CARTER AFB FOUR BARREL CARBURETOR

Carburetor Model Number	Used On
3900 S	V-326 H.O. Automatic
3899 S	V-326 H.O. Synchro-mesh
3896 S	V-389 G.T.O. Automatic
3895 S	V-389 G.T.O. Synchro-mesh

GENERAL DESCRIPTION

The Carter AFB (aluminum four barrel) carburetor used on V-326 H.O. and V-389 G.T.O. engines is composed of two major assemblies, an air horn assembly and a combined throttle body and bowl called the body assembly. The air horn and body are made of cast aluminum.

The carburetor is basically two dual carburetors in one assembly. The half of the carburetor containing the step up rods, pump assembly and idle system is called the primary side of the carburetor. The other half is called the secondary side.

The carburetor contains the conventional carburetor circuits:

Float Circuits
Low Speed Circuits
High Speed Circuits
Pump Circuit
Choke Circuit

FLOAT CIRCUIT (Fig. 6B-66)

The purpose of the float circuit is to maintain the correct fuel level in the carburetor bowl at all times. The Carter AFB carburetor has two separate float circuits. Each float operates in its own float bowl and each bowl supplies fuel to a primary low speed circuit and to a primary and secondary high speed circuit. The two circuits operate identically.

When the fuel level in the bowl drops, the float also drops allowing the needle to fall away from its seat.

Fuel at the fuel inlet under fuel pump pressure will then enter through the fuel filter past the needle and seat and into the float bowl. As the fuel level rises in the bowl, the needle valve is seated cutting off the flow of fuel.

The intake needle seats are installed at an angle to give positive seating action of the intake needles. Intake needles and seats are carefully matched in manufacture and tested to ensure against fuel leakage. They should therefore always be used in pairs and not intermixed.

The bowl areas are vented to the inside of the air horn and to each other to ensure equal pressure on the surface of the fuel at all times and to allow the escape of fuel vapors. Baffles are used in the bowl area to minimize fuel turbulence.

LOW SPEED CIRCUITS (Fig. 6B-67)

Fuel for idle and early part throttle operation is metered through the low speed circuits on the primary side of the carburetor. With the throttle valves closed, manifold vacuum exists at the idle needle port and idle discharge port. Atmospheric pressure will then force fuel through the primary metering jet and up through the low speed jet. The fuel picks up air at the by-pass and is metered and broken up in the economizer passage. The fuel mixture then passes by another air bleed, down the idle passage and is discharged at the idle discharge port and the idle needle port.

The idle ports are slot-shaped. As the throttle valves are opened, more of the idle ports are uncovered, allowing a greater quantity of fuel mixture to enter the carburetor bores. The secondary throttle valves remain closed at idle.

To aid in hot starting, vapor vents are provided in the throttle bores.

During hot idle the throttle valves are completely closed with the by-pass type carburetor. Idle air

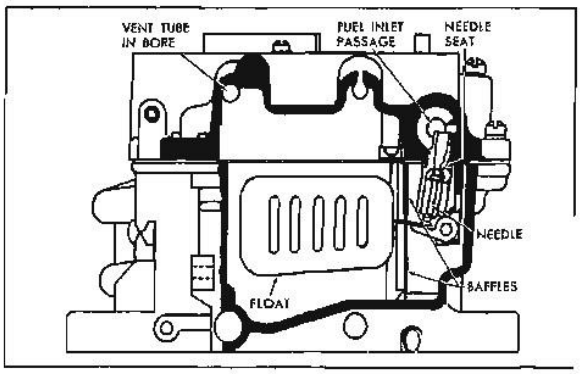

Fig. 6B-66 Float Circuit

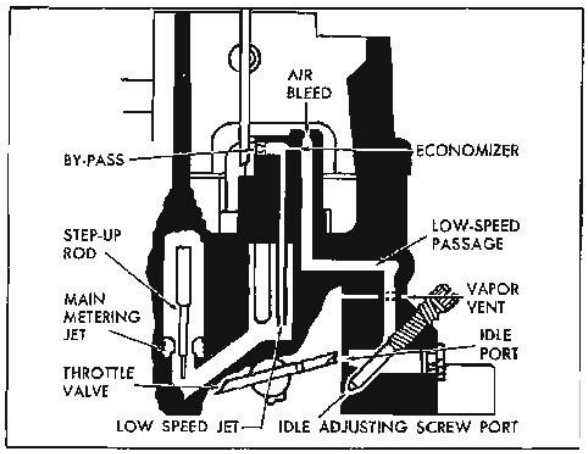

Fig. 6B-67 Low Speed Circuit

is directed around the throttle valves through the passage shown in Fig. 6B-68. The amount of air going through the passage is controlled by the air adjusting screw, thereby also controlling idle speed.

During long periods of idling with an extremely hot engine the fuel in the carburetor bowl becomes hot enough to form vapors. These vapors enter the carburetor bores by way of the inside bowl vents. The vapors mix with the idle air and are drawn into the engine, causing an excessively rich mixture and a loss in rpm or engine stalling. Also, the decrease in the density of the air caused by extreme high under-hood temperatures reduces the idle speed.

The hot idle compensator (Fig. 6B-69) is calibrated to open under these temperature conditions, permitting additional air to enter the manifold below

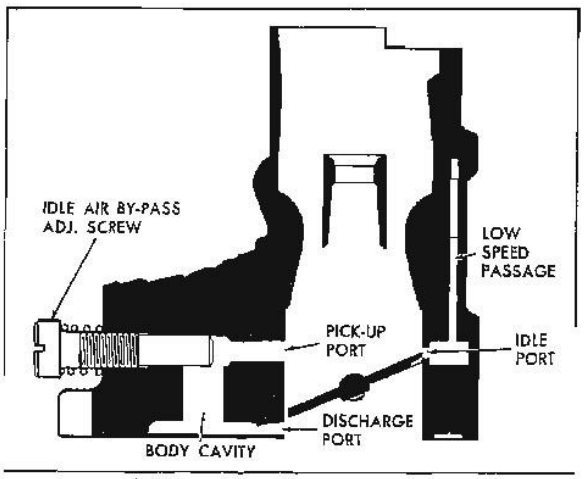

Fig. 6B-68 Idle Air By-Pass Circuit

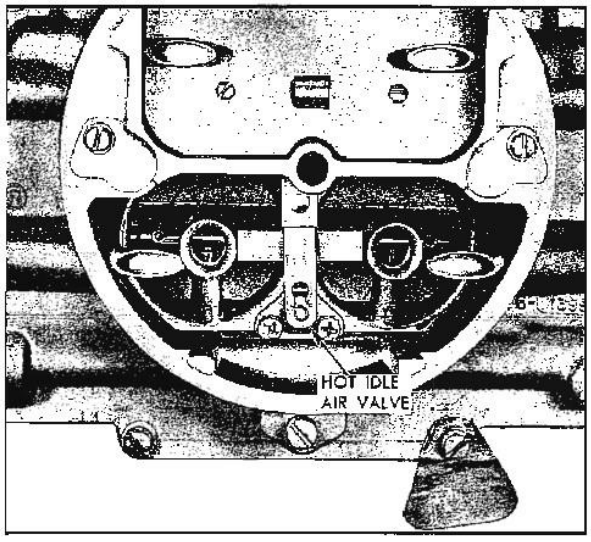

Fig. 6B-69 Hot Idle Air Valve

the secondary throttle valves (Fig. 6B-70) and mix with the fuel vapors, providing a more combustible mixture. The engine rpm may still vary slightly, however extreme rough idle operation and engine stalling are avoided.

The device is especially beneficial during traffic operation in very hot weather when the car is allowed to idle for a long period of time, particularly on air condition-equipped automobiles. One of the other more common driving conditions that will bring the thermostatic valve into operation is when the car has been driven at highway speeds during a very hot day and then a line of traffic causes a delay where the engine must be run at idle speed, moving the car only a few feet at a time.

The valve is calibrated to open when the air temperature in the bore of the carburetor is between 115 and 125 degrees Fahrenheit with 15" vacuum applied to the valve seat. The operation of this valve cannot be checked accurately in field service because of the difficulty of obtaining and measuring an accurate air temperature in the bore of the carburetor and the specified 15" of vacuum at the seat of the valve. In service, if any doubt exists concerning the operation of the valve, it should be replaced.

A small hole through each primary throttle valve supplies idle air to supplement the air supplied through the by-pass idle air circuit. These supplementary air supply holes provide better adjustability and increase the idle air volume to provide sufficient idle speed on new engines.

HIGH SPEED CIRCUIT—PRIMARY SIDE (Fig. 6B-71)

Fuel for late part throttle and full throttle operation is supplied through the high speed circuit.

As the throttle valves are opened air flow through the carburetor increases to the point that fuel is picked up at the discharge nozzles located in the main venturi. The pressure differential caused by the rapid flow of air through the venturi forces fuel through the primary metering jet up through the main vent tube. After picking up air at the air bleed, the mixture is forced out through the main discharge nozzle. The air bleed in the high speed circuit also serves as an anti-percolator passage.

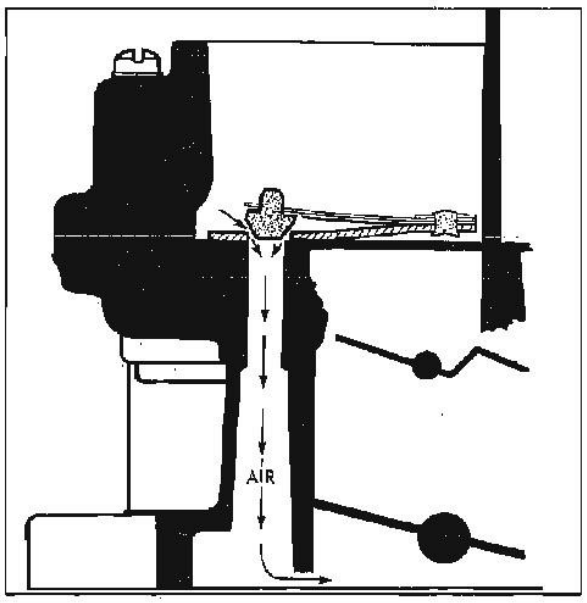

Fig. 6B-70 Hot Idle Air Valve Air Passage

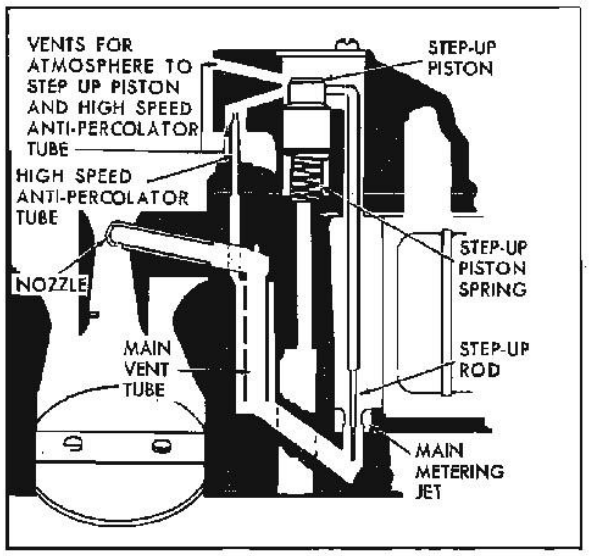

Fig. 6B-71 High Speed Circuit - Primary Side

The amount of fuel delivered through the primary high speed circuit is dependent upon air flow or throttle valve opening and by the position of the step-up rods in the primary main metering jets. The step-up rods are controlled entirely by manifold vacuum. When manifold vacuum is high the step-up rod piston and step-up rod are held downward, restricting the flow of fuel through the primary main metering jet. Under any operating condition that reduces manifold vacuum such as as acceleration or hill-climbing, the step-up rod piston spring raises the step-up rod, positioning the smaller diameter or power step in the jet. This allows additional fuel to be metered through the jet. The step-up rods are not adjustable.

HIGH SPEED CIRCUIT—SECONDARY SIDE (Fig. 6B-72)

The throttle valves in the secondary side remain closed until the primary throttle valves open a predetermined amount (approximately 42° of throttle opening). They arrive at the wide open position at the same time as the primary throttle valves.

Mounted above the secondary throttle valves are the auxiliary throttle valves. These valves are opened by air flow and closed by counterweights. When the secondary throttle valves open, only the primary high speed circuit will function until there is sufficient air velocity to open the auxiliary throttle valves. When the auxiliary valves open, fuel will be supplied through the secondary high speed circuit.

Fuel for the secondary side is metered through the secondary main metering jets. No step-up rods are used.

To supplement the starting of the secondary high speed circuit, an initial discharge system is used. Initial discharge ports are located next to the venturi struts. When the auxiliary valves start to open, a low pressure area results at these ports and atmospheric pressure forces fuel into the initial discharge passage. Air is picked up at the air bleed and the mixture enters the air stream at the initial discharge ports. As the auxiliary valves continue to open and the secondary nozzles begin to function, pressure increases at the discharge ports and their operation diminishes. An acceleration tube is used to smooth the transition from two to four barrel operation on acceleration.

PUMP CIRCUIT (Fig. 6B-73)

The accelerating pump circuit located in the primary side provides for a measured amount of fuel to be discharged into the carburetor throat during acceleration from low car speeds. A rapid opening of

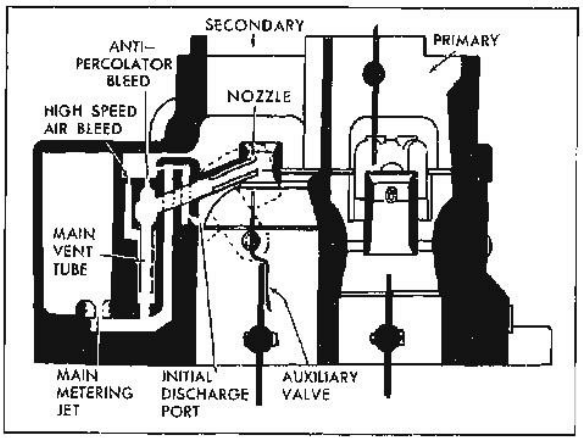

Fig. 6B-72 High Speed Circuit - Secondary Side

the throttle valves, as is the case when accelerating from low speeds, causes an immediate increase in air velocity. Since fuel is heavier than air it requires a short period of time for it to "catch up" with the air flow. To avoid a leanness during this momentary lag, the accelerator pump furnishes a quantity of liquid fuel, sprayed into the air stream to mix incoming air and maintain the proper fuel-air mixture. The pump is operated by the combined action of two springs which are calibrated to move the plunger in such a manner that a sustained charge of fuel is delivered for smooth acceleration.

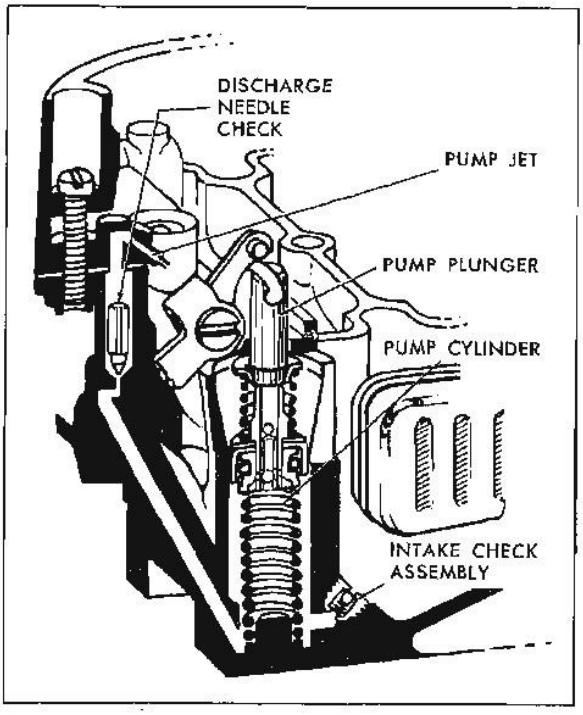

Fig. 6B-73 Pump Circuit

The pump is attached by linkage to the accelerator so that when the throttle valves are closed the pump plunger moves upward in its cylinder, creating a low pressure area (partial vacuum) in the cylinder below the plunger. Atmospheric pressure acting on the fuel in the bowl forces fuel into this cylinder through the intake ball check. The discharge needle is seated at this time to prevent air being drawn into the cylinder.

When the throttle is opened, the friction of the plunger in the cylinder and the tension of the lower plunger spring resist the downward movement of the pump plunger, causing the plunger shaft to telescope. This compresses the upper spring. The upper spring then overcomes the resistance and pushes the plunger down. However, the speed of the plunger is retarded by the lower spring so that a sustained charge of fuel is released into the system. The movement of the plunger exerts a pressure in the cylinder which seats the intake ball check preventing fuel from being forced back into the bowl. The same pressure also forces fuel up the discharge passage, unseating the pump discharge needle, and on through the pump jets in the cluster where it is sprayed into the carburetor throat.

At higher speeds, pump discharge is no longer necessary to insure smooth acceleration. When the throttle valves are opened a predetermined amount, the pump plunger bottoms in the cylinder, eliminating pump discharge.

During high speed operation, a vacuum exists at the pump discharge ports. To prevent atmospheric pressure from forcing fuel to these ports and into the system, the pump jets are vented. This allows air instead of fuel to be forced through the discharge ports.

An "anti-percolator" check valve, contained inside the plunger, provides relief for any vapors which might form during hot idle or when a hot engine is not operating. The ball check is designed so that it can move up and down in its passage. Throughout the above periods it is unseated by gravity and vapors in the pump well rise and by-pass the ball check through small holes in the plunger head.

The "anti-perc" ball check also acts as an extra inlet during the upstroke of the plunger, but is seated by fuel when the plunger moves down.

CHOKE CIRCUIT (Fig. 6B-74)

The purpose of the choke system is to provide a very rich mixture for cold engine operation.

The choke system subjects all fuel outlets in the bore of the carburetor to manifold vacuum while restricting the intake of air.

The choke system includes a thermostatic coil, housing, choke piston, choke valve, source of fresh air supply to the choke stove, 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 the intake manifold.

When the engine is cold, tension of the thermostatic coil holds the choke valve closed. Starting the engine causes air velocity to strike the offset choke valve. This tends to open it along with the action of intake manifold vacuum on the choke piston. Thus, after a slight opening of the choke valve, the tension of the thermostatic coil spring balances the force of air on the valve and the pull of vacuum at the piston.

At the cold idle position, slots located in the sides of the choke piston cylinder are uncovered, exposing them to intake manifold vacuum. Air, heated in a tube running through the exhaust cross-over passage in the intake manifold, then fills this low pressure area in the choke housing. The flow of warm air heats the thermostatic coil and causes it to lose its tension until full choke valve opening is accomplished. The clean air is supplied to the choke in the manifold from the air horn, just below the air cleaner. Here filtered air from the air cleaner is picked up and carried to the choke by a metal pipe.

A secondary baffle plate is located in the choke housing to distribute the warm air evenly over the thermostatic coil, thereby insuring gradual relaxation of the coil. The baffle revolves with the choke

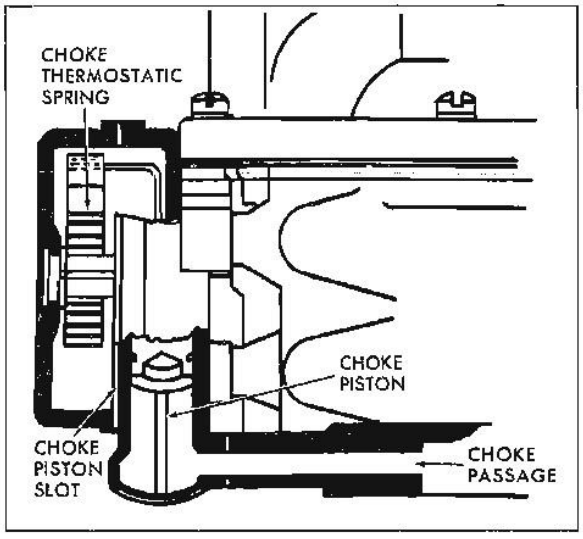

Fig. 6B-74 Choke Circuit

valve and prevents the warm air from striking the thermostatic coil until the choke valve opens a predetermined amount. This delays choke opening.

If the engine is accelerated during the warm-up period, the corresponding drop in manifold vacuum allows the thermostatic coil to momentarily close the choke, providing a richer mixture.

To combat engine stalling during warm-up on cool, humid days, caused by "carburetor icing", heated air from the choke housing is circulated through a passage in the base of the carburetor flange.

During the warm-up period, it is necessary to provide a fast idle to prevent engine stalling. This is accomplished by a fast idle cam connected to the choke shaft. The fast idle adjusting screw on the throttle lever contacts the fast idle cam and prevents the throttle valves from returning to a normal warm engine idle position until the choke is open.

If during the starting period, the engine becomes flooded, the choke valve can be partially opened manually to allow increased air flow through the carburetor. This is accomplished by depressing the accelerator pedal forcibly to the floor and engaging the starter. The unloader projection on the throttle lever contacts the unloader lug on the fast idle cam and in turn partially opens the choke valve.

ADJUSTMENTS ON CAR

All Carter adjustments can be performed on the car. All adjustments are included in the "Overhaul and Adjustments" procedure, with the exception of the idle speed and mixture adjustment, fast idle adjustment, and the unloader adjustment. Following are the idle speed, mixture, and the unloader adjustments.

IDLE SPEED AND MIXTURE ADJUSTMENT

1. As a preliminary setting turn air screw out 1/2 turn from lightly seated position and mixture screws out 1 turn.

2. Set hand brake securely, place transmission in neutral and connect tachometer to engine.

3. Start engine and warm up thoroughly. Make sure choke is fully open and carburetor is completely off fast idle.

CAUTION: When adjusting idle make sure hot idle compensator is held manually closed during adjustment.

4. Adjust the air screw to obtain correct idle rpm. (Use drive range on automatic transmission-equipped cars.)

5. Turn mixture screws to best quality (highest rpm) idle.

6. Reset air screw to correct rpm if mixture adjustment changed setting.

7. Recheck mixture adjustment to insure smoothest possible idle.

NOTE: Always recheck idle mixture setting after making idle rpm adjustment with air screw.

IDLE SPECIFICATIONS

Synchromesh, exc. air conditioning	580-600 rpm
Automatic, exc. air conditioning	480-500 rpm in drive range
Air Conditioning Equipped	
Automatic - Drive-range, A/C off	540-560 rpm
S/M - Neutral, A/C off	640-660 rpm

FAST IDLE ADJUSTMENT

The fast idle setting must be made after the idle speed and mixture adjustment has been made. With the engine completely warmed up and the fast idle screw on highest step of fast idle cam, set fast idle screw to give an engine speed of 2500 rpm.

UNLOADER ADJUSTMENT

1. Remove carburetor air cleaner assembly.

2. Depress accelerator pedal forcibly to floor. (This should be done by person sitting in driver's seat of car to simulate driving conditions.)

3. With accelerator pedal depressed as in Step 2, bend tang on throttle lever to give a clearance of 5/32" ± 1/32" between the top of the choke valve and the inside of the air horn.

4. Replace air cleaner assembly.

The above procedure will eliminate variance in linkage, floor mat, pedal location, etc., and should ensure correct unloader action.

OVERHAUL AND ADJUSTMENT

DISASSEMBLY OF AIR HORN

1. Place carburetor on stand J-5923 or J-8328 and remove inlet nut, gasket and filter.

2. Remove throttle connector rod and anti-rattle spring.

3. Remove fast idle connector rod at upper end (Fig. 6B-75).

4. Remove choke connector rod (Fig. 6B-76).

5. Remove two step-up piston cover plate attaching screws and cover plates (Fig. 6B-76).

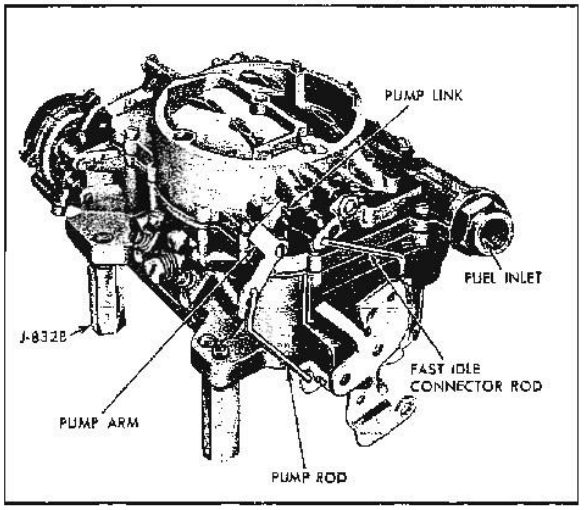

Fig. 6B-75 Carter AFB Carburetor

6. Remove two step-up rods and step-up pistons. If desired, step-up rod may be separated from piston by unhooking step-up rod retaining spring from end of rod (Fig. 6B-77). Remove two step-up rod piston springs.

7. Remove choke shaft lever retainer screw, choke shaft lever and washer from end of choke shaft.

8. Remove two choke valve attaching screws and choke valve.

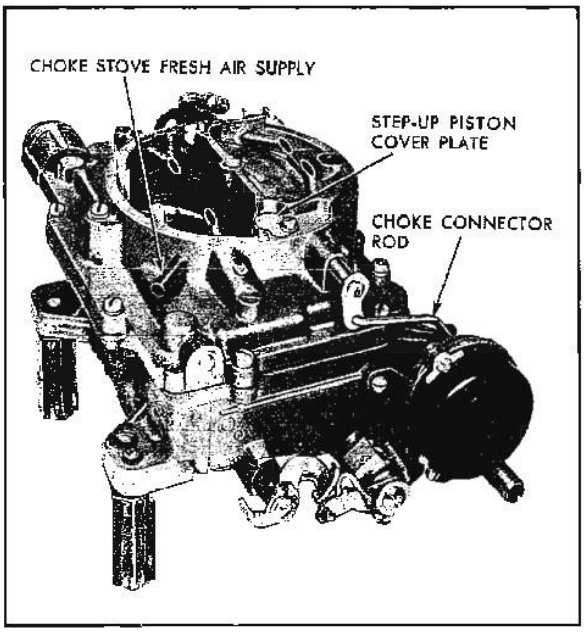

Fig. 6B-76 Carter AFB Carburetor

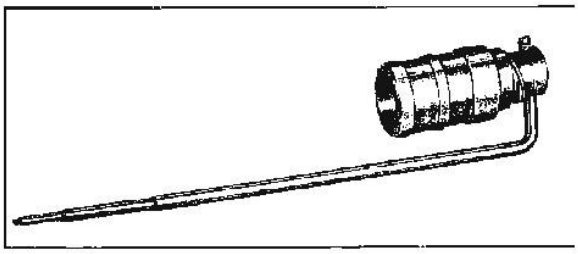

Fig. 6B-77 Step-Up Rod and Piston Assembly

9. Remove ten air horn attaching screws and lift off air horn assembly.

10. Slide choke shaft from air horn.

11. Remove pump arm and link and pump plunger assembly.

12. Remove float hinge pin, float and float needle assembly on inlet side of carburetor (Fig. 6B-78).

13. Remove float needle seat and gasket, using wide-blade screwdriver.

NOTE: Keep individual float parts grouped so the same needle and seat are used together.

14. Remove remaining float hinge pin, float, float needle, float needle seat and gasket.

15. Remove air horn gasket.

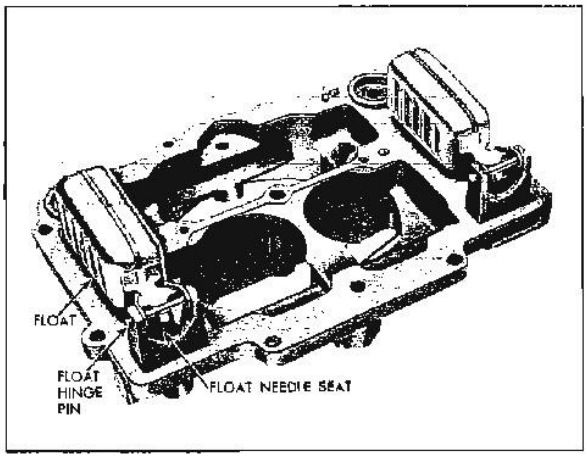

Fig. 6B-78 Air Horn Assembly

DISASSEMBLY OF THROTTLE BODY

1. Remove three choke coil housing attaching screws and choke coil housing and thermostatic coil.

2. Remove coil housing gasket and baffle plate.

3. Remove choke lever attaching screw (Fig. 6B-79). Remove choke piston, lever and link assembly by rotating piston from bore.

4. Remove three choke housing to body attaching screws (Fig. 6B-79) and remove choke housing and gasket.

5. Remove lower choke lever and shaft from choke housing.

6. Remove pump jet cluster and gasket (Fig. 6B-80).

7. Remove two screws and primary venturi and gasket on pump side (Fig. 6B-80).

8. Remove two screws and primary venturi and gasket on choke side.

NOTE: The venturi assemblies are not interchangeable.

9. Remove hot idle air valve and gasket.

10. Remove secondary venturi on pump and choke sides (Fig. 6B-80).

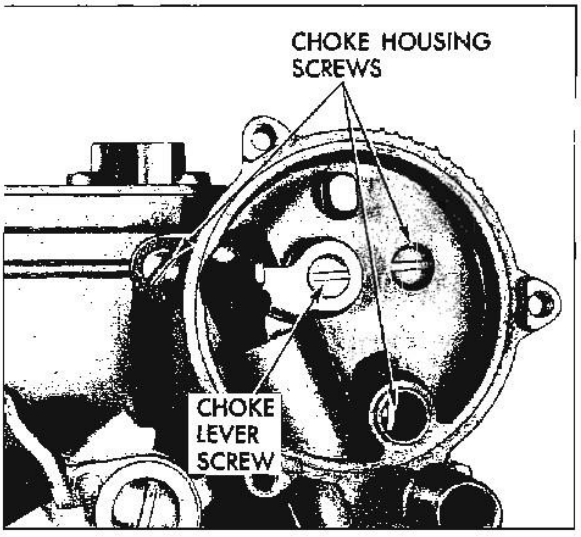

Fig. 6B-79 Location of Choke Housing Screws

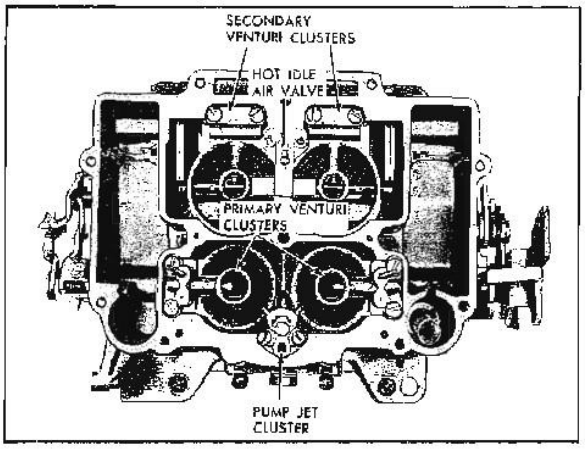

Fig. 6B-80 Top View of Carburetor Body Assembly

11. Lift out auxiliary throttle valve, shaft and weight assembly (Fig. 6B-81).

12. Remove two primary metering jets.

13. Remove two secondary metering jets.

14. Remove pump return spring.

15. Remove pump intake check.

16. Remove idle mixture screws.

17. Remove air screw.

18. Carefully invert carburetor body and remove pump discharge check needle.

19. Remove throttle lever adjusting screw and spring.

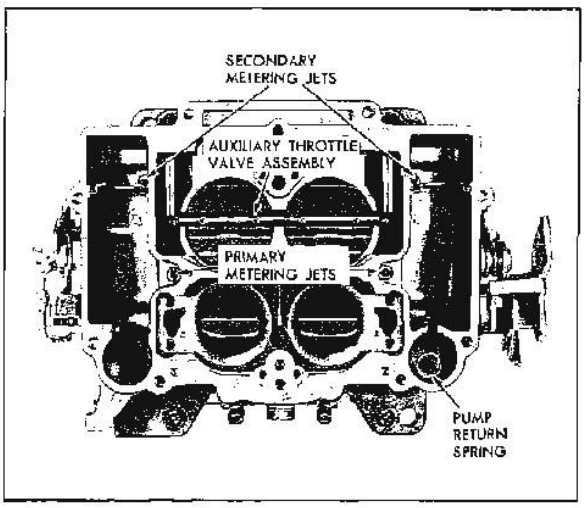

Fig. 6B-81 Body Assembly with Cluster Removed

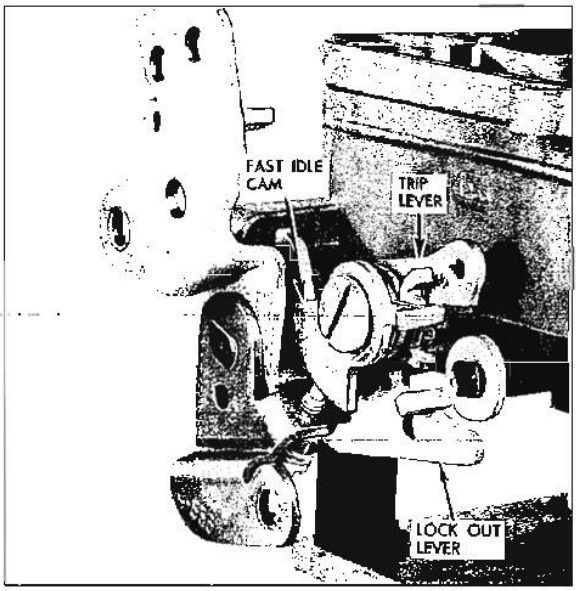

Fig. 6B-82 Location of Fast Idle Cam and Lockout Lever

20. Remove fast idle cam attaching screw, fast idle cam, trip lever and lockout lever (Fig. 6B-82).

21. Remove primary to secondary throttle operating rod (Fig. 6B-83).

22. Remove screw, secondary throttle shaft washer and secondary throttle operating lever and spring.

23. Unhook throttle flex spring from primary outer throttle shaft arm.

24. Remove primary throttle shaft lever attaching screw and washer from primary throttle shaft.

25. Remove outer throttle shaft arm and throttle shaft dog (Fig. 6B-83).

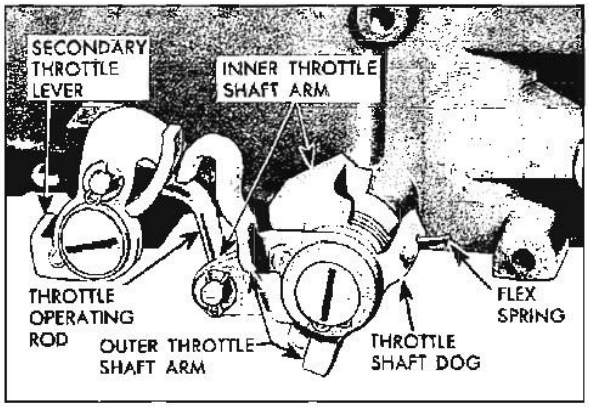

Fig. 6B-83 Primary and Secondary Throttle Linkage

26. Remove inner throttle shaft arm and flex spring.

27. If necessary to remove throttle shafts, remove throttle valve attaching screws, throttle valves and slide shaft from carburetor body.

28. Remove fast idle adjusting screw if necessary to replace.

CLEANING AND INSPECTION

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.

2. Blow out all passages (Figs. 6B-84, 85, 86, 87, and 89) in casting with compressed air and blow off all parts to ensure they are free of cleaner.

NOTE: Follow instruction furnished with cleaning solution container.

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, checking the following specific points:

a. Inspect choke piston and choke piston housing for carbon and gum. 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.

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

d. Inspect float pins for excessive wear.

e. Inspect floats for dents and excessive wear on ltp. 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 or scored.

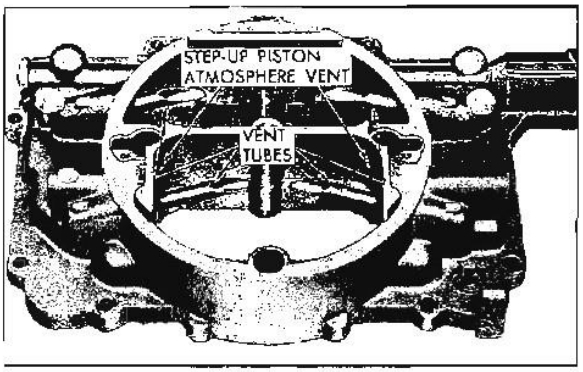

Fig. 6B-84 Passage Identification - Air Horn

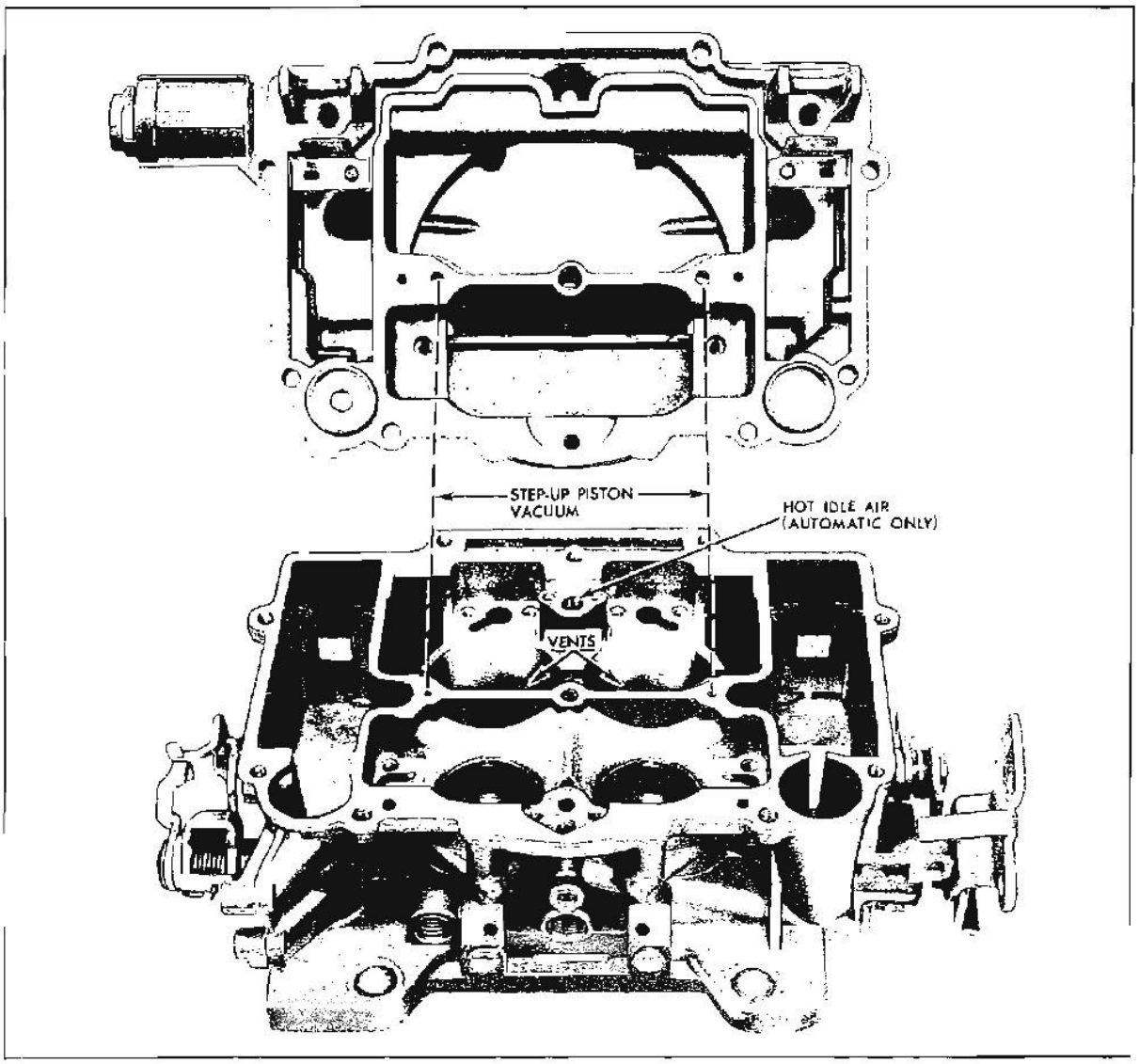

Fig. 6B-85 Passage Identification - Air Horn to Body

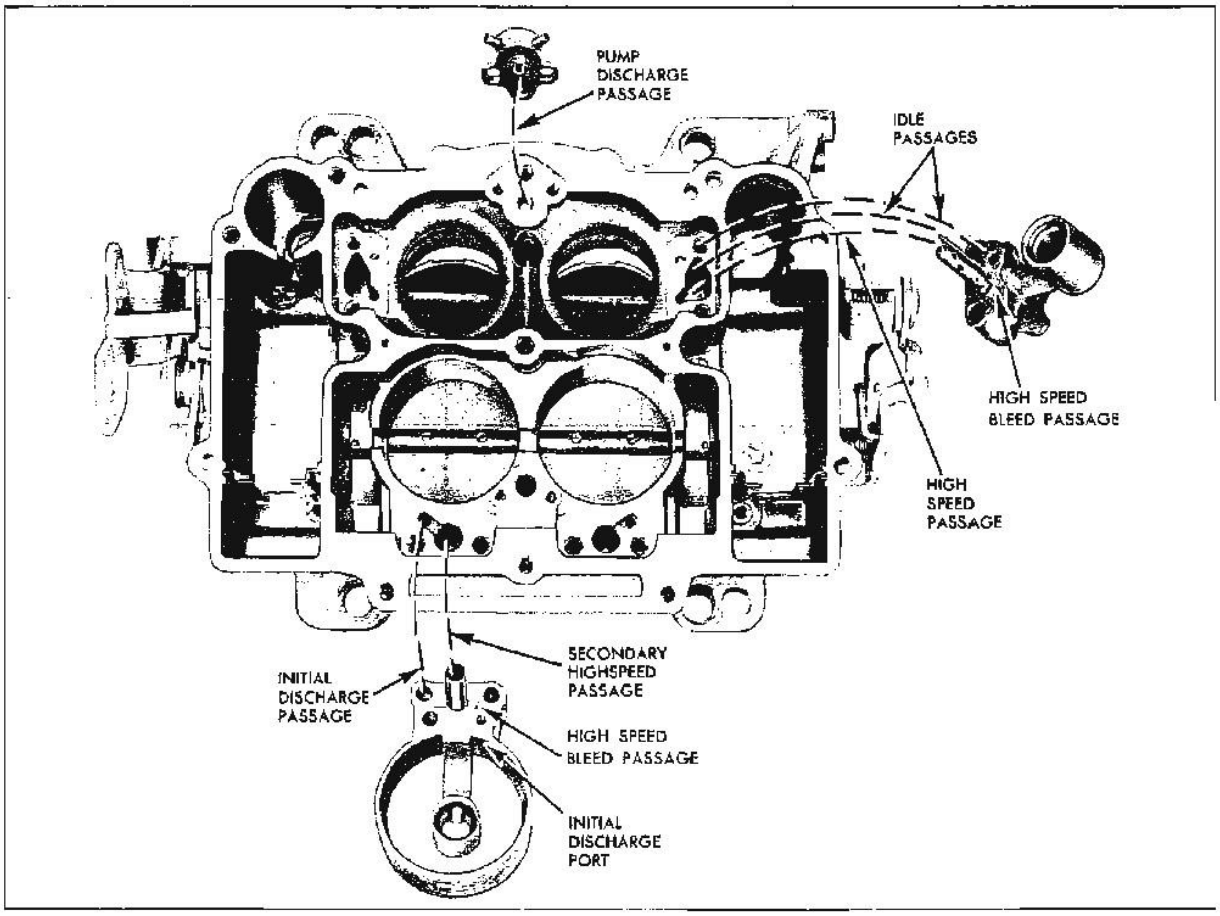

Fig. 6B-86 Passage Identification - Clusters to Body

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

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 passage and the top surface of the inner wall of the bowl.

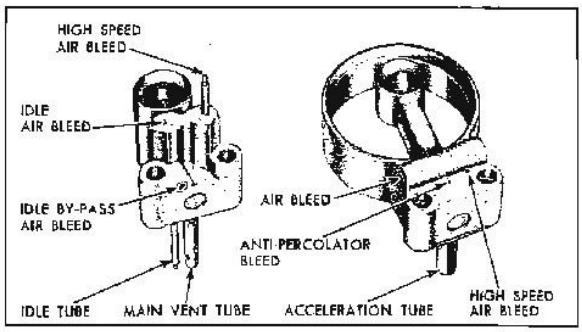

Fig. 6B-87 Passage Identification - Primary and Secondary Venturi Clusters

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.

ASSEMBLY OF THROTTLE BODY

1. If throttle shafts were removed during disassembly, insert shafts through body with lever ends on pump side of body.

2. Using new screws install primary and secondary throttle valves so that trade mark (c in circle) is visible from the bottom of body with throttle valves closed.

3. Install fast idle adjusting screw.

4. Place carburetor body on stand.

5. Install pump intake check.

6. Install inner throttle shaft arm and flex spring on primary throttle shaft (Fig. 6B-88).

7. Install throttle shaft dog on primary throttle shaft (Fig. 6B-89).

8. Install outer throttle shaft arm, washer and retaining screw on primary throttle shaft (Fig. 6B-90).

9. Hook end of flex spring into notch on outer throttle shaft arm.

10. Install secondary throttle operating spring, lever, washer and screw (Fig. 6B-90). Wind spring two turns tight.

11. Install throttle operating rod, washers and spring clips.

12. Install lockout dog, trip lever, fast idle cam and screw (Fig. 6B-91).

13. Install throttle lever screw and spring.

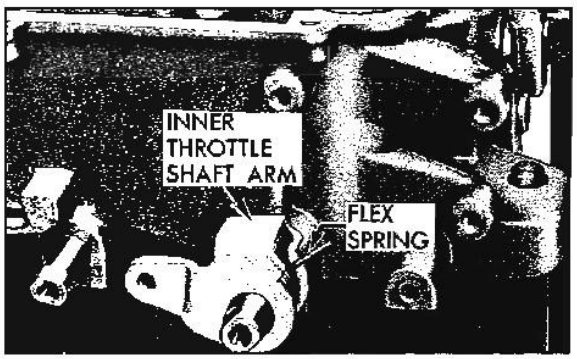

Fig. 6B-88 Inner Throttle Shaft Arm and Flex Spring Installed

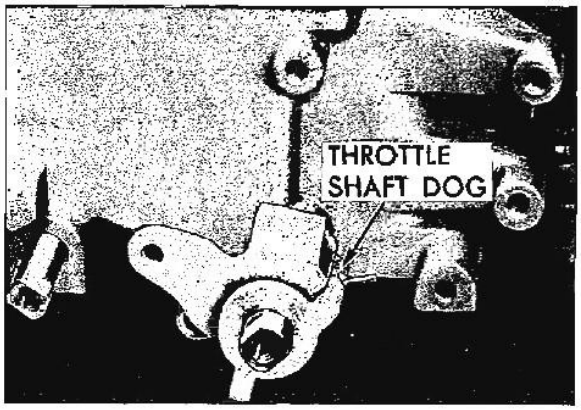

Fig. 6B-89 Throttle Shaft Dog Installed

14. Install idle mixture screws. Turn in finger tight and back out one turn for approximate adjustment.

15. Install air screw. Turn in finger tight and back out 1/2 turn for approximate adjustment.

16. Install primary metering jets and secondary metering jets in their respective bores.

17. Set auxiliary throttle valves in place.

18. Install secondary venturi and gaskets on choke and pump sides.

19. Install hot idle air valve and gasket.

20. Install primary venturi and gaskets on choke and pump side of carburetor (Fig. 6B-92).

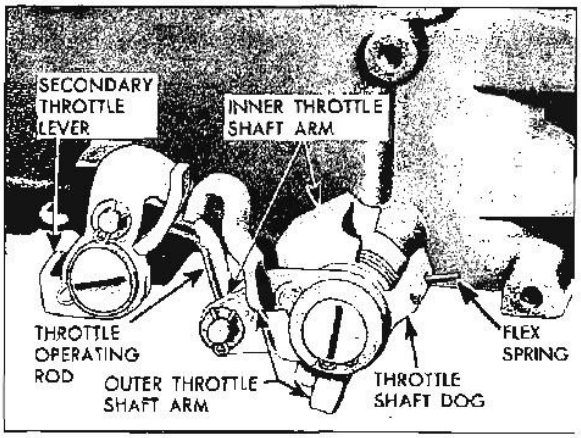

Fig. 6B-90 Primary and Secondary Throttle Linkage Installed

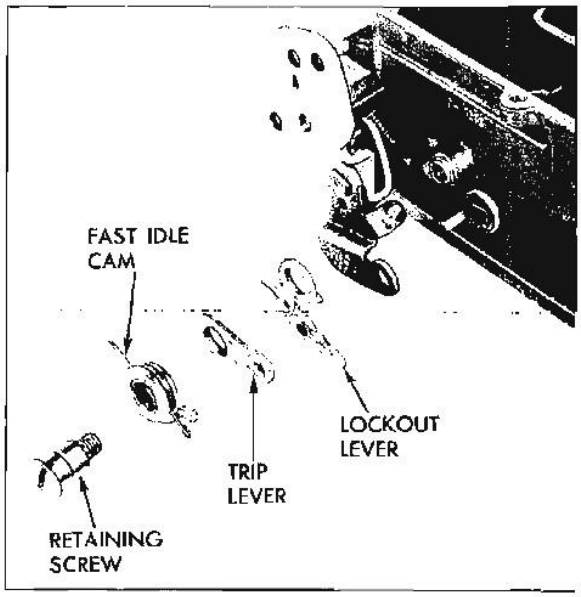

Fig. 6B-91 Lockout Lever and Fast Idle Cam

21. Install pump discharge check needle, point down and pump jet cluster and gasket with two screws.

22. Install pump plunger return spring in pump bore.

23. Install lower choke shaft and lever in choke housing and attach choke housing and gasket to carburetor body and three self-tapping screws.

24. Install choke piston and link assembly in choke housing.

25. Attach choke piston linkage to lower choke shaft with screw and spacer washer.

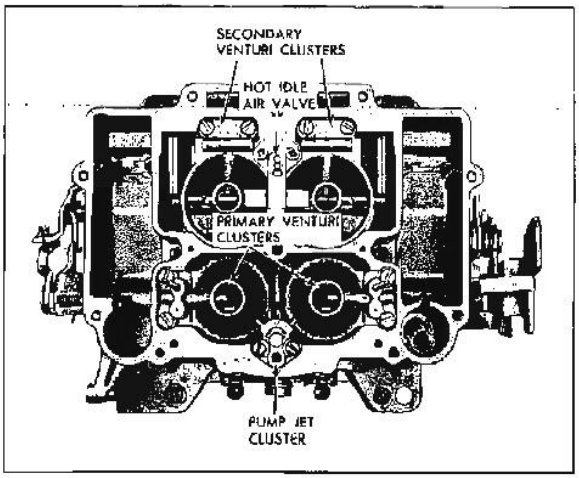

Fig. 6B-92 Venturi Clusters Installed

NOTE: Before proceeding with next step, perform choke piston lever adjustment.

26. Install choke baffle plate, cover gasket, and choke cover and spring assembly. Set choke at one notch rich.

ASSEMBLY OF AIR HORN

1. Slide choke shaft into air horn.

2. Install air horn gasket.

3. Install float needle seat and gasket, float needle and float assembly on pump side of air horn.

4. Install float needle seat and gasket, float needle, and float assembly on choke side of air horn.

5. Adjust float:

A. ADJUST FLOAT ALIGNMENT

1. Sight down the side of the float shell to determine if the side of the float is parallel to the outer edge of the air horn casting. Adjust by bending float lever by applying pressure to the end of the float shell with the fingers while supporting the float lever with the thumb.

CAUTION: To avoid damaging the float apply only enough pressure to bend float lever.

2. After aligning float remove as much clearance as possible between arms of float lever and lugs on air horn by bending the float lever. Arms of float lever should be parallel to the inner surfaces of lugs on air horn as possible. Floats must operate freely without excess clearance on hinge pin.

B. ADJUST FLOAT LEVEL (Fig. 6B-93)

With the air horn inverted, gasket in place and needle seated, the clearance shown in Fig. 6B-93 should be between float at point below first indentation on side of flat from toe end and air horn gasket. Fig. 6B-93 also illustrates point where the dimension should be checked. Bend float arm to adjust. Adjust both floats and recheck float alignment.

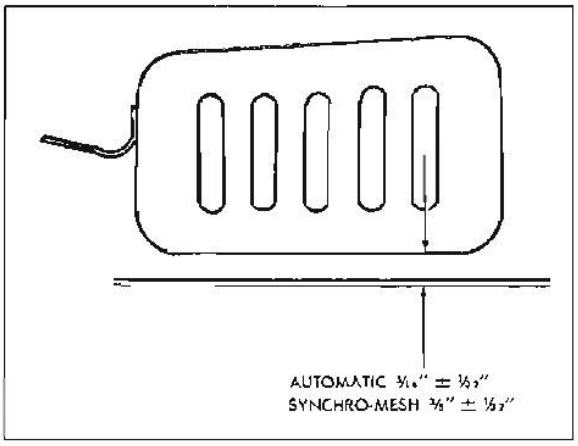

Fig. 6B-93 Float Level Check

C. ADJUST FLOAT DROP (Fig. 6B-94)

With bowl cover held in upright position and measuring from outer end of each float, the distance between top of floats and bowl cover gasket should be a minimum of 23/32" min. To adjust, bend stop tabs on float brackets.

NOTE: Maximum float drop can be any amount which will retain needle for installation. Needle must not wedge at maximum drop.

6. Insert pump plunger shaft through air horn and retain with pump link.

7. Install air horn attaching screws (Fig. 6B-95).

8. Install two step-up rod piston springs in their respective bores.

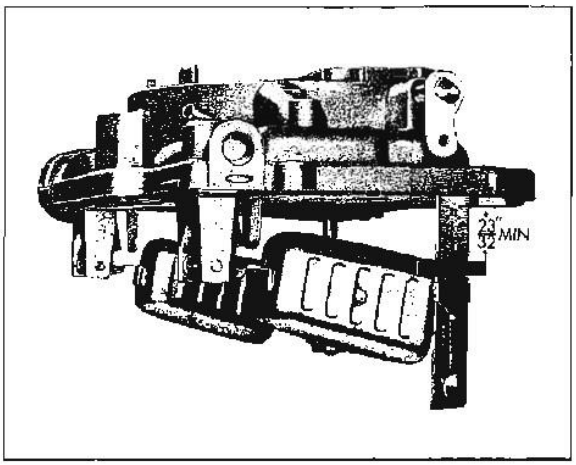

Fig. 6B-94 Checking Float Drop

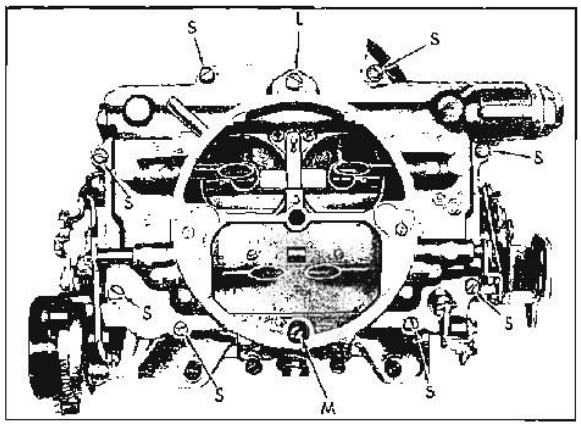

Fig. 6B-95 Location of Air Horn Attaching Screws
S = Short M = Med. L = Long

9. Install step-up rod and piston on pump side of carburetor.

10. Install step-up rod and piston on choke side of carburetor.

11. Install two step-up piston cover plates and screws.

12. Install pump arm lever to air horn casting and connect pump link. Link must be installed as shown in Fig. 6B-96.

13. Insert lower end of pump connector rod in hole in throttle lever. Install upper end of rod in center hole in pump arm lever, retaining with clip.

14. Install choke valve with circle c in trademark visible with the choke valve closed.

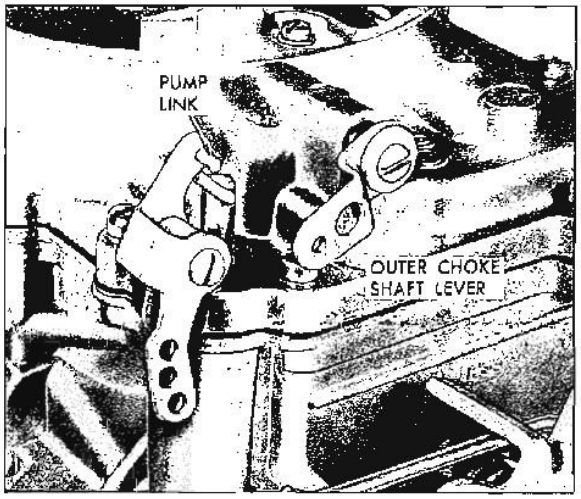

Fig. 6B-96 Pump Link Installed

15. Install choke connector rod between upper and lower choke lever.

16. Install choke shaft lever, washer, and screw on end of choke shaft (Fig. 6B-96).

17. Install fast idle connector rod between fast idle cam and inner choke shaft lever.

18. Install throttle connector rod, and washers.

19. Install inlet screen plug and gasket.

ADJUST PUMP

1. Be sure choke is wide open so fast idle cam does not hold throttle valves open.

2. The distance from the top of the bowl cover to bottom of "S" pump link should be .300-.325" (Fig. 6B-97). Adjust pump linkage so that all play is removed at closed throttle position and full throttle lever travel is still obtainable.

3. To adjust, bend throttle connector rod at lower angle.

ADJUST CHOKE PISTON LEVER

1. Remove three choke coil housing screws and choke coil housing and thermostatic coil.

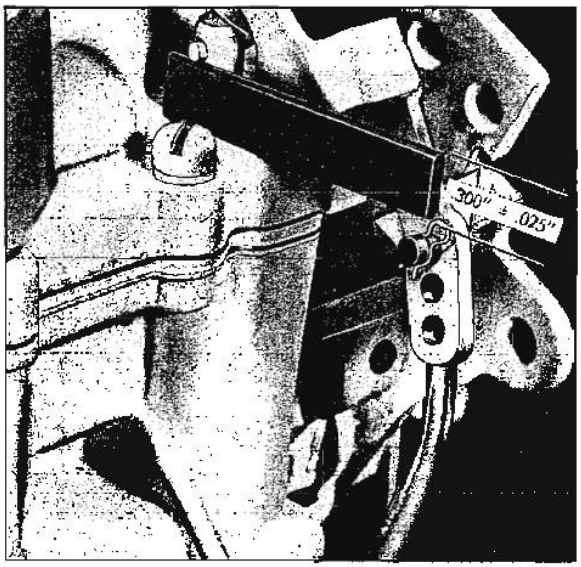

Fig. 6B-97 Checking Pump Adjustment

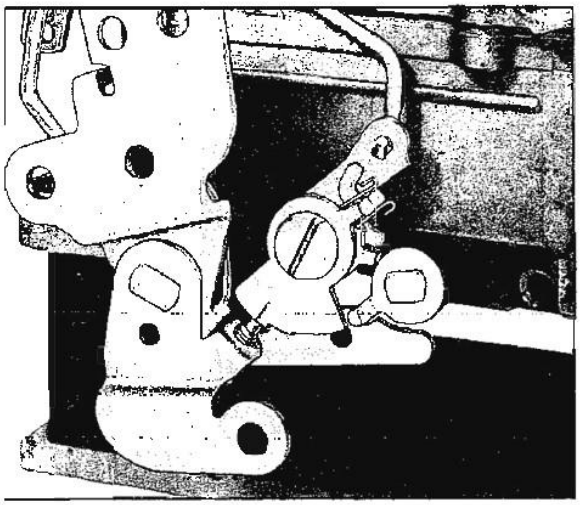

Fig. 6B-98 Checking Choke Shaft Lever

2. Remove coil housing gasket and baffle plate.

3. Completely close choke valve.

4. Choke piston should be flush to 1/64" below outer lip of cylinder.

5. To adjust, bend choke connector rod.

ADJUST CHOKE SHAFT LEVER

With choke valve fully closed and choke lever and arm in contact, bend choke connector rod to align cam index mark on fast idle cam with fast idle screw (Fig. 6B-98).

ADJUST SECONDARY THROTTLE LEVER

1. Open fully both sets of throttle valves. (In this position the stop lugs on primary and secondary throttle levers should contact the boss on the flange.)

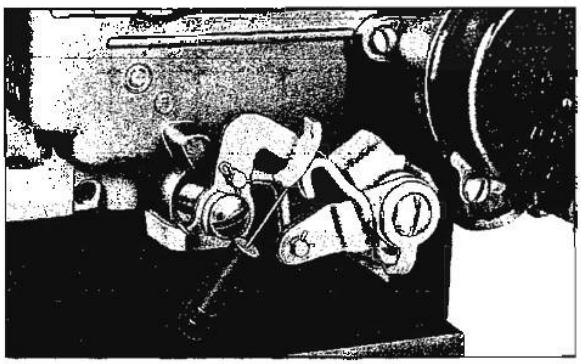

Fig. 6B-99 Checking Secondary Throttle Lever Adjustment