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Model 4GC
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ROCHESTER CARBURETORS

Model 4GC Carburetor
SERVICE MANUAL

UNITED MOTORS SERVICE—AC DIVISION
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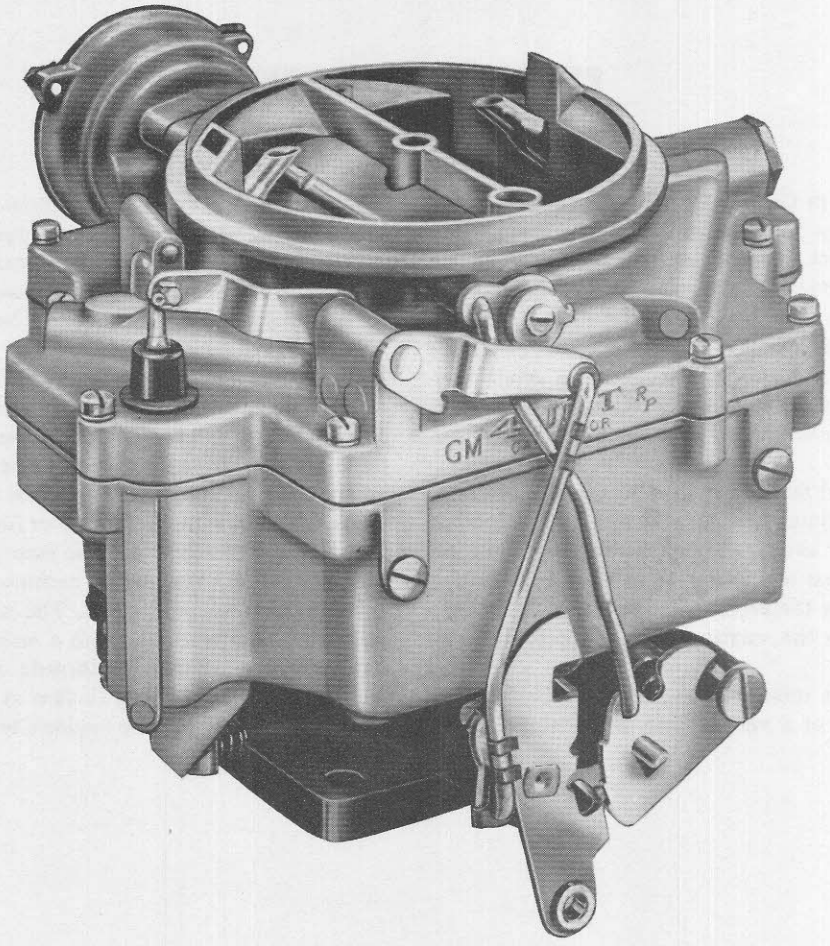


MODEL 4GC

ROCHESTER CARBURETOR

The Rochester Model 4GC Carburetor consists basically of two dual carburetors. The two carburetors will be referred to as the Primary or Pump Side and the Secondary or Fuel Inlet Side. The Primary Side completely controls the metering to the engine throughout the idle and part throttle range. The fuel from the Primary Side is supplemented by fuel from the Secondary Side throughout the power or wide open throttle range.

This design incorporates many new and distinctive features, as well as retaining many of the tested and proven features basic to the design of previous model Rochester Carburetors.

The Model 4GC Carburetor still retains the six basic systems of carburetion: Idle, Part Throttle, Power, Accelerator Pump, Float, and Choke. The following discussion will trace and describe the operation of each of these systems. The recommended disassembly and assembly procedure is also given. For adjustment instructions and specifications, refer to Instruction Sheet for the particular car application concerned.

PERFORMANCE FEATURES

The float bowls in the Model 4GC Carburetor completely encompass the main bores of the carburetor. This, plus the fact that a direct passage connects the main discharge nozzle wells and idle tube wells, provides for smooth operation regardless of the angle of tilt the car may assume.

Another basic feature of all Rochester Carburetors also incorporated in the Model 4GC is the fixed type main metering jets. No wear takes place at the jet orifice.

This carburetor model employs the use of a vacuum operated power system. In this way proper power mixtures are readily available upon a drop in manifold vacuum, regardless of the degree of throttle opening. It is not necessary therefore, to open the throttle completely to enrich the mixture sufficiently for power operation.

As in previous units, the Model 4GC Carburetor employs the use of a vented type pump plunger. By means of a vent valve ball, within the plunger head itself, fuel vapors are allowed to pass from the pump well to the float bowl under constant throttle conditions. This insures that the pump well will be primed with solid fuel at all times thereby being readily available for rapid acceleration.

This pump system, as in the Model BB, is also vented to the bore of the carburetor air horn. This is done to prevent pump pullover or fuel being discharged from the pump jets during high speed operation.

The chief feature, completely new to Rochester Carburetor design, is the secondary or fuel inlet side of the carburetor. This secondary side incorporates only three of the six basic systems of carburetion, those being Idle, Wide Open, and Float. The secondary throttle valves are controlled, through a series of linkages, by the primary or pump side throttle opening. The secondary side, by increasing air flow at high speeds, proportionately increases the engine's breathing capacity.

SERVICE FEATURES

The Model 4GC Carburetor, in keeping with all other Rochester designed carburetors, has been kept basically simple for ease of service.

A major portion of the calibrated metering parts is contained in the venturi clusters, located in the float bowl and may be readily serviced by removing the Air Horn Assembly.

The idle tubes and main discharge nozzles, being pressed into the venturi clusters, need not be serviced separately.

The power restrictions and pump jets are also pressed in at the factory, thereby making individual replacement unnecessary.

After the idling RPM has been set, no further adjustment of the idle, part throttle, power or targeting of the pump jets is necessary.

All field adjustments have been kept as simple as possible. For ease in servicing this unit, the special tools, gauges, and field adjustments required have been kept to a minimum.

OPERATING SYSTEMS

IDLE SYSTEM

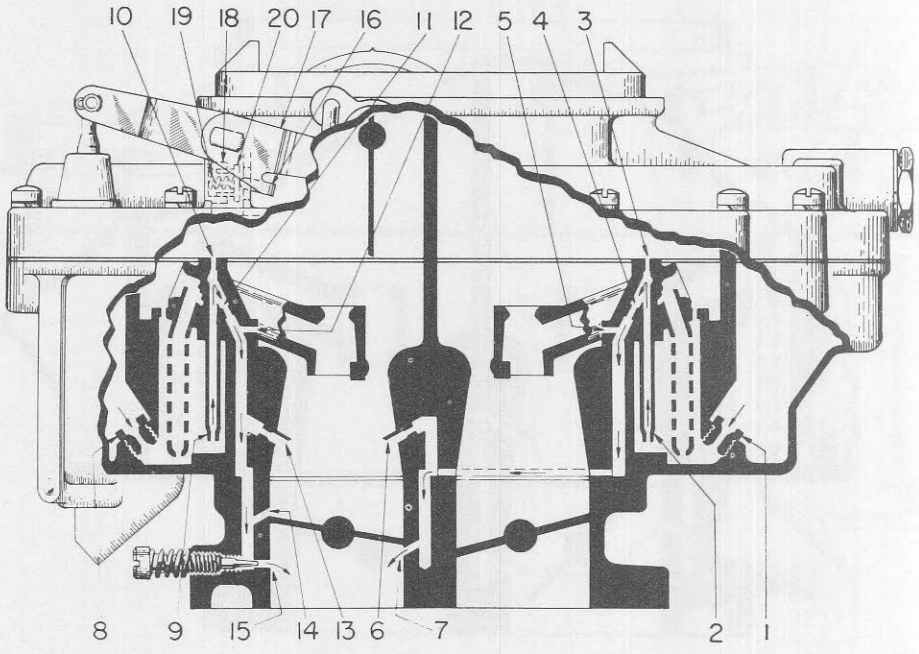


Figure 7-1

At small throttle openings, the vacuum created at the main discharge nozzles is not great enough to cause fuel to flow from the nozzles. Therefore, additional systems have been introduced to provide the proper mixture ratios required throughout the low speed range.

A fixed idle system is provided on the secondary or fuel inlet side of the carburetor. This system provides about half the required fuel for normal curb idle mixtures. As shown in figure 7-1, the secondary idle fuel is drawn from the float bowl through the main metering jets (1), into the fuel well in the bottom of the float bowl. It then passes through the calibrated restrictions in the ends of each idle tube (2). The fuel is then drawn up through the idle tube, is bled at the idle bleeds (3), passes through calibrated restrictions (4) and is again bled by the calibrated bleeds shown at (5). The mixture is then drawn through the channel in the float bowl around the secondary throttle body bores, is further bled by the lower idle air bleeds (6) and is discharged from the throttle body idle orifice (7). As the throttle is opened, the vacuum or suction on the idle discharge holes (7) decreases very rapidly. These discharge holes, therefore, stop feeding fuel in the off idle range.

In addition, an adjustable idle system is provided on the primary or pump side of the carburetor. This system provides the balance of fuel required for normal curb idle as well as that required for operation in the off idle, low speed range. Refer again to figure 7-1. The primary idle fuel is drawn from the float bowl through the main metering jets (8) into the fuel well in the bottom of the float bowl. It then passes through the calibrated idle tube restrictions (9), and idle tubes. Air joins this fuel at the calibrated bleeds (10). This mixture then passes through the calibrated restrictions (11) and is bled further at the secondary idle bleeds shown at (12). The mixture then passes through the float bowl idle channel, is further bled at the lower idle air bleeds (13) and secondary idle holes (14), and is discharged from the throttle body idle needle holes (15). As the throttle valves are opened, the bleed effect of the secondary idle holes gradually diminishes. When these holes become exposed to manifold vacuum they then become fuel discharge holes to meet the increased demand of the engine.

To minimize difficult hot weather starting or rough idling due to fuel vapor formation the Model 4GC Carburetor incorporates an external vent when the throttle valves are in the closed position. This external idle vent consists of an actuating lever (16) attached to the pump shaft and lever assembly (17), idle vent valve guide (18), idle vent valve spring (19), and idle vent valve (20). When the throttle valves are closed, the actuating lever contacts the spring loaded vent valve and holds it open, permitting vapors from the float bowl to vent themselves to the atmosphere. As the throttle valves are opened, the idle vent spring closes the vent valve thus eliminating the atmospheric vent and returning the carburetor to an internal balance.

PART THROTTLE SYSTEM

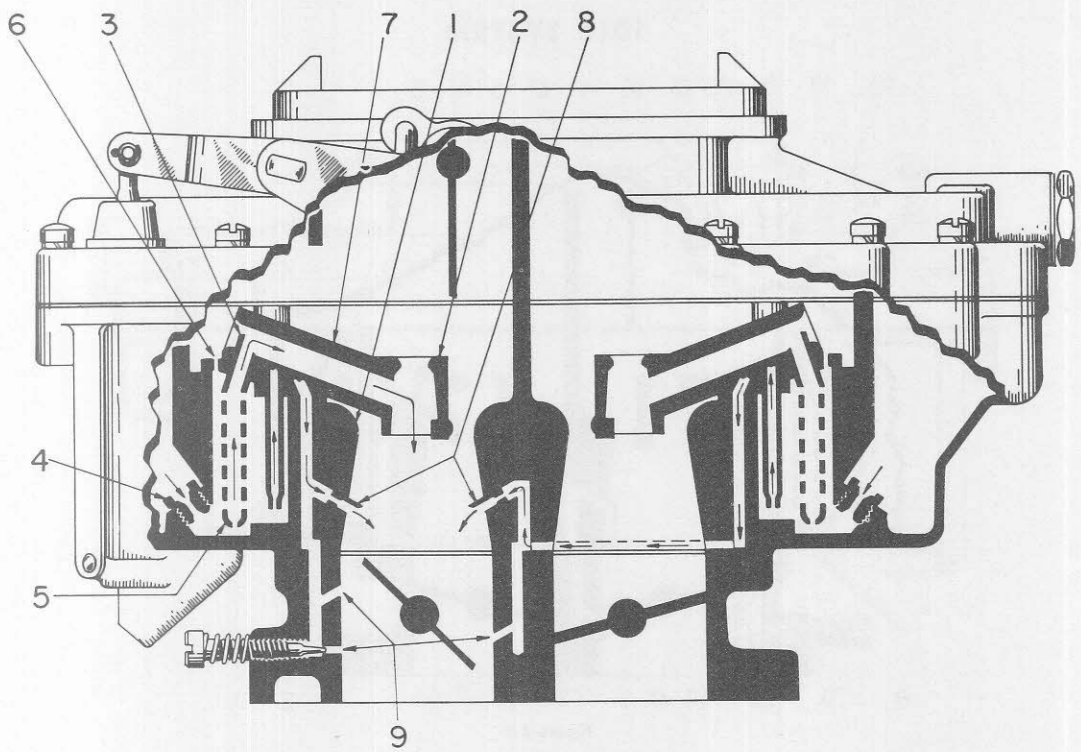


Figure 7-2

As the throttle valves are opened to a greater degree and more air is drawn through the carburetor, it is necessary to provide means, other than the idle systems, for supplying additional fuel to meet the engine requirements.

Use Figure 7-2 as a reference.

The primary or pump side of the carburetor meets this increased demand for fuel in the following manner: At a point of sufficient throttle opening, manifold vacuum or suction, multiplied several times in the primary (1) and secondary venturi (2), is transmitted to the tip of the main well tubes or main discharge nozzles (3). This suction draws fuel from the float bowl, through the calibrated main metering jets (4) and into the air bled main well tubes (5). After passing through the main well tubes (5) air joins the mixture at the main well bleeds (6). The mixture then passes from the tip of the nozzle through the Mixture Passage (7), to the secondary venturi (2) and on into the intake manifold. As the throttle opening is progressively increased and more fuel is drawn through the main well tubes, the fuel level in the main wells drops. As this fuel level drops, the calibrated holes in the main well tubes become uncovered of fuel. When this occurs, they become air bleeds, thus mixing progressively more air with the fuel passing through the main well tubes. Thus, although the nozzle suction is increased by increasing the throttle opening, the fuel mixture to the engine remains constant throughout the Part Throttle range.

As throttle opening increases, lower idle air bleeds (8) which now become part throttle feed nozzles, have been placed in the main air flow channels below the primer venturi (1). These nozzles, being exposed to manifold vacuum during part throttle operation, draw fuel through both the Primary and Secondary idle systems as described on the previous page. It will be noted that these nozzles acted as air bleeds during the operation of the idle system. Now they are acting as discharge nozzles.

The throttle valves on the secondary or fuel inlet side of the carburetor do not open until the primary linkages engage the secondary throttle shaft. They must then open fully during the remaining few degrees of primary throttle travel. The secondary side, therefore, only supplies fuel in the idle and power ranges. The part throttle or intermediate range is controlled completely on the primary side of the carburetor.

POWER SYSTEM

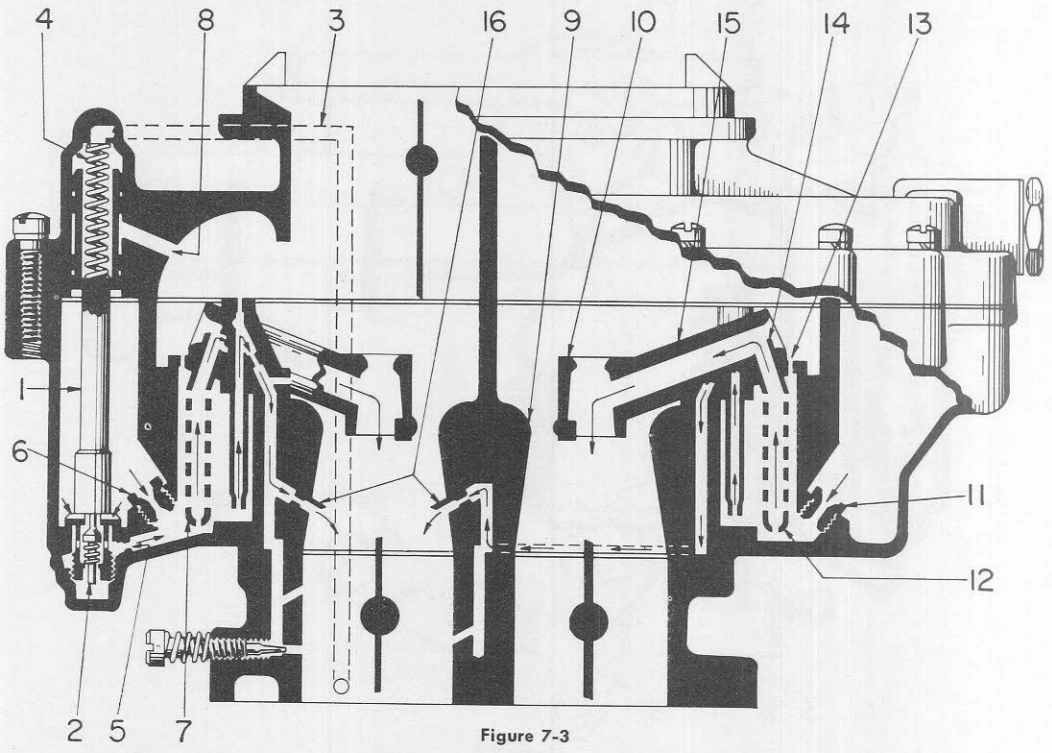


Figure 7-3

Use Figure 7-3 as a reference.

To achieve the proper mixtures required when more power is desirable or sustained high speed driving is to be maintained the Model 4GC Carburetor employs the use of a vacuum operated power piston (1) in the air horn and a power valve (2) in the float bowl. This power system is located on the primary or pump side of the carburetor.

The power piston vacuum channel (3) is exposed to manifold vacuum beneath the throttle valves. The vacuum in this channel varies directly with the manifold vacuum. In the idling and part throttle ranges, the manifold vacuum is normally quite high. This vacuum is sufficient to hold the power piston (1) in its extreme up position. However, as the throttle valves are progressively opened, the manifold vacuum drops. When the vacuum drops below approximately 7" Hg. the calibrated spring (4) beneath the power piston forces the piston down. This situation occurs at very high driving speeds or on rapid accelerations. When the piston drops down, it unseats the spring loaded power valve (2). This permits additional fuel to flow from the float bowl through the calibrated power restrictions (5) and into the main wells. This additional fuel supplements that already flowing through the main metering jets (6) and main well tubes (7), (on the Primary side) thus making the mixture being delivered to the manifold, considerably richer than normal Part Throttle mixtures. This power mixture continues to be supplied as long as the manifold vacuum remains below approximately 7" Hg. When the manifold vacuum again increases sufficiently, the force of the power piston spring (4) is overcome and the piston is drawn up, thus returning the carburetor to the economical part throttle mixtures.

It will be noted that the power piston cavity in the carburetor air horn is connected to the main air flow passage by a vacuum break hole (8). It is the purpose of this hole to prevent the transfer of vacuum acting on the piston from acting also on the top of the fuel in the float bowl. Any leakage of air past the upper grooves of the piston will be compensated for by this vacuum break hole and will not affect carburetor calibration.

It is also in this range that the secondary side of the carburetor provides additional air and fuel to the engine for increased power. For high speed operation, beyond the part throttle range, the throttle linkages engage the secondary throttle valves and open them completely in the remaining few degrees of primary throttle travel.

In this range manifold vacuum or suction, acting on the secondary side of the carburetor, is multiplied at the primary (9) and secondary (10) venturi and draws fuel from the float bowl through the calibrated main metering jets (11) into the main wells. This fuel then passes through the main well tubes (12) and is bled in a manner similar to that discussed previously in the operation of the Primary main well air bleeds. This mixture is bled further at the main well bleeds (13) and is then drawn to the tips of the main well tubes (14). It then passes through the mixture passage (15) to the secondary venturi (10) and is discharged into the intake manifold.

The lower idle air bleeds (16) also supply fuel throughout the power range in a manner similar to that discussed under the Part Throttle System operation.

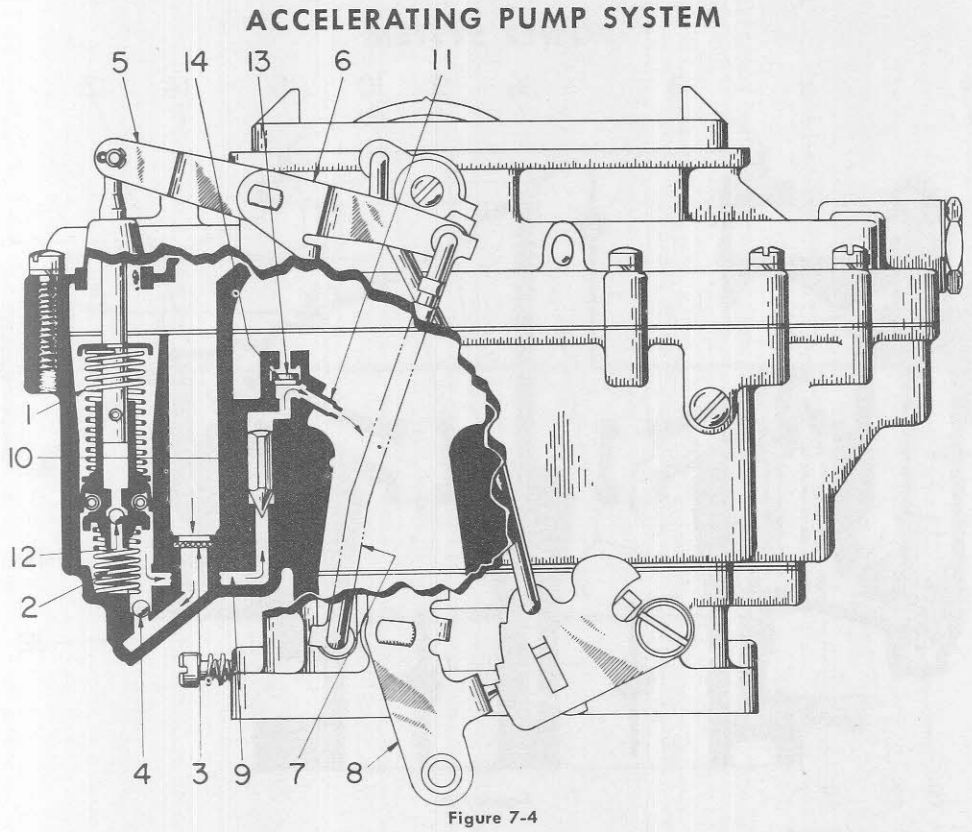


Figure 7-4

When the throttle is opened rapidly the air flow and manifold vacuum change almost instantaneously, while the heavier fuel tends to lag behind causing a momentary leanness. The accelerator pump provides the fuel necessary for smooth operation on rapid acceleration.

Use Figure 7-4 as a reference.

Since the throttle valves on the secondary or fuel inlet side of the carburetor remain fully closed throughout part throttle operation, it is only necessary to have one accelerator pump, that being located on the primary or pump side of the carburetor.

A double spring pump plunger is used on the Model 4GC Carburetor. The rates of compression of the top spring (1) versus the bottom spring (2) are carefully calibrated to insure a smooth, sustained charge of fuel for acceleration.

On the pump intake or up stroke, fuel from the float bowl passes through the pump filter screen (3), unseats the aluminum inlet ball (4), and fills the pump well.

The accelerator pump, being connected, through the inside pump lever (5), pump shaft, and lever assembly (6) and pump rod (7), to the throttle lever (8) moves at the slightest change in throttle opening. Upon acceleration or down stroke of the pump plunger, the force of fuel in the pump well seats the inlet ball (4). The fuel is then forced through the discharge channel (9) unseats the pump outlet needle (10), and discharges through the pump jets (11) into the main air stream. No targeting of these pump jets is required.

The Model 4GC Carburetor accelerator pump system is vented twice for peak operating efficiency.

The pump plunger head has been vented to minimize the effect of fuel percolation in the float bowl pump well. This has been accomplished by the design of a ball check and seat in the plunger head (12). In this manner any build up of fuel vapors in the pump cylinder will rise and by-pass the ball, thus venting themselves into the float bowl. There is, therefore, always a charge of solid fuel beneath the plunger head for rapid acceleration. Without this feature, any vapor pressure build up would evacuate the charge of fuel in the pump system, thus causing poor initial acceleration as well as difficult hot weather starting.

The atmospheric vent valve is located in the primary venturi cluster (13) in the channel above the pump discharge jets. Upon sudden acceleration, the force of fuel past the outlet needle seats the valve in its "up" position, thus preventing a discharge of fuel through the vent passage. Under constant throttle conditions, the weight of the valve causes it to rest against its spring retainer (14), thus permitting air to flow from the inside bore of the air horn, through the vent and into the chamber above the pump outlet needle. This vent valve utilizes the suction at the pump jets by progressively increasing the force tending to seat the outlet needle, with each increase in throttle opening. This prevents a condition known as pump pullover, or a discharge of fuel from the pump jets during high speed operation.

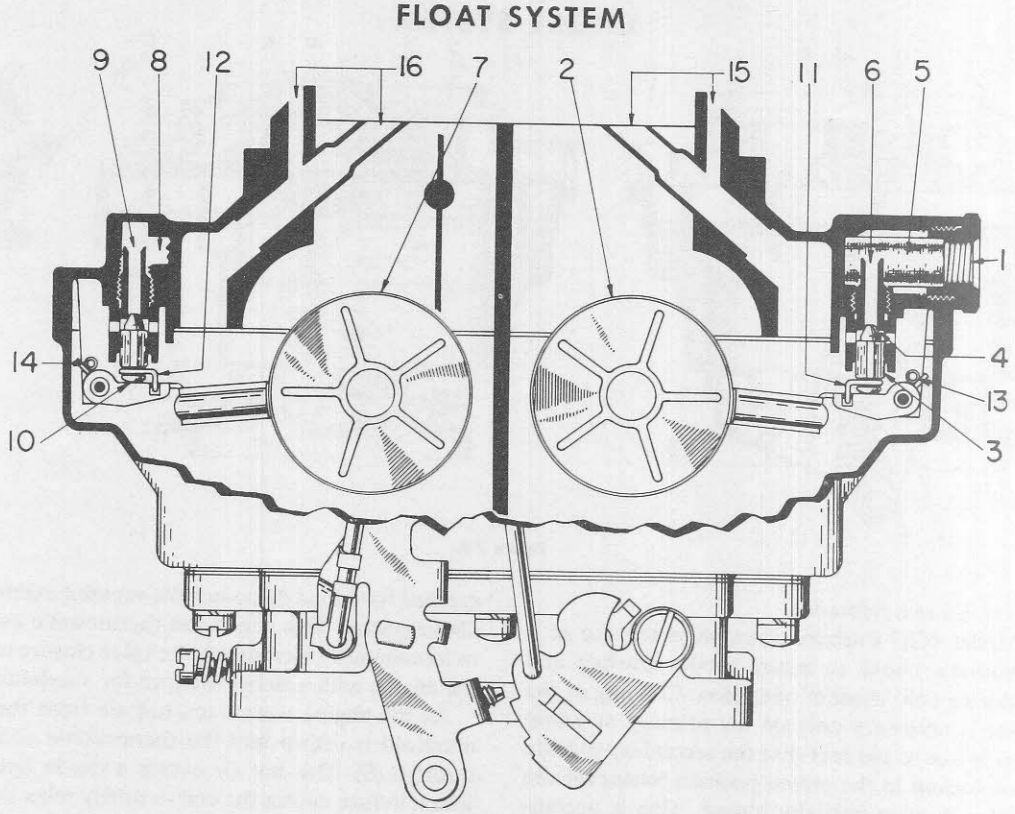


Figure 7-5

To aid in maintaining the correct fuel level under all conditions of operation, the Model 4GC Carburetor employs the use of two sets of twin floats.

Use Figure 7-5 as a reference.

Both sides of the carburetor incorporate individual float systems for maintaining the proper fuel level in each float bowl. All fuel enters the carburetor on the secondary or fuel inlet (1) side.

As the fuel level on the secondary side drops, the twin floats (2) also drop, thus moving the inlet needle (3) off its seat (4). Then pressure, from the fuel pump, forces fuel through the filter screen (5), into the inlet passage (6), and the float bowl. As the fuel level rises, the floats rise and once again close off the inlet needle.

As fuel is drawn from the float bowl on the primary or pump side of the carburetor, the float action is identical with that on the secondary side. As the twin floats drop (7), pressure from the fuel pump forces fuel through the fuel inlet (1) and filter screen (5). This fuel then passes through a channel cored in the air horn and enters the inlet passage on the primary side at (8). It then passes through the needle seat channel (9), past the now open inlet needle (10), and into the float bowl. As on the secondary side, when the fuel level rises, the floats rise and once again close off the inlet needle.

Both float systems are provided with float needle pull clips (11 & 12) (on some model 4GC Carburetors only) and float balance springs (13 & 14). The float needle pull clips link together the twin floats and the inlet needles, thus causing the inlet needles to retract from their seats upon a drop in fuel level in the float bowls. This is to prevent the possibility of gum deposits causing a sticking condition. The balance springs act as vibration dampeners and enable the carburetor to maintain a more constant and accurate fuel level.

Both sides of the carburetor are individually and internally vented by the channels shown in 15 and 16. These vents transmit the pressure from beneath the air cleaner to the fuel in the float bowl. The amount of fuel metered by the carburetor is dependent upon the pressure in the float bowl causing fuel to flow. By locating the vents below the air cleaner, or internally, the carburetor automatically compensates for air cleaner restriction, since the same pressure causing air to flow will also be causing fuel to flow.

A cored passage in the float bowl, slightly above the normal fuel level, links the primary and secondary float bowls together. In this way any abnormal rise in level on one side will be absorbed by the other and should not seriously disrupt the operation of the engine.

FLOAT BOWL DISASSEMBLY (Cont'd)

size from the jets on the secondary side, they must always be installed on the pump side.

3. Remove the power valve and fiber gasket from the pump side.
4. Remove three attaching screws and lock washers from venturi cluster on inlet (secondary) side. Then carefully remove venturi cluster and gasket.
5. Remove both main metering jets from the inlet (secondary) side.
   NOTE: These jets are also stamped with the last two digits of the jet part number and must always be installed on the inlet (secondary) side of the carburetor.
6. Remove the pump return spring from the pump well with a pair of long-nosed pliers.
7. Carefully invert the carburetor bowl and remove the aluminum pump inlet ball and the brass pump outlet needle. (Figure 7-15.)
   NOTE: NEVER SUBSTITUTE A STEEL BALL FOR THE ALUMINUM BALL.
8. If necessary, remove the pump inlet filter screen and retainer from the bottom of the float bowl.

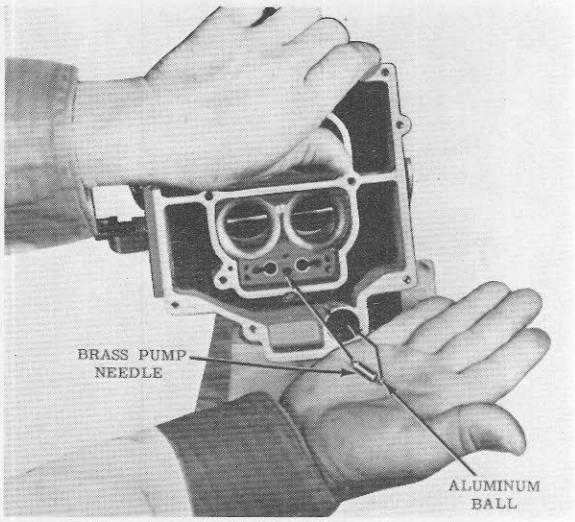


Figure 7-15

THROTTLE BODY DISASSEMBLY

1. Place carburetor in inverted position.
2. Remove throttle body from carburetor bowl by removing three 10-32 attaching screws and lock washers and one large 3/8-24 attaching screw and lock washer from the center of the throttle body.
3. Carefully remove throttle body gasket.
4. Remove idle adjusting needles and springs.
5. Remove fast idle screw and spring from throttle lever.
6. Remove idle stop screw and spring from throttle body casting.
   NOTE: THE THROTTLE BODY IS SERVICED AS A UNIT LESS THE THROTTLE LEVERS. TO REMOVE AND REPLACE THESE LEVERS PROCEED AS FOLLOWS:
7. Remove two cotter pins from secondary throttle lever link.
8. Remove washer from upper end of secondary throttle lever link.
9. Remove secondary throttle lever retaining screw and washer.
10. Unhook inner end of override shaft spring (heavy spring).
11. Remove shaft override spring retaining screw from primary throttle shaft.
12. Remove secondary throttle actuating lever and override spring.
13. Remove secondary throttle lever link assembly.
14. Unhook secondary throttle lever return spring from secondary lever.
15. Remove secondary throttle lever from secondary throttle shaft. Then remove secondary throttle lever return spring from secondary throttle shaft.

CLEANING AND INSPECTION OF PARTS

1. Inspect idle adjusting needles for burrs or ridges.
2. Thoroughly clean carburetor castings and metal parts in carburetor cleaning solvent.
   CAUTION: Choke Coil, Primary venturi cluster (with pump discharge nozzles) and pump plunger should not be immersed in solvent. Clean these parts in clean gasoline only.
3. Blow all passages in castings dry with compressed air. Do not pass drills through jets or calibrated passages.
4. Clean filter screens of dirt or lint. If they are distorted or plugged, replace.
5. Check floats for dents or wear or burrs at hinge pin holes.
6. Shake floats to check for leaks.
7. Examine float needle and seat. If grooved, replace with a factory matched float needle, seat, and gasket assembly.
8. Check choke shaft for wear in the air horn bores. If worn excessively, replace.
9. Inspect holes in inside and outside pump levers, fast idle cam, and throttle lever. If holes are worn excessively or out of round to the extent of improper operation of the carburetor, the worn parts should be replaced.
10. If excessive wear is noted on the steps of the fast idle cam, it should be replaced to assure proper engine operation during the warm-up and choking periods.
11. Inspect pump plunger leather, replace the plunger as an assembly if leather is creased or cracked.
12. Inspect the gaskets for flexibility. If the gaskets appear hard or brittle, they should be replaced to assure a proper seal.
    NOTE: Due to the close tolerance fit of the throttle valves, and the fact that the idle discharge holes are drilled in relation to a proper fitting valve, the throttle body and vaive assembly should be replaced as a complete assembly when wear is noted at the throttle valves, or throttle body bores.

MODEL 4GC CARBURETOR ASSEMBLY

THROTTLE BODY ASSEMBLY

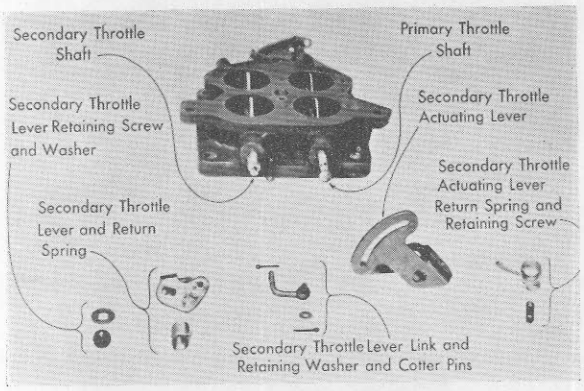


Figure 7-16

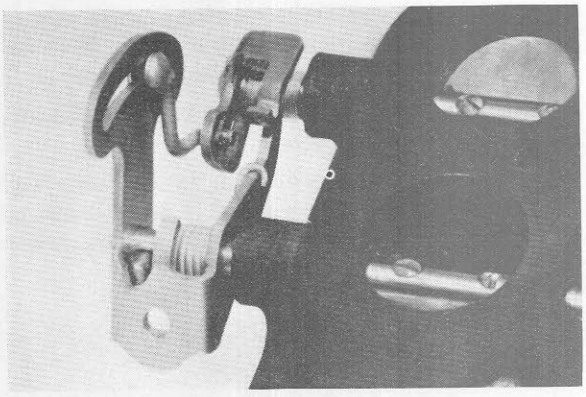


Figure 7-17

NOTE: Refer to Figure 7-16 for steps 1 through 7.

1. Install secondary throttle lever return spring on secondary throttle shaft so that end hooks into hole in throttle body casting.
2. Install secondary throttle lever on secondary throttle shaft. Then install secondary throttle lever retaining screw and washer.
3. With a piece of wire, wind up the secondary throttle lever return spring one complete turn.
4. Install the secondary throttle lever link assembly and cotter pin to the secondary throttle lever.
5. Install the secondary throttle actuating lever and override spring on the primary throttle shaft. Then install the secondary throttle lever link assembly into the secondary throttle actuating lever with a washer and cotter pin.
6. Install the shaft override spring retaining screw into the primary throttle shaft so that the hooked end of the spring stops against the retaining screw.
7. Hook the inner end of the override shaft spring onto the secondary throttle actuating lever. Refer to Figure 7-17 for proper assembly of throttle linkages.
8. Install the idle stop screw and spring into the throttle body casting.
9. Install the fast idle screw and spring into the throttle lever.
10. Install both idle adjusting needles and springs into the throttle body casting.
11. Place the throttle body gasket in position on the float bowl, with the bowl inverted on a flat surface. (Figure 7-18.) Be certain that all gasket holes are properly aligned.
12. Place Throttle Body in Position on float bowl. (Figure 7-19.) Attach with three 10-32 attaching screws and lock washers and one large ⅜-24 screw and lock washer.

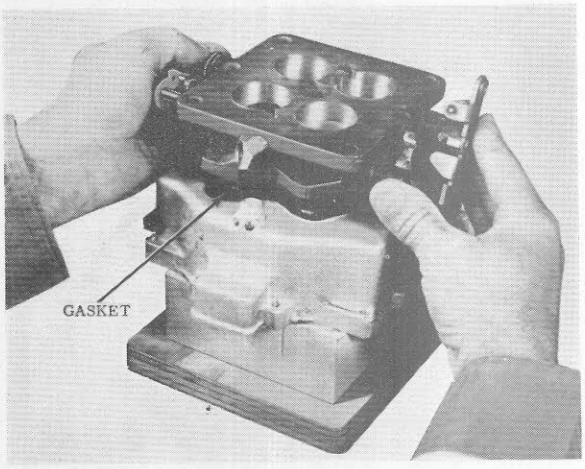


Figure 7-18

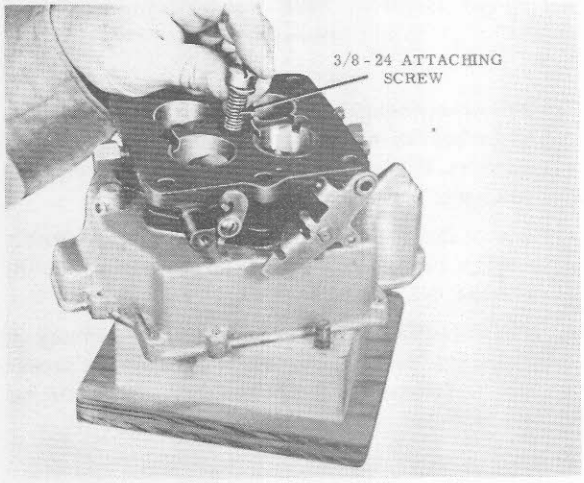


Figure 7-19

FLOAT BOWL ASSEMBLY (Continued)

10. Place venturi cluster gasket in position on pump side of carburetor. Be certain all gasket holes are properly aligned.
11. Install primary venturi cluster on pump side of carburetor with three retaining screws and lock washers. (Figure 7-23.) This cluster contains the pump discharge nozzles.

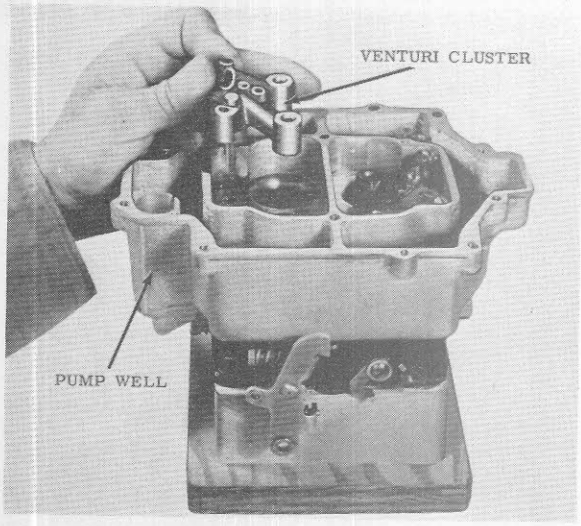


Figure 7-23

AIR HORN ASSEMBLY

1. Place air horn gasket in position on air horn. Be certain all gasket holes are properly aligned.
2. Assemble power piston and actuating spring into air horn cavity. Rotate retaining washer to hold piston in place. (Figure 7-24.)
3. Place rubber seal on pump plunger assembly. Then assemble plunger and seal in carburetor air horn so that casting positions in groove on seal. (Figure 7-25.)
4. Install float balance spring and clips on pump side of carburetor. (Figure 7-26.)
5. Install fiber gasket and needle seat on pump side of carburetor. (Figure 7-26.)

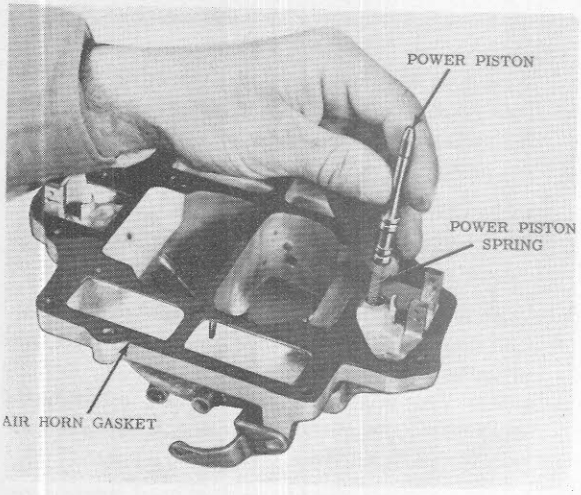


Figure 7-24

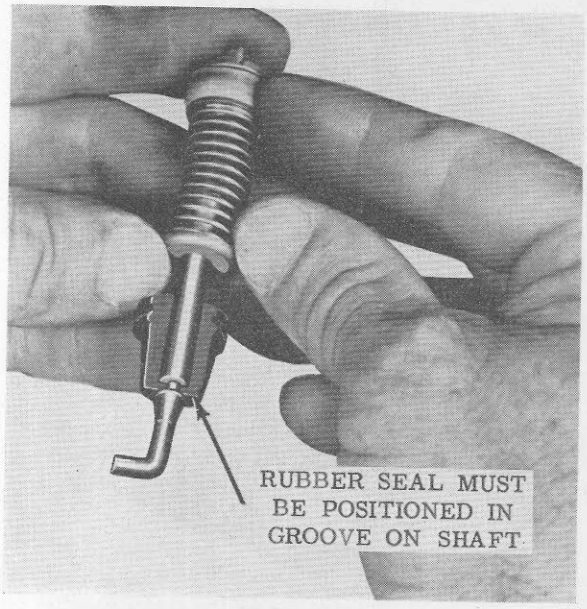


Figure 7-25

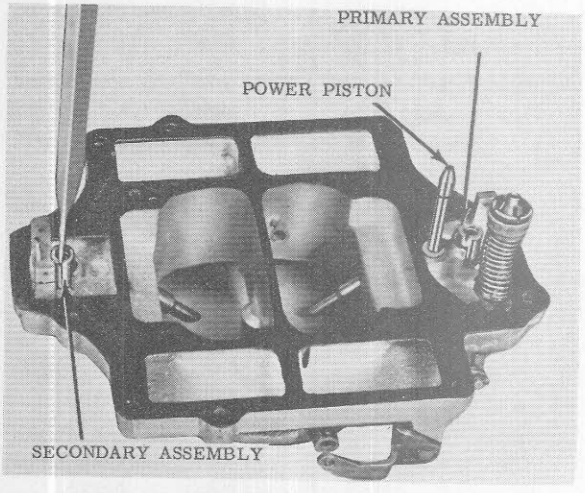


Figure 7-26

AIR HORN ASSEMBLY (Continued)

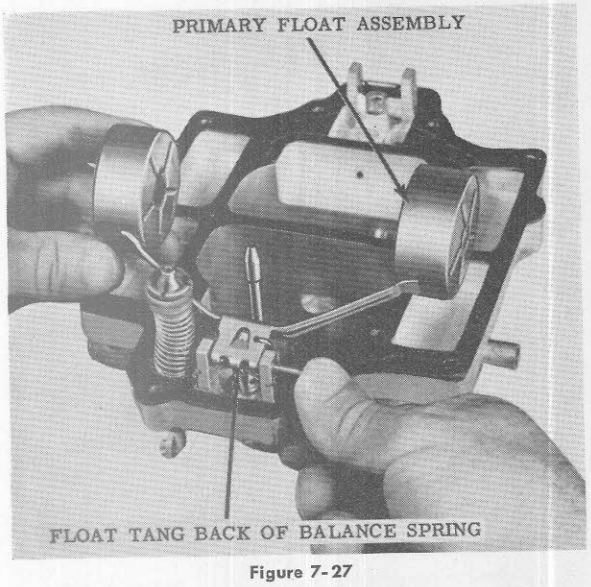


Figure 7-27

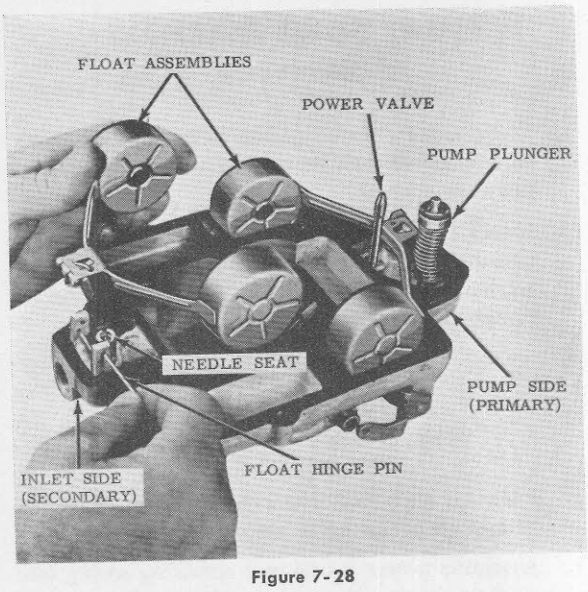


Figure 7-28

6. Assemble float needle to float assembly. Then install float, needle and hinge pin on pump side of carburetor. (Figure 7-27.)
7. Install float balance spring and clips on fuel inlet side of carburetor.
8. Install fiber gasket and needle seat on fuel inlet side of carburetor. (Figure 7-26.)
9. Assemble float needle to float assembly. Then install float, needle, and hinge pin on fuel inlet side of carburetor. (Figure 7-28.)
   NOTE: The float level and tension adjustments should be made at this point. See adjustment bulletin for proper setting.
10. Install air horn assembly on float bowl, being careful to guide pump plunger in well and not to bend float assemblies. Align air horn and gasket to screw holes in float bowl.
11. First tighten the three inner attaching screws and lock washers evenly and securely. Then tighten the remaining ten air horn attaching screws and lock washers.
12. Assemble inside pump lever to pump plunger rod and install cotter pin.
13. Assemble choke housing gasket to air horn. Then install choke housing to air horn with two attaching screws and lock washers.
14. Assemble choke piston and piston pin to choke shaft, lever, and link assembly. Install choke shaft assembly, through choke housing, into the air horn. (Figure 7-29.) Rotate choke shaft clockwise to assemble piston into choke housing sleeve.
15. Slide choke valve through choke shaft so that letters "RP" are facing up when valve is closed.
16. Start, but do not tighten, two choke valve attaching screws.
17. Install the choke lever and collar assembly, choke rod, and fast idle cam and retaining screw (as an assembly) to the choke shaft on one end, and throttle body on the other.

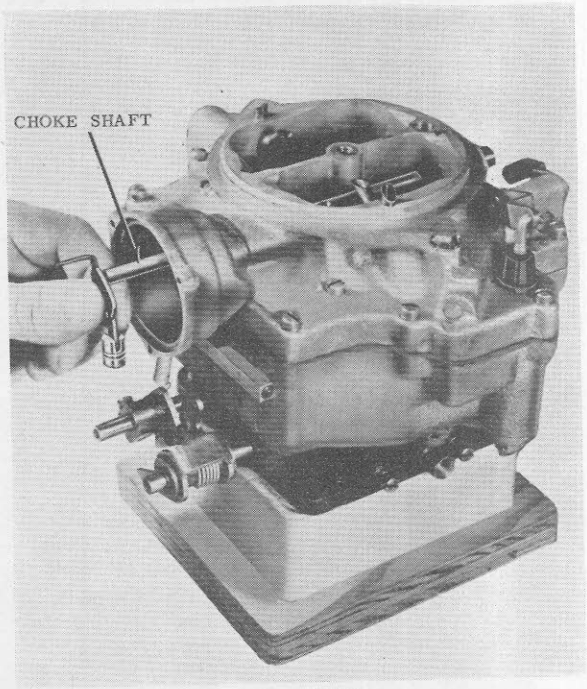


Figure 7-29

AIR HORN ASSEMBLY (Continued)

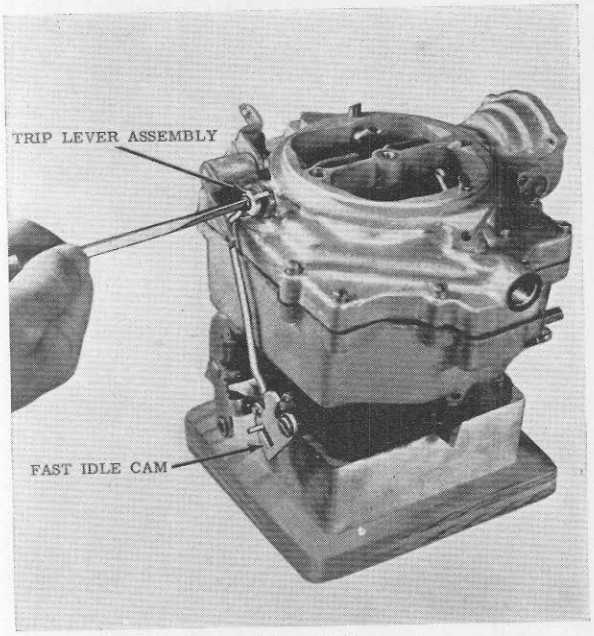


Figure 7-30

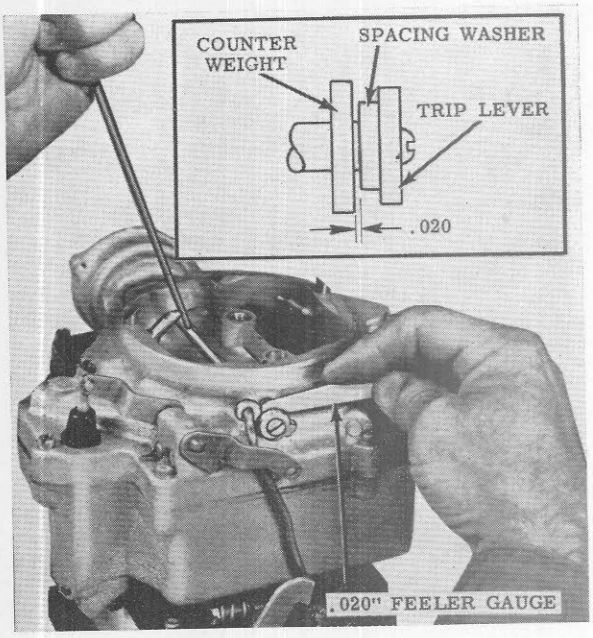


Figure 7-31

18. Then install the trip lever, spacing washer, and retaining screw on the end of the choke shaft. (Figure 7-30.)
19. To provide correct fit of choke valve in air horn, push lightly on choke shaft to obtain a minimum clearance of .020″ between spacing washer and lever and collar assembly. (Figure 7-31.) While holding in this position tighten choke valve retaining screws.
20. Install pump shaft and lever assembly into air horn casting. Assemble shaft to inside pump lever with attaching nut and lock washer.
21. Assemble pump rod with two clips to pump lever on one end and throttle lever on the other. Dog leg of pump rod should be assembled nearest the throttle lever.
22. Assemble choke baffle plate into choke housing.
23. Assemble stat cover, gasket and coil assembly to choke housing so that coil contacts shaft link.
24. Rotate stat cover until the scribe line on the cover coincides with the index mark on the choke housing. Secure stat cover with three retaining screws and retainers.
25. Place fuel inlet strainer and fiber gasket on strainer nut. Then install this assembly in carburetor fuel inlet with a ¾″ wrench.

CHOKE MODIFIER DISASSEMBLY AND ASSEMBLY

DISASSEMBLY

1. Remove clips from choke modifier rod and remove rod.
2. Remove screw from index lever and remove lever. Do not remove index plate.
3. Remove stat cover screws and retainers, then stat cover and coil assembly.
4. Remove primary throttle shaft modifier lever.

ASSEMBLY

1. Assemble primary throttle shaft modifier lever with letters RP facing outward and lever pointed up with throttle valves closed.
2. Assemble stat cover and coil assembly with screws and retainers.
3. Assemble stat modifier lever to stat cover. Leave retaining screw loose.
4. Assemble choke modifier rod with rod end clips. Stat modifier lever should point away from fuel inlet.
5. Tighten retaining screw.

Refer to Figure 7-7 for proper assembly.

UNITED MOTORS SERVICE - AC DIVISION

GENERAL MOTORS PRODUCTS OF CANADA LIMITED

OSHAWA, ONTARIO

Bulletin 9D-9-57
Date: 12-1-56
Page: 1
File After 9D-9 4GC-Basic Model Manual

ROCHESTER PRODUCTS CARBURETOR BULLETIN

SUBJECT: MODEL 4GC - 1957 DESIGN CHANGES

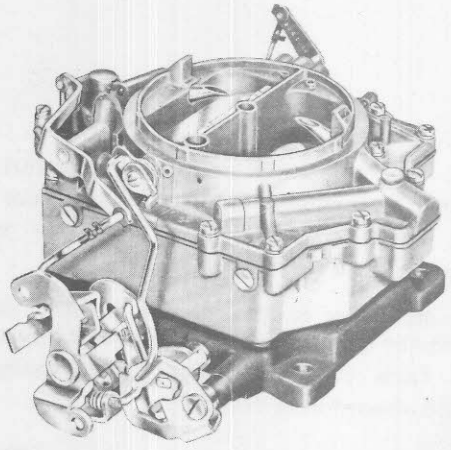
BUICK

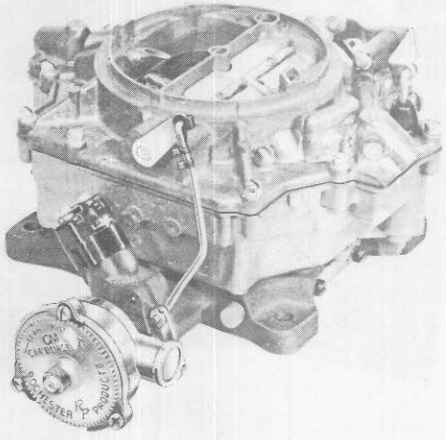
Model 4GC — 1957 Applications
Series 50-60-70 — 7010070

DESCRIPTION OF CHANGES

APPEARANCE:

The Model 4GC carburetor for 1957 Buick is radically different in appearance from earlier models, having been reduced in height by approximately one inch. The float bowl is lowered with new type cutaway floats which are spring balanced. The automatic choke housing has been moved from the float bowl to the throttle body. The throttle body thickness has been reduced by removing the counterweighted auxiliary valves and installing new type spring loaded auxiliary valves in the float bowl.





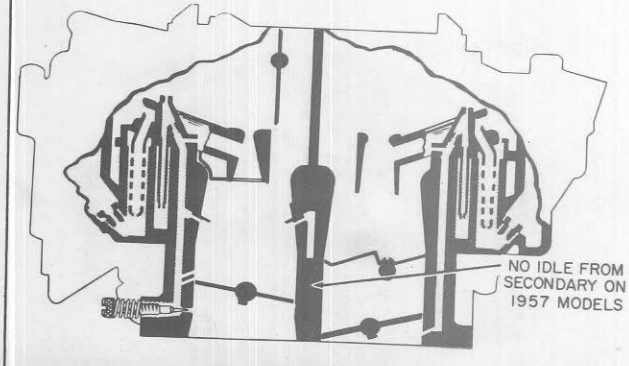
SPECIFICATIONS:

The throttle body bore size has been increased from 1-7/16" to 1-9/16" on the primary side and from 1-7/16" to 1-11/16" on the secondary side. The large venturi size has been increased from 1-3/16" to 1-5/16" on the primary side and from 1-1/4" to 1-15/32" on the secondary side. The small venturi on the primary side has been increased from 1/8" to 1/4". Calibration and metering has been changed to meet the demands of the new 1957 engine.

OPERATION:

The idle system has been changed in that there are no supplementary idle holes feeding, from the secondary side of the carburetor, between the primary and secondary bores.

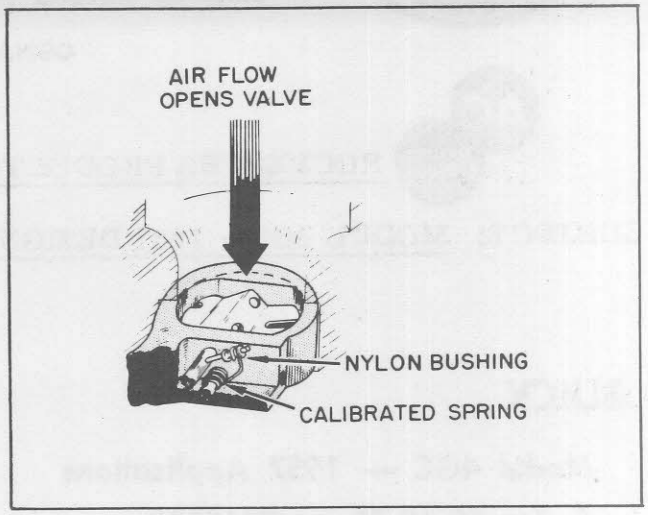
The secondary bores contain a new spring loaded auxiliary valve which keeps the secondary side of the carburetor out of operation, until air velocity is high enough to provide good metering.



IDLE SYSTEM

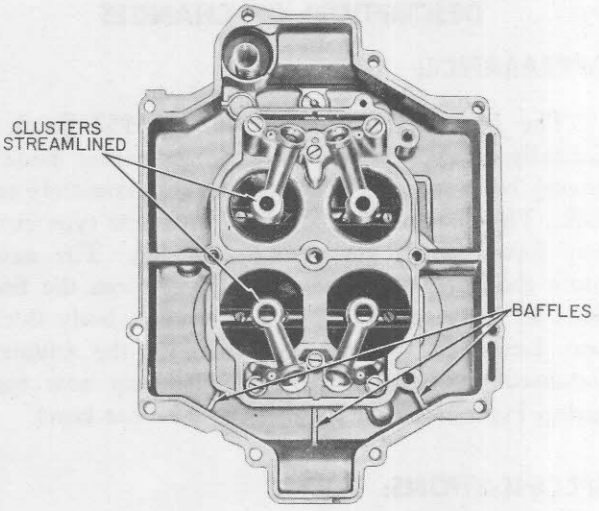
BUICK (Continued)

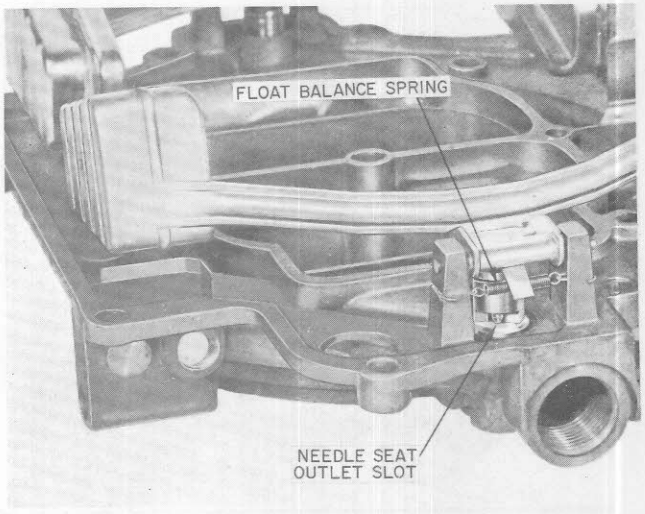
The auxiliary valve assembly fits in place in the underside of the float bowl casting and is held there by assembly of the throttle body to the bowl. Spring tension on the valve is factory calibrated and should not be reset in the field. Lubrication of the bushing is not generally necessary but light machine oil may be used if stickiness is encountered.



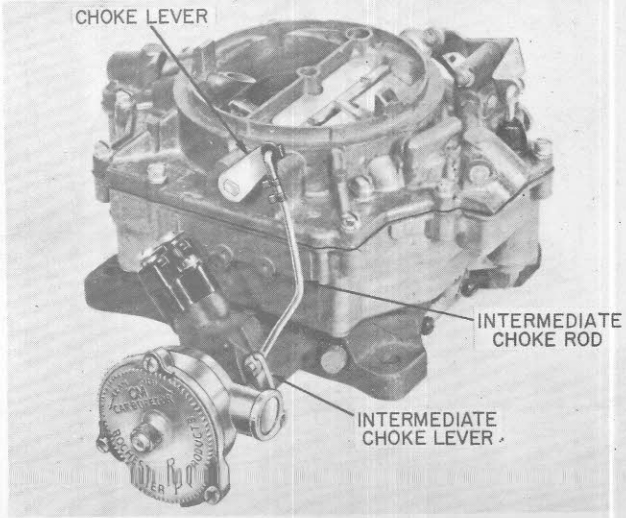
The large and small venturi and venturi clusters have been streamlined to provide minimum air turbulence and resistance to air flow for improved metering through the venturi system.

The new low bowl design has three baffles installed in the secondary side to prevent any spill-over of fuel from the secondary nozzles during sharp turns and abnormal operation.





New type spring balanced, cutaway floats are used in the new low bowl design. The balance spring is mounted between the two float hanger posts and exerts pressure on the float tang to assist in closing the float valve. The purpose of the balance spring is to give a more positive closing of the float valve to eliminate any fuel spill-over during abnormal operation.



Moving the choke housing to the throttle body requires a longer intermediate choke rod to connect with the choke valve shaft. Otherwise choke operation is the same as 1956 models.

BUICK (Continued)

SERVICE:

The following are adjustment changes made necessary by new design and construction.

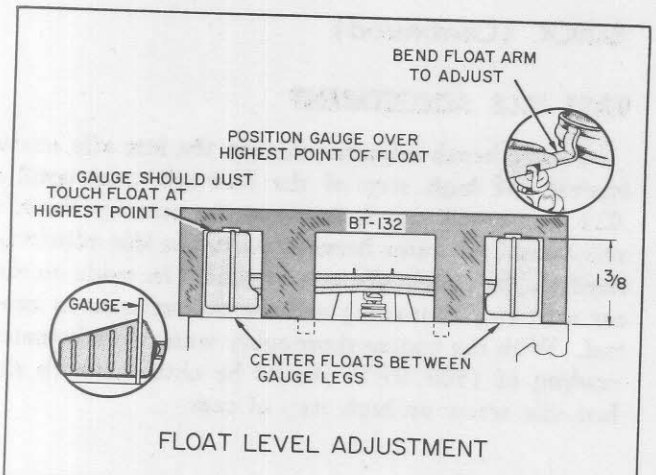
FLOAT LEVEL ADJUSTMENT:

With the air horn inverted and air horn gasket in place, position Float Gauge BT-132 over the floats at their highest point as shown.

Bend the float arms at the rear so that the highest point of the floats just contact gauge.

Vertical height should be 1-3/8".

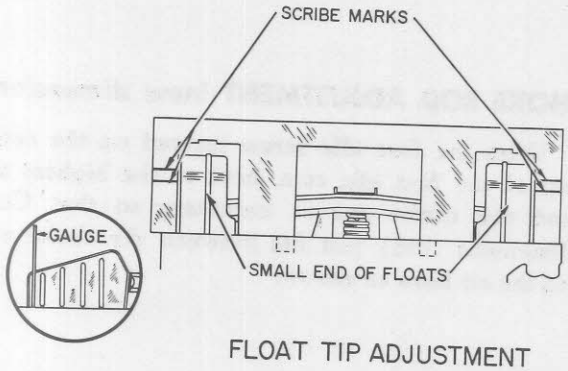
If necessary bend each float arm horizontally until each float pontoon is centered between gauge legs.



FLOAT LEVEL ADJUSTMENT

FLOAT TIP ADJUSTMENT:

Move Gauge BT-132 to small ends of floats as shown. With Gauge held vertically, the upper edge of the float at the point where the radius ends should align between scribe marks on gauge.



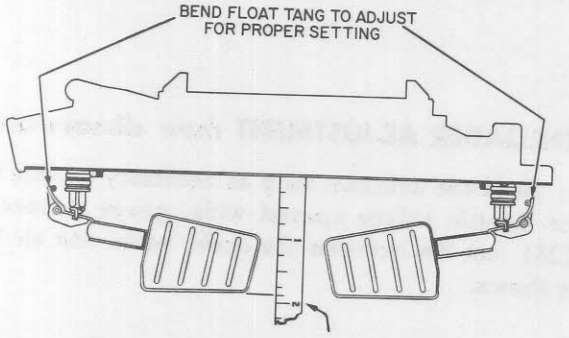
FLOAT TIP ADJUSTMENT

FLOAT DROP ADJUSTMENT

(due to new type floats)

Note: This adjustment is important because of the new type spring balanced floats.

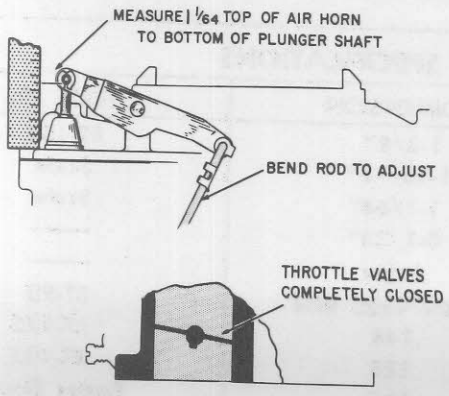
With air horn upright and floats hanging free, distance from air horn gasket to lowest point of float should be 1-13/16". Bend float tang to adjust.



FLOAT DROP ADJUSTMENT

PUMP ROD ADJUSTMENT *(new dimension)*

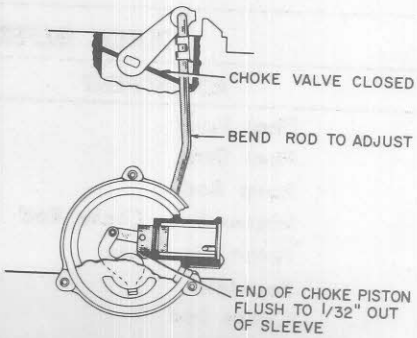
With the throttle valves completely closed, bend the pump rod to obtain a dimension of 1-1/64" from the air horn to the bottom of the pump plunger shaft.



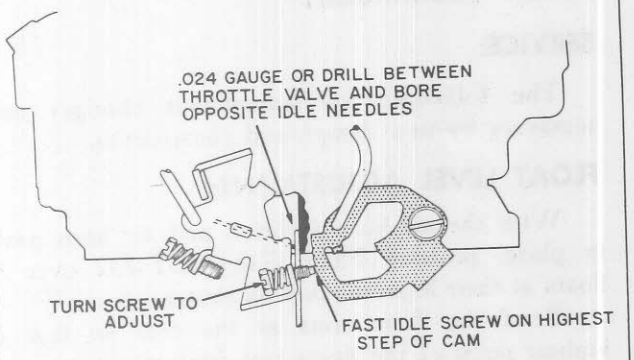
PUMP ROD ADJUSTMENT

INTERMEDIATE CHOKE ROD ADJ. *(new)*

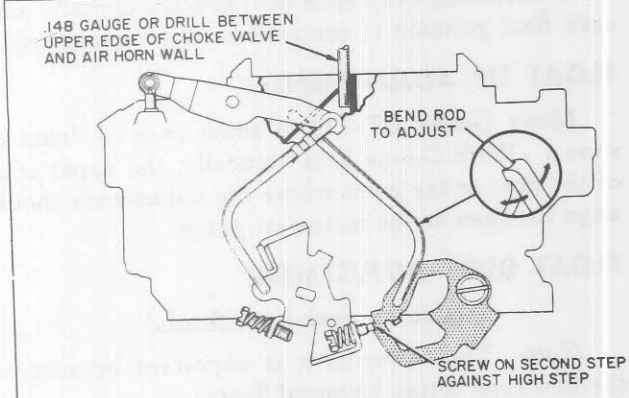
Holding the choke valve closed, bend the intermediate choke rod as necessary so that the end of the choke piston is flush to 1/32" out of the choke piston sleeve.



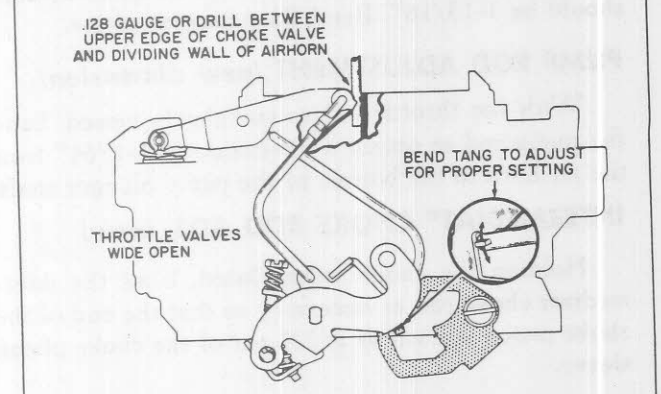
INTERMEDIATE CHOKE ROD ADJUSTMENT



FAST IDLE ADJUSTMENT



CHOKE ROD ADJUSTMENT



UNLOADER ADJUSTMENT

BUICK (Continued)

FAST IDLE ADJUSTMENT

As the bench adjustment, turn the fast idle screw against the high step of the fast idle cam until a .024 gauge will just fit between the primary throttle valve and carburetor bore, opposite the idle adjusting needles. Final fast idle setting should be made on the car with engine running and the transmission in neutral. With the engine thoroughly warm a tachometer reading of 1500 RPM should be obtained with the fast idle screw on high step of cam.

CHOKE ROD ADJUSTMENT *(new dimension)*

With the fast idle screw located on the second step of the fast idle cam, next to the highest step, bend the choke rod as necessary so that Gauge (dimension .148) just fits between the choke valve and the air horn as shown.

UNLOADER ADJUSTMENT *(new dimension)*

Bend the unloader tang as necessary so that with the throttle valves opened wide, gauge (dimension 128) just fits between the choke valve and air horn as shown.

QUICK REFERENCE ADJUSTMENT SPECIFICATIONS

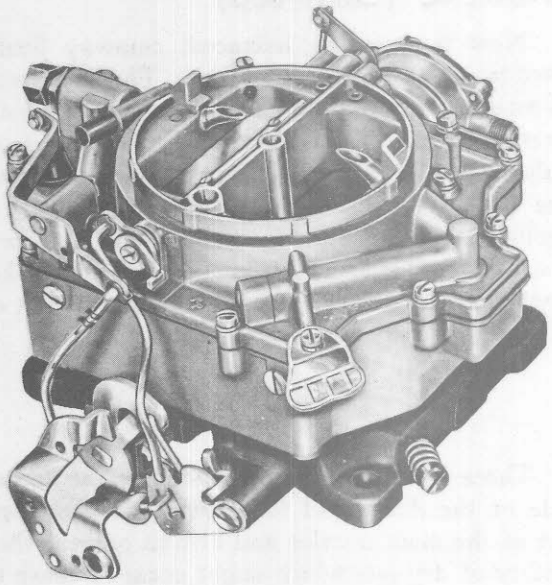
ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-3/8"	BT-132
Float Drop	1-13/16"	Scale
Pump Rod	1-1/64"	Scale
Intermediate Choke Rod	0-1/32"	——
Automatic Choke	Index	——
Fast Idle	.024 - 1500 RPM	BT-90
Choke Rod	.148	BT-135
Unloader	.128	BT-135
Sec. Lockout	.015	Feeler Gauge
Sec. Contour	.030	Feeler Gauge

CADILLAC

Model 4GC — 1957 Applications

Standard — 7010100
Air Conditioned — 7010101

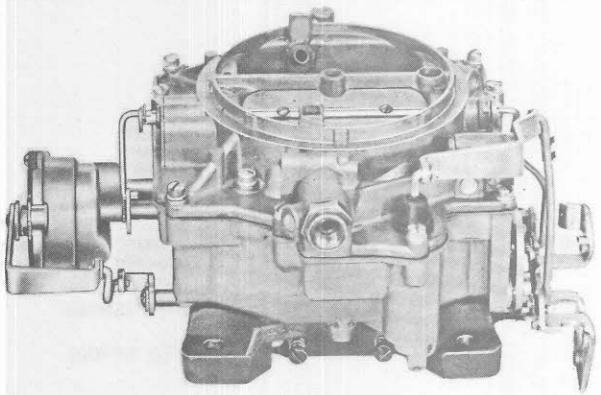
DESCRIPTION OF CHANGES



APPEARANCE:

The 1957 4GC is quite changed in appearance from earlier models.

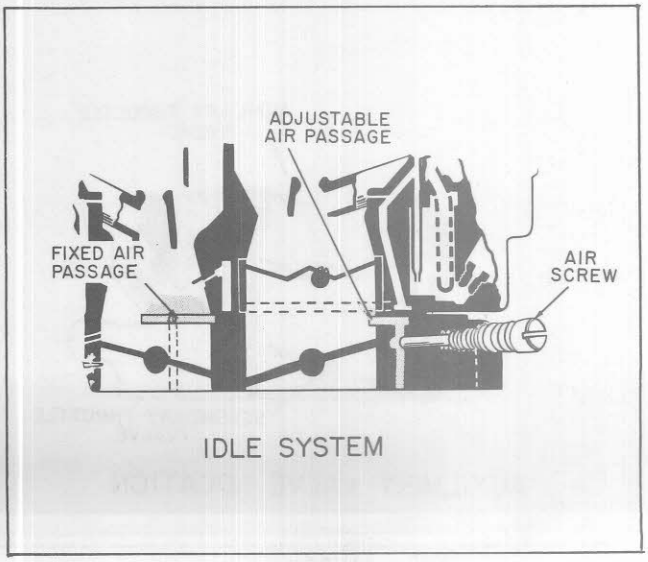
The overall height has been reduced by decreasing the flange thickness and the bowl height. The automatic choke has been moved from the air horn to the float bowl to allow lower hood styling. The secondary throttle actuating lever and linkage has been moved from the choke housing side to the throttle lever side of the carburetor and is now a part of the throttle shaft and lever assemblies. The idle air screw has been moved from behind the throttle lever to a more accessible position on the rear of the throttle body.



SPECIFICATIONS:

To meet increased performance requirements, the main venturi in both the primary and secondary sides have been increased in size. The large venturi on the primary side was increased from 1-1/16" to 1-1/8". The large venturi on the secondary side was increased from 1-3/16" to 1-15/32". The secondary bore size was increased from 1-7/16" to 1-11/16".

Calibration and metering has been changed to meet the demands of the new 1957 engine.



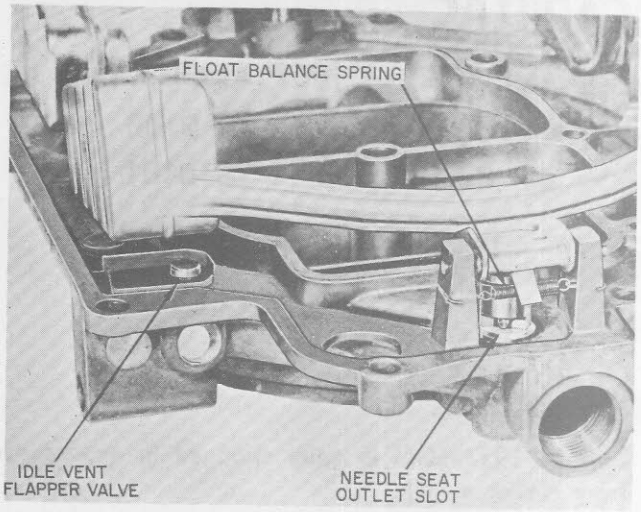
IDLE SYSTEM

OPERATION:

The idle system is slightly changed; idle air for the by-pass now comes from both the primary and secondary bores. The fixed air passage feeds air from the primary bores; the adjustable passage, regulated by the air screw, now feeds air from the secondary bores to the primary bores through the heat insulator block. Operation is otherwise unchanged.

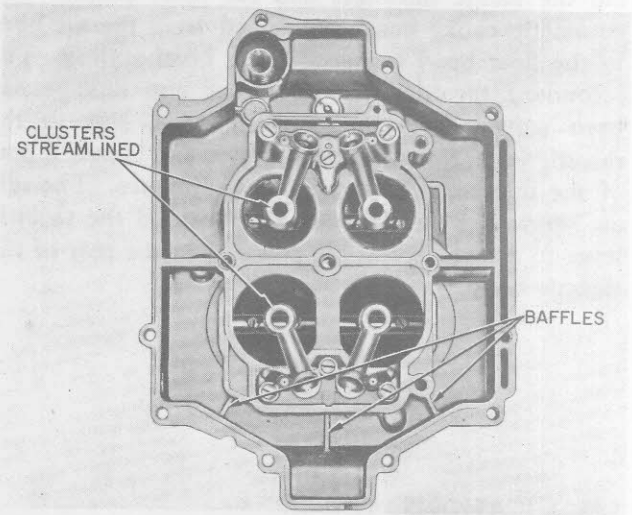
CADILLAC (Continued)

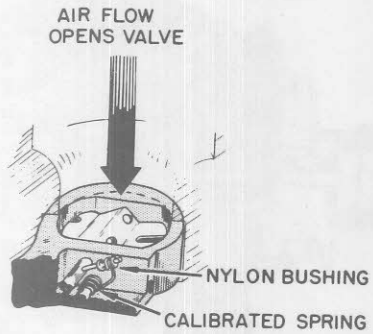
New type spring balanced, cutaway floats are used in the new low bowl design. The balance spring is mounted between the two float hanger posts and exerts pressure on the float tang. The purpose of the balance spring is to give a more positive closing of the float valve to eliminate any possibility of fuel spill-over during abnormal operation. A new anti-spill flapper valve has been installed under the idle vent valve to prevent any spillage of fuel out of the idle vent valve.



Three baffles have been added in the secondary side of the float bowl to prevent fuel from spilling out of the main nozzles and also to prevent the possibility of dry jets which might occur in sharp turns.

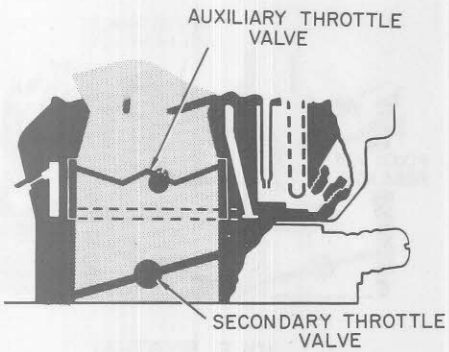
To minimize air flow resistance and turbulence, the venturi and venturi clusters have been streamlined in design and construction.





AUXILIARY VALVE

The secondary bores contain a new spring-loaded auxiliary valve which keeps the secondary side of the carburetor out of operation until air velocity is high enough to provide good metering. This new feature allows a wider range of full power operation.

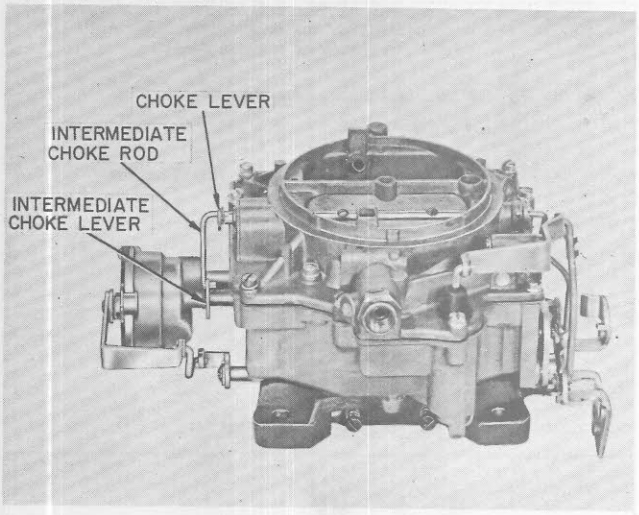


AUXILIARY VALVE LOCATION

The auxiliary valve assembly fits in place in the underside of the float bowl casting and is held in place by assembly of the throttle body to the bowl. Spring tension is set at the factory and should not be changed in the field. Lubrication is not generally necessary but light machine oil may be used if desired to prevent sticking.

CADILLAC (Continued)

The choke system, while basically the same in operation as earlier models, is slightly changed in that the thermostatic coil now acts on an intermediate choke lever which transmits the action through an intermediate choke rod to the choke valve shaft.



SERVICE:

The following are adjustment changes made necessary by new design and construction.

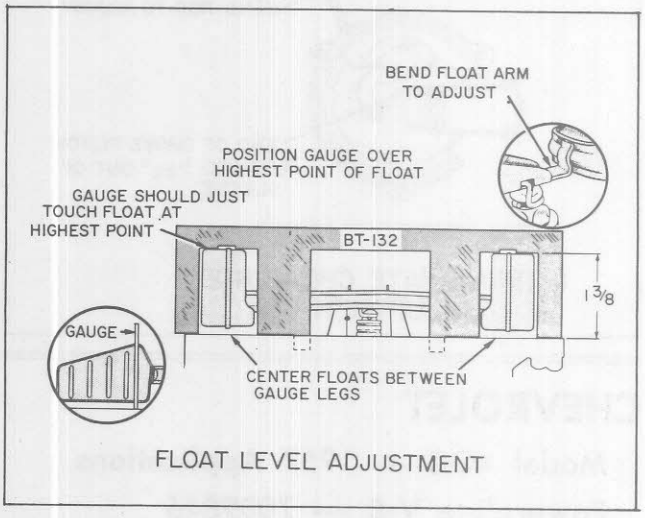
FLOAT LEVEL ADJUSTMENT:

With the air horn inverted and air horn gasket in place, position Float Gauge BT-132 over the floats at their highest point as shown.

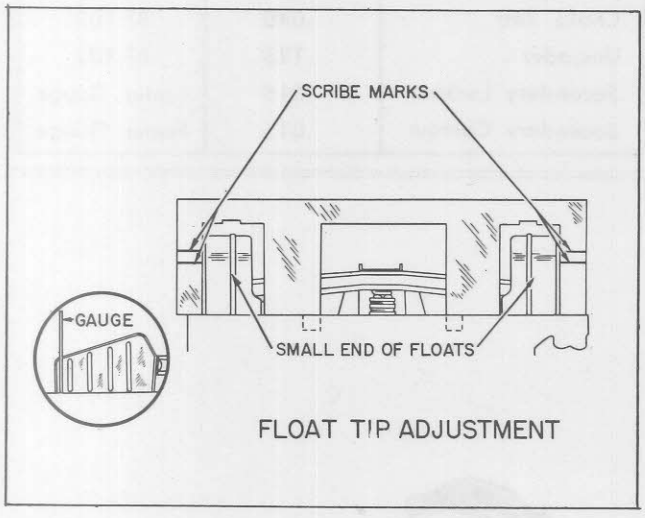
Bend the float arms at the rear so that the highest point of the floats just contact gauge.

Vertical height should be 1-3/8".

If necessary bend each float arm horizontally until each float pontoon is centered between gauge legs.



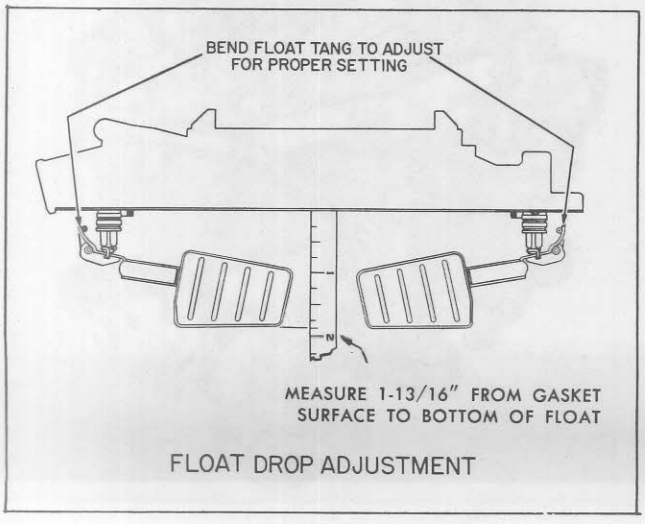
FLOAT LEVEL ADJUSTMENT



FLOAT TIP ADJUSTMENT

FLOAT TIP ADJUSTMENT:

Move Gauge BT-132 to small ends of floats as shown. With Gauge held vertically, the upper edge of the float at the point where the radius ends should align between scribe marks on gauge.

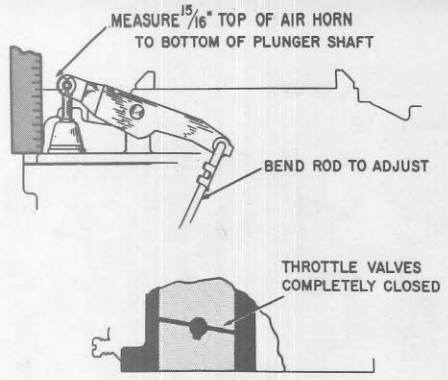


FLOAT DROP ADJUSTMENT

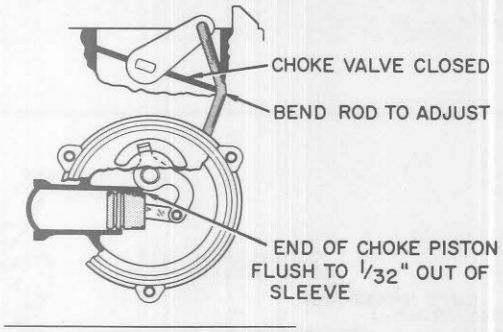
FLOAT DROP ADJUSTMENT *(new type floats)*

Note: This adjustment is important because of the new type spring balanced floats.

With air horn upright and floats hanging free, distance from air horn gasket to lowest point of float should be 1-13/16". Bend float tang to adjust.



PUMP ROD ADJUSTMENT



INTERMEDIATE CHOKE ROD ADJUSTMENT

CADILLAC (Continued)

PUMP ROD ADJUSTMENT *(new dimension)*

With the throttle valves completely closed, bend the pump rod as necessary to obtain a dimension of 15/16" from the top of the air horn casting to the bottom of the pump plunger shaft.

INTERMEDIATE CHOKE ROD ADJ. *(new)*

Hold the choke valve closed, bend the intermediate choke rod as necessary so that the choke piston is flush to 1/32" out of the end of the choke piston sleeve.

QUICK REFERENCE ADJUSTMENT SPECIFICATIONS

ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-3/8"	BT-132
Float Drop	1-13/16"	Scale
Pump Rod Set.	15/16"	Scale
Idle Vent	.063	BT-79
Int. Choke Rod	0-1/32"	——
Automatic Choke	Index	——
Fast Idle	.020	BT-67
Choke Rod	.040	BT-102
Unloader	.125	BT-102
Secondary Lockout	.015	Feeler Gauge
Secondary Contour	.015	Feeler Gauge

CHEVROLET

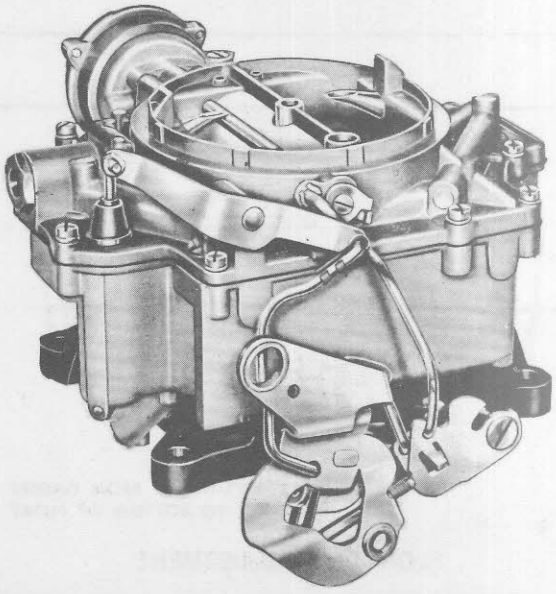
Model 4GC — 1957 Applications
Powerglide V-8 — 7009846

DESCRIPTION OF CHANGES

Except for minor calibration changes, the 1957 4GC is similar to the 1956 model. Service information will be the same as for 1956. Listed below are adjustment specifications.

QUICK REFERENCE ADJUSTMENT SPECIFICATIONS

ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-5/8"	BT-89
Float Drop	2-1/4"	Scale
Pump Rod	1-1/16"	Scale
Automatic Choke	1 notch lean	——
Choke Rod	.043	BT-131
Unloader	.235	BT-131
Secondary Lockout	.015	Feeler Gauge
Secondary Contour	.015	Feeler Gauge

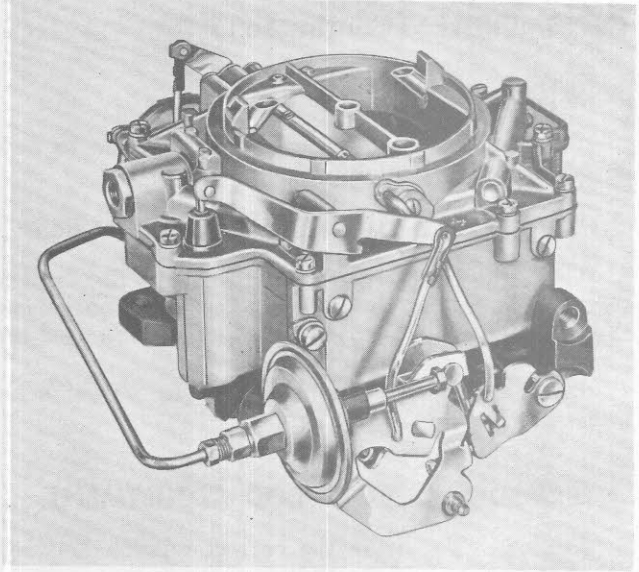


OLDSMOBILE

Model 4GC — 1957 Applications

88-98 Syncromesh — 7009471

88-98 Hydramatic — 7009470

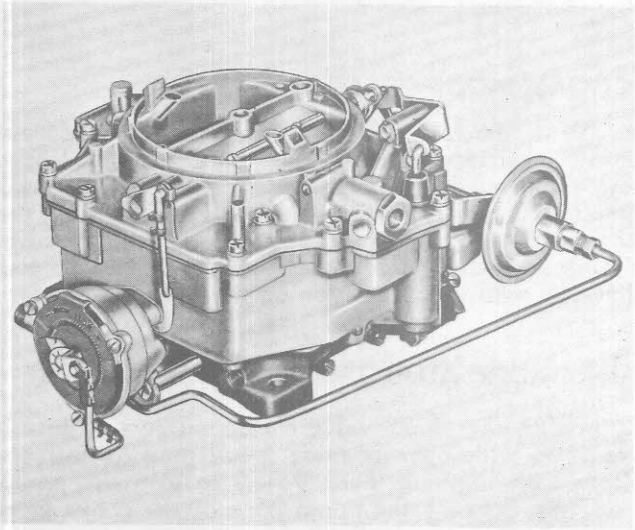


APPEARANCE:

The 1957 4GC carburetor for Oldsmobile is similar in appearance to the unit used in 1956, with the exception that the automatic choke housing is located on the float bowl instead of the air horn. A choke modifier is used on the automatic choke for improved cold driveaway.

SPECIFICATIONS:

There is no change in general specifications but metering and calibration have been changed to meet the demands of the new 1957 engine.



OPERATION:

The only change in operation in the 1957 4GC is the choke system. In previous models the thermostatic coil acted directly on the choke shaft; in the 1957 4GC the choke coil acts through an intermediate choke shaft and rod to move the choke valve shaft.

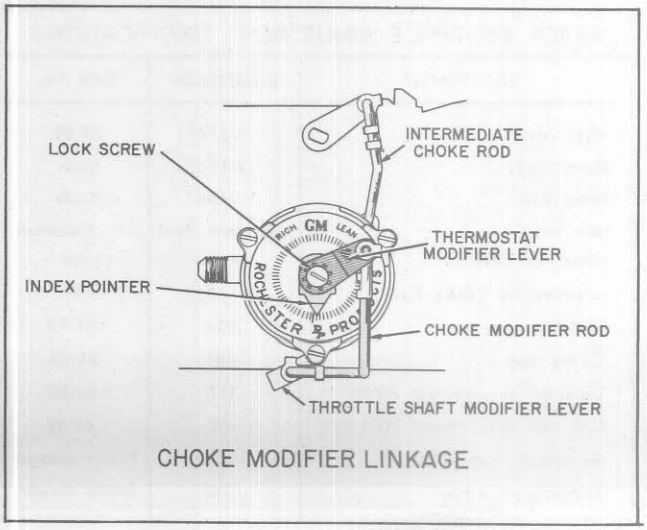
The choke modifier which is new for this year is used to prevent "loading up" and excessively rich mixtures during the engine warm-up period.

Under normal operation, the automatic choke valve assumes a position where the torque of thermostatic coil is balanced against vacuum pull on the choke piston plus air velocity against the offset choke valve. As heat from the exhaust manifold relaxes the tension on the thermostatic coil, the choke valve gradually opens.

When the engine is started cold and the throttle is opened considerably (such as going up a steep hill) vacuum pull on the choke piston is lessened, thereby causing the choke valve to close because the balance between the tension on the thermostatic coil and vacuum pull on the choke piston is upset. Also vacuum drawing heat to the thermostatic coil housing may not be sufficient to heat and relax the thermostatic coil before "loading up" takes place.

The choke modifier, being linked directly to the throttle by means of the throttle shaft, modifier lever, choke modifier rod, thermostat modifier lever and shaft is actuated by the slightest throttle movement. Thus the thermostat modifier lever rotates the thermostatic coil, thereby relaxing or increasing tension on the thermostatic coil as necessary to give the proper choke valve opening.

As can be seen when opening the throttle valves gradually to wide open position, the choke modifier is at its leanest point at approximately 45° of throttle opening and then as the throttle valves are opened to wide open position the choke modifier enrichens. The reason for this is the engine demands a certain fuel mixture at these different points of throttle opening and so the choke modifier has been calibrated thus to meet these demands.



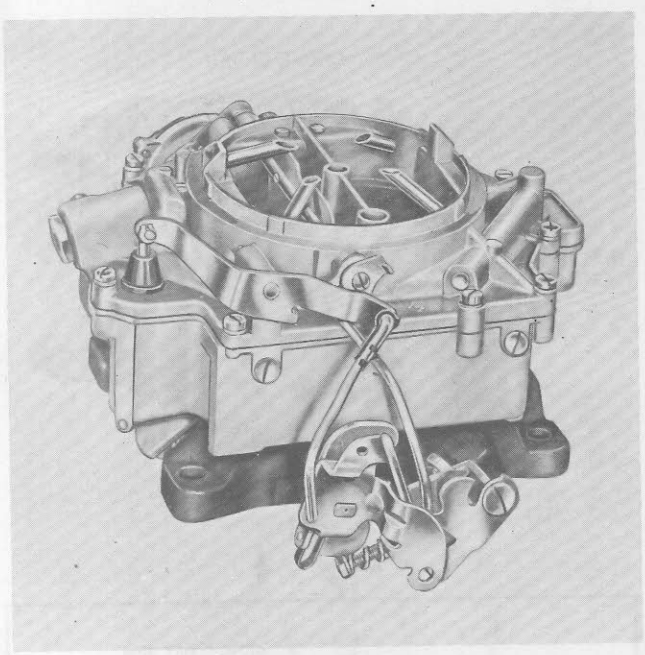
CHOKE MODIFIER LINKAGE

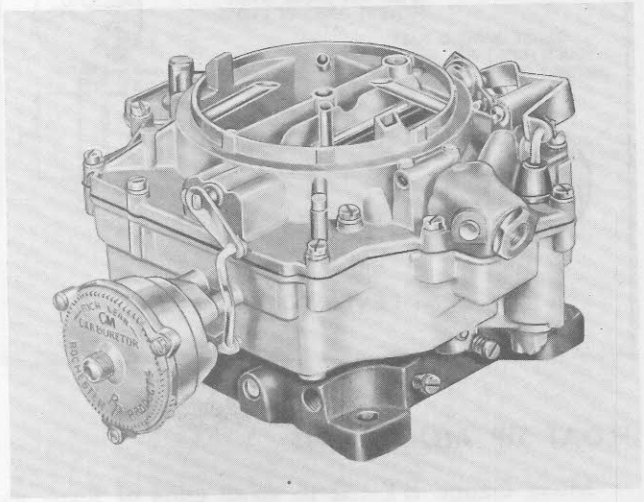
PONTIAC

Model 4GC — 1957 Application

Syncromesh — 7009829

Hydramatic — 7009830





DESCRIPTION OF CHANGES

APPEARANCE:

The 1957 Pontiac 4GC has been lowered in height with a new low bowl design. The automatic choke has been moved from the air horn to the float bowl to allow for improved air cleaner design and lower hood styling.

SPECIFICATIONS:

The secondary bores have been enlarged from 1-7/16" to 1-11/16" and the secondary main venturi has been enlarged from 1-1/4" to 1-15/32". Specifications and metering have been changed to meet the demands of the new 1957 engine. See specification sheet for calibration data.

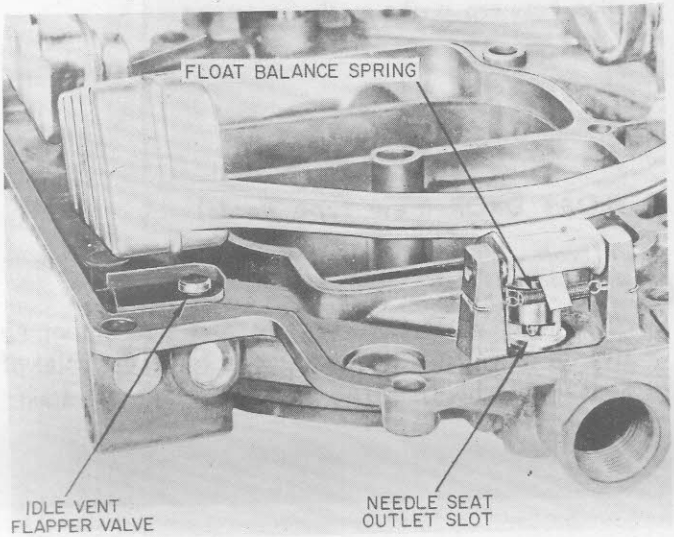
OPERATION:

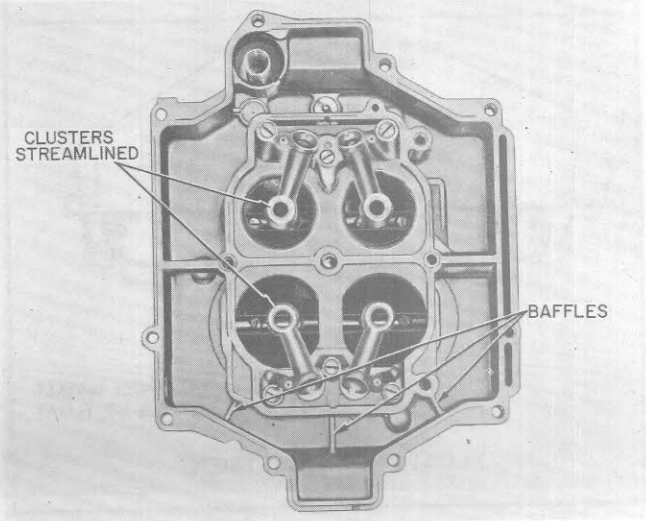
New type spring balanced, cutaway floats are used in the new low design. The balance spring is mounted between the two float hanger posts and exerts pressure on the float tang. The purpose of the balance spring is to give a more positive closing of the float valve to eliminate any fuel spillage during abnormal operation.

A new anti-spill flapper valve has been installed under the idle vent valve to prevent any spillage of fuel out of the idle vent valve.

Three baffles have been added in the float bowl on the secondary side to prevent spillage of fuel out the main nozzles and the possibility of dry jets which might be encountered in sharp turns and abnormal operation.

To minimize air flow resistance and turbulence, the venturi and venturi clusters have been streamlined in design and construction.

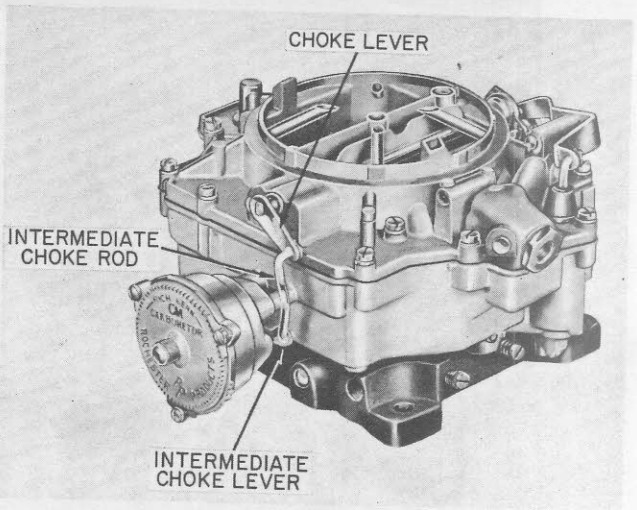




PONTIAC (Continued)

The choke system, while basically the same in operation as earlier models, is slightly changed in that the thermostatic coil now acts on an intermediate choke lever which transmits the action through an intermediate choke rod to the choke valve shaft.

Four vapor vent holes have been drilled in the throttle body just above the throttle valves, to vent any fuel vapors which might form during hot idle operation.



SERVICE:

The following are adjustment changes made necessary by new design and construction.

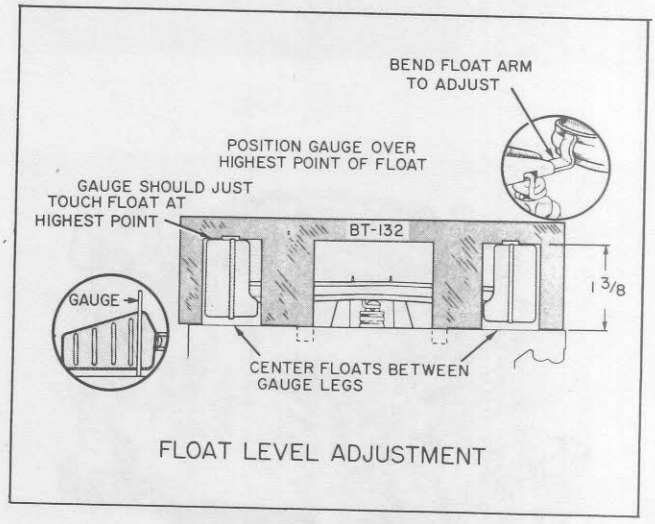
FLOAT LEVEL ADJUSTMENT:

With the air horn inverted and air horn gasket in place, position Float Gauge BT-132 over the floats at their highest point as shown.

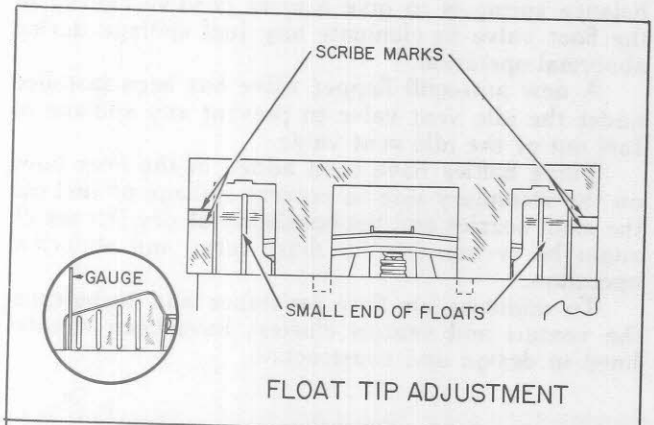
Bend the float arms at the rear so that the highest point of the floats just contact gauge.

Vertical height should be 1-3/8".

If necessary bend each float arm horizontally until each float pontoon is centered between gauge legs.



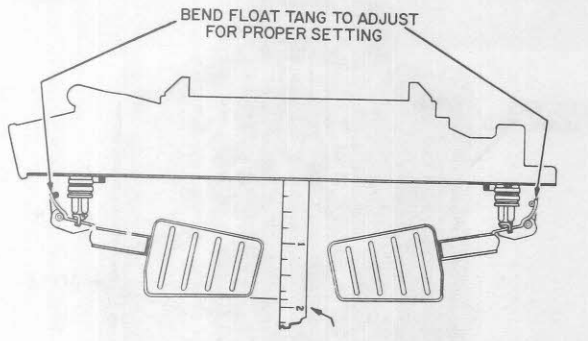
FLOAT LEVEL ADJUSTMENT



FLOAT TIP ADJUSTMENT

FLOAT TIP ADJUSTMENT

Move Gauge BT-132 to small ends of floats as shown. With Gauge held vertically, the upper edge of the float at the point where the radius ends should align between scribe marks on gauge.



FLOAT DROP ADJUSTMENT

FLOAT DROP *(new type floats)*

Note: This adjustment is very important due to new type spring balanced floats.

With the air horn upright and floats hanging free, distance from air horn gasket to lowest point of float should be 1-13/16". Bend float tang to adjust.

UNITED MOTORS SERVICE - AC DIVISION

GENERAL MOTORS PRODUCTS OF CANADA LIMITED

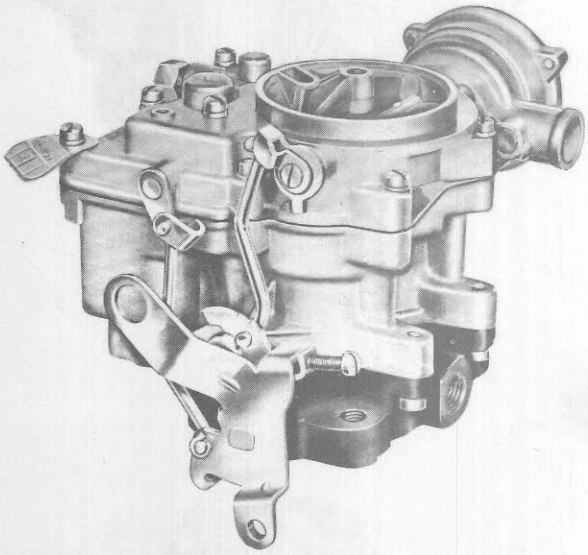
OSHAWA, ONTARIO

Bulletin 9D-10-57
Date: 12-1-56
Page: 1
File After 9D-9 Section

ROCHESTER PRODUCTS CARBURETOR BULLETIN

SUBJECT: MODEL 2GC - 1957 DESIGN CHANGES

APPLICATIONS



CHEVROLET

Passenger V-8 Syncromesh — 7010647

Passenger V-8 Powerglide — 7010648

PONTIAC Series 2000 and 2200

V-8 Syncromesh — 7010750

V-8 Powerglide — 7010648

DESCRIPTION OF CHANGES

APPEARANCE:

The Model 2GC Carburetors for 1957 Chevrolet are unchanged in appearance, operation or service requirements from the 1956 Models except as listed below.

OPERATION:

Minor changes in metering and calibration have been made to meet the demands of the new 1957 engine.

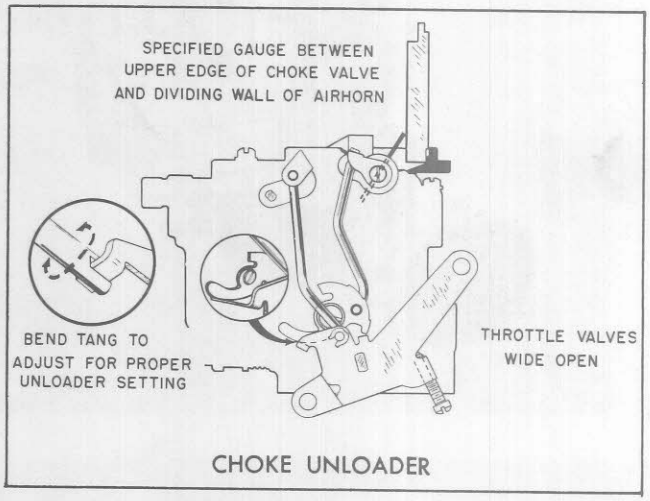
SERVICE:

Due to choke changes a new dimension for the choke unloader will be required on the G.M. of Canada Syncromesh application. Part No. 7010750.

UNLOADER SETTING: *(7010750) ONLY*

With the choke valve in its normally closed position, rotate throttle lever to wide open position and bend tang on lever to give an opening of .265 between upper edge of choke valve and inside wall of air horn. A 17/64" drill may be used for checking this dimension.

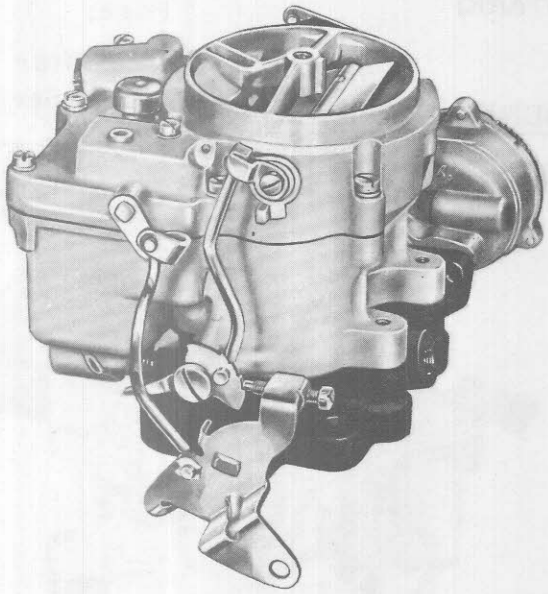
Bend the tang on the throttle lever as shown with Bending Tool BT-69.

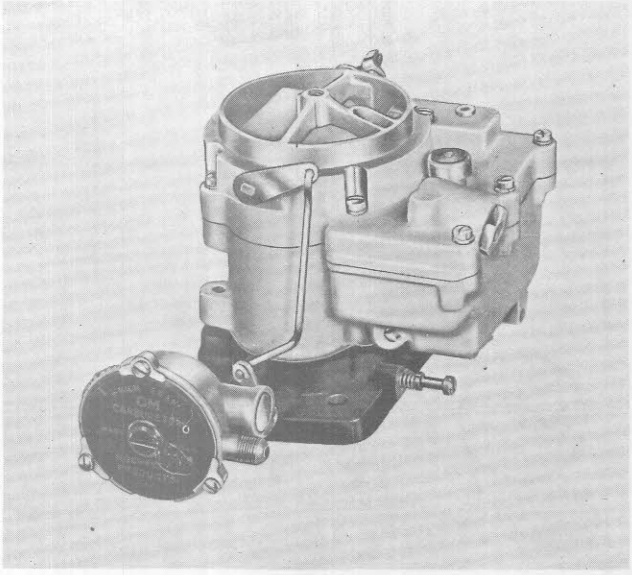


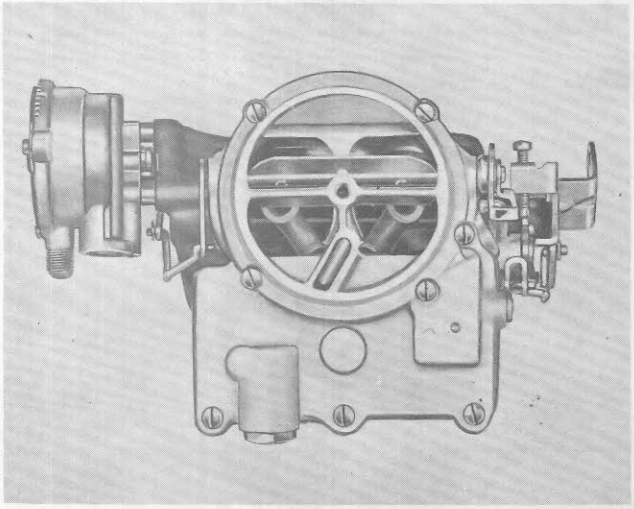
CHOKE UNLOADER

QUICK REFERENCE ADJUSTMENT SPECIFICATIONS

ADJUSTMENT	DIMENSION	GAUGE
Float Level	1-1/4"	BT-129
Float Drop	1-29/32"	BT-129
Pump Rod	57/64"	BT-129
Automatic Choke 7010647 — 7010648	Index	———
Automatic Choke 7010750	1 Notch Rich	———
Choke Rod	.089	BT-108
Unloader 7010647 — 7010648	.360	BT-108
Unloader—G.M. of Canada—7010750	.265	Use 17/64" Drill







MODEL 2GC APPLICATIONS

PONTIAC Series 2700 and 2800

Synchromesh V-8 — 7009832

Hydramatic V-8 — 7009831

APPEARANCE:

The new Pontiac 2GC carburetor for 1957 is similar to earlier models, except it is larger in overall size to accomodate larger bores and venturi. The choke housing has been moved from the air horn to the throttle body to allow for lower hood styling.

A change in air horn construction is made to allow center stud attachment of the air cleaner. This will give a more positive attachment of the air cleaner.

An internal vent for fuel bowl venting has been added in the air horn to eliminate any possible change in air-fuel mixture due to air cleaner restriction.

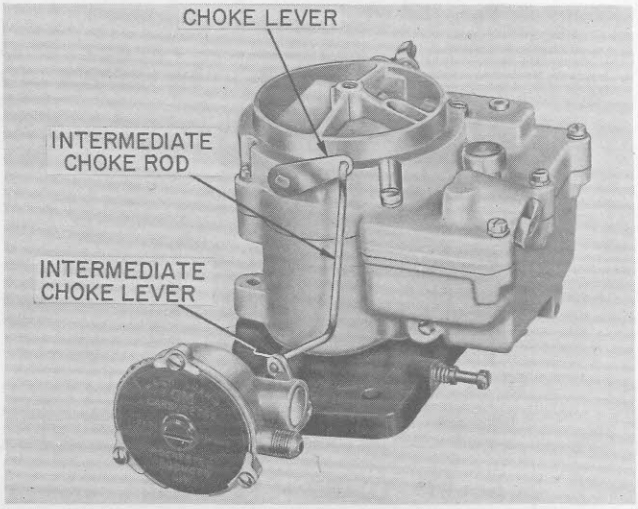
A new type choke coil baffle plate is used in the choke housing. It has a deflector for improved heat control on the choke coil.

SPECIFICATIONS:

Overall capacity of the carburetor has been increased for a greater performance range, with the bore size increased from 1-7/16" to 1-11/16" and the main venturi size increased from 1-1/4" to 1-5/16". Metering and calibration has been changed to meet the demands of the new 1957 engine.

OPERATION:

The only change in operation is in the choke system. In previous models, the thermostatic coil acted directly on the choke valve shaft; in the 1957 carburetor, the coil acts through an intermediate choke shaft and rod to move the choke valve shaft. Choke operation is otherwise unchanged.



PONTIAC—(Continued)

SERVICE:

The change in overall construction makes necessary the following new adjustments:

PUMP ROD ADJUSTMENT *(new dimension)*

With the throttle valves completely closed the dimension from top of the air horn casting to the top of the pump rod should be 53/64". Use Gauge BT-133.

INTERMEDIATE CHOKE ROD ADJUSTMENT

The addition of the intermediate choke linkage necessitates this new adjustment. The purpose is to obtain the correct relation between the choke piston and choke valve position.

Procedure: Remove the thermostat cover and coil assembly and inside baffle plate. Hold the choke valve completely closed and bend the intermediate choke rod as necessary so that the end of the choke piston is flush to 1/32" out of the choke piston sleeve.

CHOKE ROD ADJUSTMENT *(new gauge)*

Turn the idle screw in until the primary throttle valves just start to open. Turn idle screw in one more complete turn. Then place the idle screw on the second step of the fast idle cam next to the high step. With the screw in this position, the end of Gauge BT-134 (dim. .061) should just fit in place as shown between the upper edge of the choke valve and the inside wall of the air horn. To adjust bend the counterweight tang as shown with Bending Tool BT-69.

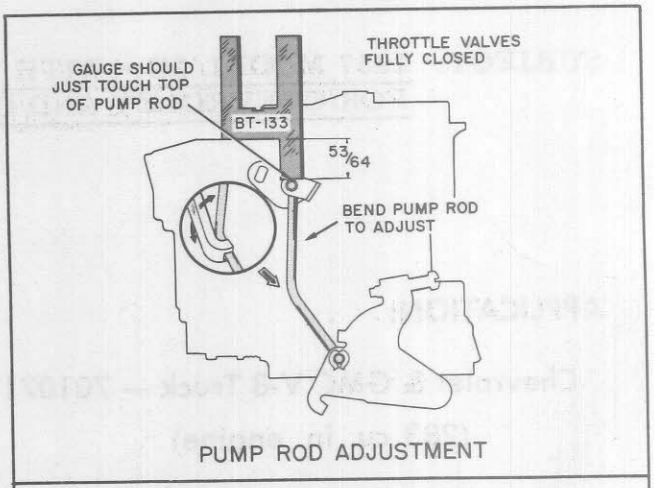
UNLOADER ADJUSTMENT *(new gauge)*

With the throttle valves held wide open the choke valve should be open just enough to admit Gauge BT-134 (dimension .163) between the upper edge of the choke valve and the inside wall of the air horn.

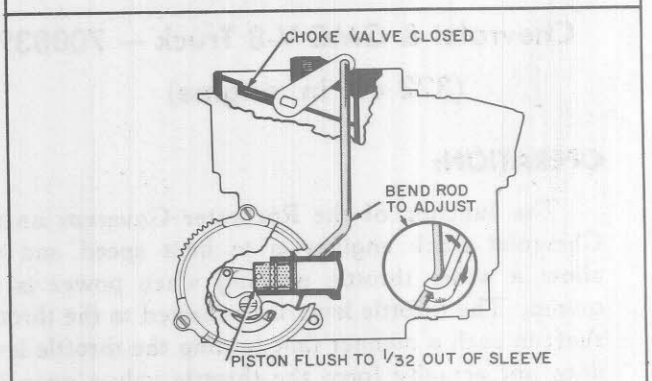
To adjust bend the tang on the throttle lever as shown with Bending Tool BT-69.

QUICK REFERENCE SPECIFICATIONS

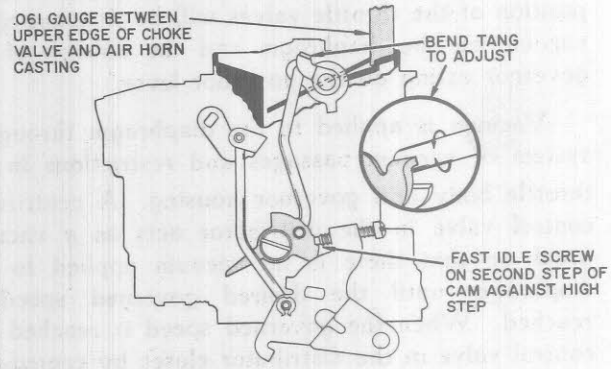
ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-15/64"	BT-133
Float Drop	1-29/32"	BT-133
Pump Rod	53/64"	BT-133
Intermediate Choke Rod	0.-1/32"	——
Automatic Choke	Index	——
Choke Rod	.061	BT-134
Unloader	.163	BT-134



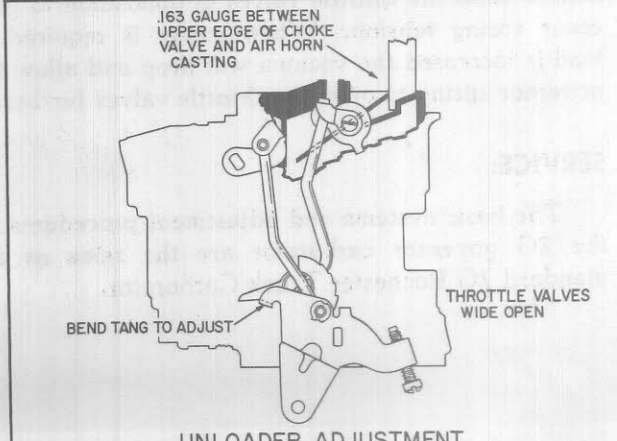
PUMP ROD ADJUSTMENT



INTERMEDIATE CHOKE ROD ADJUSTMENT

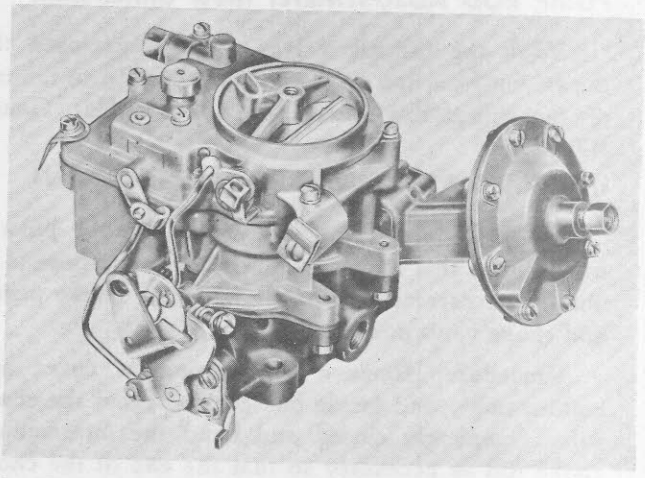


CHOKE ROD ADJUSTMENT



UNLOADER ADJUSTMENT

SUBJECT: 1957 MODEL 2G - WITH VACUUM AND SPEED CONTROL GOVERNOR FOR CHEVROLET AND GMC TRUCKS



APPLICATION:

Chevrolet & GMC V-8 Truck — 7010717
(283 cu. in. engine)

Chevrolet & GMC V-8 Truck — 7008394
(322 cu. in. engine)

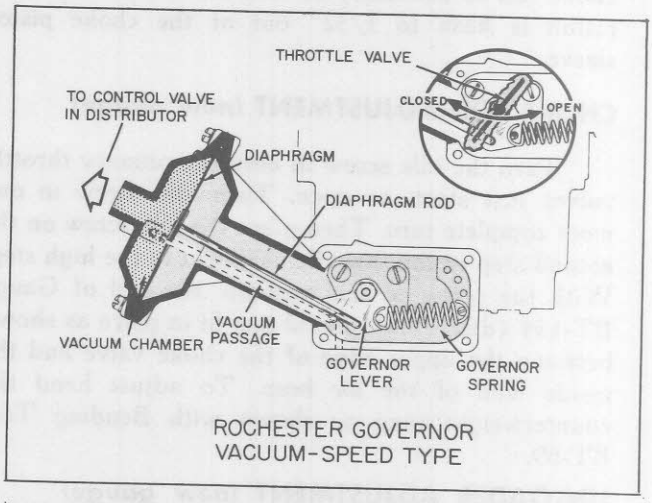
OPERATION:

The function of the Rochester Governor on the Chevrolet truck engines is to limit speed and yet allow a wider throttle opening when power is required. The throttle lever is connected to the throttle shaft in such a manner that turning the throttle lever does not actually force the throttle valves open but rather allows them to follow the throttle lever because of governor spring tension. Thus when the throttle lever is moved to wider open position, the position of the throttle valves will be determined by vacuum on the diaphragm and the tension of the governor acting on the governor lever.

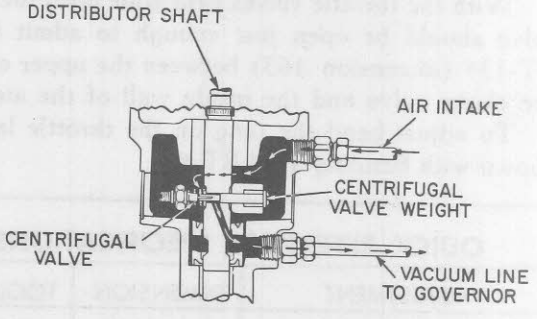
Vacuum is applied to the diaphragm through a system of vacuum passages and restrictions in the throttle body and governor housing. A centrifugal control valve in the distributor acts as a vacuum break so that there is no vacuum applied to the diaphragm until the desired governed speed is reached. When the governed speed is reached the control valve in the distributor closes by centrifugal force and vacuum is applied to the diaphragm which acts to close the throttle valves in opposition to governor spring tension. When power is required as load is increased the vacuum will drop and allow the governor spring to open the throttle valves further.

SERVICE:

The basic systems and adjustment procedures on the 2G governor carburetor are the same as the standard 2G Rochester Truck Carburetor.



ROCHESTER GOVERNOR
VACUUM-SPEED TYPE



GOVERNOR BLEED VALVE

GOVERNOR (Continued)

7010717 QUICK REFERENCE ADJUSTMENT SPECIFICATIONS		
ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-1/4"	BT-129
Float Drop	1-29/32"	BT-129
Pump Rod	57/64"	BT-129

7008394 QUICK REFERENCE ADJUSTMENT SPECIFICATIONS		
ADJUSTMENT	DIMENSION	TOOL No.
Float Level	1-15/64"	BT-130
Float Drop	1-29/32"	BT-129
Pump Rod	57/64"	BT-129

TROUBLE SHOOTING TIPS:

1 — Loss of speed control:

Check for vacuum leaks and operation of bleed valve in distributor. Also for proper seal of diaphragm cover and condition of diaphragm itself. Check for plugged restrictions in vacuum passage in governor housing and throttle body.

2 — Erratic operation under load:

Check for binding in throttle shaft and throttle lever.

SUMMARY:

Vacuum and free operation are two keys to correct operation of the Rochester governor. If all the parts are free to move as intended and there are no vacuum leaks, the unit will operate correctly.

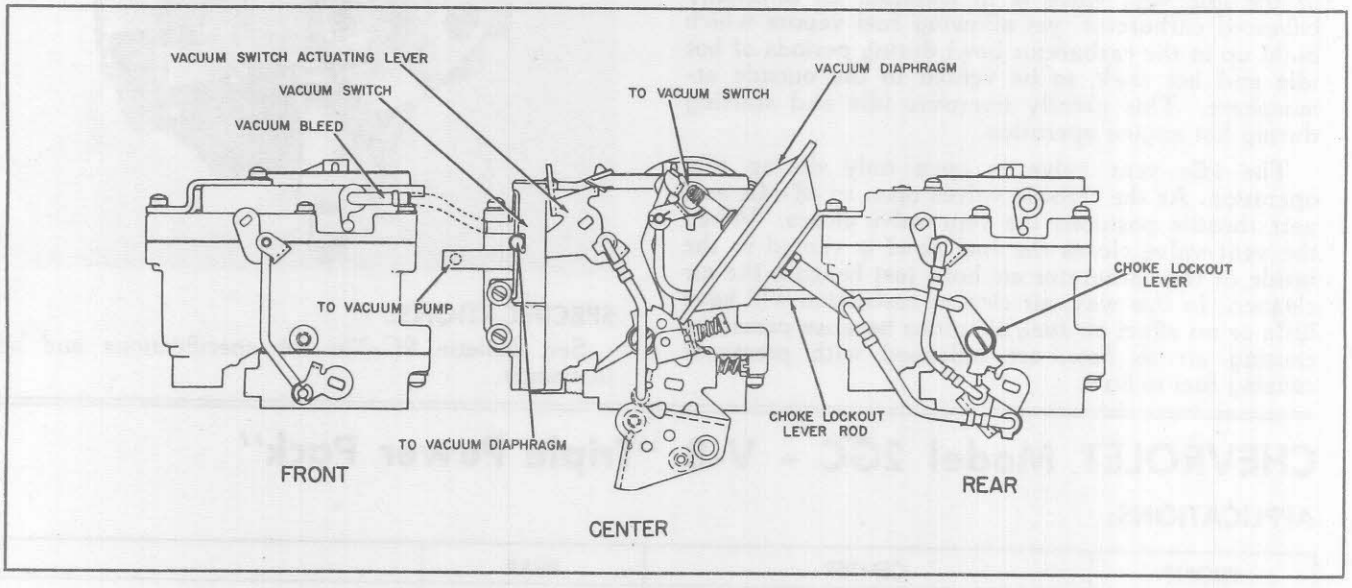
Rochester Carburetors
2GC, TRIPLE POWER PACK, AND 2G
1958 DESIGN CHANGES

CADILLAC Model 2GC - Triple Power Pack

APPLICATIONS:

FRONT	CENTER		REAR	APPLICATION
STD. & A.C.	STANDARD	AIR COND.	STD. & A.C.	
7012201	7012202	7012205	7012203	Carburetor No. Early
7012901	7012902	7012905	7012903	Carburetor No. Late
7012200 STD.		7012204 A.C.		Complete Power Package No.

REFER TO 9C-210 FOR LATEST CARBURETOR NUMBERS



APPEARANCE:

The throttle rod connecting the two throttle levers on the end carburetors is different in shape due to engine design.

The center carburetor is internally balanced, with the elimination of the fixed external vent and the addition of an idle vent valve.

A choke modifier is used in conjunction with the automatic choke.

The throttle return springs on the end carburetors are integral with the throttle body casting.

OPERATION:

A slotted throttle body to bowl gasket is used in all three carburetors, to vent any fuel vapors which may form in the venturi and throttle bores to the outside atmosphere. This prevents the vapors from entering the manifold, which might cause hard starting and rough idle during hot engine operation.

New type float needle and seats are used in all three carburetors. The needle seats have a narrow seat which by-passes dirt more readily to prevent flooding.

All three carburetor float bowls are internally vented by the elimination of the fixed external vents. Pressures from just beneath the air cleaner in the air horn are vented to the fuel in the carburetor bowl. Therefore, the same pressures causing air to flow are causing fuel to flow. In this way air cleaner restriction will not affect fuel/air mixtures during part throttle and power ranges.

An external idle vent valve mounted on the center carburetor air horn, vents any fuel vapors which may form in the float bowl during periods of hot idle and hot "soak" to the outside atmosphere. The vent valve is operated by a tang on the pump lever and is only open during idle operation. During part throttle and power operation the vent valve is closed, returning the carburetor to an internal balance.

A new type pump lever is used on the center carburetor with a special tang for more positive closing of the vacuum switch.

SPECIFICATIONS:

See Bulletin 9C-210 for specifications and adjustments.

CHEVROLET Model 2GC - V-8 Passenger

APPLICATIONS:

SYN. — EARLY	SYN. — LATE	AUTO. TRANS.	APPLICATION
7012133	7012451	7012452	Carburetor No.

REFER TO 9C-326 FOR LATEST CARBURETOR NUMBERS

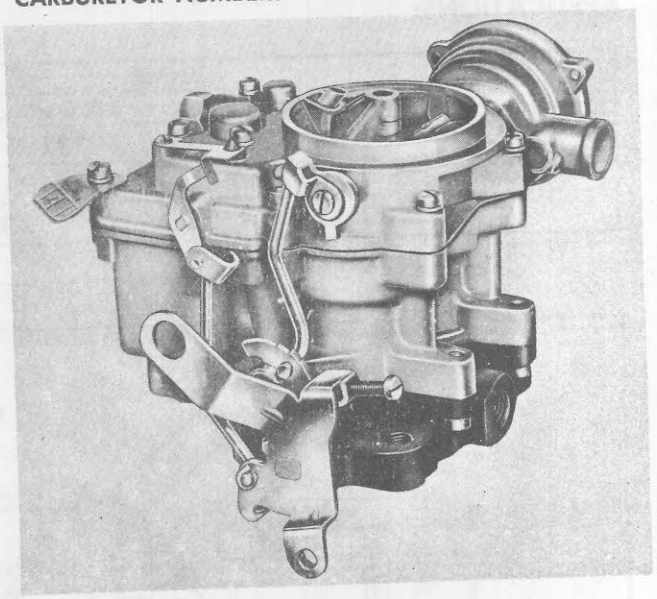
APPEARANCE:

The venturi and bore are the same as 1957 models. The metering and calibration has been changed to meet the demands of the 1958 engine.

OPERATION:

Operation remains unchanged except for the addition of an external idle vent valve. The purpose of the idle vent valve is to maintain an internally balanced carburetor, yet allowing fuel vapors which build up in the carburetor bowl during periods of hot idle and hot soak, to be vented to the outside atmosphere. This greatly improves idle and starting during hot engine operation.

The idle vent valve is open only during idle operation. As the throttle valves open to off-idle and part throttle positions the vent valve closes. When the vent valve closes the fuel bowl is vented to the inside of the carburetor air horn just beneath the air cleaner. In this way, air cleaner restriction will have little or no effect on fuel/air ratios because pressures causing air to flow, are balanced with pressures causing fuel to flow.



SPECIFICATIONS:

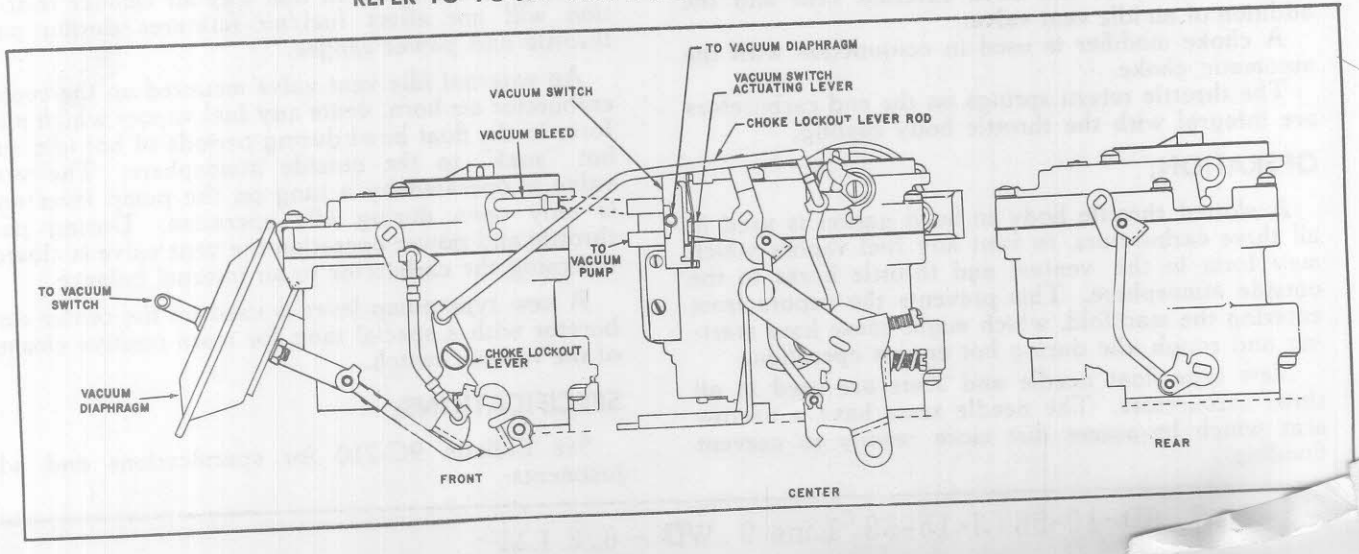
See Bulletin 9C-326 for specifications and adjustments.

CHEVROLET Model 2GC - V-8 "Triple Power Pack"

APPLICATIONS:

FRONT	CENTER		REAR	
A.T. & SYN.	AUTO. TRANS.	SYNCHROMESH	A.T. & SYN.	APPLICATION
7011951	7011952	7012503	7011953	Carburetor No. (Early)
7012851	7011952	7012503	7012853	Carburetor No. (Late)
7012850 A.T.		7012855 Syn.		Complete Power Package No.

REFER TO 9C-327 FOR LATEST CARBURETOR NUMBERS



OPERATION:

The carburetor systems are the same as the standard Model 2GC Chevrolet carburetor. The center carburetor has float, idle, part throttle power, pump and choke systems while the two outside carburetors contain float, main metering and accelerator pump systems only.

The pump system in all three carburetors does not have a fuel inlet ball check and channel. All fuel is supplied through a slot in the wall of the pump well.

The throttle body to bowl gasket is slotted on all three carburetors. The purpose of the slots is to vent any fuel vapors which may form in the carburetor bores during hot idle and hot "soak" to the outside atmosphere. This feature greatly improves hot idle and hot starts.

The float needle seat has a narrow seating surface to more readily by-pass dirt and for improved seating qualities.

SPECIFICATIONS:

See Bulletin 9C-327 for specifications and adjustments.

CHEVROLET Model 2G - V-8 Truck

APPLICATIONS:

EARLY	LATE	APPLICATION
7012035	**7012453**	**Standard Carburetor No.**
7012047	**7012455**	**Governor Equipped Carburetor No.**

REFER TO 9C-328 FOR LATEST CARBURETOR NUMBERS

APPEARANCE:

On the late model carburetors the external bowl vent has been removed and replaced by an idle vent valve.

OPERATION:

The purpose of the idle vent valve is to vent fuel vapors, which may form in the float bowl during idle operation, to the atmosphere.

SPECIFICATIONS:

See Bulletin 9C-328 for specifications and adjustments.

CHEVROLET Model 2G Truck

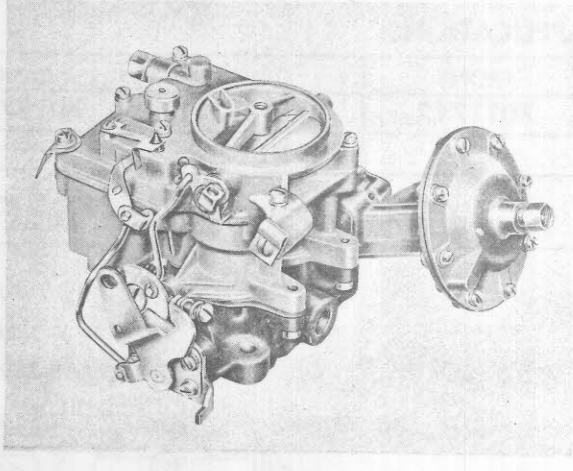
WITH VACUUM OPERATED GOVERNOR

The pump rod idle vent valve should be adjusted using the same procedure as the standard 1958 Chevrolet Model 2GC.

APPLICATIONS:

283"	
3700 RPM	APPLICATION
7012233	**Early Carburetor No.**
7012457	**Late Carburetor No.**

REFER TO 9C-329 FOR LATEST CARBURETOR NUMBERS



APPEARANCE:

The 1958 models are similar to 1957 except for the addition of an external idle vent valve on the late carburetor. The fixed external vent on the air horn has been removed.

OPERATION:

Governor speed setting has been changed to govern at 3700 RPM.

The carburetor is completely internally balanced with the addition of the idle vent valve.

SPECIFICATIONS:

See Bulletin 9C-329 for specifications and adjustments.

OLDSMOBILE
Model 2GC - Passenger

APPLICATIONS:

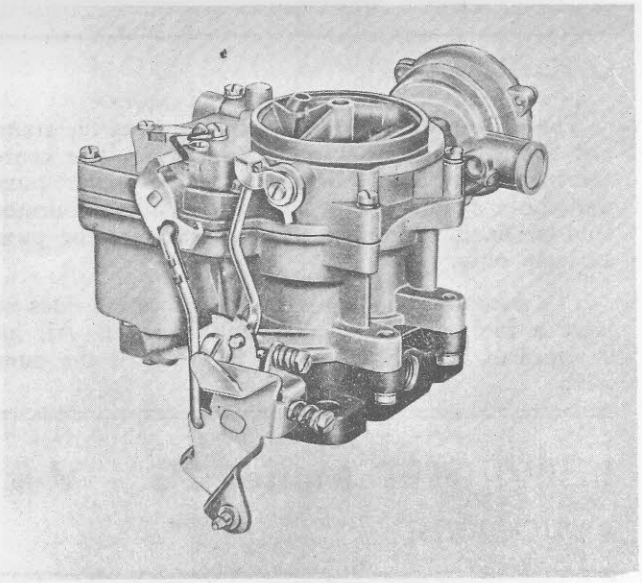
1958	YEAR
AUTO. TRANS.	APPLICATION
7012450	**CARBURETOR No.**

REFER TO 9C-512 FOR LATEST CARBURETOR NUMBERS

APPEARANCE:

The Model 2GC for the 1958 Oldsmobile is a side bowl design.

The fixed external bowl vent has been removed and is replaced by an idle vent valve.



OPERATION:

The purpose of the idle vent valve is to maintain an internally balanced carburetor, yet allowing fuel vapors which may build up in the carburetor bowl during periods of hot idle and hot soak, to be vented to the outside atmosphere. This greatly improves idle and starting during hot engine operation.

The idle vent valve is open only during idle operation. During part throttle and power operation the vent valve is closed, thereby venting the fuel bowl to the outside of the carburetor air horn just beneath the air cleaner. In this way air cleaner restriction will have little or no effect on fuel/air ratios because the pressures causing air to flow in the venturi system will always be balanced with pressures in the float bowl causing fuel to flow.

The throttle body to bowl gasket is slotted to vent any fuel vapors which may form in the carburetor bores during periods of idle and "hot soak" to the outside atmosphere. This feature greatly improves hot engine starting.

All spark drillings in the throttle body are removed. Spark vacuum is now connected directly to manifold vacuum.

SPECIFICATIONS:

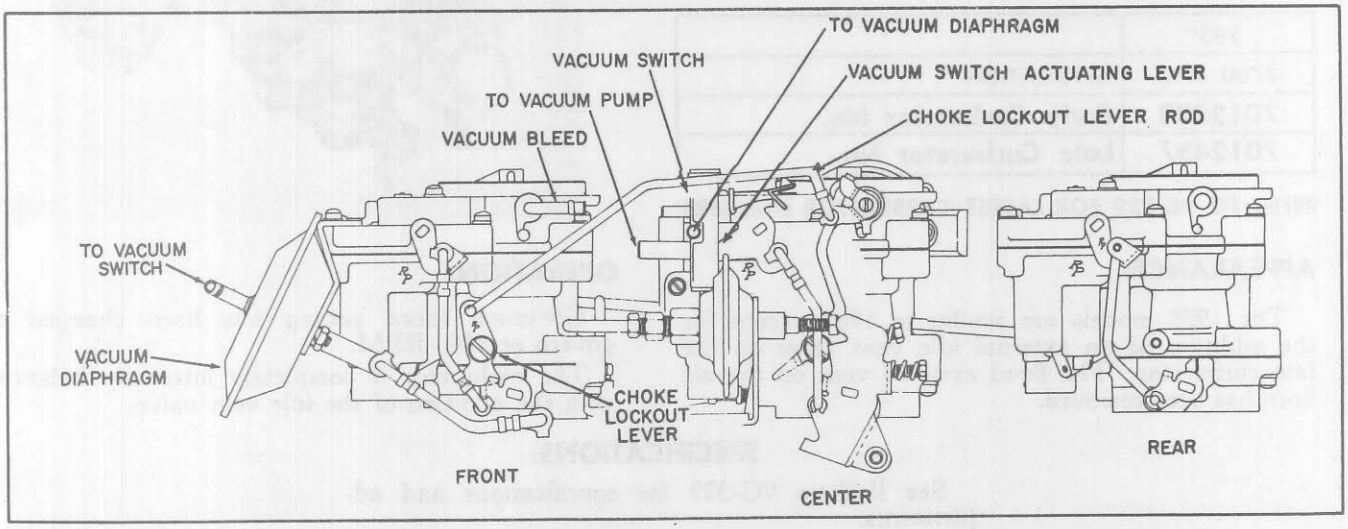
See Bulletin 9C-512 for specifications and adjustments.

OLDSMOBILE Model 2GC - Triple Power Pack

APPLICATIONS:

FRONT	CENTER	REAR	APPLICATION
7011712	**7011713**	**7011714**	**Carburetor No. Early**
——	**7012913**	——	**Carburetor No. Late**

REFER TO 9C-513 FOR LATEST CARBURETOR NUMBERS



APPEARANCE:

The fixed external bowl vent has been removed in the air horn on the center carburetor and an external idle vent valve has been added. The extension throttle return springs on the front and rear carburetors have been replaced by torsion springs integral with the throttle body.

The spark drillings have been removed in the throttle body. Spark advance is taken directly from manifold vacuum. A new type pump lever is used on the center carburetor with a special tang for a more positive closing of the vacuum switch.

Bore and venturi sizes are the same as 1957. Calibration and metering have been changed to meet the demands of the 1958 engine.

OPERATION:

The following changes have been made for improved operation.

A venturi throttle body to bowl gasket is used on all three carburetors. The purpose of the vented gasket is to vent any fuel vapors which may form in the carburetor bores to the outside atmosphere. This feature greatly improves hot idle and hot engine starting.

The center carburetor is internally balanced during part throttle and power ranges with the addition of the external idle vent valve. The internal balance is accomplished by venting the fuel bowl to pressure beneath the air cleaner. In this way air cleaner restriction will not affect fuel/air mixtures.

The purpose of the external idle vent valve is to vent any fuel vapors which may form in the float bowl during hot idle and hot "soak" to the outside atmosphere.

The float needle seats in all three carburetors have a narrow seat to more readily by-pass dirt, etc. and for improved seating qualities.

SPECIFICATIONS:

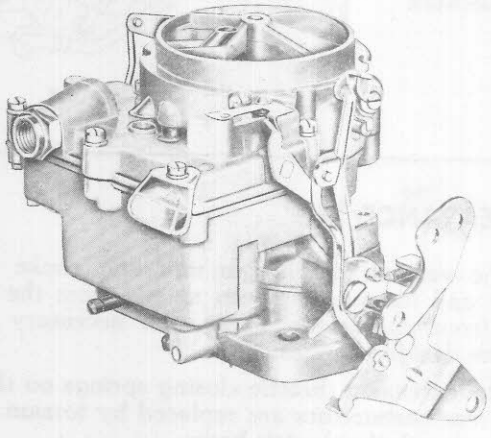
See Bulletin 9C-513 for specifications and adjustments.

PONTIAC
Model 2GC - Passenger

APPLICATIONS:

HYDRAMATIC	SYNCHROMESH	APPLICATION
7011702	7011703	Carburetor No. Early
7012702	7012703	Carburetor No. Late

REFER TO 9C-609 FOR LATEST CARBURETOR NUMBERS



APPEARANCE:

The throttle lever is larger and of new design for transmission requirements.

The fixed external bowl vent in the top of the air horn has been removed and replaced by an idle vent valve.

Venturi and bore sizes remain the same as 1957 models, except on the Synchromesh application. The large venturi on the Synchromesh has been reduced in size from 1-5/16" to 1-1/4".

Metering and calibration have been changed for the 1958 engine.

OPERATION:

The fixed external bowl vent in the top of the air horn has been removed and is replaced by an idle vent valve. The purpose of the idle vent valve is to vent fuel vapors to the outside atmosphere.

With the addition of the idle vent valve the carburetor is completely internally vented during part throttle and power ranges. In this way, air cleaner restriction will have little or no effect on fuel/air ratios because pressures causing air to flow will be balanced with pressures causing fuel to flow. This is accomplished by a vent tube in the air horn which transmits air pressures from beneath the air cleaner to the top of the fuel in the carburetor bowl.

The float assembly is larger and new in shape to give added bouyancy which is needed due to increased fuel pressures.

SPECIFICATIONS:

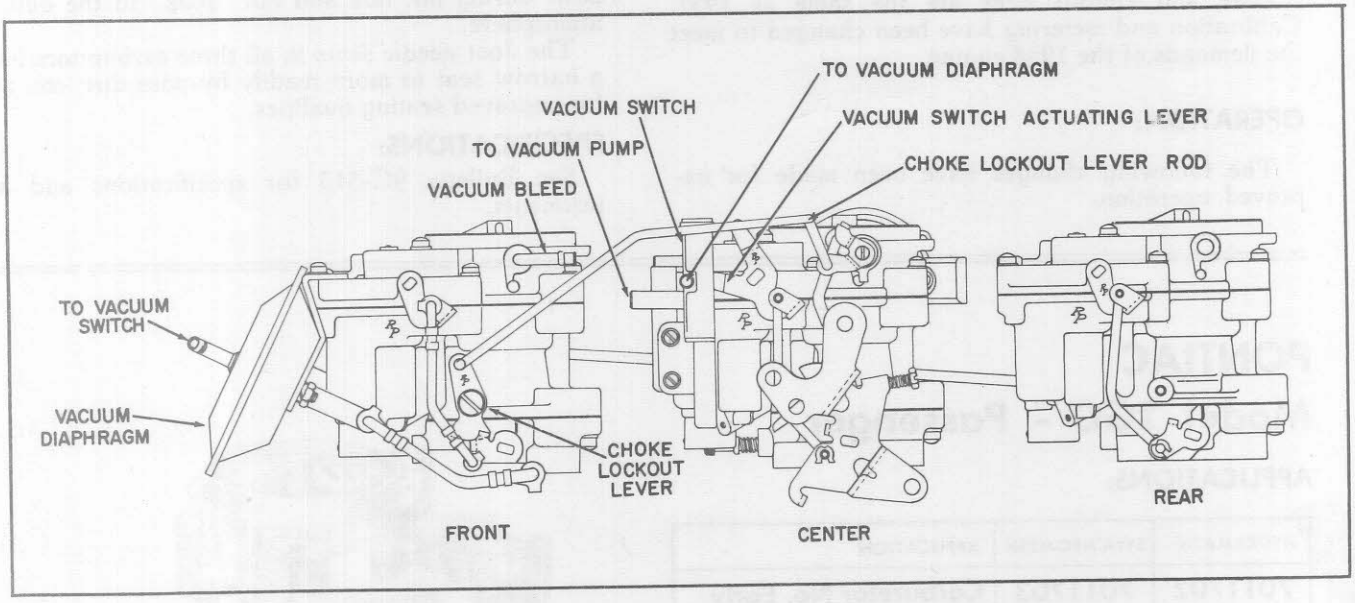
See Bulletin 9C-609 for specifications and adjustments.

PONTIAC Model 2GC - Triple Power Pack

APPLICATIONS:

1958				YEAR
FRONT	CENTER		REAR	APPLICATION
HYD. & SYN.	HYDRAMATIC	SYNCHROMESH	HYD. & SYN.	
7011705	7011706	7011709	7011707	Carburetor No.
7011704 HYD.		7011708 SYN.		Complete Power Package No.

REFER TO 9C-610 FOR LATEST CARBURETOR NUMBERS



APPEARANCE:

The vacuum diaphragm unit and choke lockout lever and linkage has been moved from the rear to the front carburetor. This was necessary due to engine design changes.

The extension throttle closing springs on the front and rear carburetors are replaced by torsion springs integral with the throttle body.

Bore and venturi sizes remain the same. Calibration and metering has been changed for 1958 engine demands. The float needle seat fuel inlet hole has been enlarged for maximum fuel flow.

OPERATION:

A vented throttle body to bowl gasket is used on all three carburetors to vent any fuel vapors which may form in the carburetor bores to the outside atmosphere. This feature greatly improves hot idle and hot engine starting.

The float needle seat has a narrow seat to by-pass dirt, etc. more readily and for improved seating qualities.

SPECIFICATIONS:

See Bulletin 9C-610 for specifications and adjustments.

CARBURETOR TOOLS AND GAUGES AS LISTED IN 9C BULLETINS ARE AVAILABLE THROUGH ROCHESTER DISTRIBUTORS

BULLETIN 9D-10 A
PAGE 1 OF 4
DATE: SEPTEMBER 1958
REPLACES: 9D-10-57A,
DATED 7-1-57
FILE BEHIND
9D-10 SERVICE MANUAL

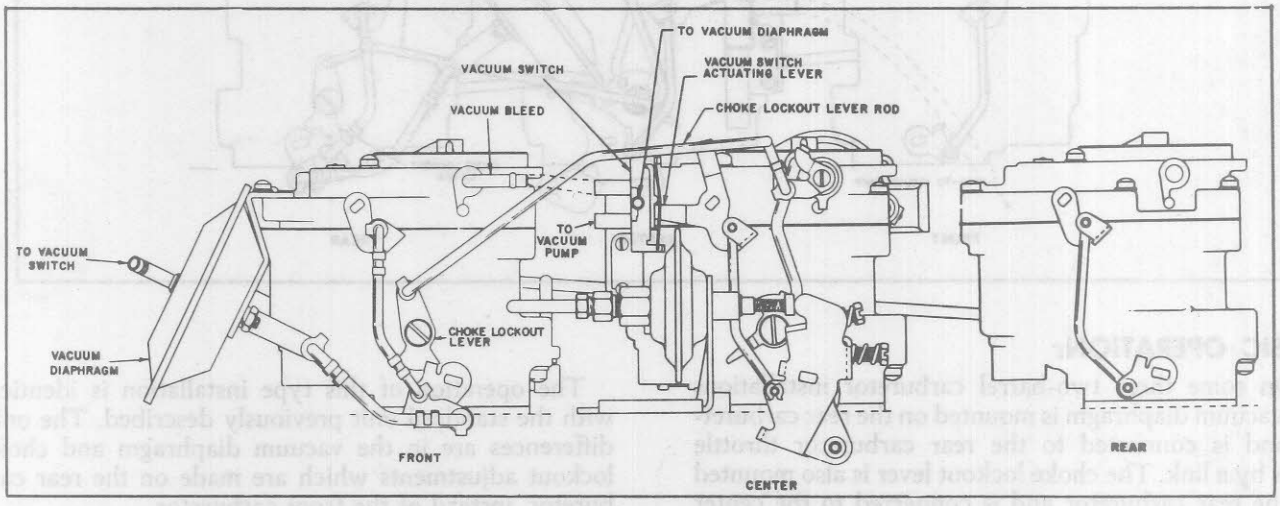
Rochester Carburetors

TRIPLE POWER PACK

MODEL 2G—2GC

TRIPLE TWO BARREL CARBURETOR INSTALLATION

(FRONT DIAPHRAGM MOUNT)



BASIC OPERATION:

In this installation, three Rochester 2 jet carburetors are mounted in tandem. The center carburetor of the trio, called the primary carburetor, contains all the conventional systems of carburetion, including Float, Idle, Part Throttle, Power, Pump and Choke. The Front and Rear carburetors, called the secondary carburetors, contain only Float, Pump and Main Metering Systems. The Primary carburetor is the only one used during idle, warm up and part throttle operation. During idle and low speeds, the two secondary carburetors are kept out of operation by closing springs externally attached to the throttle shafts.

The throttle valves and accelerator pumps on the secondary carburetors are operated by a vacuum diaphragm which is controlled by a vacuum switch mounted on the center carburetor. The throttle shafts on the outside carburetors are connected by common rods, so they will both operate simultaneously, controlled by the vacuum diaphragm.

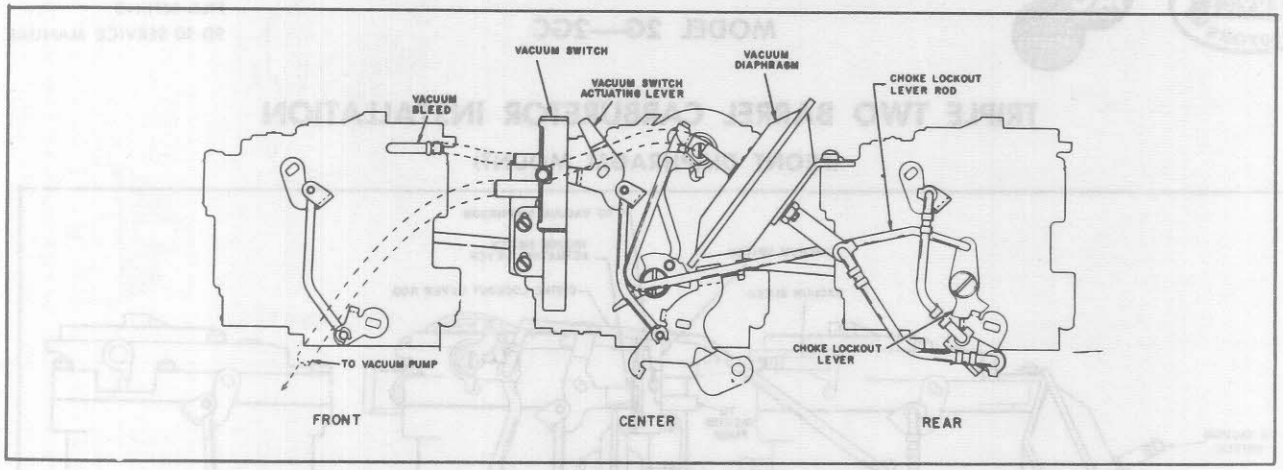
During idle and part throttle ranges the center carburetor feeds fuel while the outside carburetors remain out of operation. The two outside carburetors operate in the following manner: A vacuum switch located on the center carburetor is operated by a tang on the accelerator pump lever. The vacuum switch is connected directly to the vacuum booster pump on the engine. The switch also has a vacuum line which runs to the vacuum diaphragm. This vacuum diaphragm is connected by linkage to the throttle lever on the front carburetor.

On normal acceleration the center carburetor feeds air and fuel until the throttle valves are opened approximately 60 degrees. When the throttle valves reach 60 degrees on the center carburetor, it automatically opens the vacuum switch which applies vacuum to the diaphragm. Vacuum applied to this diaphragm opens the throttle valves on both front and rear carburetors simultaneously feeding fuel from the accelerating and main metering systems.

On deceleration the vacuum switch closes, shutting off all vacuum applied to the diaphragm. Air is then bled from inside the carburetor air horn by another line through the vacuum switch to the vacuum diaphragm unit, allowing the diaphragm to return to its normal position under spring tension, thereby closing the throttle valves on both outside carburetors. The two outside carburetors feed fuel and air at any time the throttle valves in the center carburetor are opened approximately 60 degrees or more.

The choke operates basically the same as the choke on the standard 2-jet carburetor. However, there is a lockout lever located on the front carburetor connected to the choke shaft by a rod. This lockout lever automatically keeps the front and rear carburetors out of operation by locking the throttle valves closed until the engine is thoroughly warm.

TRIPLE TWO BARREL CARBURETOR INSTALLATION
(REAR DIAPHRAGM MOUNT)



BASIC OPERATION:

On some three two-barrel carburetor installations the vacuum diaphragm is mounted on the rear carburetor and is connected to the rear carburetor throttle lever by a link. The choke lockout lever is also mounted on the rear carburetor and is connected to the center carburetor choke valve by the lockout rod.

The operation of this type installation is identical with the standard unit previously described. The only differences are in the vacuum diaphragm and choke lockout adjustments which are made on the rear carburetor, instead of the front carburetor.

CARBURETOR SYSTEMS

There are six basic systems incorporated in the Rochester 2-jet carburetor used in the triple-two barrel installation. They are Float, idle, part throttle, power, accelerating pump and choke.

All six systems are used in the center carburetor while the secondary carburetors (front and rear) have the float, part throttle and accelerating pump systems only.

The systems are identical in operation on all triple-two barrel carburetor installations except for minor calibration differences. The following explanation and illustrations show how each system operates to provide efficient carburetion throughout all operating conditions.

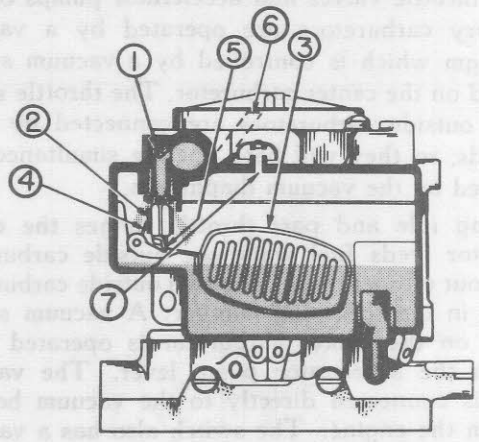
FLOAT SYSTEM:

(All Three Carburetors)

The float system controls the level of fuel in the carburetor bowl. Entering fuel first travels through the inlet strainer (1) to remove particles which might block jets or passages. Then the fuel passes through the needle and seat (2) into the carburetor bowl; flow continues until the rising liquid level raises the float (3) to a position where the needle valve (2) is closed. Thus, the fuel level can be regulated by setting the float to close the valve when the proper level is reached.

The float tang (4) allows correct float drop for sufficient fuel flow. A float needle pull clip (5) connecting the float arm to the needle valve keeps the needle from sticking closed in the seat.

The float bowl is internally (6) and externally (7) vented in the center carburetor. The front and rear carburetors are internally vented (6) to eliminate any possible change in fuel/air mixture due to air cleaner restriction. The center carburetor is externally vented to the atmosphere for idle operation.



FLOAT SYSTEM

IDLE SYSTEM:

(Center Carburetor Only)

The Idle system consists of the idle tubes (1), idle passages (2), idle air bleeds (3) and (4), idle adjustment needles (5), idle discharge holes (6), and the idle needle adjusting hole (7).

In the low idle speed position, the throttle valve (8) is slightly open, allowing a small amount of air to pass between the wall of the carburetor bore and the edge of the throttle valve.

The idle needle hole (7) is in the high vacuum area below the throttle valve, but the fuel is vented to atmospheric pressure.

The fuel is drawn from the bowl through the main metering jets (9) into the main well (13). It is metered by the idle fuel metering orifice at the lower tip of the idle tube (1) and travels up the idle tube. When the fuel reaches the top of the idle tube, it mixes with air drawn through the first idle air bleed (3) and the mixture moves through the horizontal idle passage.

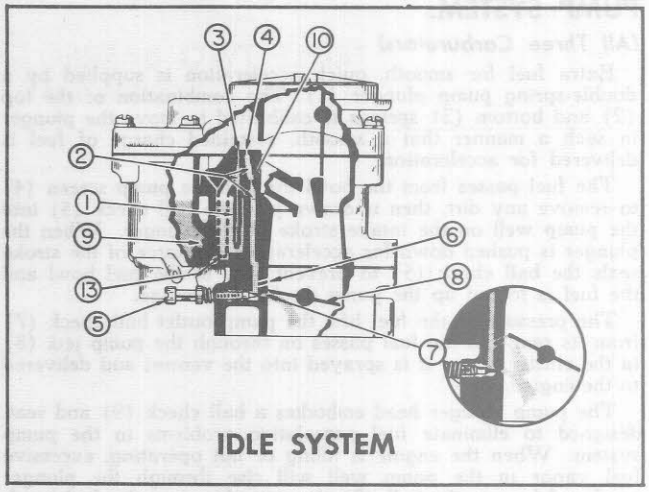
Air enters the second idle air bleed (4) and combines with the mixture which then passes through the restriction (10) and down the vertical idle passage to the idle discharge holes (6) located just above the throttle valve where more air is added to the mixture. The mixture then passes through the idle needle hole (7) and into the bore of the carburetor.

In addition to this mixture of fuel and air, there is air entering the bore of the carburetor through the slightly opened throttle valves (8). For smooth operation, the air from the bore and the air/fuel mixture from the idle needle hole must combine to form the correct final mixture for low idle engine speed.

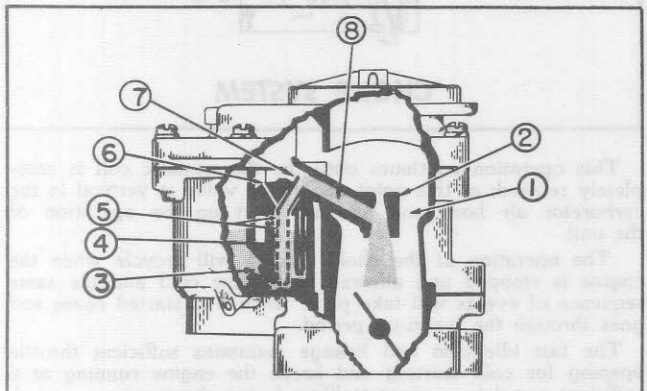
The position of the idle adjusting needle (5) governs the amount of air/fuel mixture admitted to the carburetor bore. Except for this variable at the idle adjustment needle, the idle system is specifically calibrated for idle and low engine speeds.

OFF-IDLE (See Inset)

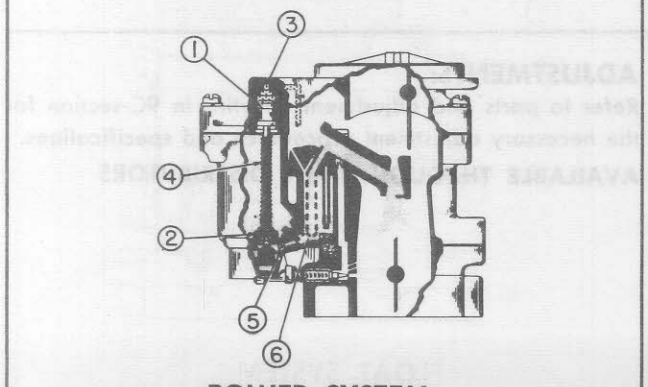
As the throttle valve is opened, a pressure differential change occurs: opening of the valve progressively exposes the idle discharge holes (6) to manifold vacuum and the air stream, with the result that they deliver additional air/fuel mixture for off-idle engine requirements



IDLE SYSTEM



PART THROTTLE



POWER SYSTEM

PART THROTTLE:

(All Three Carburetors)

This system is used on all three carburetors; however, the front and rear carburetors do not come into operation until approximately 60 degree throttle opening of the center carburetor.

Further opening of the throttle valve increases the speed of the air stream passing through the venturi system (1), thus lowering the pressure (raising the vacuum) in the small venturi area (2) of the carburetor bore. At the same time, the edge of the throttle valve is moved away from the wall of the carburetor bore, progressively reducing the vacuum and thus reducing the mixture at the idle discharge holes.

Since the low pressure point is now in the small venturi area (2), fuel and air/fuel mixture will be drawn from the fuel bowl through the main metering system to the venturi as follows:

The fuel passes through the main metering jets (3) into the main well where it rises in the main well tube (4). Air entering through the main well air bleeds (6) in the cluster is mixed with fuel through the vents (5) in the main well tube. The mixture continues up the main well tube through the nozzle (7) where more air is added. The mixture flows through the high speed passage (8) to the small venturi (2) where it mixes with additional air and moves on to the bore of the carburetor, through the intake manifold, and into the cylinders as a final mixture for part throttle operation.

POWER SYSTEM:

(Center Carburetor Only)

The power system provides additional fuel for heavy load and high speed engine requirements.

A spring loaded power piston (1) controlled by vacuum regulates the power valve (2) to supply additional fuel according to speed and load.

The power piston vacuum channel (3) is open to manifold vacuum beneath the throttle valves; thus, the vacuum in the channel rises and falls with engine manifold vacuum.

During idle and part throttle operation, the vacuum in the channel (3) is normally high enough to hold the power piston (1) in the fully raised position against the tension of the power valve spring (4). As the manifold vacuum drops with engine load and speed, the calibrated spring (4) forces the piston down against the power valve (2). The power valve is opened by this method and it allows additional fuel to flow through the calibrated power restrictions (5) into the main wells (6)

The power valve (2) allows a gradual increase in fuel flow as the power valve is fully opened to permit a maximum calibrated fuel flow from the power system.

As the load decreases, manifold vacuum increases. The increasing vacuum pull on the piston (1) gradually overcomes the spring tension of the power valve spring and the power piston returns to its original raised position; then the valve (2) is fully closed.

PUMP SYSTEM:

(All Three Carburetors)

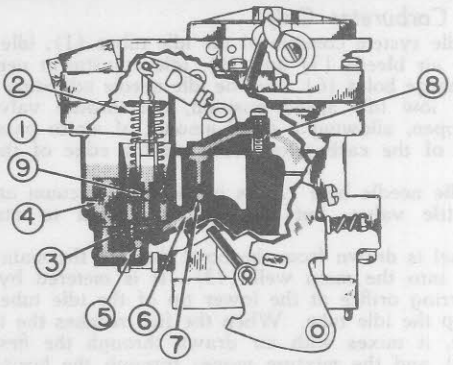
Extra fuel for smooth, quick acceleration is supplied by a double-spring pump plunger (1). The combination of the top (2) and bottom (3) springs is calibrated to move the plunger in such a manner that a smooth, sustained charge of fuel is delivered for acceleration.

The fuel passes from the bowl through the pump screen (4) to remove any dirt, then is drawn past the ball check (5) into the pump well on the intake stroke of the plunger. When the plunger is pushed down for acceleration, the force of the stroke seals the ball check (5) to prevent flow to the fuel bowl and the fuel is forced up the pump discharge passage.

The pressure of the fuel lifts the pump outlet ball check (7) from its seat and the fuel passes on through the pump jets (8) in the cluster where it is sprayed into the venturi and delivered to the engine.

The pump plunger head embodies a ball check (9) and seat, designed to eliminate fuel percolation problems in the pump system. When the engine is idling or not operating, excessive fuel vapor in the pump well will rise through the plunger head and bypass the ball (9) then circulate into the fuel bowl, which is vented to the atmosphere.

Without this feature, vapor pressure in the pump system might force fuel through the pump passage and into the engine, causing hard starting when hot because of excess fuel in the manifold or poor initial acceleration due to lack of the proper amount of fuel in the pump system.



PUMP SYSTEM

CHOKE SYSTEM:

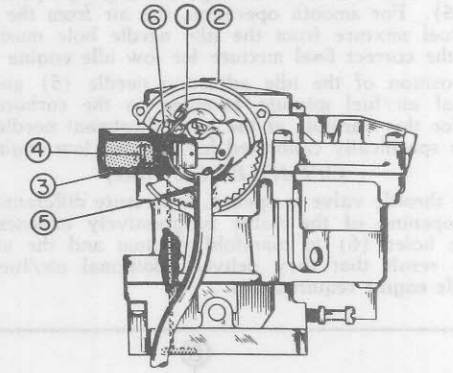
(Center Carburetor Only)

For cold engine operation, a rich mixture at the carburetor is required so that a combustible mixture remains in the manifold system to be drawn into the cylinders after considerable condensation of the fuel vapor on the cold engine parts. The function of the choke system is to subject all fuel outlets in the bore of the carburetor to high vacuum, while restricting the intake of air, thus drawing into the engine the required rich mixture.

The choke system includes a thermostatic coil (1), housing (2), and choke piston (3), all of which are interconnected with the choke valve and linkage.

The choke is controlled by a combination of intake manifold vacuum, air velocity against the offset choke valve, atmospheric temperature, and induced heat from the exhaust manifold system.

When the engine is cold, the bi-metal thermostatic coil (1) expands and closes the choke valve. As soon as the engine is started, two forces within the carburetor start the dechoking operation. Engine manifold vacuum exerts a pulling action on the choke piston (3) through the vacuum passage (4). Hot fresh air passes through the choke stove and carburetor heat tube (5) and begins to warm the thermostatic coil (1). The choke valve is offset; therefore, the speed and volume of the air stream through the air horn of the carburetor will proportionately affect the movement of the choke valve. Engine manifold vacuum continues to pull hot air through the heat tube (5) and over the baffle plate, through the restriction (6) at a speed and volume calibrated to effect maximum efficiency from the entire system.



CHOKE SYSTEM

This operation continues until the thermostatic coil is completely relaxed; at this point, the choke valve is vertical in the carburetor air horn and has no effect on the operation of the unit.

The operation of the choke system will recycle when the engine is stopped and allowed to become cold and the same sequence of events will take place when it is started again and goes through the warm-up period.

The fast idle cam and linkage maintains sufficient throttle opening for cold starting and keeps the engine running at a sufficient speed to prevent stalling during the warm-up period.

The mechanical unloader eliminates the possibility of the choke closing during heavy loads and acceleration by cracking the choke valve at wide open throttle.

ASSEMBLY AND DISASSEMBLY:

Refer to 9D-10 service manual for the correct disassembly and assembly procedures.

ADJUSTMENTS:

Refer to parts and adjustment bulletins in 9C-section for the necessary adjustment procedures and specifications.

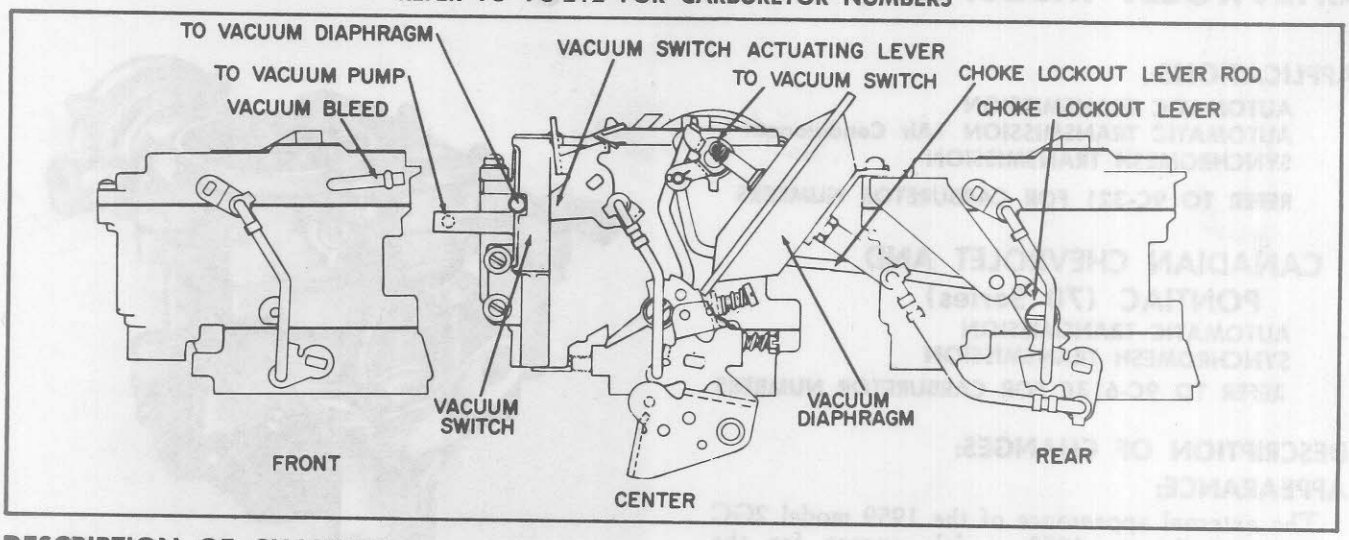
CARBURETOR TOOLS AND GAUGES NEEDED ARE AVAILABLE THROUGH U-M-S DISTRIBUTORS

CADILLAC: "TRIPLE POWER PACK"

Model 2G - 2GC

APPLICATIONS: STANDARD — AIR CONDITIONED

REFER TO 9C-212 FOR CARBURETOR NUMBERS



DESCRIPTION OF CHANGES:

APPEARANCE:

The three-two jet carburetor installation for the 1959 Cadillac is very similar to the 1958 model except for the following design changes:

The bores and venturi on the front and rear carburetors have been enlarged for improved engine performance. The overall height of the front and rear carburetors has been reduced for improved air cleaner design.

The choke modifier has been removed on the center carburetor and the standard Rochester choke is used.

The fuel inlet holes in the air horn on the front and rear carburetors have been moved to the side for improved accessability to the fuel inlet lines and fittings.

The idle mixture needles have been redesigned with a hexagonal head as well as the screw driver slot for ease in adjustment.

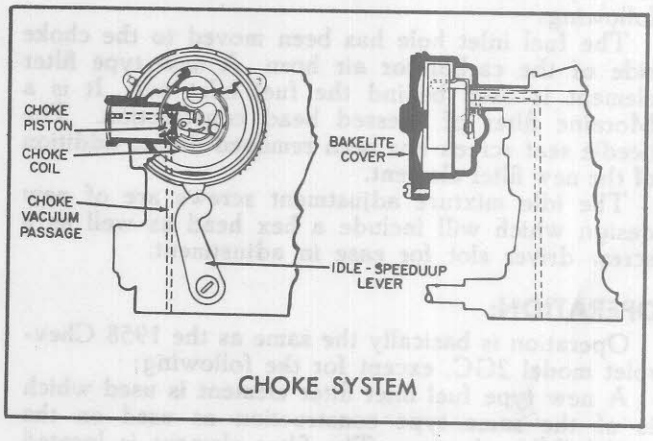
An idle air compensator is used on both the standard and air conditioned models in the center carburetor.

OPERATION:

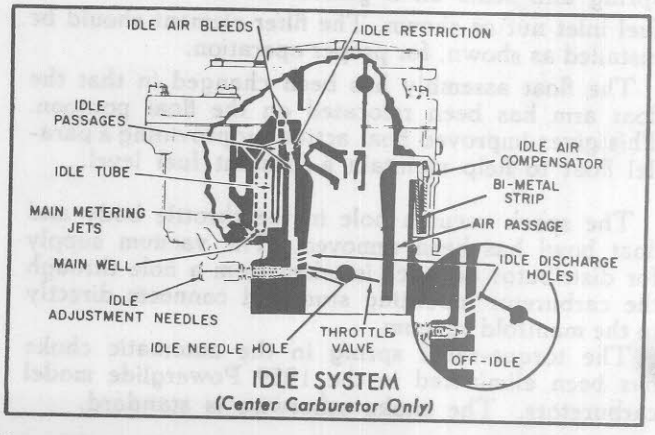
The operation is basically the same as the 1958 Cadillac except for the following changes:

The float system in the front and rear carburetors differ from the 1958 models in that the float is larger for added bouyancy and improved float action.

On the standard and air conditioned models an idle compensator is used as an additional aid to prevent stalling during prolonged hot idle periods. This is simply a thermostatic controlled air bleed which supplies additional idle air to the idle mixture.



CHOKE SYSTEM



IDLE SYSTEM
(Center Carburetor Only)

The idle compensator consists of a bi-metal strip, a valve and a mounting bracket. It is mounted between the large venturi at the rear of the carburetor.

The valve itself seats on a hole which is connected by an air passage to a point below the throttle valves.

In operation, when idling hot for long periods, the bi-metal strip will expand outward, forcing the valve off its seat. This allows additional idle air to enter below the throttle valves, offsetting the enrichening effects of high engine temperatures.

When underhood temperatures decrease the valve closes and idle operation returns to normal.

SPECIFICATIONS:

See Bulletin 9C-212 for specifications and adjustments.

CHEVROLET Model 2GC - V-8 Passenger

APPLICATIONS:

AUTOMATIC TRANSMISSION
AUTOMATIC TRANSMISSION (Air Conditioned)
SYNCHROMESH TRANSMISSION

REFER TO 9C-321 FOR CARBURETOR NUMBERS

CANADIAN CHEVROLET AND PONTIAC (70 Series)

AUTOMATIC TRANSMISSION
SYNCHROMESH TRANSMISSION

REFER TO 9C-613C FOR CARBURETOR NUMBERS

DESCRIPTION OF CHANGES:

APPEARANCE:

The external appearance of the 1959 model 2GC is very similar to 1958 models except for the following:

The fuel inlet hole has been moved to the choke side of the carburetor air horn. A new type filter element is used behind the fuel inlet nut. It is a Moraine filter of pressed bead construction. The needle seat screen has been removed due to addition of the new filter element.

The idle mixture adjustment screws are of new design which will include a hex head as well as a screw driver slot for ease in adiustment.

OPERATION:

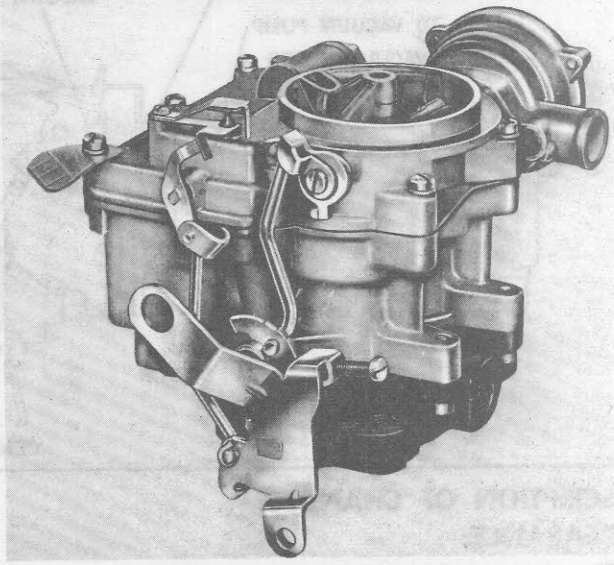
Operation is basically the same as the 1958 Chevrolet model 2GC, except for the following:

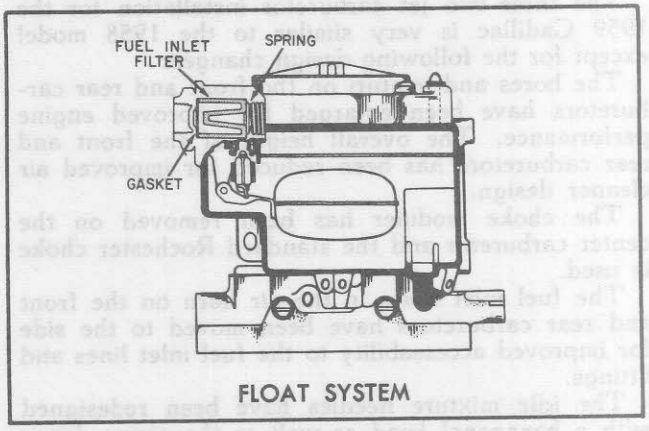
A new type fuel inlet filter element is used which is of the same type construction as used on the model BC carburetor. The filter element is located in the fuel inlet channel in the air horn, behind the fuel inlet nut. It is held in place by a small coil spring and seats on a gasket on the inside of the fuel inlet nut as shown. The filter element should be installed as shown, for proper operation.

The float assembly has been changed in that the float arm has been relocated on the float pontoon. This gives improved float action by providing a parallel float to help maintain a constant fuel level.

The spark vacuum hole in the throttle body and float bowl has been removed. The vacuum supply for distributor advance is taken from a hole through the carburetor mounting stud and connects directly to the manifold vacuum.

The torque-relief spring in the automatic choke has been eliminated in the 1959 Powerglide model carburetors. The choke otherwise is standard.





FLOAT SYSTEM

On the Air Conditioned model carburetors, an idle compensator is used as an additional aid to prevent stalling during prolonged hot idle periods. This is simply a thermostatically controlled air bleed which supplies additional idle air to the idle mixture.

The idle compensator consists of a bi-metal strip, a valve, and a mounting bracket. It is mounted between the large venturi at the rear of the carburetor. The valve itself seats on a hole which is connected by an air passage to a point below the throttle valves.

In operation, when idling hot for long periods, the bi-metal strip will expand upward, forcing the valve off its seat. This allows additional idle air to enter below the throttle valves, offsetting the enrichening effects of high engine temperatures.

SERVICE:

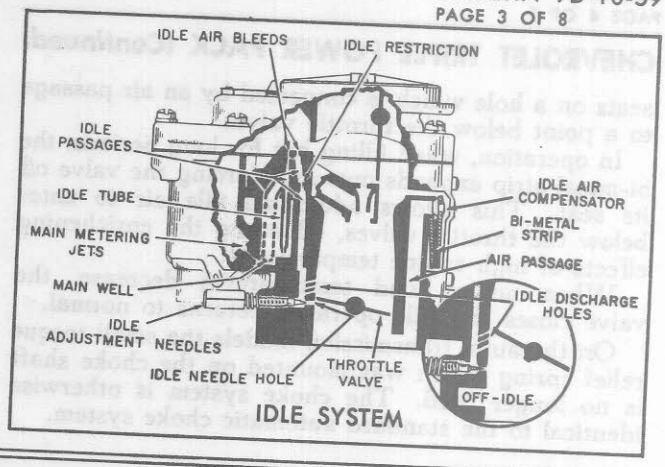
The adjustment procedures remain the same as the 1958 models. Due to changes in the float assembly, a new setting dimension and gauge will be required.

Note: The idle compensator valve must be closed when adjusting the engine idle.

To close valve push inward on small plunger located on the idle compensator cover, at rear of carburetor.

SPECIFICATIONS:

See Bulletin 9C-321 and 9C-613C for specifications and adjustments.



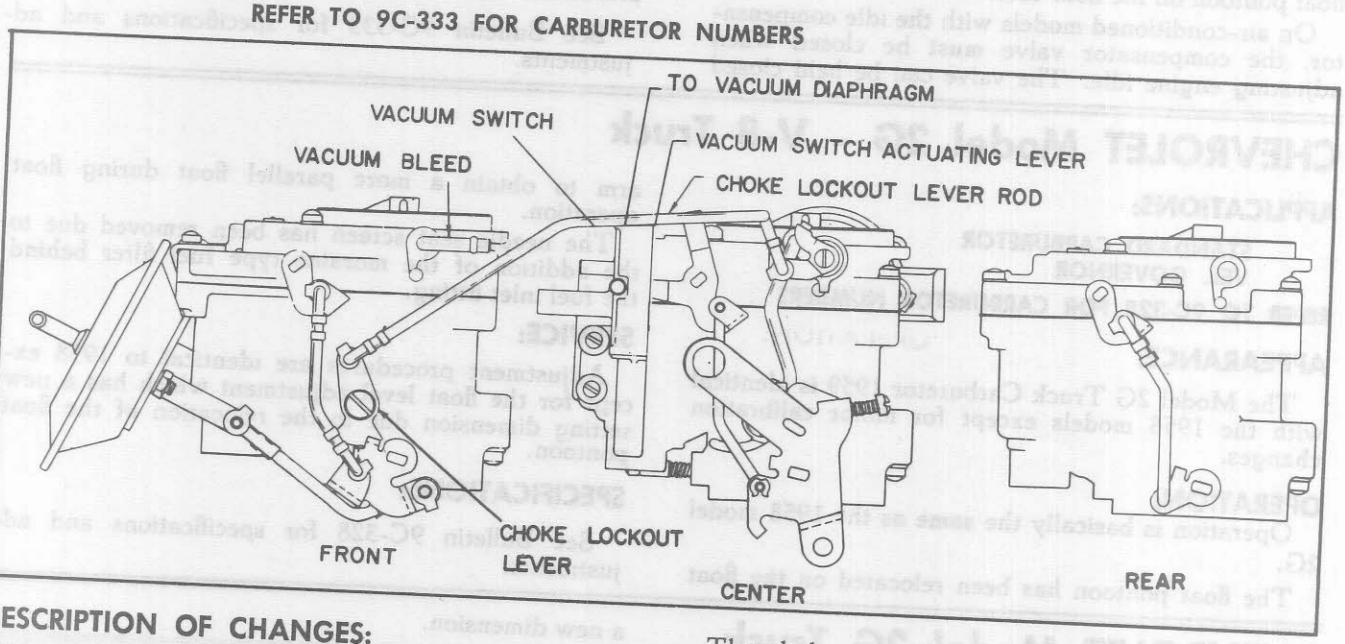
IDLE SYSTEM

CHEVROLET: "Triple Power Pack"

Model 2G - 2GC

APPLICATIONS: SYNCHROMESH
AUTOMATIC TRANSMISSION
AIR CONDITIONED

REFER TO 9C-333 FOR CARBURETOR NUMBERS



DESCRIPTION OF CHANGES:

APPEARANCE:

In apearance the 1959 "Triple Pack" is very similar to the 1958 installation. The following design improvements have been made.

A new type moraine fuel filter, which is of pressed bead construction, is mounted in the carburetor air horn behind the fuel inlet nut. The use of this new filter element eliminates the need for a needle seat screen.

The float pontoon has been relocated on the float hanger for improved operation and location in the float bowl.

All spark drillings in the throttle body have been removed and spark vacuum is taken directly from the engine manifold through the carburetor mounting stud.

The venturi cluster in the center carburetor has been redesigned with the addition of a trumpet type boost venturi.

The choke cover has been redesigned in that the side inlet housing is used replacing the heat inlet in the choke cover.

The accelerator pump fuel inlet channel and inlet check ball have been eliminated from the end carburetors. All fuel is supplied to the pump well through a slot in the side of the pump chamber wall. This makes the pump system identical on all three carburetors.

OPERATION:

In operation the 1959 "Triple Power Pack" is very similar to the 1958 models.

On the air conditioned models, an idle compensator is used as an additional aid to prevent stalling during the long hot idle periods. This is simply a thermostatic controlled air bleed which supplies additional idle air to the idle mixture.

The idle compensator consists of a bi-metal strip a valve, and a mounting bracket. It is mounted between the large venturi at the rear. The valve itself

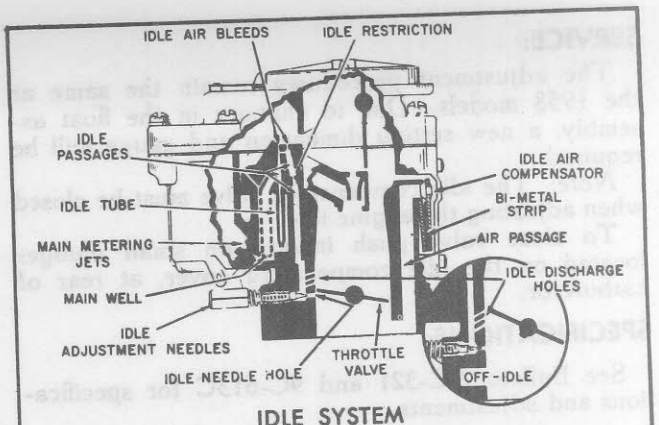
CHEVROLET TRIPLE POWER PACK (Continued)

seats on a hole which is connected by an air passage to a point below the throttle valves.

In operation, when idling hot for long periods, the bi-metal strip expands outward, forcing the valve off its seat. This allows additional idle air to enter below the throttle valves, offsetting the enrichening effects of high engine temperatures.

When under hood temperatures decrease, the valve closes and idle operation returns to normal.

On the auto. transmission models the small torque relief spring which was mounted on the choke shaft is no longer used. The choke system is otherwise identical to the standard automatic choke system.



IDLE SYSTEM
(Center Carburetor Only)

SERVICE:

All adjustment procedures remain the same as the 1958 "Triple Power Pack" except for the float level adjustment. The procedure remains the same but the setting has been changed due to the relocation of the float pontoon on the float arm.

On air-conditioned models with the idle compensator, the compensator valve must be closed when adjusting engine idle. The valve can be held closed by pushing inward on the small plunger button on the idle compensator cover.

The compensator valve will normally be closed except when operating under extreme hot conditions.

SPECIFICATIONS:

See Bulletin 9C-333 for specifications and adjustments.

CHEVROLET Model 2G - V-8 Truck

APPLICATIONS:

STANDARD CARBURETOR
VEL. GOVERNOR

REFER TO 9C-328 FOR CARBURETOR NUMBERS

APPEARANCE:

The Model 2G Truck Carburetor 1959 is identical with the 1958 models except for minor calibration changes.

OPERATION:

Operation is basically the same as the 1958 model 2G.

The float pontoon has been relocated on the float arm to obtain a more parallel float during float operation.

The needle seat screen has been removed due to the addition of the moraine type fuel filter behind the fuel inlet fitting.

SERVICE:

Adjustment procedures are identical to 1958 except for the float level adjustment which has a new setting dimension due to the relocation of the float pontoon.

SPECIFICATIONS:

See Bulletin 9C-328 for specifications and adjustments.

CHEVROLET Model 2G Truck

VACUUM GOVERNOR — 3700 RPM
283 CUBIC INCH ENGINE
348 CUBIC INCH ENGINE

REFER TO 9C-334 FOR CARBURETOR NUMBERS

APPEARANCE:

The 1959 Models are very similar to the 1958 except for the addition of an idle vent valve shield.

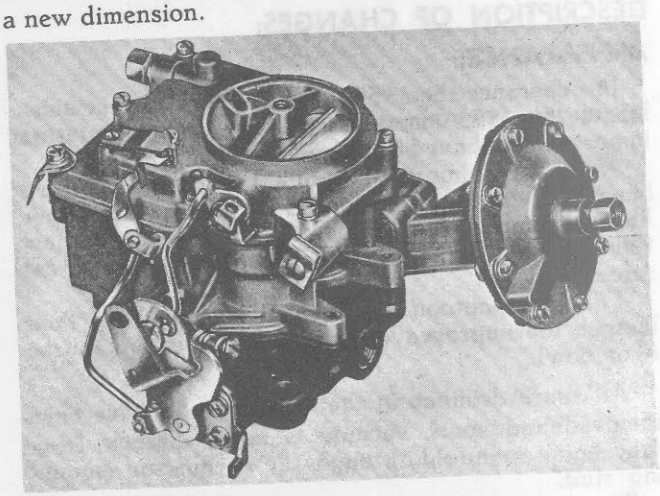
The idle mixture screws have been changed in that they have hexagonal heads as well as a screw driver slot for ease in adjustment.

OPERATION:

Operation is basically the same as the 1958 models except for the relocation of the float pontoon on the float arm which gives a more parallel float.

SERVICE:

Adjustment features remain the same as 1958 except for the float level setting which differs due to a new dimension.



SPECIFICATIONS:

See Bulletin 9C-334 for specifications and adjustments.

OLDSMOBILE
Model 2GC - Passenger

APPLICATIONS:

SYNCHROMESH, AUTOMATIC TRANSMISSION and AIR CONDITIONED

REFER TO 9C-514 FOR CARBURETOR NUMBERS

DESCRIPTION OF CHANGES:

APPEARANCE:

The model 2GC for the 1959 Oldsmobile is of the side bowl design and is very similar to the 1958 Pontiac model 2GC.

The choke housing is located on the throttle body for maximum choke efficiency and to allow lower air cleaner construction. The automatic choke mechanism has been redesigned to give a faster opening choke valve for improved economy and engine performance during choke operation.

The idle mixture adjustment screws are of a new design and have a hexagonal head as well as a screw driver slot for ease in adjustment.

SPECIFICATIONS:

The venturi and bore sizes are larger than the 1958 Oldsmobile 2GC. The carburetor has been completely recalibrated for the 1959 engine.

OPERATION:

Operation is basically the same as the 1958 Oldsmobile 2GC except for the following:

On the Air Conditioned model carburetors, an idle compensator is used as an additional aid to prevent stalling during prolonged hot idle periods. This is simply a thermostatically controlled air bleed which supplies additional idle air to the idle mixture.

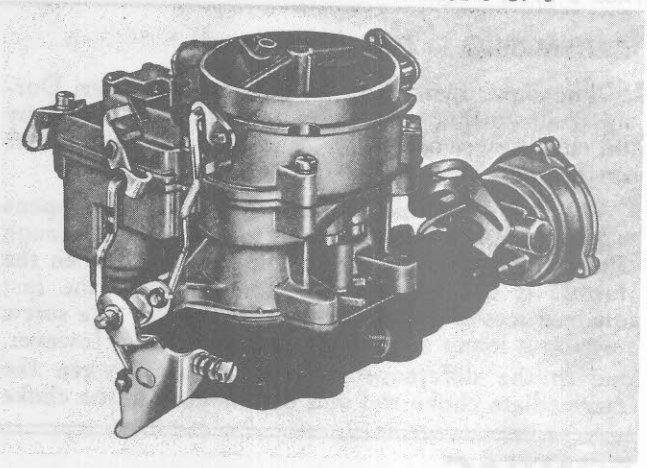
The idle compensator consists of a bi-metal strip, a valve, and a mounting bracket. It is mounted between the large venturi at the rear of the carburetor, inside the air horn bore. The valve itself seats on a hole which is connected by an air passage to a point below the throttle valves.

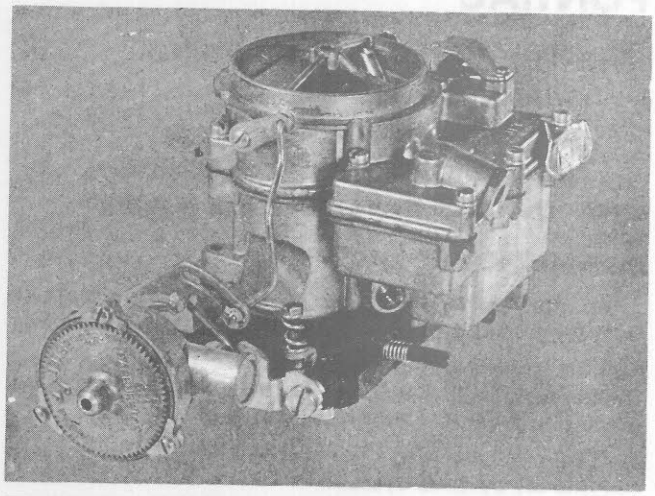
In operation, when idling hot for long periods, the bi-metal strip will expand upward, forcing the valve off its seat. This allows additional idle air to enter below the throttle valves, offsetting the enrichening effects of high engine temperatures.

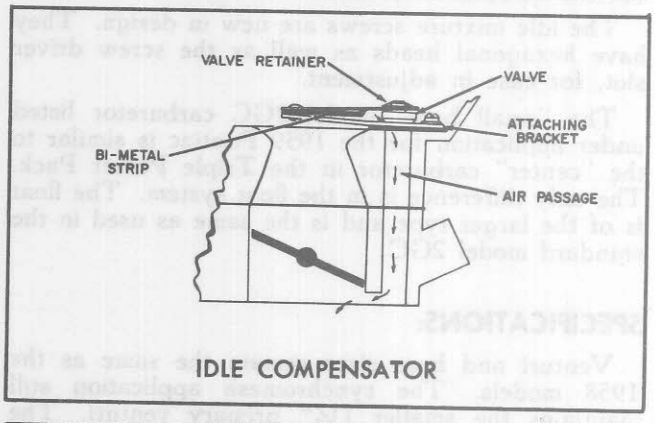
When underhood temperatures decrease, the valve closes and idle operation returns to normal.

Note: On air conditioned models, the idle compensator valve must be held closed when adjusting engine idle. Normally the valve will be closed unless under extremely hot idle conditions.

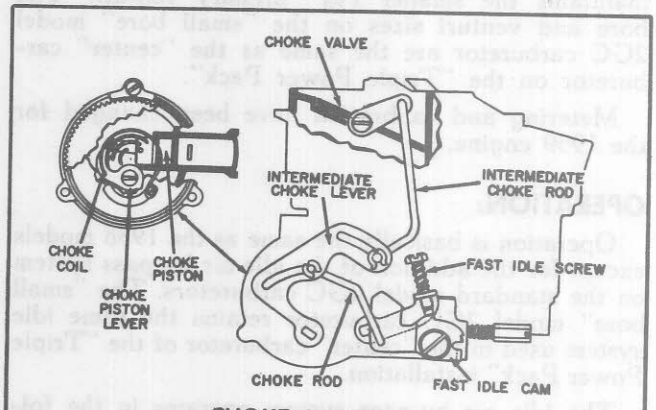
The choke system differs on the 1959 Oldsmobile 2GC in that the fast idle engine speed is controlled directly by the choke coil and vacuum pull on the choke piston rather than the position of the choke valve. This feature allows the use of a faster opening choke valve for improved economy during the engine warm-up period.







IDLE COMPENSATOR



CHOKE SYSTEM

OLDSMOBILE - 2GC *(Continued)*

The choke operates in the following manner. During cold starting the choke valve is held closed by the choke thermostatic coil and fast idle screw rests on the high step of the fast idle cam.

When the engine is started the choke valve opens a predetermined amount to a position, where enough choking action keeps the engine running. When the throttle is opened, during cold driveaway the fast idle cam moves downward so that the fast idle screw rests on a lower step of the fast idle cam. However, due to the difference in lever ratios between the intermediate choke rod and the choke rod, the choke valve will move approximately two times faster than the fast idle cam. In this way, fast idle speed can be maintained to prevent stalling and yet allow the choke valve to open faster for improved economy.

The intermediate choke lever is slotted to permit the fast idle cam to operate independently from the choke valve.

SERVICE:

See Bulletin 9C-514 for specifications and adjustments.

PONTIAC

Model 2GC - Passenger

SYNCHROMESH

AUTOMATIC TRANSMISSION

AUTOMATIC TRANSMISSION (Small Bore)

REFER TO 9C-613 FOR CARBURETOR NUMBERS

APPEARANCE:

In appearance the 1959 model 2GC for Pontiac is very similar to the 1958 except for the following:

The spark drilling in the throttle body have been removed. The distributor vacuum advance is connected directly to manifold vacuum.

The idle system is changed in that it incorporates the idle air by-pass system.

The idle mixture screws are new in design. They have hexagonal heads as well as the screw driver slot, for ease in adjustment.

The "small bore" model 2GC carburetor listed under application for the 1959 Pontiac is similar to the "center" carburetor in the Triple Power Pack. The only difference is in the float system. The float is of the larger type and is the same as used in the standard model 2GC.

SPECIFICATIONS:

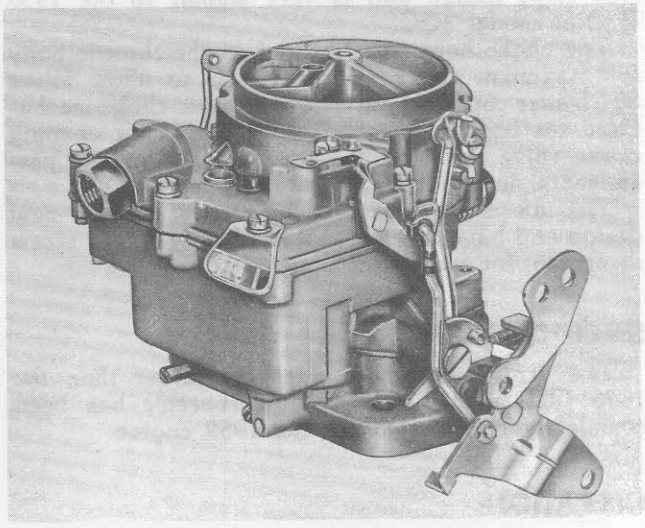
Venturi and bore sizes remain the same as the 1958 models. The synchromesh application still maintains the smaller 1¼" primary venturi. The bore and venturi sizes on the "small bore" model 2GC carburetor are the same as the "center" carburetor on the "Triple Power Pack".

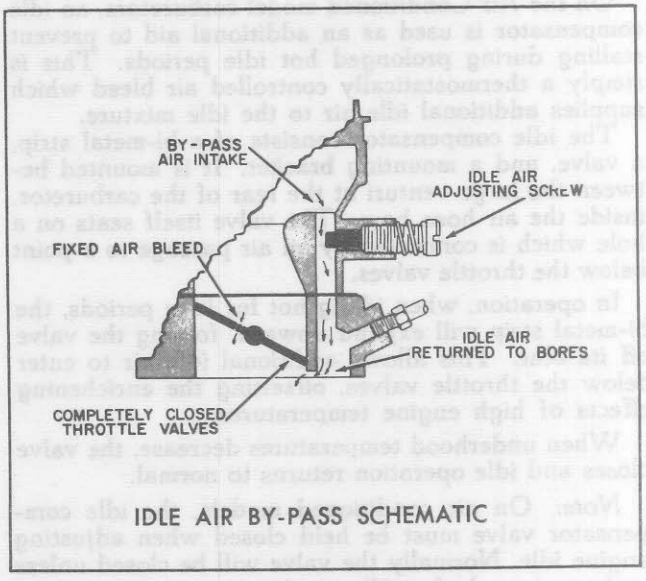
Metering and calibration have been changed for the 1959 engine.

OPERATION:

Operation is basically the same as the 1958 models except for the addition of the idle air by-pass system on the standard model 2GC carburetors. The "small bore" model 2GC carburetor retains the same idle system used in the "center" carburetor of the "Triple Power Pack" installation.

The idle air by-pass system operates in the following manner:





IDLE AIR BY-PASS SCHEMATIC

Idle air is taken from the carburetor bore above the throttle valves, passed around the valves by an air passage, to a point below the throttle valves. The amount of idle air which is supplied to the engine is regulated by an air adjustment screw located in the idle air passage at the rear of the carburetor.

PONTIAC - 2GC *(Continued)*

In order to obtain sufficient idle air for stable idle speed and adjustment, a fixed air bleed is necessary; this is accomplished by a drilled hole in each throttle valve. The fixed idle air bleeds maintain a constant idle air flow for part of the idle air requirements, while the idle air adjustment screw regulates the remainder of the idle air. Thus, the engine idle speed can be adjusted by the idle air adjustment screw.

The idle system otherwise operates identically to the 1958 model 2GC.

SERVICE:

Adjustment procedures remain the same as the 1958 model 2GC Pontiac.

See Bulletin 9C-613 for specifications and adjustments.

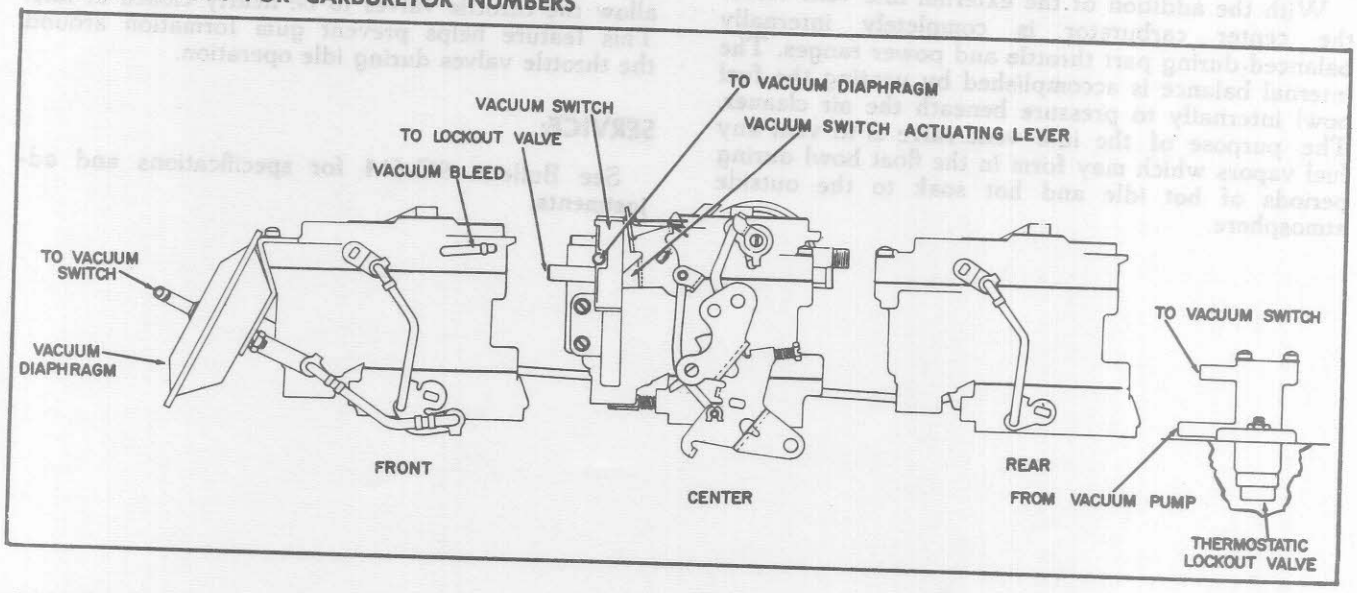
PONTIAC: "Triple Power Pack"

Model 2G - 2GC

APPLICATION:

STANDARD — AUTOMATIC TRANSMISSION

REFER TO 9C-614 FOR CARBURETOR NUMBERS



APPEARANCE:

The 1959 "Triple Power Pack" is basically the same as the 1958 models except for the following design changes.

The secondary carburetors have larger bores and venturi than the 1958 models. They are very similar in design to the 1958 standard model 2GC except that they do not have idle, power, and choke systems. The external vents have been removed; this provides a completely internally balanced carburetor.

The mechanical lockout linkage for the secondary carburetors has been removed. The front and rear carburetors are locked out of operation by shutting off the vacuum supply, during cold engine operation.

The front and rear carburetors have side fuel inlets in the air horn for ease of fuel line attachment.

The spark drillings have been removed from the center carburetor and distributor spark vacuum is taken directly from manifold vacuum.

The fixed external vent on the center carburetor air horn has been removed and is replaced by an external idle vent valve.

The idle mixture screws have hexagonal heads as well as a screw driver slot for ease in adjustment.

Trumpet inserts are used in the small venturi on the secondary carburetors. These are used for improved venturi action, and are necessary due to design requirements.

With the addition of the external idle vent valve, a new pump lever is used which is very similar to the 1958 Cadillac and Oldsmobile Triple Power Pack.

SPECIFICATIONS:

Bore and venturi sizes remain the same on the center carburetor. The two secondary carburetors have larger bore and venturi. Calibration and metering has been changed to meet the demands of the 1959 engine.

OPERATION:

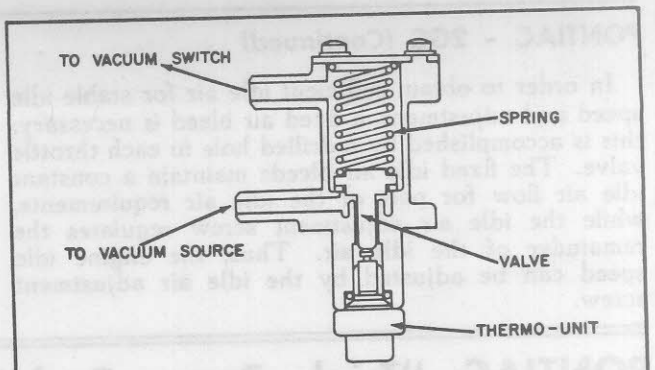
The operation is basically the same in the 1958 Triple Pack except for the following due to design changes.

A thermo lock-out valve is used in place of the choke lockout linkage to keep the secondary carburetors out of operation during choke operation. This is accomplished in the following manner.

PONTIAC TRIPLE POWER PACK *(Continued)*

A temperature controlled vacuum valve, mounted at the front of the engine manifold in the water jacket, is controlled by water temperature. The thermo controlled vacuum valve shuts off all vacuum applied to the vacuum switch on the center carburetor, until the engine is thoroughly warmed up. When the engine temperature reaches approximately 145° F the temperature controlled vacuum valve opens, allowing vacuum to be applied to the vacuum switch. The vacuum switch on the center carburetor operates in the normal manner. It opens at approximately 60 degrees of primary throttle travel, applying vacuum to the diaphragm on the front carburetor, which in turn opens the secondary carburetor throttle valves.

With the addition of the external idle vent valve, the center carburetor is completely internally balanced during part throttle and power ranges. The internal balance is accomplished by venting the fuel bowl internally to pressure beneath the air cleaner. The purpose of the idle vent valve is to vent any fuel vapors which may form in the float bowl during periods of hot idle and hot soak to the outside atmosphere.



THERMO-LOCKOUT VALVE

A "fixed" idle air bleed is used in the throttle valves of the center carburetor, on the hydramatic application. The purpose of the fixed air bleed is to allow the throttle valves to be nearly closed at idle. This feature helps prevent gum formation around the throttle valves during idle operation.

SERVICE:

See Bulletin 9C-614 for specifications and adjustments.

Rochester Carburetors

MODEL 2G, 2GC

1960 DESIGN CHANGES

BULLETIN 9D-10-60
PAGE 1 OF 3
DATE: 4-1-60
SUPPLEMENT No. 3
TO
BULLETIN 9D-10
DATED SEPTEMBER 1958

Model 2GC CHEVROLET - V-8

APPLICATIONS:

Synchromesh

Automatic Transmission

Automatic Transmission *(Air Cond.)*

(Refer to 9C Section for carburetor numbers)

APPEARANCE

The Model 2GC carburetor for the 1960 Chevrolet are carry over models and the same part numbers will be used as in 1959. The following improvements have been made and will be identified in production by change letters. Although they are design improvements they will be completely interchangeable model for model.

The following changes will be incorporated for 1960:

1. The gasket between the choke housing and air horn will be removed and a small round gasket will be used at the vacuum port as a seal. The remainder of the surface will be metal contact to help prevent loosening of the choke housing in service.
2. The toothed choke cover retainer has been redesigned with a slotted instead of round hole, to aid in making a more accurate choke index setting.
3. The venturi cluster casting has been changed slightly in that the skirted section has been added to the aspirator arm next to the main casting. The purpose of the skirted section is to aid in production methods and also improve air flow in the venturi area by reducing air turbulence in this area.

OPERATION

Operation will be identical to the 1959 model except for minor calibration changes which will give performance improvements but will be completely interchangeable with 1959 models. All adjustments and adjustment specifications will remain the same as the 1959 model.

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor specifications.

Model 2GC OLDSMOBILE - 88

APPLICATIONS:

Automatic Transmission & Synchromesh

(Refer to 9C Section for carburetor numbers)

APPEARANCE

In appearance the 1960 model is very similar to the 1959 Model 2GC. The choke section of the air horn has been streamlined for improved air flow in the bore by the removal of the protruding section underneath the choke valve. This section was needed on earlier models due to air cleaner, air flow turbulence, but is no longer necessary due to new air cleaner designs. The removal of this section improves air flow and gives improved performance under power operation.

The venturi cluster has been streamlined with the addition of metal at the base of the aspirator arm next to the main casting for improved air flow and air turbulence reduction in the venturi area. This feature also greatly increases the ease of manufacturing the die cast part.

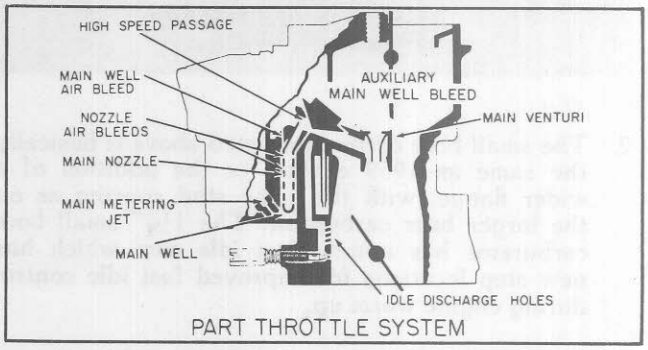
A metal baffle has been added in the fuel bowl next to the accelerating pump well. This feature greatly aids in preventing turn cut out by keeping fuel around the main metering jets and pump well during abnormal turns and maneuvers. The fill slot in the pump well has been moved in location to the side to allow maximum fuel flow for filling the pump well.

The new slotted toothed choke cover retainer is used for a more accurate choke index setting.

OPERATION

The off-idle discharge holes have been increased from 3 to 4 holes for improved off-idle operation. The newly added 4th idle discharge hole acts as an air bleed during off-idle operation and is located in such a position that it bleeds air only and does not add additional fuel between the off-idle and part throttle operation.

An auxiliary main well air bleed has been added in the aspirator channel and connects the aspirator channel to the main well. The addition of this bleed



PART THROTTLE SYSTEM

was made to improve flow characteristics of the carburetor at the high speed end of part throttle operation of the carburetor.

ADJUSTMENTS

The float level setting has been changed on the 1960 models.

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor specifications.

Model 2GC
PONTIAC

APPLICATIONS:

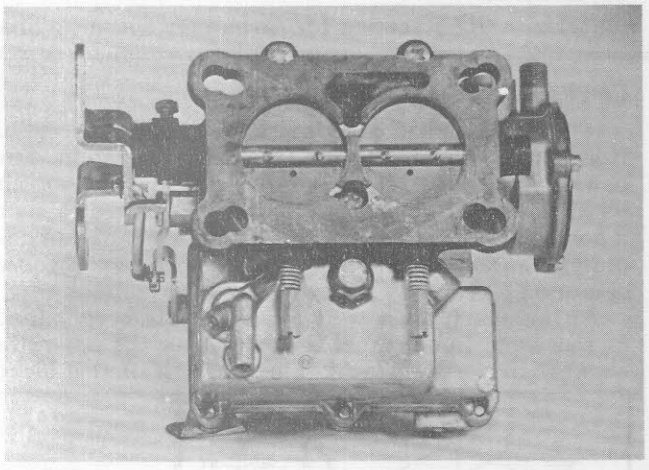
Hydramatic—Standard Engine
Synchromesh—Standard Engine
Hydramatic—420E Engine
Synchromesh—420E Engine

(Refer to 9C Section for carburetor numbers)

APPEARANCE

The following changes in appearance are incorporated in both the large and small bore Model 2GC carburetor for the 1960 Pontiac.

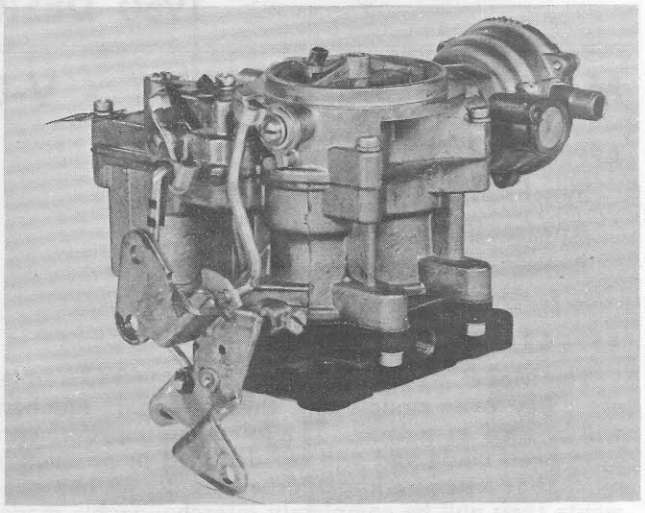
1. The throttle lever has been redesigned and differs from the 1959 model for transmission requirements.

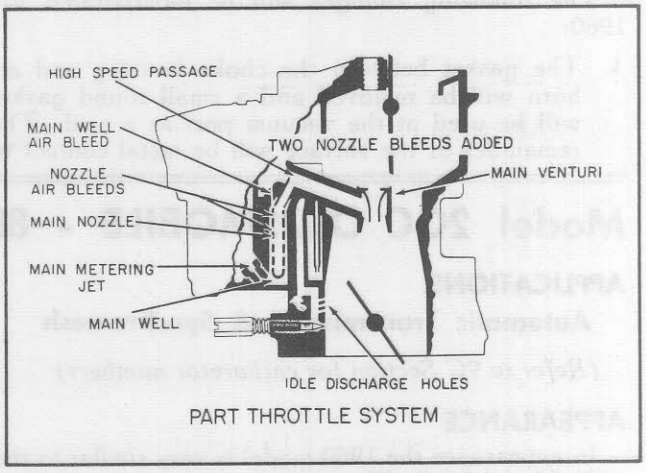


2. The small bore carburetor listed above is basically the same as 1959 except for the addition of a wider flange, with the same stud spacing as on the larger bore carburetor. The 1¼" small bore carburetor has a new fast idle cam which has new step locations for improved fast idle control during engine warm up.

3. On the 1½" large bore carburetor the tang on the air horn casting, underneath the choke valve, has been removed for performance improvements. The venturi cluster nozzles have been changed in that two small bleed holes have been added to the top of the nozzle in the main well to improve nozzle cut-in and carburetor flow between the off-idle and part throttle operation.

4. The main venturi on the 1½" carburetor has been reduced in size from 1-5/16" to 1¼" for overall performance improvement.





PART THROTTLE SYSTEM

5. The 1½" large bore carburetor will be no longer used for synchromesh application and is replaced by the smaller bore model.

OPERATION

Operation is basically the same as the 1959 Model 2GC except for the new type nozzle and recalibration for the 1960 engine.

ADJUSTMENTS

All adjustments will remain the same as the 1959 models except for new pump rod and idle vent settings which will require a new gauge. The new pump setting is required to meet the pump capacity needed for the 1960 engine.

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor specifications.

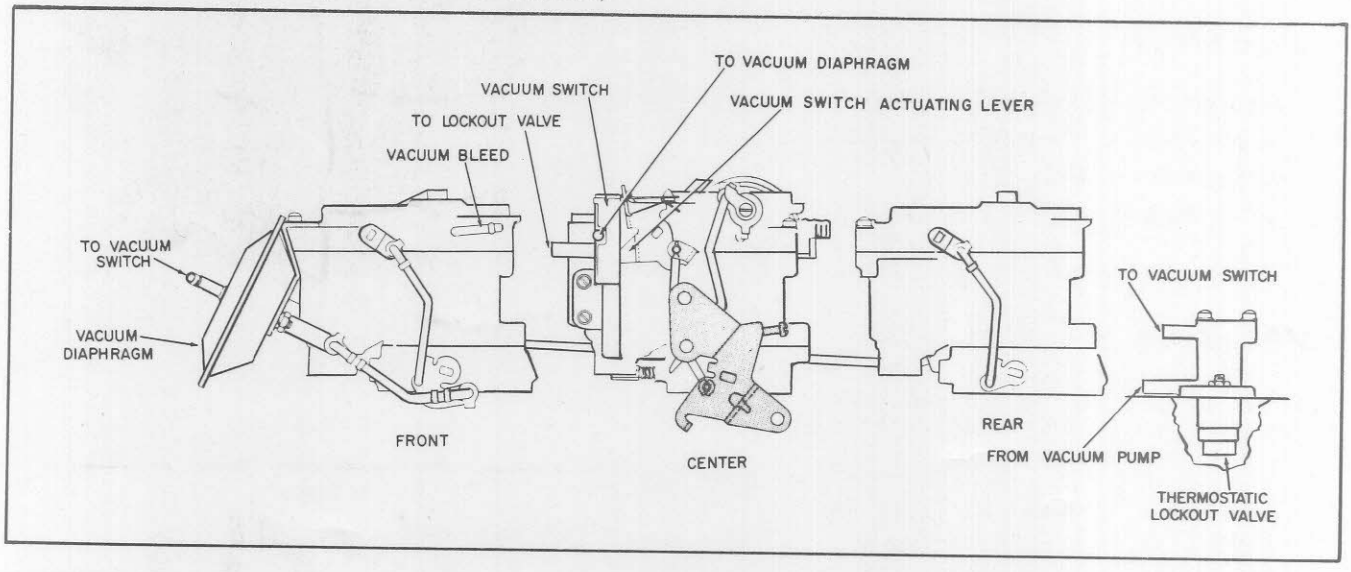
PONTIAC: "Triple Power Pack"

Model 2G - 2GC

APPLICATION:

STANDARD — AUTOMATIC TRANSMISSION

(Refer to 9C Section for carburetor numbers)



APPEARANCE

Appearance of the 1960 Triple Power Pack is the same as the 1959 models except for the addition of the new throttle lever which is the same as used on the Standard Model 2GC.

OPERATION

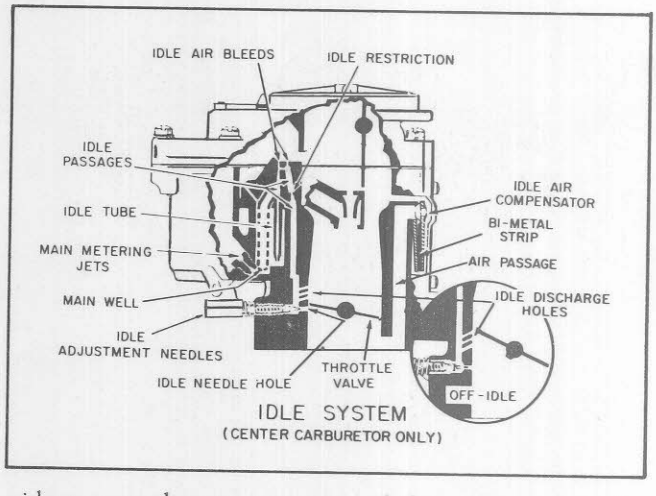
Operation of the Triple Power Pack Unit is basically the same as 1959 except for the addition of an idle compensator on the center carburetor of the Hydramatic installation.

The idle compensator is located at the rear of the carburetor bowl and is very similar to the 1959 Cadillac center carburetor in operation and adjustment.

ADJUSTMENTS

All adjustments will remain the same as the 1959 model except for new pump and idle vent settings on the center carburetor. The new pump rod setting is required to meet the pump capacity required for the 1960 engine.

The vacuum switch setting has been changed on the 1960 models to delay slightly the cut in point on the end carburetors. This change was made to provide a smoother transmission shift pattern when the end carburetors cut in.

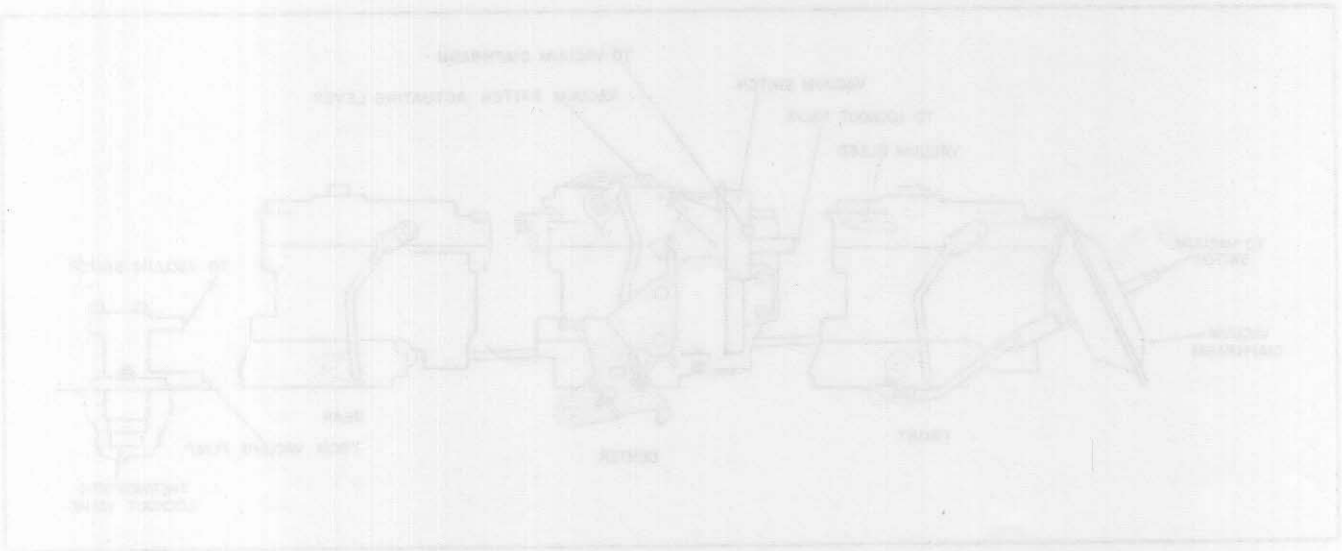


IDLE SYSTEM
(CENTER CARBURETOR ONLY)

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor specifications.



Rochester Carburetors

MODEL 2G, 2GC

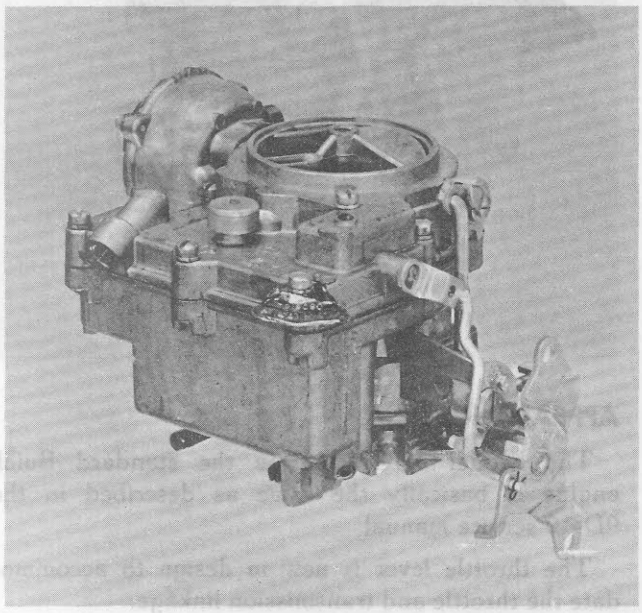
1961 DESIGN CHANGES

BUICK V8 "SPECIAL" — Model 2GC

APPLICATIONS*

215 cu. in. engine
Synchromesh
Automatic Transmission

*Refer to 9C bulletin for carburetor numbers.



APPEARANCE

The Model 2GC for the 1961 Buick "Special" is similar in appearance to the standard Model 2GC described in the 9D-10 manual.

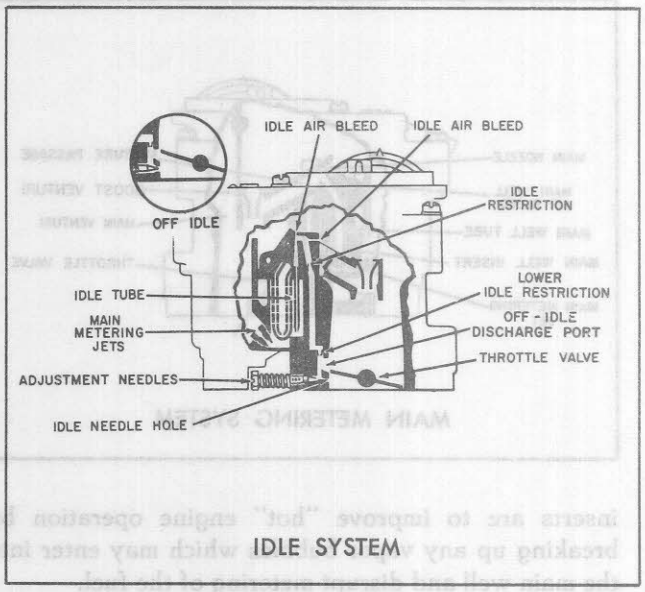
An aluminum throttle body casting is used in place of the conventional cast iron. The aluminum body is reduced in height to accommodate low hood lines and reduces the carburetor total weight.

The throttle lever is new in design to facilitate linkage hook up and has a tang for dash pot pick up.

On air-conditioned models an externally mounted idle compensator is used, similar to the "Carb-Airator".

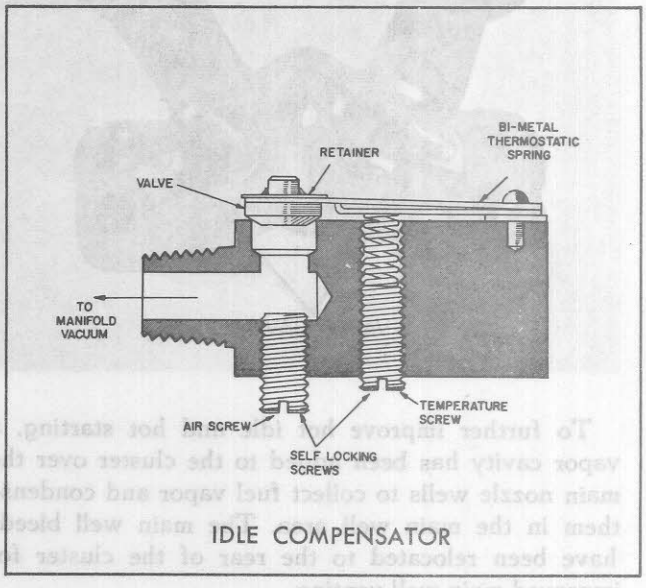
OPERATION

The carburetor systems are similar in operation to all Model 2GC carburetors.



IDLE SYSTEM

The conventional off-idle port drillings have been replaced by idle port slots.

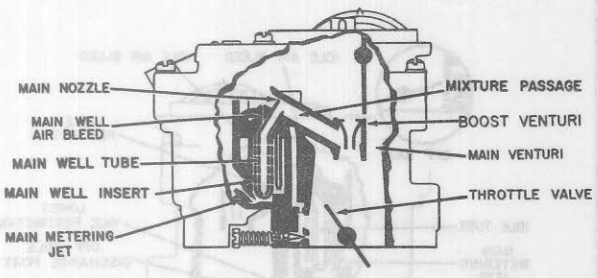


IDLE COMPENSATOR

The externally mounted idle compensator is specifically calibrated for the engine on which it is used and is mounted into the vacuum hole at the rear of the carburetor throttle body assembly. It operates the same as the internally mounted units. Field adjustment is not recommended, if the unit malfunctions replace the complete unit.

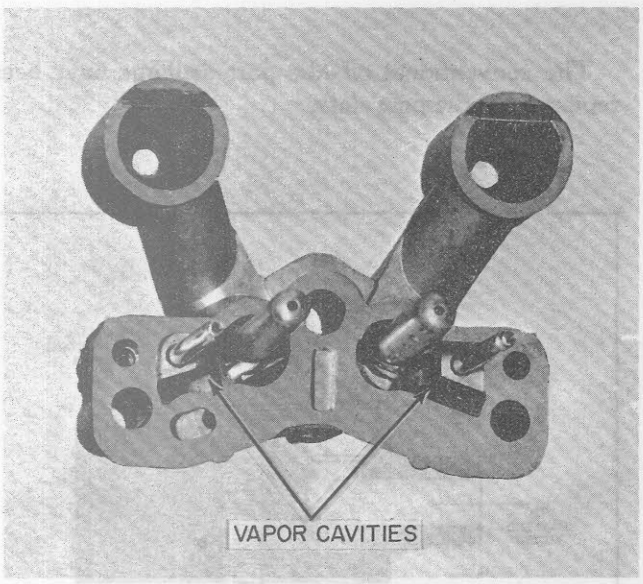
Main Metering System

Main well insert tubes are used, which completely surround the main well tubes. The purpose of the



MAIN METERING SYSTEM

inserts are to improve "hot" engine operation by breaking up any vapor bubbles which may enter into the main well and disrupt metering of the fuel.



To further improve hot idle and hot starting, a vapor cavity has been added to the cluster over the main nozzle wells to collect fuel vapor and condense them in the main well area. The main well bleeds have been relocated to the rear of the cluster for improved main well venting.

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor metering specifications.

See 9D-10 manual for overhaul procedures.

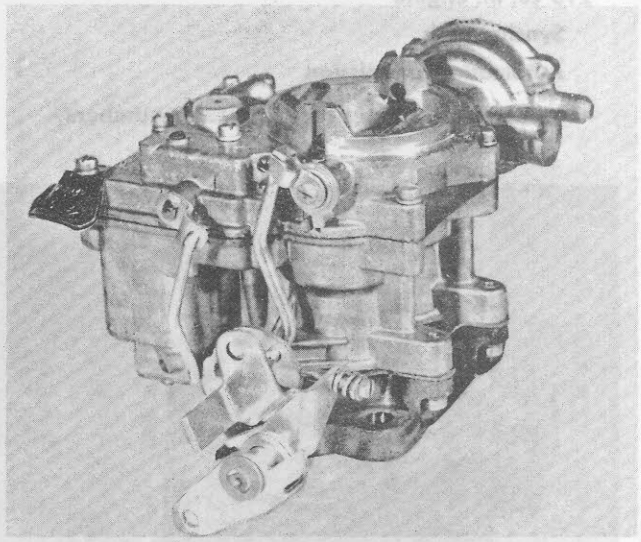
BUICK V8, — Model 2GC

APPLICATION*

364 cu. in. engine

Automatic Transmission

*Refer to 9C section for carburetor numbers.



APPEARANCE

The Model 2GC used on the standard Buick engine is basically the same as described in the 9D-10 service manual.

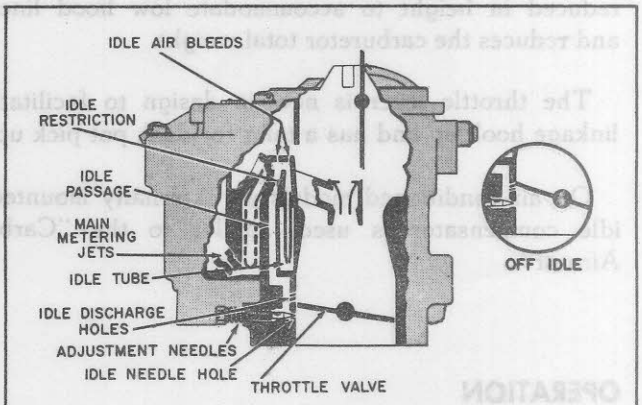
The throttle lever is new in design to accommodate the throttle and transmission linkage.

OPERATION

Idle and Main Metering Systems

The throttle body is cast iron and has the conventional off-idle port drillings.

The carburetor is internally vented through a balance tube in the air horn and externally through a fixed capped vent on top of the air horn.



IDLE SYSTEM

An additional external vent hole has been added in the air horn at the base of the balance tube. Both external vents are used to allow vapors to escape and not be forced into the engine causing rough idle and hard starting during "hot" engine operation.

The venturi cluster has the vapor cavity designed into it, over the main well area.

SERVICE

Refer to 9C section for complete carburetor adjustments.

Refer to 9D-1 section for carburetor metering specifications.

See 9D-10 manual for overhaul procedures.

CHEVROLET — Models 2G and 2GC

APPLICATION — Passenger*

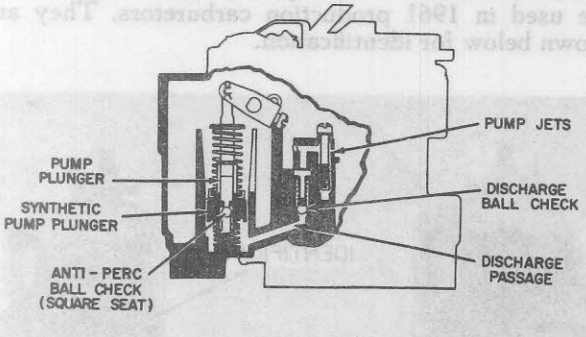
Same as 1960 model

APPLICATION — Truck*

Same as 1960 model

APPEARANCE AND OPERATION

All 2G and 2GC model carburetors for the 1961 Chevrolet are basically the same as the 1960 models. The following changes in design have been added to improve performance.



PUMP SYSTEM

Pump System

A new pump assembly has been incorporated for improved pump performance. The improvements include a synthetic pump cup in place of the leather cup and spring, and a square approach vapor vent ball seat. The square approach seat allows a narrow seating surface resulting in a more positive seal and reduces the possibility of the ball sticking.

The leather cup and spring will be used in the end carburetors of the 3x2 installation.

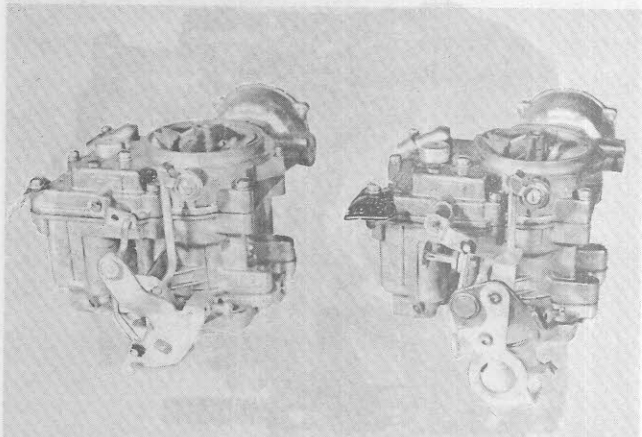
SERVICE

Same as 1960 model

OLDSMOBILE — Model 2GC

APPLICATION*

Oldsmobile "F-85"
Auto. Trans.
Synchromesh



APPEARANCE

The Model 2GC Rochester carburetor used on the 1961 Olds "F-85" is basically the same in appearance as the standard Model 2GC. The choke housing assembly is located on the air horn rather than on the throttle body assembly. The following new features have been added.

An aluminum casting is used in place of cast iron for the throttle body. The aluminum body is reduced in height to accommodate low hood lines and also reduces carburetor weight.

On air conditioned models an externally mounted idle compensator is used. The compensator unit is specifically calibrated for the Oldsmobile engine.

*REFER TO 9C BULLETIN FOR CARBURETOR NUMBERS.

OPERATION

Idle System

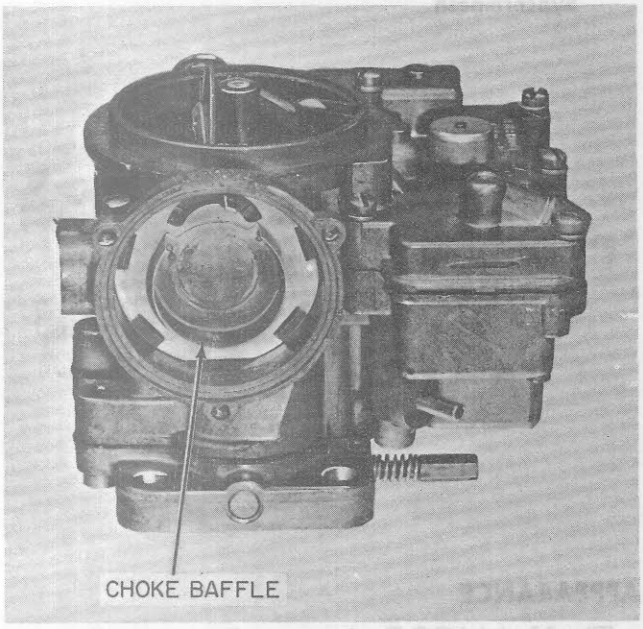
The idle system is similar in operation to all Model 2GC idle systems. The conventional off-idle discharge holes have been replaced by slots for improved operation and to facilitate manufacture.

The idle compensator operates the same as the internally mounted units, field adjustment is not recommended, if the unit malfunctions, it should be replaced.

Main Metering System

Main well insert tubes are used which completely surround the main well tubes. All fuel to the main nozzle first passes through calibrated holes in the insert which break up vapor bubbles and greatly improve hot operation of the part throttle system.

To further improve hot idle and hot starting a vapor cavity has been added in the cluster over the main well. The main well bleeds have been relocated to the rear of the cluster for improved venting.



Choke System

The conventional Rochester GM choke is used for choking operation and operates basically the same as on the standard Model 2GC.

A cylindrical cup type baffle is used inside the choke housing to improve choke operation, through heat deflection from the choke coil.

SERVICE

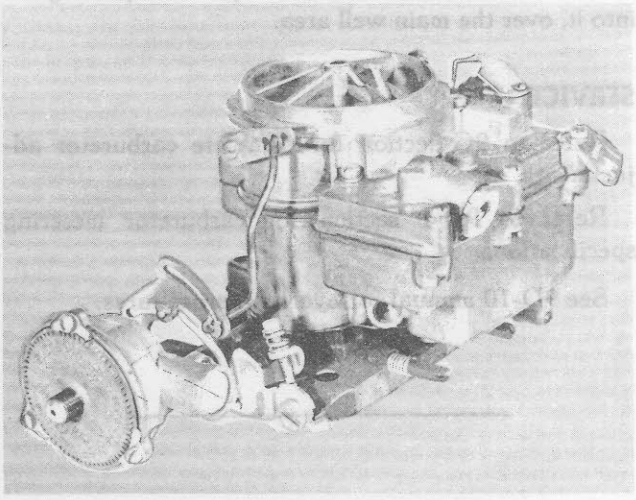
Adjustment procedures are basically the same as all Rochester Model 2GC units and are covered thoroughly in the 9C section of the manual.

OLDSMOBILE — Model 2GC

APPLICATION — Oldsmobile 88*

Standard

Air Conditioned



APPEARANCE

The large bore Model 2GC Olds is the same as the 1960 model, except for changes in the choke linkage.

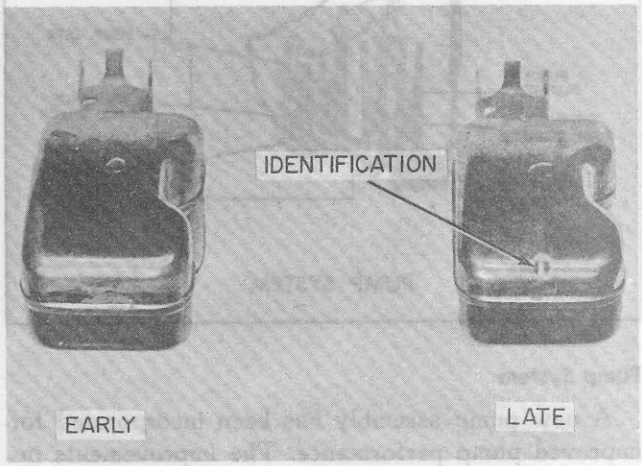
The upper choke lever has three adjustment holes for tailoring the choke to different climatic conditions.

The outer hole moves the choke valve the least and, thereby, results in richer mixtures during choke operation and the center and inner holes cause progressively more choke blade travel and leaner mixtures for cold operation. Normal operation is in the center hole.

OPERATION

Float System

Due to a fuel level change two type float pontoons are used in 1961 production carburetors. They are shown below for identification.



*REFER TO 9C BULLETIN FOR CARBURETOR NUMBERS.

The early production float is used in carburetors prior to change "B" on the identification tag. The late type is used in all carburetors tagged change "B" and later. The only difference between the two is the depth of the float pontoon. The top half on the late type was reduced in height to give more clearance between the top of the float and air horn gasket. This is required due to a higher fuel level setting.

SERVICE

Adjustments remain basically the same as on the 1960 models, except for the choke adjustment which differs in that a new intermediate choke rod adjustment will be required, depending upon the location of the intermediate choke rod in the upper choke lever.

Float adjustment procedures remain the same, however, a new setting dimension is required on units using the late type float assembly.

PONTIAC V8 — Model 2GC

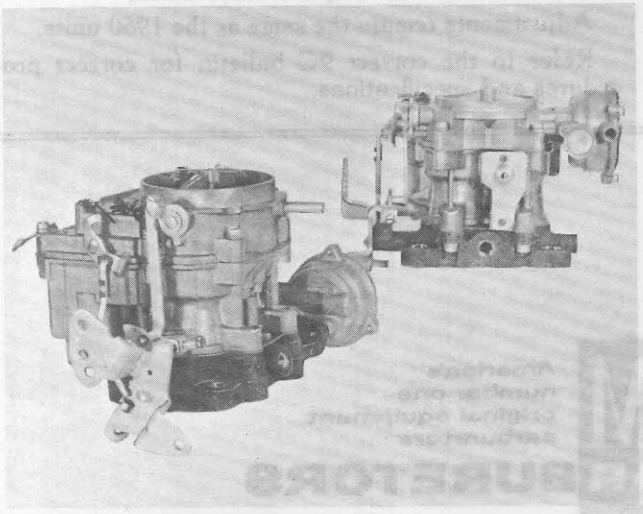
APPLICATION*

STANDARD AND ECONOMY ENGINE

SYNCHROMESH

Auto. Trans—3 Speed (Std. and Air Cond.)

Auto. Trans.—4 speed (Std. and Air Cond.)



APPEARANCE

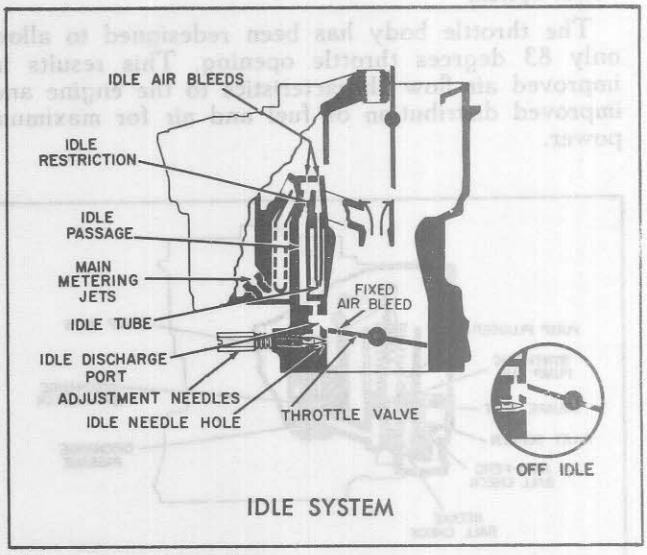
The model 2GC carburetors for the 1961 Pontiac, using the standard and economy engine, have been redesigned for improved performance and economy.

The throttle levers have been changed to accommodate new transmission and shift points.

All carburetors used on 3 speed Hydramatic transmission equipped cars will have spark port drillings.

SYSTEMS

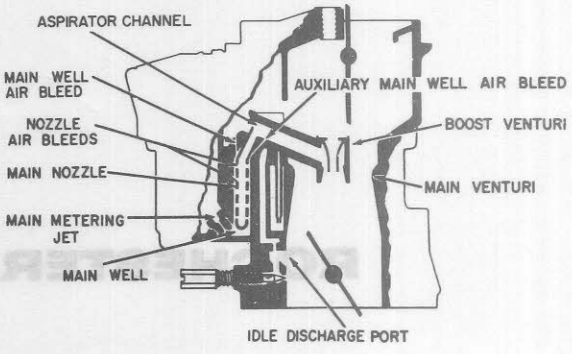
The idle air by-pass system has been removed on all Model 2GC carburetors for Pontiac. Idle air for curb idle is supplied to the engine around the slightly cracked throttle valves which are adjusted by the idle speed screw. Fixed idle air bleeds through the throttle valves are also used.



IDLE SYSTEM

An idle slot replaces the conventional off-idle ports.

On air conditioned models the hot idle compensator is located inside the air horn, between the bores on the large bore carburetor, and at the rear of the carburetor on small bore carburetors used on the economy engine. Its operation and design is similar to those used on previous applications.



MAIN METERING SYSTEM

*REFER TO 9C BULLETIN FOR CARBURETOR NUMBERS.

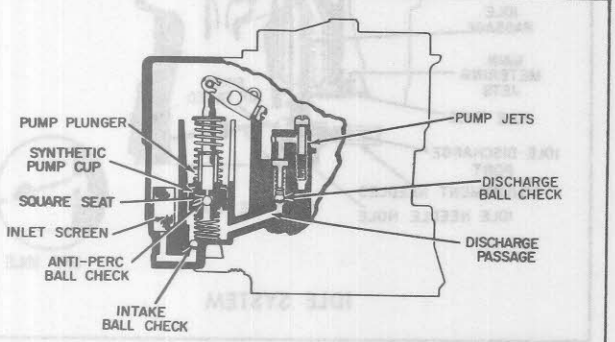
Main Metering System

An auxiliary main well bleed has been added which connects the carburetor main well to the aspirator channel. This additional bleed helps low speed nozzle cut-in and provides more efficient metering control at higher speeds.

A vapor cavity has been added in the venturi cluster area, just above the main well, on the smaller bore carburetors used on the economy engine. This vapor cavity, as described previously, helps condense fuel vapors which may form in the main well during hot engine operation and provides more efficient metering in the part throttle system.

Power System

The throttle body has been redesigned to allow only 83 degrees throttle opening. This results in improved air flow characteristics to the engine and improved distribution of fuel and air for maximum power.



PUMP SYSTEM

Pump System

A 90° approach seating area has been provided for the pump vapor vent ball to seat upon. This new seat provides improved sealing characteristics and lessens the possibility of the vapor vent ball sticking on its seat.

The pump system is further improved with the use of the synthetic pump cup in place of the conventional leather cup and garter spring.

Choke System

Hot air to the choke housing from the choke stove in the manifold is now taken from a source inside the air horn bore. Here, filtered air from the air cleaner is available to insure clean air to the automatic choke.

ADJUSTMENT

Adjustment procedures will remain the same as on the 1960 models.

Refer to the 9C section of the manual for correct procedures and specifications.

PONTIAC — TRIPLE POWER PACK

APPLICATION

2G-Front

2G-Rear

2GC-Center — Synchromesh
Auto. Trans., 4 speed
Auto. Trans., 3 speed

APPEARANCE AND OPERATION

All previously discussed changes in design are incorporated in the Triple Power Pack.

Adjustments remain the same as the 1960 units.

Refer to the correct 9C bulletin for correct procedures and specifications.