GENERAL DESCRIPTION
ROCHESTER 4GC 4-JET CARBURETOR

The Rochester 4GC Carburetor for the 1956 Pontiac V-8 is essentially two 2-Jet carburetors in a single casting. The "Primary Side" contains all six carburetor systems—FLOAT, IDLE, PART THROTTLE, POWER, PUMP, AND CHOKE; the "Secondary Side" supplements the "Primary Side" with separate FLOAT and POWER SYSTEMS.

The new carburetor uses the Rochester Calibrated Cluster Design, which places in a removable assembly the main well tubes, idle tubes, mixture passages, air bleeds, and the pump jets.

When the cluster is removed for service purposes, all of these vital parts can be readily seen, cleaned and examined because the main well tubes and idle tubes are permanently installed in the cluster body by means of a precision pressed fit.

The cluster fits on a platform provided in the body casting of the carburetor so that the main well and idle tubes are suspended in the fuel.

A gasket is used between the cluster casting and the body platform.

This method of design and assembly serves to insulate the main well tubes and idle tubes from engine heat thus preventing heat expansion and percolation spillover during hot idle periods of operation and during the time the hot engine is not operating.

The following material describes and illustrates the details and operation of the six "Systems" of FLOAT, IDLE, PART THROTTLE, POWER, PUMP AND CHOKE, as used in the Rochester 4GC.

FLOAT SYSTEM (FIG. 6B-74)

The float system controls the fuel level in the carburetor bowls under all conditions of operation.

Both sides of the Rochester 4GC incorporate individual float systems for maintaining the proper fuel level in each float bowl. All fuel enters the carburetor through a common inlet located at the front of the bowl cover.

As the fuel level on the primary side drops, the twin floats also drop pulling the inlet needle off its seat. Pressure from the fuel pump will then force fuel through the filter screen into the inlet passage, then through the small cylindrical filter screen and past the needle and seat into the float bowl. As the fuel

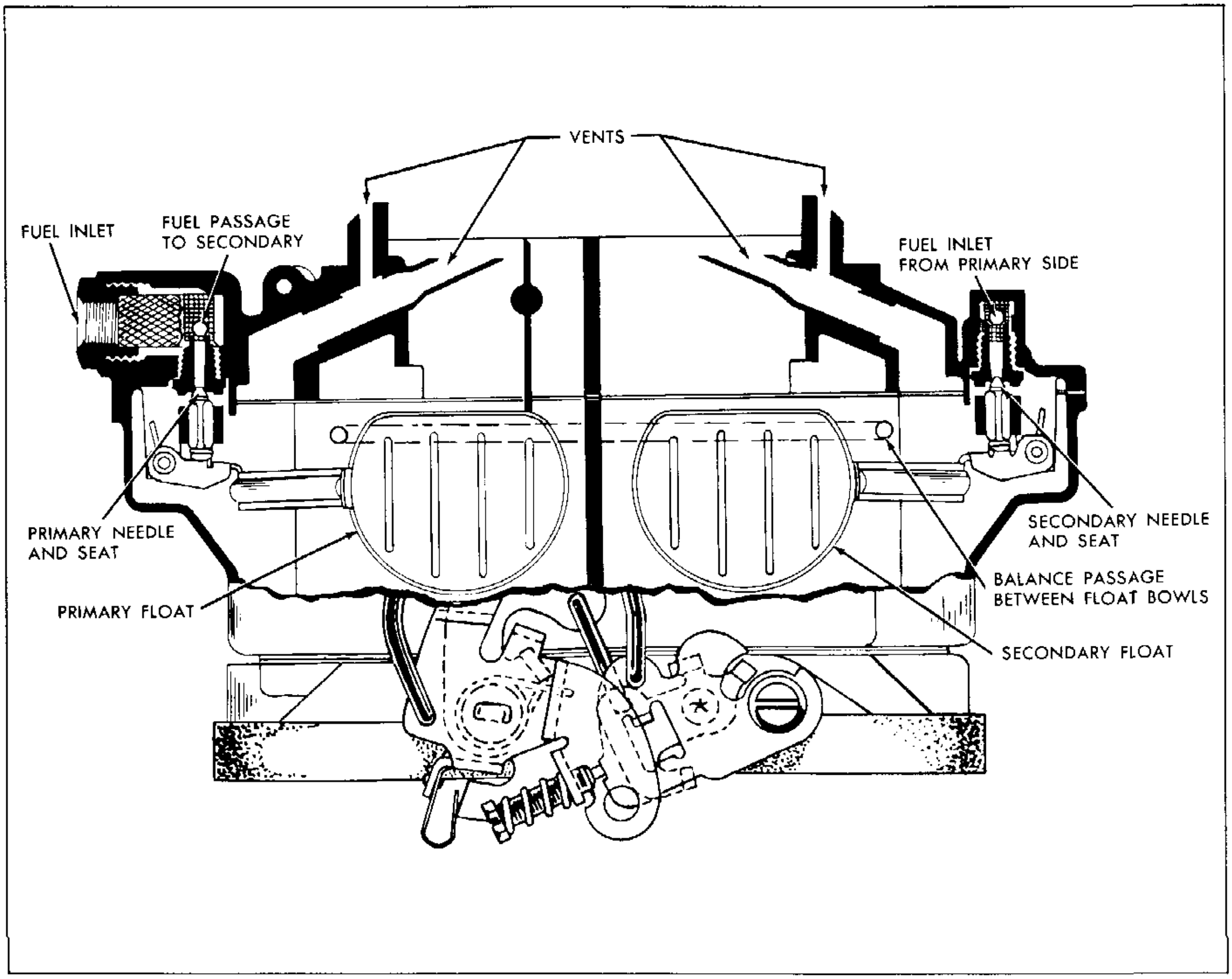


Fig. 6B-74 Float System

level in the bowl rises the floats also rise seating the float needle and shutting off the flow of fuel.

Float action on the secondary side is identical with that of the primary side. As the secondary floats drop and the needle is pulled from its seat fuel is forced from the fuel inlet on the primary side through a channel cored in the air horn to the inlet passage on the secondary side.

A passage in the float bowl slightly above the normal fuel level connects the primary and secondary float bowls. In this way any abnormal rise in level on one side will be absorbed by the other without disrupting engine operation.

Both sides of the carburetor are externally and internally vented to allow even pressure of fuel and air at all times and to allow the escape of fuel vapors during hot idle operation.

To aid in the venting of the carburetor bowl, an idle vent valve and spring assembly is installed in the bowl cover and air horn assembly. The idle vent valve is actuated by a tang that is part of the accelerator pump actuating lever. With the throttle valves in their idle position, the idle vent valve is held open against its spring. When the throttle valves are opened the pump actuating lever tang no longer contacts the idle vent valve and the spring forces the valve to shut. The function of the idle vent valve assembly is to improve idle when the engine is warm by venting fumes outside the carburetor rather than into the air cleaner area. It should be noted that this external venting may result in noticeable fumes on idle or when the vehicle is being operated in extreme turns with the throttle valves closed.

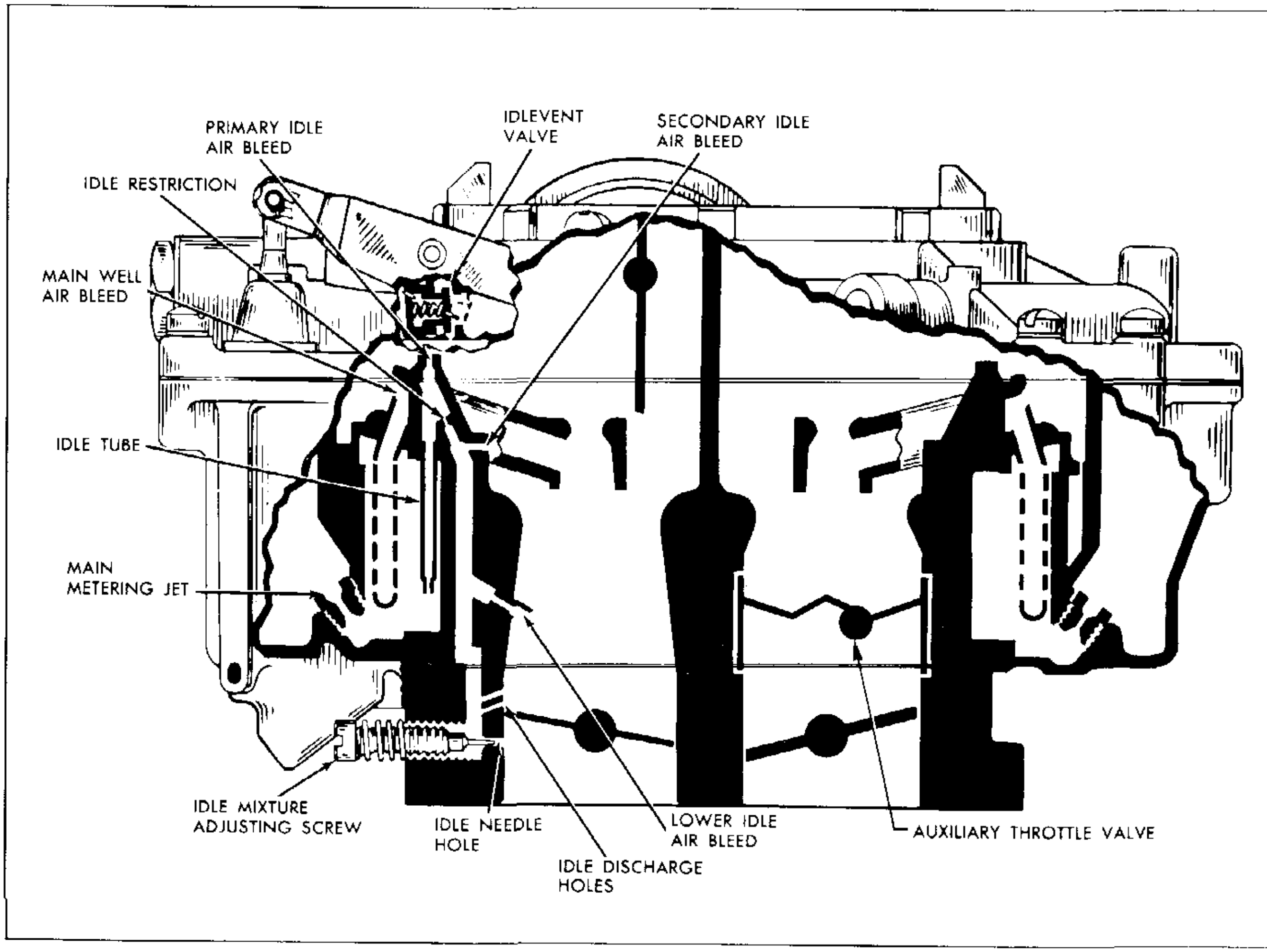


Fig. 6B-75 Idle System

IDLE SYSTEM (FIG. 6B-75)

At small throttle openings the vacuum created by the main venturi is not sufficient to cause fuel to flow from the nozzles. Therefore, an additional system is provided to furnish the proper mixture ratios required throughout the low speed range.

An adjustable idle system is provided on the primary side of the carburetor only. Idle passages will be observed in some areas on the secondary side of the carburetor but in all instances they are blocked by gaskets and are not operational.

Idle fuel is drawn from the float bowl through the main metering jets into the fuel well at the bottom of the float bowl. It then passes through the calibrated idle tube restrictions and idle tubes. Air joins the fuel at the primary idle air bleeds. This mixture then passes through the idle restrictions which tend to mix thoroughly the fuel and air. More air enters the mixture at the secondary idle air bleeds. The mixture then passes down the vertical idle channel. At the lower end of the channel additional air is bled into the mixture through the lower idle air bleeds and idle discharge holes. The resultant mixture is then discharged into the throttle bore from the idle needle holes.

As the throttle valves are opened the bleed effect of the idle discharge holes gradually diminishes. When these holes become exposed to manifold vacuum they become fuel discharge holes to meet the increased fuel demand. Further opening of the throttle valves increases the air velocity striking the extended lower idle air bleed causing the pressure differential to discharge fuel from this tube which continues during part and wide open throttle operation.

The idle mixture adjusting screws govern the amount of fuel-air mixture admitted to the carburetor bore at idle.

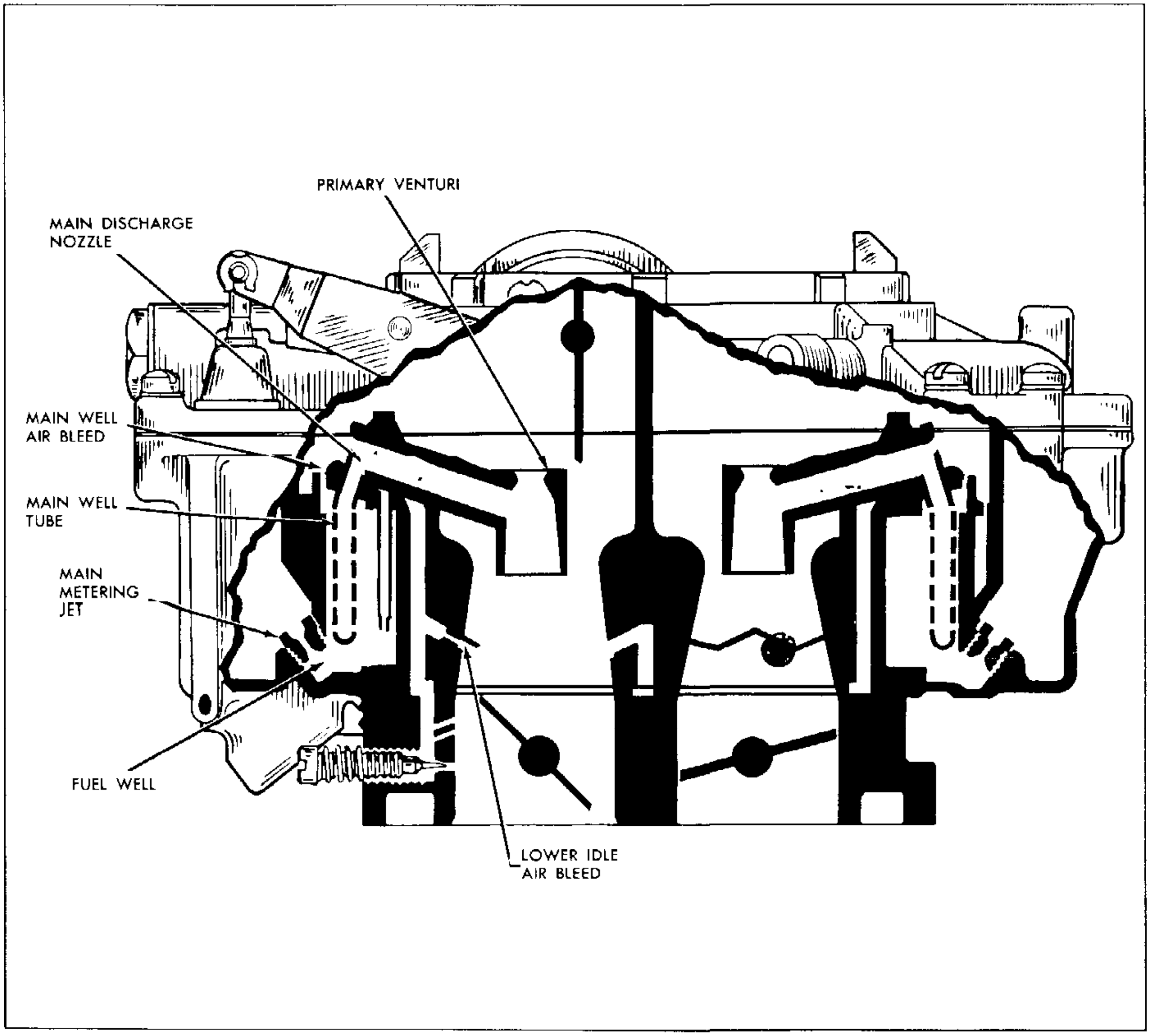


Fig. 6B-76 Part Throttle System

PART THROTTLE SYSTEM (FIG. 6B-76)

As the throttle valves are opened to a greater degree and more air is drawn through the carburetor, it is necessary to provide more fuel than is available from the idle system. As the primary side operates alone up to approximately 40° of primary throttle opening all fuel used during part throttle operation originates from the primary side.

The increased air flow through the venturi during part throttle operation lowers the pressure at the tip of the main discharge nozzles. This differential in pressure forces fuel from the float bowl, through the main metering jets and into the main well tubes. After passing through the main well tubes the mixture passes from the tip of the nozzle through the mixture passage to the venturi and on into the intake manifold. As the throttle opening is increased and more fuel is drawn through the main well tubes the fuel level in the main well drops. More holes in the main well tubes are then exposed to the air in the upper well area and become air bleeds. This maintains the proper fuel-air mixture to the engine throughout the part throttle range.

As covered under the idle system the lower idle air bleeds act as fuel discharge nozzles during part throttle operation.

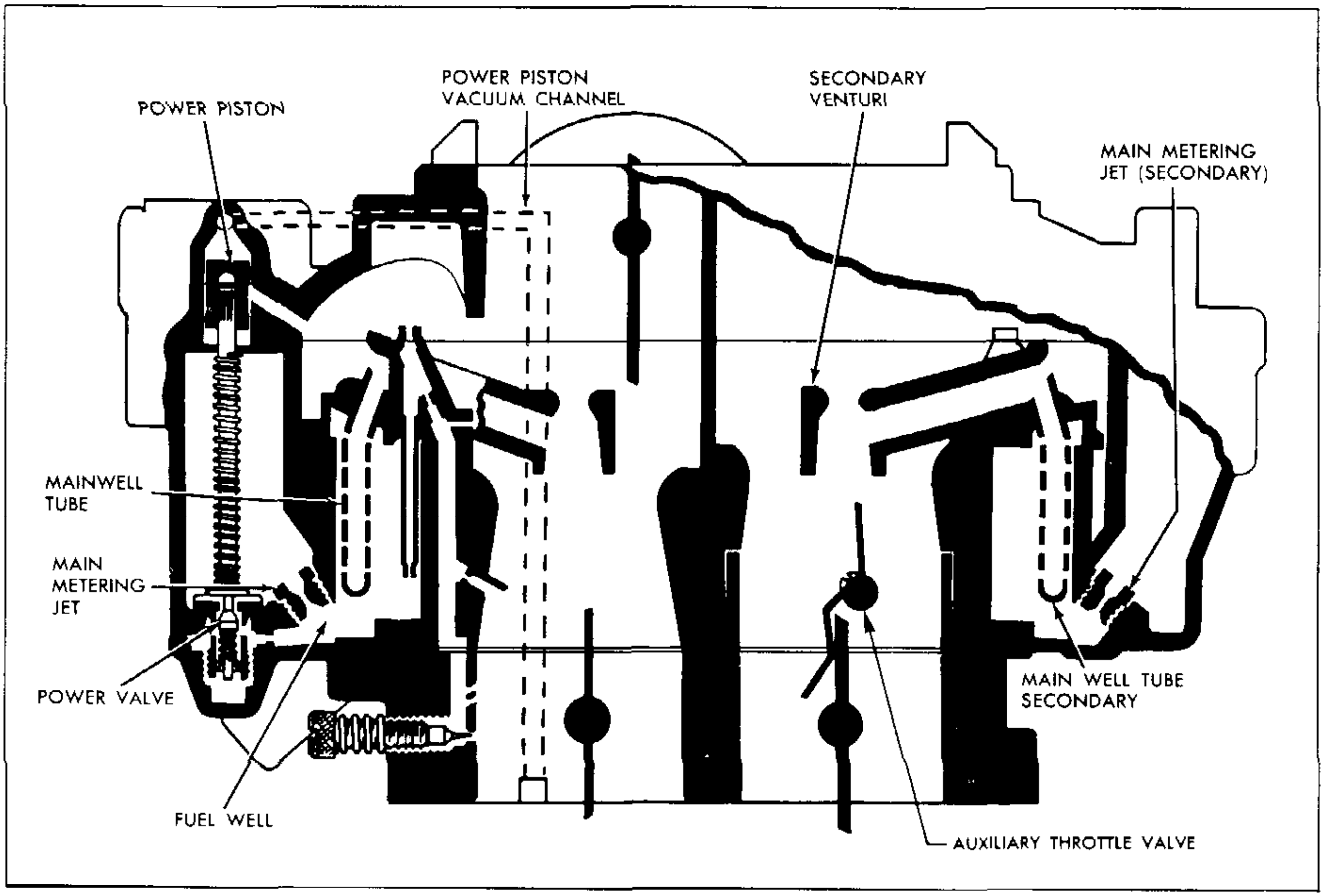


Fig. 6B-77 Power System

POWER SYSTEM (FIG. 6B-77)

As the primary throttle valves are opened past 40°, mechanical linkage between the primary and secondary throttle valves starts to open the secondary valves. The ratio of motion is such that by the time the primary valves have reached wide open, the secondary valves are also wide open. With both the primary and secondary throttle valves open, the venturi systems in both sides feed fuel-air mixture through their respective main metering systems.

A pair of spring loaded, air velocity operated, auxiliary throttle valves are located in the secondary bores above the regular throttle valves. When the throttle valves are moved to their wide open position and engine speed is low there is insufficient air flow through the secondary bores to force the spring loaded auxiliary valves to open. This will concentrate all air flow through the primary throttle bores with better metering of fuel and air. In this condition the carburetor is functioning as a 2-Barrel carburetor. As the engine speed increases, the force of the air acting on the auxiliary valves increases to the point where the auxiliary valves are forced to open. The calibration of the auxiliary valve spring tension is such that valve opening occurs when greatest metering efficiency is possible.

In addition, fuel flow is supplemented through a vacuum-controlled power valve on the primary side.

The power piston vacuum channel is exposed to manifold vacuum beneath the throttle valves. This vacuum is sufficient to hold the power piston in its extreme up position during part throttle operation. However, as the throttle valves are progressively opened manifold vacuum decreases to the point that the spring beneath the piston forces the piston down. This occurs only at very high speeds or during rapid acceleration. When the piston is forced down it unseats the spring loaded power valve allowing additional fuel to flow into the main well. This raises the level in the main well and by covering some of the openings in the main well tubes supplies a considerably richer mixture than normal part throttle mixtures.

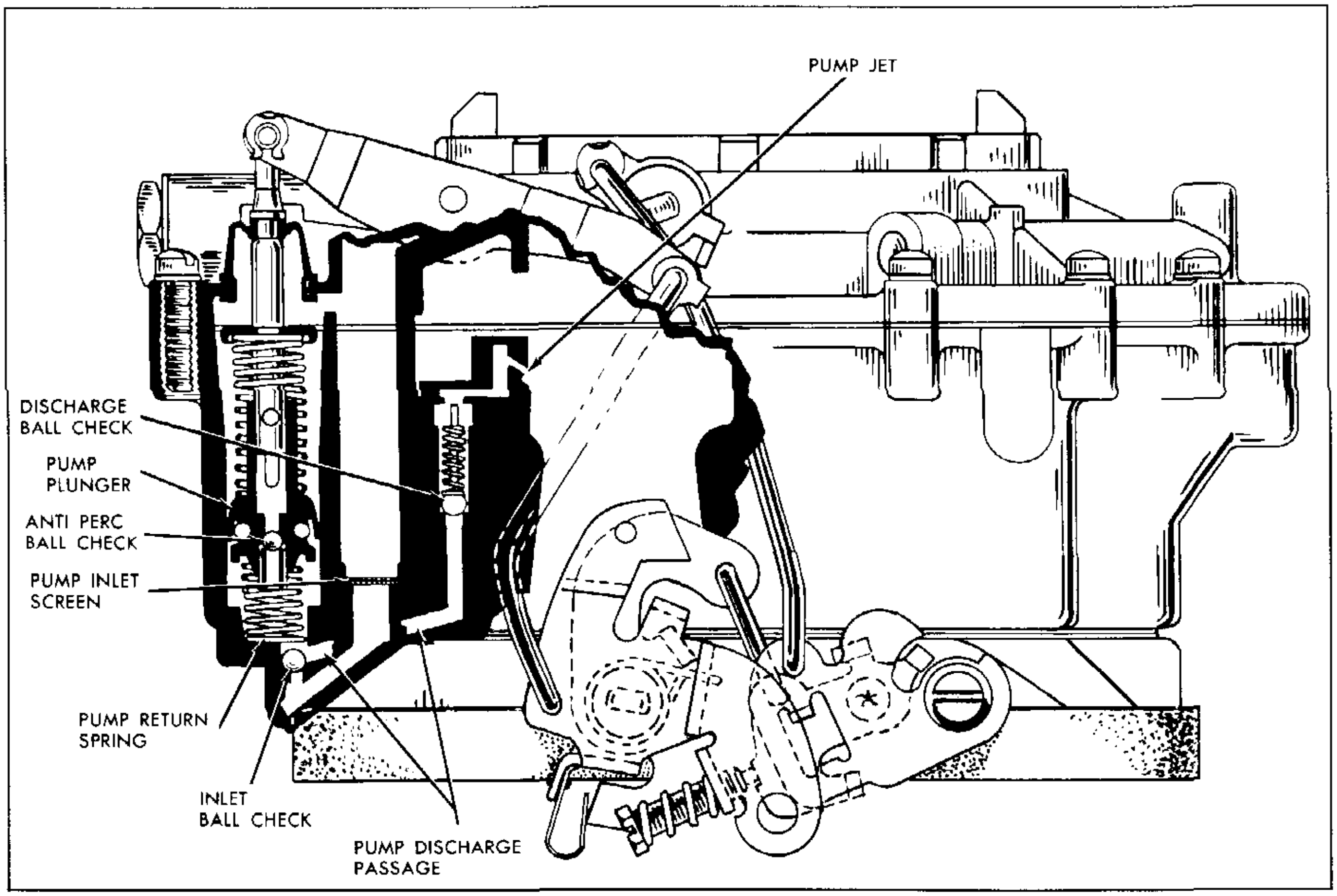


Fig. 6B-78 Pump System

PUMP SYSTEM (FIG. 6B-78)

Rapid opening of the throttle valves for acceleration causes an almost instantaneous increase in air velocity. The fuel, however, is much heavier than the air and requires a short time to "catch up" with the air flow. To avoid leanness during this momentary lag, the accelerator pump furnishes a quantity of liquid fuel, sprayed into the air stream to mix with incoming air and maintain the proper fuel-air mixture.

Since the secondary throttle valves remain closed during part throttle operation, only the primary side needs the extra boost; hence the primary side only contains the pump system.

Extra fuel for smooth, quick acceleration is supplied by a double spring pump plunger. The combination of the top and bottom 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 to remove any dirt, then is drawn past the inlet ball check into the pump well on the intake stroke of the plunger. When the plunger is pushed downward for acceleration, the force of the stroke seats the inlet ball check 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 from its seat and the fuel passes on through the pump jets in the cluster, where it is sprayed into the venturi and delivered to the engine.

The pump plunger head embodies a unique ball check and seat, designed to eliminate fuel percolation in the pump system. When the engine is idling or not operating, excessive fuel vapors in the pump well rise through the plunger head and by-pass the ball, then circulate into the fuel bowl, which is vented to the atmosphere.

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

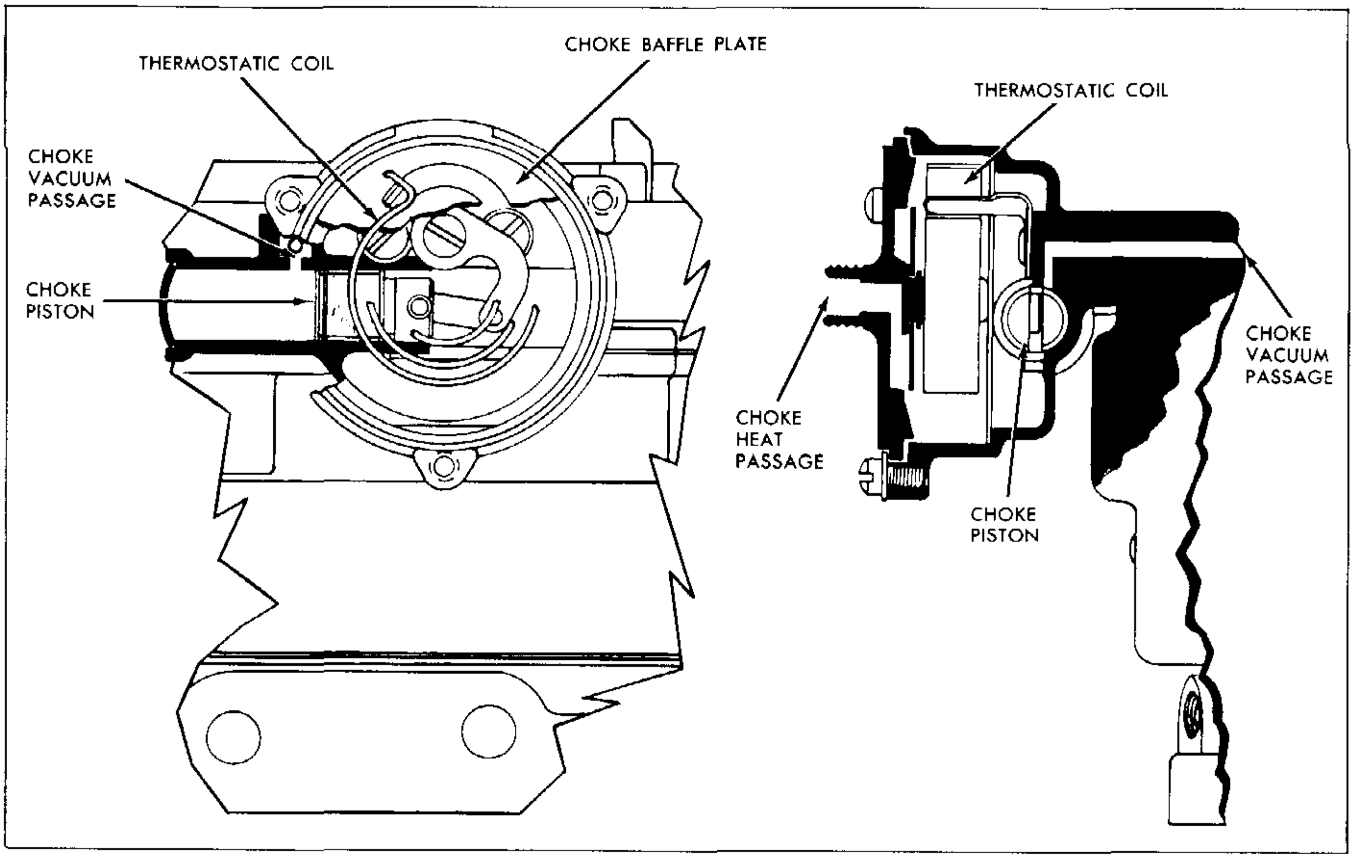


Fig. 6B-79 Choke System

CHOKE SYSTEM (FIG. 6B-79)

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

When the engine is cold, the thermostatic coil is calibrated to hold the choke valve closed. As the engine is started, air velocity against the offset choke valve causes the valve to open slightly, against the torque of the thermostatic coil. In addition, intake manifold vacuum is applied to the choke piston, through the vacuum channel, which also tends to open the choke. As the engine warms up, heated air is drawn into the choke housing through the choke heat tube, by vacuum through the passage hole in the choke piston bore. As the engine temperature increases, causing the coil to relax its tension, the choke valve is moved gradually to the full open position.

During warm-up the choke piston serves to modify the choking action to compensate for varying engine loads or acceleration. Any acceleration decreases the vacuum on the choke piston and allows the choke valve to momentarily move towards the closed position to provide the richer mixture needed.

To prevent stalling during warm-up it is necessary to run the engine at a higher than normal engine speed. This is accomplished by the fast idle screw which rests on the steps of the fast idle cam. The fast idle cam is in turn linked to the choke valve shaft by the choke rod, choke trip lever and choke lever assembly. This linkage holds the throttle valves open sufficiently to give the necessary increased idle RPM until the choke valve moves to the full open position.

The choke system is also provided with an "unloader". Wide opening of the primary throttle valves would lower the vacuum pull on the choke piston, allowing the choke to partially close, which would cause extreme richness. To prevent this, the throttle lever at wide open strikes a tang on the fast idle cam, forcing the choke partly open to allow a "de-choking" action. This feature is also useful in starting a flooded engine, when choking would only aggravate the trouble; the mechanical opening of the choke valve allows enough air flow to mix with the excess gas in the manifold and the engine can be started.

Since the secondary throttle valves remain closed, only the primary side requires a choke system. When the choke is closed, the fast idle cam is raised; the raised position of the fast idle cam "locks out" any opening of the secondary throttle valve by means of a lockout lever, which is free to move only when the cam is fully lowered.

ADJUSTMENTS ON CAR—ROCHESTER 4GC CARBURETOR

All adjustments with the exception of the idle speed and mixture adjustment are included in "Overhaul and Adjustments" procedure and can be done on the car. Following is the idle speed and mixture adjustment.

IDLE SPEED AND MIXTURE ADJUSTMENT

With the engine at operating temperature (choke entirely off) adjust idle speed to 450-470 RPM.

The idle mixture adjustment should be adjusted to give a smooth idle at the specified idle speed. Missing is a sign of too lean an idle mixture, while "rolling" or "loping" indicates too rich a mixture. Turning in the idle mixture adjusting screw leans out the idle mixture. One and one-half turns out from the lightly seated position may be used as a preliminary setting of the idle mixture adjusting screw before making the final setting.

Setting the idle speed and mixture will also give the correct fast idle speed.

OVERHAUL AND ADJUSTMENTS ROCHESTER MODEL 4GC CARBURETOR

DISASSEMBLY

DISASSEMLY OF AIR HORN

1. Mount carburetor on holding fixture J-5923. Remove gasoline inlet fitting, screen and gasket assembly (Fig. 6B-80).

2. Remove three choke cover attaching screws and retainers and remove choke cover.

3. Using a small screwdriver carefully lift the choke baffle plate from the choke housing.

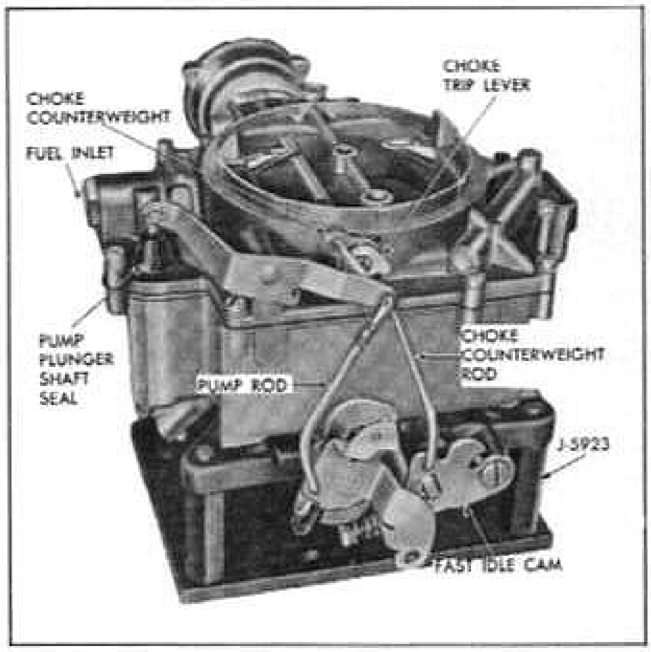


Fig. 6B-80 Rochester 4GC 4 Jet Carburetor

4. Remove clip from upper end of pump rod (Fig. 6B-80). It is not necessary to remove rod at lower end.

5. Remove trip lever retaining screw at end of choke shaft and remove trip lever (Fig. 6B-80).

6. Remove fast idle cam attaching screw and remove choke counterweight rod and fast idle cam as an assembly (Fig. 6B-80).

NOTE: It will usually be unnecessary to separate counterweight rod from fast idle cam.

7. Remove two choke valve retaining screws and slide choke valve from slot in choke shaft.

8. Rotate choke shaft counterclockwise to free choke piston from housing. Then remove piston and choke shaft from air horn.

9. Remove two choke housing attaching screws, and remove choke housing and gasket from air horn (Fig. 6B-81).

10. Remove 13 air horn attaching screws (Fig. 6B-82).

11. Carefully remove air horn by lifting straight up until all parts are clear of carburetor body (Fig. 6B-83).

12. Remove hinge pin and float assembly on primary side (Fig. 6B-84).

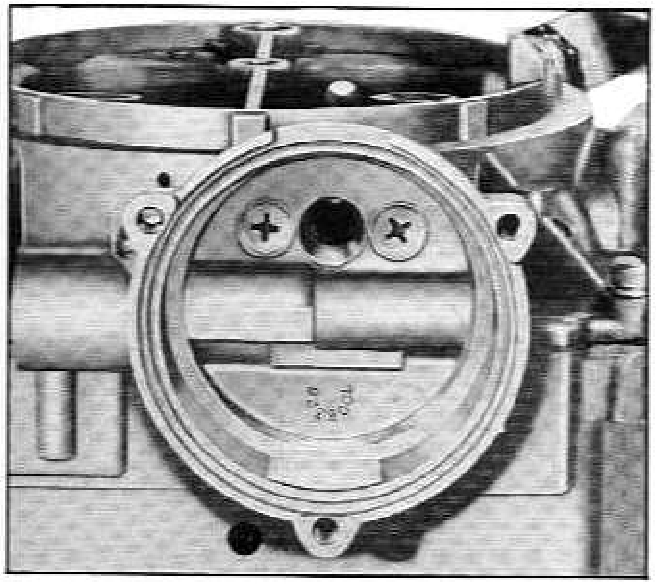


Fig. 6B-81 Location of Choke Housing Attaching Screws

13. Remove float needle seat, gasket and strainer screen from primary side (Fig. 6B-84).

CAUTION: Group and keep together float, float needle, needle seat, and gasket as units. Never mix parts from primary and secondary sides.

14. Remove and group hinge pin, float, float needle, needle seat, gasket and strainer screen from secondary side.

15. Remove horseshoe retainer from pump plunger shaft and remove rubber seal and pump plunger

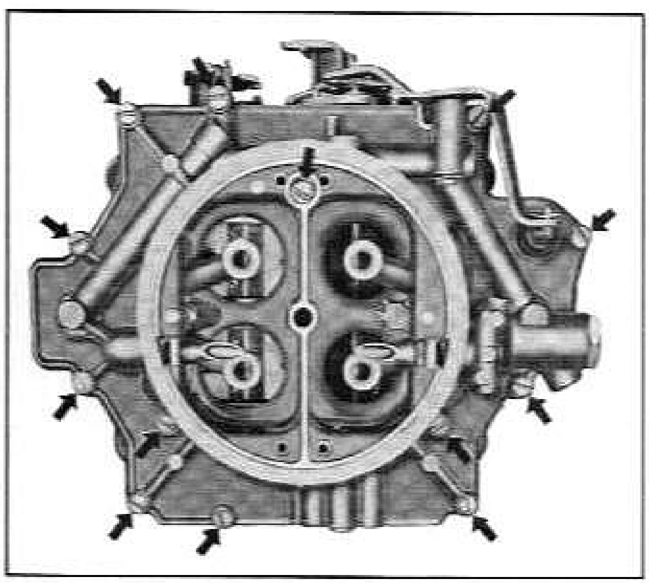


Fig. 6B-82 Location of Air Horn Attaching Screws

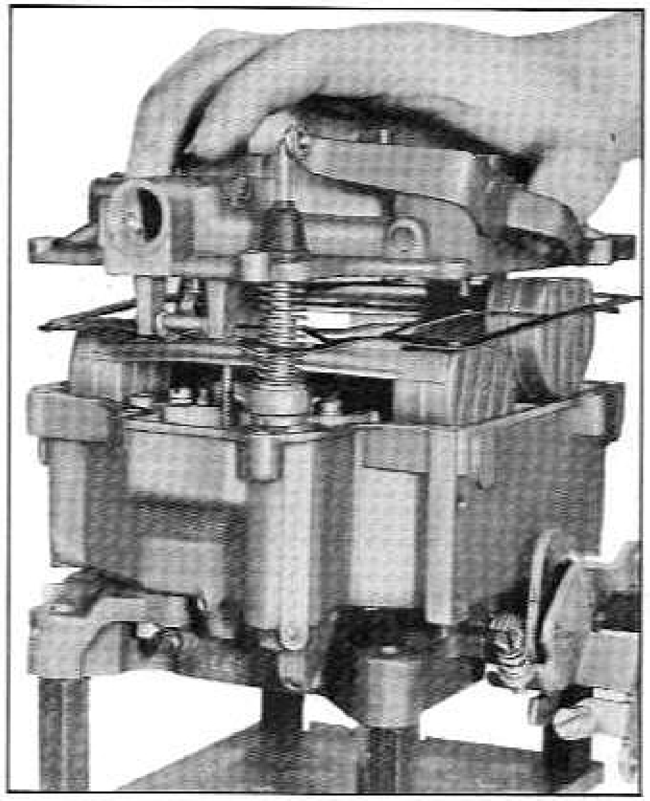


Fig. 6B-83 Removing Air Horn Assembly

assembly from air horn (Fig. 6B-80).

16. Remove power piston assembly from air horn by depressing piston stem and allowing it to snap free or by holding stem and tapping lightly on air horn with a non metallic object (Fig. 6B-85).

17. Remove air horn gasket.

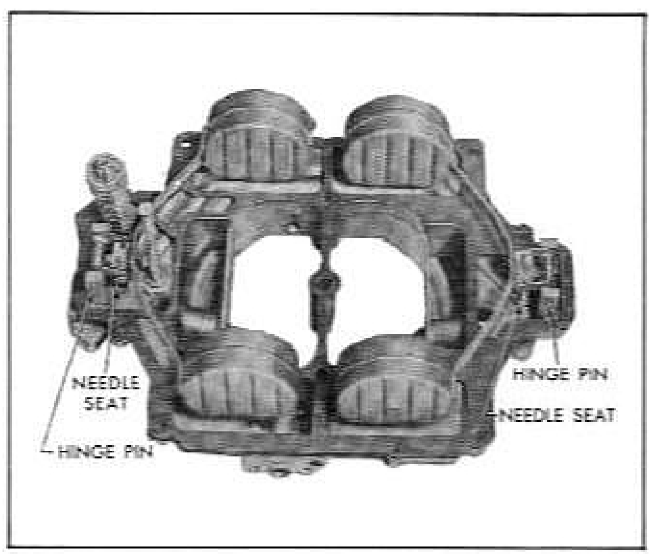


Fig. 6B-84 Air Horn Assembly

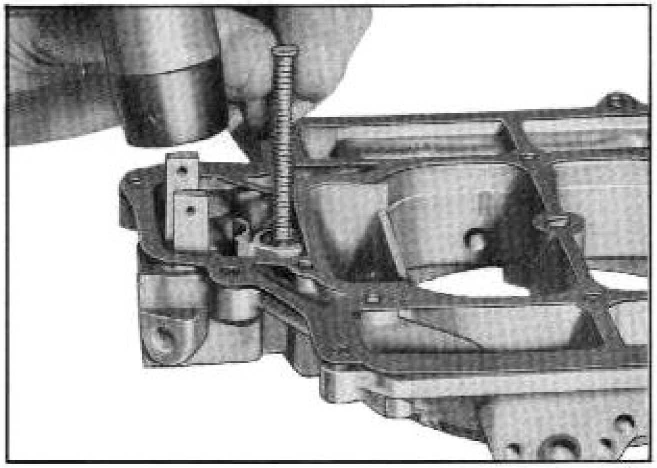


Fig. 6B-85 Removing Power Piston Assembly

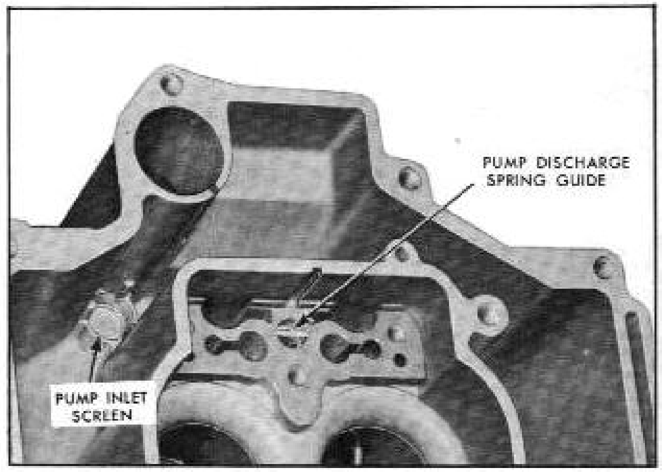


Fig. 6B-87 Pump Discharge Spring Guide and Pump Inlet Screen

DISASSEMBLY OF CARBURETOR BODY AND FLANGE

1. Remove three attaching screws and lockwashers from venturi cluster on primary side and carefully remove cluster and gasket (Fig. 6B-86).

NOTE: The primary venturi cluster contains the pump discharge nozzles and idle tube in addition to main well tubes, and must always be installed on primary side. The venturi clusters are serviced as an assembly.

2. Remove both main metering jets from primary side of carburetor body (Fig. 6B-86).

3. Remove power valve and gasket (Fig. 6B-86).

4. Remove three screws from secondary venturi cluster and remove cluster and gasket.

5. Remove both main metering jets from secondary side of carburetor body. Keep separate from primary metering jets.

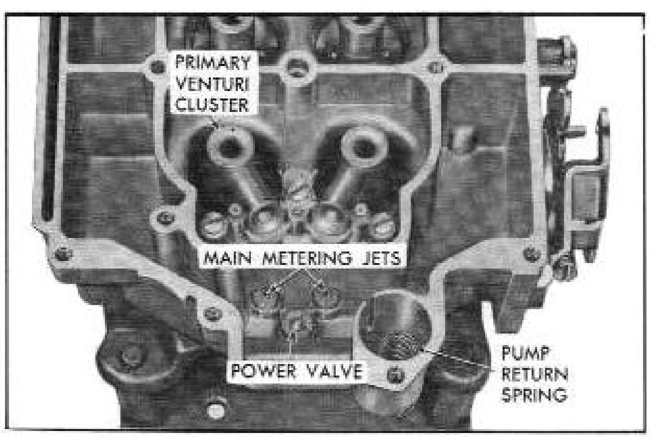


Fig. 6B-86 Carburetor Body Assembly

6. Remove pump return spring from pump well (Fig. 6B-86). Carefully invert carburetor body to remove aluminum pump inlet ball.

7. Using needle nose pliers, remove pump discharge spring guide, spring and steel ball (Fig. 6B-87).

8. If required, pump inlet screen may be removed for cleaning by prying up retaining ring with a pointed tool (Fig. 6B-87).

9. Remove four throttle flange attaching screws and lockwashers and remove throttle flange (Fig. 6B-88).

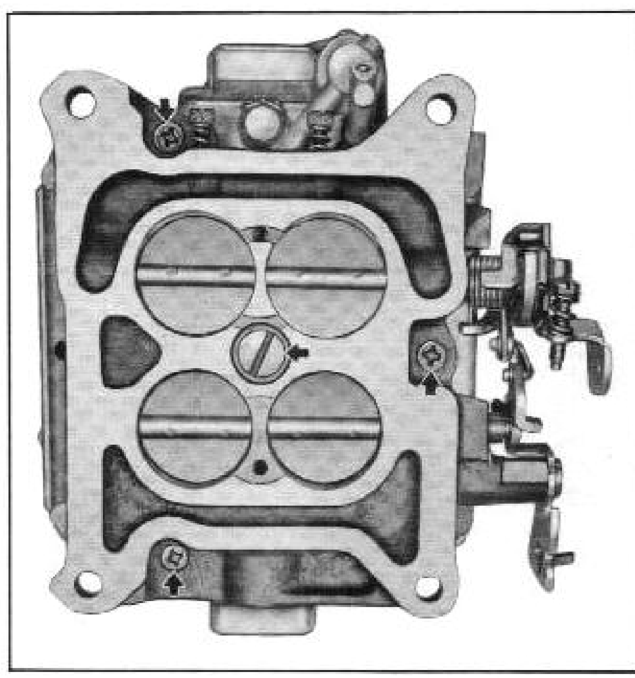


Fig. 6B-88 Throttle Flange Attaching Screws

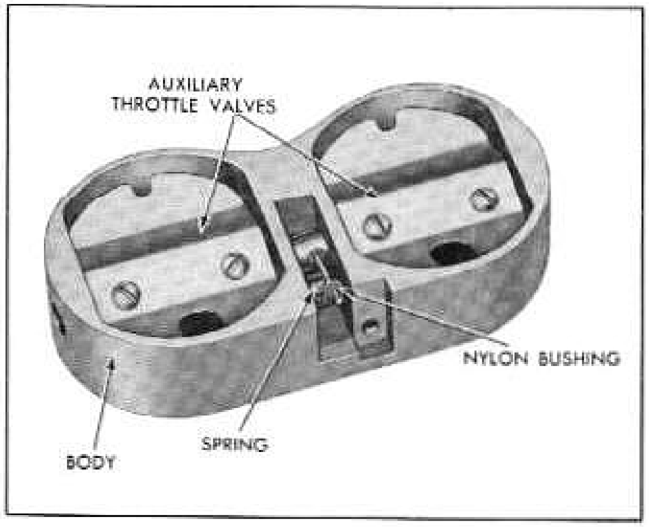


Fig. 6B-89 Auxiliary Throttle Valves

10. Remove throttle flange gasket.

11. Remove idle mixture adjusting screws.

NOTE: The throttle flange and levers are serviced as a unit. No further disassembly of throttle flange should be attempted as it may be impossible to again reassemble throttle valves correctly in relation to vacuum and idle discharge orifices.

12. With carburetor bowl inverted, lift out auxiliary throttle valve body (Fig. 6B-89). No further disassembly of throttle valve body should be made.

CLEANING AND INSPECTION OF PARTS

Dirt, gum, water or carbon contamination in the carburetor or on the exterior moving parts of a carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection while servicing.

1. Thoroughly clean carburetor castings and all metal parts in clean carburetor cleaning solution. CAUTION: Composition and plastic parts such as pump plunger and gaskets should not be immersed in cleaner. This includes the auxiliary valve body which incorporates a nylon bushing (Fig. 6B-89).

2. Blow out all passages (Figs. 6B-90 through 6B-94) in casting with compressed air and blow off all parts so they are free of cleaner. (Be sure to follow instructions furnished with cleaning solution.) CAUTION: Do not use drills or wire to clean out jets or ports as this may enlarge the opening and affect carburetor operation.

3. Carefully inspect parts for wear and replace those which are worn. Check the following specific points:

A. Inspect choke piston and choke piston housing for carbon. If necessary to clean choke piston housing, remove Welch plug in the bottom of housing. Plug can be removed by piercing center with a small pointed instrument and prying outward. Care should be exercised so that damage will not result to the casting when removing this plug. Before installing new plug, carbon present in piston cylinder slots should be removed and the Welch plug seat should be carefully cleaned.

B. Remove carbon from bores of throttle flange with sandpaper; never use emery cloth.

C. Inspect float needles, and seats for wear; if worn, both needle and seat must be replaced.

D. Inspect float pins for excessive wear.

E. Inspect floats for dents and excessive wear on lip. Check for fluid inside floats by shaking. Replace float if any of above are present.

F. Inspect throttle shafts for excessive wear (looseness or rattle in body flange casting).

G. Inspect idle mixture adjusting screws for burrs. Replace if burred.

H. Inspect pump plunger assembly. If leather is not in good condition, replace plunger.

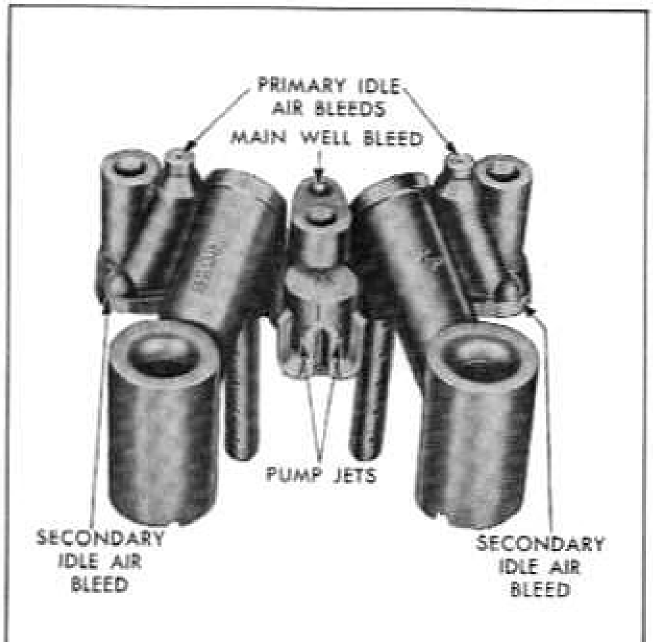


Fig. 6B-90 Passage Identification (Cluster Casting)

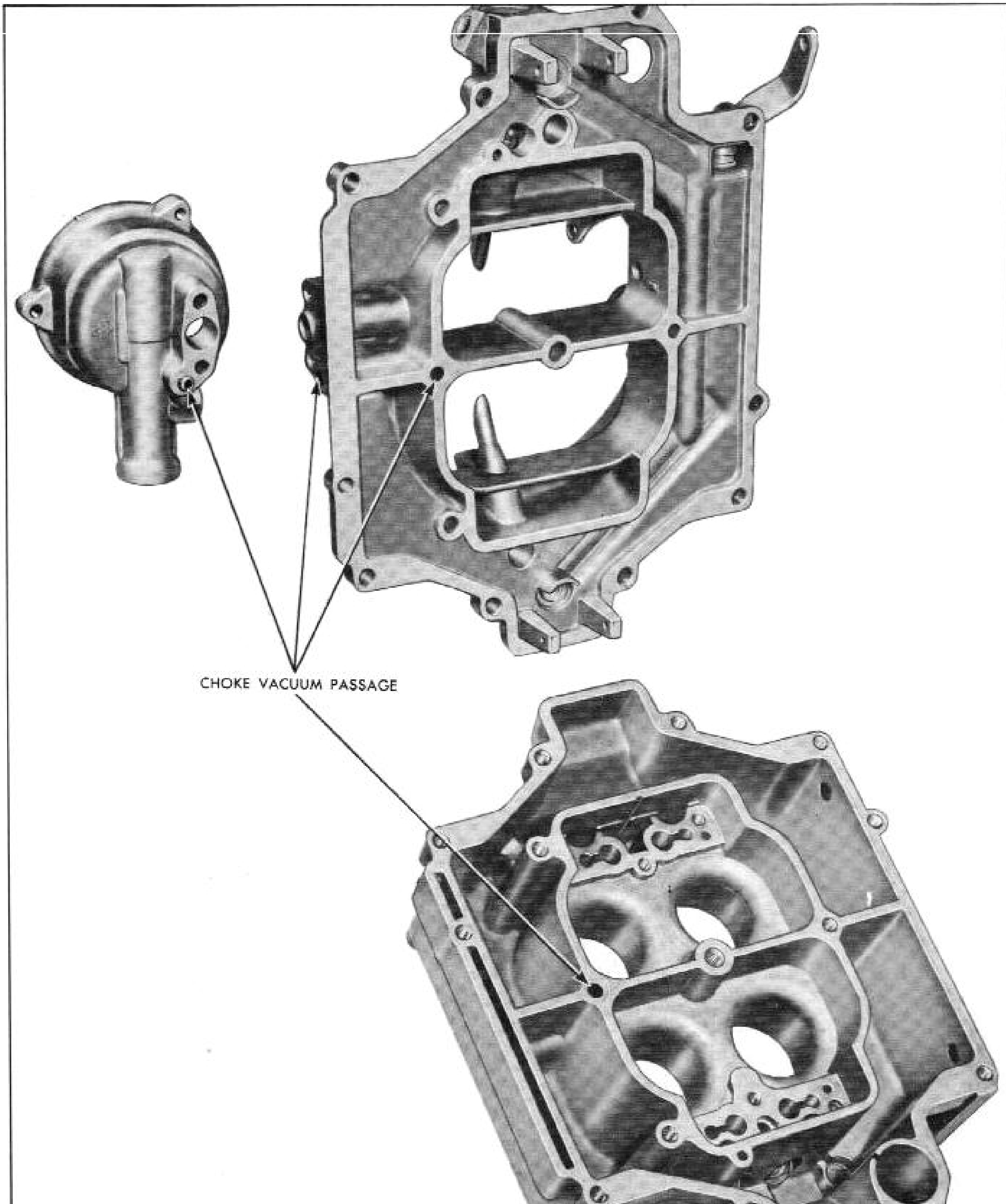


Fig. 6B-91 Passage Identification (Body—Air Horn—Choke Housing)

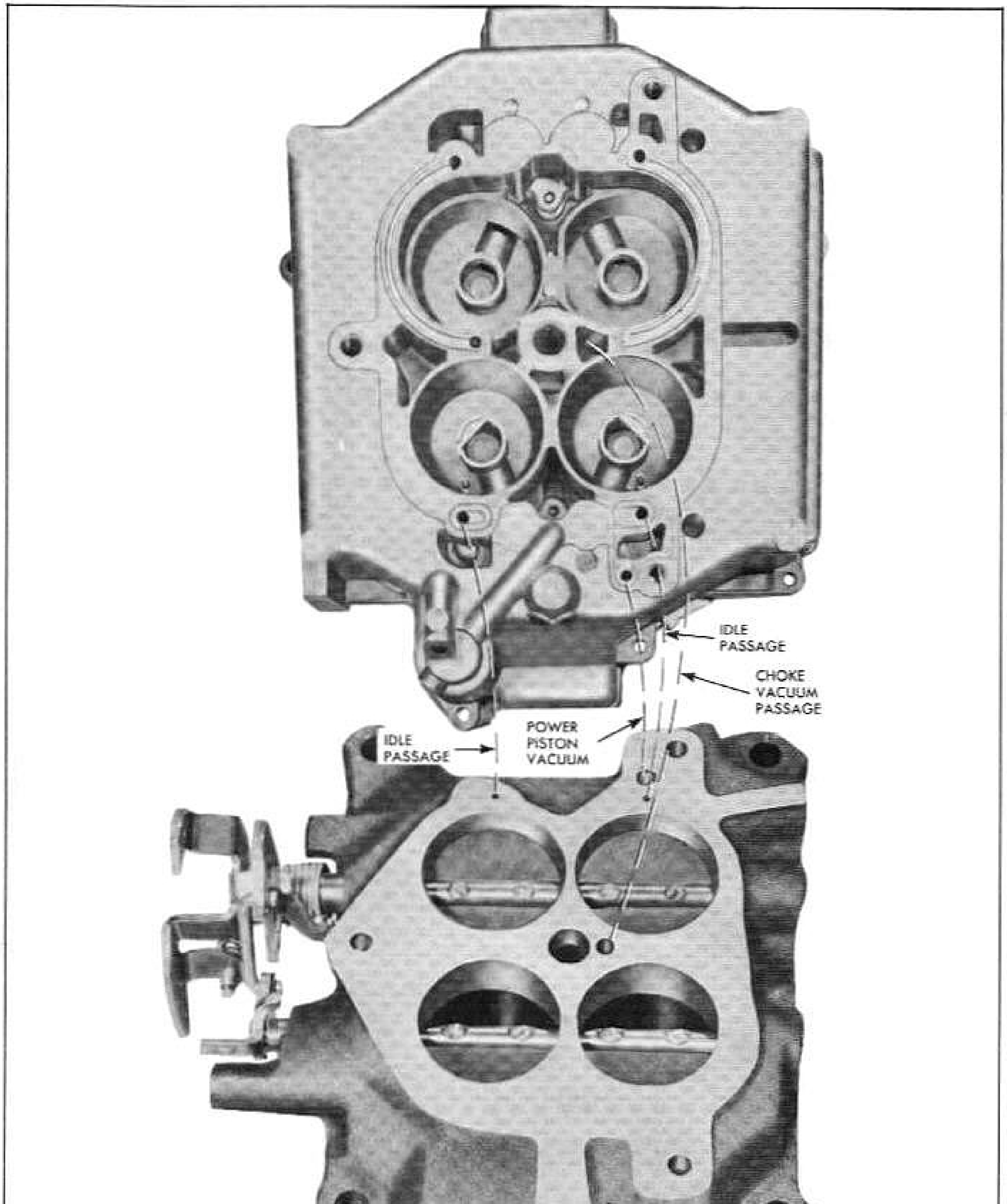


Fig. 6B-92 Passage Identification (Body—Flange)

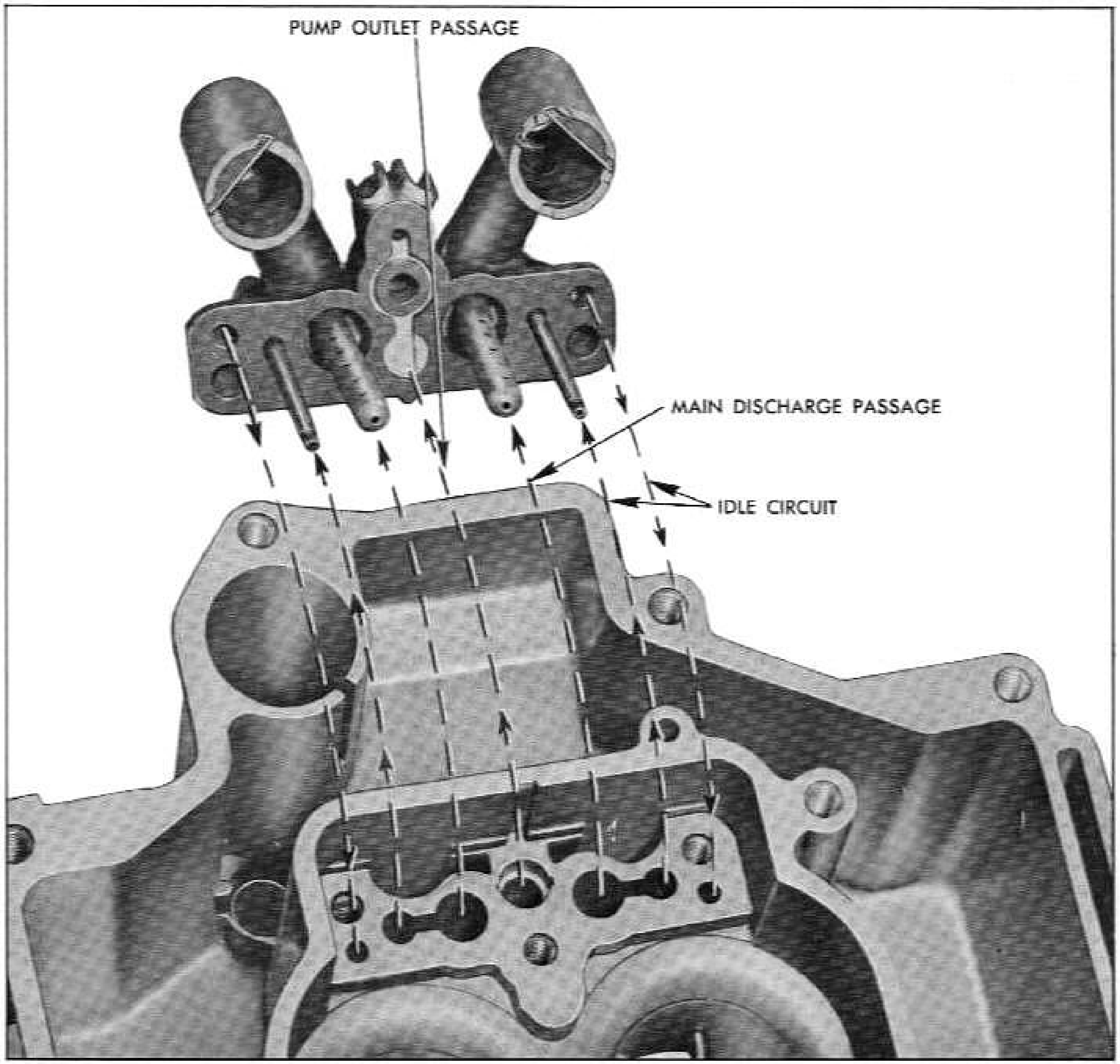


Fig. 6B-93 Passage Identification (Cluster—Body)

I. Inspect gasketed surfaces between body and air horn, and between body and flange. Small nicks or burrs should be smoothed down to eliminate air or fuel leakage. Be especially particular when inspecting choke vacuum passages and the top surface of the inner wall of the bowl.

J. Inspect holes in pump rocker arm, fast idle cam and throttle shaft lever. If holes are worn excessively or out of round to the extent of causing improper carburetor operation, the part should be replaced.

K. If excessive wear is noted on fast idle cam, it should be replaced to ensure proper engine operation during warm up.

L. Check all filter screens for lint or dirt. Clean or replace as necessary.

M. Check venturi clusters for loose or damaged parts. If damage or looseness exists, replace cluster assembly.

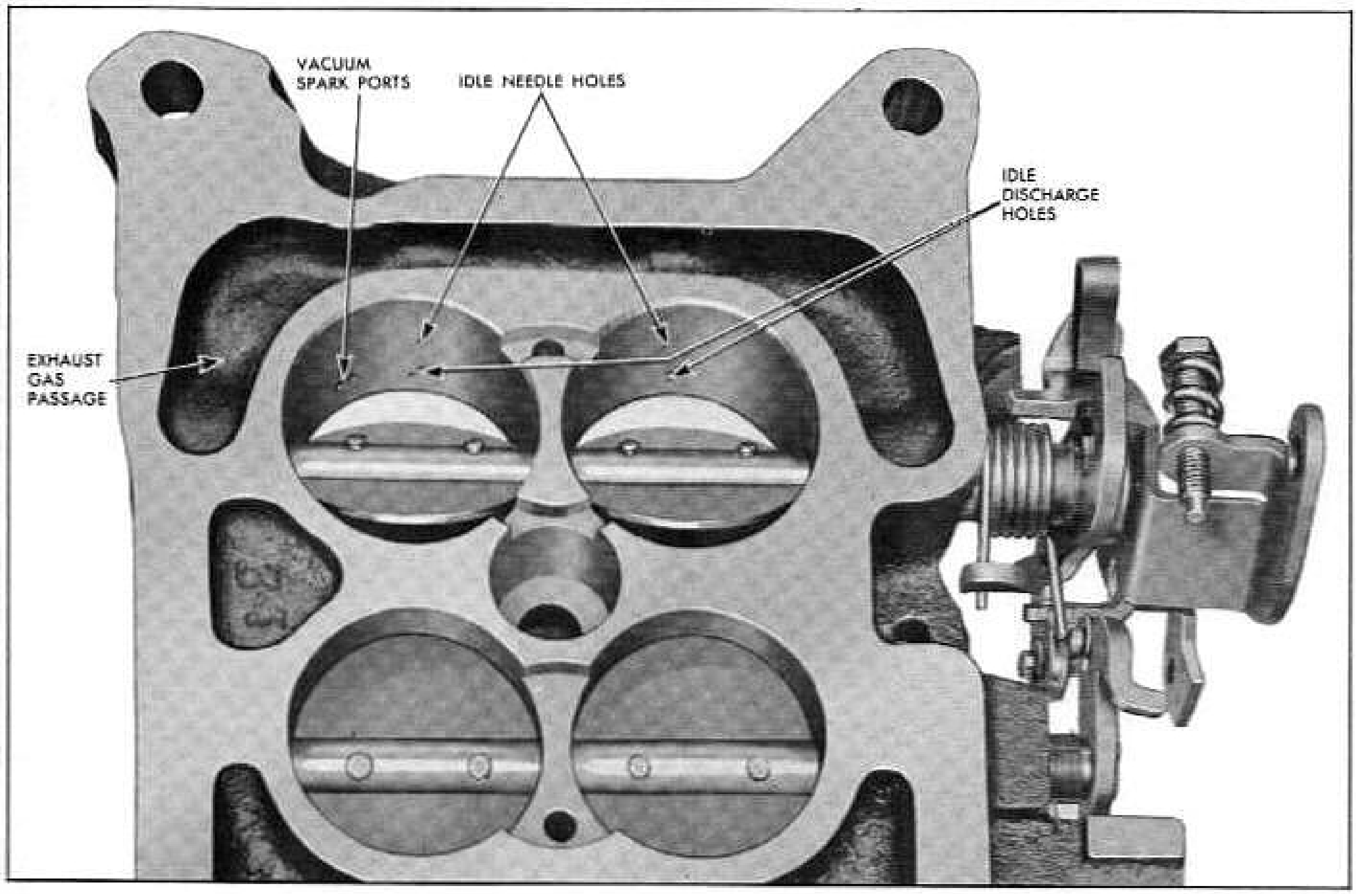


Fig. 6B-94 Passage Identification (Throttle Flange)

ASSEMBLY AND ADJUSTMENT

ASSEMBLY OF THROTTLE FLANGE AND CARBURETOR BODY

1. With carburetor body inverted install auxiliary throttle valve body as shown in Fig. 6B-95.

2. Position throttle flange gasket on bowl making sure all holes are properly aligned.

3. Place throttle flange on carburetor body and install four attaching screws, tighten securely.

4. Install idle mixture adjusting screw assemblies. Tighten finger tight and back off $1\frac{1}{2}$ turns for approximate adjustment.

5. Place throttle flange assembly and carburetor on holding fixture J-5293 and install steel pump outlet ball, discharge spring and guide, aluminum inlet ball and pump return spring. NOTE: the aluminum inlet ball is $\frac{5}{32}$" in diameter. The steel outlet ball is $\frac{3}{16}$" in diameter.

6. Replace the pump inlet screen if it was removed in disassembly.

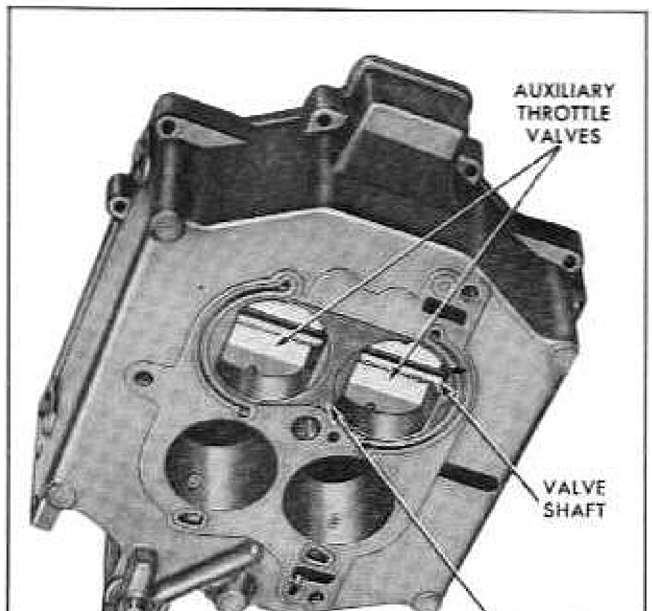


Fig. 6B-95 Auxiliary Throttle Valves

7. Install primary and secondary main metering jets in their respective sides.

8. Install secondary venturi cluster and gasket using three attaching screws and lockwashers.

NOTE: The secondary venturi cluster does not have pump discharge nozzles or idle tubes.

9. Install power valve assembly and gasket in primary side of carburetor body.

10. Install primary venturi cluster and gasket using three attaching screws and lockwashers.

ASSEMBLY OF AIR HORN

1. Install power piston into air horn and stake *lightly* to retain piston during assembly.

2. Assemble rubber seal on pump plunger shaft.

3. Assemble pump plunger assembly into air horn making certain that the seal is properly located in air horn.

4. Assemble pump plunger shaft into operating lever and install horse shoe retainer.

5. Position gasket on air horn.

6. Install primary and secondary float needle seats; gaskets and inlet screens in air horn. CAUTION: Needle seats must be installed on the same sides from which they were removed to match their respective float needles.

7. Install float and needle assembly and hinge pin on primary side.

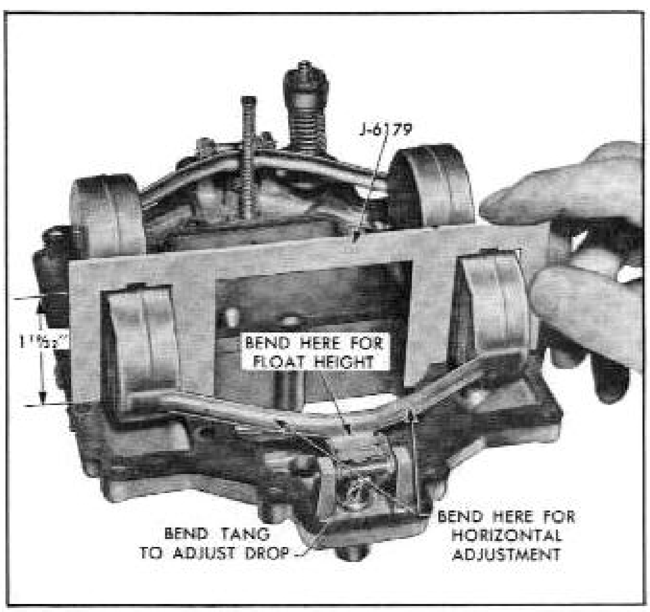


Fig. 6B-96 Checking Float Level

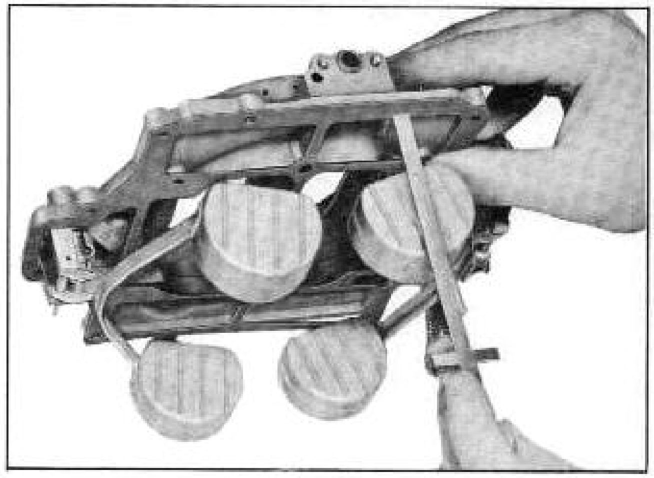


Fig. 6B-97 Checking Float Drop

8. Install float and needle assembly and hinge pin on secondary side.

FLOAT LEVEL ADJUSTMENT

1. With air horn gasket in place, position float level gauge J-6179 over floats so that gauge is located against the curvature in bore of the carburetor air horn (Fig. 6B-96).

2. Bend float arms at center as shown in Fig. 6B-96 so floats just contact gauge. The vertical height should be $1\frac{19}{32}''$.

3. If necessary, bend float arms horizontally until each float pontoon is centered between gauge legs.

4. Repeat same adjustment on the opposite float assembly.

FLOAT DROP ADJUSTMENT

1. Check distance between air horn and bottom of float with air horn held in upright position (Fig. 6B-97). Float drop is correct when distance between air horn, with gasket installed, and float is $2\frac{1}{4}''$.

2. If adjustment is necessary, bend float tang toward float needle seat to lessen drop and away from seat to increase drop (See Fig. 6B-96).

COMPLETION OF CARBURETOR ASSEMBLY

1. Install air horn assembly on body being careful to guide pump plunger into well. Check to see that floats are lined up correctly so that they will not bend.

2. Align air horn and gasket to screw holes in body.

3. Start 13 air horn attaching screws.

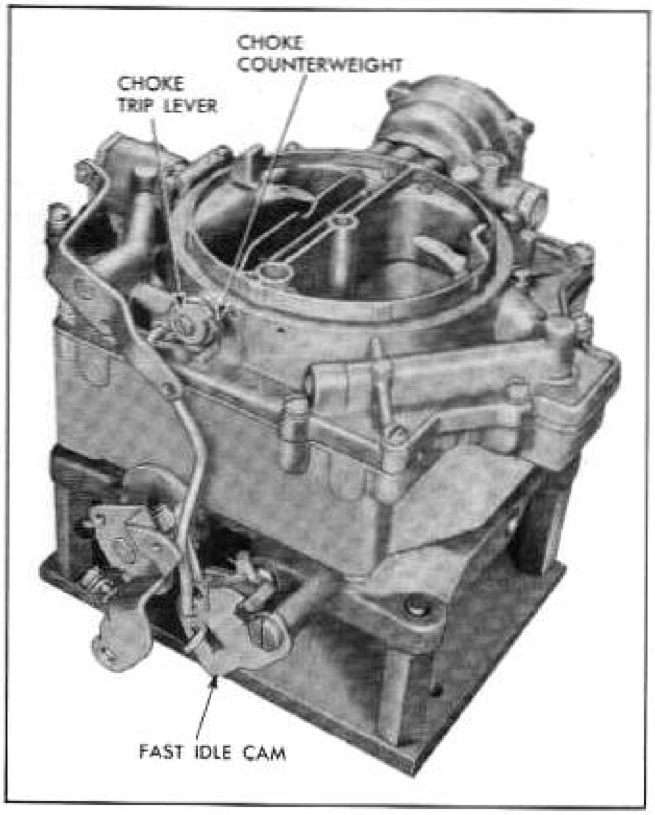


Fig. 6B-98 Counterweight, Trip Level and Fast Idle Cam Installed

4. Tighten evenly and securely all inner attaching screws, then tighten outer screws.

5. Install choke housing and gasket to air horn.

6. Install choke shaft, fitting piston into choke piston housing. Rotate clockwise to check for fit of piston in bore.

7. Slide choke valve through shaft so letters "R.P." are facing up when choke valve is closed.

8. Just start, but do not tighten, choke valve attaching screws.

9. Install choke counterweight, trip lever and fast idle cam (Fig. 6B-98).

10. To provide correct fit of choke valve in air horn push lightly on choke shaft to obtain a minimum clearance of .020" between trip lever and counterweight (Fig. 6B-99). While holding in this position, tighten choke valve retaining screws.

11. Place baffle plate in position in choke housing.

12. Install thermostat cover, coil assembly, gasket, retaining screws and retainers. Leave screws loose.

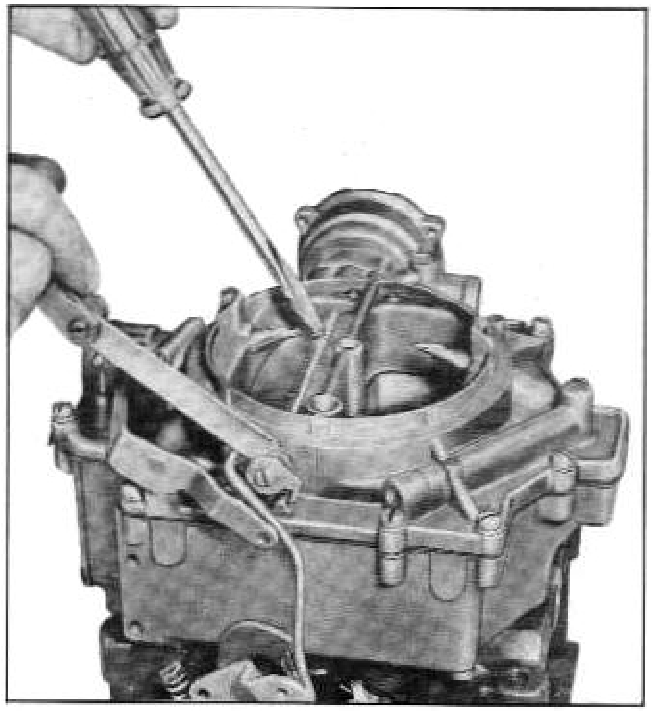


Fig. 6B-99 Spacing the Choke Valve

13. Rotate cover counterclockwise until the coil picks up the tang, set choke at "Index". Tighten retaining screws.

14. Install pump rod to pump rocker arm and throttle lever with clip and horse shoe retainer.

15. Install fuel inlet fitting, screen, and gasket in air horn.

ADJUSTMENTS

The float adjustments have been described and made during assembly of the air horn. The remaining adjustments should be made in the following sequence:

1. Pump Rod Adjustment
2. Choke Rod Adjustment
3. Choke Unloader Adjustment
4. Secondary Throttle Lockout Adjustment
5. Secondary Throttle Contour Clearance Adjustment
6. Idle Vent Valve Adjustment.

PUMP ROD ADJUSTMENT

1. Back off idle screw so that throttle valves are completely closed.

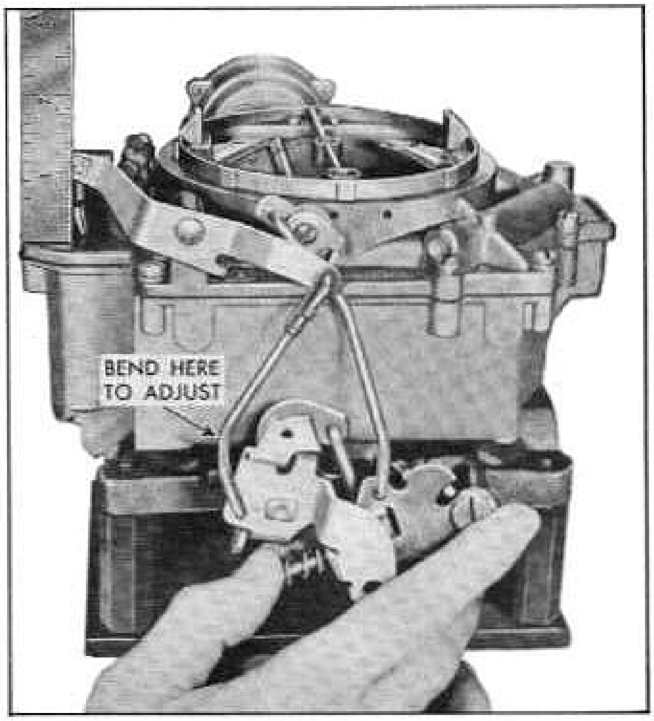


Fig. 6B-100 Checking Pump Plunger Adjustment

2. Hold throttle closed and measure from top of air horn casting to bottom of pump plunger rod (Fig. 6B-100). Distance should be $^{31}/_{32}$". Bend pump rod where shown to correct.

3. Operate pump shaft several times to assure free movement.

CHOKE ROD ADJUSTMENT

1. Turn idle screw in until it just contacts second step and is against shoulder of high step of fast idle cam.

2. Be certain that choke trip lever is in contact with choke counterweight lever.

3. There should be .054" clearance (gauge KMO-480-A) between top edge of choke valve and dividing wall in the air horn (Fig. 6B-101). Bend choke rod at lower angle if necessary to adjust.

CHOKE UNLOADER ADJUSTMENT

1. With choke trip lever contacting choke counterweight lever, hold throttle valve in the wide open position.

2. There should now be a clearance of .115" (gauge J-6178) between top of choke valve and the dividing wall of the air horn (Fig. 6B-102). Bend tang on the fast idle cam to adjust as necessary.

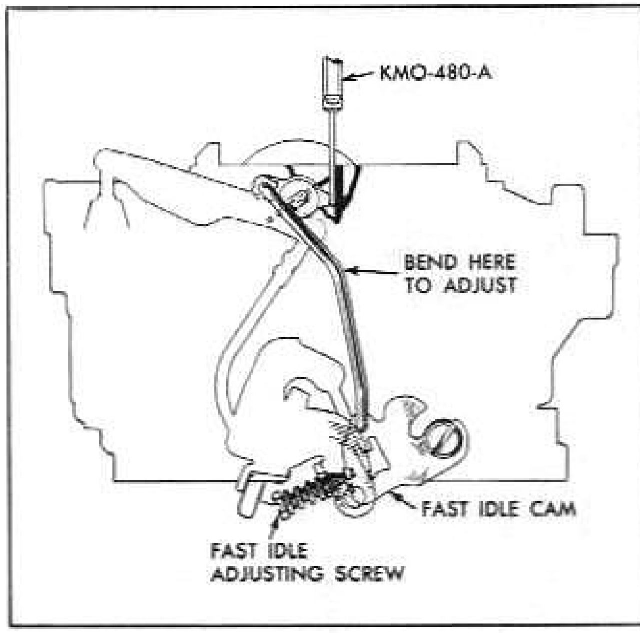


Fig. 6B-101 Checking Choke Rod Adjustment

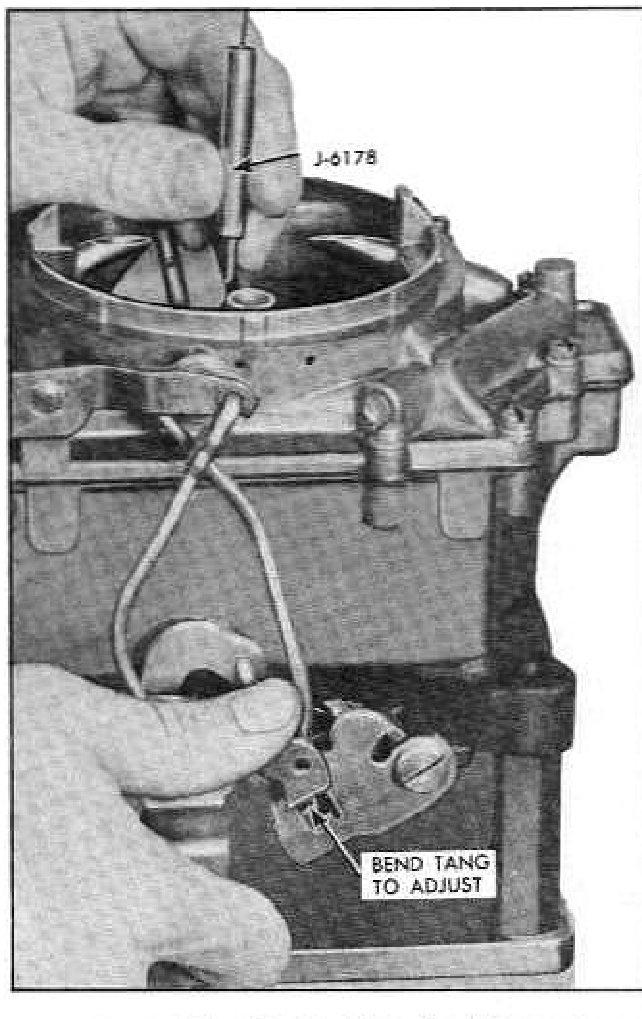


Fig. 6B-102 Checking Unloader Adjustment

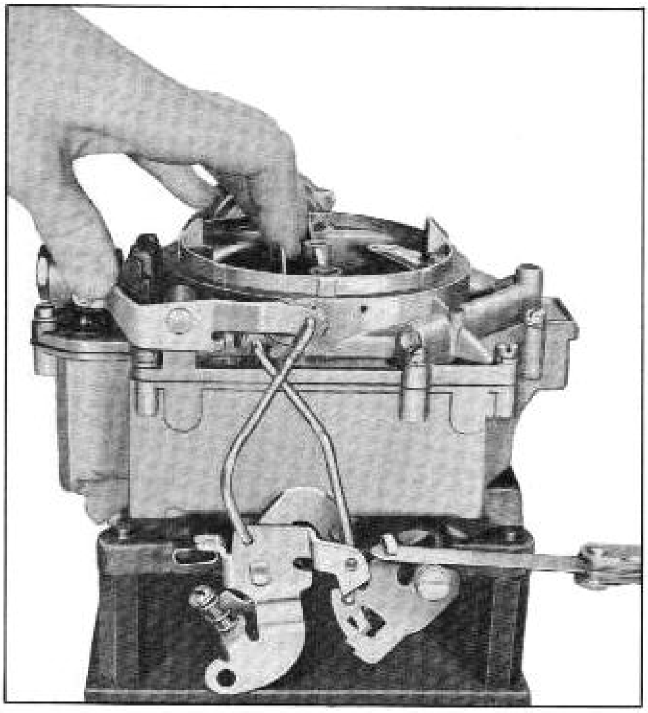


Fig. 6B-103 Checking Secondary Throttle Contour Clearance

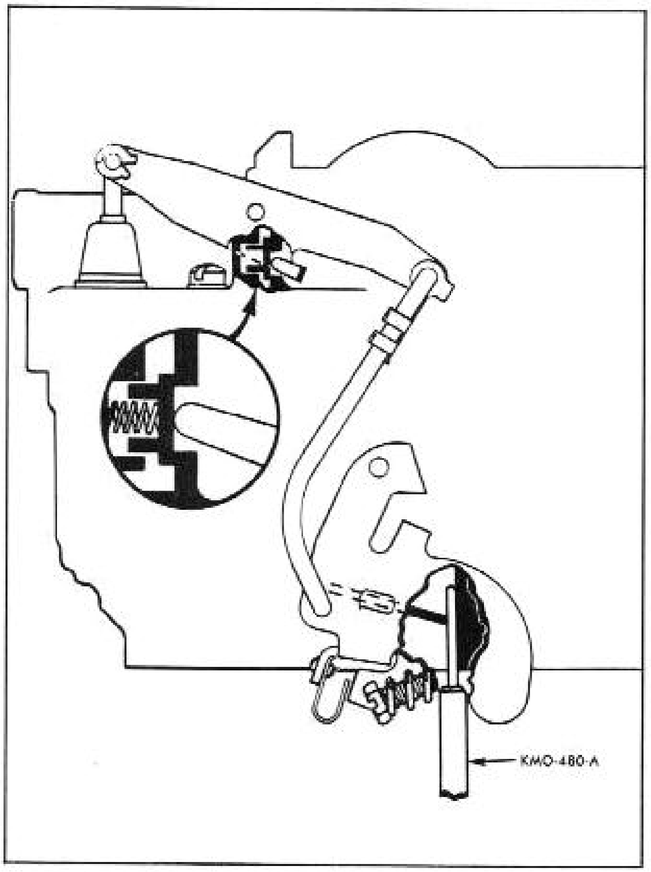


Fig. 6B-104 Checking Closing of Idle Vent Valve

SECONDARY THROTTLE LOCKOUT ADJUSTMENT

1. With the choke valve closed so that secondary lockout tang is in the fast idle cam slot, check clearance between fast idle cam and tang. The clearance should be .015".

2. Bend tang horizontally to adjust.

SECONDARY THROTTLE CONTOUR CLEARANCE ADJUSTMENT

1. With choke valve held wide open and the fast idle cam and secondary lockout lever positioned as shown in Fig. 6B-103 there should be a clearance of .015" between the cam and the tang.

2. Bend tang vertically to adjust.

IDLE VENT VALVE ADJUSTMENT

With vent valve closed and operating tang against face of valve there should be .054" (KMO 480-A) clearance between lower edge of primary throttle valve and inner wall of bore opposite idle adjusting screw (Fig. 6B-104).

Adjust by bending operating tang.

TROUBLE DIAGNOSIS AND TESTING

Excessive leaness during cold engine operation may indicate that the secondary throttle valves are partially open. Check the secondary lockout and check for too rapid choke opening.

In all other respects 4-jet trouble diagnosis is the same as on the 2-jet carburetor. See page 6B-34 for 2-jet trouble diagnosis.

ROCHESTER 4GC 4-JET CARBURETOR ADJUSTMENT SPECIFICATIONS

FLOAT LEVEL ADJUSTMENT – Vertical distance between surface of air horn and center of float is $1\frac{19}{32}$" (J-6179) for both primary and secondary.

FLOAT DROP–With air horn in operating position, distance between air horn and bottom of float is $2\frac{1}{4}$". No special gauge necessary, use scale.

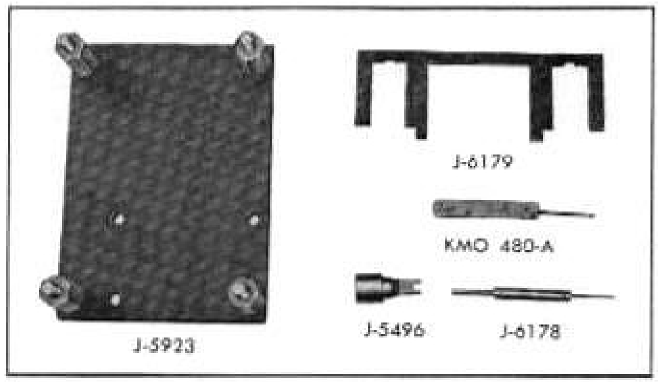
PUMP ROD–Distance between air horn casting and bottom of pump plunger $\frac{31}{32}$".

CHOKE ROD—With idle screw on second step and against shoulder of high step of fast idle cam there is .054″ clearance (KMO-480A) between top edge of choke valve and dividing wall in air horn.

UNLOADER—Distance between upper edge of choke valve and dividing wall in air horn is .115″ (J-6178).

HOT IDLE SPEED .... 450-470 RPM

CHOKE—Butterfly Type—Primary Side Only—Set on Index.



ROCHESTER 4-JET SPECIAL TOOLS

J-5496	Bending Tool
J-5923	Holding Stand
J-6178	Choke Unloader Gauge
J-6179	Float Level Gauge
KMO 480-A	Choke Rod Gauge