SECTION B

HEATER SYSTEM (45-46-48000 SERIES)

CONTENTS

DIVISION I SPECIFICATIONS AND ADJUSTMENTS

12-12 SPECIFICATIONS

Recommended Coolant	Ethylene-glycol Base
Type of Thermostat	190° F
Capacity of Cooling System with Heater (45000 Series)	14.4 qts.
(46-48000 Series)	18.0 qts.
Blower Motor Type	12 V.D.C.
Blower Motor Fan	Squirrel Cage

12-13 ADJUSTMENT OF HEATER LEVER AND OUTSIDE AIR DOOR

It is suggested that the control cable regulating the HEATER lever and outside air door be adjusted when recommended springback of 1/8 to 3/16 inch of HEATER lever is not present when lever is in OFF position. An adjustment should also be performed when heater assembly has been removed or when air doors do not permit adequate flow of air.

Adjustment of the HEATER lever is accomplished by rotation of the control cable adjuster nut (see Figure 12-10). To adjust proceed as follows:

1. To adjust check that HEATER lever is in OFF position, then rotate adjuster nut on control cable until approximately 1/8 to 3/16 inch springback is obtained.

NOTE: The HEATER lever will lock in mid position if less than 1/8 inch springback occurs. The outside air door lever will not fully open if more than 3/16 inch springback occurs.

2. After adjustment is completed, check that 1/16 inch clearance

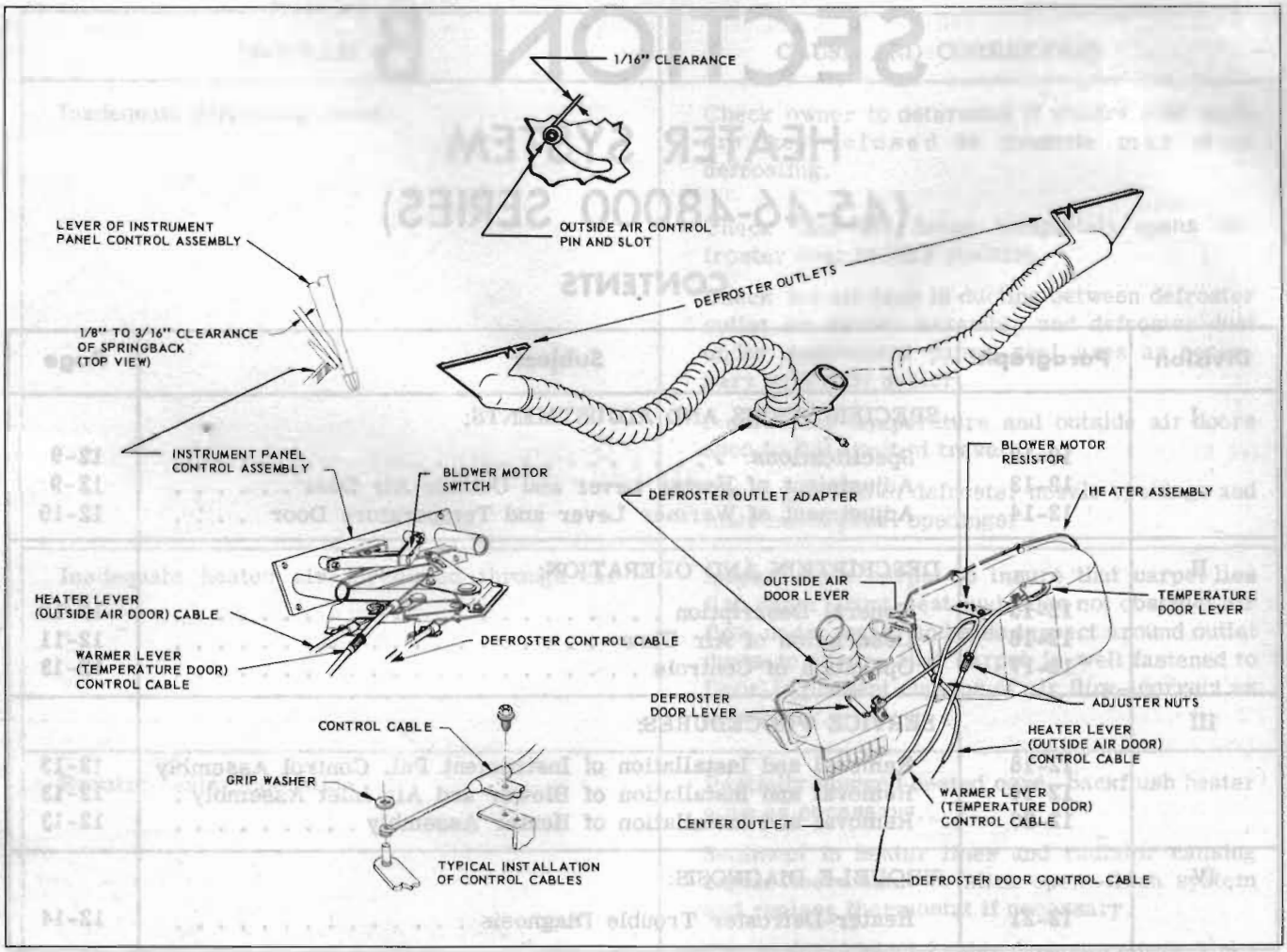

Figure 12-10—Heater and Instrument Panel Control Assembly Installation (45000, 46000 and 48000 Series)

exists between outside air inlet door control pin and end of slot on instrument panel control assembly (see Figure 12-10)

12-14 ADJUSTMENT OF WARMER LEVER AND TEMPERATURE DOOR

It is suggested that the control cable regulating the WARMER lever and the temperature air door be adjusted when recommended springback of WARMER lever does not occur, heater assembly has been removed, or when temperature air door does not open sufficiently to permit maximum flow of air.

Adjustment is accomplished by rotation of the control cable adjuster nut. To adjust proceed as follows:

1. Move WARMER lever fully to the right and rotate control cable adjuster nut until a slight springback occurs.

2. Move WARMER lever fully to the left and rotate (if necessary) adjuster nut to obtain 1/8 to 3/16 inch springback.

NOTE: The defroster control cable is a non-adjustable, fixed dimension cable and regulates the defroster door to a predetermined travel.

DIVISION II

DESCRIPTION AND OPERATION

12-15 GENERAL DESCRIPTION

The heater system for the 45000, 46000 and 48000 Series cars is a air-mix type system in which the temperature of the air is varied by diluting heated air with unheated air. The outside air, after it enters the system, is divided into two air streams. Part of the air flow is diverted to the heater core and the balance of the air flow is by-passed around the heater core.

The heater system consists of three major assemblies: (1) a blower and air inlet assembly (see Figure 12-11) which contains the blower motor, (2) the heater assembly which houses the temperature door, the outside air door, the defroster door, and the heater core, (3) and instrument panel control assembly which regulates the opening and closing of the doors in the heater assembly.

The flow of coolant through the heater system is shown in Figure 12-12.

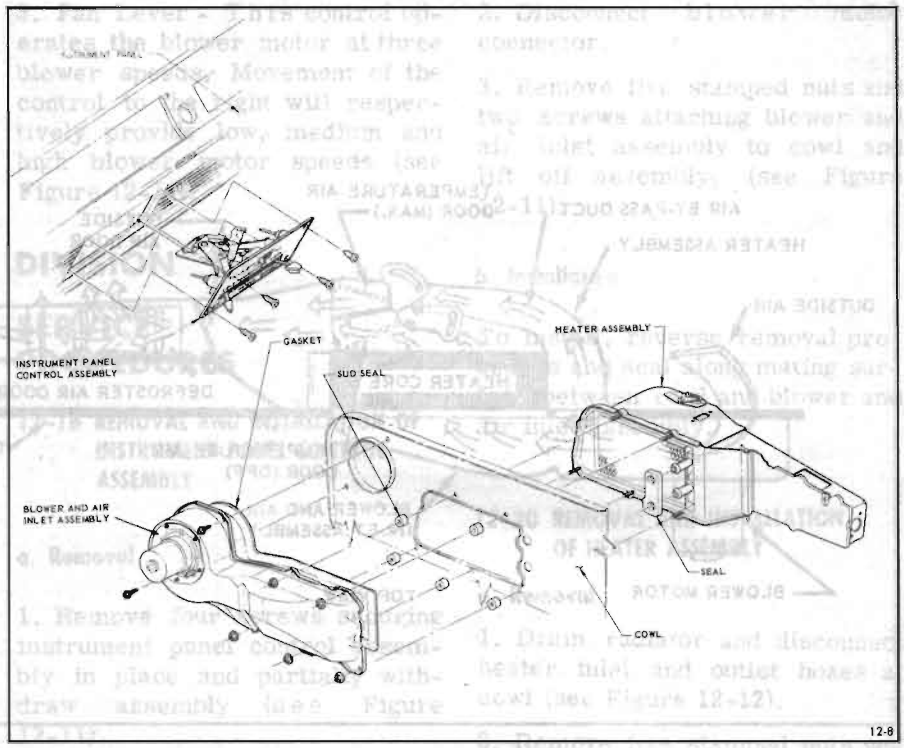

Figure 12-11—Heater System Installation

12-16 DESCRIPTION OF AIR FLOW

The air flow begins at air intake grille located on the cowl forward of the windshield (see Figure 12-13). The outside air passes through the air intake grille into the cowl air chamber, and then

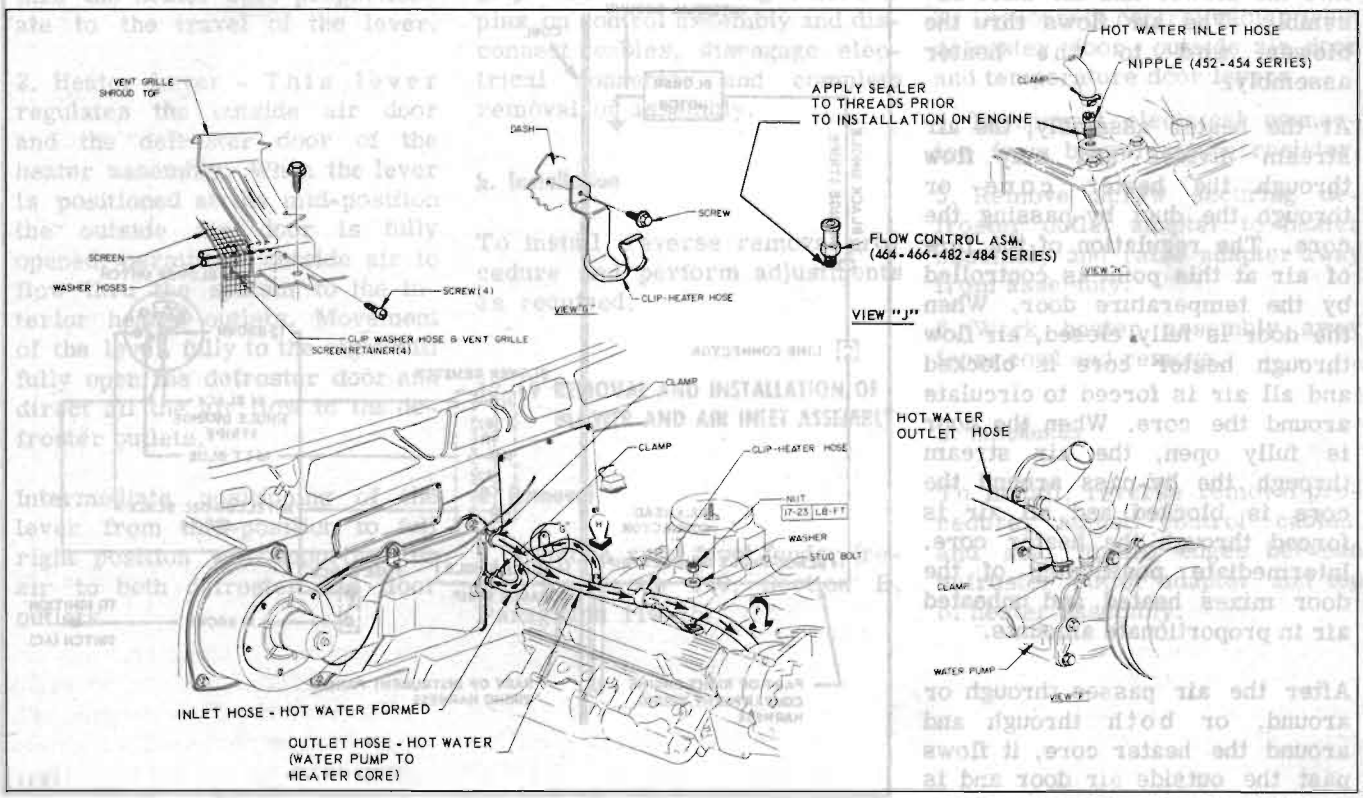

Figure 12-12—Heater System Coolant Circulation

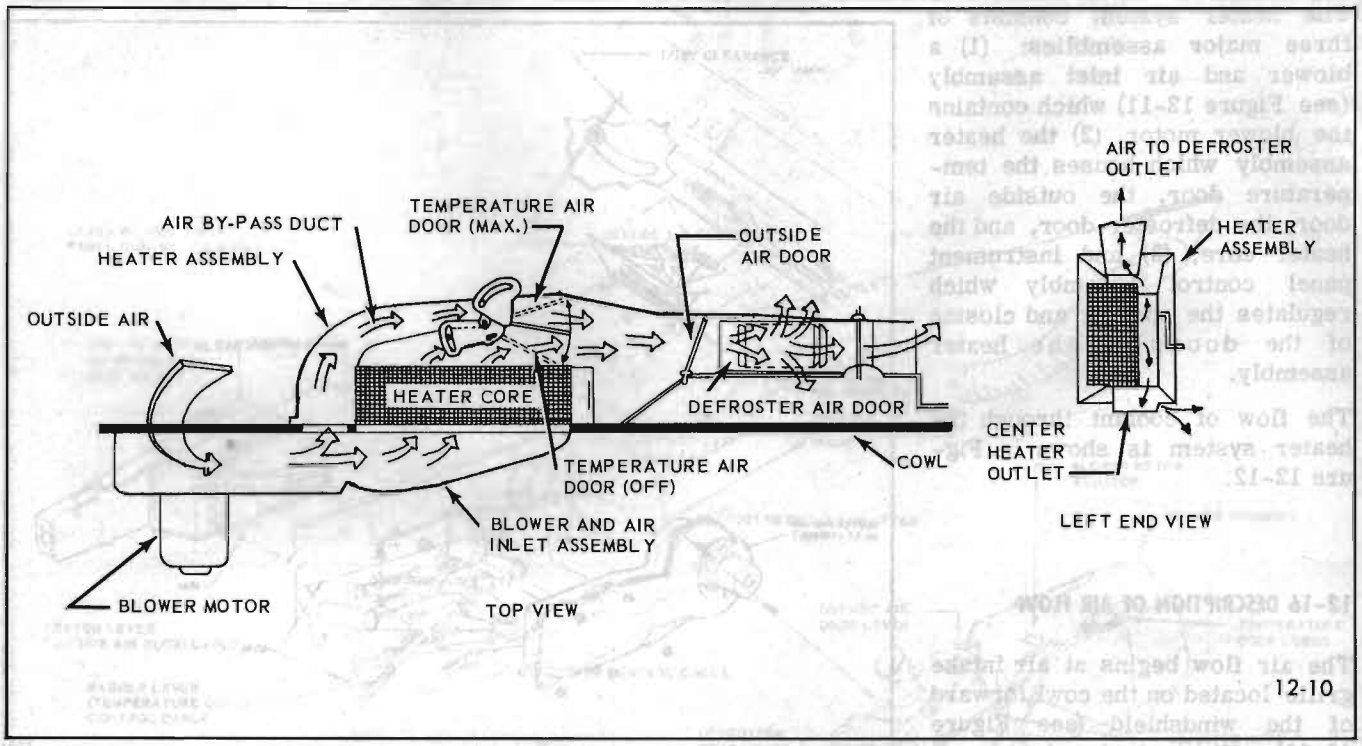

Figure 12-13—Heater System Air Flow

into the blower and air inlet assembly. The air flows thru the blower and to the heater assembly.

At the heater assembly, the air stream divides and may flow through the heater core or through the duct by-passing the core. The regulation of the flow of air at this point is controlled by the temperature door. When the door is fully closed, air flow through heater core is blocked and all air is forced to circulate around the core. When the door is fully open, the air stream through the by-pass around the core is blocked and all air is forced through the heater core. Intermediate positioning of the door mixes heated and unheated air in proportionate amounts.

After the air passes through or around, or both through and around the heater core, it flows past the outside air door and is directed to the defroster door. When the defroster door is closed

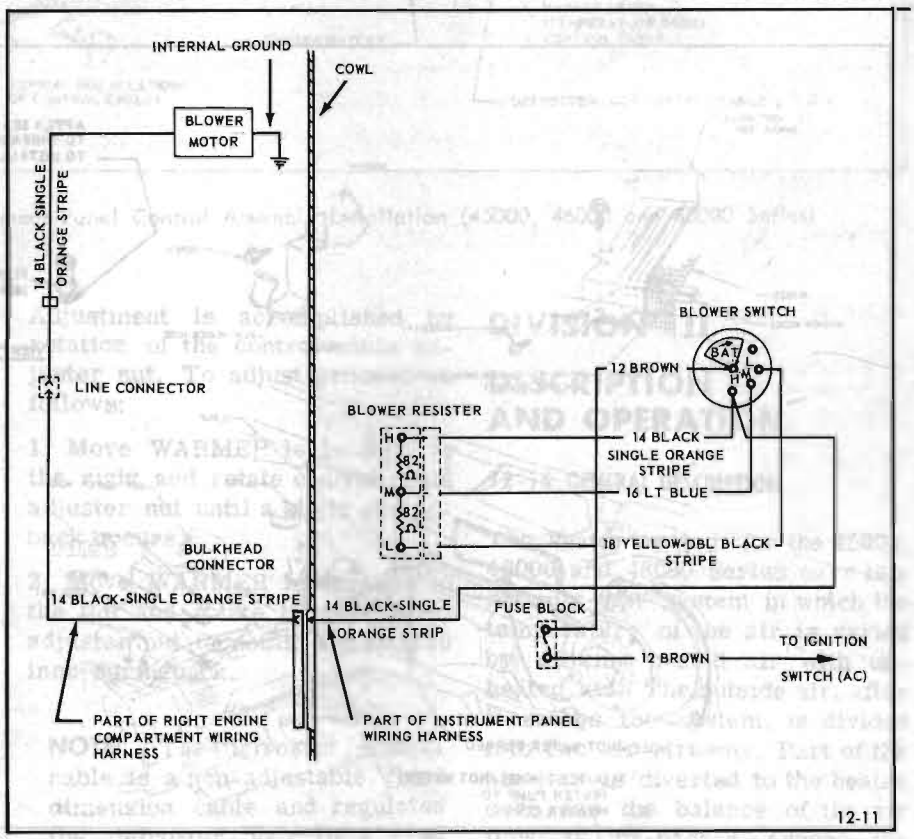

Figure 12-14—Wiring Diagram of Heater System (45-46-48000 Series)

all air is channeled to the front floor area. When the defroster door is fully open all air is ducted to the defroster outlets. Intermediate positioning of the defroster door apportions air to both the defroster and the floor. Depending on how much heat is being directed to the defroster outlet, the balance of the air stream will flow through the center heater outlet (see Figure 12-13) to the front floor area.

12-17 OPERATION OF CONTROLS

The heater system is regulated by three control levers which function as follows:

1. Warmer Lever - This lever opens and closes the temperature door thereby controlling the amount of air either by-passing or flowing thru the heater core. Moving of the lever to the right opens door and diverts the air thru the heater core proportionate to the travel of the lever.

2. Heater Lever - This lever regulates the outside air door and the defroster door of the heater assembly. When the lever is positioned at the mid-position the outside air door is fully opened, permitting outside air to flow thru the system to the interior heater outlets. Movement of the lever fully to the right will fully open the defroster door and direct all the air flow to the defroster outlets.

Intermediate positioning of the lever from mid-position to full right position will apportion the air to both defroster and floor outlets.

3. Fan Lever - This control operates the blower motor at three blower speeds. Movement of the control to the right will respectively provide low, medium and high blower motor speeds (see Figure 12-14).

DIVISION III

SERVICE PROCEDURES

12-18 REMOVAL AND INSTALLATION OF INSTRUMENT PANEL CONTROL ASSEMBLY

a. Removal

1. Remove four screws securing instrument panel control assembly in place and partially withdraw assembly (see Figure 12-11).

2. Disconnect both lamp sockets from rear of assembly, pry up grip washers securing cables to pins on control assembly and disconnect cables, disengage electrical connector and complete removal of assembly.

b. Installation

To install, reverse removal procedure and perform adjustments as required.

12-19 REMOVAL AND INSTALLATION OF BLOWER AND AIR INLET ASSEMBLY

a Removal

1. Remove right front fender (refer to Group 110, Section B, Paragraph 110-15).

2. Disconnect blower motor connector.

3. Remove five stamped nuts and two screws attaching blower and air inlet assembly to cowl and lift off assembly, (see Figure 12-11).

b. Installation

To install, reverse removal procedure and seal along mating surface between cowl and blower and air inlet assembly.

12-20 REMOVAL AND INSTALLATION OF HEATER ASSEMBLY

a. Removal

1. Drain radiator and disconnect heater inlet and outlet hoses at cowl (see Figure 12-12).

2. Remove five stamped nuts securing heater assembly to cowl (see Figure 12-11).

3. Disconnect control cables from defroster door, outside air door and temperature door levers.

4. Disconnect electrical connector from blower motor resistor.

5. Remove screw securing defroster outlet adapter to heater assembly and raise adapter away from assembly.

6. Work heater assembly away from cowl and remove.

b. Installation

To install, reverse removal procedure, adjust control cables, and seal mating edges between defroster outlet adapter and top of heater assembly.

DIVISION IV TROUBLE DIAGNOSIS

12-21 HEATER-DEFROSTER TROUBLE DIAGNOSIS

NOTE: It is suggested that prior to inspecting a car for heater system malfunctions, the owner be questioned to determine if system has been operated correctly. All windows and vents must be closed to effect maximum heat buildup.

TROUBLE	CAUSE AND CORRECTION
Blower motor inoperative.	Check fuse. Check for defective heater blower switch. Check for defective blower resistor assembly. Check for loose connectors or broken wires.
Insufficient heating	Check operation of outside air door (refer to paragraph 12-13), and temperature door. Check for air leaks around sealing edges of components. Check for sufficient coolant. Check for air leaks thru cowl, around doors, windows, etc. Dirt or foreign material under thermostat.
Inadequate defrosting	Check operation of outside air door (refer to paragraph 12-13), temperature door or defroster door. Check for air leaks and for sufficient coolant. Check for loose or disconnected defroster air hoses and for position of defroster duct and instrument panel openings.