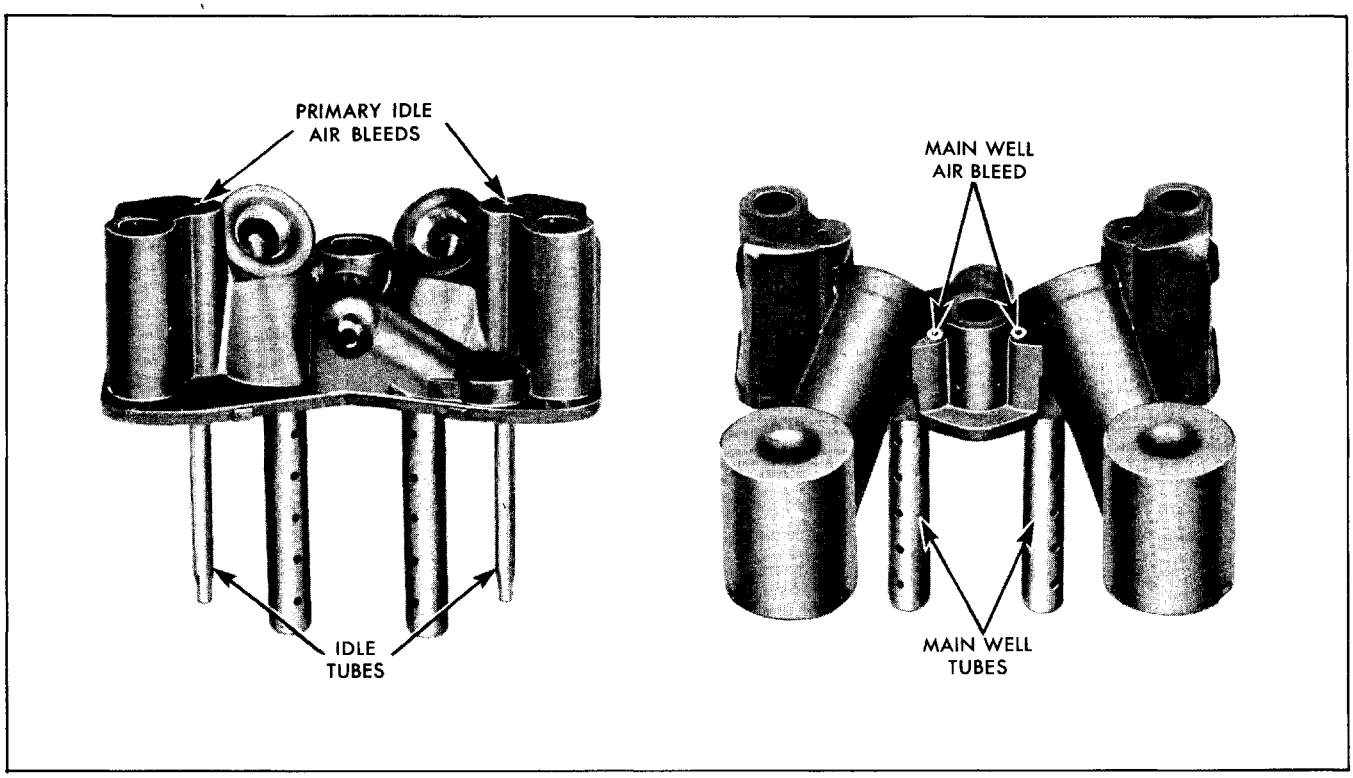


Fig. 6B-72 Cluster Casting

DESCRIPTION

ROCHESTER 2GC 2-JET CARBURETOR

The Rochester 2GC Carburetor incorporates the calibrated cluster design.

The cluster casting (Fig. 6B-72) is the heart of the carburetor; it embodies the small or secondary venturi, the high speed passages, the main well tubes and nozzles, the idle tubes, and the calibrated air bleeds for both the low and high speed metering systems, as well as the accelerating 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 spill-over during hot idle periods of operation and during the time the hot engine is not operating.

An external vent with a protective cover to keep out dirt and other foreign matter is located in the center of the bowl cover to provide adequate venting of the unit under all types of operating conditions. No internal tube venting methods are used.

The Model 2GC Carburetor is of side bowl construction. It is designed, however, with fuel supply jets and passages submerged below the liquid level to provide efficient engine operation under all driving conditions.

Six "Systems" are utilized in the Rochester 2GC carburetor. They are:

Float System
Idle System
Part Throttle System
Power System
Pump System
Choke System

These systems are described and illustrated schematically in the following text. Figures 6B-73, 74, 75 and 76 illustrate the passages as they actually appear to the carburetor mechanic.

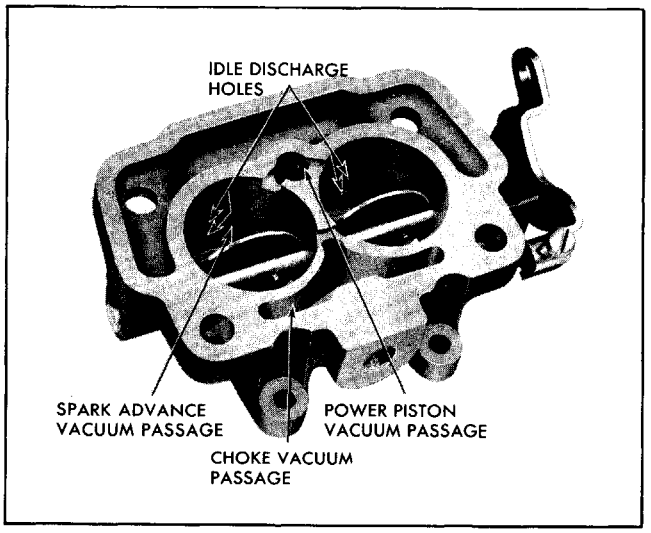


Fig. 6B-73 Passage Identification—Throttle Body

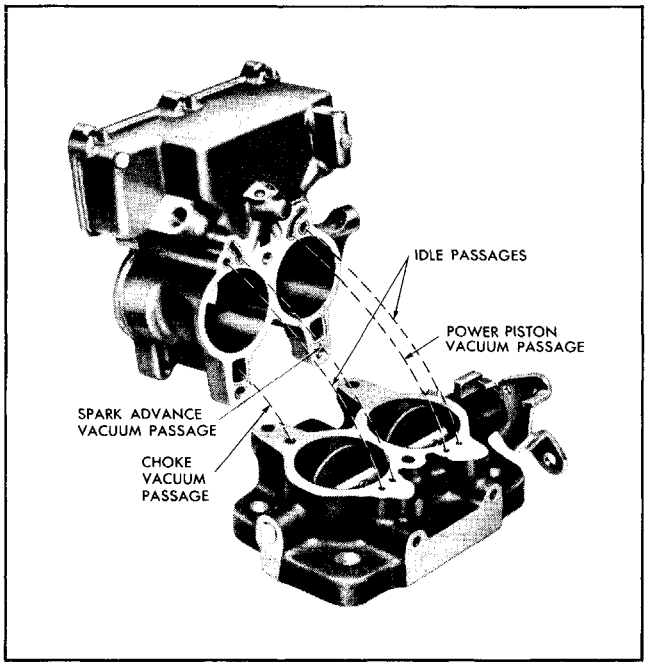


Fig. 6B-74 Passage Identification—Thottle Body to Bowl

FLOAT SYSTEM (FIG. 6B-77)

The float system controls the level of fuel in the carburetor bowl.

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

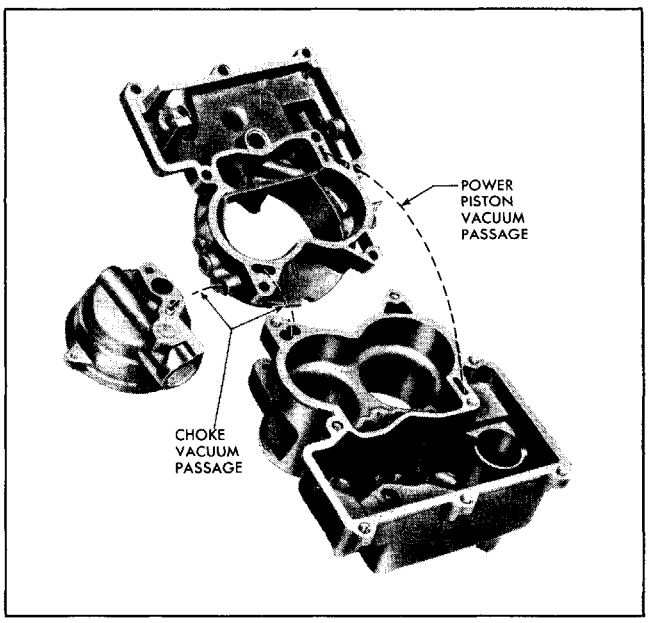


Fig. 6B-75 Passage Identification—Bowl to Cover to Choke Housing

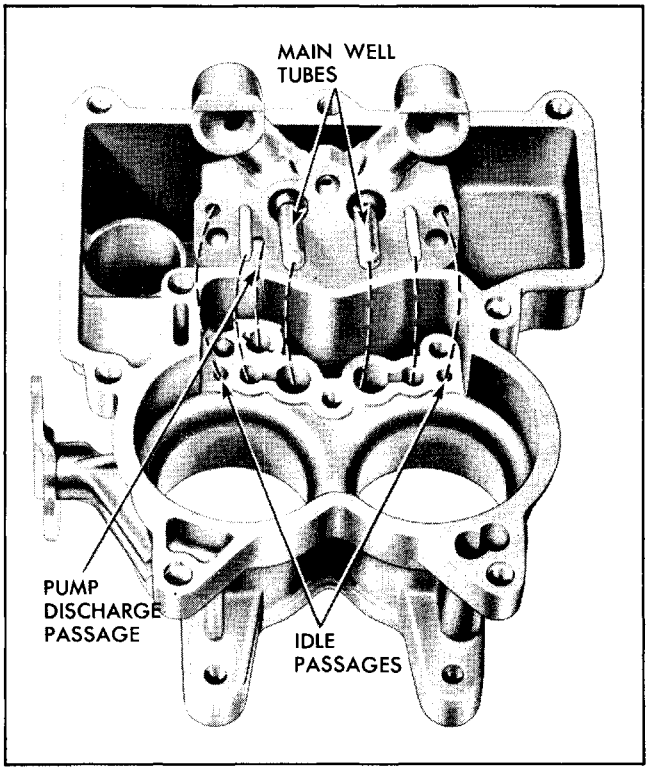


Fig. 6B-76 Passage Identification—Bowl to Cluster Assembly

The float tang prevents the float from traveling too far downward. A float needle pull clip connecting the float arm to the needle valve keeps the needle from sticking closed in the seat.

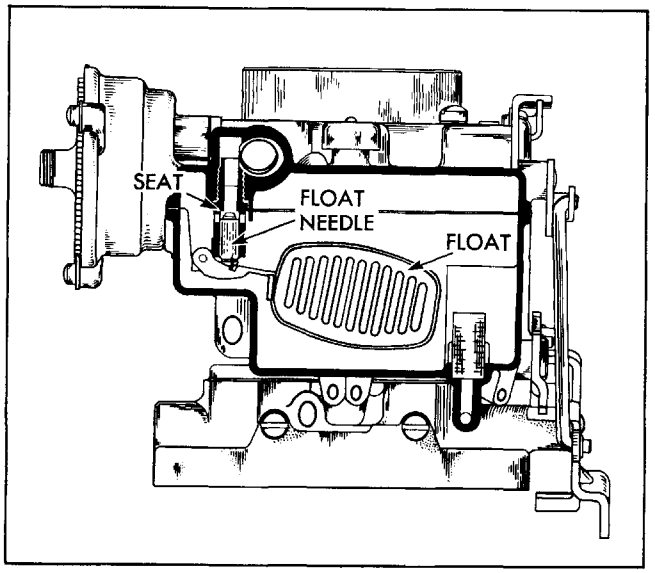


Fig. 6B-77 Float System

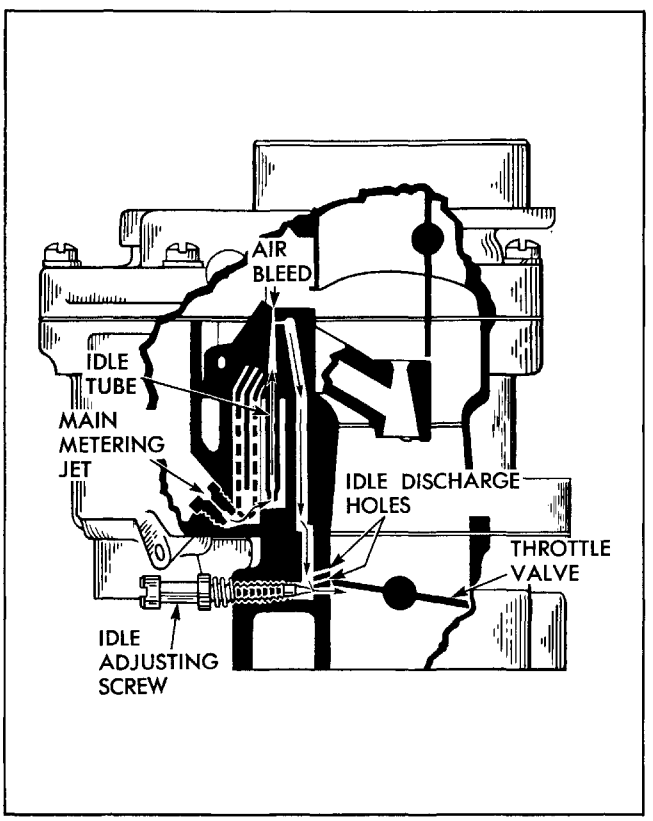


Fig. 6B-78 Idle System

IDLE SYSTEM (FIG. 6B-78)

The idle system consists of the idle tubes, idle passages, idle air bleeds, idle adjustment needles and idle discharge holes.

In the curb idle speed position, the throttle valve is cracked slightly open, allowing a small amount of air to pass through between the wall of the carburetor bore and the edge of the throttle valve.

The idle needle hole is in the high vacuum area below the throttle valve, while the fuel bowl is vented to atmospheric pressure. Vacuum can be called a lack of pressure, so a high vacuum area can be spoken of as an area of low pressure. Thus it can be said that there is considerable *pressure difference* between the normal *atmospheric pressure on the fuel* in the bowl and the *low pressure* (or high vacuum) *at the idle needle hole.*

The fuel and fuel-air mixture will be drawn from the highest pressure point to the lowest pressure point, and will flow from the fuel bowl to the manifold in the following manner:

Fuel is drawn from the fuel bowl through the main metering jets into the main well. It is metered by the idle fuel metering orifice at the lower tip of the idle tube and travels up the idle tube. When the fuel reaches the top of the idle tube, it mixes with air drawn through the primary idle air bleed (the larger of the two holes on top of the cluster) and the mixture moves through the horizontal idle passage.

The smaller of the two holes on top of the cluster is the secondary idle air bleed, through which more air enters and combines with the mixture.

The fuel-air mixture next moves down the vertical idle passage to the three idle discharge holes located just above the throttle valve. Through these holes further air is added to the mixture, which then passes through the idle needle hole.

In addition to this mixture of fuel and air, there is air entering the bore through the slightly open throttle valve; for smooth operation, the air from the bore and the fuel-air mixture from the idle needle hole must combine to form the correct final mixture for curb idle engine speed.

The position of the idle adjustment needle governs the amount of fuel-air mixture admitted to the carburetor bore.

Except for this variable at the idle adjustment needle, the idle system is specifically calibrated for low engine speeds.

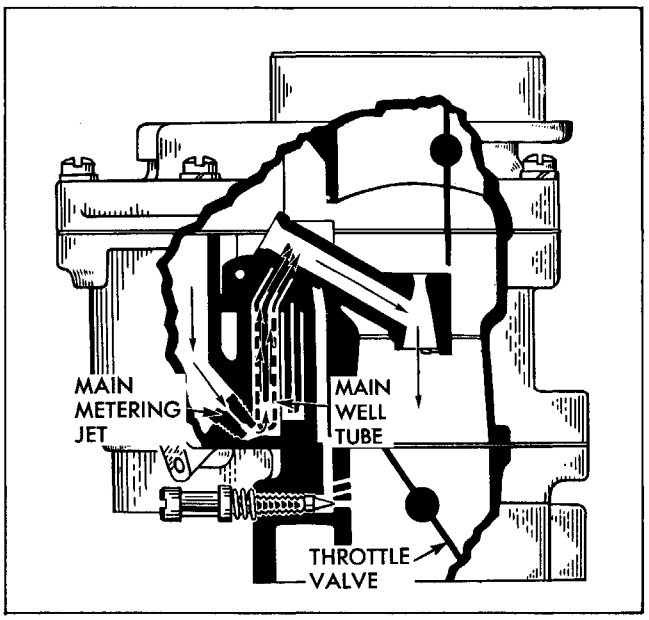


Fig. 6B-79 Part Throttle System

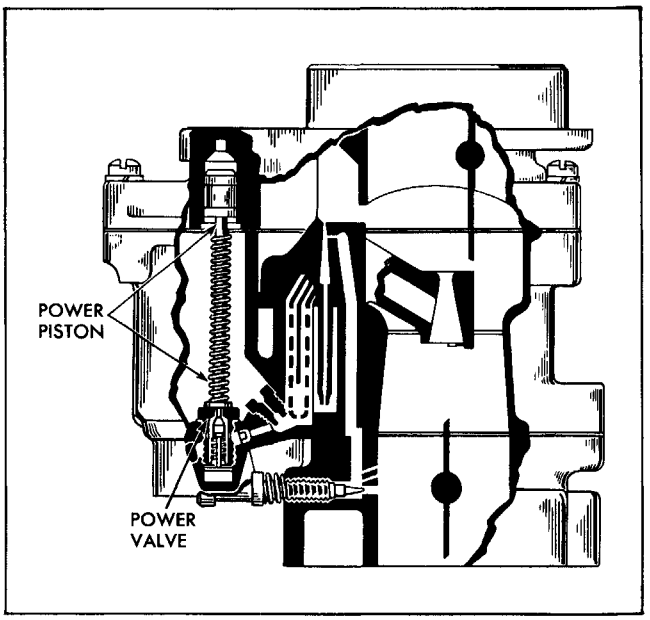


Fig. 6B-80 Power System

PART THROTTLE SYSTEM (FIG. 6B-79)

As the throttle valve is opened, there is a change in pressure differential points.

Opening of the valve progressively exposes the three idle discharge holes to manifold vacuum and the air stream with the result that they deliver additional fuel-air mixture for fast idle engine requirements.

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

Since the low pressure point is now in the small venturi area, fuel and fuel-air 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 jet into the main well, where it rises in the main well tube. Air entering through the main well air bleeds in the cluster is mixed with the fuel through the main well tube vents. The mixture continues up the main well tube through the nozzle, where more air is added. The mixture flows through the high speed passage to the small venturi, mixes with additional air and moves on to the bore of the carburetor, through the intake manifold, and into the cylinder as a final mixture for part throttle operation.

Permanent jets and air bleeds calibrate the main metering system for efficient part throttle operation.

POWER SYSTEM (FIG. 6B-80)

The Power System provides additional fuel for heavy load and high speed engine requirements.

A spring loaded power piston, controlled by vacuum, regulates the power valve to supply additional fuel according to engine speed and load.

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

During idle and part throttle operation, the manifold vacuum in the channel is normally high enough to hold the power piston in the fully raised position against the tension of the spring. As the manifold vacuum drops with load, the calibrated spring forces the piston down against the power valve, to open it and allow additional fuel flow through the calibrated power restrictions into the main wells.

A two-step valve allows a gradual increase in fuel flow as the power valve is opened; at full throttle position, the power valve is fully opened to permit maximum calibrated fuel flow from the power system.

As the load decreases, manifold vacuum increases. The increasing vacuum pull on the piston gradually overcomes the spring tension and returns the power piston to its original raised position, with the valve fully closed.

PUMP SYSTEM (FIG. 6B-81)

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.

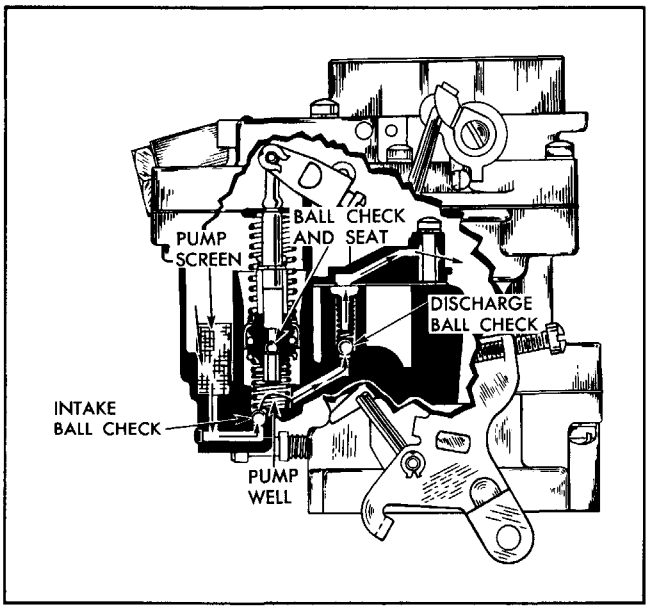


Fig. 6B-81 Accelerator Pump System

The fuel passes from the bowl through the pump screen to remove any dirt, then is drawn past the 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 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.

CHOKE SYSTEM

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 bore of the carburetor to manifold vacuum while restricting the intake of air, thus drawing into the engine the required rich mixture.

The Model 2GC Carburetor employs the newly designed Rochester multistage Balanced Piston Automatic Choke System, to insure proper starting and driving during cold weather operation.

The choke system includes a thermostatic coil, housing, choke piston, choke valve, and fast idle cam and linkage. It is controlled by a combination of intake manifold vacuum, air velocity against the offset choke valve, atmospheric temperature and hot air from choke stove.

The thermostatic coil, which is attached to the choke valve shaft acts to hold the choke valve closed when the engine is cold.

The offset choke valve is first slightly opened by a combination of manifold vacuum on the choke piston and air velocity against the offset choke valve.

In the first choking stage, manifold vacuum is applied to the choke piston through a vacuum slot in the housing. This vacuum pulls the piston to help open the choke valve against the thermostatic coil torque. The piston moves in the housing to a point where the piston blocks the vacuum slot; at this point there is very little vacuum pull on the piston and further choke valve opening is primarily the function of the thermostatic coil.

In the second stage, the coil is gradually heated by air drawn from the exhaust manifold "stove", through the center of the thermostatic coil cover, then through a calibrated vacuum by-pass into the main vacuum passage. The calibrated restriction of the vacuum by-pass slows the flow of air through the coil, so that the heating is gradual.

The baffle plates on both sides of the coil serve to

distribute the heat from its entering point at the center of the coil throughout the choke housing, to prevent a "hot spot" in the coil center.

The coil "relaxes" as it is heated and the piston moves in the housing until the shoulder of the "slabbed" portion uncovers the edge of the vacuum slot. One side of the piston is "slabbed" or cut away, so that vacuum from the slot can draw air directly from the choke housing, thus allowing a greater flow of heat through the coil for the rest of the opening operation.

Finally, the large groove completely around the the piston uncovers an opening in the choke housing leading to the head of the piston. Vacuum is transmitted from the vacuum slot through the groove in the piston, through the passage in the housing to the piston head, where it helps to pull the piston the remaining distance and open the choke valve fully.

Thus the stages can be listed as follows:

1. Rapid opening to the calibrated point primarily by vacuum until the piston covers the vacuum slot.

2. Gradual increase in opening of the choke valve as the calibrated vacuum by-pass restricts the flow of air through the coil from the exhaust manifold "stove".

3. Increased rate of opening as the vacuum slot is uncovered by the open section of the piston and the air flow rate thru the coil is increased.

4. Final opening action as the piston groove introduces vacuum to a slot in the housing leading to the piston head, so that the piston is rapidly drawn the remaining distance.

With this type of system, more heat passes through the thermostatic coil; the coil gets relatively hotter than in conventional chokes and the choke will remain open longer when the hot engine is shut off. Thus hot starting is much improved.

The thermostatic coil controls the majority of the choking action. Low manifold vacuum (during acceleration or load) cannot allow the choke to partially close as often happens in the conventional vacuum controlled choke system.

The choke system uses a conventional fast idle cam and linkage to maintain sufficient engine speed for cold operation.

The carburetor is also equipped with a mechanical "unloader" to eliminate the possibility of the choke closing during heavy load or acceleration.

At wide open throttle, the throttle lever lifts a tang on the fast idle cam and restricts the choke from closing past a certain point. This feature is particularly useful in preventing excess choking when the engine is cranked with the throttle wide open.

In addition, the unloader also eliminates the possibility of the choke sticking closed, or closing during heavy load or acceleration due to low vacuum on the piston.

ADJUSTMENTS ON CAR

ROCHESTER 2GC CARBURETOR

IDLE SPEED AND MIXTURE ADJUSTMENT

With the engine at operating temperature, (choke entirely off), adjust idle speed to 390-410 RPM for Hydra-Matic equipped cars, and 450-475 RPM for Synchro-Mesh equipped cars.

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.

AUTOMATIC CHOKE ADJUSTMENT

Choke cover setting is clearly indicated by index markings on housing and air horn casting. Normal setting is at center index mark. With choke cover set in this position, choke valve should be just closed at 75°F (engine and carburetor must be cooled to room temperature).

FAST IDLE CAM INDEX ADJUSTMENT

No adjustment of fast idle speed is provided since the steps of the fast idle cam are correctly proportioned to give the correct speed stops above normal idle speed. It is necessary, however, to have the correct relationship between fast idle cam position and choke valve position. To check and adjust this setting, proceed as follows:

1. Place end of idle screw on the next to highest step of the fast idle cam.

Small end of tool J-5920 should slide easily between upper edge of choke valve and bore of carburetor, as shown in Fig. 6B-82.

2. If necessary, bend choke trip lever tang, using tool J-5496, until prescribed clearance as measured in Step 1 is obtained.

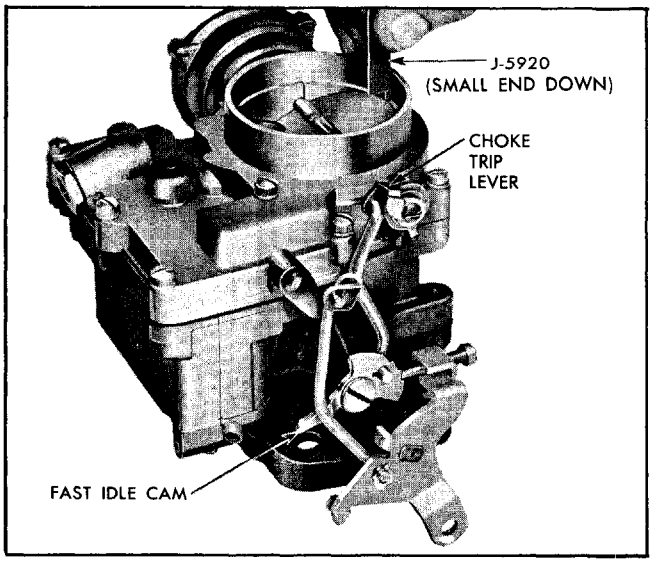


Fig. 6B-82 Checking Fast Idle Adjustment

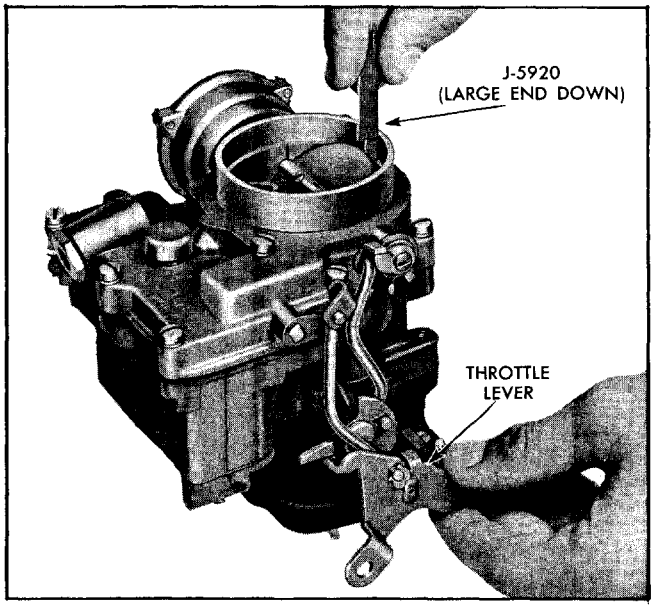


Fig. 6B-83 Checking Unloader Adjustment

UNLOADER ADJUSTMENT

Check and make any necessary correction of unloader adjustment as follows:

1. Place throttle in wide open position.

2. Large end of tool J-5920 should slide freely between upper edge of choke valve and bore of carburetor as shown in Fig. 6B-83.

3. If necessary, bend tang of throttle lever with tool J-5496, as shown in Fig. 6B-84 to obtain necessary clearance.

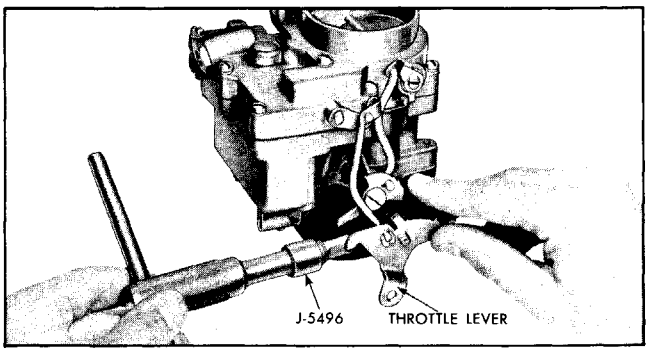


Fig. 6B-84 Adjusting Unloader with J-5496

FLOAT ADJUSTMENT

To check float adjustment, proceed as follows:

1. Disconnect fuel line at fuel filter and manifold stove hot air tube at carburetor.

2. Loosen hex nut fastening heat suction tube to choke housing.

3. Remove retaining screw at end of choke shaft and carefully pry off choke trip lever, fast idle link and lever.

4. Remove eight screws from bowl cover and remove bowl cover and air horn assembly from carburetor bowl.

5. Adjust floats as outlined in Step 10, page 6B–51.

PERIODIC SERVICE ROCHESTER CARBURETOR

There are no periodic services required on the Rochester 2GC Carburetor.

OVERHAUL AND ADJUSTMENTS ROCHESTER MODEL 2GC CARBURETOR

Flooding, stumble on acceleration and other performance complaints are, in many instances, caused by the presence of dirt, water or other foreign matter in the carburetor. To aid in diagnosing the cause of the complaint, the carburetor should be carefully removed from the engine without draining the fuel from the bowl. The contents of the fuel bowl may then be examined for contamination as the carburetor is disassembled.

The following is a step-by-step sequence by which the Rochester 2GC Carburetor may be completely disassembled and reassembled. Adjustments may be

made and various parts of the carburetor may be serviced without completely disassembling the entire unit.

DISASSEMBLY

DISASSEMBLY OF BOWL COVER

1. Remove the three choke cover attaching screws and retainers, then remove choke cover and coil assembly from carburetor (Fig. 6B-85).

2. Remove choke cover gasket and baffle plate.

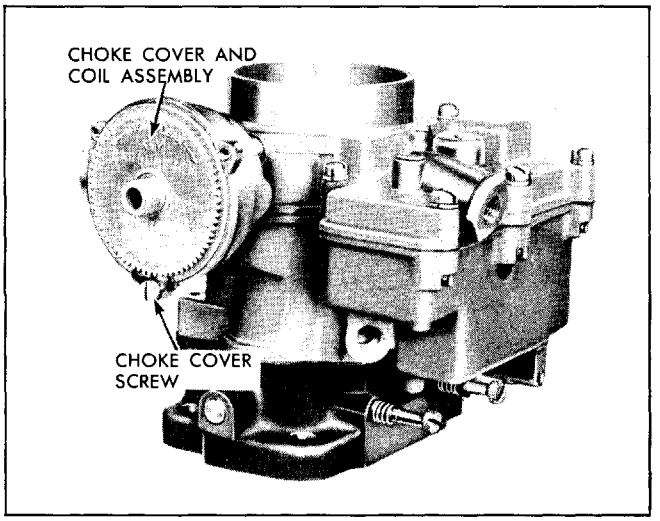


Fig. 6B-85 Removing or Replacing Choke Cover Assembly

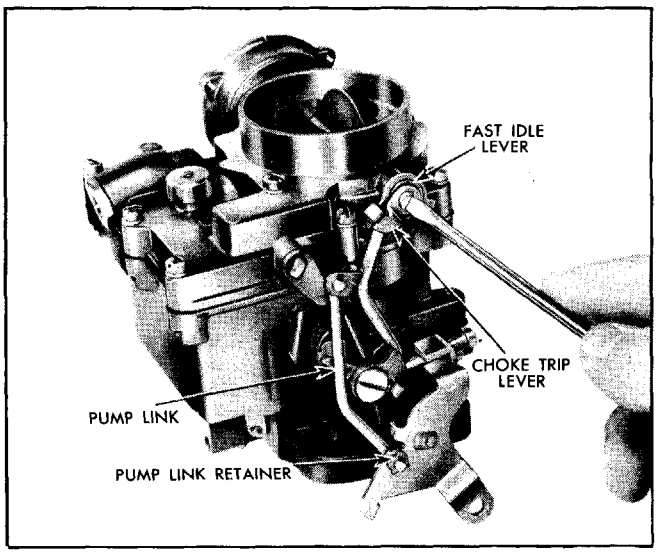


Fig. 6B-86 Removing or Replacing Choke Trip Lever

3. Remove retaining screw (Fig 6B-86) at end of choke shaft and carefully pry off choke trip lever, and fast idle link and lever. Lever can be removed from

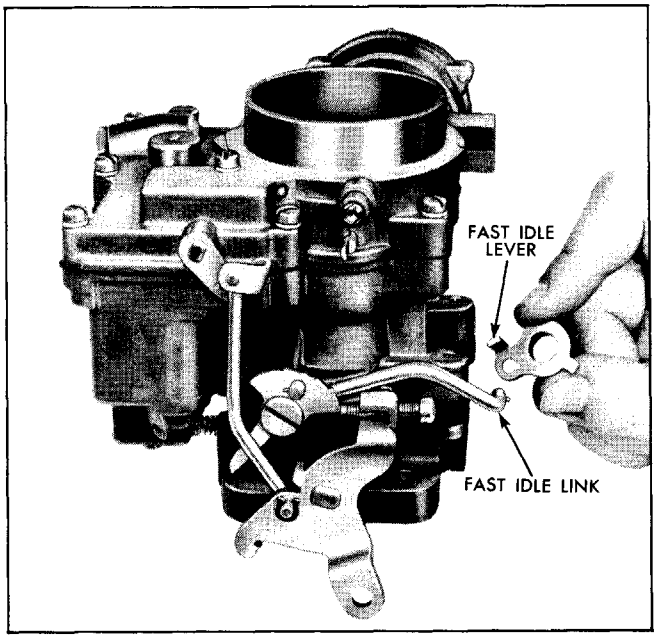


Fig. 6B-87 Removing or Replacing Fast Idle Lever

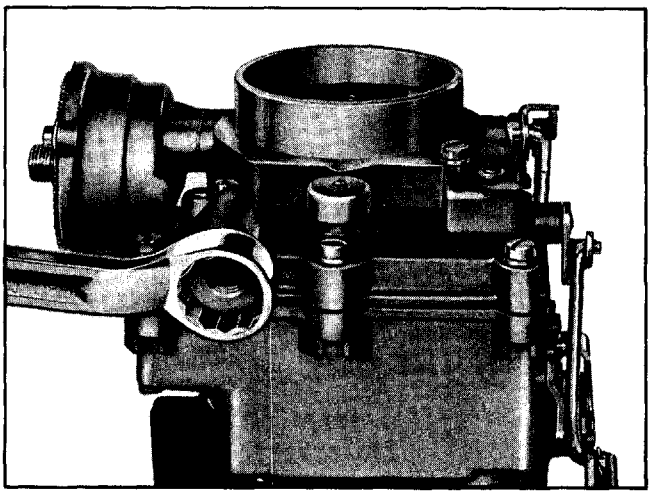


Fig. 6B-88 Removing or Replacing Filter Screen Retainer Nut

link by turning until slot in lever will pass over tang on link (Fig. 6B-87). Rotate link until it will slip out through slot in fast idle cam.

4. Remove fuel filter.

5. Remove filter screen retainer nut and gasket with ¾" wrench and remove the screen (Fig. 6B-88).

6. Disconnect pump link from throttle lever by removing retainer. Link can be removed completely by rotating until it clears pump lever (Fig. 6B-86).

7. Remove eight cover screws and lift cover from bowl (Fig. 6B-89).

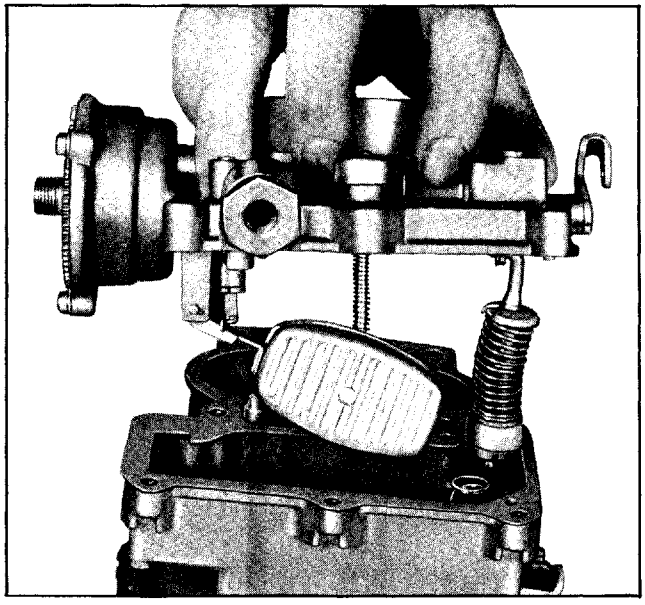


Fig. 6B-89 Removing or Replacing Bowl Cover

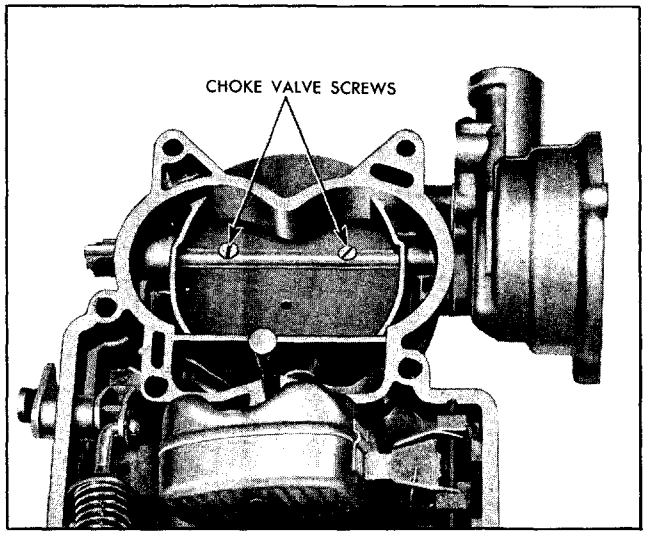


Fig. 68-90 Location of Choke Valve Attaching Screws

8. Remove two choke valve screws, then remove choke valve (Fig. 6B- 90).

9. Rotate choke shaft counterclockwise to free choke piston from housing, then pull piston and choke shaft from carburetor (Fig. 6B-91).

10. Remove choke piston from shaft by jogging assembly, with piston pin hole downward, until pin falls out (Fig. 6B-92).

11. Remove two choke housing attaching screws. Choke housing and gasket may now be removed from air horn assembly (Fig. 6B-93).

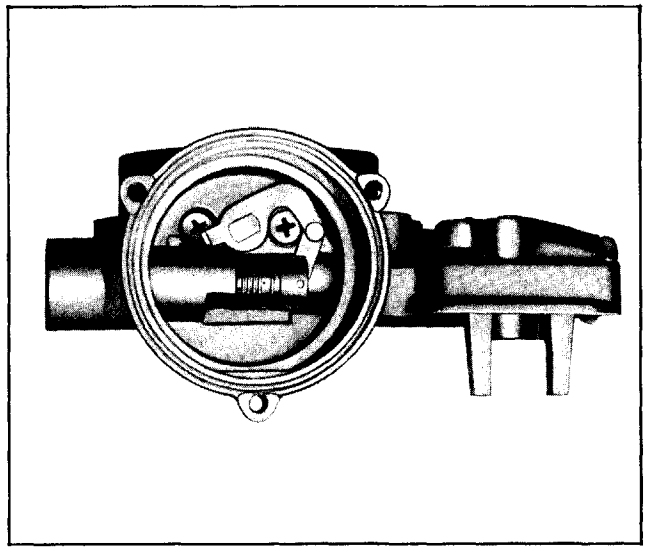


Fig. 6B-91 Removing or Replacing Choke Piston

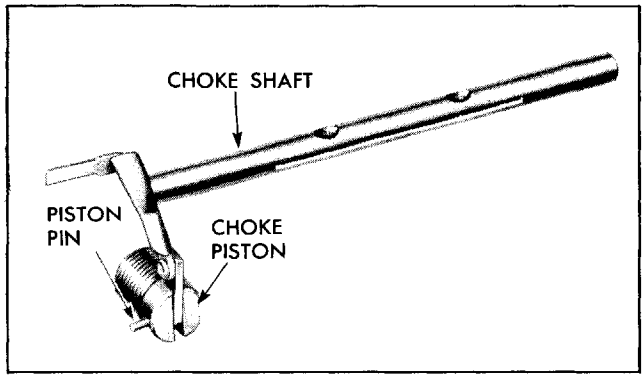


Fig. 6B-92 Choke Shaft and Piston Assembly

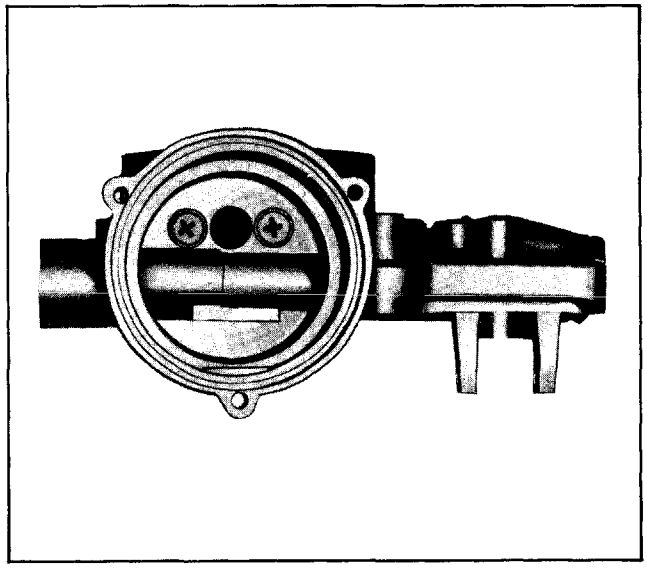


Fig. 6B-93 Location of Choke Housing Attaching Screws

12. Place upended cover on flat surface. Remove float hinge pin and lift float assembly from cover (Fig. 6B-94). Float needle may now be removed from float.

13. Remove float needle seat and gasket with wide blade screw driver (Fig. 6B-95).

14. Remove power piston (Fig. 6B-95).

15. Remove retainer on pump plunger shaft, remove plunger assembly from pump arm (Fig. 6B-95). The pump lever and shaft may be removed by loosening set screw on inner arm and removing outer lever and shaft (Fig. 6B-96).

16. The cover gasket may now be removed.

NOTE: The pump plunger may be further disassembled by compressing the spring and removing the retainer.

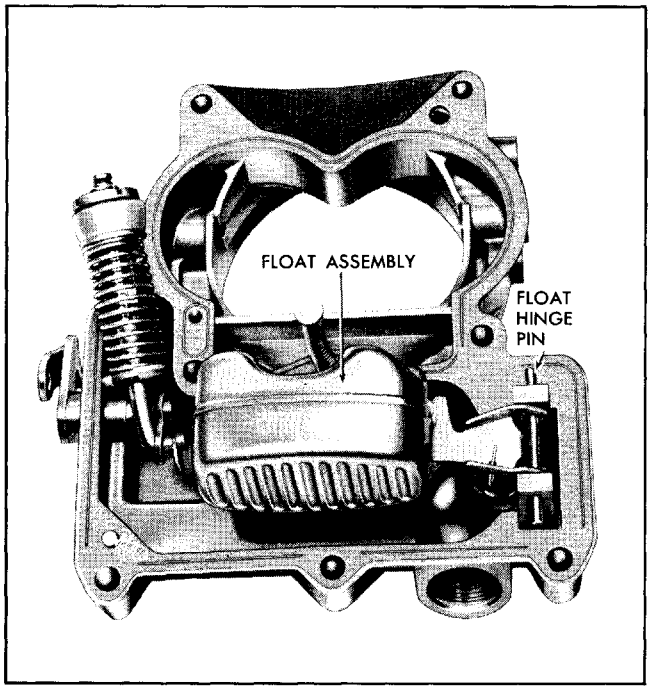


Fig 6B-94 Float to Bowl Cover Construction

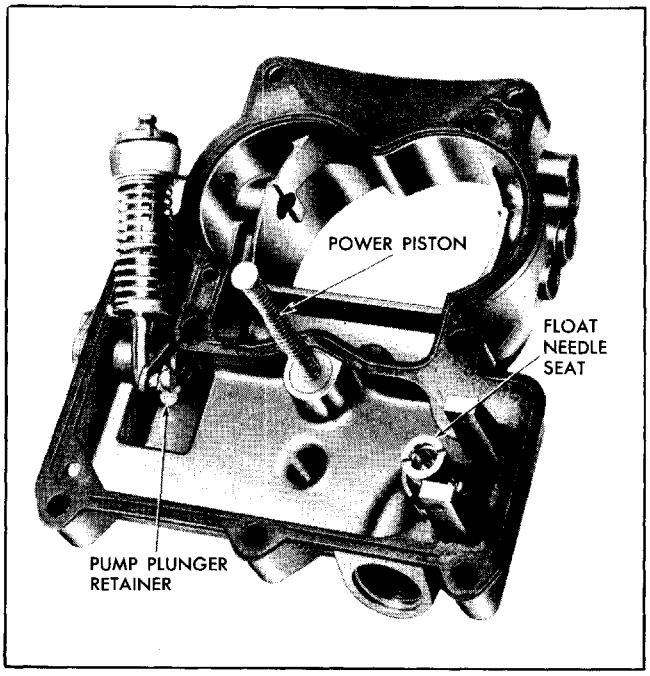


Fig. 6B-95 Power Piston and Pump Plunger

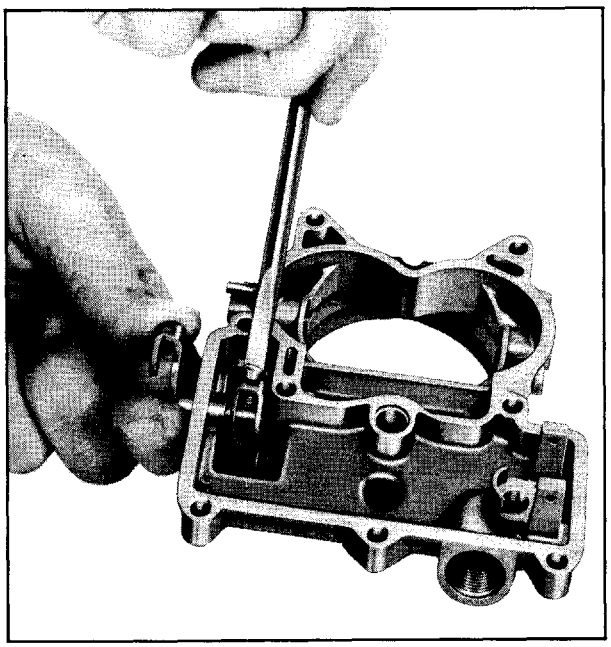


Fig. 6B-96 Removing or Replacing Pump Lever

DISASSEMBLY OF BOWL

1. Remove pump inlet filter screen and pump plunger return spring, remove check ball from bottom of pump well (Fig. 6B-97).

2. Remove main metering jets and power valve (Fig. 6B-98).

3. Remove three screws on top of cluster, after which cluster and gasket may be removed (Fig. 6B-99).

4. Using a pair of long nose pliers, remove the pump discharge spring retainer (Fig. 6B-100). Then the spring and check ball may also be removed.

5. Upend carburetor and remove three large bowl to throttle body attaching screws. Throttle body and gasket may now be removed (Fig. 6B-101).

6. Remove fast idle cam (Fig. 6B-102).

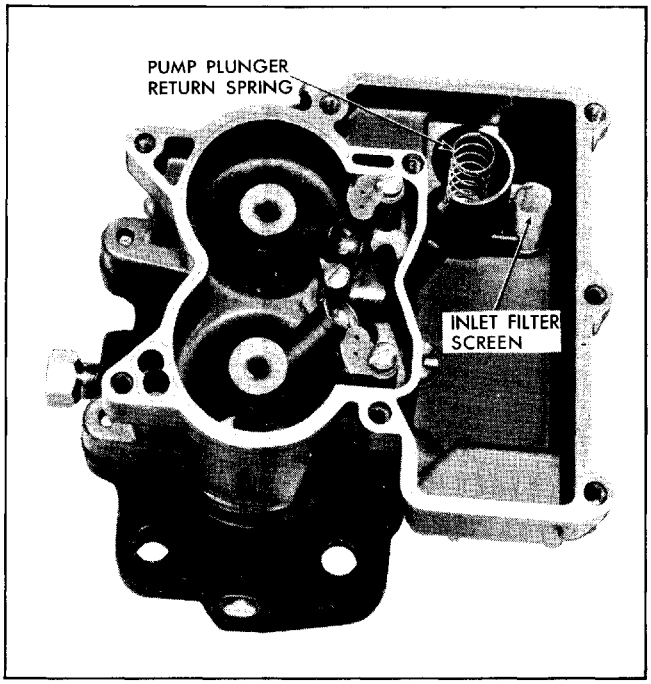


Fig. 6B-97 Pump Plunger Return Spring and Inlet Filter Screen

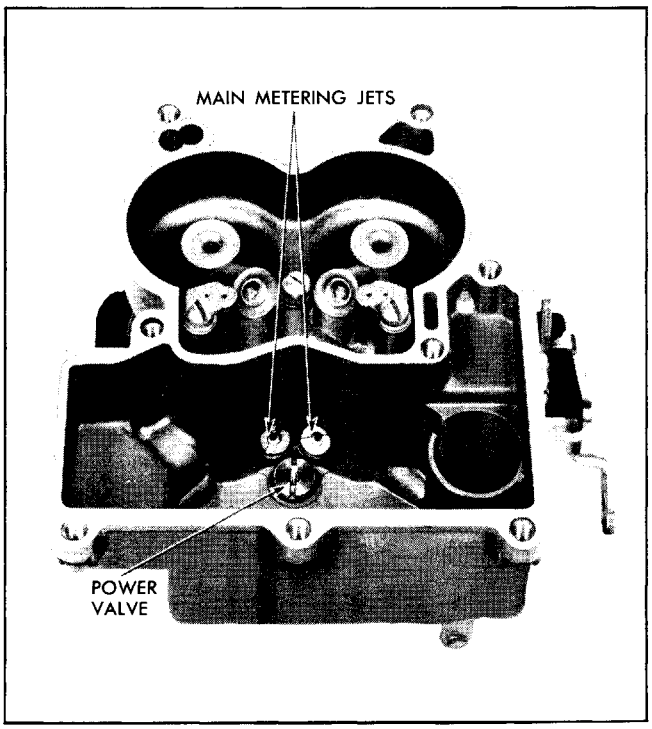


Fig. 6B-98 Main Metering Jets and Power Valve

DISASSEMBLY OF THROTTLE BODY

1. Remove idle adjusting needles and springs.
2. Remove idle screw from throttle lever.

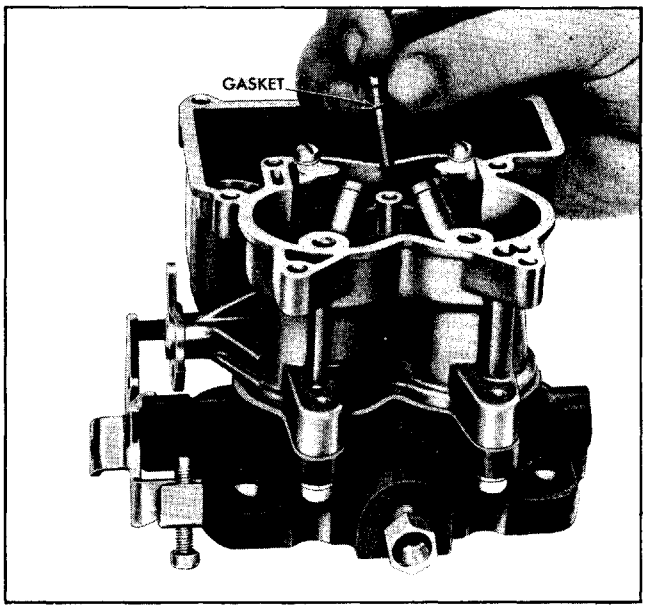


Fig. 6B-99 Removing or Replacing Cluster Assembly

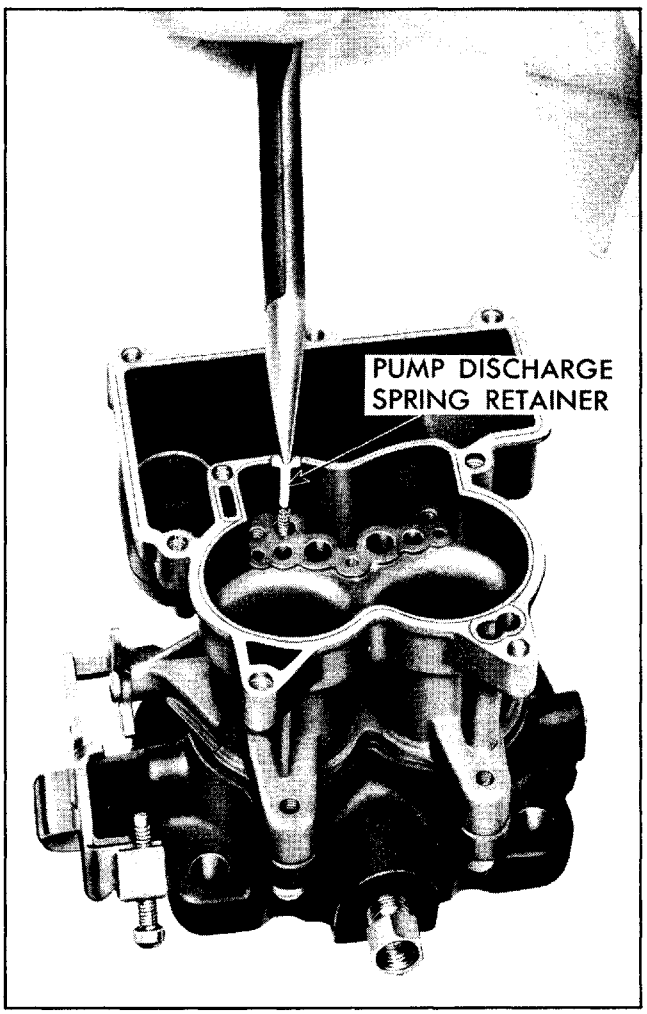


Fig 6B-100 Removing or Replacing Pump Discharge Spring Retainer

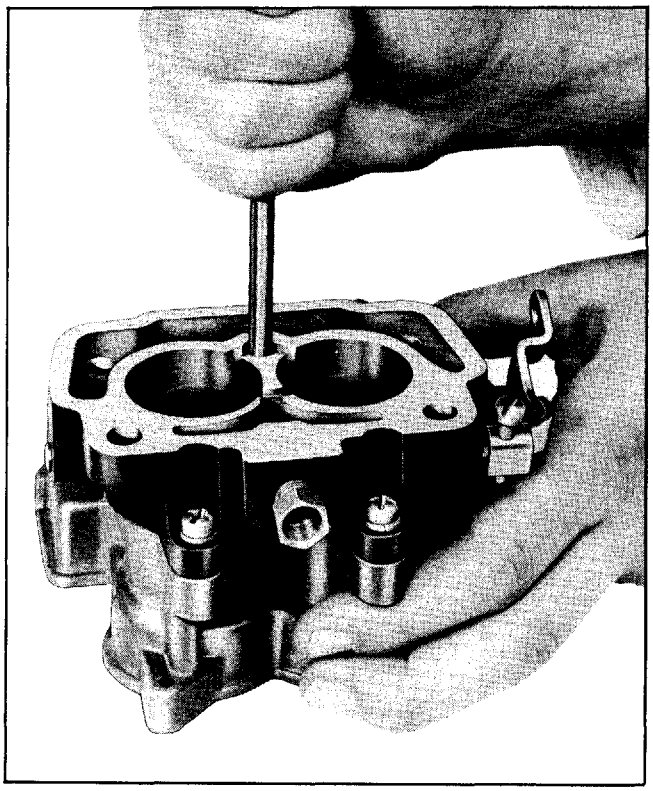


Fig. 6B-101 Removing or Replacing Throttle Body

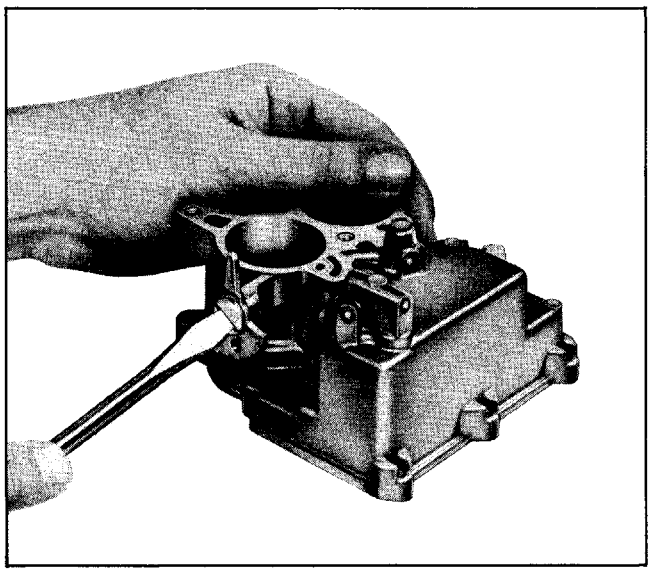


Fig. 6B-102 Removing or Replacing Fast Idle Cam

CLEANING AND INSPECTION OF PARTS

Dirt, gum, water or carbon contamination in 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 metal parts in clean cleaning solvent. CAUTION: *Choke coil and housing, and pump plunger should not be immersed in solvent. Clean pump plunger in clean gasoline only.*

TO AVOID DAMAGE TO GASKET BETWEEN CHOKE HOUSING AND AIR HORN DO NOT SOAK AIR HORN ASSEMBLY IN CLEANER OR SOLVENT IF CHOKE PISTON HOUSING HAS NOT BEEN REMOVED.

2. Blow all passages in castings dry with compressed air and blow off all parts until they are dry. CAUTION: *Do not pass drills or wires through calibrated jets or passages as this may enlarge orifices and seriously affect carburetor calibration.*

3. Check all parts for wear. If wear is noted, defective parts must be replaced. Note especially the following:

a. Check float needle and seat for wear. If wear is noted the assembly must be replaced.

b. Check float lip for wear and float for dents. Check floats for leaks by shaking.

c. Check throttle and choke shaft bores in throttle body and cover castings for wear or out of round.

d. Inspect idle adjusting needle for burrs or ridges. Such a condition requires replacement.

e. If wear is noted on steps of fast idle cam, it should be replaced as it may upset engine idle speed during the warm up period.

f. Inspect pump plunger leather. Replace plunger if leather is damaged.

4. Inspect gaskets to see if they appear hard or brittle or if the edges are torn or distorted. If any such condition is noted they must be replaced.

5. Check both filter screens for dirt or lint. Clean and if they are distorted or remain plugged, replace.

6. If for any reason parts have become loose or damaged in the cluster casting, it must be replaced.

ASSEMBLY AND ADJUSTMENT

ASSEMBLY OF THROTTLE BODY

1. Install idle screw in throttle lever.

2. Screw idle adjusting needles and springs into throttle body until finger tight. Back out screw 1½ turns as a preliminary idle adjustment.

3. Upend bowl, place new throttle body gasket in position and attach throttle body. Tighten screws evenly and securely (Fig. 6B-101).

ASSEMBLY OF BOWL

1. Install fast idle cam (Fig. 6B-102).

2. Drop pump discharge check ball into discharge hole. Ball is $\frac{3}{16}$" diameter (steel). Replace spring and retainer (Fig. 6B-100).

3. Replace cluster and gasket, tighten screws evenly and securely. Make certain center screw is fitted with gasket to prevent pump discharge leakage (Fig. 6B-99).

4. Replace main metering jets and power valve (Fig. 6B-98).

5. Drop pump intake ball check into hole in pump well. Ball is $\frac{5}{32}$" diameter (aluminum). Install pump return spring, pressing with finger to center it in pump well (Fig. 6B-103).

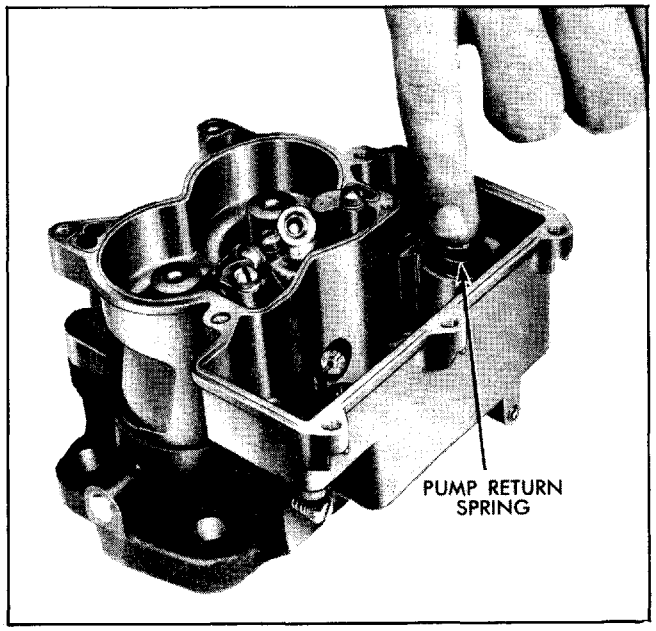


Fig. 6B-103 Replacing Pump Return Spring

6. Replace pump inlet strainer, pressing carefully into position.

ASSEMBLY OF BOWL COVER

1. Place new gasket into position and attach choke housing to air horn. Tighten screws securely (Fig. 6B-93).

2. Assemble choke piston to shaft with pin, with flat cut side of piston toward air horn (Fig. 6B-92). Place shaft in choke housing and rotate clockwise so that piston rides in housing (Fig. 6B-91).

3. Install choke valve on choke shaft with letters "RP" facing upward. Center choke valve before tightening screws.

NOTE: Install fast idle lever, choke trip lever and tighten attaching screw temporarily while centering choke valve.

4. Replace pump lever assembly (Fig. 6B-96).

5. Install float needle seat and gasket, using wide blade screw driver (Fig. 6B-95).

6. Replace power piston in vacuum cavity; piston should travel freely in cavity (Fig. 6B-95).

7. Attach plunger shaft with retainer, with shaft end pointing inward (Fig. 6B-95).

8. Install cover gasket.

9. Attach needle to float, carefully position float and insert hinge pin (Fig. 6B-94).

10. Adjust float as follows:

(a) Float level—

Place float gauge J-5916 in position over float and resting on gasket surface. Highest point of float should just touch gauge (Fig. 6B-104). Adjust by bending the float arm. Measurement from gasket surface to high point of float is $1\frac{15}{64}$".

(b) Float drop—

With air horn right side up so that float can hang free, the distance from the gasket surface to the lowest point of the float should be $1\frac{29}{32}$" and can be measured using the float gauge (Fig. 6B-105). To adjust bend float tang.

11. Place cover on bowl, making certain that accelerator pump plunger is correctly positioned and will move freely (Fig. 6B-89.)

12. Install and tighten 8 cover screws evenly and securely.

13. Install filter screen, with closed end toward air horn. Install strainer nut and gasket assembly in cover.

14. Install pump link and retainer (Fig. 6B-86).

15. To adjust pump link, place float and pump gauge on air horn next to air intake, with single leg of gauge downward toward pump link. With throttle stop screw backed off so that throttle valves are tightly closed, the top surface of the pump rod should

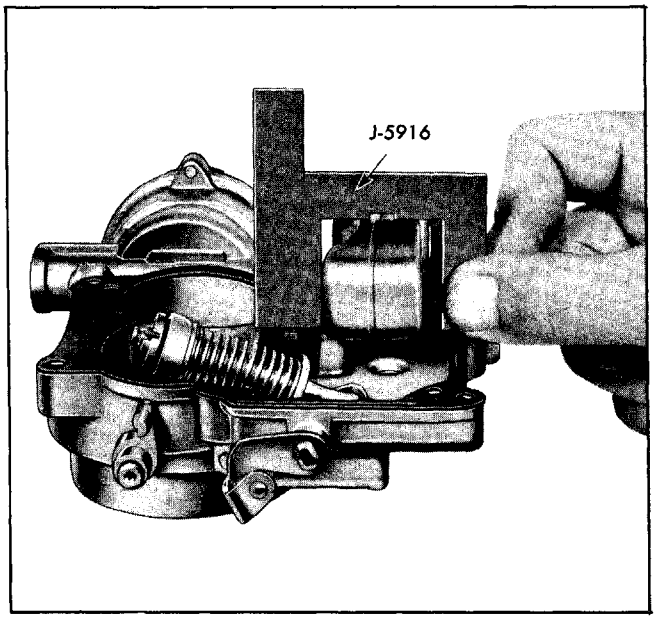


Fig. 6B-104 Checking Float Level

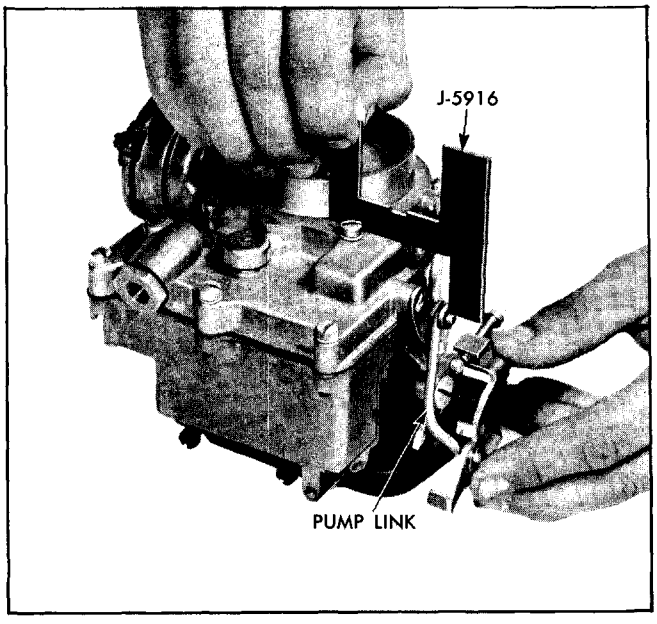


Fig. 6B-106 Checking Pump Link

just touch the end of the gauge (Fig. 6B-106). Measurement .922".

16. Place baffle plate and choke housing gasket into position and install choke coil and cover (Fig. 6B-107). Rotate cover counterclockwise until index marks on cover and housing are aligned (Fig. 6B-85). Attach three retainers and screws to choke housing and tighten securely. NOTE: Choke valve should be lightly closed at room temperature (75°F) when index mark on cover and housing are aligned.

17. Replace link in fast idle cam (Fig. 6B-108) and choke lever (Fig. 6B-87), place choke lever on cover with the tang facing outward and toward the pump lever. Install spacer washer and trip lever so that tang of trip lever is under tang of choke lever, and install retaining screw (Fig. 6B-86).

18. Adjust choke rod as follows: With the thermostat cover set at index, locate the idle stop screw against the second step of the fast idle cam, next to the shoulder of the highest step. Bend the choke trip

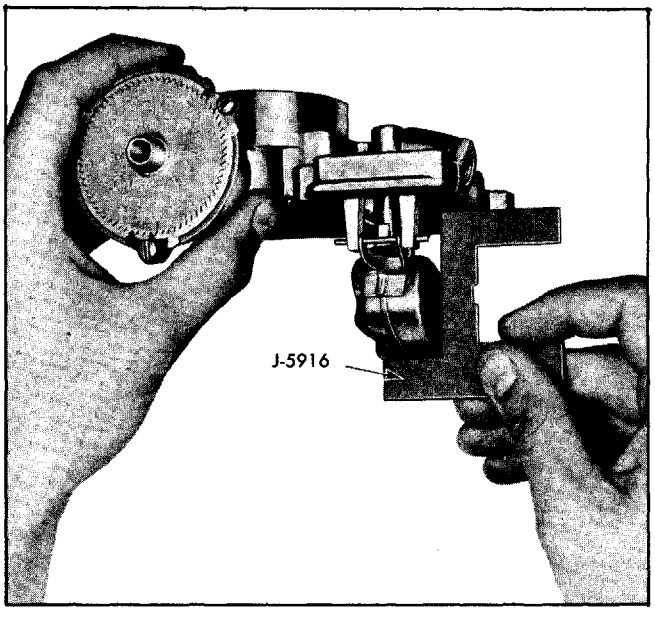


Fig. 6B-105 Checking Float Drop

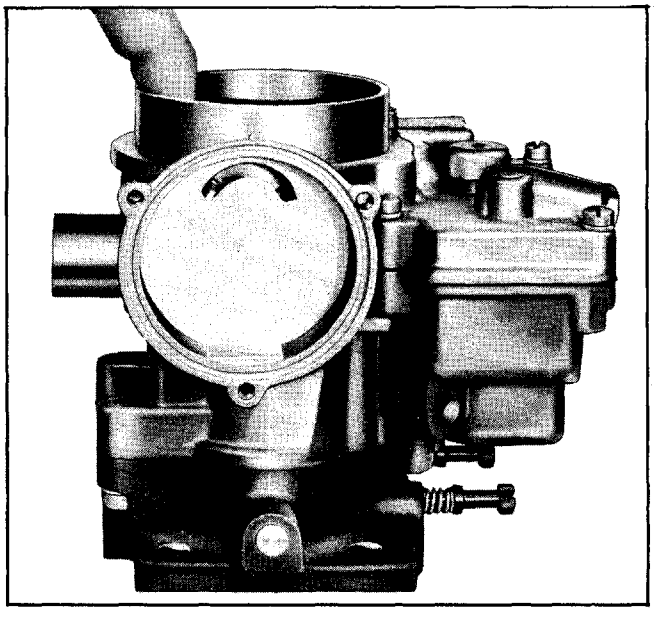


Fig. 6B-107 Replacing Choke Baffle Plate

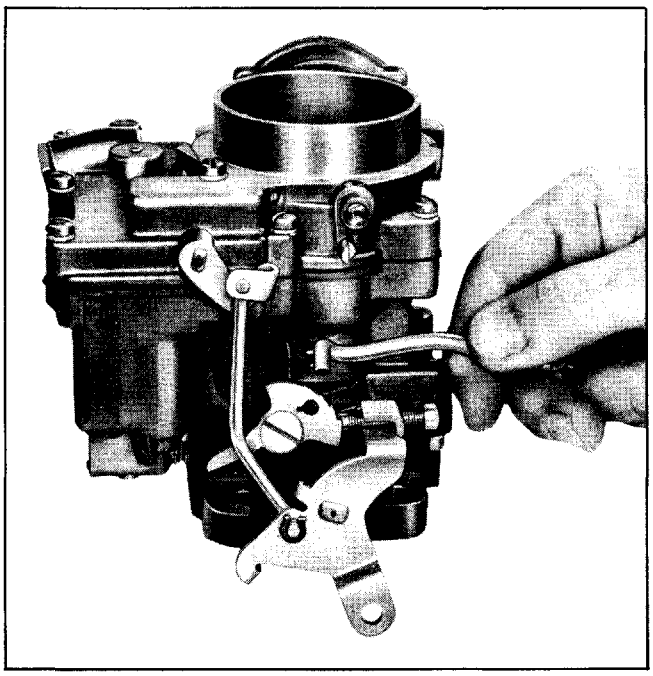


Fig. 6B-108 Removing or Replacing Link in Fast Idle Cam

lever tang so that the small end of J-5920 just fits between the inner side of the air horn and the upper edge of the choke valve (Fig. 6B-82). The gauge is constructed to fit the contour of the air horn.

19. Adjust loader as follows: With the thermostat cover set at index, and the throttle lever in wide open position, bend the tang on the throttle lever so that the large end of J-5920 just fits between the upper edge of the choke valve and the inner side of the air horn (Fig. 6B-83). The gauge is constructed to fit the contour of the air horn.

NOTE: For both adjustments, be sure choke trip lever is in contact with choke rod lever.

TEST BEFORE INSTALLATION ON ENGINE

It is good shop practice to fill the carburetor bowl before installing the carburetor. This reduces the strain on the starting motor and battery and reduces the possibility of backfiring while attempting to start the engine. A fuel pump clamped to the bench, a small supply of fuel and the necessary fittings enable the carburetor to be filled and the operation of the float and intake needle and seat to be checked. Operate the throttle several times to check flow from pump discharge holes in cluster before installing the carburetor.

TROUBLE DIAGNOSIS AND TESTING—ROCHESTER

When carburetor troubles are encountered they can usually be corrected by making the adjustments outlined under "Adjustments on Car". The following list of common troubles and their causes will frequently save considerable time in locating the cause of the difficulty. NOTE: Before any work is performed on the carburetor, make sure trouble is not due to poor compression, or in the ignition system due to improper timing, defective spark plugs, burned ignition points, etc. Always diagnose performance trouble by using the Pontiac Tune-N-Test Guide before adjusting or repairing the carburetor.

When the cause of trouble is not located by the Tune-N-Test, check for trouble in the carburetion system as follows:

POOR FUEL ECONOMY

NOTE: Before any attempt is made to improve fuel economy the actual gasoline mileage should be determined using a tenth of a gallon tester. If the mileage obtained during this test compares favorably with that found on other normal cars, the poor mileage must be attributed to the driving conditions or driving habits of the owner. Also consider factors such as dragging brakes, soft tires, improper tire size, and improper speedometer driven gear.

1. Check automatic choke to see that it operates properly and that it is correctly indexed.

2. Inspect manifold heat valve to see that it operates freely.

3. Check for leaks in fuel line fittings, at fuel tank, or at fuel pump bowl.

4. Check for dirty or restricted air cleaner.

5. Test for high fuel pump pressure.

6. Dissassemble carburetor and inspect throttle body to bowl gasket and air horn gasket for evidence of leaks in vacuum passages. Check float level.

7. Check jets and passages for dirt or obstructions.

8. Check for loose cluster.

9. Check for damaged main well tubes.

10. Check power piston for wear or damage.

11. Check actuating spring for distortion.

12. Check ball checks and valves for leakage.

13. Check for free movement of power piston.

14. Check for loose power valve assembly.

SURGING CONDITION AFTER SHORT STOP WITH HOT ENGINE

1. Check for weak fuel pump.

2. Check seat for tightness in casting.

3. Check float needle for smoothness and proper seating.

4. Check float for leaking or collapsed condition.

5. Check for binding float arm and pin.

6. Check float adjustment.

7. Check for dirty or obstructed jets and fuel passages.

8. Check for loose cluster.

9. Check for damaged main well tubes.

FLAT SPOT OR POOR ACCELERATION

1. See that manifold heat valve operates freely and that thermostat is properly installed.

2. Check pump leather for hardness or distortion.

3. Check inlet and outlet valves for leakage.

4. Check for proper seating of plunger vent ball.

5. Check pump channels for dirt or obstruction.

6. Check pump discharge holes in cluster for dirt or obstruction.

ROUGH IDLE WHICH CANNOT BE CORRECTED BY MIXTURE AND SPEED ADJUSTMENT

1. Check fast idle cam to choke valve adjustment.

2. Check vacuum and heat connections.

3. Check choke cover indexing setting.

4. Check choke valve for freeness.

5. Check choke piston for dirt or carbon.

6. Check idle channels and throttle bore for carbon and dirt.

7. Check idle adjustment screws.

8. Check float adjustment.

IMPROPER HIGH SPEED PERFORMANCE

1. Check spark plug gap.

2. Check distributor points.

3. Test fuel pump outlet and pressure as outlined on page 6B-40.

4. Check gaskets for leakage.

FLOODING OR LEAKING

1. Test for excessive fuel pump pressure.

2. Check float needle and seat for roughness or foreign material.

3. Check float adjustment (make sure float is centered so it does not rub side of bowl).

4. Check for leaking or collapsed float.

5. Inspect bowl for cracks or loose passage plugs.

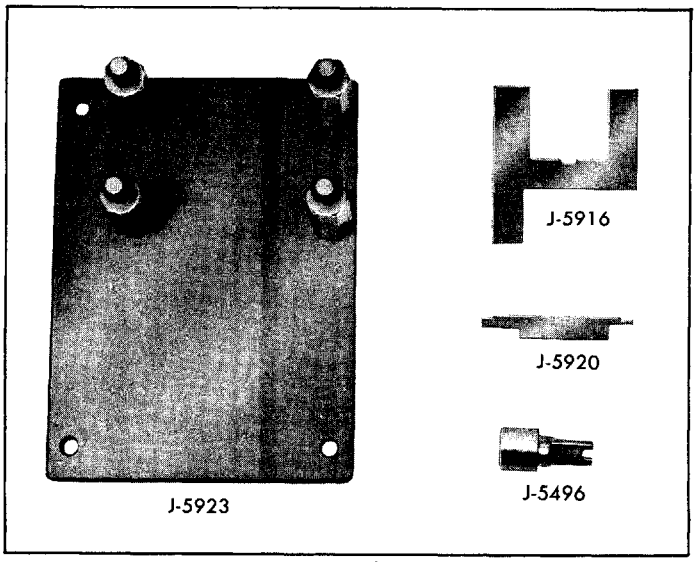
STALLING DURING WARM-UP DUE TO ICING

Check exhaust gas passage for carbon build up. Clean hole to manifold and manifold flange surface. Always use new manifold to carburetor gaskets to ensure against leak.

SPECIFICATIONS

ROCHESTER 2GC CARBURETOR

Float Level	$1\frac{15}{64}$"
Float Drop	$1\frac{29}{32}$"
Fast Idle Cam Index	J-5920 (.52). Top edge of choke valve to inner area of air horn. Bend tang
Unloader	J-5920 (.161). Top edge of choke valve as above
"Stat" Setting	Index
Pump Rod	.922"



ROCHESTER 2-JET SPECIAL TOOLS

J-5496	Bending Tool
J-5916	Float Level Gauge
J-5920	Choke Unloader and Fast Idle Cam Index Gauge
J-5923	Holding Stand

SERVICE CRAFTSMAN NEWS REFERENCE

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