

PONTIAC

Service Craftsman News



No. 8 S-297

August, 1957

MODIFY ROCHESTER 4-JET CARB IF FLOODING CONDITION EXISTS

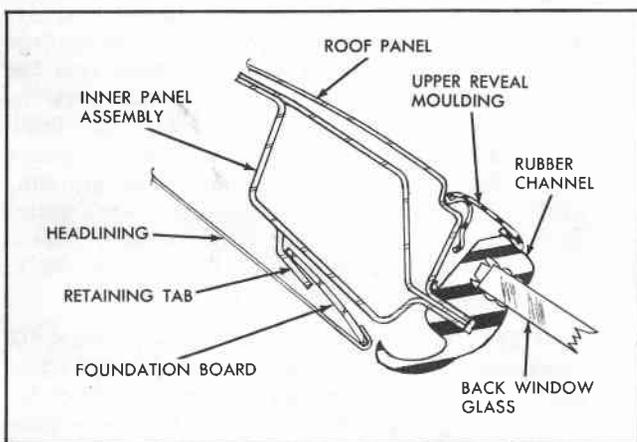


Fig. 1 Unconcealed Headlining

USE OF SHIM PROVES VALUABLE IN CONCEALING HEADLINING EDGE

If a condition is encountered on 2711 and 2719 styles where the rear edge of the headlining is not concealed by the forward lip of the back window glass rubber channel, the condition may be corrected using the following procedure:

1. At affected area, as indicated in Figure 1, gently press rubber channel out of the way. Carefully grasp the rear edge of the headlining and pull the headlining down and rearward until the foundation board disengages from the retaining tabs in the rear roof bow. The retaining tabs may bend slightly during this operation.

NOTE: When making repairs at the outer ends of the headlining on two-door styles, the removal operation can be made easier by removing the rear quarter window garnish moldings.

2. Obtain a piece of 1/16 inch panel board stock which has not been treated with asphalt or other bleeding-type materials. Cut the panel board

(See Headlining, page 68)

Install New Needle and Seat, Filter Element

The following carburetor modifications have been released to aid in eliminating flooding and stalling conditions on the Rochester 4-Jet carburetor.

1. Installation of a new type filter element package, part number 854467. This is a new fuel filter element of improved quality.
2. Installation of needle, seat and gasket package number 7012295. This package consists of a new type needle and seat assembly for both the primary and secondary side of the carburetor. The needle seat is of a new type with a narrower seating area. Also included in the package are fuel inlet screens and the necessary gaskets to perform the complete modification procedure.
3. Drilling of fuel balance ports to a larger size. This will aid in fuel flow between float bowl areas and minimize the effect of uneven fuel levels.
4. Resetting idle speed to 500 RPM in drive range.

The parts listed above are available from the zone warehouses. All of these items are important and repairs should be carefully performed in each case of flooding and/or stalling. The following step by step procedure should be followed and extreme care used in making adjustments. All parts are to be thoroughly cleaned before reassembly.

1. Remove carburetor and filter assembly from engine.
2. Remove air horn from carburetor.

(See Rochester 4-Jet Page 67)

IMPORTANT

Read the important air conditioning information beginning on page 2 of this issue.

COMPLETE AIR CONDITIONING SERVICE

ALWAYS USE PROPER PROCEDURE IN CORRECTING A/C COMPLAINTS

Product Information Reports have indicated that various irregularities are being experienced on 1957 models equipped with air conditioning. Whenever any of the following complaints are brought to your attention, perform the corrections listed under the respective complaint. Many of these service instructions have been covered in previous issues of the Service Craftsman News and in News Flashes. It is included here to present a complete outline of the difficulties being encountered and the "fixes" necessary to correct them.

Before attempting to make any corrections, perform an operational check of the refrigeration system to be sure that the system is properly charged and that suction and discharge pressures are proper for the existing outside air temperature.

EVAPORATOR CORE FREEZE-UP

In News Flash 57-12 dated May 14, 1957, an article was published entitled "Evaporator Core Freezes up With High Temperature at Right Nozzle". If the corrective measures listed in that article do not satisfactorily prevent freeze-up of the evaporator core, it will be necessary to calibrate the sensitivity of the rancostat capillary tube.

All rancostats currently being produced have the correct setting. They may be identified by a daub of yellow paint on the side of the valve where the part number is located.

Procedure for calibrating a rancostat is as follows:

1. Remove rancostat and plate as an assembly.
2. Check to make sure the adapter is properly sealed at the dash (See News Flash 57-12 May 14, 1957). Any air leak between the evaporator and rancostat capillary tube will cause the evaporator to freeze up.
3. Remove the pressed paper door on the rancostat for proper point opening (.006" - .010") and adjust if necessary. A one-fourth turn on point adjusting screw varies point opening .004".
4. Obtain a pail or container large enough to permit the rancostat plate (with capillary tube attached) to be completely covered by iced water in this container when the plate is immersed. Obtain also a sufficient quantity of crushed ice to permit controlling the water temperature between 40°F. -42°F.

5. Obtain the desired water temperature of 40°F. -42°F. using a known accurate thermometer. Make sure all the water in the container has the same temperature by mixing the water thoroughly.

NOTE: Leave the thermometer in the water at all times so you may observe any variations in water temperature.

6. Remove all ice that may be floating on the surface of the water so the ice will not interfere with the calibration of the rancostat by giving a false reading due to a lower contact temperature, should the capillary tube touch the ice.
7. Move the rancostat cam to the coldest position (the cam lever pin towards you as you look into the end of the rancostat from which the pressed paper door was removed). Immerse only the plate (with capillary tube) into the water, watching the points carefully to see if they open fully. A "click" sound may be heard when the points open. Should the points fail to open at this temperature level, turn the temperature range spring adjusting screw clockwise the necessary amount to permit the rancostat points to open at 40°F. -42°F.

NOTE: In order to properly calibrate the rancostat, remove the plate from the iced water and turn the range spring adjusting screw in increments of 1/4 turn in the clockwise direction and recheck after each adjustment. DO NOT attempt to turn adjusting screw while the parts are in the water as any pressure on the screw will result in assisting the points to open giving a false calibration.

CAUTION: During this procedure the water may warm to a temperature above 42°F. and it will be necessary to recool it to the proper temperature. It is essential that the water temperature be maintained at 40°F. -42°F. when checking the rancostat point opening.

8. Recheck calibration of the rancostat by immersing the plate and capillary tube into water having a temperature of 40°F. -42°F.

NOTE: DO NOT CALIBRATE the rancostat to a degree where it requires a temperature below 40°F. to open the points or evaporator will freeze up.

9. Remove the parts from this water to permit them to warm thoroughly. When warmed above 45.5°F. the points will close. When the water used for calibration warms to exactly a temperature of 42°F., immerse the parts again and check to be sure the points remain closed.

10. Replace the pressed paper door.
11. Write or paint the temperature at which the points opened on the face of the pressed paper door.
12. Replace rancostat and plate assembly, making sure the rancostat plate is properly sealed to the dash adapter to prevent air leaks between these two parts.

CAUTION: When replacing these parts, make sure the rancostat capillary tube is free in the groove in the adapter or the tube may be pinched when the parts are secured.

13. Adjust rancostat cable.

Once the proper water temperature is obtained, it is a simple matter to calibrate all rancostats you may have in your Parts Department. The sensitivity of the rancostat for 1956 is the same as that for 1957, and a 1956 rancostat may be calibrated in the same manner except that when the cam lever is at its coldest position the cam pin is away from you as you look into the end of the rancostat from which the pressed paper door was removed.

COMPRESSOR NOISE AND VIBRATION

The following are corrections for various compressor noises and vibrations which might be experienced.

COMPRESSOR ROAR

A noisy compressor pulley bearing may cause this complaint. To check for a noisy pulley bearing, remove the compressor drive belt. With one hand on the compressor body, spin the pulley with the other. If a rough sensation is felt coming from the compressor body, then replace the pulley bearing. Be sure to provide the necessary clearance of .008" - .013" between the compressor clutch front plate and the pulley as a new bearing may disturb the original clearance.

Check the suction and discharge hose to insure that they are not twisted or kinked and that they do not contact the fender skirt.

Other conditions that may cause these noises are explained under "Pumping or Growling Noise", "Vibration at 600 - 700 Engine RPM", or "Vibration at 18 - 25 MPH". If the roar or noise still exists after performing these checks and corrective measures, it will be necessary to replace the compressor assembly.

PUMPING OR GROWLING NOISE

This noise is only heard when the compressor is operating. In this case, check the suction and discharge hoses to insure that they are not twisted or kinked and that they do not contact the fender skirt. Should the noise continue, replace the suction hose with a 1955 suction hose (3134491).

Install 2 spacers (3134293) around the 1955 suction hose to space away from right frame and fender skirt junction.

VIBRATION AT 600-700 ENGINE RPM

The vibrations experienced at 600-700 engine rpm may be eliminated as follows:

1. Remove the compressor front bracket.
2. Reinforce the compressor front bracket as shown in Fig. 2, with metal that is 3/16" or 1/4" thick using the template shown in the lower left portion of this same figure.

NOTE: This bracket should be reinforced so the metal is at the lower edge of the bracket when installed on the car.

3. Replace reinforced compressor front bracket.

This repair may also reduce the same excessive vibration noted as the transmission shifts from 1--2, 2 - 3, and 3 - 4.

VIBRATION AT 18-25 MPH

The vibration experienced at speeds between 18 to 25 mph can be greatly reduced by proper alignment of the exhaust system from the exhaust manifold back through the tail pipe.

The vibration experienced at speeds between 25 to 35 should be at a minimum if:

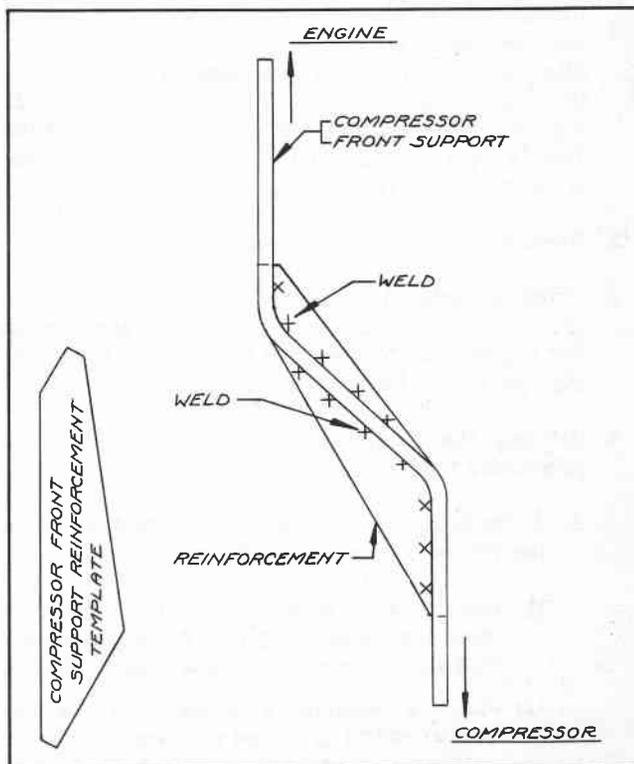


Fig. 2 Compressor Front Support Reinforcement

1. The receiver dehydrator filter assembly is held tightly by the clamps.
2. The compressor drive belt does not contact the receiver dehydrator filter assembly to the sight glass pipe.
3. There is sufficient clearance between the compressor and the fender skirt. NOTE: The oil test outlet may vibrate against the lower edge of the hole in the fender skirt because the clearance here is very slight. Enlarge hole to eliminate any contact at this point.
4. The oil cooler lines are held securely by the clamp which attaches these lines to the frame.
5. The compressor suction hose from the evaporator is properly aligned and does not contact the fender skirt.
6. The engine cross-over-pipe is in proper alignment to the exhaust pipe.
7. The heater pipe to the lower radiator tank does not contact or vibrate against the left fender skirt.

Should the above checks fail to remove the objectionable vibration, insulate the compressor rear brace from the intake manifold as follows:

1. Obtain two shock absorber front bushings (5325788), two shock absorber bushing retainers (043468), one manifold clamp washer (501215) and one bolt 3/8-16 x 2-1/4" (180132). As an alternate to the bolt use a piece of electrician's threaded hanger rod 3/8-16"x 3" long, a 3/8-16 nut and a spring lock nut. All parts except the 180132 bolt and the 501215 washer are in the front stabilizer link package.
2. Remove the compressor rear brace.
3. Using a rubber bushing as a guide, open the end of the compressor rear brace that attaches to the intake manifold so that the boss on the bushing just enters the hole in the brace.
4. Replace the compressor rear brace using the procedure below:
 - A. If the hanger rod is used as the stud, perform the fix as follows:
 - (1) Install the threaded stud (section of threaded hanger rod) into the intake manifold and place clamp washer over the stud.
 - (2) Place a bushing retainer onto the flat washer with the dished side up.
 - (3) Place a rubber bushing onto the flat washer with the flat side of the bushing down.

- (4) Holding the compressor rear brace intake manifold attaching flange over the boss end of the rubber bushing, place another bushing on top of the brace with the boss down.
- (5) Place the bushing retainer over the upper bushing and hold parts together with the nut. Tighten finger tight.
- (6) Start the compressor rear brace bolts into the compressor rear bracket and secure them finger tight.
- (7) Tighten the nut on the stud until the bushing begins to barrel out, then an additional full turn. Lock with the spring lock nut.
- (8) Tighten securely the compressor rear bracket to brace bolts.

NOTE: The compressor rear brace should not contact the rocker arm cover. If it is necessary to provide clearance grind only enough to obtain a clearance of no more than 1/16".

B. If the 180132 bolt is used, insulate the rear brace as follows:

- (1) Place a manifold clamp washer onto the intake manifold boss.
- (2) Place a bushing retainer onto the manifold clamp dish side up.
- (3) Place a bushing onto the bushing retainer with the boss on the bushing facing up.
- (4) Place a bushing retainer onto the 2-1/4" bolt so the head of the bolt will fit into the hex depression of the retainer.
- (5) Place a bushing onto the bolt so the boss of the bushing faces the end of the bolt.
- (6) Holding the compressor rear brace in position over the rubber bushing on the intake manifold, thread the bolt, bushing and retainer assembly through the brace bushing, retainer and manifold clamp and secure the bolt finger tight. Start compressor rear brace to rear bracket screws and tighten finger tight.
- (7) Tighten bolt at manifold until rubber bushings barrel out and tighten one full turn.
- (8) Secure compressor rear brace to compressor rear bracket bolts.

NOTE: The compressor rear brace should not contact the rocker arm cover.

If it is necessary to provide clearance grind only enough to obtain a clearance of no more than 1/16".

WATER COLLECTING IN EVAPORATOR

To correct this condition be sure the drain tube is not covered with mud or undercoating material. If the tube is of the early type, cut 1-1/2 of the 2 corrugations from the bottom of the drain tube (See Service Craftsman News, December 1956, Page 71).

INSUFFICIENT COOLING

Review "cause" and "remedy" under "insufficient Cooling" in the 1957 Air Conditioning Manual, page 46. In addition, the sealing procedure explained under "Evaporator Core Freezes-Up" and "Water Collecting in the Evaporator" will also assist in reducing nozzle temperature.

If these corrections still do not give satisfactory cooling, then the system should be modified. Two methods of modifying the 1957 Air Conditioning system to provide varying degrees of recirculation are explained below together with a list of the parts needed in the change.

PARTS REQUIRED

The parts required to provide recirculation on existing 1957 Pontiacs equipped with air conditioning are; 530752 shroud top opening (cowl) baffle, and 530840 air recirculating hole cover package which consists of a 530753 air recirculating hole cover and a 530768 air recirculating hole cover template.

These parts are now available from GMPD warehouses in Los Angeles, Dallas, Kansas City, Atlanta, Bloomfield and Chicago.

COWL METHOD

Should the owner be complaining of evaporator freeze-up only, the adjustment and calibration of cooling is desired. Then the car may be modified to incorporate a cowl recirculation system. Procedure for modifying these cars is as follows:

NOTE: The adapter must be properly sealed at the dash and the rancostat must be properly adjusted and calibrated.

1. Remove the cowl ventilator louver.
2. Place the 530752 shroud top opening baffle over the right side of the cowl. Hook the tab at the end of the baffle under the center of the cowl upper panel reinforcement brace to prevent any rattling at this point, making sure that body sealer seals any opening between this baffle and the cowl itself.

NOTE: Do not seal between the end of the tab end of the baffle (towards center of car) and the

cowl inner panel. Outside air will be drawn through this opening and also from the cowl right plenum chamber lower drain hole.

3. Secure this baffle with sheet metal screws; one at each upper panel reinforcement brace at the cowl (upper) right side.
4. Paint installed baffle with dull black paint.
5. Replace cowl ventilator louver.

In order to provide recirculation, the OWNER SHOULD BE INSTRUCTED TO OPEN THE COWL RIGHT VENT. Air circulation is from the inside of the car through the right vent, up the plenum chamber, through the air inlet of the air filter housing, and into the normal air system of the air conditioning unit. Some outside air will enter from the center of the cowl through the opening at the end of the baffle just installed and some air will also enter through the drain in the bottom of the right cowl plenum lower drain hole.

Pushing the right vent control in to close the vent valve will permit 100% outside air to enter the system, but at a reduced volume.

The right cowl vent may still be used for ventilation during spring, fall, and winter to permit the entrance of outside air through this opening, but at reduced volume.

1956 METHOD

Should the owner desire the maximum amount of cooling that can be obtained with provision for some outside air, the system may be modified to incorporate a recirculation feature similar to that used in the 1956 air conditioning system. 1957 cars equipped with air conditioning may be modified as follows:

NOTE: The adapter must be properly sealed at the dash and the rancostat must be properly adjusted and calibrated. (See News Flash 57-12, May 15, 1957).

1. Remove the air filter housing assembly.
2. Using the air recirculating hole template (530768), mark openings to be cut in dash and also punch to locate screw holes in dash.
3. Cut opening in dash shroud and also drill four holes using 9/64" drill. NOTE: Care should be taken that the drill or metal cutters do not break through rapidly and damage air conditioning hoses behind the dash.
4. Remove dash insulator knock-out completely and cover edges of opening with tape to prevent the fine insulating material from being pulled into the evaporator which would plug or restrict air flow through the evaporator.

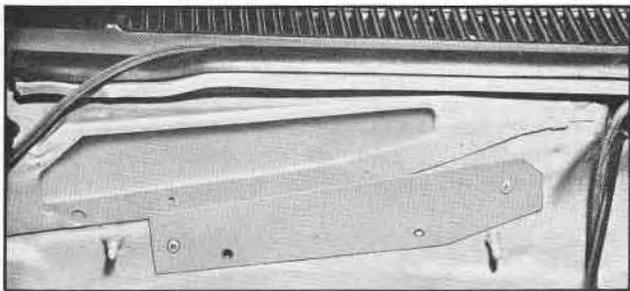


Fig. 3 Production Cover Plate

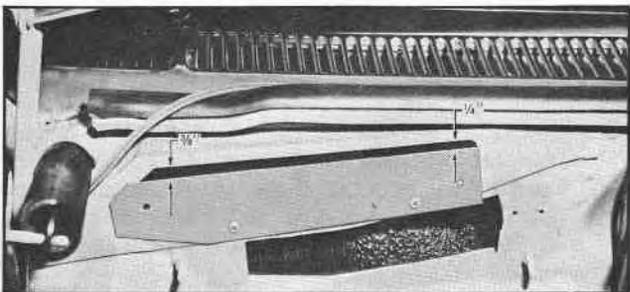


Fig. 4 Position of Plate for Cooler Weather

5. Place a bead of body sealer around the sides and lower outer edge of the 530753 cover. Place over the outside air opening to cover all but a gap 1/4", wide which would extend the entire length upper part of the hole (See Fig. 4).
6. Secure cover (530753) with sheet metal screws.
7. Replace air filter housing and adjust air valve cable.

During the cooler weather, the owner may wish to have the plate positioned as shown in Fig. 3 to prevent outside air from entering the car.

PRODUCTION CHANGE

A production change has been made on all 1957 air conditioned equipped cars to provide recirculation features. This will make possible both lower nozzle temperatures and reduced humidity in the car. There will be two steps in this production change.

1. The fresh air ventilator inlet on the cowl will have a shroud top opening baffle installed under the right side of the cowl ventilator louver. This will block off a large portion of the outside air supply. When the right cowl ventilator valve is open, air will be drawn into opening at the right kick pad and recirculated through the air conditioning system, together with outside air picked up from the unblocked area at the end of the cowl baffle.
2. To provide for an even greater percentage of recirculation, an opening has been made in the dash for air to pass directly from the passenger com-

partment into the inlet filter housing. This opening will be covered in production by a cover as shown in Fig. 3. Should the owner desire greater air cooling, it will be necessary to remove the filter housing and move this cover so as to form a baffle at the outside of the intake opening as shown in Fig. 4. Care should be used to seal between the dash and the cover to prevent water from entering the car.

NOTE: During cooler weather, the owner may wish to have the plate positioned as in Fig. 3 to prevent outside air from entering the car.

OPERATIONAL TEST SPECS.

The operational test specifications that appear in the 1957 Air Conditioning Manual (pages 52, 53 and 54) do not apply to 1957 cars modified to incorporate the recirculation features. New operational test specifications for suction, discharge and right nozzle temperatures, as effected by humidity, will be released as soon as possible.

SUGGESTED TIME ALLOWANCES

The suggested straight time allowances for the above corrections are as follows:

1. Rancostat adjustment and calibration only - 1.2 hrs. If necessary to seal adapter to dash, add .2 hr.
2. Compressor "Roar" (changing pulley bearing) - 1.1 hrs.
3. Vibration at 600-700 engine rpm (reinforcing compressor front bracket) - .9 hr.
4. Vibration between 25 and 35 mph (insulating compressor rear brace) - .8 hr.
5. Pumping or growling noise from compressor (change suction hose) - 1.9 hrs.
6. Water collecting in evaporator (modify drain tube) - .2 hr.
7. Recirculating with cowl baffle - .7 hr. If necessary to adjust and calibrate rancostat, add 1.2 hrs. If necessary to seal adapter to dash, add .2 hr.
8. Recirculating using 1956 method (dash opening) - 2.1 hrs. If necessary to adjust and calibrate rancostat add .5 hr. If necessary to seal adapter to dash add .2 hr.
9. Relocation of the 530753 cover at any time after original modification to either position is considered owner maintenance. The suggested time for this service is 1.5 hours.

ROCHESTER 4-JET

(Continued from Page 1)

3. Remove fuel filter and inlet nut from carburetor air horn as a unit.
4. Using a 3/16" drill, drill out the balance passage holes (Fig. 5). Note: These holes are drilled at an angle and care should be used to see that drill does not contact other areas of carburetor while drilling. Position drill as shown. Remove all burrs and chips after drilling.
5. Remove cluster assemblies from bowl.
6. Remove bowl from throttle flange.
7. Using air pressure only, carefully clean all cluster and bowl passages.
8. Remove floats, needles, seats and inlet screens from air horn.
9. Clean fuel passage in air horn by repeated blowing of air pressure from both needle seat holes.
10. Check for gum or carbon deposits in throttle bores, remove throttle body and clean in solvent if present.
11. Check to see that all passages in throttle flange are clean and open. Note: This is important. Remove idle mixture screws and by use of a light or a tag wire make sure passages are clean.
12. Install new inlet screens and needle and seat assemblies in carburetor air horn. Caution: Do not seat needles by tapping or lapping into position. This will damage narrow seating area.
13. Install new air horn gasket and set floats as follows:

A. Float Level

- (1) With air horn gasket in place and air horn inverted, position float level gauge J-6628 over floats as shown in Fig. 6 so that gauge is located against the curvature in base of carburetor air horn.
- (2) Bend float arms vertically at center so floats just contact gauge. The vertical height is $1\text{-}3/8" + 1/32"$.
- (3) If necessary bend float arms horizontally until each float pontoon is centered between gauge legs.
- (4) Repeat same adjustment on opposite float assembly.
- (5) With air horn inverted, lower edge of toe of float should be flush to $+1/16"$ from gasket surface. With gauge in position shown in Fig. 7, the two scribe marks on the gauge show required height of float toe necessary to ensure this clearance. If adjustment is necessary, hold float

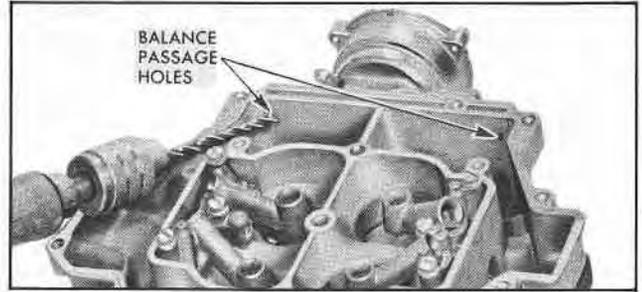


Fig. 5 Drilling Balance Passage

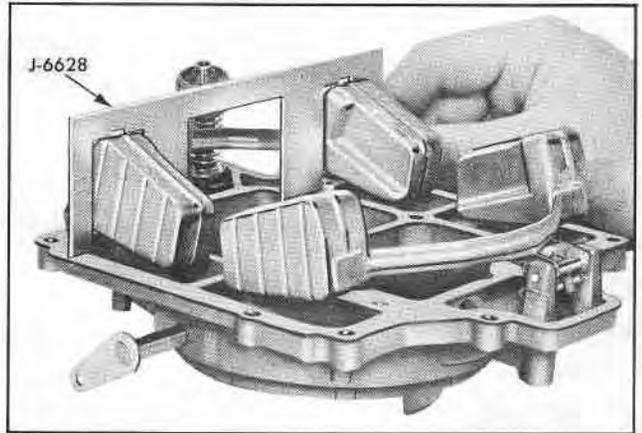


Fig. 6 Checking Float Level

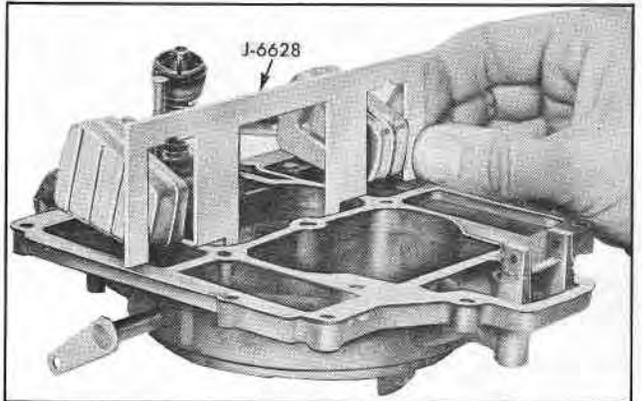


Fig. 7 Checking Float Toe Clearance

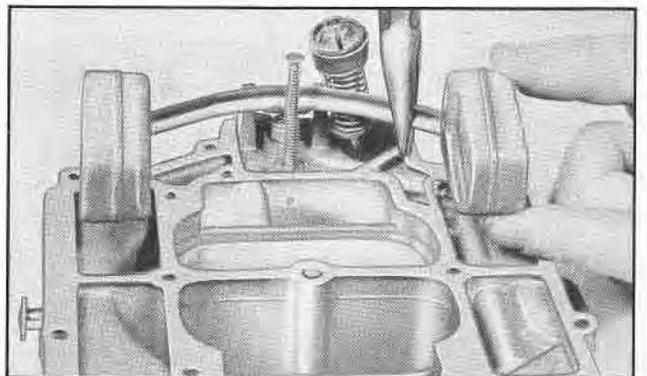


Fig. 8 Adjusting Float Toe Height

hanger adjacent to float pontoon, and with fingers bend toe of float up or down as required (See Fig. 8).

B. Float Drop

- (1) With float held in an upright position, check distance between air horn with gasket in place and the toe of float at end of radius as shown in Fig. 9. Float drop is correct when this distance is $1-13/16'' + 1/32''$. Note that this gauging is done at the toe of the float and NOT at the heel as shown in the 1957 Shop Manual.
- (2) If adjustment is necessary, bend float tang toward float needle seat to lessen drop and away from seat to increase drop.

- 14. Remove old fuel filter element and gaskets and discard.
- 15. Clean fuel filter passages and install fuel filter and gaskets from package number 854467.
- 16. Reassemble carburetor completely.
- 17. Reinstall carburetor on car using new manifold gasket and warm up engine.
- 18. Perform idle speed and mixture adjustment setting idle speed to 500 RPM in drive range, using tachometer.

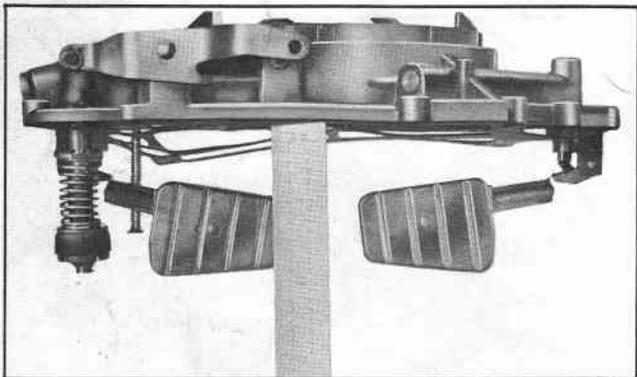


Fig. 9 Checking Float Drop

HEADLINING

(Continued from Page 1)

into a shim approximately four to six inches longer than the affected area. Trim the width of the shim so that it will be equal to the width of the foundation board plus the width necessary to obtain approximately 1/4 to 3/8 inch overlap, between the lip of the glass rubber channel and the headlining.

- 3. Rebend retaining tabs back into their original shape. Allow enough of an opening for shim to slide in readily.
- 4. Place shim between headlining and foundation board as shown in Figure 10.
- 5. Engage foundation board and shim into retaining tabs. Always work toward the center of a repaired area when re-installing headlining.
- 6. Using a flat-bladed tool, carefully pry lip of rubber channel over edge of headlining.
- 7. Reinstall rear quarter window garnish moldings on two-door styles.

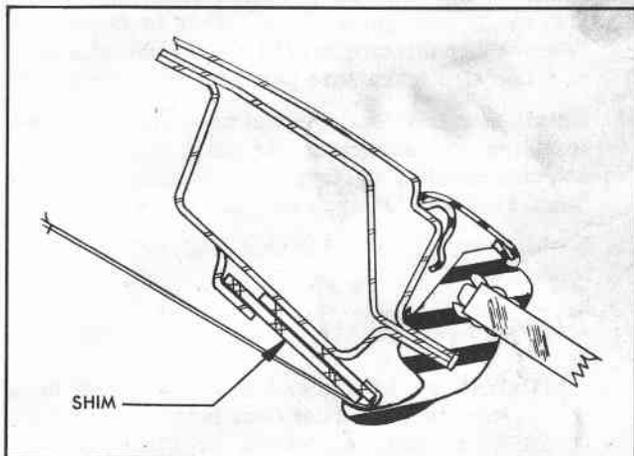


Fig. 10 Shim Installed

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.
