

ELECTRICAL SYSTEM

SECTION **EL**

When you read wiring diagrams:

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

CONTENTS

HARNESS CONNECTOR	EL- 2
STANDARDIZED RELAY	EL- 3
POWER SUPPLY ROUTING	EL- 5
BATTERY	EL- 9
STARTING SYSTEM	EL- 17
STARTING SYSTEM — Starter —	EL- 19
CHARGING SYSTEM	EL- 25
CHARGING SYSTEM — Alternator —	EL- 27
COMBINATION SWITCH	EL- 32
HEADLAMP	EL- 34
EXTERIOR LAMP	EL- 47
INTERIOR LAMP	EL- 55
METER AND GAUGES	EL- 57
WARNING LAMPS AND CHIME	EL- 61
WIPER AND WASHER	EL- 65
HORN, CIGARETTE LIGHTER AND CLOCK	EL- 73
REAR WINDOW DEFOGGER	EL- 74
AUDIO AND POWER ANTENNA	EL- 77
LOCATION OF ELECTRICAL UNITS	EL- 81
HARNESS LAYOUT	EL- 83
SUPER MULTIPLE JUNCTION (S.M.J.)	EL-107

WIRING DIAGRAM REFERENCE CHART

E.C.C.S. (Ignition system)	EF & EC SECTION
A/T CONTROL	AT SECTION
DIFFERENTIAL OIL COOLER	PD SECTION
4-WHEEL SKID CONTROL	BR SECTION
ELECTRIC DOOR MIRROR, DOOR LOCK AND POWER WINDOW	BF SECTION
HEATER AND AIR CONDITIONER	HA SECTION

EL

HARNESS CONNECTOR

Description

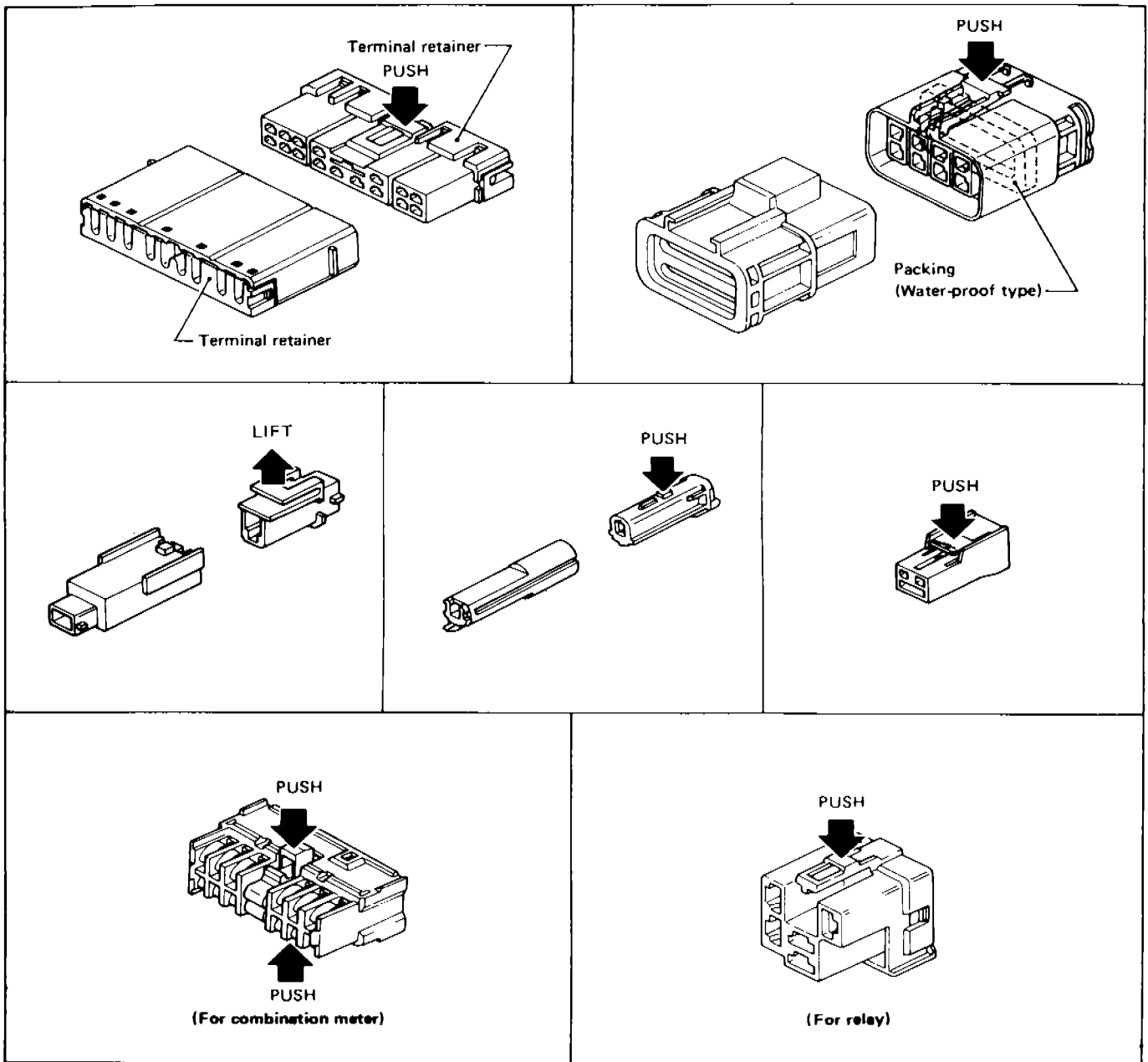
HARNESS CONNECTOR

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

CAUTION:

Do not pull the harness when disconnecting the connector.

[Example]



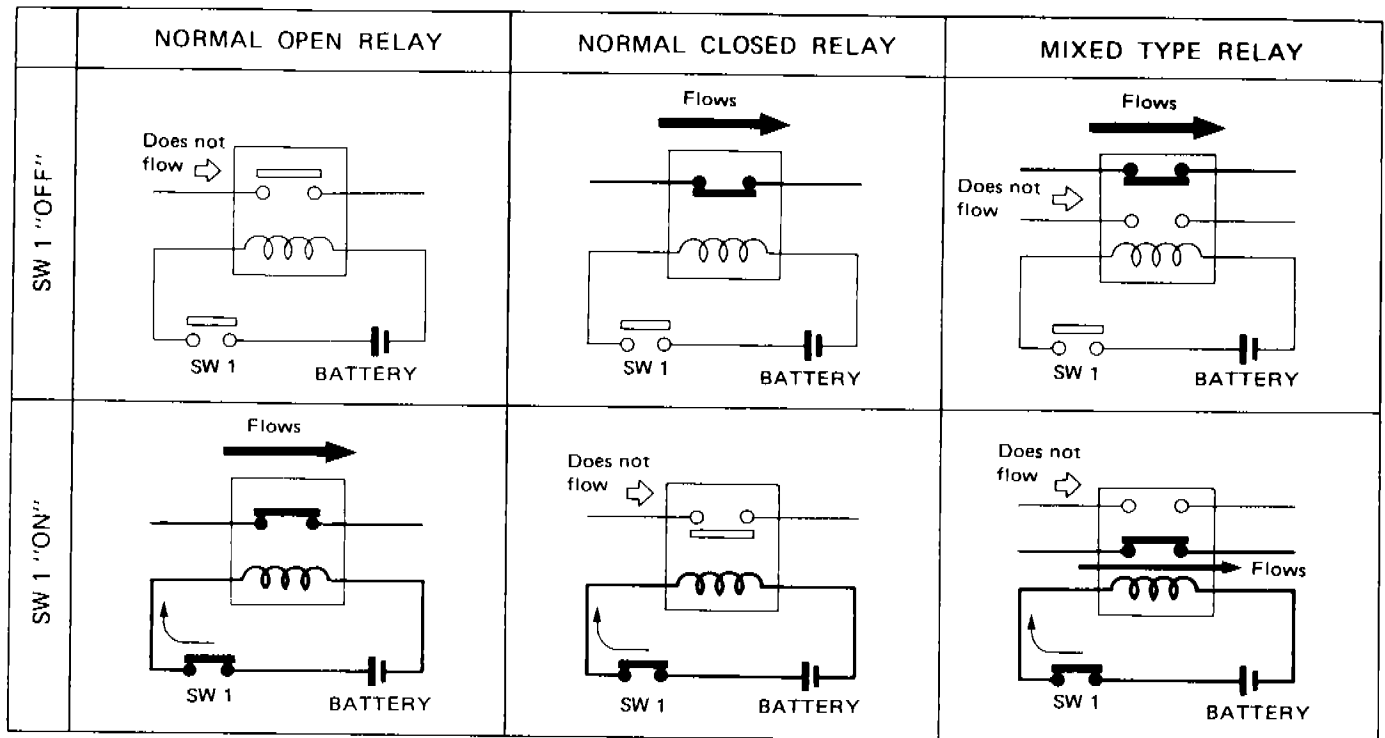
SEL769D

STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

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

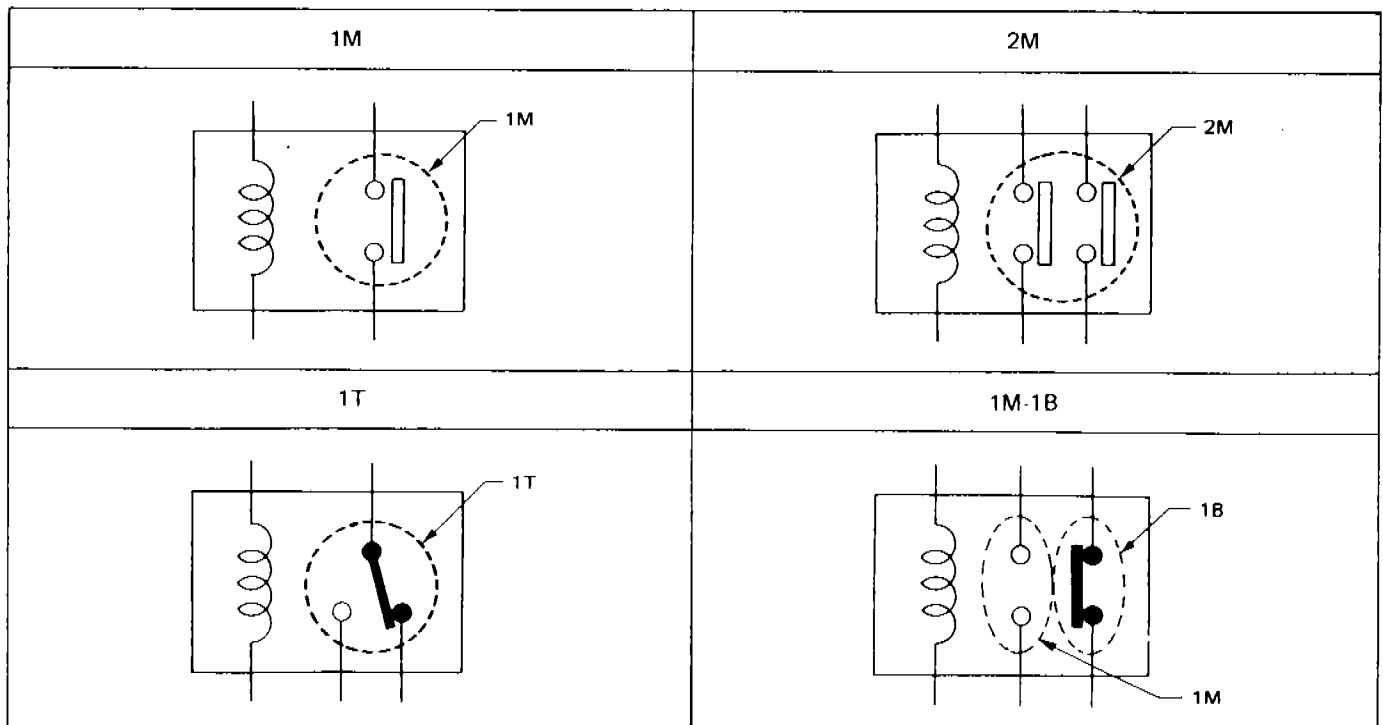


SEL881H

TYPE OF STANDARDIZED RELAYS

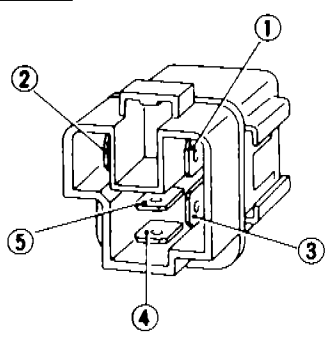
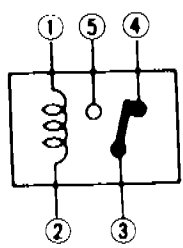
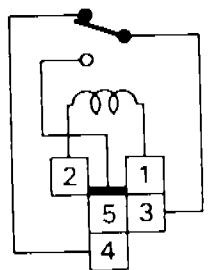
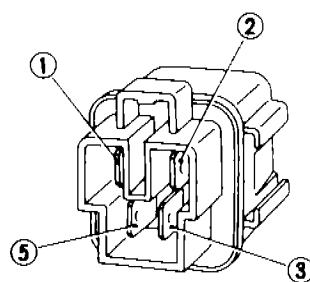
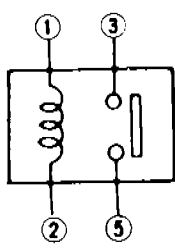
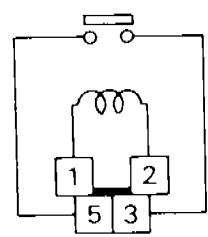
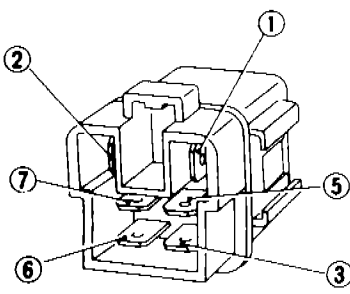
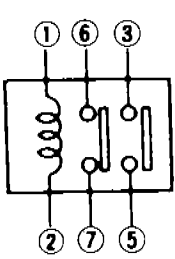
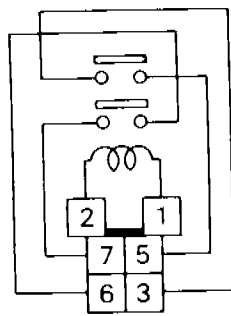
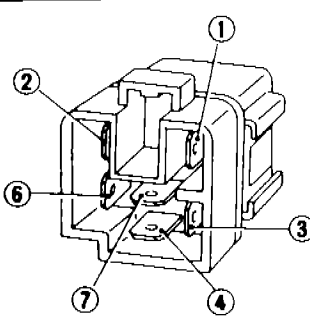
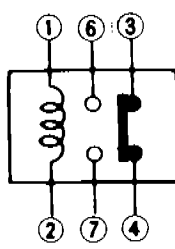
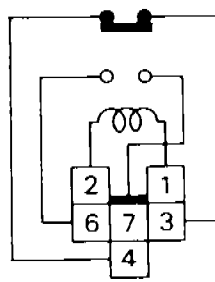
1M 1 Make
1T 1 Transfer

2M 2 Make
1M-1B 1 Make 1 Break



SEL882H

STANDARDIZED RELAY

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

SEL883H

Wiring Diagram

[illegible]

EL-5

Wiring Diagram (Cont'd)

Legend:

- L: L. H. drive model
- R: R. H. drive model
- G: Except for Europe

Component List:

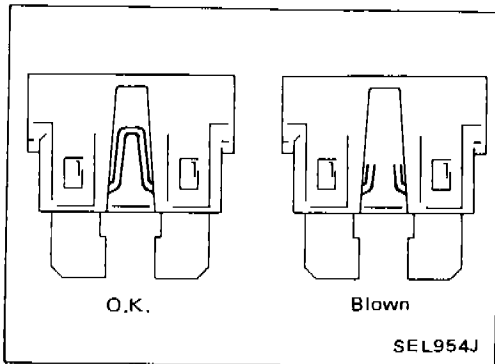
- L: Differential oil cooler
- 6: Meter and Gauges, Auto antenna timer, Rear window defogger, Rear fog lamp, washer timer
- G/W: Turn signal
- L: Radio, Audio, Meter illumination (liquid crystal), Auto antenna timer
- L/W: Rear window wiper and washer, Door mirror system
- LB: Windshield wiper and washer
- OR/B: Cigarette lighter
- L/OR: Heater and Air conditioner
- L/R: Glow motor
- UP: Fuse Block
- L: Rear window defogger
- R/B: Interior lamp (Interior, Spot, Foot, Luggage room), Radio, Audio Clock, A/T control unit, Auto antenna timer, Rear fog lamp
- R/Y: Stop lamp
- G/L: Hazard warning lamp
- SB: Headlamp timer, Retractor relay
- G/R: Exterior lamps (Clearance, License, Tail), Illumination, Glove box lamp, Headlamp timer, Warning buzzer
- OR: E. C. S. control unit
- B/L: Back-up lamp, Inhibitor switch, A/T control unit

Wiring Diagram Details:

- IGNITION RELAY:** Connected to Ignition Switch, Accessory Relays, and Ignition System.
- ACCESSORY RELAY-1:** Connected to Ignition Switch, Accessory Relays, and Ignition System.
- ACCESSORY RELAY-2:** Connected to Ignition Switch, Accessory Relays, and Ignition System.
- IGNITION SWITCH:** Controls Ignition System, Bulb check relay, Fuel pump, Air regulator, E.C.S. System, Retractor relay, Air conditioner, Headlamp L.H., Headlamp R.H., Horn, 4-Wheel Sktu Control System, and Charging System.
- STARTING SYSTEM:** Connected to Ignition Switch and Ignition System.
- IGNITION SYSTEM:** Connected to Ignition Switch and Ignition Relay.
- Bulb check relay:** Connected to Ignition Switch and Ignition System.
- Fuel pump, Air regulator:** Connected to Ignition Switch and Ignition System.
- E.C.S. SYSTEM:** Connected to Ignition Switch and Ignition System.
- Retractor relay:** Connected to Ignition Switch and Ignition System.
- Air conditioner:** Connected to Ignition Switch and Ignition System.
- Headlamp L.H., Headlamp R.H., Horn:** Connected to Ignition Switch and Ignition System.
- 4-WHEEL SKTU CONTROL SYSTEM:** Connected to Ignition Switch and Ignition System.
- CHARGING SYSTEM:** Connected to Ignition Switch and Ignition System.
- Power window system:** Connected to Ignition Switch and Ignition System.
- Door lock system:** Connected to Ignition Switch and Ignition System.
- CIRCUIT BREAKER:** Connected to Ignition Switch and Ignition System.
- BATTERY:** Connected to Ignition Switch and Ignition System.
- FUSE AND FUSIBLE LINK (IN RELAY BOX):** Connected to Ignition Switch and Ignition System.

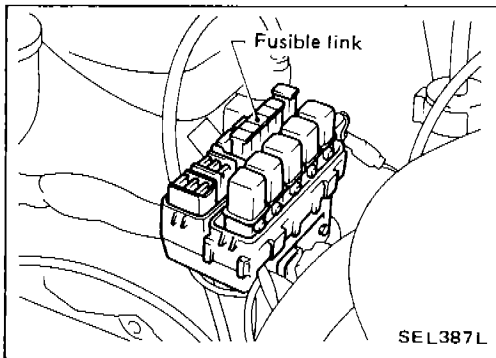
EL-6

POWER SUPPLY ROUTING



Fuse

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



Fusible Link

A melted fusible link can be detected by visual inspection. 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 periphery of fusible link with vinyl tape. Extreme care should be taken with this link to ensure that it does not come into contact with any other wiring harness or vinyl or rubber parts.

POWER SUPPLY ROUTING

NOTE

EL-8

BATTERY

CAUTION:

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

How to Handle Battery

METHODS OF PREVENTING OVER-DISCHARGE

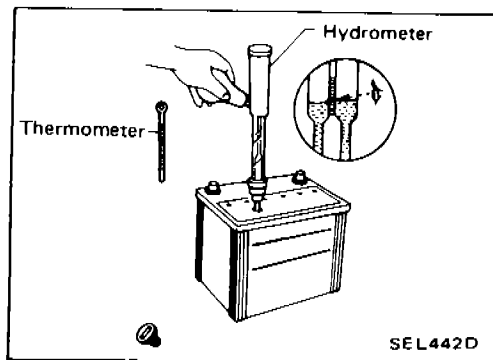
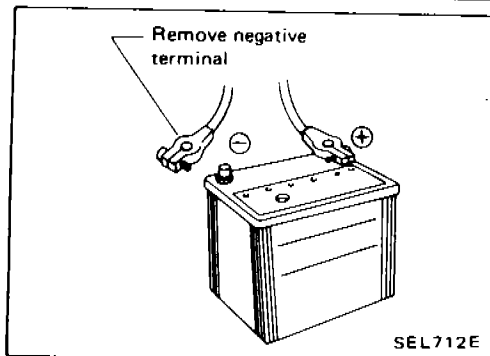
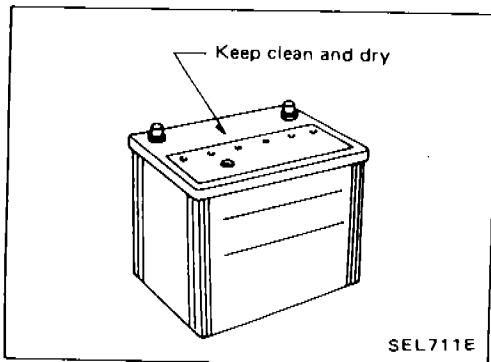
The following precautions must be taken to prevent over-discharging a battery.

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

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

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

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



BATTERY

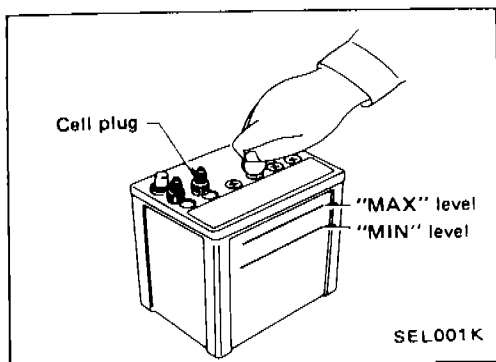
How to Handle Battery (Cont'd)

CHECKING ELECTROLYTE LEVEL

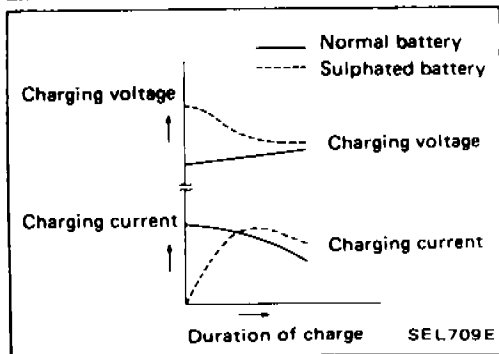
WARNING:

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

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



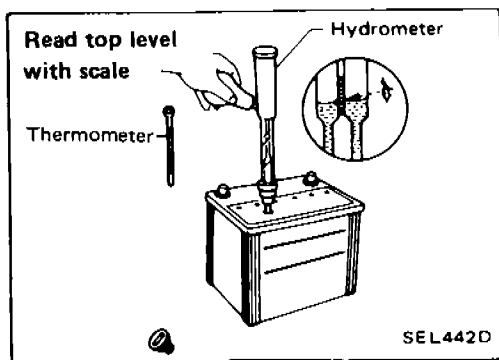
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

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

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

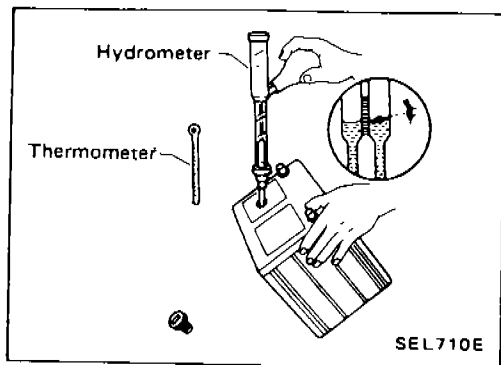


SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.

BATTERY

How to Handle Battery (Cont'd)

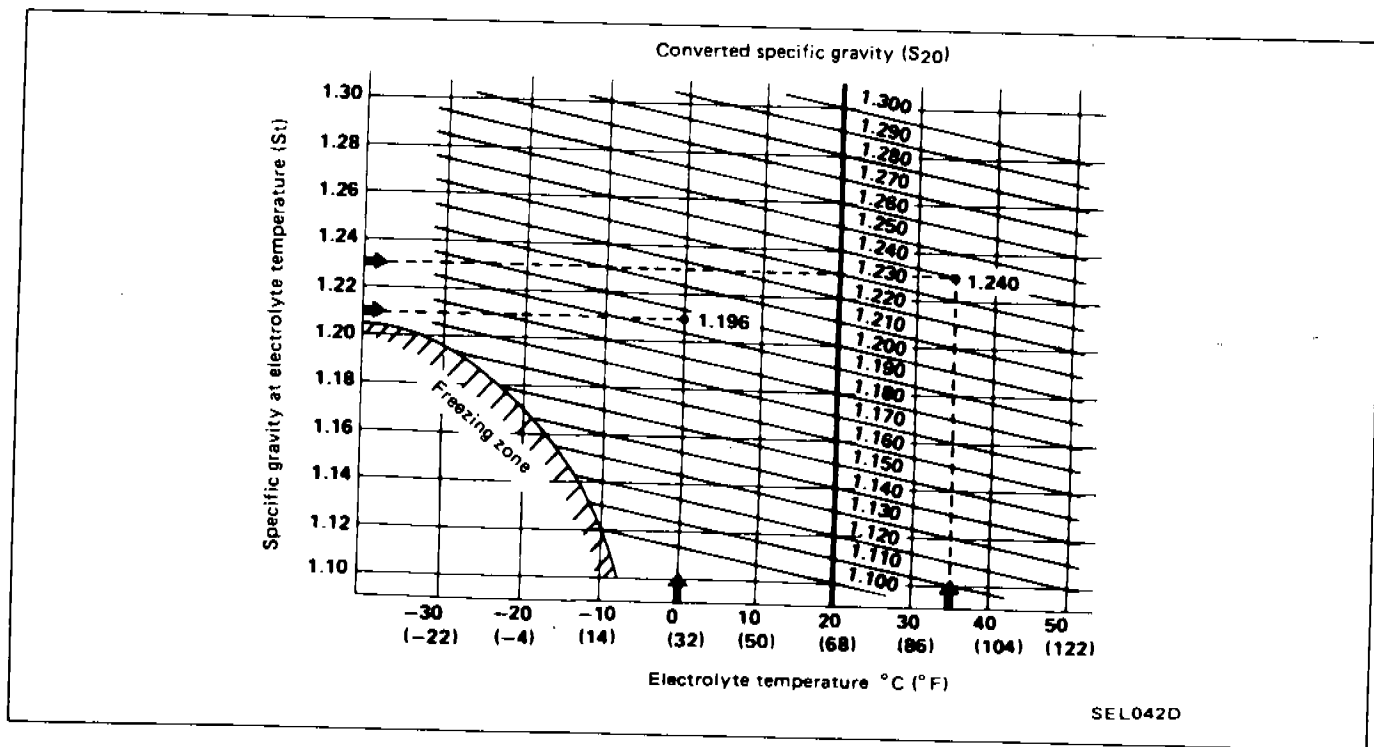


- When electrolyte level is too low, tilt battery case to raise it for easy measurement.

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

Example:

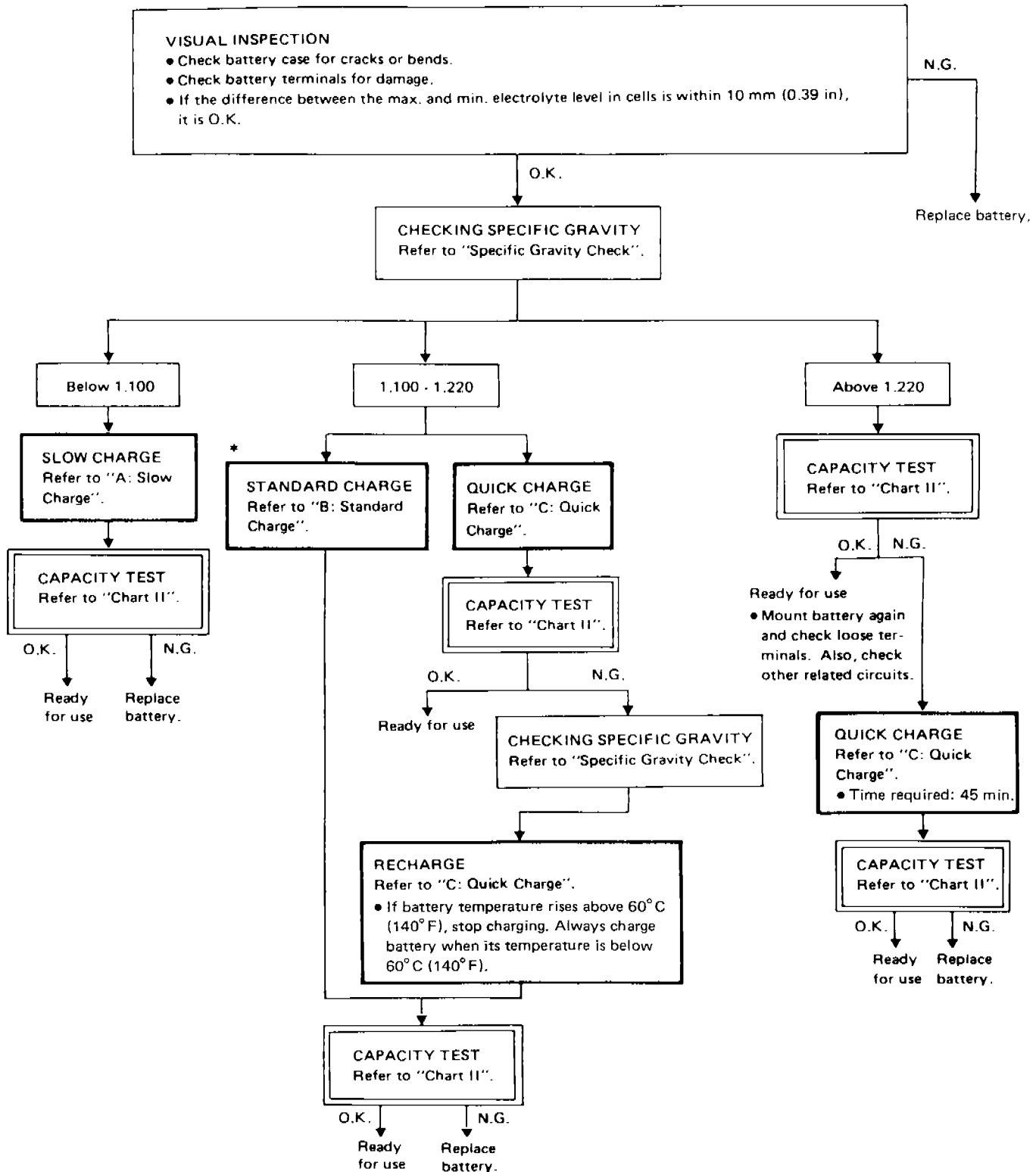
- When electrolyte temperature is 35° C (95° F) and specific gravity of electrolyte is 1.230, converted specific gravity at 20° C (68° F) is 1.240.
- When electrolyte temperature is 0° C (32° F) and specific gravity of electrolyte is 1.210, converted specific gravity at 20° C (68° F) is 1.196.



BATTERY

Battery Test and Charging Chart

Chart I

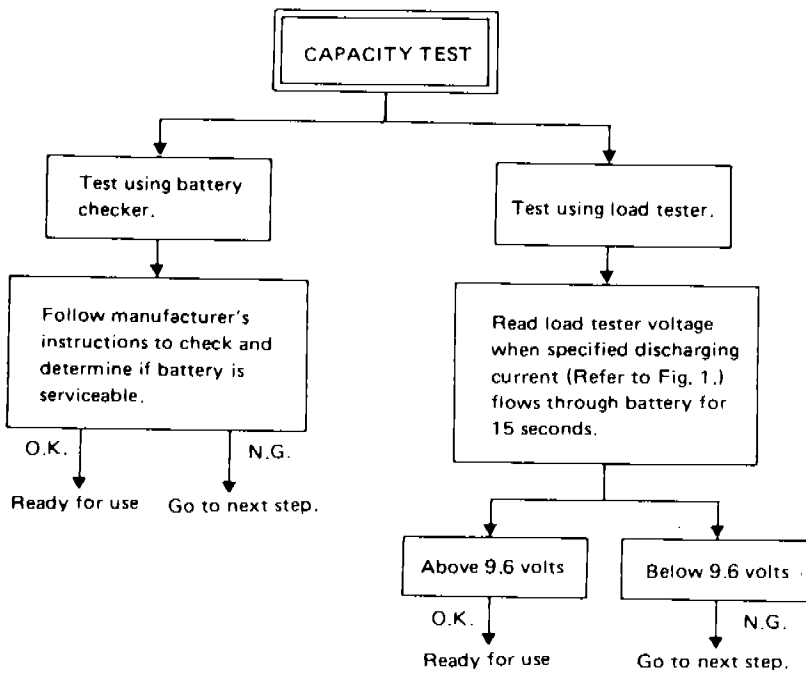


* "STANDARD CHARGE" is recommended in case that the vehicle is in storage after charging.

BATTERY

Battery Test and Charging Chart (Cont'd)

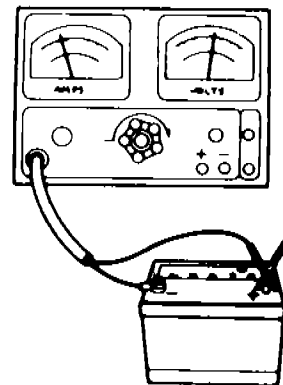
Chart II



- Check battery type and determine the specified current using the following table.

Fig. 1 DISCHARGING CURRENT (Load tester)

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



SEL697B

BATTERY

Battery Test and Charging Chart (Cont'd)

A: SLOW CHARGE

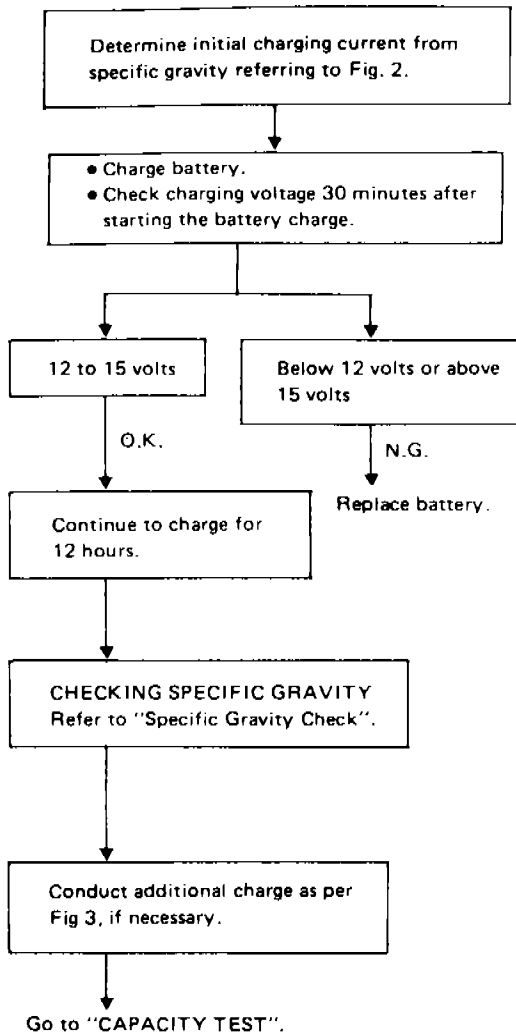
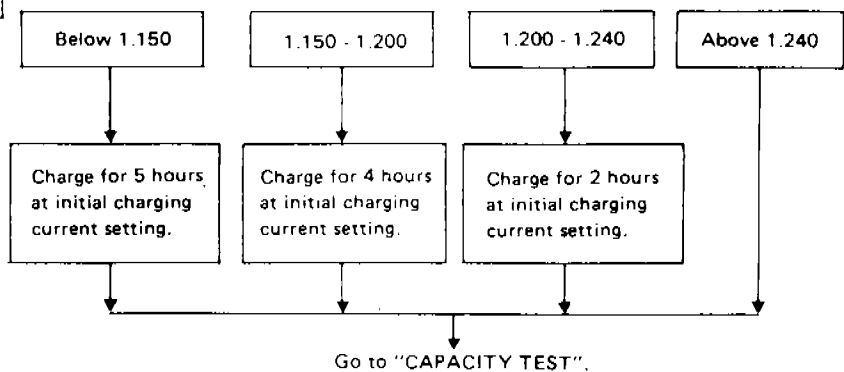


Fig. 2 INITIAL CHARGING CURRENT SETTING (Slow charge)

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

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

Fig. 3 ADDITIONAL CHARGE (Slow charge)



CAUTION:

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

BATTERY

Battery Test and Charging Chart (Cont'd)

B: STANDARD CHARGE

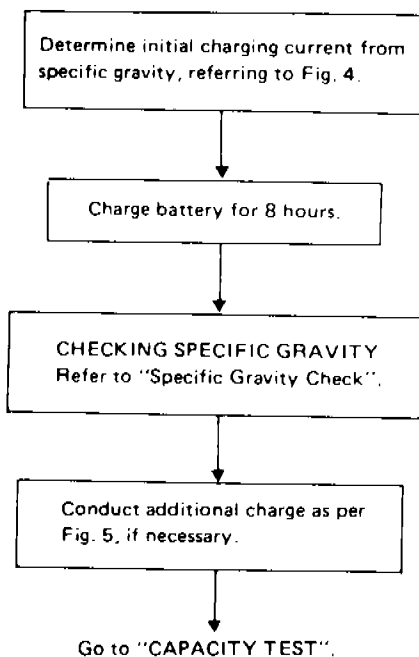
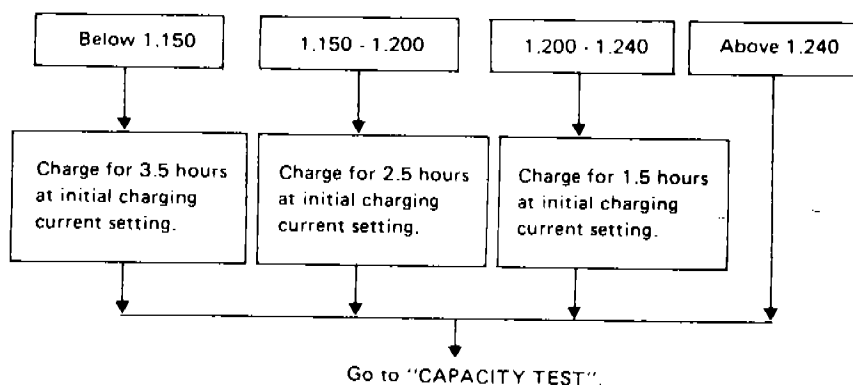


Fig. 4 INITIAL CHARGING CURRENT SETTING
(Standard charge)

BATTERY TYPE CON- VERTED SPECIFIC GRAVITY	28B19R(L) 34B19R(L)	46B24R(L) 55B24R(L)	50D23R(L) 55D23R(L)	65D26R(L) 80D26R(L)	75D31R(L)	95D31R(L) 95E41R(L)	130E41R(L)
1.100 - 1.130	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	8.0 (A)	9.0 (A)	13.0 (A)
1.130 - 1.160	3.0 (A)	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	8.0 (A)	11.0 (A)
1.160 - 1.190	2.0 (A)	3.0 (A)	4.0 (A)	5.0 (A)	6.0 (A)	7.0 (A)	9.0 (A)
1.190 - 1.220	2.0 (A)	2.0 (A)	3.0 (A)	4.0 (A)	5.0 (A)	5.0 (A)	7.0 (A)

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

Fig. 5 ADDITIONAL CHARGE (Standard charge)



CAUTION:

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

BATTERY

Battery Test and Charging Chart (Cont'd)

C: QUICK CHARGE

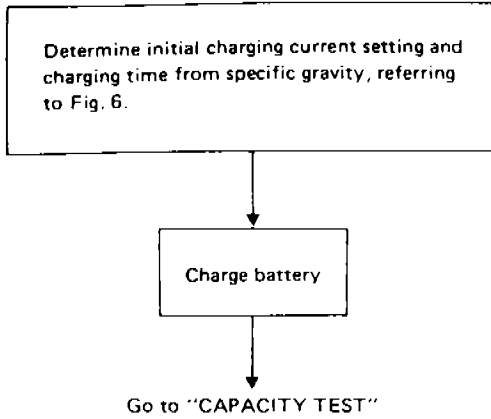


Fig. 6 INITIAL CHARGING CURRENT SETTING AND CHARGING TIME (Quick charge)

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

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

CAUTION:

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

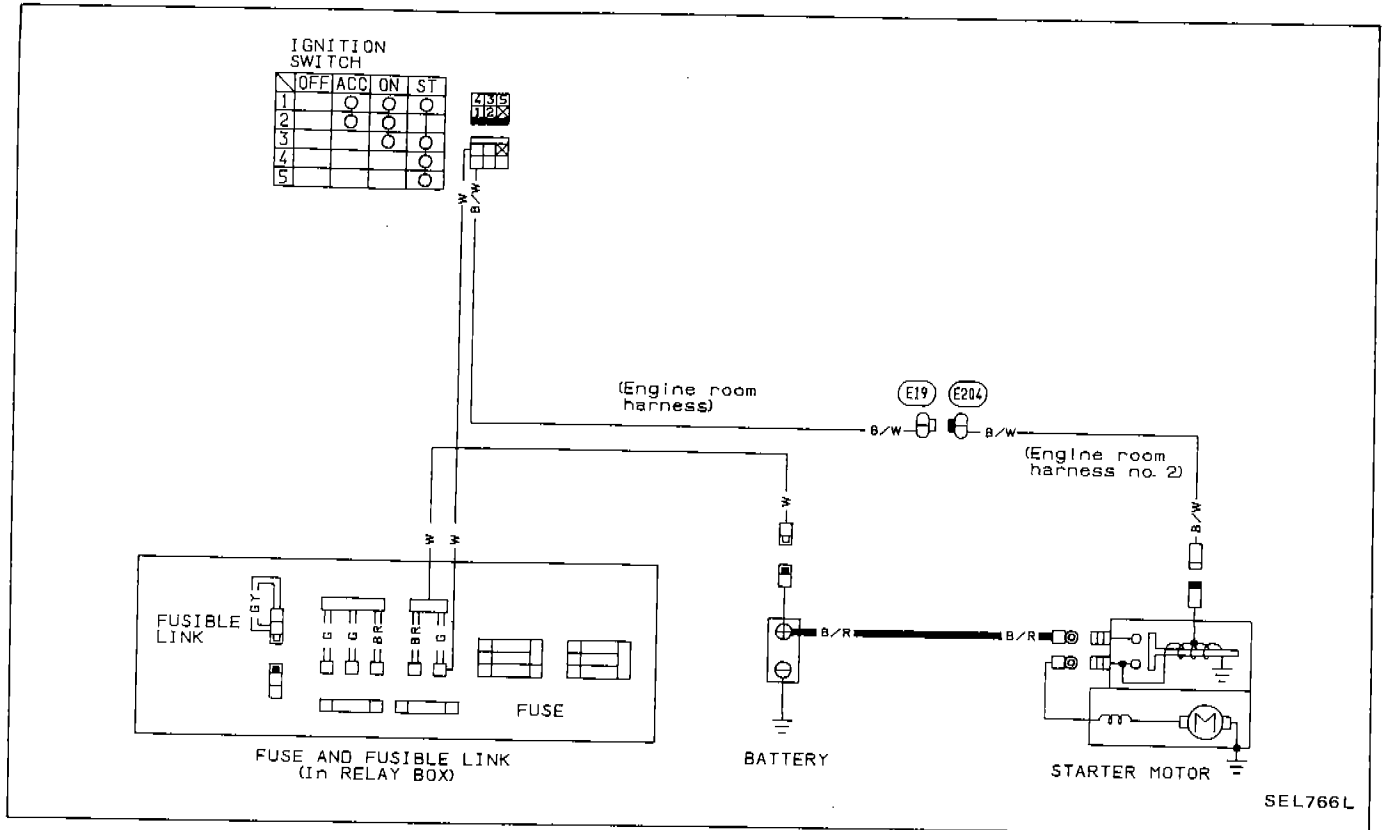
Service Data and Specifications (S.D.S.)

Applied area	Europe	Except Europe (Option)	Except Europe
Type	55D23R		34B19R
Capacity V-AH	12-60		12-33

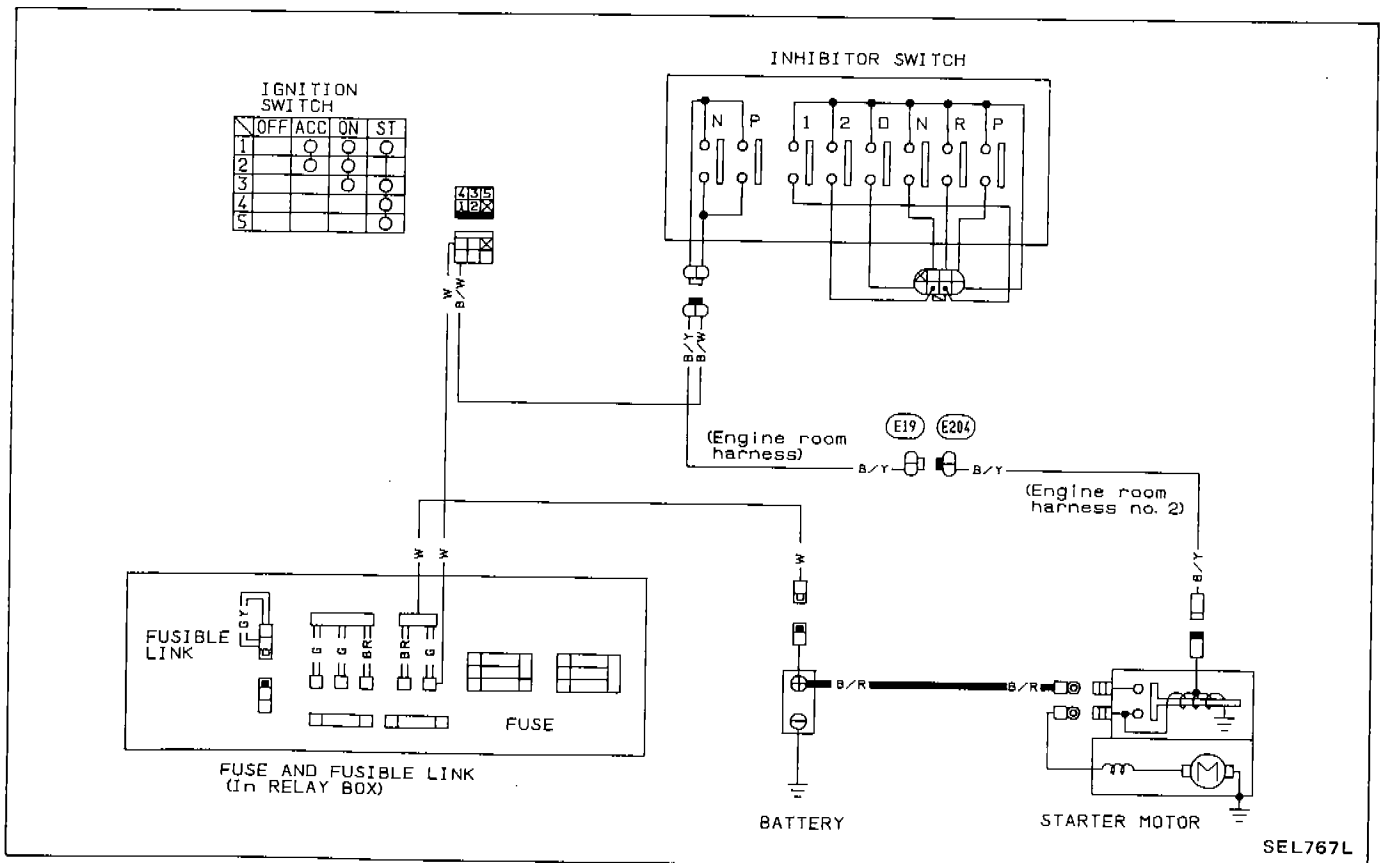
STARTING SYSTEM

Wiring Diagram

M/T MODEL

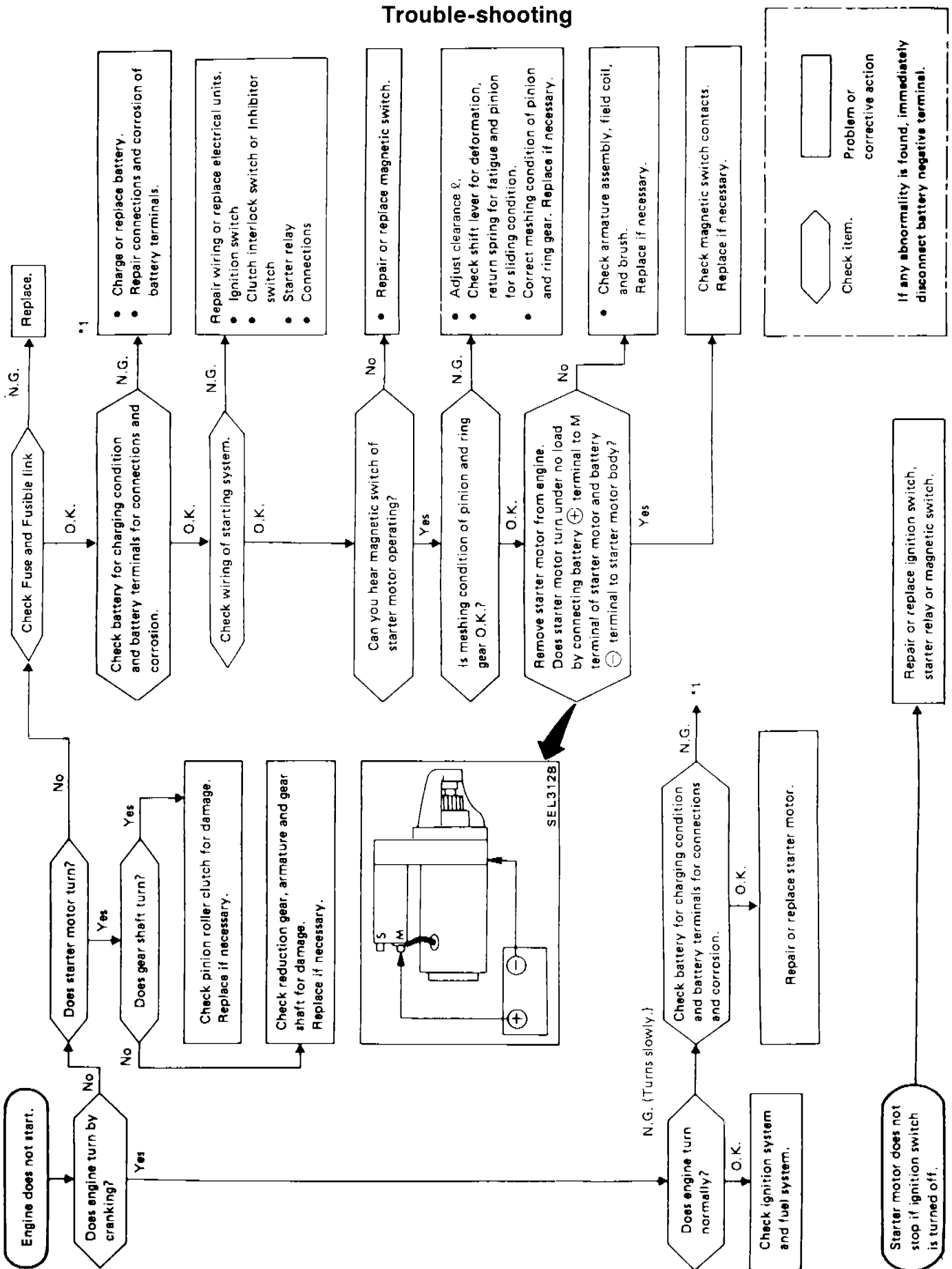


A/T MODEL



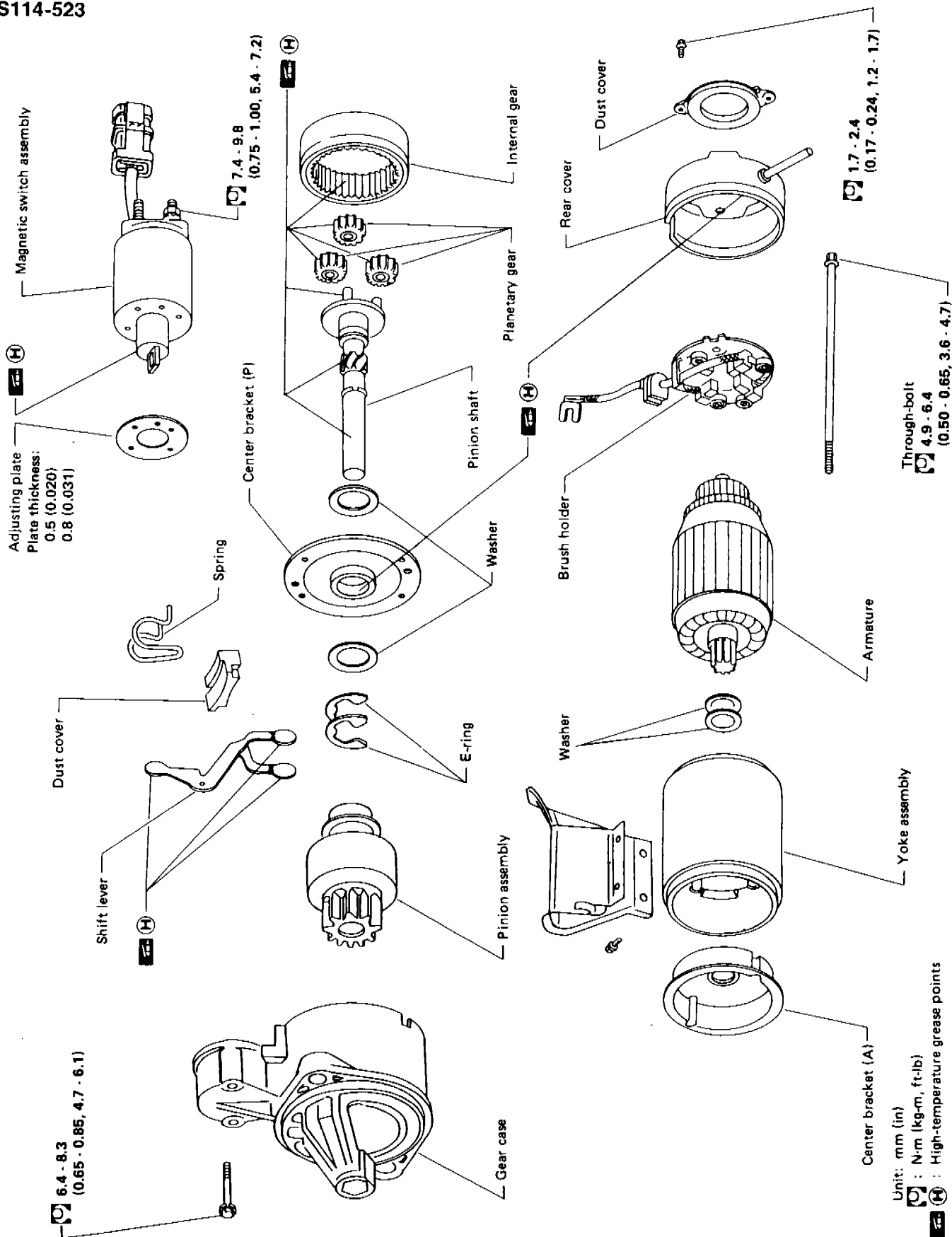
STARTING SYSTEM

Trouble-shooting



Construction

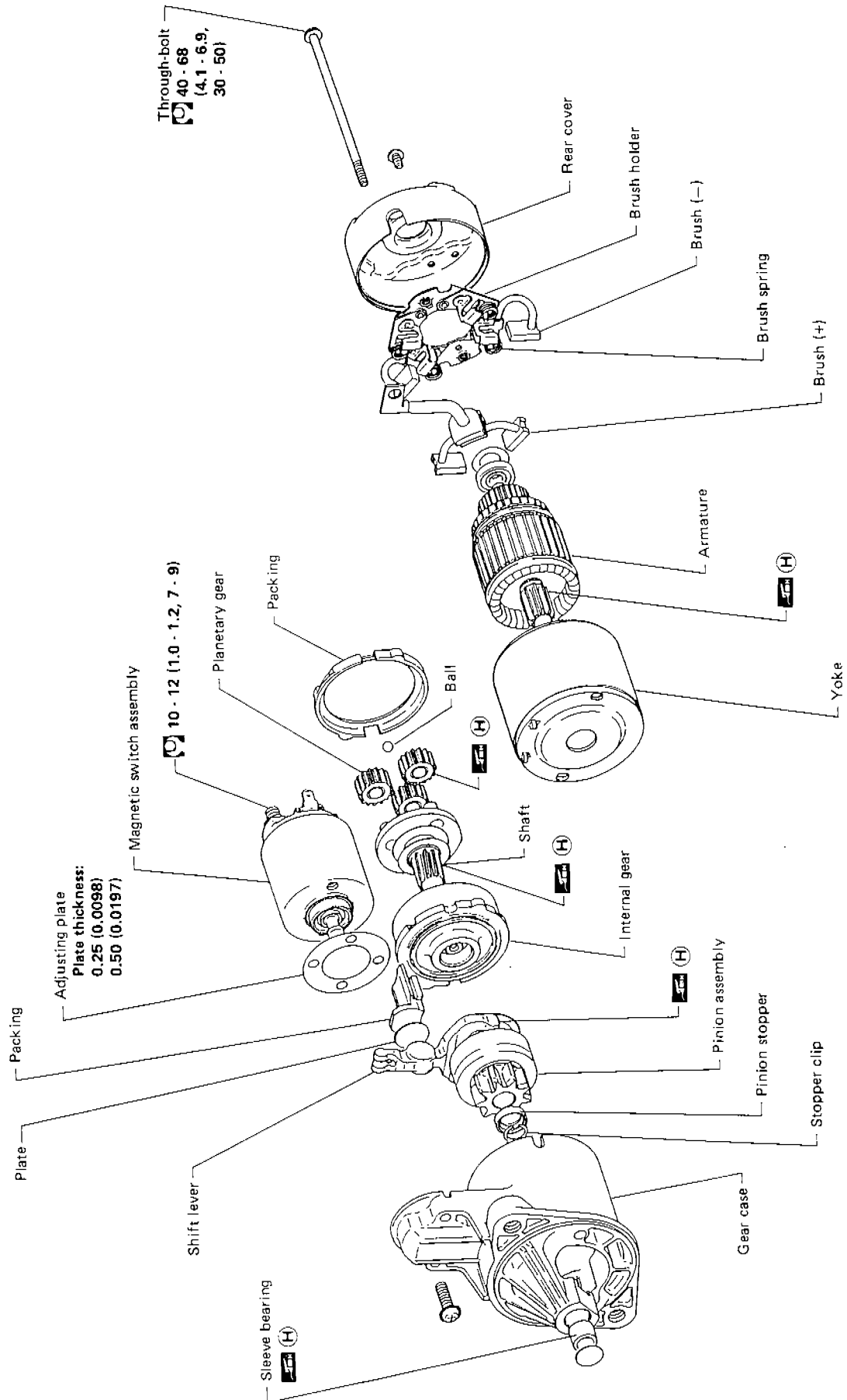
S114-523



SEL647J

Construction (Cont'd)

M1T71481



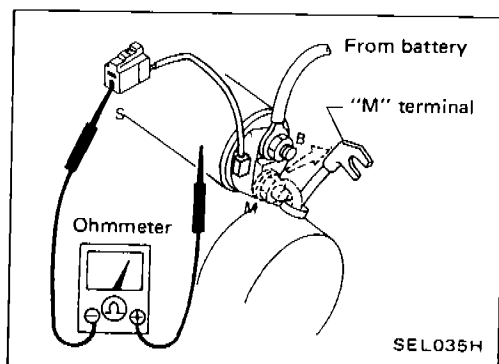
EL-20

Unit : mm (in)

: N·m (kg·m, ft·lb)

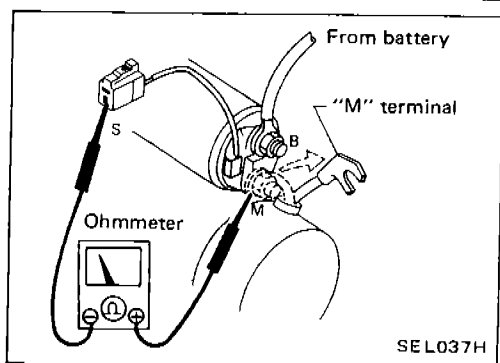
High-temperature grease point

SEL707L

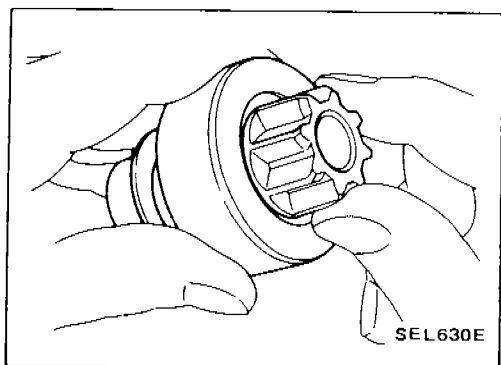


Magnetic Switch Check

- 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.

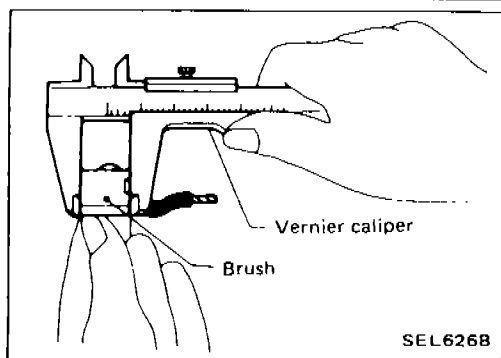


- 2. Continuity test (between "S" terminal and "M" terminal).
- No continuity ... Replace.



Pinion/Clutch Check

1. Inspect pinion teeth.
 - Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
 - If it does not lock (or locks) in either direction or unusual resistance is evident. ... Replace.



Brush Check

BRUSH

Check wear of brush.

Wear limit length:

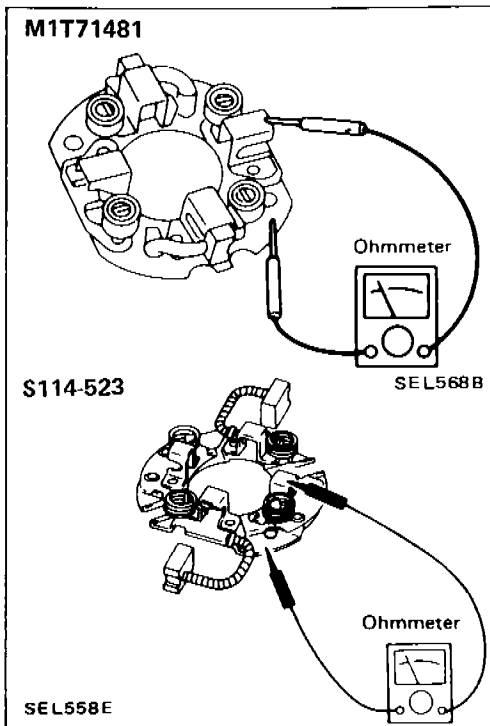
Refer to S.D.S.

- Excessive wear ... Replace.

Brush Check (Cont'd)

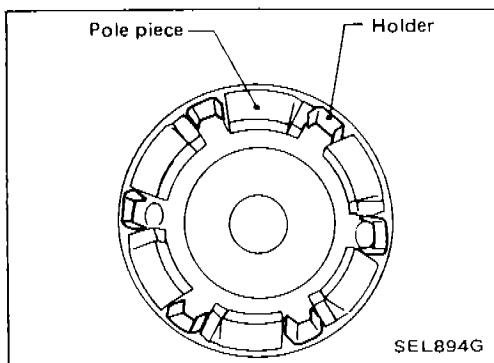
BRUSH HOLDER

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.



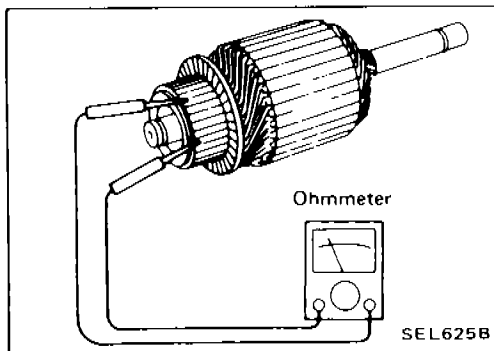
Pole Piece Check

Pole piece is secured to yoke by bonding agent. Check pole piece 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.

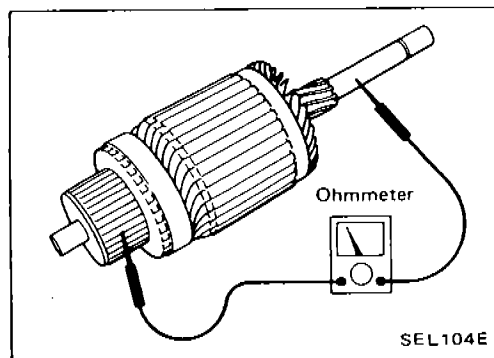


Armature Check

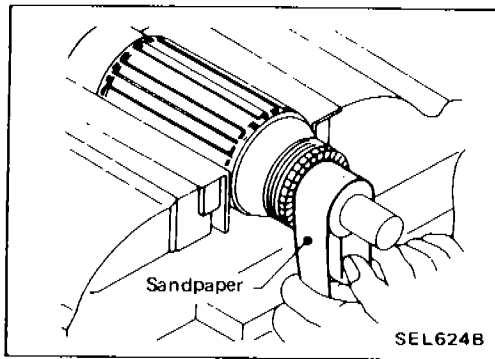
1. Continuity test (between two segments side by side).
 - No continuity ... Replace.



2. Insulation test (between each commutator bar and shaft).
 - Continuity exists. ... Replace.

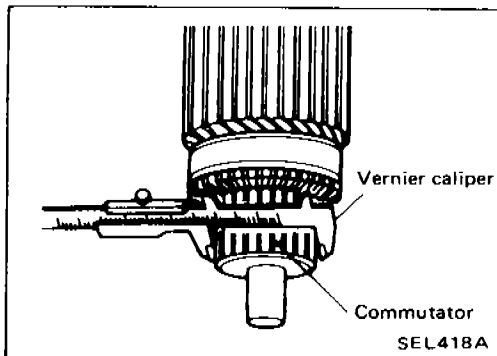


Armature Check (Cont'd)



3. Check commutator surface.

- Rough ... Sand lightly with No. 500 to 600 sandpaper.

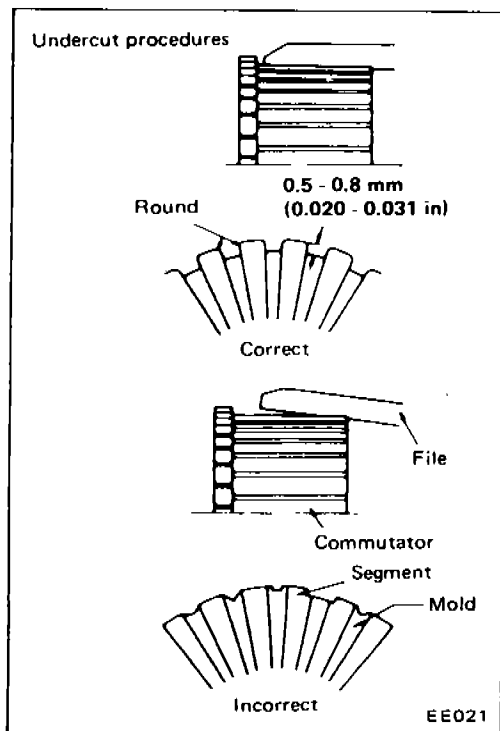


4. Check diameter of commutator.

Commutator minimum diameter:

Refer to S.D.S.

- 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.

- Gear case metal
- Moving portion of shift lever
- Plunger of magnetic switch
- Internal gear
- Planetary gear
- Shaft

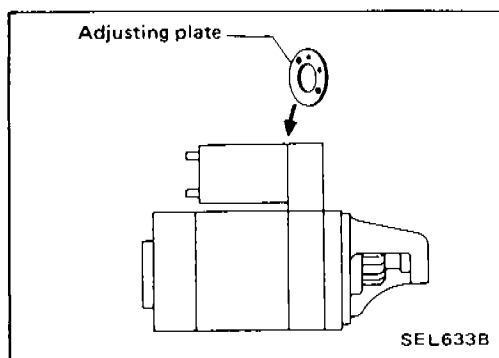
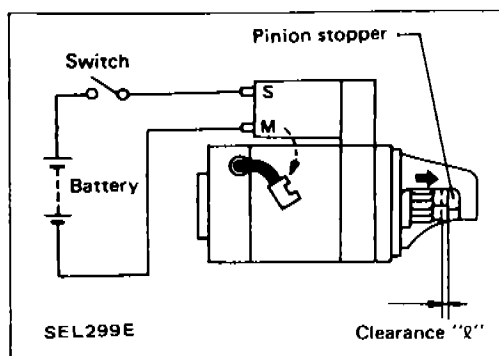
Assembly (Cont'd)

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 S.D.S.



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

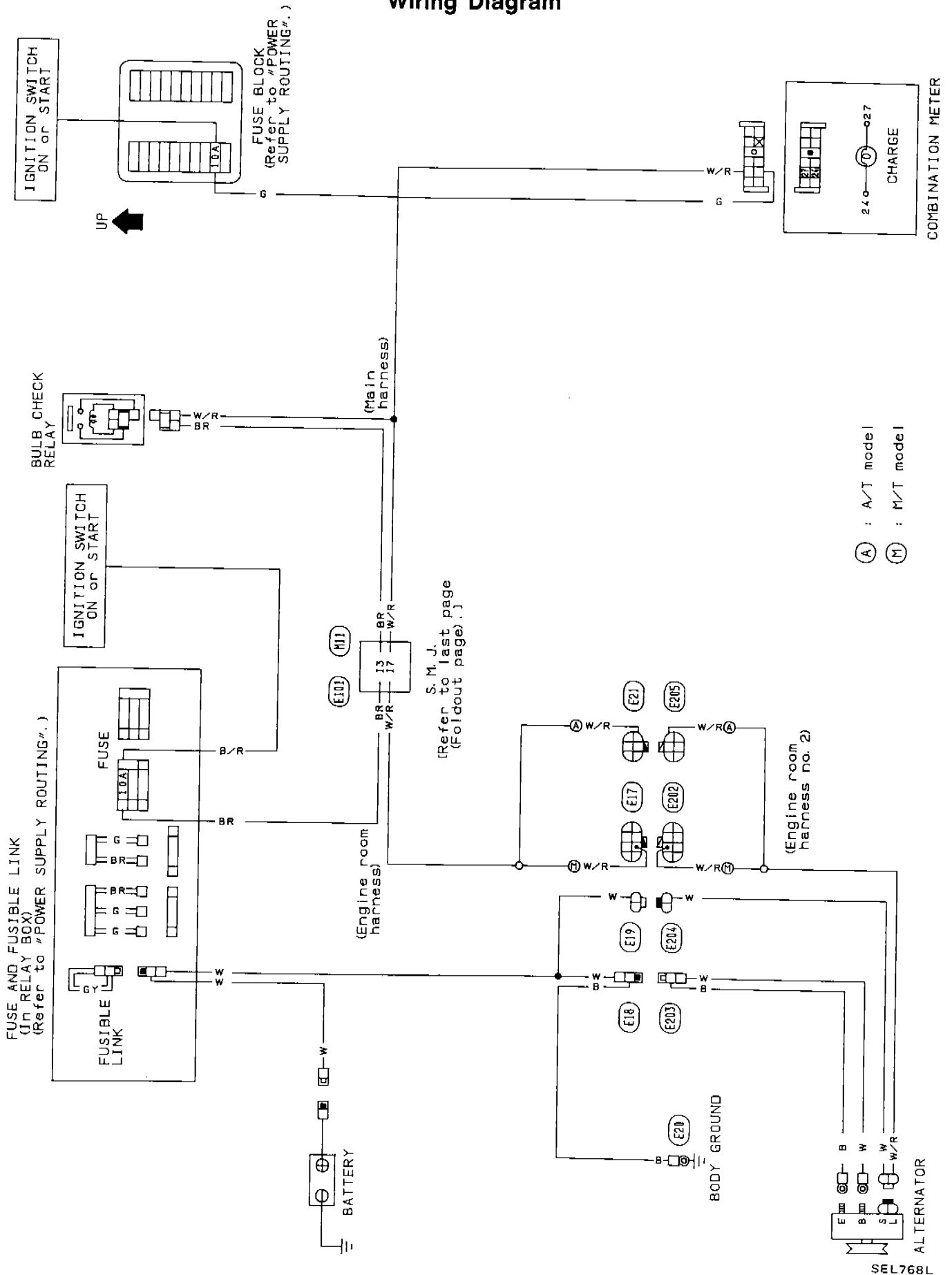
Service Data and Specifications (S.D.S.)

STARTER

Type		S114-523	M1T71481
		HITACHI make	MITSUBISHI make
		Reduction gear type	
Applied model		All	
System voltage	V	12	
No-load			
Terminal voltage	V	11.0	
Current	A	Less than 90	50 - 75
Revolution	rpm	More than 2,950	3,000 - 4,000
Minimum diameter of commutator	mm (in)	32.0 (1.260)	28.8 (1.134)
Minimum length of brush	mm (in)	11.0 (0.433)	12.0 (0.472)
Brush spring tension	N (kg, lb)	17.7 - 21.6 (1.8 - 2.2, 4.0 - 4.9)	13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)
Clearance of bearing metal and armature shaft	mm (in)	0.2 (0.008)	—
Clearance "ℓ" between pinion front edge and pinion stopper	mm (in)	0.3 - 1.5 (0.012 - 0.059)	0.5 - 2.0 (0.020 - 0.079)

CHARGING SYSTEM

Wiring Diagram



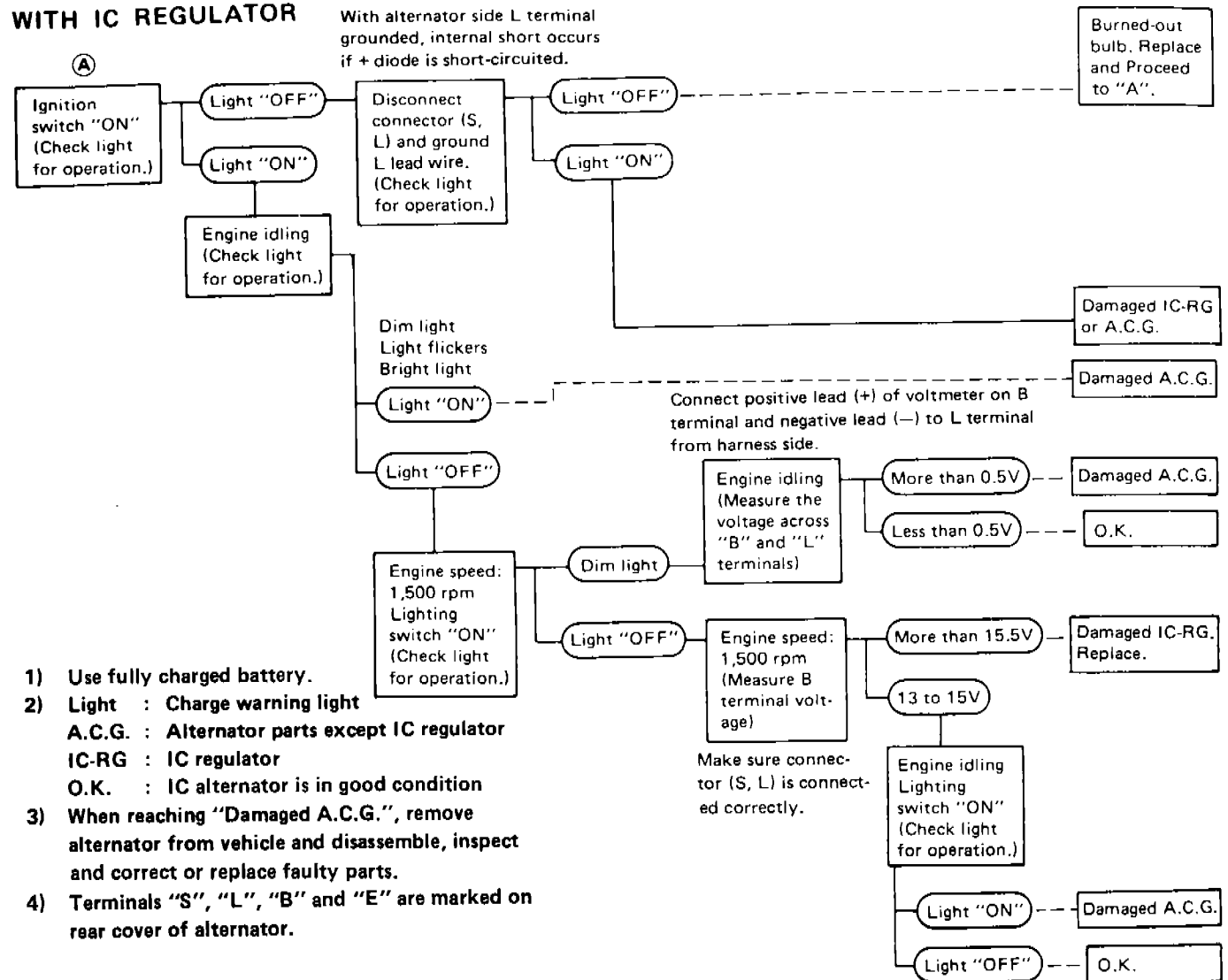
CHARGING SYSTEM

Trouble-shooting

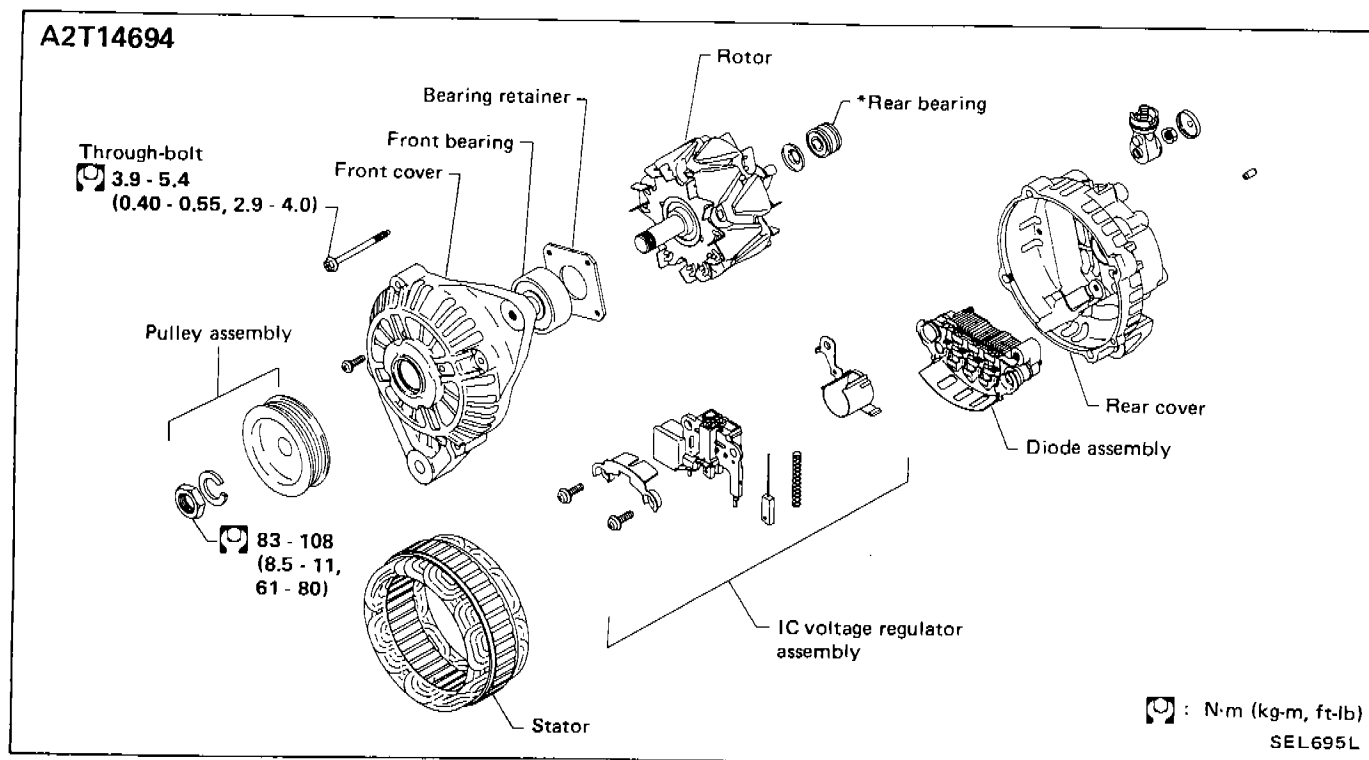
Before conducting an alternator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. The alternator can be checked easily by referring to the Inspection Table.

Before starting trouble-shooting, inspect the fusible link.

WITH IC REGULATOR



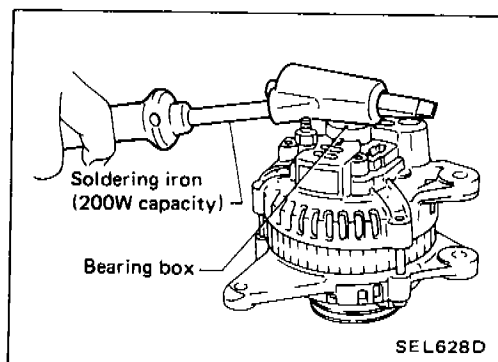
Construction



*Rear bearing

CAUTION:

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

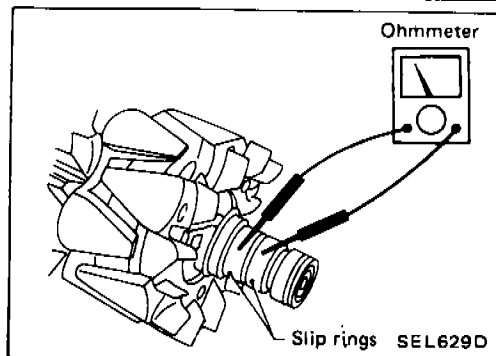


Disassembly

REAR COVER REMOVAL

CAUTION:

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.



Rotor Slip Ring Check

1. Continuity test
- No continuity ... Replace rotor.

Rotor Slip Ring Check (Cont'd)

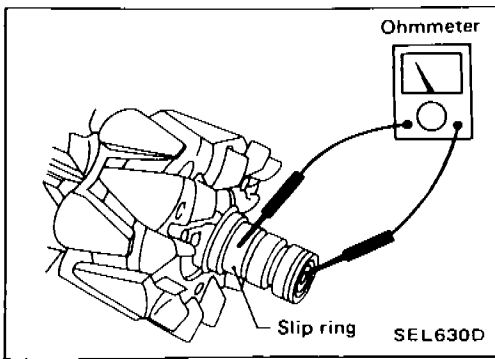
2. Insulator test

- Continuity exists. ... Replace rotor.

3. Check slip ring for wear.

Slip ring minimum outer diameter:

Refer to S.D.S.



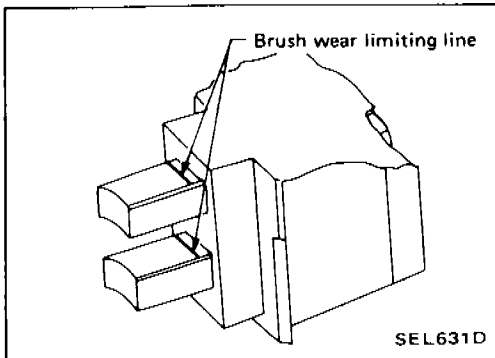
Brush Check

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.



3. Check brush lead wire for damage.

- Damaged ... Replace.

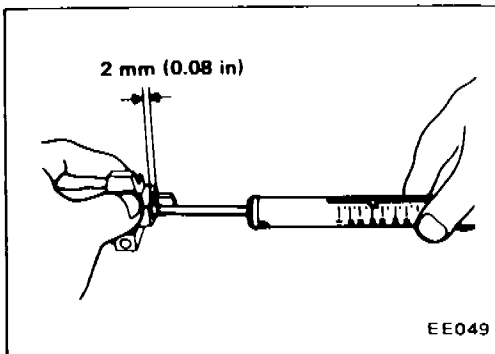
4. Check brush spring pressure.

Measure brush spring pressure with brush projected approximately 2 mm (0.08 in) from brush holder.

Spring pressure:

Refer to S.D.S.

- Not within the specified values ... Replace.

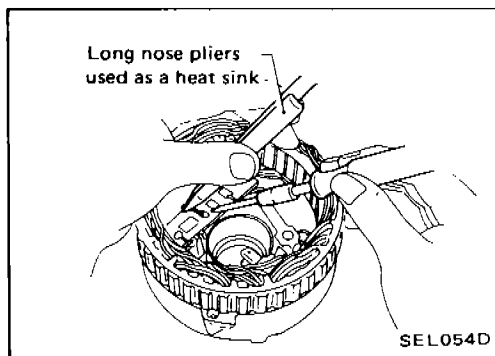


Stator Check

To test the stator or diode, separate them by unsoldering the connecting wires.

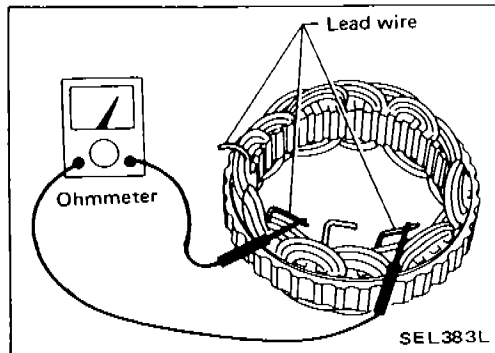
CAUTION:

Use only as much heat as required to melt solder. Otherwise, diodes will be damaged by excessive heat.

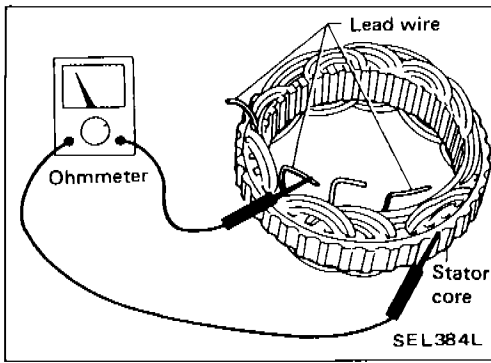


1. Continuity test

- No continuity ... Replace stator.



Stator Check (Cont'd)



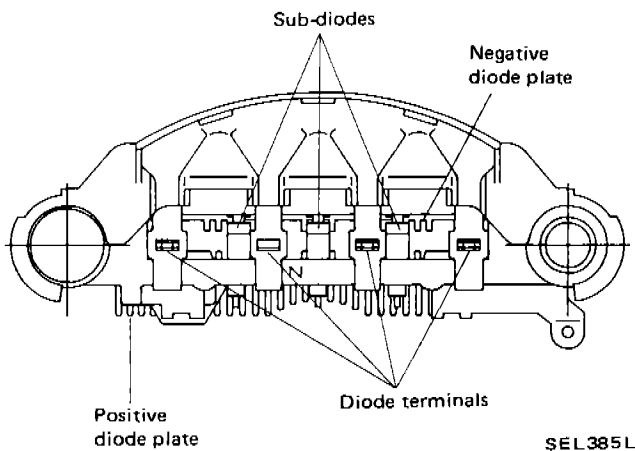
2. Ground test
 - Continuity exists. ... Replace stator.

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.

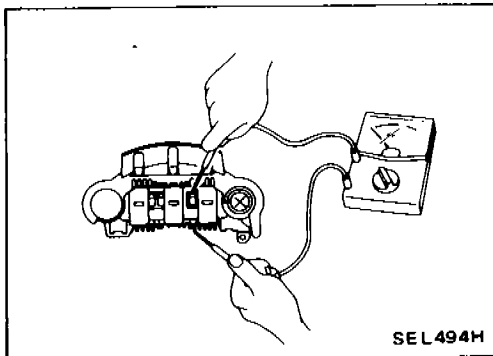
	Ohmmeter probes		Continuity
	Positive $\oplus$	Negative $\ominus$	
Diodes check (Positive side)	Positive diode plate	Diode terminals	Yes
	Diode terminals	Positive diode plate	No
Diodes check (Negative side)	Negative diode plate	Diode terminals	No
	Diode terminals	Negative diode plate	Yes



SEL385L

SUB-DIODES

- Attach ohmmeter's probe to each end of diode to check for continuity.
- Continuity is N.G. ... Replace diode assembly.

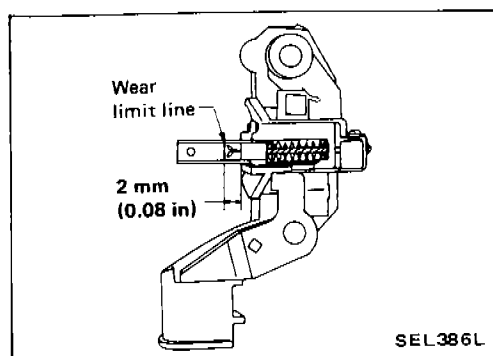


SEL494M

Assembly

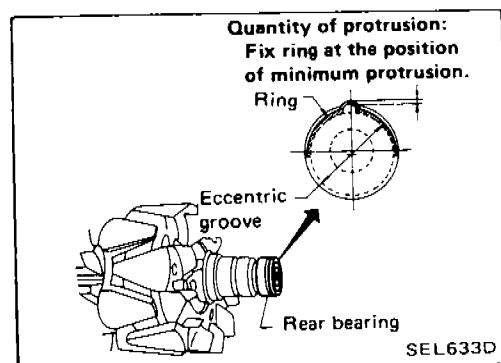
Carefully observe the following instructions.

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



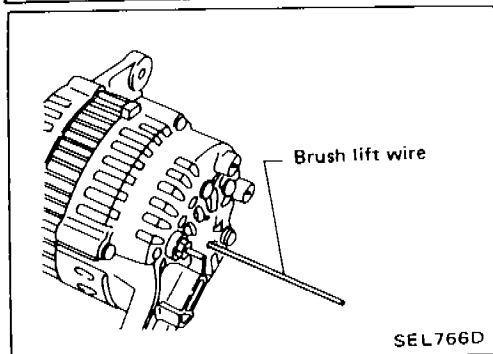
WHEN SOLDERING BRUSH LEAD WIRE

- Position brush so that its wear limit line protrudes 2 mm (0.08 in) beyond end face of brush holder.



RING FITTING IN REAR BEARING

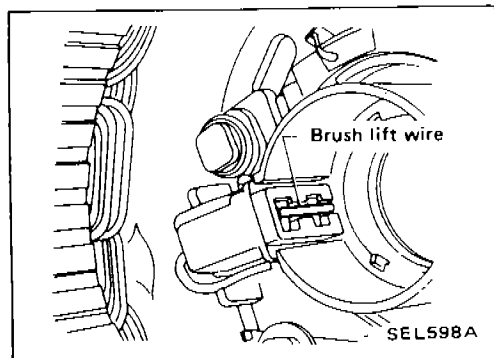
- Fix ring into groove in rear bearing so that it is as close to the adjacent area as possible.



REAR COVER INSTALLATION

- (1) Before installing front cover with pulley and rotor with rear cover, push brush up with fingers and retain brush by inserting brush lift wire into brush lift hole from outside.
- (2) After installing front and rear sides of alternator, pull brush lift wire by pushing toward the center.

Do not pull brush lift wire by pushing toward outside of rear cover as it will damage slip ring sliding surface.

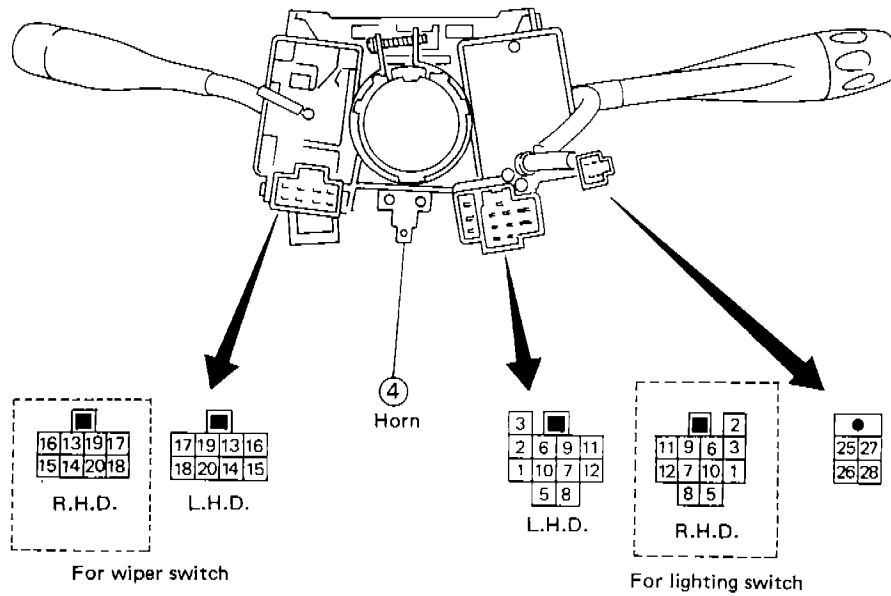
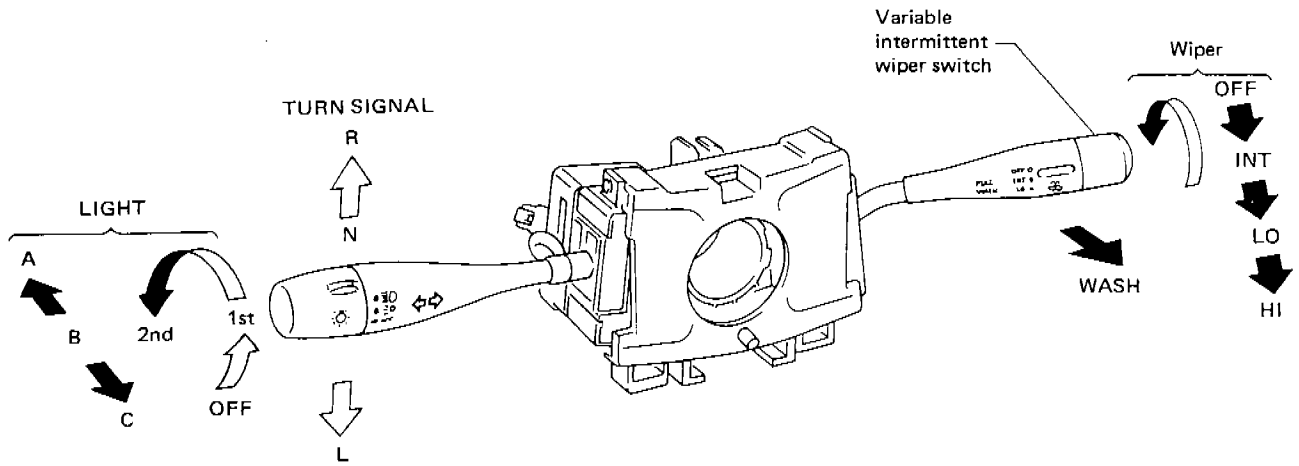


**Service Data and Specifications (S.D.S.)
ALTERNATOR**

Type		A2T14694
Applied model		All
Nominal rating	V-A	12-80
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,100
Hot output current	A/rpm	More than 22/1,300 More than 60/2,500
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	8.0 (0.315)
Brush spring pressure	N (g, oz)	3.040 - 4.217 (310 - 430, 10.93 - 15.17)
Slip ring minimum outer diameter	mm (in)	22.1 (0.870)

COMBINATION SWITCH

Check



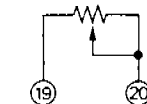
LIGHTING SWITCH

	OFF			1			2		
	A	B	C	A	B	C	A	B	C
5									
6									
7									
8									
9									
10									
11									
12									
25									
26									
27									
28									

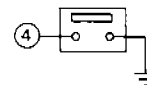
WIPER SWITCH

	OFF	INT	LO	HI	WASH
13					
14					
15					
16					
17					
18					

INTERMITTENT WIPER VOLUME



HORN SWITCH

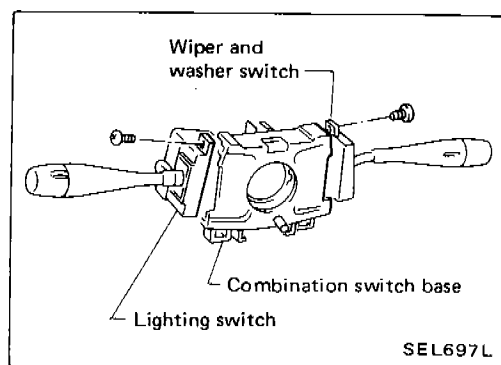


TURN SIGNAL SWITCH

	R	N	L
1			
2			
3			

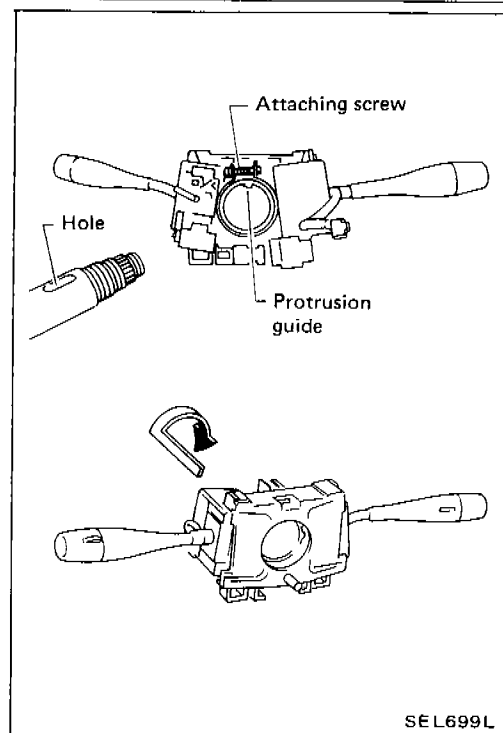
SEL696L

COMBINATION SWITCH



Replacement

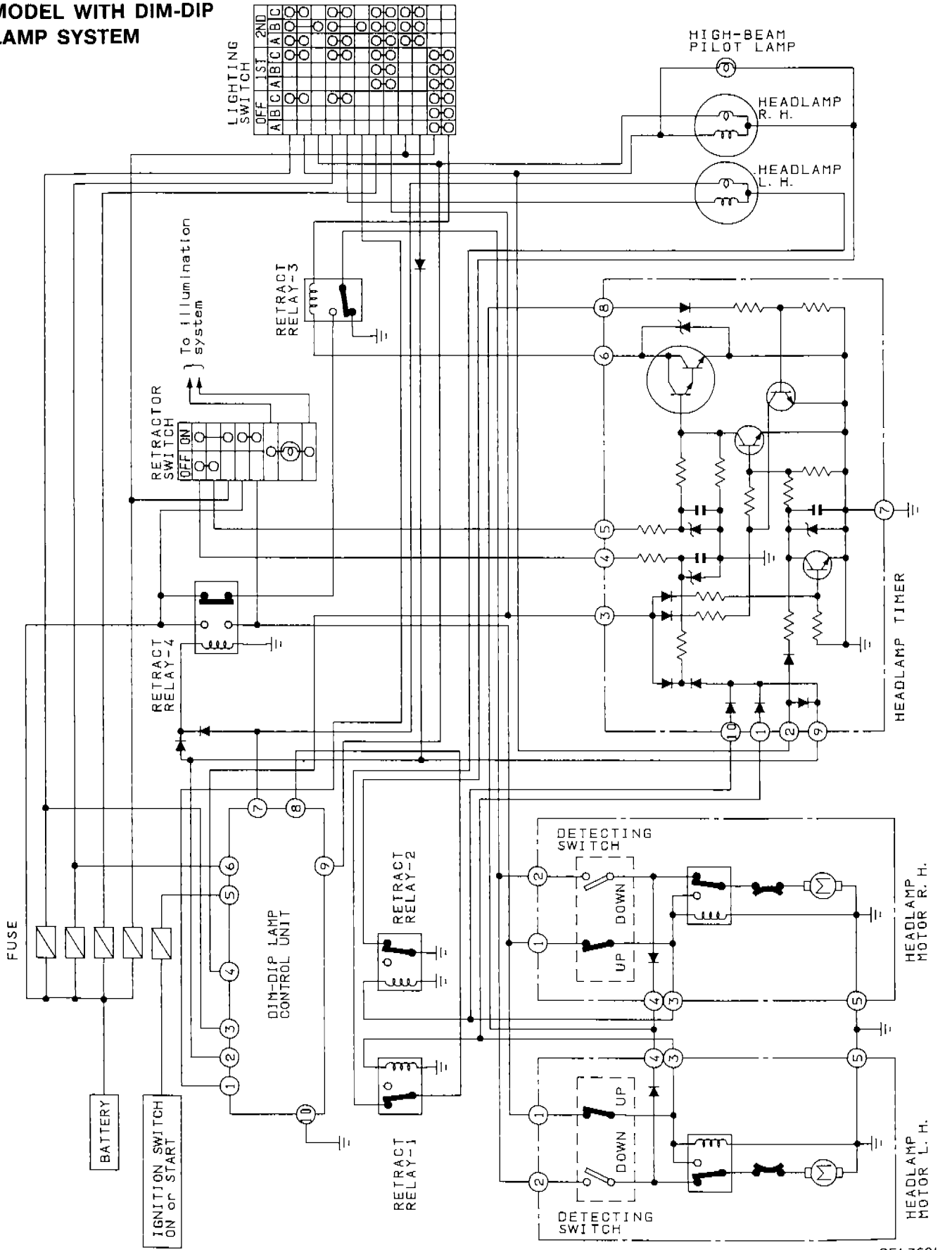
- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screw and turn after pushing on it.



HEADLAMP

Schematic

MODEL WITH DIM-DIP LAMP SYSTEM



SEL769L

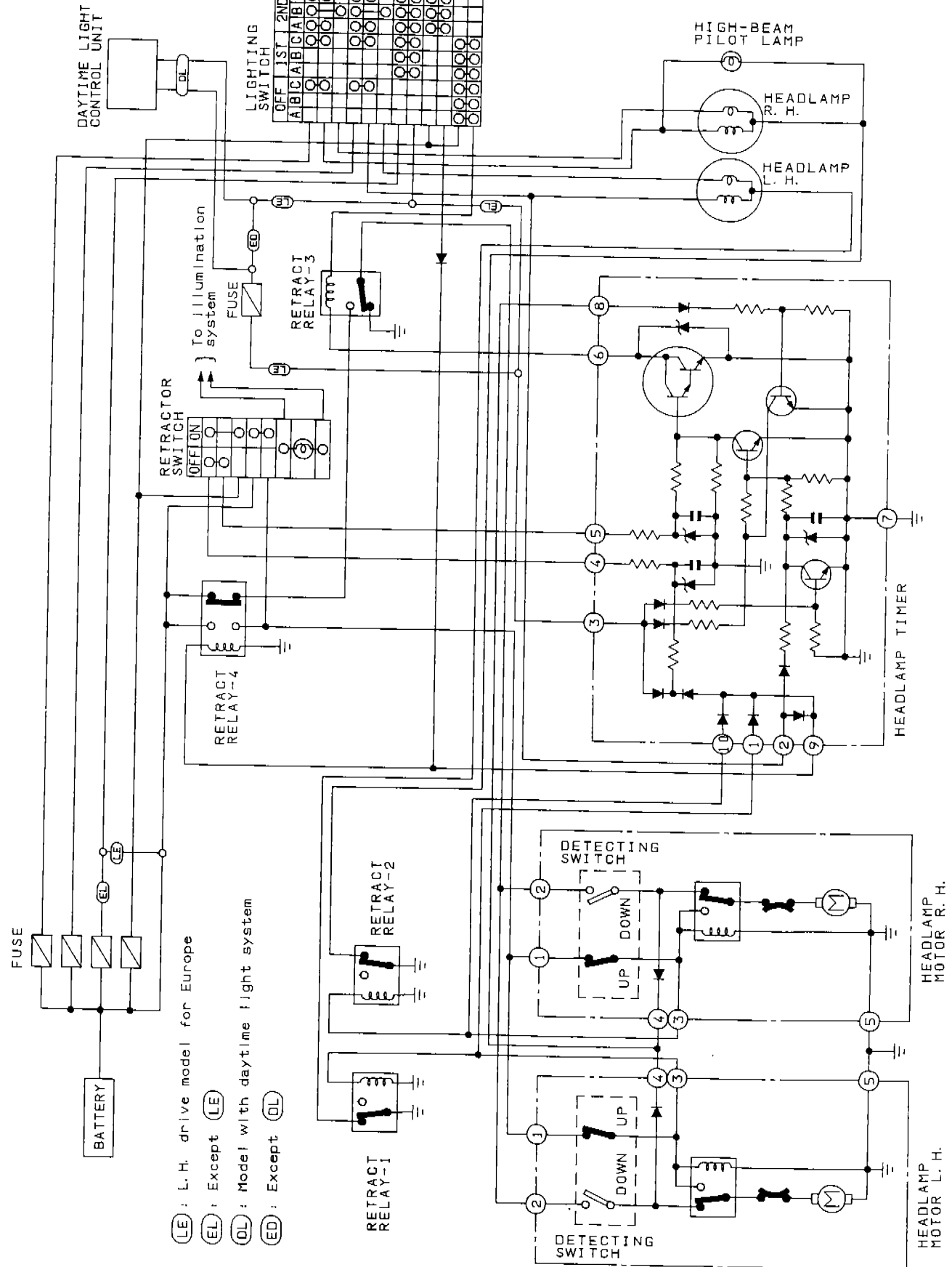
Schematic (Cont'd)

The diagram illustrates the electrical system for the L.H. drive model for Europe. It shows the following components and their connections:

- BATTERY**: The main power source, connected to a **FUSE** block.
- FUSE**: A block containing four individual fuses, each protecting a different branch of the circuit.
- DAYTIME LIGHT CONTROL UNIT**: A unit that controls the daytime lights, connected to the battery and the lighting switch.
- LIGHTING SWITCH**: A switch that controls the main lighting, connected to the battery and the daytime light control unit.
- RETRACTOR SWITCH**: A switch that controls the retractor system, connected to the battery and the retractor relays.
- RETRACT RELAY-1, 2, 3, 4**: Four relays that control the retractor system, each connected to the retractor switch and the battery.
- RETRACT RELAY-1, 2, 3, 4**: Four relays that control the retractor system, each connected to the retractor switch and the battery.

The diagram also includes a legend for the symbols used:

- LE**: L.H. drive model for Europe
- EL**: Except
- OL**: Model with daytime light system
- ED**: Except

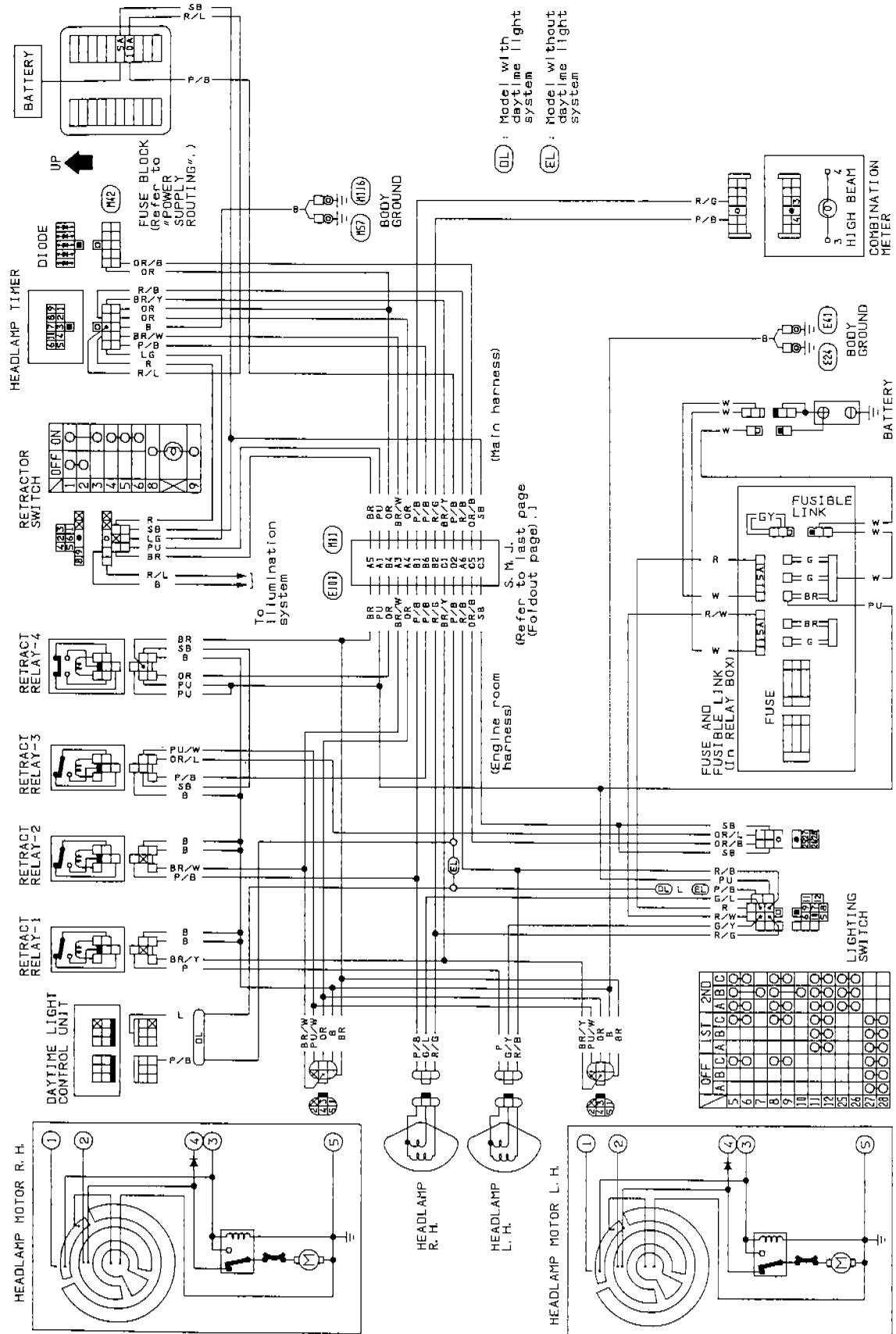


EL-35

HEADLAMP

Wiring Diagram

L.H. DRIVE MODEL FOR EUROPE

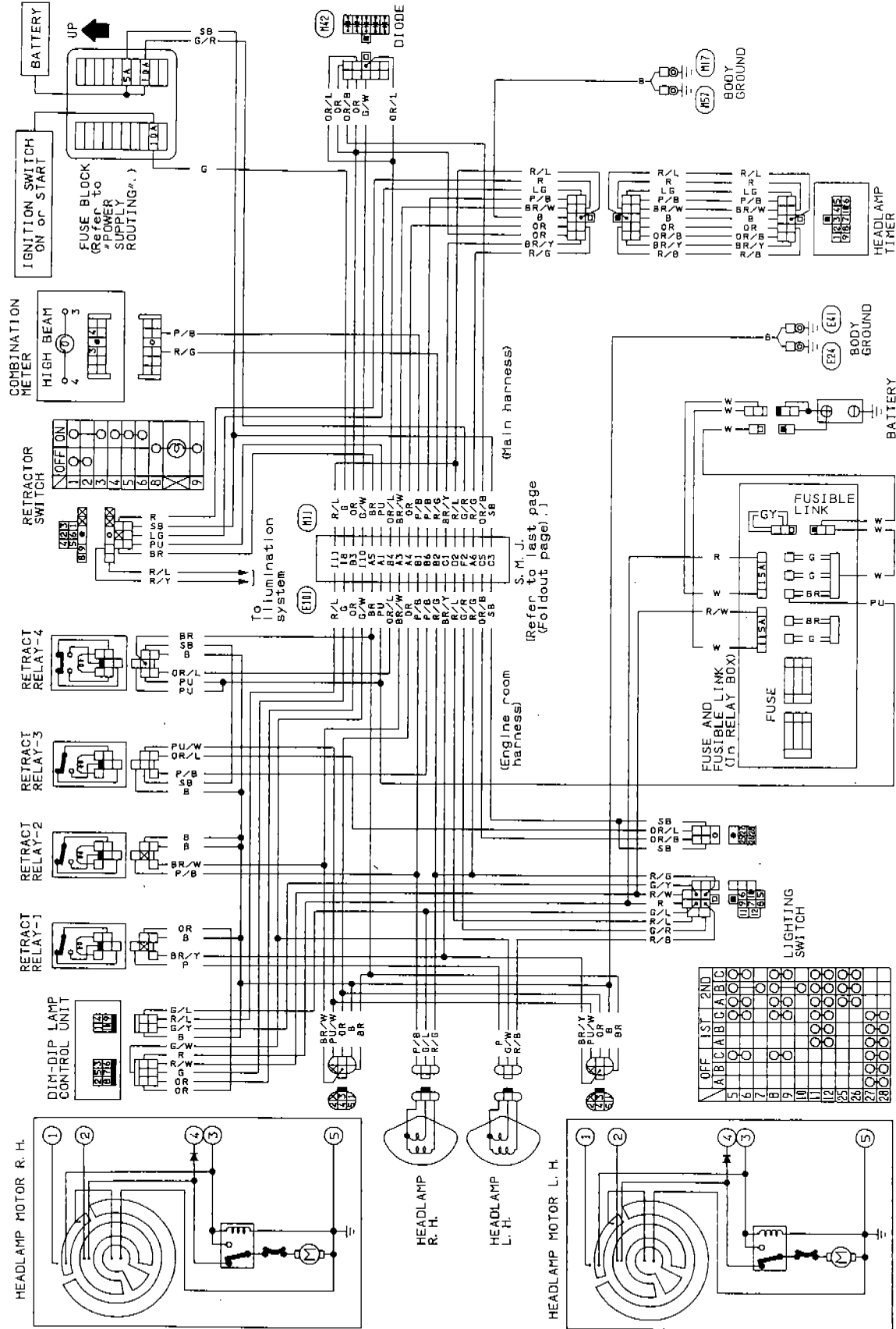


SEL771L

HEADLAMP

Wiring Diagram (Cont'd)

MODEL WITH DIM-DIP LAMP SYSTEM



SEL772L

Wiring Diagram (Cont'd)

HEADLAMP MOTOR R. H.

HEADLAMP R. H.

HEADLAMP L. H.

HEADLAMP MOTOR L. H.

RETRACT RELAY-1

RETRACT RELAY-2

RETRACT RELAY-3

RETRACT RELAY-4

COMBINATION METER

RETRACTOR SWITCH

DIODE

FUSE BLOCK

FUSE AND FUSIBLE LINK (IN RELAY BOX)

LIGHTING SWITCH

HEADLAMP TIMER

HEADLAMP TIMER

LEGEND:

- L : L. H. drive model
- E : For Europe
- R : R. H. drive model
- G : Except for Europe

EL-38

HEADLAMP

Description

BASIC OPERATION

Condition		Operation	
Lighting switch	Retractor switch	Headlamp motor	Headlamps
OFF → 1ST	OFF	No operation	OFF
1ST → 2ND	OFF	Open	ON after headlamp motor reaches fully open position.
2ND → 1ST	OFF	Held to open position	OFF
1ST → OFF	OFF	Closed	OFF
Except for Europe model Momentarily turned to PASSING	OFF	Opened and closed after headlamps go off.	Momentarily ON after headlamp motor reaches fully open position, and then go off.
For Europe model Momentarily turned to PASSING	OFF	Opened and closed	OFF
Held at PASSING position	OFF	Open	ON after headlamp motor reaches fully open position.
Release PASSING position	OFF	Closed after headlamps go off.	OFF
OFF	ON	Open	OFF

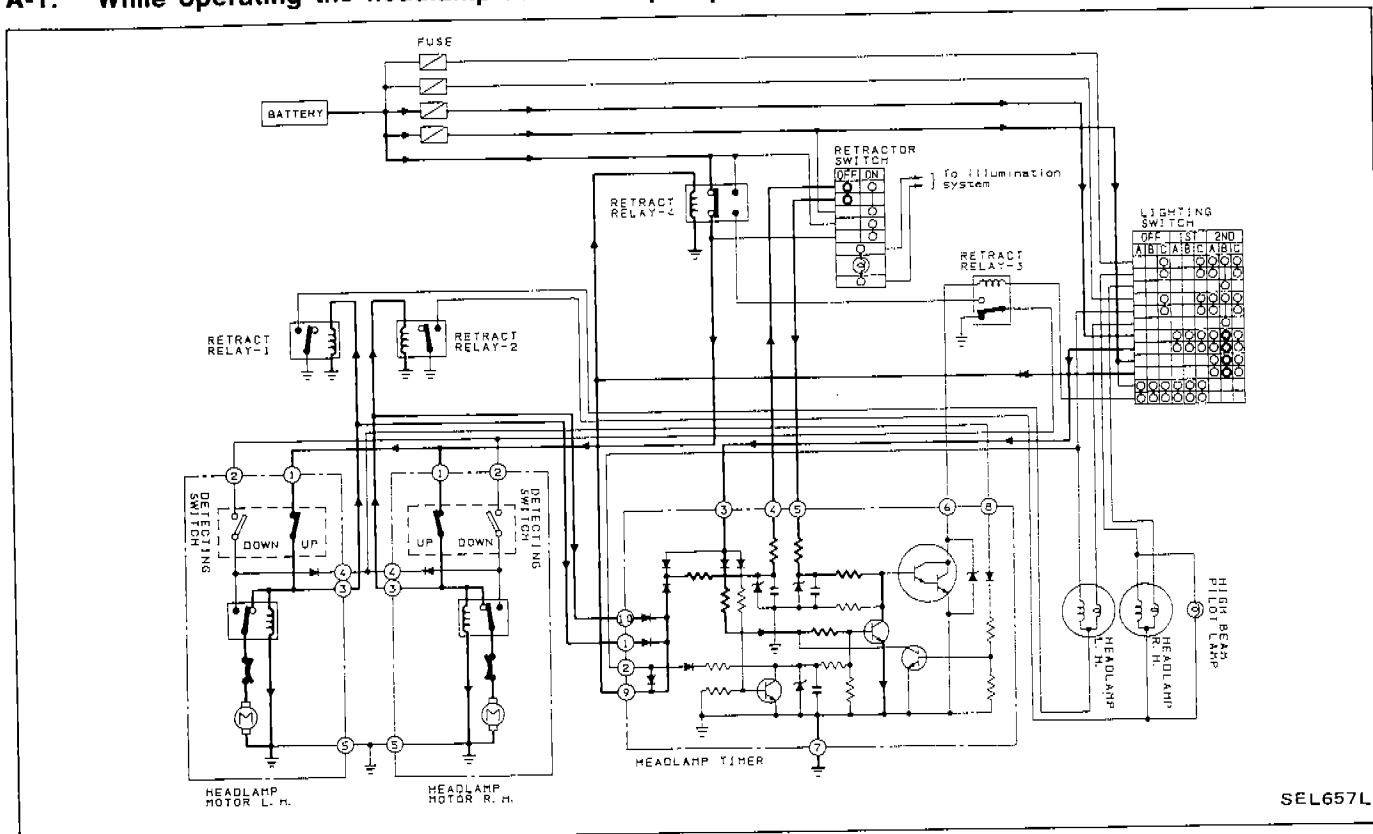
HEADLAMP

Description (Cont'd)

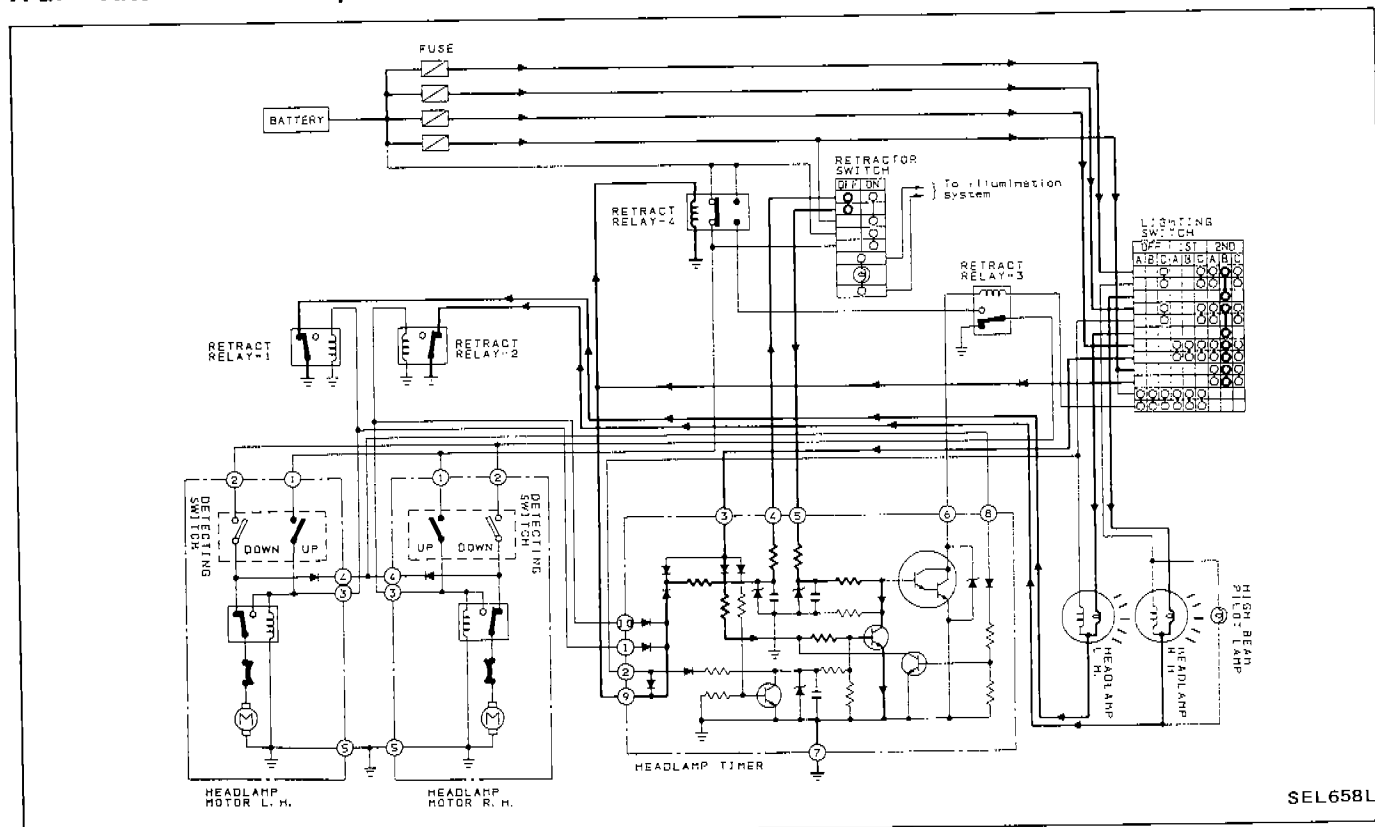
CIRCUIT OPERATION

[A] When lighting switch is switched from "1ST" → "2ND"

A-1: While operating the headlamp motor to open position



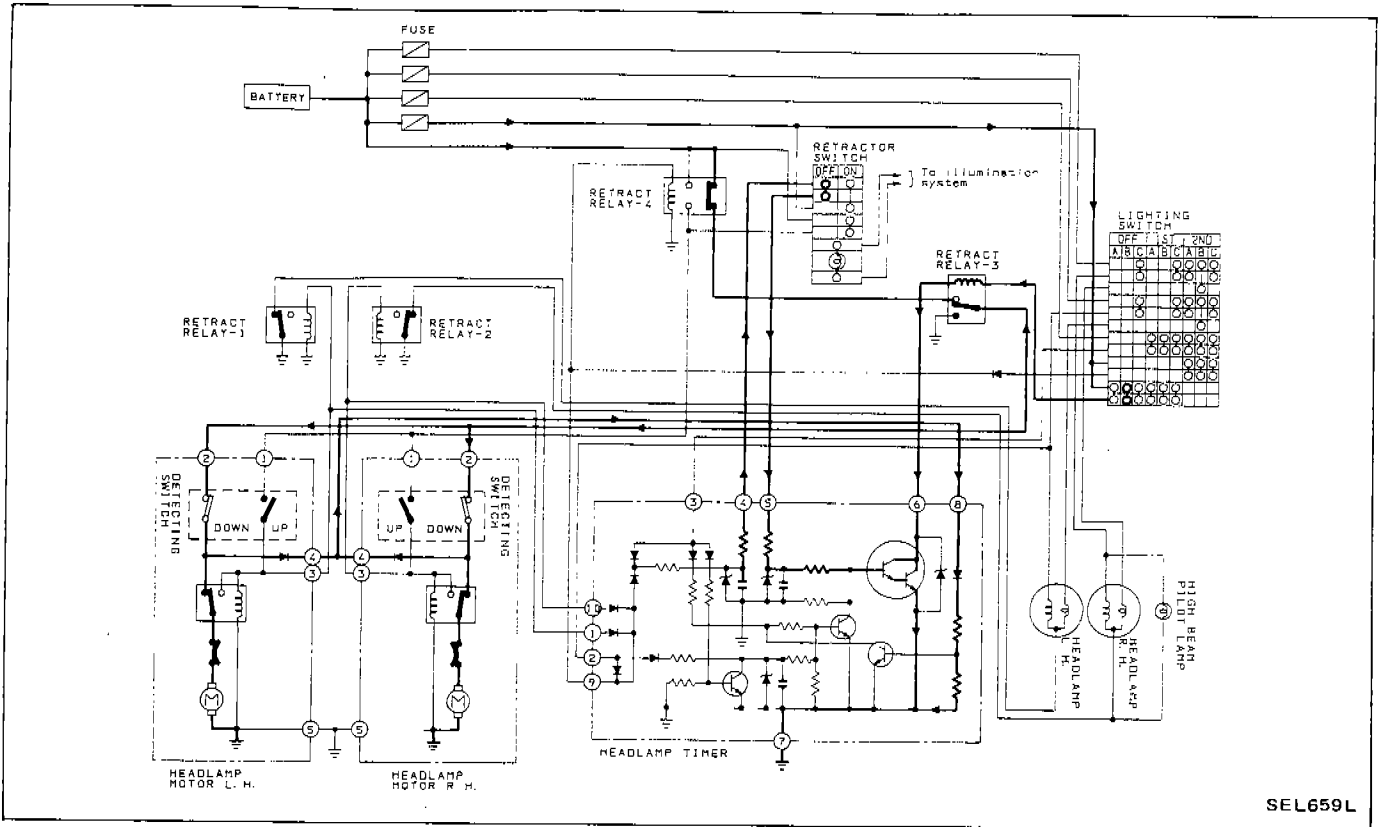
A-2: After the headlamp motor reaches fully open position



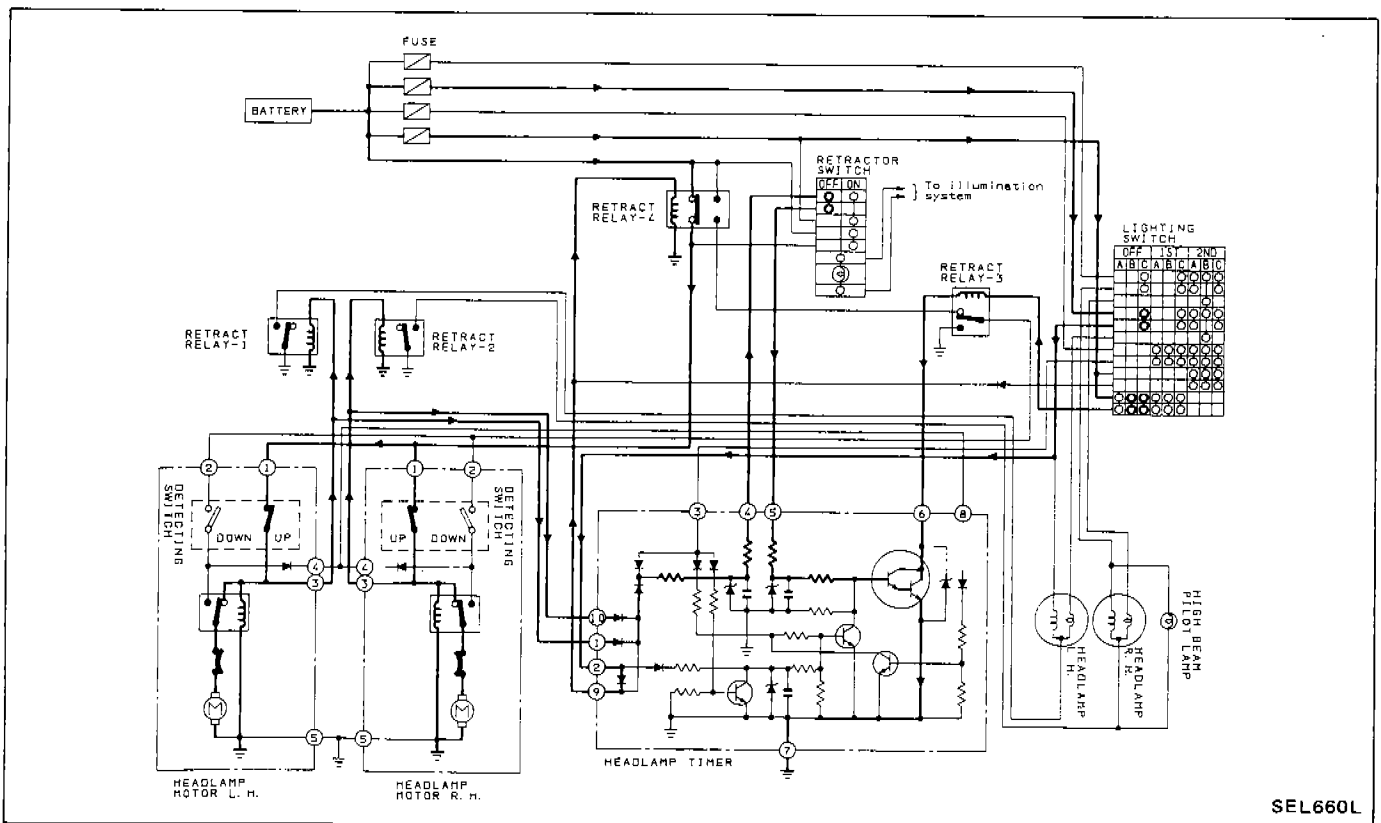
HEADLAMP

Description (Cont'd)

- [B] When lighting switch is switched from "1ST" → "OFF"
(While operating the headlamp motor to closed position)



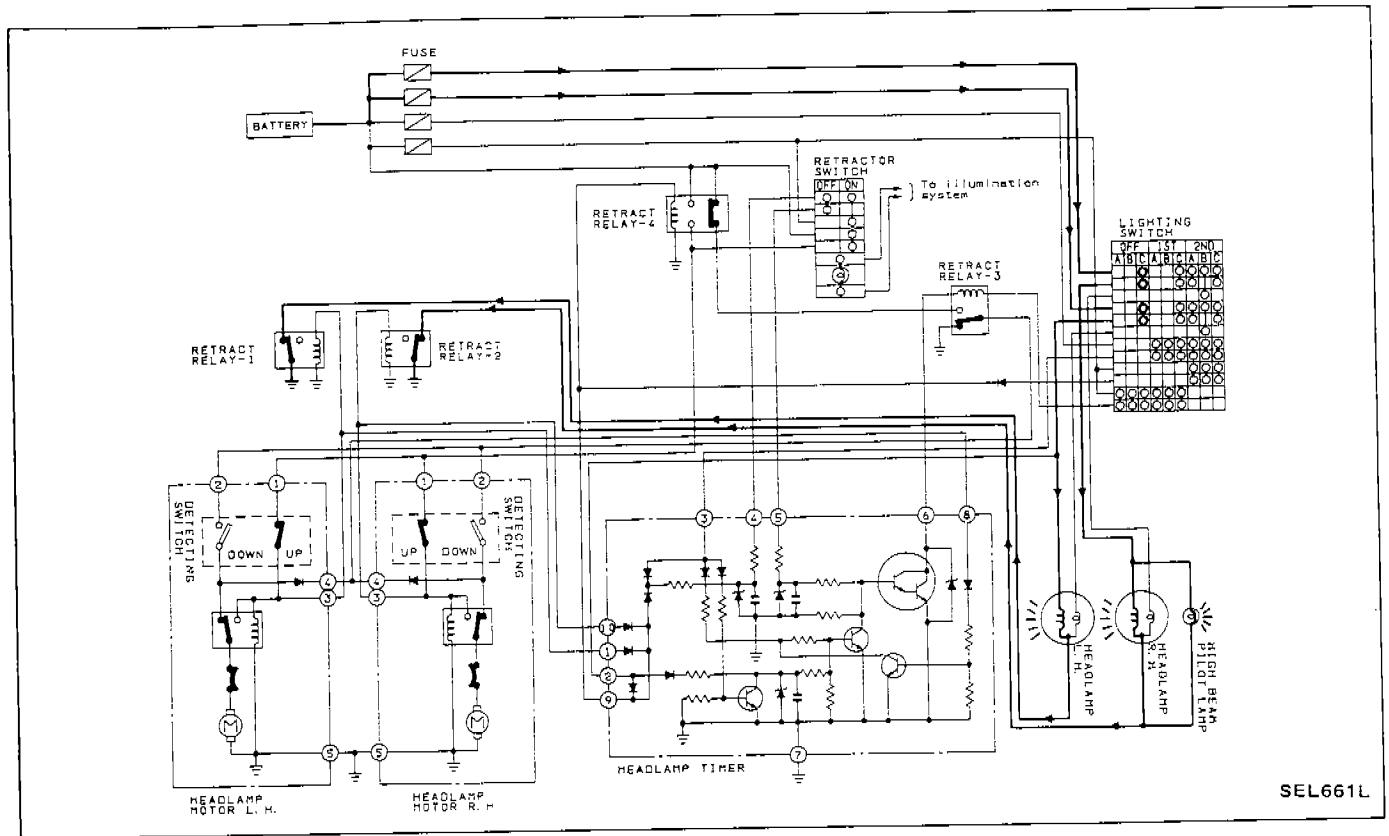
- [C] When lighting switch is switched to "PASSING"
C-1: While operating the headlamp motor to open position



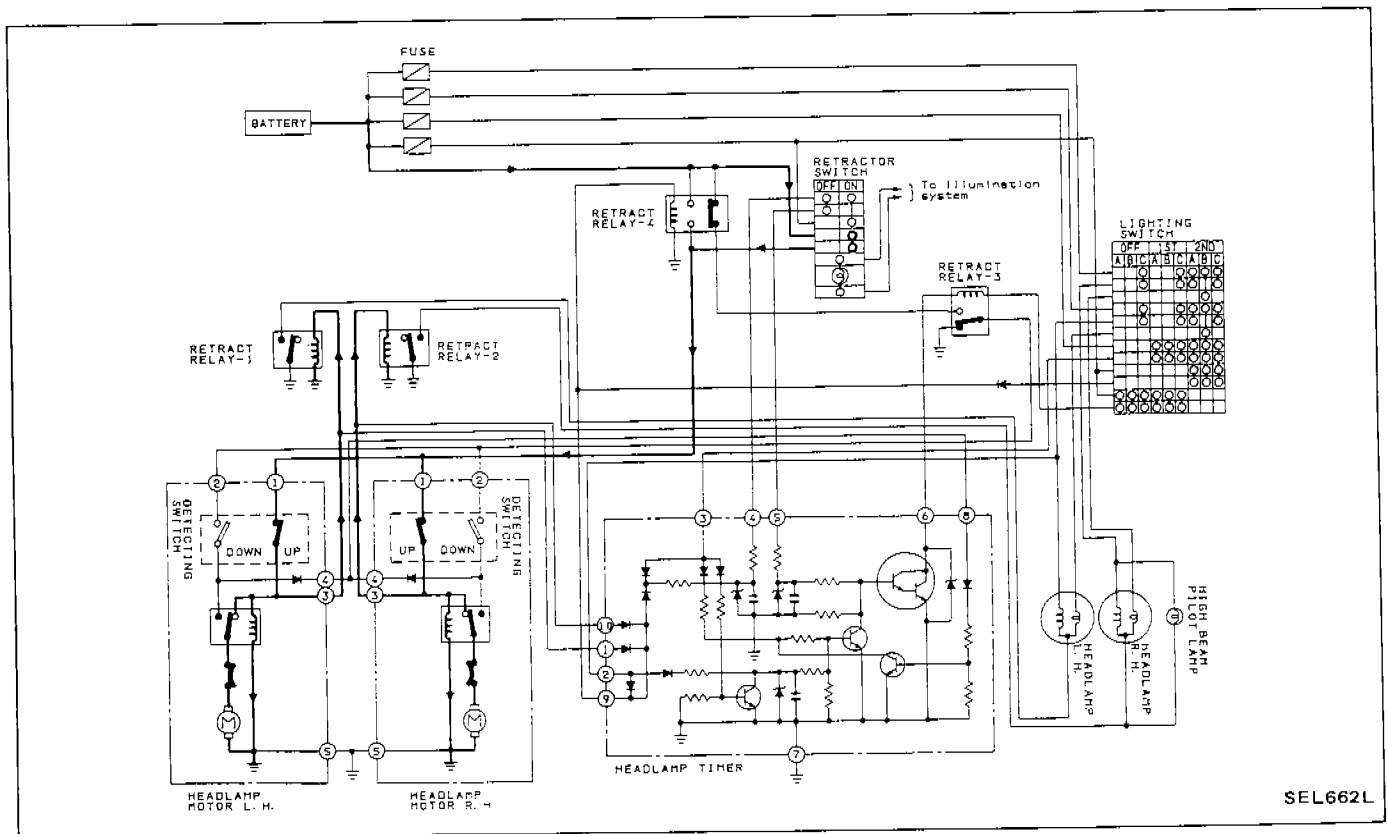
HEADLAMP

Description (Cont'd)

C-2: After the headlamp reaches fully open position

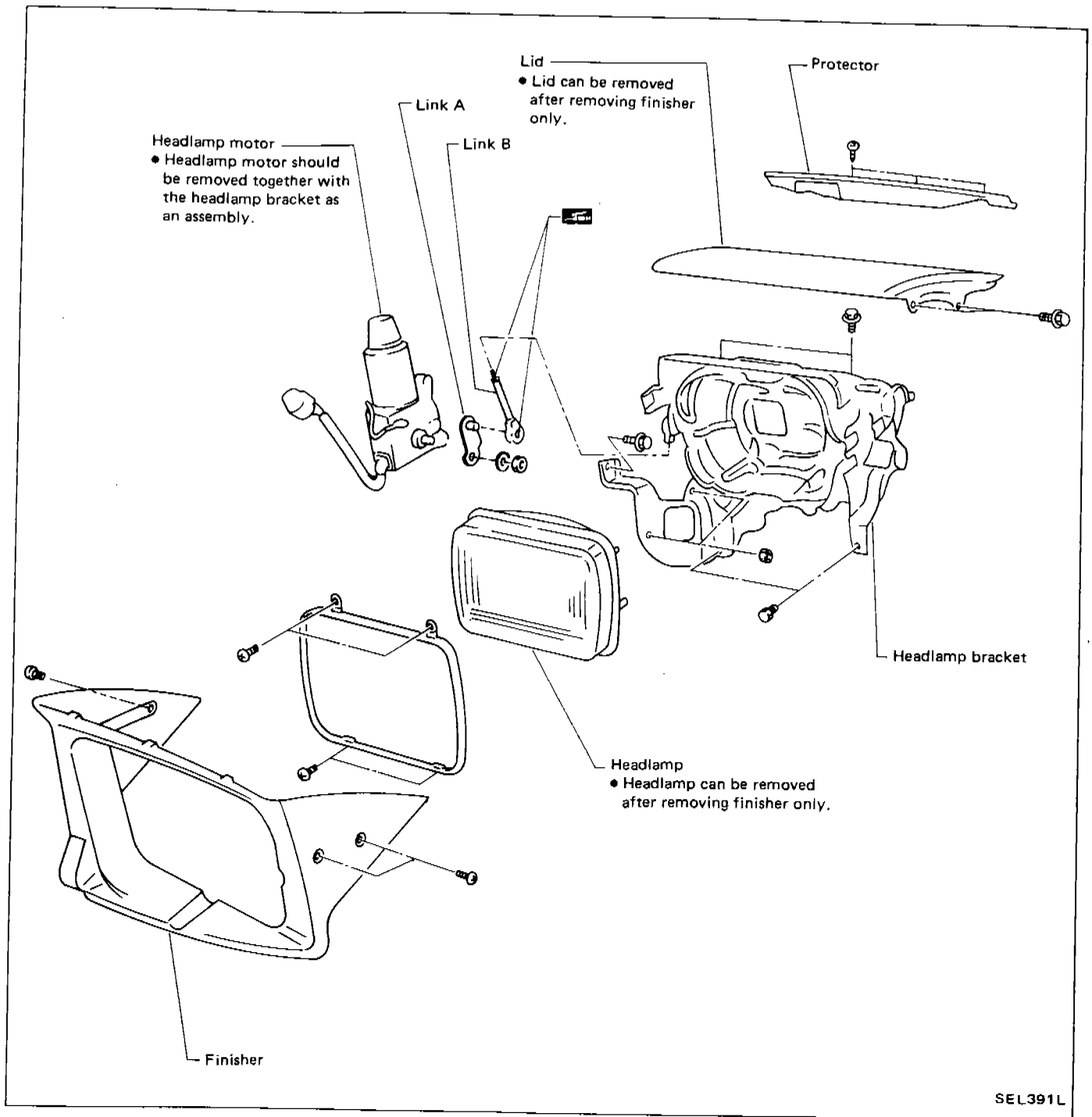


[D] When retractor switch is turned ON
(While operating the headlamp motor to open position)



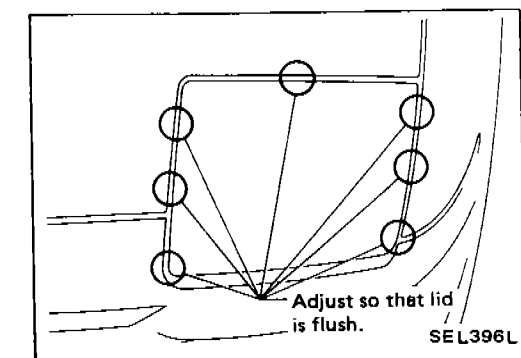
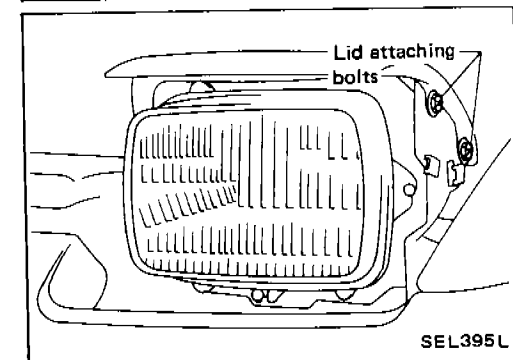
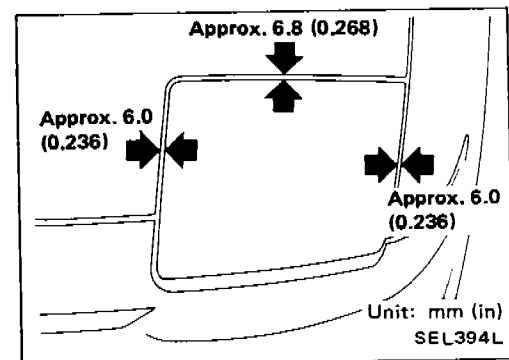
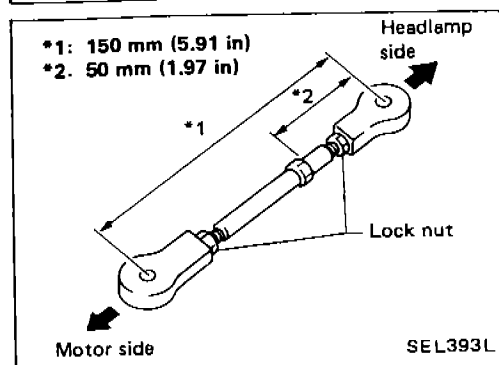
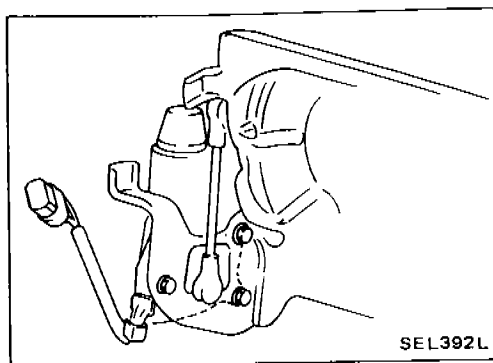
HEADLAMP

Constructions



SEL391L

HEADLAMP



Assembly

1. Install headlamp motor, ball joint and link A (as one unit) on headlamp bracket.
2. While turning link B, install link A's ball joint on headlamp housing's ball joint.
3. Set distance between centers of upper and lower ball joints as shown in figure at left, and tighten lock nuts.
4. Assemble headlamp, finisher and lid.

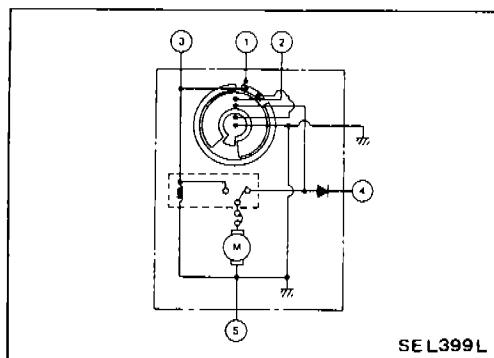
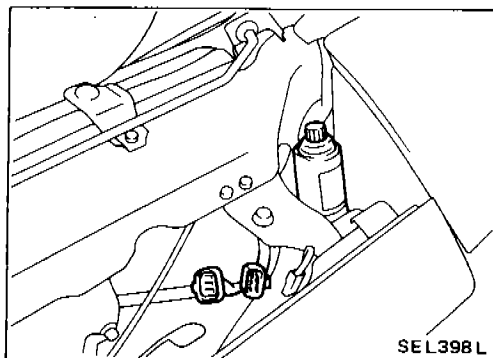
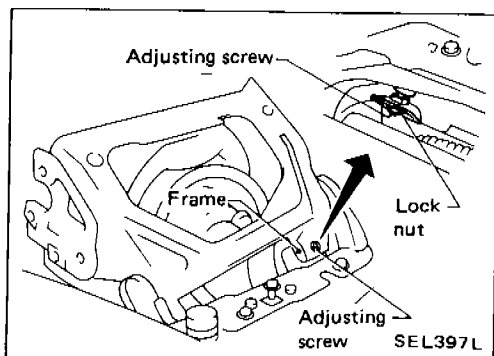
Installation and Adjustment

Before doing this, be sure to disconnect battery ground cable.

1. Install headlamp bracket to body temporarily.
 - 1) Determine headlamp bracket location on body so that alignment between lid, hood, and fender looks straight.
 - 2) After adjusting alignment, tighten headlamp bracket to body.
2. Adjust lid alignment.
 - Adjust lid, hood and fender for alignment while opening and closing headlamp with motor manual knob.
Use motor manual knob to open and close headlamp, and adjust alignment while checking that lid is not interfering with hood.

HEADLAMP

Installation and Adjustment (Cont'd)



3. Adjust stopper.
 - 1) Loosen lock nut on stopper.
 - 2) Turn motor manual knob to open headlamp assembly completely.
 - 3) Adjust stopper screw.

Headlamp Motor Check

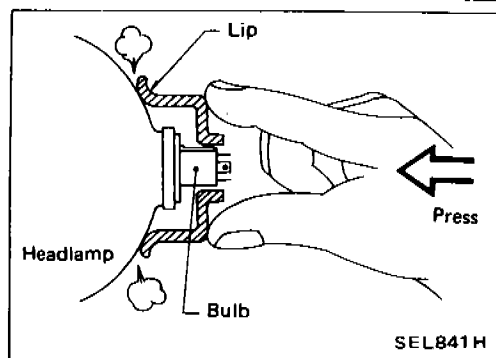
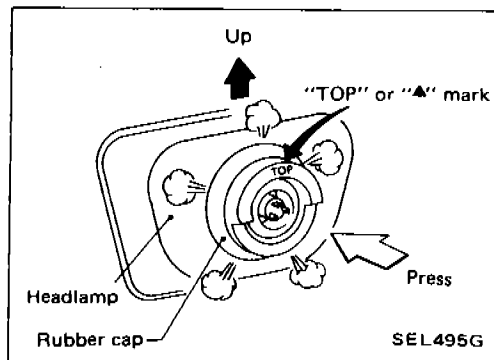
1. Disconnect battery ground cable.
2. Disconnect the headlamp motor connector.
3. Use an ohmmeter to check for continuity in headlamp motor circuit while rotating motor with manual knob.

Link A position	Ohmmeter probe		Continuity
	(+)	(-)	
"CLOSE"	①	⑤	YES
	②	⑤	NO
	①	③	NO
	③	①	YES
"OPEN"	①	⑤	NO
	②	⑤	YES
	②	④	NO
	④	②	YES

Bulb Replacement

INSTALLING HEADLAMP RUBBER CAP

When installing the rubber cap, set the "TOP" or "▲" mark so that it is facing up.



Press the rubber cap firmly so that the lip makes contact with the headlamp body.

Aiming Adjustment

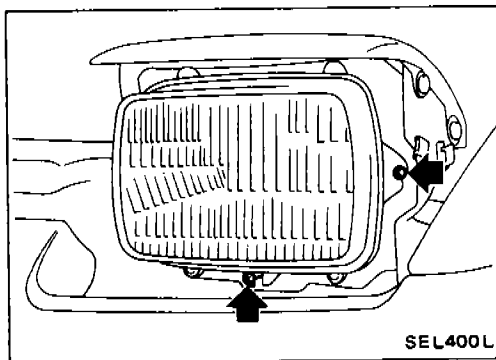
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. For operating instructions of any aimer, it should be in good repair, calibrated and used according to respective operation manuals supplied with the unit.

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

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

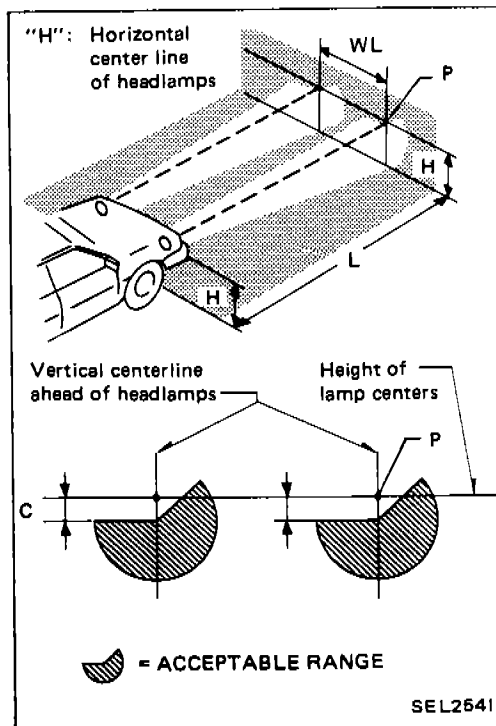
CAUTION:

- 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).



LOW BEAM

- Turn headlamp low beam on.
- 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

"WL": Distance between each headlamp center

"L": 5,000 mm (196.85 in)

"C": 50 mm (1.97 in)

Clearance, License, Tail and Stop Lamps/Wiring Diagram

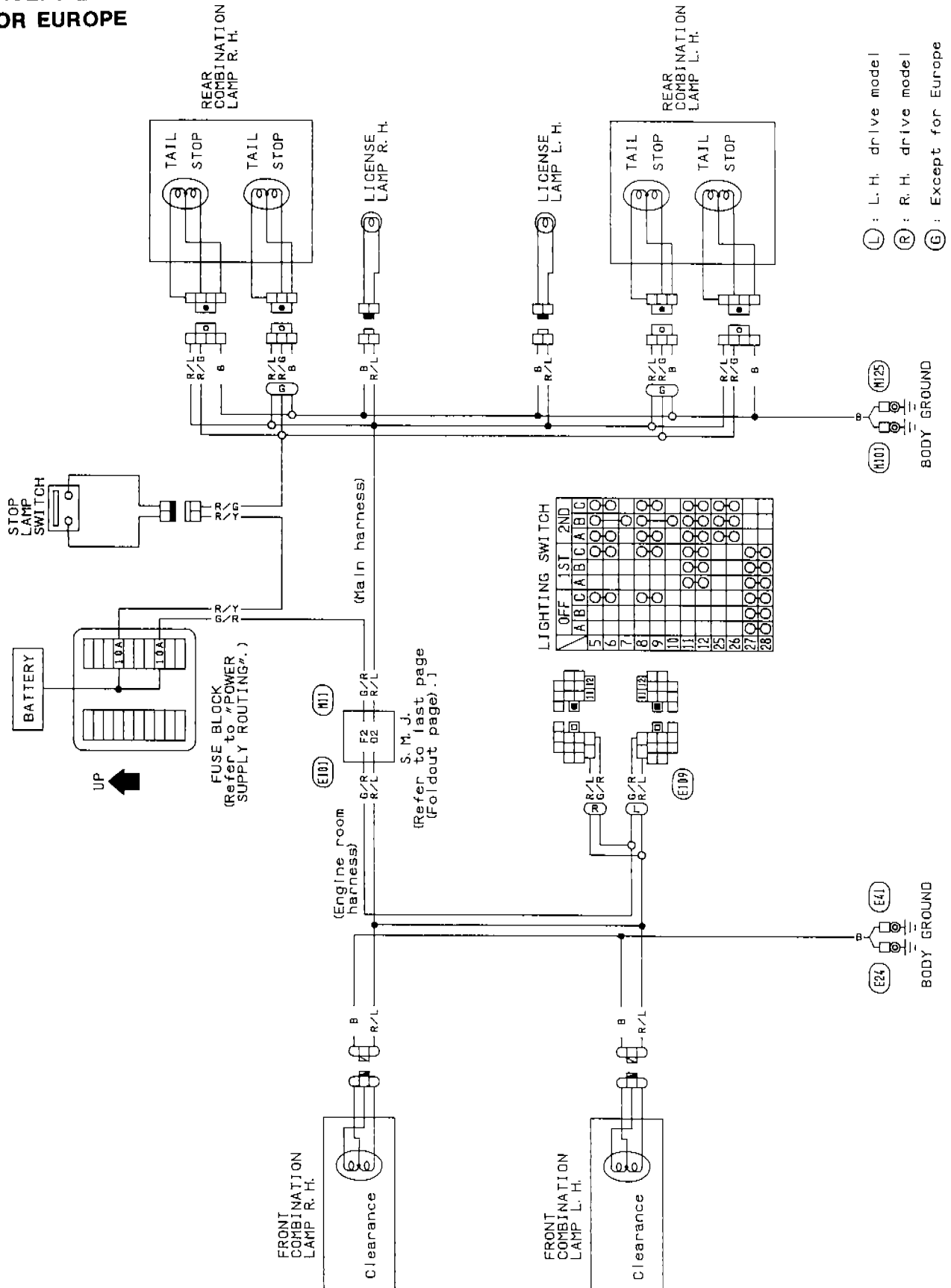
[illegible]

EL-47

EXTERIOR LAMP

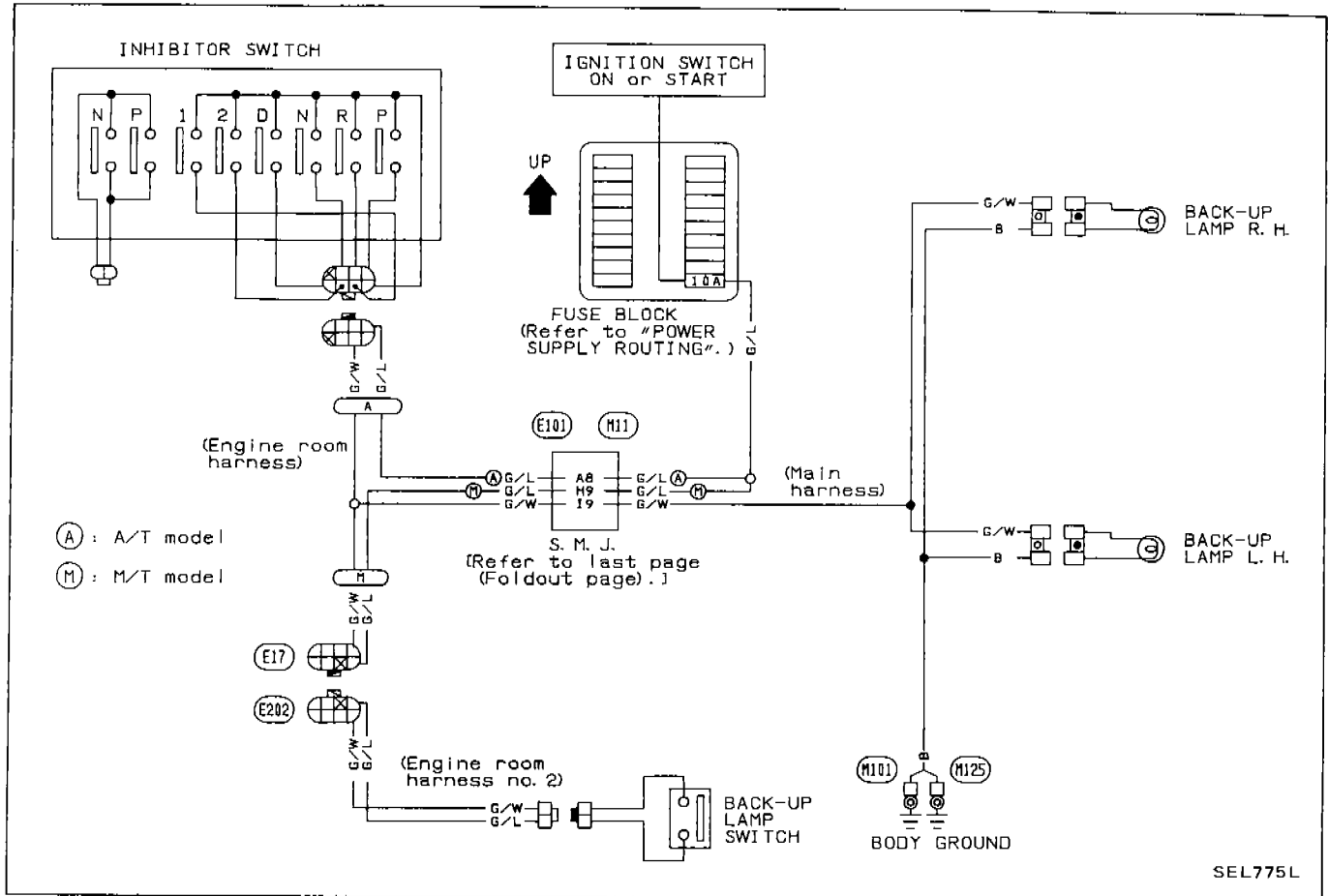
Clearance, License, Tail and Stop Lamps/Wiring Diagram (Cont'd)

EXCEPT L.H. DRIVE MODEL
FOR EUROPE



EXTERIOR LAMP

Back-up Lamp/Wiring Diagram



Rear Fog Lamp/Wiring Diagram

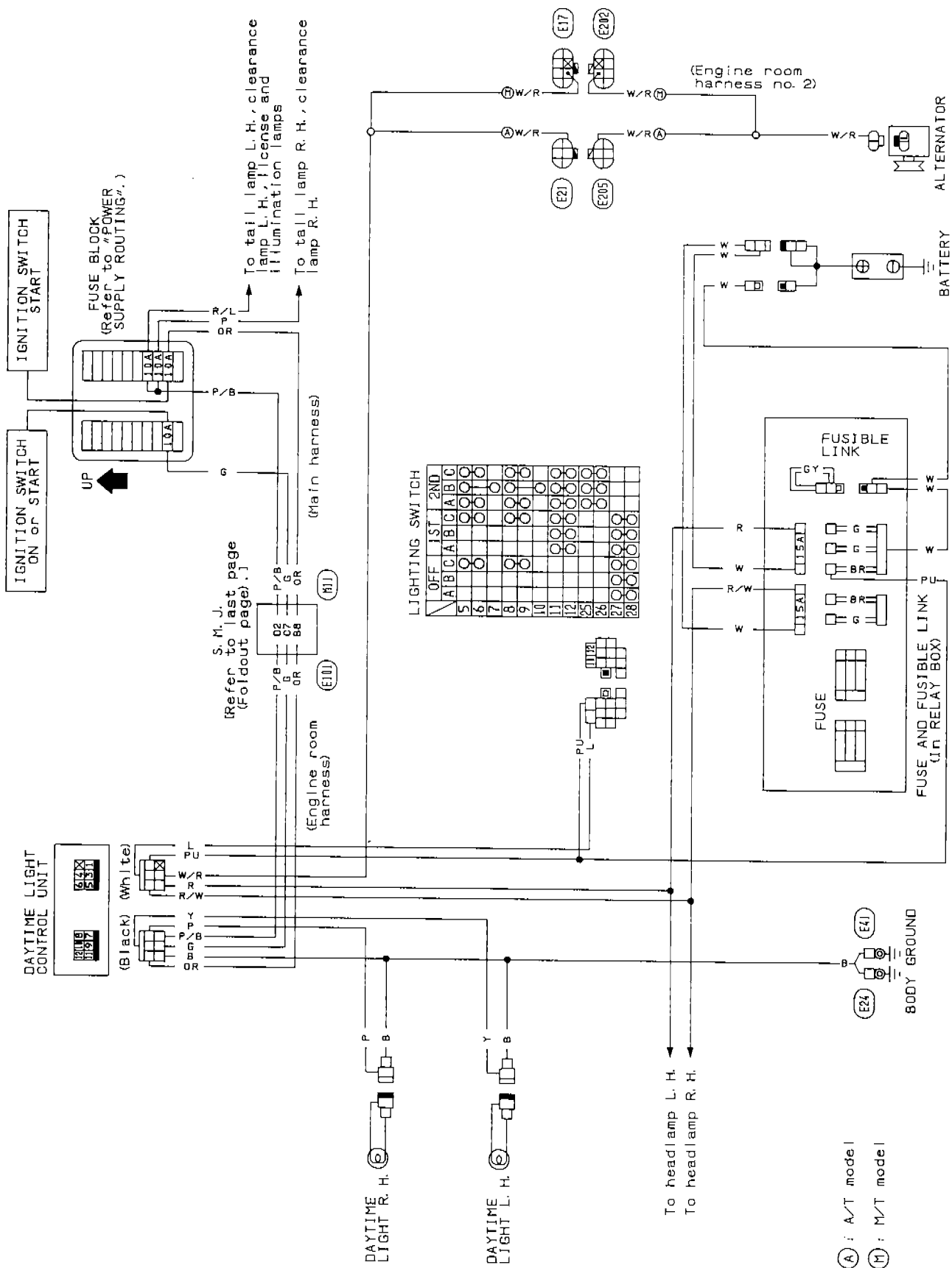


Daytime Light/Schematic



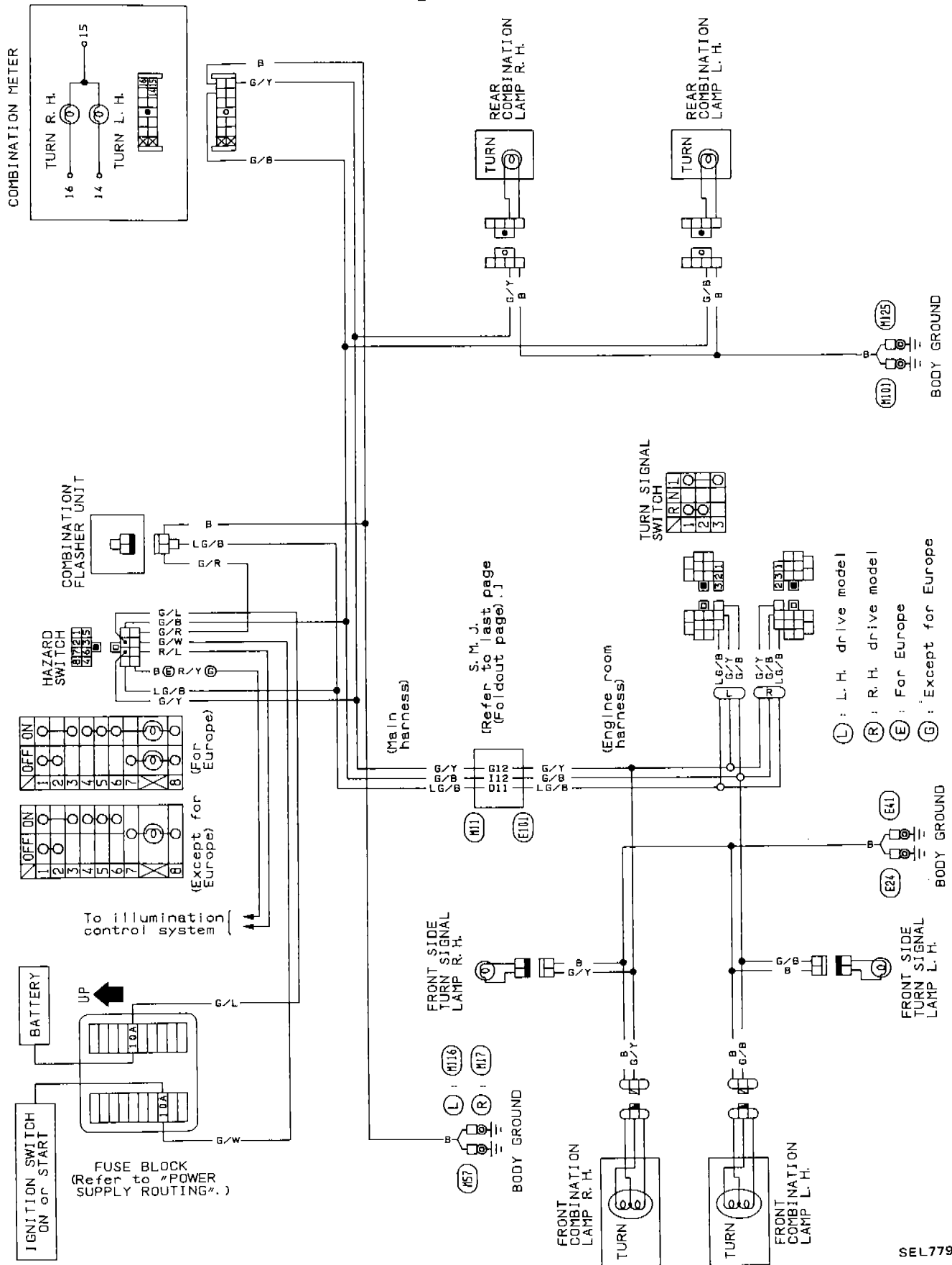
EXTERIOR LAMP

Daytime Light/Wiring Diagram

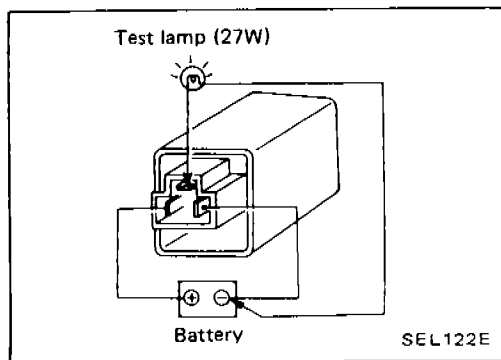


SEL778L

Turn Signal and Hazard Warning Lamps/Wiring Diagram



EXTERIOR LAMP



Combination Flasher Unit Check

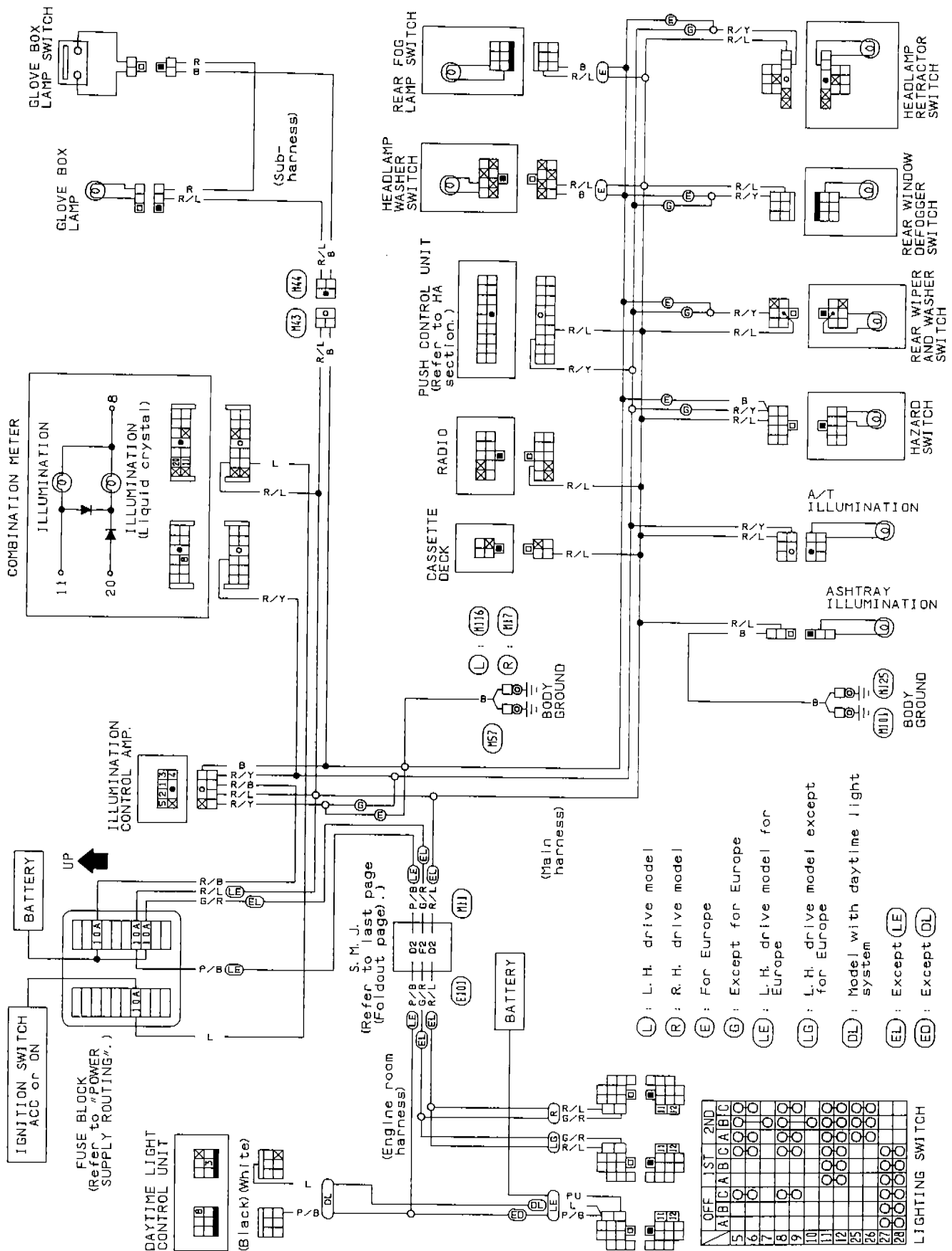
- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.

Bulb Specifications

Item	Wattage (W)
Headlamp	60/55
Front combination lamp	
Turn signal/clearance lamp	21/5
Daytime running lamp	27
Side turn signal lamp	5
Rear combination lamp	
Stop/Tail	21/5
Turn signal	21
Rear fog	21
Back-up lamp	21
License plate lamp	5
Interior lamp	10
Spot lamp	8
Luggage compartment lamp	5

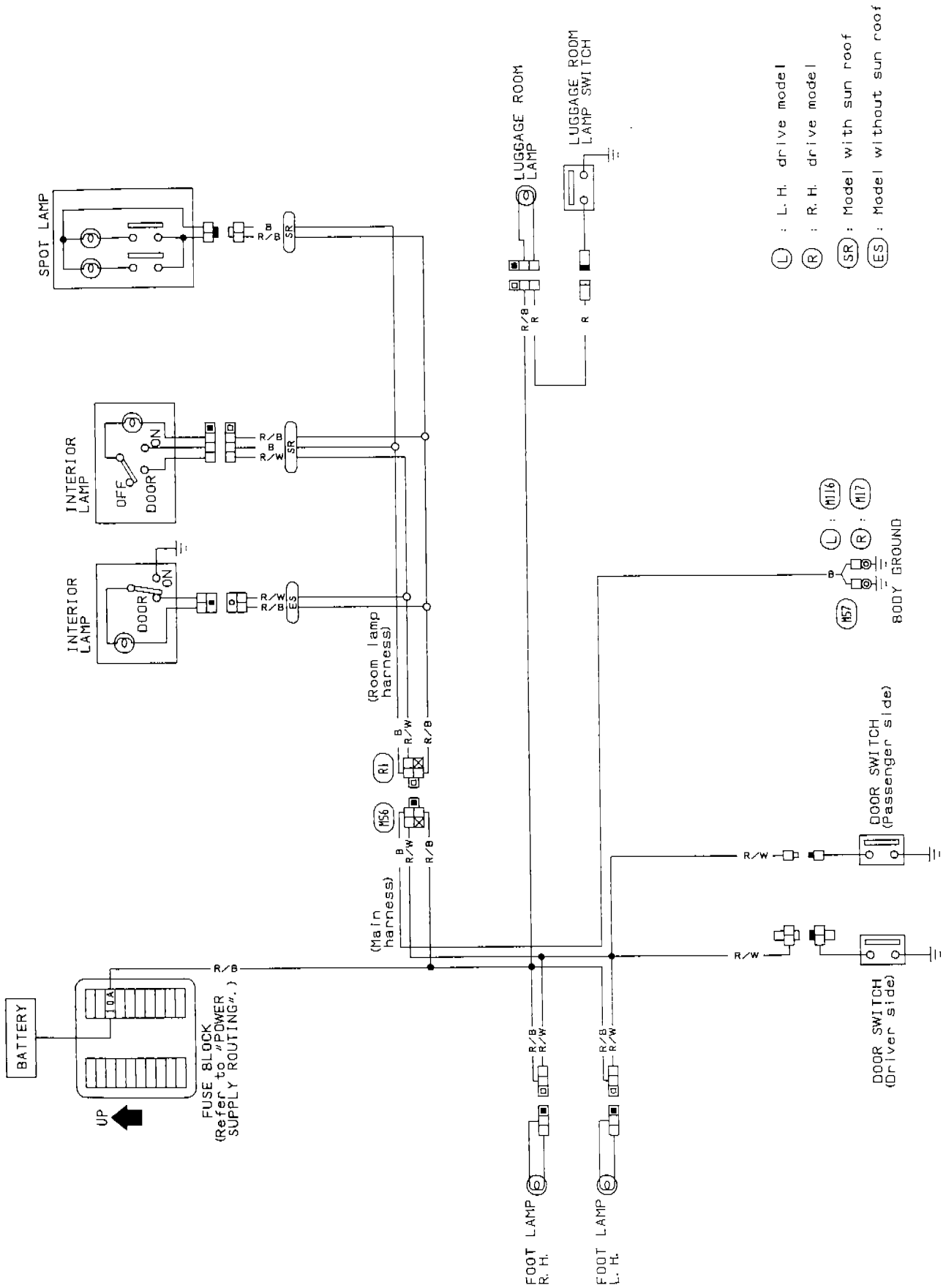
INTERIOR LAMP

Illumination/Wiring Diagram



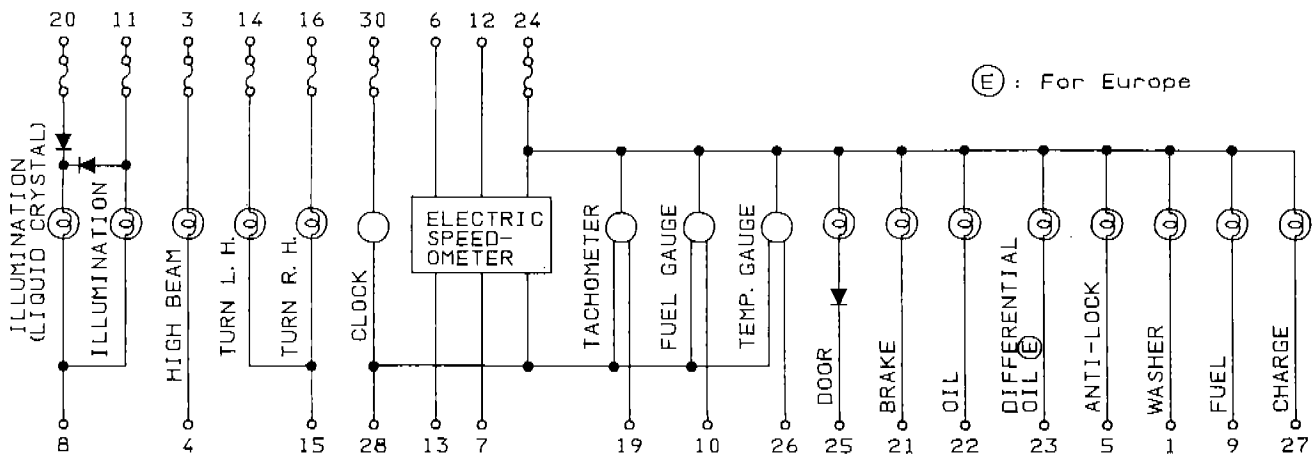
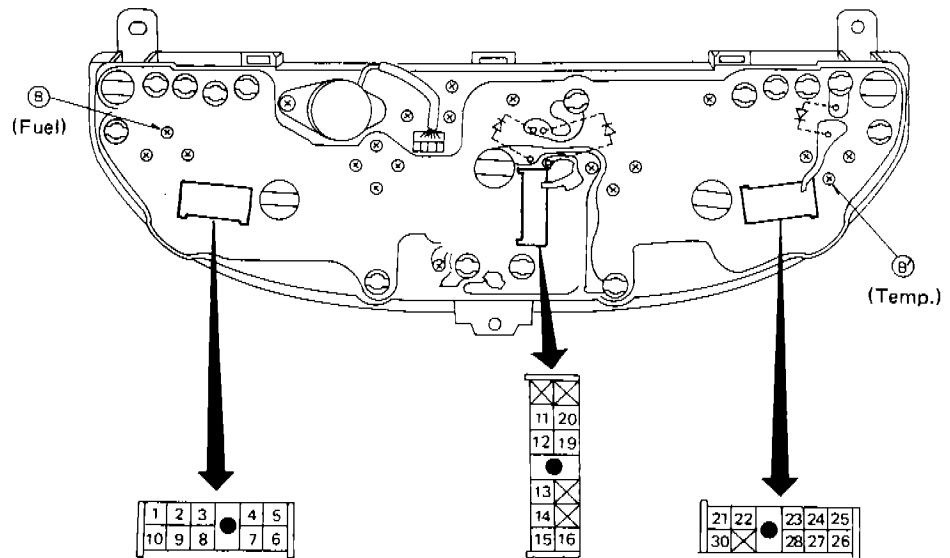
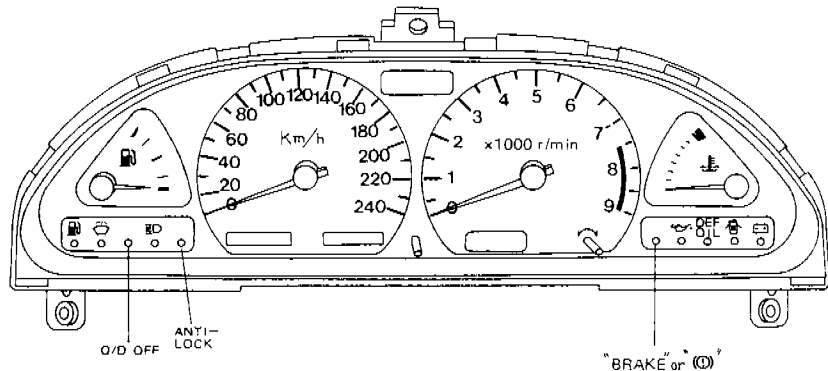
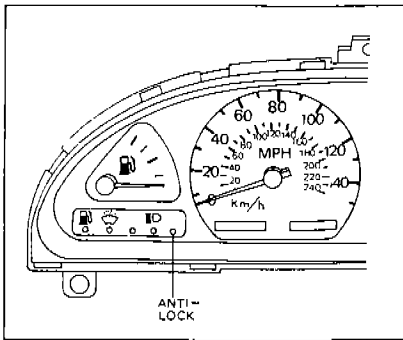
INTERIOR LAMP

Interior Lamp/Wiring Diagram



METER AND GAUGES

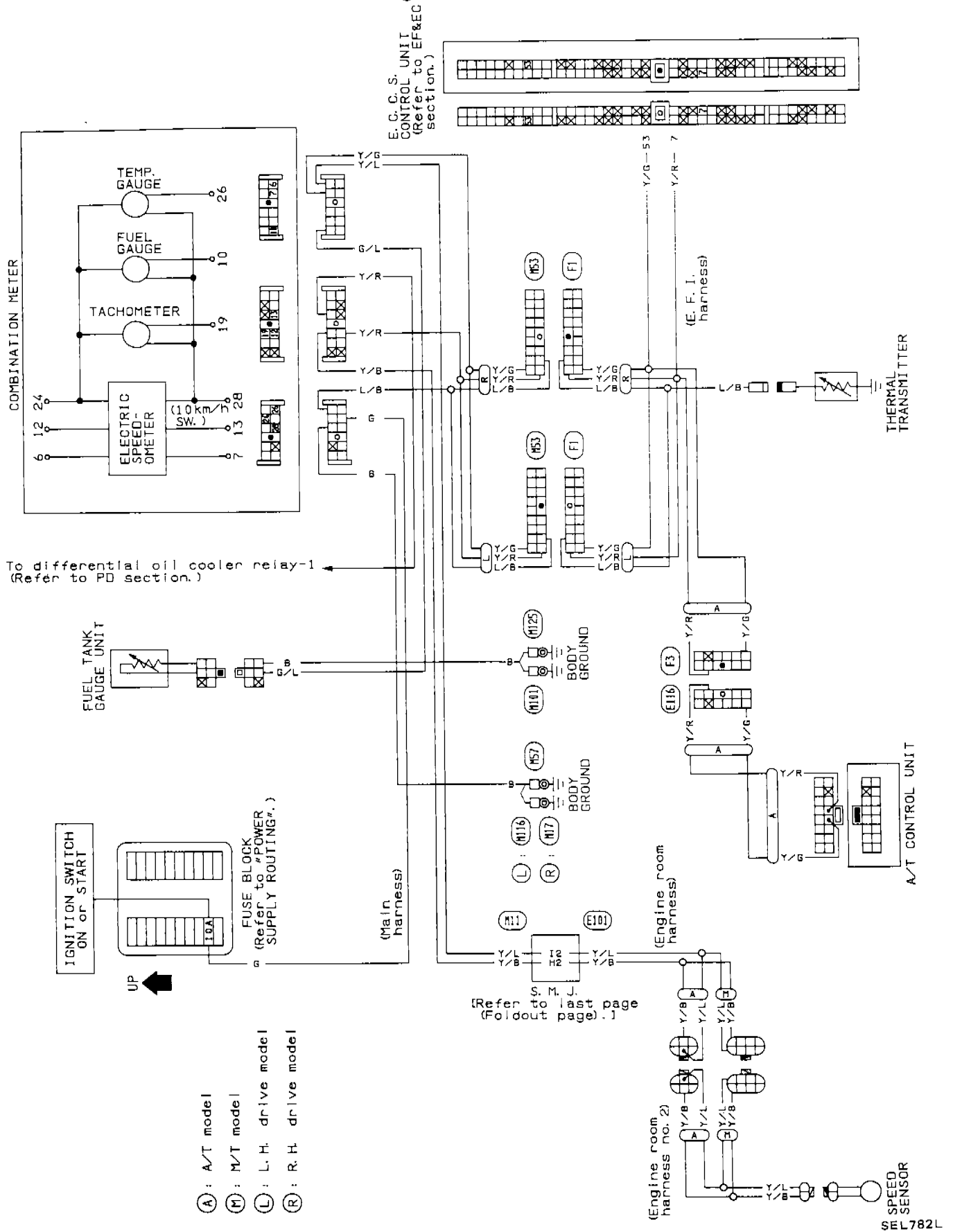
Combination Meter



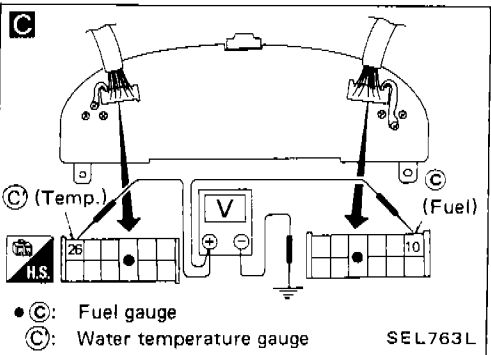
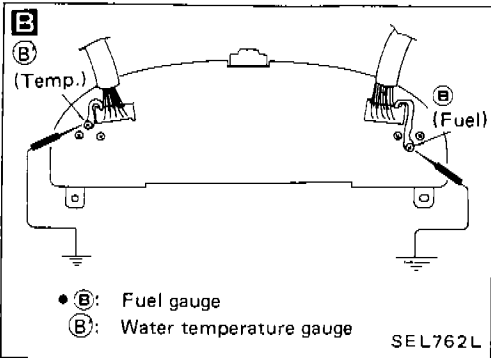
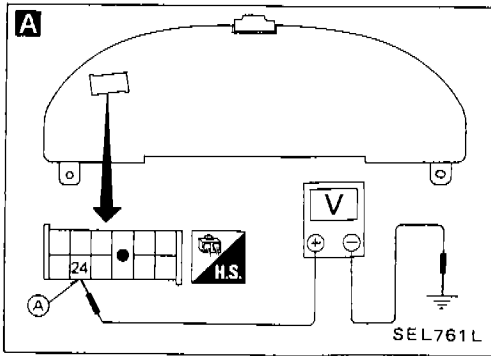
SEL698L

METER AND GAUGES

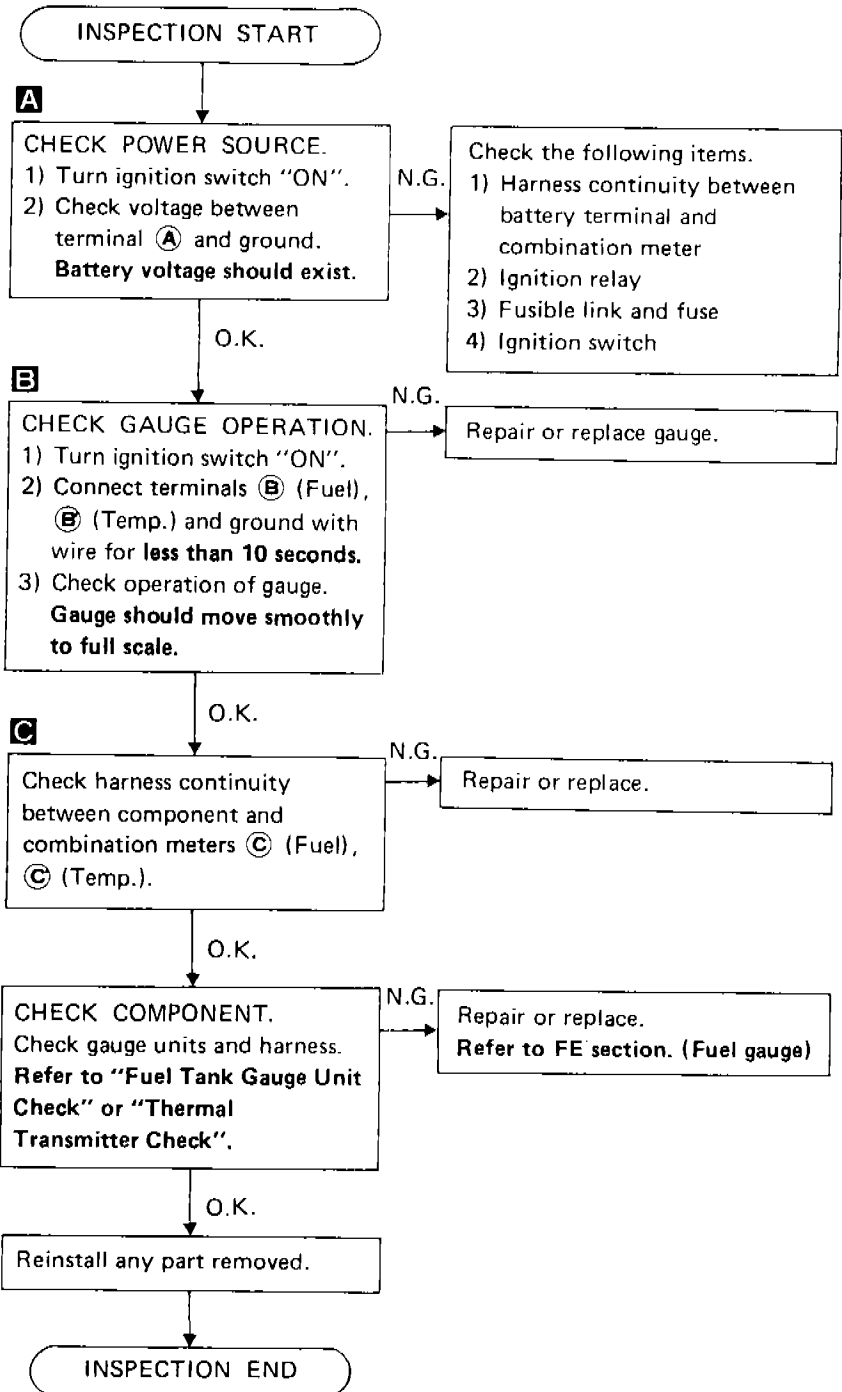
Tachometer, Temp. and Fuel Gauges/Wiring Diagram



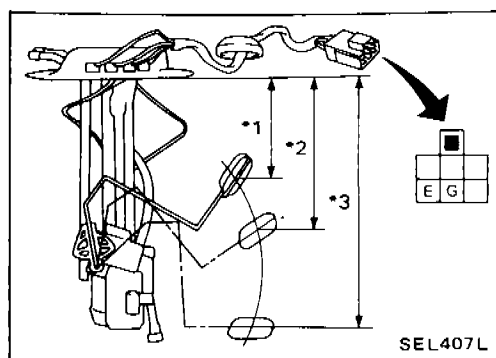
METER AND GAUGES



Inspection/Fuel Gauge and Water Temperature Gauge



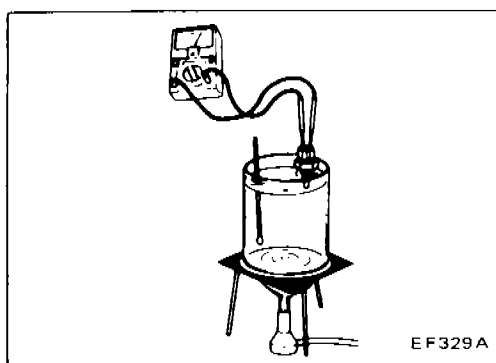
METER AND GAUGES



Fuel Tank Gauge Unit Check

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

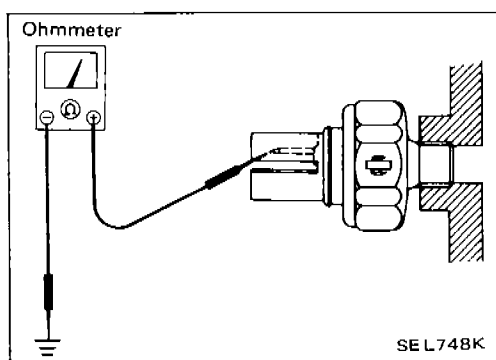
Ohmmeter		Float position mm (in)		Resistance Ω	Fuel value ℓ (Imp gal)
(+)	(-)				
G	E	*1	Full	Approx. 64 (2.52)	4.3 - 6.3
		*2	1/2	Approx. 137 (5.39)	27.7 - 34.3
		*3	Empty	Approx. 210 (8.27)	73.3 - 84.8



Thermal Transmitter Check

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

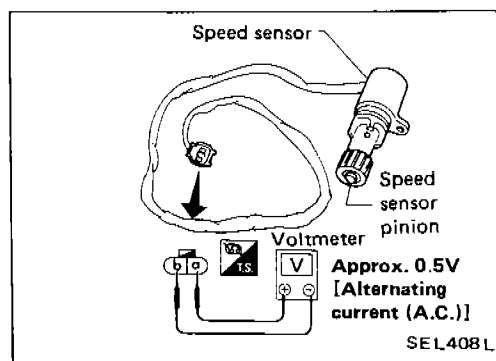
Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90 Ω
100°C (212°F)	Approx. 21 - 24 Ω



Oil Pressure Switch Check

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

	Oil pressure kPa (bar, kg/cm ² , psi)	Continuity
Engine start	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1.4 - 2.8)	NO
Engine stop	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1.4 - 2.8)	YES

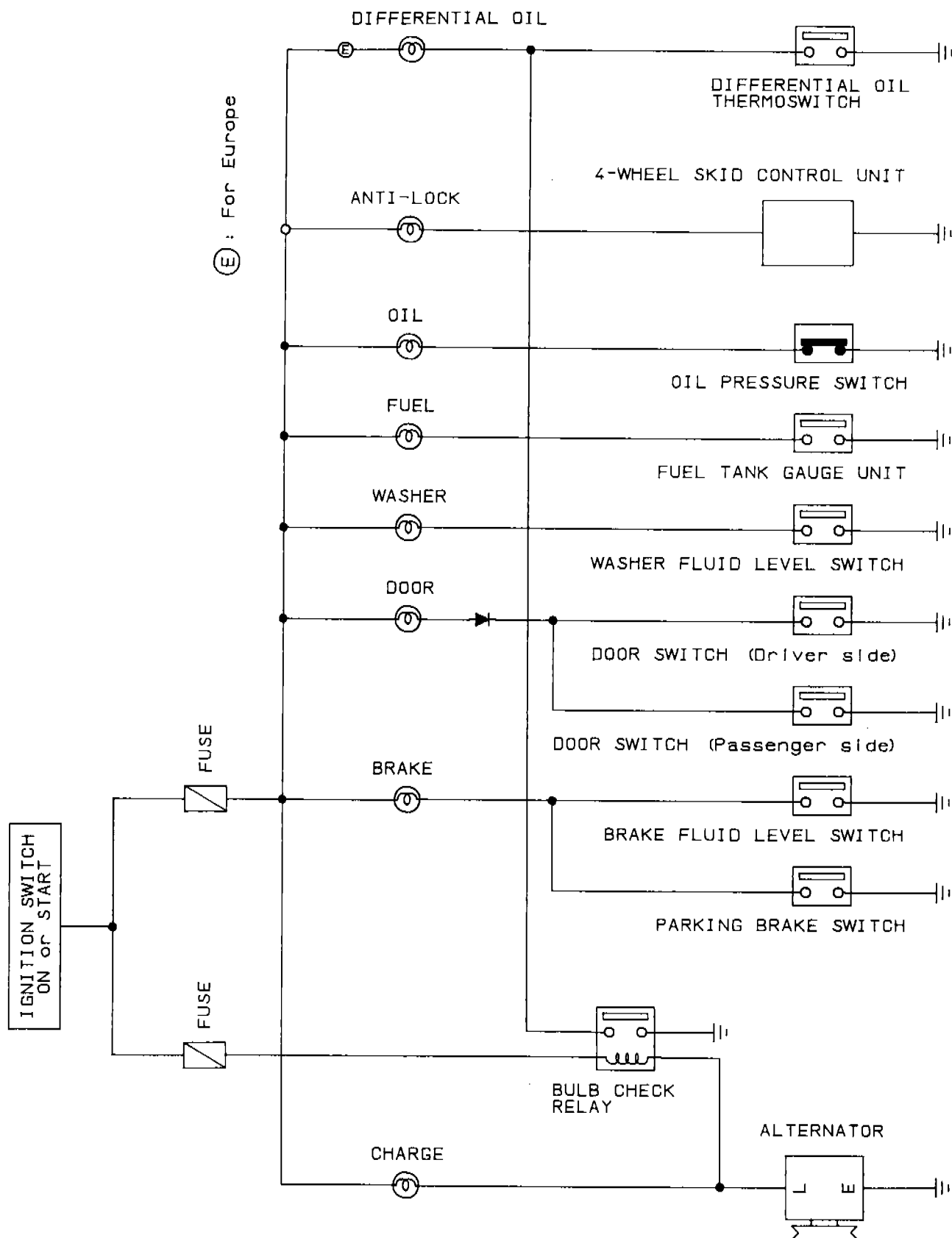


Speed Sensor Signal Check

1. Remove speed sensor from transmission.
Location: Refer to "Location of Electrical Units".
2. Turn speedometer pinion quickly and measure voltage across **a** and **b**.

WARNING LAMPS AND CHIME

Warning Lamps/Schematic



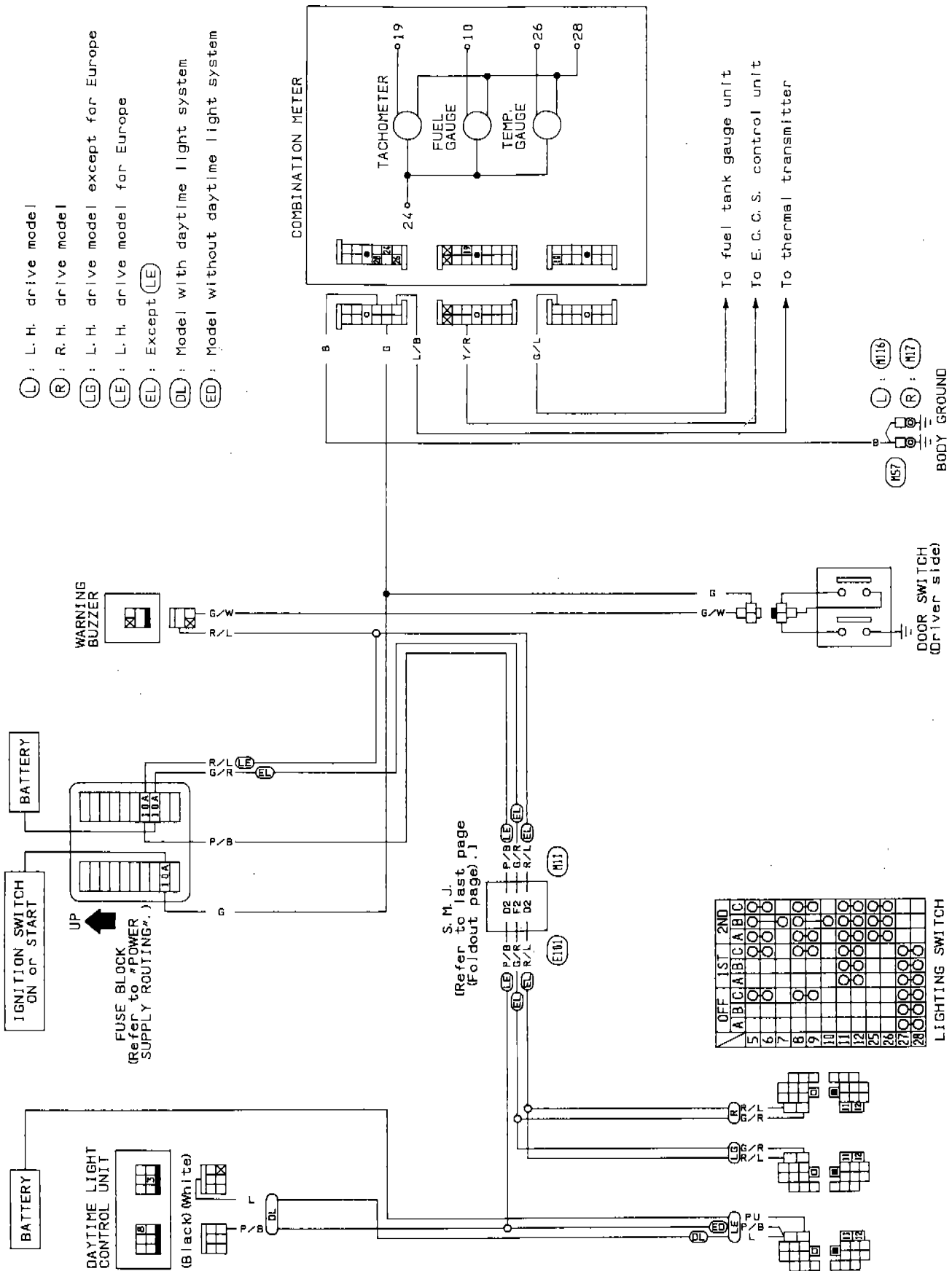
SEL783L

Warning Lamps/Wiring Diagram



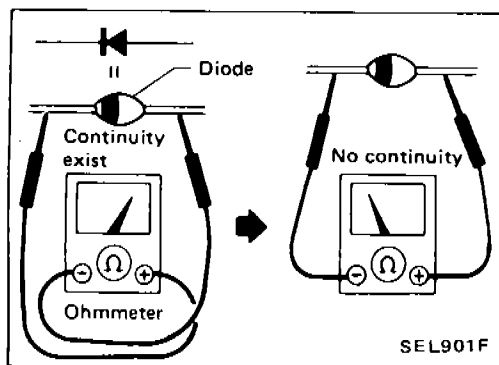
WARNING LAMPS AND CHIME

Warning Chime/Wiring Diagram



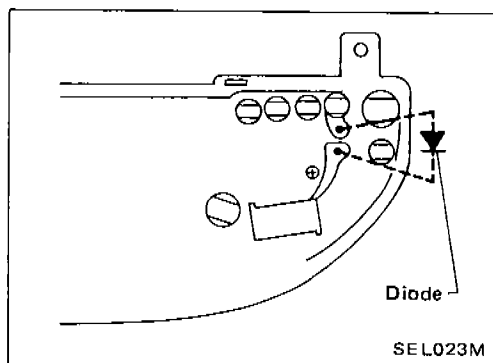
SEL785L

WARNING LAMPS AND CHIME

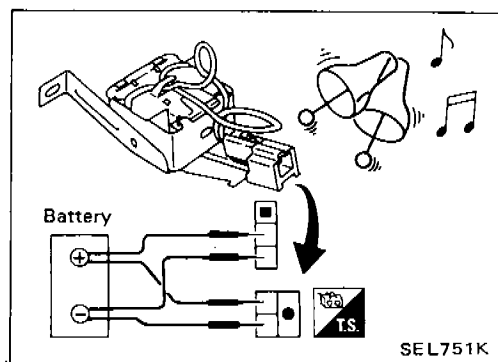


Diode Check

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



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

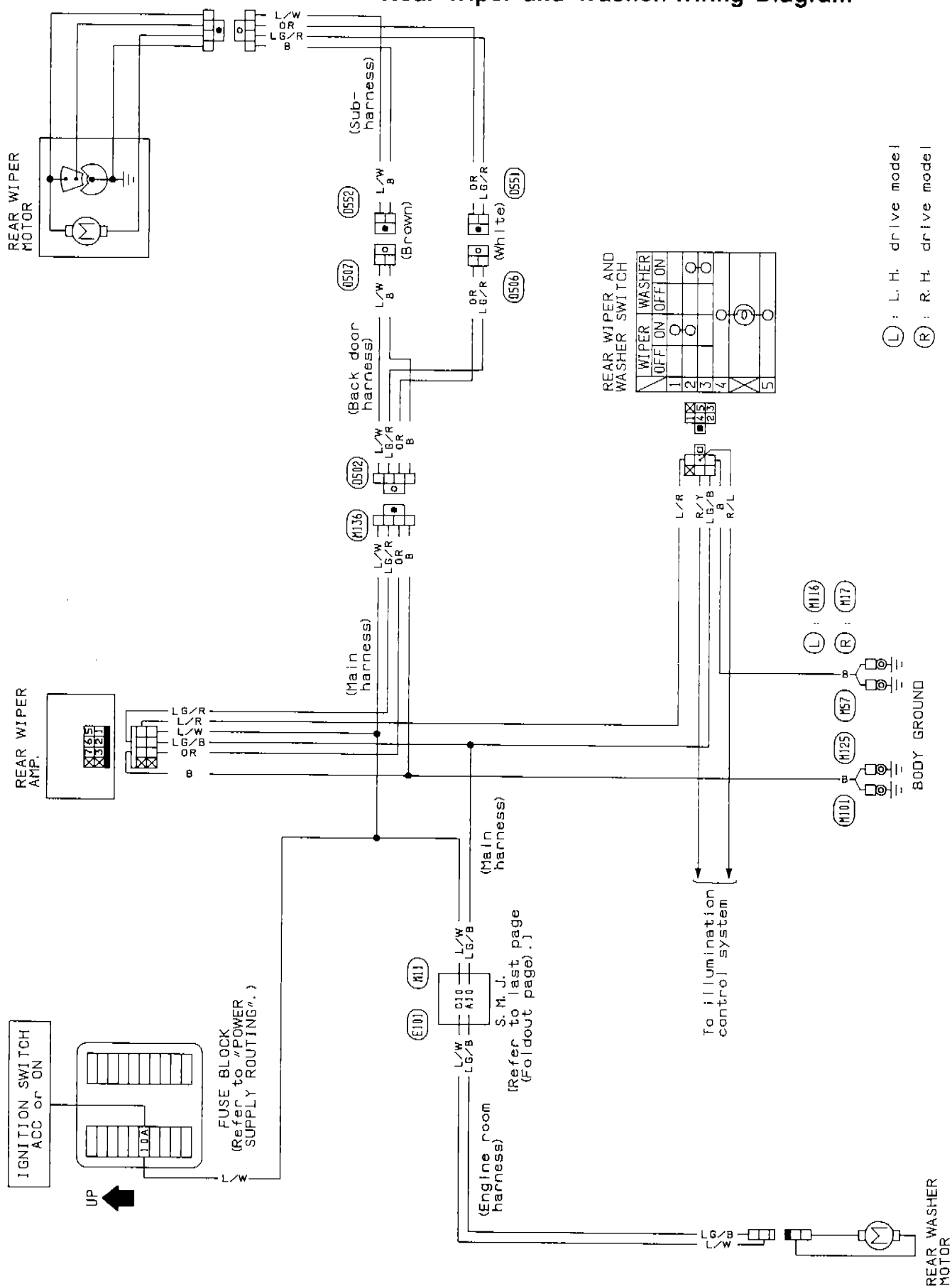


Warning Chime Check

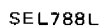
Front Wiper and Washer/Wiring Diagram



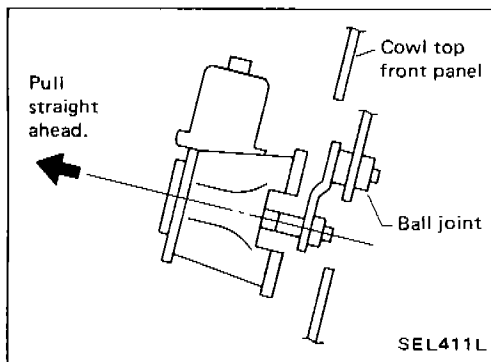
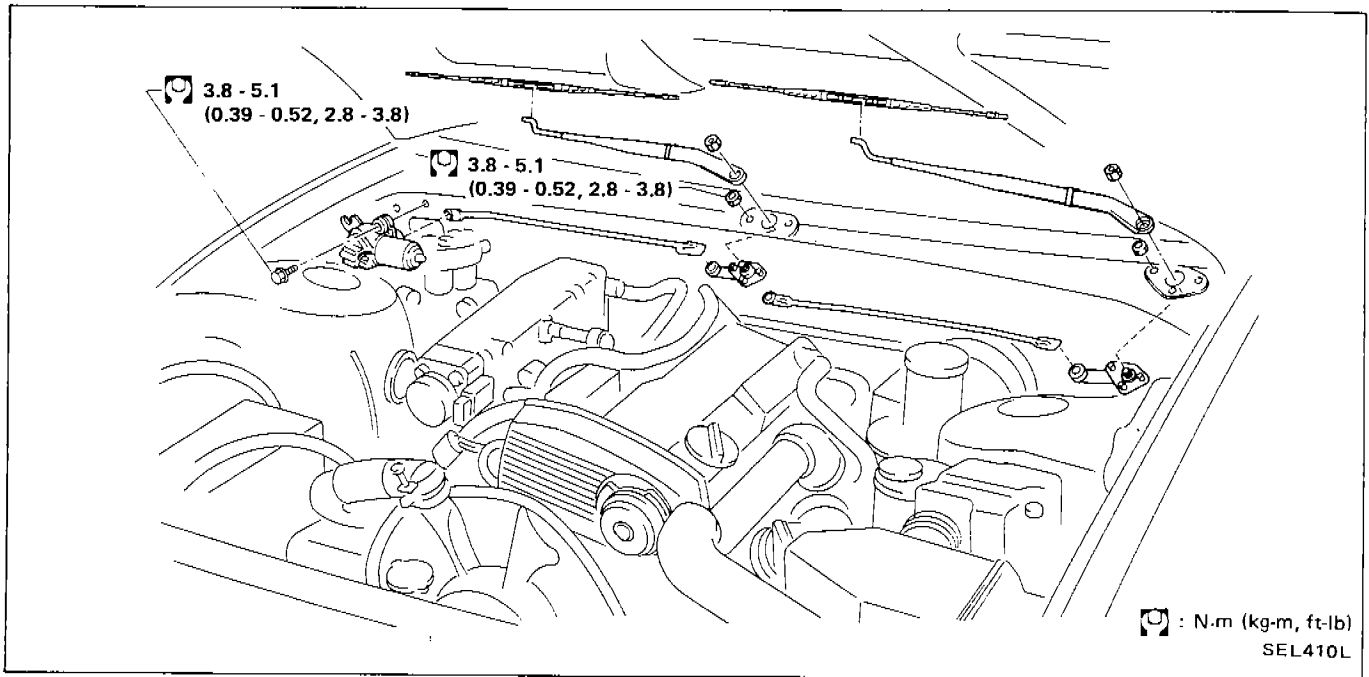
Rear Wiper and Washer/Wiring Diagram



Headlamp Wiper and Washer/Wiring Diagram



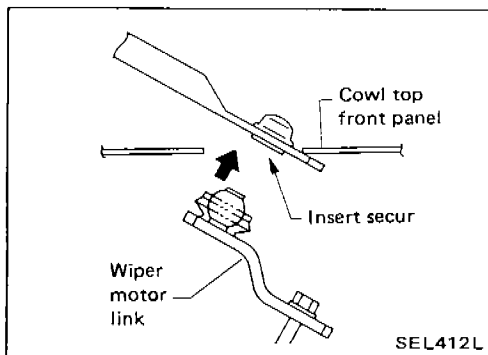
Wiper Removal and Installation



FRONT WIPER REMOVAL

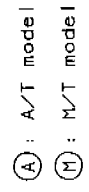
Before removing front wiper motor link, turn wiper switch OFF and disconnect motor leads at connectors.

1. Remove wiper arm.
2. Remove cowl cover.
3. Remove bolts which secure wiper motor.
4. Extract wiper motor so that wiper motor link comes out of hole in front cowl top panel. Then, pull motor straight out to disconnect ball joint which connects motor link and wiper link. Wiper motor can then be removed.
5. Remove wiper link pivot blocks on driver and passenger sides.
6. Extract wiper link and pivot blocks (as one unit) from oblong hole on left side (L.H.D.) or right side (R.H.D.) of cowl top.

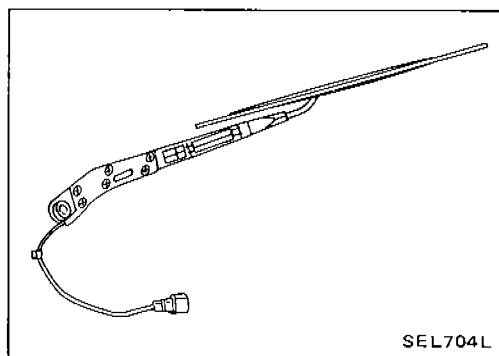


FRONT WIPER INSTALLATION

1. Position wiper link and pivot blocks (as one unit) in cowl top through oblong hole.
2. Before installing pivot blocks on cowl top, hold end (motor link side) of wiper link at hole in front cowl top panel and insert motor link's ball pin into hole in wiper link.
3. Install front wiper in reverse order of above removal procedures.
- Apply a small amount of grease to ball joints before installation.



WIPER AND WASHER



Wiper Arm (For Europe L.H.D. model)

The wiper arm pressure is controlled by the vehicle speed when the wiper switch is in the "ON" position.

Vehicle speed	km/h (MPH)	Wiper arm pressure
More than	130 (81)	Low → High
Less than	120 (75)	High → Low

Wiper and Washer Adjustment

INSTALLATION

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L₁" & "L₂" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L₁" & "L₂".

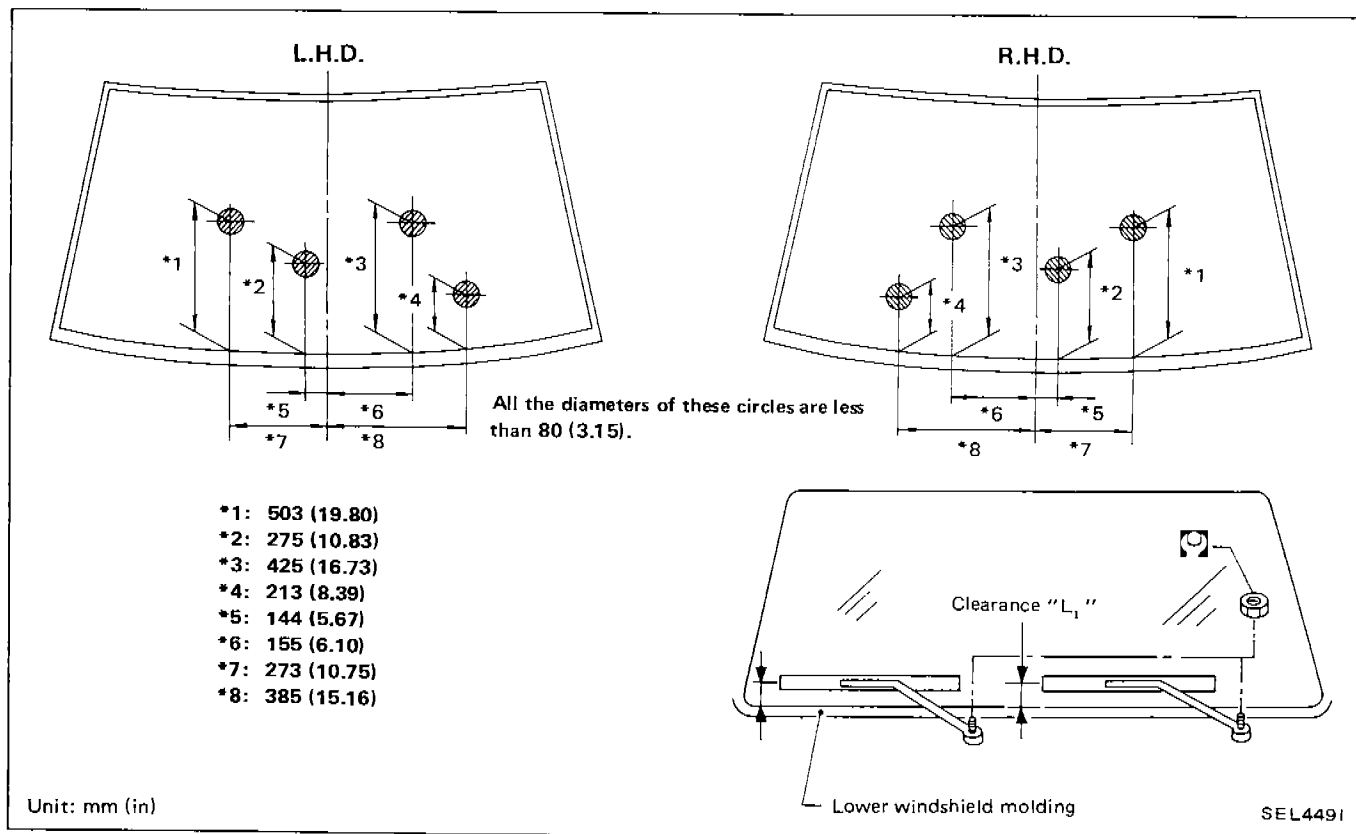
Clearance "L₁": 17.5 - 32.5 mm (0.689 - 1.280 in)

Clearance "L₂": 25 - 35 mm (0.98 - 1.38 in)

- Tighten wiper arm nuts to specified torque.

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

Rear wiper: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)

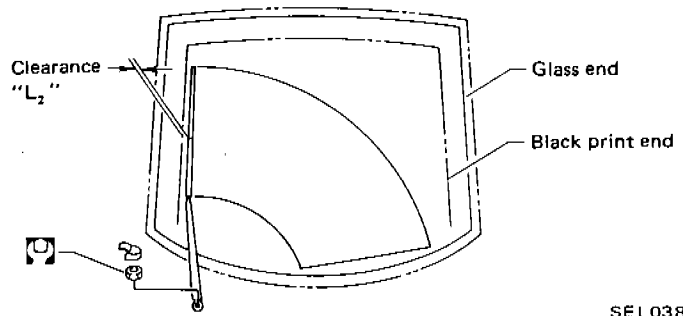
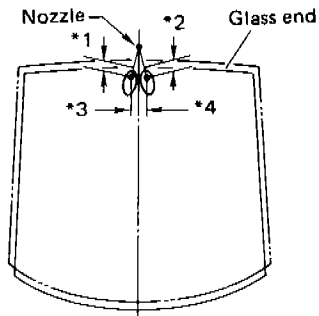


WIPER AND WASHER

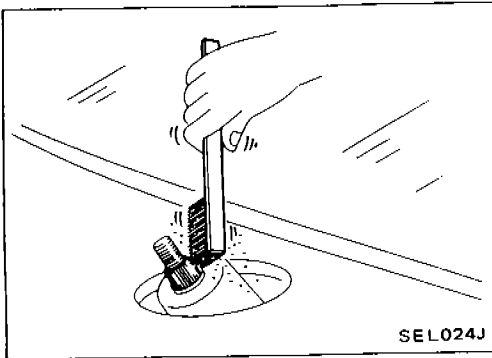
Wiper and Washer Adjustment (Cont'd)

- *1: 93 (3.66)
- *2: 85 (3.35)
- *3: 38 (1.50)
- *4: 25 (0.98)

Unit: mm (in)



SEL038M

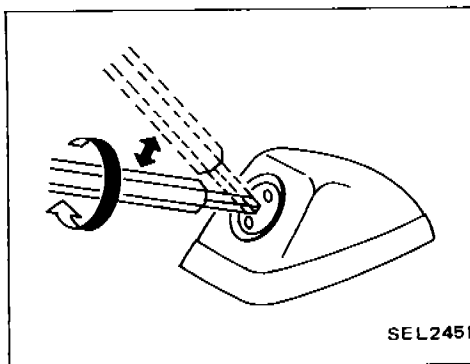


SEL024J

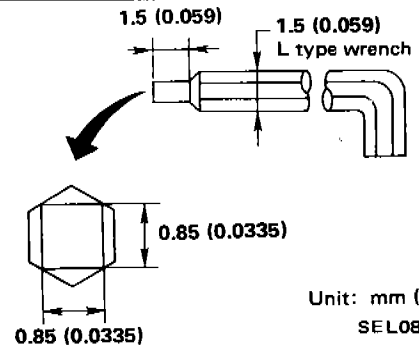
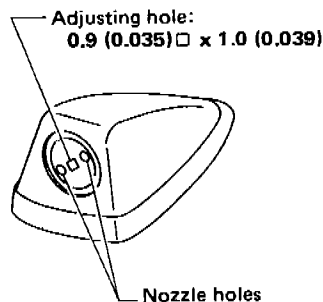
- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.

Washer Nozzle Adjustment

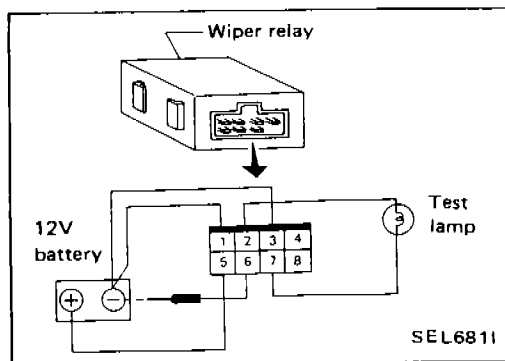
- Adjust washer nozzle with suitable tool as shown in the figure at left. Details of tool are shown below.



SEL245I



Unit: mm (in)
SEL088I



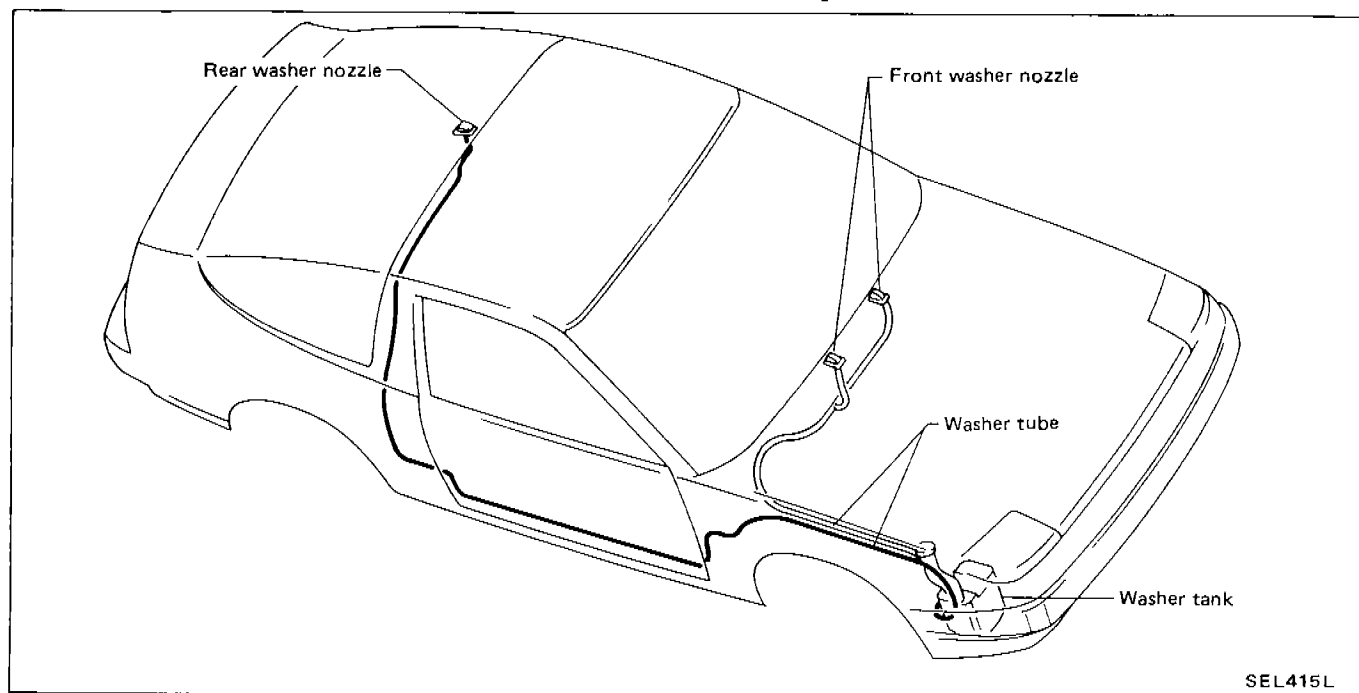
SEL681I

Wiper Amplifier Check

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

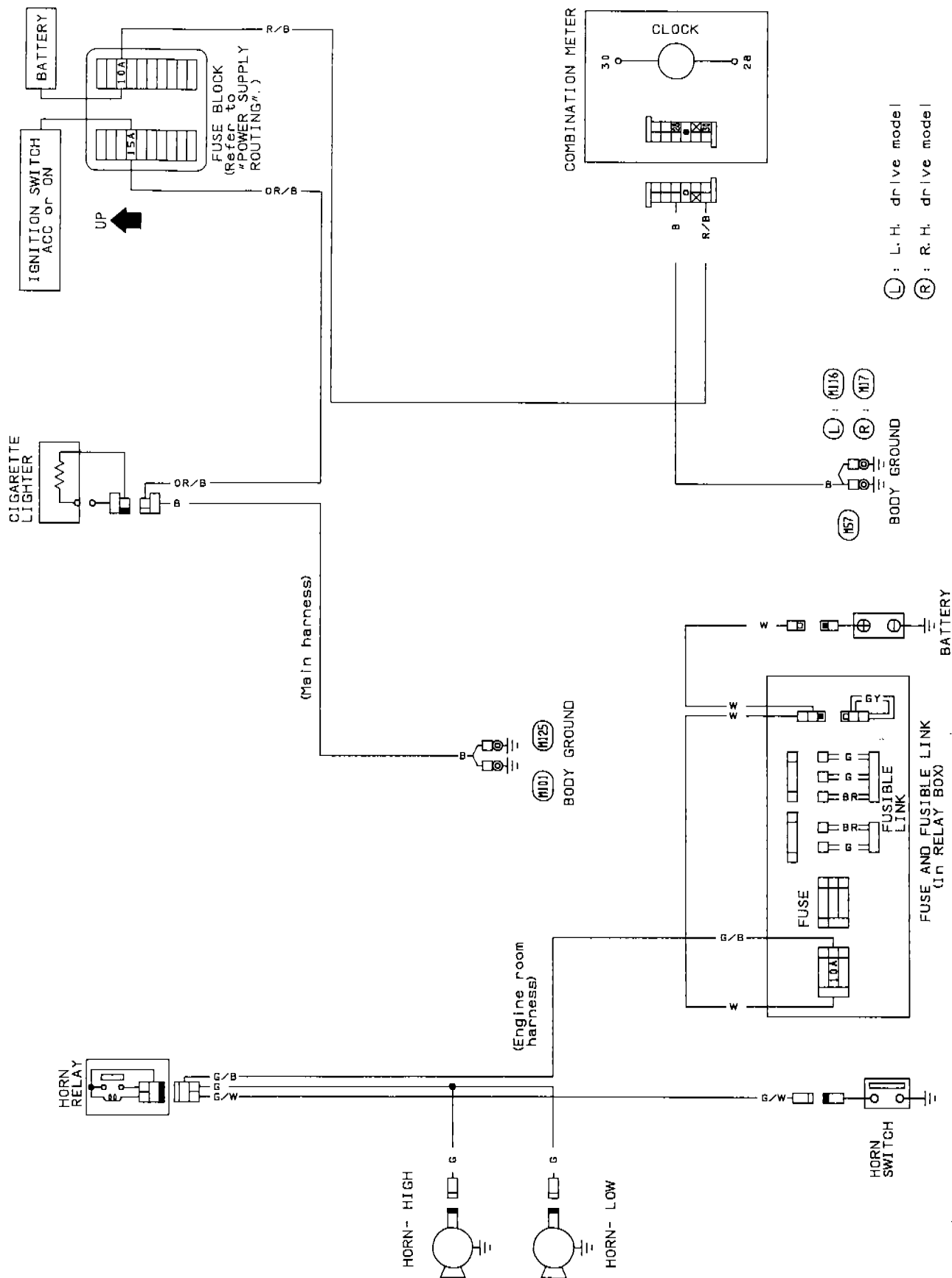
WIPER AND WASHER

Washer Tube Layout



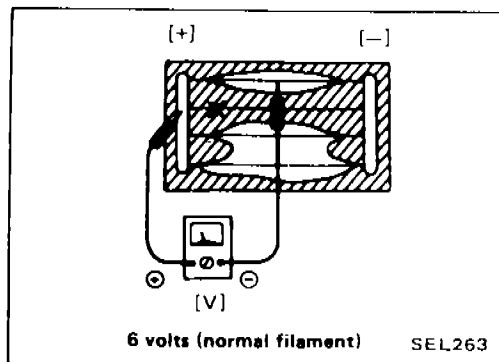
HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram



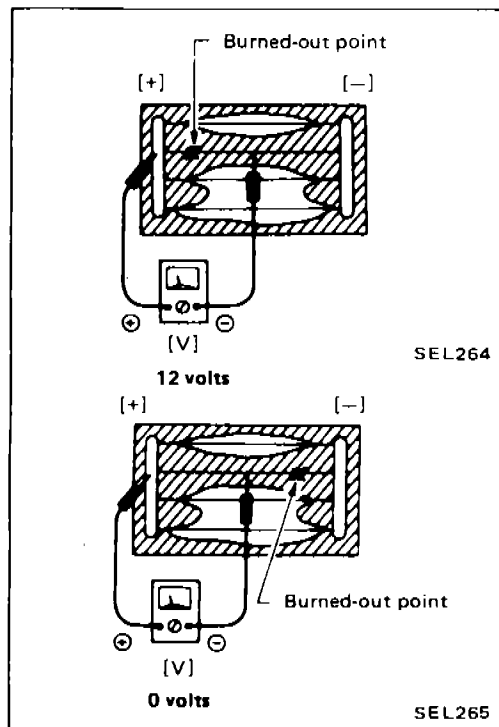
SEL790L

REAR WINDOW DEFOGGER

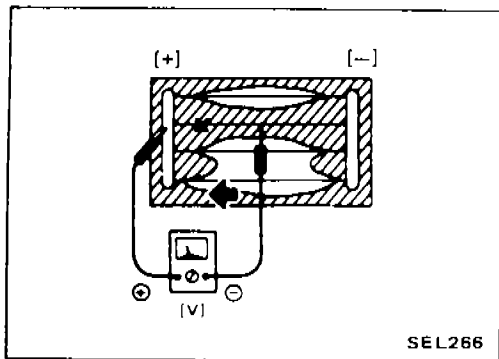


Filament Check

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



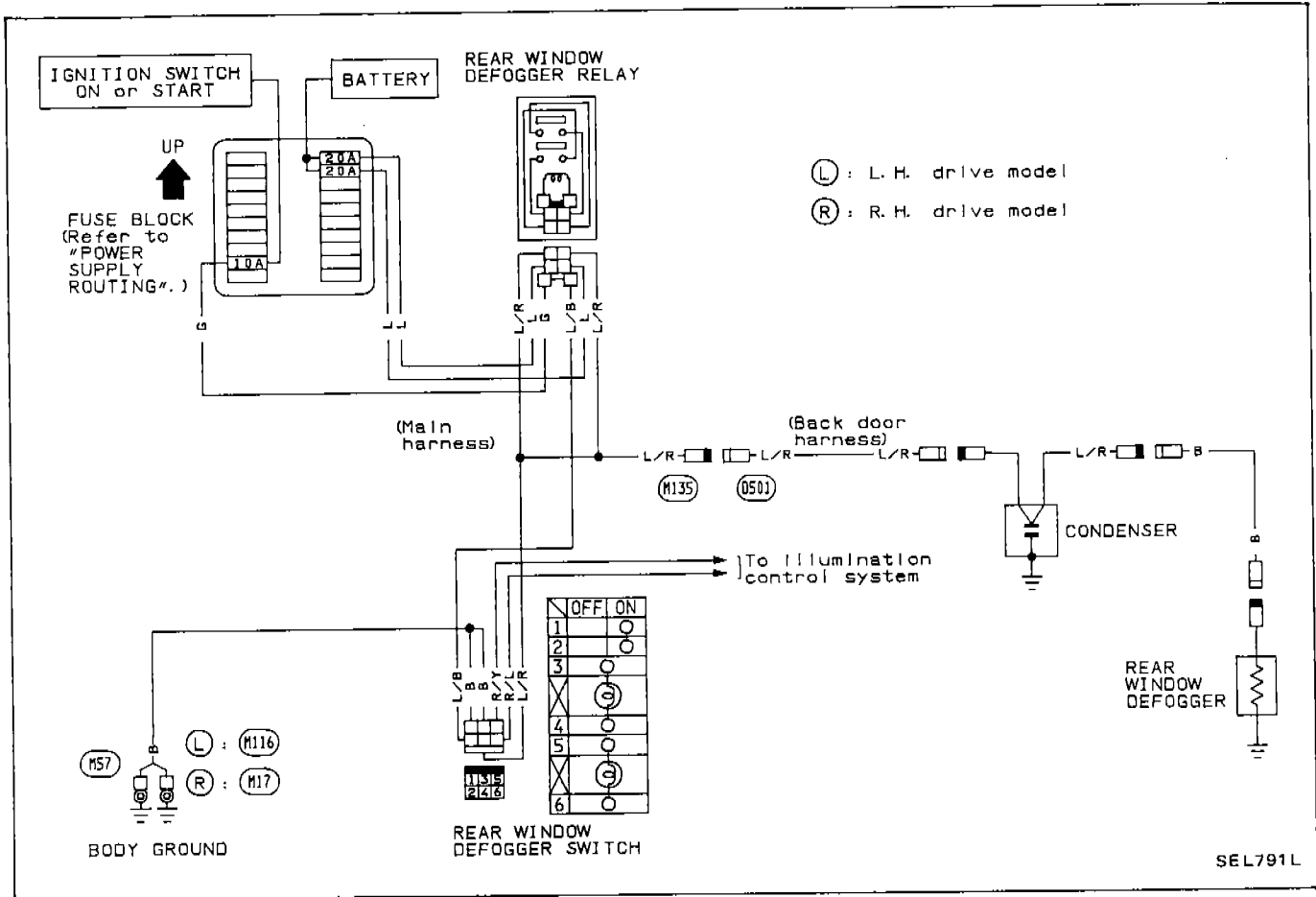
2. If a filament is burned out, circuit tester registers 0 or 12 volts.



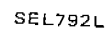
3. To locate burned out point, move probe to left and right along filament to determine point where tester needle swings abruptly.

REAR WINDOW DEFOGGER

Wiring Diagram



Audio/Wiring Diagram



REAR WINDOW DEFOGGER

Filament Repair

REPAIR EQUIPMENT

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

REPAIRING PROCEDURE

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

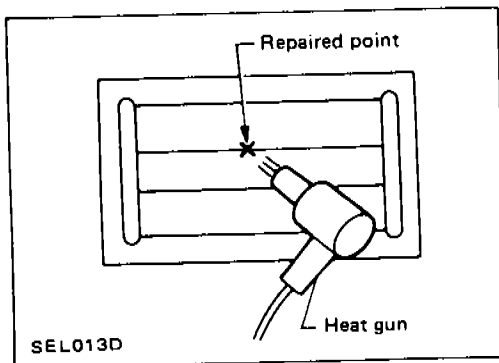
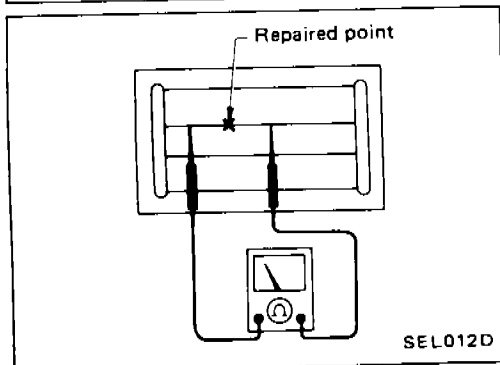
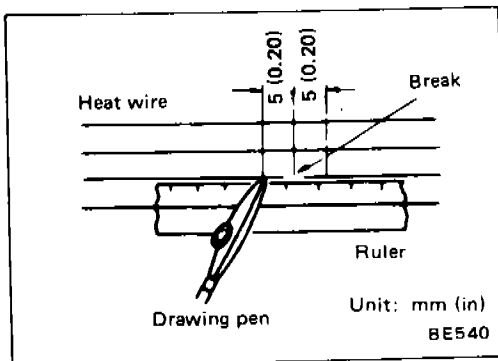
Shake silver composition container before use.

3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.

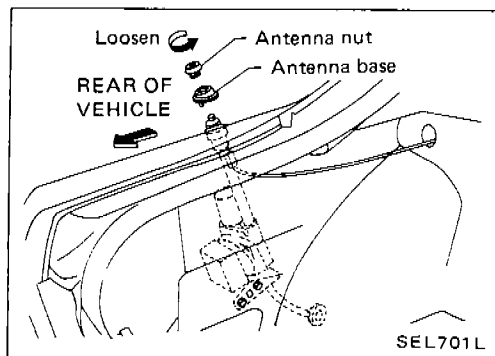
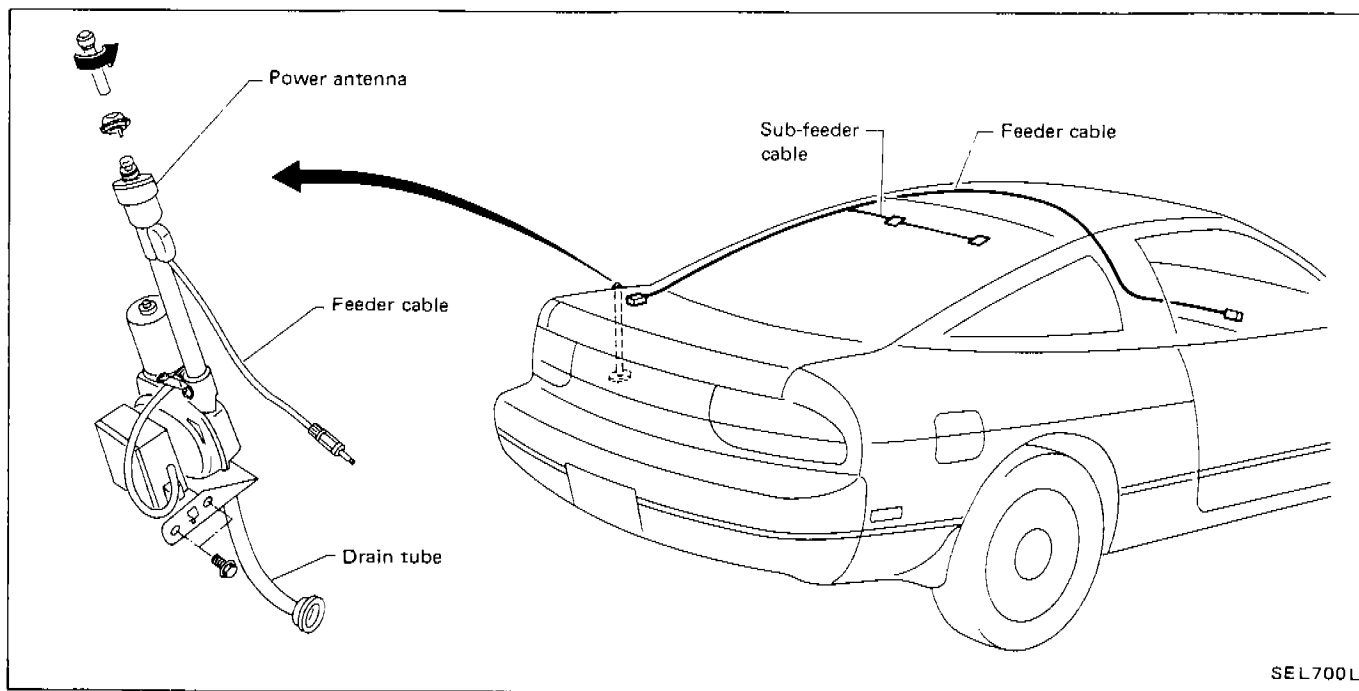
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.

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

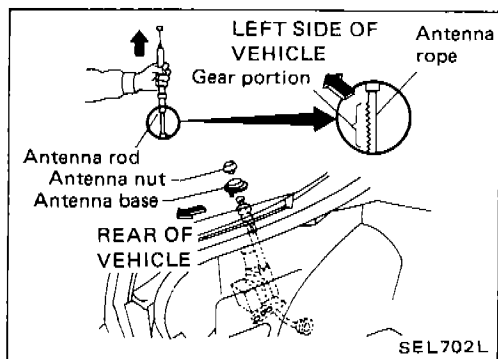


Location of Antenna

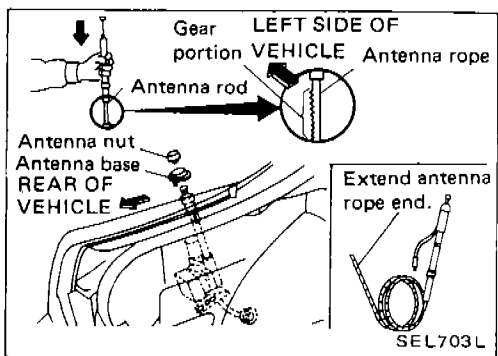


Antenna Rod Replacement REMOVAL

1. Remove antenna nut and antenna base.



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

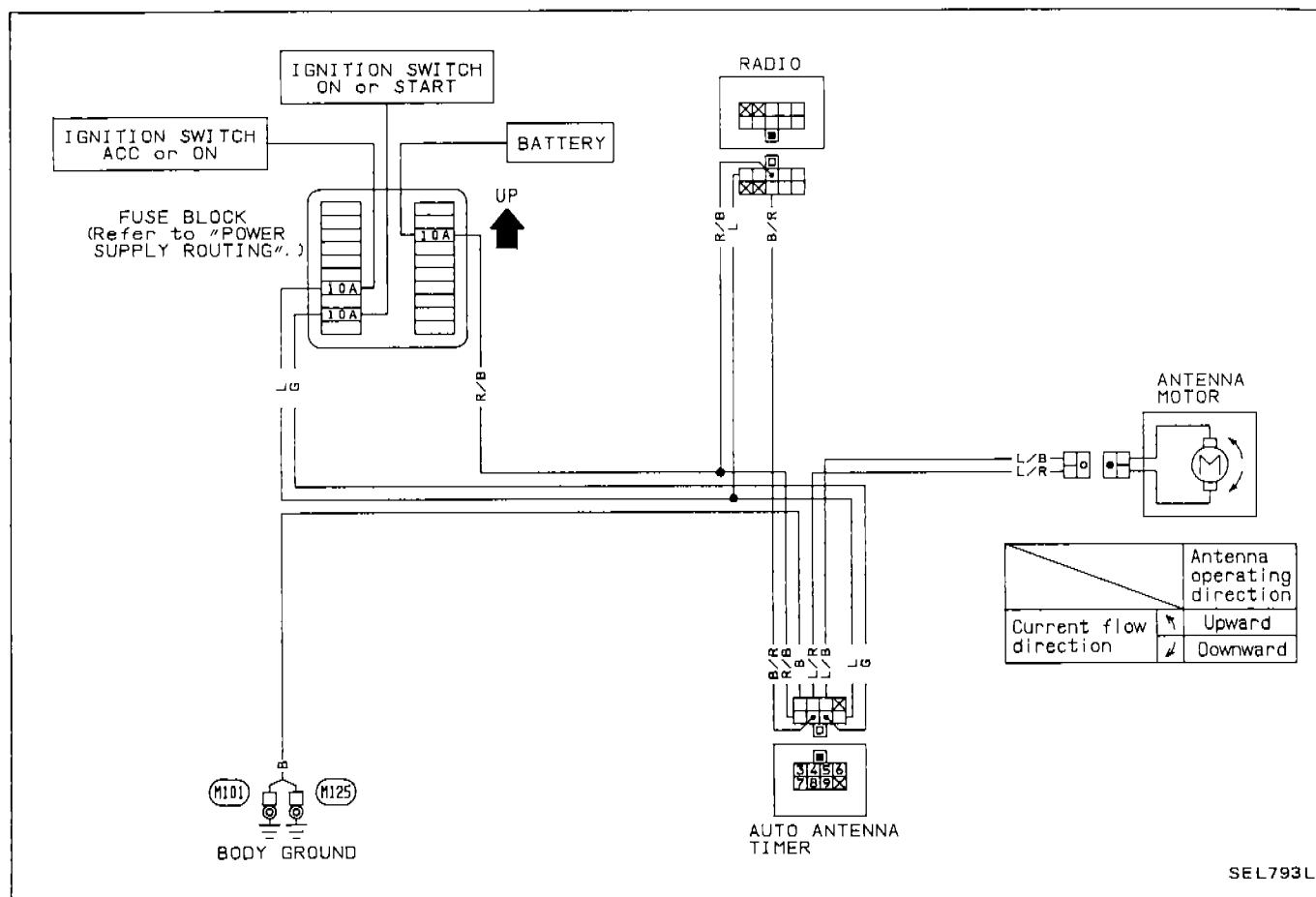


INSTALLATION

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.

AUDIO AND POWER ANTENNA

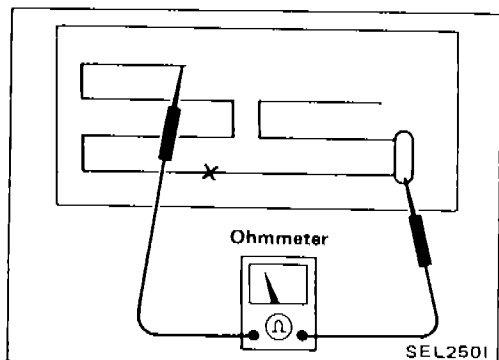
Power Antenna/Wiring Diagram



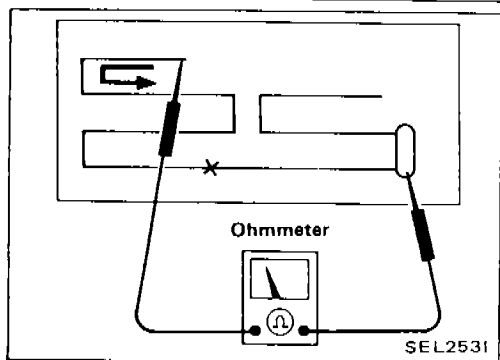
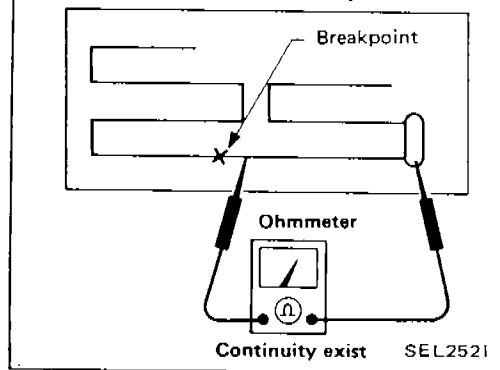
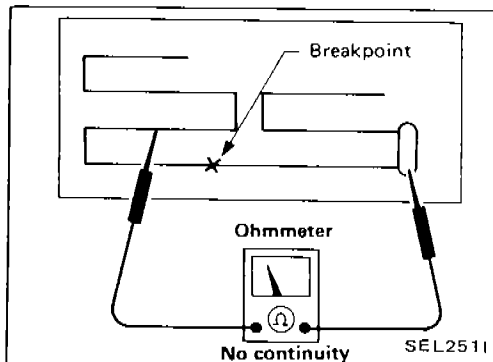
Window Antenna Repair

ELEMENT CHECK

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



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



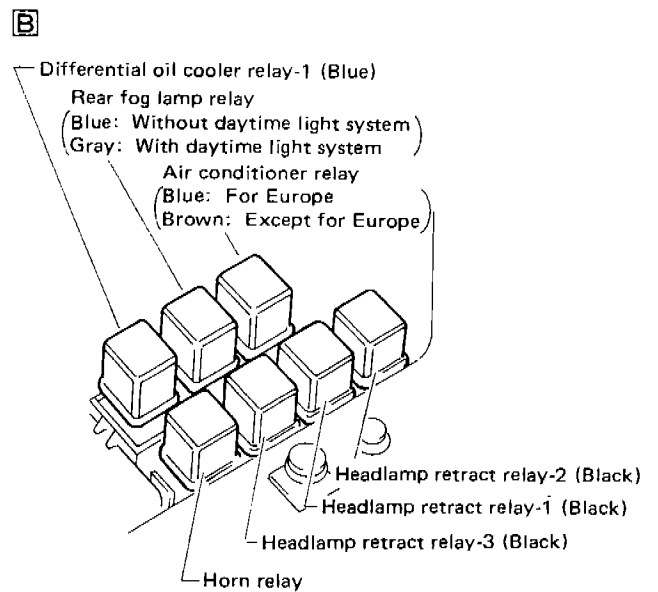
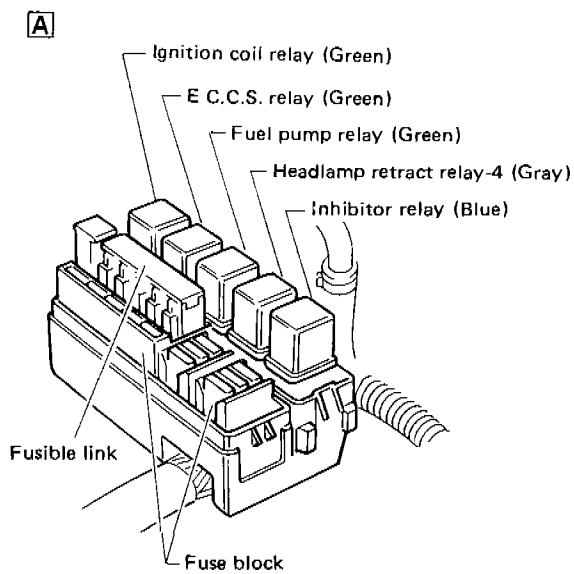
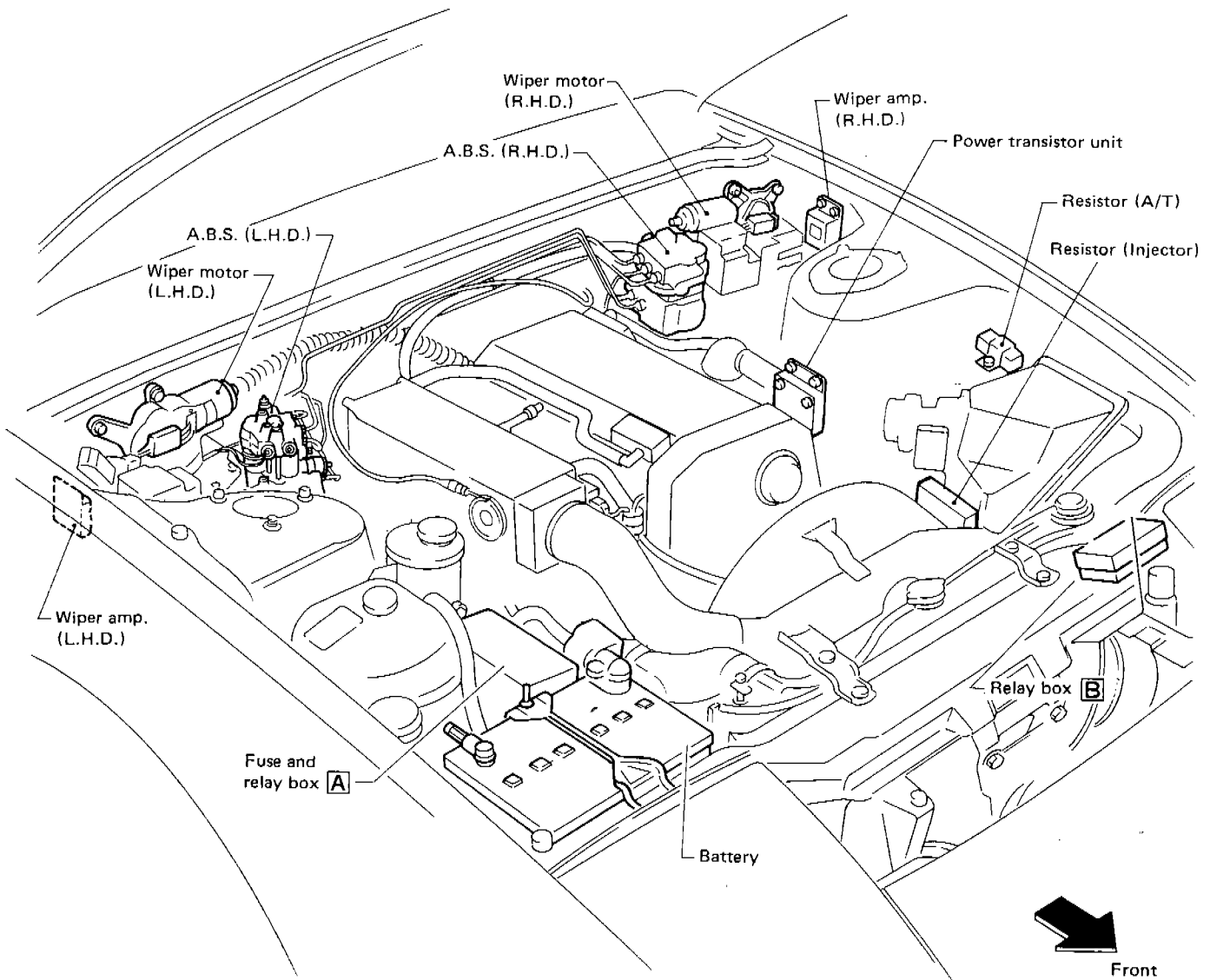
3. To locate broken point, move probe to left and right along element to determine point where tester needle swings abruptly.

ELEMENT REPAIR

Refer to "Filament Repair" of REAR WINDOW DEFOGGER.

LOCATION OF ELECTRICAL UNITS

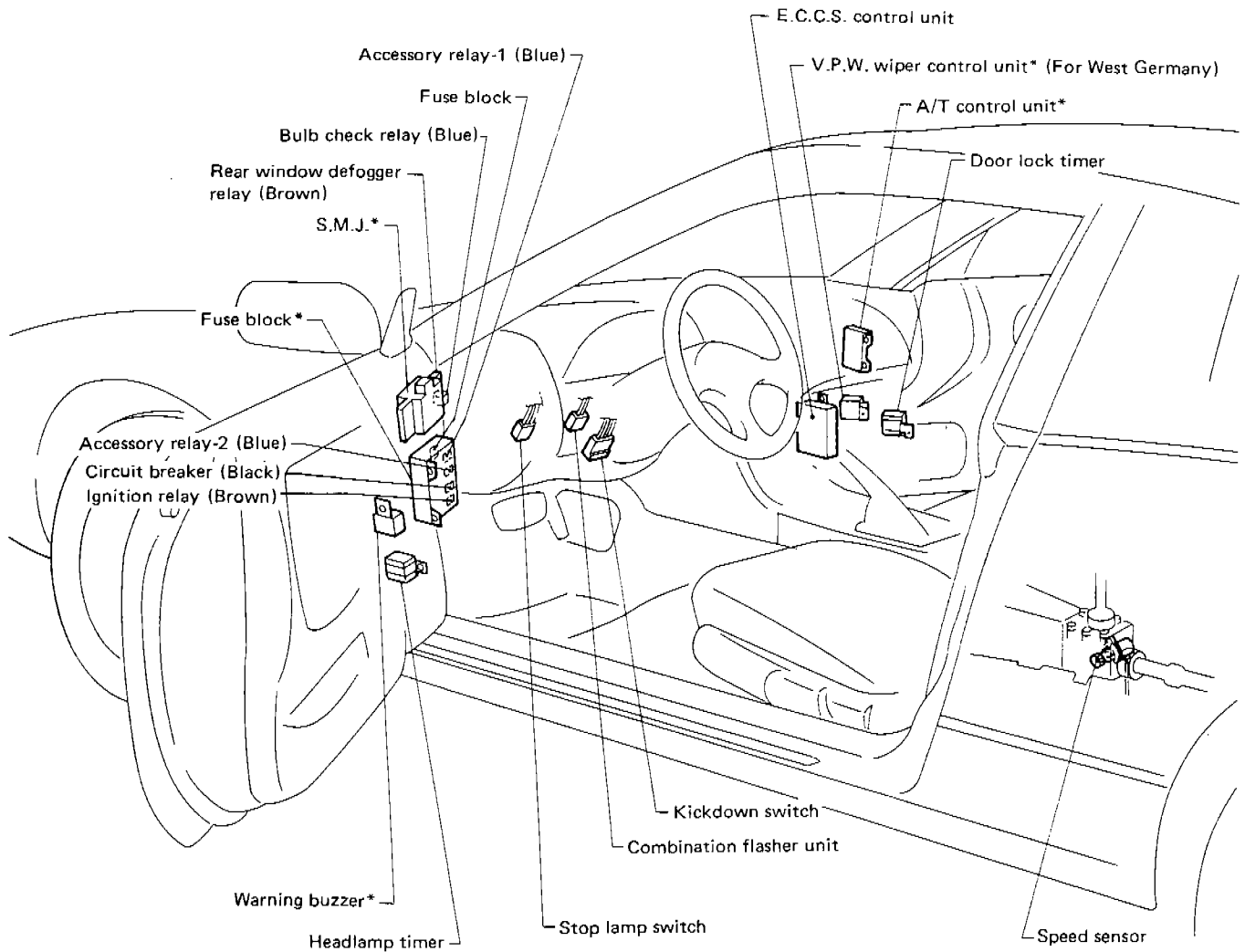
Engine Compartment



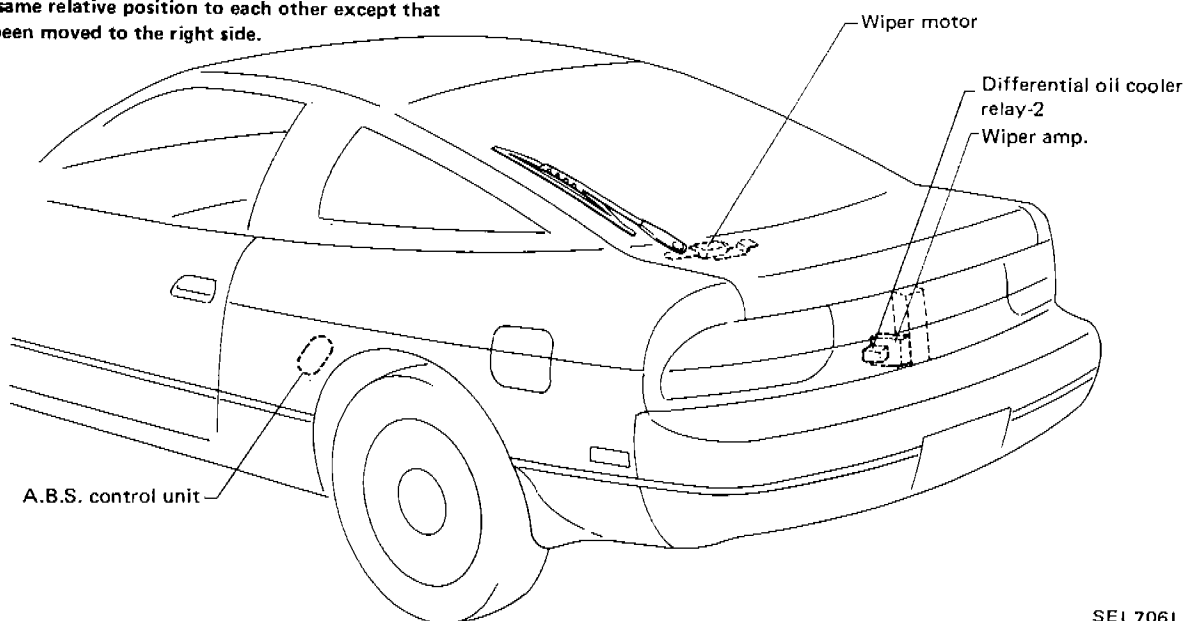
SEL705L

LOCATION OF ELECTRICAL UNITS

Passenger Compartment



- Figure shows dashboard for L.H.D. models.
- On R.H.D. models, all side panel unit parts marked with an asterisk "*" are symmetrically located to those of L.H.D. models. However, switches and units around steering column remain in the same relative position to each other except that they have all been moved to the right side.

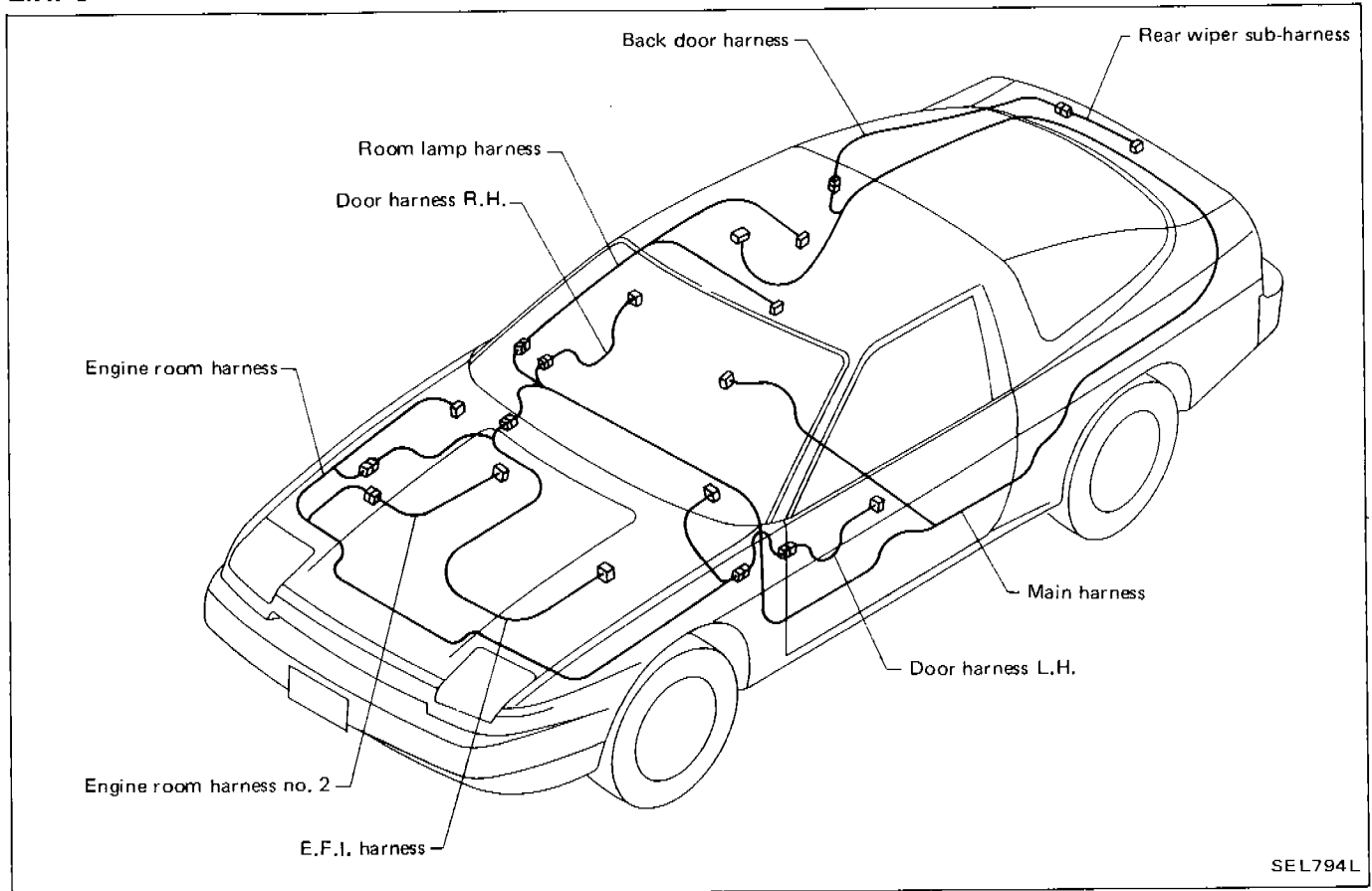


SEL706L

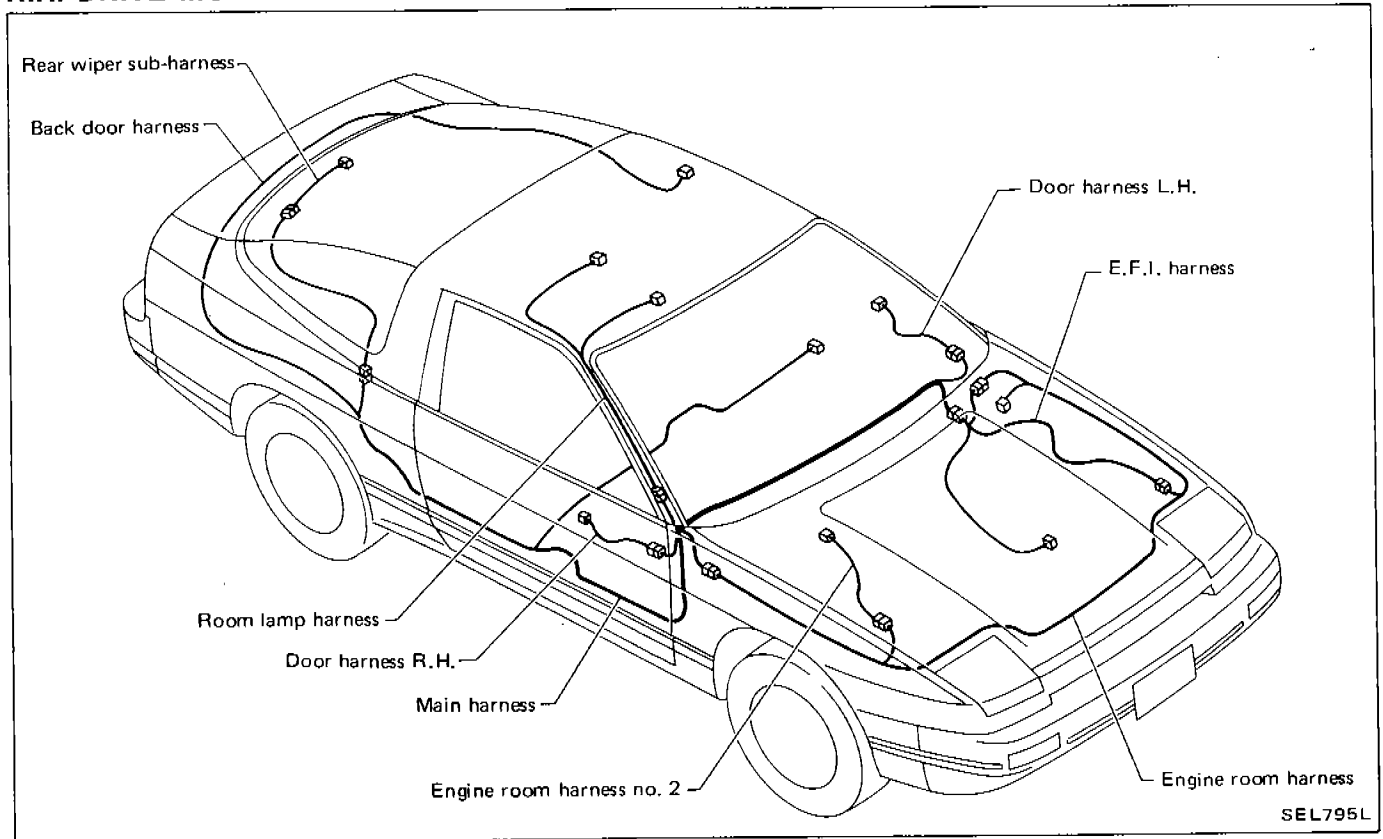
HARNESS LAYOUT

Outline

L.H. DRIVE MODEL



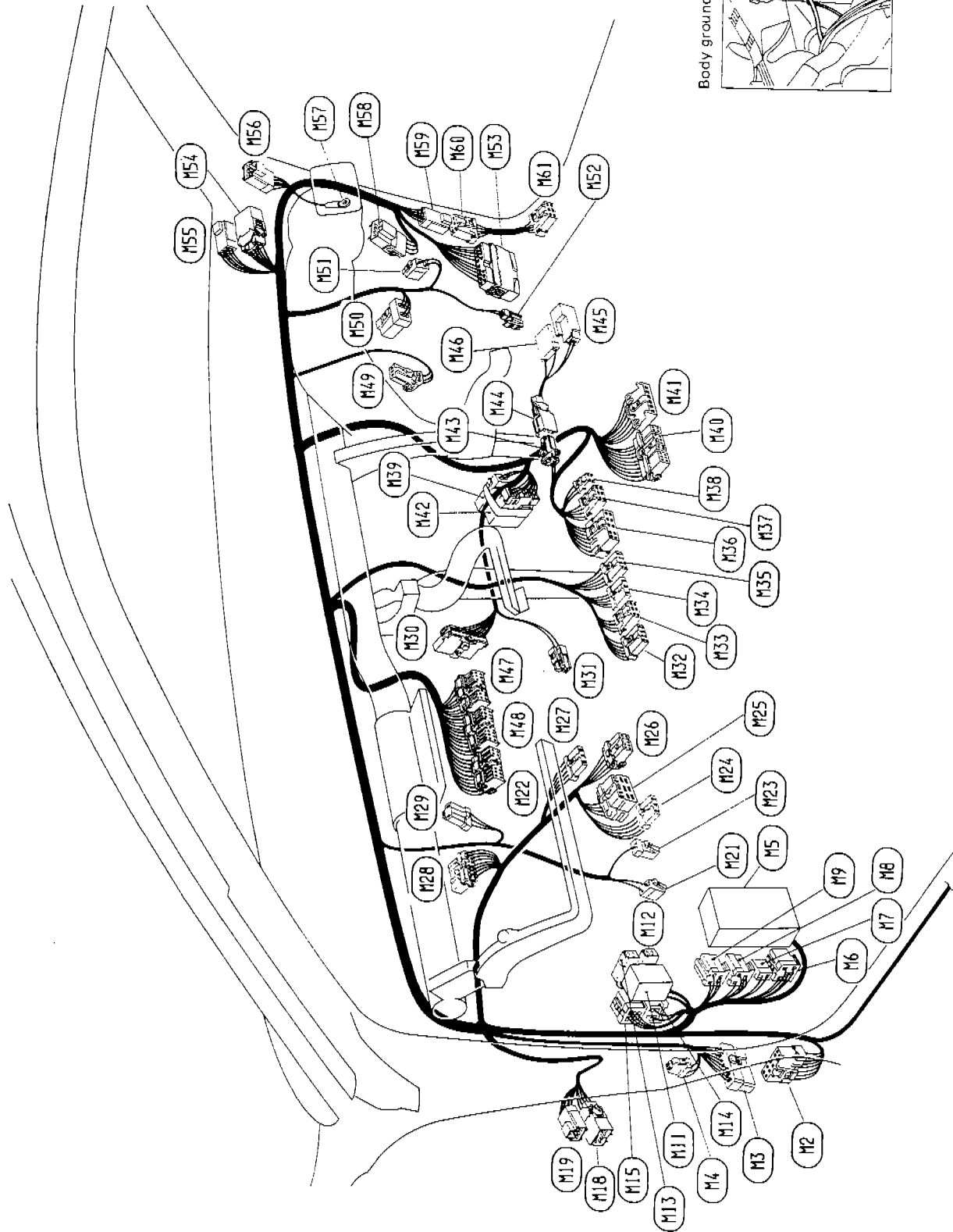
R.H. DRIVE MODEL



HARNESS LAYOUT

Main Harness

L.H. DRIVE MODEL



EL-84

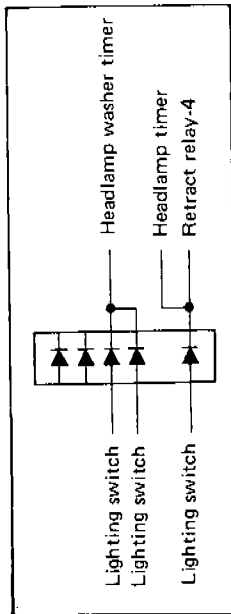
HARNESS LAYOUT

Main Harness (Cont'd)

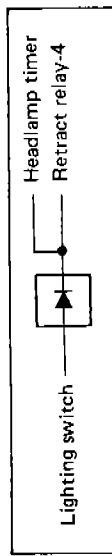
- (H2) : Headlamp timer
- (H3) : Check connector
- (H4) : Warning buzzer
- (H5) : Fuse block
- (H6) : Ignition relay
- (H7) : Circuit breaker (Model with power window system)
- (H8) : Accessory relay-2
- (H9) : Accessory relay-1
- (H10) : To engine room harness (E101) (Blue)
- (H11) : To engine room harness (E102) (Blue)
- (H12) : To engine room harness (E103) (Black)
- (H13) : Bulb check relay
- (H14) : Rear window defogger relay
- (H15) : To door harness L.H. (D1)
- (H16) : To door harness L.H. (D2)
- (H17) : Kickdown switch (A/T model)
- (H18) : Combination meter
- (H19) : Stop lamp switch
- (H20) : Rear fog lamp switch
- (H21) : Headlamp retractor switch
- (H22) : Illumination control amplifier
- (H23) : Not used
- (H24) : Not used
- (H25) : Combination flasher unit
- (H26) : Mode door motor
- (H27) : Foot lamp L.H.
- (H28) : Headlamp washer switch
- (H29) : Rear wiper and washer switch
- (H30) : Rear window defogger switch
- (H31) : Hazard switch
- (H32) : Radio
- (H33) : Radio
- (H34) : Cassette deck
- (H35) : Diode (Except for Europe)
- (H36) : Push control unit
- (H37) : Fan switch
- (H38) : Diode (For Europe)
- (H39) : To sub-harness (H40)
- (H40) : To main harness (H41)
- (H41) : Glove box lamp
- (H42) : Glove box lamp switch
- (H43) : Combination meter
- (H44) : Combination meter
- (H45) : Thermo control amplifier

- (H50) : Heater resistor
- (H51) : Blower motor
- (H52) : Foot lamp R.H.
- (H53) : To E.F.I. harness (E1)
- (H54) : To door harness R.H. (D101)
- (H55) : To door harness R.H. (D102)
- (H56) : To room lamp harness (H1)
- (H57) : Body ground
- (H58) : Intake door motor
- (H59) : To sub-harness (H60)
- (H60) : To main harness (H61)
- (H61) : Door lock timer

Diode (H42)



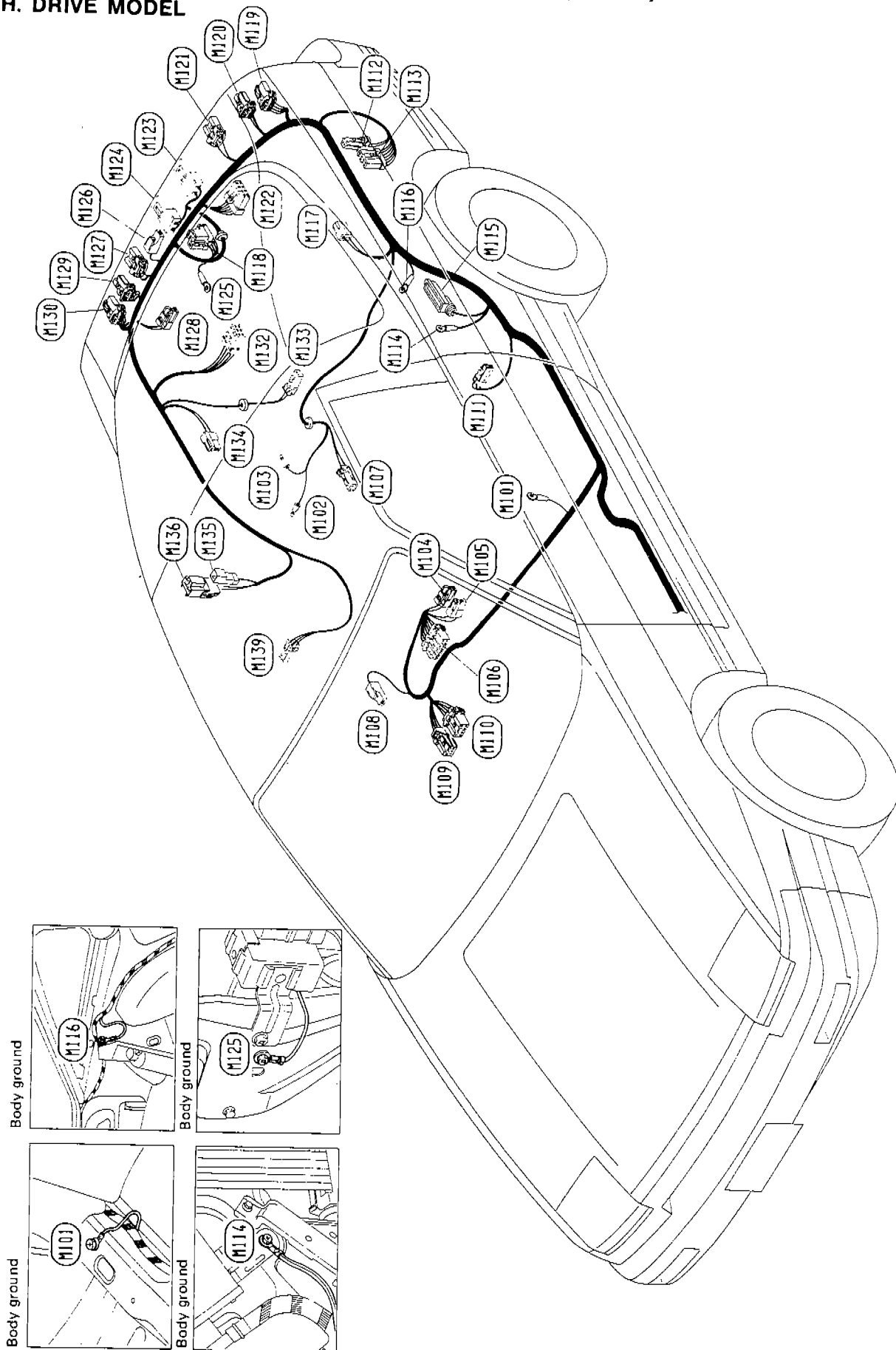
Diode (H39)



HARNESS LAYOUT

Main Harness (Cont'd)

L.H. DRIVE MODEL



HARNESS LAYOUT

Main Harness (Cont'd)

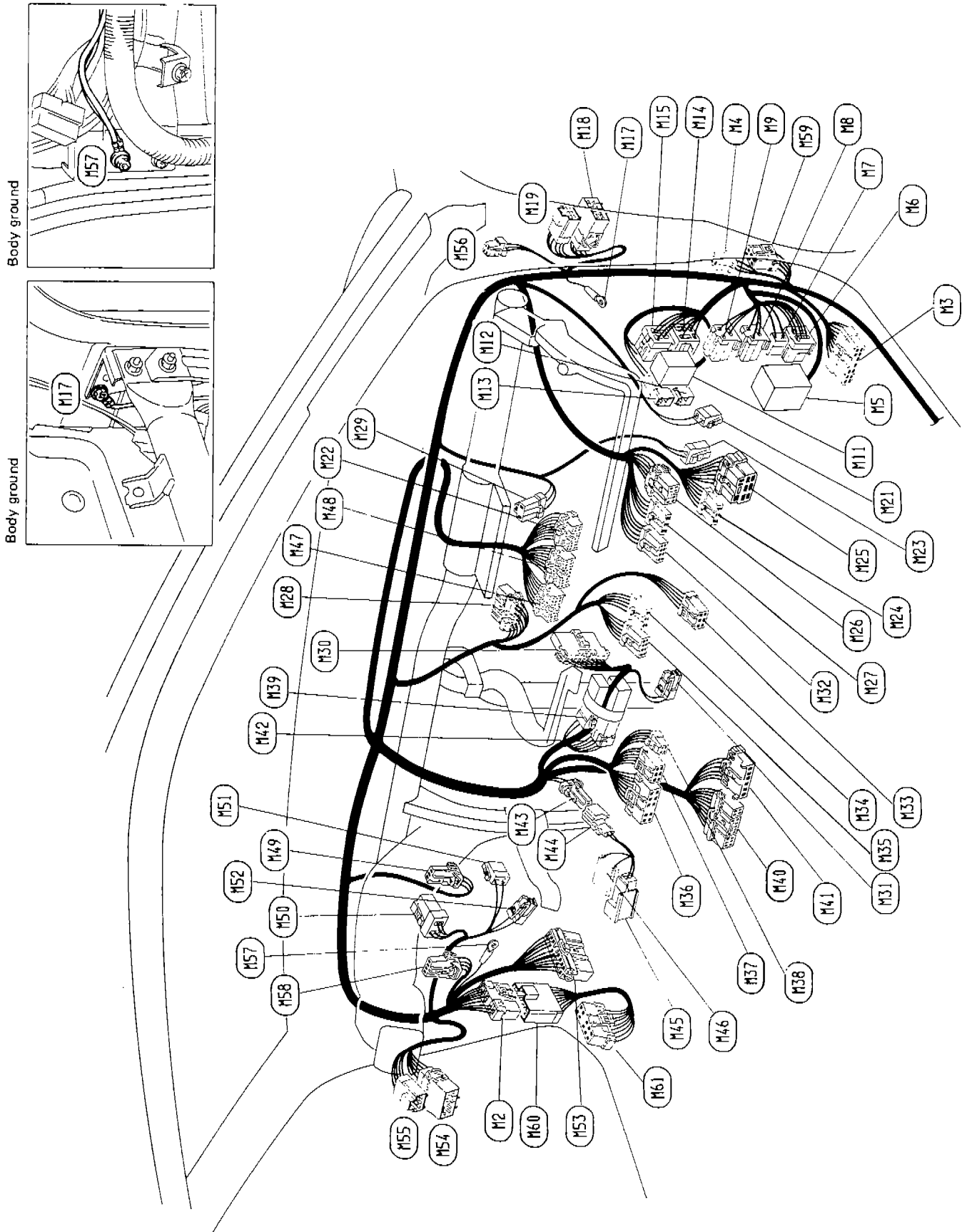
(N119) : Rear combination lamp L.H.
 (N120) : Rear combination lamp L.H.
 (N121) : Back-up lamp L.H.
 (N122) : Rear wiper amplifier
 (N123) : License lamp L.H.
 (N124) : License lamp R.H.
 (N125) : Body ground
 (N126) : Luggage room lamp switch
 (N127) : Back-up lamp R.H.
 (N128) : Luggage room lamp
 (N129) : Rear combination lamp R.H.
 (N130) : Rear combination lamp R.H.
 (N132) : Fuel tank gauge unit
 (N133) : Rear brake skid sensor
 (N134) : Rear speaker R.H.
 (N135) : To back door harness (0501)
 (N136) : To back door harness (0502)
 (N139) : Door switch R.H.

(N101) : Body ground
 (N102) : Differential oil temperature sensor
 (N103) : Differential oil temperature switch
 (N104) : Ash tray illumination
 (N105) : Cigarette lighter
 (N106) : Door mirror control switch
 (N107) : Differential oil cooler pump
 (N108) : Parking brake switch
 (N109) : A/T device (A/T illumination and O.D. control switch) (A/T model)
 (N110) : Not used
 (N111) : Door switch L.H.
 (N112) : Power antenna motor
 (N113) : Power antenna timer
 (N114) : Body ground
 (N115) : 4-wheel skid control unit
 (N116) : Body ground
 (N117) : Rear speaker L.H.
 (N118) : Differential oil cooler relay-2

HARNESS LAYOUT

Main Harness (Cont'd)

R.H. DRIVE MODEL

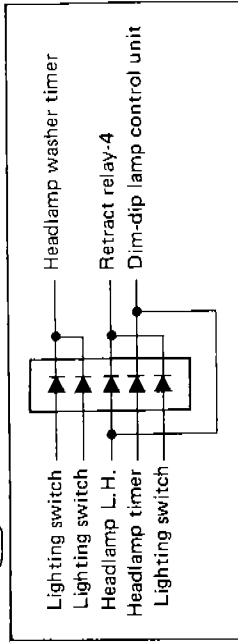


HARNESS LAYOUT

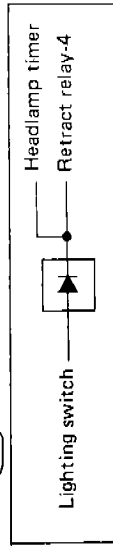
Main Harness (Cont'd)

- (H50) : Heater resistor
- (H51) : Blower motor
- (H52) : Foot lamp R.H.
- (H53) : To E.F.I. harness (F1)
- (H54) : To door harness L.H. (U11)
- (H55) : To door harness L.H. (U12)
- (H56) : To room lamp harness (R1)
- (H57) : Body ground
- (H58) : Intake door motor
- (H59) : Door lock timer
- (H60) : To main harness (H2)
- (H61) : Headlamp timer

Diode (H42)



Diode (H39)

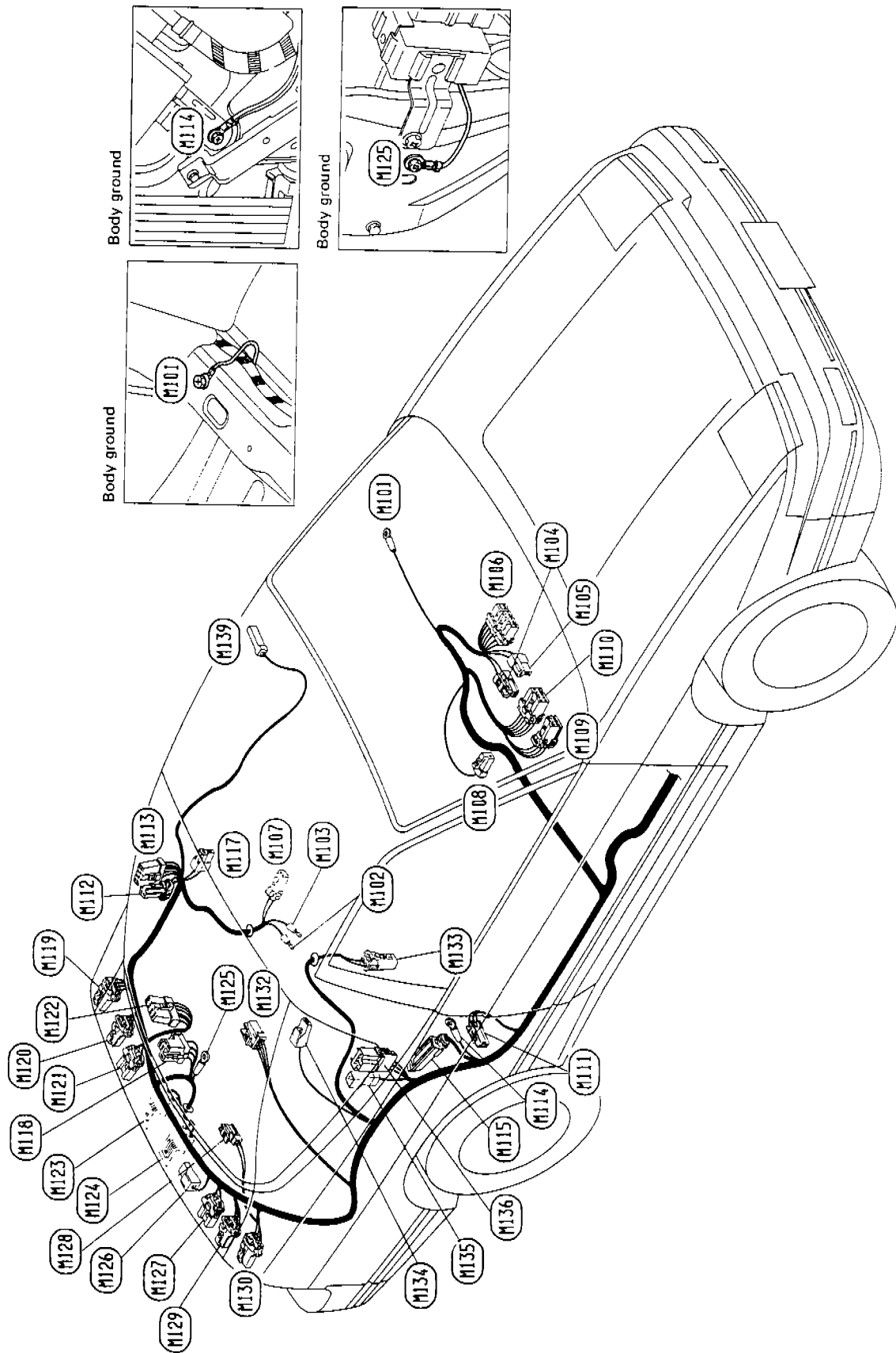


- (H2) : To sub-harness (H43)
- (H3) : Check connector
- (H4) : Warning buzzer
- (H5) : Fuse block
- (H6) : Ignition relay
- (H7) : Circuit breaker (Model with power window system)
- (H8) : Accessory relay-2
- (H9) : Accessory relay-1
- (H10) : To engine room harness (E101)
- (H11) : To engine room harness (E102) (Blue)
- (H12) : To engine room harness (E103) (Black)
- (H13) : Bulb check relay
- (H14) : Rear window defogger relay
- (H15) : Body ground
- (H16) : To door harness R.H. (U11)
- (H17) : To door harness R.H. (U12)
- (H18) : Kickdown switch (A/T model)
- (H19) : Combination meter
- (H20) : Stop lamp switch
- (H21) : Rear fog lamp switch
- (H22) : Headlamp retractor switch
- (H23) : Illumination control amplifier
- (H24) : Not used
- (H25) : Not used
- (H26) : Combination flasher unit
- (H27) : Mode door motor
- (H28) : Foot lamp L.H.
- (H29) : Headlamp washer switch
- (H30) : Rear wiper and washer switch
- (H31) : Rear window defogger switch
- (H32) : Hazard switch
- (H33) : Radio
- (H34) : Radio
- (H35) : Cassette deck
- (H36) : Diode (Except for Europe)
- (H37) : Push control unit
- (H38) : Fan switch
- (H39) : Diode (For Europe)
- (H40) : To sub-harness (H44)
- (H41) : To main harness (H43)
- (H42) : Glove box lamp
- (H43) : Glove box lamp switch
- (H44) : Combination meter
- (H45) : Combination meter
- (H46) : Thermo control amplifier

HARNESS LAYOUT

Main Harness (Cont'd)

R.H. DRIVE MODEL



HARNESS LAYOUT

Main Harness (Cont'd)

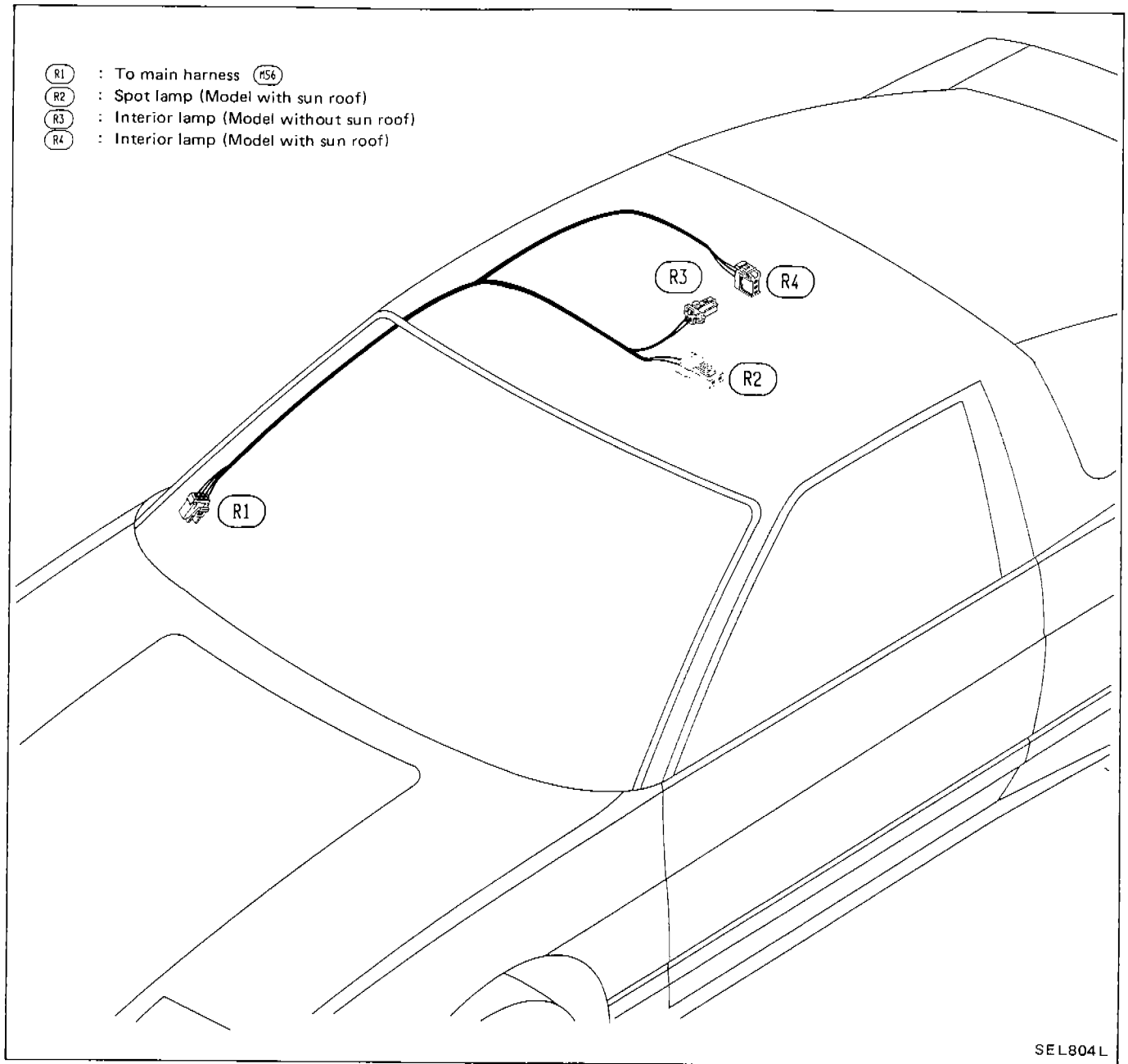
(H120) : Rear combination lamp L.H.
 (H121) : Back-up lamp L.H.
 (H122) : Rear wiper amplifier
 (H123) : License lamp L.H.
 (H124) : License lamp R.H.
 (H125) : Body ground
 (H126) : Luggage room lamp switch
 (H127) : Back-up lamp R.H.
 (H128) : Luggage room lamp
 (H129) : Rear combination lamp R.H.
 (H130) : Rear combination lamp R.H.
 (H132) : Fuel tank gauge unit
 (H133) : Rear brake skid sensor
 (H134) : Rear speaker R.H.
 (H135) : To back door harness (050)
 (H136) : To back door harness (0502)
 (H139) : Door switch L.H.

(H101) : Body ground
 (H102) : Differential oil temperature sensor
 (H103) : Differential oil temperature switch
 (H104) : Ash tray illumination
 (H105) : Cigarette lighter
 (H106) : Door mirror control switch
 (H107) : Differential oil cooler pump
 (H108) : Parking brake switch
 (H109) : A/T device (A/T illumination and O.D. control switch) (A/T model)
 (H110) : Not used
 (H111) : Door switch R.H.
 (H112) : Power antenna motor
 (H113) : Power antenna timer
 (H114) : Body ground
 (H115) : 4-wheel skid control unit
 (H117) : Rear speaker L.H.
 (H118) : Differential oil cooler relay-2
 (H119) : Rear combination lamp L.H.

SEL803L

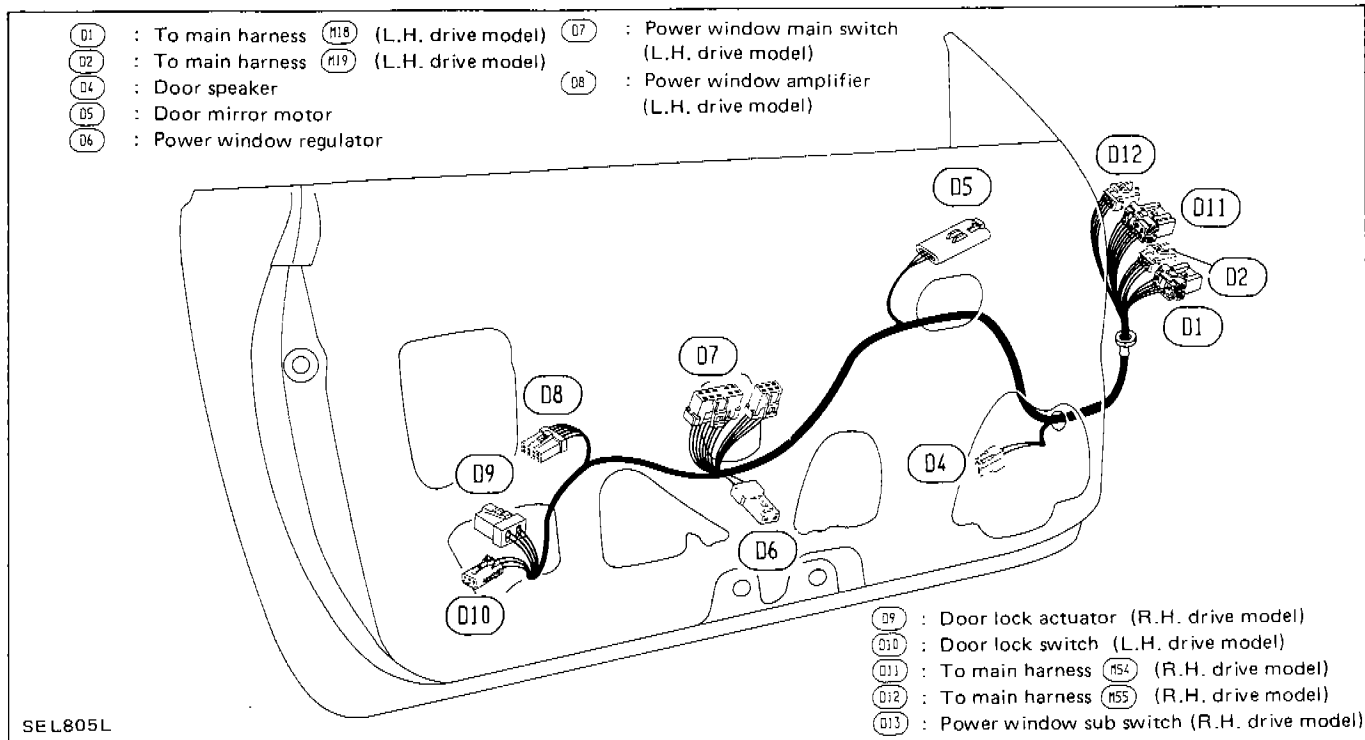
HARNESS LAYOUT

Room Lamp Harness

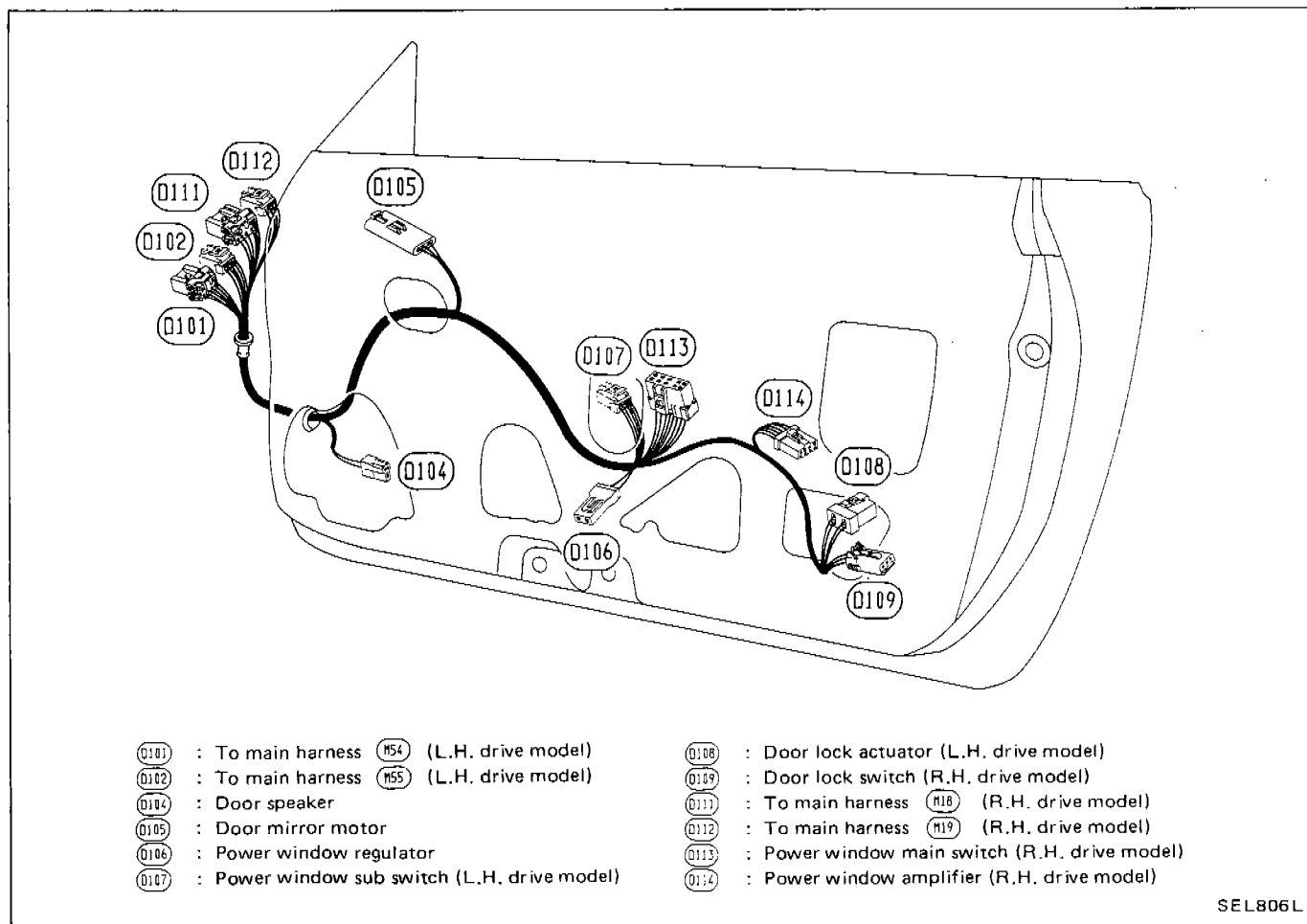


HARNESS LAYOUT

Door Harness L.H.



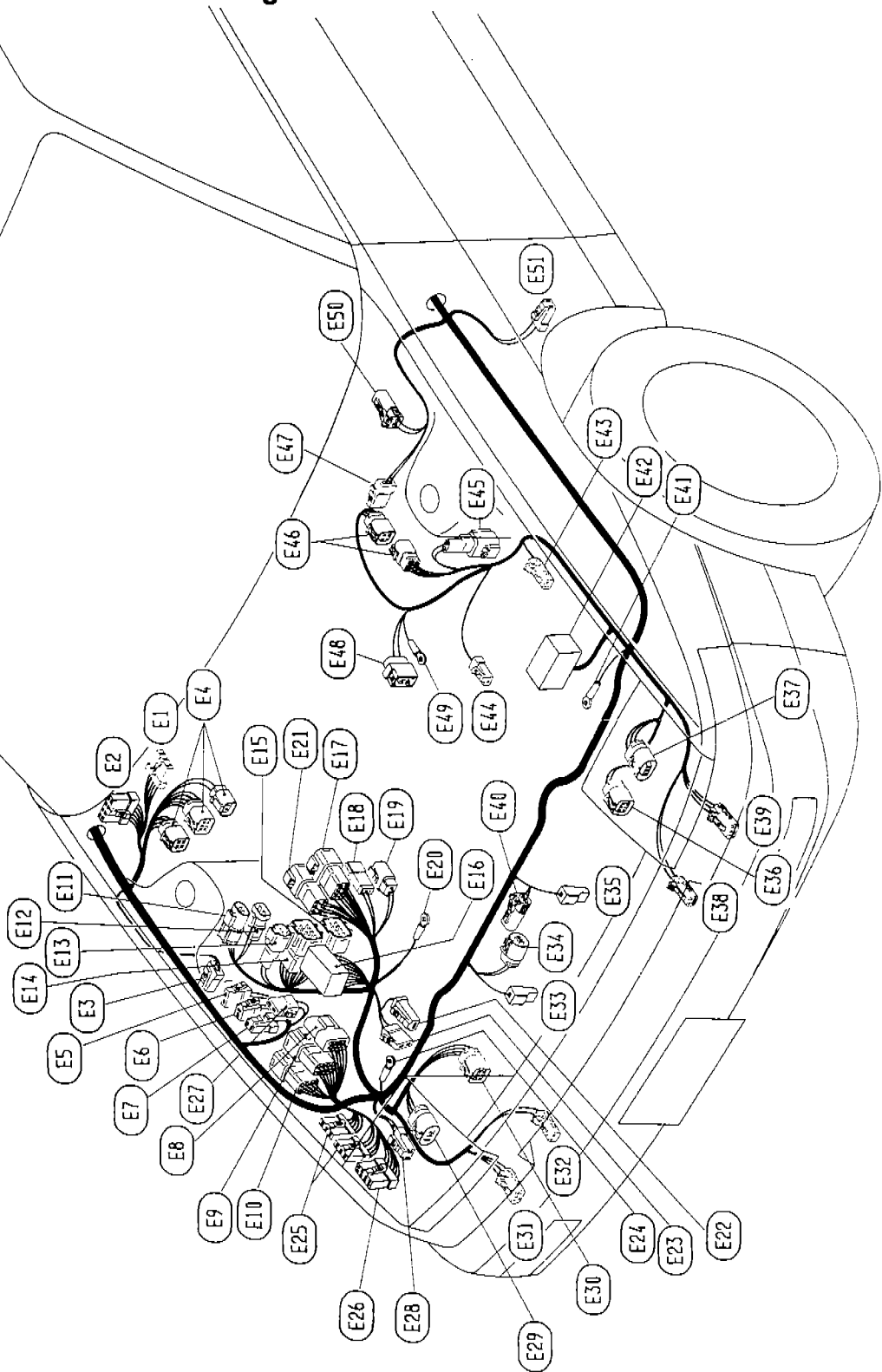
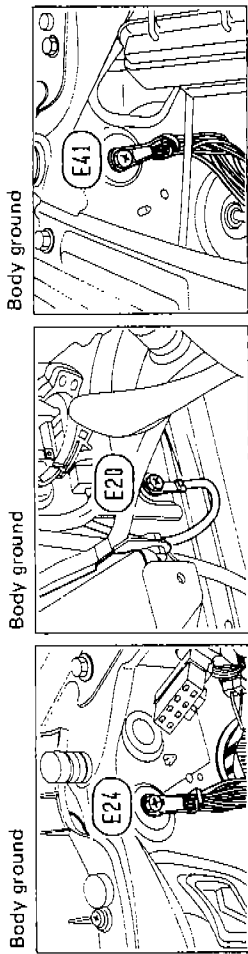
Door Harness R.H.



HARNESS LAYOUT

Engine Room Harness

L.H. DRIVE MODEL



HARNESS LAYOUT

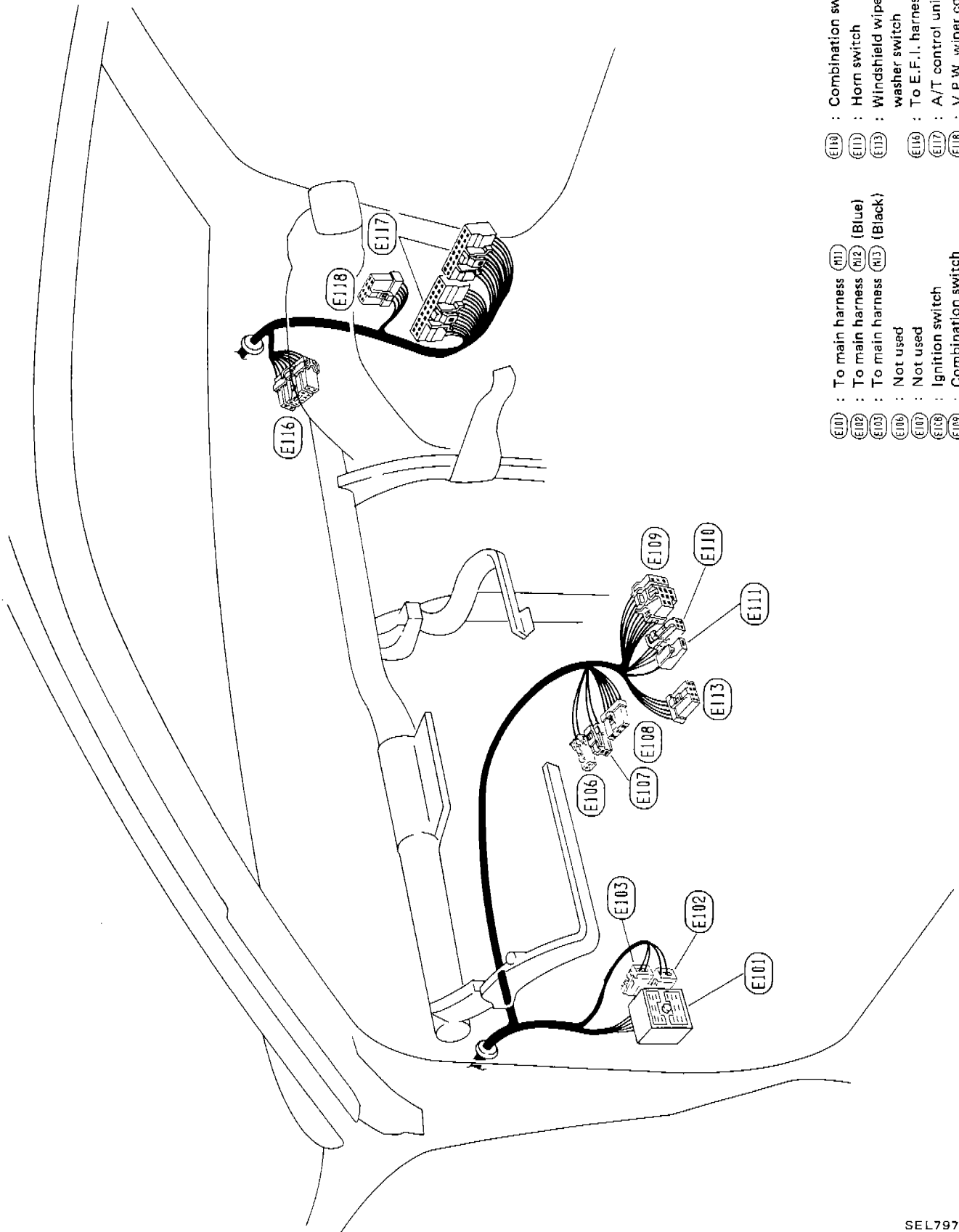
Engine Room Harness (Cont'd)

E1	: Windshield wiper motor	E28	: Not used
E2	: Windshield wiper amplifier	E29	: Headlamp R.H.
E3	: Side turn signal lamp R.H.	E30	: Headlamp motor R.H.
E4	: Anti-skid brake actuator	E31	: Front combination lamp R.H.
E5	: Rear washer motor	E32	: Daytime light R.H.
E6	: Front washer motor	E33	: Horn-high
E7	: Washer fluid level switch	E34	: Condenser fan motor
E8	: To E.F.I. harness (F8) (White)	E35	: Horn-low
E9	: To E.F.I. harness (F9) (Gray)	E36	: Headlamp motor L.H.
E10	: To E.F.I. harness (F10) (Brown)	E37	: Headlamp L.H.
E11	: To engine room harness no. 2 (E20) (M/T model)	E38	: Daytime light L.H.
E12	: Inhibitor switch (A/T model)	E39	: Front combination lamp L.H.
E13	: Revolution sensor (A/T model)	E40	: Dual-pressure switch
E14	: Inhibitor switch (A/T model) (Gray)	E41	: Body ground
E15	: To solenoid valve sub-harness (A/T model) (Brown)	E42	: Relay box (Refer to page EL-81.)
E16	: Relay box (Refer to page EL-81.)	E43	: Dropping resistor (A/T model)
E17	: To engine room harness no. 2 (E20) (A/T model)	E44	: Compressor
E18	: To engine room harness no. 2 (E20)	E45	: Front brake skid sensor L.H.
E19	: To engine room harness no. 2 (E20)	E46	: Power transistor unit
E20	: Body ground	E47	: Brake fluid level switch
E21	: To engine room harness no.2 (E20) (M/T model)	E48	: Pressure regulator control solenoid valve
E22	: Battery	E49	: Body ground for front brake skid sensor L.H.
E23	: Battery	E50	: V.P.W. wiper motor
E24	: Body ground	E51	: Side turn signal lamp L.H.
E25	: Daytime light control unit	E52	: To engine room harness (E28)
E26	: Headlamp washer amplifier		
E27	: Headlamp washer motor		

HARNESS LAYOUT

Engine Room Harness (Cont'd)

L.H. DRIVE MODEL



- (E101) : To main harness (H11)
- (E102) : To main harness (H12) (Blue)
- (E103) : To main harness (H13) (Black)
- (E106) : Not used
- (E107) : Not used
- (E108) : Ignition switch
- (E109) : Combination switch
- (E110) : To E.F.I. harness (F3)
- (E111) : V.P.W. wiper control unit
- (E112) : To main harness (Blue)
- (E113) : To main harness (Black)
- (E116) : To main harness
- (E117) : To E.F.I. harness
- (E118) : To E.F.I. harness
- (E119) : Combination switch
- (E120) : Horn switch
- (E121) : Washer switch
- (E122) : A/T control unit
- (E123) : V.P.W. wiper control unit

HARNESS LAYOUT

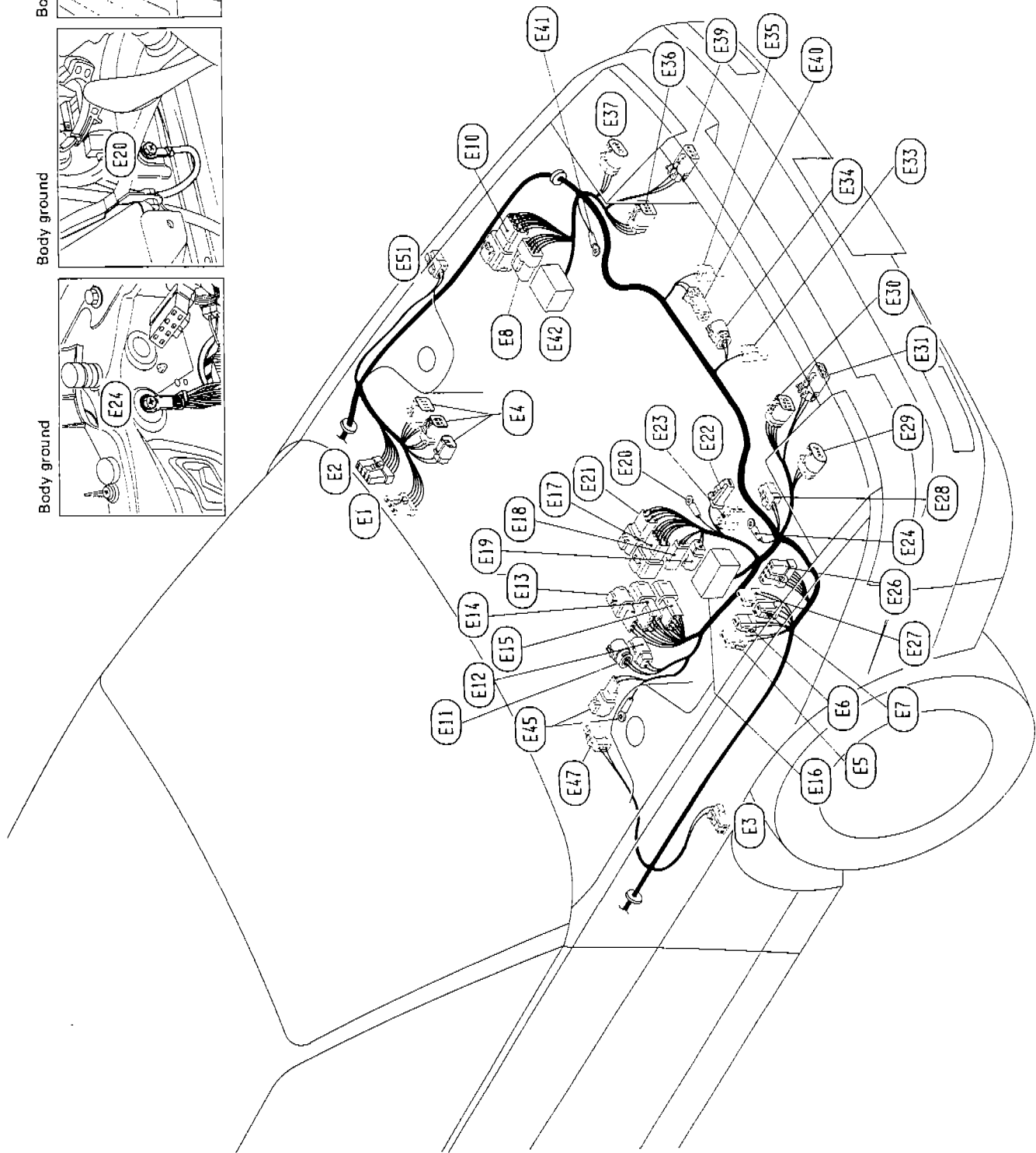
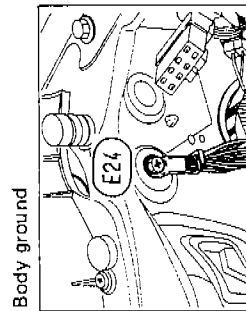
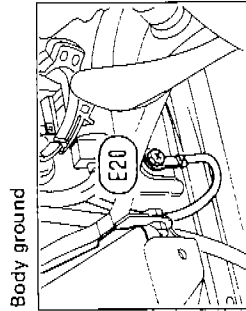
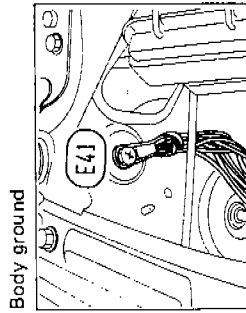
NOTE

EL-97

HARNESS LAYOUT

Engine Room Harness (Cont'd)

R.H. DRIVE MODEL



HARNESS LAYOUT

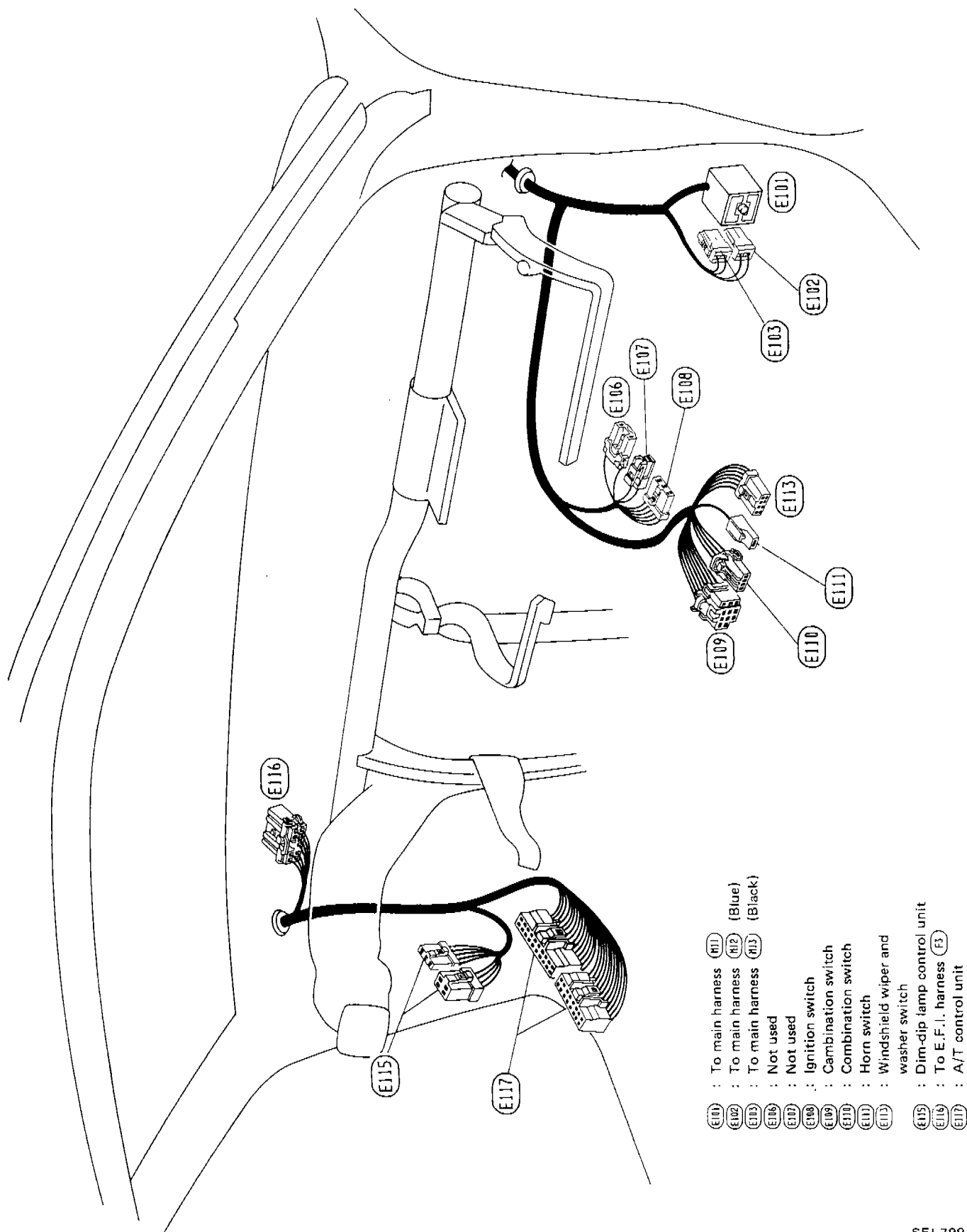
Engine Room Harness (Cont'd)

(E1)	: Windshield wiper motor	(E24)	: Body ground
(E2)	: Windshield wiper amplifier	(E26)	: Headlamp washer amplifier
(E3)	: Side turn signal lamp R.H.	(E27)	: Headlamp washer motor
(E4)	: Anti-skid brake actuator	(E28)	: Not used
(E5)	: Rear washer motor	(E29)	: Headlamp R.H.
(E6)	: Front washer motor	(E30)	: Headlamp motor R.H.
(E7)	: Washer fluid level switch	(E31)	: Front combination lamp R.H.
(E8)	: To E.F.I. harness (E8) (White)	(E33)	: Horn-high
(E9)	: To E.F.I. harness (E9) (Brown)	(E34)	: Condenser fan motor
(E10)	: To engine room harness no. 2 (E201) (M/T model)	(E35)	: Horn-low
(E11)	: Inhibitor switch (A/T model)	(E36)	: Headlamp motor L.H.
(E12)	: Revolution sensor (A/T model)	(E37)	: Headlamp L.H.
(E13)	: Inhibitor switch (A/T model) (Gray)	(E39)	: Front combination lamp L.H.
(E14)	: To solenoid valve sub-harness (A/T model) (Brown)	(E40)	: Dual-pressure switch
(E15)	: Relay box (Refer to page EL-81.)	(E41)	: Body ground
(E16)	: To engine room harness no. 2 (E202) (A/T model)	(E42)	: Relay box (Refer to page EL-81.)
(E17)	: To engine room harness no. 2 (E203)	(E45)	: Front brake skid sensor R.H.
(E18)	: To engine room harness no. 2 (E204)	(E47)	: Brake fluid level switch
(E19)	: To engine room harness no. 2 (E204)	(E51)	: Side turn signal lamp L.H.
(E20)	: Body ground	(E52)	: To engine room harness (E28)
(E21)	: To engine room harness no.2 (E205) (M/T model)		
(E22)	: Battery		
(E23)	: Battery		

HARNESS LAYOUT

Engine Room Harness (Cont'd)

R.H. DRIVE MODEL

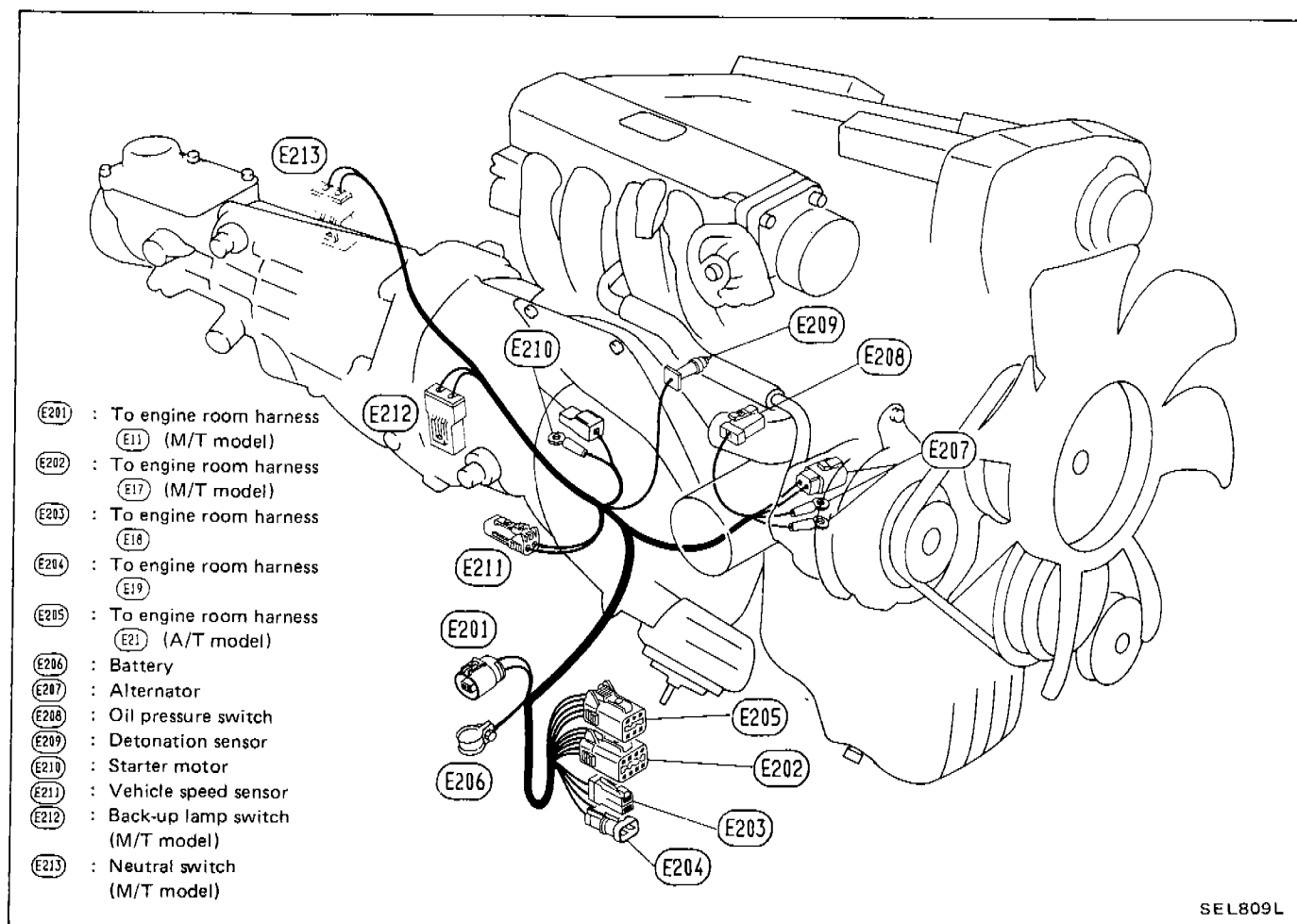


EL-100

SEL799L

HARNESS LAYOUT

Engine Room Harness No. 2

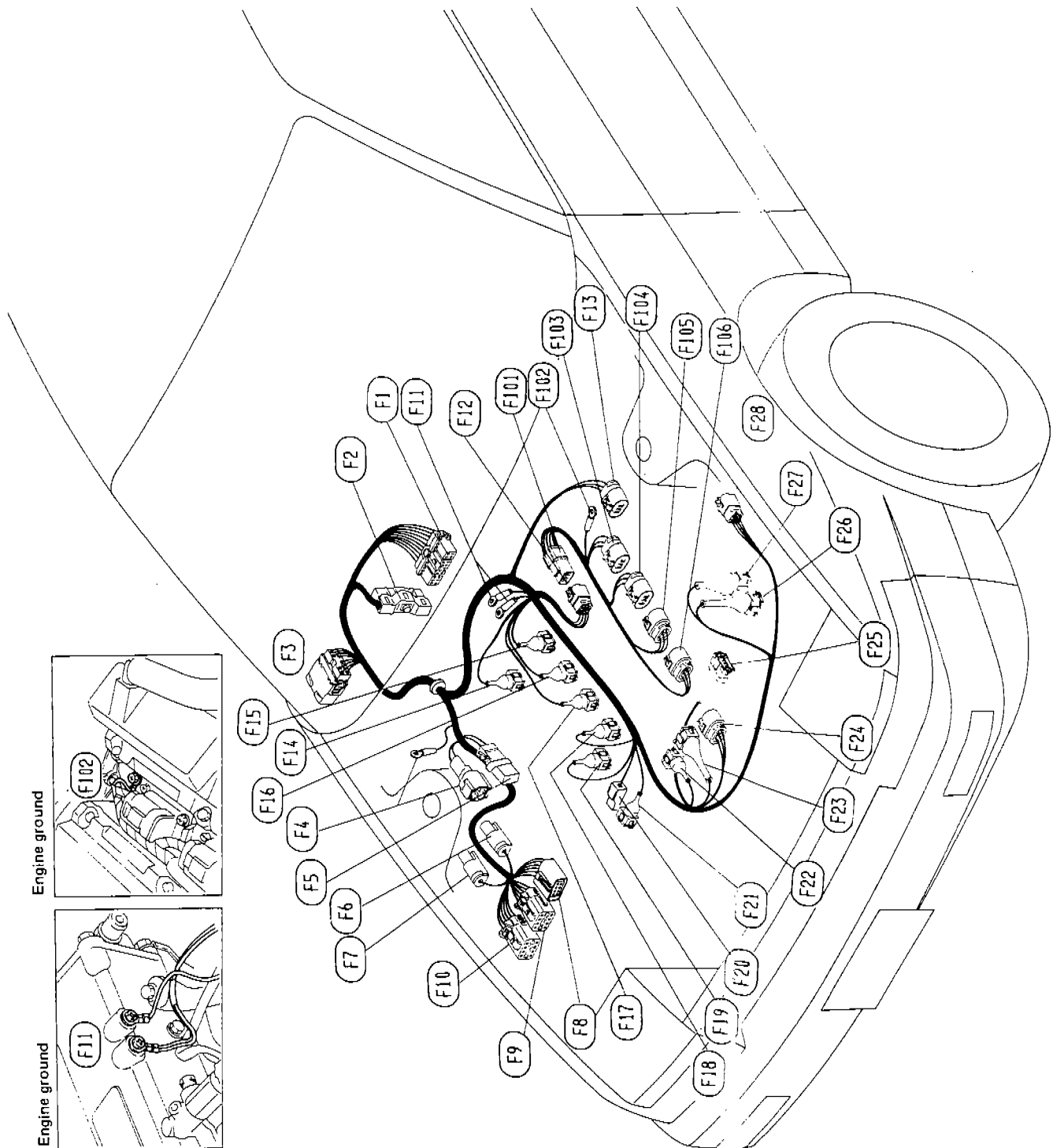


SEL809L

HARNESS LAYOUT

E.F.I. Harness

L.H. DRIVE MODEL



HARNESS LAYOUT

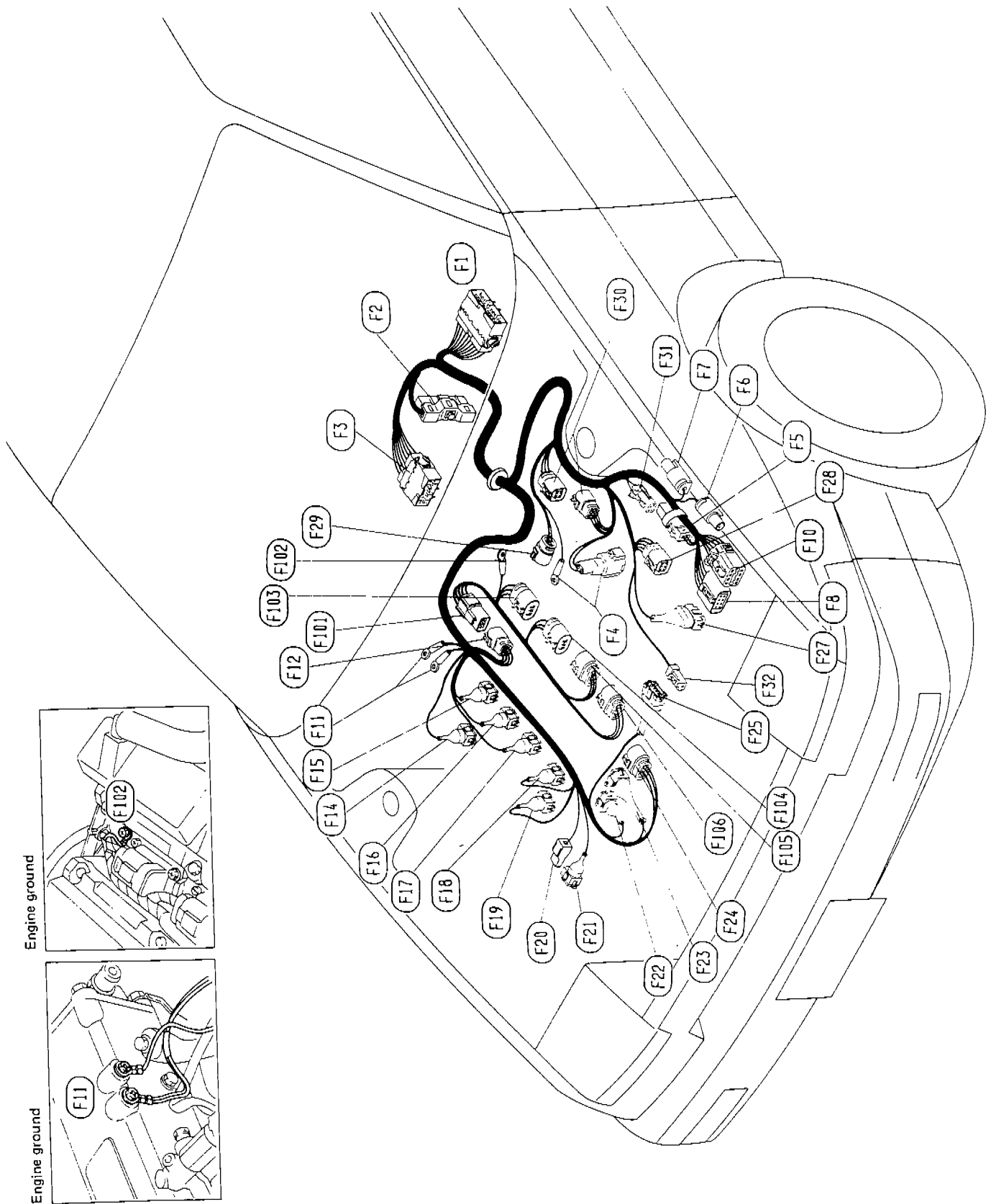
E.F.I. Harness (Cont'd)

(F1)	: To main harness (E53)	(F18)	: Injector-1
(F2)	: E.C.C.S. control unit	(F19)	: A.A.C. solenoid valve
(F3)	: To engine room harness (E16)	(F20)	: Thermal transmitter
(F4)	: Front brake skid sensor R.H.	(F21)	: Engine temperature sensor
(F5)	: Resistor	(F22)	: Air regulator
(F6)	: Check connector	(F23)	: Throttle valve switch
(F7)	: Check connector	(F24)	: Throttle sensor
(F8)	: To engine room harness (E8) (White)	(F25)	: Crank angle sensor
(F9)	: To engine room harness (E9) (Gray)	(F26)	: Air flow meter (For model with catalyzer)
(F10)	: To engine room harness (E10) (Brown)	(F27)	: Air flow meter (Except for model with catalyzer)
(F11)	: Engine ground	(F28)	: Dropping resistor
(F12)	: To ignition coil sub-harness (F11)	(F29)	: To E.F.I. harness (F12)
(F13)	: Exhaust gas sensor (For model with catalyzer)	(F30)	: Engine ground
(F14)	: F.I.C.D. solenoid valve	(F31)	: Ignition coil-4
(F15)	: Injector-4	(F32)	: Ignition coil-3
(F16)	: Injector-3	(F33)	: Ignition coil-2
(F17)	: Injector-2	(F34)	: Ignition coil-1

HARNESS LAYOUT

E.F.I. Harness (Cont'd)

R.H. DRIVE MODEL



HARNESS LAYOUT

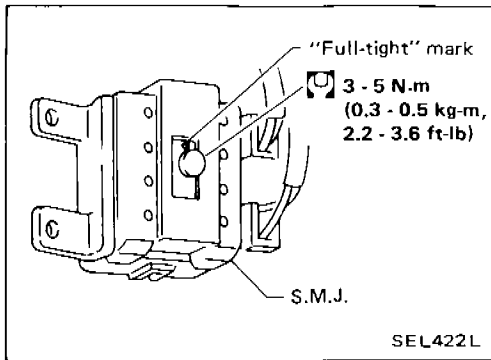
E.F.I. Harness (Cont'd)

(F1)	: To main harness (H53)	(F21)	: Engine temperature sensor
(F2)	: E.C.S. control unit	(F22)	: Air regulator
(F3)	: To engine room harness (E16)	(F23)	: Throttle valve switch
(F4)	: Front brake skid sensor L.H.	(F24)	: Throttle sensor
(F5)	: Resistor	(F25)	: Crank angle sensor
(F6)	: Check connector	(F26)	: Air flow meter
(F7)	: Check connector	(F27)	: Dropping resistor
(F8)	: To engine room harness (E8) (White)	(F28)	: Pressure regulator control solenoid valve
(F9)	: To engine room harness (E10) (Brown)	(F29)	: Power transistor unit
(F10)	: Engine ground	(F30)	: Dropping resistor (A/T model)
(F11)	: To ignition coil sub-harness (F101)	(F31)	: Compressor
(F12)	: F.I.C.D. solenoid valve	(F101)	: To E.F.I. harness (F12)
(F13)	: Injector-4	(F102)	: Engine ground
(F14)	: Injector-3	(F103)	: Ignition coil-4
(F15)	: Injector-2	(F104)	: Ignition coil-3
(F16)	: Injector-1	(F105)	: Ignition coil-2
(F17)	: A.A.C. solenoid valve	(F106)	: Ignition coil-1
(F18)	: Thermal transmitter		

SUPER MULTIPLE JUNCTION (S.M.J.)

REMOVAL

- Remove fuse block retaining screws to gain access to S.M.J.
- Slide fuse block to the side, and remove S.M.J. retaining bolts to detach S.M.J.



INSTALLATION

To install S.M.J., tighten bolts until orange "full-tight" mark appears and then retighten to specified torque as required.

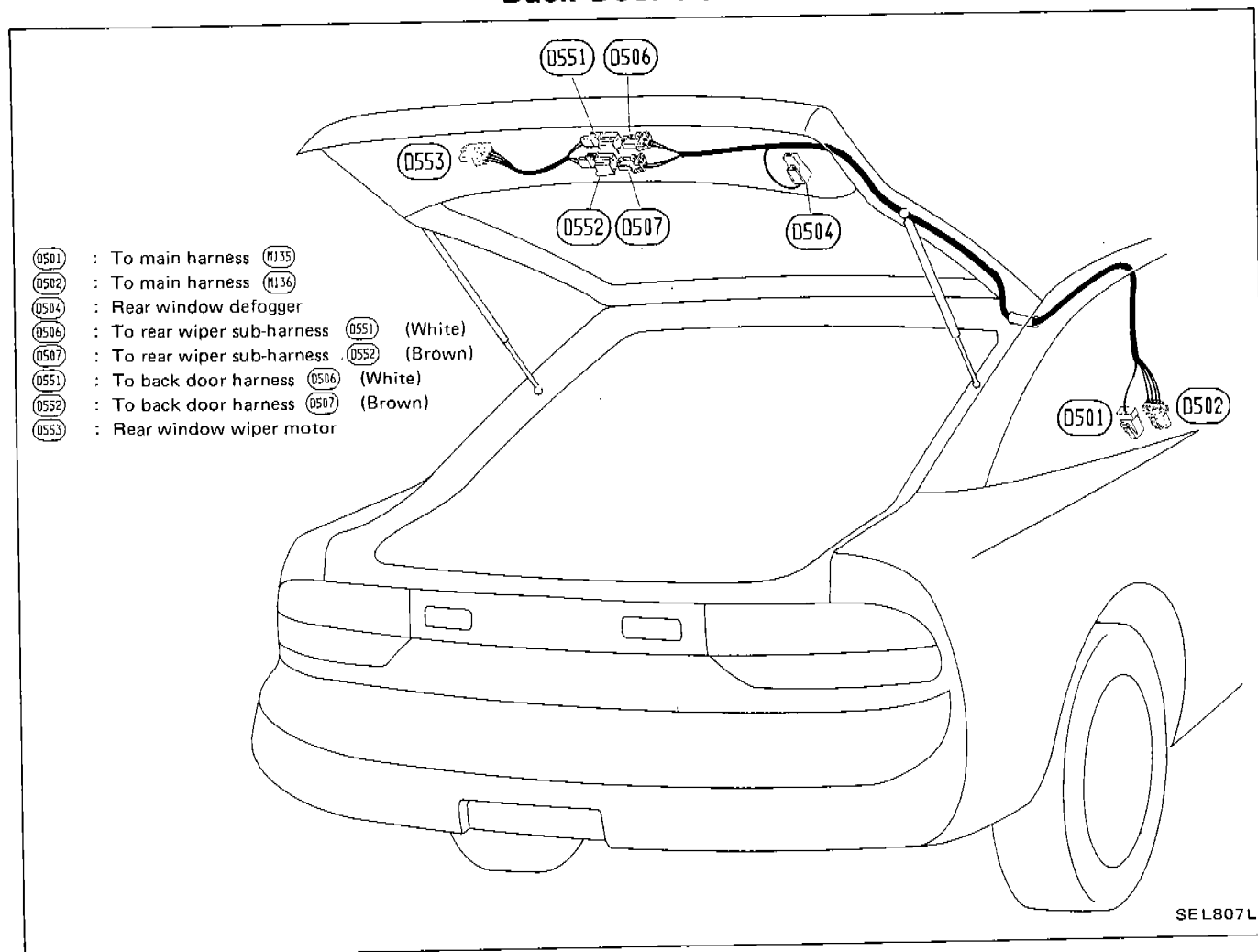
3 - 5 N·m
(0.3 - 0.5 kg-m, 2.2 - 3.6 ft-lb)

CAUTION:

Do not overtighten bolts, otherwise, they may be damaged.

HARNESS LAYOUT

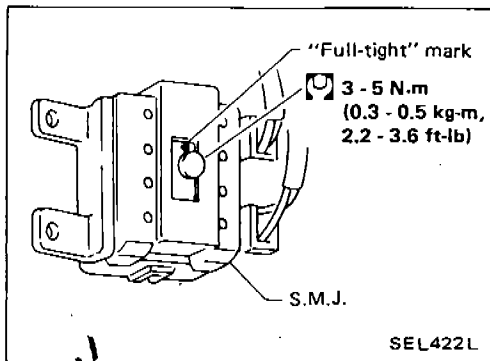
Back Door Harness



SUPER MULTIPLE JUNCTION (S.M.J.)

REMOVAL

- Remove fuse block retaining screws to gain access to S.M.J.
- Slide fuse block to the side, and remove S.M.J. retaining bolts to detach S.M.J.



INSTALLATION

To install S.M.J., 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.

SUPER MULTIPLE JUNCTION (S.M.J.)

Terminal Arrangement

MAIN HARNESS

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
D1	D2									D11	D12
E1	E2									E11	E12
F1	F2									F11	F12
G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12



I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12
H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
F1	F2									F11	F12
E1	E2									E11	E12
D1	D2									D11	D12
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12

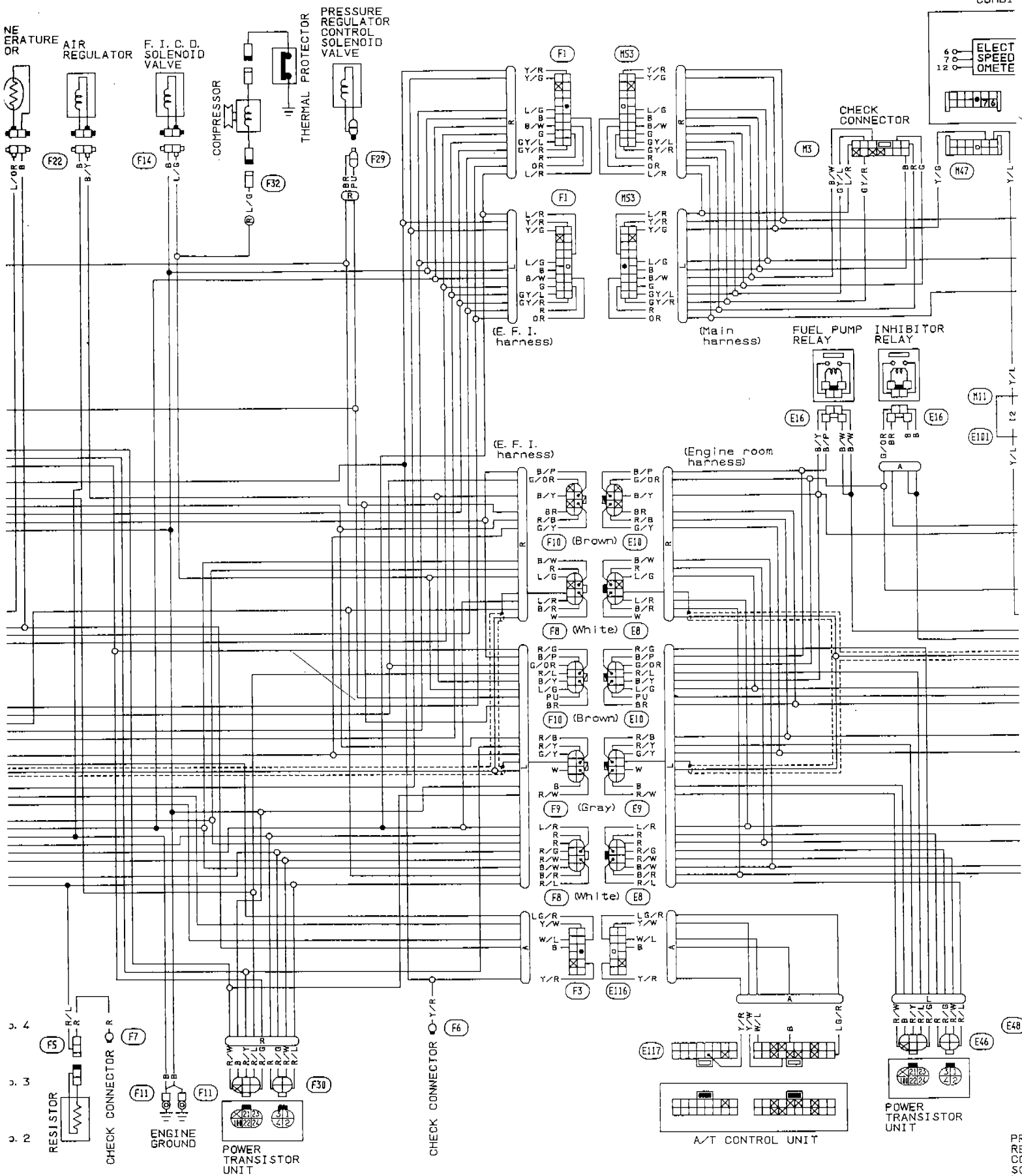
ENGINE ROOM HARNESS

E.C.C.S. CONTROL UNIT

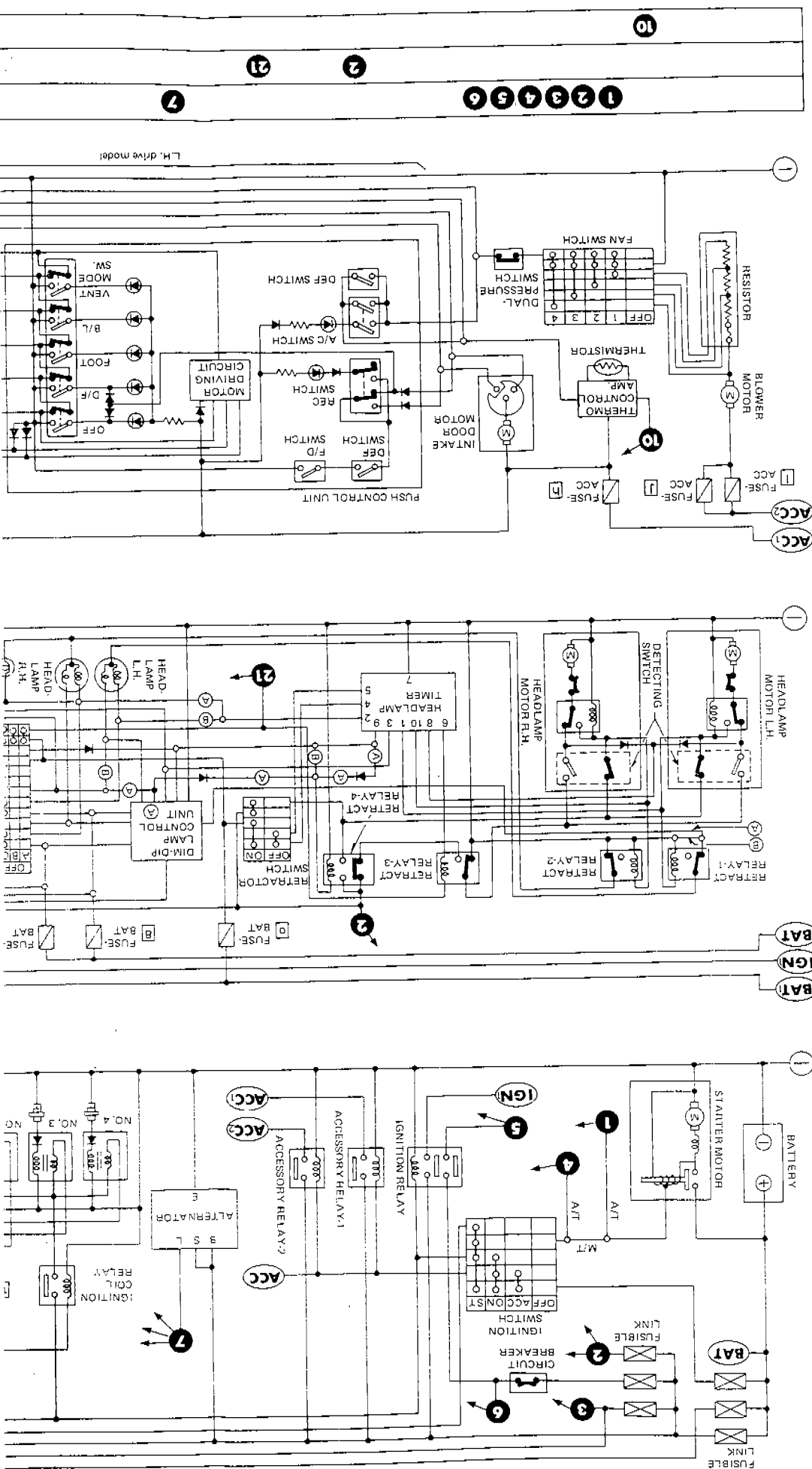
101	102	103	104	105	106	107	108	1	2	3	4	5	6	7	8	9	10	21	22	23	24	25	26	27	28	29	30	41	42	43	44	45	46	47	48	49	50
109	110	111	112	113	114	115	116	11	12	13	14	15	16	17	18	19	20	31	32	33	34	35	36	37	38	39	40	51	52	53	54	55	56	57	58	59	60

View from harness side

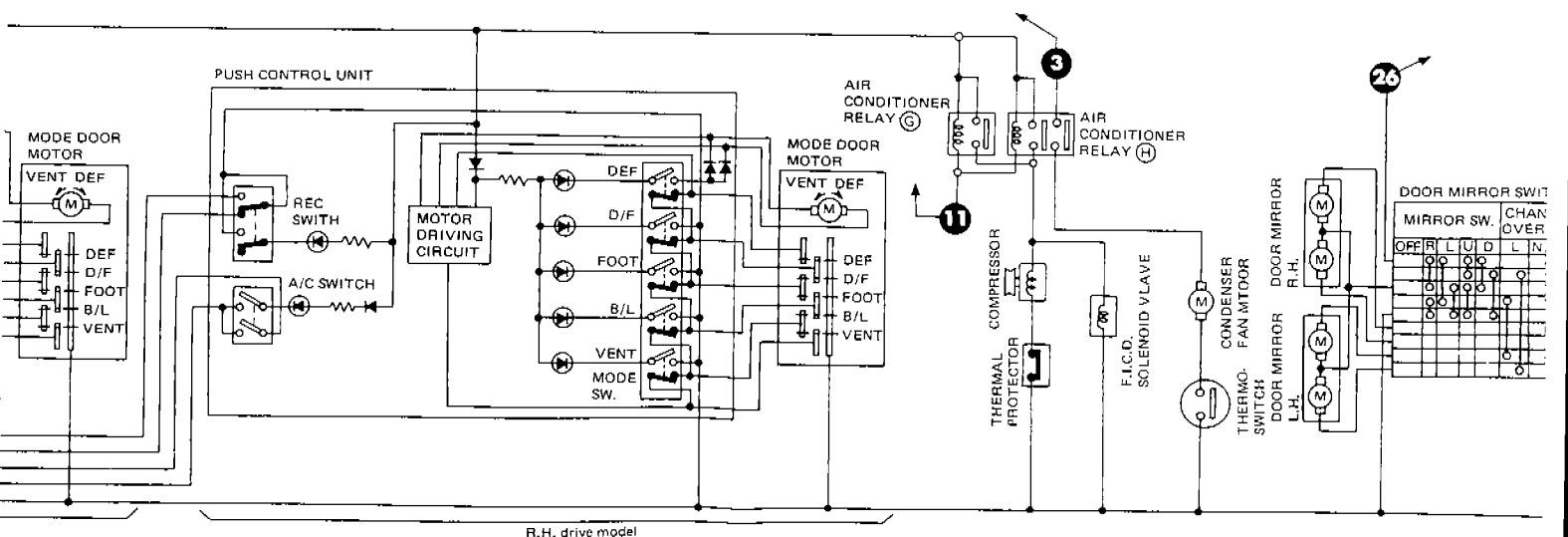
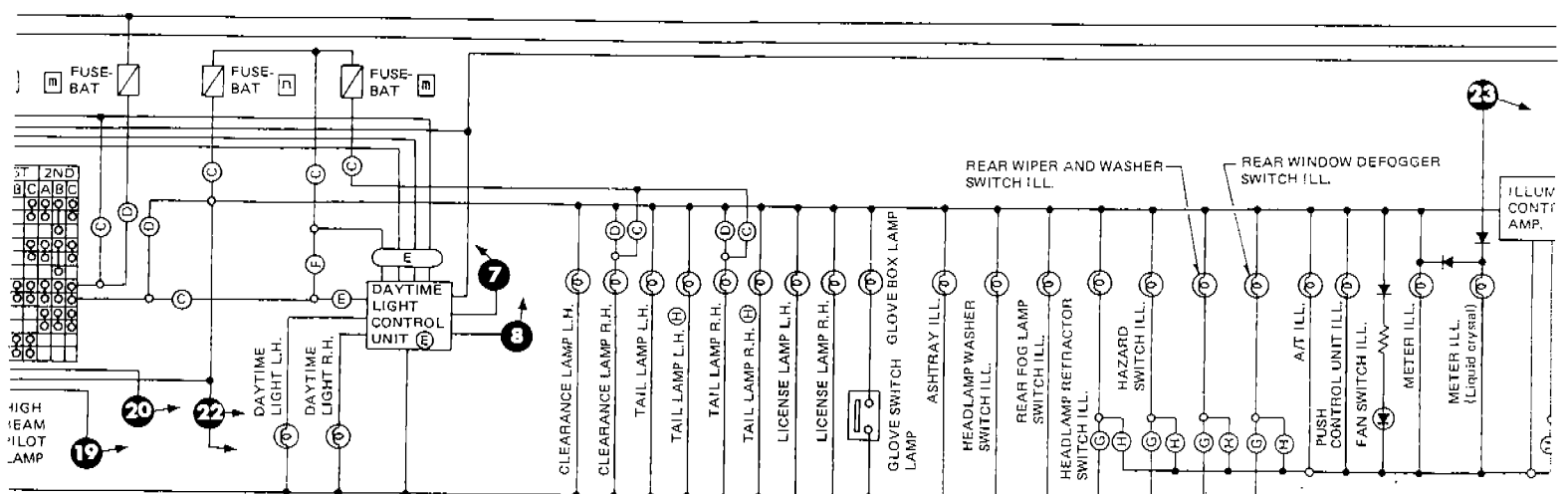
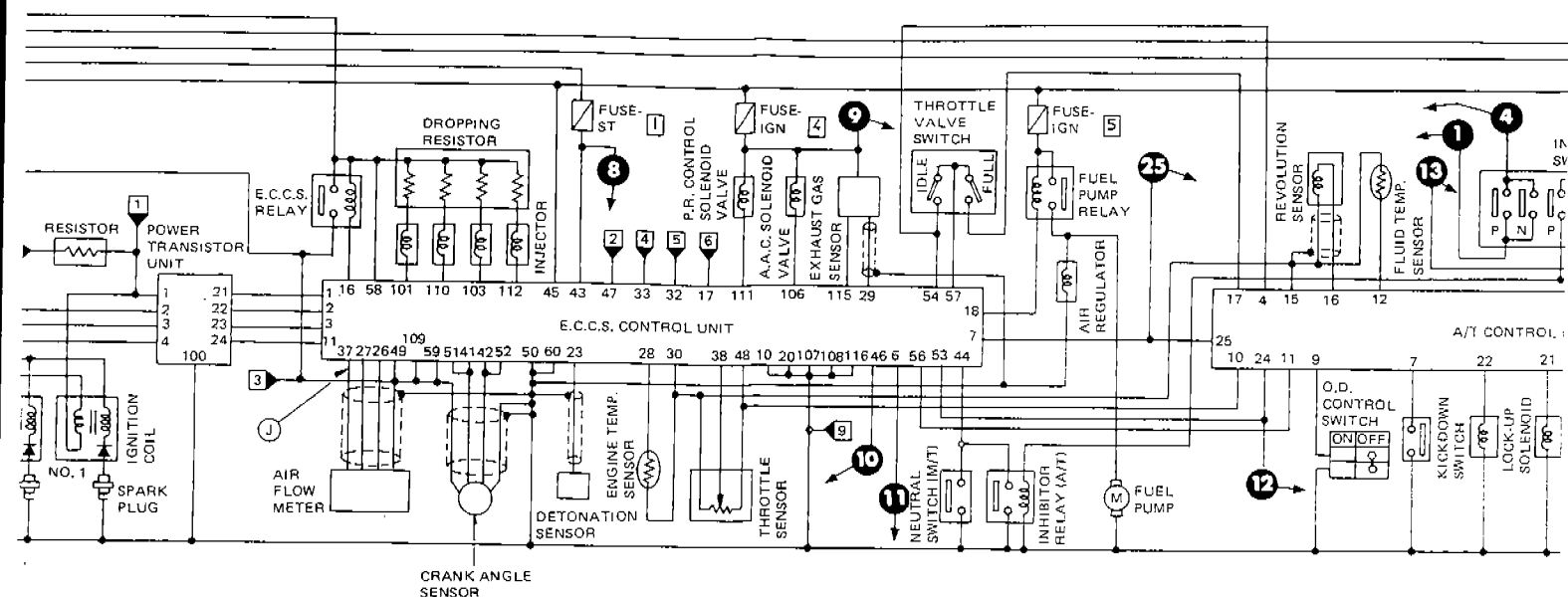




NISSAN 200SX (S13 series) CIRCUIT DIAGRAM



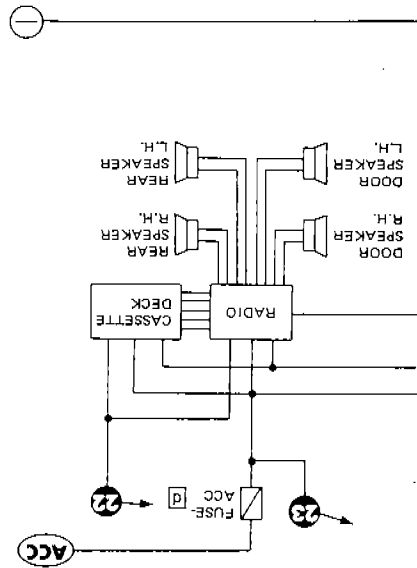
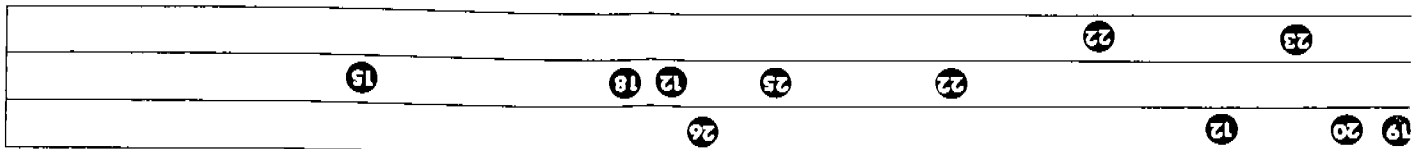




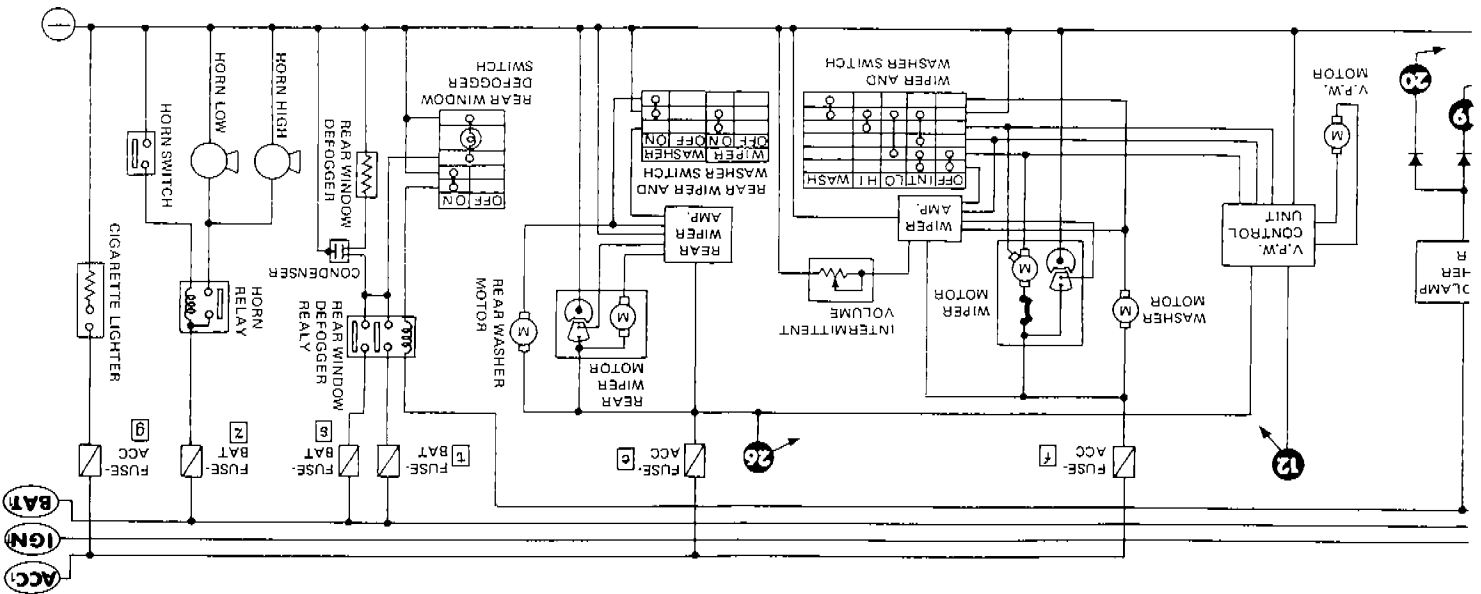
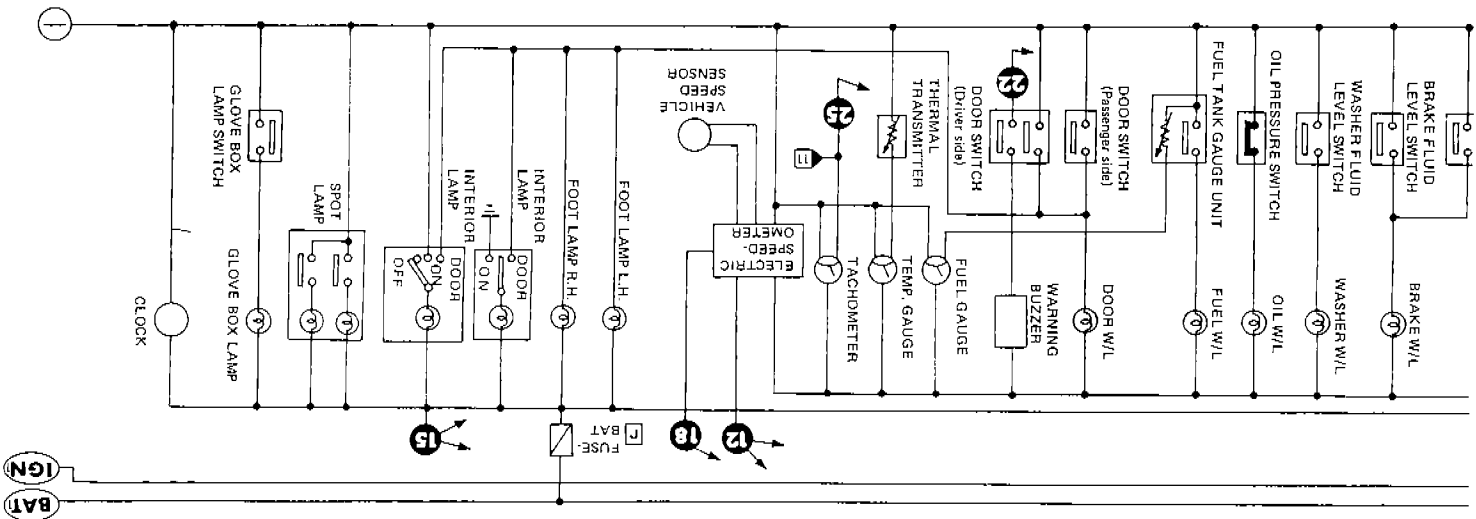
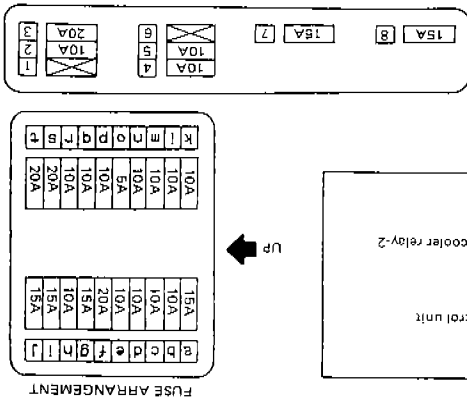
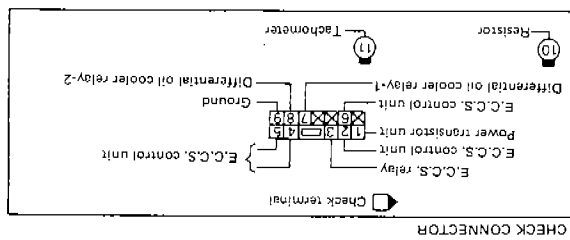
R.H. drive model

- 19 20 22 7 8 9 10 11 25 12 13 1 4 23 11 3 26

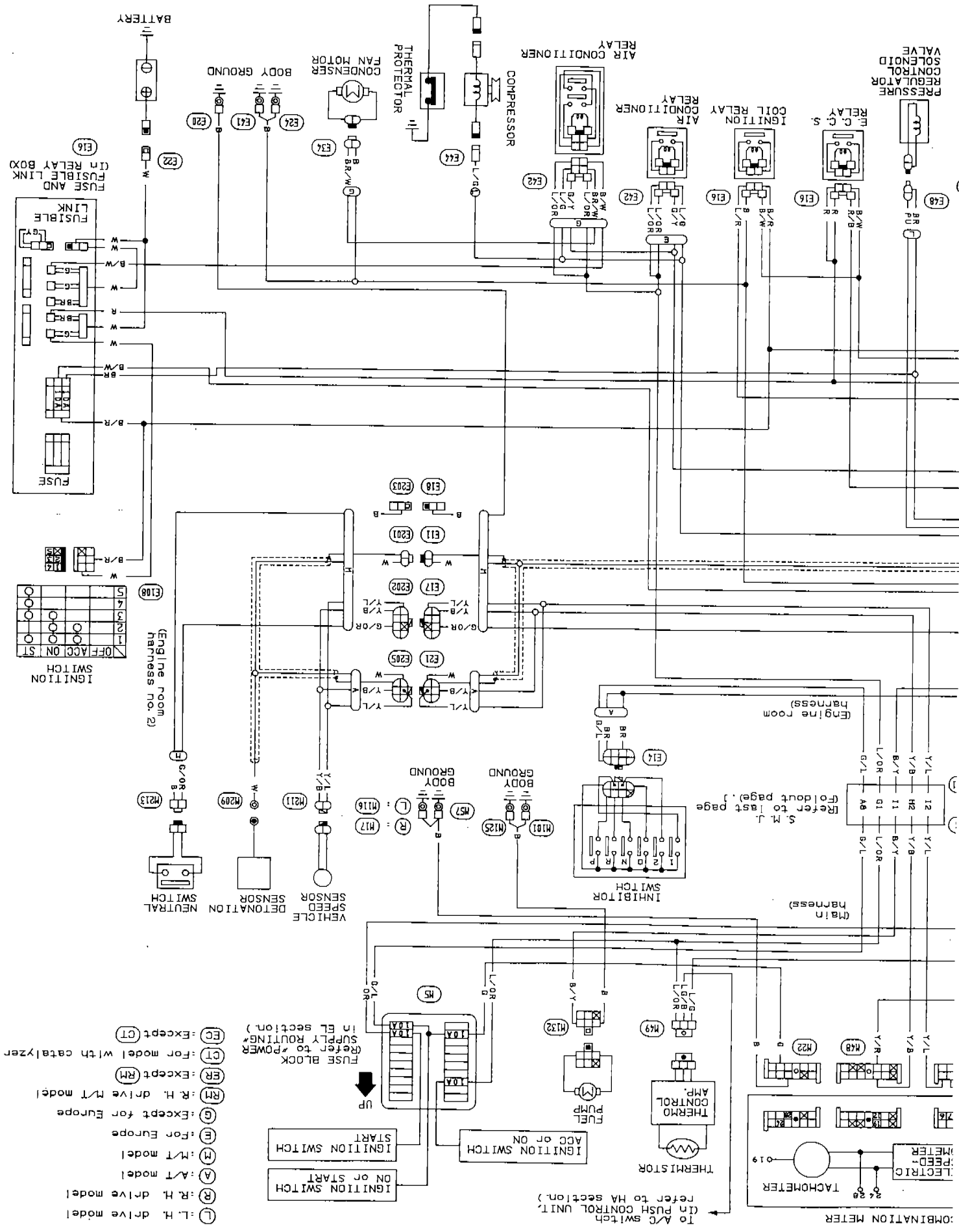
11-11-11



- (M/T) : M/T model
(A/T) : A/T model
(A) : Except A
(B) : L.H. drive model for Europe
(C) : Model with daytime light system
(D) : L.H. drive model for Europe
(E) : Model with daytime light system
(F) : L.H. drive model
(G) : R.H. drive model
(H) : For Europe
(I) : Except for Europe
(J) : Except B
(K) : Model without catalyzer



...



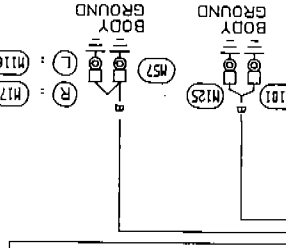
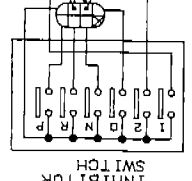
- (L) L.H. drive model
- (R) R.H. drive model
- (A) A/T model
- (M) M/T model
- (E) For Europe
- (G) Except for Europe
- (RM) R.H. drive M/T model
- (ER) Except RM
- (CT) For model with catalyzer
- (EC) Except CT

FUSE BLOCK
(refer to POWER
SUPPLY ROUTING
in EL section)

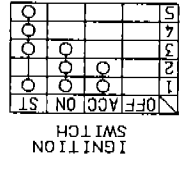
To A/C switch
(in PUSH CONTROL UNIT,
refer to HA section.)

COMBINATION METER
TACHOMETER
ELECTRIC
METER
P.E.E.D.
METER

(Main harness)
S.M.J.
(Refer to last page.)
harness (Engine room)



(Engine room
harness no.2)



NISSAN 200SX E. C. C. S. WIRING DIAGRAM

E. C. C. S. UNIT

101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160

F2

101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160

