ON-VEHICLE SERVICE

Wiper and Washer Switch

Inspect (Figure 147)

1. Check the switch operates smoothly.
2. Inspect the continuity by following table.

SW position \ Terminal No.	①	④	②	⑤	⑥	③	⑦
OFF		○		○	○		
INT	○	○	○	○			
LOW		○			○		
HI		○				○	
Washer		○					○

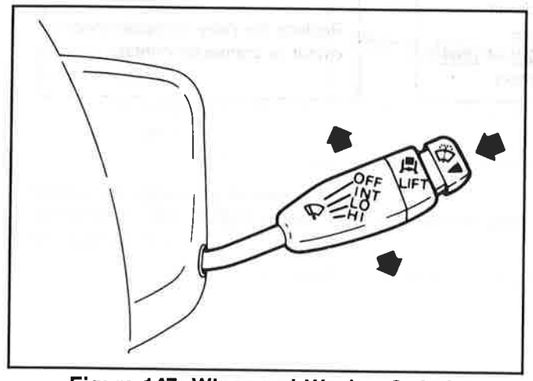


Figure 147. Wiper and Washer Switch

Remove or Disconnect

Refer to "STARTING" of "SYSTEM REPAIR" for combination switch removal procedure.

Install or Connect

Refer to "STARTING" of "SYSTEM REPAIR" for combination switch installation procedure.

Wiper Motor and Linkage

Inspect (Figure 148)

Low speed operation

1. Inspect the wiper motor operates at low speed when applying the battery voltage (+) to the connector terminal ③ and (−) to the terminal ⑤.

High speed operation

1. Inspect the wiper motor operates at high speed when applying the battery voltage (+) to the connector terminal ③ and (−) to the terminal ④.

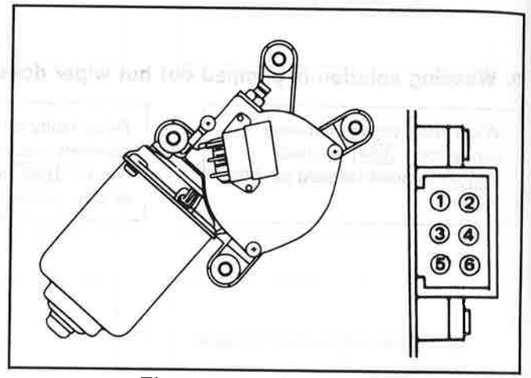
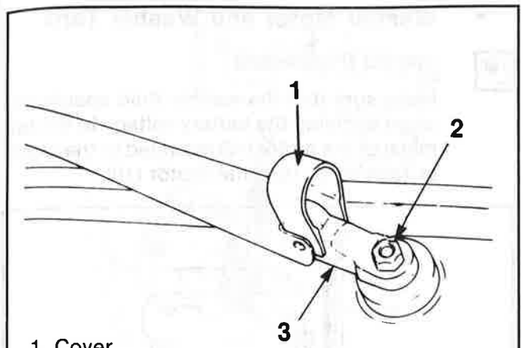


Figure 148. Wiper Motor

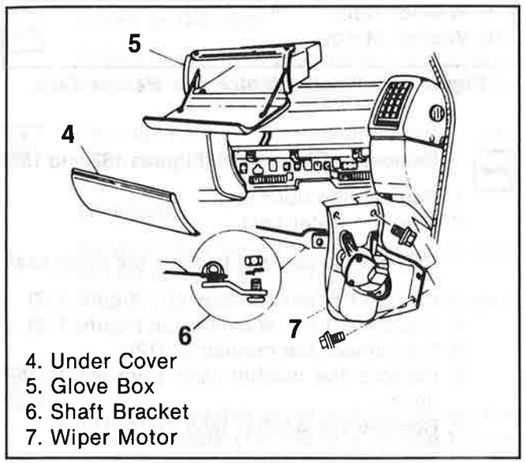
Remove or Disconnect (Figures 149, 150 and 151)

1. Light up a cover (1) (figure 149).
2. Loosen the lock nut (2).
3. Remove the wiper arm (3).
4. Remove the dust cover and seal.
5. Remove the under cover center (4) (figure 150).
6. Remove the glove box (5).
7. Remove the shaft bracket (6).
8. Remove the wiper motor (7).
9. Remove the link assembly (figure 151).



1. Cover
2. Lock Nut
3. Wiper Arm

Figure 149. Wiper Motor and Linkage Removal 1



4. Under Cover
5. Glove Box
6. Shaft Bracket
7. Wiper Motor

Figure 150. Wiper Motor and Linkage Removal 2

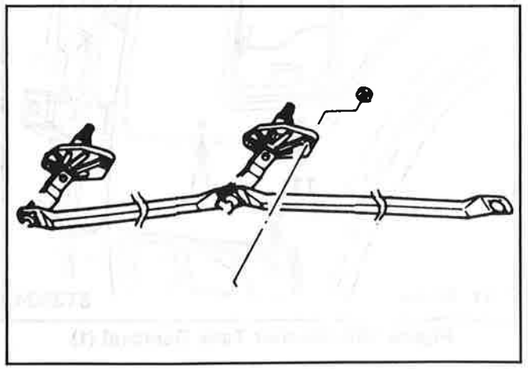


Figure 151. Wiper Motor and Linkage Removal 3

Install or Connect

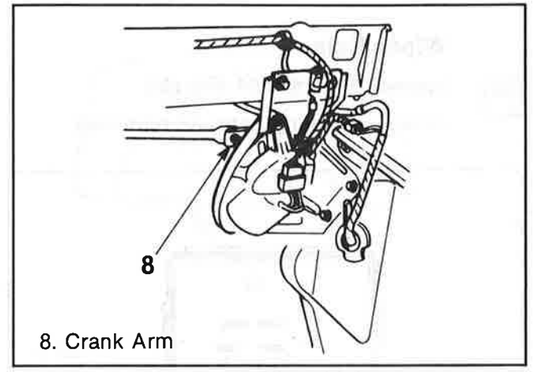
Follow the removal procedure in the reverse order noting the following points.

Wiper Linkage (Figure 151)

Take care not to scratch the painted surfaces of the body when installing the wiper linkage to the body.
In case crank arm (8) of wiper motor is removed, confirm the position of auto stop prior to reinstall the crank arm to the wiper motor.

Tighten

- Crank arm nut to 14 N•m (10 ft.lb.).



8. Crank Arm

Figure 151. Wiper Linkage

Wiper Blade Position (Figure 152)

Confirm the auto stop position of wiper motor prior to the installment of the wiper blade and arm.
The distance between the vent cowl cover rubber seal ① and the wiper blade edge ② is about 40 mm (1.77 in).

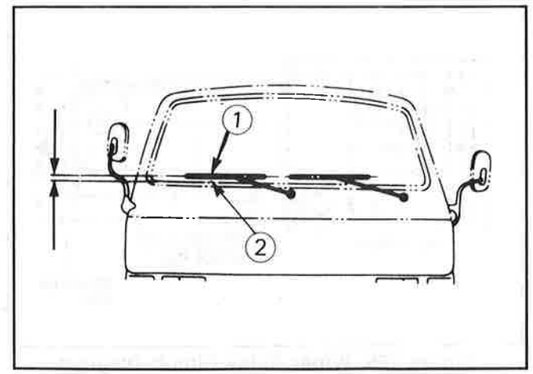


Figure 152. Wiper Blade Position

Wiper Arm (Figure 149)

Tighten the wiper arm (2) nut to the specified torque.

Tighten

- Wiper arm nut to 17 N•m (12 ft.lb.).

Pay close attention to the important points mentioned in the following paragraphs.

Connector

Be absolutely sure that the wiper motor connector is securely connected.
This will prevent poor contact and an open circuit.

Wiper Relay

Inspect (Figures 154 and 155)

Check continuity between terminals.

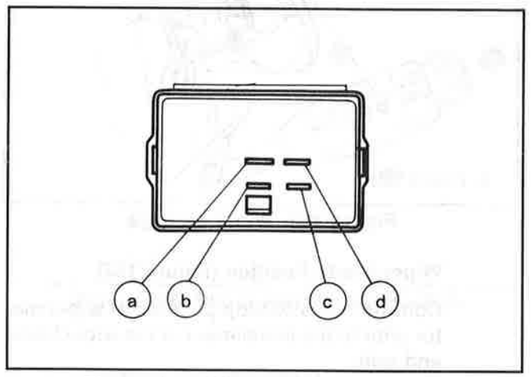


Figure 154. Wiper Relay Connector

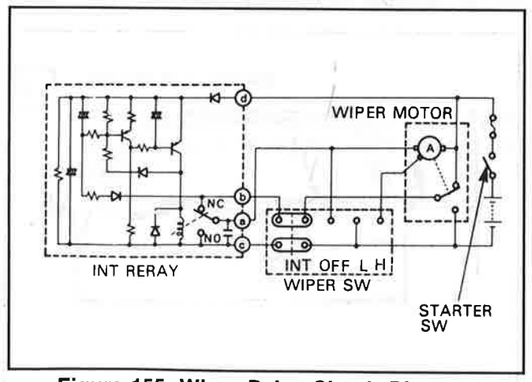
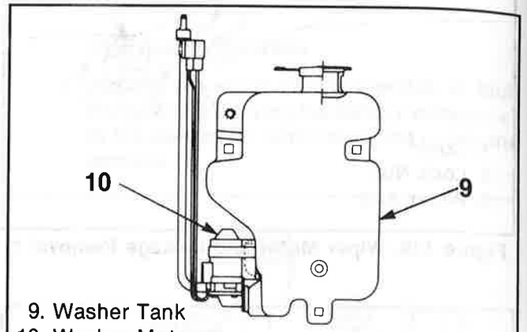


Figure 155. Wiper Relay Circuit Diagram

Washer Motor and Washer Tank

Inspect (Figure 156)

Make sure that the washer fluid spouts out when applying the battery voltage to the terminal of the motor (10) mounted to the washer tank (9) to turn the motor (10).



9. Washer Tank
10. Washer Motor

Figure 156. Washer Motor and Washer Tank

Remove or Disconnect (Figures 157 and 158)

1. Remove the door pad.
2. Peel the water seal.

NOTE: Take care not to break the water seal.

3. Loosen the tank screws (11) (figure 157).
4. Disconnect the washer tube (figure 158).
5. Disconnect the connector (12).
6. Remove the washer tank from inside the door.
7. Remove the washer tank motor (13).

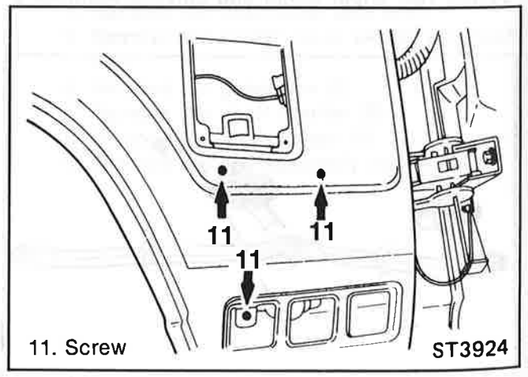
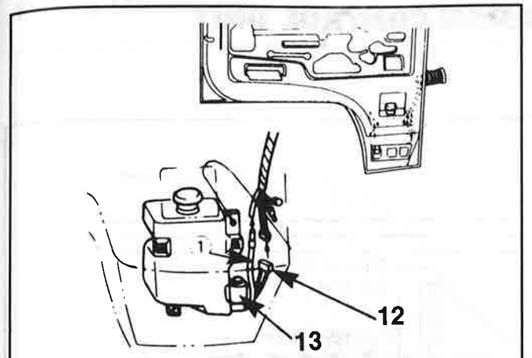


Figure 157. Washer Tank Removal (1)



12. Connector
13. Washer Motor

Figure 158. Washer Tank Removal (2)

Install or Connect

Follow the removal procedure in the reverse order to install the washer tank and motor.

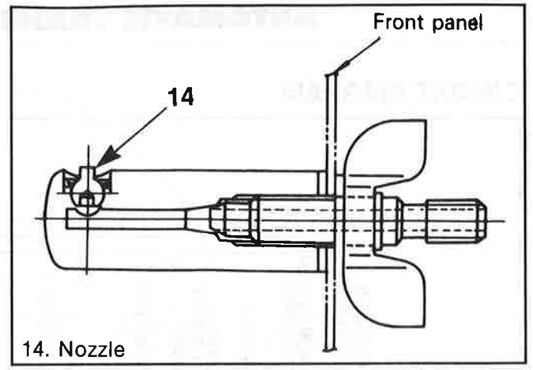
Pay close attention to the important points mentioned in the following paragraphs.

Connector

Be absolutely sure that the wiper motor connector is securely connected.
This will prevent poor contact and an open circuit.

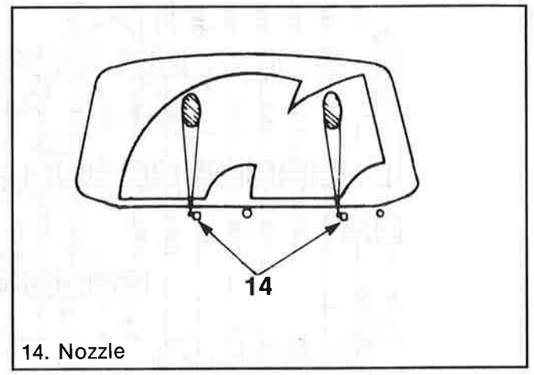
Adjust

1. Adjust the washer spray angle by turning the washer nozzle (14) using a needle (figure 159).
2. Washer Nozzle (14) spraying point is shown as illustrated (figure 160).



14. Nozzle

Figure 159. Windshield Washer Spray 1



14. Nozzle

Figure 160. Windshield Washer Spray 2

AUTOMATIC TRANSMISSION CONTROL UNIT

CIRCUIT DIAGRAM

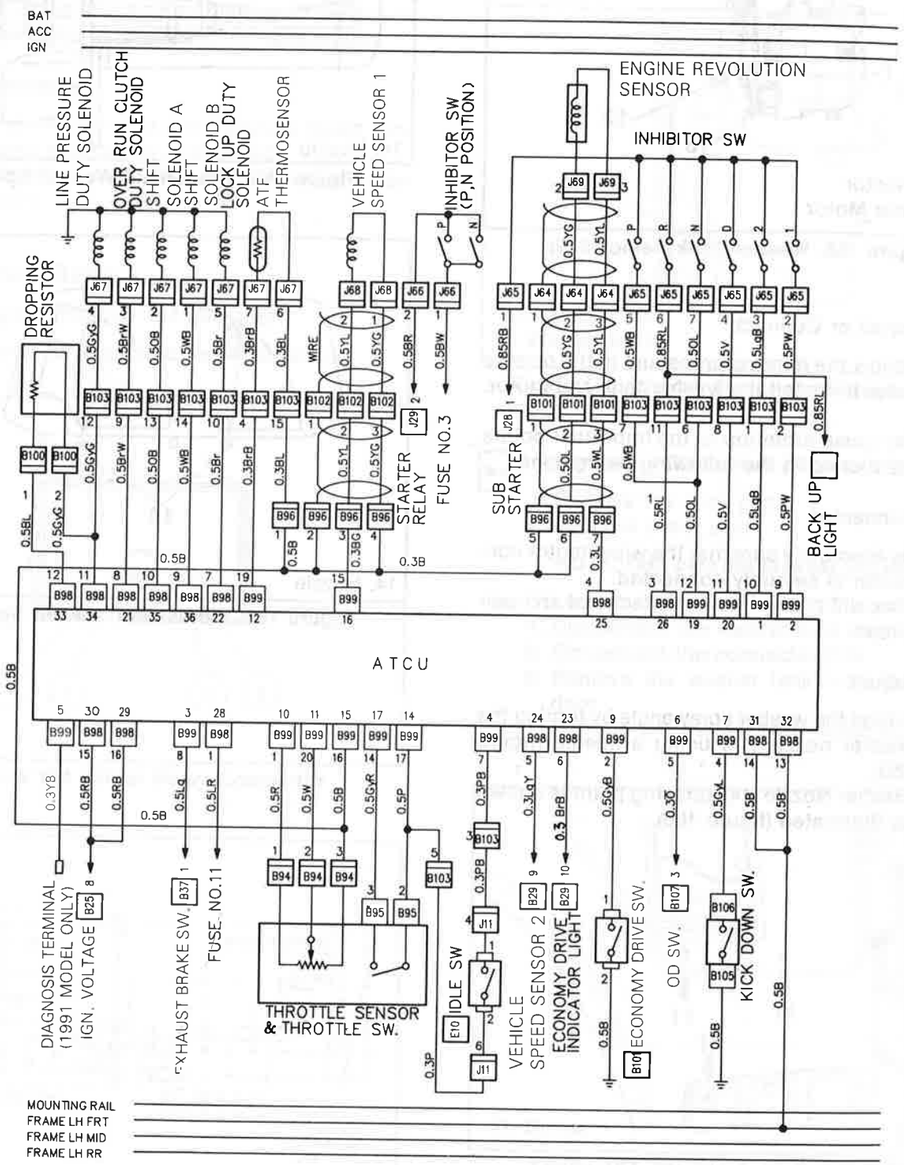


Figure 161. Circuit Diagram

PARTS LOCATION

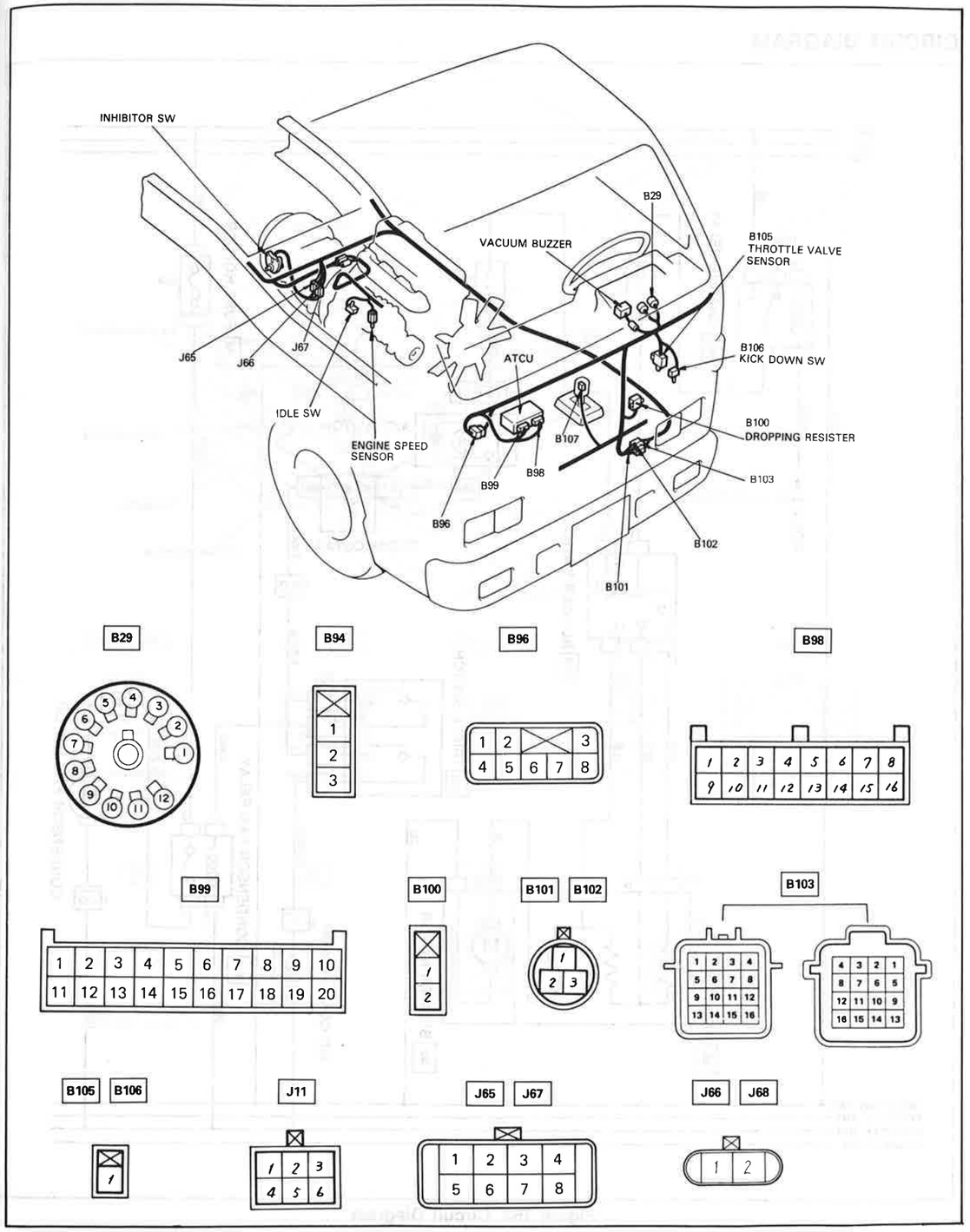


Figure 162. Parts Location

AIR CONDITIONER

CIRCUIT DIAGRAM

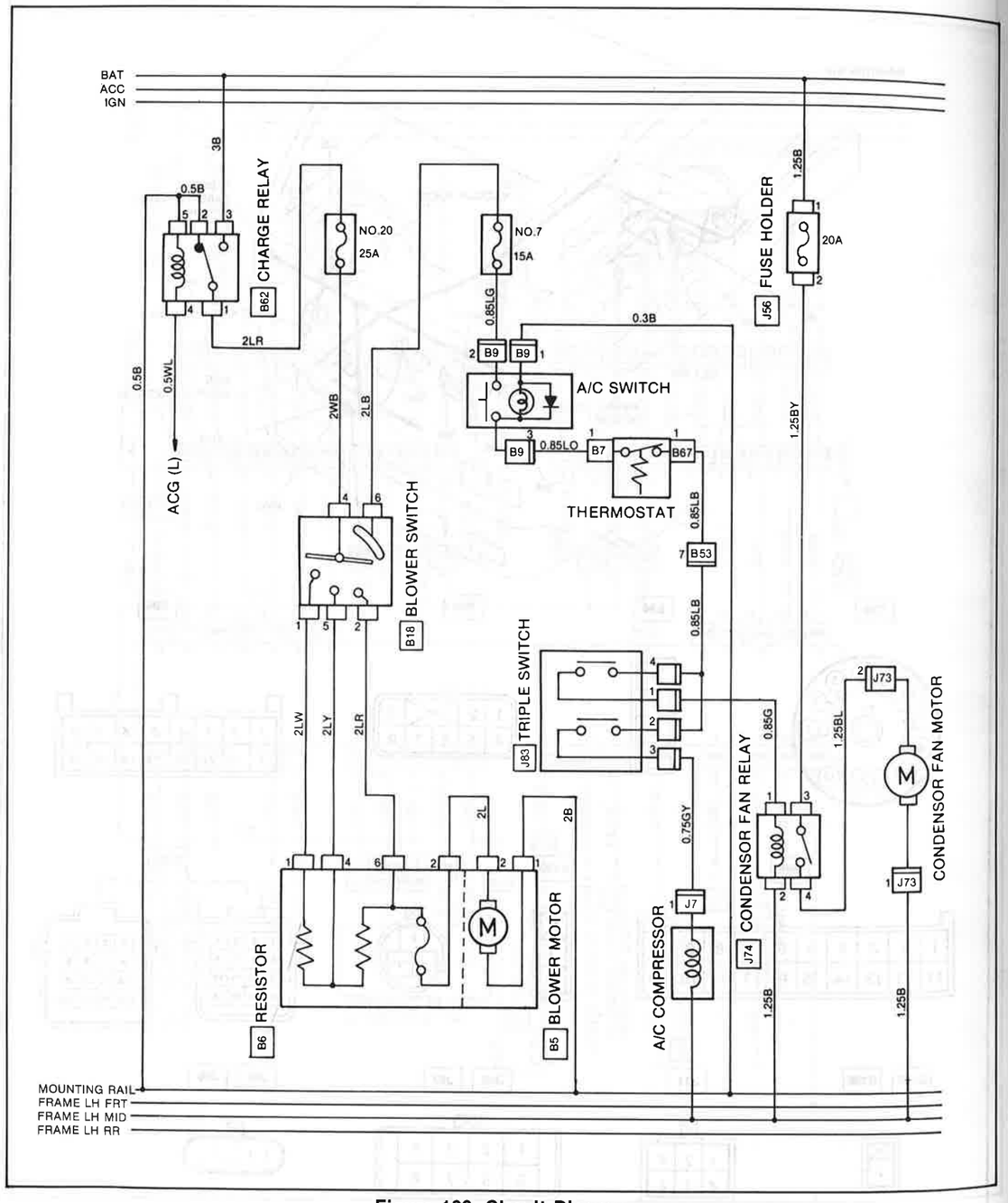
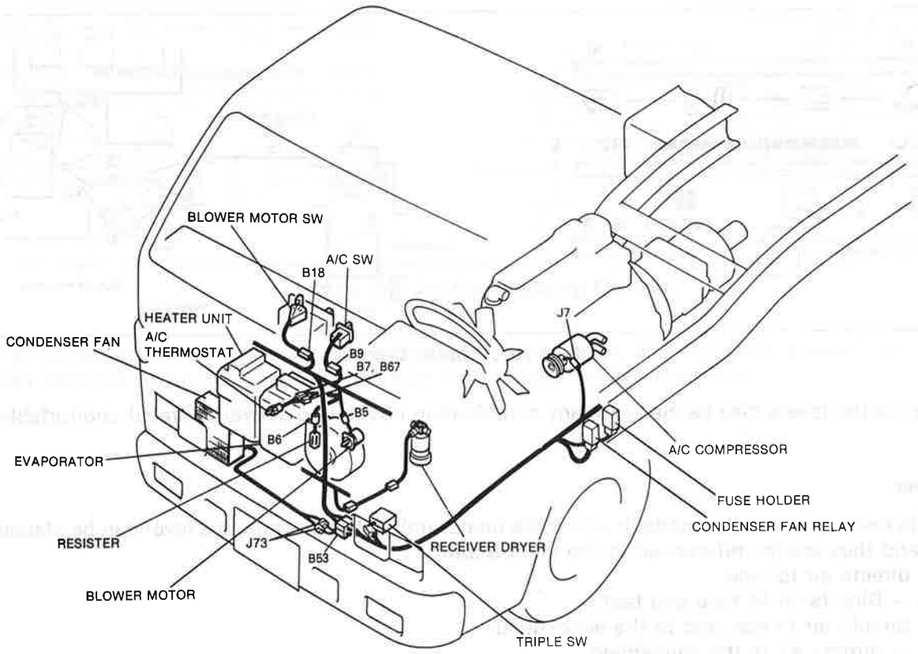


Figure 163. Circuit Diagram

PARTS LOCATION



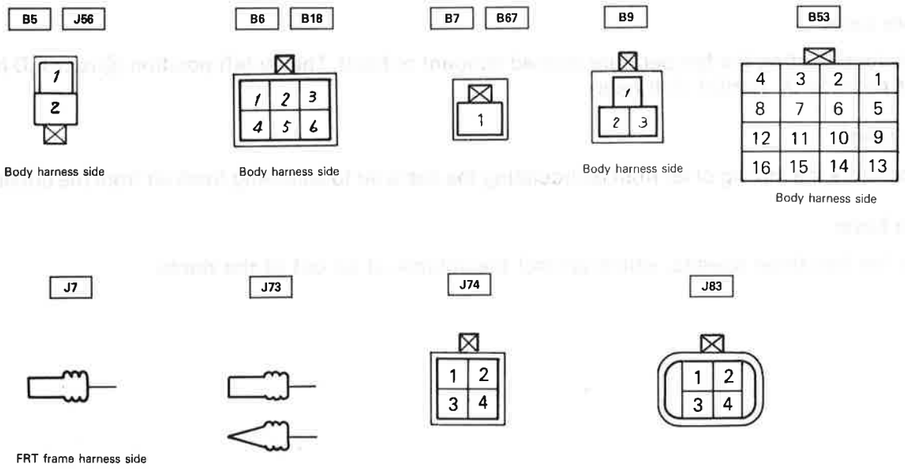


Figure 164. Parts Location

FUNCTION

Heating

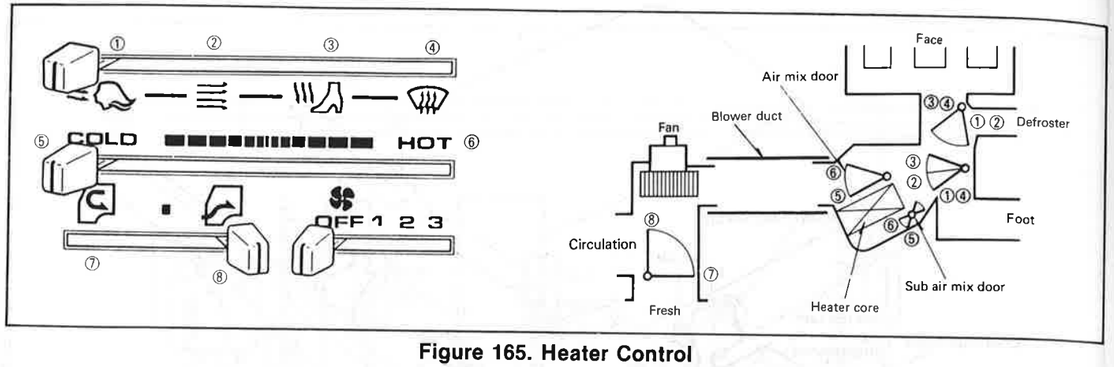


Figure 165. Heater Control

The heater control levers may be placed in any combination position to deliver the most comfortable driving climate.

Select Lever

This lever is used to select the mode in which the heater unit is to perform. This lever can be placed in four positions and they are (as referenced in the illustration):
① Vent — directs air to face.
② Bi-level — Directs air to face and feet.
③ Heat — directs air to feet and to the windshield.
④ Defrost — directs air to the windshield.

Temperature Lever

This lever is for selecting the temperature wanted (amount of heat). The far-left position ⑤ is COLD (no heat); the farright position ⑥ is HOT (full heat).

Air Source Lever

This lever controls the mixing of air from recirculating the cab's air to admitting fresh air from the outside ⑦, ⑧.

Blower Fan Lever

The blower fan has three speeds, which control the volume of air out of the ducts.

Air Conditioning

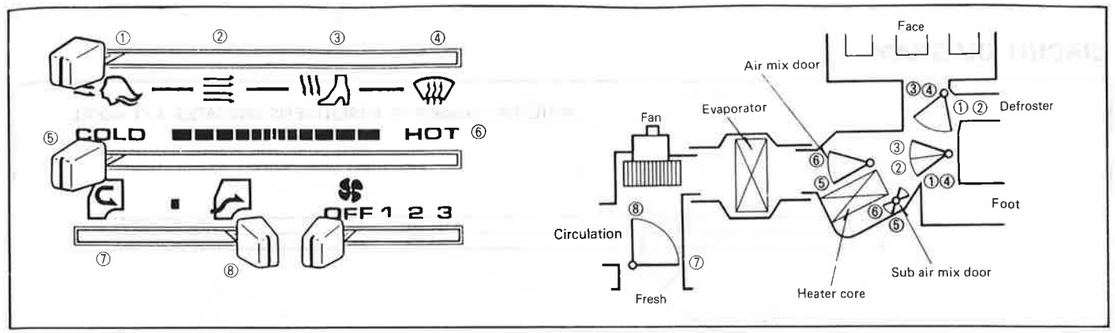


Figure 166. Air Conditioning Control

The air conditioning system consists of a compressor, a codenser, an evaporator, a receiver/dryer and the necessary controls and safety devices to ensure its safe and reliable operation.

FUEL HEATER

CIRCUIT DIAGRAM

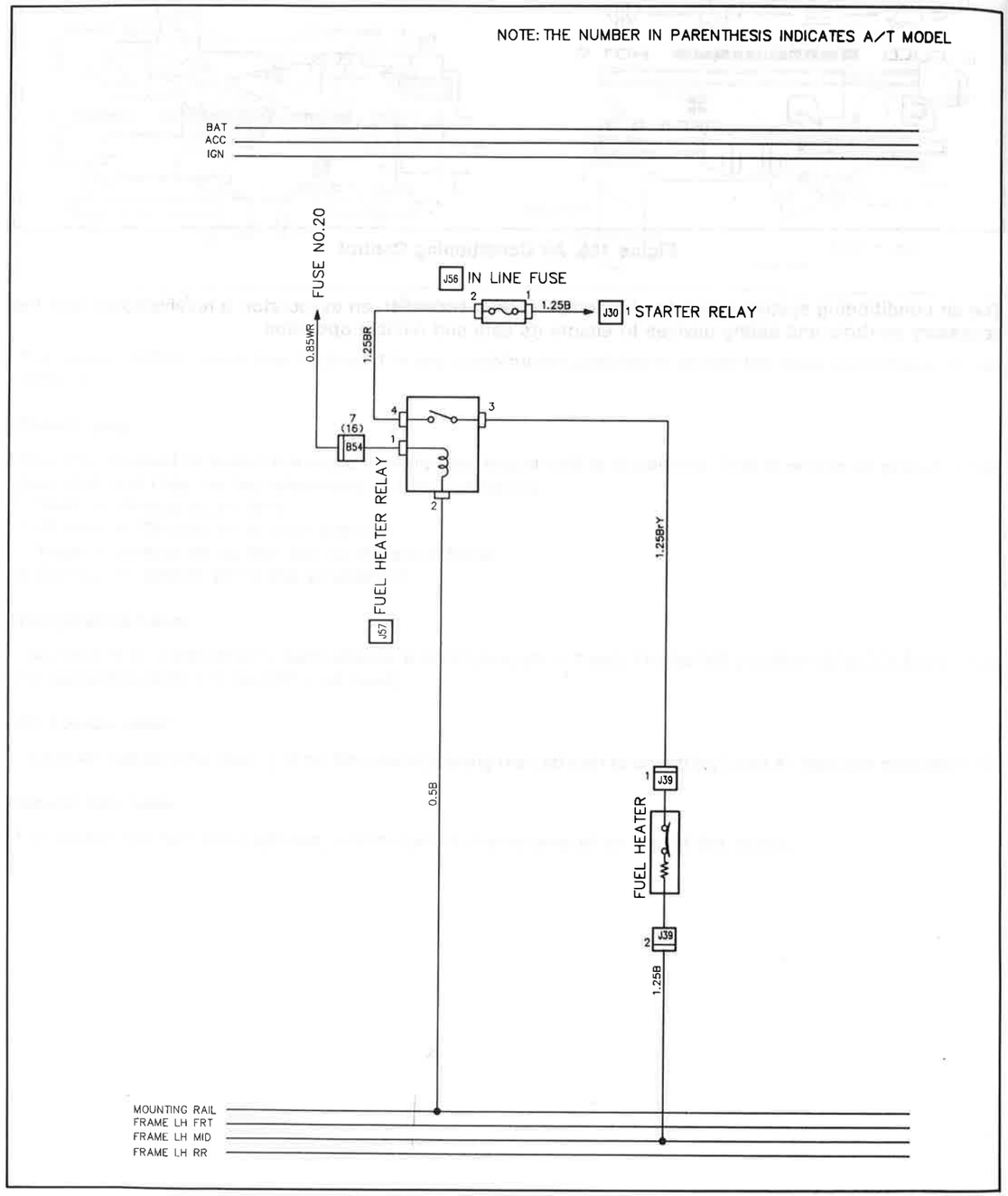


Figure 167. Circuit Diagram

PARTS LOCATION

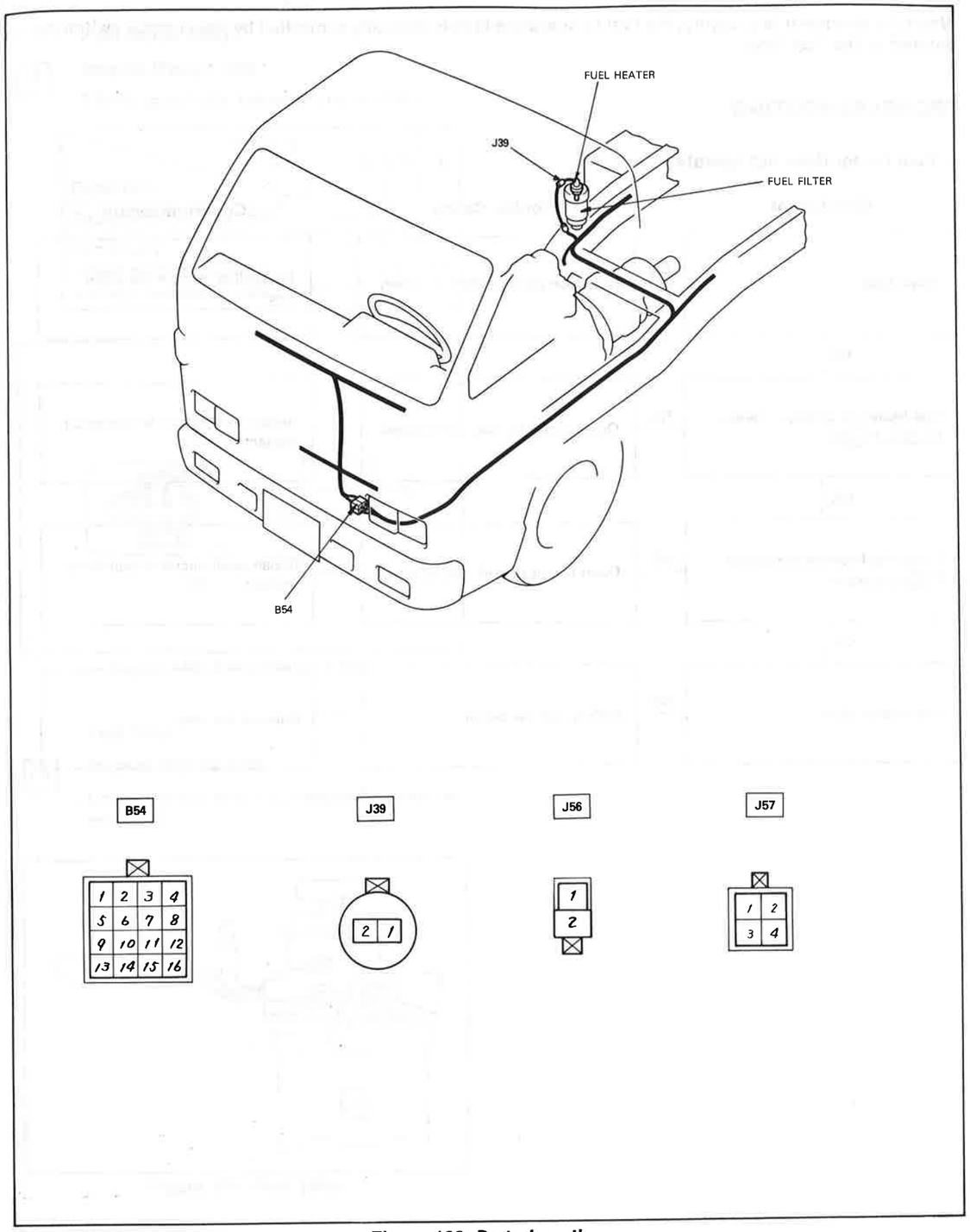


Figure 168. Parts Location

FUNCTION

When the alternator is charging, the fuel temperature is automatically controlled by the bi-metal switch incorporated in the fuel filter.

TROUBLESHOOTING

1. Fuel heater does not operate

Checkpoint		Trouble Cause	Countermeasure
Inline fuse	NG	Inline fuse poor contact or blown	Reinstall or replace the inline fuse
OK			
Fuel heater continuity between 1 [J39] -2 [J39]	NG	Open circuit for bad connections	Repair open circuit or connector contact
OK			
Continuity between connector 2 [J39] -ground	NG	Open circuit or bad connections	Repair open circuit or connector contact
OK			
Fuel heater relay	NG	Defect internal circuit	Replace the relay

ON-VEHICLE SERVICE

Fuel heater relay

Inspect (Figure 169)

Check continuity between the terminal.

Condition \ Terminal No.	①	②	③	④
Resistance approx. 80Ω	○	○		
Continuity when applying battery voltage between ① and ②			○	○

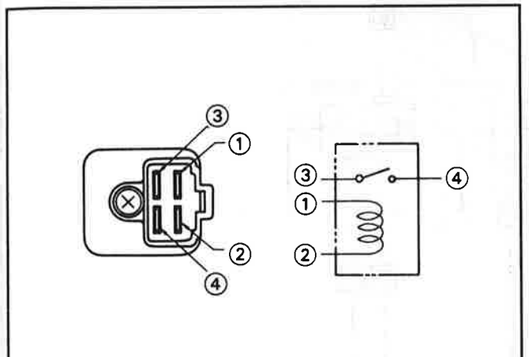


Figure 169. Fuel Heater Relay

Fuel filter

Inspect (Figure 170)

Check the fuel heater continuity between terminals ①.

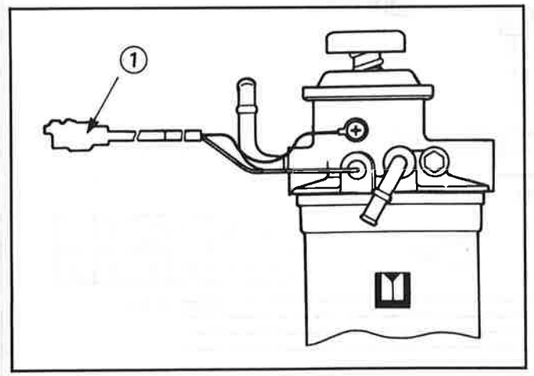


Figure 170. Fuel Filter

AUDIO

CIRCUIT DIAGRAM

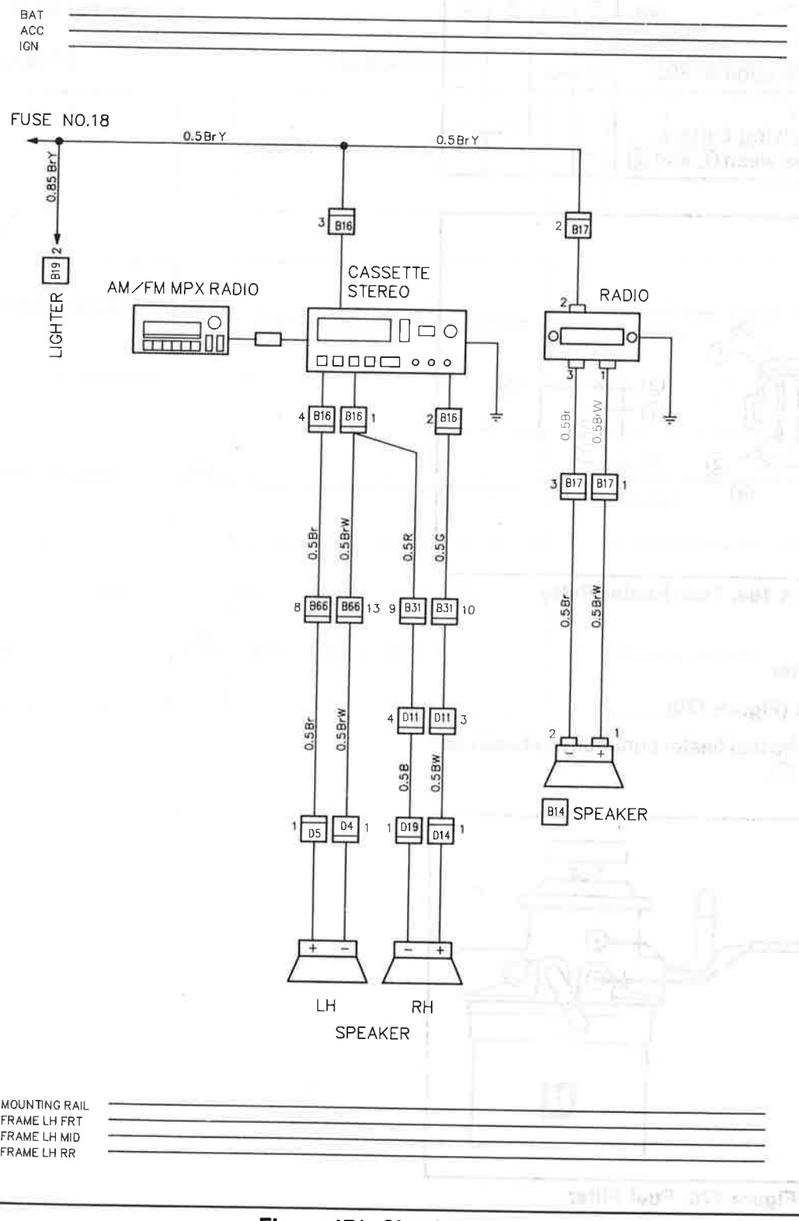
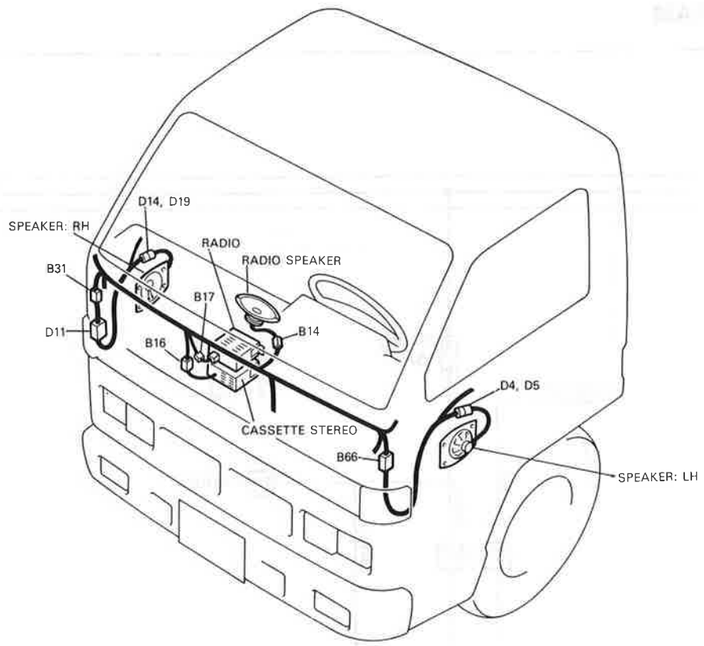


Figure 171. Circuit Diagram

PARTS LOCATION



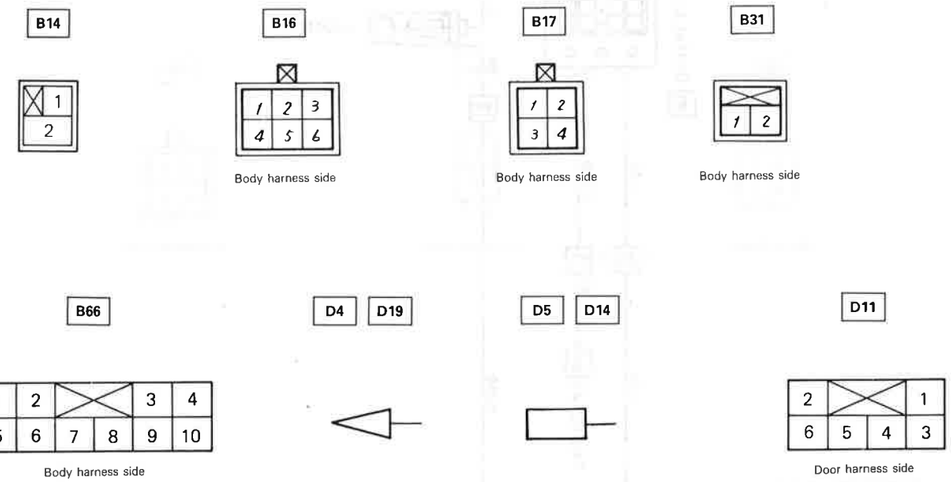


Figure 172. Parts Location

LIGHTER. DIGITAL CLOCK

CIRCUIT DIAGRAM

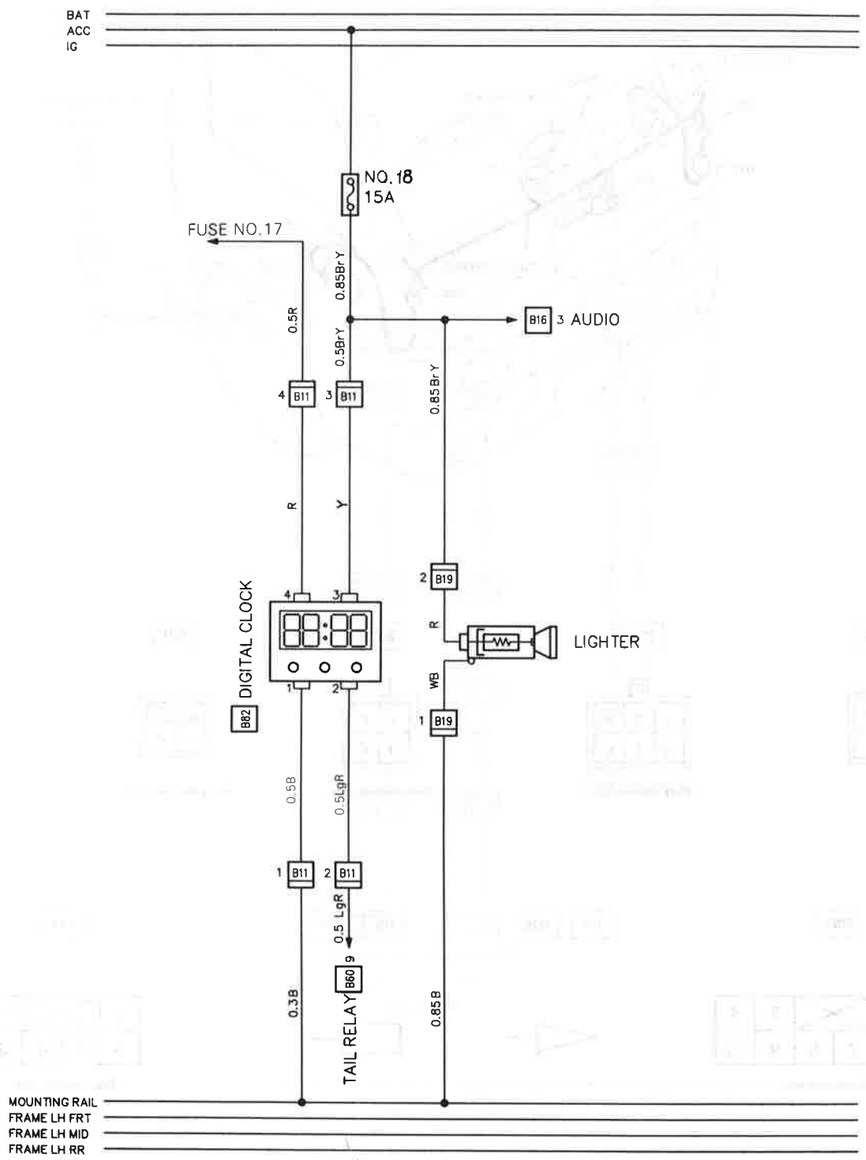
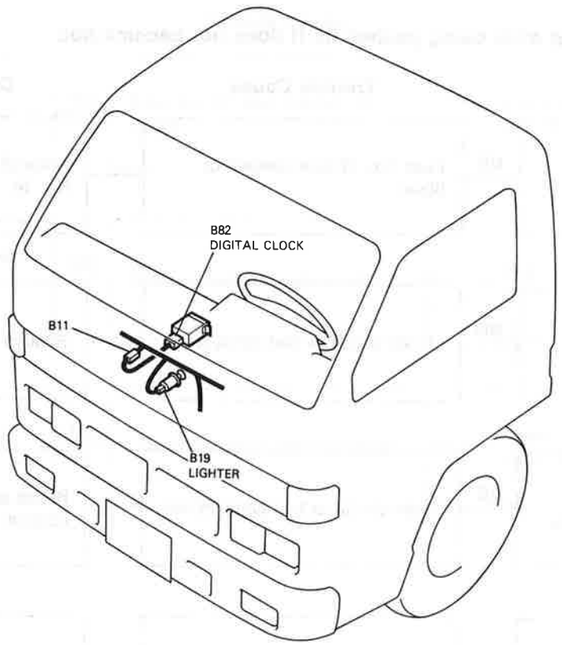


Figure 173. Curcuit Diagram

PARTS LOCATION



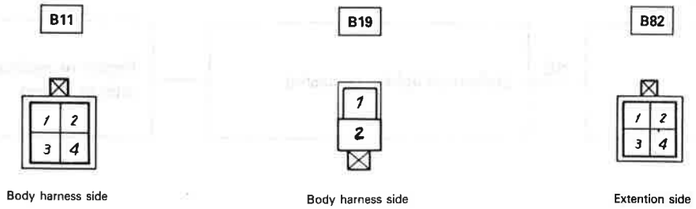


Figure 174. Parts Location

TROUBLESHOOTING

Lighter

1. Lighter does not pop out after being pushed in. It does not become hot.

Checkpoint		Trouble Cause	Countermeasure
Audio system (System should receive power)	NG	Fuse No. 18 poor contact or blown	Reinstall or replace the fuse No. 18
OK ↓			
Lighter continuity between center part and outer area	NG	Open circuit or bad connection	Replace the lighter
OK ↓			
Voltage between connector 2 [B19] - ground at starter sw. is ACC position (Should be 12V present)	NG	Open circuit or bad connections	Repair open circuit or connector contact
OK ↓			
Continuity between connector 1 [B19] - ground	NG	Open circuit or bad connections	Repair open circuit or connector contact

2. Lighter pops out prematurely before becoming hot

Lighter and casing	NG	Deformed lighter or casing	Repair or replace the lighter and/or casing

3. Lighter becomes too hot

Lighter and casing	NG	Deformed lighter and casing	Repair or replace the lighter and/or casing

Digital Clock

1. Digital clock does not operate

Checkpoint		Trouble Cause	Countermeasure
Lighter function	NG	Fuse No. 18 poor contact or blown	Reinstall or replace the fuse No. 18
OK ↓			
Digital clock continuity between 4 [B82] -1 [B82] , 3 [B82] -2 [B82]	NG	Open circuit or short circuit	Repair circuit or replace the clock
OK ↓			
Continuity between 1 [B11] - ground	NG	Open circuit or bad connection	Repair open circuit or bad connection