DATSUN Model A10 Series

SECTION BE

BODY ELECTRICAL SYSTEM

CONTENTS

BODY ELECTRICAL WIRING

DESCRIPTION

Cables are covered with color-coded vinyl for easy identification. In the wiring diagram, colors are indicated by one or two alphabetical letters.

It is recommended that the battery be disconnected before performing any electrical service other than bulb or fuse replacement.

In addition to fuses, a fusible link has been installed to protect wiring. The fusible link functions almost the same as a fuse, though its characteristics are slightly different than normal fuses.

CABLE COLORS

Cable colors are indicated by one or two alphabetical letters:

B: Black, Br: Brown, G: Green,
L: Blue, Lg: Light green,
R: Red, W: White, Y: Yellow

The main cable is generally coded with a single color. The others are coded with a two-tone color as below:

BW: Black with white stripe
GY: Green with yellow stripe

INSPECTION

Inspect all electrical circuits, referring to wiring or circuit diagrams. Circuits should be tested for continuity or short circuit with a conventional test lamp or low reading voltmeter. Before inspecting circuit, ensure that:

1. Each electrical component part or cable is securely fastened to its connector or terminal.
2. Each connection is firmly in place and free from rust and dirt.
3. No cable covering shows any evidence of cracks, deterioration or other damage.
4. Each terminal is at a safe distance away from any adjacent metal parts.
5. Each cable is fastened to its proper connector or terminal.
6. Each grounding bolt is firmly planted.
7. Wiring is kept away from any adjacent parts with sharp edges or high temperature parts (such as exhaust pipe).
8. Wiring is kept away from any rotating or working parts: fan pulley, fan belt, etc.
9. Cables between fixed portions and moving parts are long enough to withstand shocks and vibratory forces.

Note:

a. **Before starting to inspect and repair any part of electrical system or other parts which may lead to a short circuit, disconnect cables at battery terminals as follows:**
Disconnect cable at negative (–) terminal, and then disconnect cable at positive (+) terminal.
Before connecting cables to battery terminal, be sure to clean terminals with a rag. Fasten cable at positive (+) terminal, and then ground cable at negative (–) terminal. Apply grease to top of these terminals to prevent rust from developing on them.
b. **Never use a screwdriver or service tool to conduct a continuity test. Use test leads.**
c. **Never ground an open circuit or circuits under no load. Use a test lamp (12V-3W) or circuit tester as a load.**

FUSE AND FUSIBLE LINK

MAINTENANCE INSTRUCTIONS

Fuse

The fuse block is installed under the instrument panel on driver's side.

When, for one reason or another, fuse has melted, use systematic procedure to check and eliminate cause of problem before installing new fuse.

Note:

a. **If fuse is blown, be sure to eliminate cause of problem before installing new fuse.**
b. **Use fuse of specified rating. Never use fuse of more than specified rating.**
c. **Check condition of fuse holders. If much rust or dirt is found thereon, clean metal parts with fine-grained sandpaper until proper metal-to-metal contact is made.**
Poor contact in any fuse holder will often lead to voltage drop or heating in the circuit and could result in improper circuit operation.

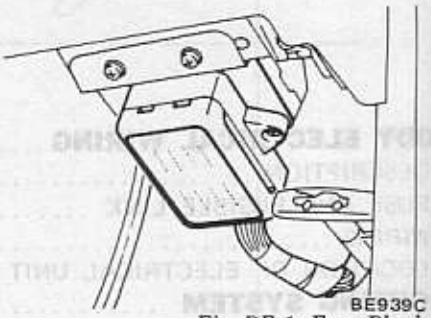


Fig. BE-1 Fuse Block

Fusible link

Fusible link protects starting, ignition and charge circuits, and wiring between fuse and fusible link.

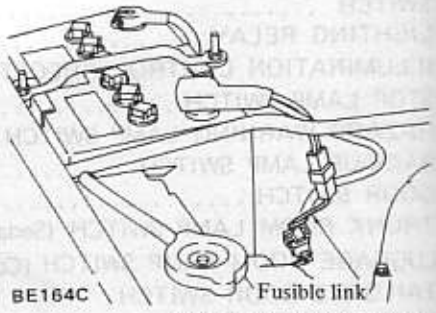


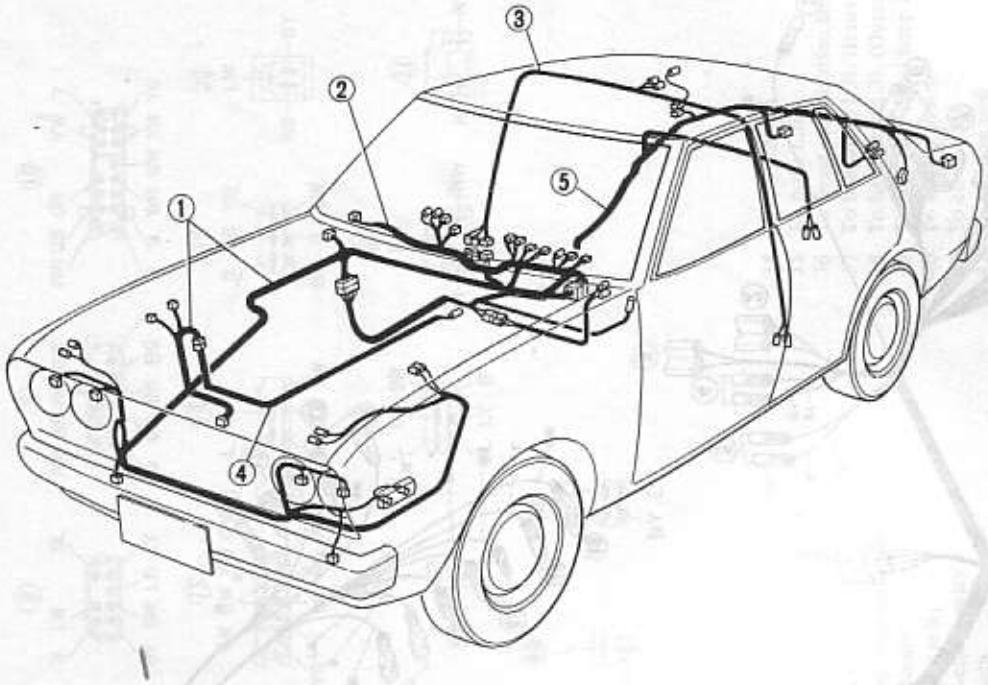
Fig. BE-2 Fusible Link

CAUTION:

a. 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.
b. 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.

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, as required, to conduct continuity test. This continuity test can be performed in the same manner as for any conventional fuse.

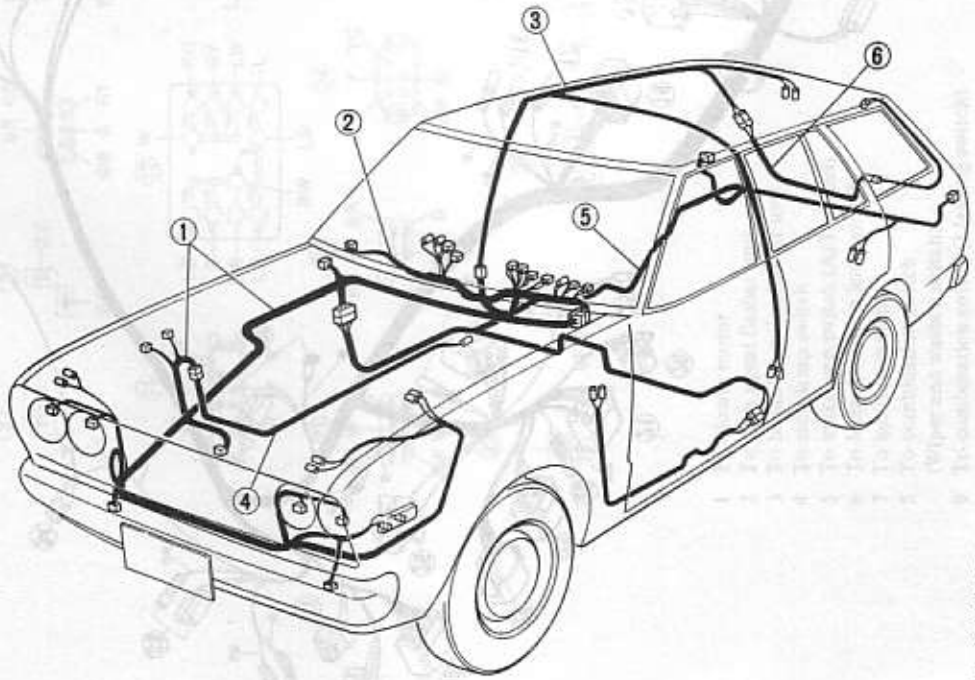
WIRING



1 Main harness
2 Instrument harness
3 Room lamp harness
4 Engine harness No. 2
5 Body harness

BE224C

Fig. BE-3 Wiring (Sedan and Coupe)



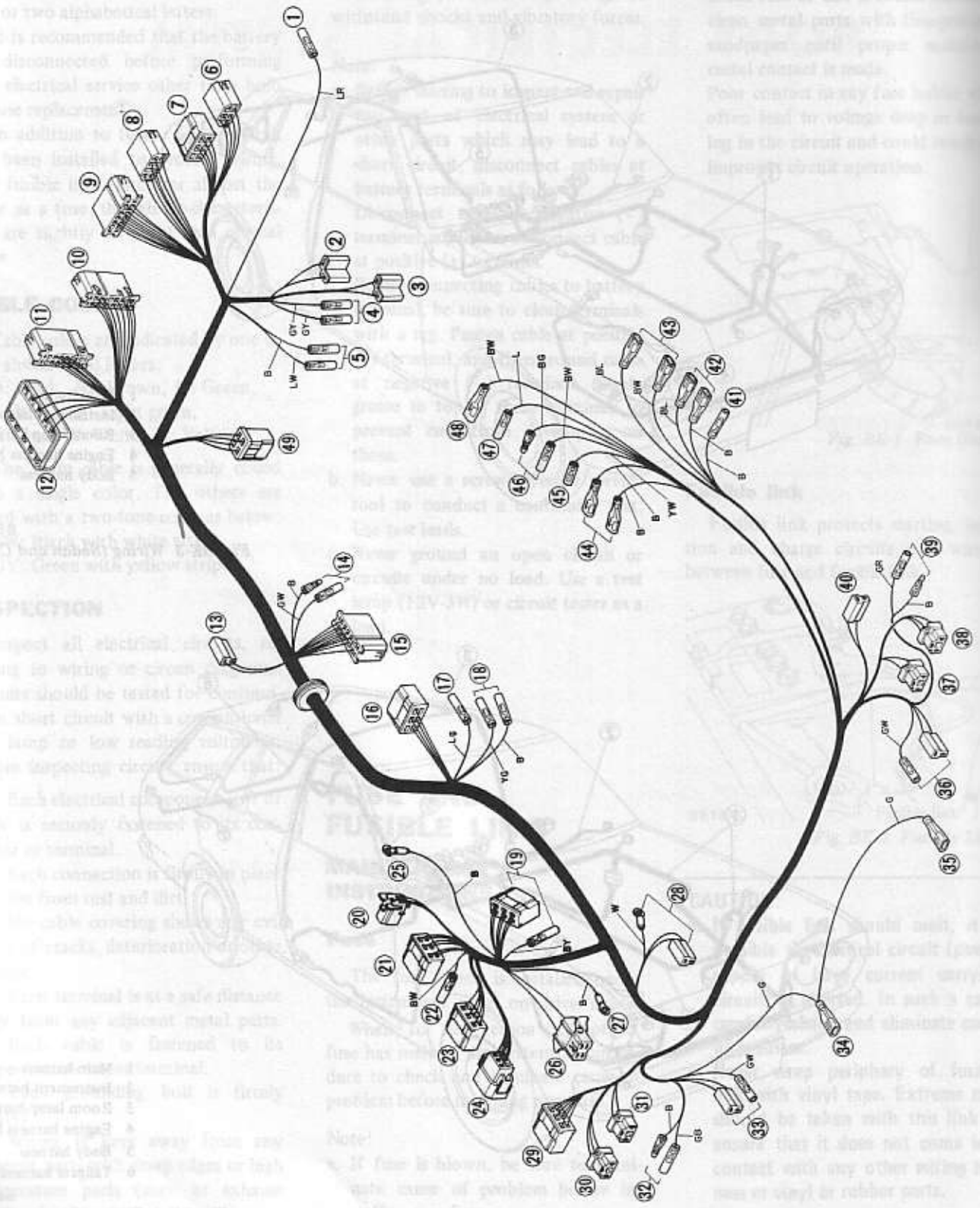
1 Main harness
2 Instrument harness
3 Room lamp harness
4 Engine harness No. 2
5 Body harness
6 Tailgate harness

BE225C

Fig. BE-4 Wiring (Station Wagon)

WIRING HARNESS

Main harness



1 To blower motor
2 To turn signal flasher unit
3 To hazard warning flasher unit
4 To stop lamp switch
5 To kickdown switch (A/T model)
6 To hazard warning lamp switch
7 To ignition switch
8 To combination switch (Wiper and washer switch)
9 To combination switch (Lighting switch)
10 To instrument harness
11 To instrument harness
12 Fuse block
13 To air conditioner harness "A"
14 To indicator harness (A/T model)
15 To body harness
16 To wiper motor
17 To air conditioner harness "B"
18 To brake fluid level switch
19 To engine harness No. 2
20 To horn relay
21 To voltage regulator
22 To condenser
23 To lighting relay
24 To auto-choke relay
25 Body earth
26 To fusible link
27 Body earth
28 To alternator
29 To intermittent wiper amplifier
30 To headlamp R.H. (Outer)
31 To headlamp R.H. (Inner)
32 To side turn signal lamp R.H.
33 To front combination lamp R.H.
34 To horn R.H.
35 To horn L.H.
36 To front combination lamp L.H.
37 To headlamp L.H. (Inner)
38 To headlamp L.H. (Outer)
39 To side turn signal lamp L.H.
40 To washer motor
41 To condenser
42 To ignition coil
43 To resistor
44 To distributor
45 To thermal transmitter
46 To VC cut solenoid
47 To auto-choke heater
48 To fuel cut solenoid
49 To body harness (Station Wagon only)

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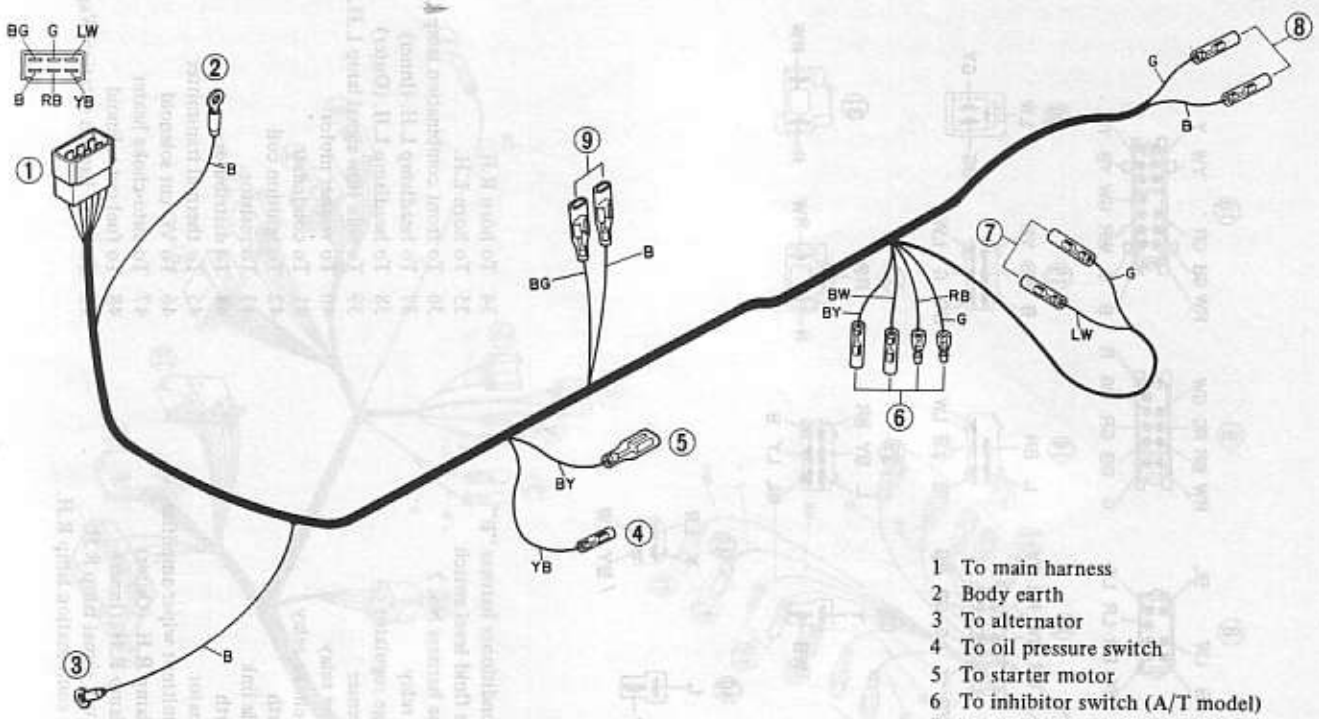
Fig. BE-5 Main Harness

Engine harness No. 2



1 To main harness
2 Body earth
3 To alternator
4 To oil pressure switch
5 To starter motor
6 To inhibitor switch (A/T model)
7 To kickdown solenoid (A/T model)
8 To back-up lamp switch (M/T model)
9 To top gear switch (M/T model)

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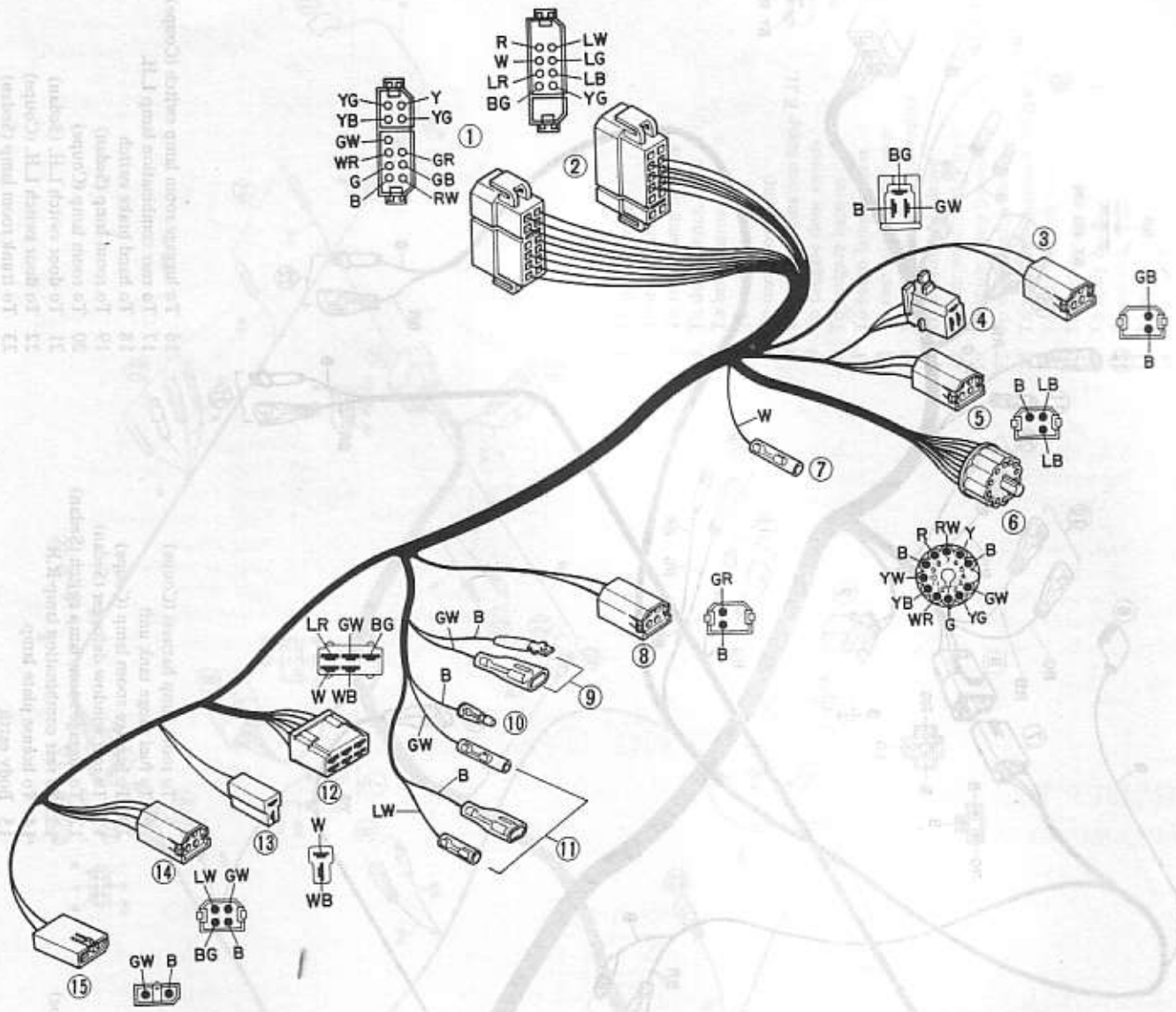
Fig. BE-6 Engine Harness No. 2

Instrument harness



1 To main harness
2 To main harness
3 To turn signal pilot lamp R.H.
4 To illumination switch
5 To rear defogger switch
6 To combination meter
7 To tachometer
8 To turn signal pilot lamp L.H.
9 To ash tray illumination lamp
10 To heater control (Fan switch)
11 To cigarette lighter
12 To radio
13 To speaker
14 To clock
15 To heater control panel illumination lamp

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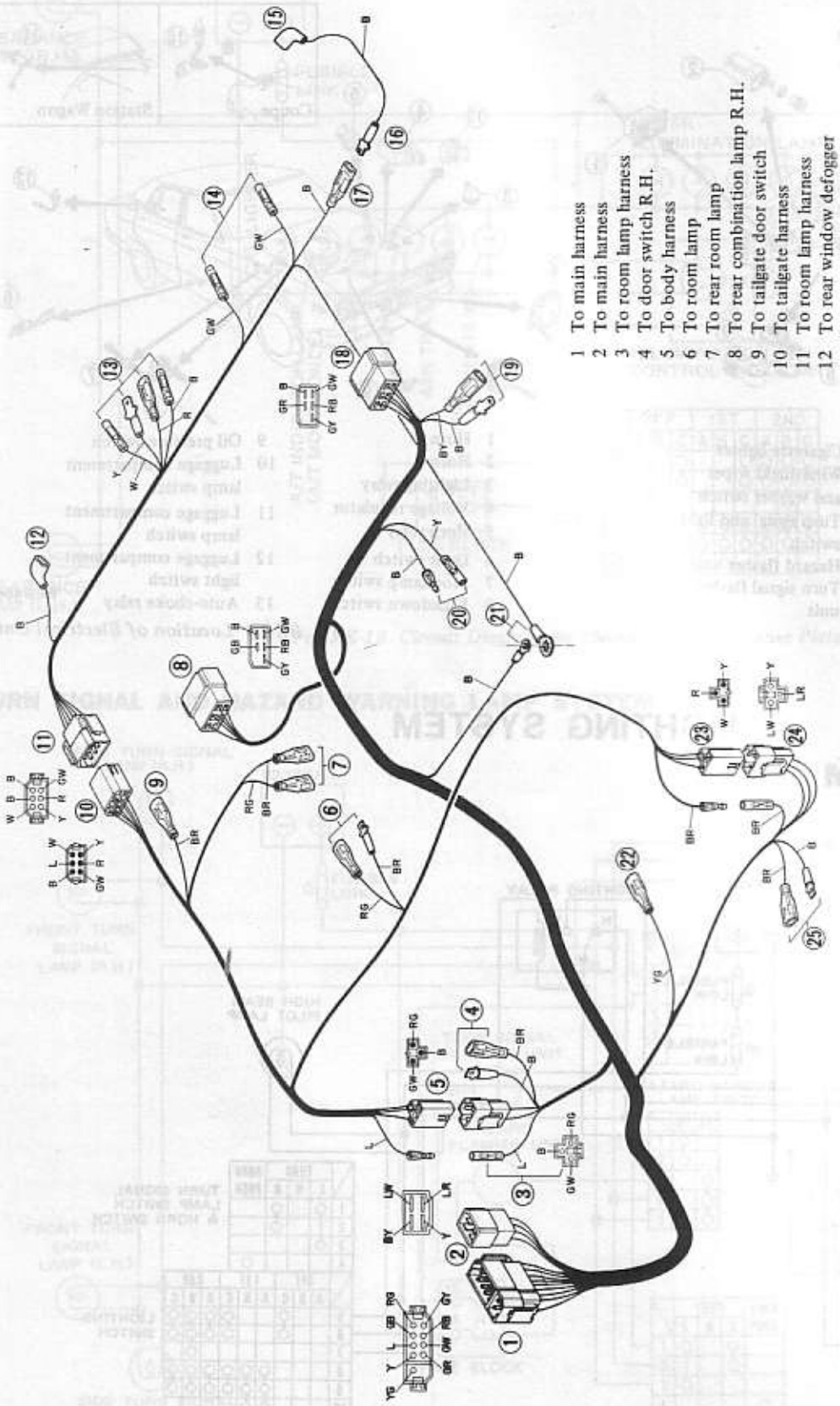
Fig BE-7 Instrument Harness

Body and room lamp harness

Sedan and Coupe

Fig. BE-8 Body and Room Lamp Harness (Sedan and Coupe)

Body, room lamp and tailgate harness (Station Wagon)



1 To main harness
2 To main harness
3 To room lamp harness
4 To door switch R.H.
5 To body harness
6 To room lamp
7 To rear room lamp
8 To rear combination lamp R.H.
9 To tailgate door switch
10 To tailgate harness
11 To room lamp harness
12 To rear window defogger
13 To rear window wiper motor
14 To license plate lamp
15 To rear window defogger
16 To room lamp harness
17 To rear window defogger
18 To rear combination lamp L.H.
19 To rear window washer motor
20 To fuel gauge tank unit
21 To body earth
22 To parking brake switch
23 To body harness
24 To room lamp harness
25 To door switch L.H.

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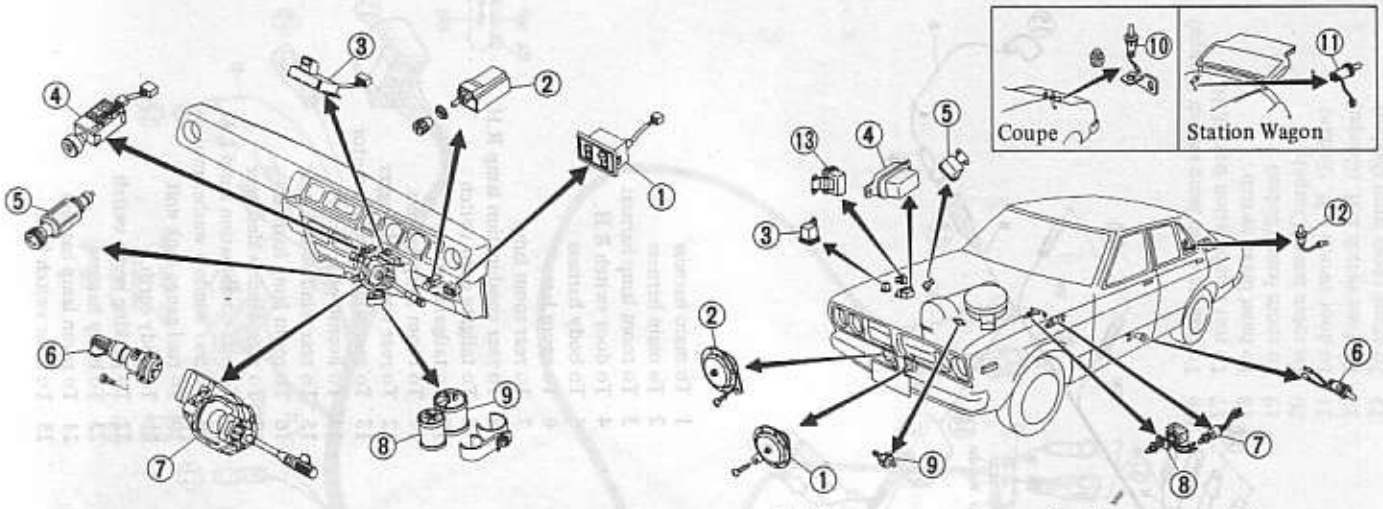
Fig. BE-9 Body, Room Lamp and Tailgate Harness (Station Wagon)

LOCATION OF ELECTRICAL UNIT



1 Rear window electric defogger switch
2 Illumination control rheostat
3 Hazard warning switch
4 Rear window wiper and washer switch
5 Cigarette lighter
6 Windshield wiper and washer switch
7 Turn signal and light switch
8 Hazard flasher unit
9 Turn signal flasher unit

1 Horn
2 Horn
3 Lighting relay
4 Voltage regulator
5 Horn relay
6 Door switch
7 Stop lamp switch
8 Kickdown switch
9 Oil pressure switch
10 Luggage compartment lamp switch
11 Luggage compartment lamp switch
12 Luggage compartment light switch
13 Auto-choke relay

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Fig. BE-10 Location of Electrical Unit

LIGHTING SYSTEM

CIRCUIT DIAGRAM

HEADLAMP SYSTEM

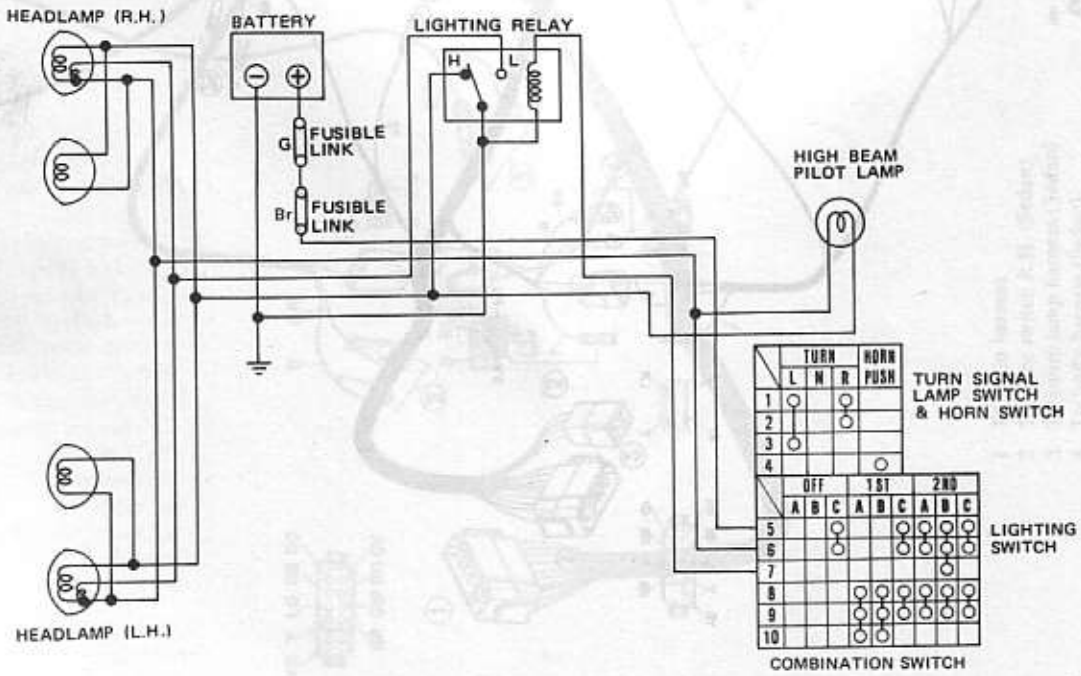

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Fig. BE-11 Circuit Diagram for Headlamp System

CLEARANCE, TAIL, LICENSE PLATE AND ILLUMINATION LAMP SYSTEM

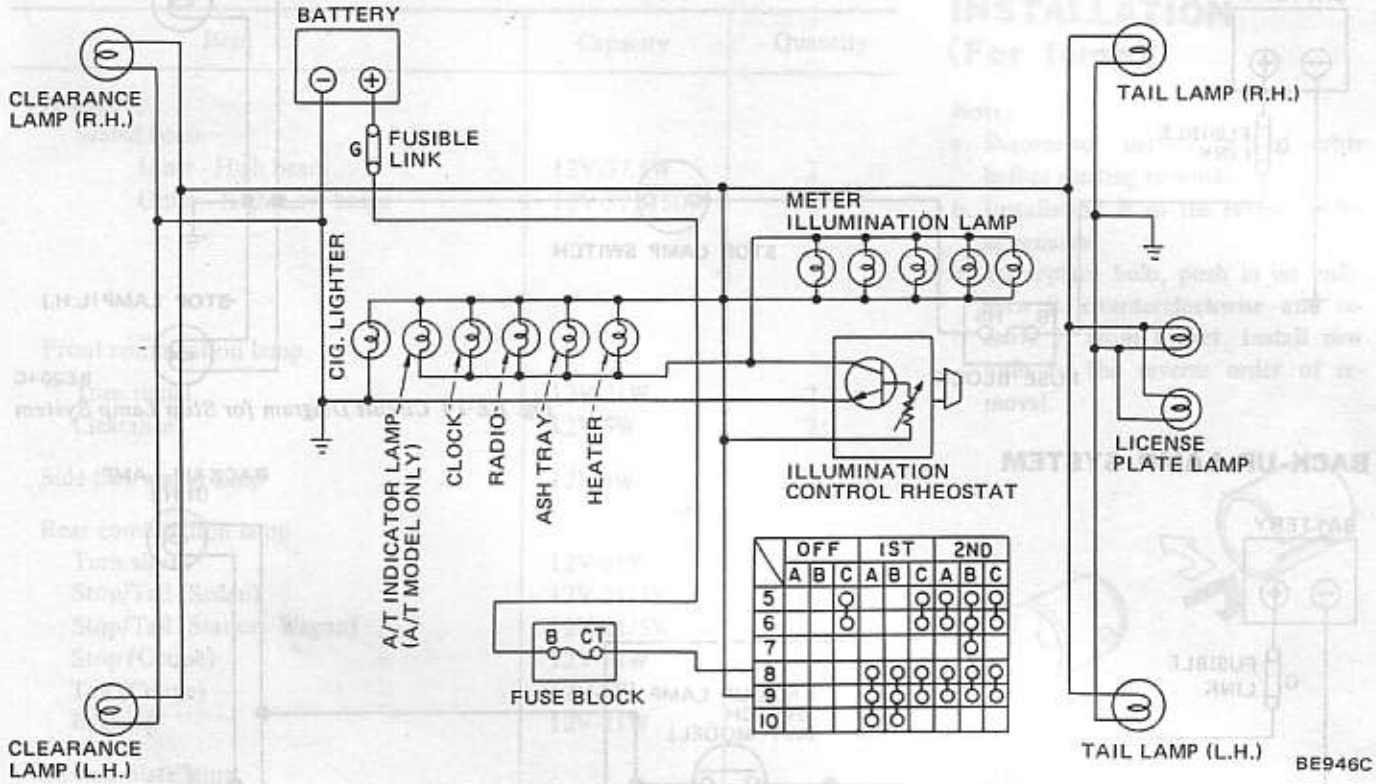

Fig. BE-12 Circuit Diagram for Clearance, Tail, License Plate and Illumination Lamp System

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

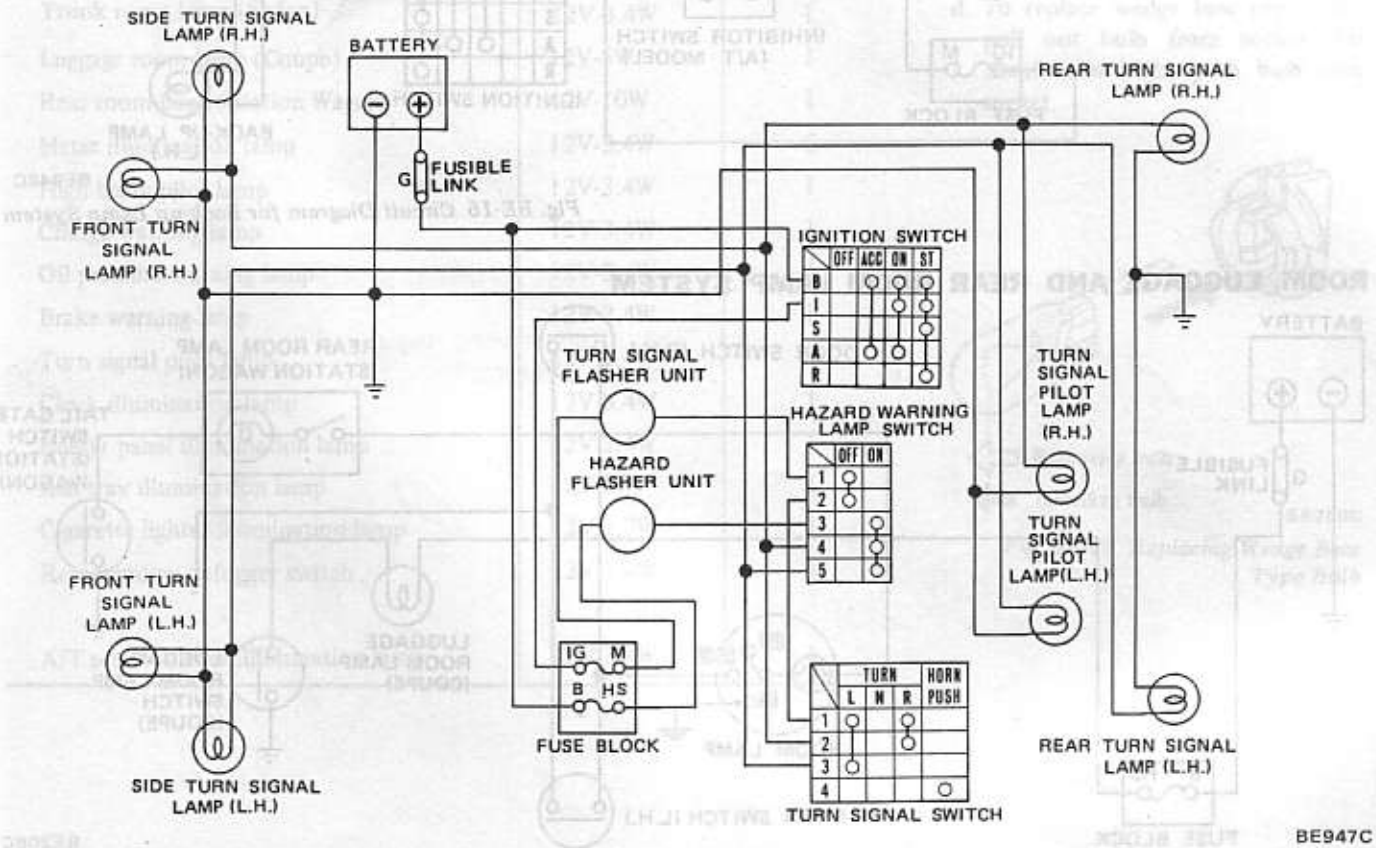

Fig. BE-13 Circuit Diagram for Turn Signal and Hazard Warning Lamp System

STOP LAMP SYSTEM

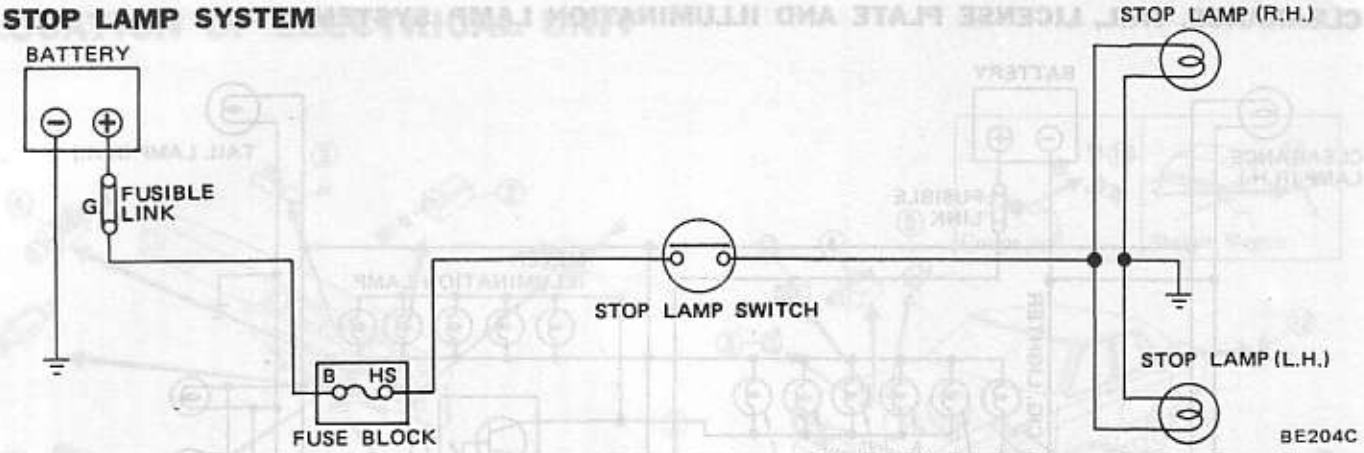

Fig. BE-14 Circuit Diagram for Stop Lamp System

BACK-UP LAMP SYSTEM

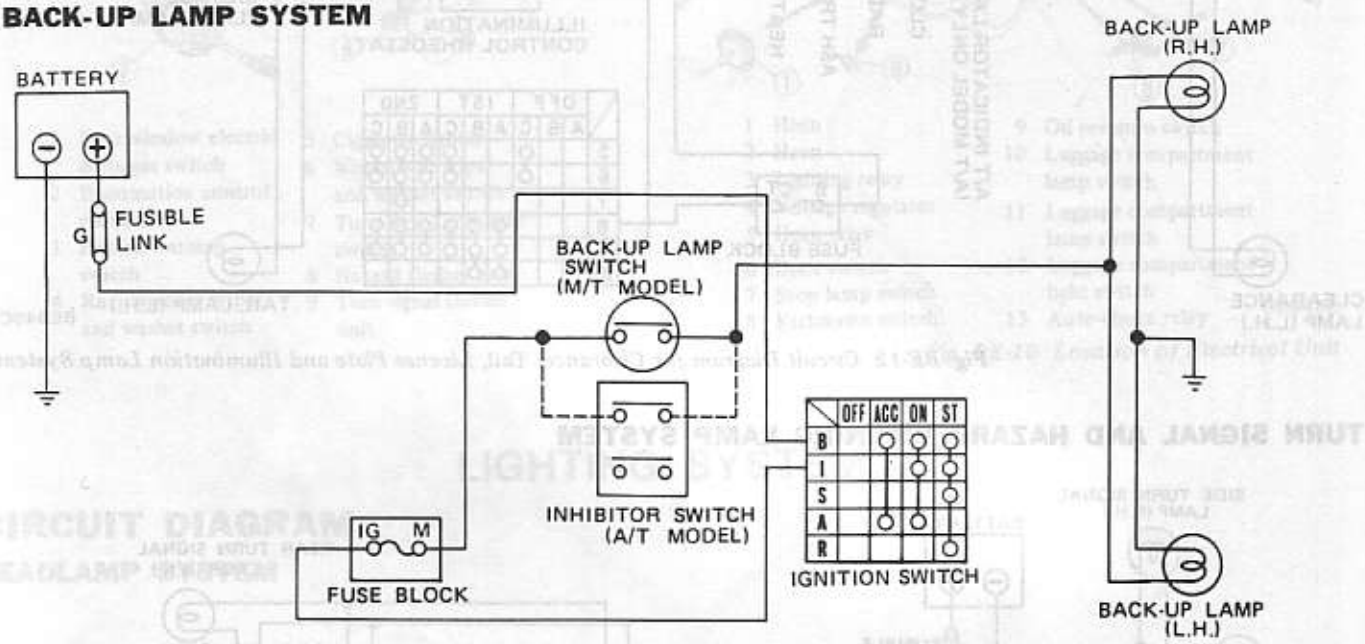

Fig. BE-15 Circuit Diagram for Back-up Lamp System

ROOM, LUGGAGE AND REAR ROOM LAMP SYSTEM

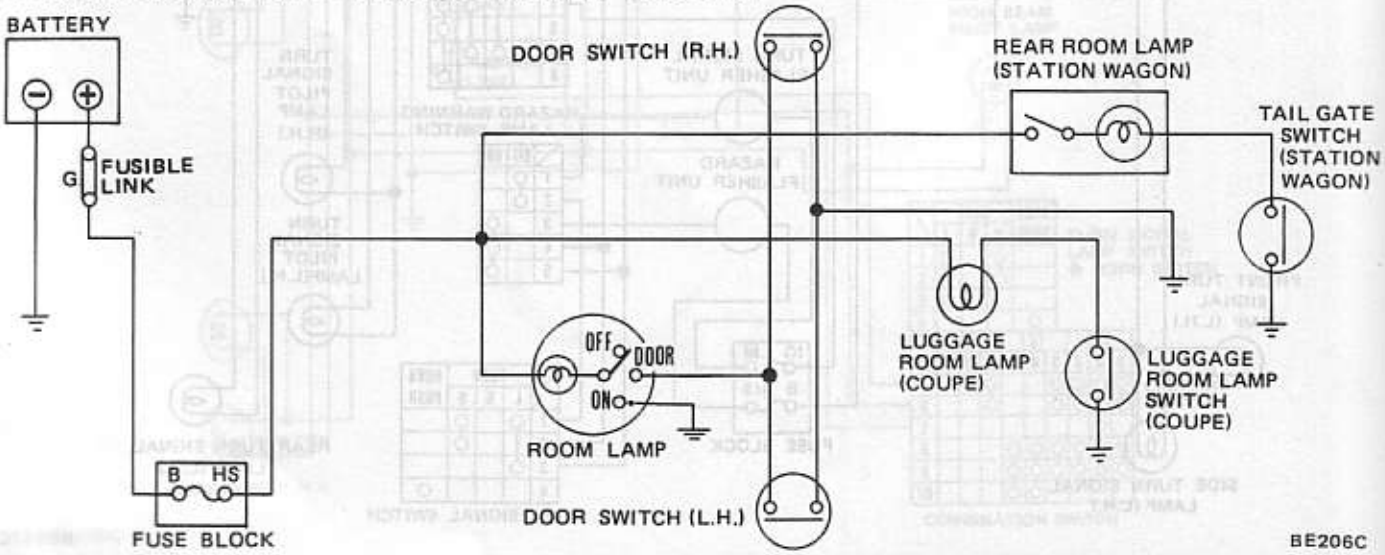

Fig. BE-16 Circuit Diagram for Room, Luggage and Rear Room Lamp System

BULB SPECIFICATIONS

Item	Capacity	Quantity
Headlamp		
Sealed beam		
Inner - High beam	12V-37.5W	2
Outer - High/Low beam	12V-37.5/50W	2
Front combination lamp		
Turn signal	12V-21W	2
Clearance	12V-5W	2
Side turn signal lamp	12V-5W	2
Rear combination lamp		
Turn siganl	12V-21W	2
Stop/Tail (Sedan)	12V-21/5W	4
Stop/Tail (Station Wagon)	12V-21/5W	2
Stop (Coupe)	12V-21W	2
Tail (Coupe)	12V-5W	2
Back-up	12V-21W	2
License plate lamp		
Sedan and Coupe	12V-10W	2
Station Wagon	12V-7.5W	2
Room lamp	12V-10W	1
Trunk room lamp (Sedan)	12V-3.4W	1
Luggage room lamp (Coupe)	12V-5W	1
Rear room lamp (Station Wagon)	12V-10W	1
Meter illumination lamp	12V-3.4W	5
High beam pilot lamp	12V-3.4W	1
Charge warning lamp	12V-3.4W	1
Oil pressure warning lamp	12V-3.4W	1
Brake warning lamp	12V-3.4W	1
Turn signal pilot lamp	12V-3.4W	2
Clock illumination lamp	12V-3.4W	1
Heater panel illumination lamp	12V-3.4W	1
Ash tray illumination lamp	12V-2W	1
Cigarette lighter illumination lamp	12V-1.7W	1
Rear window defogger switch	12V-1.4W	1
A/T selector lever illumination lamp	12V-3.4W	1

REMOVAL AND INSTALLATION (For lamp)

Note:

a. Disconnect battery ground cable before starting to work.

b. Installation is in the reverse order of removal.

c. To replace bulb, push in on bulb, turn it counterclockwise and remove it from socket. Install new bulb in the reverse order of removal.

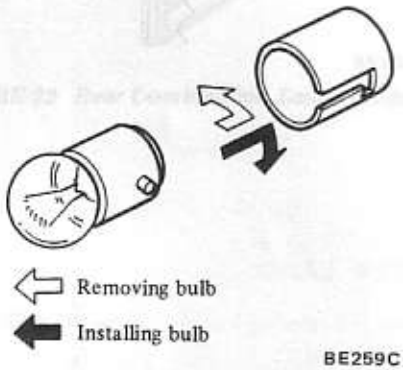

Fig. BE-17 Replacing Bulb

d. To replace wedge base type bulb, pull out bulb from socket. To install new bulb, push bulb into socket.

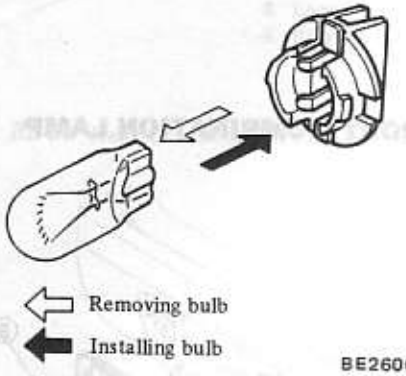

Fig. BE-18 Replacing Wedge Base Type Bulb

HEADLAMP

Note: Before removing headlamp as an assembly, remove radiator grille.

1 Screw
2 Retaining ring
3 Sealed beam unit
4 Mounting ring
5 Screw
6 Aiming adjusting screw
7 Cover

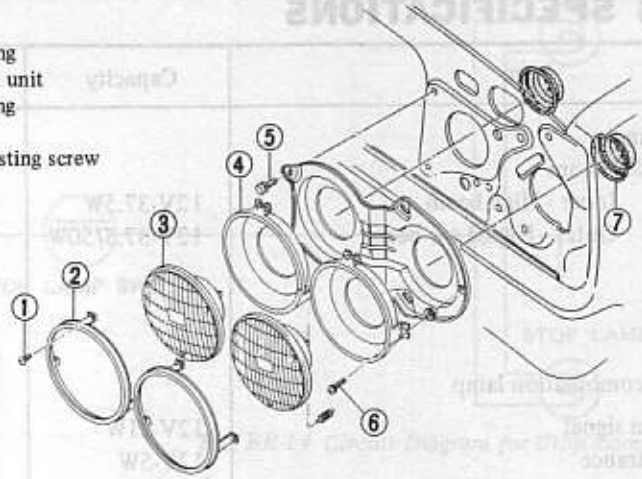

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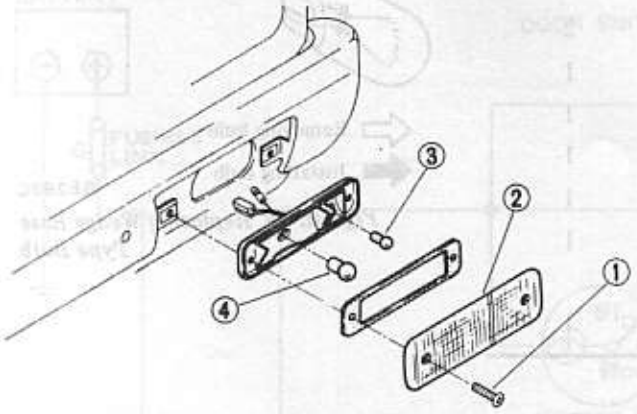
Fig. BE-19 Headlamp

FRONT COMBINATION LAMP



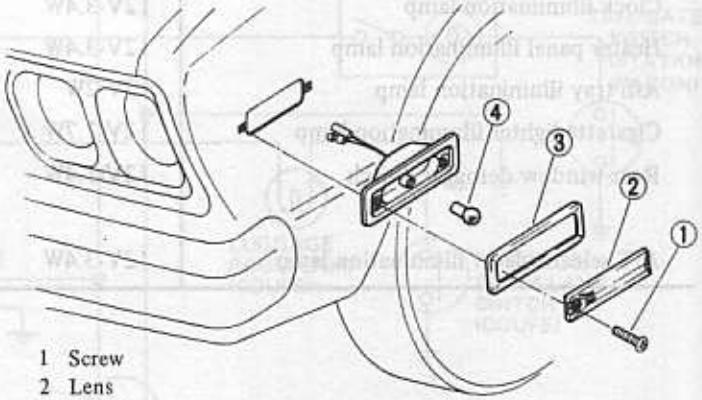
1 Screw
2 Lens
3 Bulb (Clearance)
4 Bulb (Turn)

BE165C

Fig. BE-20 Front Combination Lamp

SIDE TURN SIGNAL LAMP

Note: When removing lamp assembly, remove radiator grille.



1 Screw
2 Lens
3 Packing
4 Bulb

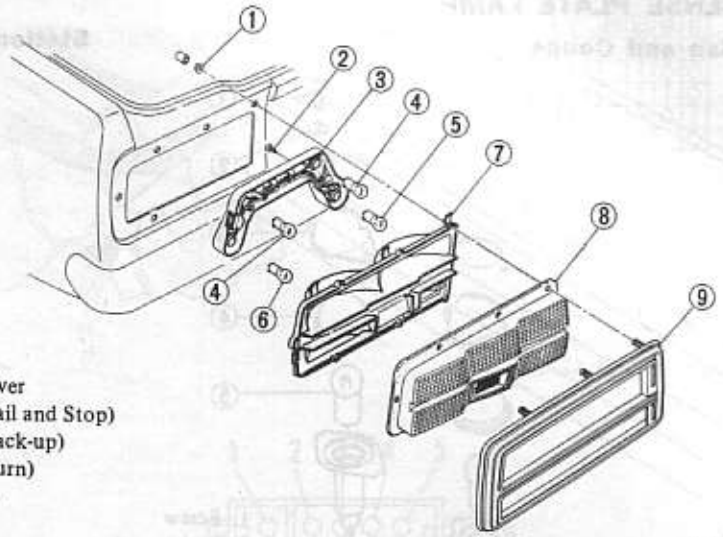
BE166C

Fig. BE-21 Side Turn Signal Lamp

REAR COMBINATION LAMP

Sedan

Note: Bulb can be easily replaced after removing back cover.



1 Nut
2 Screw
3 Back cover
4 Bulb (Tail and Stop)
5 Bulb (Back-up)
6 Bulb (Turn)
7 Housing
8 Lens
9 Rim

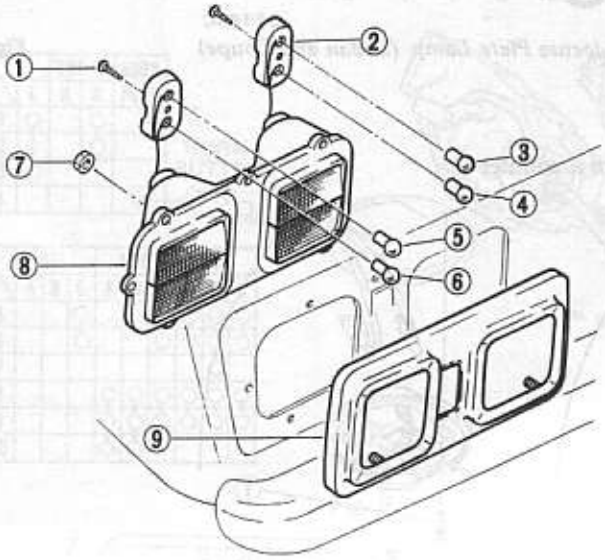
BE237C

Fig. BE-22 Rear Combination Lamp (Sedan)

Coupe

Note:

a. When removing lamp assembly, remove luggage rear finisher.
b. Bulb can be easily replaced after removing back cover.



1 Screw
2 Back cover
3 Bulb (Stop)
4 Bulb (Buck-up)
5 Bulb (Tail)
6 Bulb (Turn)
7 Nut
8 Lens
9 Rim

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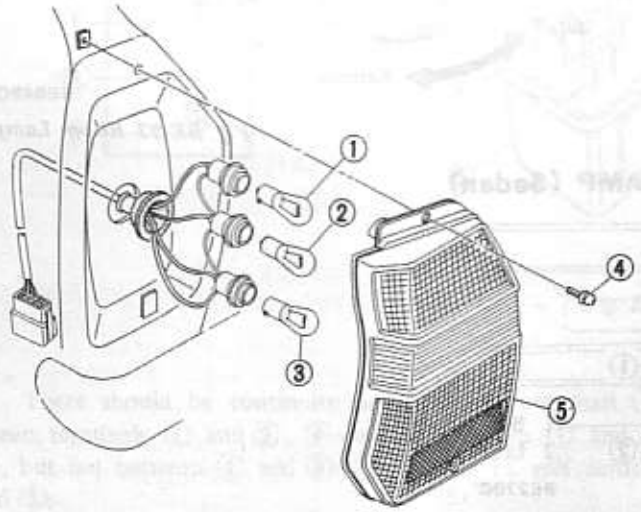
Fig. BE-23 Rear Combination Lamp (Coupe)

Station Wagon



1 Bulb (Turn)
2 Bulb (Back-up)
3 Bulb (Tail and Stop)
4 Screw
5 Lens

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Fig. BE-24 Rear Combination Lamp (Station Wagon)

LICENSE PLATE LAMP

Sedan and Coupe

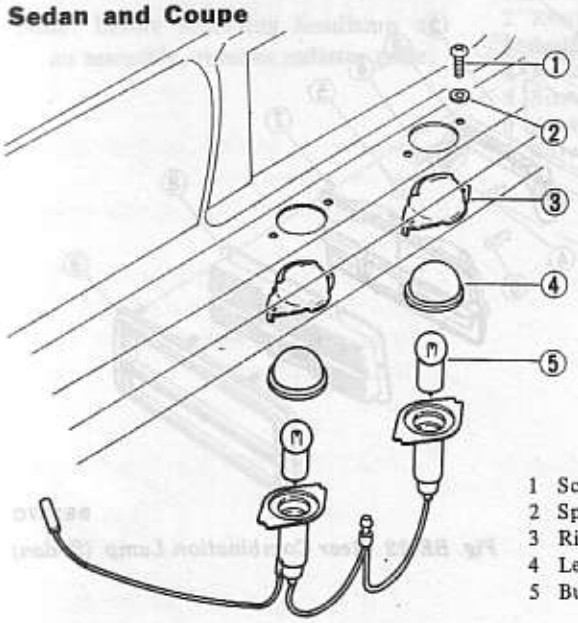


Fig. BE-25 License Plate Lamp (Sedan and Coupe)

Station Wagon

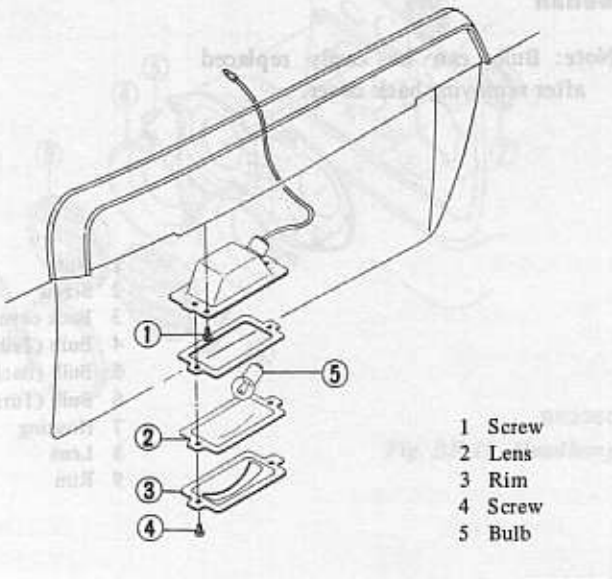


Fig. BE-26 License Plate Lamp (Station Wagon)

ROOM LAMP

Note: To remove lens, turn it counter-clockwise.

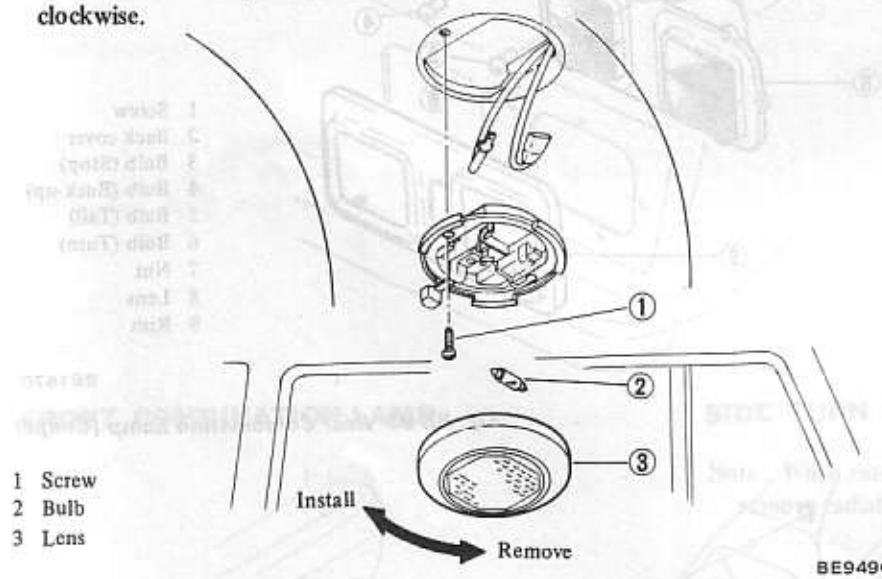


Fig. BE-27 Room Lamp

LUGGAGE ROOM LAMP (Coupe)

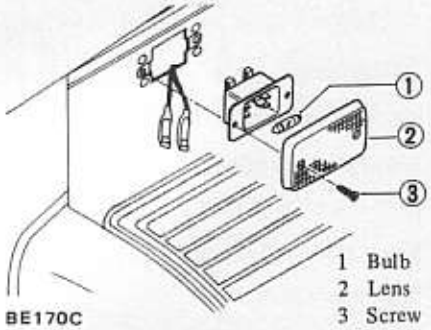


Fig. BE-29 Luggage Room Lamp (Coupe)

REAR ROOM LAMP (Station Wagon)

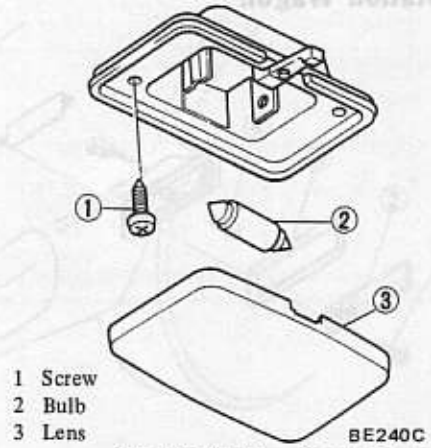


Fig. BE-30 Rear Room Lamp (Station Wagon)

TRUNK ROOM LAMP (Sedan)

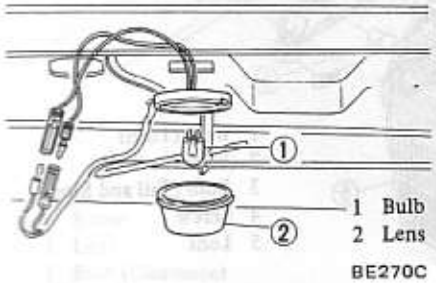


Fig. BE-28 Trunk Room Lamp (Sedan)

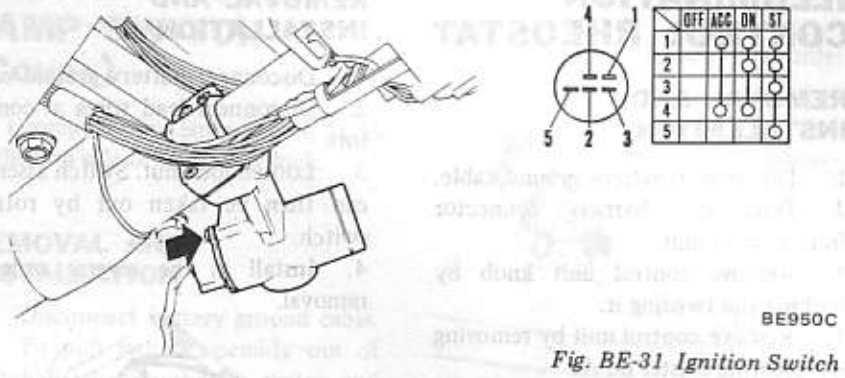
IGNITION SWITCH

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove steering column cover.
3. Disconnect harness connector.
4. Remove small screw retaining switch body to steering lock.
5. Install ignition switch in the reverse order of removal.

INSPECTION

Test continuity through ignition switch with a test lamp or ohmmeter. See Fig. BE-31.



BE950C

Fig. BE-31 Ignition Switch

LIGHTING AND TURN SIGNAL LAMP SWITCH

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove horn ring.
3. Remove steering wheel.
4. Remove steering column cover.
5. Disconnect combination switch wires at connector.
6. Loosen retaining screw and remove combination switch assembly.
7. Install combination switch in the reverse order of removal.

INSPECTION

Test continuity through switch with a test lamp or ohmmeter. See Fig. BE-32.

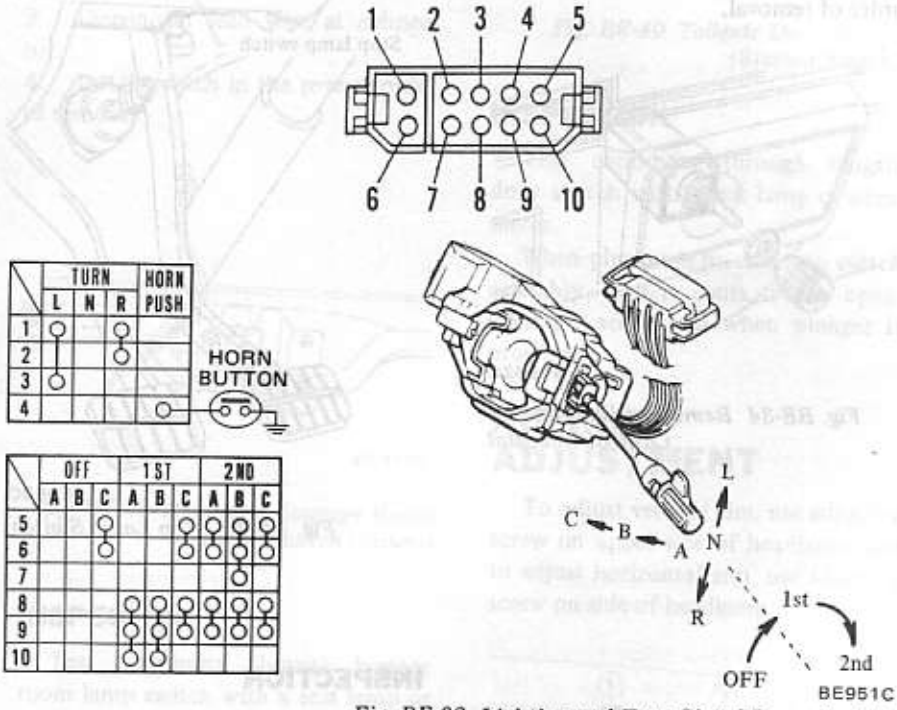


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Fig. BE-32 Lighting and Turn Signal Lamp Switch

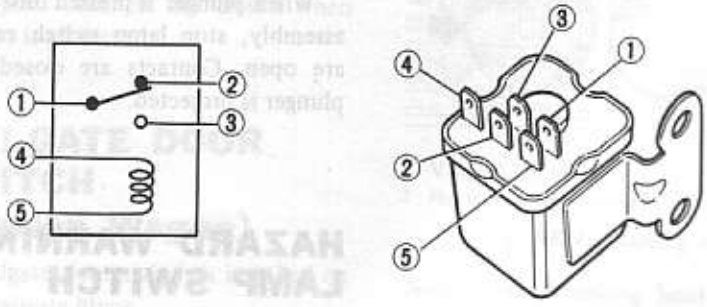
LIGHTING RELAY

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Disconnect harness connector.
3. Remove relay attaching screw.
4. Install lighting relay in the reverse order of removal.

INSPECTION

Inspect lighting relay as follows. See Fig. BE-33.



BE245C

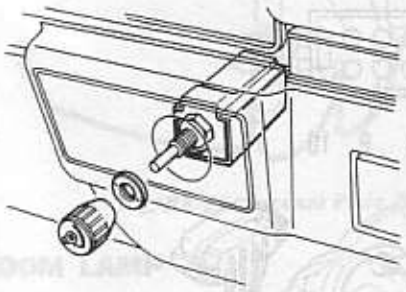
Fig. BE-33 Lighting Relay

1. There should be continuity between terminals ① and ②, ④ and ⑤, but not between ① and ③, ② and ③.
2. There should be continuity between terminals ① and ③ but not between ① and ② when supplying DC 12 volt across terminals ④ and ⑤.

ILLUMINATION CONTROL RHEOSTAT

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Disconnect harness connector from control unit.
3. Remove control unit knob by pushing and twisting it.
4. Remove control unit by removing nut securing cluster lid A.
5. Install control unit in the reverse order of removal.



BE952C

Fig. BE-34 Removing Illumination Control Rheostat

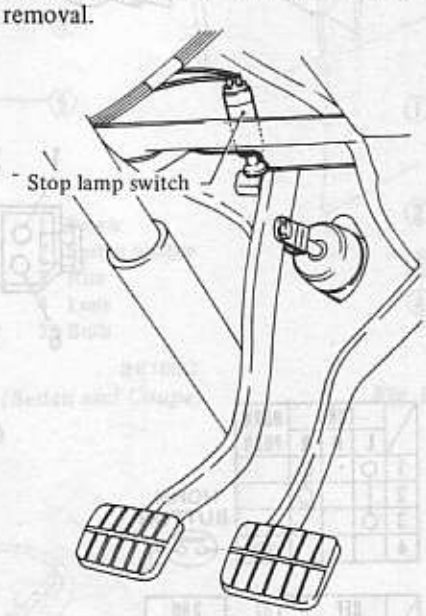
STOP LAMP SWITCH

Stop lamp switch is integral part of brake pedal.

Whenever stop lamp switch is removed, adjustment is required.

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Disconnect lead wires at connectors.
3. Loosen lock nut. Switch assembly can then be taken out by rotating switch.
4. Install in the reverse order of removal.



BE953C

Fig. BE-35 Stop Lamp Switch

INSPECTION

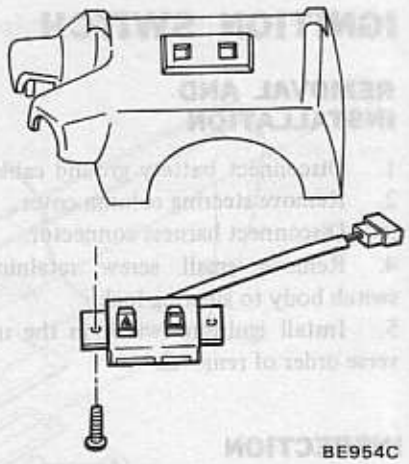
Test continuity through stop lamp switch with a test lamp or ohmmeter.

When plunger is pressed into switch assembly, stop lamp switch contacts are open. Contacts are closed when plunger is projected.

HAZARD WARNING LAMP SWITCH

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove upper steering column cover.
3. Disconnect harness connector.
4. Remove retaining screw.
5. Install hazard warning lamp switch in the reverse order of removal.

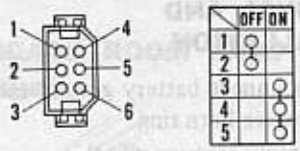


BE954C

Fig. BE-36 Removing Hazard Warning Lamp Switch

INSPECTION

Test continuity through switch with a test lamp or ohmmeter.



BE955C

Fig. BE-37 Hazard Warning Lamp Switch

BACK-UP LAMP SWITCH

Back-up lamp switch is installed on transmission.

INSPECTION

When transmission lever is in "R" position, there should be continuity between two terminals.

DOOR SWITCH

Door switch is installed on lower center pillar.

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.

Note: On Coupe, remove side box from rear armrest and detach adhesive tape securing harness to body from inside side box.

2. To pull switch assembly out of lower pillar, withdraw switch and wiring assembly.
3. Disconnect lead wire at connector.
4. Installation is in the reverse order of removal.

INSPECTION

Test continuity through door switch with a test lamp or ohmmeter.

When plunger is pressed into switch assembly, door switch contacts are open. Contacts are closed when plunger is projected.

TRUNK ROOM LAMP SWITCH (Sedan)

Trunk room lamp switch is installed on R.H. truck lid hinge.

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. To pull switch assembly out of bracket, withdraw switch and wiring assembly.
3. Disconnect lead wire at connector.
4. Install switch in the reverse order of removal.

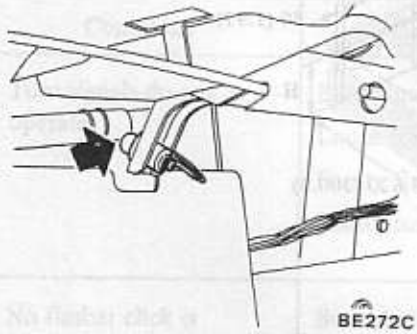


Fig. BE-38 Trunk Room Lamp Switch (Sedan)

INSPECTION

Test continuity through trunk room lamp switch with a test lamp or ohmmeter. When plunger is pressed into switch assembly, trunk room lamp switch contacts are open. Contacts are closed when plunger is projected.

LUGGAGE ROOM LAMP SWITCH (Coupe)

Luggage room lamp switch is installed on side of back door lock.

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. To pull switch assembly out of switch bracket, withdraw switch and wiring assembly.
3. Disconnect lead wire at connector.
4. Install switch in the reverse order of removal.

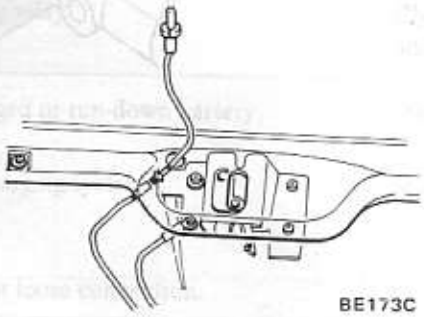


Fig. BE-39 Removing Luggage Room Lamp Switch (Coupe)

INSPECTION

Test continuity through luggage room lamp switch with a test lamp or ohmmeter. When plunger is pressed into switch assembly, switch contacts are open. Contacts are closed when plunger is projected.

TAILGATE DOOR SWITCH (Station Wagon)

Tailgate door switch is installed on R.H. tailgate hinge.

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove tailgate hinge cover by removing screws.
3. To pull switch assembly out of bracket, withdraw switch and wiring assembly.
4. Disconnect lead wire at connector.
5. Install switch in the reverse order of removal.

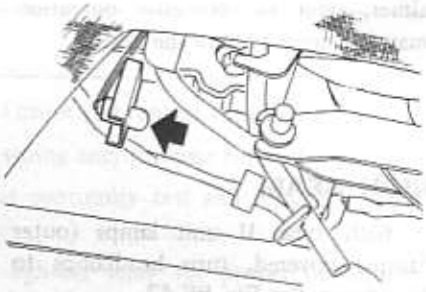


Fig. BE-40 Tailgate Door Switch (Station Wagon)

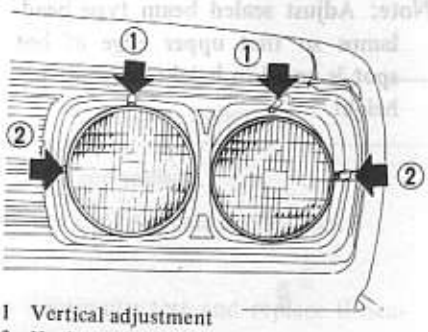
INSPECTION

Test continuity through tailgate door switch with a test lamp or ohmmeter.

When plunger is pressed into switch assembly, switch contacts are open. Contacts are closed when plunger is projected.

AIMING ADJUSTMENT

To adjust vertical aim, use adjusting screw on upper side of headlamp; and to adjust horizontal aim, use adjusting screw on side of headlamp.



1 Vertical adjustment
2 Horizontal adjustment

Fig. BE-41 Aiming Adjustment

Note: Before making headlamp aiming adjustment, observe the following instructions.

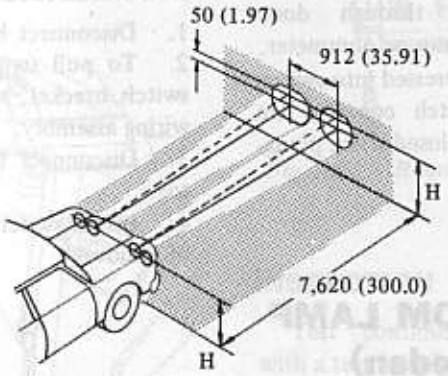
a. Keep all tires inflated to correct pressures.
b. Place car and tester on one and same flat surface.
c. See that there is no load in car.
1) Gasoline, radiator and engine oil pan filled up to correct level.
2) Without passenger

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. For operating instructions of any aimer, refer to respective operation manuals supplied with the unit.

HIGH BEAM

With type II unit lamps (outer lamps) covered, turn headlamps to high beam. See Fig. BE-42.

Note: Adjust high beams so that main axis of light is parallel to center line of body.



"H": Horizontal center line of headlamps

Unit: mm (in)

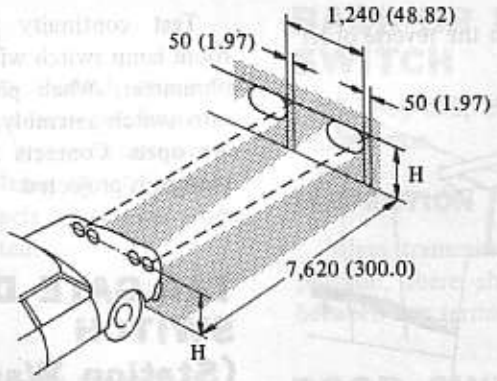
BE956C

Fig. BE-42 High Beam Adjustment

LOW BEAM

Turn headlamps to low beam.

Note: Adjust sealed beam type headlamps so that upper edge of hot spot is equal in height to headlamp height.



"H": Horizontal center line of headlamps

Unit: mm (in)

BE957C

Fig. BE-43 Low Beam Adjustment

TROUBLE DIAGNOSES AND CORRECTIONS

HEADLAMP

Condition	Probable cause	Corrective action
Headlamps do not light on either high or low beams	Burnt fusible link.	Correct cause and replace fusible link.
	Loose connection or open circuit.	Check wiring and/or repair connection.
	Faulty lighting switch.	Conduct continuity test and replace if necessary.
	Faulty lighting relay.	Check lighting relay for proper operation and replace if necessary.
	No ground.	Clean and tighten ground terminal.
High beam cannot be switched to low beam or vice versa.	Faulty lighting switch.	Conduct continuity test and replace if necessary.
	Faulty lighting relay.	Check lighting relay for proper operation and replace if necessary.
Headlamps dim.	Partly discharged or run-down battery.	Measure specific gravity of electrolyte and recharge or replace battery if necessary.
	Inoperative charging system.	Measure voltage at headlamp terminals. If it is less than 12.8V, check charging system for proper operation.
	Poor ground or loose connection.	Clean and/or tighten.
Headlamp lights on only one side.	Loose headlamp connection.	Repair.
	Faulty headlamp beam.	Replace.

TURN SIGNAL LAMP

Condition	Probable cause	Corrective action
Turn signals do not operate.	Burnt fuse.	Correct cause and replace.
	Loose connection or open circuit.	Check wiring and/or repair connection.
	Faulty flasher unit.	Replace.
	Faulty turn signal switch.	Conduct continuity test and replace if necessary.
No flasher click is heard.	Burnt bulb.	Replace.
	Loose connection.	Reconnect firmly.
Flashing cycle is too slow (Pilot lamp does not go out.), or too fast.	Bulb other than specified wattage being used.	Replace with one specified.
	Burnt bulbs.	Replace.
	Loose connection.	Repair.
	Faulty flasher unit.	Replace.

Condition	Probable cause	Corrective action
Flashing cycle is irregular.	Burnt bulb.	Replace.
	Loose connection.	Repair.
	Bulbs other than specified wattage being used.	Replace with one specified.

TAIL LAMP, STOP LAMP AND BACK-UP LAMP

Condition	Probable cause	Corrective action
Neither left nor right lamps light.	Burnt fuse.	Correct cause and replace.
	Faulty stop lamp switch.	Conduct continuity test and replace if necessary.
	Faulty back-up lamp switch.	Conduct continuity test and replace if necessary.
	Loose connection or open circuit.	Check wiring and/or repair connection.
Lamp on only one side lights.	Burnt bulb.	Replace.
	Loose bulb.	Repair lamp socket.
	Loose connection or open circuit.	Check wiring and/or repair connectin.

METERS AND GAUGES

CIRCUIT DIAGRAM

FUEL LEVEL AND WATER TEMPERATURE GAUGE SYSTEM

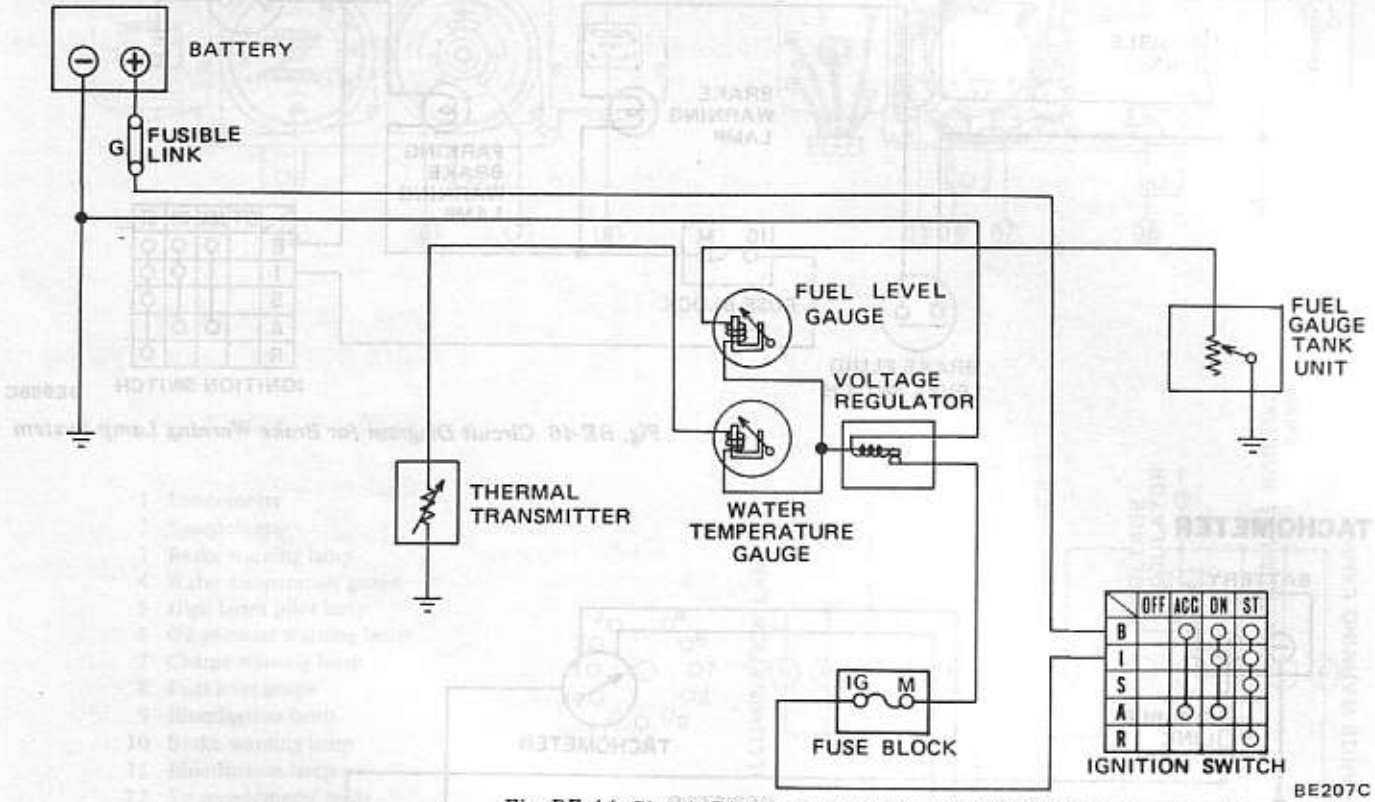


Fig. BE-44 Circuit Diagram for Fuel Level and Water Temperature Gauge System

OIL PRESSURE AND CHARGE WARNING LAMP SYSTEM

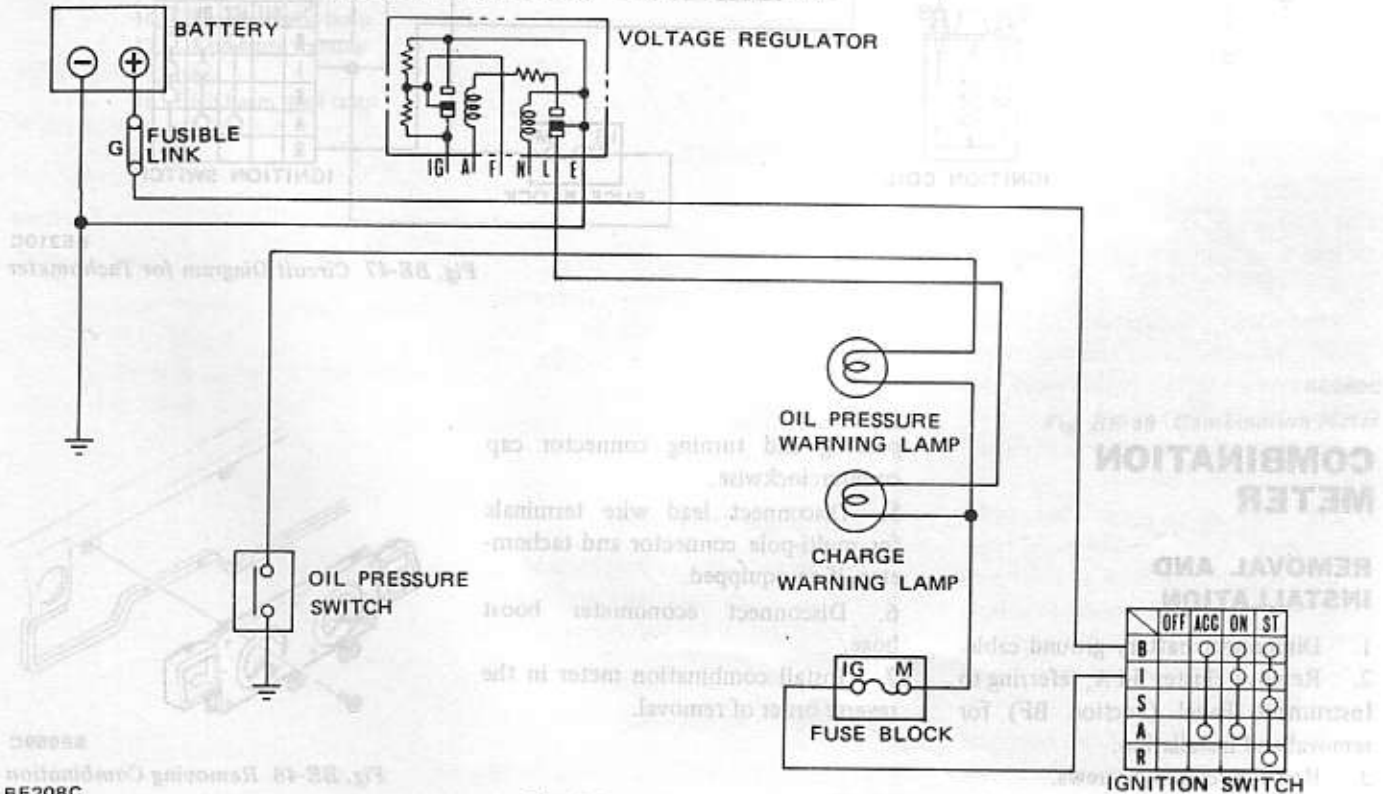


Fig. BE-45 Circuit Diagram for Oil Pressure and Charge Warning Lamp System

BRAKE WARNING LAMP SYSTEM

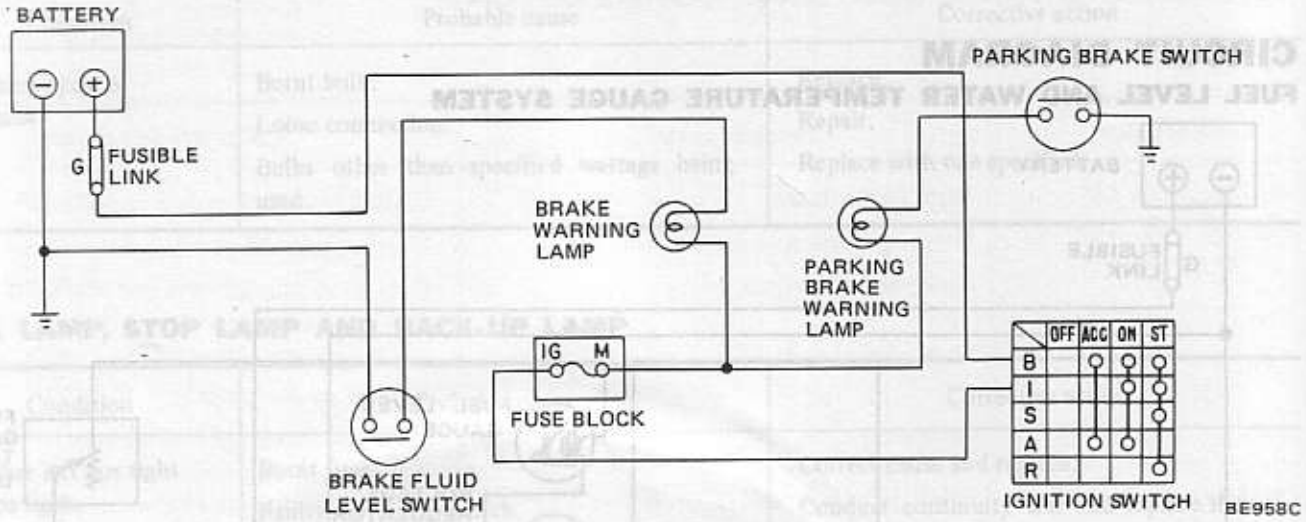


Fig. BE-46 Circuit Diagram for Brake Warning Lamp System

TACHOMETER

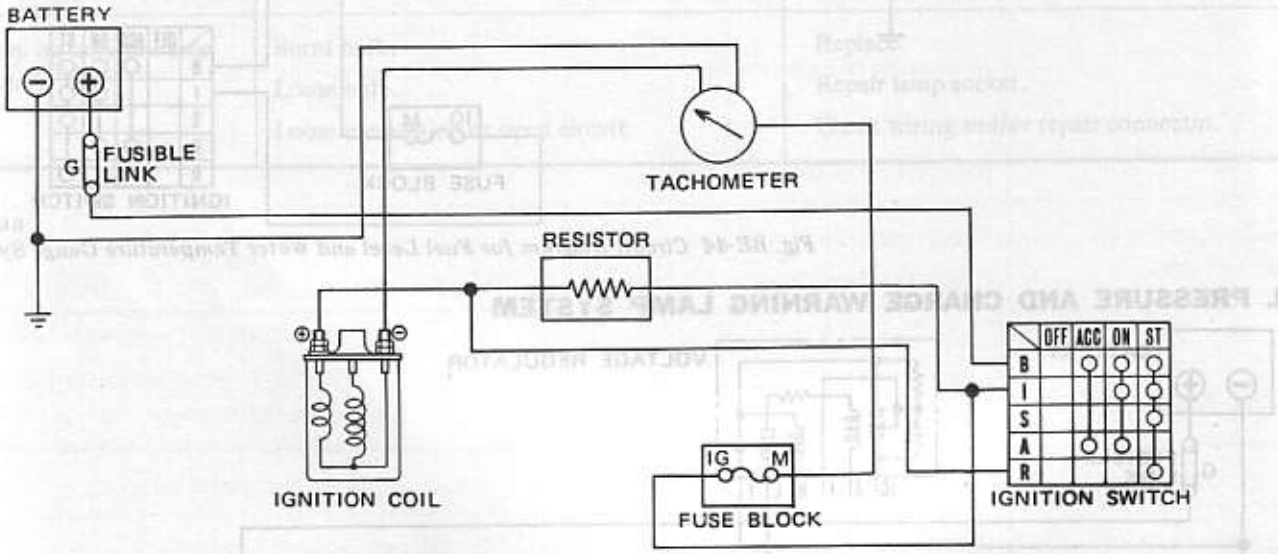


Fig. BE-47 Circuit Diagram for Tachometer

COMBINATION METER

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove cluster lid A, referring to Instrument Panel (Section BF) for removal and installation.
3. Remove retaining screws.
4. Disconnect speedometer cable by pushing and turning connector cap counterclockwise.
5. Disconnect lead wire terminals for multi-pole connector and tachometer, if so equipped.
6. Disconnect econometer boost hose.
7. Install combination meter in the reverse order of removal.

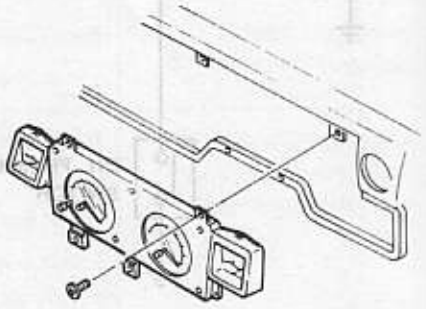
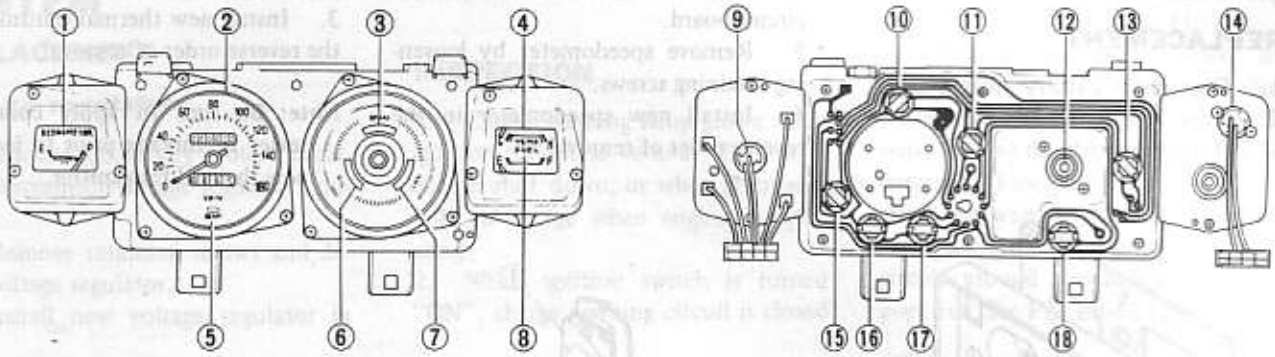
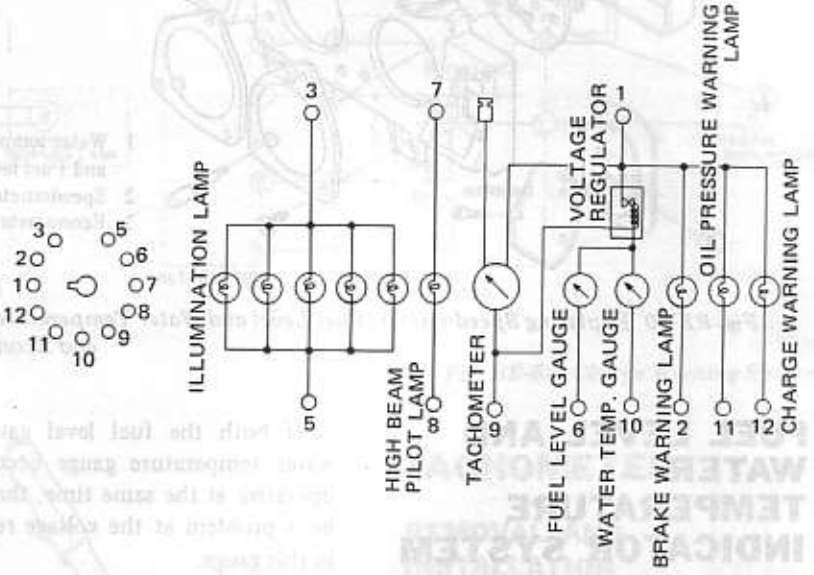


Fig. BE-48 Removing Combination Meter



1 Econometer
2 Speedometer
3 Brake warning lamp
4 Water temperature gauge
5 High beam pilot lamp
6 Oil pressure warning lamp
7 Charge warning lamp
8 Fuel level gauge
9 Illumination lamp
10 Brake warning lamp
11 Illumination lamp
12 To speedometer cable
13 Illumination lamp
14 Illumination lamp
15 Illumination lamp
16 Charge warning lamp
17 Oil pressure warning lamp
18 High beam pilot lamp



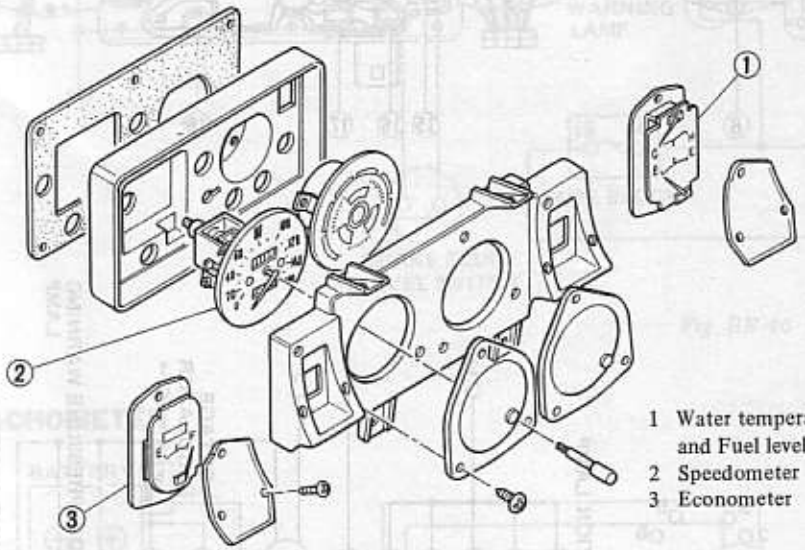
BE960C

Fig. BE-49 Combination Meter

SPEEDOMETER

REPLACEMENT

1. Disconnect battery ground cable.
2. Remove combination meter.
3. Remove reset knob.
4. Remove screws securing printed circuit board.
5. Remove speedometer by loosening retaining screws.
6. Install new speedometer in the reverse order of removal.



1 Water temperature and Fuel level gauge
2 Speedometer
3 Econometer

BE961C

Fig. BE-50 Replacing Speedometer, Fuel Level and Water Temperature Gauge and Econometer

FUEL LEVEL AND WATER TEMPERATURE INDICATOR SYSTEM

DESCRIPTION

The fuel level indicating system consists of a fuel gauge tank unit and a fuel level gauge.

The tank unit is a sliding resistance type.

The water temperature indicating system consists of a thermal transmitter located in the engine block and a water temperature gauge.

The thermal transmitter is equipped with a thermistor element.

The fuel level gauge and water temperature gauge are a bi-metal type.

The voltage regulator is built into this gauge body, and is used to supply a constant voltage so that the fuel level gauge and water temperature gauge operate correctly.

The operating part of the regulator consists of a bi-metal arm and a heater coil.

If both the fuel level gauge and water temperature gauge become inoperative at the same time, there may be a problem at the voltage regulator in this gauge.

REPLACEMENT

Gauge

1. Remove combination meter.
2. Disconnect harness connector from terminal on printed circuit board.
3. Remove retaining screws.
4. Install new gauge in the reverse order of removal.

Fuel gauge tank unit

Fuel gauge tank unit is located on fuel tank. Refer to Fuel Gauge Tank Unit (Section FE) for removal and installation.

Thermal transmitter

1. Disconnect lead wire from terminal.
2. Remove thermal transmitter by loosening it counterclockwise.
3. Install new thermal transmitter in the reverse order of removal.

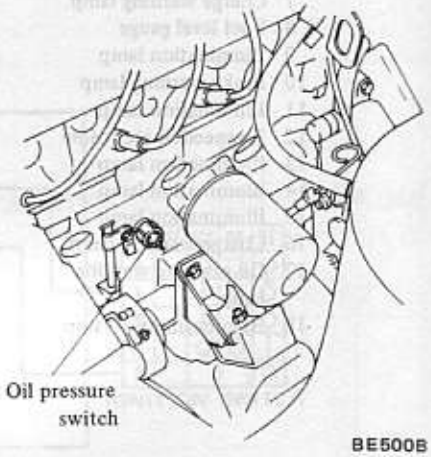
Note: Be sure to apply conductive sealer to threads prior to installing new thermal transmitter.

OIL PRESSURE WARNING SYSTEM

REPLACEMENT

Oil pressure switch

To replace oil pressure switch, disconnect lead wire from switch terminal and unscrew switch.



BE500B

Fig. BE-51 Oil Pressure Switch

CHARGE WARNING SYSTEM

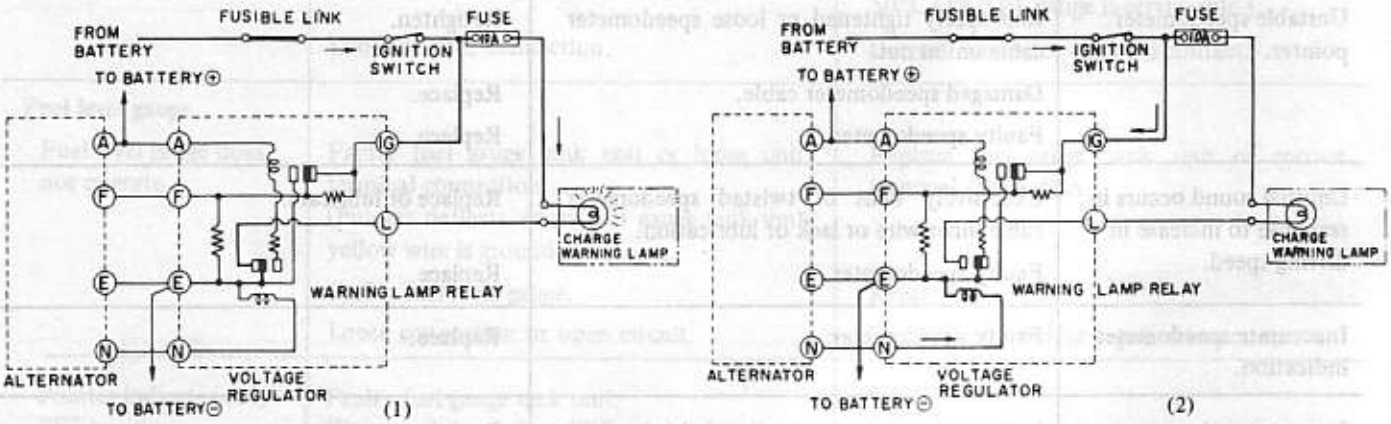
REPLACEMENT

Voltage regulator

1. Disconnect battery ground cable.
2. Disconnect voltage regulator connector.
3. Remove retaining screws and detach voltage regulator.
4. Install new voltage regulator in the reverse order of removal.

INSPECTION

1. Charge warning lamp glows when ignition switch is turned "ON" with engine shut down, or when alternator fails to charge when engine is operating.
2. When ignition switch is turned "ON", charge warning circuit is closed and current flows from ignition switch to warning lamp and grounds through regulator. See Fig. BE-52 (1).
3. When engine is started and alternator comes into operation, alternator output current (N) opposes current flowing from warning lamp; as current (N) increases, solenoid is energized and warning lamp relay contacts are opened–in effect breaking warning circuit ground connection–and lamp goes out. See Fig. BE-52 (2).



BE501B

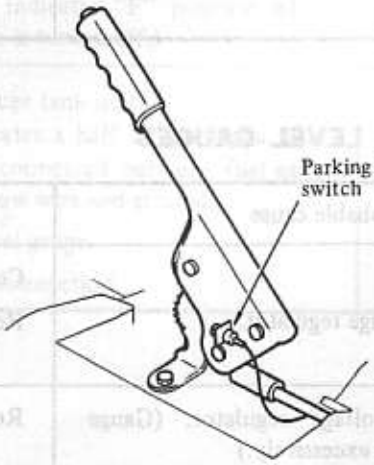
Fig. BE-52 Charge Warning System

BRAKE WARNING SYSTEM

REPLACEMENT

Parking brake switch

1. Disconnect battery ground cable.
2. Remove console box.
3. Disconnect parking brake switch lead wire at connector.
4. Remove switch from switch bracket by pulling it.
5. Install new switch in the reverse order of removal.



BE177C

Fig. BE-53 Parking Brake Switch

Brake fluid level switch

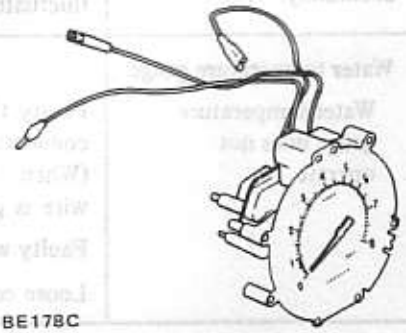
Brake fluid level switch is built into brake master cylinder cap.

The cap can be easily removed by twisting it after disconnecting lead wire terminals. Then replace it.

TACHOMETER

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove combination meter.
3. Remove speedometer reset knob.
4. Disconnect tachometer connector from printed circuit board terminal.
5. Remove screws securing printed circuit board.
6. Remove tachometer by loosening retaining screws.
7. Install tachometer in the reverse order of removal.



BE178C

Fig. BE-54 Tachometer

TROUBLE DIAGNOSES AND CORRECTIONS

SPEEDOMETER

Condition	Probable cause	Corrective action
Speedometer pointer and odometer do not operate.	Loose speedometer cable union nut.	Retighten.
	Broken speedometer cable.	Replace.
	Damaged speedometer drive pinion gear (Transmission side).	Replace.
	Faulty speedometer.	Replace.
Unstable speedometer pointer.	Improperly tightened or loose speedometer cable union nut.	Retighten.
	Damaged speedometer cable.	Replace.
	Faulty speedometer.	Replace.
Unusual sound occurs in response to increase in driving speed.	Excessively bent or twisted speedometer cable inner wire or lack of lubrication.	Replace or lubricate.
	Faulty speedometer.	Replace.
Inaccurate speedometer indication.	Faulty speedometer.	Replace.
Inaccurate odometer operation.	Improperly meshed second and third gear or worn gears.	Replace speedometer.
	Faulty feeding due to deformed odometer and pinion carrier.	Replace speedometer.

WATER TEMPERATURE AND FUEL LEVEL GAUGES

Condition	Probable cause	Corrective action
Neither water temperature gauge nor fuel level gauge operates.	Burnt fuse.	Correct cause and replace fuse.
	Faulty gauge voltage regulator.	Replace water temperature gauge.
Both water temperature gauge and fuel level gauge indicate inaccurately.	Faulty gauge voltage regulator. (Gauge pointer fluctuates excessively.)	Replace water temperature gauge.
	Loose or poor connection. (Gauge pointer fluctuates slightly.)	Correct.
Water temperature gauge		
Water temperature gauge does not operate.	Faulty thermal transmitter or loose terminal connection. (When thermal transmitter yellow/white wire is grounded, gauge pointer fluctuates.)	Replace or correct connection.
	Faulty water temperature gauge.	Replace.
	Loose connection or open circuit.	Check wiring and/or repair connection.

Condition	Probable cause	Corrective action
Meter indicates only maximum temperature.	Faulty thermal transmitter. (Meter pointer returns to original position when ignition swtich is turned off.)	Replace.
	Faulty water temperature gauge. (Meter pointer indicates maximum temperature even after ignition switch is turned off.)	Replace.
Water temperature gauge does not operate accurately.	Faulty water temperature gauge.	[Connect a 116Ω resistance between thermal transmitter yellow/white wire and gound. When meter indicates approximately 50°C (122°F), gauge is serviceable.]
	Loose or poor connection.	Correct connector terminal contact.
Fuel level gauge		
Fuel level gauge does not operate.	Faulty fuel gauge tank unit or loose unit terminal connection. (Pointer deflects when fuel gauge tank unit yellow wire is grounded.)	Replace fuel gauge tank unit or correct terminal connection.
	Faulty fuel level gauge.	Replace.
	Loose connection or open circuit.	Check wiring and/or repair connection.
Pointer indicates only "F" position.	Faulty fuel gauge tank unit. (Pointer drops below "E" mark when ignition switch is turned off.)	Replace.
	Faulty fuel level gauge. (Pointer still indicates "F" position when ignition switch is turned off.)	Replace.
Fuel level gauge does not operate accurately.	Faulty fuel gauge tank unit. (Pointer indicates a half level when a 32Ω resistance is connected between fuel gauge tank unit yellow wire and ground.)	Replace.
	Faulty fuel level gauge.	Replace fuel level gauge.
	Poor or loose connection.	Correct connector terminal contact.

OIL PRESSURE WARNING LAMP

Oil pressure warning lamp glows whenever engine oil pressure falls below 20 to 39 kPa (0.2 to 0.4 kg/cm², 2.8 to 5.7 psi).

Condition	Probable cause	Corrective action
Lamp does not light when ignition switch is set to "ON".	Faulty oil pressure switch or loose switch terminal connection. (When lead wire connected to switch is grounded, warning lamp lights.)	Replace or correct connection.
	Burnt bulb or loose bulb.	Replace bulb or correct bulb socket.
	Loose connection or open circuit.	Check wiring and/or repair connection.
Lamp does not go out while engine is being operated.	Lack of engine oil.	Check oil level and add oil as required.
	Oil pressure too low.	Inspect engine oil pressure system.
	Faulty oil pressure switch.	Replace.

CHARGE WARNING LAMP

Condition	Probable cause	Corrective action
Lamp does not light when ignition switch is set to "ON".	Burnt bulb or loose bulb. (Warning lamp does not light when voltage regulator white/red wire is grounded.)	Replace bulb or correct bulb socket.
	Loose connection or open circuit.	Check wiring and/or repair connection.
Lamp does not go out when engine is started.	Faulty charging system.	Inspect charging system.

ELECTRICAL ACCESSORIES

CIRCUIT DIAGRAM

WINDSHIELD WIPER AND WASHER SYSTEM

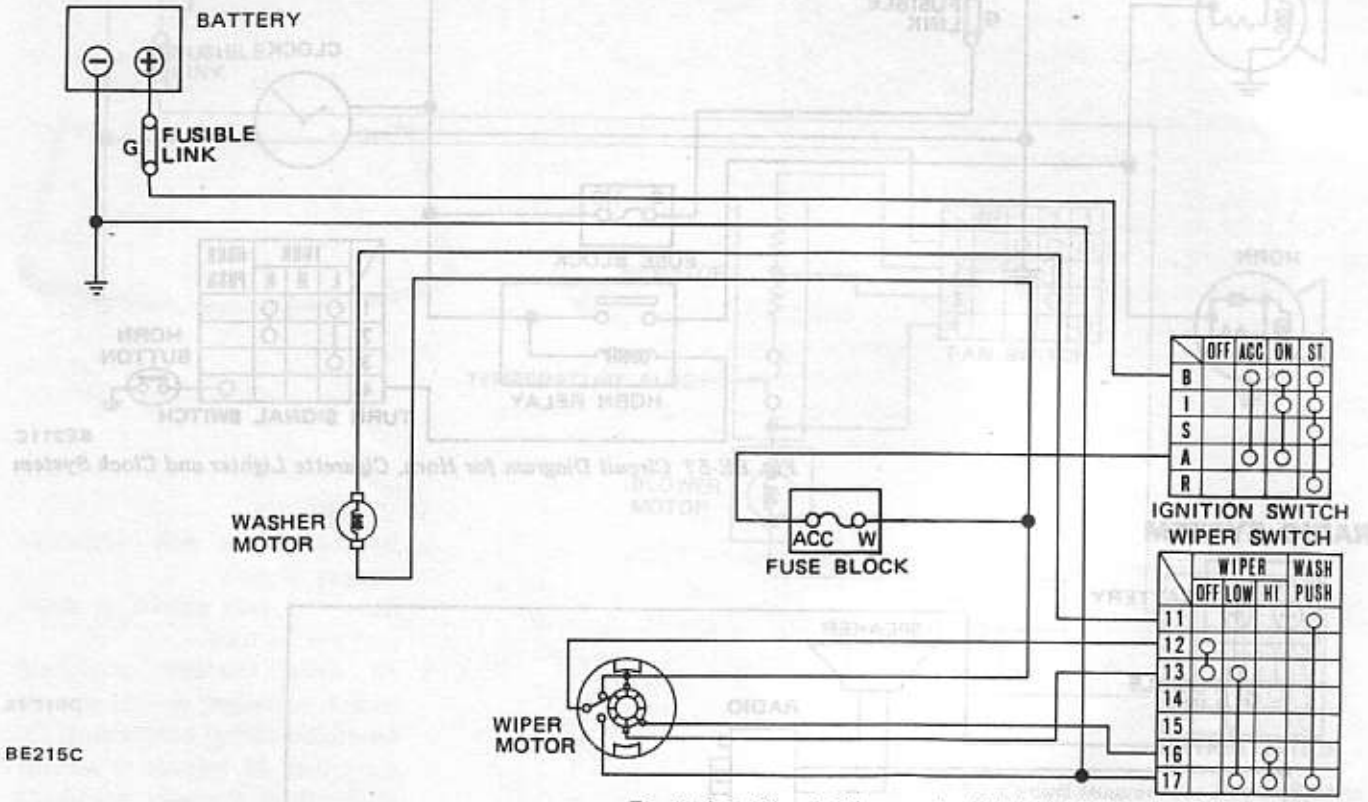


Fig. BE-55 Circuit Diagram for Windshield Wiper and Washer System

REAR WINDOW WIPER AND WASHER SYSTEM

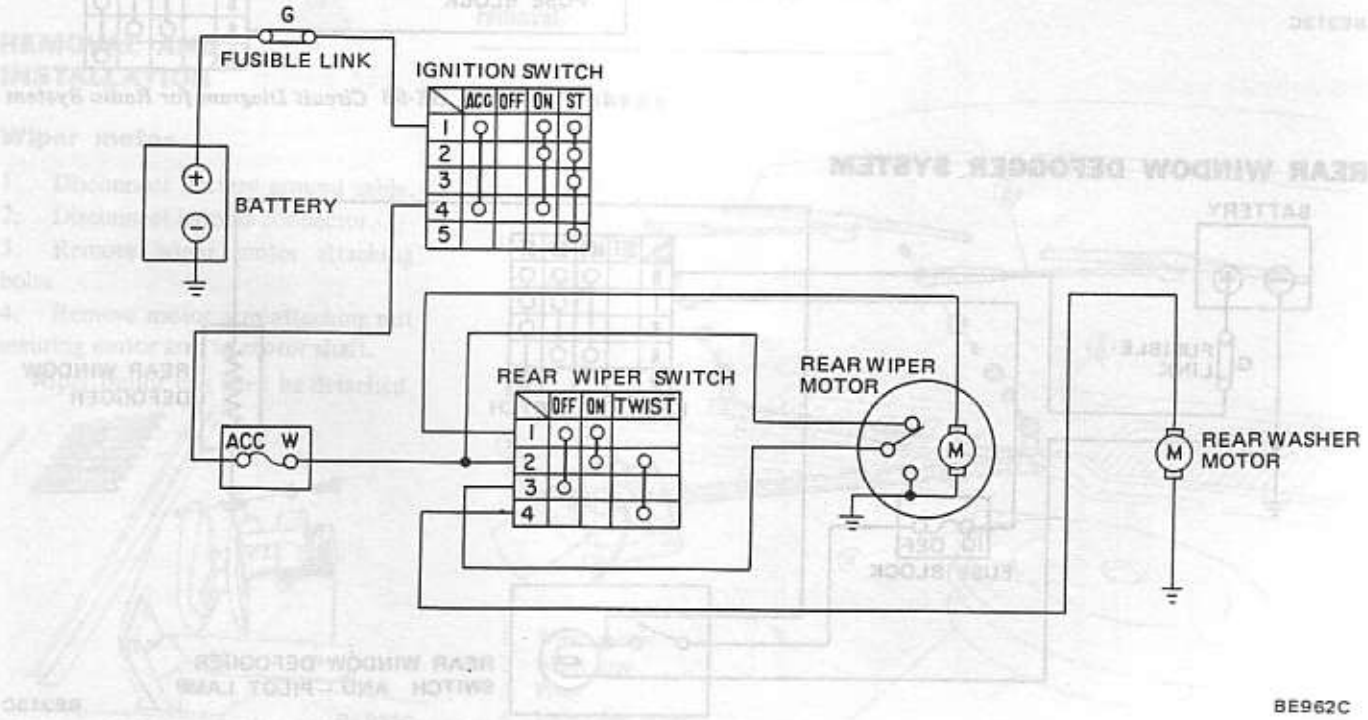


Fig. BE-56 Circuit Diagram for Rear Window Wiper and Washer System

HORN, CIGARETTE LIGHTER AND CLOCK SYSTEM

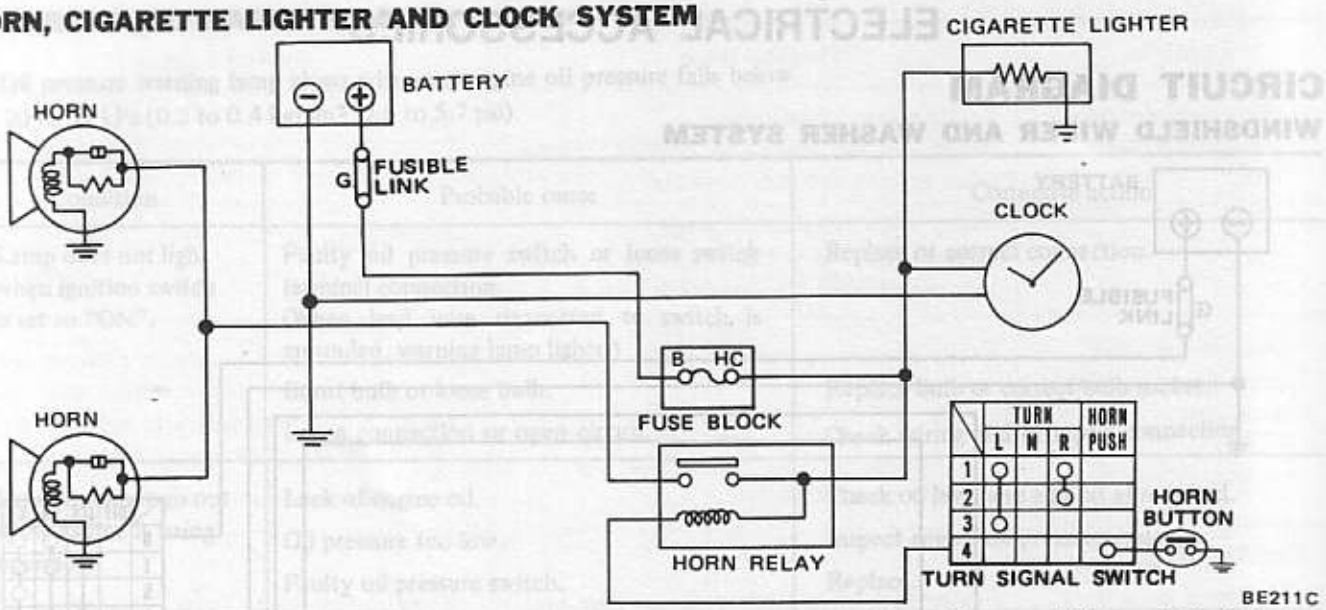


Fig. BE-57 Circuit Diagram for Horn, Cigarette Lighter and Clock System

RADIO SYSTEM

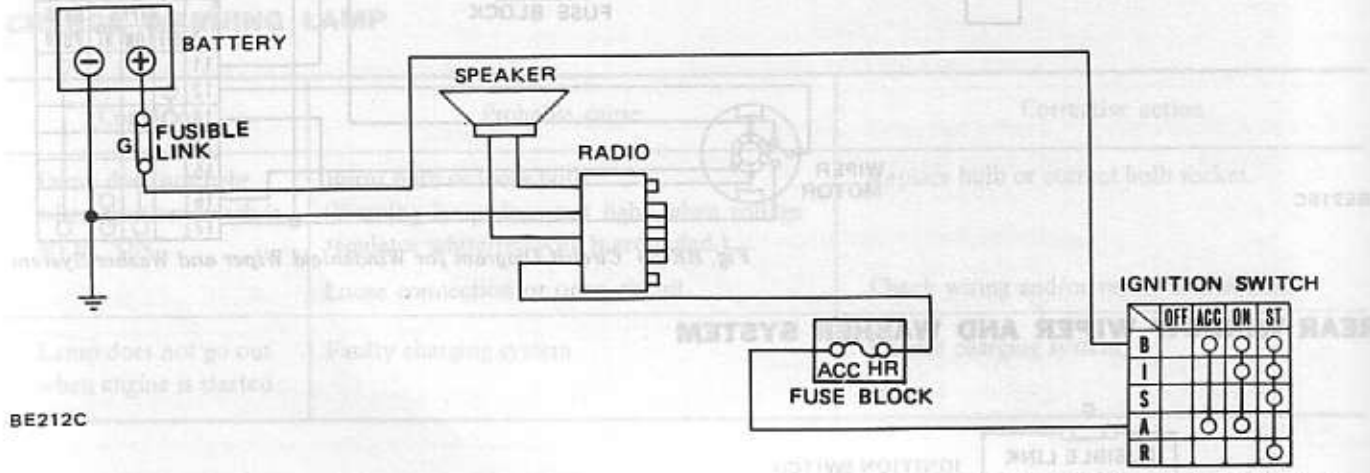


Fig. BE-58 Circuit Diagram for Radio System

REAR WINDOW DEFOGGER SYSTEM

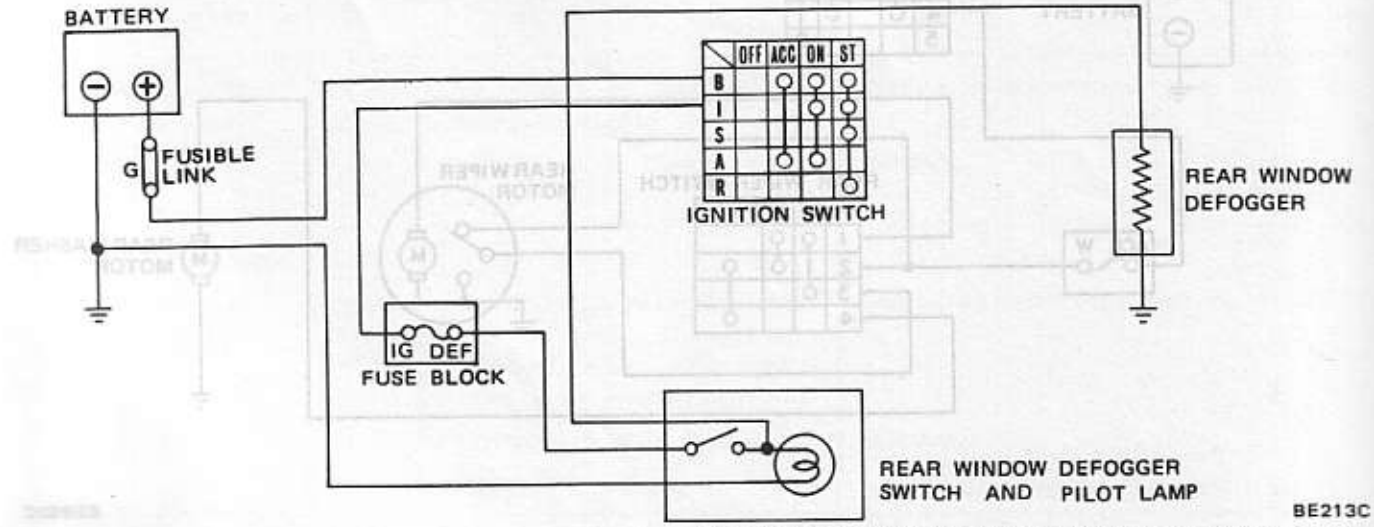


Fig. BE-59 Circuit Diagram for Rear Window Defogger System

HEATER SYSTEM

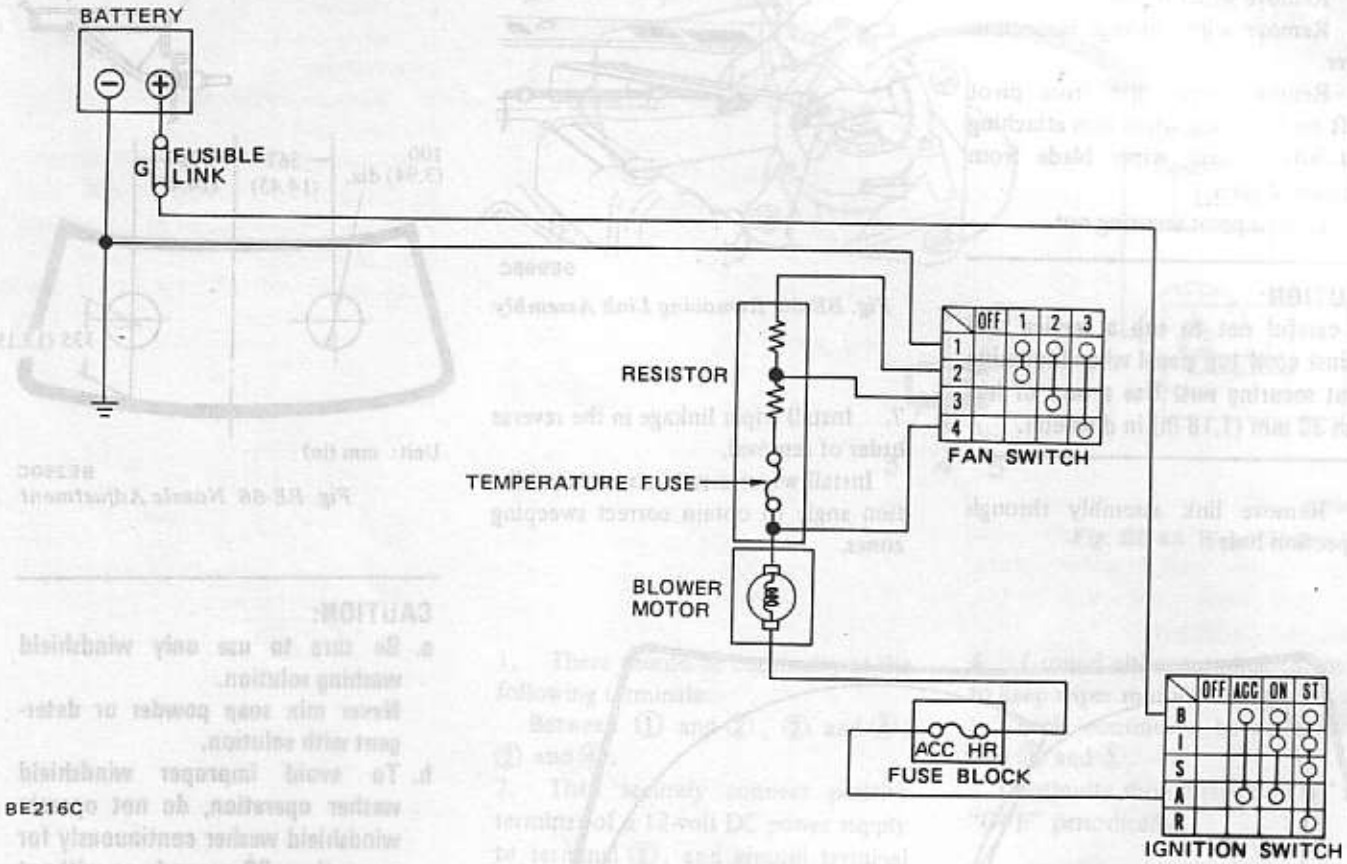


Fig. BE-60 Circuit Diagram for Heater System

WINDSHIELD WIPER AND WASHER

REMOVAL AND INSTALLATION

Wiper motor

1. Disconnect battery ground cable.
2. Disconnect harness connector.
3. Remove wiper motor attaching bolts.
4. Remove motor arm attaching nut securing motor arm to motor shaft.

Wiper motor can then be detached.

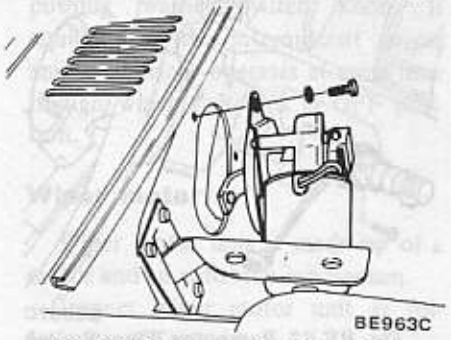
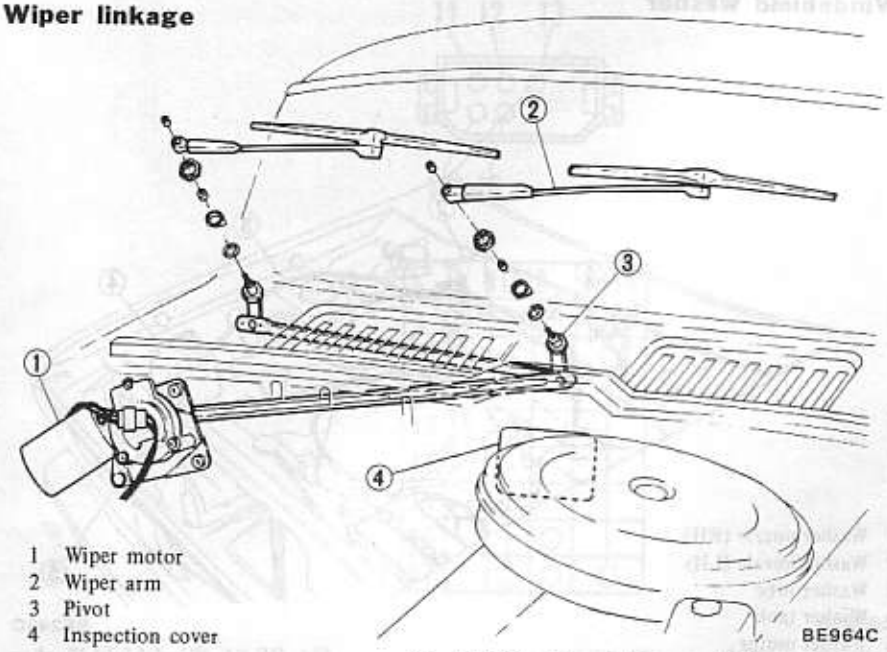


Fig. BE-61 Removing Wiper Motor

CAUTION:
Be careful not to bend linkage during removal.

Wiper linkage



1 Wiper motor
2 Wiper arm
3 Pivot
4 Inspection cover

Fig. BE-62 Wiper Motor and Wiper Linkage

1. Disconnect battery ground cable.
2. Remove wiper motor.
3. Remove wiper linkage inspection cover.
4. Remove wiper arm from pivot shaft by loosening wiper arm attaching bolt after raising wiper blade from windshield glass.
5. Loosen pivot securing nut.

CAUTION:
Be careful not to rub a service tool against cowl top panel when loosening pivot securing nut. Use a box of less than 30 mm (1.18 in) in diameter.

6. Remove link assembly through inspection hole.

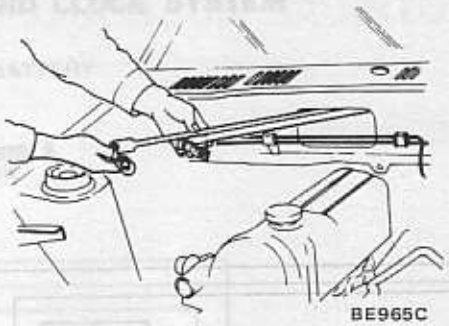


Fig. BE-63 Removing Link Assembly

7. Install wiper linkage in the reverse order of removal.

Install wiper arm in correct installation angle to obtain correct sweeping zones.

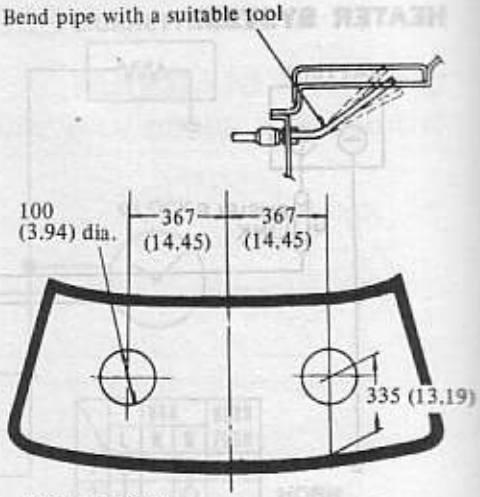


Fig. BE-66 Nozzle Adjustment

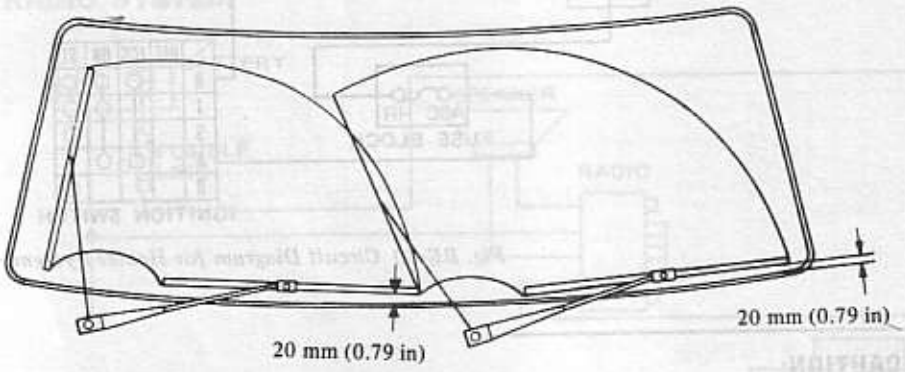
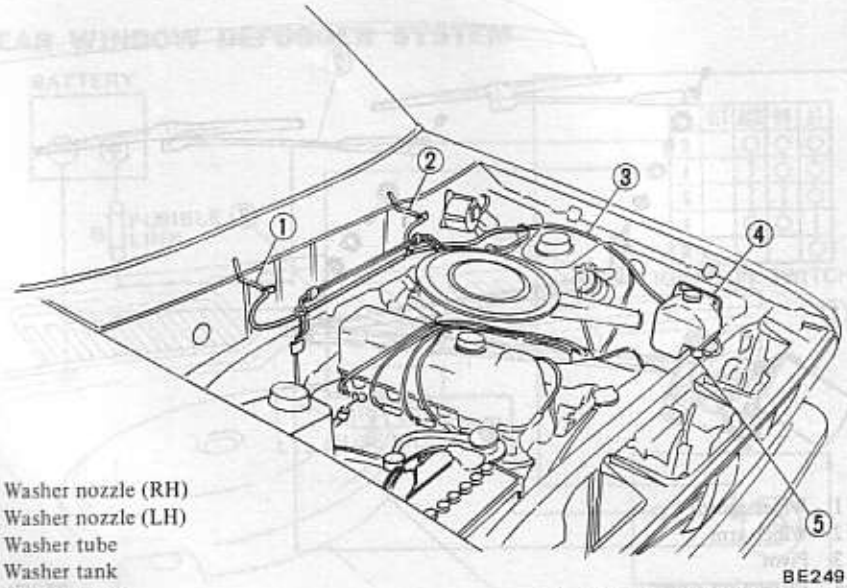


Fig. BE-64 Wiper Arm Installation

CAUTION:
a. Be sure to use only windshield washing solution.
Never mix soap powder or detergent with solution.
b. To avoid improper windshield washer operation, do not operate windshield washer continuously for more than 30 seconds or without washer fluid. Normally, windshield washer should be operated for 10 seconds or less at one time.

Windshield washer



1 Washer nozzle (RH)
2 Washer nozzle (LH)
3 Washer tube
4 Washer tank
5 Washer motor

Fig. BE-65 Windshield Washer

Wiper switch

1. Disconnect battery ground cable.
2. Remove steering column cover.
3. Remove wiper switch from combination switch by removing retaining screws.
4. Install wiper switch in the reverse order of removal.

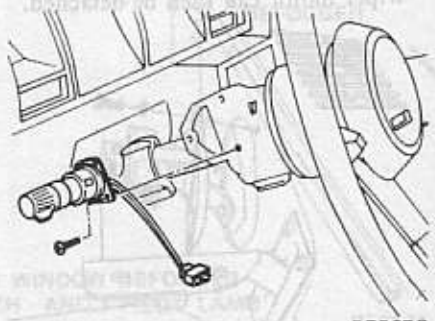
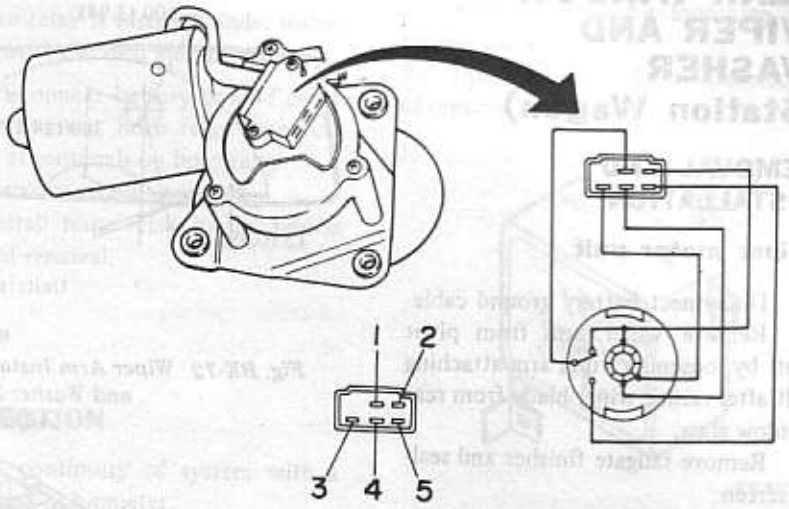


Fig. BE-67 Removing Wiper Switch



BE968C

Fig. BE-68 Wiper Motor Unit

INSPECTION

When wiper switch is in 1st (LO) position, wiper is operated at low speed and when switch is in 2nd (HI) position, wiper is operated at high speed.

Windshield washer is operated by pushing washer switch knob. If equipped with intermittent wiper amplifier, wiper operates at same time though wiper switch is in OFF position.

Wiper motor

Wiper motor unit is made up of a motor and an auto-stop mechanism.

Inspect wiper motor unit as follows. See Fig. BE-68.

1. There should be continuity at the following terminals:

   Between ① and ②, ② and ③, ② and ④.

2. Then securely connect positive terminal of a 12-volt DC power supply to terminal ②, and ground terminal ③. Wiper motor should run.

3. Next, ground terminal ④. Do not ground terminal ③ this time. Wiper motor should run.

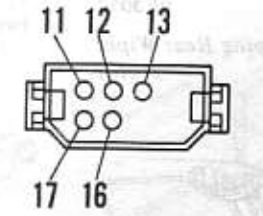
4. Ground either terminal ③ or ④ to keep wiper motor running.

   Check continuity between terminals ① and ⑤.

   Continuity should repeat "ON" and "OFF" periodically.

Wiper and washer switch

Test continuity through wiper and washer switch at each step with a test lamp or ohmmeter. See Fig. BE-69.



	WIPER			WASH
	OFF	LOW	HI	PUSH
11				○
12	○			
13	○	○		
14				
15				
16			○	
17		○	○	○

BE969C

Fig. BE-69 Wiper and Washer Switch

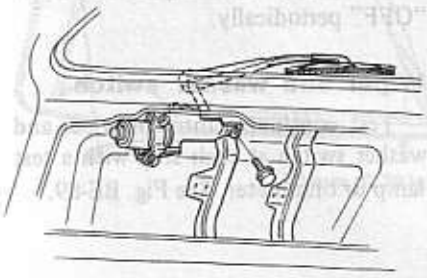
REAR WINDOW WIPER AND WASHER (Station Wagon)

REMOVAL AND INSTALLATION

Wiper motor unit

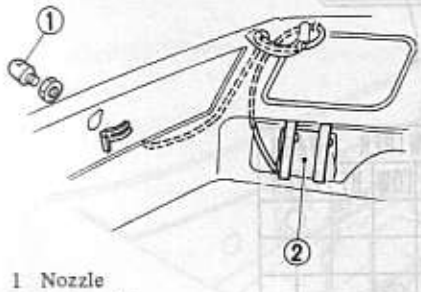
1. Disconnect battery ground cable.
2. Remove wiper arm from pivot shaft by loosening wiper arm attaching bolt after raising wiper blade from rear window glass.
3. Remove tailgate finisher and sealed screen.
4. Disconnect harness connector.
5. Remove wiper motor unit from tailgate by removing attaching bolts.
6. Install wiper motor unit in the reverse order of removal.

Install wiper arm in correct installation angle to obtain correct sweeping zones.



BE302C

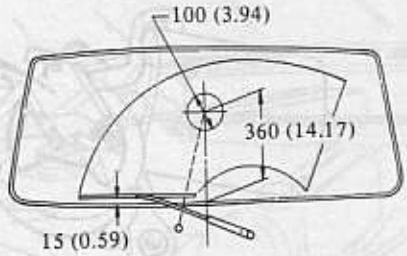
Fig. BE-70 Removing Rear Wiper Motor



1 Nozzle
2 Washer bag

BE307C

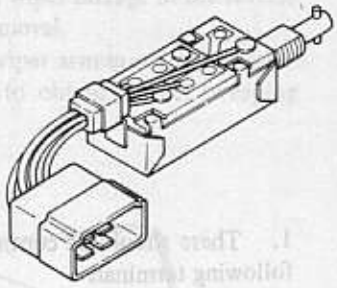
Fig. BE-71 Rear Window Washer



Unit: mm (in)

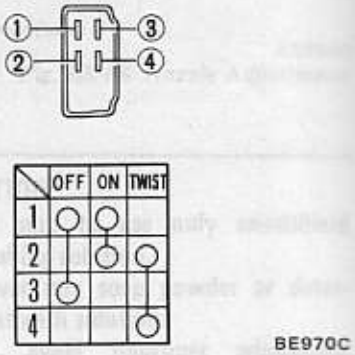
BE303C

Fig. BE-72 Wiper Arm Installation and Washer Nozzle Adjustment



Rear window wiper switch

1. Disconnect battery ground cable.
2. Disconnect harness connector from switch.
3. Remove switch knob by pushing and twisting it.
4. Remove wiper switch by loosening nut securing it to cluster lid A.
5. Install wiper switch in the reverse order of removal.



BE970C

Fig. BE-73 Rear Window Wiper Switch

INSPECTION

Wiper motor

Wiper motor unit is made up of a motor and an auto-stop mechanism.

Inspect wiper motor unit as follows. See Fig. BE-74.

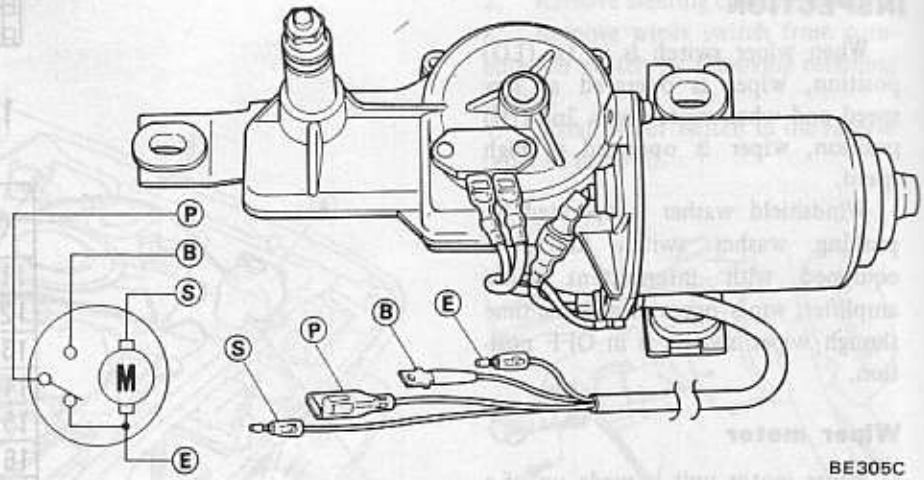
1. There should be continuity between the following terminals:

Between Ⓟ and Ⓔ, Ⓢ and Ⓔ

2. Then securely connect positive terminal of a 12-volt DC power supply to terminal Ⓢ and ground terminal Ⓔ. Wiper motor should run.
3. Keep wiper motor running.

Check continuity between Ⓟ and Ⓑ.

Continuity should repeat "ON" and "OFF" periodically.



BE305C

Fig. BE-74 Rear Wiper Motor

Rear wiper and washer switch

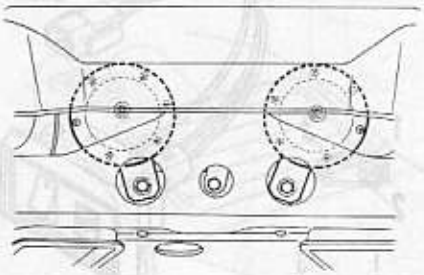
Test continuity through wiper and washer switch at each step with a test lamp or ohmmeter.

HORN

REMOVAL AND INSTALLATION

Horn

1. Disconnect battery ground cable.
2. Disconnect horn wire at connector.
3. Remove horn retaining bolt.
4. Install horn in the reverse order of removal.



BE248C

Fig. BE-75 Horn

Horn relay

Horn relay is installed under instrument panel and near steering shaft.

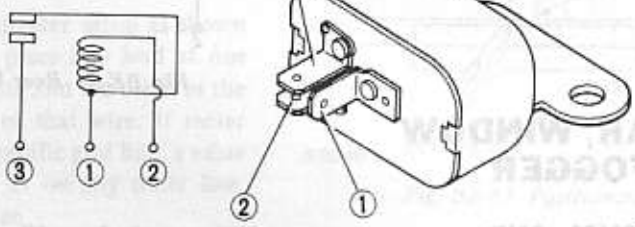
1. Disconnect battery ground cable.
2. Disconnect horn relay wire connector at terminals on horn relay.
3. Remove retaining screws.
4. Install horn relay in the reverse order of removal.

INSPECTION

Test continuity of system with a test lamp or ohmmeter.

Horn relay

There must be continuity between terminals ① and ③ when there is 12-volt DC across terminals ① and ②. See Fig. BE-76.



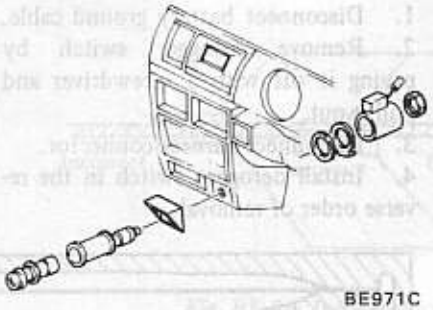
BE512B

Fig. BE-76 Horn Relay

CIGARETTE LIGHTER

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove console box if equipped.
3. Remove lead wire terminals.
4. Remove retaining nut.
5. Remove lighter from cluster lid A.
6. Install cigarette lighter in the reverse order of removal.



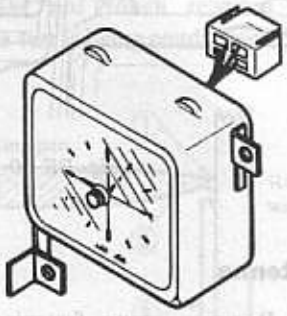
BE971C

Fig. BE-77 Cigarette Lighter

CLOCK

REMOVAL AND INSTALLATION

1. Disconnect battery ground cable.
2. Remove cluster lid A.
3. Disconnect harness connector.
4. Remove clock by loosening retaining screws.
5. Install clock in the reverse order of removal.



BE972C

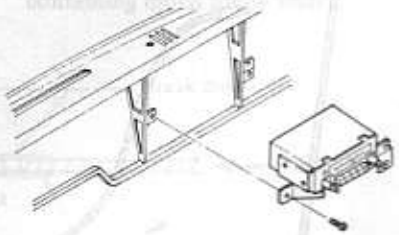
Fig. BE-78 Clock

RADIO

REMOVAL AND INSTALLATION

Radio receiver

1. Disconnect battery ground cable.
2. Remove cluster lid A.
3. Remove radio with bracket by loosening attaching screws.
4. Disconnect harness connector and antenna feeder cable.
5. Install radio receiver in the reverse order of removal.

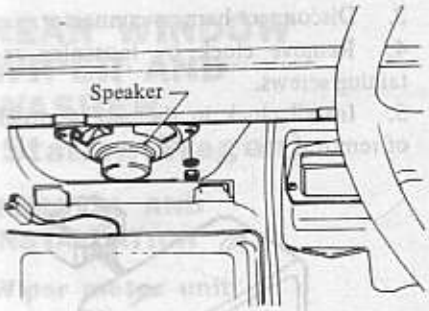


BE186C

Fig. BE-79 Radio

Speaker

1. Disconnect battery ground cable.
2. Remove radio receiver.
3. Disconnect harness connector.
4. Remove speaker by loosening attaching nuts.
5. Install speaker in the reverse order of removal.



BE973C

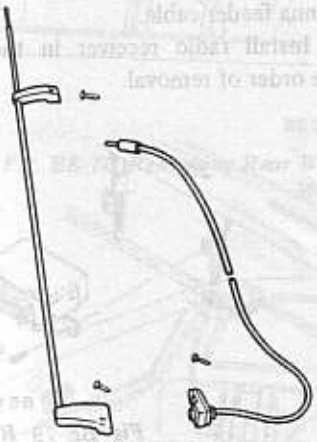
Fig. BE-80 Speaker

Antenna

1. Remove screws fastening upper and lower antenna supports to front pillar.
2. Install antenna in the reverse order of removal.

Feeder cable

1. Disconnect battery ground cable.
2. Remove antenna.
3. Remove front pillar molding.
4. Remove cluster lid A.
5. Disconnect feeder cable from radio receiver.
6. Pull out feeder cable through hole in front pillar.
7. Install feeder cable in the reverse order of removal.



BE974C

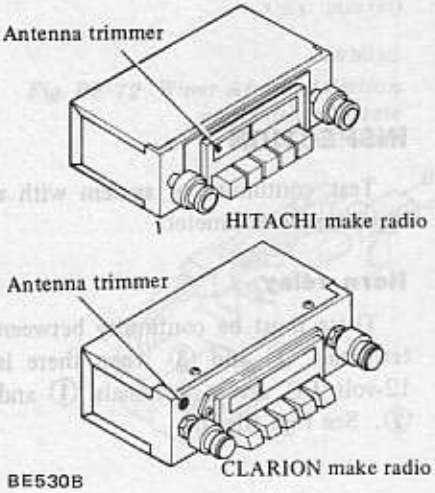
Fig. BE-81 Antenna and Feeder Cable

ADJUSTING ANTENNA TRIMMER

When a new radio receiver, antenna or feeder cable is installed, antenna trimmer should be adjusted.

1. Retract antenna completely.
2. Tune in to frequency of the weakest station between 12 and 16 (1,200 to 1,600 kHz) on dial.

   Noise may be generated, but disregard it.
3. Turn antenna trimmer to left and right slowly and set it at a position where receiving sensitivity is highest.



BE530B

Fig. BE-82 Trimmer Adjusting Screw

REAR WINDOW DEFOGGER

REMOVAL AND INSTALLATION

Defogger switch

1. Disconnect battery ground cable.
2. Remove defogger switch by prying it off with a screwdriver and pull it out.
3. Disconnect harness connector.
4. Install defogger switch in the reverse order of removal.

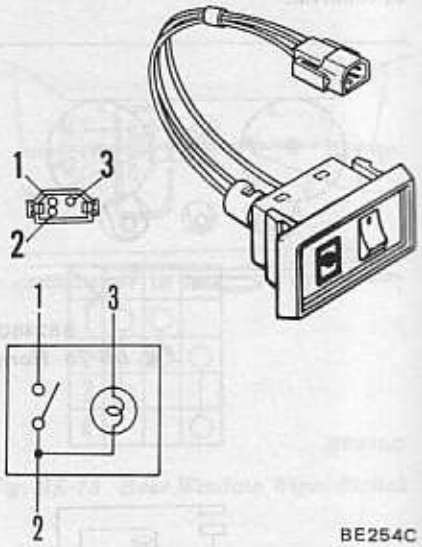
Rear window filaments

The filaments are printed inside the rear window glass. Therefore, the element cannot be removed.

INSPECTION

Defogger switch

Test continuity of switch with a test lamp or ohmmeter.



BE254C

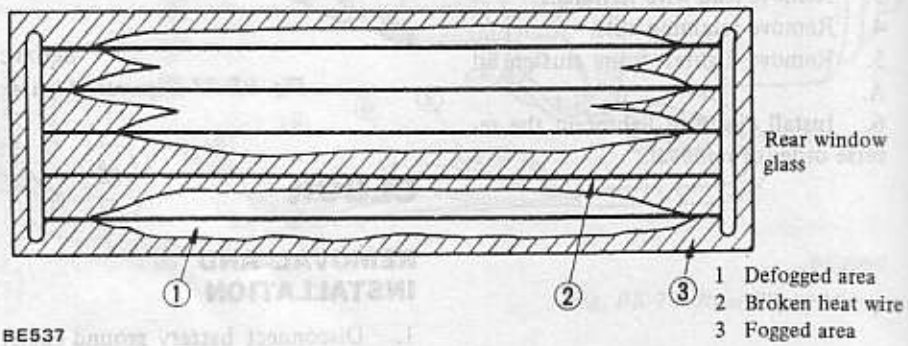
Fig. BE-83 Rear Window Defogger Switch

Rear window filaments

Rear window defogger filaments can be inspected for circuit breaks by one of three methods.

Method 1:

Start engine and turn on window defroster system. If area around a specified filament is not defogged, that line is broken.



BE537

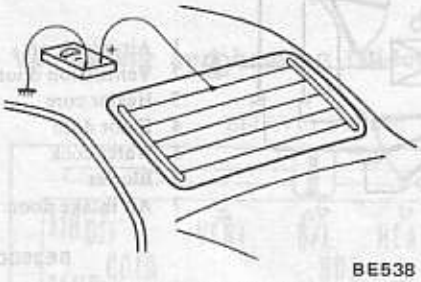
1 Defogged area
2 Broken heat wire
3 Fogged area

Fig. BE-84 Broken Filament

Method 2:

Start engine and turn on window defroster system. With a direct-current voltmeter setup as shown in Fig. BE-90, check each heat wire for discontinuity. If meter indicates 12 volts or 0 on a specific wire, that line is broken. (Normal indication: 6 volts)

Break in that line can then be detected by moving positive lead of meter along line until an abrupt variation in meter indication is encountered.



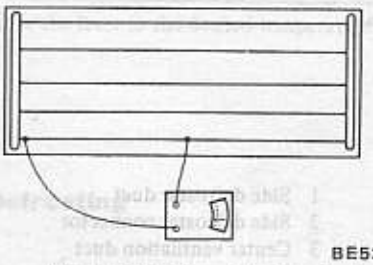
BE538

Fig. BE-85 Checking for Broken Filament with D-C Voltmeter

Method 3:

With an ohmmeter setup as shown in Fig. BE-86, place one lead at one end of a heat wire and the other in the middle section of that wire. If meter registers, on a specific grid line, a value twice as much as on any other line, that line is broken.

A break in that line can then be located by an abrupt variation in meter indication as test lead moves along broken heat wire.



BE539

Fig. BE-86 Checking for Broken Filament with Ohmmeter

FILAMENT MAINTENANCE

Repair equipment

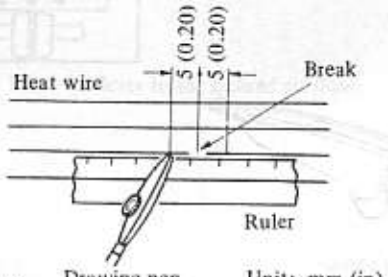
1. Conductive silver composition (Dupont No. 4817)
2. Ruler, 30 cm (12 in) long
3. Drawing pen
4. Heat gun
5. Alcohol
6. Cloth

Repair procedure

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

Note: Shake silver composition container before use.

3. Place ruler on glass along broken line to be repaired. 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.



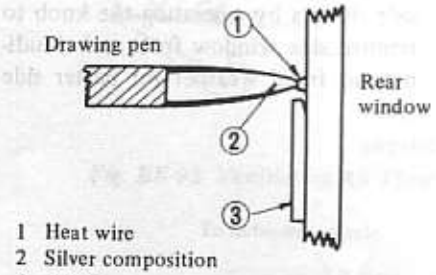
BE540

Fig. BE-87 Positioning Ruler

4. Wipe clean silver composition from tip of drawing pen.

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

Note: Do not touch repaired area while test is being conducted.



BE541

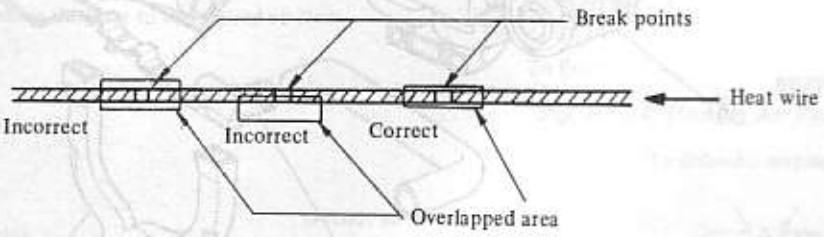
Fig. BE-88 Depositing Silver Composition in Place

6. 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.

After repair

Wipe repaired area clean with a soft, clean cloth.

Note: Do not use a cleaning solvent containing much soapy water.



BE542

Fig. BE-89 Incorrect and Correct Deposition of Silver Composition

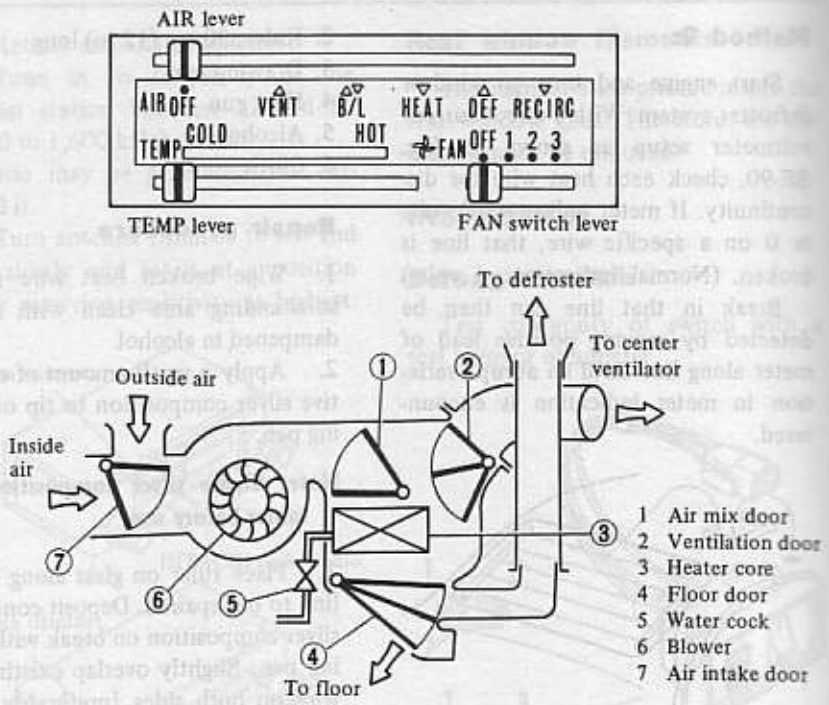
HEATER

DESCRIPTION

Outside air drawn in through the cowl top grille is directed through the air intake case to the heater unit by the blower. The heater unit includes an air mix door which controls the air temperature, and a ventilation door and floor door which change the distribution of air flow. The air intake door inside the air intake case shuts out the outside air when the heater is off.

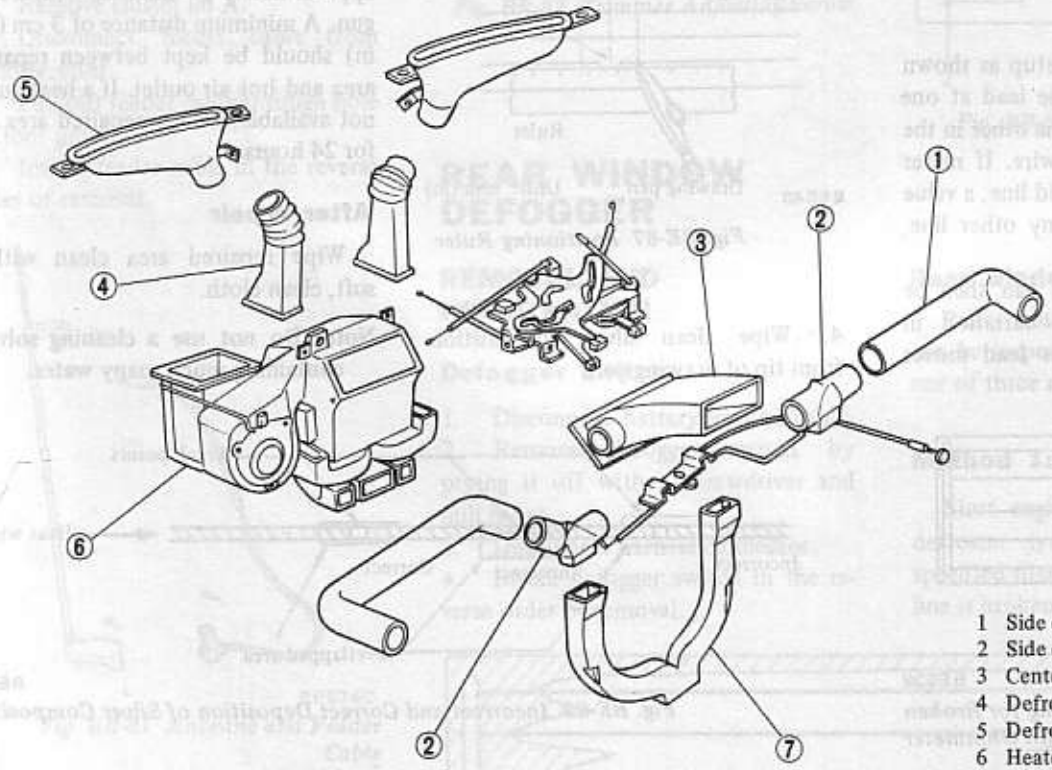
The heater controls, consisting of three levers, are located in the middle portion of the instrument panel. They are the AIR lever which selects the air inlet and outlet, the TEMP lever which controls the temperature and the FAN switch lever which regulates air flow with the blower.

Heated air is discharged from the side outlets by operating the knob to remove side window frost and cloudiness in frigid weather for better side view.



BE258C

Fig. BE-90 Heater Control

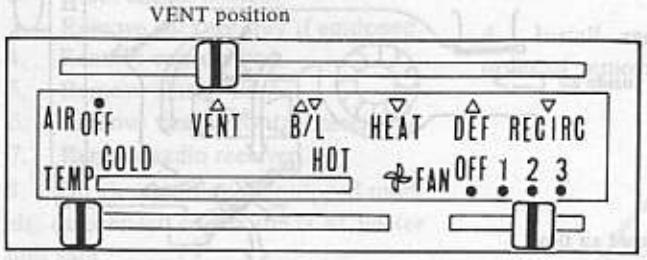


BE975C

Fig. BE-91 Heater Construction

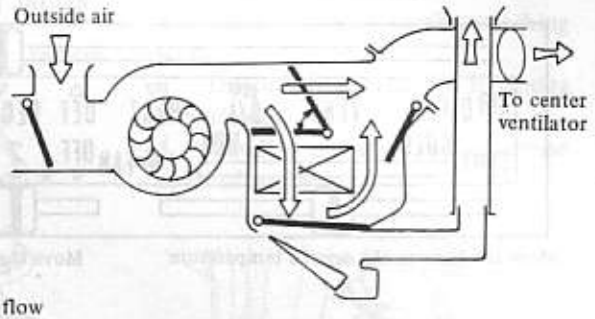
AIR FLOW

Ventilating



Move the lever to the desired temperature

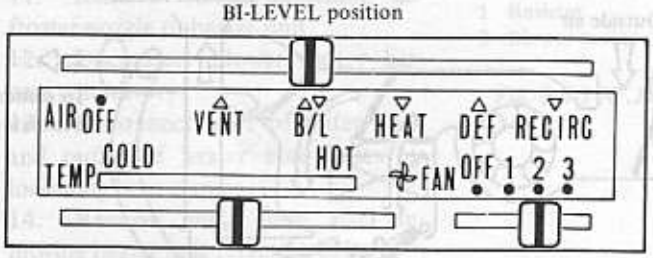
Move the lever to the desired air flow



BE218C

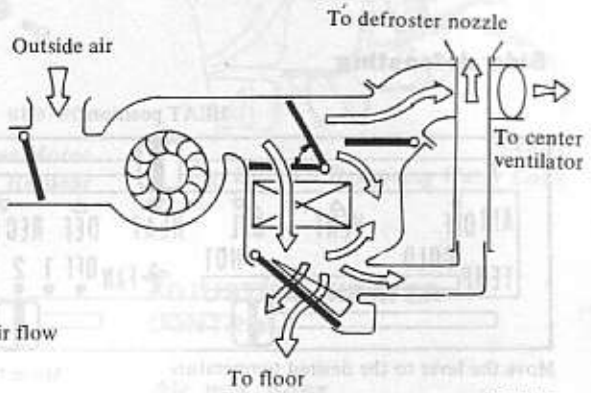
Fig. BE-92 Ventilating Air Flow

Ventilating and heating (Bi-level)



Move the lever to the desired temperature

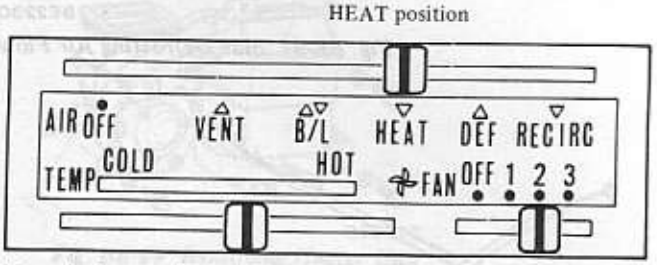
Move the lever to the desired air flow



BE219C

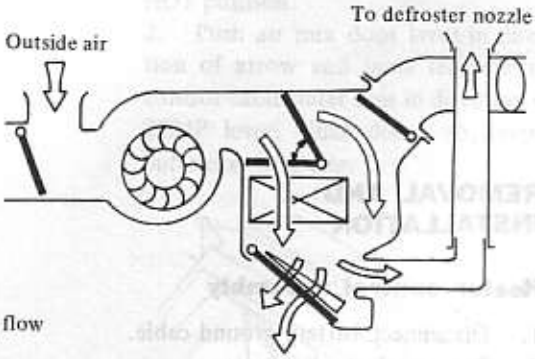
Fig. BE-93 Ventilating and Heating Air Flow

Heating



Move the lever to the desired temperature

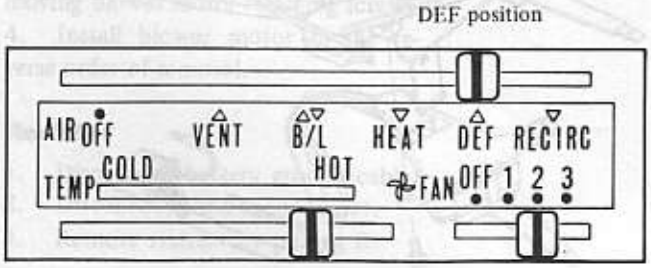
Move the lever to the desired air flow



BE220C

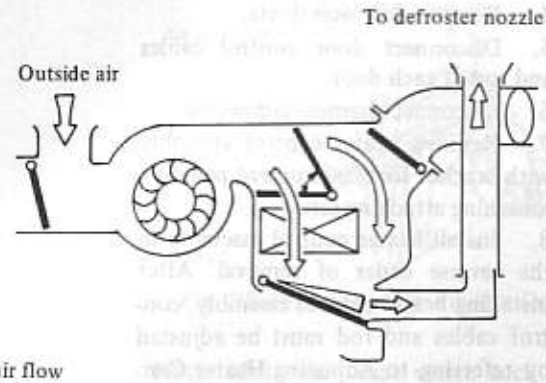
Fig. BE-94 Heating Air Flow

Defrosting



Move the lever to the desired temperature

Move the lever to the desired air flow



BE221C

Fig. BE-95 Defrosting Air Flow

Recirculating

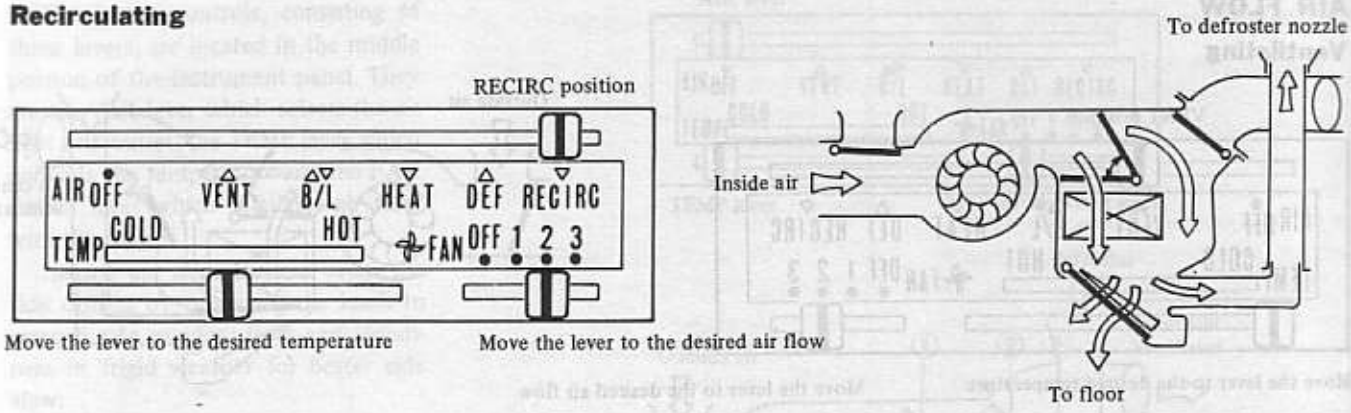


Fig. BE-96 Recirculating Air Flow

Side defrosting

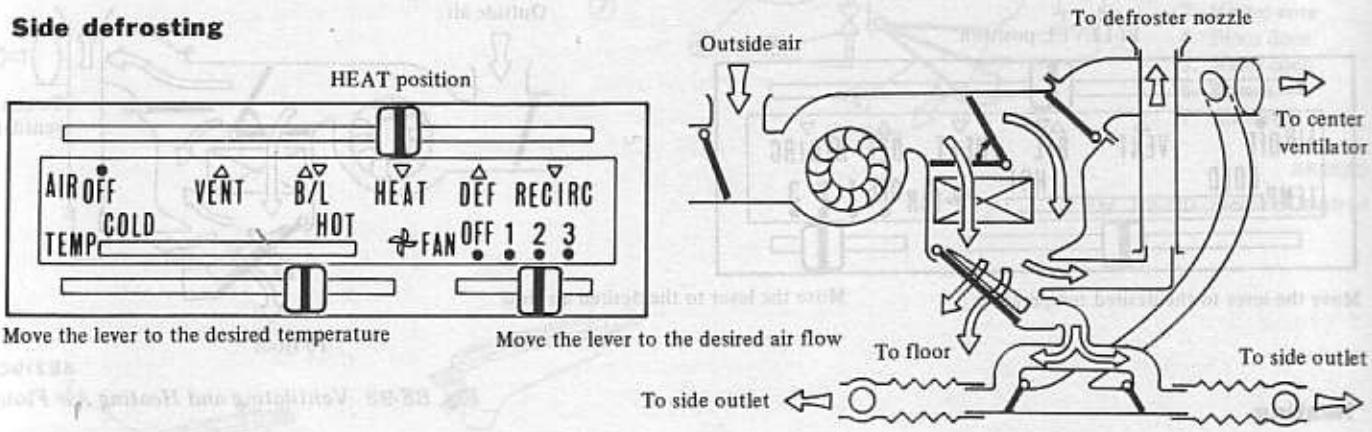


Fig. BE-97 Side Defrosting Air Flow

REMOVAL AND INSTALLATION

Heater control assembly

1. Disconnect battery ground cable.
2. Remove cluster lid A.
3. Remove side defroster center duct.
4. Remove defroster ducts.
5. Disconnect door control cables and rod at each door.
6. Disconnect harness connector.
7. Remove heater control assembly with bracket from instrument panel by loosening attaching screw.
8. Install heater control assembly in the reverse order of removal. After installing heater control assembly, control cables and rod must be adjusted by referring to Adjusting Heater Control.

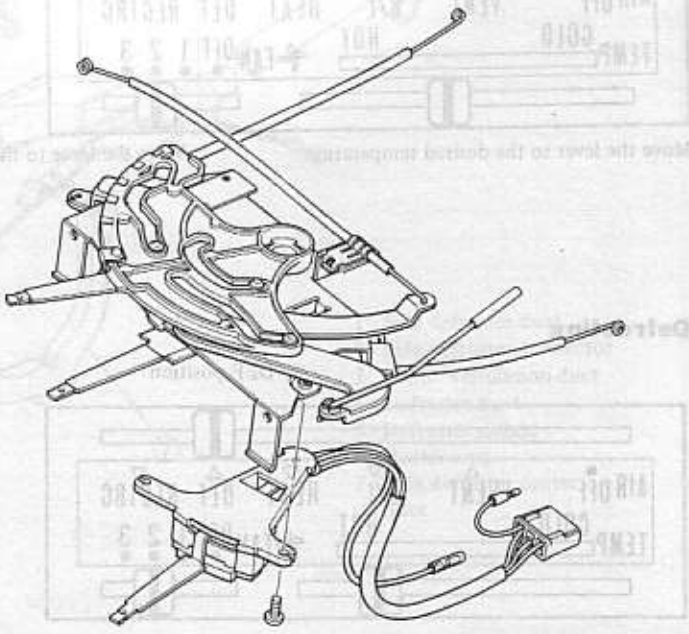
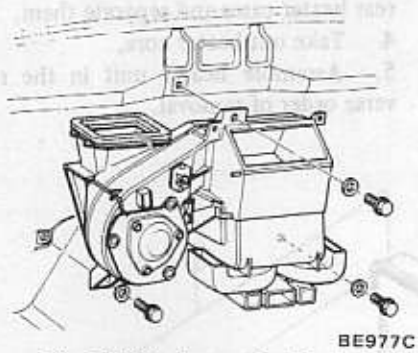


Fig. BE-98 Heater Control Assembly

Heater unit

1. Disconnect battery ground cable.
2. Drain engine coolant.
3. Remove package tray if equipped.
4. Remove console box.
5. Remove cluster lid A.
6. Remove heater control assembly.
7. Remove radio receiver.
8. On air conditioner equipped models, disconnect cooler ducts at heater unit side.
9. Disconnect side defroster connectors by disconnecting side defroster control cable and rod at side defroster connector.
10. Remove center ventilator duct.
11. Remove screws attaching defroster nozzle to heater unit.
12. Disconnect blower motor harness connector.
13. Disconnect inlet of water cock and outlet of heater core hoses by loosening hose clamps.
14. Remove heater unit after removing heater unit retaining bolts.
15. Install heater unit in the reverse order of removal.



BE977C

Fig. BE-99 Removing Heater Unit

Blower motor

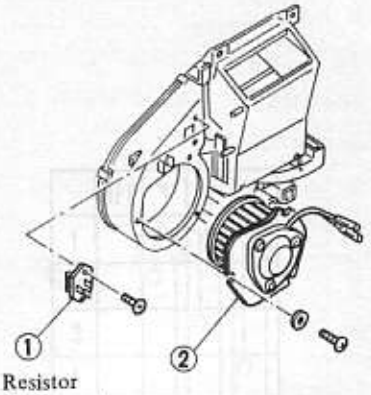
1. Disconnect battery ground cable.
2. Disconnect blower motor harness connector.
3. Remove blower motor after removing blower motor retaining screws.
4. Install blower motor in the reverse order of removal.

Resistor

1. Disconnect battery ground cable.
2. Disconnect harness connector.
3. Remove resistor by pulling it.

Note: Resistor can be removed easily by prying from above and below with a flat-blade screwdriver with resistor slightly raised from heater unit.

4. Install resistor in the reverse order of removal.



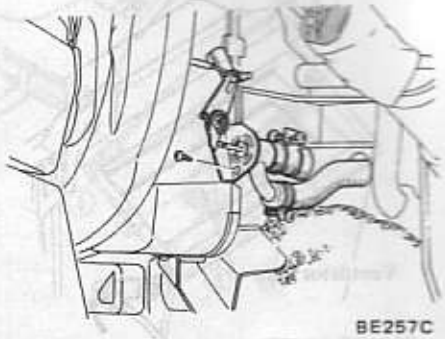
1 Resistor
2 Blower motor

BE978C

Fig. BE-100 Removing Blower Motor and Resistor

Water cock

1. Drain engine coolant.
2. Remove water cock attaching screw.
3. Disconnect hoses by loosening hose clamps.
4. Install water cock in the reverse order of removal.



BE257C

Fig. BE-101 Removing Water Cock

ADJUSTING HEATER CONTROL

Air mix door

1. Set TEMP lever at maximum HOT position.
2. Push air mix door lever in direction of arrow and press temperature control cable outer case in direction of TEMP lever. While doing, so, secure outer case with clip.

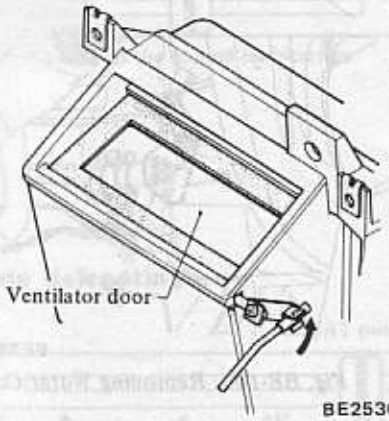
BE252C

Fig. BE-102 Adjusting Air Mix Door

Note: Make sure that water cock is fully closed when TEMP lever is in maximum COLD position.

Ventilation door

1. Set AIR lever at RECIRC position.
2. Push ventilation door relay lever in direction of arrow (to shut out air flow to center outlet) and press ventilation door control rod into relay lever clamp.



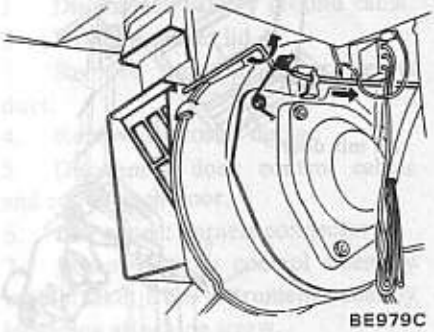
BE253C

Fig. BE-103 Adjusting Ventilation Door

Note: Make sure that ventilation door is fully open when AIR lever is in VENT position.

Air intake door

1. Set AIR lever at OFF position.
2. Push air intake door lever in direction of arrow (to shut out outside air flow) and press air intake door control cable outer case in direction of AIR lever. While doing so, secure outer case with clip.



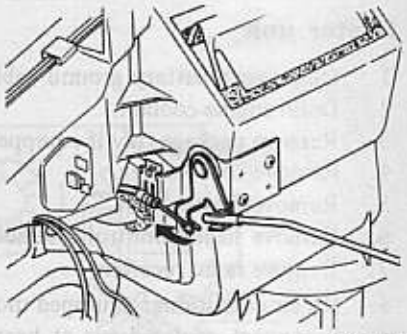
BE979C

Fig. BE-104 Adjusting Air Intake Door

Note: Make sure that air intake door is fully open (outside air can flow into air intake case) when AIR lever is in VENT position.

Floor door

1. Set AIR lever at OFF position.
2. Push relay lever in direction of arrow (to shut out air flow to floor and defroster) and press floor door control rod into relay lever clamp.



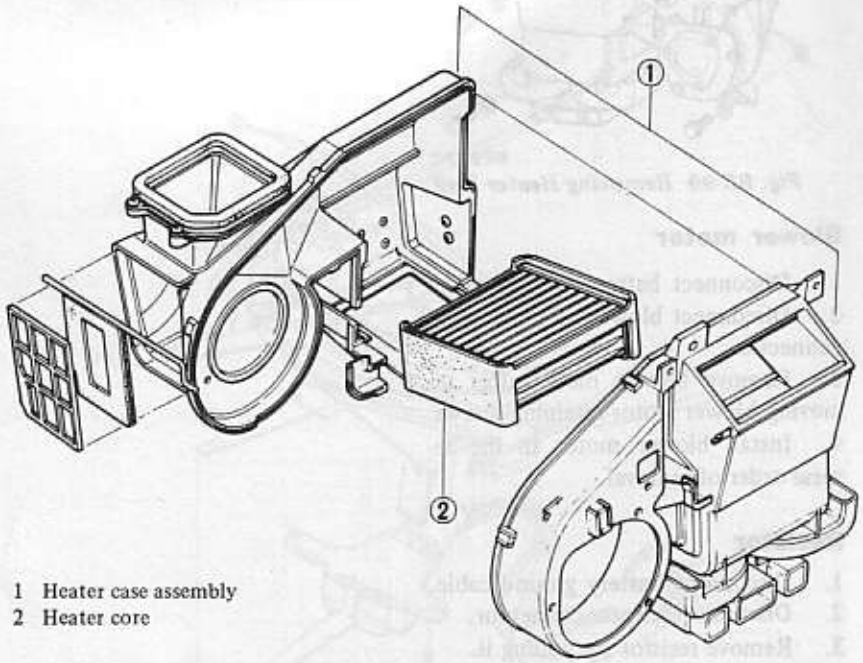
BE265C

Fig. BE-105 Adjusting Floor Door

Note: Make sure that floor door is fully open (air flows to floor and defroster) when AIR lever is in HEAT position.

DISASSEMBLY AND ASSEMBLY OF HEATER UNIT

1. Remove heater unit.
2. Disconnect heater core inlet and outlet hoses by loosening hose clamps.
3. Remove clips securing front and rear heater cases and separate them.
4. Take out heater core.
5. Assemble heater unit in the reverse order of removal.



1 Heater case assembly
2 Heater core

BE980C

Fig. BE-106 Heater Unit

INSPECTION

Check the following items if blower motor fails to rotate.

Fuse

To check for burned-out fuse, use the same procedure as that for ordinary fuses with a circuit tester or test lamp.

Blower motor power supply

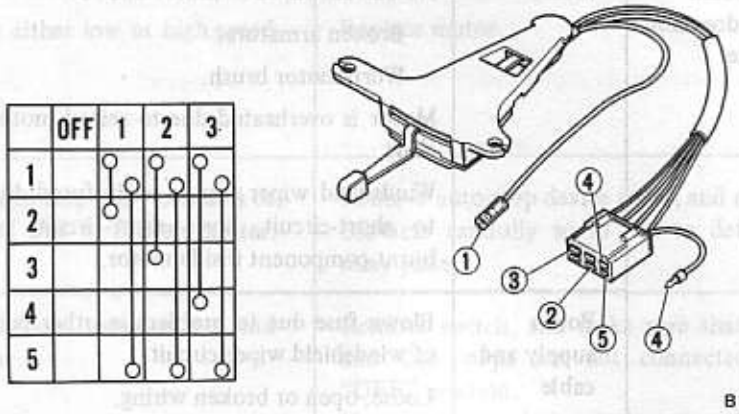
1. Disconnect blower motor harness to connect main harness.
2. Connect one test lamp lead wire to main harness for blower motor and the other to ground.
3. Turn ignition switch to "ACC" position. Test lamp should go on.

Blower motor

1. Disconnect blower motor harness to connect fan switch and connect the harness to ground.
2. Turn ignition switch to "ACC" position. Blower motor should rotate.

Fan switch

Test continuity through fan switch with a test lamp or ohmmeter. See Fig. BE-107.



BE264C

Fig. BE-107 Fan Switch

Resistor

There should exist continuity between terminals of resistors, although values of resistors are different.

TROUBLE DIAGNOSES AND CORRECTIONS

WINDSHIELD WIPER AND WASHER SYSTEM

Condition	Probable cause		Corrective action
Windshield wiper does not operate.	Motor	No current flows to motor due to:	
		Broken armature.	Replace motor.
		Worn motor brush.	Replace motor.
		Motor is overheated due to seized motor shaft.	Replace motor.
		Windshield wiper fuse is easily fused due to short-circuit, layer short-circuit, or burnt component inside motor.	Replace motor or repair short-circuited part.
	Power supply and cable	Blown fuse due to problem in other part of windshield wiper circuit.	Check other part for operation, and correct problem.
		Loose, open or broken wiring.	Check wiring near motor and connector for proper connection. Correct if necessary.
		Erroneous wiring.	Check each wire for color code, and correct if necessary.
		Improper grounding.	Correct.
	Switch	Improper switch contact.	Correct.
	Link	Foreign material interrupts movement of link mechanism.	Correct.
		Disconnected link rod.	Correct.
		Seized or rusted arm shaft.	Lubricate or replace arm shaft.
Windshield wiper operating speed is too slow.	Motor	With arm raised, excessive current still flows due to rare short-circuit of motor armature.	Replace motor.
		Windshield wiper stops when lightly held with hand due to worn motor brush.	Replace motor.
		With arm raised, excessive current still flows (3 to 5A) due to seized motor shaft.	Replace motor or lubricate bearing with engine oil.
	Power supply and cable	Low source voltage.	Measure voltage, check other electrical parts for operation, and take corrective action for power supply if necessary.
	Link	Humming occurs on motor in arm operating cycle due to seized arm shaft.	Lubricate or replace.
	Switch	Improper switch contact.	Conduct continuity test, and replace if necessary.

Condition		Probable cause		Corrective action
		Windshield wiper blade	Windshield wiper blade sticks on windshield glass.	Raise arm and operate windshield wiper without applying load. Clean windshield glass and/or replace wiper blade.
Windshield wiper speed cannot be adjusted correctly.		Motor	Motor brush for either low or high speed is worn.	Replace motor.
Windshield wiper does not stop correctly.	Stops anywhere.	Motor	Contaminated auto-stop relay contacts or improper contact due to foreign matter.	Remove auto-stop device cover, and clean contacts carefully so as not to deform relay plate.
		Cable and switch	Improper connection between 1st and 2nd switch steps.	Remove switch, and make sure that 1st and 2nd steps are not connected at "OFF" position. If connected, replace switch.
	Does not stop.	Motor	Incomplete auto-stop operation (Contact is not interrupted.)	Remove auto-stop device cover, and correct relay plate bending.

HORN

Condition	Probable cause	Corrective action
Horn does not operate.	Discharged battery. (Measure specific gravity of electrolyte.)	Recharge.
	Burnt fuse.	Correct cause and replace fuse.
	Faulty horn button contact. [Horn sounds when horn relay terminal ② is grounded.]	Repair horn button.
	Faulty horn relay. [Horn sounds when ① and ③ horn relay terminals are connected with a test lead.]	Replace.
	Faulty horn or loose horn terminal connection.	Correct horn terminal connection or replace horn.
Horn sounds continuously.	Short-circuited horn button and/or horn button lead wire. [When lead wire is disconnected from horn relay terminal ②, horn stops sounding.]	Repair horn button or its wiring.
	Faulty horn relay.	Replace.
Reduced volume and/or tone quality.	Loose or poor connector contact. (Fuse, relay, horn and/or horn button.)	Repair.
	Faulty horn.	Replace.

RADIO

Noise prevention chart

Position car in an open area away from steel buildings, run engine, extend antenna to its maximum length, set volume control to maximum and set dial at a median point where no broadcasting wave is received.

Condition	Probable cause	Corrective action
Ignition system		
Noise occurs when engine is operated.	High tension cable Ignition coil	Install new high tension cable. Install a 0.5μF capacitor to primary side + terminal of ignition coil. **Note: Be careful not to install capacitor to secondary or primary breaker side. This will result in improper engine operation.**
Charging system		
Sound of alternating current present.	Alternator	Install a 0.5μF capacitor to charging terminal A. **Note: Do not use a larger capacitor. If capacitor is installed to terminal F, alternator coil will be damaged.**
When accelerator pedal is depressed or released, noise occurs.	Voltage regulator	Install a 0.5μF capacitor to "IGN" terminal of voltage regulator.

HEATER

Condition	Probable cause	Corrective action
Inadequate heating performance.		
No heated air discharged.	Cooling water temperature too low.	Check thermostat. Replace as necessary.
	Heater core plugged.	Clean.
	Insufficient cooling water level.	Refill.
	Malfunctioning water cock.	Adjust control cable.
	Malfunctioning air mix door.	Adjust control cable.
Inadequate air flow to floor.	Blower motor speed too low.	Check motor terminal voltage. Repair poor connection and discontinuity. Replace motor if necessary.
	Malfunctioning floor door.	Adjust control cable.
Inadequate defrosting performance.		
Cold air discharged.	Refer to "No heated air discharged".	
Inadequate air flow to defroster.	Malfunctioning floor door (or faulty seal).	Adjust control cable.
	Defroster nozzle plugged.	Clean.
	Leak at defroster duct-to-nozzle connection.	Correct.
Blower motor does not run.	Fuse melted.	Replace.
	Motor wire connector disconnected.	Correct.
	Faulty switch.	Replace.
	Motor inoperative.	Check and correct.
Control lever drags.	Inner wire rubbing against outer case end.	Adjust control cable.
	Control cable bent excessively.	Correct.
	Malfunctioning doors, door levers, etc.	Check and correct.
Noise from blower motor.	Loose bolt in blower motor.	Check and tighten loose bolts.