SECTION 16

HEATER AND VENTILATION

A. General Description

The body ventilating system takes in fresh air from the periphery of the headlights. The intake air is guided into the interior from the front ventilator lids both sides of the instrument panel, and goes out by way of the rear gadget tray to the luggage compartment. From the luggage compartment, air is discharged into the atmosphere through rear ventilator lids.
Two types of heaters are employed, an engine type **(Fig. 16A-1)** and an exhaust type. The engine type utilizes air which has been to cool the engine, and the exhaust type heats fresh air by way of the exhaust pipe and forces the air by way of a blower into the interior of the vehicle. When the heater/defroster control lever, installed on the instrument panel, is switched to the "defrost" position, the heated air run along the inside of the front windshield for defrosting while the heated air turns its direction to the front floor when the lever positioned at the "room".

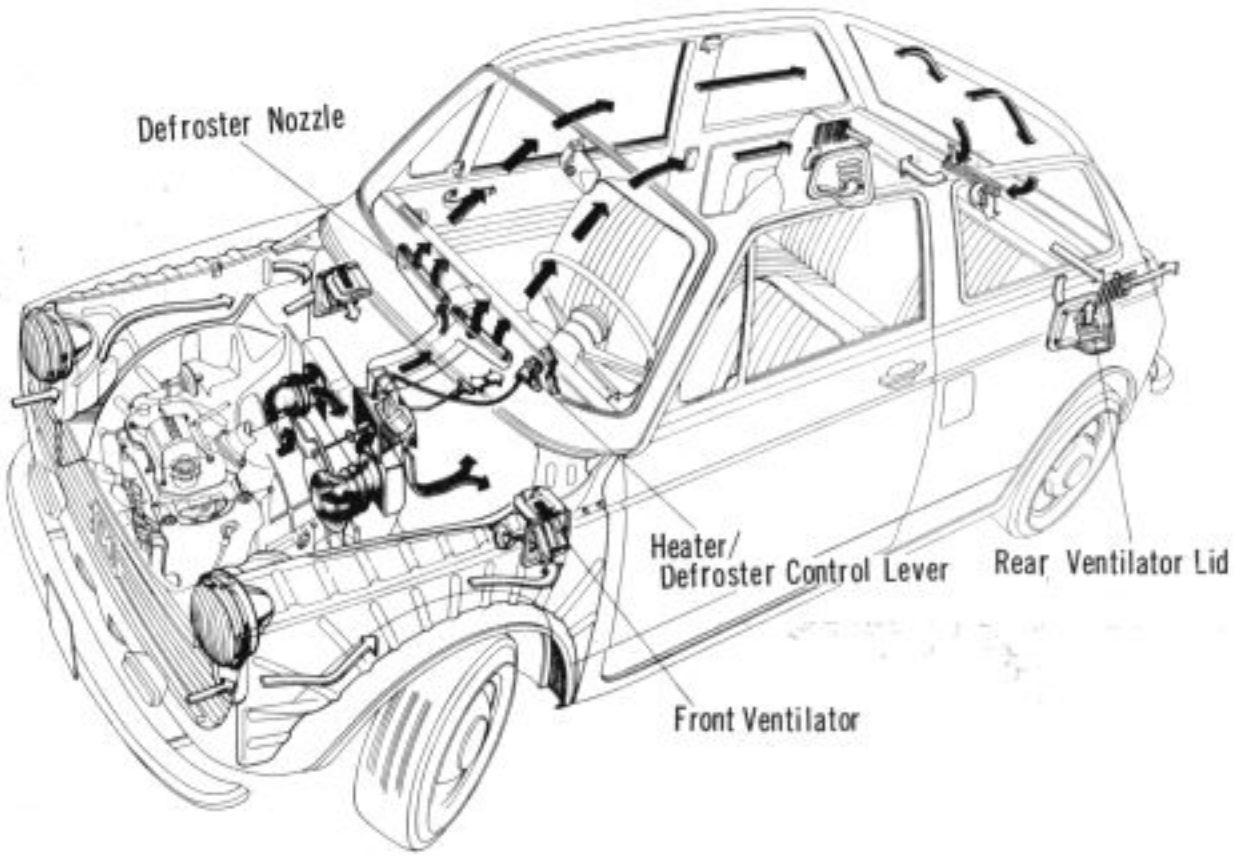

Fig. 16 A-1

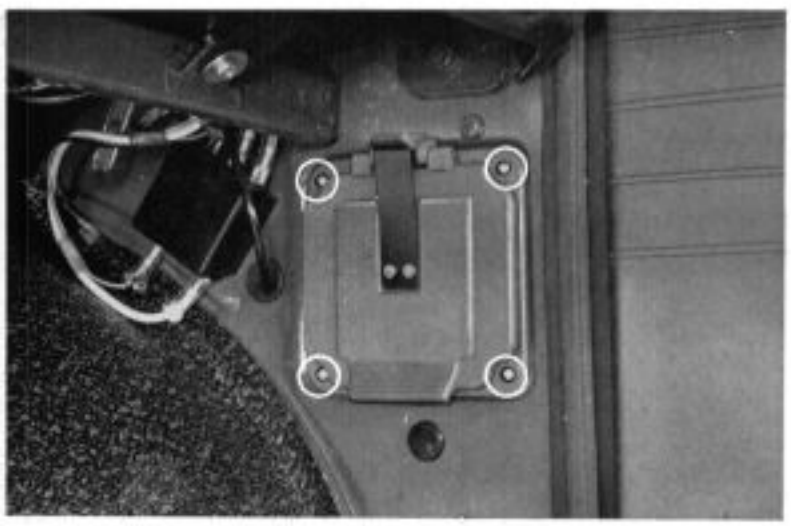

Fig. 16 B-1

Fig. 16 B-2

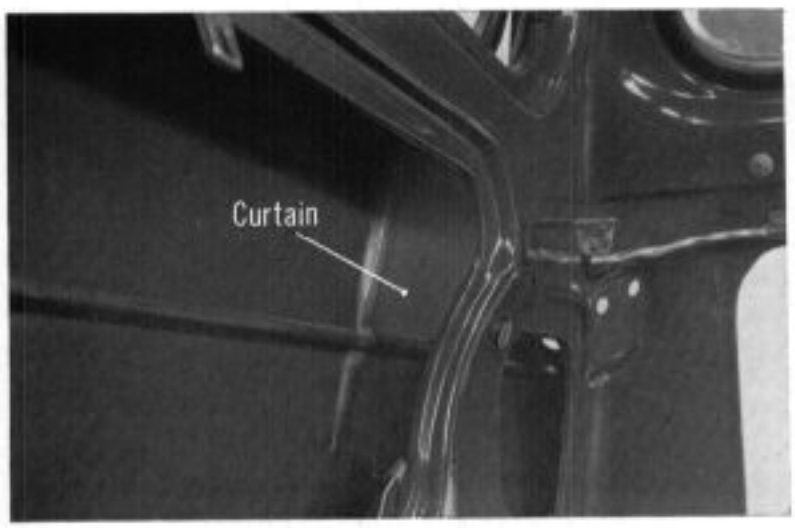

Fig. 16 B-3

B. Ventilation

Removal of front ventilator

1. Remove the four tapping screws and the front ventilator can be removed.
   The front ventilators are installed on the right and left sides, and are different in the direction of vanes.

Removal of rear ventilator

1. The rear ventilator lid is made of polyethylene (HD), and is inserted in the vehicle body with the pawls, provided in three different positions. To remove the rear ventilator, merely wrench out the periphery of it with a screwdriver.
2. When romounting it, set it in position by tapping lightly by hand.
3. To prevent the entry of rain into the luggage compartment, a vinyl curtain is placed on the body panel. (Refer to Fig. 16B-3)

C. Engine Type Heater

Description

Air warmed as it is sucked in by the cooling fan (into the space between the cylinders and the cylinder head to cool the engine) is introduced through a duct into the passenger compartment. This system is such that no power is required to operate the heater, and as the construction is simple, operation remains trouble free.

The introduction of hot air (produced by cooling the engine) into the passenger room or its discharge directly into the atmosphere are accomplished by either pushing the heater drum in or drawing it out. The hot air is further controlled by a valve in the heater/defroster control housing so as to provide air supply to the defroster or to the passenger compartment.

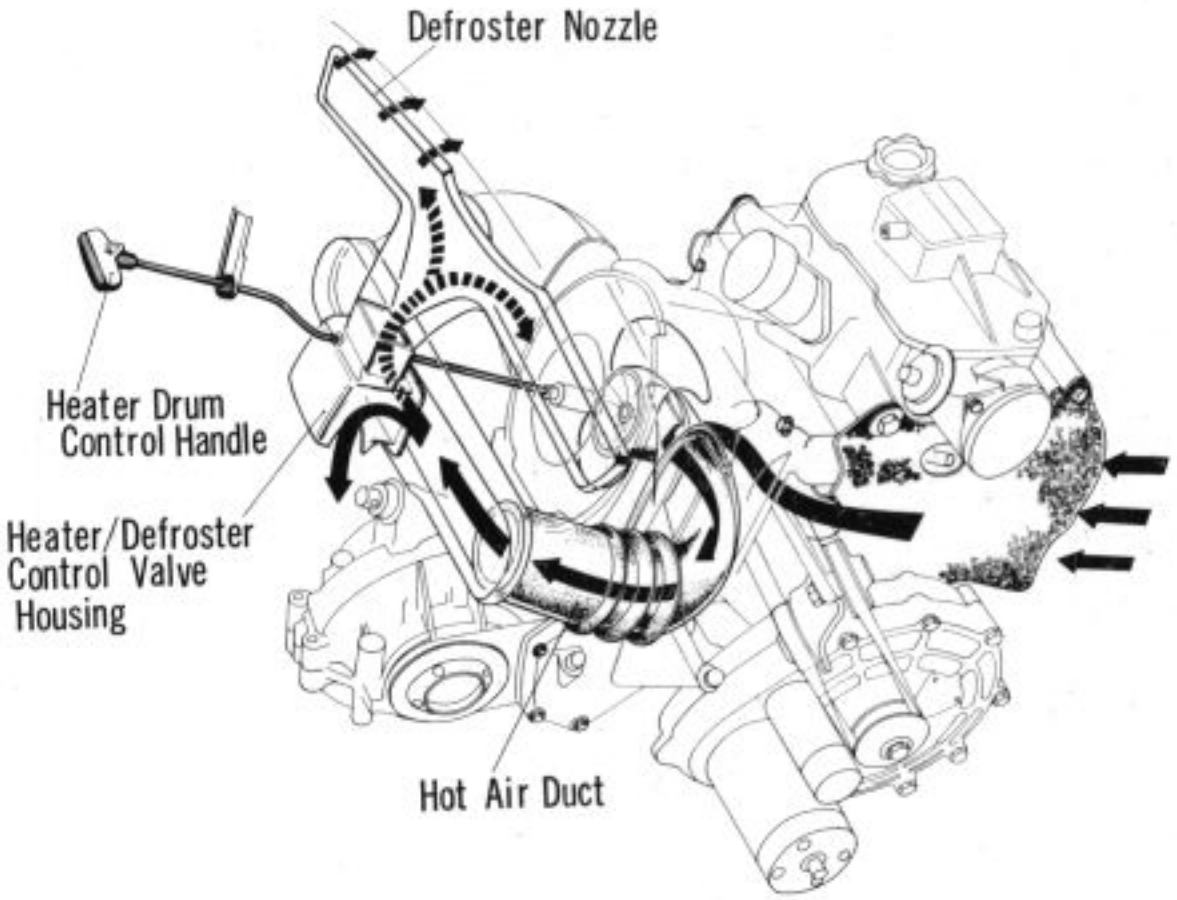

Fig. 16C-1

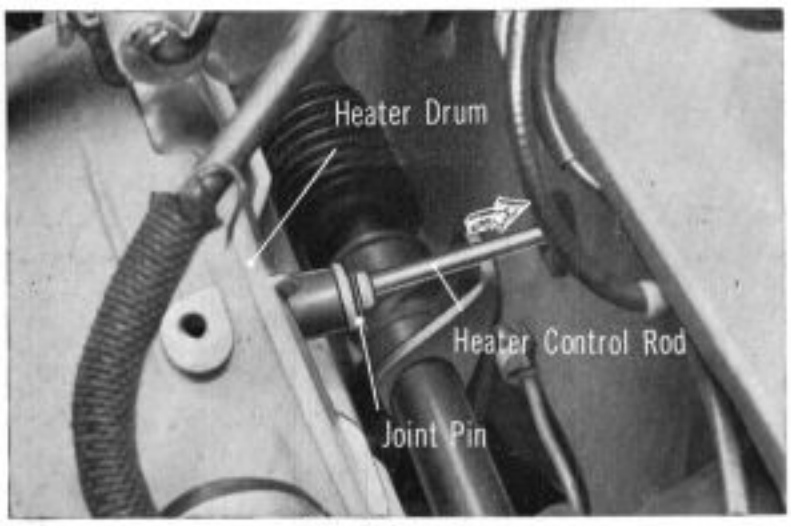

Fig. 16 C-2

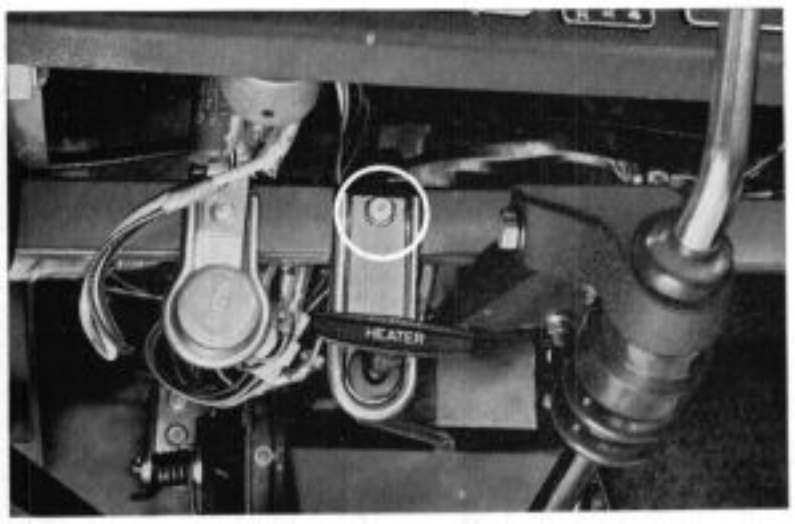

Fig. 16 C-3

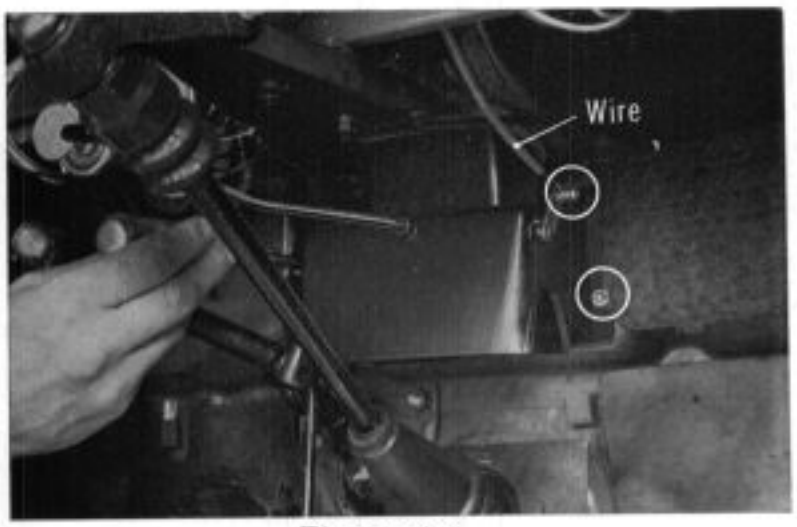

Fig. 16 C-4

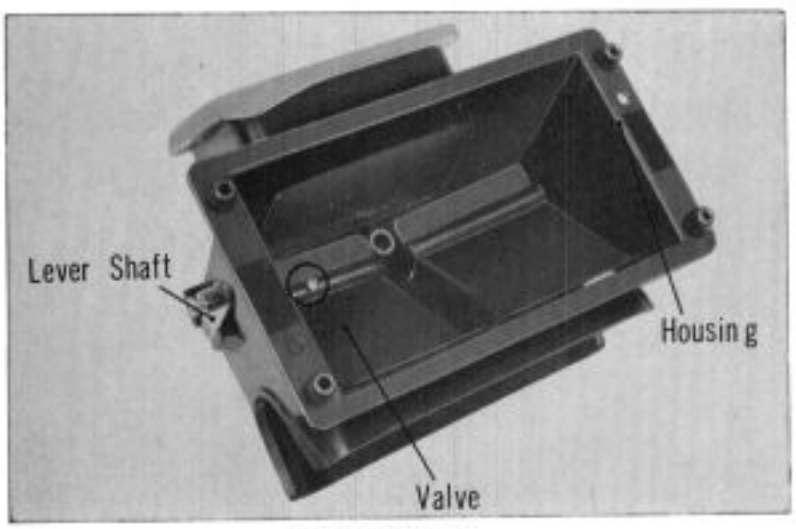

Fig. 16 C-5

Removal and Disassembly

1. Pull out the heater control rod joint pin to disconnect the rod from the heater drum and then force the rod toward the interrior of the vehicle.

2. Remove the control lever bracket,and remove the rod from the housing.

3. Loosen the screw and remove the wire mounted of the valve lever.

4. Remove the two control valve housing installation screws and separate the housing.

5. The control valve is installed on the shaft with a screw. After removing the screw, remove the lever shaft from the housing.

6. Loosen the screw, and separate the heater/ defroster control lever knob from the lever. **(Fig. 16C-6)**

Fig. 16 C-6

7. The heater/defroster control lever assembly is installed on the instrument panel with two screws provided on the back side of the panel. **(Fig. 16C-7)**

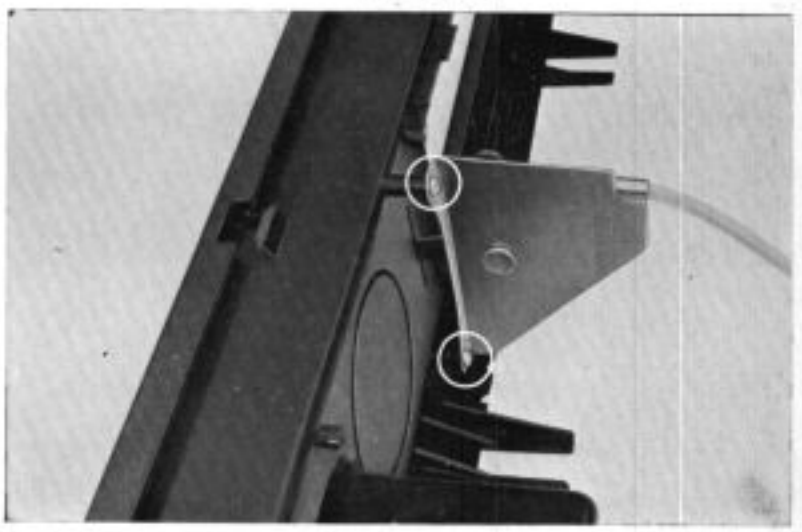

Fig. 16 C-7

D. Exhaust Type Heater

Description

Fresh air is introduced through the port on the left-hand side of the head light, and forcedly fed by a blower through air inlet duct into the heat exchanger integrated with exhaust pipe. The air warmed here is then introduced into the passenger room through the heater control valve and the hot air duct. The hot air supplied to the defroster or to the interior is controlled by a heater/defroster control valve. When hot air is not utilized for interior heating, it is discharged outside the engine room through the hot air discharge duct. An idle stop relay is installed in access to the regulator to open the blower motor circuit when the main switch is turned off. If the circuit is not opened, the blower motor works as a generator while free rotating and the generating current will flow back to the electrical system causing engine running off.

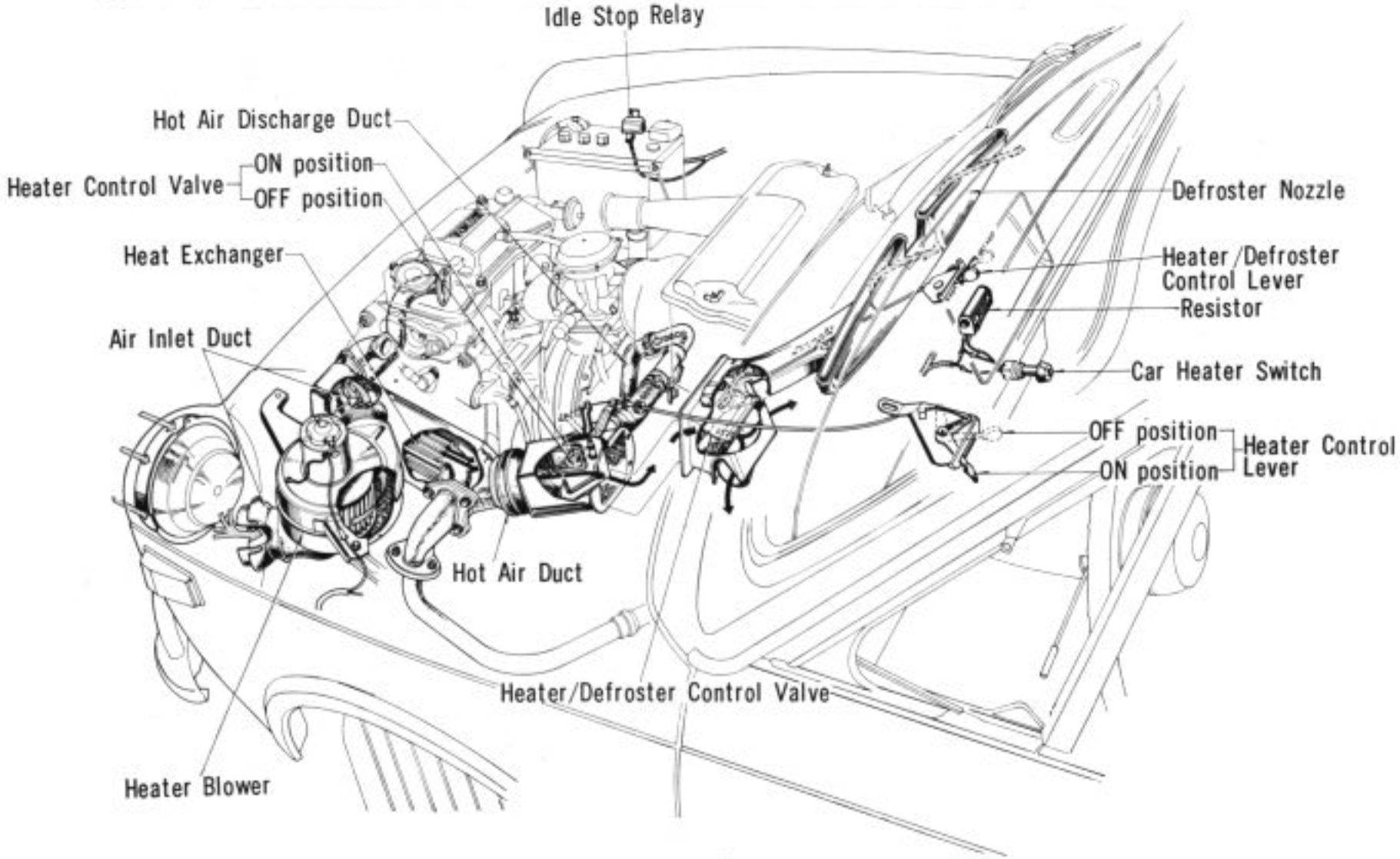

Fig. 16D-1

Removal and Disassembly

a. HEAT EXCHANGER AND BLOWER

The heat exchanger is connected to the exhaust pipes at the head and the tail by flanges, and supported at the bottom.

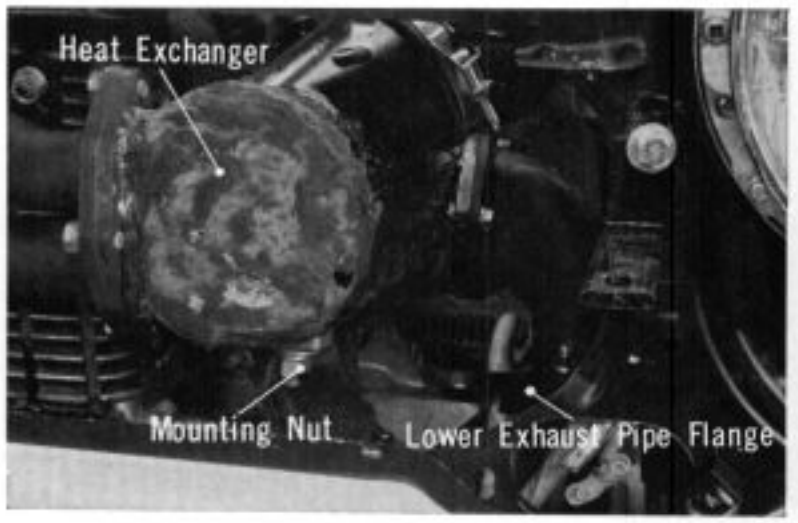

Fig. 16 D-2

Remove the air inlet duct B. Disconnect the electrical lead (+), and then remove the blower assembly. Air intake duct A is connected to the blower. Disconnect this duct; otherwise the blower assembly cannot be taken from the engine room.

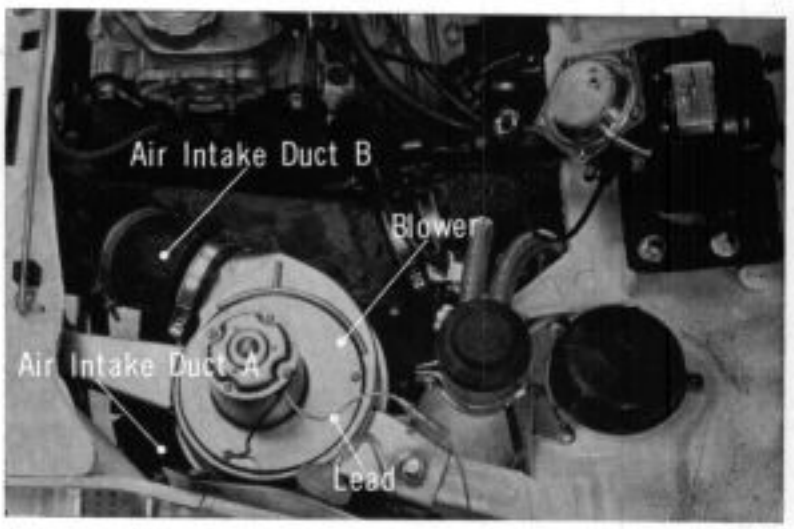

Fig. 16 D-3

Periodical checking of the mounting bolts will be required to prevent gas leakage, which may be caused by loose bolts and nuts at the junctions.

Tightening Torque	8 mm bolt and nut	2.0~2.4 kg-m (15~18 lb-ft)
	10 mm heat exchanger mounting nut	4.0~4.8 kg-m (29~35 lb-ft)

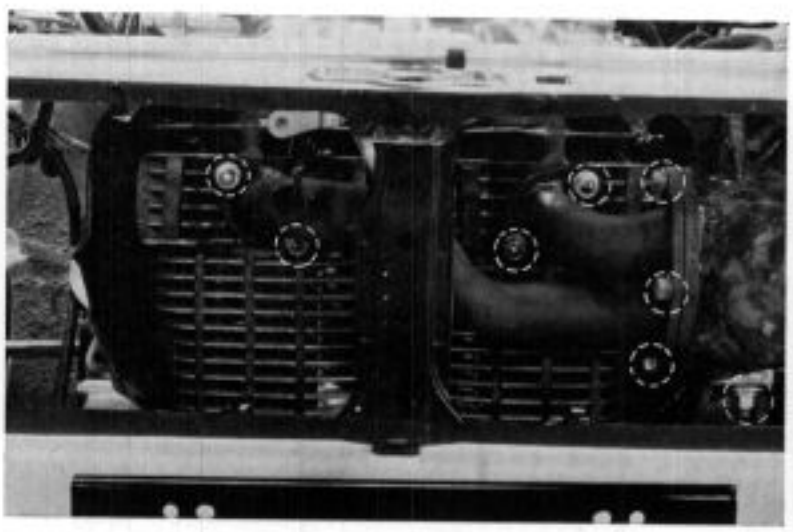

Fig. 16 D-4

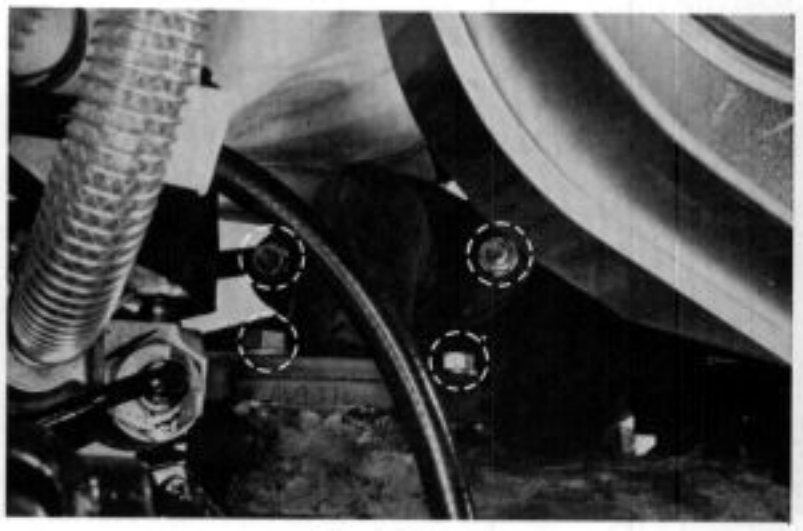

Fig. 16D-5

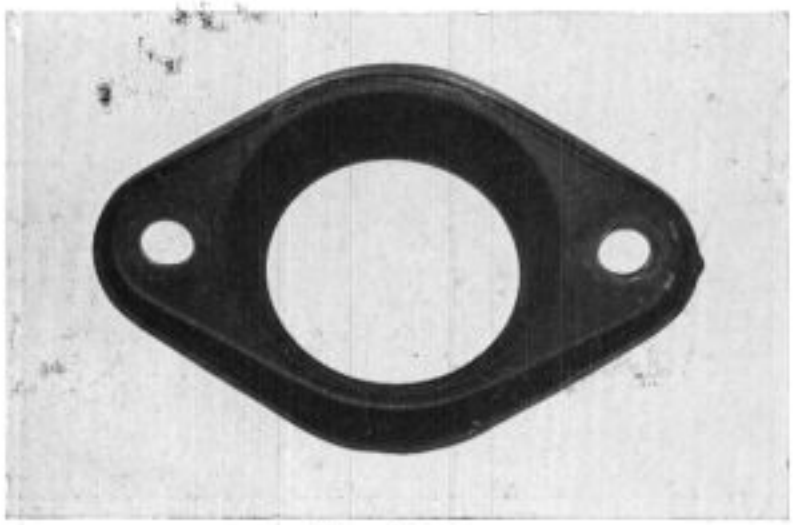

Fig. 16D-6

Installation

1. Discard old gaskets and install new gaskets whenever reinstalling the heat exchanger and/or exhaust pipes.
   Further, the lower exhaust pipe flange is recommended to be replaced as the old flange may be permanent-strained.

2. If the exhaust pipes and heat exchanger are not mounted neutrally, they may be cracked or broken soon due to strain concentration on a particular point. When reassembling exhaust pipes and heat exchanger, first loosely mount them and place all mounting nuts and bolts. Then, torque the nuts and bolts evenly and alternately. Work from the front of the car toward the rear and progressively adjust the components. Upon completion, tighten the nuts and bolts to specification as follows.

Tightening torque:

8 mm bolts and nuts	2.0~2.4 kg-m (14~18 lb-ft)
10 mm nuts	40~4.8 kg-m ((29~35 lb-ft)

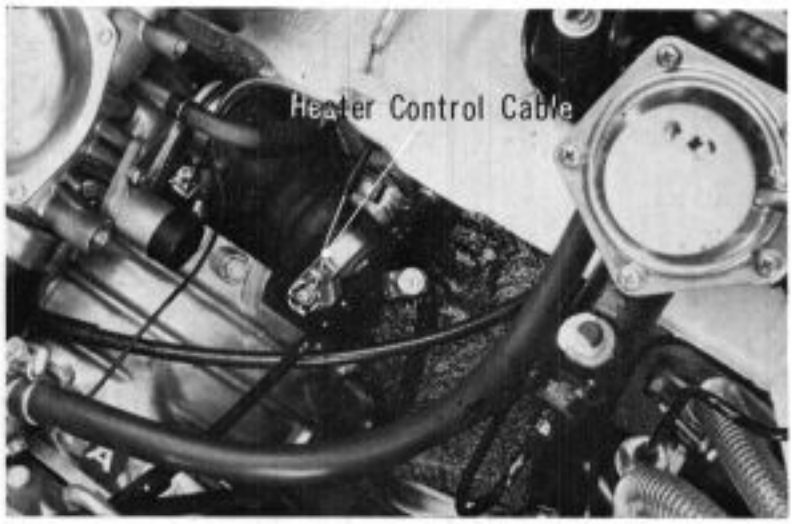

Fig. 16D-7

3. (Adjustment of Heater Control Cable)

   Adjust the control cable at heater control valve "shut" position.

   Shut the valve by hand and adjust the cable while positioning the heater control lever at SHUT position.

Loosen the screw, and separate the heater/defroster control lever knob from the lever.

Fig. 16 D-10 (Standard Instrument Panel)

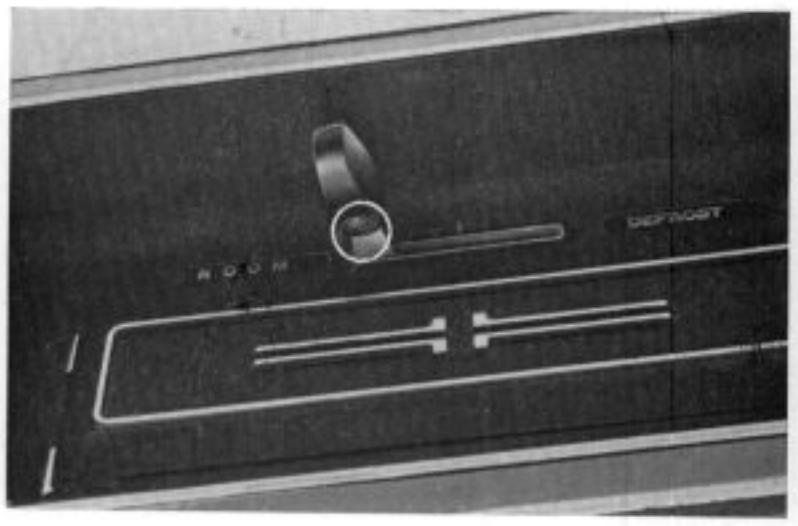

Fig. 16 D-11 (Deluxe Instrument Panel)

The heater/defroster control lever assembly is installed on the instrument panel with two screws provided on the back side of the panel.

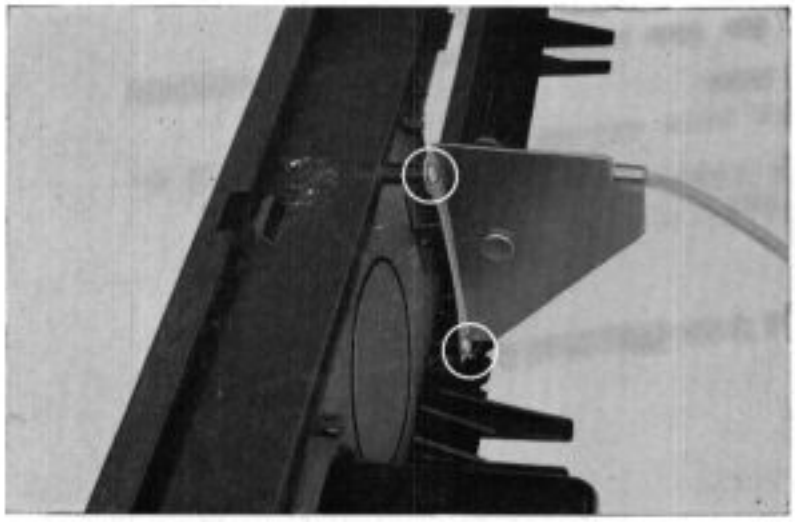

Fig. 16 D-12 (Standard Instrument Panel)

Fig. 16 D-13 (Deluxe Instrument Panel)

c. CONTROL VALVE HOUSING AND DEFROSTER NOZZLE

Loosen the screw and remove the wire mounted on the valve lever.

Remove the two control valve housing installation screws and separate the housing.

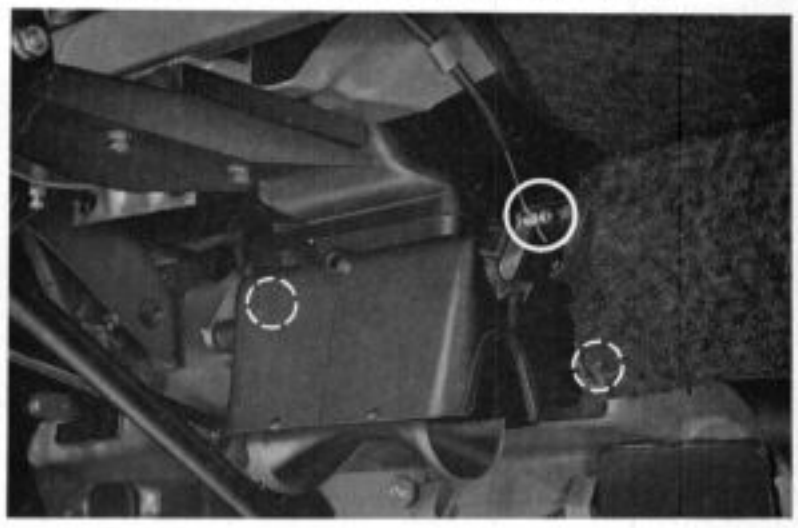

Fig. 16 D-14

The defroster nozzle is mounted at three points.

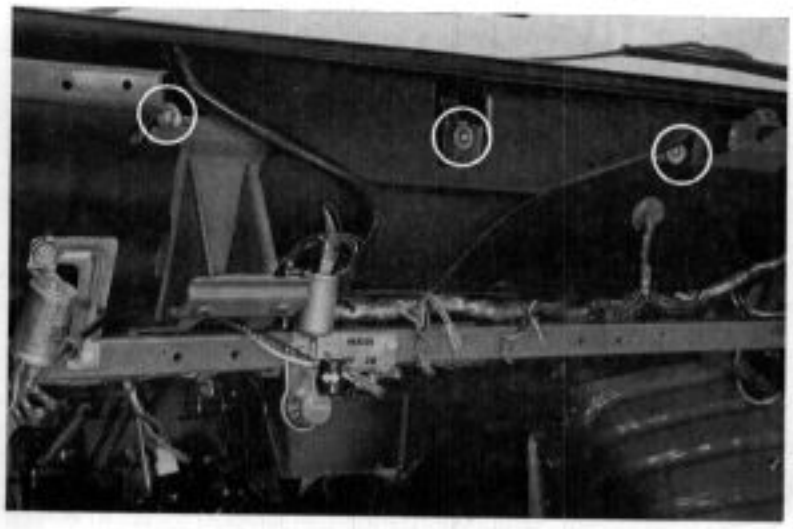

Fig. 16 D-15 (Standard Instrument Panel)

Fig. 16 D-16 (Deluxe Instrument Panel)

Check the defroster nozzle seals for air leakage.

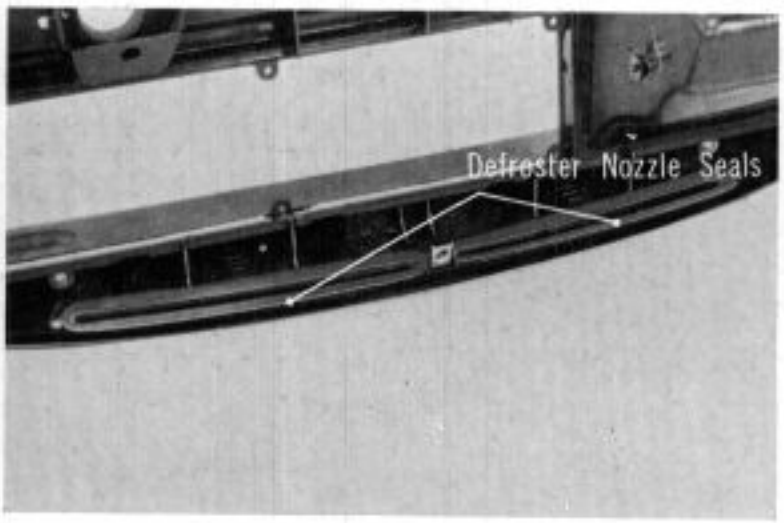

Fig. 16 D-17

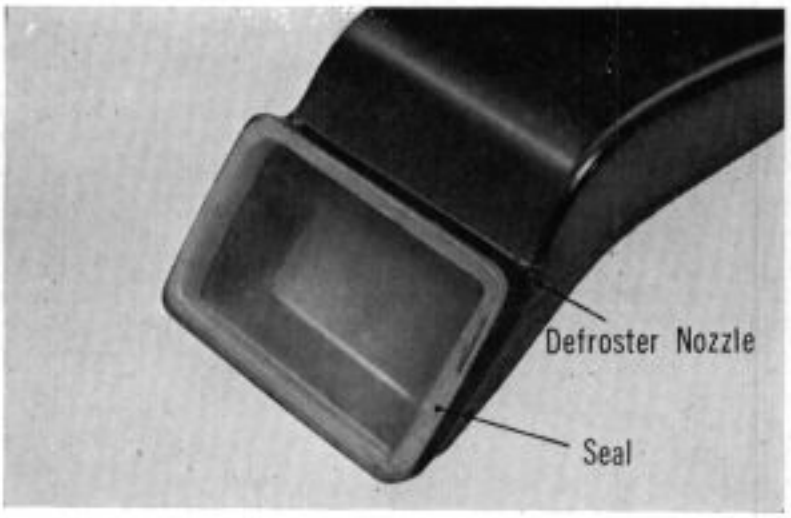

Fig. 16 D-18

E. Electrical Wiring Diagram (Exhaust Type Car Heater)

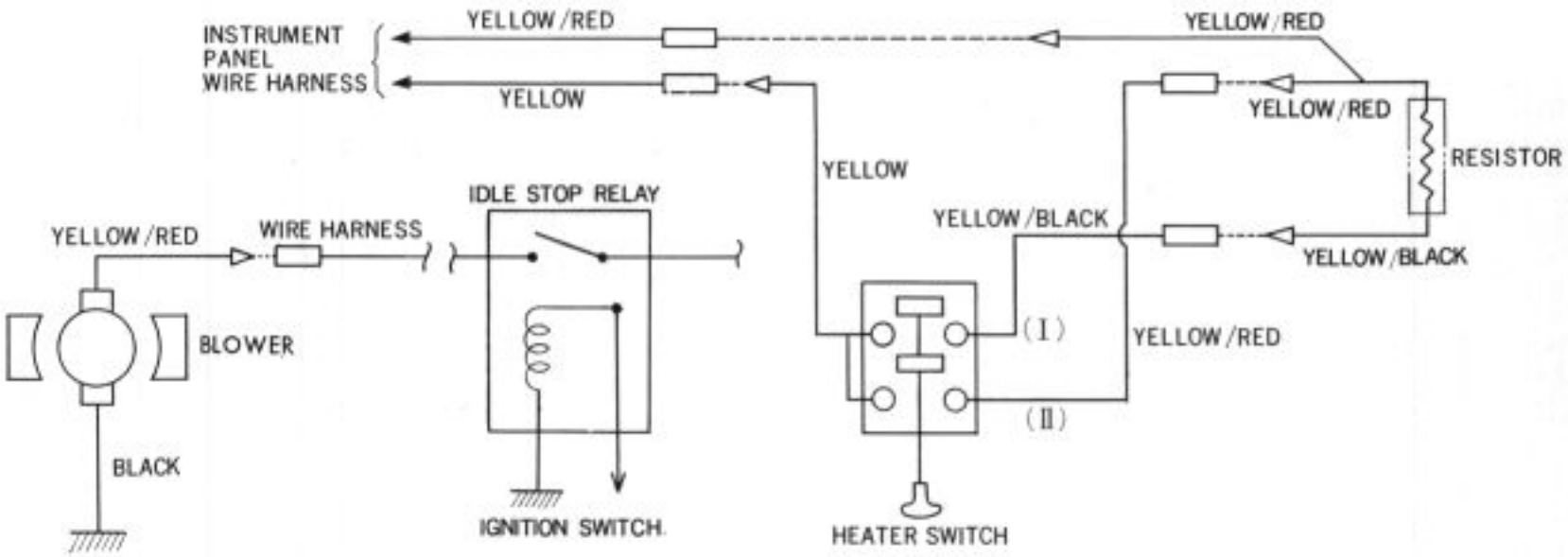

Fig. 16D-19

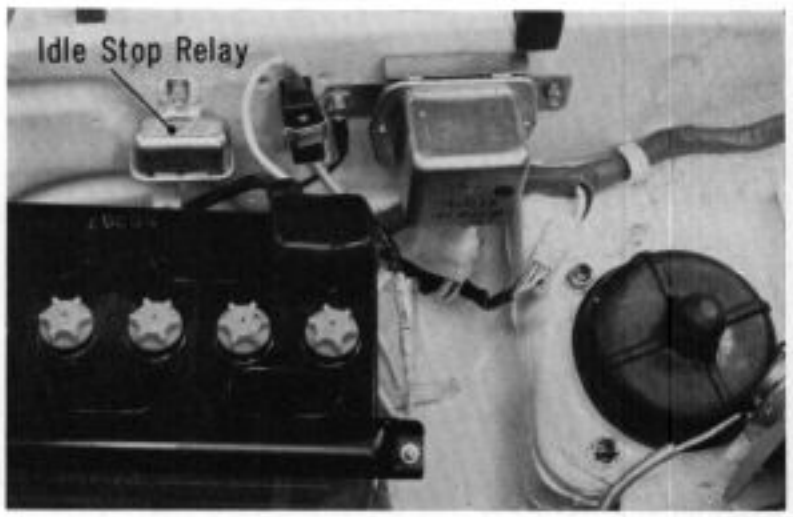

Fig. 16D-20

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