

## SECTION S

### THE HEATER

Section No. S.1	Operation of the heater.
Section No. S.2	The controls.
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#### Section S.1

##### OPERATION OF THE HEATER

This unit provides heating and ventilation for the interior of the vehicle with provision for demisting and defrosting the windshield.

The heating and ventilating system incorporates a circulating blower and valves controlled from a two-lever quadrant control unit located in the fascia panel which provides control over the heat supply and air circulation. In addition there is a control over the introduction of fresh air through the scuttle air scoop by the control lever beneath the fascia.

The circulating blower is a centrifugal-type unit of high capacity, and delivers a supply of fresh or re-circulated air to the heating and ventilating unit, which consists of four assemblies :—

(a) The radiator unit.

(b) The air-box, containing the distribution valves.

(c) The outer casing.

(d) The water regulating valve.

The radiator unit is of the tube-and-fin type and rectangular in shape, with the water connection pipes extended to pass through the outer casing. The radiator unit is located above the top aperture of the air-box, thereby sealing this aperture from the casing.

The air-box is divided into three chambers : the hot-air chamber situated immediately beneath the radiator aperture, which connects with the two lower chambers controlling the air supply to the vehicle interior and to the demisting/defrosting air supply to the windshield.

A flap-valve is located between the two apertures of each distribution air chamber and is carried on a

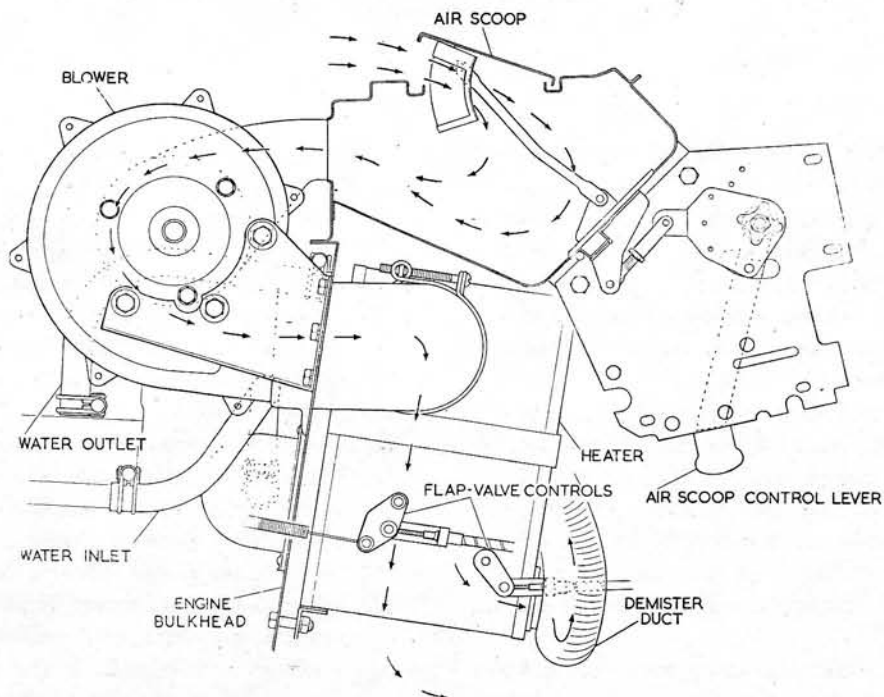


Fig. S.1.

A diagram of the ventilation system showing the air flow when the air scoop control lever is in the intermediate position. On later models fitted with a modified heater body connection (page S.3) the water flow is in reverse to that shown in the diagram. See Section S.4 and Fig. S.5 for later model with modified ventilator mechanism.

shaft passing out through one end of the casing. These flap-valves are connected to the control quadrant and enable both apertures to be closed, both partially open, or one open with the other closed as desired. By this means the mixture of heated air and unheated air can be controlled at will, thus enabling the quantity and temperature of the air supply to the car interior and the windshield to be regulated according to requirements.

The outer casing is constructed so that the base forms the lower surface of the air-box, and it carries an aperture through which air passes into the car interior.

The outer casing also has two side plates which are held in position by spring clips onto a wrapping-plate forming the ends and top of the casing. A large circular aperture in the wrap is connected to the air ducting from the circulation blower.

## Section S.2

### THE CONTROLS

The controls in the facia panel are intended to be used in conjunction with the air scoop ventilating lever to the left of the steering column, and they enable the car heating and screen demisting units to be used together or independently. In warm weather the same controls can be used to switch off the heat and circulate air at atmospheric temperature inside the car as required.

The upper or temperature control in the heater control quadrant is at "off" when moved to the extreme left. When moved to the "cold" position at the extreme right, this control shuts off the supply of hot water to the heater unit. It must be remembered when using this control that it takes the heater matrix

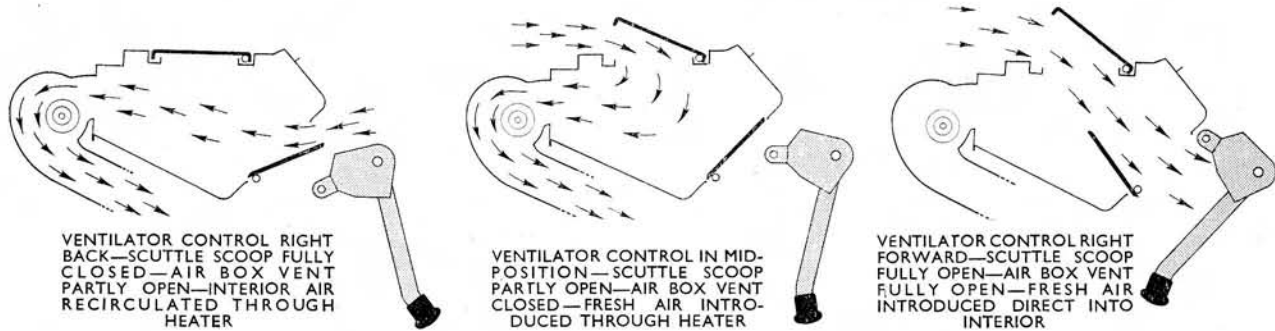


Fig. S.2.

Showing the three positions of the air scoop lever.

The rear side plate of the casing has two projecting circular nozzles, which are connected to the windshield demisting and defrosting ducts. The front side plate allows the water connections from the radiator unit to project, one taking the form of a  $\frac{1}{2}$  in. diameter pipe connected to the cylinder head and the other carrying the water valve which is connected to the water thermostat housing.

The water control valve is attached to the upper ventilation control lever of the control panel by a rigid connection, which ensures that no hot water from the engine cooling system passes through the radiator when the ventilation control lever is moved to the "cold" position. This lever also controls the valve admitting the passage of air from the air-box to the car interior.

The control quadrant also has a screen air control lever (the lower one) which is attached to the control cable for the demister/defroster valve of the unit, regulating the proportion of air delivered to the windshield.

an appreciable time to cool down after the control has been moved to the "cold" position.

The lower or air lever controls the proportion of air supplied to the demister ducts below the windshield. Heated air will not be available at the windshield, despite the position of the control, if the ventilating control is at "cold" or the engine is not running. In these circumstances there is no hot water in the heater unit.

The Air Scoop Lever has three positions :—

1. With the lever backward the air scoop on the scuttle is fully closed and the vent into the car is fully open to allow internal re-circulation of the air through the heater unit by the blower.
2. When the lever is pushed forward to the midway position the air scoop is half-open and the vent into the car is closed. In this position fresh air forced through the scoop by the forward motion of the car enters through the heater unit and can be heated if desired. The circulation can be augmented by switching on the blower.

3. When the lever is in the fully forward position, the air scoop is fully opened. The car vent is also fully open and fresh air is able to pass directly into the car.

The Blower is fitted to enable the quantity of warmed or cold air entering the car to be controlled and to be maintained when the car is travelling at a low speed or is stationary. It also permits forced recirculation of the interior air when this is required. The blower is controlled by the knob of the temperature control, which must be pulled outwards to switch on the motor. The motor will operate only if the ignition switch is on.

Hot air will not issue from the heater unit unless the engine is warm, as the heat is supplied by the hot water in the engine cooling system.

It must also be realised that the heater unit takes time to cool down and that it cannot be expected to deliver cold air immediately after it has been called upon to supply heated air.

As a general guide some of the more frequently required positions are indicated herewith.

*No Ventilation.* When the temperature lever and air lever are both placed on the extreme left in the "off" position and the scuttle control lever is right back there is no air circulation.

*Warm Weather.* When no heating is required place the temperature lever in the "cold" position and the air lever in either the "demist" or "defrost" position, according to requirements. The ventilation can then be augmented by use of the blower and further modified by opening the scuttle control to admit fresh air at atmospheric temperatures to the desired extent.

*Moderately Cold Weather.* When heating is required, place the temperature lever between the "warm" and "hot" positions according to the degree of heating required, and place the air lever in the "demist" position for demisting, or in the "defrost" position for removal of frost from the screen, as required. A further degree of ventilation control is available by operating the scoop control, but it will then probably be necessary to increase the heat of the heater unit by moving the temperature lever towards the "hot" position.

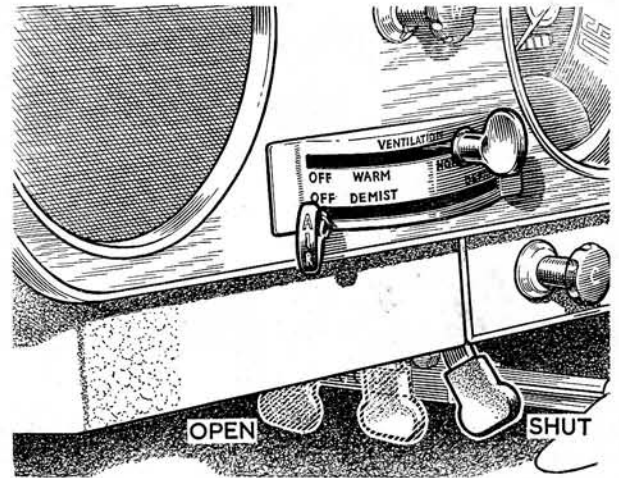


Fig. S.3.  
Heating and ventilating controls.

*Conditions of Severe Cold or Frost.* When the maximum supply of heat to the screen is required, place the temperature lever in the "off" position and place the air lever in the "defrost" position to ensure the maximum air stream delivery to the screen. If the scuttle scoop is closed and the blower is switched on, maximum internal circulation will be obtained, and can be reduced by cutting out the blower.

## Section S.3

### MODIFIED HEATER BODY CONNECTION

On later models a modified heater body connection is fitted between the water pump and the thermostat.

The brass insert fitted in the earlier connections is deleted and the new casting reverses the heater water flow so that it now passes through the engine before entering the heater circuit.

The heater connections to the engine remain the same.

The modified heater body connection (Part No. AEB143) may be fitted to earlier models if a higher heater temperature is required.

## WARNING

**AS THERE IS NO PROVISION FOR DRAINING THE HEATER RADIATOR, IT IS ESSENTIAL TO USE ANTI-FREEZE IN THE COOLING SYSTEM IN SEVERE WEATHER AND WHEN FROST IS EXPECTED.**

**THE WISE COURSE IS ALWAYS TO USE ANTI-FREEZE IN THE COOLING SYSTEM.**

# S THE HEATER

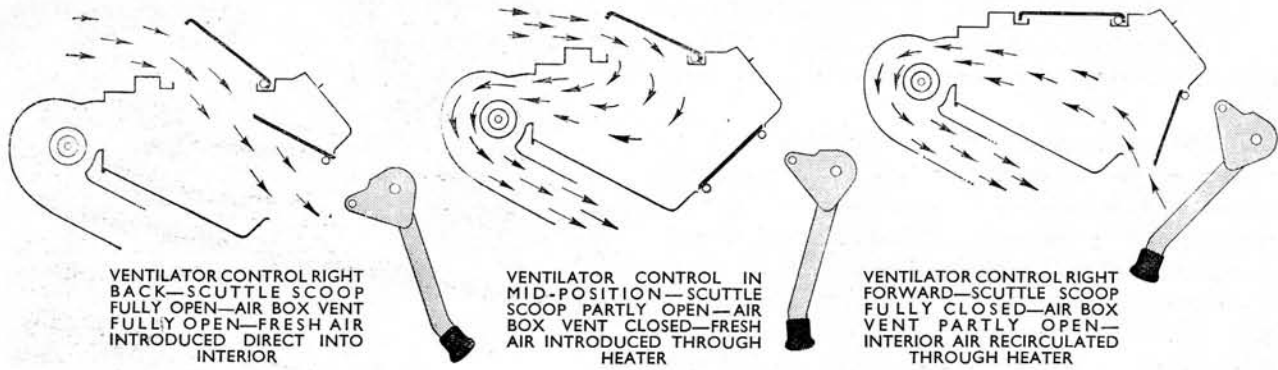


Fig. S.4.

The three positions of the air scoop lever effective from Car No. RMH.3099.

## Section S.4

### MODIFIED VENTILATOR MECHANISM INCORPORATING A DEFLECTOR

From Car No. RMH.3099 the ventilator mechanism is modified and a deflector (Part No. ADB.2897) is fitted in the air box below the scoop flap. Fig. S.5

shows the lay-out of the new mechanism and also the position of the deflector.

The air scoop lever has three positions as before but the positions are reversed. Fig. S.4 clearly indicates the new lever positions. It will be noted from these diagrams that the vent into the car now hinges at the top and not at the bottom as on earlier vehicles.

The heater and heater controls remain unchanged.

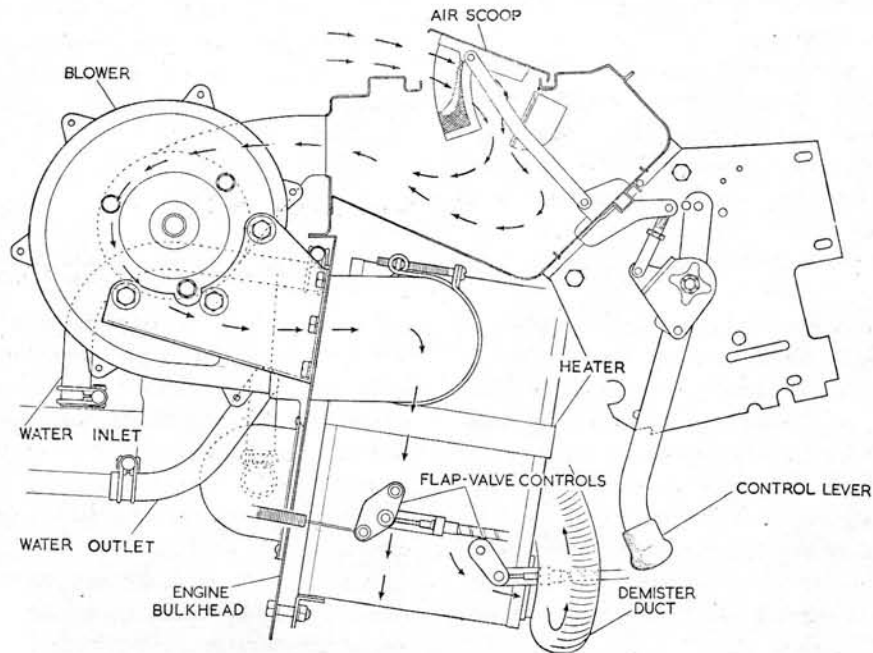


Fig. S.5.

A diagram of the ventilation system, modified ventilator mechanism and deflector fitted to all later models (see Section S.4). The air scoop lever is in the intermediate position.