HEATING

CONTENTS OF THIS SECTION

GENERAL DESCRIPTION

Components of the Firebird heater are attached to the firewall on the right side of vehicle. The blower, air inlet assembly and water hoses are located on the engine side of firewall while the heater core and distributor duct are on the passenger side.

The heater operates on outside air only with the blower receiving its airflow from the cowl vent plenum chamber.

Since the unit has no water valve, water circulation keeps the core hot at all times. Air passing through the core receives maximum heat from the core.

In operation, three levers control all heater operations. The AIR-FAN lever is a combination control: moving the lever half-way opens the AIR door (by means of a bowden cable) to supply outside air to the passenger compartment; further movement of the lever operates the three-speed blower. The other levers drive bowden cables which operate the diverter doors located in the distributor duct to control heater output temperature and defroster operation.

The heart of the heater operation is the temperature door. Air from the blower follows parallel paths through the system: one passing through the heater core and the other by-passing the core. The temperature door, operated by the TEMPERATURE control lever, is placed in the heater assembly so that when it closes off the path from the heater core, it allows ambient airflow through the unheated path. In the opposite position only heated airflow is allowed. Final heater output temperature is dependent upon the proportion of heated and unheated air blended together according to the setting of this temperature door.

Just beyond the temperature damper door is the Air door, operated by the AIR-FAN control lever, which is the air on-or-off control. This door will be open whenever the heater blower is in operation.

The defroster door, operated by the DEFROSTER lever, acts to divert the heated airflow up through the defroster ducts for de-fogging or de-icing operations.

CONTROLS

AIR-FAN LEVER

Since the heater makes use of outside air only, this lever serves as an air ON or OFF control by actuating a damper in the distributor assembly downstream from the blower. With the lever in the

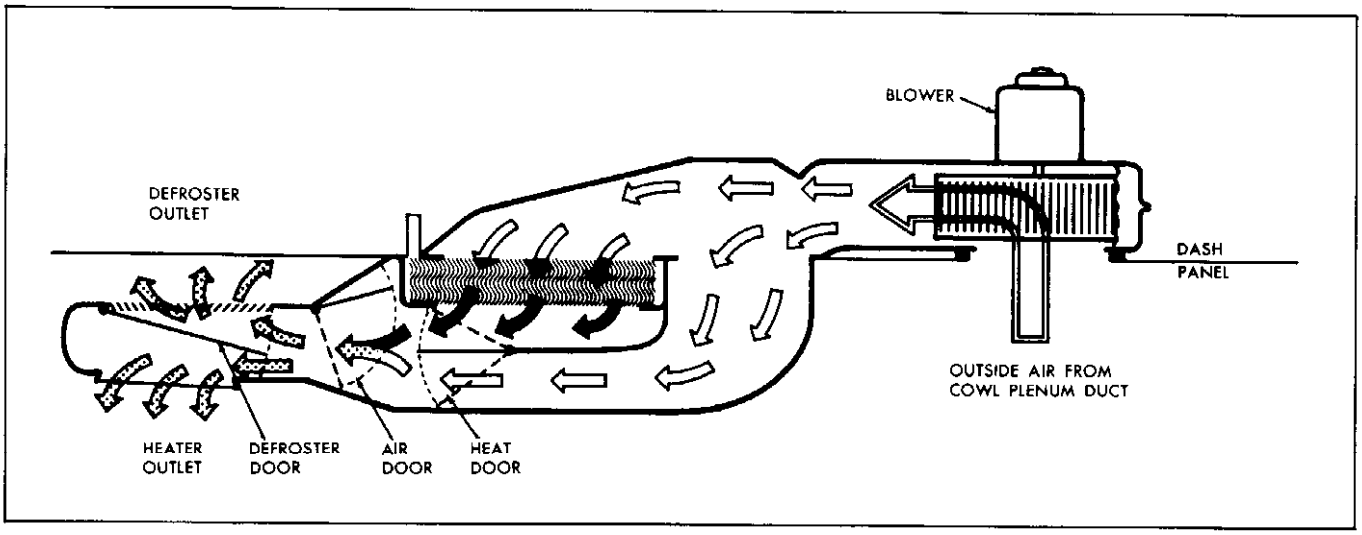

Fig. 1-1 Heater Air Flow

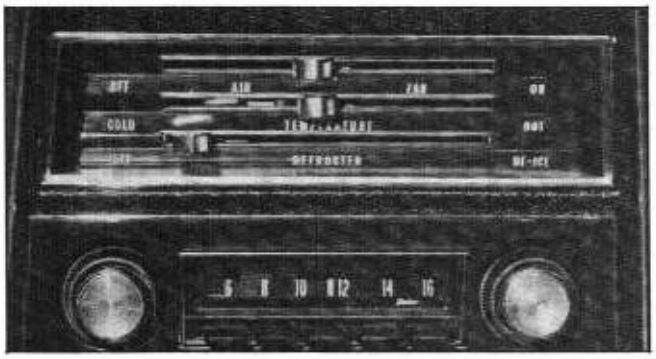

Fig. 1-2 Heater Control Panel

half-way position, this damper will be open to allow airflow into the vehicle. Moving the lever further will actuate the three-speed (LOW-MED-HIGH) fan switch which controls the blower motor and determines the volume and force of air flowing through the heater core into the car.

TEMPERATURE LEVER

This lever through its bowden cable controls the positioning of the temperature door in the distributor duct. This door allows airflow through either the heater core (full right) or the by-pass duct around the heater core (full left). Since the water temperature is constant, this knob acts as an air mixture control regulating temperature by varying the proportions of heated and unheated air blended in the heater distributor duct.

DEFROSTER LEVER

The defrost lever controls the position of the damper (or deflector) door located in the heater and defroster assembly. In the OFF position full airflow will go to the floor duct for car heating purposes. In the DE-ICE position the diverter door will drop down and divert almost all the airflow to the defroster duct. This position will seldom be needed except for extreme de-icing requirements. The lever can be left in any intermediate position desired for comfortable proportioning of air between the floor and windshield for normal de-fogging operations.

COMPONENT REPLACEMENT AND REPAIR

BLOWER MOTOR AND/OR BLOWER DUCT

REMOVAL

1. Disconnect battery ground and positive cables, and remove battery and tray (Fig. 1-3).

2. Unclip heater hoses from fender skirt.

3. Scribe alignment marks and remove hood.

4. Remove right front fender and skirt as an assembly.

5. Disconnect the blower motor wire at the motor flange.

6. Either remove the motor to case mounting screws and remove motor or remove the two screws

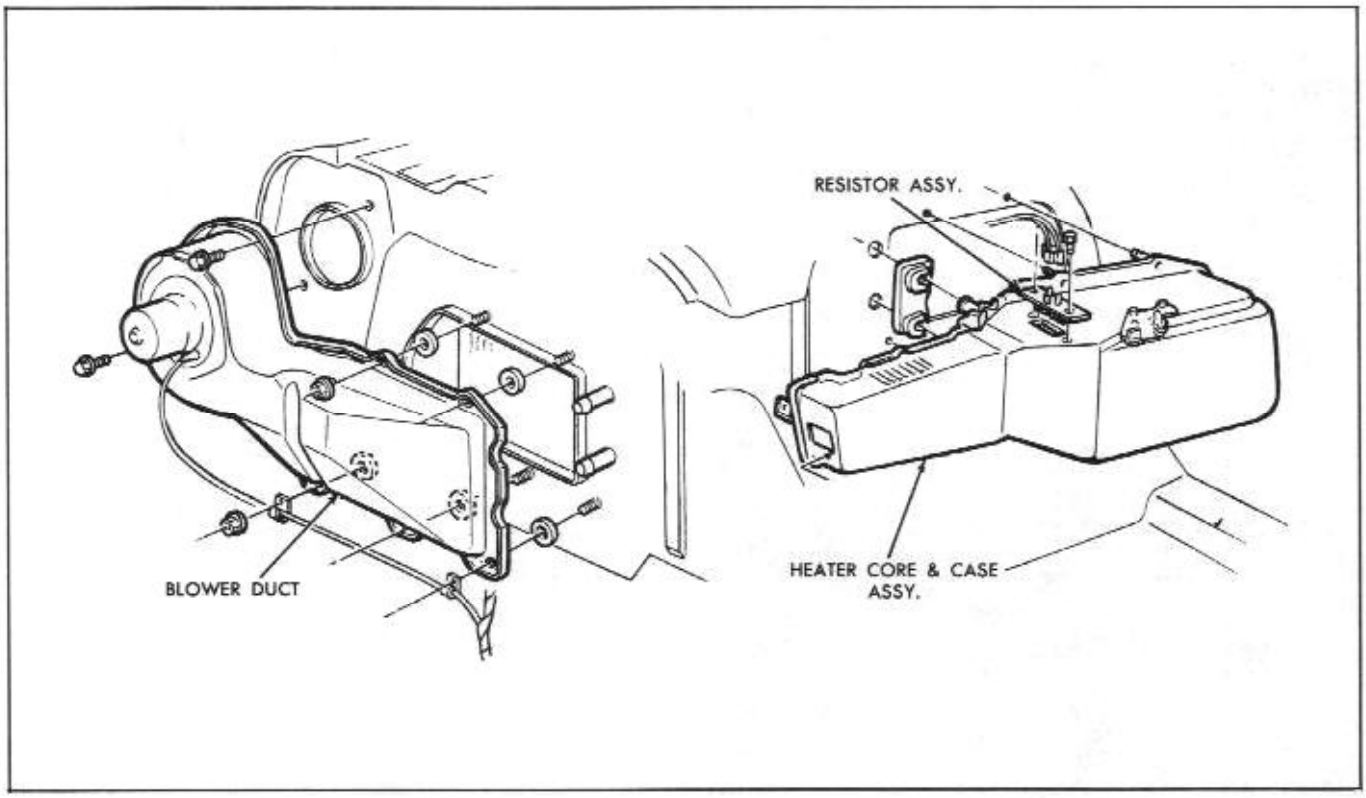

Fig. 1-3 Heater Blower and Air Inlet

and five nuts at dash to remove motor and duct assembly. Pry duct gently if the sealer acts as an adhesive.

7. Remove the blower wheel retaining nut to separate blower and motor.

INSTALLATION

1. Assemble the blower impeller to motor.

2. Place the assembly into case and install mounting screws. Connect the blower motor wire to motor and replace duct if applicable.

3. Install fender and skirt assembly.

4. Clip the heater hoses to fender skirt, replace battery and tray and connect cables.

5. Replace hood.

HEATER CORE REPLACEMENT

1. Drain radiator.

2. Remove heater hoses at their connections beside the air inlet assembly.

NOTE: The hose from the water pump must go to the top heater core pipe; the other hose runs from the rear of the R.H. cylinder head with V-8 engines or the center of the block with L-6 engines to the lower core pipe.

3. Remove nuts from core case studs on the engine side of the dash.

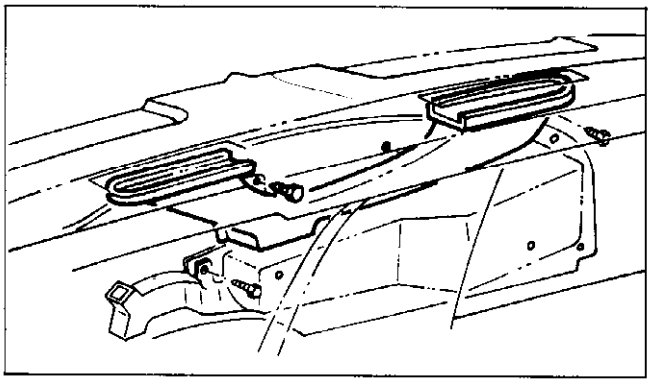

Fig. 1-4 Defroster Duct Installation

4. Inside the vehicle pull the entire heater assembly from the firewall.

5. Remove the bowden cables and all electrical connectors from the heater assembly and remove assembly.

6. Remove the core tube seal and core assembly retaining springs and remove core.

7. Install the replacement core.

NOTE: Be sure the core to case sealer is intact before installing core. Use new sealer if necessary.

8. Install core retaining springs and core tube seal.

9. Within the vehicle insert the five studs on heater through the holes in cowl and blower and air

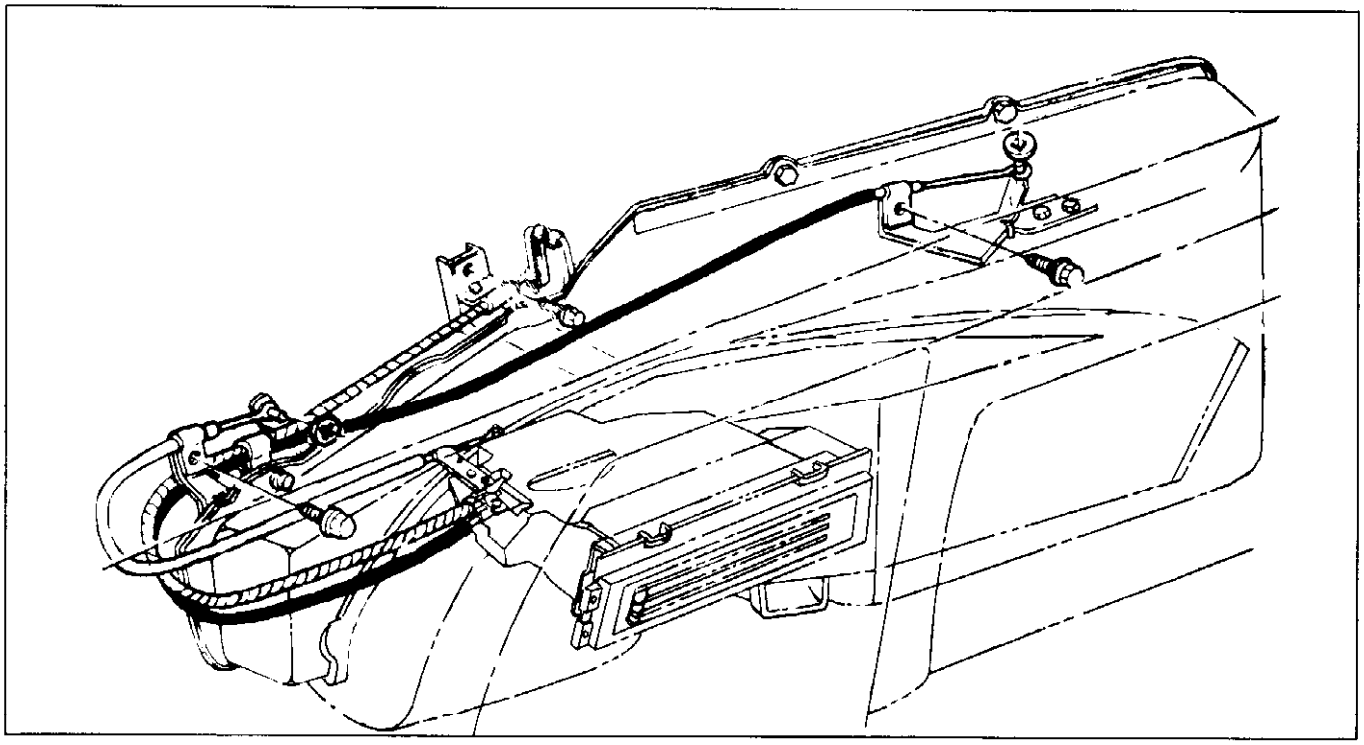

Fig. 1-5 Control Assembly (Cables Attached)

inlet assembly. Install the case to firewall mounting nuts (on engine side).

NOTE: It may be necessary to first insert coolant tubes through the dash followed by the five studs.

10. Replace the remaining bowden cables and electrical connectors.

11. Replace heater hoses, being careful to install them in their proper location.

12. Refill radiator.

DEFROSTER DUCT

For removal and installation of defroster duct refer to Fig. 1-4.

1. Remove glove compartment, ash tray bracket and radio.

2. Remove two duct retaining screws.

3. Pull heater case assembly from firewall as described under heater case remove and replace.

4. Remove duct.

CONTROL PANEL

For removal and installation of control panel refer to Fig. 1-3.

FAN SWITCH REPLACEMENT

1. Remove instrument panel trim plate.

2. Remove control assembly-to-instrument panel reinforcement attaching screws and push the control toward the front of the vehicle and down.

3. Remove the two switch attaching screws and electrical connector.

4. Install switch, screws, and electrical connector.

5. Place control in instrument panel and secure with attaching screws.

6. Replace trim plate.

RESISTOR REPLACEMENT

The resistor is attached to the top of the heater assembly. It should be replaced if low or medium blower speed is inoperative. Remove the glove box for access to unit.

BASIC AIR CONDITIONING INFORMATION

The Basic Air Conditioning Information contained in Section 1A of the 1967 Pontiac Service Manual is applicable to the Pontiac Firebird.