

SECTION 11-B

ACCESSORIES OTHER THAN RADIO

CONTENTS OF SECTION 11-B

Paragraph	Subject	Page	Paragraph	Subject	Page
11-8	Heater and Windshield Defroster	11-29	11-11	Safety (Spot) Light	11-35
11-9	Automatic Windshield Washer	11-33	11-12	Auxiliary (Fog) Lamps	11-36
11-10	Back Up Lamps and Switch	11-34	11-13	Rear Window Wiper	11-36

SERVICE BULLETIN REFERENCE

Bulletin No.	Page No.	SUBJECT

11-8 HEATER AND WINDSHIELD DEFROSTER

a. Description of Heater and Defroster

The heater and the defroster are separate units which may be operated together or independently as desired. The heater and defroster installation is an automatically controlled hot water system which uses forced air to insure positive distribution of heat.

The hot water supply is taken from the radiator thermostat housing on the outlet side of engine water pump and is returned to engine cooling system on the inlet side of water pump. Through connecting hoses, the water pump circulates hot water through a temperature control unit on the dash, the defroster unit core mounted on the dash under the cowl, and the heater unit core located under the front seat. See figures 11-27 and 11-28.

Only outside air passes through the heater unit to be heated and distributed through interior of car. The outside air is brought in from behind the radiator grille through an air intake duct built into the right front fender skirt. This duct is also used in the separate ventilating system. The flow of air to the heater unit is controlled by an air intake valve which is manually operated by a Bowden wire connected to a knob on the instrument panel.

An electric blower is provided to insure a positive supply of outside air to the heater unit

at car speeds below 30 MPH. At car speeds above 30 MPH the blower may be shut off, if desired, as the heater unit will be supplied with sufficient outside air due to car velocity.

In 1948 models, the heater blower is located just forward of the heater unit and supplies outside air to the heater unit only. A separate electric blower is built into the defroster unit. This blower forces air from inside the body through the defroster core and upward through two hoses to two outlets in the garnish molding at lower edge of windshield. Each blower is controlled by a separate switch on instrument panel. See figure 11-27.

In 1949 Series 50-70, the heater blower is located in the front end of the outside air intake duct so that it can supply outside air to both the heater and the defroster units. The blower is controlled by a switch on instrument panel. See figure 11-28.

In 1949 Series 50-70, the flow of air to each unit is controlled by a separate air valve manually operated by a Bowden wire connected to a knob on instrument panel. Heated air from the heater unit is distributed by an air distribution housing mounted above the heater unit. Heated air from the defroster unit is conducted through a hose to a manifold built into the cowl, from which it flows through openings which distribute heated air evenly over inside surface of windshield.

The car temperature is automatically regu-

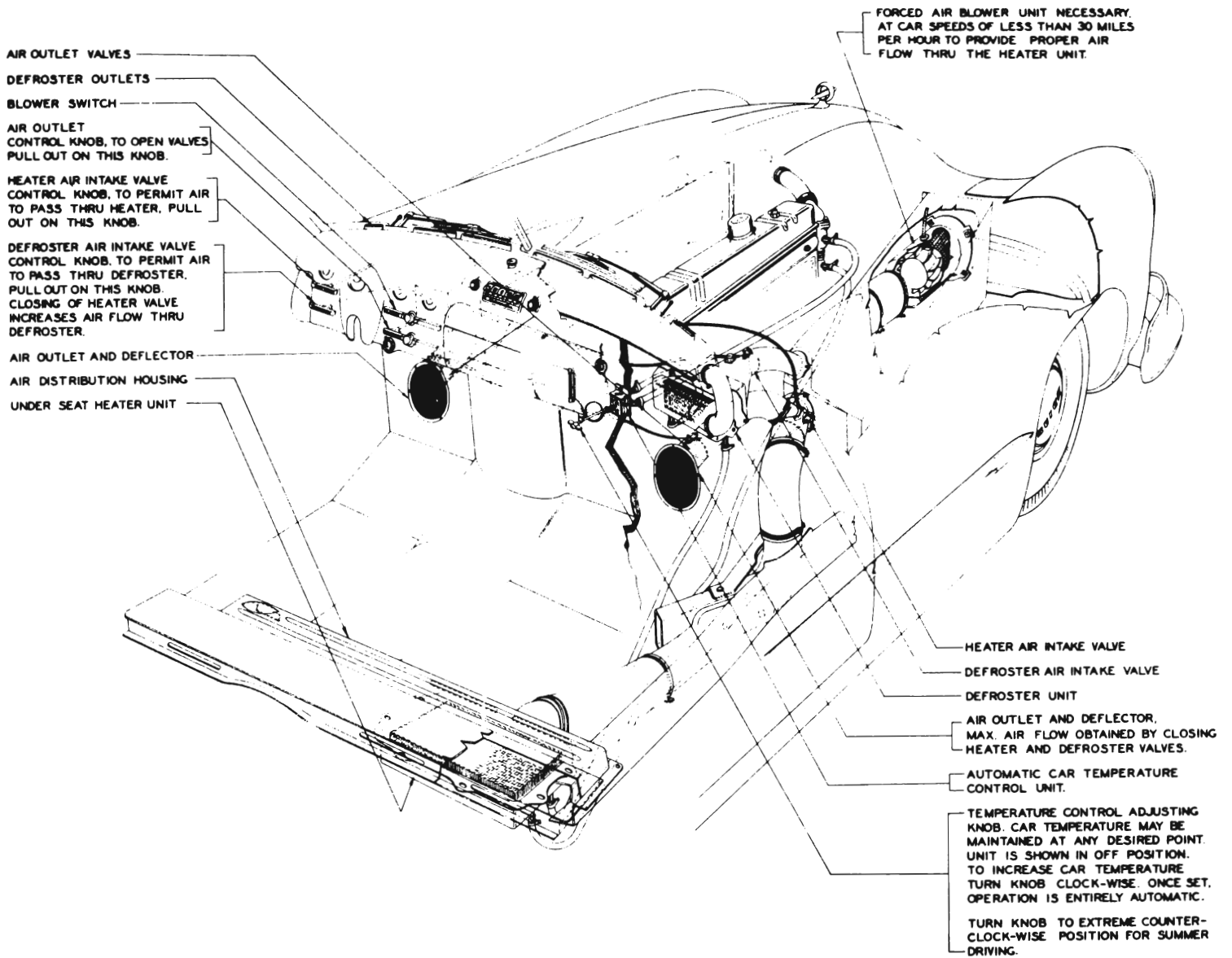


Figure 11-28—Heater, Defroster, and Air Ventilators—
1949 Series 50-70

lated by the temperature control unit when the heater air intake valve is open. The control unit contains a thermostatically actuated valve which regulates the flow of hot water between the engine and heater unit to maintain a uniform car temperature. It is manually adjusted for desired car temperature by a knob, marked "WARMER", located at lower edge of instrument panel.

Turning the control knob clockwise increases the car temperature and turning knob counterclockwise decreases temperature. The last few degrees of motion of adjusting knob in the full clockwise direction cuts out the automatic control feature and holds the control unit valve wide open to give maximum water flow with consequent maximum heat. This feature is to provide unrestricted flow of hot water to the defroster unit when maximum defroster capacity is required for de-icing windshield. At this time the temperature of the car may

be reduced by adjusting the heater air intake valve to restrict flow of air through heater.

Hot water flow through the heater and the defroster units is completely shut off by a full counterclockwise rotation of the control unit adjusting knob. This shuts off all heat when not desired, such as for summer driving. This feature eliminates the need for a shut-off valve in water line at engine.

b. Heat Distribution

The amount of air forced into the car through the heater unit, particularly when the car is moving forward, is dependent to some extent on the door window and ventilator openings. With all windows and ventilators closed, the flow of air is restricted and distribution of heated air is not sufficient to heat the car properly. See figure 11-29.

With door windows closed and one or more ventilators opened approximately $\frac{1}{2}$ ", the flow

of air is not restricted and when car is in forward motion a partial vacuum is created in the body which will permit the maximum flow of air through the heater unit into the body. See figure 11-30.

The distribution of warm air between the front and rear seat passengers can be controlled to some extent by regulating the amount of opening of front and rear ventilators. See figure 11-31.

Additional distribution of heat also may be obtained if the defroster is turned on. This circulates air through a separate heating core in the defroster unit, forcing it upward through openings at lower edge of windshield, from which it is deflected rearward into the body.

c. Use of Heater and Defroster Controls

The controls should be used in the following manner to turn heater and defroster on and off, and to regulate heater to obtain the car temperature desired.

1. Open front door ventilator about $\frac{1}{2}$ ". If heat distribution to rear seat passengers is also desired, open rear ventilator about $\frac{1}{2}$ ". (Select ventilators on opposite side from which wind may be blowing).

2. Make sure that knob marked "VENT" (1948) or "VENTILATION" (1949) is pushed all the way forward to prevent cold air entering car through air ventilators.

3. Pull out knob marked "HEAT" (1948) or "HEATER AIR" (1949).

4. If maximum heat is desired at start, turn temperature control knob marked "WARMER" as far as it will go clockwise, or in the direction of arrow. If less than maximum heat is desired, set knob at desired point between closed and fully open positions.

5. If car is stopped, or is operating at speeds below 30 MPH pull out knob marked "BLOWER." At speeds above 30 MPH the blower need not be turned on.

6. If maximum heat distribution is desired, or windshield defrosting is required, pull out knob marked "DEFROSTER."

7. As heat requirements change, the temperature in the car may be set at a higher or lower level by turning temperature control knob as indicated by the arrow. Once set for a desired car temperature the thermostat will automatically maintain this temperature without further attention.

8. To shut heater off, push in on knobs marked "BLOWER" and "HEAT" or "HEATER AIR," also knob marked "DEFROSTER" if this is out. It is not necessary to turn off or change setting of temperature control knob once it is set for the most desirable car temperature.

d. Use of Heater and Ventilators in Summer

In normal summer weather, outside air ventilation is obtained by pulling out the air ventilator knob marked "VENT" (1948) or "VENTILATION" (1949) to the desired point. This opens the outside air outlet control valves and allows outside air to be forced from behind the radiator grille through the air intake ducts into the body under the cowl. See figure 11-32.

When additional outside air ventilation is desired, the heater may be used to secure increased circulation in the following manner:

1. Shut off heat by turning the knob marked "WARMER" counterclockwise to full off position.

2. Pull out to full open position the knob marked "HEAT" (1948) or "HEATER AIR" (1949).

3. Close all windows and open all door ventilators.

4. Outside air will be forced into front of body through ventilator outlets under the cowl, and into rear of car through the heater. At speeds below 30 MPH the blower also may be turned on if desired.

5. On cool summer evenings it might often be desirable to adjust the temperature control in a clockwise direction to slightly warm the outside air entering through the heater.

e. Wiring Connections for Heater and Defroster Blower Switches—1948 Models

The upper terminal of the heater "BLOWER" switch is connected to the blower motor. The lower terminal of switch is connected to the ignition terminal of the gasoline gauge. The upper terminal of the "DEFROSTER" switch is connected to the defroster motor. The lower terminal of switch is connected to the lower terminal of the heater "BLOWER" switch.

When the switches are properly connected as described, the heater and defroster blowers will operate only when the ignition switch is turned on. This prevents discharge of the battery in case the heater or defroster switch is left on when the car is parked.

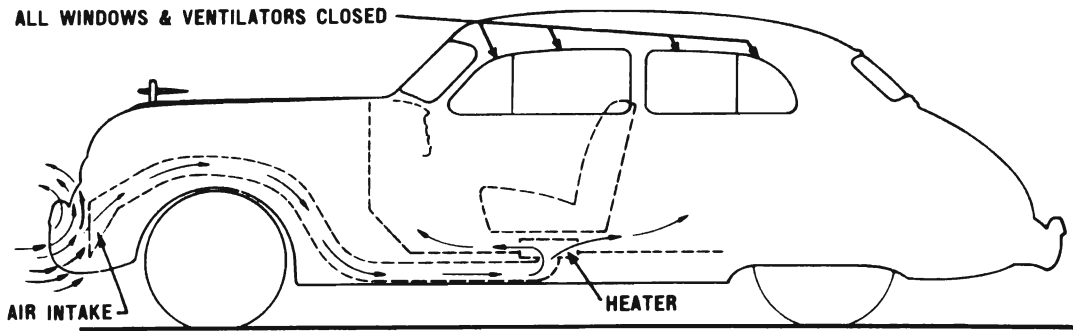


Figure 11-29—Air Flow Restricted by Closed Windows and Door Ventilators

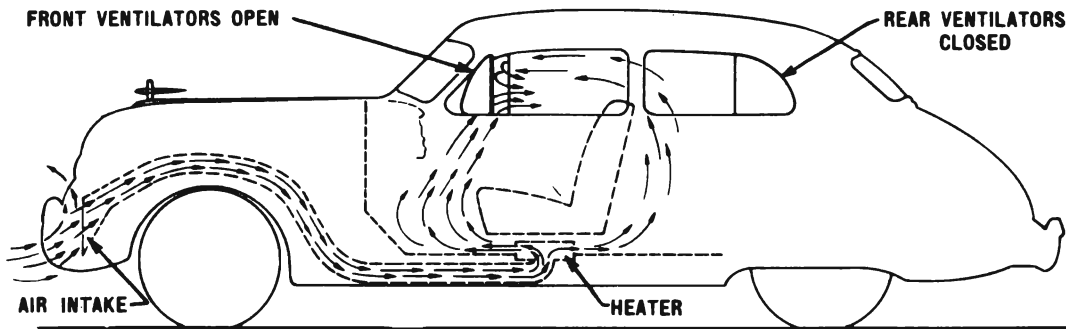


Figure 11-30—Heat Distribution for Front Seat Passengers Only

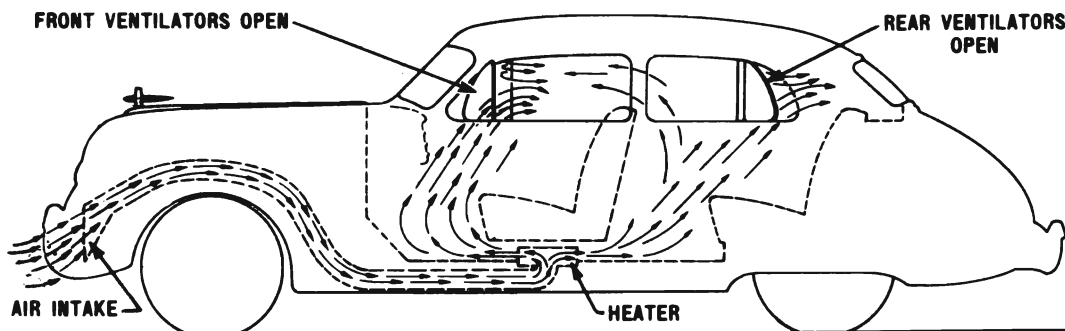


Figure 11-31—Heat Distribution for Front and Rear Seat Passengers

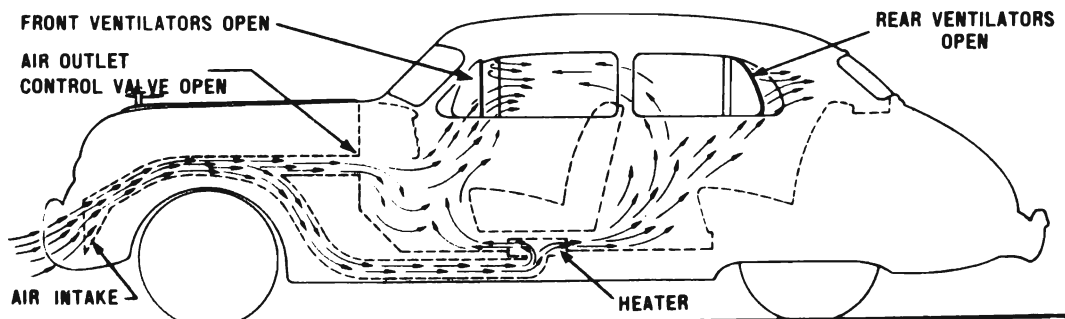


Figure 11-32—Air Flow Through Outside Air Ventilators and Heater for Summer Ventilation

f. Wiring Connections for Heater and Defroster Blower Switch—1949 Series 50-70

The upper terminal of the "BLOWER" switch is connected to a terminal on the fuse block under cowl. This terminal is connected, through a fuse on the block, to the accessory terminal of the ignition switch. The blower will operate only when ignition switch is turned on.

The lower terminal of "BLOWER" switch is connected to the top terminal of headlight junction block at right side of radiator core. The blower motor lead is also connected to the same terminal. A blower motor ground wire is attached to the fender skirt by a bolt with a shakeproof lockwasher placed between the terminal and fender skirt.

through the control valve.

In operation, manifold vacuum actuates the washer pump which draws water from the jar and forces it through the nozzles where it is sprayed on the windshield glasses in the path of the windshield wiper blades. The combination of water spray and wiper blade action cleans the windshield of dust, mud, insects, etc.

On *Series 40*, the control valve is mounted on the radio grille. The washer is operated by pushing in on the knob on radio grille marked "WASHER," holding for several seconds and then releasing knob. Water will then be sprayed in the path of windshield wiper blades.

On *1948 Series 50-70*, the control valve is incorporated in the windshield wiper control valve located on the wiper motor. See figure 11-33. The washer is operated by turning the

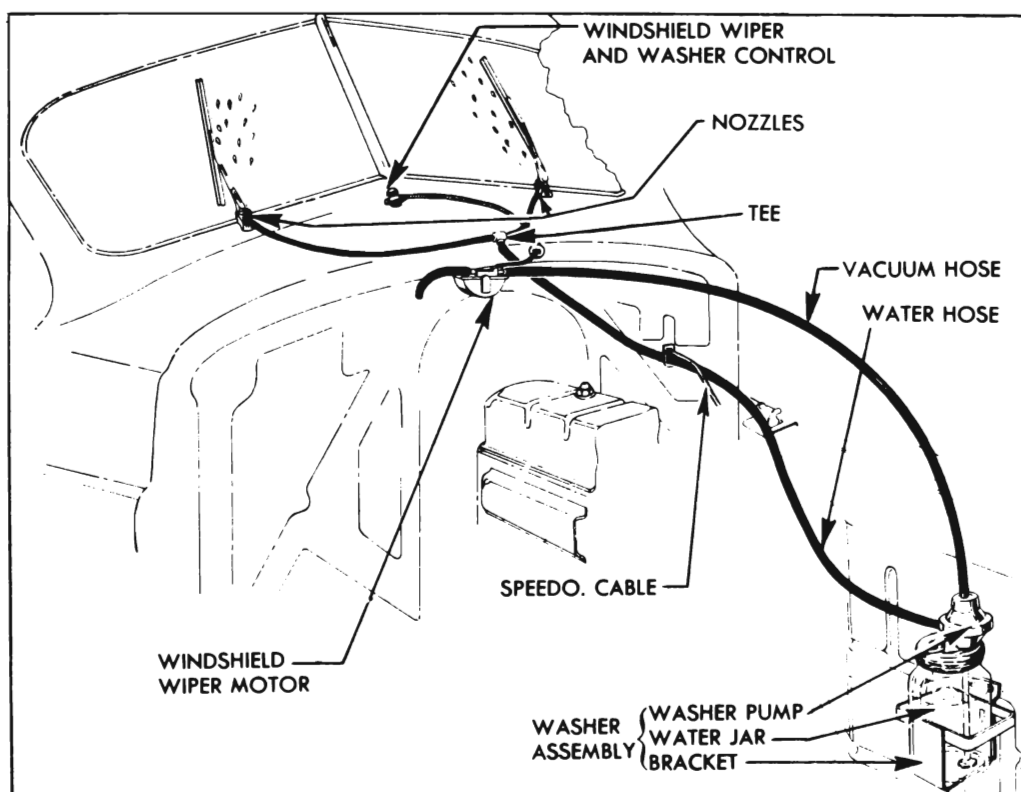


Figure 11-33—Windshield Washer Installation—1948 Series 50-70

11-9 AUTOMATIC WINDSHIELD WASHER

a. Description and Operation

The automatic windshield washer installation includes a washer assembly, control valve, spray nozzle, and connecting hoses.

The washer assembly, which consists of a vacuum operated water pump and a glass jar, is mounted in a bracket in the engine compartment. The pump is connected by a rubber hose to two spray nozzles located at lower edge of windshield glass. The pump is also connected by a rubber hose to engine manifold vacuum

windshield wiper control knob. Turn knob to the extreme counterclockwise position, hold for three to five seconds, then turn knob clockwise to operate the windshield wiper. Water will then be sprayed in the path of the windshield wiper blades.

On *1949 Series 50-70*, the control valve is incorporated in the windshield wiper control valve mounted on instrument panel at center of windshield. See figure 11-34. The washer is operated by pushing down on the button in center of windshield wiper control knob, holding for several seconds and then releasing but-

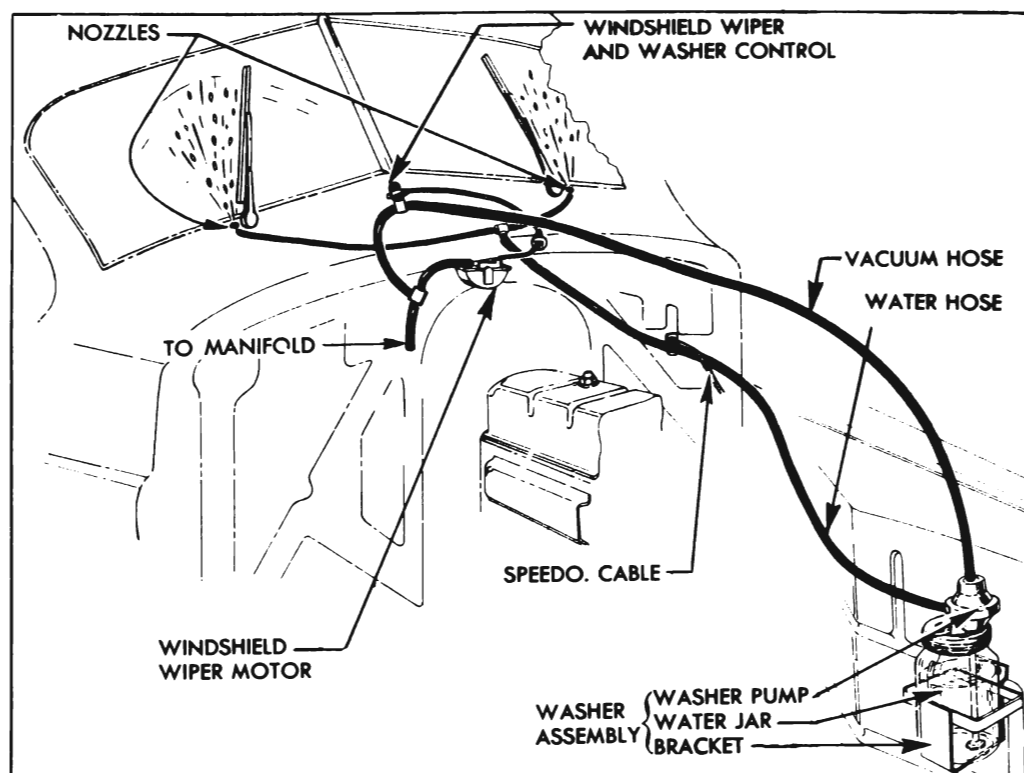


Figure 11-34—Windshield Washer Installation—1949 Series 50-70

ton. Water will then be sprayed in the path of windshield wiper blades.

b. Service Instructions

When the washer is filled for use during seasons when freezing of water may occur, Windshield Washer Solvent, Group 8.797 should be used. Do not use water containing alcohol or other anti-freeze materials as damage to car finish may result.

If the windshield washer does not operate when control valve is used as instructed, check to make sure that water is in the jar. With washer turned on, unscrew the cap of each nozzle to permit water pressure to force out any obstruction in nozzle, then tighten cap. Examine all hoses for leaks or sharp bends, and check hoses for correct connections. See figures 11-33 or 11-34.

11-10 BACK-UP LAMPS AND SWITCHES

Back-up lamps are a factory installed accessory. On *1948 Models*, they are mounted on the rear bumper guards on all models except Estate Wagons where they are attached to the body of the combination tail, stop, and signal lamps. On *1949 Series 50-70*, including Estate Wagons, back-up lamps are mounted in rear of body.

The back-up lamps are controlled by the ignition switch and a back-up switch. When

ignition switch is in the "ON" position, the lamps will light automatically when the transmission gear shift lever is placed in the reverse position. The lamps will not light when gear shift lever is in any other position, provided the switch is properly adjusted. This is a legal requirement in many states.

A fuse provides protection for the wiring and switch against short circuits. On 1948 models, this fuse is located in a splice type fuse holder in the wiring harness, under the cowl above the parking brake lever. On *1949 Series 50-70*, the direction signal fuse on fuse block also protects the back-up lamp circuit.

a. Back-Up Switch On Cars With Synchromesh Transmissions

The back-up switch on cars equipped with synchromesh transmissions is located at the lower end of steering column jacket and is operated by the transmission control shaft lever when placed in reverse position.

To provide for manufacturing variations in linkage, the switch operating arm can be adjusted for length. To assure proper switch operation, the transmission shift controls and the switch operating arm must be properly adjusted as follows:

1. Adjust transmission shifter and selector rods as described in paragraph 4-25.

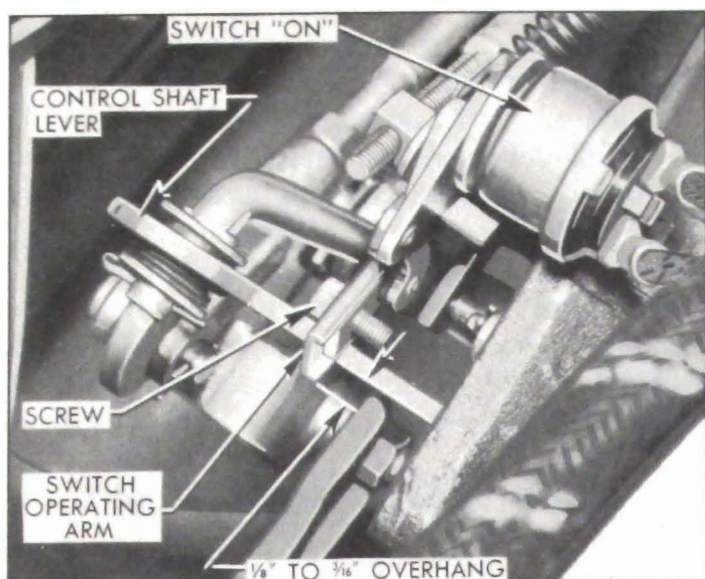


Figure 11-35—Position of Switch Operating Arm in Reverse

2. Place transmission gear shift lever in reverse.

3. Loosen hex head cap screw on switch operating arm and adjust length of arm until end of arm extends $1/8''$ to $3/16''$ beyond front edge of control shaft lower lever. See figure 11-35. Tighten switch arm screw securely.

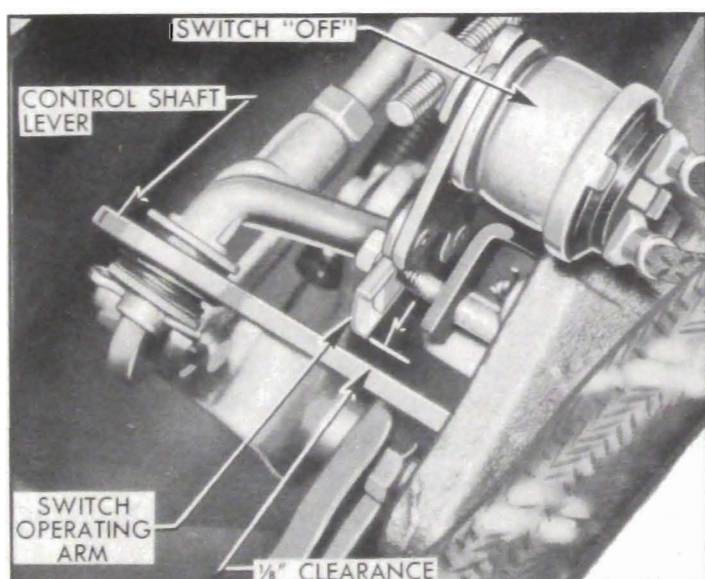


Figure 11-36—Position of Switch Operating Arm in Second Speed

4. Place transmission gear shift lever in second speed position and check clearance between end of switch operating arm and rear edge of control shaft lower lever. The clearance will be approximately $1/8''$ if switch is properly adjusted. See figure 11-36.

b. Back-Up Switch on Cars with Dynaflow Drive

The back-up switch on cars equipped with Dynaflow Drive is located in front of the brake

master cylinder and is operated by the transmission shift idler lever. This switch is not interchangeable with switch used with synchromesh transmissions.

Proper adjustment of switch is obtained as follows:

1. Loosen hex head switch mounting screws.
2. Place transmission control lever in reverse position.

3. Move switch up or down on mounting bracket to obtain $15/32''$ clearance between upper end of switch operating lever and nearest edge of switch bracket. Mounting screw holes are slotted to permit this adjustment. Tighten mounting screws securely. See figure 11-37.

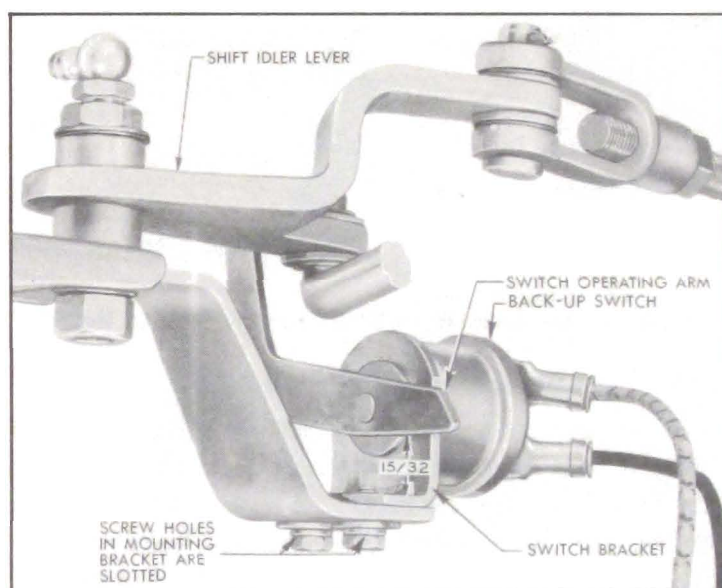


Figure 11-37—Adjustment of Back-Up Switch—Dynaflow Drive

11-11 SAFETY (SPOT) LIGHT

The safety (spot) light is connected to the No. 3 (tail light) terminal of the lighting switch so that the light may be turned on only when the lighting switch is in the "parking" or "driving" positions. The wiring is protected by a fuse located in a splice type fuse holder which is supported by a clip just below the left defroster nozzle in back of instrument panel.

Instructions for original installation of the safety light are contained in the accessory package. If the safety light must be removed for any reason observe the following instructions:

a. Removal of Safety Light

1. Turn lighting and safety light switches to "off" position.
2. Separate safety light lead at fuse holder, remove fuse, and work lead up through opening

in instrument panel.

3. Loosen screw "A." Remove handle screw, handle, bearing, and spring then push pinion up and remove it. Remove screw "A" and pull housing from shaft. See figure 11-38.

4. Loosen the nut on friction bracket, remove mounting bracket attaching screws and remove safety light from car.

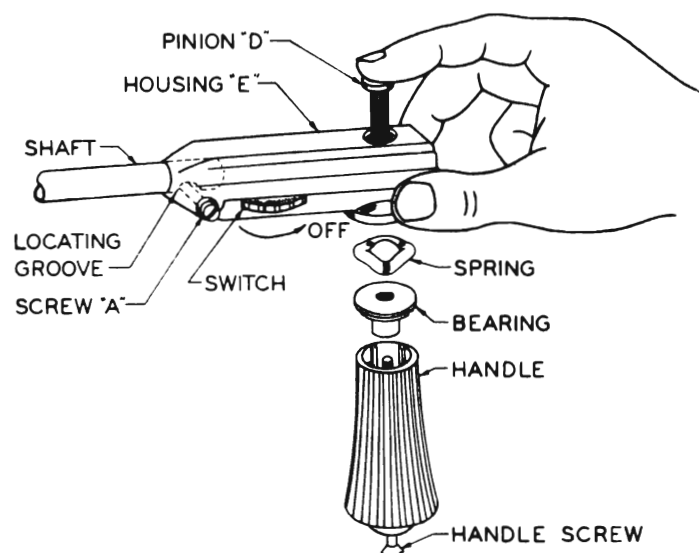


Figure 11-38—Assembly of Safety Light Pinion and Handle

b. Installation of Safety Light

1. Make sure that mounting bracket fits snugly into the lamp arm and is retained by the small spring on shaft. A small tang of the spring fits into a hole in shaft to hold mounting bracket in place with the correct tension.

2. Place the gasket over shaft and against mounting bracket. Rotate lamp head until racks protrude from shaft to equal lengths, then tie rack ends together with string or rubber band.

3. Put shaft through hole in body pillar and through the friction bracket on inside of body. Install mounting bracket attaching screws, taking care to tighten screws alternately a little at a time until both are uniformly tight.

4. Be sure to turn switch to "off" position to avoid damage to switch contacts. See figure 11-38.

5. Remove string or rubber band from racks then slide housing into position on shaft. Do not force housing into position as driving racks may be damaged. Start screw "A" in housing but do not tighten. Screw should be in approximate center of locating groove in shaft.

6. Insert the pinion between teeth of driving racks using care to start pinion in center of hole in housing. Pinion should slip into place

easily under very light finger pressure. If more than light finger pressure is required, pinion is not located in center of hole in housing.

7. Install spring, bearing, handle, and handle screw. Tighten screw securely then rotate handle to see that pinion and racks move freely. Finally, tighten screw "A" securely.

8. Install fuse in fuse holder, connect fuse holder together and force it into clip located just below the left defroster nozzle. Check to make sure that safety light lead is securely attached to No. 3 terminal of the lighting switch.

11-12 AUXILIARY (FOG) LAMPS

When the lighting switch is in parking position, either the parking lamps or the auxiliary lamps will burn, depending on the position of the auxiliary light switch.

During the installation of the auxiliary lamps, the white wire to the parking lamps is disconnected from the No. 2 terminal of lighting switch and connected to one terminal of the auxiliary light switch. The other terminal of auxiliary light switch is connected by a jumper wire to the No. 2 terminal of lighting switch. The auxiliary lamp wiring is protected by the thermo circuit breaker on the lighting switch.

The auxiliary lamps must be properly aimed, and should always be checked after any work on the front end sheet metal assembly. The following procedure covers proper aiming of each lamp individually.

1. Place car on a level stretch with a light colored surface or aiming screen twenty-five feet (25') ahead. Draw a horizontal line on this surface four inches (4") BELOW the level of the fog lamp center. See figure 11-39.

2. Sight through the center of the rear window of the car over the radiator ornament to determine the vertical center line of the car and draw a vertical line at this point.

3. Place a vertical line the same distance to the left or right of center as the lamp is from center of the car.

4. Aim the lamp (without removing lens) so that the top of the beam is at the horizontal line, and centered sideways on the axis of the lamps, regardless of its position to the left or right of the car. After the lamp has been properly aimed, tighten the lamp nut securely.

11-13 REAR WINDOW WIPER

The control provided with the rear window

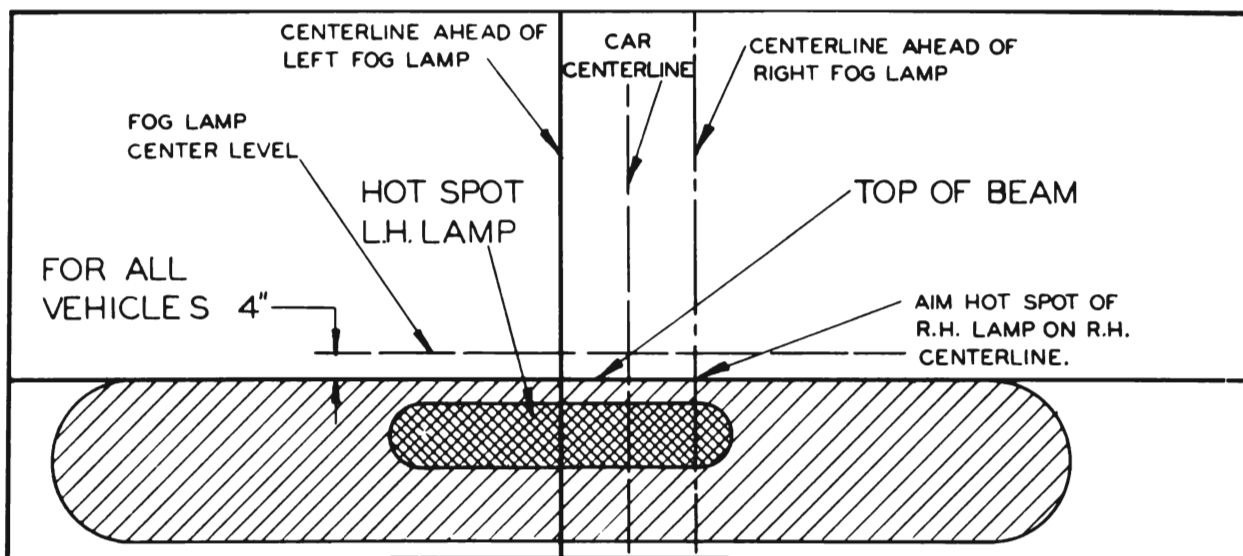


Figure 11-39—Auxiliary Lamp Aiming Chart—Left Hand Lamp Pattern Shown

wiper is a combination push-pull and turn type. The wiper is turned on by pulling control knob out, and the speed is adjusted by turning the knob. Pushing the control knob in to stop wiper action will bring the wiper blade to the parked position.

Installation instructions are contained in each rear window wiper package. If it becomes necessary to remove the 1948 model wiper motor for any reason, it may be properly reinstalled by referring to figure 11-40. The installation drawing for 1949 models is not available at time of printing manual.

After installation of wiper motor, and before installation of wiper arm, start engine and turn wiper on to check for proper operation of motor. Turn wiper off, but leave engine running. Place arm and blade in parked position on window glass and slip arm over the driving hub on wiper motor shaft. Turn wiper on and then off to check operation and return to parked position. If blade does not park correctly, slip arm off and reinstall in required position on driving hub.

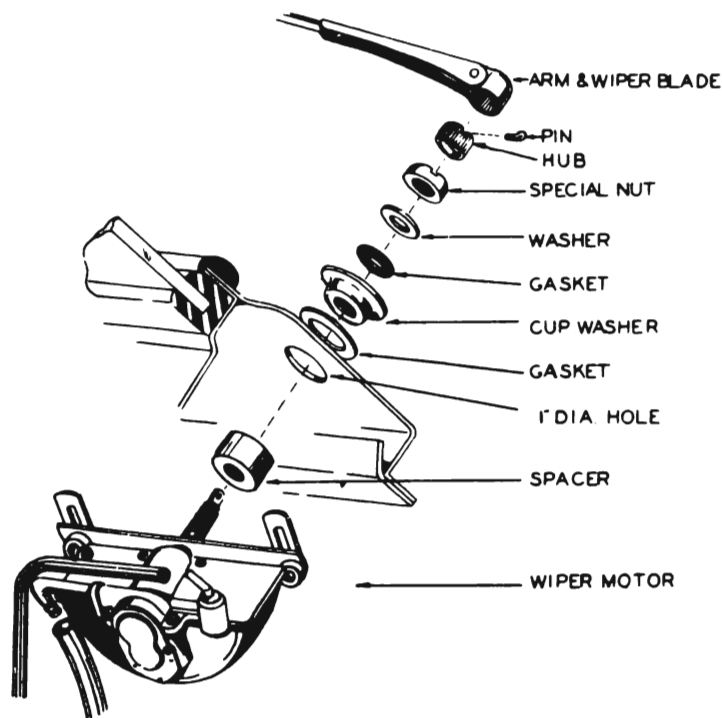


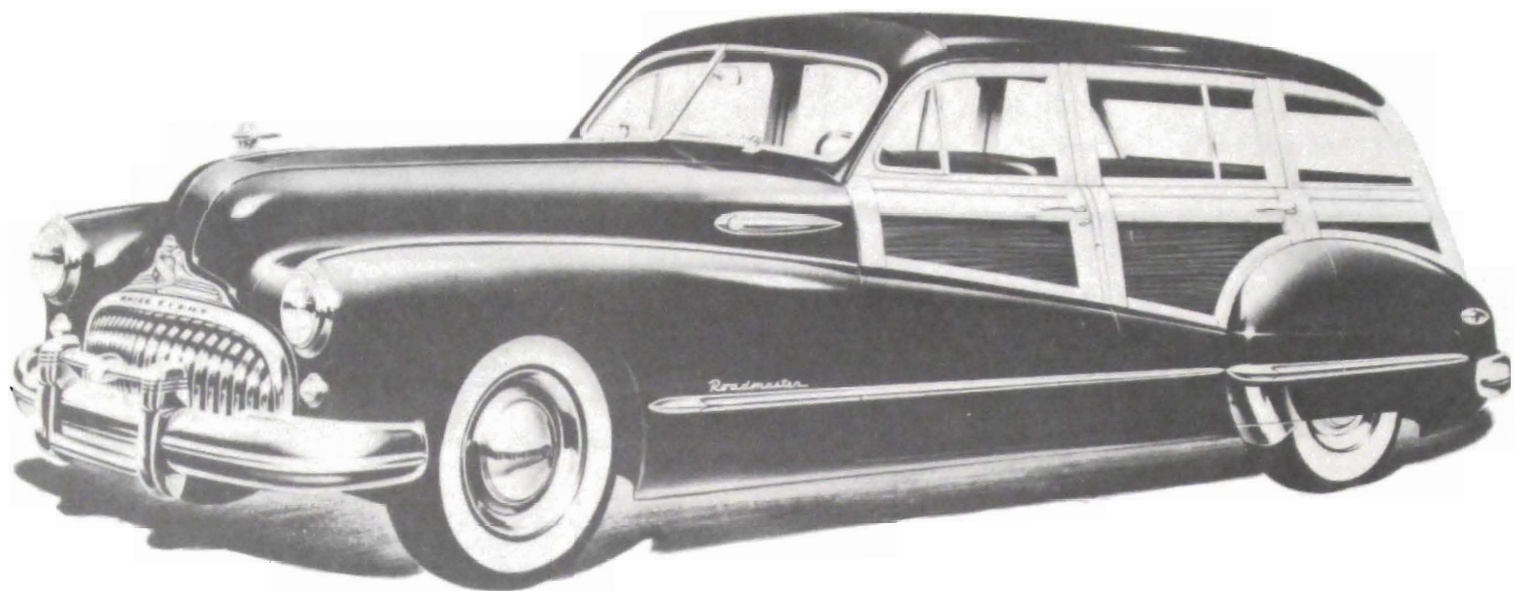
Figure 11-40—Rear Window Wiper Installation—1948 Models

WARNING—CARBON MONOXIDE

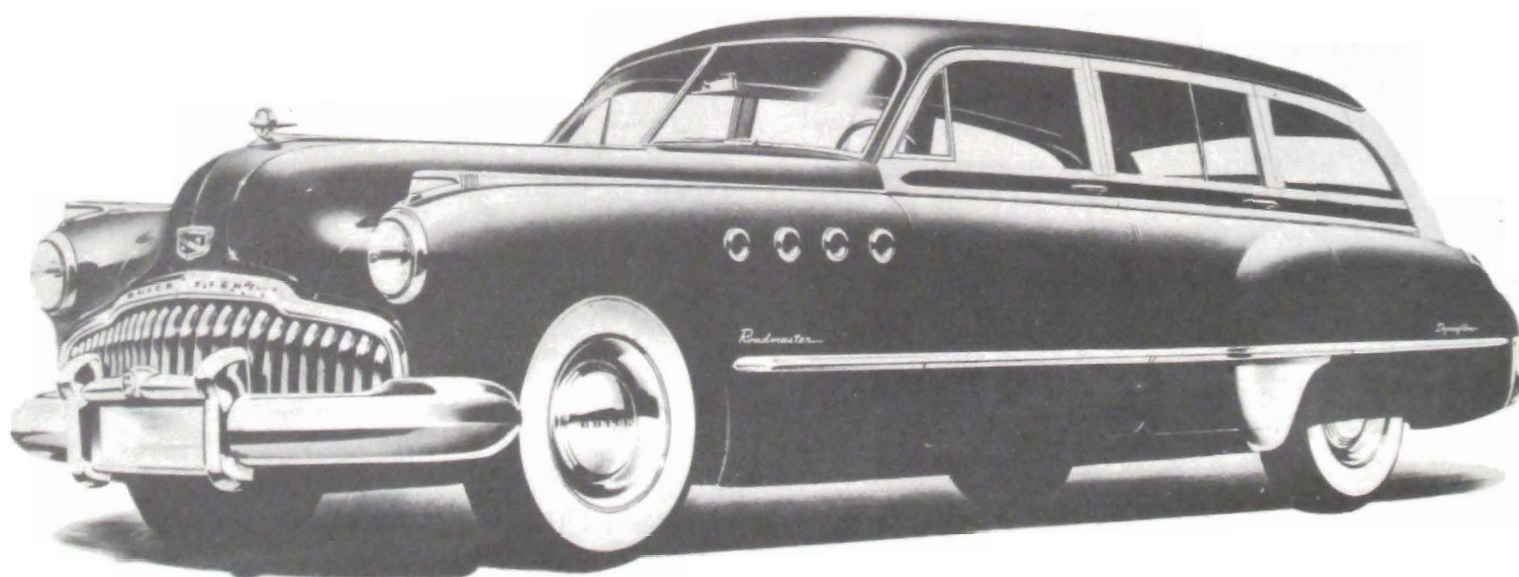
Avoid inhaling exhaust gases when any concentration of these is present in the air, i.e., in a garage, in congested traffic, or when stopped closely behind a vehicle with its motor running. Exhaust gases may have strong odors which normally should give warning of their presence. However, the exhaust gases from some vehicles may not be noticeable under certain conditions and the senses of people react differently. Exhaust gases contain a percentage of carbon monoxide which is a poisonous gas that, by itself, is tasteless, colorless, and odorless.

CAUTION

To keep out offensive odors and exhaust gases when traveling in congested traffic or when parked behind a car having its motor running, shut the outside air intake valves by pushing the knobs marked VENTILATION and HEATER.



1948 Model 79



1949 Model 79