

ACCESSORIES

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DELUXE ELECTROMATIC RADIO

GENERAL DESCRIPTION

The Deluxe Electromatic Radio (Fig. 14-1) is equipped with a "selector bar" and five push buttons to provide automatic tuning of all available stations in any locality. The push buttons are of course preset to the owners favorite stations while the selector bar provides tuning to all stations transmitting in the area. Two control knobs flank the radio dial. The left hand knob is the on-off switch and volume control. The tone control is mounted behind the left knob. The tone control provides regulation of tone characteristics. The right knob is the manual tuner. Behind the manual tuning knob is a three position "sensitivity" control that limits signal strength. When the control is moved full counterclockwise only the strongest stations are picked up by the selector bar. Movement of the sensitivity control in a clockwise direction to the second and third positions will simply increase the signal pick up ability of the selector bar to all listenable stations.

Antenna height controls automatic station selection similarly to the sensitivity control. If the station indicator sweeps the dial repeatedly without stopping, the antenna should be raised to help strengthen the broadcasting signal before any service work is attempted.

SERVICE INFORMATION

SETTING PUSH BUTTONS

Setting of the five push buttons is accomplished as follows: Manually select desired station starting at low end of dial and adjust for peak reception. Pull open door above push buttons and line up one of the five red tabs with the station indicator (starting with

left hand tab). By repeating this process five stations will be preset to push button operation. Where two stations operate at close to the same frequency it may be necessary to offset the tabs slightly to assure selection of the station desired.

In support of the civil defense program, both Pontiac radios feature the "civil defense marking" (black circle and white triangle) at the CONELRAD frequencies of 640 and 1240 kilocycles.

ANTENNA TRIMMER ADJUSTMENT

In order to make the antenna trimmer adjustment, the car should be outdoors and as far removed from electrical disturbances as possible. Extend the antenna to its full height. Tune in a weak station between 600 and 1000 kilocycles where it is possible to turn the volume control full on. This is necessary in order to offset the action of the automatic volume control. Using a screw driver inserted through the small hole indicated by arrow in the right side of the tuner case, turn the trimmer adjusting screw clockwise until the station fades out. Turn the screw counterclockwise until the station peaks in volume and starts to fade. Then adjust the trimmer screw between these two extremes for maximum volume.



Fig. 14-1 Deluxe Electromatic Radio

This should be done on new car pre-delivery inspection and also after a set has been removed from the car and worked on by a radio repair man. The reason for trimming the antenna after service work has been performed is that the radio repair man will undoubtedly have adjusted the trimmer to match his antenna so that it no longer matches the antenna in the car from which it was removed. Trimming the antenna is especially important with the deluxe electromatic radio inasmuch as this will directly affect the sensitivity control of the selector bar. **NOTE:** For removal or replacement of tuner or audio-powered unit see pages 14-2 and 14-3.

DELUXE RADIO

GENERAL DESCRIPTION

The Deluxe radio (Fig. 14-2) is a push button tuned, dual unit, superheterodyne set having six tubes plus a rectifier. The radio consists of two units which are the tuner and the audio-power unit. In addition to push button tuning, the radio has manual tuning, an off-on and volume control, and a tone control. The rear seat speaker control, on cars so equipped, mounts on front of the tuner unit just above the dial face. Either the standard (manually operated) antenna or the motor driven antenna may be used with the radio.

Both radio units are located behind, and attached to the instrument panel. The audio-power unit contains the vibrator, rectifier tube, phase inverter transformer, speaker, and two output tubes which are accessible from behind the right side of the instrument panel. After the tuner, located in the center of the panel, has been removed, a cover on top provides access to the remaining four tubes.



Fig. 14-2 Deluxe Radio

SERVICE INFORMATION

SETTING PUSH BUTTONS

1. Turn the receiver on and let it play for ten or fifteen minutes so all metal parts expand to operating temperature.
2. Select the push button to be adjusted and pull it to the right and out, as far as it will go.
3. Tune in the desired station with the manual tuning knob.
4. Push the push button all the way in and release. The push button is now set up.

ANTENNA TRIMMER ADJUSTMENT

1. Turn radio on and allow it to operate for approximately 10-15 minutes to reach normal operating temperature.
2. Extend antenna to full length.
3. Turn volume control on full and tune to a weak station between 600 and 1000 kilocycles.
4. Using a small screw driver, inserted through small hole (indicated by arrow) in right side of tuner, adjust trimmer screw to obtain maximum volume.

TUNER—REMOVE AND REPLACE

REMOVE

1. Disconnect "A" lead and dial light lead from fuse block (terminals number 12 and 7 respectively) and remove wires (taped together) from clips above left cowl trim pad, on braces between steering column and fire wall, and beneath glove box.
2. Remove interconnecting cable from audio-power unit.
3. Remove antenna lead-in from right side of tuner unit.
4. Disconnect "A" lead at connector between tuner unit and audio-power unit.
5. Remove nut, lock washer, and plain washer from stud at right rear side of tuner unit.
6. Loosen set screws in two outer control knobs; remove all control knobs, washers, and nuts which bear against instrument panel finish plate. Remove finish plate.

7. If car is equipped with rear seat speaker, remove two screws which retain rear speaker control to tuner and remove control (Fig. 14-2).

8. Remove screw and lock washer from tabs on either side of tuner (Fig. 14-2).

9. Remove tuner by pulling outward from in front of instrument panel.

REPLACE

1. Position tuner unit in opening in instrument panel and place brace over stud on right hand side of tuner; install screws on either side of tuner (Fig. 14-2) and tighten screws securely.

2. If car is equipped with rear seat speaker, install speaker control on tuner unit (Fig. 14-2).

3. From beneath instrument panel, install washers and nut on stud on right rear side of tuner and tighten nut securely.

4. Connect "A" lead connector between tuner unit and audio-power unit.

5. Connect rear speaker wires on cars so equipped.

6. Replace antenna lead-in in tuner unit.

7. Replace interconnecting cable plug in socket on audio-power unit.

8. Replace "A" lead wire and dial light wire in clips and connect to fuse block (terminals number 12 and 7 respectively).

9. Replace instrument panel finish plate, retaining nuts, and control knobs.

AUDIO-POWER UNIT—REMOVE AND REPLACE

REMOVE

1. If tuner unit has not been removed, perform steps 2 and 4 of tuner unit removal procedure.

2. Disconnect rear seat speaker wires from audio-power unit.

3. Remove antenna lead-in from clips on underside of audio-power unit. (If car is equipped with power antenna, remove power cables from clips.)

4. Remove screw at top left side of audio-power unit.

5. Support unit and remove two retaining screws from bottom of instrument panel; remove audio-power unit.

REPLACE

1. Place audio-power unit in position behind instrument panel and loosely install two screws at bottom of panel.

2. Replace retaining screw at top left side of audio-power unit and tighten screw securely.

3. Replace antenna lead-in (and motor driven antenna power cables) in clips on underside of audio-power unit.

4. Connect rear speaker and rear speaker control wires to audio-power unit; connect "A" lead at connector between tuner and audio-power unit.

5. Replace interconnecting plug in audio-power unit.

6. Tighten retaining screws at bottom of instrument panel.

POWER ANTENNA

OPERATION

The electric antenna operating switch is located on the instrument panel. To raise antenna, lift operating switch lever up; to lower, push switch lever down. When lever is released it returns automatically to the "Off" position. The antenna can be raised or lowered to any intermediate height by releasing switch lever when desired position is reached. **CAUTION:** Do not hold switch in operating position beyond full travel of antenna (up or down) any longer than necessary to make sure antenna has reached the end of its travel. Such practice would result in motor overload and excessive wear of the drive mechanism.

POWER ANTENNA—REMOVE, OVERHAUL, AND REPLACE

REMOVE

1. Lower antenna sections and remove upper mounting nut (Fig. 14-3), using Antenna Nut Spanner Wrench J-5185-1; remove adapter and pad.

2. Disconnect wires to antenna motor and disconnect antenna lead-in at point where rear lead-in connects to front lead-in.

3. Remove clips and nylon storage tube from gas tank flange on rear frame cross member.

4. Remove screws which retain fender bracket to fender.

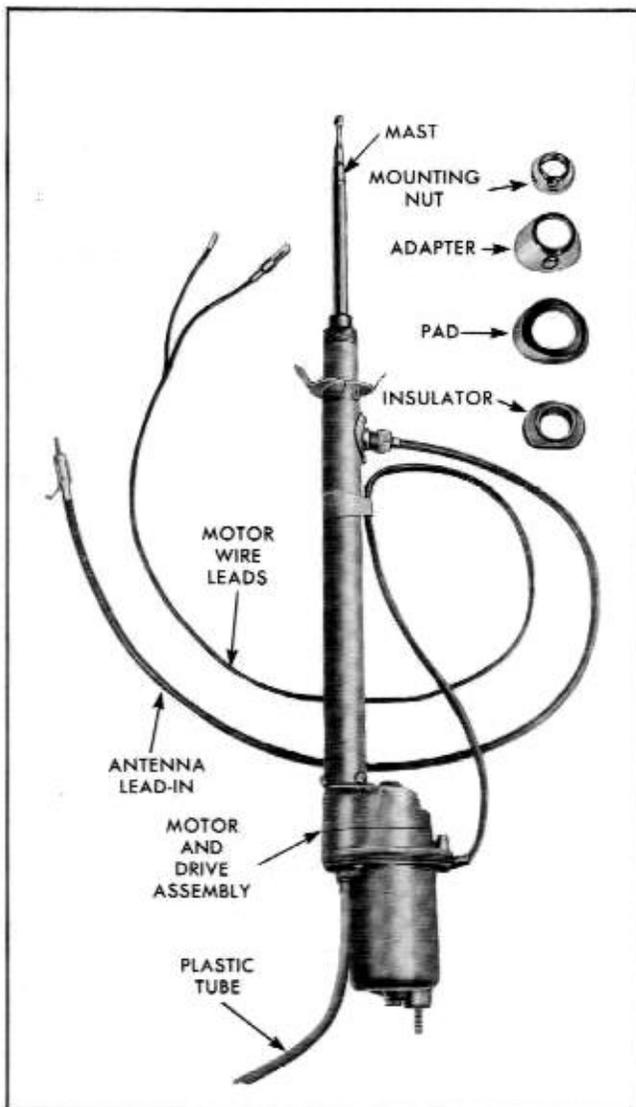


Fig. 14-3 Power Antenna

5. Remove antenna assembly and insulator on upper end of tube.

DISASSEMBLE

1. Remove three body tube to motor cover screws and remove body tube.

2. Remove mast sections and nylon strip assembly from motor as follows:

a. If motor is in operating condition connect motor cables to 12 volt current source to operate motor and run nylon strip out of drive pulleys of drive assembly.

b. If motor is inoperative, nylon strip can be pulled out of drive by holding motor firmly and pulling lower or large section of antenna mast until nylon strip is disengaged from drive. **NOTE:** It may take

considerable force to pull nylon strip through motor drive mechanism, but this will not damage unit.

3. If power unit is to be replaced, remove antenna support bracket from power unit, and drive assembly. **CAUTION:** Power unit and drive assembly should never be disassembled. This part is serviced only as a unit.

ASSEMBLE

1. If new power unit is being installed, fasten bracket to stud on lower end of power unit assembly using lockwasher and nut.

2. Insert end of nylon strip of mast sections into opening in motor assembly and connect motor terminals to 12 volt source to operate motor and drive unit. This will draw the nylon strip through motor.

3. Place body tube over mast sections with connector facing motor side, slide body tube down onto motor cover, and install three attaching screws.

4. Inspect plastic tube to make sure it is free of any obstruction due to mutilation or broken nylon strip. Insert nylon strip in tube, position tube on antenna assembly as shown in Fig. 14-3 and fasten plastic tube to motor using two attaching screws.

5. Operate antenna for 10 to 15 complete cycles to make certain it operates properly.

REPLACE

1. Place insulator on flange at upper end of tube; place antenna tube through hole in fender making certain that insulator protrudes through fender.

2. Ensure that fender bracket and flange of fender are clean so as to provide good contact; position bracket on fender and install lock washers and screws.

3. Connect antenna lead-in; connect wires to motor.

4. Replace pad on fender; replace adapter, and upper mounting nut. Tighten nut securely with Antenna Nut Spanner Wrench J-5185-1.

5. Check antenna travel. Time must not exceed 12 seconds for full up or down travel.

6. Replace nylon storage tube.

REAR SEAT SPEAKERS

A new radio rear speaker system employing two rear speakers (Fig. 14-4) and conventional single front speaker, is introduced this year to bring the magic of Hi Fidelity sound to automobile radio recep-



Fig. 14-4 Rear Seat Speakers

tion. The twin rear speakers, each having different response characteristics, are mounted left and right of center in the rear package shelf. Control of the radio's speaker system is accomplished through the use of a five position switch that provides the following selections:

1. Front speaker only.
2. High response rear speaker only.
3. Low response rear speaker only.
4. Both rear speakers (Hi-Fi).
5. All speakers (Hi-Fi).

The rear speaker control switch, in conjunction with the radio tone control knob, now makes possible twenty different sound combinations to assure personal satisfaction in tone control or sound distribution, and compensates for many variations in program characteristics.

POWER SEAT

The power operated six-way front seat adjuster (Fig. 14-5) has forward and backward travel of 5", vertical travel of 2" and tilting movement through 15° to provide a comfort range without parallel in any other power operated seat. Control of the seat is accomplished through three switches mounted in a control panel located at the left hand side of the seat. Raising or lowering of the front of the seat is caused by up or down movement of the front switch. Elevation of the rear of the seat, up or down, is controlled by the rear switch and, overall up or down movement of the seat is controlled by the simultaneous or alternate actuation of both the front and rear switches. Fore and aft (horizontal) movement of



Fig. 14-5 Power Seat

the seat is controlled by the center switch. The power seat electrical circuit as well as the power windows are protected by a 40 ampere circuit breaker mounted at the top of the left side kick pad. NOTE: Complete service and diagnosis are given in Fisher Body News, Volume 15-7.

BACK-UP LAMPS

The back-up lamp switch on Hydra-Matic equipped cars is incorporated in the starter neutralizer switch. See the 1956 Hydra-Matic Shop Manual for correct adjustment of starter neutralizer and back-up lamp switch.

The back-up lamp switch used with vehicles equipped with Synchro-Mesh transmissions is mounted on the steering column. Moving the shift lever to the reverse position causes the switch actuating pin in the gearshift lower lever to close the switch, completing the electrical circuit anytime the ignition switch is in the "ON" position. The actuating pin should be adjusted to clear the switch by $\frac{1}{8}$ " when the gearshift lower lever is moved into second gear position.

UTILITY LAMP

The luggage compartment and utility lamp (Fig. 14-6) replaces the unit that was formerly located under the hood and is used on all models except Station Wagons. The light is incorporated with a reel containing seventeen feet of wire that is held to a deck lid bracket by two spring clips. A mercury



Fig. 14-6 Luggage Compartment and Utility Lamp

switch mounted on the deck lid automatically closes the electrical circuit when the deck lid is raised.

Since this unit cannot be used on the Station Wagon the under the hood style utility lamp is used.

THE UNDERHOOD LAMP

The utility lamp (Fig. 14-7) on all Station Wagons is now a stationary unit located near the front of the hood and operated by a mercury switch. The electrical circuit is so arranged that the lamp circuit will be energized only when the hood is raised.



Fig. 14-7 Underhood Lamp

WINDSHIELD WASHER

The windshield washer is operated by a foot pedal and includes a wiper coordinator. The windshield washer replaces the vacuum type used heretofore. The actuating pedal for the new washer is located above and to the left of the clutch pedal area in the toe board (Fig. 14-8). A new pump is used in conjunction with a jar and mounting bracket. A single nozzle is mounted centrally on the rear of hood. This nozzle contains two adjustable ball type openings that provide control of the stream's direction and windshield contact area.

By depressing the foot pedal at the toeboard the pump forces twin jets of washer solution onto the windshield while the coordinator simultaneously activates the windshield wiper. Release of the foot pedal automatically shuts off the solution and windshield wiper.

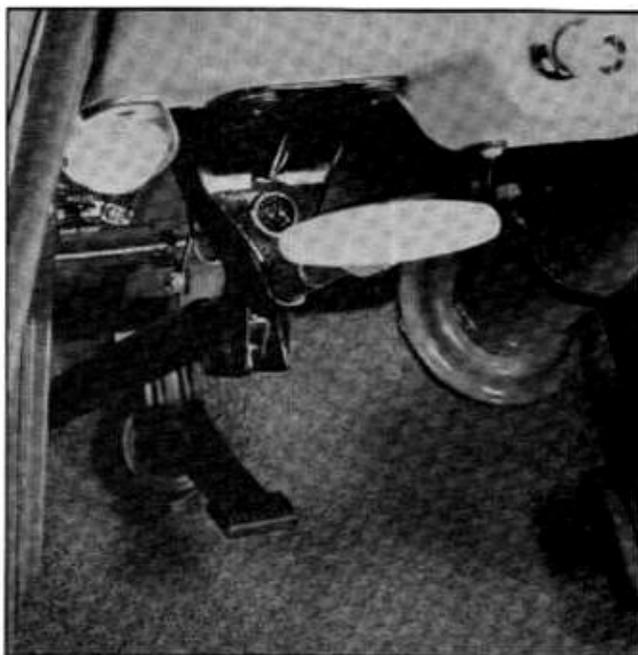


Fig. 14-8 Windshield Washer Foot Control

ADJUSTMENTS ON CAR

To adjust the windshield washer nozzles, insert a pin in the small hole and position the nozzle so that the water strikes the windshield about 11" above the bottom and about 13" to the left of center for the left hand nozzle and 13" to the right of center for the right hand nozzle.

Care should be taken to avoid clogging nozzle jets when wax or cleaner is applied to car. Clean water

should be used in washer jar with recommended washer solvent for best results.

ELECTRIC WINDSHIELD WIPER

GENERAL DESCRIPTION

The electric windshield wiper has a 12 volt D. C. motor with both a series and shunt field is used to drive a worm shaft which in turn drives an oscillating mechanism through a nylon worm gear. This electrically operated wiper (Fig. 14-9) will clean through about $125\frac{1}{2}^\circ$ of blade travel as compared to about 103° of blade travel with the vacuum operated wiper. The blade and arm assembly is heavier and utilizes increased spring tension to keep the blades on the windshield through a full arc to the end of the wrap-around windshield corner. With this wiper there is no slow down when passing cars, going up hills, or accelerating. When the electric wiper is installed at the factory, the combination fuel and vacuum pump used as standard equipment will be replaced with a fuel pump only.

The wiper motor switch is located in the wiper motor housing and is controlled by a cable connected to the switch control knob. The switch control knob which is the same as that used on vacuum wipers is located in the same place on the instrument panel and operated in much the same manner. It is a three position control; off, slow speed and fast speed. There is no detent or feel between the positions, so that when the wiper is turned on, it will usually be turned to the fast speed position. This wiper can be turned on by the foot operated windshield washer the same as if a vacuum wiper was installed.

The motor is protected against overheating by a 18 amp. thermal circuit breaker which is built into the case assembly. It is an automatic reset type circuit breaker which, if caused to open through an overload, will automatically reset in a short period of time. For additional protection, a 30 amp. fuse is located in a line holder inside the body next to the accessory fuse block. This fuse arrangement is designed primarily to protect the car's wiring harness.

The wiper blades will park in the full down position regardless of their position at the time the switch is turned to "OFF". This is made possible through a cam or eccentric drive mechanism built into the wiper motor assembly. The only differences in the complete wiper assembly between vacuum and

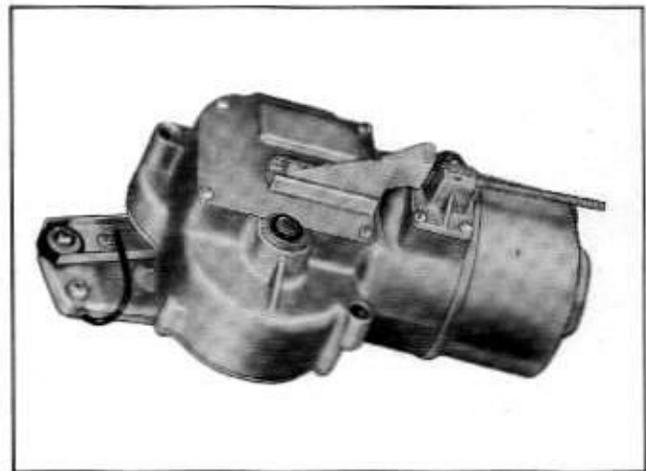


Fig. 14-9 Electric Windshield Wiper

electrically operated, are in the wiper motor, wiper arms and wiper blades. The transmissions, cable drives, and cable tension adjustments are exactly the same on either installation.

Do not manually move the blades through any part of the wiper arc at any time. The motor will act as a brake if the wipers are not operating. Forced lateral movement will cause a bent arm and/or a broken wiper transmission. To free blades which have frozen to the windshield move the blades straight away from windshield to remove ice.

Wiper blades should operate through 90-110 wipes per minute on slow speed, 145-170 wipes per minute on fast speed, both with a wet windshield.

VENTILATION AND HEATING AND DEFROSTING SYSTEMS

VENTILATION SYSTEM

The air intake for the ventilation system is located at the horizontal portion of the cowl forward of the windshield reveal moulding and flush with the hood. Outside air enters the louvered intake into an enclosed chamber which extends on each side of the cowl. Air in the chamber travels to inlets in the sides of the cowl trim pads. Control knobs mounted below the instrument panel provide individual control of the air flow through the inlets into the front passenger compartment.

Contour of the air chamber is such that water in the air is deflected away from the inlet ducts, which extend into the chamber and are also flanged to further prevent the entrance of water through the inlets in the cowl trim pads and the heater inlet duct located in the left side of the chamber. A large volume of water, such as would be present when the car is being washed, is prevented from entering the inlet ducts by gutters above the ducts in each side of the chamber.

HEATING AND DEFROSTING SYSTEM

GENERAL DESCRIPTION

The major components of the heating and defrosting system are the underseat heater, defroster, thermostatic control valve, and blower motor.

The heater is located under the front seat and circulates warm air at floor level to both the front and rear compartment by means of a distribution manifold running crosswise of the body under the front seat.

The defroster is located on the left side of the cowl in the engine compartment and discharges cool or warmed air, at the driver's option, across the windshield through slots at the bottom to reduce fogging and icing.

The thermostatic control valve located on the dash insulator behind the instrument panel automatically regulates the flow of hot water to the heater and defroster. In addition to automatic regulation, the valve may be manually opened or closed by the "TEMP" control on the instrument panel.

A blower and motor is located at the end of the heater inlet duct between the tubes leading to the heater and defroster. The use of the blower for normal driving is at the option of the driver since sufficient air may be forced through the heater and defroster by the forward motion of the car. For low speed driving or under severe conditions, the blower should be used.

WATER FLOW

The water flow in the heater and defroster units is illustrated in (Fig. 14-10). Water flows from the water passage in the intake manifold to the thermostatic control valve and then through the defroster core to the underseat heater. From the heater, water flows to the bottom of the radiator from where it is pumped back to the engine.

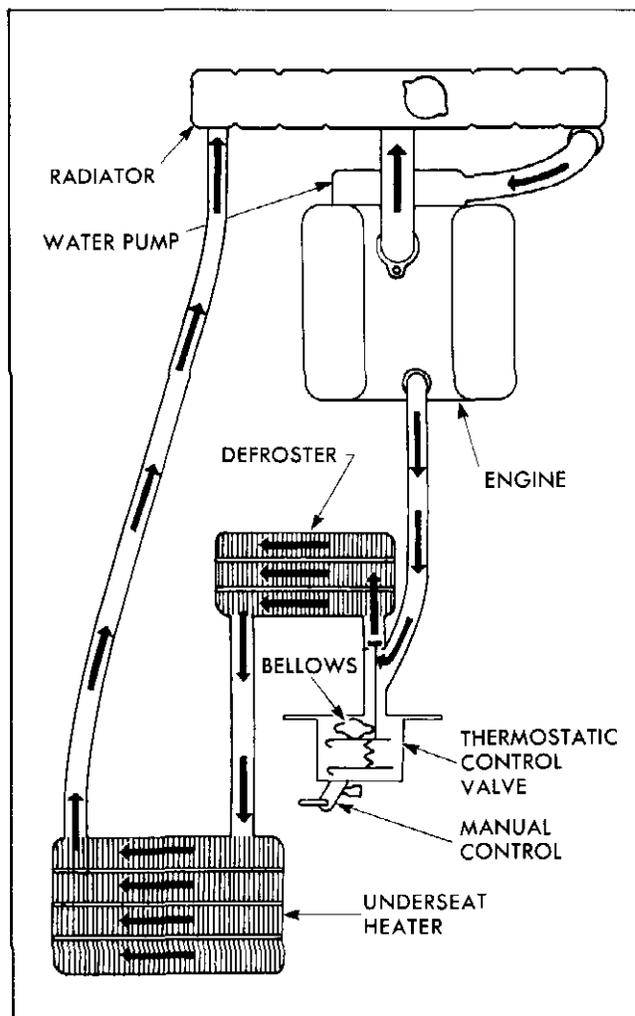


Fig. 14-10 Water Flow Through Heating and Defrosting System

AIR FLOW

The heater inlet duct is located in the left side of the air chamber. Outside air enters through the air intake and travels downward in the left side of the chamber to the heater and defroster inlet duct. When the air control is in either the "NORM" or "DE-ICE" position, the air valve in the heater and defroster inlet duct is open and air is admitted to the blower motor. From the blower motor air is directed to the defroster unit and underseat heater.

As the air control is moved from "NORM" toward "DE-ICE" a valve in the defroster moves to direct air over the defroster core and by-pass less around the core. Thus, at "DE-ICE" position all defroster air passes through the core and reaches the windshield as warm air.

In cool or moderately cold weather the air control can be set at "NORM" to provide cool refreshing air at the breathing level. In extremely cold weather, however, the air control should be set at "DE-ICE" so that warm air will be supplied from the defroster nozzles. Otherwise the extremely cold air passing from the defroster nozzles will cool the car, making adequate heating impossible.

ADJUSTMENTS ON CAR

HEATER AND DEFROSTER AIR VALVE LINKAGE—ADJUST

1. Loosen trunnion lock nuts on heater air inlet valve located between blower and dash, and on defroster valve on right side of defroster unit.

2. Place "AIR" control lever in "DE-ICE" position.

3. Rotate arm on defroster air valve clockwise (forward and down) until it is against stop and tighten trunnion lock nuts.

4. Set "AIR" control lever in "OFF" position.

5. Move arm on air inlet valve counterclockwise (outward toward fender) until valve seats and tighten lock nuts.

6. Check linkage for freedom of operation. If binding occurs, make minor adjustments (half turns on lock nuts) until linkage operates freely.

THERMOSTATIC CONTROL VALVE LINKAGE—ADJUST

1. Set "TEMP" control lever in "OFF" position.

2. Loosen lock nuts on rod which attaches to arm on thermostatic valve lever and rotate lever fully clockwise as viewed from bottom.

3. With "TEMP" indicator in "OFF" position and thermostatic valve lever fully clockwise, tighten lock nuts.

HEATER AND DEFROSTER TROUBLE DIAGNOSIS

1. Kinked Hoses

Observe all heater hoses for presence of kinks which would restrict the flow of water. Check especially the intake manifold to temperature control valve hose.

This hose makes a sharp bend at the vertical pipe

threaded into the front of the intake manifold. When a kink is observed at this point, a new hose should be installed.

2. Floor Mats

Check front floor mat to see that it is flat and not cutting off part of air flow. Rear floor mat should be retained by the heater air distributor duct.

3. Engine Thermostat

It should be kept in mind that the normal warm up time is slightly better than in 1955 due to 160° thermostat used.

4. Defroster Nozzles

Check defroster nozzles to be sure that they are not pinched together, blocked by windshield rubber or installed partially under the garnish molding.

ELECTRIC CLOCK

GENERAL DESCRIPTION

The electric clock is operated by current from the car battery so that hand winding is eliminated. Automobile clocks operating on direct current from the car battery must not be compared too closely for accuracy to the home electric clock operating on alternating current. The cycles per second of alternating current used in the home are controlled and periodically corrected at the power house, thereby eliminating accumulation of errors.

With the direct current system such as used in a car, no such control is possible; therefore, automobile electric clocks will accumulate errors day by day the same as hand wound, spring operated clocks. For this reason, it may be necessary to regulate electric automobile clocks.

Two makes of clocks are used. While both receive power from the radio-clock fuse on the fuse block, one make also has a 1½ ampere fuse mounted on the back of the clock.

With proper regulation, the variation from correct time should not be in excess of 2 minutes in 24 hours. The Pontiac clock starts automatically when set.

CLOCK ADJUSTMENT

To regulate clock, insert small screwdriver in slot of regulator screw at bottom of bezel and turn a slight amount. If clock runs fast, turn toward "S", or if clock runs slow, turn toward "F". One quarter turn is equivalent to about 5 minutes in 24 hours.

DUAL EXHAUST

A new dual exhaust system is available for all 1956 models with exception of the four-door 860 station wagon. The dual exhaust system has direct exhaust from the left and right bank exhaust manifolds, thereby eliminating the crossover pipe (Fig. 14-11). The dual exhaust system also improves engine performance because of back pressure reduction. The

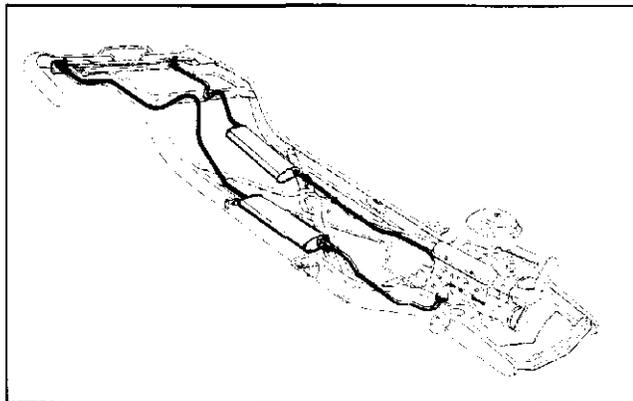


Fig. 14-11 Dual Exhaust System

dual mufflers are basically the same construction as the single muffler type; therefore, the capacity to pass exhaust gases with the heat control valve open has doubled. The mufflers and pipes are not interchangeable with each other or interchangeable with the standard single muffler type that is used on all models.

Dual exhaust mufflers have zinc coated internal parts to resist corrosion which is more severe with dual mufflers.

HANDICAP CONTROLS

ACCELERATOR AND BRAKE HAND CONTROL ADJUSTMENT

1. Adjust accelerator shaft to provide a positive closed throttle condition when accelerator return spring brings cross shaft lever against its stop.
2. Adjust brake tube assembly to bring hand lever against its stop on the accelerator shaft without depressing brake pedal.