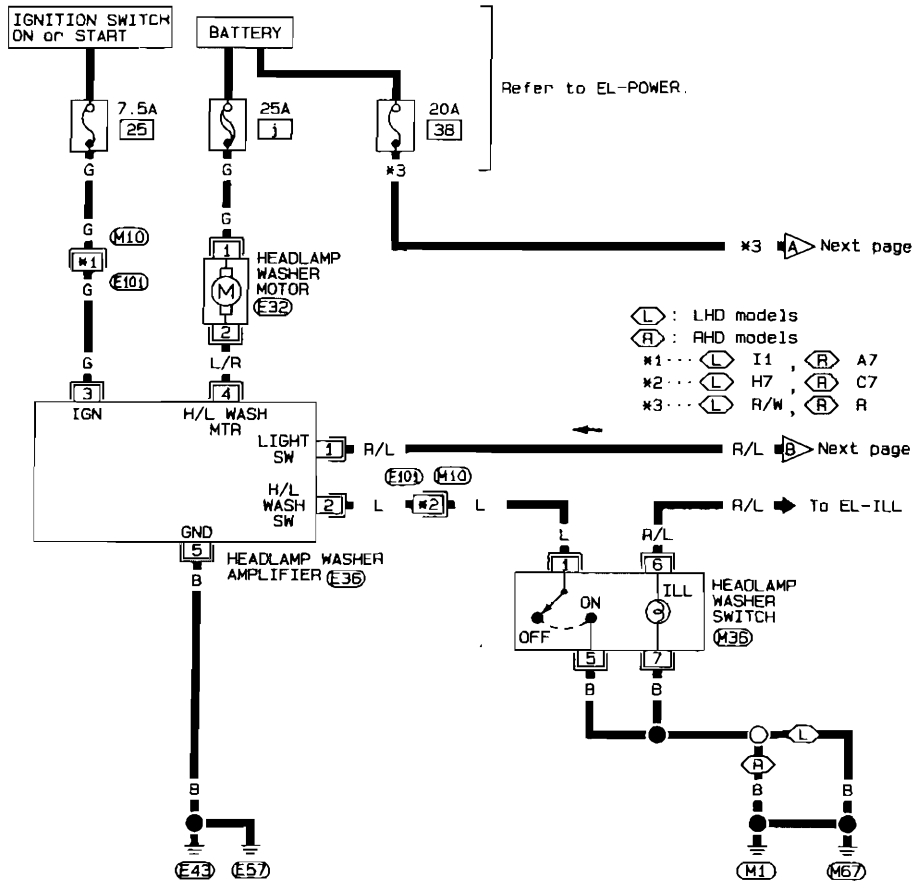
Vith the headlamp washer switch in the ON position, ground is supplied
- to headlamp washer amplifier terminal ②
- through headlamp washer switch terminal ①
- to headlamp washer switch terminal ⑤
- through body ground (M1) or (M67).

Ground is also supplied
- to headlamp washer motor terminal ②
- through headlamp washer amplifier terminal ④
- to headlamp washer amplifier terminal ⑤
- through body ground (E43).

With power and ground supplied, headlamp washer will operate.

Headlamp Washer/Wiring Diagram — HLC —

EL-HLC-01



E36 W

E32 BR

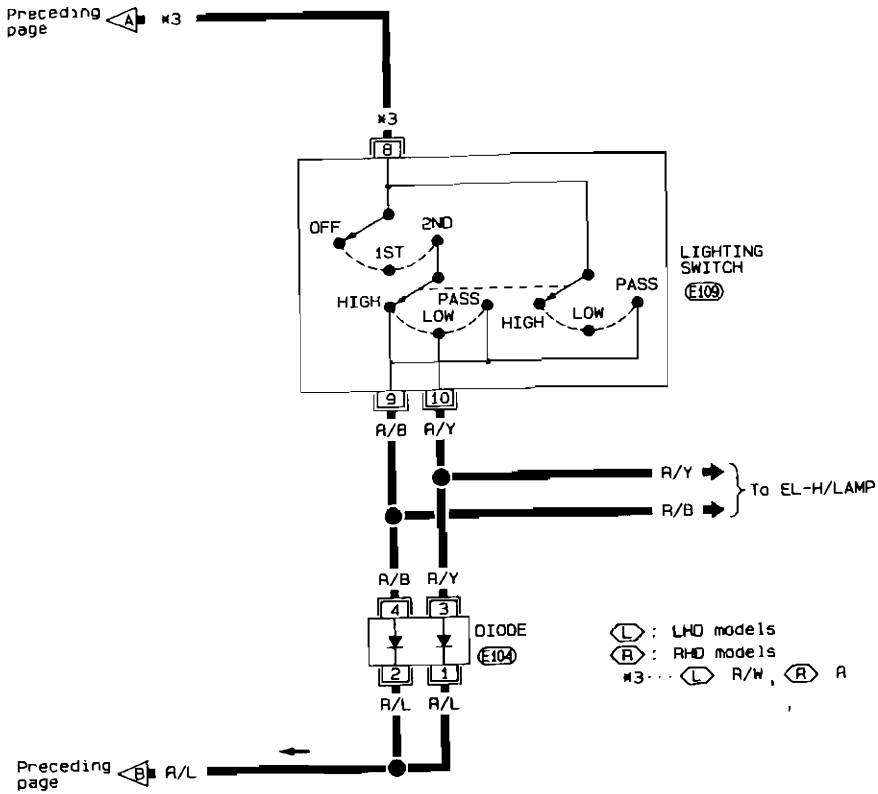
M36 BR

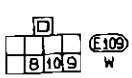
Refer to last page (Foldout page).

M10 , E101

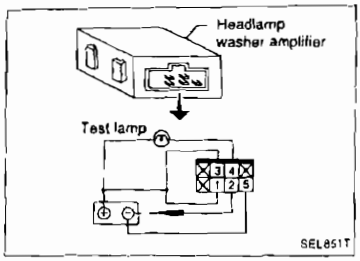
Headlamp Washer/Wiring Diagram — HLC — (Cont'd)

EL-HLC-02



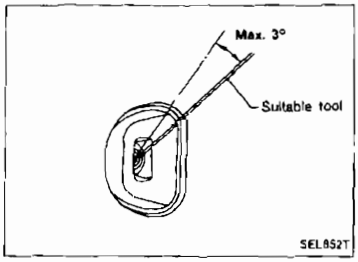


SEL746F



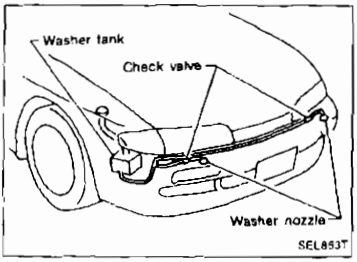
Headlamp Washer Amplifier Check

1 Connect as shown in the figure at left.
2 If test lamp comes on when connected to the terminal ② and battery ground, headlamp washer amplifier is normal.

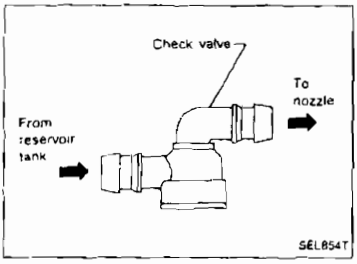


Headlamp Washer Nozzle Adjustment

- Using a suitable tool, adjust headlamp washer nozzle to correct its spray pattern.
  Adjustable range: ±3° (Up and down)



Headlamp Washer Tube Layout



Check Valve (For headlamp washer)

System Description

Power is supplied at all times
- from 25A fusible link (Letter [I] located in the fuse and fusible link box)
- to circuit breaker terminal (1)
- through circuit breaker terminal (2)
- to power window relay terminal (3)

With ignition switch in ON or START position, power is supplied
- through 7.5A fuse (No. [26] located in the fuse block)
- to power window relay terminal (1)

Ground is supplied to power window relay terminal (2)
- through body ground (M1).

The power window relay is energized and power is supplied
- through power window relay terminal (5)
- to power window main switch terminal (5),
- to power window sub-switch terminal (4),
- to power window amplifier terminal (3) and
- to power window amplifier terminal (4).

MANUAL OPERATION

Driver side door

Ground is supplied
- to power window main switch terminal (4) and
- to power window amplifier terminal (7)
- through body ground (M1).

WINDOW UP
When the driver side switch in the power window main switch is pressed in the up position, ground signal is supplied
- to power window amplifier terminal (1)
- from power window main switch terminal (3).

Power is supplied
- to driver side power window regulator terminal (1)
- through power window amplifier terminal (5)

Ground is supplied
- to driver side power window regulator terminal (2)
- through power window amplifier terminal (6)

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

WINDOW DOWN
When the driver side switch in the power window main switch is pressed in the down position, ground signal is supplied
- to power window amplifier terminal (2)
- from power window main switch terminal (2).

Power is supplied
- to driver side power window regulator terminal (2)
- through power window amplifier terminal (6).

Ground is supplied
- to driver side power window regulator terminal (1)
- through power window amplifier terminal (5)

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

Passenger side door

Ground is supplied
- to power window main switch terminal (4)
- through body ground (M1)

System Description (Cont'd)

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

MAIN SWITCH OPERATION
Power is supplied
- through power window main switch (⑥, ⑦)
- to power window sub-switch (①, ⑤).

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

SUB-SWITCH OPERATION
Power is supplied
- through power window sub-switch (②, ③)
- to passenger side power window regulator (①, ②).

Ground is supplied
- to passenger side power window regulator (②, ①)
- through power window sub-switch (③, ②)
- to power window sub-switch (⑤, ①)
- through power window main switch (⑦, ⑥)

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

AUTO OPERATION

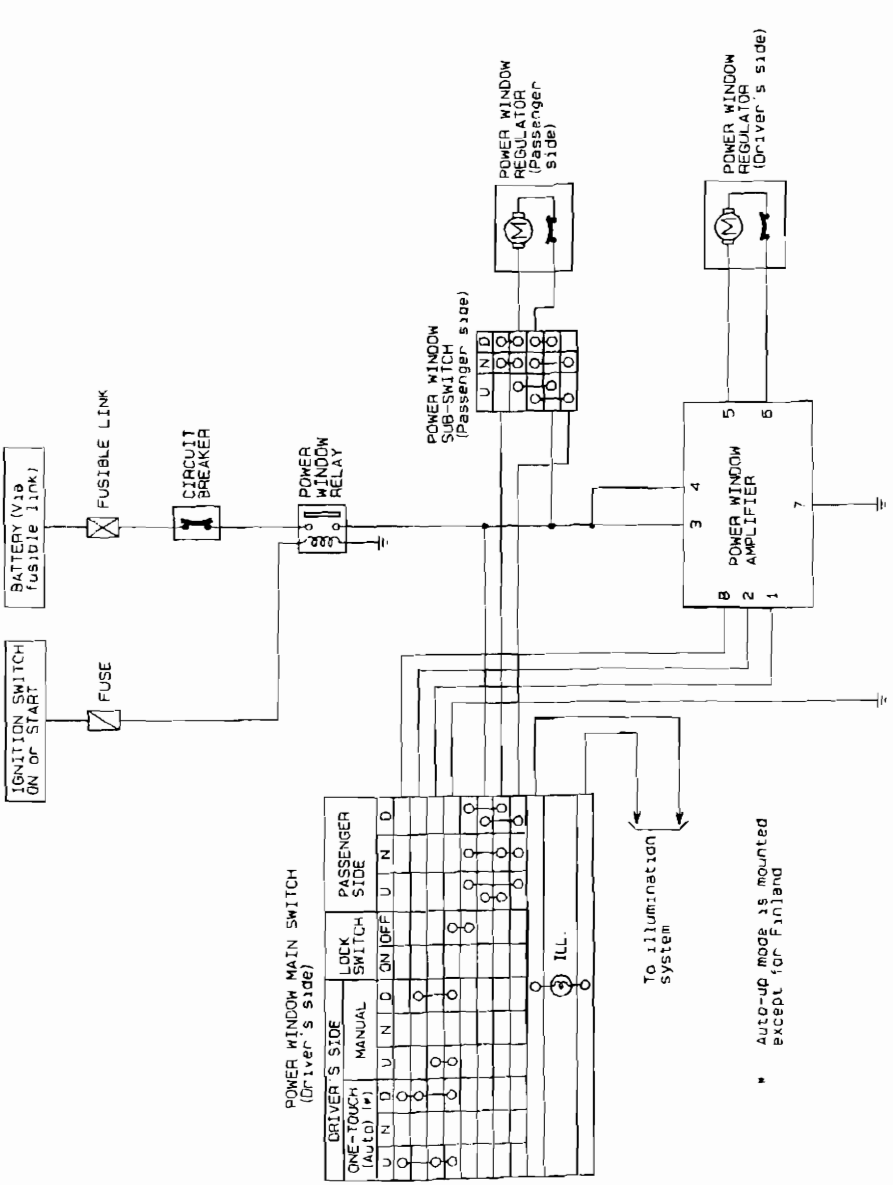
The power window AUTO feature enables the driver to raise or lower the driver's window without holding the window switch.
The AUTO feature only operates on the driver's window.
When a power window main switch is pressed and released the AUTO position, ground signal is supplied
- to power window amplifier terminal ⑧
- from power window main switch terminal ①

The subsequent operation is the same as the manual operation of driver side door.
Then, the driver side door window will fully close or fully open.

POWER WINDOW LOCK

The power window lock is designed to lock-out window operation to passenger side door window.
When the lock switch is pressed to lock position, ground of the passenger side switch in the power window main switch is disconnected. This prevents the power window motors from operating.

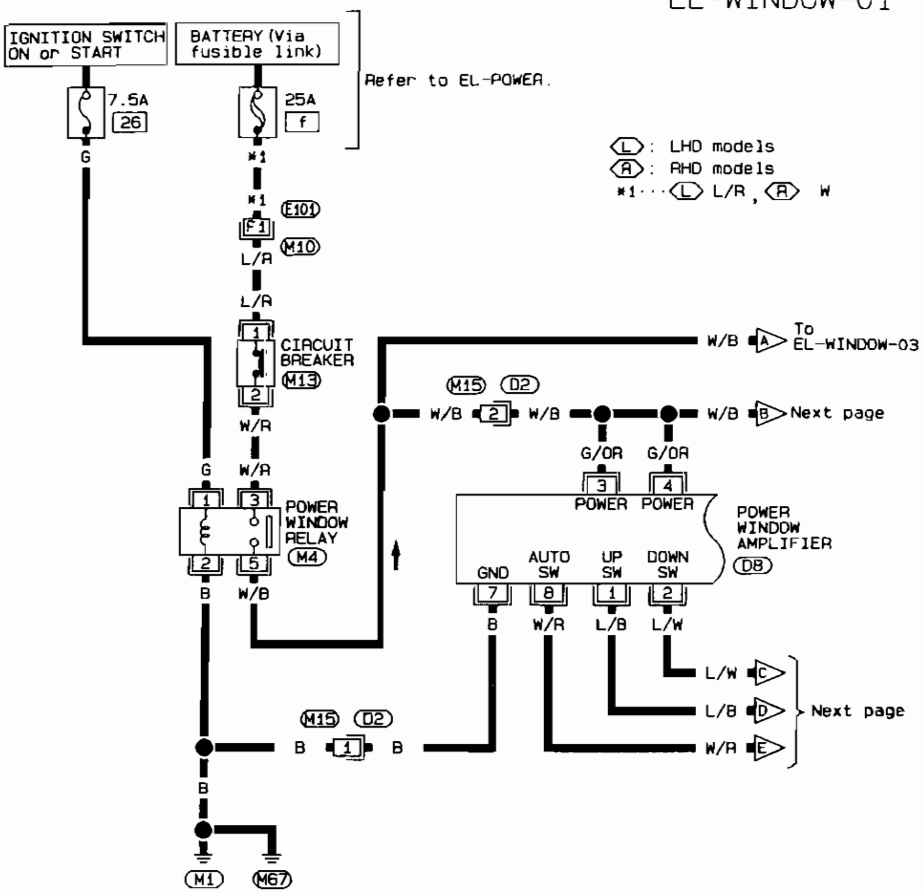
Schematic

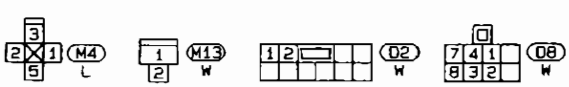


SEL747T

Wiring Diagram — WINDOW —

EL-WINDOW-01

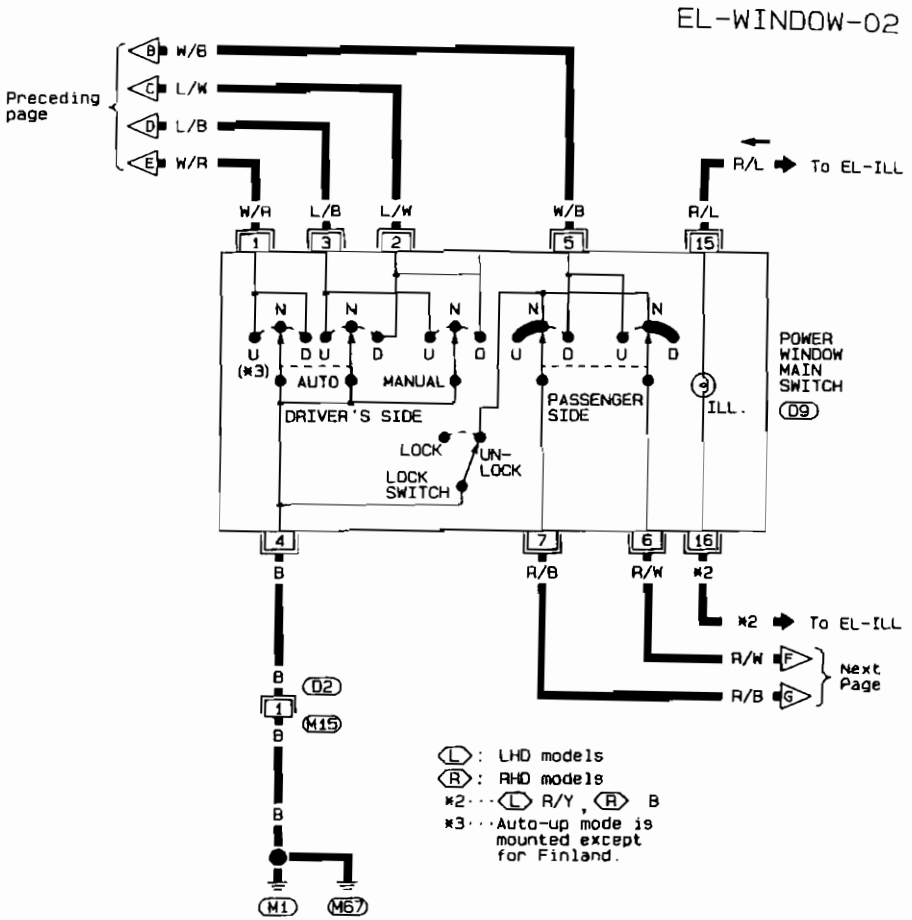




Refer to last page (Foldout page).

M10 , E101

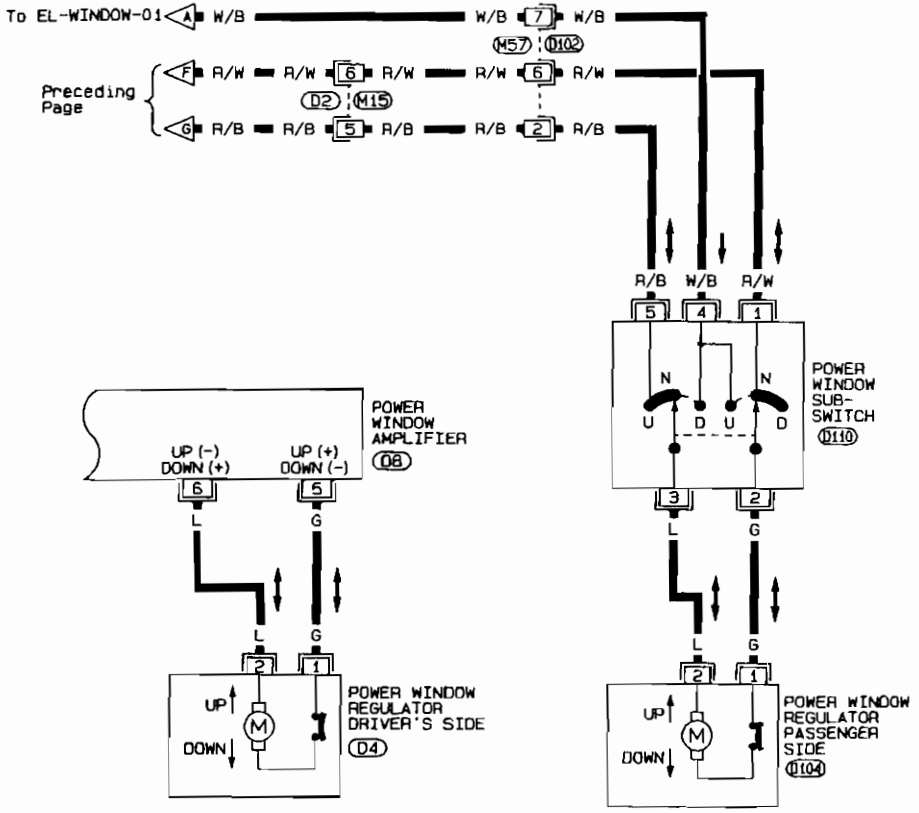
Wiring Diagram — WINDOW — (Cont'd)

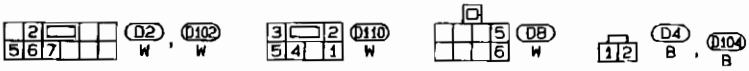


SEL749T

Wiring Diagram — WINDOW — (Cont'd)

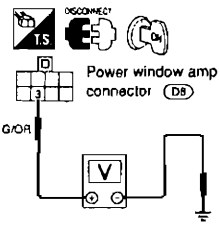
EL-WINDOW-03



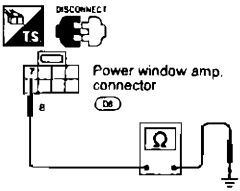


SEL750T

A



B



Trouble Diagnosis

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Driver and passenger power window cannot be operated.

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT.

1) Disconnect power window amp. connector.
2) Check voltage while ignition switch is "ON".

Terminals	Voltage (V)
③ - GND	Approx. 12

NG → Check the following
- Fuse
- Power window relay
- Power supply harness

OK ↓

B

Check continuity between power window amp. terminal ⑦ and GND.
Does continuity exist?

No → Repair harness.

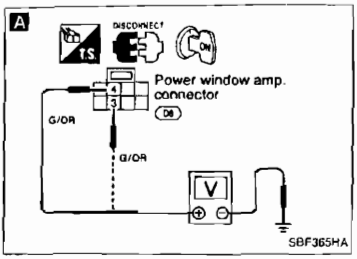
Yes ↓

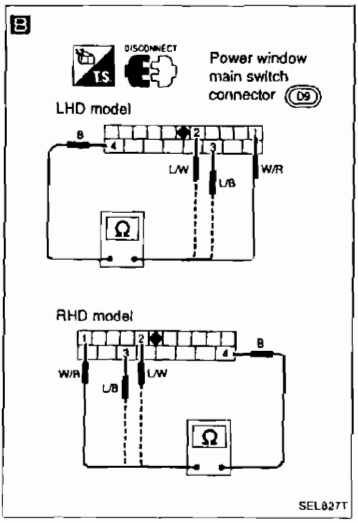
Go to DIAGNOSTIC PROCEDURE 2 and 3

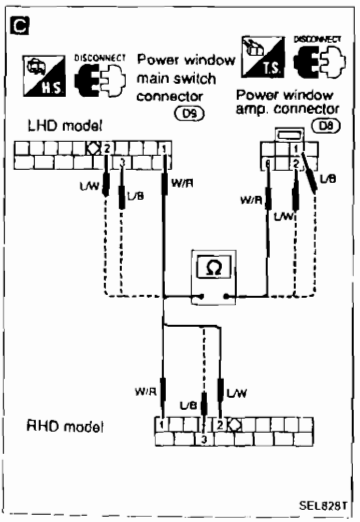
Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Driver's power window cannot be operated but passenger power window can be operated.







A

CHECK POWER SUPPLY FOR POWER WINDOW AMP.

1) Disconnect connector from power window amp.
2) Check voltage across power window amp terminal ③ and GND, ④ and GND while ignition switch is "ON".

Terminals	Battery voltage existence
③ - GND	Yes
④ - GND	

NG → Repair harness between power window relay and power window amp

OK ↓

B

CHECK POWER WINDOW MAIN SWITCH CIRCUIT.

1) Disconnect connector from power window main switch.
2) Check continuity

Power window main switch operation	Terminals
Auto (Down)	① - ④
Up	③ - ④
Down	② - ④

Does continuity exist?

No → Replace power window main switch.

Yes ↓

C

1) Disconnect connector from power window amp. connector
2) Check continuity

	Terminals
Auto	① - ⑧
Up	③ - ①
Down	② - ②

Does continuity exist?

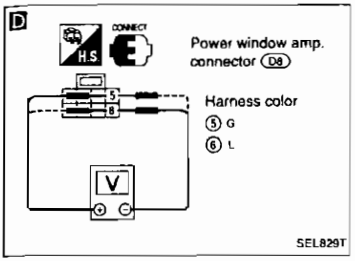
No → Repair harness

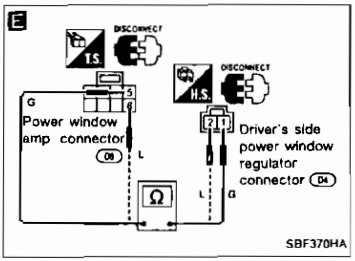
Yes ↓

Ⓐ

(Go to next page.)

Trouble Diagnosis (Cont'd)





Ⓐ

D

CHECK POWER WINDOW MOTOR CIRCUIT.

1) Connect power window amp. connector.
2) Check voltage for power window motor.

Terminals		Power window main switch operation
⊕	⊖	
⑤	⑥	Up
⑥	⑤	Down

Does battery voltage exist?

No → Replace power window amp.

Yes ↓

E

1) Disconnect driver side power window regulator connector.
2) Check continuity.

Terminals
⑤ - ①
⑥ - ②

Does continuity exist?

No → Repair harness.

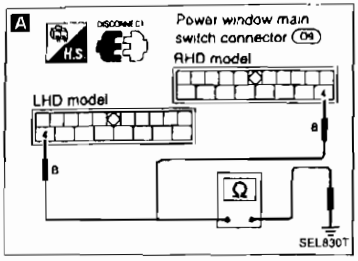
Yes ↓

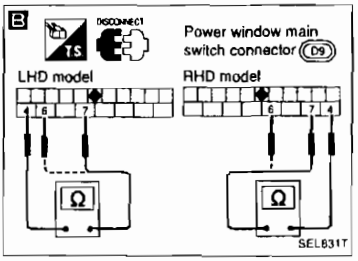
Check driver side power window motor
Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-168)

Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 3-1

SYMPTOM: Passenger power window (main switch and sub-switch) cannot be operated. But driver side power window can be operated.





A

CHECK GROUND CIRCUIT.

1) Disconnect power window main switch connector
2) Check continuity between power window main switch terminal ④ and GND.

Does continuity exist?

No → Repair harness

Yes ↓

B

CHECK POWER WINDOW MAIN SWITCH.

Check continuity when power window lock switch is in "UNLOCK" position.

Terminals
⑦ - ④
⑤ - ④

Does continuity exist?

No → Replace power window main switch

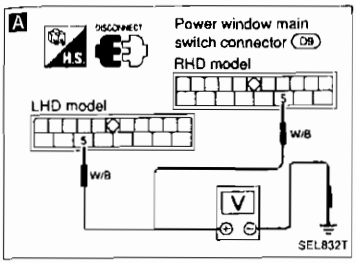
Yes ↓

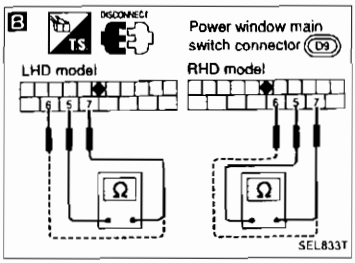
Check passenger side power window motor. Refer to "ELECTRICAL COMPONENTS INSPECTION" (EL-168).

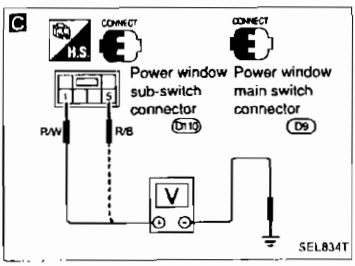
Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 3-2

SYMPTOM: Passenger power window cannot be operated using main switch. But driver side and passenger side (using sub-switch) can be operated.







A

CHECK MAIN POWER SUPPLY.
1) Disconnect power window main switch connector.
2) Check voltage across power window main switch terminal ⑤ and GND.

Does battery voltage exist?

No → Repair harness

Yes ↓

B

CHECK POWER WINDOW MAIN SWITCH.
Check continuity.

Power window main switch operation	Terminals
Up	⑥ - ⑤
Down	⑦ - ⑤

Does continuity exist?

No → Replace power window main switch

Yes ↓

C

1) Connect power window main switch connector
2) Check voltage

Power window main switch operation	Terminals
Up	① - GND
Down	③ - GND

Does battery voltage exist?

No → Repair harness

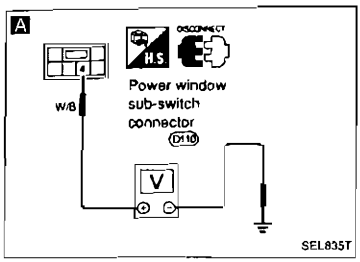
Yes ↓

Replace power window sub-switch

Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 3-3

SYMPTOM: Passenger power window cannot be operated using sub-switch. But driver side and passenger side (using main switch) can be operated.



A

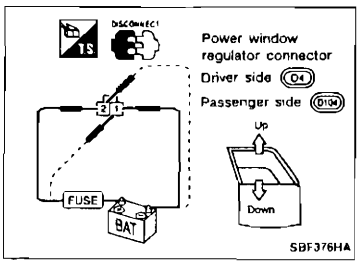
CHECK MAIN POWER SUPPLY.
1) Disconnect power window sub-switch connector
2) Check voltage across power window sub-switch terminal ④ and GND.
Does battery voltage exist?

No → Repair harness.

Yes ↓

Replace power window sub-switch

Note: If passenger power window does not lock using lock button of main switch, replace main switch.



ELECTRICAL COMPONENTS INSPECTION

POWER WINDOW MOTOR

Terminals		Operation
⊕	⊖	
①	②	Upward
②	①	Downward

System Description

ower is supplied at all times
- through 25A fusible link (No. [1] located in the fuse and fusible link box)
- to circuit breaker terminal (1)
- through circuit breaker terminal (2)
- to smart entrance control unit terminal (1).

round is supplied to smart entrance control unit terminal (10) through body ground (M1).

OWER DOOR LOCK OPERATION

/hen one of the following input signals is supplied:
- driver side door is locked/unlocked using key or lock knob,
- passenger side door is locked/unlocked using key or lock knob (Only for models with multi-remote control system);

mart entrance control unit locks/unlocks driver side door (Only for models with multi-remote control ystem) and passenger side door.
or operation by the remote controller, refer to "MULTI-REMOTE CONTROL SYSTEM".

nput (Unlock signal)

lodels with multi-remote control system

/hen the driver side door is unlocked using key or lock knob, ground is supplied
- to smart entrance control unit terminal (12)
- through driver side door lock actuator (door unlock sensor) terminal (4)
- to driver side door lock actuator (door unlock sensor) terminal (2)
- through body ground (M1).

/hen the passenger side door is unlocked using key or lock knob, ground is supplied
- to smart entrance control unit terminal (13)
- through passenger side door lock actuator (door unlock sensor) terminal (4)
- to passenger side door lock actuator (door unlock sensor) terminal (2)
- through body ground (M67).

lodels without multi-remote control system

/hen the driver side door is unlocked using key or lock knob, ground is supplied
- to smart entrance control unit terminal (12)
- through lock knob switch terminal (2)
- to lock knob switch terminal (1)
- through body ground (M1).

nput (Lock signal)

he smart entrance control unit terminal (12) or (13) receives lock signal when the unlock signal is shut ff.

Output (Unlock)

Driver side door (Models with multi-remote control system)

Power is supplied
- to driver side door lock actuator terminal (1)
- through smart entrance control unit terminal (3).

Then, the door is unlocked.
Ground is supplied
- to driver side door lock actuator terminal (3)
- through smart entrance control unit terminal (5).

Passenger side door

Power is supplied
- to passenger side door lock actuator terminal (1)
- through smart entrance control unit terminal (2).

Ground is supplied
- to passenger side door lock actuator terminal (3)
- through smart entrance control unit terminal (4)

Then, the door is unlocked.

System Description (Cont'd)

Output (Lock)

Driver side door (Models with multi-remote control system)

Power is supplied

- to driver side door lock actuator terminal ③
- through smart entrance control unit terminal ⑤

Then, the door is locked.

Ground is supplied

- to driver side door lock actuator terminal ①
- through smart entrance control unit terminal ③

Passenger side door

Power is supplied

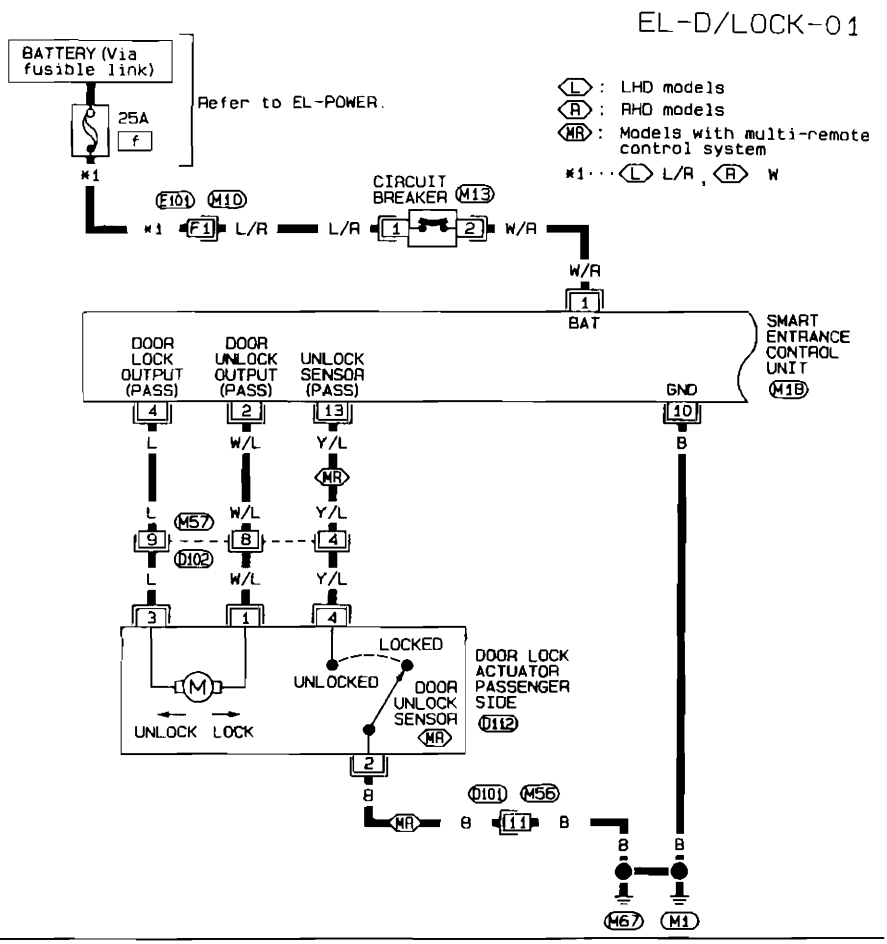
- to passenger side door lock actuator terminal ③
- through smart entrance control unit terminal ④.

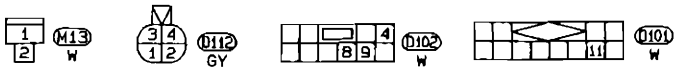
Ground is supplied

- to passenger side door lock actuator terminal ①
- through smart entrance control unit terminal ②

Then, the door is locked.

Wiring Diagram — D/LOCK —



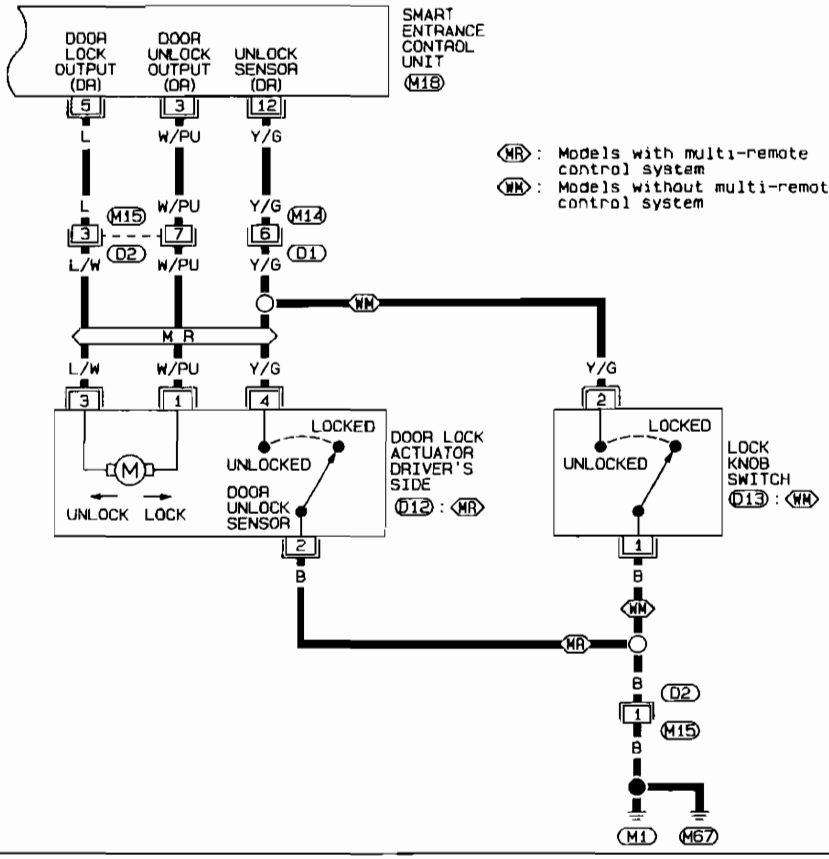


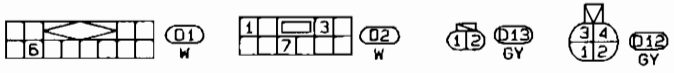
Refer to last page (Foldout page).
M10 , E101
M18

SEL751F

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02

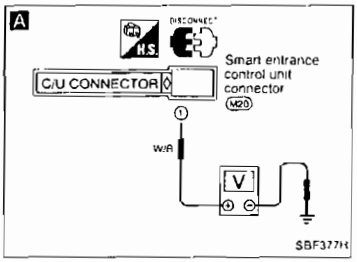


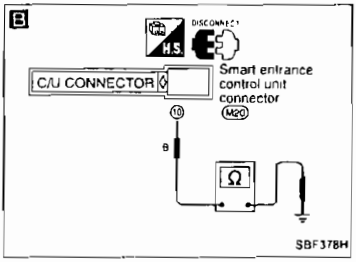


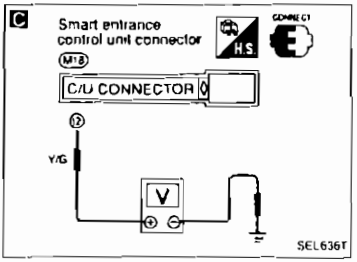
Refer to last page (Foldout page).

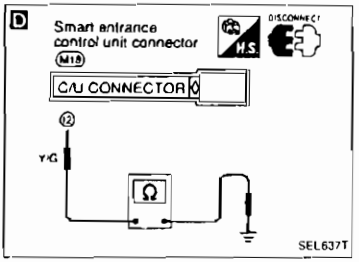
M18

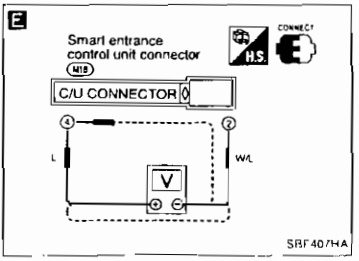
SEL752F











Trouble Diagnoses

DIAGNOSTIC PROCEDURE

SYMPTOM: Power door lock cannot be operated.

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT.
1) Disconnect connector from control unit
2) Check voltage across control unit terminal ① and GND
Does battery voltage exist?

No → Check the following
- Fuse
- Circuit breaker
- Power supply harness

Yes ↓

B

Check continuity between terminal ⑩ and GND
Does continuity exist?

No → Check GND harness

Yes ↓

C

CHECK UNLOCK SENSOR CIRCUIT.
1) Connect control unit connector.
2) Check voltage across control unit terminal ⑫ and GND

Driver side door lock knob condition	Terminals	Voltage (V)
Locked → Unlocked → Locked	⑫ - GND	12 → 0 → 12

NG → **D**

1) Disconnect connector from control unit
2) Check continuity between ⑫ and GND.

Driver side door lock knob condition	Terminals
Unlocked	⑫ - GND

Does continuity exist?

No → Replace smart entrance control unit.

Yes → Repair door knob switch harness or replace lock knob switch

OK ↓

E

CHECK DOOR LOCK ACTUATOR CIRCUIT.
Check voltage for door lock motor.

Driver side door lock knob condition	Terminals ⊕	Terminals ⊖
Locked	4	2
Unlocked	2	4

Does battery voltage exist?

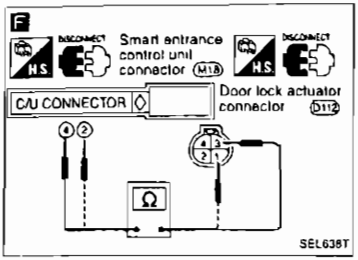
Yes → Replace smart entrance control unit

No ↓

·A·

(Go to next page)

Trouble Diagnoses (Cont'd)



Ⓐ

F

1) Disconnect control unit connector and door lock actuator connector
2) Check continuity

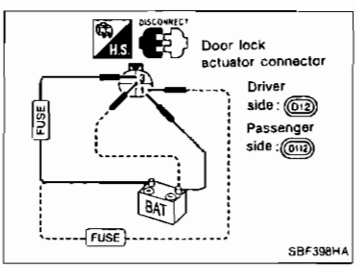
No → Repair harness

Terminals	Continuity
④ - ③	Yes
② - ①	

Does continuity exist?

Yes ↓

Check power door lock motor.
Refer to "ELECTRICAL COMPONENTS INSPECTION"



ELECTRICAL COMPONENTS INSPECTION

Power door lock motor

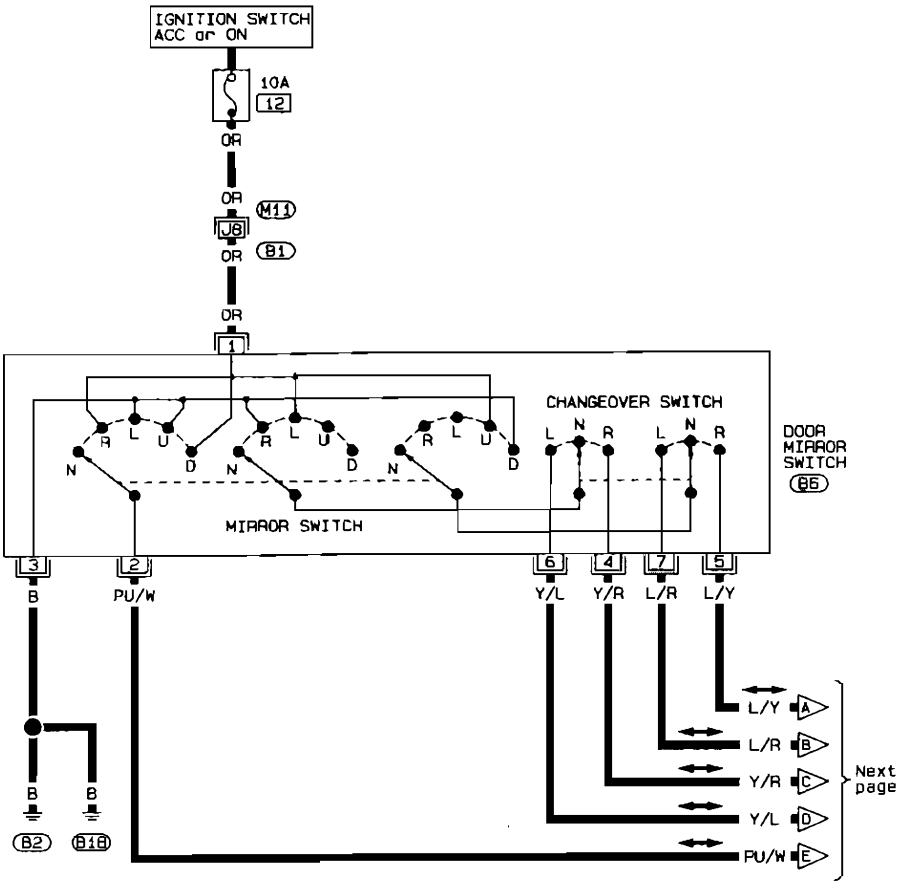
Door lock condition	Terminals	
	⊕	⊖
Unlocked → Locked	③	①
Locked → Unlocked	①	③

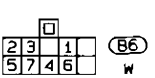
★ For removal of door mirror, refer to "DOOR MIRROR" in BT section.

Wiring Diagram — MIRROR —

LHD MODELS

EL-MIRROR-01





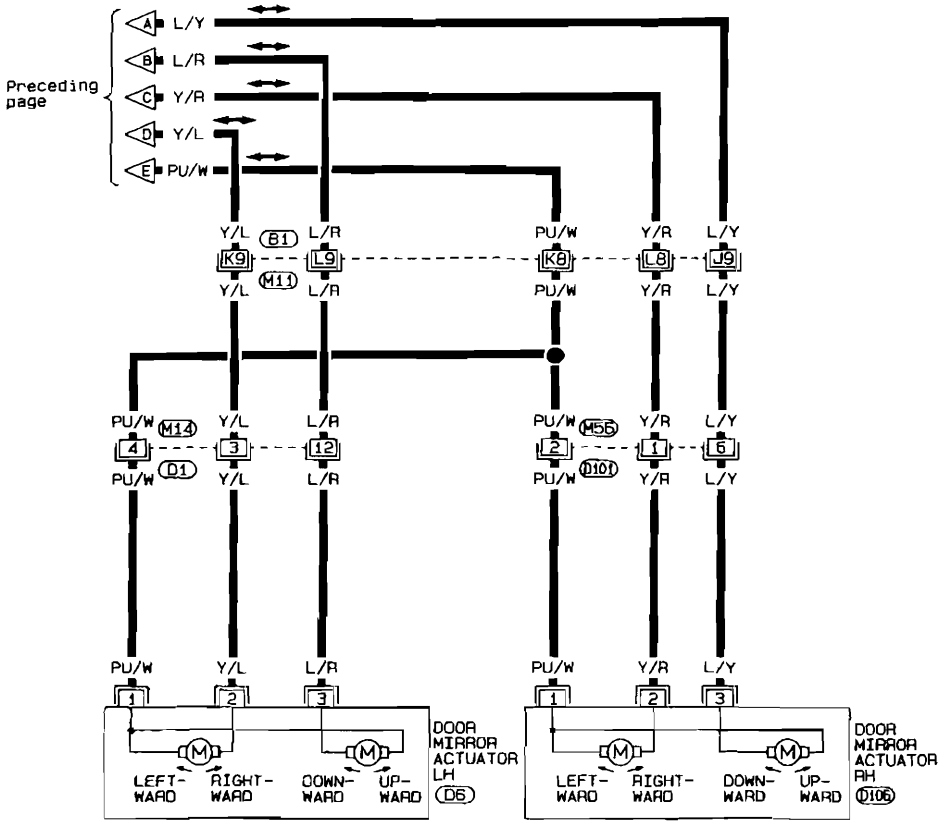
Refer to last page (Foldout page).

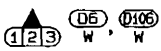
M11, B1

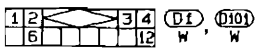
SEL753T

Wiring Diagram — MIRROR — (Cont'd)

EL-MIRROR-02







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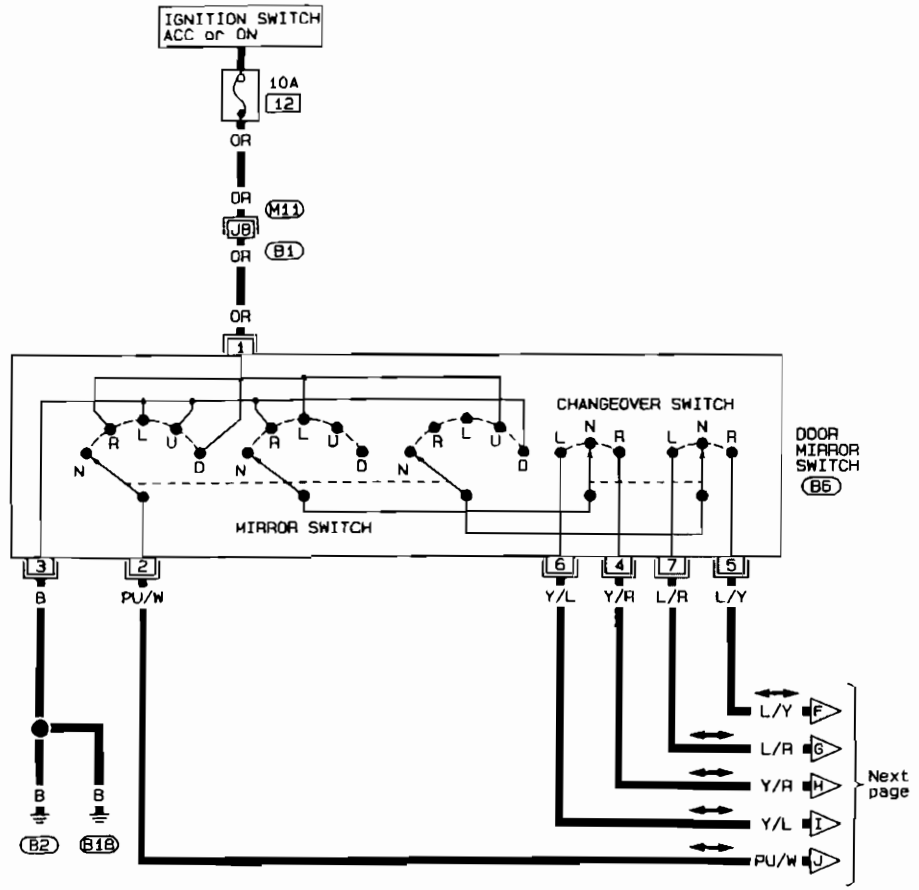
M11 , B1

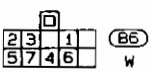
SEL754T

Wiring Diagram — MIRROR — (Cont'd)

RHD MODELS

EL-MIRROR-03





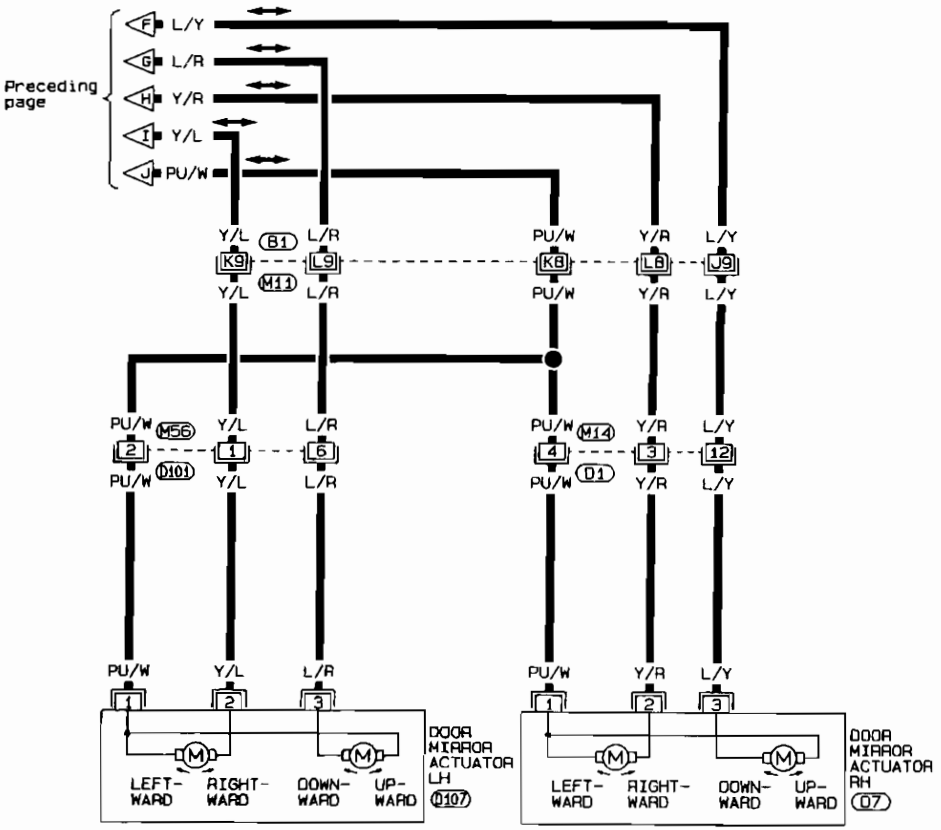
Refer to last page (Foldout page).

M11, B1

SEL837T

Wiring Diagram — MIRROR — (Cont'd)

EL-MIRROR-04



D7 W, D107 W

D1 W, D101 W

Refer to last page (Foldout page).

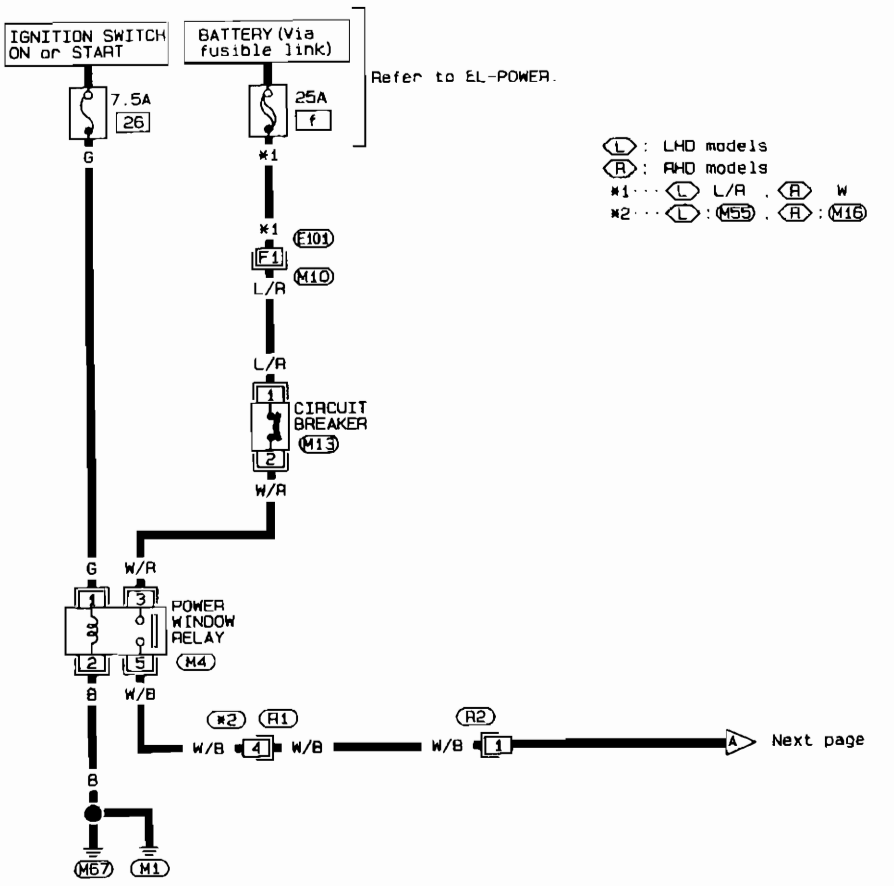
M11, B1

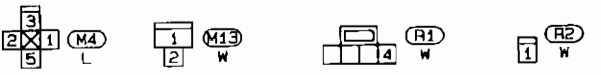
SEL838T

★ For removal and adjustment of sunroof, refer to "SUNROOF" in BT section.

Wiring Diagram — SROOF —

EL-SROOF-01





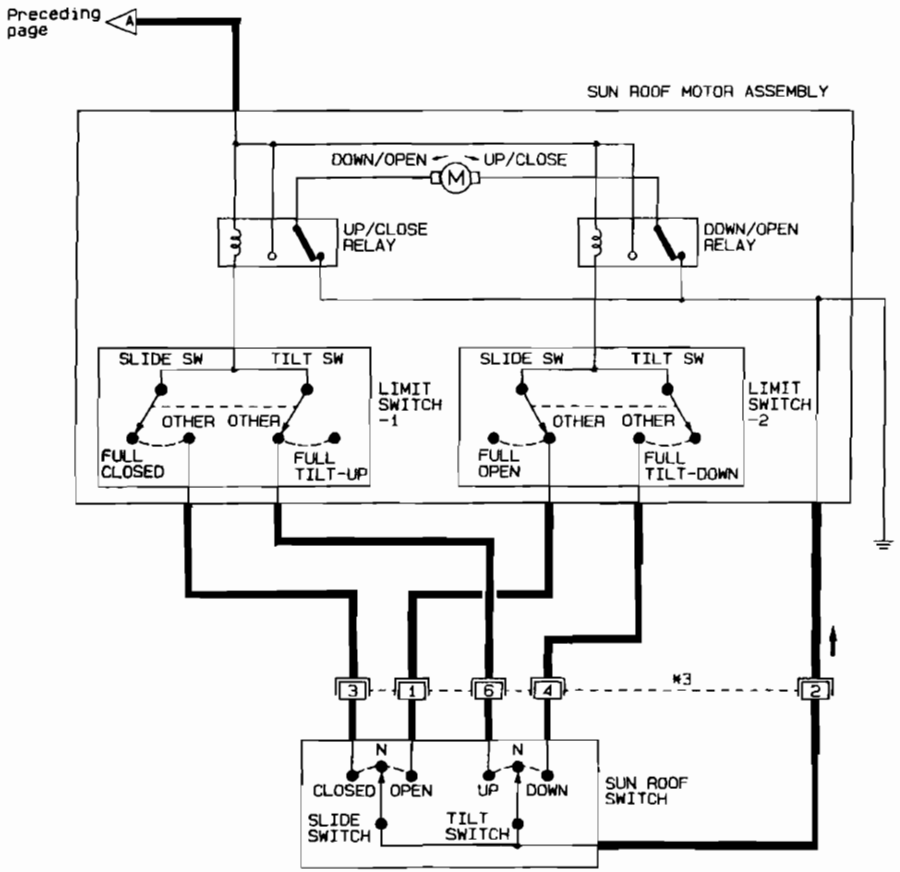
Refer to last page (Foldout page).

M10 , E101

SEL755T

Wiring Diagram — SROOF — (Cont'd)

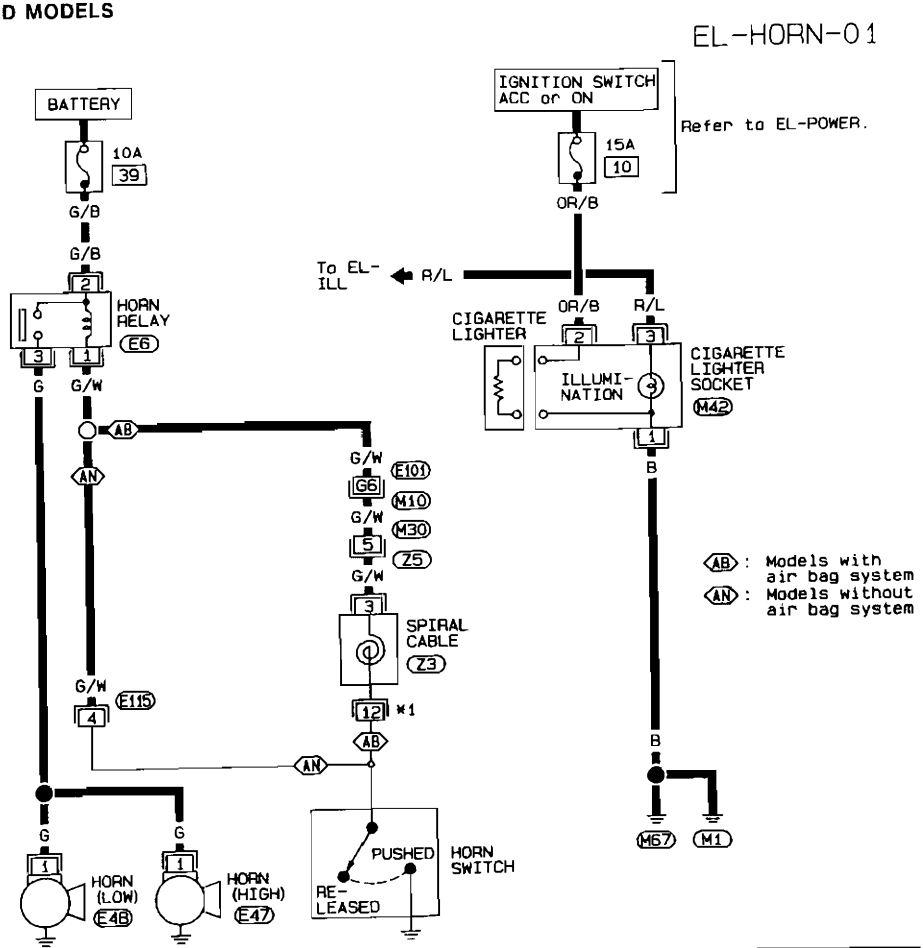
EL-SROOF-02

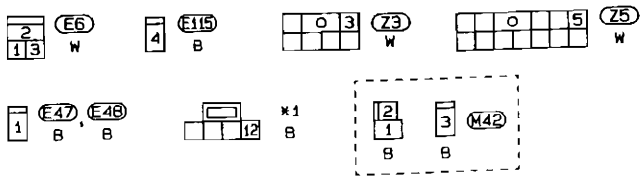


SEL756T

Wiring Diagram — HORN —

LHD MODELS





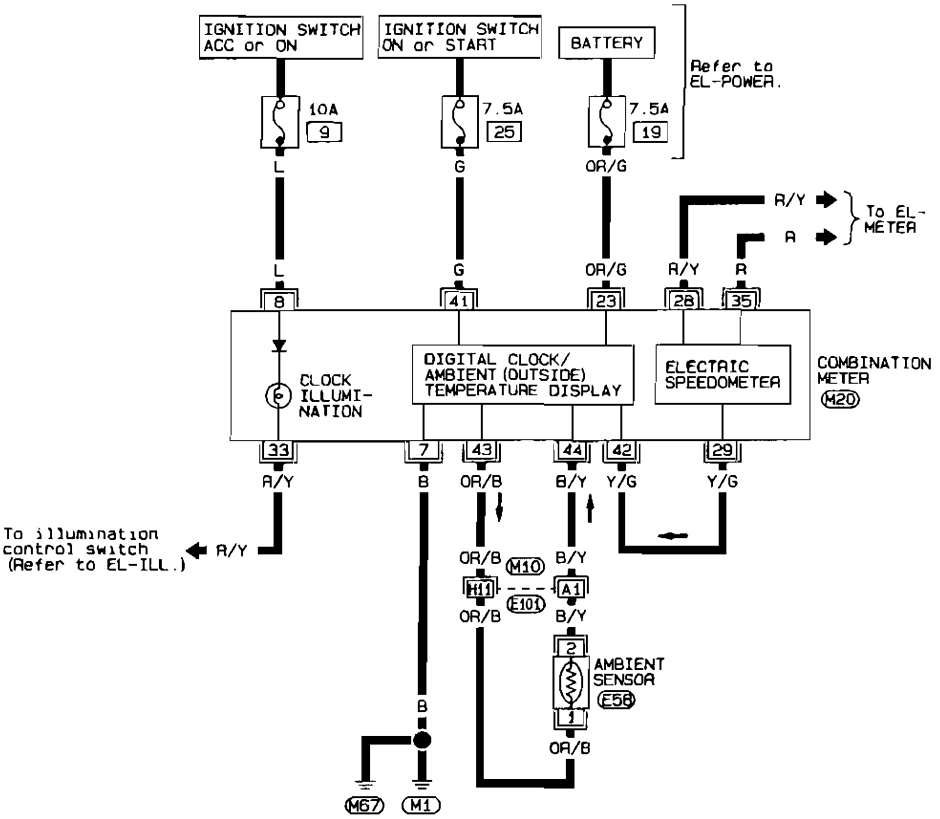
Refer to last page (Foldout page).

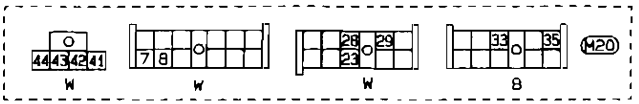
M10, E101

SEL757T

Wiring Diagram — HORN — (Cont'd)

EL-HORN-02



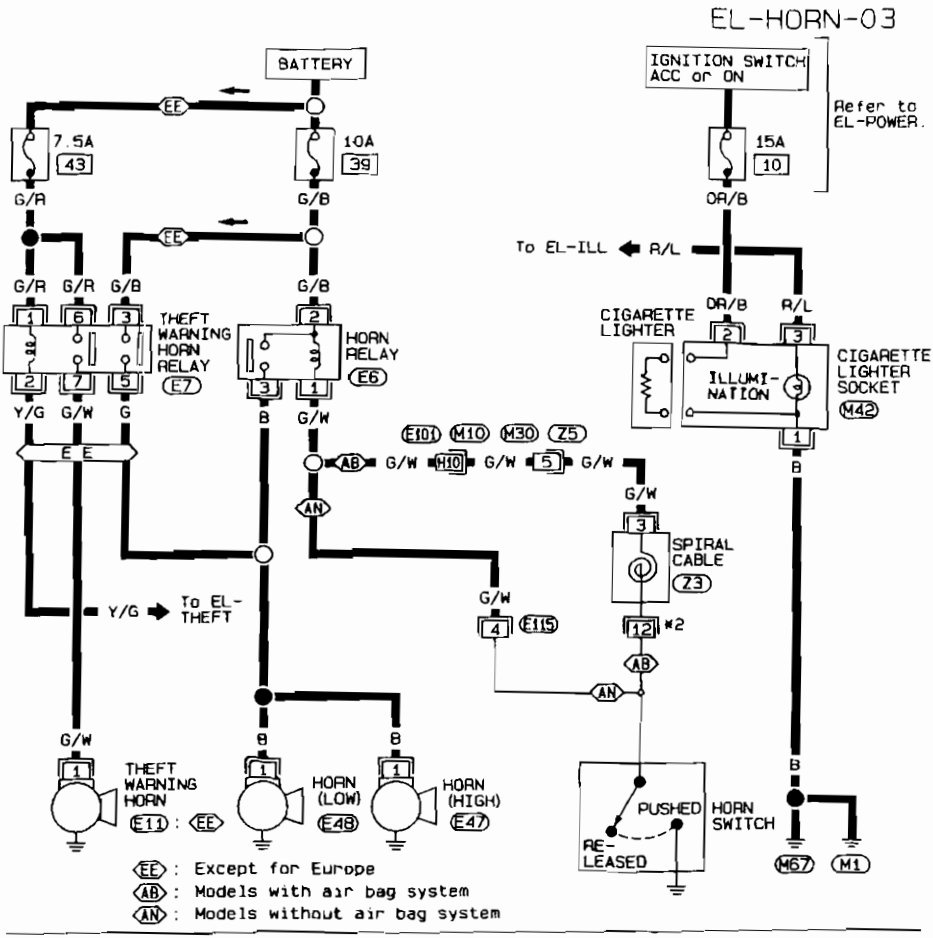


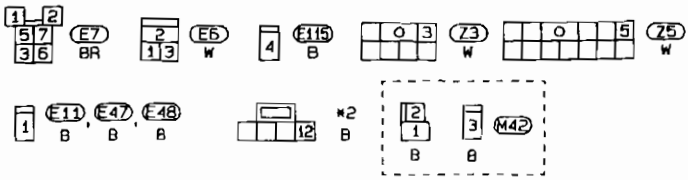
Refer to last page (Foldout page).
M10 , E101

SEL758T

Wiring Diagram — HORN — (Cont'd)

RHD MODELS

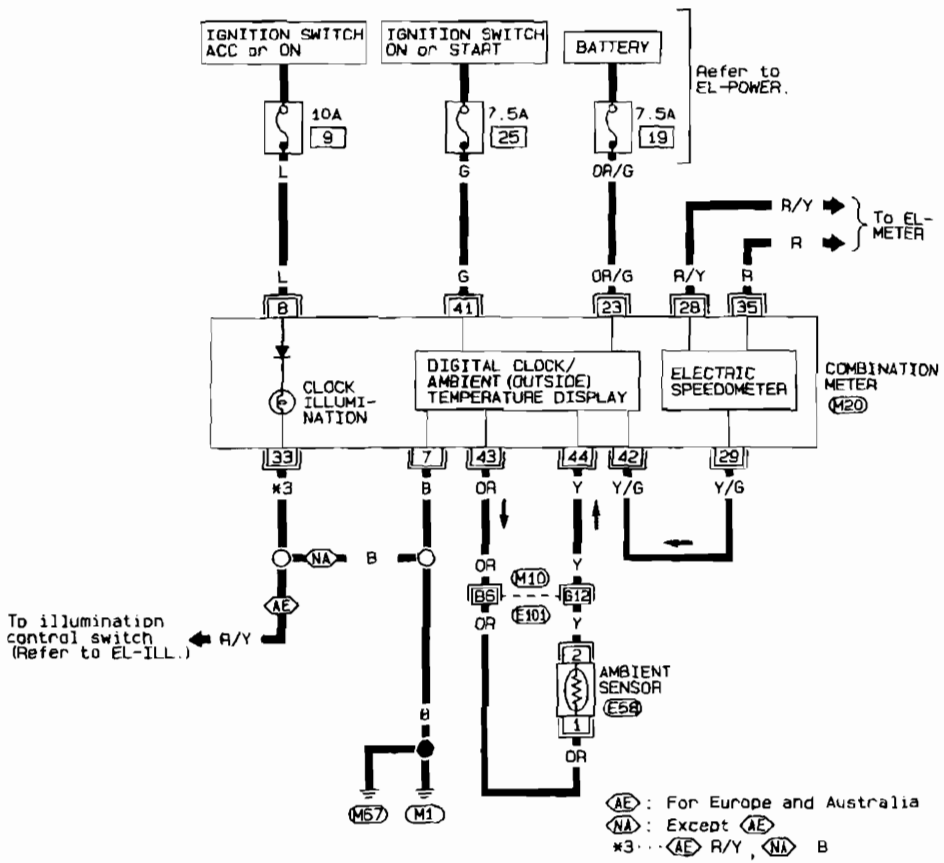


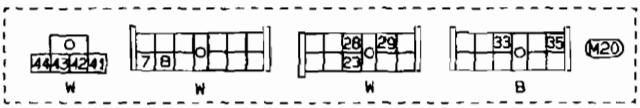


Refer to last page (Foldout page).
M10 , E101

Wiring Diagram — HORN — (Cont'd)

EL-HORN-04





Refer to last page (Foldout page).

M10 , E101

SEL760T

System Description

The rear window and door mirror defogger system is controlled by the smart entrance control unit.
Power is supplied at all times
- to rear window defogger relay terminal ③
- through 15A fuse (No. 18 located in the fuse block) and
- to rear window defogger relay terminal ⑥
- through 15A fuse (No. 17 located in the fuse block) and
- to mirror defogger relay terminal ③
- through 10A fuse (No. 12, located in the fuse block).

With the ignition switch in the ON or START position, power is supplied
- to each defogger relay terminal ① and
- to smart entrance control unit terminal ⑪

Ground is supplied
- to rear window defogger switch terminal ② and
- to smart entrance control unit terminal ⑩
- through body ground M1 or M67.

Operation

The ignition switch must be in the ON or START position for defogger operation.
With the rear window defogger switch in the ON position and for approximately 15 minutes after the rear window defogger switch has turned to OFF from ON, ground is supplied
- through terminal ① of the rear window defogger switch
- to smart entrance control unit terminal ⑳.

Terminal ⑯ of the smart entrance control unit then supplies ground to each defogger relay terminal ②
With power and ground supplied, each defogger relay is energized
For rear window defogger system, power is supplied
- through terminals ⑤ and ⑦ of the rear window defogger relay
- to condenser terminal ①
- through terminal ② of the condenser
- to the rear window defogger terminal ①.

For mirror defogger system, power is supplied
- through mirror defogger relay terminal ⑤
- to each door mirror defogger terminal ①.

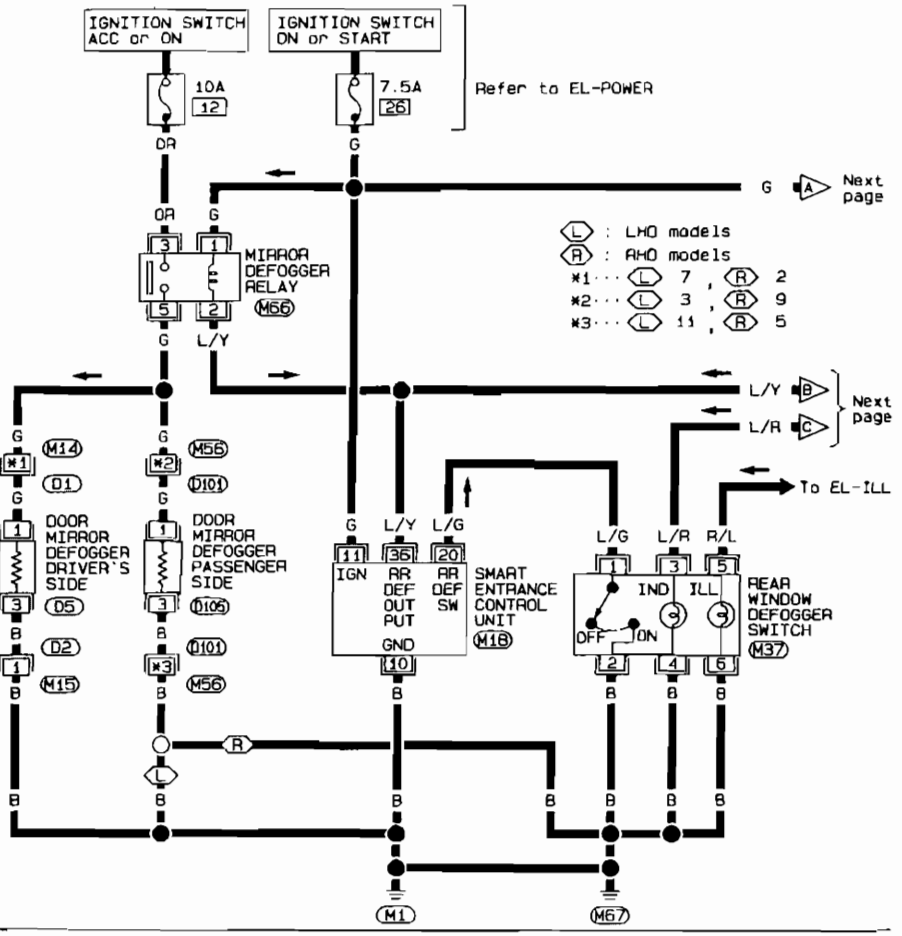
Ground is supplied
- to rear window defogger terminal ②
- through body ground B104, and
- to each door mirror defogger terminal ③
- through body ground M1 or M67.

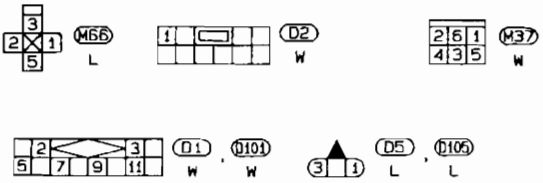
With power and ground supplied, each defogger filament heats and defogs the rear window and door mirror.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.
Power is supplied
- to terminal ③ of the rear window defogger switch
- from terminal ⑤ of the rear window defogger relay

Terminal ④ of the rear window defogger switch is grounded through body ground M1 or M67

Wiring Diagram — DEF —

EL-DEF-01





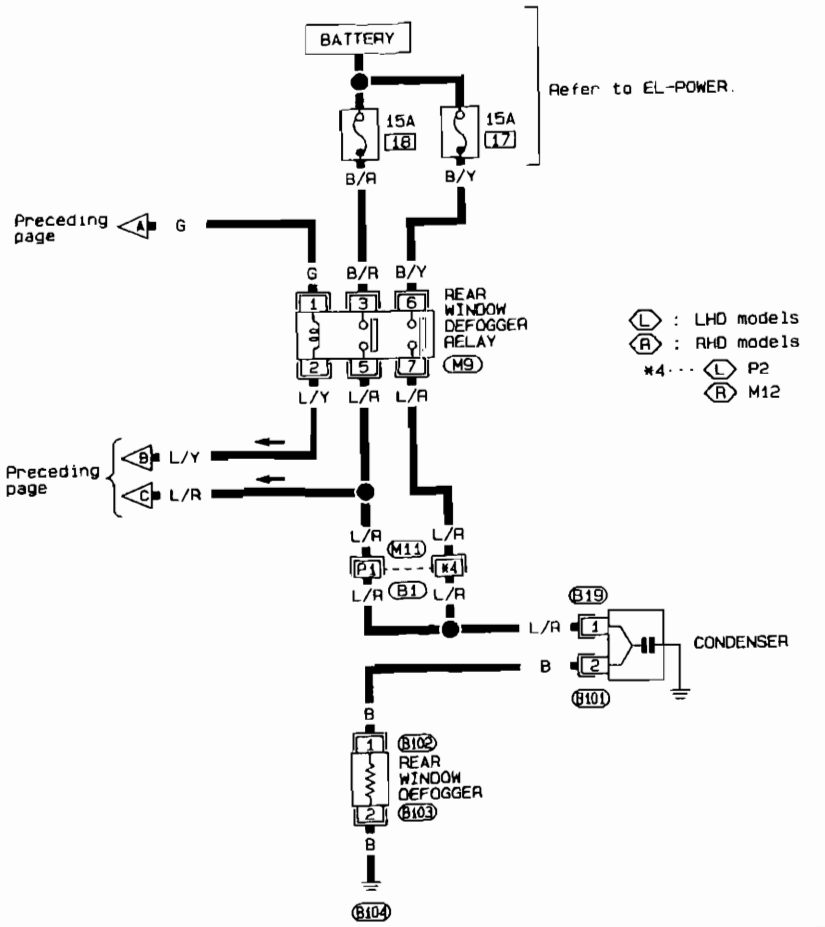
Refer to last page (Foldout page).

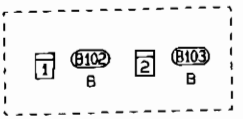
M18

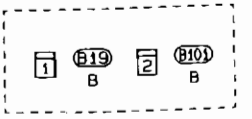
SEL761I

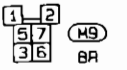
Wiring Diagram — DEF — (Cont'd)

EL-DEF-02









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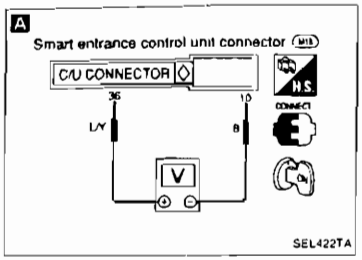
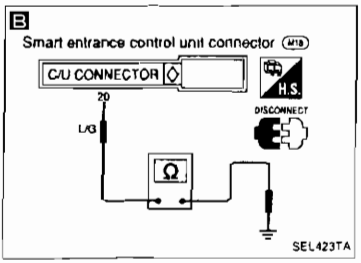
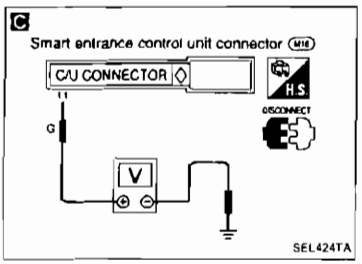
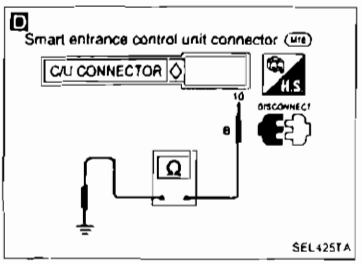
M11, B1

SEL762T









Trouble Diagnoses

DIAGNOSTIC PROCEDURE 1

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

A

REAR WINDOW DEFOGGER OUTPUT SIGNAL CHECK
Measure voltage between control unit harness terminals ㉖ and ⑩.

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

OK →
- Check rear window defogger relay (Refer to EL-189.)
- Check rear window defogger circuit
- Check rear window defogger filament. (Refer to EL-189.)

NG ↓

B

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

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

NG →
- Check rear window defogger switch. (Refer to EL-189.)
- Check continuity between control unit harness terminal ⑳ and rear window defogger switch harness terminal ①. **Continuity should exist.**
- Check continuity between rear window defogger switch harness terminal ② and body ground. **Continuity should exist.**

OK ↓

C

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

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

NG → Repair harness or connectors

OK ↓

D

CONTROL UNIT GROUND CIRCUIT CHECK
Check continuity between control unit harness terminal ⑩ and body ground
Continuity should exist.

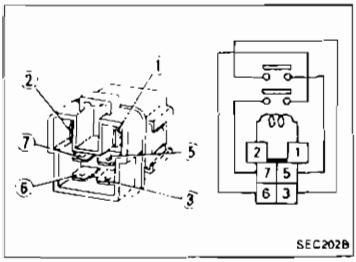
NG → Repair harness or connectors.

OK ↓

Replace control unit

Trouble Diagnoses (Cont'd)

ELECTRICAL COMPONENTS INSPECTION

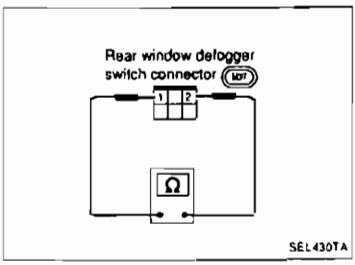


SEC202B

Rear window defogger relay

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

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

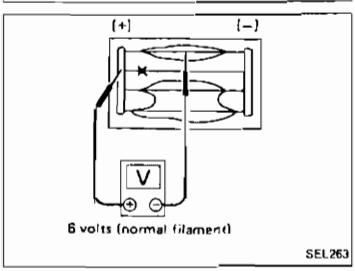


SEL430TA

Rear window defogger switch

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

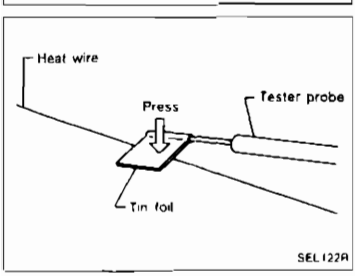
Terminals	Condition	Continuity
① - ②	Rear window defogger switch is pushed	Yes
	Rear window defogger switch is released	No



6 volts (normal filament)
SEL263

Filament Check

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



SEL122A

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

Audio/System Description

Refer to Owner's Manual for audio system operating instructions

Power is supplied at all times

- through 7.5A fuse (No. 19 , located in the fuse block)
- to radio terminal ⑥.

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

- through 10A fuse (No. 9 , located in the fuse block)
- to radio terminal ⑩

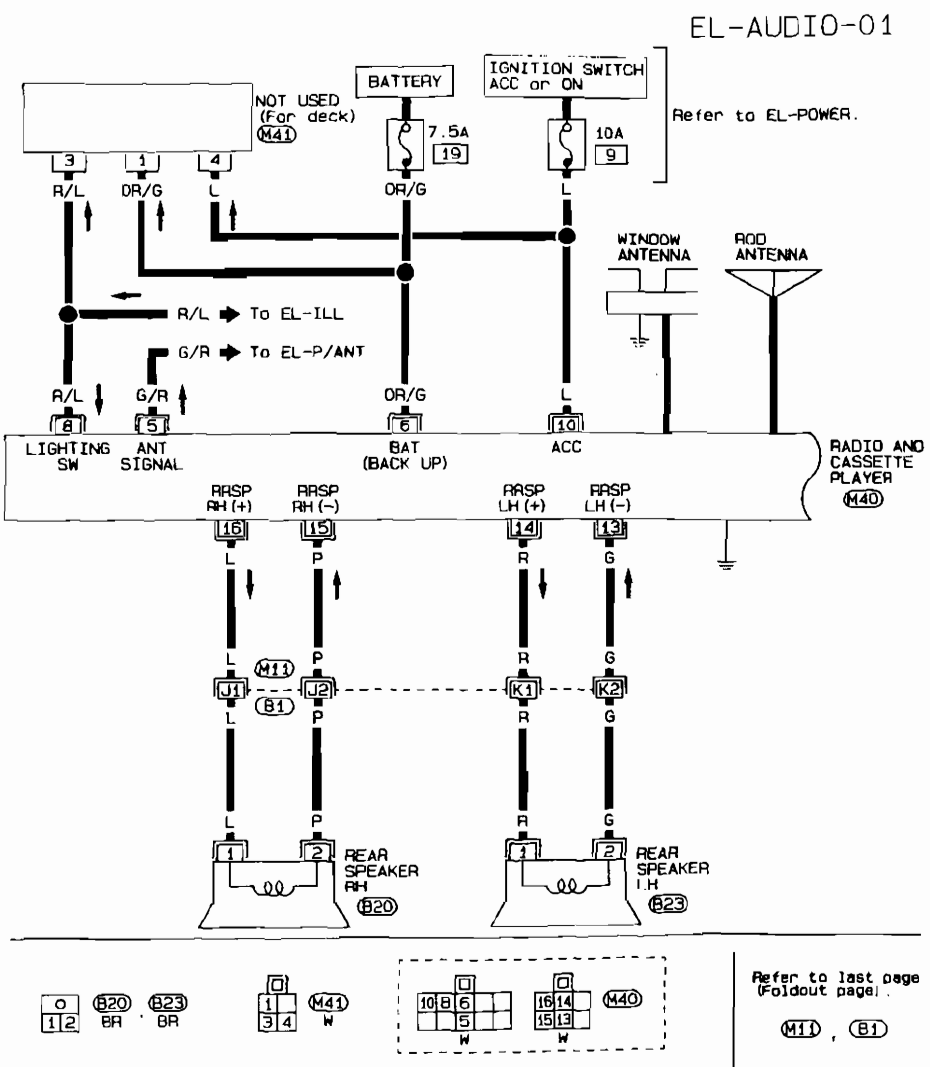
Ground is supplied through the case of the radio.

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

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

Audio/Wiring Diagram — AUDIO —

EXCEPT CENTRAL AND SOUTH AMERICA

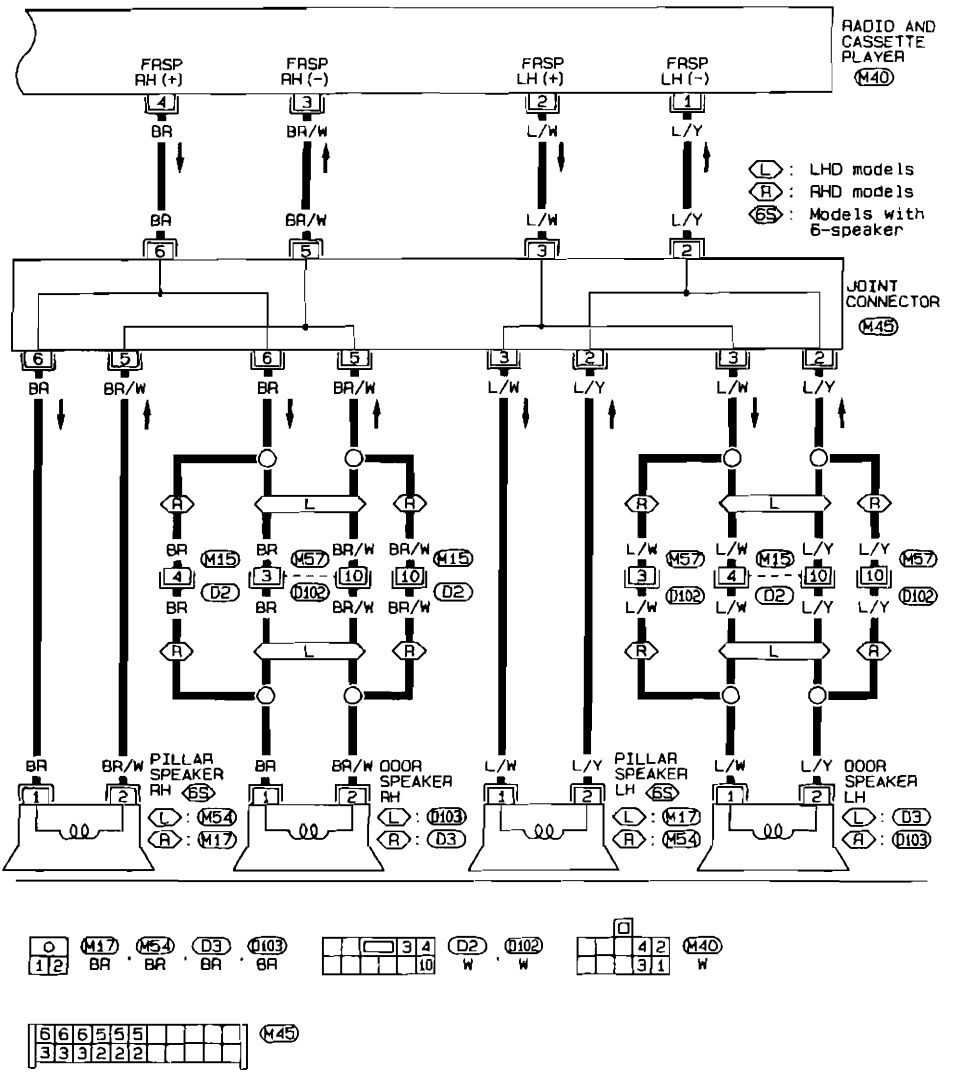


Refer to last page (Foldout page).

M11 , B1

SEL763T

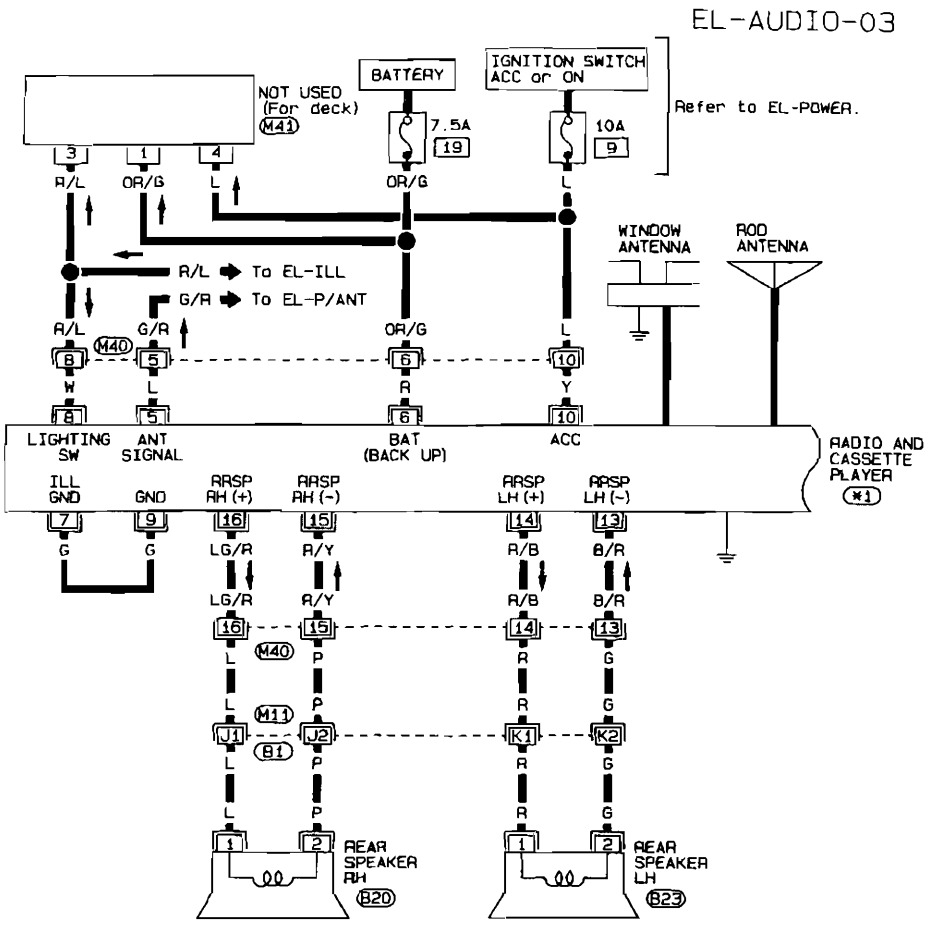
EL-AUDIO-02

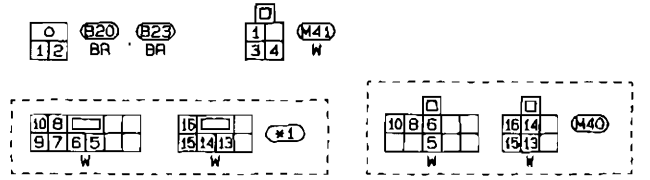


SEL764T

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

FOR CENTRAL AND SOUTH AMERICA



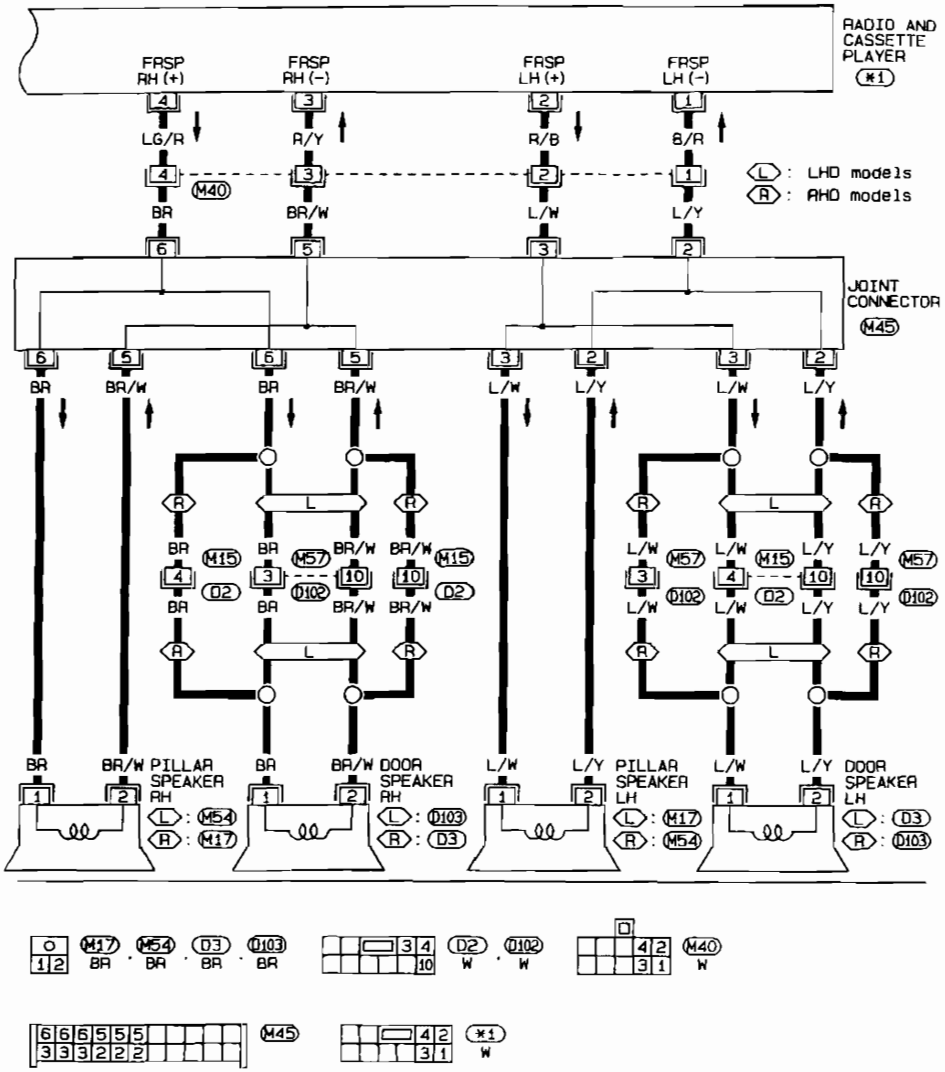


Refer to last page (Foldout page).
M11 , B1

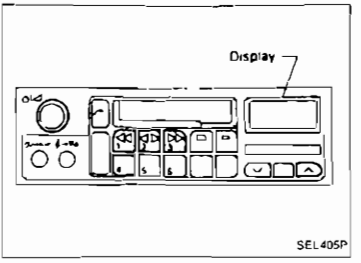
SEL765T

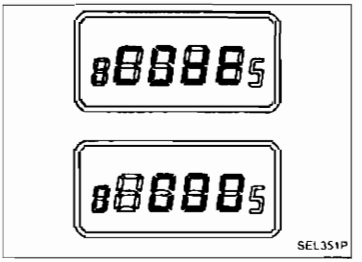
Audio/Wiring Diagram — AUDIO — (Cont'd)

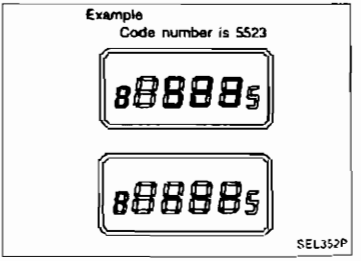
EL-AUDIO-04



SEL786T







Audio

ANTI-THEFT SYSTEM

By using a personal 4-digit code known only to the vehicle owner, the possibility of the audio unit being stolen is effectively reduced, because without the code the unit can not be activated. When in normal use, the unit is unlocked and accessible in the usual way.

If however, someone attempts to remove the unit or the ground cable is disconnected from the battery, the Anti-theft system activates and the unit "locks". The only way it can be unlocked is by entering a personal code number known only by the owner.

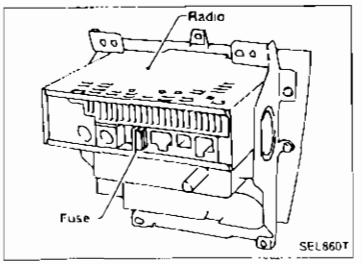
UNLOCKING THE UNIT (How to enter a personal code number)

Use the following procedures to enter a personal code number into the radio.

1. Turn ignition switch to "ACC" or "ON".
2. Turn SW VOL knob to "ON" and "CODE" will appear on the display.
3. Press any button (except "eject") and "0000" will appear on the display.
4. Enter a personal code number by pressing station select buttons 1, 2, 3, 4 the required number of times to display the code.
5. Press [^] to enter the code.
   Unit is unlocked and the radio/cassette will operate.
   If the wrong code number is entered, the display shows "----". Wait ten seconds then enter the correct code.

CAUTION:

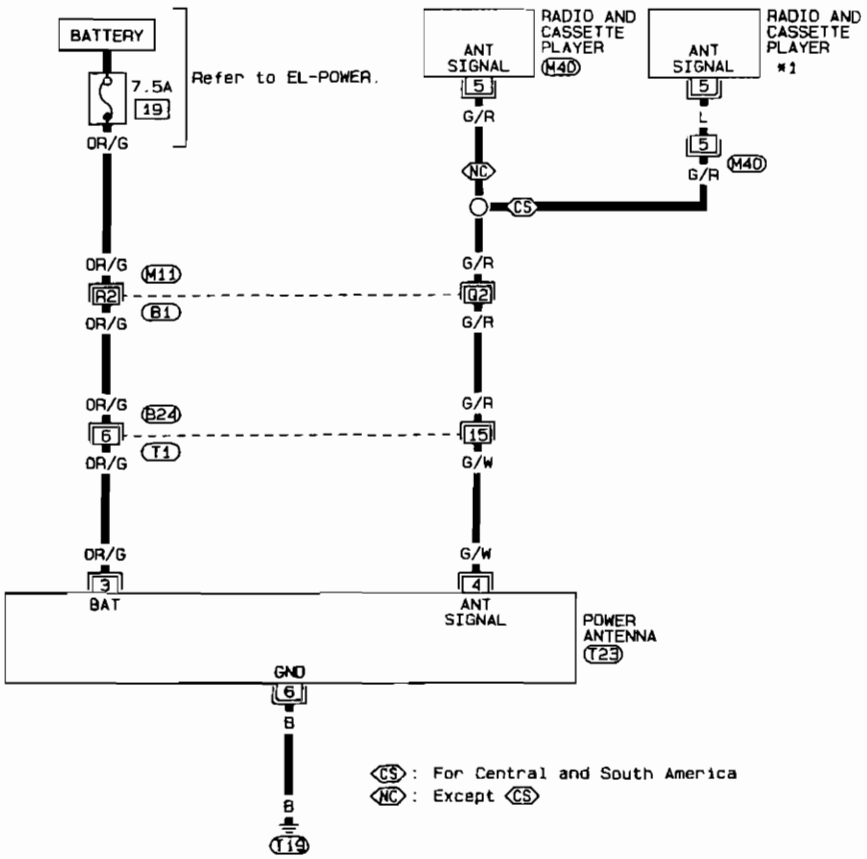
There is a theft prevention mechanism restricting the number of times a wrong code number can be entered into the radio unit. If a wrong code number is entered 1 to 2 times, you will have to wait for 10 seconds before the radio will receive further input. If a wrong code number is entered 3 to 20 times, you will have to wait a duration of 15 minutes. The radio unit will lock permanently if any further attempts are made.

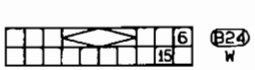


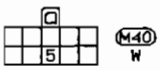
Radio Fuse Check

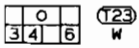
Power Antenna/Wiring Diagram — P/ANT —

EL-P/ANT-01





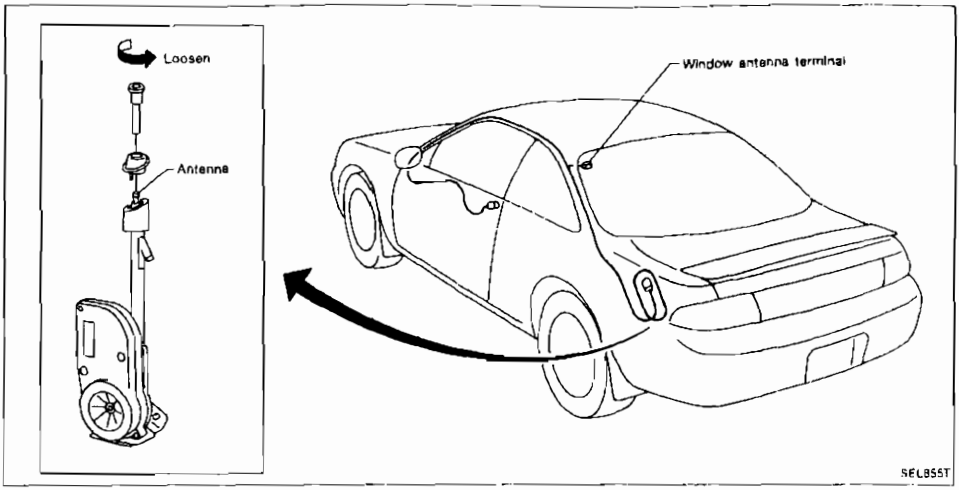


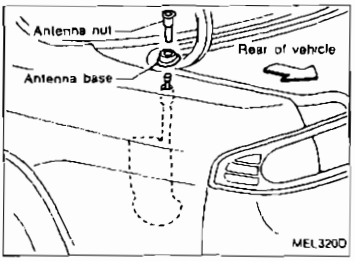


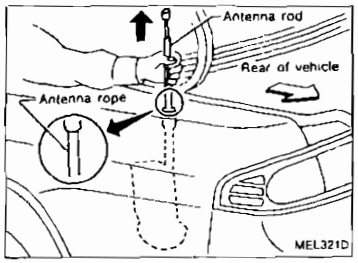
Refer to last page (Foldout page).
M11 , B1

SEL767T

Location of Antenna







Antenna Rod Replacement

REMOVAL

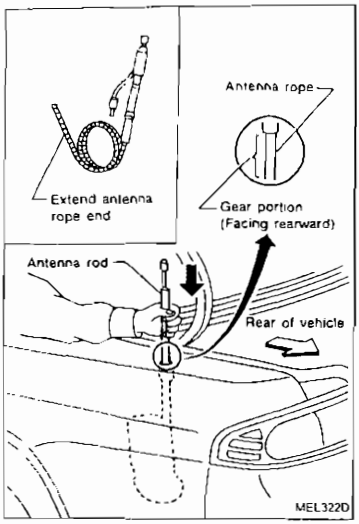
1. Remove antenna nut and antenna base.

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

Antenna Rod Replacement (Cont'd)

INSTALLATION

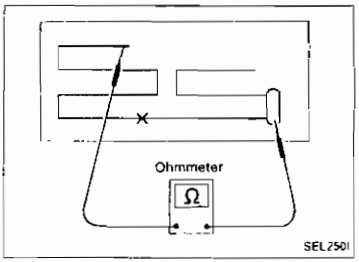
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe
4. Retract antenna rod completely by operating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



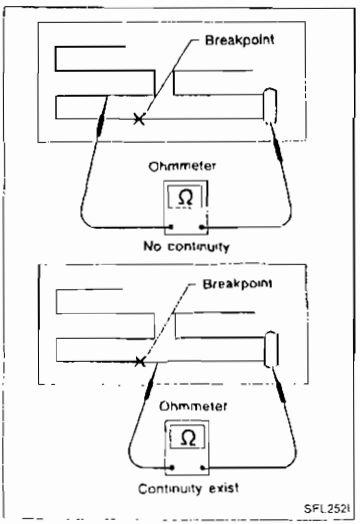
Window Antenna Repair

ELEMENT CHECK

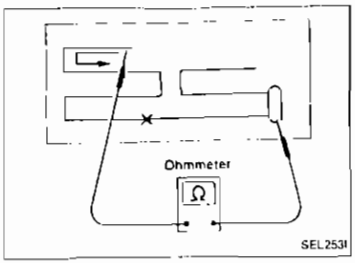
1 Attach probe circuit tester (in ohm range) to antenna terminal on each side.



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



Window Antenna Repair (Cont'd)



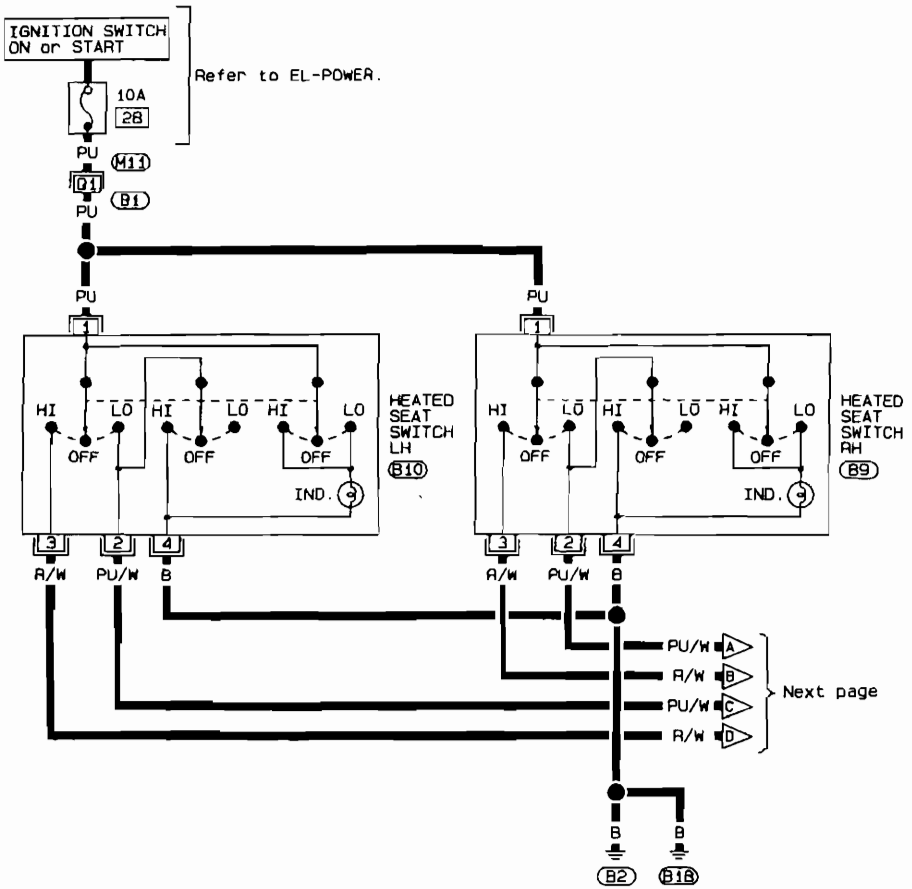
3. To locate broken point, move probe to left and right along element. Tester needle will swing abruptly when probe passes the point

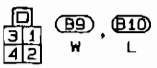
- **Refer to REAR WINDOW DEFOGGER "Filament Repair" for Element Repair.**

★ For location of heating unit, refer to "SEAT" in BT section.

Wiring Diagram — H/SEAT —

EL-H/SEAT-01





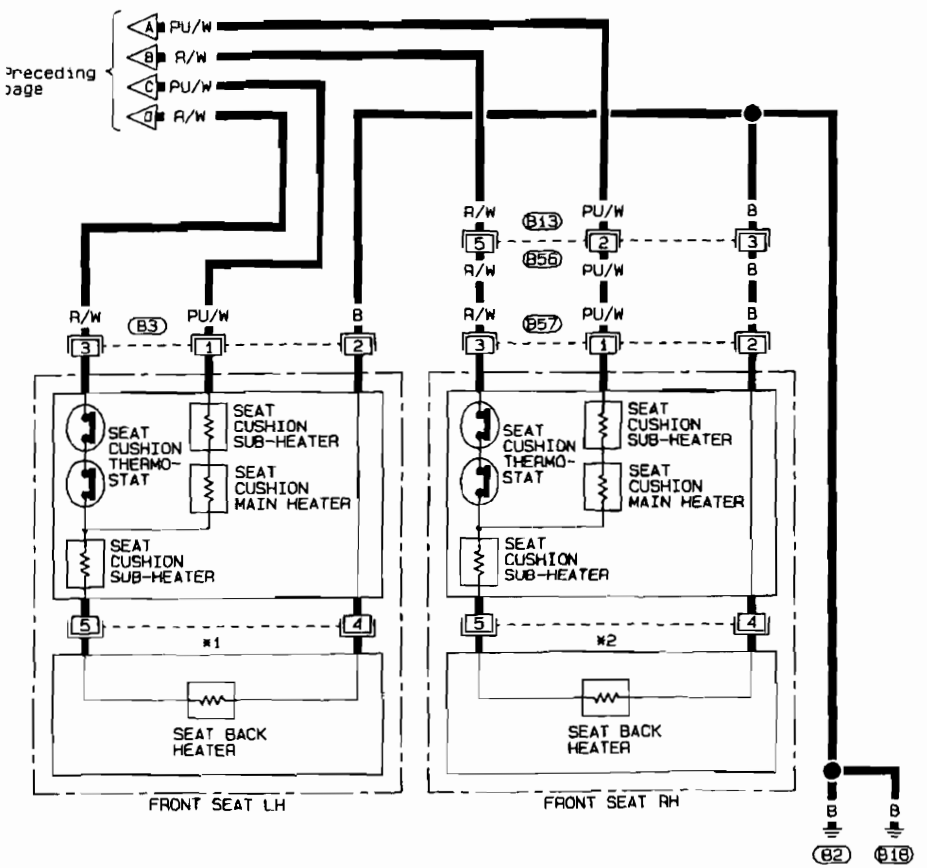
Refer to last page (Foldout page)

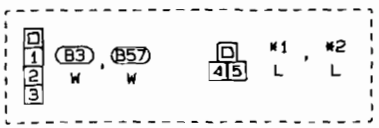
M11 , B1

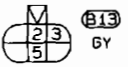
SEL768T

Wiring Diagram — H/SEAT — (Cont'd)

EL-H/SEAT-02







System Description

Power is supplied at all times
- through 25A fusible link (letter [i], located in the fusible link and fuse box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

Power is supplied at all times
- to interior lamp terminal ① and
- to key switch terminal ①
- through 10A fuse (No [21], located in the fuse block).

Power is supplied at all times
- to multi-remote control relay-1 terminal ①
- through 10A fuse (No. [22], located in the fuse block).

Terminal ⑩ of the smart entrance control unit is grounded through body ground (M1).

INPUTS

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

When the driver side door switch is OPEN, ground is supplied
- to smart entrance control unit terminal ⑮
- through driver side door switch terminal ①
- to driver side door switch terminal ③
- through body ground (B2) or (B18).

When the passenger side door switch is OPEN, ground is supplied
- to smart entrance control unit terminal ⑯
- through passenger side door switch body ground.

When the driver side door lock actuator (door unlock sensor) is UNLOCKED, ground is supplied
- to smart entrance control unit terminal ⑫
- through driver side door lock actuator (door unlock sensor) terminal ④
- to driver side door lock actuator (door unlock sensor) terminal ②
- through body ground (M1).

When the passenger side door lock actuator (door unlock sensor) is UNLOCKED, ground is supplied
- to smart entrance control unit terminal ⑬
- through passenger side door lock actuator (door unlock sensor) terminal ④
- to passenger side door lock actuator (door unlock sensor) terminal ②
- through body ground (M67).

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

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

OPERATED PROCEDURE

Power door lock operation

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

smart entrance control unit locks all the doors with input of LOCK signal from remote controller.
When key switch is OFF (when ignition key is not inserted in key cylinder), smart entrance control unit unlocks the doors with input of UNLOCK signal from remote controller.
For details of current flow, refer to "POWER DOOR LOCK"

System Description (Cont'd)

Interior lamp operation

When the following input signals are both supplied.

- key switch OFF (when ignition key is not inserted in key cylinder);
- door switch CLOSED (when all the doors are closed),

multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller.

For detailed description, refer to "Interior, Spot and Trunk Room Lamps"

Panic alarm operation

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

For detailed description, refer to "THEFT WARNING SYSTEM"

Hazard warning lamp operation

When the following input signals are all supplied

- key switch OFF (when ignition key is not inserted in key cylinder),
- door switch CLOSED (when all the doors are closed);
- door lock actuator (door unlock sensor) LOCKED (when all the doors are locked),

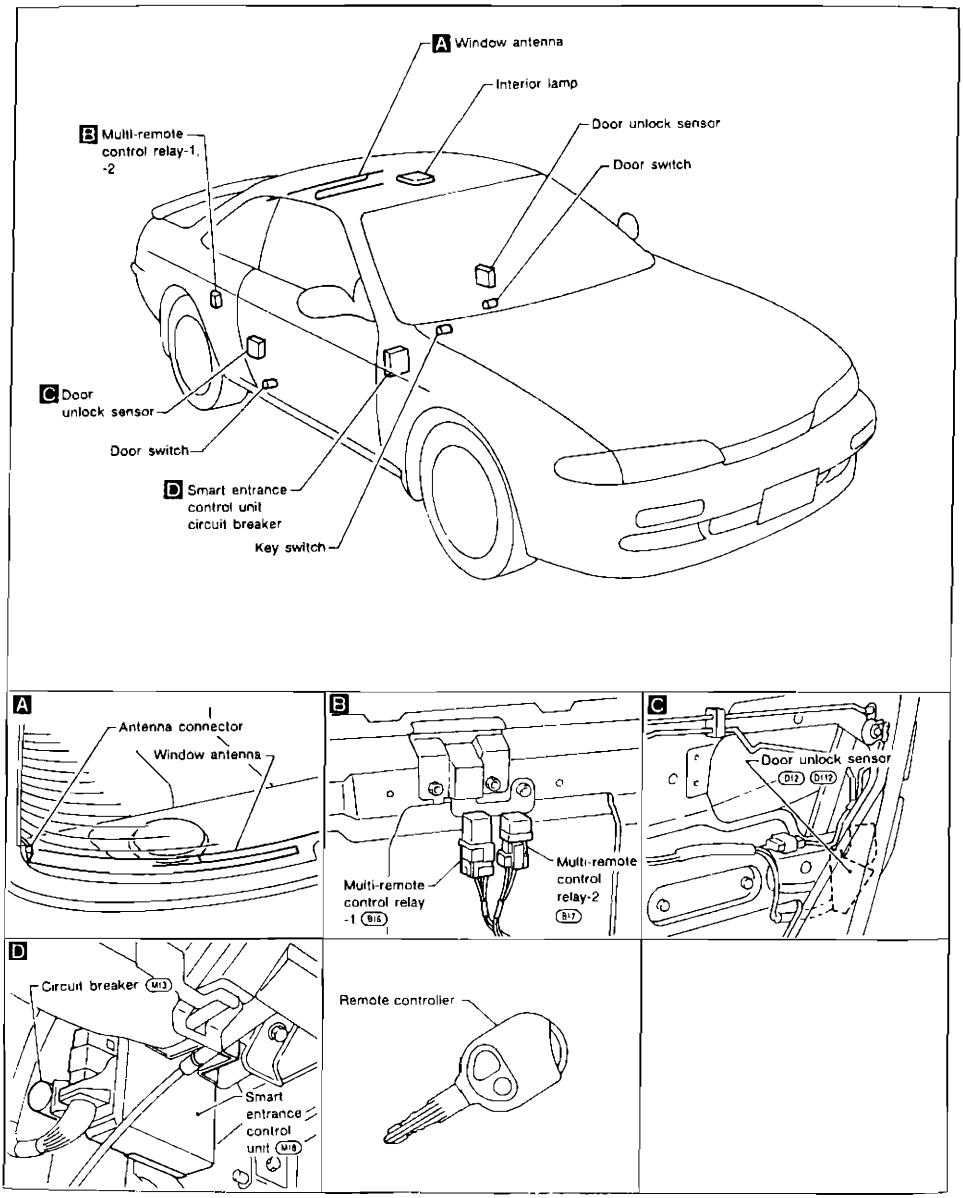
multi-remote control system outputs two times the following ground signals with input of LOCK signal from remote controller:

- to multi-remote control relay-1 terminal ②,
- through smart entrance control unit terminal ⑦

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

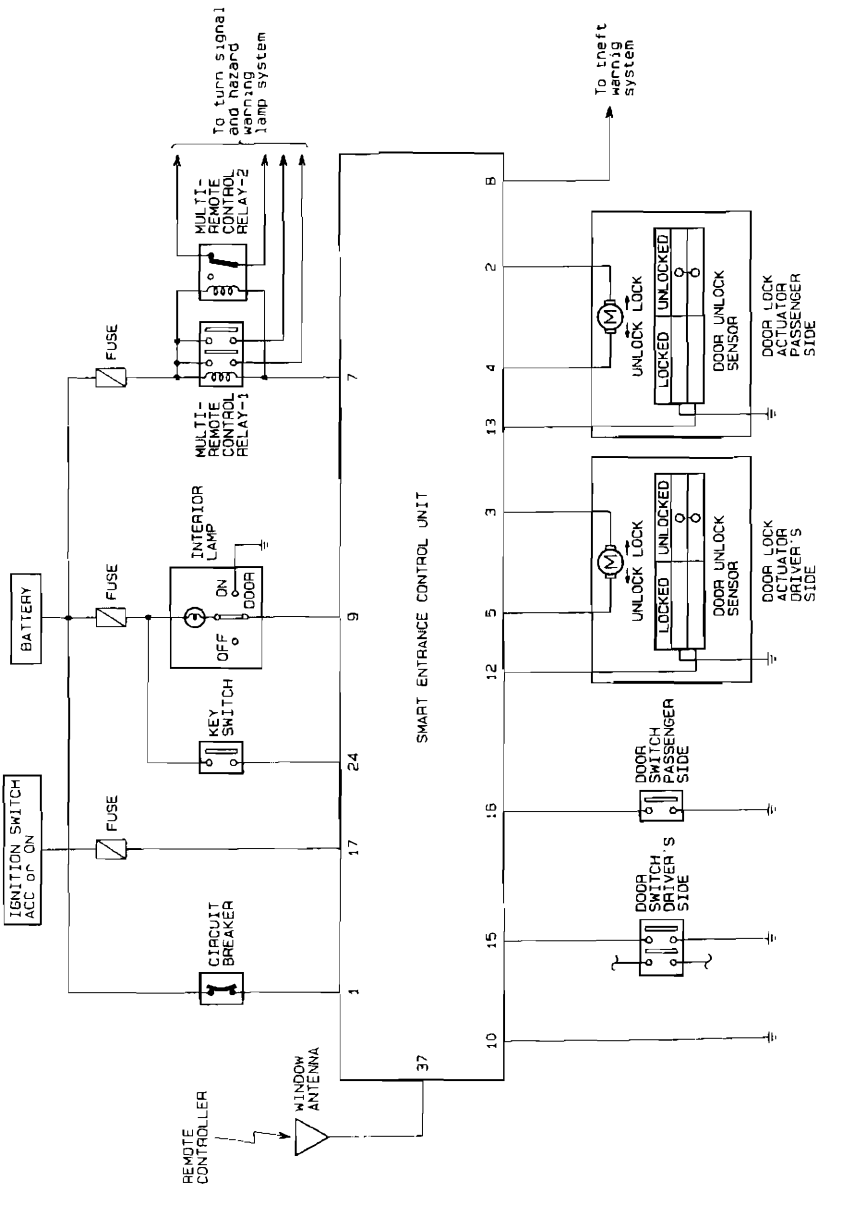
For detailed description, refer to "Turn Signal and Hazard Warning Lamps" and "THEFT WARNING SYSTEM"

Component Parts and Harness Connector Location



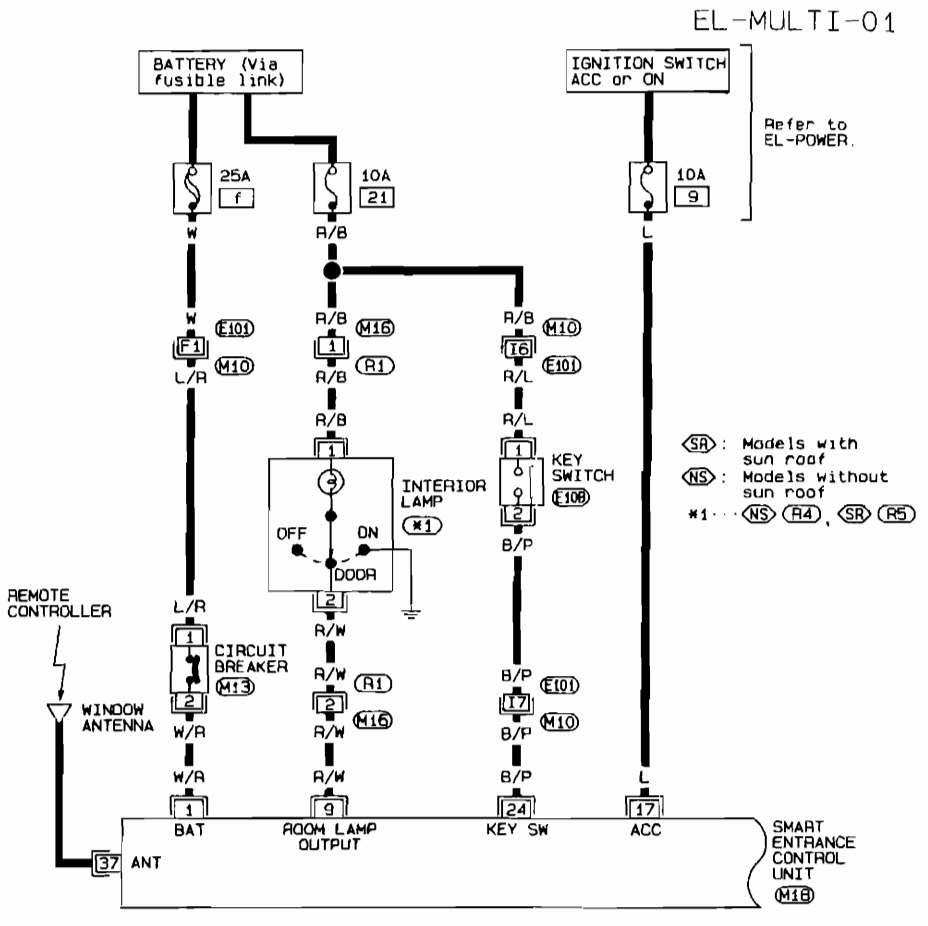
SEL859T

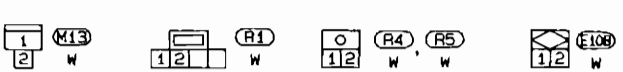
Schematic



SEL774T

Wiring Diagram — MULTI —



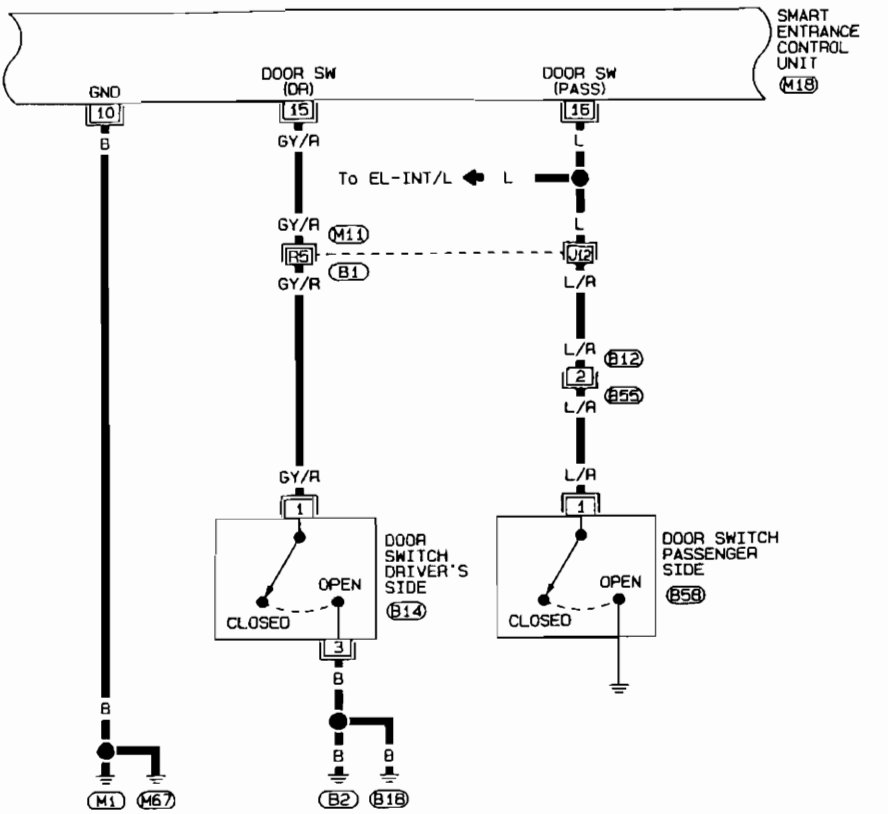


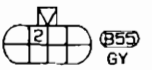
Refer to last page (Foldout page).
(M10), (E101)
(M18)

SEL770f

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02





Refer to last page (Foldout page).

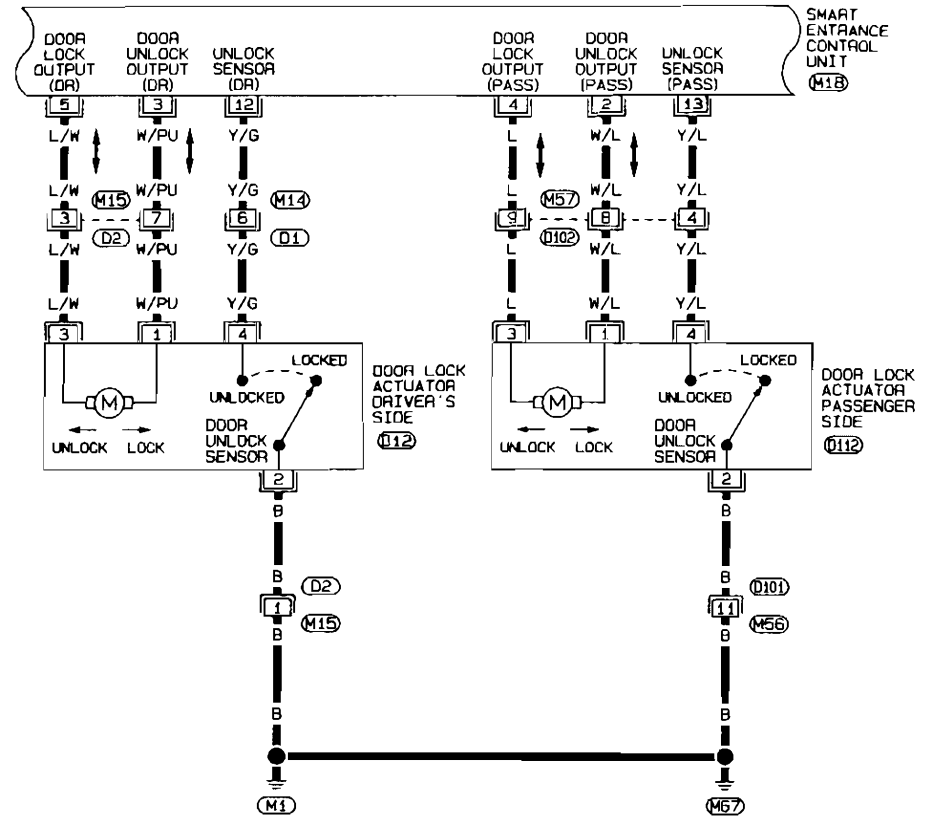
M11, B1

M18

SEL771T

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-03



D1 W, D101 W

D2 W, D102 W

D12 GY, D112 GY

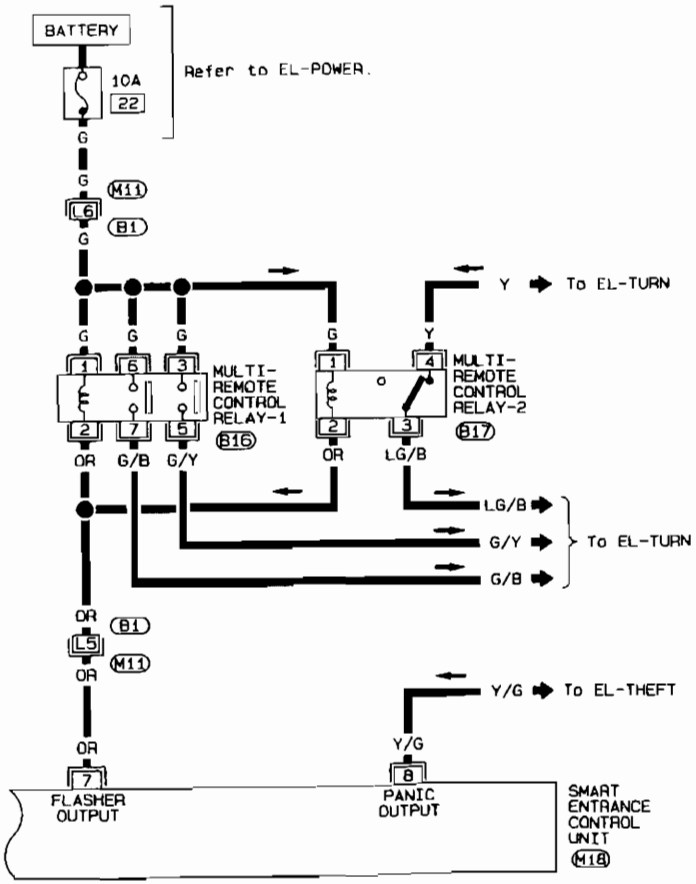
Refer to last page (Foldout page).

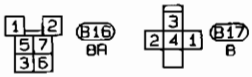
M18

SEL772T

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04





Refer to last page (Foldout page).

M11, B1

M18

Input/Output Operation Signal

SMART ENTRANCE CONTROL UNIT

Terminal No	Connections	Operated condition		Voltage (V) (Approximate values)
1	Power source (C/B)	—		12V
2	Passenger door lock motor	When door unlock signal is received from remote controller or unlock sensor	Unlocked	12V
3	Driver door lock motor		Free	1V or less
4	Passenger door lock motor	When door lock signal is received from remote controller or unlock sensor	Locked	12V
5	Driver's door lock motor		Free	1V or less
7	Multi-remote control relay 1	When doors are locked using remote controller or panic alarm is operated using remote controller		12V → 1V or less
8	Theft warning horn relay	When panic alarm is operated using remote controller		12V → 1V or less
9	Interior lamp	When doors are unlocked using remote controller. (Lamp switch in "DOOR" position)		12V → 1V or less
10	Ground	—		—
11	Ignition switch (ON)	"ON" or "START" position		12V
12	Driver door unlock sensor	Driver door. Locked → Unlocked		12V → 4.5V or less
13	Passenger door unlock sensor	Passenger door Locked → Unlocked		12V → 4.5V or less
15	Driver door switch	OFF (Closed) → ON (Open)		12V → 4.5V or less
16	Passenger door switch	OFF (Closed) → ON (Open)		12V → 1.5V or less
17	Ignition switch (ACC)	"ACC" or "ON" position		12V
24	Ignition key switch (Insert)	IGN key inserted → IGN key removed from IGN key cylinder		12V → 4.5V or less
37	Multi-remote antenna	—		—

Trouble Diagnoses

TROUBLE SYMPTOM

- All functions of remote control system do not operate

CHECK REMOTE CONTROLLER BATTERY
Refer to DIAGNOSTIC PROCEDURE 1
→ NG → Replace battery
↓ OK

Go to DIAGNOSTIC PROCEDURE 2
↓ OK

Replace the multi-remote controller

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

① DOOR LOCK OR UNLOCK DOES NOT FUNCTION
(Pressing lock or unlock button of remote controller normally locks or unlocks all doors.)
→ Go to DIAGNOSTIC PROCEDURE 3

OR

② HAZARD WARNING LAMPS DO NOT FLASH TWICE WHEN PRESSING LOCK BUTTON OF REMOTE CONTROLLER
- Check if hazard warning lamps flash with hazard switch.
If check is OK, Go to DIAGNOSTIC PROCEDURE 4
→ If check is NG → Check "Hazard warning lamp" circuit.

OR

③ INTERIOR LAMP DOES NOT TURN ON FOR 30 SECONDS WHEN PRESSING UNLOCK BUTTON OF REMOTE CONTROLLER.
- Check if the interior lamp switch is in the "door" position, the lamp illuminates when a door is open.
If check is OK, Go to DIAGNOSTIC PROCEDURE 5
→ If check is NG → Check "Interior lamp" circuit.

OR

④ PANIC ALARM (HORN AND HAZARD WARNING LAMP) DOES NOT ACTIVATE WHEN PANIC ALARM BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
- Check if horn and hazard warning lamp activate when test is conducted as follows.
  1. Open the driver's window.
  2. Close all doors. Wait for about 30 seconds to make sure that the lighted "SECURITY" warning lamp begins to blink.
  3. Lock doors with door key inserted into key cylinder.
  4. Manually unlock with driver's door lock knob, then panic alarm should activate. (The alarm will stop when door is locked and unlocked with the key.)
→ If check is NG → Check "THEFT WARNING" system

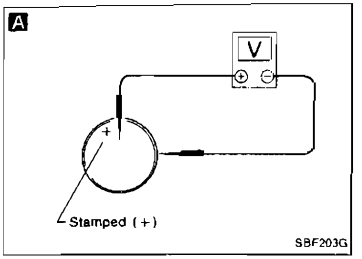
↓ OK

Enter the identity (ID) code of another remote controller and recheck operation to see if the same trouble as indicated above occurs
→ OK → Check multi-remote controller operation again.
If necessary, replace Smart Entrance Control Unit.
↓ NG

Replace the multi-remote controller

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

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1

Check remote controller battery.

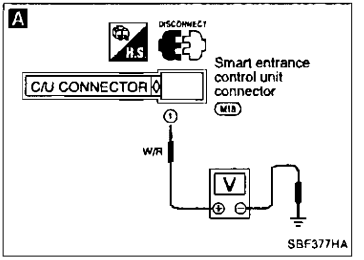
A

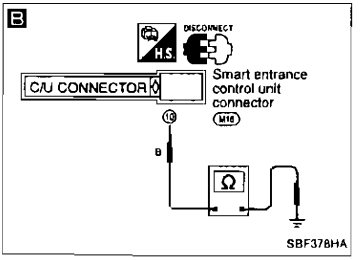
CHECK REMOTE CONTROLLER BATTERY.

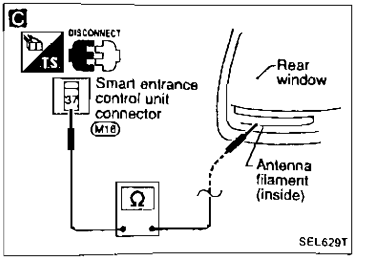
Remove battery and measure voltage across battery positive and negative terminals ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	3V or more

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







DIAGNOSTIC PROCEDURE 2

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

A

CHECK MAIN POWER SUPPLY AND GROUND CIRCUIT.
1) Remove key from ignition
2) Disconnect connector from control unit. Check voltage across control unit terminal ① and GND
Does battery voltage exist?

No → Check the following.
- Fuse
- Circuit breaker
- Power supply harness

Yes ↓

B

Check continuity between terminal ⑩ and GND
Does continuity exist?

No → Check GND harness

Yes ↓

C

CHECK ANTENNA CIRCUIT.
Disconnect 1-pin connector from control unit
Check continuity between a terminal and filament on the rear window
Does continuity exist?

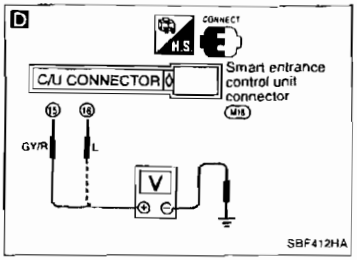
No → Check antenna circuit (Refer to REAR WINDOW DEFOGGER "Filament Repair".)

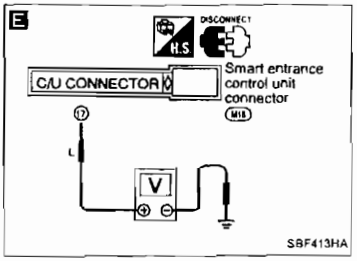
Yes ↓

Ⓐ

(Go to next page.)

Trouble Diagnoses (Cont'd)





Ⓐ

D

CHECK DOOR SWITCH CIRCUIT.
1) Close all doors
2) Connect control unit connector
3) Check voltage across control unit terminal ⑮ and GND, ⑯ and GND.

Does battery voltage exist?

No → Replace smart entrance control unit

Yes

D

1) Open all doors.
2) Check voltage across control unit terminal ⑮ and GND, ⑯ and GND.

Is voltage approx. 0V?

No → Check door switch circuit

Yes

E

CHECK IGNITION SWITCH "ACC" CIRCUIT.

Disconnect connector from control unit. Check voltage across control unit terminal ⑰ and GND while ignition switch is "ACC".

Does battery voltage exist?

No → Check ignition switch "ACC" circuit.

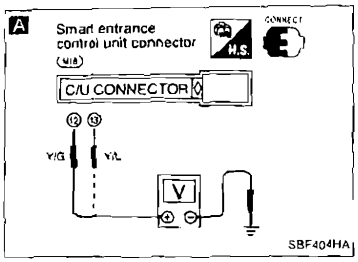
Yes

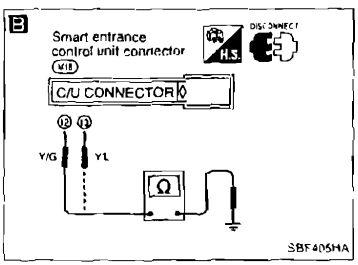
Check operation parts in multi-remote control system for function

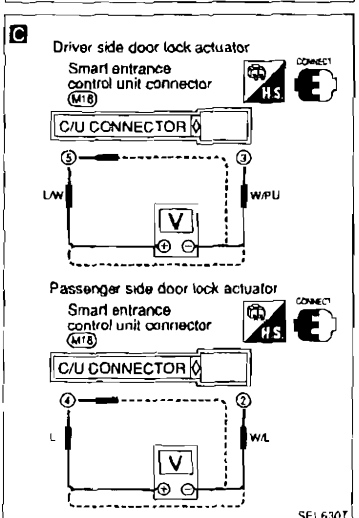
Trouble Diagnoses (Cont'd)

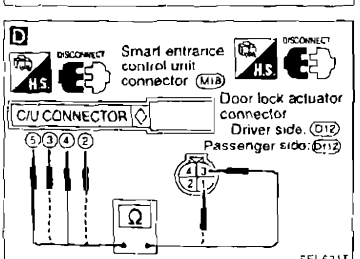
DIAGNOSTIC PROCEDURE 3

SYMPTOM: Door lock or unlock on remote control does not function.









A

CHECK UNLOCK SENSOR CIRCUIT

Check voltage across control unit terminal ⑫ and GND, ⑬ and GND

Door lock knob condition		Terminals	Voltage (V)
Locked → Unlocked	Driver	⑫ - GND	12 → 0
Unlocked → Locked	Passenger	⑬ - GND	0 → 12

NG → **B**

OK

B

1) Disconnect connector from control unit
2) Check continuity between ⑫ and GND, ⑬ and GND

Door lock knob condition	Terminals
Unlocked	⑫ - GND
	⑬ - GND

Does continuity exist?

No → Repair unlock sensor harness or replace door lock actuator

Yes → Replace smart entrance control unit

C

CHECK DOOR LOCK ACTUATOR CIRCUIT.

Check voltage for door lock motor

Door lock actuator driver side.

Door lock knob condition	Terminals ⊕	Terminals ⊖
Locked	⑤	③
Unlocked	③	⑤

Door lock actuator passenger side

Door lock knob condition	Terminals ⊕	Terminals ⊖
Locked	④	②
Unlocked	②	④

Does battery voltage exist?

No → Replace smart entrance control unit

Yes

D

1) Disconnect control unit connector and door lock actuator connector
2) Check continuity

	Terminals
Driver side	⑤ - ③
	③ - ①
Passenger side	④ - ①
	② - ①

Does continuity exist?

No → Repair harness

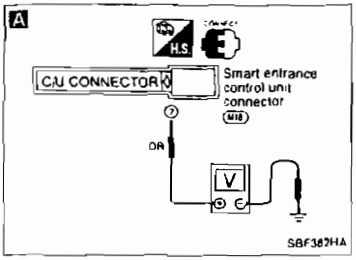
Yes

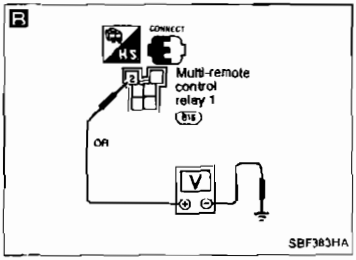
Check power door lock motor. Refer to ELECTRICAL COMPONENTS INSPECTION in "POWER DOOR LOCK" (EL-174).

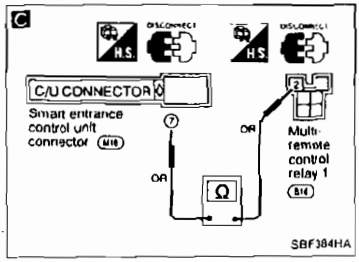
Trouble Diagnoses (Cont'd)

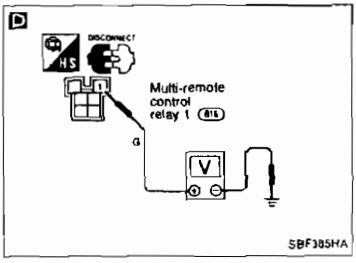
DIAGNOSTIC PROCEDURE 4

SYMPTOM: Hazard warning lamps do not flash twice when pressing lock button of remote controller. Everything else functions.









A

CHECK HAZARD WARNING LAMP FLASHING CIRCUIT.
Check voltage across control unit terminal ⑦ and GND.
Does battery voltage exist?

Yes → Ⓐ (Go to next page.)

No ↓

B

Check voltage across multi-remote control relay 1 terminal ② and GND
Does battery voltage exist?

Yes → **C**

1. Disconnect connectors from control unit and multi-remote control relay 1
2. Check continuity between terminal ⑦ of control unit connector and ② of multi-remote control relay 1.

Does continuity exist?

No → Repair harness between control unit connector and multi-remote control relay 1 connector

Yes → Check system again

No ↓

D

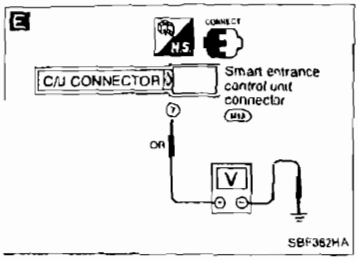
Disconnect connector from multi-remote control relay 1
Check voltage across multi-remote control relay 1 terminal ① and GND
Does battery voltage exist?

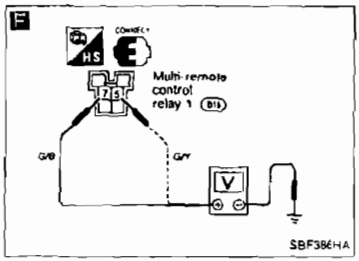
No → Repair power supply harness for multi-remote control relay 1

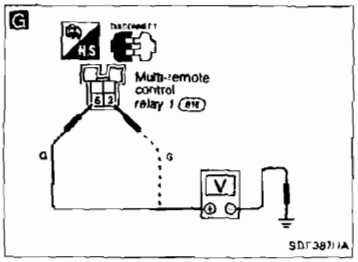
Yes ↓

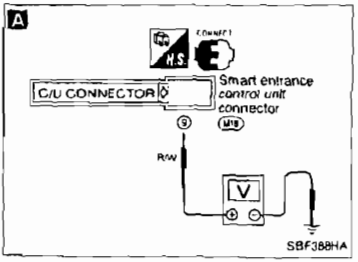
Replace multi-remote control relay 1

Trouble Diagnoses (Cont'd)









Ⓐ

E

Push lock button of remote controller and check voltage across control unit terminal ⑦ and GND
Is voltage approx. 0V?

No → Replace smart entrance control unit

Yes

F

Push lock button of remote controller and check voltage across multi-remote control relay 1 terminal ⑤ and GND, ⑦ and GND.
Does battery voltage exist?

Yes → Repair hazard switch circuit harness.

No

G

Disconnect connector from multi-remote control relay 1
Check voltage across multi-remote control relay terminal ③ and GND, ⑥ and GND.
Does battery voltage exist?

No → Repair power supply harness.

Yes

Replace multi-remote control relay 1.

DIAGNOSTIC PROCEDURE 5

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

A

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

No → Repair harness between control unit connector and interior lamp connector

Yes

A

Push unlock button of remote controller and check voltage across control unit terminal ⑨ and GND
Is voltage approx. 0V?

No → Replace smart entrance control unit

Yes

Check system again

Replacing Remote Controller or Control Unit

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

ID Code Entry Procedure

To enter the ID code, follow this procedure.

"Setting mode":

Three steps must be followed to establish the "setting mode".

(1) Close and lock all doors.

(2) Insert and remove the key from the ignition more than six times within 10 seconds. (The hazard warning lamp will then flash twice.)

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

ID code entry:

(3) Turn ignition key to "ACC" position.

(4) Push lock button on the new remote controller once (for example, if door is locked using the remote controller during this ID code entry enable state, a new ID code can be entered)

- ***At this time, the new ID code is entered. (The hazard warning lamp will then flash twice.)***

(5) If you need to enter additional remote controllers (including the original), release the driver's door lock, then lock again with door lock knob.

(6) Push lock button on the new additional remote controller once.

(7) This ID code entry enable state and setting mode remain until the driver's door is opened.

NOTE

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

System Description

Refer to Owner's Manual for theft warning system operating instructions.
Power is supplied at all times
- through 30A fusible link (letter h), located in the fusible link and fuse box)
- to ignition switch terminal ①.

With the ignition switch in the START position, power is supplied
- from terminal ⑤ of the ignition switch
- to theft warning relay terminal ③.

Power is supplied at all times
- through 7.5A fuse (No. 19, located in the fuse block)
- to security indicator lamp terminal ②.

Power is supplied at all times
- through 25A fusible link (letter f), located in the fusible link and fuse box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to smart entrance control unit terminal ①.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse (No. 9, located in the fuse block)
- to smart entrance control unit terminal ⑰.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse (No. 26, located in the fuse block)
- to smart entrance control unit terminal ⑪ and
- to theft warning relay terminal ①.

Ground is supplied
- to smart entrance control unit terminal ⑩
- through body ground (M1).

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

The operation of the theft warning system is controlled by the doors, hood and trunk lid.
To activate the theft warning system, the ignition switch must be in the OFF position and the smart entrance control unit must receive signals indicating the doors, hood and trunk are closed and the doors are locked
When a door is open, smart entrance control unit terminal ⑮ or ⑯ receives a ground signal from driver side or passenger side door switch.
When a door is unlocked, smart entrance control unit terminal ⑫ or ⑬ receives a ground signal
- from terminal ④ of the driver side door unlock sensor
- from terminal ④ of the passenger side door unlock sensor
- through body ground (M1) or (M67) for the doors.

When the hood is open, smart entrance control unit terminal ㉙ receives a ground signal
- from terminal ② of the hood switch
- through body ground (E43).

When the trunk lid is open, smart entrance control unit terminal ㉘ receives a ground signal
- from terminal ① of the trunk room lamp switch
- through body ground (T19).

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

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

If the key or remote controller is used to lock doors, terminal ㉚ receives a ground signal
- from terminal ② of the driver side key cylinder switch and
- from terminal ① of the passenger side door key cylinder switch
- through body grounds (M1) and (M67).

If this signal is received by the smart entrance control unit, the theft warning system will activate automatically.
Once the theft warning system has been activated, smart entrance control unit terminal ㉛ supplies ground to terminal ① of the security indicator lamp
The security lamp will illuminate for approximately 30 seconds and then go on and off

System Description (Cont'd)

THEFT WARNING SYSTEM OPERATION

The theft warning system is triggered by

- opening a door or the trunk lid without using the key
- opening the hood
- tampering with the key cylinder in the door

Once the theft warning system has been activated, if the smart entrance control unit receives a ground signal at terminal ⑮, ⑯, ㉕ or ㉙ (as described under THEFT WARNING SYSTEM ACTIVATION), the theft warning system will be triggered. Also, when a door key tamper signal is received at the smart entrance control unit, the system will be triggered. The hazard warning lamps flash and the horns sound intermittently, and the starting system is interrupted.

When a door key cylinder switch has been tampered with, smart entrance control unit terminal ㉘ receives a ground signal

- from terminal ③ of each door's key cylinder switch
- through body ground (M1) or (M67)

If the theft warning system is triggered, ground is supplied

- from terminal ㉜ of the smart entrance control unit
- to theft warning relay terminal ②.

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

Power is supplied at all times

- through 7.5A fuse (No. 43, located in the fusible link and fuse box)
- to theft warning horn relay terminals ① and ⑥

Power is supplied at all times

- through 10A fuse (No. 39, located in the fusible link and fuse box)
- to theft warning horn relay terminal ③

Power is supplied at all times

- through 10A fuse (No. 22, located in the fuse block)
- to multi-remote control relay-1 terminals ①, ③ and ⑥

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

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

The hazard warning lamps flash and the horns sound intermittently

The alarm automatically turns off after approximately 30 seconds but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

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

When the key or remote controller is used to unlock a door, smart entrance control unit terminal ㉛ receives a ground signal

- from terminal ① of the driver side door key cylinder switch
- from terminal ② of the passenger side door key cylinder switch

When the key is used to unlock the trunk lid, smart entrance control unit terminal ㉗ receives a ground signal from terminal ① of the trunk key cylinder switch.

When the smart entrance control unit receives either one of these signals, the theft warning system is deactivated

PANIC ALARM OPERATION

Multi-remote control system may or may not operate theft warning system (horns and hazard warning lamps) as required

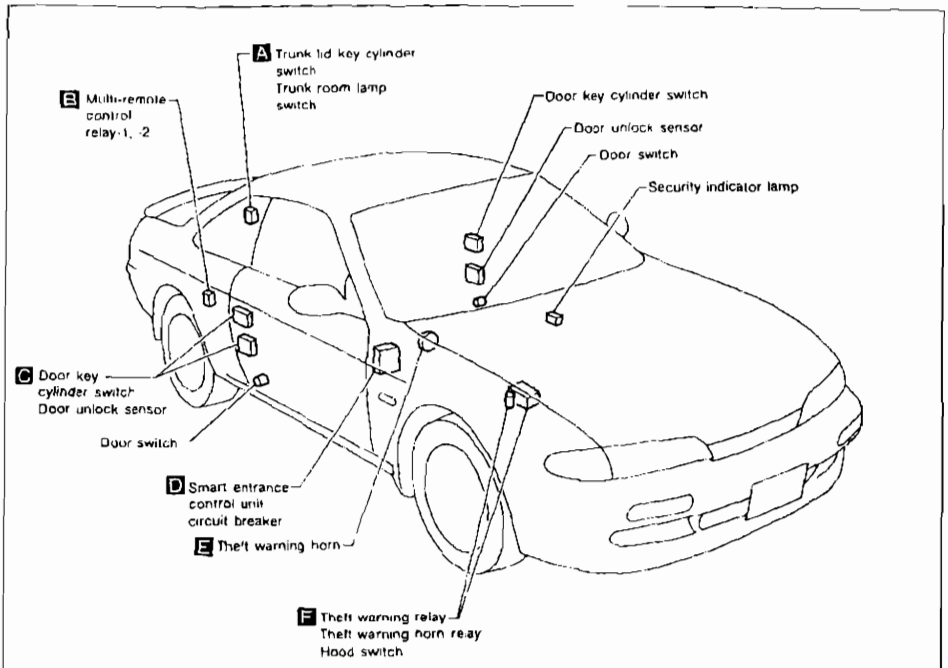
When the multi-remote control system is triggered, ground is supplied intermittently.

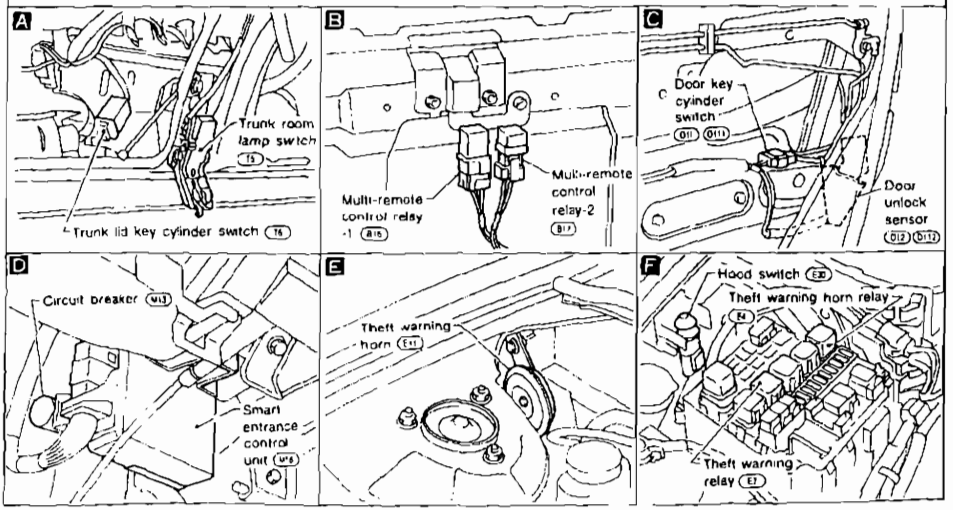
- from smart entrance control unit terminal ⑧
- to theft warning horn relay terminal ② and
- from smart entrance control unit terminal ⑦
- to multi-remote control relay-1 terminal ②

System Description (Cont'd)

The hazard warning lamps flash and the horns sound intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller

Component Parts and Harness Connector Location





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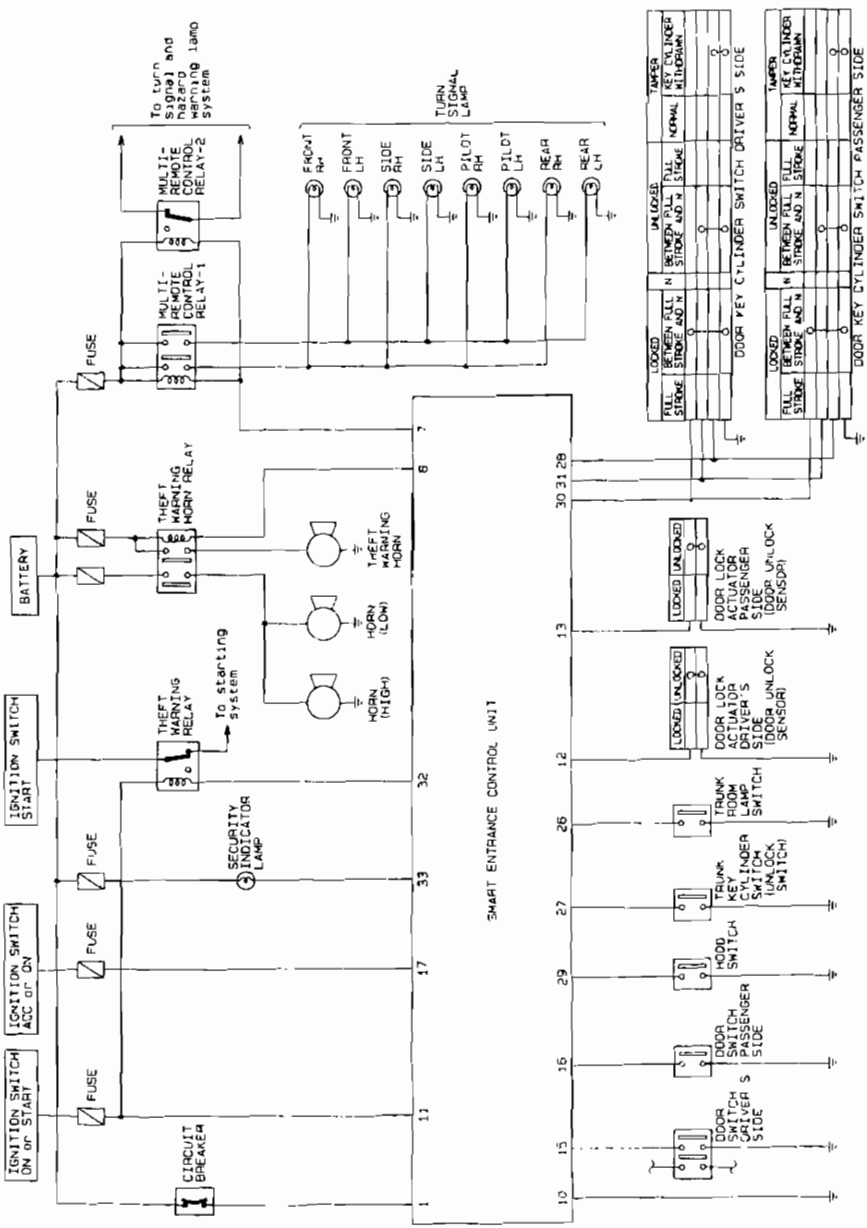
Schematic



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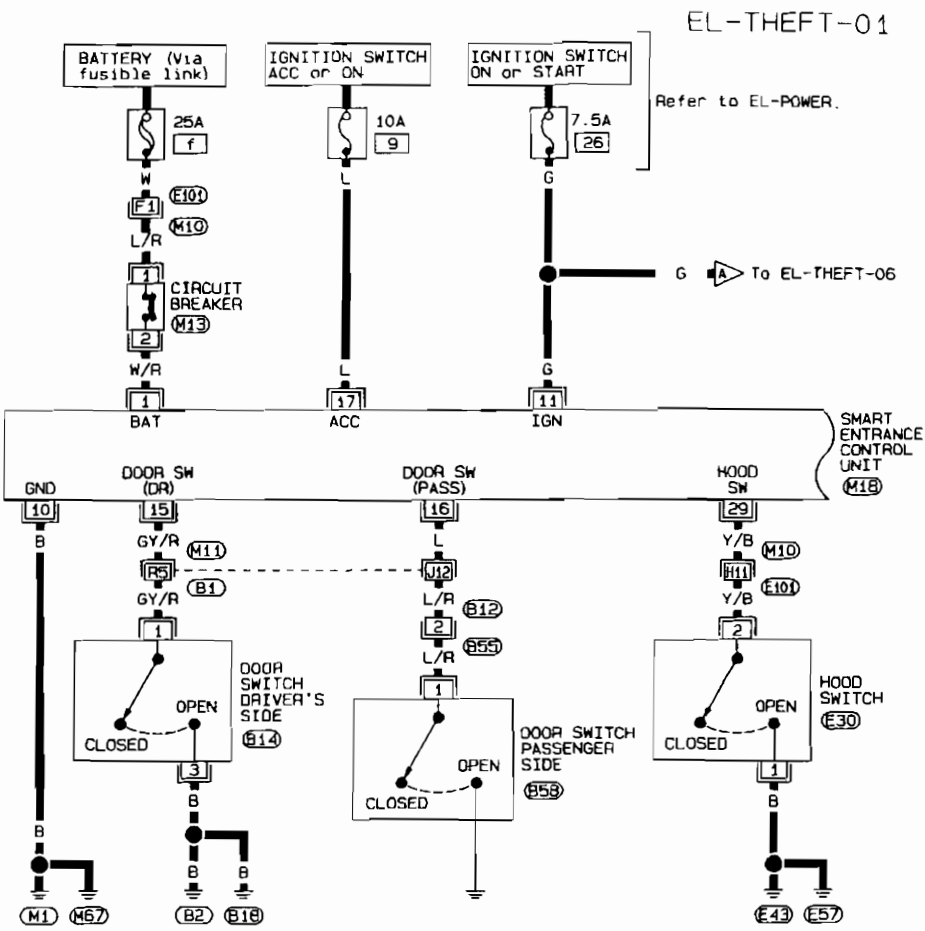
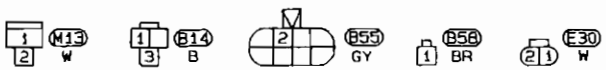
Wiring Diagram — THEFT —





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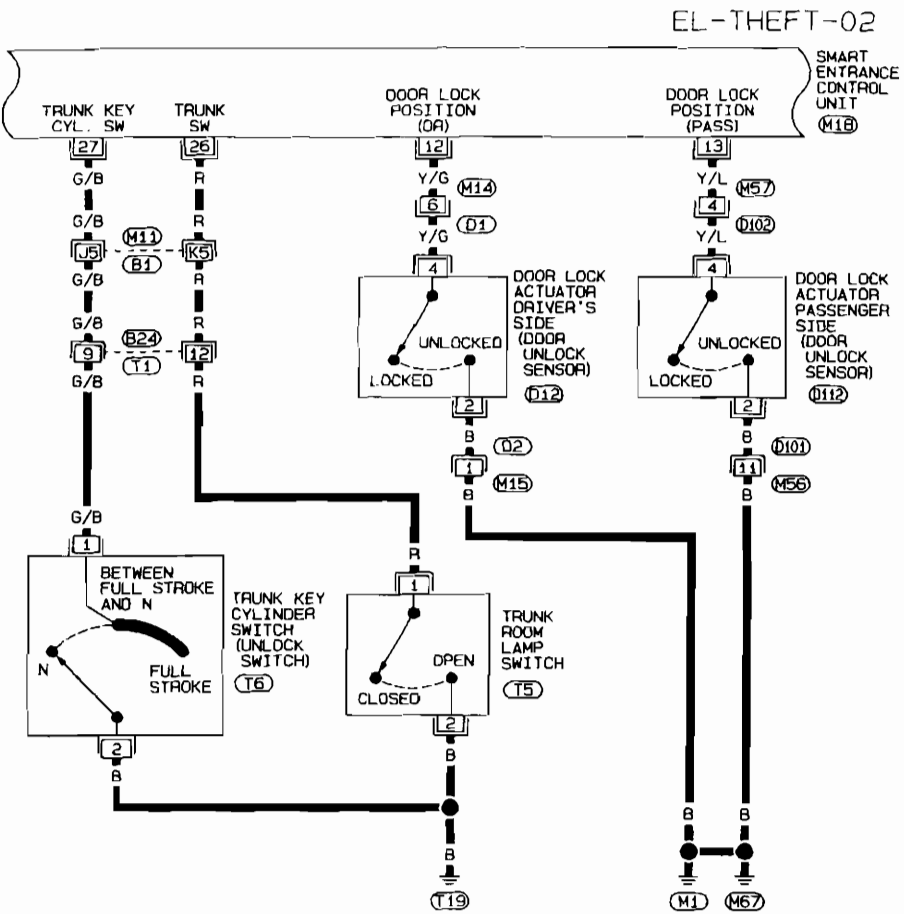
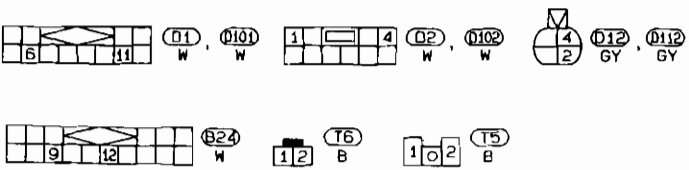
M18

Wiring Diagram — THEFT — (Cont'd)





Refer to last page (Foldout page).

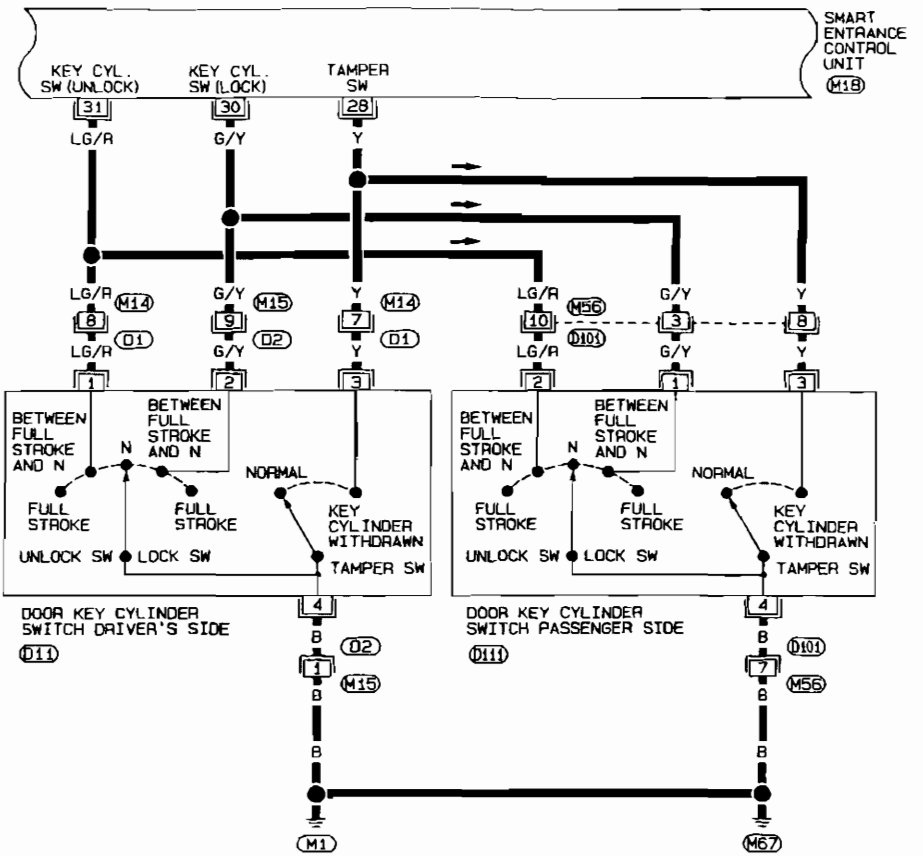
M11, B1

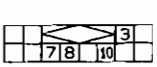
M18

SEI776T

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-03





D1, D101
W, W

D2
W

D11, D111
GY, GY

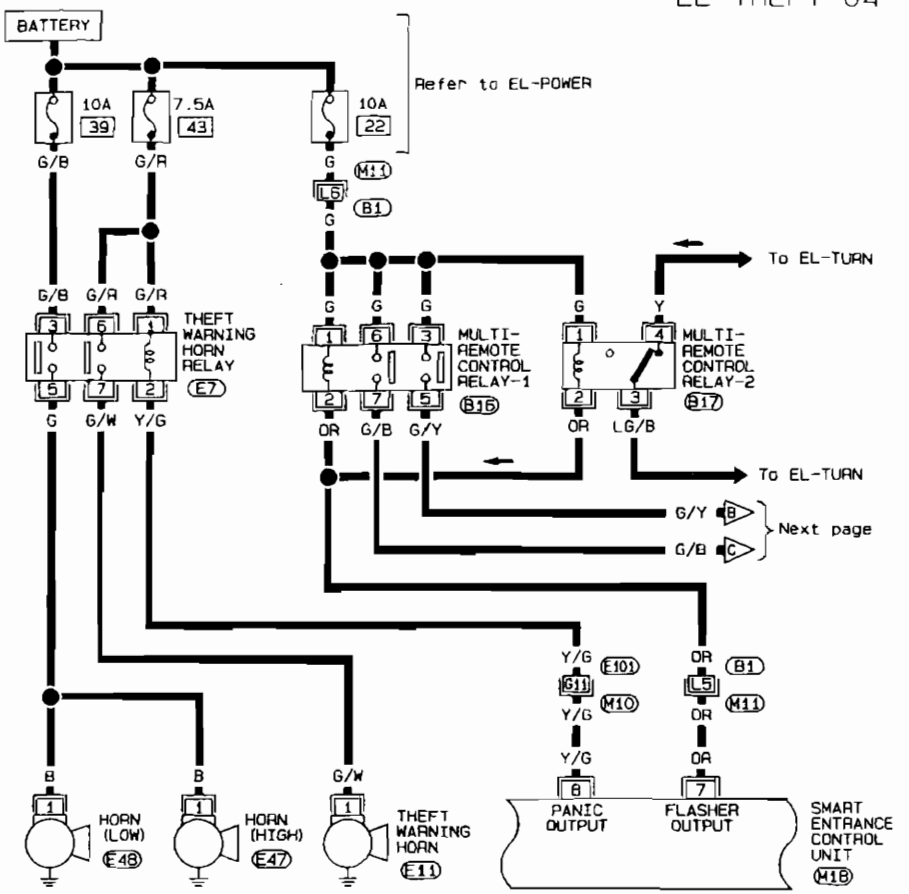
Refer to last page (Foldout page).

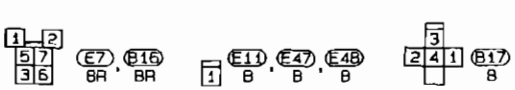
M18

SEL777T

Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-04





Refer to last page (Foldout page).

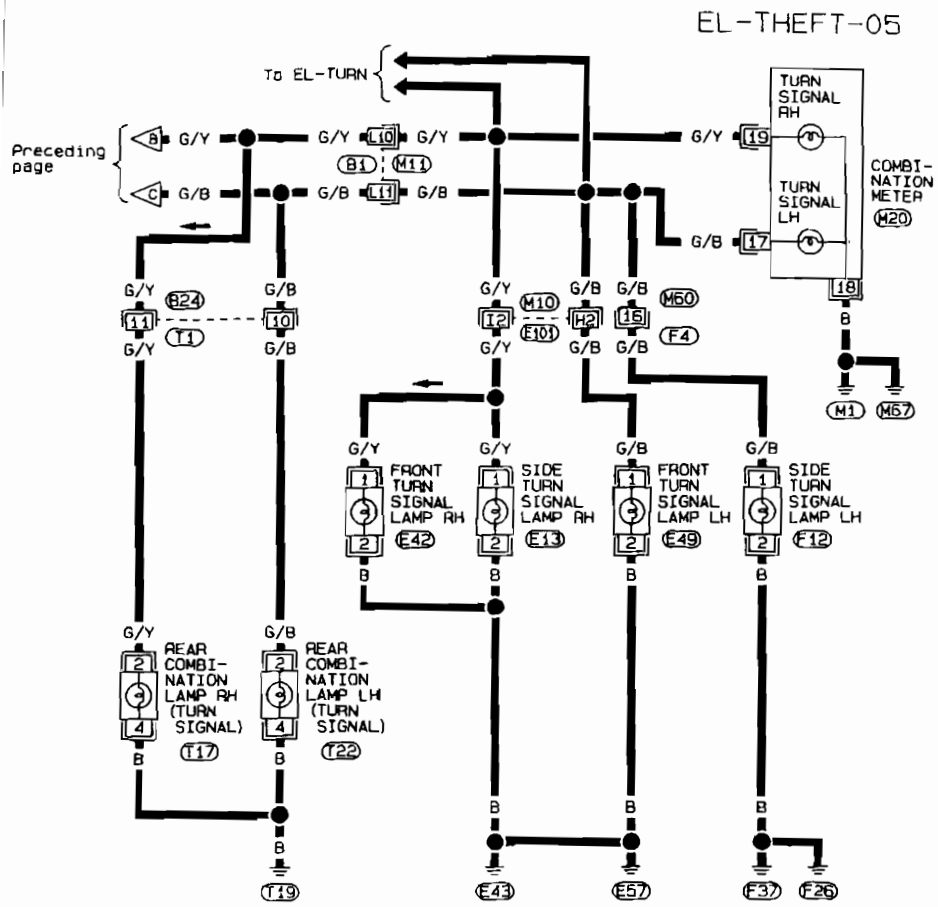
M10, E101

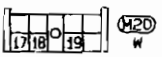
M11, B1

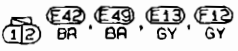
M18

SFL778T

Wiring Diagram — THEFT — (Cont'd)

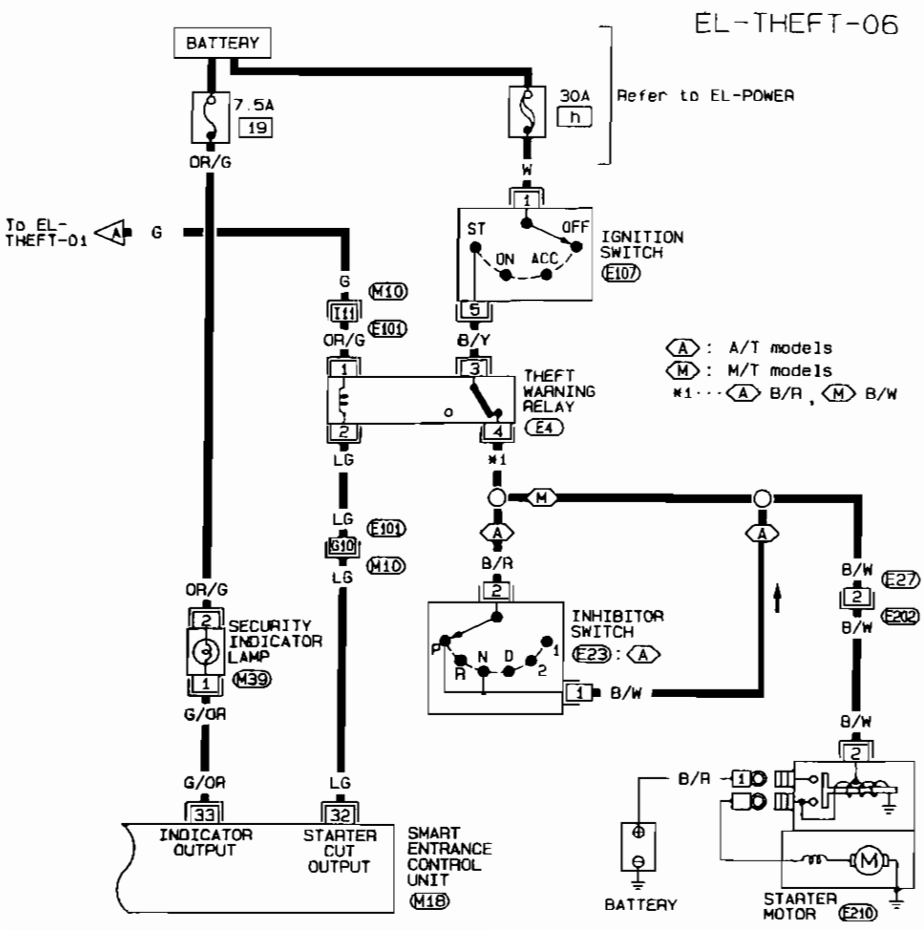






Refer to last page (Foldout page).

Wiring Diagram — THEFT — (Cont'd)



M39 W · E4 B · E107 W · E23 W · E202 B · E210 B

Refer to last page (Foldout page).

M10 , E101

M18

Input/Output Operation Signal

SMART ENTRANCE CONTROL UNIT

Terminal No	Connections	Operated condition	Voltage (V) (Approximate values)
1	Power source (C/B)	—	12V
7	Multi-remote control relays 1 and 2	When panic alarm is operated	12V → 1V or less
8	Theft warning horn relay	When panic alarm is operated.	12V → 1V or less
10	Ground	—	—
11	Ignition switch (ON)	"ON" or "START" position	12V
12	Driver door unlock sensor	Driver door: Locked → Unlocked	12V → 4.5V or less
13	Passenger door unlock sensor	Passenger door: Locked → Unlocked	12V → 4.5V or less
15	Driver door switch	OFF (Closed) → ON (Open)	12V → 4.5V or less
16	Passenger door switch	OFF (Closed) → ON (Open)	12V → 1.5V or less
17	Ignition switch (ACC)	"ACC" or "ON" position	12V
26	Trunk room lamp switch	ON (Open) → OFF (Closed)	0V → 12V
27	Trunk key cylinder switch	OFF (Neutral) → ON (Unlocked)	4.5V or more → 0V
28	Door key cylinders tamper switch	OFF → ON	4.5V or more → 0V
29	Hood switch	ON (Open) → OFF (Closed)	0V → 4.5V or more
30	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)	4.5V or more → 0V
31	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)	4.5V or more → 0V
32	Theft warning relay (Starter cut)	OFF → ON	12V → 0V
33	Security indicator	Goes off → Illuminates	12V → 0V

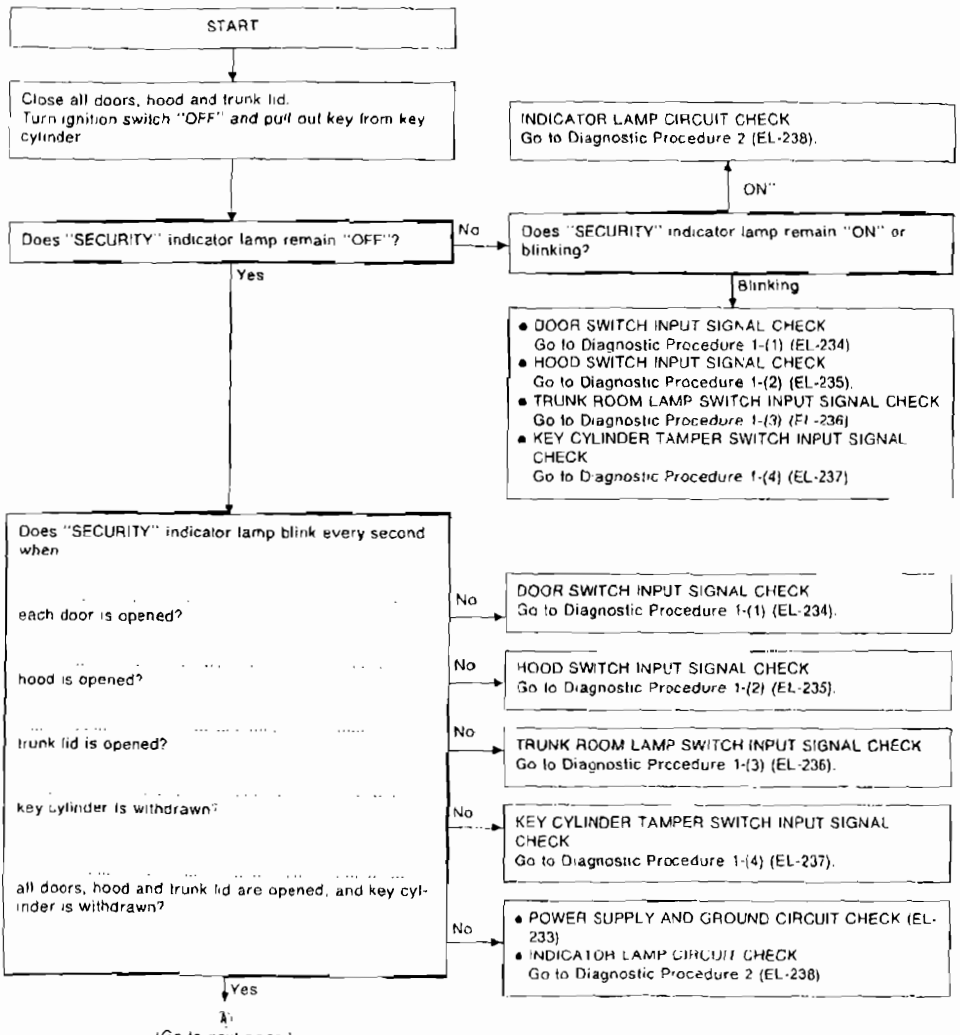
Trouble Diagnoses

SYSTEM OPERATION CHECK

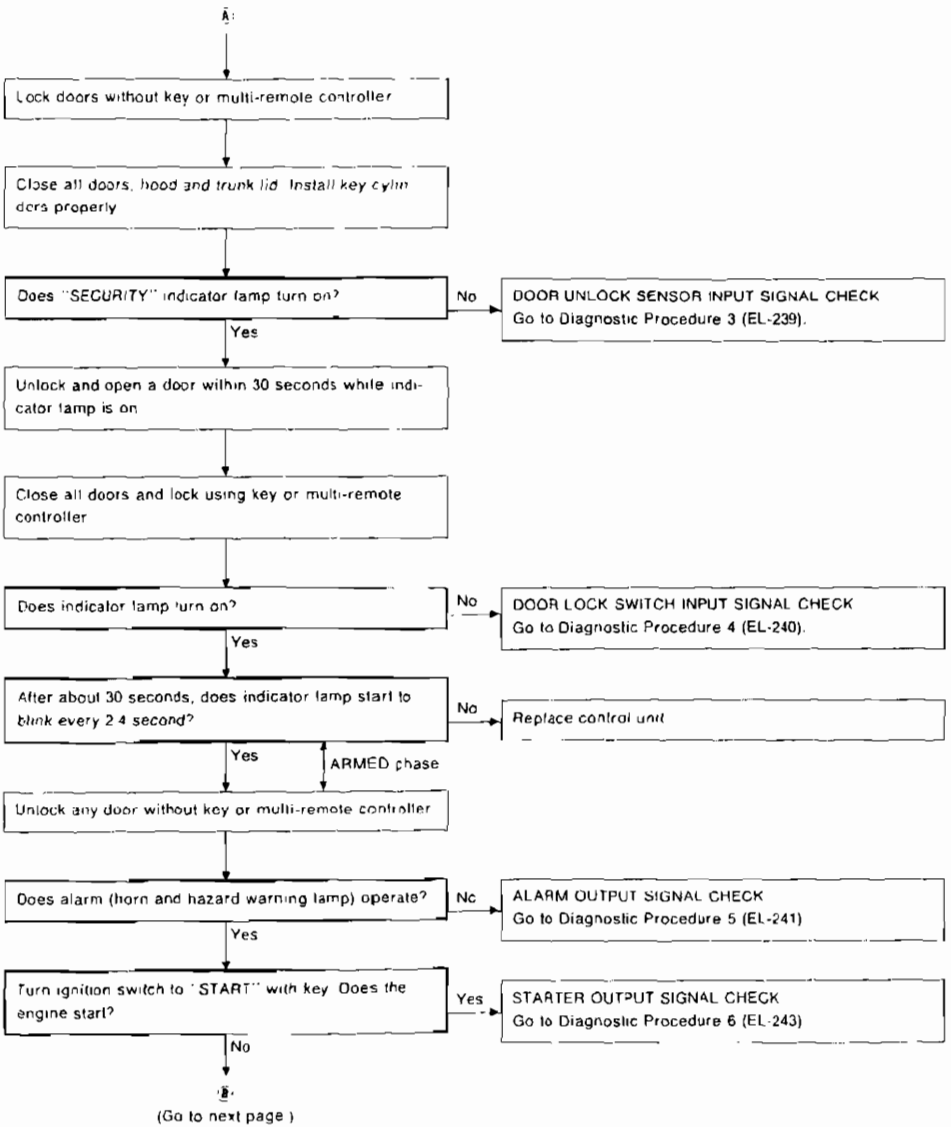
The system operation is canceled by turning ignition switch to "ACC" at any step in the following:

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

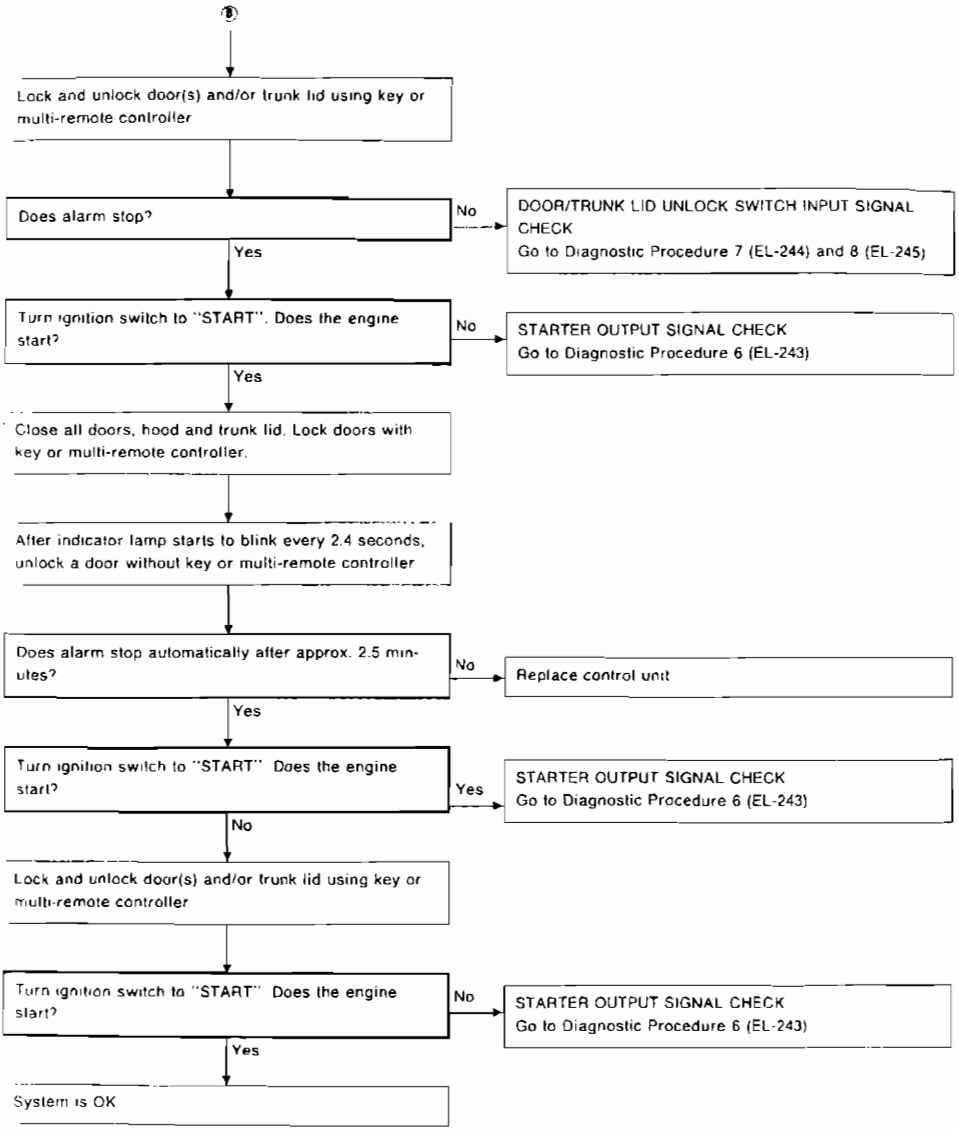
in the following flow chart.



Trouble Diagnoses (Cont'd)

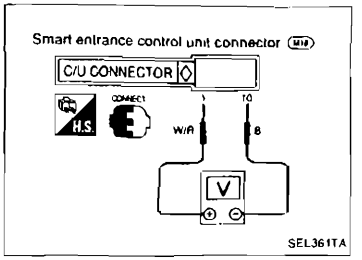


Trouble Diagnoses (Cont'd)



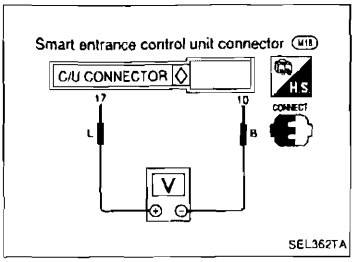
Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK



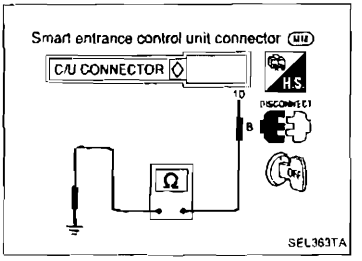
Main power supply circuit check

Terminals	Ignition switch position		
	OFF	ACC	ON
⑰ - ⑩	Battery voltage	Battery voltage	Battery voltage



Power supply circuit check for system cancel

Terminals	Ignition switch position		
	OFF	ACC	ON
⑰ - ⑩	0V	Battery voltage	Battery voltage



Ground circuit check

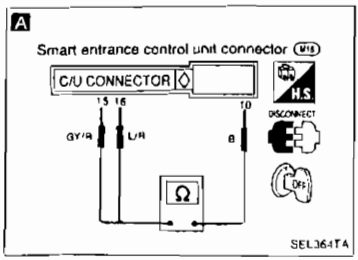
Terminals	Continuity
⑩ - Ground	Yes

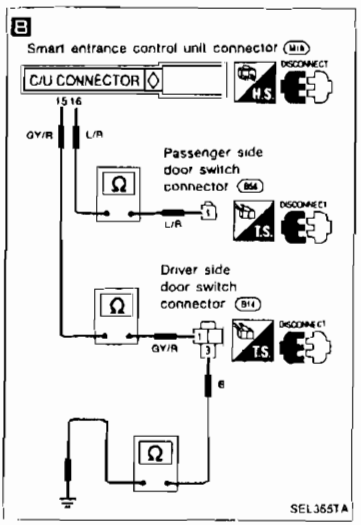
Trouble Diagnoses (Cont'd)

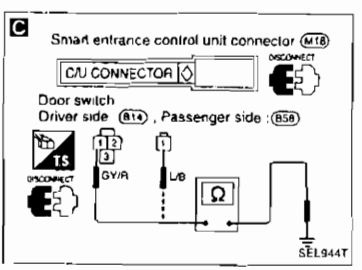
DIAGNOSTIC PROCEDURE 1

SYMPTOM: • Indicator lamp does not blink or
• Indicator lamp remains blinking every second.

Diagnostic procedure 1-(1)







A

DOOR SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑮ or ⑯ and ⑩

Condition	Continuity between ⑮ and ⑩
Driver side door is closed	No
Driver side door is opened.	Yes

Condition	Continuity between ⑯ and ⑩
Passenger side door is closed	No
Passenger side door is opened	Yes

OK → Go to Diagnostic Procedure 2 (EL-238).

NG ↓

DOOR SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-246)

NG → Replace door switch

OK ↓

B

DOOR SWITCH CIRCUIT CHECK
- Check harness continuity between control unit harness terminal ⑮ or ⑯ and door switch harness terminal
- Check harness continuity between driver side door switch harness terminal ③ and body ground.

Continuity should exist.

NG → Repair harness or connectors

OK ↓

C

Check harness continuity between door switch harness terminal and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness
(Short circuit exists between control unit harness terminal ⑮ or ⑯ and door switch harness terminals.)

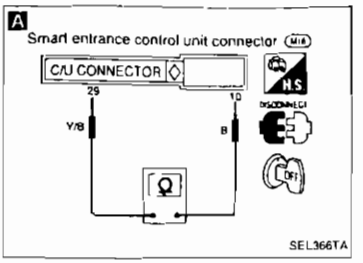
OK ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR

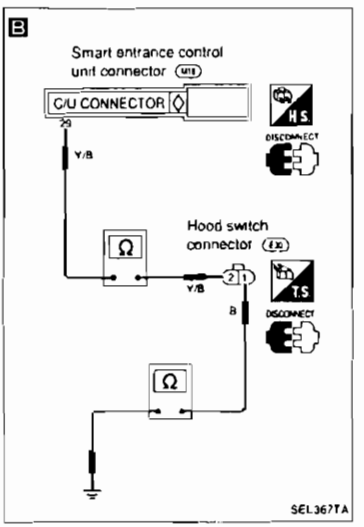
Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(2)

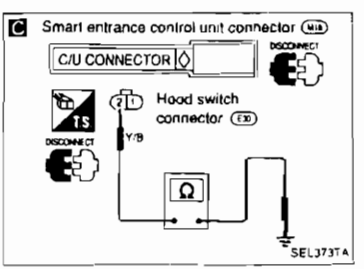
A



B



C



A

HOOD SWITCH INPUT SIGNAL CHECK
Check continuity between control unit harness terminals 29 and 10

Condition	Continuity
Hood is open	Yes
Hood is closed	No

OK → Go to Diagnostic Procedure 2 (EL-238)

NG ↓

Check hood switch and hood fitting condition

NG → Adjust installation of hood switch or hood

OK ↓

HOOD SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-246)

NG → Replace hood switch

OK ↓

B

HOOD SWITCH CIRCUIT CHECK
- Check harness continuity between control unit harness terminal 29 and hood switch harness terminal 2
- Check harness continuity between hood switch terminal 1 and body ground

Continuity should exist.

NG → Repair harness or connectors

OK ↓

C

Check harness continuity between hood switch harness terminal 2 and body ground
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness
(Short circuit exists between control unit harness terminal 29 and hood switch harness terminal 2.)

OK ↓

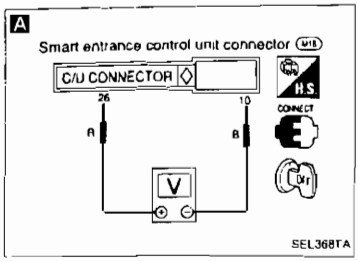
CHECK THE CONNECTIONS AT EACH CONNECTOR

EL

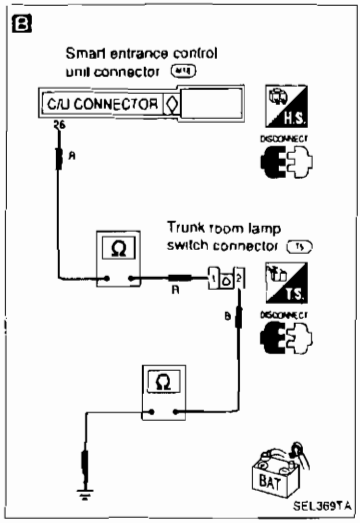
Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(3)

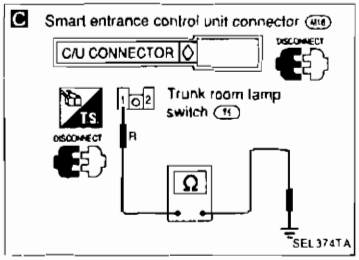
A



B



C



A

TRUNK ROOM LAMP SWITCH INPUT SIGNAL CHECK

Check voltage between control unit harness terminals 26 and 10.

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

OK → Go to Diagnostic Procedure 2 (EL-238)

NG ↓

TRUNK ROOM LAMP SWITCH CHECK

Refer to "Electrical Components Inspection" (EL-246).

NG → Replace trunk room lamp switch.

OK ↓

B

TRUNK ROOM LAMP SWITCH CIRCUIT CHECK

- Check harness continuity between control unit harness terminal 25 and trunk room lamp switch harness terminal 1.
- Check harness continuity between trunk room lamp switch harness terminal 2 and body ground

Continuity should exist.

NG → Repair harness or connectors

OK ↓

C

Check harness continuity between trunk room lamp switch harness terminal 1 and body ground

(Before checking harness continuity, control unit harness connector should be disconnected.)

Continuity should not exist.

NG → Repair harness (Short circuit exists between control unit harness terminal 25 and trunk room lamp switch harness terminal 1.)

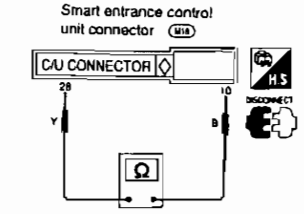
OK ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR

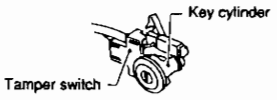
Trouble Diagnoses (Cont'd)

Diagnostic procedure 1-(4)

A

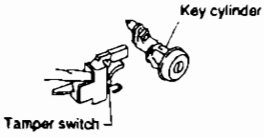


[Example]



No continuity . OK

[Example]



Read switch turns on when key cylinder is removed.

Continuity exists OK

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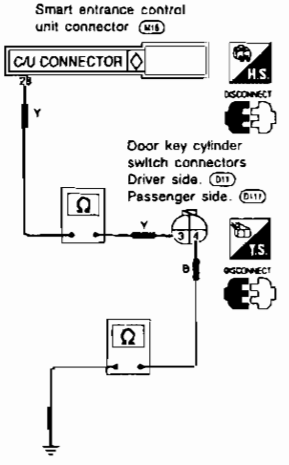
B



SEL371TA

A

KEY CYLINDER TAMPER SWITCH INPUT SIGNAL CHECK

Check continuity between control unit harness terminals 28 and 10.

Condition	Continuity
Tamper switch is	
Normal	No
Removed	Yes

OK → Go to Diagnostic Procedure 2 (EL-238).

NG ↓

KEY CYLINDER TAMPER SWITCH CHECK

Refer to "Electrical Components Inspection" (EL-247)

NG → Replace door key cylinder switch

OK ↓

B

KEY CYLINDER TAMPER SWITCH CIRCUIT CHECK

- Check harness continuity between control unit harness terminal 28 and door key cylinder switch harness terminal 3.
- Check harness continuity between door key cylinder switch terminal 4 and body ground

Continuity should exist.

NG → Repair harness and connectors.

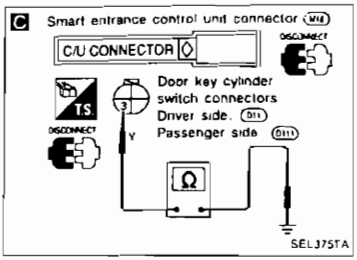
OK ↓

Ⓐ

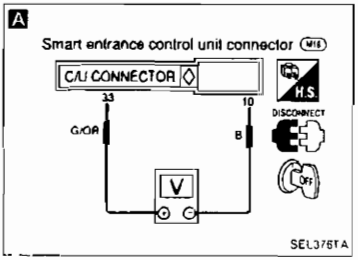
(Next page)

Trouble Diagnoses (Cont'd)

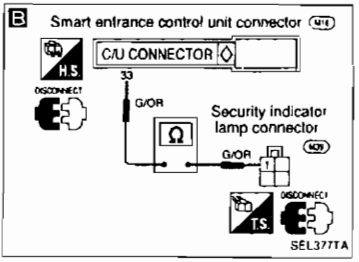
C



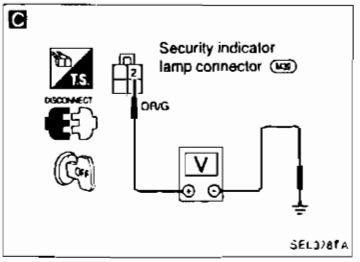
A



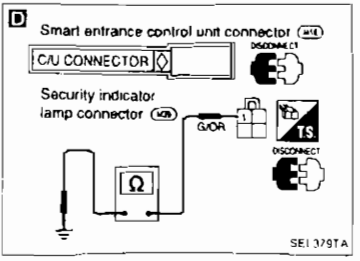
B



C



D



Ⓐ

C

Check harness continuity between door key cylinder switch harness terminal (3) and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness.
(Short circuit exists between control unit harness terminal (28) and door key cylinder switch terminal (3).)

OK ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR

DIAGNOSTIC PROCEDURE 2

SYMPTOM: • Indicator lamp does not blink or
• Indicator lamp remains "ON".

A

INDICATOR LAMP OUTPUT SIGNAL CHECK
Check voltage between control unit harness terminals (33) and (10).
Battery voltage should exist.

OK → Replace control unit

NG ↓

CHECK INDICATOR LAMP.

NG → Replace indicator lamp

OK ↓

B

INDICATOR LAMP CIRCUIT CHECK
Check harness continuity between control unit harness terminal (33) and indicator lamp harness terminal (1).
Continuity should exist.

NG → Repair harness or connectors.

OK ↓

C

Check voltage between indicator lamp harness terminal (2) and body ground.
Battery voltage should exist.

NG → Repair harness or connectors

OK ↓

D

Check harness continuity between indicator lamp harness terminal (1) and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness.
(Short circuit exists between control unit harness terminal (33) and indicator lamp harness terminal (1).)

OK ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR

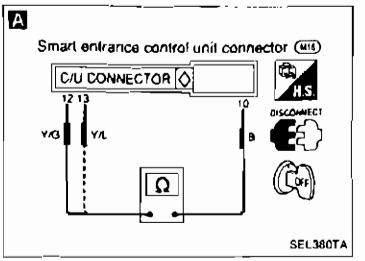
↓

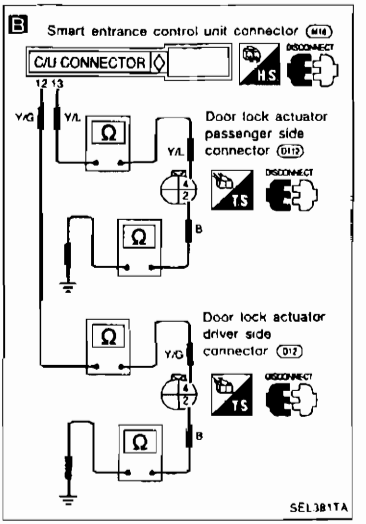
Replace control unit

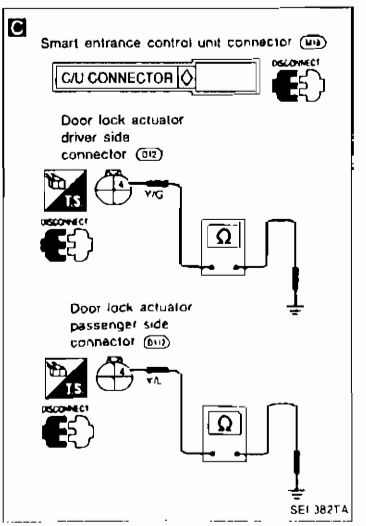
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

SYMPTOM: Indicator lamp does not come on.







A

DOOR UNLOCK SENSOR INPUT SIGNAL CHECK
Check continuity between control unit harness terminals ⑫ or ⑬ and ⑩.

Condition	Continuity between ⑫ and ⑩
Driver side door is locked	No
Driver side door is unlocked	Yes

Condition	Continuity between ⑬ and ⑩
Passenger side door is locked.	No
Passenger side door is unlocked.	Yes

OK → Go to Diagnostic Procedure 2 (EL-238)

OK → Replace control unit

NG

DOOR UNLOCK SENSOR CHECK
Refer to "Electrical Components Inspection" (EL-247).

NG → Replace door lock actuator.

OK

B

DOOR UNLOCK SENSOR CIRCUIT CHECK
- Check harness continuity between control unit harness terminal ⑫ or ⑬ and door actuator terminal ④
- Check harness continuity between door lock actuator harness terminal ② and body ground.

Continuity should exist.

NG → Repair harness or connectors

OK

C

Check harness continuity between door lock actuator harness terminal ④ and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness
(Short circuit exists between control unit harness terminal ⑫ or ⑬ and door lock actuator harness terminal ④.)

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

SYMPTOM: Indicator lamp does not come on.

A

DOOR LOCK SWITCH INPUT SIGNAL CHECK (LOCK SIGNAL)
Check continuity between control unit harness terminals (30) and (10).

Key position	Continuity
Neutral/Lock	No
Between neutral and lock	Yes

OK → Go to Diagnostic Procedure 2 (EL-238)
OK → Replace control unit.

NG

DOOR LOCK SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-247).

NG → Replace key cylinder switch

OK

B

DOOR LOCK SWITCH CIRCUIT CHECK
- Check harness continuity between control unit harness terminal (30) and door key cylinder switch terminal
- Check harness continuity between door key cylinder switch terminal and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK

C

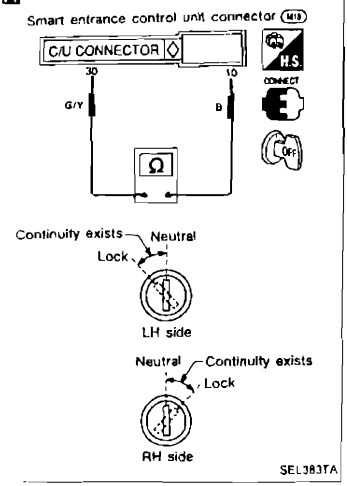
Check harness continuity between door key cylinder switch terminal and body ground
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness
(Short circuit exists between control unit harness terminal (30) and door key cylinder switch terminal.)

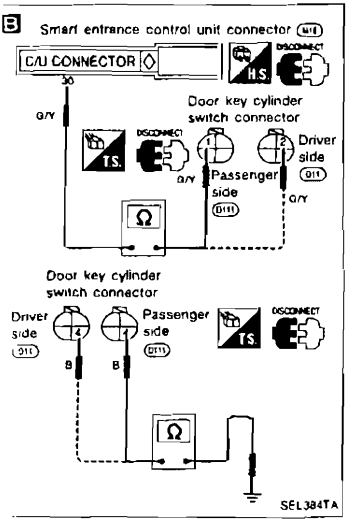
OK

CHECK THE CONNECTIONS AT EACH CONNECTOR

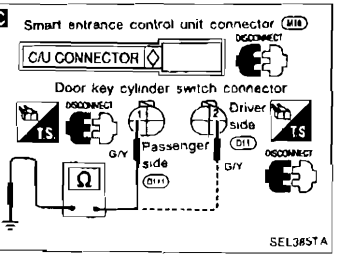
A



B



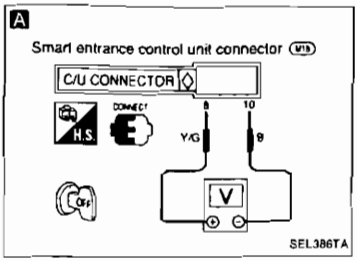
C

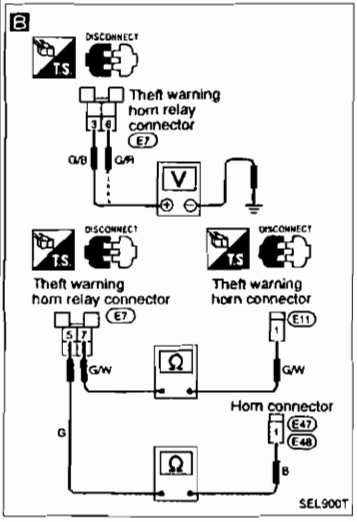


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

SYMPTOM: Alarm does not operate.





A

ALARM SIGNAL OUTPUT CHECK
Check voltage between control unit harness terminals (8) and (10).

Condition	Voltage
Except alarm phase	Approx. 12V
Alarm phase	Voltage fluctuates between 12V and 0V

NG → CHECK THE FOLLOWING
- Harness continuity between control unit harness terminal (8) and theft warning horn relay harness terminal (2)
- Harness continuity between fuse and theft warning horn relay harness terminal (1).
- Harness continuity between control unit harness terminal (8) and horn relay harness terminal (1)
- Harness continuity between fuse and horn relay harness terminal (2).
- Theft warning horn relay.
  Refer to "Electrical Components Inspection" (EL-248).

OK

B

HORN CIRCUIT CHECK
- Check voltage between theft warning horn relay harness terminal (3) and body ground, terminal (6) and body ground
  Battery voltage should exist.
- Check harness continuity between theft warning horn relay harness terminals (5), (7) and horn harness terminals.
  Continuity should exist.

OK → HORN CHECK
Refer to "Electrical Components Inspection" (EL-247)

OK → THEFT WARNING HORN RELAY CHECK
Refer to "Electrical Components Inspection" (EL-248)

OK → Ⓐ (Next page)

NG → Repair harness or connectors

NG → Replace horn

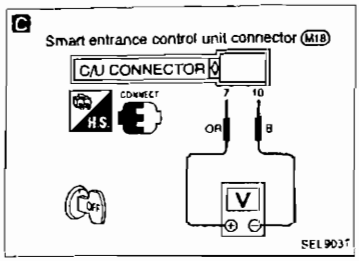
NG → Replace relay

OK → ALARM SIGNAL INPUT CHECK
- Door switch circuit
  Refer to Diagnostic Procedure 1-(1) (EL-234)
- Hood switch circuit
  Refer to Diagnostic Procedure 1-(2) (EL-235).
- Trunk room lamp switch circuit
  Refer to Diagnostic Procedure 1-(3) (EL-236)
- Key cylinder tamper switch circuit
  Refer to Diagnostic Procedure 1-(4) (EL-237).
- Door unlock sensor circuit
  Refer to Diagnostic Procedure 3 (EL-239).

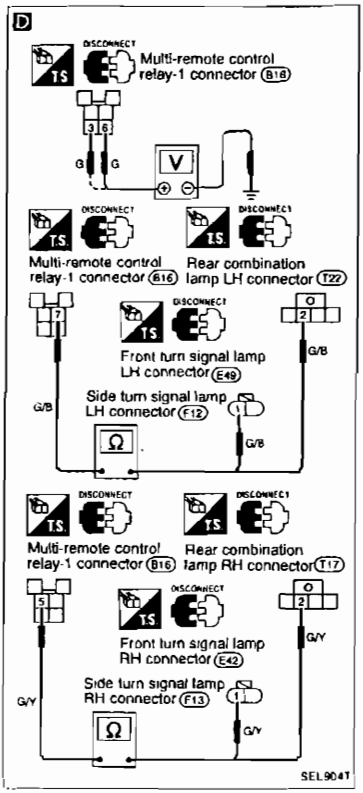
OK → Replace control unit

Trouble Diagnoses (Cont'd)

C



D



Ⓐ

C

FLASHER OUTPUT CHECK

Check voltage between control unit harness terminals ⑦ and ⑩

Condition	Voltage
Except alarm phase	Approx. 12V
Alarm phase	Voltage fluctuates between 12V and 0V

NG → CHECK THE FOLLOWING.
- Harness continuity between control unit harness terminal ⑦ and multi-remote control relay-1 harness terminal ②
- Harness continuity between fuse and multi-remote control relay-1 harness terminal ①
- Harness continuity between control unit harness terminal ⑦ and multi-remote control relay-1 harness terminal ①
- Harness continuity between fuse and multi-remote control relay-1 harness terminal ②
- Multi-remote control relay-1
  Refer to "Electrical Components Inspection" (EL-248).

OK ↓

D

HAZARD WARNING LAMP CIRCUIT CHECK
- Check voltage between multi-remote control relay-1 harness terminals ⑥, ③ and body ground.

Battery voltage should exist.
- Check harness continuity between multi-remote control relay-1 harness terminal ⑦ and rear combination lamp LH harness terminal ②.
- Check harness continuity between multi-remote control relay-1 harness terminal ⑦ and front/side turn signal lamp LH harness terminal ①
- Check harness continuity between multi-remote control relay-1 harness terminal ⑤ and rear combination lamp RH harness terminal ②.
- Check harness continuity between multi-remote control relay-1 harness terminal ⑤ and front/side turn signal lamp RH harness terminal ①

Continuity should exist.

NG → Repair harness or connectors

OK ↓

Does hazard warning lamp come on when pushing hazard warning lamp switch?

No → Check turn signal lamp system
Refer to "TURN SIGNAL LAMP" (EL-93)

Yes ↓

CHECK THE CONNECTIONS AT EACH CONNECTOR.

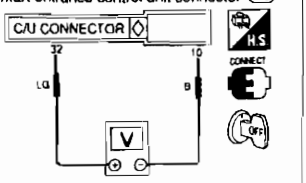
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

SYMPTOM:
- **STARTER MOTOR can be operated. (Starter killed phase) or**
- **STARTER MOTOR cannot be operated after the theft warning system is deactivated.**

A

Smart entrance control unit connector (M18)



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A

STARTER MOTOR KILL OUTPUT SIGNAL CHECK
Check voltage between control unit harness terminals (32) and (10).

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

NG → CHECK THE FOLLOWING.
- Harness continuity between control unit harness terminal (32) and theft warning relay harness terminal (2)
- Harness continuity between theft warning relay harness terminal (1) and fuse
- Theft warning relay
  Refer to "Electrical Components Inspection" (EL-248)

OK → Replace control unit.

OK

THEFT WARNING RELAY CHECK
Refer to "Electrical Components Inspection" (EL-248)

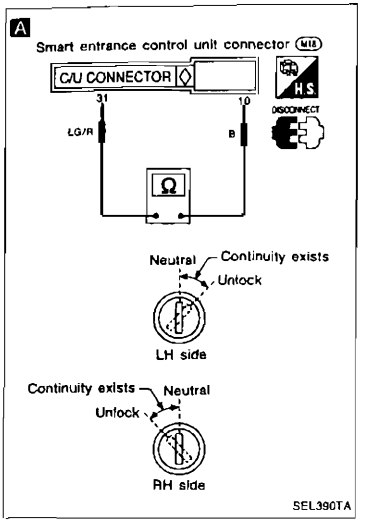
OK → CHECK THE CONNECTIONS AT EACH CONNECTOR.

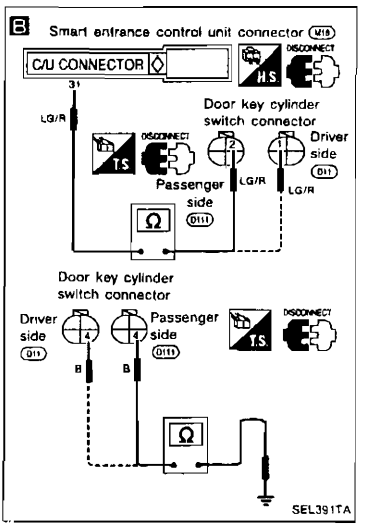
NG → Replace relay

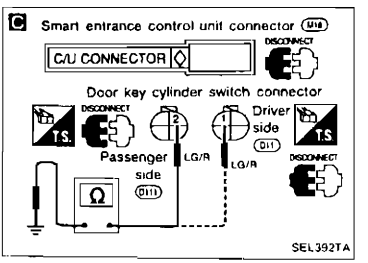
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

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







A

DOOR UNLOCK SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)
Check continuity between control unit harness terminals 31 and 10.

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

OK → ALARM OUTPUT SIGNAL CHECK
Go to Diagnostic Procedure 5. (EL-241).

NG ↓

DOOR UNLOCK SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-247).

NG → Replace key cylinder switch.

OK ↓

B

DOOR UNLOCK SWITCH CIRCUIT CHECK
- Check harness continuity between control unit harness terminal 31 and door key cylinder switch terminal.
- Check harness continuity between door key cylinder switch terminal and body ground.

Continuity should exist.

NG → Repair harness or connectors.

OK ↓

C

Check harness continuity between door key cylinder switch terminal and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

NG → Repair harness.
(Short circuit exists between control unit harness terminal 31 and door key cylinder switch terminal.)

OK ↓

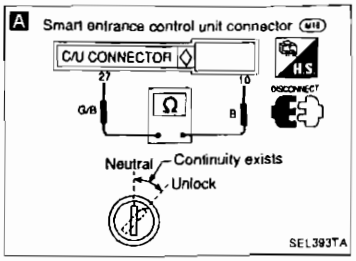
CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

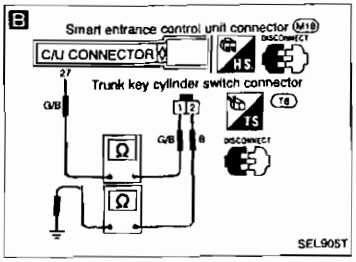
DIAGNOSTIC PROCEDURE 8

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

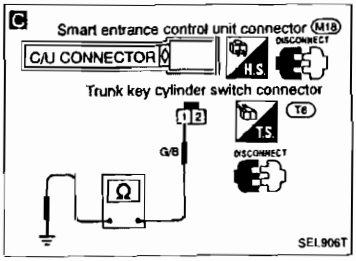
A



B



C



A

TRUNK KEY CYLINDER SWITCH INPUT SIGNAL CHECK (UNLOCK SIGNAL)
Check continuity between control unit harness terminals ㉗ and ⑩.

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

OK → ALARM OUTPUT SIGNAL CHECK
Go to Diagnostic Procedure 5. (EL-241)

NG

TRUNK KEY CYLINDER SWITCH CHECK
Refer to "Electrical Components Inspection" (EL-247).

NG → Replace trunk key cylinder switch.

OK

B

TRUNK KEY CYLINDER SWITCH CIRCUIT CHECK
- Check harness continuity between control unit harness terminal ㉗ and trunk key cylinder switch terminal ①
- Check harness continuity between trunk key cylinder switch terminal ② and body ground.

NG → Repair harness or connectors.

OK

C

Check harness continuity between trunk key cylinder switch harness terminal ① and body ground.
(Before checking harness continuity, control unit harness connector should be disconnected.)
Continuity should not exist.

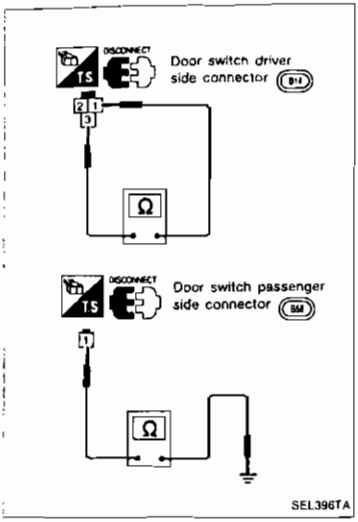
NG → Repair harness.
(Short circuit exists between control unit harness terminal ㉗ and trunk key cylinder switch harness terminal ①)

OK

CHECK THE CONNECTIONS AT EACH CONNECTOR.

Trouble Diagnoses (Cont'd)

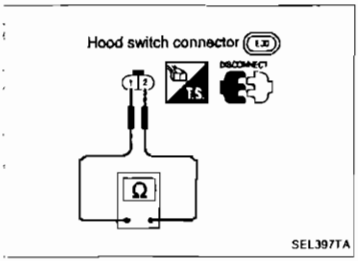
ELECTRICAL COMPONENTS INSPECTION



Door switches

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

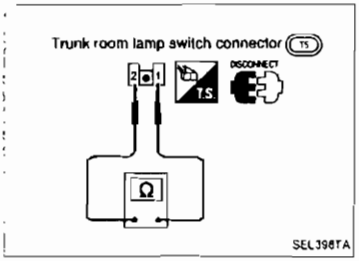
Terminal No.	Condition	Continuity
Driver side: ① - ③	Door switch is pushed	No
Passenger side: ① - body ground	Door switch is released.	Yes



Hood switch

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

Terminal No.	Condition	Continuity
① - ②	Hood switch is pushed	No
	Hood switch is released	Yes



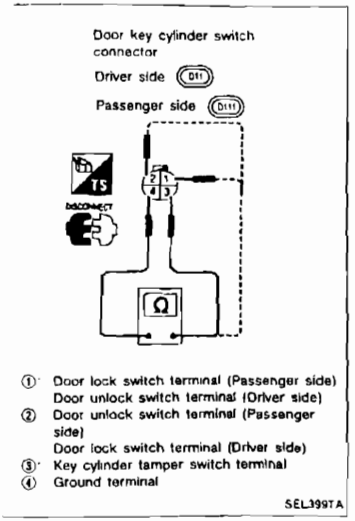
Trunk room lamp switch

Check continuity between terminals when trunk lid is closed and opened.

Terminal No.	Condition	Continuity
① - ②	Trunk lid is closed.	No
	Trunk lid is opened.	Yes

Trouble Diagnoses (Cont'd)

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

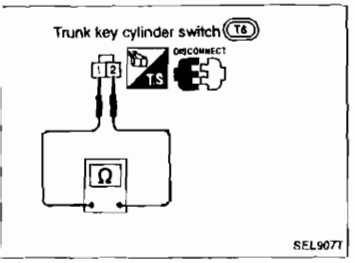


① Door lock switch terminal (Passenger side)
Door unlock switch terminal (Driver side)
② Door unlock switch terminal (Passenger side)
Door lock switch terminal (Driver side)
③ Key cylinder tamper switch terminal
④ Ground terminal

SEL399TA

- **Door key cylinder switch**

	Terminal No.	Condition	Continuity
Tamper switch	③ - ④	Key cylinder is installed	No
		Key cylinder is removed	Yes
Door lock switch	Driver side: ② - ④ Passenger side: ① - ④	Key position is neutral or lock.	No
		Key position is between neutral and lock.	Yes
Door unlock switch	Driver side ① - ④ Passenger side ② - ④	Key position is neutral or unlock	No
		Key position is between neutral and unlock.	Yes



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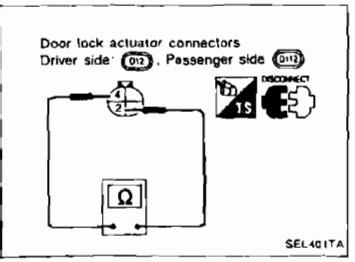
- **Trunk key cylinder switch (unlock switch)**

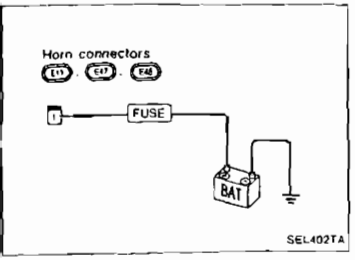
Terminal No.	Condition	Continuity
① - ②	Key position is neutral	No
	Key position is unlock	Yes



SEL401TA

- **Door lock actuator (Door unlock sensor)**

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

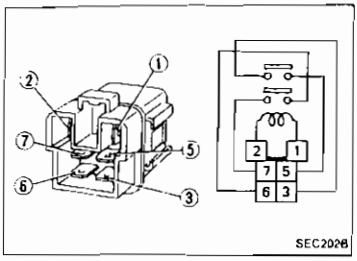


SEL402TA

Horns

Supply horn terminal with battery voltage and check horn operation.

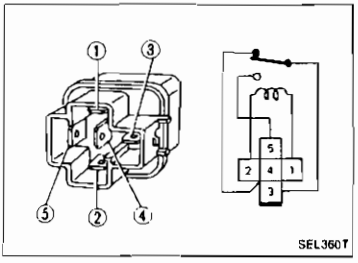
Trouble Diagnoses (Cont'd)



Theft warning horn relay and multi-remote control relay-1

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

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

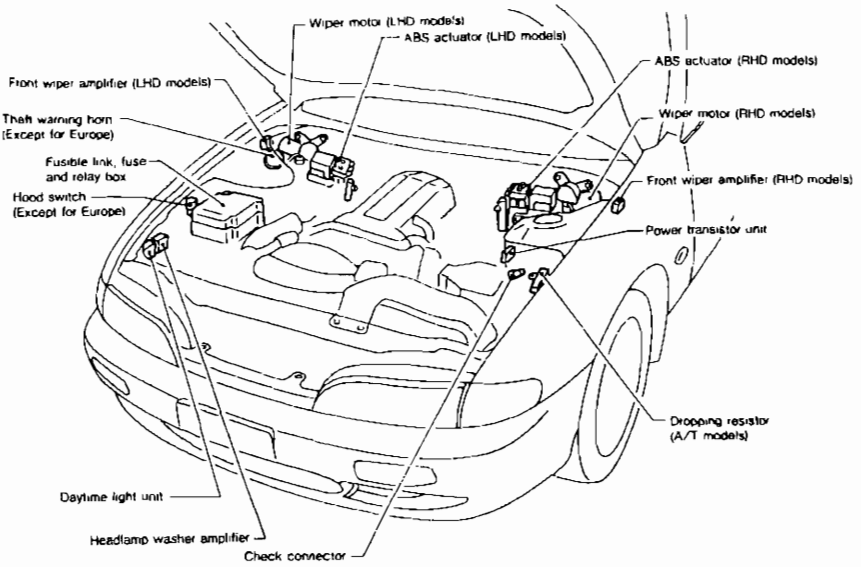


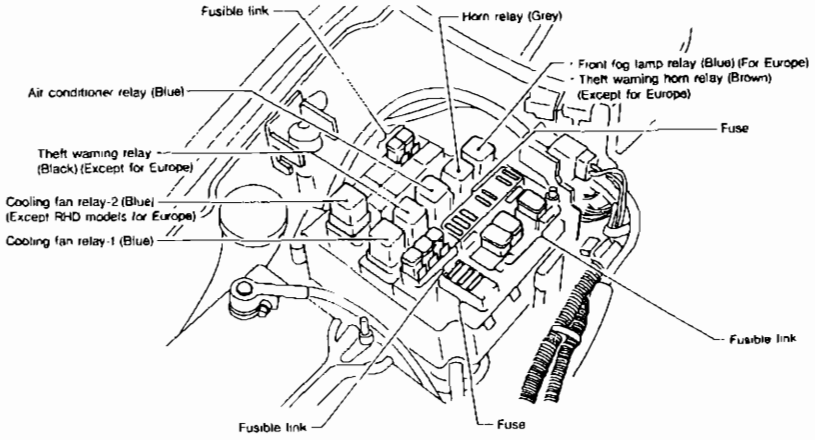
Theft warning relay

Check continuity between terminals ③ and ④

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

Engine Compartment





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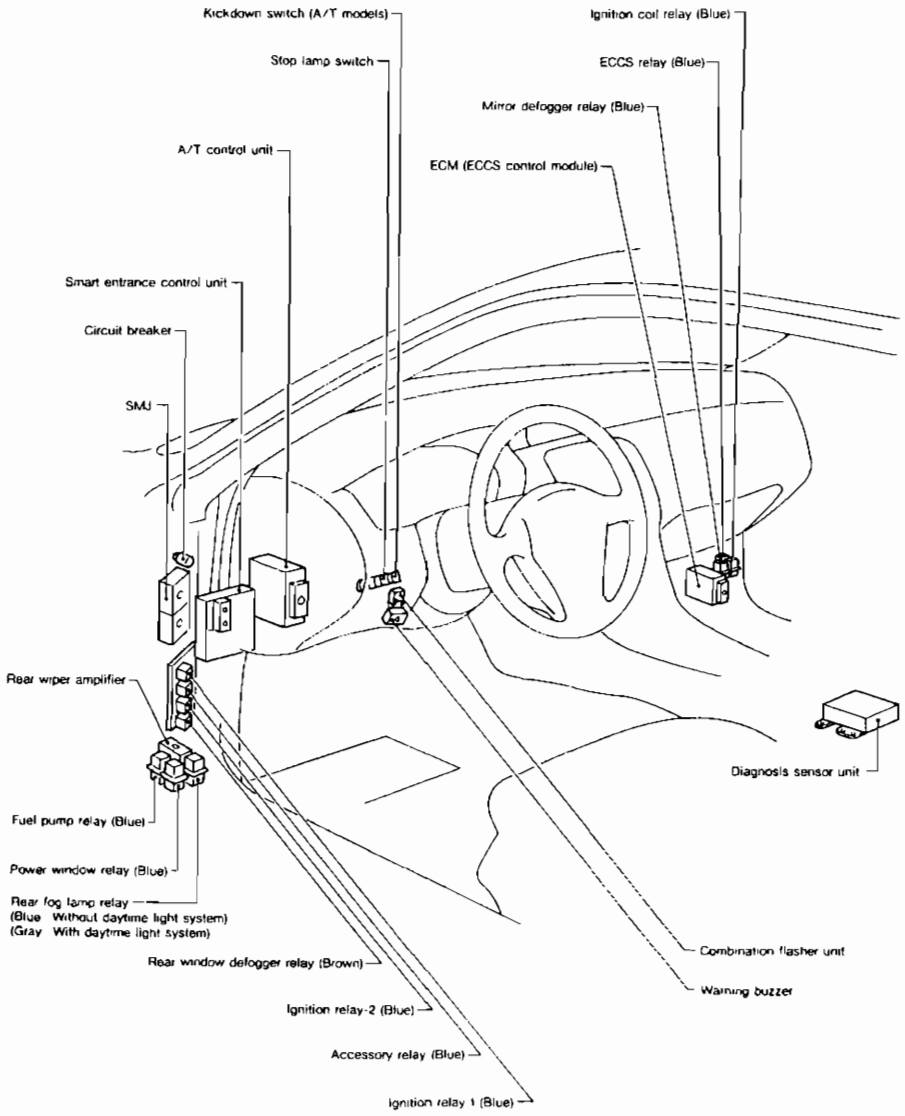
Passenger Compartment

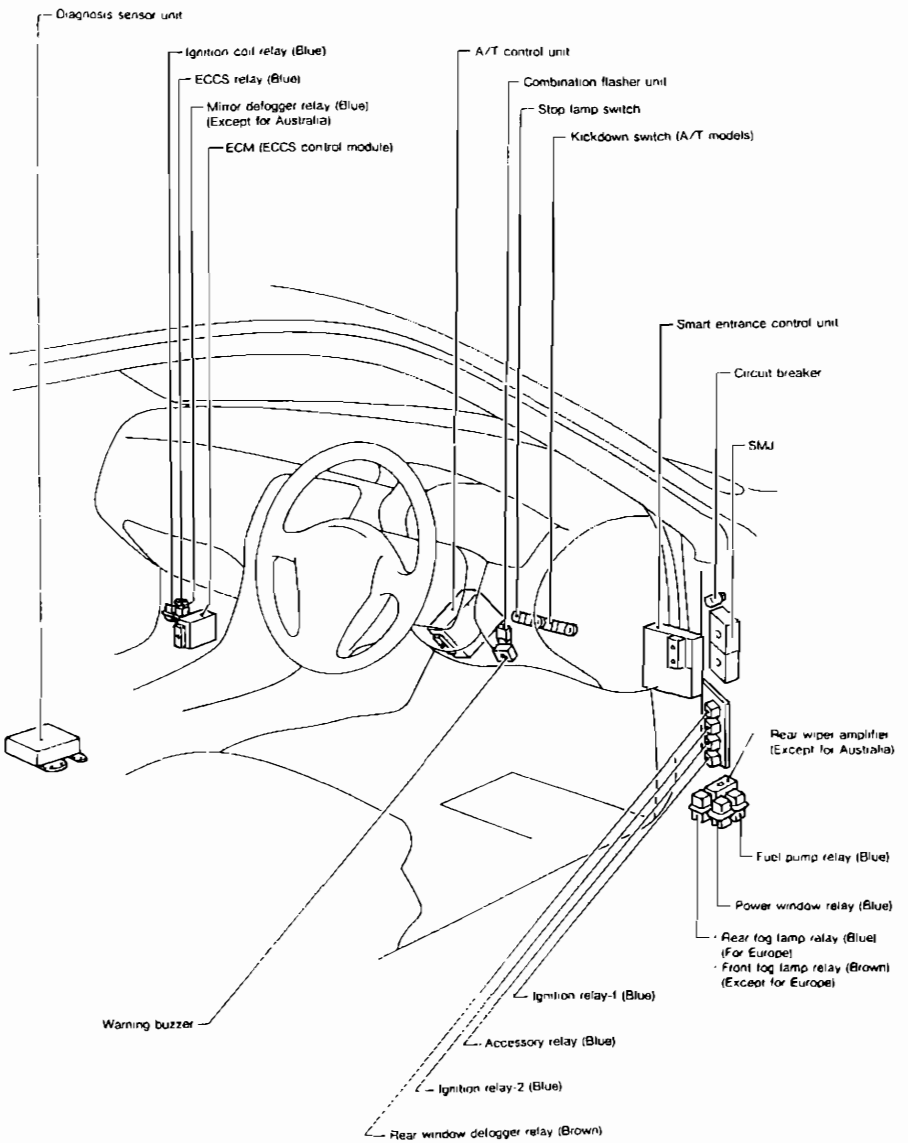
LHD MODELS



SEL862T

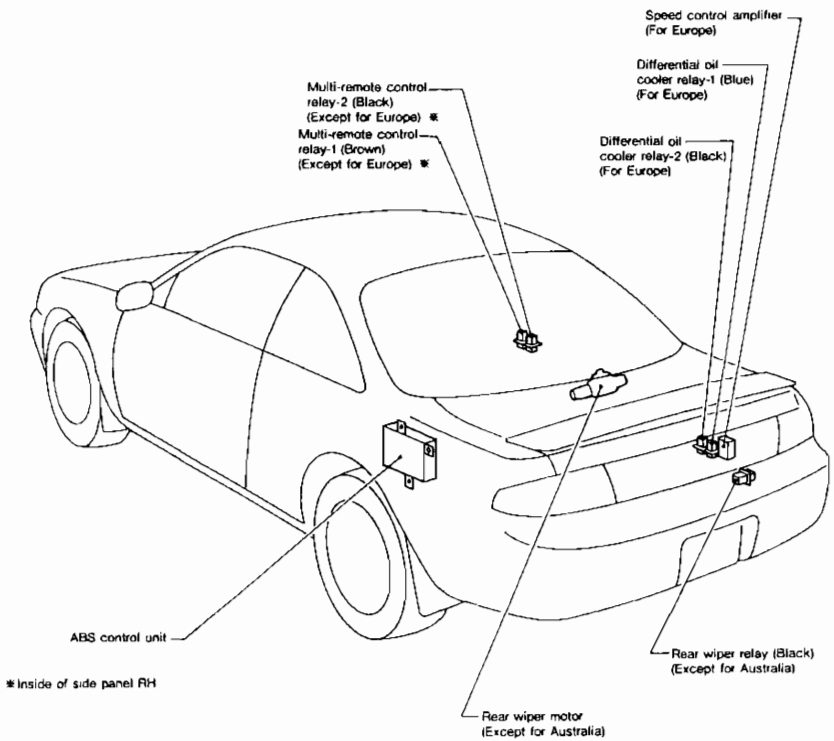
Passenger Compartment (Cont'd)

RHD MODELS



SEL883T

Trunk Compartment

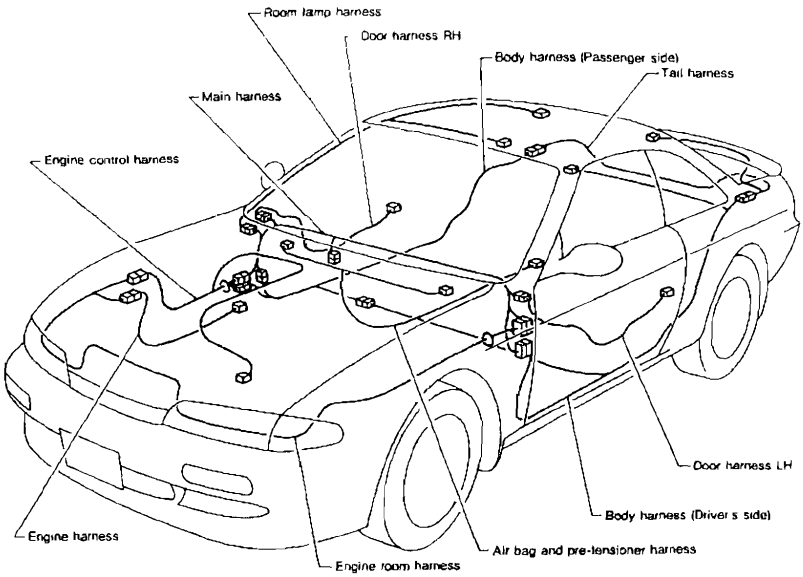


*Inside of side panel RH

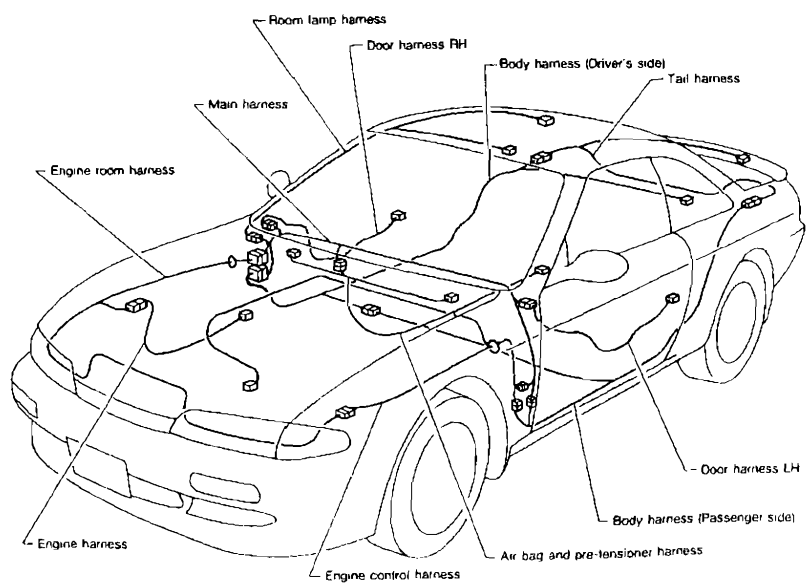
SEL864T

Outline

LHD MODELS

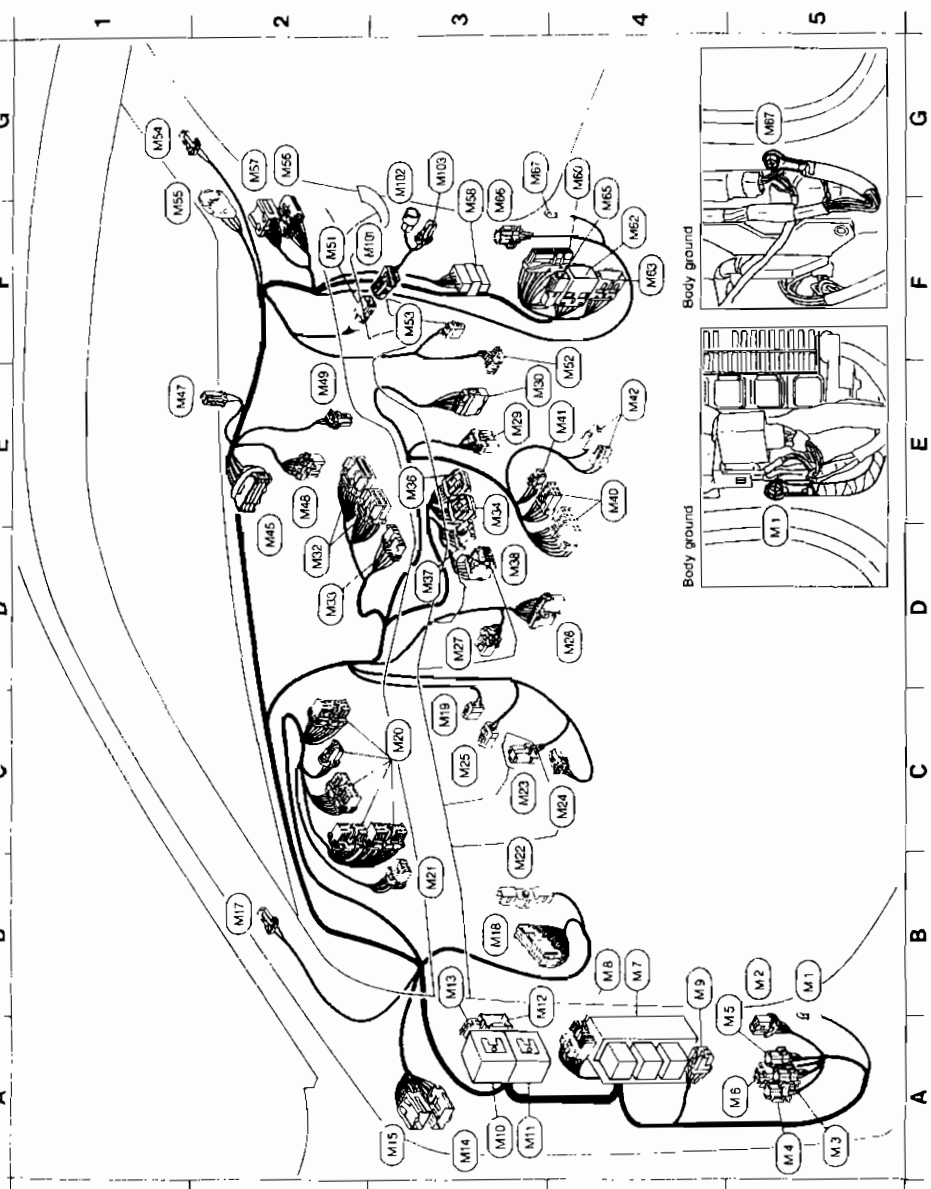


RHD MODELS



Main Harness

LHD MODELS



Main Harness (Cont'd)

B5 (M1) : Body ground
B5 (M2) : Rear wiper amplifier
A5 (M3) : Fuel pump relay
A5 (M4) : Power window relay
A5 (M5) : Rear fog lamp relay (Models without daytime light system)
A5 (M6) : Rear fog lamp relay (Models with daytime light system)
B4 (M7) : Fuse block
B4 (M8) : Data link connector for CONSULT
B4 (M9) : Rear window defogger relay
A3 (M10) : To (E10) (SMJ)
A3 (M11) : To (E1), (SMJ)
B3 (M12) : To (E102)
B3 (M13) : Circuit breaker
A3 (M14) : To (D1)
A3 (M15) : To (D2)
B2 (M17) : Pillar speaker LH
B3 (M18) : Smart entrance control unit
C3 (M19) : Kickdown switch (A/T models)
C3 (M20) : Combination meter
B3 (M21) : Illumination control switch
B3 (M22) : A/T control unit (A/T models)
C3 (M23) : Combination flasher unit
C4 (M24) : Buzzer
C3 (M25) : Stop lamp switch
D3 (M27) : Air mix door motor
D4 (M28) : Mode door motor
E3 (M29) : Bi-level door motor
E3 (M30) : To (25)
D2 (M32) : Push control unit
D2 (M33) : Fan switch
E3 (M34) : Hazard switch
E3 (M36) : Headlamp washer switch
D3 (M37) : Rear window defogger switch
D3 (M38) : Rear fog lamp switch
E4 (M40) : Radio
E4 (M41) : Not used
E4 (M42) : Cigarette lighter
D2 (M45) : Joint connector
E1 (M47) : Not used
E2 (M48) : Intake door motor
E2 (M49) : Thermo control amplifier
F2 (M51) : To (M10)
E4 (M52) : Fan resistor
F3 (M53) : Blower motor
G1 (M54) : Pillar speaker RH
F1 (M55) : To (R1)
G2 (M56) : To (D76)
G2 (M57) : To (D79)
F3 (M58) : Joint connector
G4 (M60) : To (F4)
F4 (M62) : To (F7) (A/T models)
F4 (M63) : To (B51)
F4 (M65) : To (F8) (M/T models)
F3 (M66) : Mirror defogger relay
G3 (M67) : Body ground
F3 (M101) : To (M55)
G3 (M102) : Glove box lamp
G3 (M103) : Glove box lamp switch

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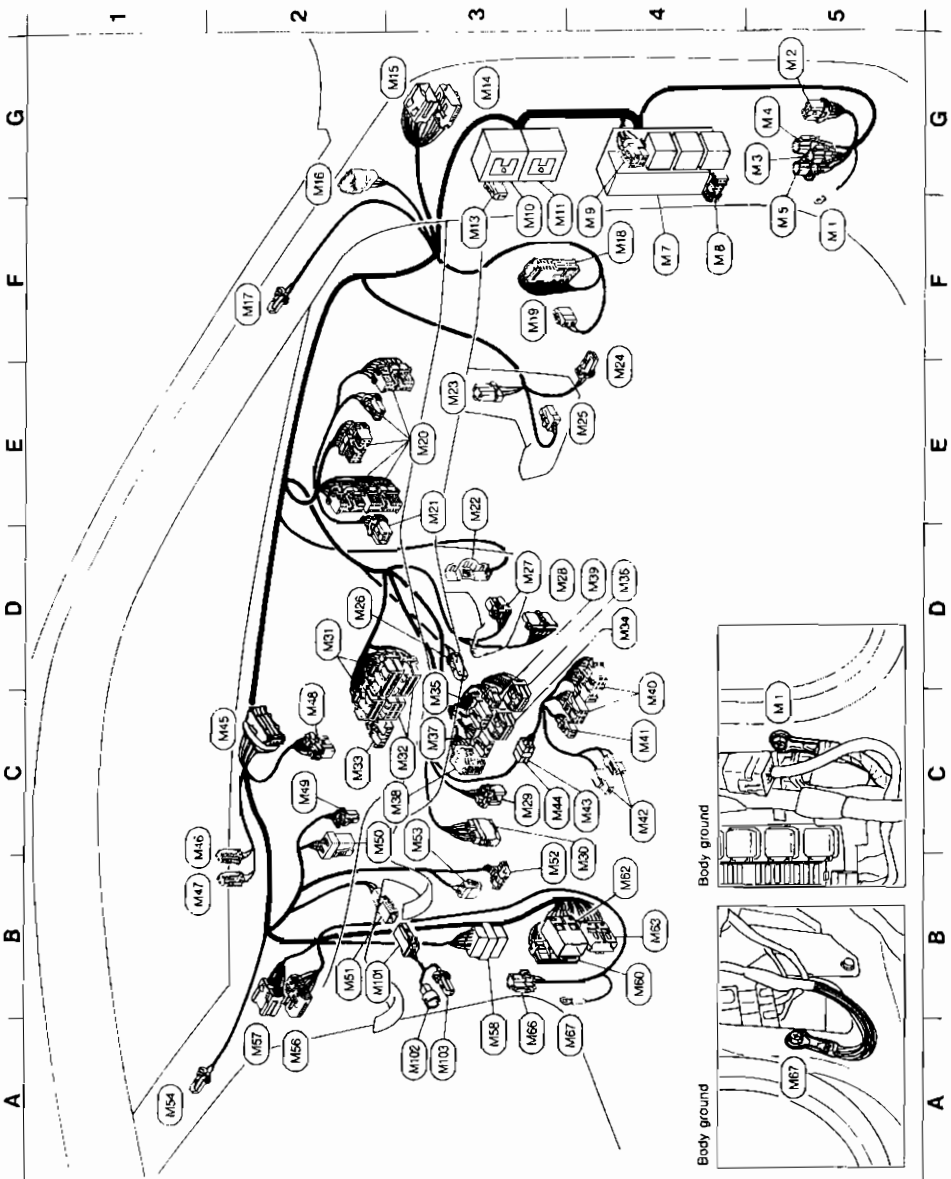
Main Harness (Cont'd)

RHD MODELS



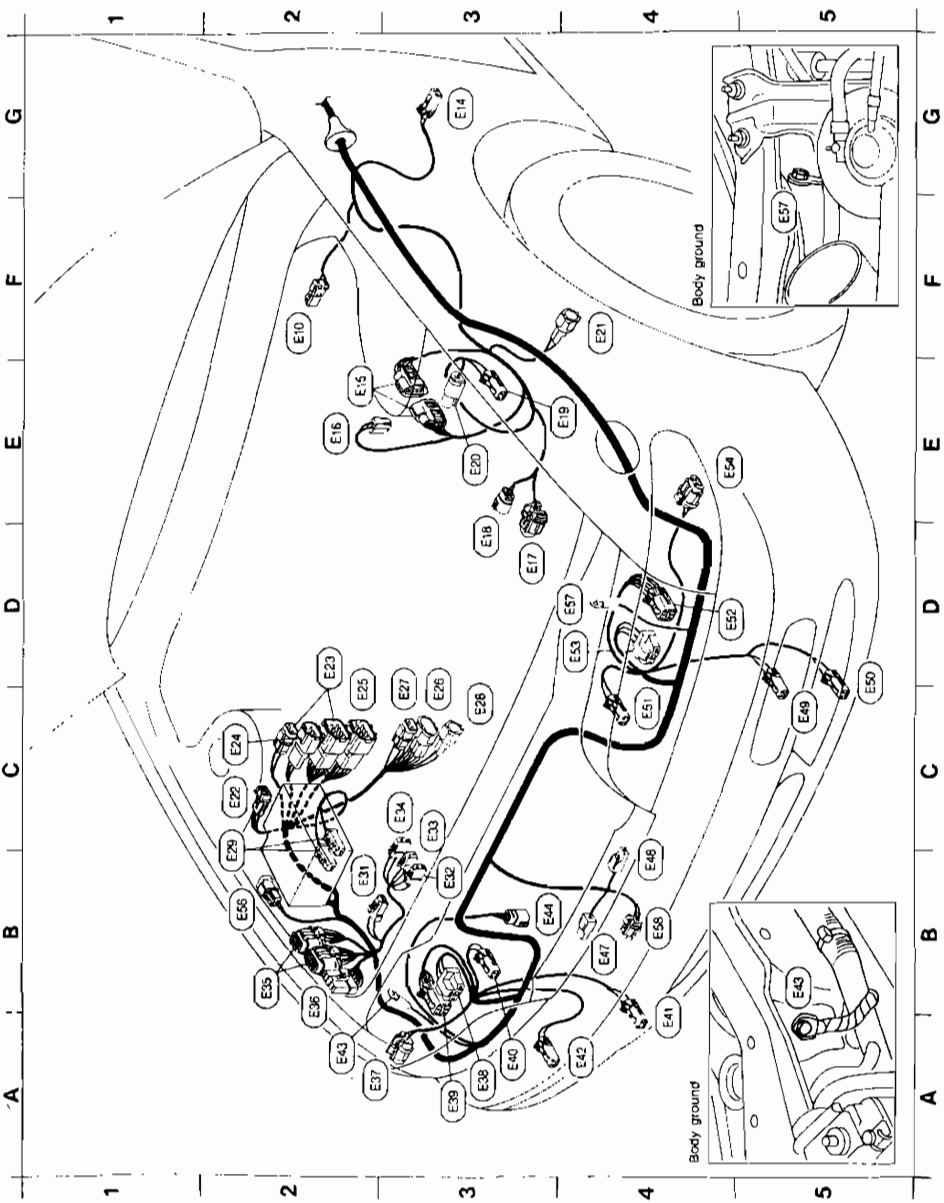
F5 : Body ground
G5 : Rear wiper amplifier (Except for Australia)
G5 : Fuel pump relay
G5 : Power window relay
F5 : Rear fog lamp relay (For Europe)
F4 : Fuse block
F4 : Data link connector for CONSULT
F4 : Rear window defogger relay
F3 : To E10 (SMJ)
F3 : To E11 (SMJ)
F3 : Circuit breaker
G3 : To D1
G3 : To D2
G2 : To R1
F2 : Pillar speaker RH
F4 : Smart entrance control unit
F3 : Kick-down switch (A/T models)
E3 : Combination meter
E3 : Illumination control switch
E3 : A/T control unit (A/T models)
E3 : Combination flasher unit
E4 : Buzzer
E4 : Stop lamp switch
D2 : In-vehicle sensor (Auto A/C)
D3 : Air mix door motor
D3 : Mode door motor
C3 : Bi-level door motor
B4 : To Z5
D2 : Auto A/C unit (Auto A/C)
C3 : Push control unit (Except auto A/C)
C2 : Fan switch (Except auto A/C)
D4 : Hazard switch (For Europe)
C3 : Hazard switch (Except for Europe)
D4 : Headlamp washer switch (For Europe)
C3 : Rear window defogger switch
C3 : Rear fog lamp switch (For Europe)
D4 : Security indicator (Except for Europe)
C4 : Radio
C4 : Not used
C4 : Cigarette lighter

C4 : Diode (Except for Europe)
C3 : Diode (Except for Europe)
C2 : Joint connector
B1 : Sunload sensor (Auto A/C)
B1 : Not used (For Europe)
C2 : Intake door motor
C2 : Thermo control amplifier
C2 : Fan control amplifier (Auto A/C)
B2 : To M109 (Except for Australia)
B3 : Fan resistor (Except auto A/C)
C3 : Blower motor
A1 : Pillar speaker LH
A2 : To D103
A2 : To D102
A3 : Joint connector (For Europe)
B4 : To T4
B4 : To T7 (A/T models)
B4 : To B51 (Models with ABS)
A3 : Mirror defogger relay (Except for Australia)
A4 : Body ground

B2 : To M51
A3 : Glove box lamp (Except for Australia)
A3 : Glove box lamp switch

Engine Room Harness

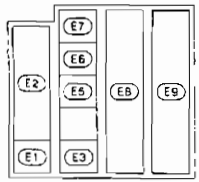
ENGINE COMPARTMENT (LHD models)



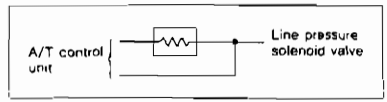
(E1) Cooling fan relay-2
(E2) : Fusible link and fuse block-1
(E3) : Cooling fan relay-1
(E5) : Air conditioner relay
(E6) : Horn relay
(E7) : Front fog lamp relay
(E8) : Fusible link and fuse block-2
(E9) : Fusible link and fuse block-3
Fusible link and fuse box

F2 (E10) : Brake fluid level switch
G3 (E14) : Side turn signal lamp LH
E2 (E15) : Power transistor unit
E2 (E16) : Wastegate valve control solenoid valve
D3 (E17) : Compressor
D3 (E18) : Power steering oil pressure switch
E3 (E19) : Dropping resistor (A/T models)
E3 (E20) : Check connector
F4 (E21) : Front wheel sensor LH (For ABS)
C2 (E22) : Boost pressure sensor
D2 (E23) : Inhibitor switch (A/T models)
C2 (E24) : Revolution sensor (A/T models)
C2 (E25) : To terminal code assembly (A/T models)
C3 (E26) : To (E201)
C3 (E27) : To (E202)
C3 (E28) : To (E203)
B2 (E29) : Battery
B2 (E31) : Washer fluid level switch
B3 (E32) : Headlamp washer motor
C3 (E33) : Front washer motor
C3 (E34) : Rear washer motor
B2 (E35) : Daytime light unit
B2 (E36) : Headlamp washer amplifier
A2 (E37) : Clearance lamp RH
A3 (E38) : Headlamp RH outer
A3 (E39) : Headlamp aiming motor RH
A3 (E40) : Headlamp RH inner
A4 (E41) : Front fog lamp RH
A4 (E42) : Front turn signal lamp RH
A2 (E43) : Body ground
B3 (E44) : Cooling fan motor
B4 (E47) : Horn (High)
B4 (E48) : Horn (Low)
C5 (E49) : Front turn signal lamp LH
C5 (E50) : Front fog lamp LH
C4 (E51) : Headlamp LH inner
D4 (E52) : Headlamp aiming motor LH
D4 (E53) : Headlamp LH outer
E4 (E54) : Clearance lamp LH
B2 (E56) : To (F20)
D4 (E57) : Body ground
B4 (E58) : Ambient sensor (For outside temperature)

Fusible link and fuse box



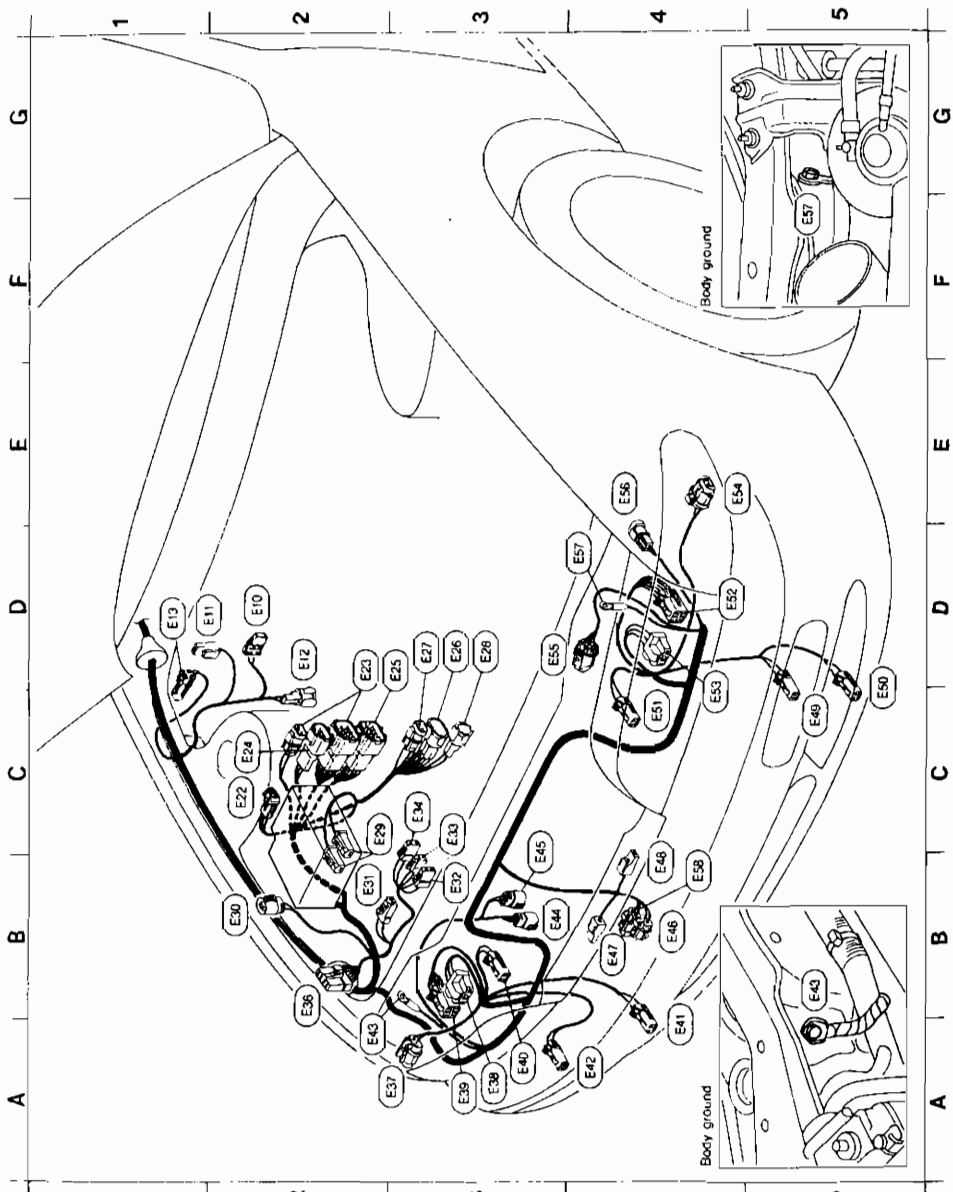
Dropping resistor (E19)



SEL869T

Engine Room Harness (Cont'd)

ENGINE COMPARTMENT (RHD models)



Engine Room Harness (Cont'd)

(E1) : Cooling fan relay-2 (Except for Europe)
(E2) : Fusible link and fuse block-1
(E3) : Cooling fan relay-1
(E4) : Theft warning relay (Except for Europe)
(E5) : Air conditioner relay
(E6) : Horn relay
(E7) : Theft warning horn relay (Except for Europe)
Front fog lamp relay (For Europe)
(E8) : Fusible link and fuse block-2
(E9) : Fusible link and fuse block-3

(Fusible link and fuse box)

D2 (E10) : Brake fluid level switch
D1 (E11) : Theft warning horn (Except for Europe)
D2 (E12) : Front wheel sensor RH (For ABS)
D1 (E13) : Side turn signal lamp RH
C2 (E22) : Boost pressure sensor
D2 (E23) : Inhibitor switch (A/T models)
C2 (E24) : Revolution sensor (A/T models)
D3 (E25) : To terminal code assembly (A/T models)
D3 (E26) : To (E20)
D3 (E27) : To (E202)
D3 (E28) : To (E203)
C2 (E29) : Battery
B2 (E30) : Hood switch (Except for Europe)
B2 (E31) : Washer fluid level switch
B3 (E32) : Headlamp washer motor (For Europe)
C3 (E33) : Front washer motor
C3 (E34) : Rear washer motor (Except for Australia)
B2 (E35) : Headlamp washer amplifier (For Europe)
A3 (E37) : Clearance lamp RH
A3 (E38) : Headlamp RH outer
A3 (E39) : Headlamp aiming motor RH (For Europe)
A3 (E40) : Headlamp RH inner
A4 (E41) : Front fog lamp RH
A4 (E42) : Front turn signal lamp RH
A2 (E43) : Body ground
B3 (E44) : Cooling fan motor (Except for Europe)
B3 (E45) : Cooling fan motor (For Europe)
B4 (E46) : Ambient sensor (For auto A/C)
B4 (E47) : Horn (High)
B4 (E48) : Horn (Low)

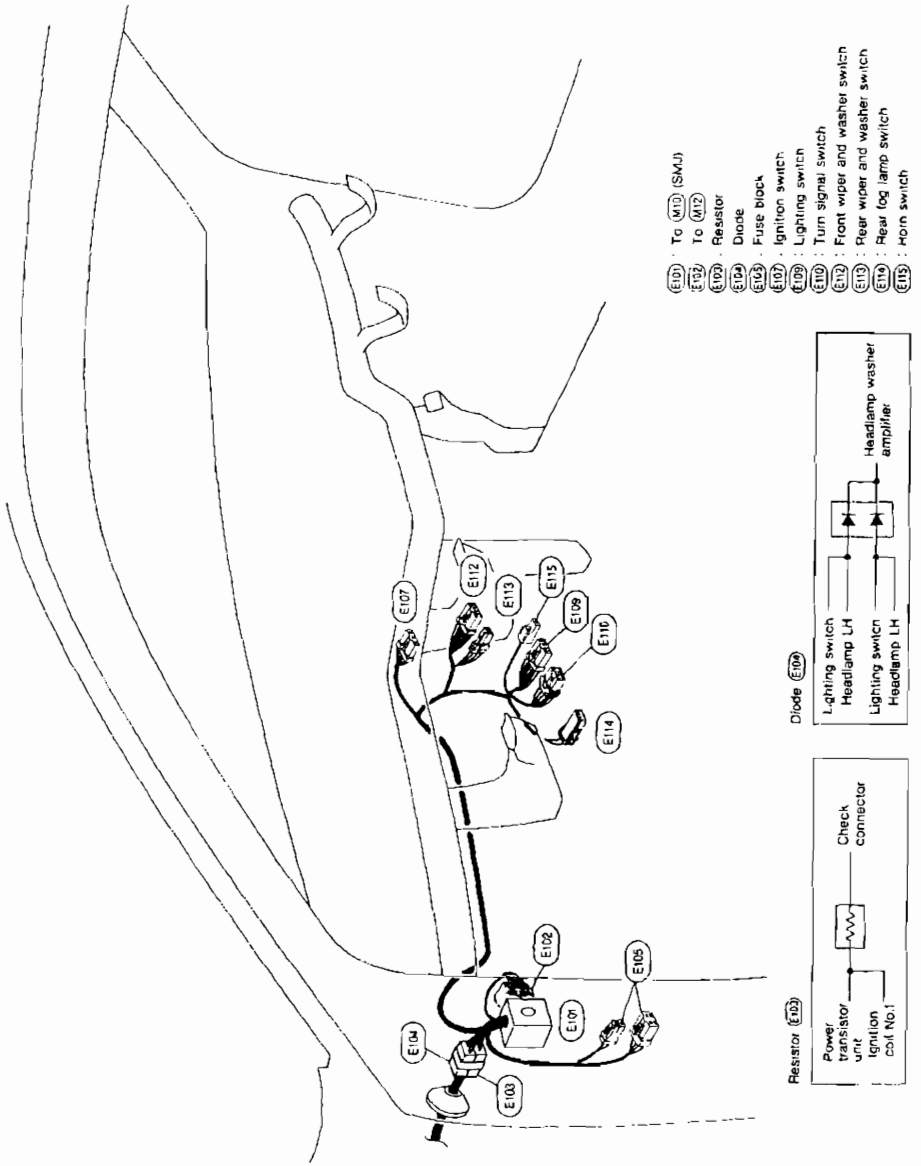
C5 (E49) : Front turn signal lamp LH
C5 (E50) : Front fog lamp LH
C4 (E51) : Headlamp LH inner
D4 (E52) : Headlamp aiming motor LH (For Europe)
C4 (E53) : Headlamp LH outer
E4 (E54) : Clearance lamp LH
D3 (E55) : Triple-pressure switch
E4 (E56) : To (E20)
D4 (E57) : Body ground
B4 (E58) : Ambient sensor (For outside temperature)

Fusible link and fuse box

SEL871T

Engine Room Harness (Cont'd)

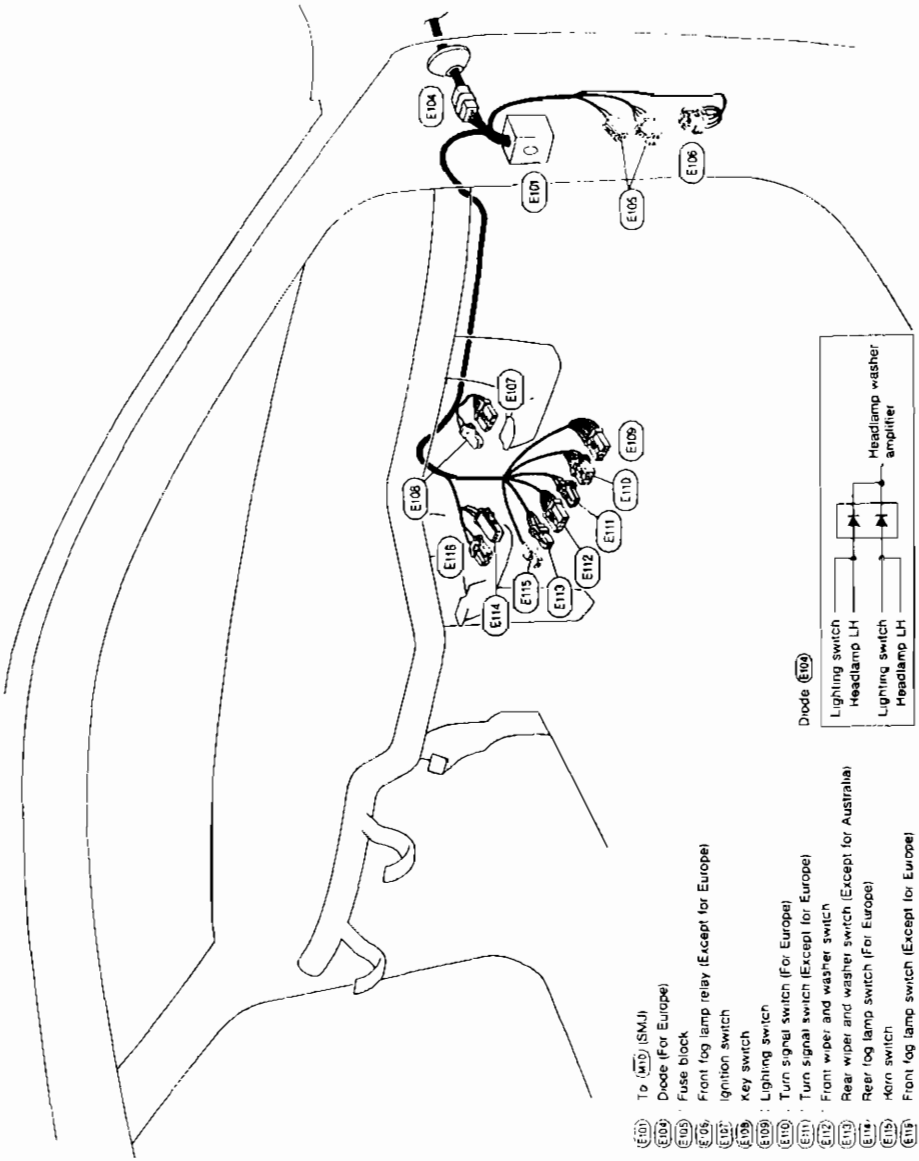
PASSENGER COMPARTMENT (LHD models)



SEL870F

Engine Room Harness (Cont'd)

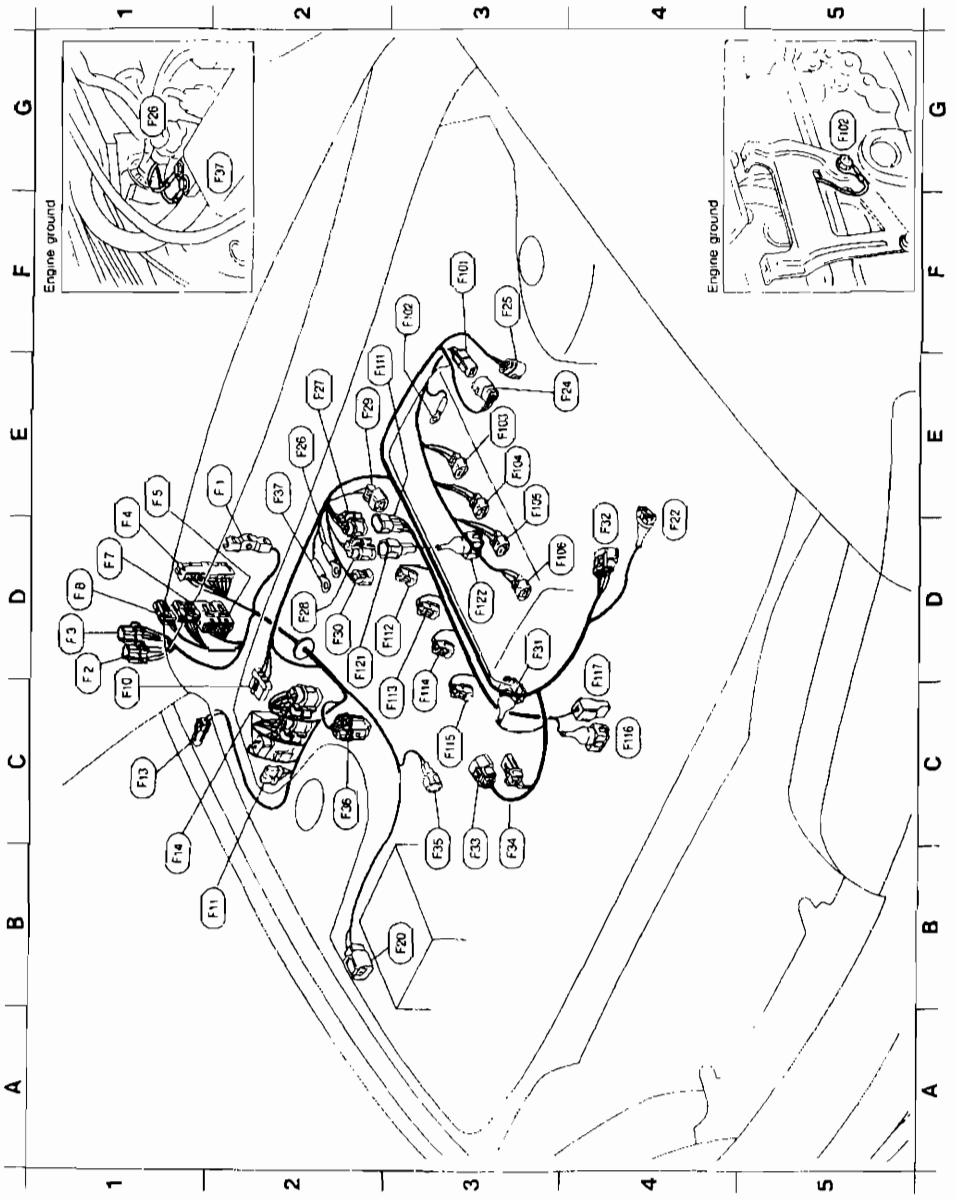
PASSENGER COMPARTMENT (RHD models)



SEL872T

Engine Control Harness

LHD MODELS



Engine Control Harness (Cont'd)

E2 (F1) : ECM (ECCS control module)
D1 (F2) : ECCS relay
D1 (F3) : Ignition coil relay
D1 (F4) : To (M50)
E1 (F5) : To (B53)
D1 (F7) : To (M62) (A/T models)
D1 (F8) : To (M65) (M/T models)
C1 (F10) : Front wiper motor
B2 (F11) : Front wiper amplifier
C1 (F13) : Side turn signal lamp RH
B1 (F14) : ABS actuator
B3 (F20) : To (E56)
D4 (F22) : Mass air flow sensor
E3 (F24) : To (F10)
F3 (F25) : Heated oxygen sensor
E2 (F26) : Engine ground
E2 (F27) : To (F11)
D2 (F28) : To (F12)
E2 (F29) : IACV-FICD solenoid valve
D2 (F30) : IACV-AAC valve
D3 (F31) : VTC solenoid valve
D4 (F32) : Camshaft position sensor
B3 (F33) : Throttle position sensor (Brown)
B3 (F34) : Throttle position switch (Gray) (A/T models)
B3 (F35) : Front wheel sensor RH (For ABS)
C2 (F36) : Triple-pressure switch
E2 (F37) : Engine ground

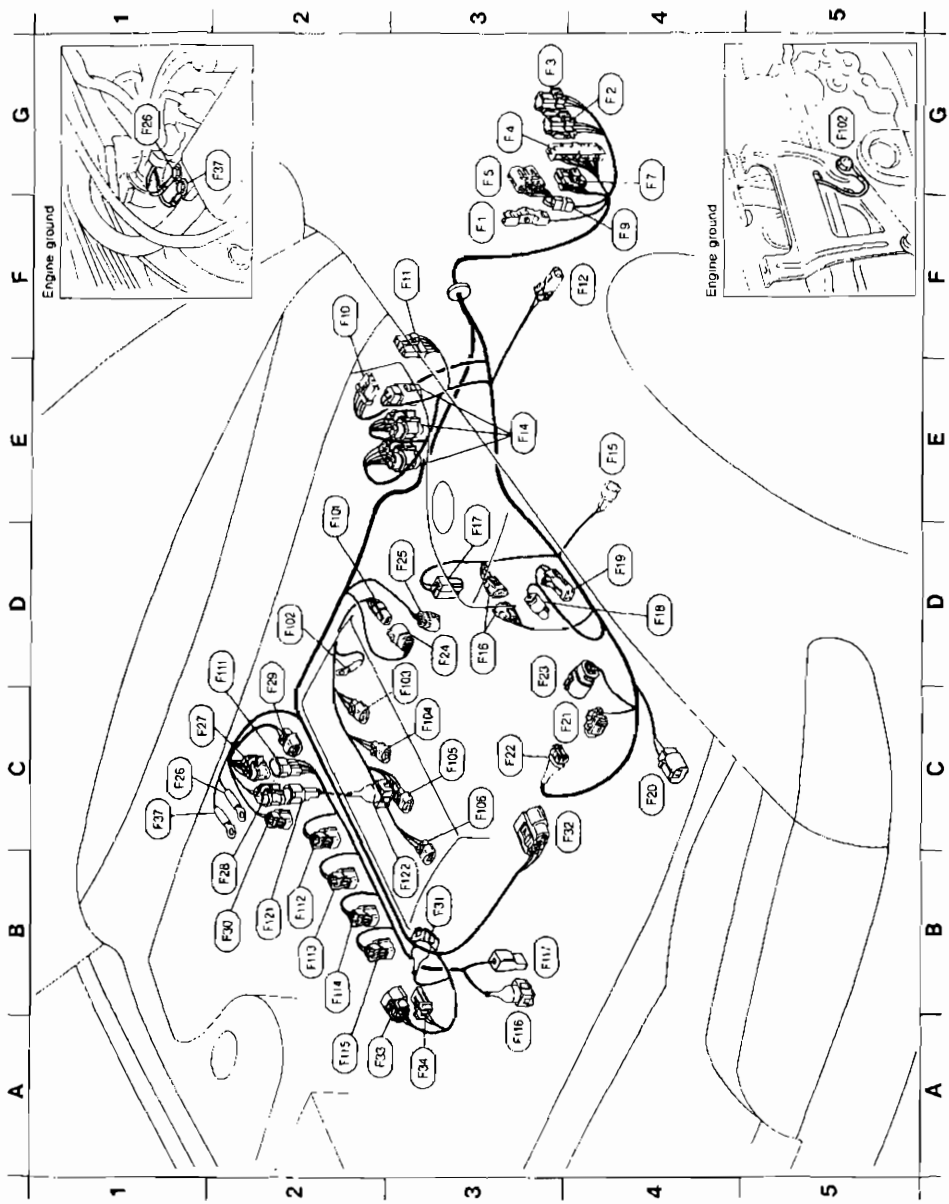
Sub-harness

F3 (F100) : To (F24)
F3 (F102) : Engine ground
E3 (F103) : Ignition coil No.4
E3 (F104) : Ignition coil No.3
E3 (F105) : Ignition coil No.2
D3 (F106) : Ignition coil No.1
E2 (F111) : To (F27)
D3 (F112) : Injector No.4
C3 (F113) : Injector No.3
C3 (F114) : Injector No.2
C3 (F115) : Injector No.1
C4 (F116) : Engine coolant temperature sensor
C4 (F117) : Thermal transmitter
D2 (F121) : To (F28)
D3 (F122) : Knock sensor

SEL873T

Engine Control Harness (Cont'd)

RHD MODELS



Engine Control Harness (Cont'd)

F3 : ECM (ECCS control module)
G4 : ECCS relay
G3 : Ignition coil relay
G3 : To (M66)
G3 : To (B55) (Model with ABS)
G4 : To (M62) (A/T models)
F4 : Resistor
F2 : Front wiper motor
F3 : Front wiper amplifier
F4 : Side turn signal lamp LH
E3 : ABS actuator (For ABS)
E4 : Front wheel sensor LH (For ABS)
D3 : Power transistor unit
D3 : Wastegate valve control solenoid valve
D4 : Check connector
D4 : Dropping resistor (A/T models)
C4 : To (E56)
C3 : Compressor
C3 : Mass air flow sensor
D3 : Power steering oil pressure switch
D3 : To (F10)
D3 : Heated oxygen sensor
C1 : Engine ground
C1 : To (F11)
B2 : To (F12)
C2 : IACV-FICD solenoid valve
B2 : IACV-AAC valve
B3 : VTC solenoid valve
C4 : Camshaft position sensor
A2 : Throttle position sensor (Brown)
A3 : Throttle position switch (Gray) (A/T models)
C1 : Engine ground

Sub-harness

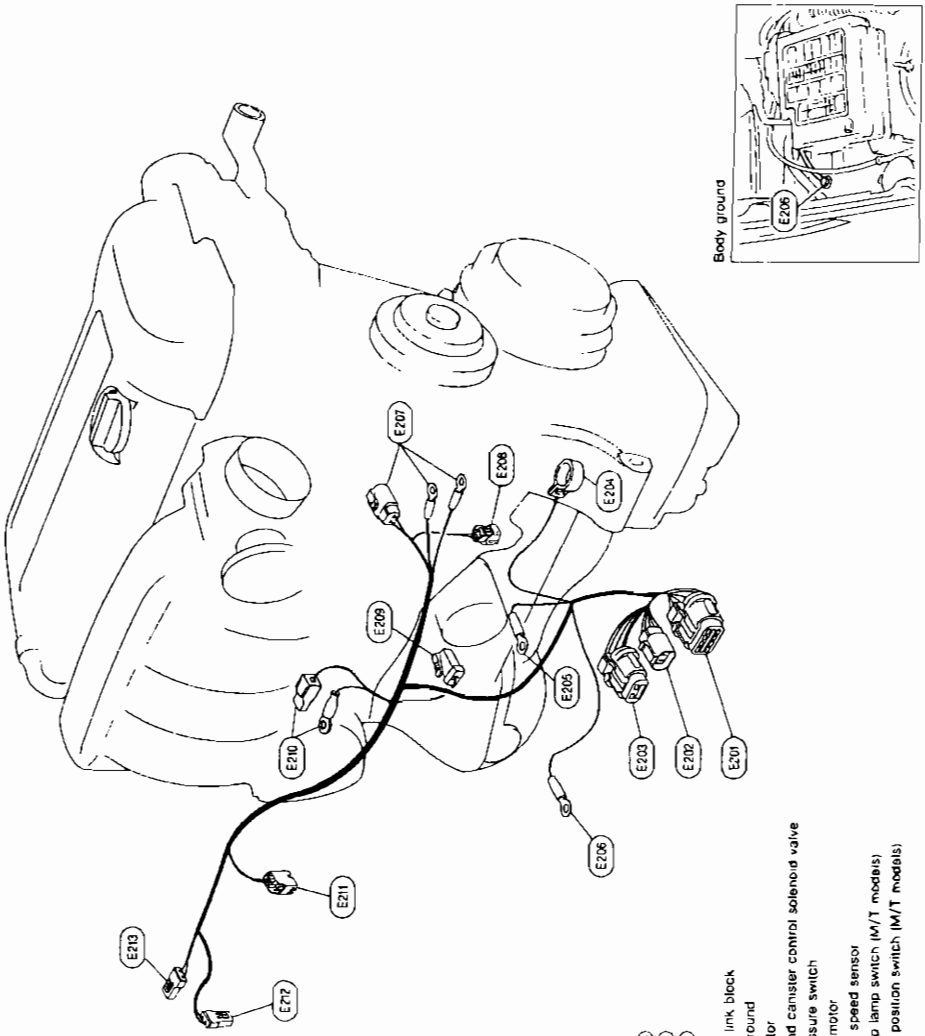
D2 (F101) : To (F24)
D2 (F102) : Engine ground
C3 (F103) : Ignition coil No.4
C3 (F104) : Ignition coil No.3
C3 (F105) : Ignition coil No.2
C3 (F106) : Ignition coil No.1
D2 (F111) : To (F37)
B2 (F112) : Injector No.4
B2 (F113) : Injector No.3
B2 (F114) : Injector No.2
A2 (F115) : Injector No.1
A3 (F116) : Engine coolant temperature sensor
B3 (F117) : Thermal transmitter
B2 (F121) : To (F28)
B3 (F122) : Knock sensor

Resistor (F9)

Dropping resistor (F19)

SEL874T

Engine Harness



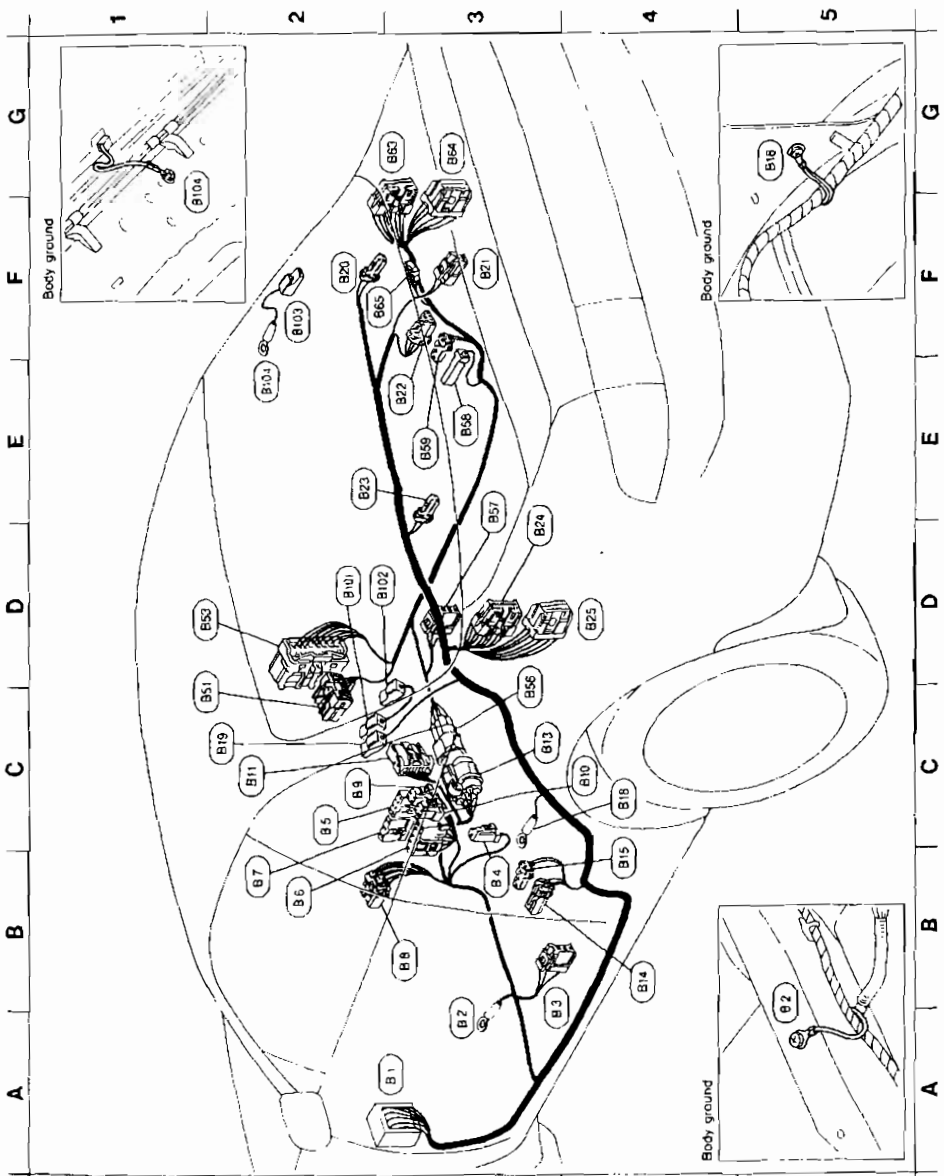
E201 : To E26
E202 : To E27
E203 : To E28
E204 : Battery
E205 : Fusible link block
E206 : Body ground
E207 : Alternator
E208 : EGR and canister control solenoid valve
E209 : Oil pressure switch
E210 : Starter motor
E211 : Vehicle speed sensor
E212 : Back-up lamp switch (M/T models)
E213 : Neutral position switch (M/T models)

SEL875T

NOTE

Body Harness

LHD MODELS



Body Harness (Cont'd)

A3 (B1) : To (M11)
A3 (B2) : Body ground
B3 (B3) : Heated seat LH
B3 (B4) : Parking brake switch
C2 (B5) : Headlamp aiming switch
B2 (B6) : Door mirror control switch
B2 (B7) : Front fog lamp switch
B3 (B8) : Overdrive switch · A/T illumination
C2 (B9) : Heated seat switch RH
C4 (B10) : Heated seat switch LH
C2 (B11) : To (22)
C3 (B13) : To (B56)
B4 (B14) : Door switch (Driver's side)
B4 (B15) : Seat belt pre-tensioner (Driver's side)
C4 (B16) : Body ground
C2 (B19) : Condenser (For rear window defogger)
F2 (B20) : Rear speaker RH
F3 (B21) : Trunk room lamp
E3 (B22) : Rear wiper motor
E2 (B23) : Rear speaker LH
D3 (B24) : To (T1)
D4 (B25) : To (T2)
C2 (B51) : To (M53)
D2 (B53) : To (15)
C3 (B56) : To (B13)
E3 (B57) : Heated seat RH
E3 (B58) : Door switch (Passenger side)
E3 (B59) : Seat belt pre-tensioner (Passenger side)
G3 (B63) : To (T26)
G3 (B64) : To (T27)
F2 (B65) : Not used

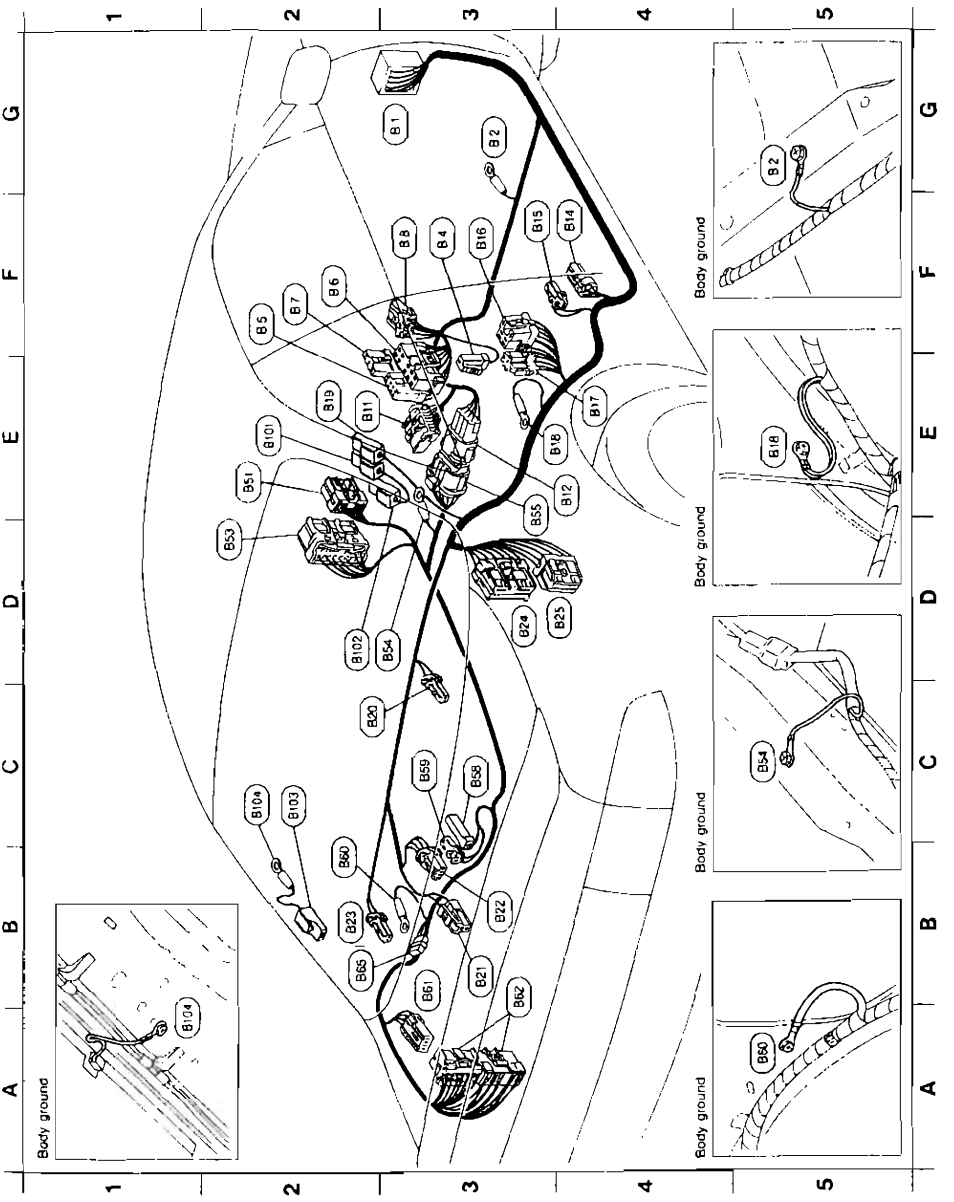
Sub-harness

D2 (B100) : Condenser (For rear window defogger)
D2 (B102) : Rear window defogger (+)
F2 (B103) : Rear window defogger (−)
E2 (B104) : Body ground

SEL676I

Body Harness (Cont'd)

RHD MODELS



G3 : To (M1)
G3 (B2) : Body ground
F3 (B4) : Parking brake switch
F2 (B5) : Headlamp aiming switch (For Europe)
F2 (B6) : Door mirror control switch
F2 (B7) : Front fog lamp switch (For Europe)
F3 (B8) : Overdrive switch - A/T illumination
E2 (B11) : To (Z2)
E4 (B12) : To (B55)
F4 (B14) : Door switch (Driver's side)
F3 (B15) : Seat belt pre-tensioner (Driver's side) (For Europe)
F3 (B16) : Multi-remote control relay-1 (Except for Europe)
E4 (B17) : Multi-remote control relay-2 (Except for Europe)
E3 (B18) : Body ground
E2 (B19) : Condenser (For rear window defogger)
C2 (B20) : Rear speaker RH
B3 (B21) : Trunk room lamp
B3 (B22) : Rear wiper motor (Except for Australia)
B2 (B23) : Rear speaker LH
D3 (B24) : To (T1)
D4 (B25) : To (T2)
E2 (B31) : To (M3) (Models with ABS)
D2 (B33) : To (F5) (Models with ABS)
D3 (B34) : Body ground
E3 (B35) : To (B12)
C3 (B36) : Door switch (Passenger side)
C3 (B39) : Seat belt pre-tensioner (Passenger side) (For Europe)
B2 (B40) : Body ground (Models with ABS)
B3 (B51) : To (T24) (Models with ABS)
B3 (B62) : ABS control unit (For ABS)
B2 (B65) : Not used (For Europe)

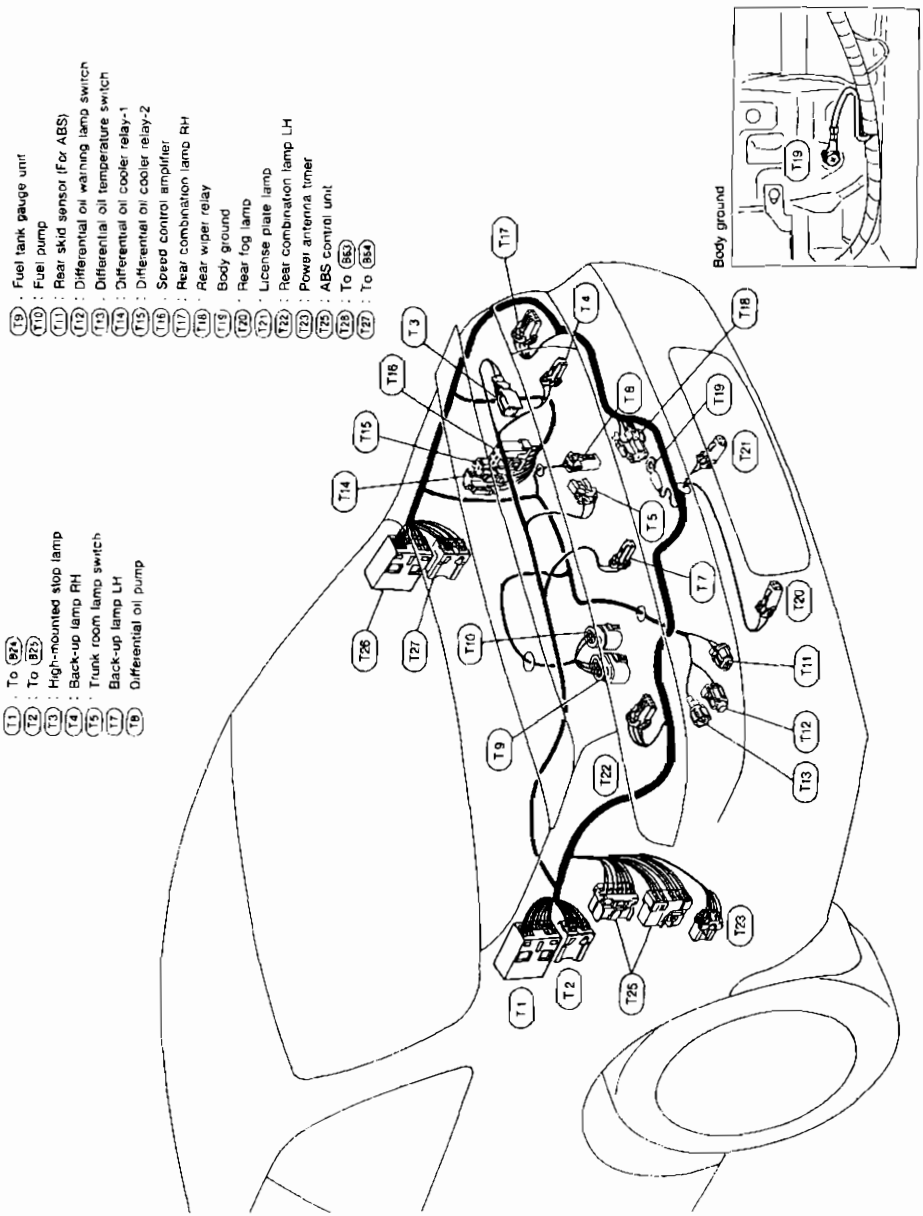
Sub-harness

E2 (B101) : Condenser (For rear window defogger)
D2 (B102) : Rear window defogger (+)
C2 (B103) : Rear window defogger (−)
C2 (B104) : Body ground

SEL877T

Tail Harness

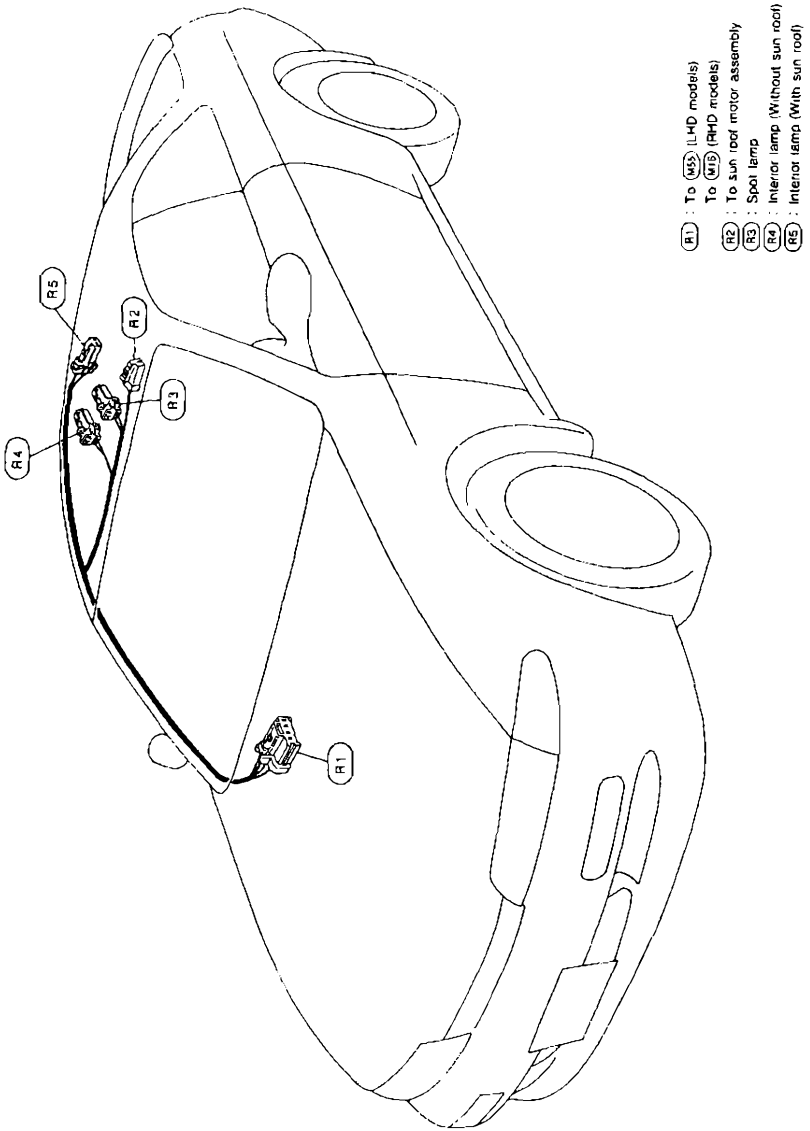
LHD MODELS



Tail Harness (Cont'd)

RHD MODELS

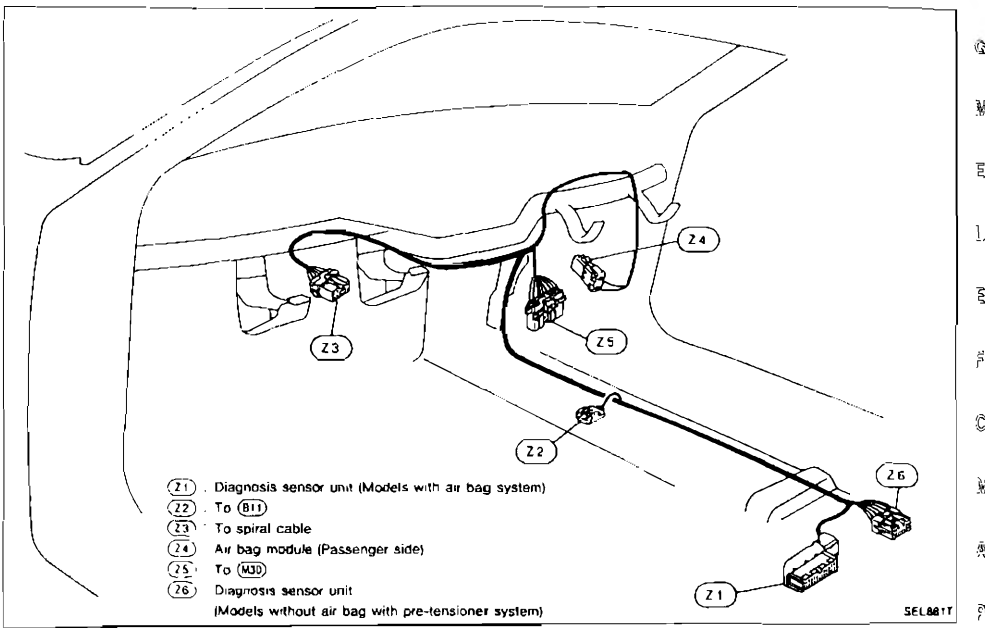
Room Lamp Harness



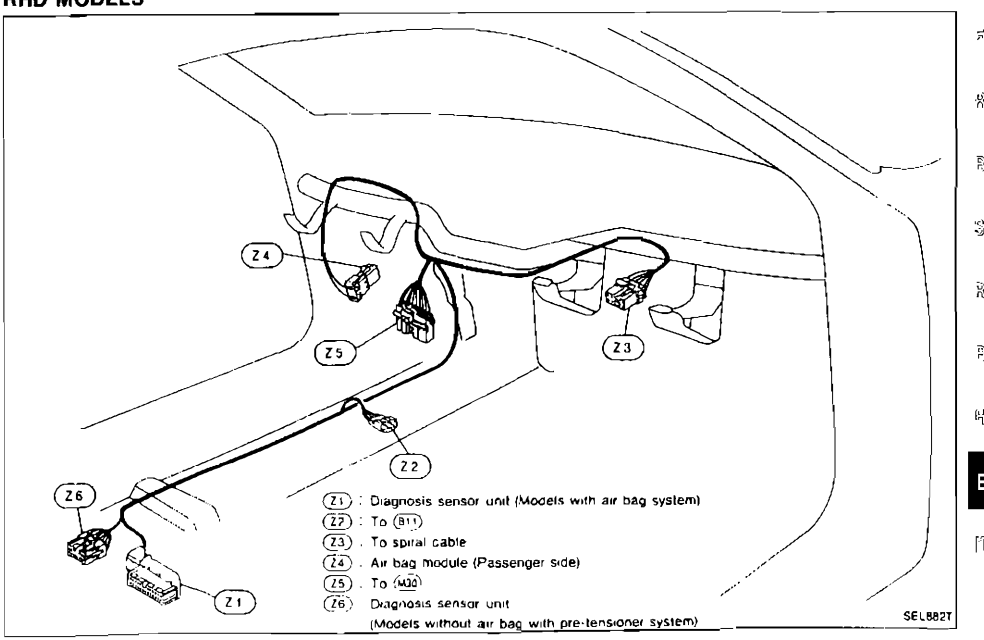
SEL880T

LHD MODELS

Air Bag and Seat Belt Pre-tensioner Harness



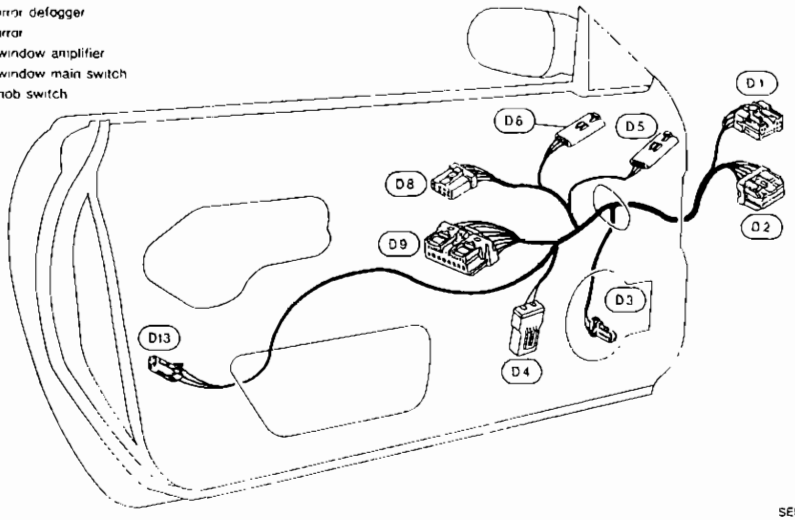
RHD MODELS



Door Harness (LHD models)

FRONT LH

(D1) To (M14)
(D2) To (M15)
(D3) Door speaker
(D4) Power window regulator
(D5) Door mirror defogger
(D6) Door mirror
(D8) Power window amplifier
(D9) Power window main switch
(D13) Lock knob switch



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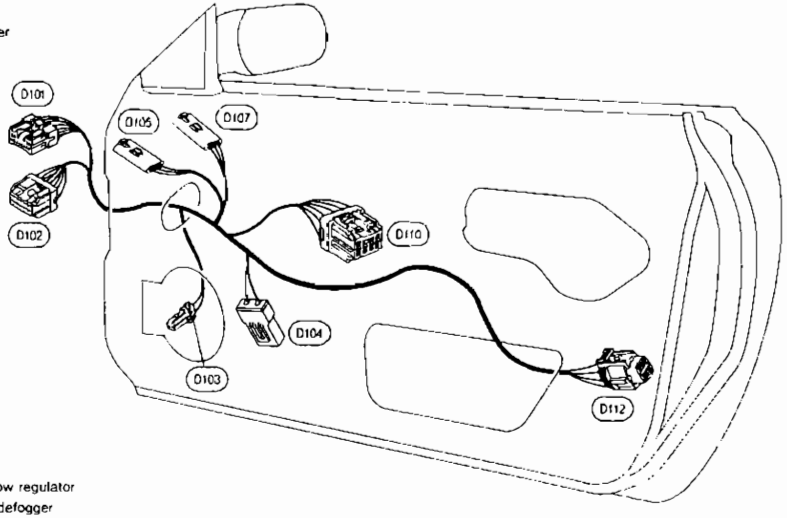
FRONT RH

(D101) : To (M56)
(D102) : To (M57)
(D103) : Door speaker



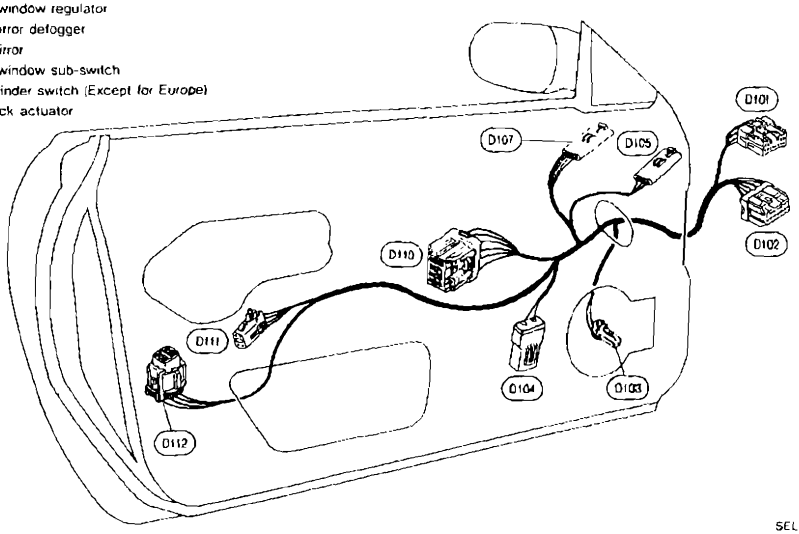
(D104) Power window regulator
(D105) Door mirror defogger
(D106) Door mirror
(D110) Power window sub-switch
(D113) Door lock actuator

SEL884T

Door Harness (RHD models)

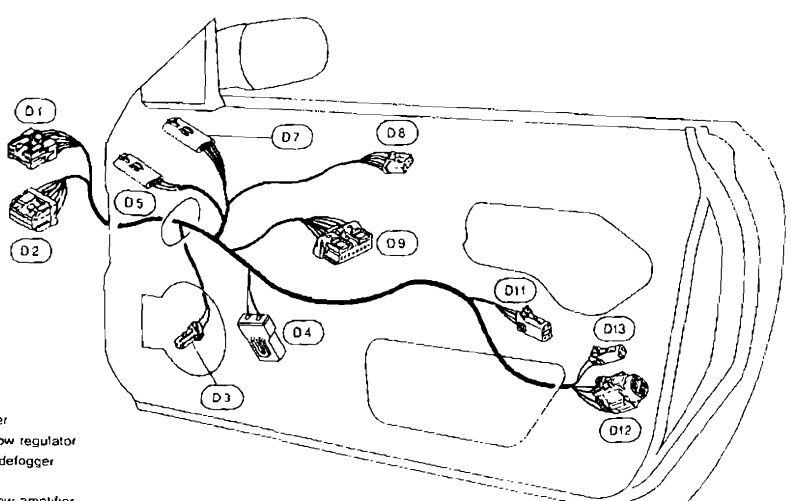
RONT LH

(D101) : To (M56)
(D102) : To (M57)
(D103) : Door speaker
(D104) : Power window regulator
(D105) : Door mirror defogger
(D107) : Door mirror
(D110) : Power window sub-switch
(D111) : Key cylinder switch (Except for Europe)
(D112) : Door lock actuator



SEL685T

FRONT RH

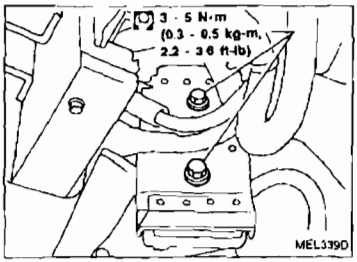


(D1) : To (M14)
(D2) : To (M15)
(D3) : Door speaker
(D4) : Power window regulator
(D5) : Door mirror defogger
(D7) : Door mirror
(D8) : Power window amplifier
(D9) : Power window main switch
(D11) : Key cylinder switch (Except for Europe)
(D12) : Door lock actuator (Except for Europe)
(D13) : Lock knob switch (For Europe)

SEL886T

Disconnecting and Connecting

- SMJ is located on left side of dash.
- To disconnect SMJ, loosen fixing bolt.



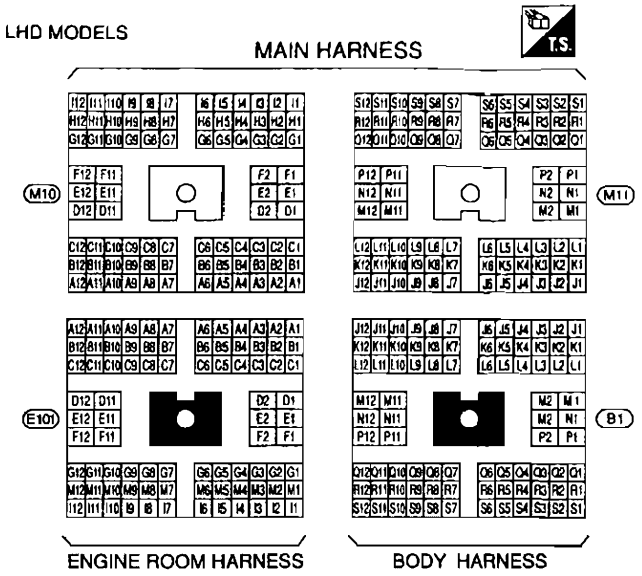
- To install SMJ, tighten bolts until orange "full-tight" mark appears and then retighten to specified torque as required.

  : 3 - 5 N·m
  (0.3 - 0.5 kg-m, 2.2 - 3.6 ft-lb)

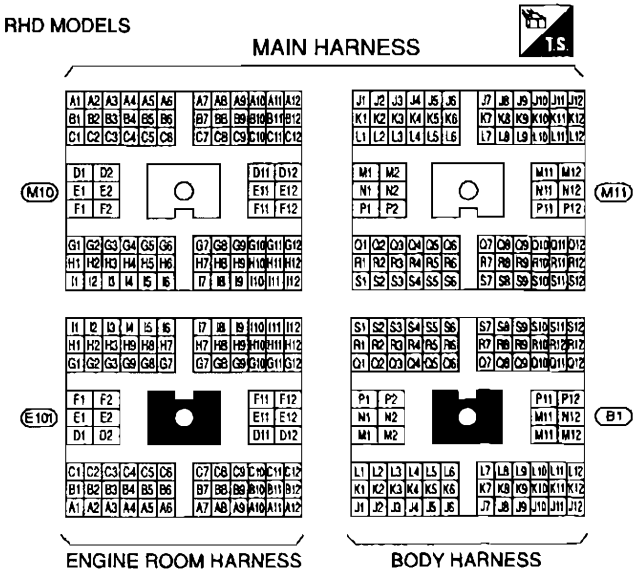
CAUTION:
Do not overtighten bolts, otherwise, they may be damaged.

Terminal Arrangement

LHD MODELS



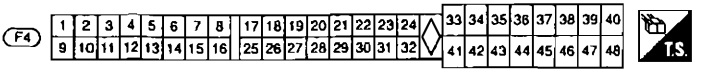
RHD MODELS

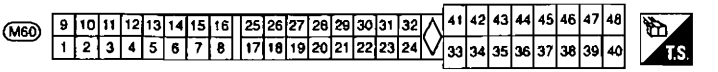


SEL857T

Terminal Arrangement (Cont'd)

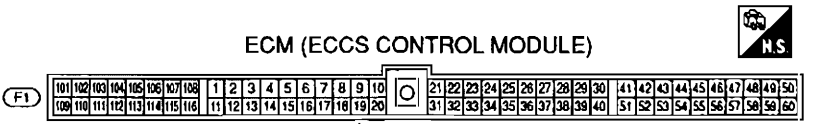
ENGINE CONTROL HARNESS





MAIN HARNESS

ECM (ECCS CONTROL MODULE)

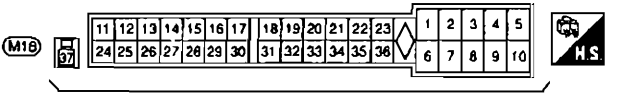


View from harness side

A/T CONTROL UNIT

View from harness side

SMART ENTRANCE CONTROL UNIT



View from harness side