SECTION 3-F
STROMBERG CARBURETOR AND AUTOMATIC CHOKE

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SERVICE BULLETIN REFERENCE

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3-27 STROMBERG CARBURETOR IDENTIFICATION NUMBERS

Stromberg carburetors used on 1948 and 1949 engines have the following model and code numbers:

Series	*Model No.*	*Code No.*
40-50	AAV-167	7-69
70	AAV-267	7-70

The model designation indicates the basic design of the unit. The code number which is stamped on the float bowl cover (air horn) directly above the fuel level sight plug, furnished the key to the size, calibrations, and other alterations required for the particular year and series engine for which the unit is specified.

Carburetors having different code numbers are not interchangeable even though the model designations are identical. The variations between carburetors having different code numbers may not be apparent on inspection, but they have a very important bearing on the performance of an engine.

When ordering or using replacement parts for a Stromberg carburetor always make certain that they are specified for the carburetor model and code number, as well as for the car model and series.

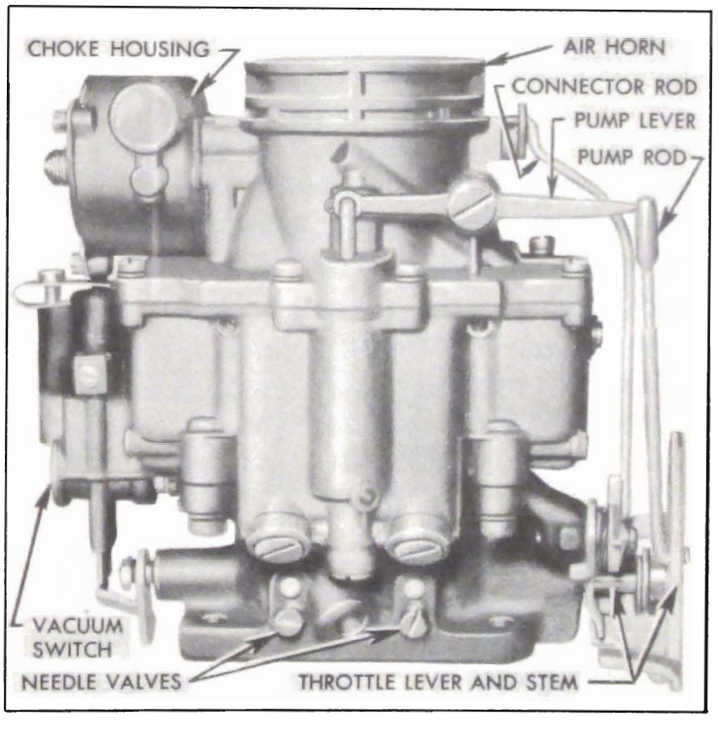

Figure 3-62—Stromberg Carburetor Assembly

3-28 DESCRIPTION AND OPERATION OF STROMBERG CARBURETOR

a. General Description

The AAV Stromberg carburetor is a dual-barrel down draft type. See figure 3-62. It contains a float system, idle (low speed) system, main metering (high speed) system, power

system, accelerating system, and automatic choke. An accelerator vacuum switch, which is part of the cranking motor control circuit, is incorporated in the carburetor assembly.

Air is supplied to both barrels of carburetor through the air horn which has one inlet and contains the choke valve. Fuel is supplied to both barrels from one float chamber. The float chamber encircles both barrels and contains a dual type float and lever assembly which actuates one float needle valve. The accelerating pump discharge nozzle in each barrel is supplied with fuel from one pump located in the float chamber. The power system for both barrels is controlled by one vacuum power piston.

Except as noted above, each barrel forms a complete carburetor system. Each barrel contains an idle system with adjustable needle valve, a main metering system, accelerating pump discharge nozzle, primary and auxiliary venturi tubes, and a throttle valve. The throttle valves of both barrels are mounted in line on one stem. The dual construction provides the advantages of two carburetors in one compact unit. The dual carburetor and dual intake manifold provides more uniform distribution of fuel to all cylinders than would be possible with one single barrel carburetor.

Operation of each system of the AAV Stromberg carburetor is described in the following subparagraphs. The automatic choke is described in paragraph 3-29, which follows. The accelerator vacuum switch is described in paragraph 10-33.

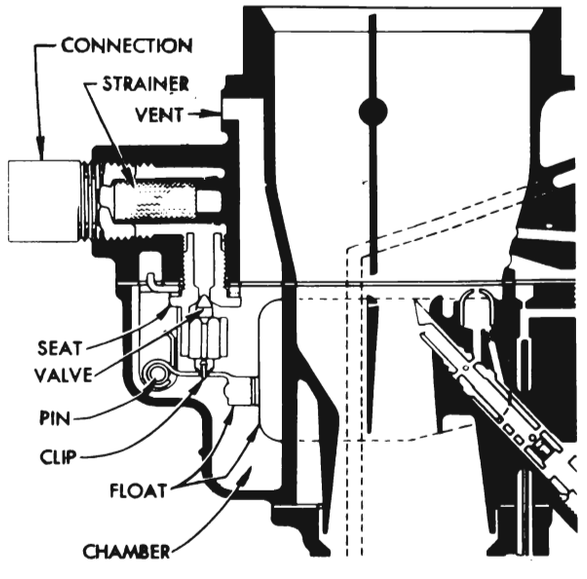

Figure 3-63—Float System—Stromberg Carburetor

b. Operation of Stromberg Float System

Fuel enters the carburetor at the gasoline connection and flows through the strainer and needle valve seat into the float chamber. When the fuel reaches the prescribed level in float chamber, the dual float presses the needle valve against its seat to shut off the flow of fuel. Thereafter, the fuel is maintained at the prescribed level by opening and closing of the needle valve as required. The float lever is hinged on a fulcrum pin and connected to the needle valve by a clip. See figure 3-63.

The float chamber is vented externally through a port in air horn to allow fuel to be smoothly withdrawn through the various systems.

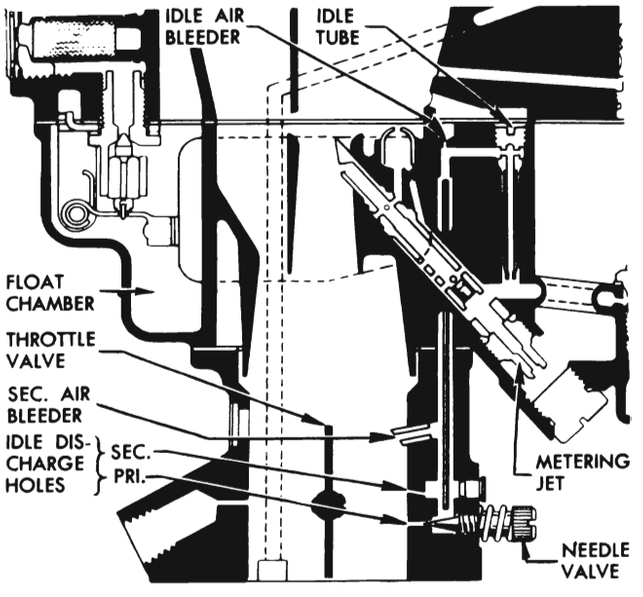

Figure 3-64—Idle System—Stromberg Carburetor

c. Operation of Stromberg Idle (Low Speed) System

Fuel is delivered to the engine through the idle system at closed throttle and light load speeds up to approximately 20 MPH. The idle system also partially controls fuel supply for light load speeds up to approximately 30 MPH.

The operation of the idle system in each barrel of the carburetor is identical. Fuel flows from the float chamber through main metering jet and upward through the idle tube which meters the fuel. From the idle tube it flows through a connecting channel where air from the idle air bleeder is mixed with it so that a mixture of air and fuel passes down the idle channel to the idle discharge holes. Additional air is drawn into the fuel air mixture in the idle channel through the secondary air bleeder. See figure 3-64.

On idle or closed throttle operation, the fuel-air mixture is drawn only from the lower or primary idle discharge hole due to high suction at this point. As throttle valve is opened, suction is also placed on the upper or secondary idle discharge hole to feed additional fuel. Fuel supplied through the idle discharge holes begins to diminish when the throttle valve is opened to the point where the main metering system begins to supply fuel, as described below, until a throttle position is reached where the idle system ceases to function.

The idle needle valve controls the quantity of fuel that is supplied through the primary idle discharge hole, thereby affecting the final fuel-air ratio supplied to the engine while the idle system is in operation.

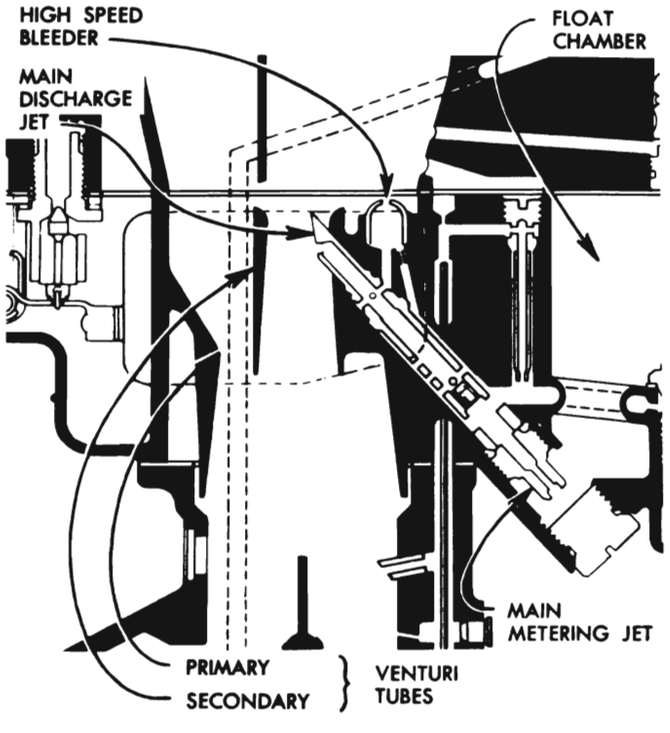

Figure 3-65—Main Metering System—Stromberg Carburetor

d. Operation of Stromberg Main Metering System

The main metering system controls the flow of fuel during the intermediate or part-throttle operation, starting at approximately 20 MPH and continuing up to approximately 75 MPH.

The operation of the main metering system in each barrel of the carburetor is identical. Air entering the barrel through the air horn passes through the primary and auxiliary venturi tubes which increase the velocity of the air and create a suction on the main discharge jet. This causes fuel to flow from the float chamber through the main metering jet into the main discharge jet. Air is drawn in through the high speed bleeder so that a mixture of fuel and air is discharged from the main discharge jet into the air stream passing through the auxiliary venturi in the barrel of the carburetor. See figure 3-65.

The main discharge jet is designed so that if any vapor bubbles are formed in the hot gasoline, the vapors will follow the outside channel around the main discharge jet instead of passing through the jet tube. These vapor bubbles escape through the dome-shaped high speed bleeder and thereby reduce percolating troubles.

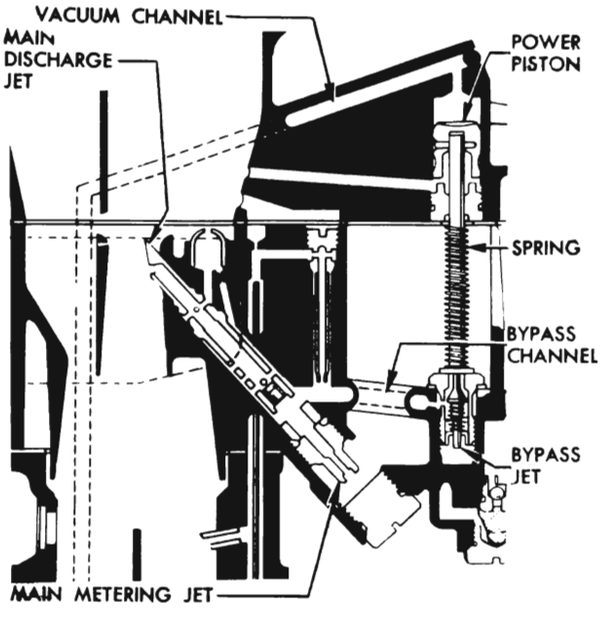

Figure 3-66—Power System—Stromberg Carburetor

e. Operation of Stromberg Power System

For maximum power or high speed operation above approximately 75 MPH a richer mixture is required than that necessary for normal throttle opening. The richer mixture is supplied through the main metering systems of both barrels of carburetor by means of the power system.

The power piston cylinder is connected by a channel to the intake manifold. At part throttle position the manifold vacuum is sufficient to hold the power piston in its "up" position against the tension of the piston spring. When the throttle valve is opened to a point where additional fuel is required for satisfactory operation, the manifold vacuum decreases sufficiently so that the piston spring moves the power piston down to open the power by-pass jet. Opening of the by-pass jet allows additional fuel to enter the main discharge jets through a by-pass channel without passing through the restricted main metering jet. See figure 3-66.

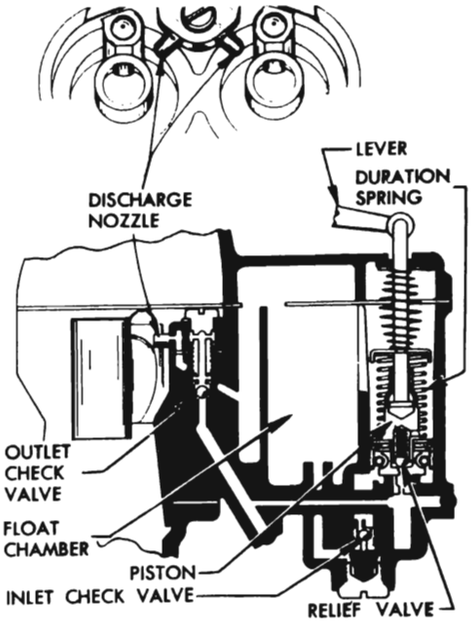

Figure 3-67—Accelerating System—Stromberg Carburetor

f. Operation of Stromberg Accelerating System

For smooth and rapid acceleration it is necessary to supply an extra quantity of fuel momentarily when the throttle is suddenly opened. This accomplished by operation of the accelerating pump piston which is directly connected to the throttle valve lever by means of a rod and fulcrum lever. See figure 3-67.

When the throttle is closed, the pump piston moves up and draws a supply of fuel from the float chamber through the inlet check valve into the pump cylinder. When the throttle valve is opened, the piston on its downward stroke exerts pressure on the fuel which closes the inlet check valve, opens the outlet check valve, and discharges a metered quantity of fuel through the pump discharge nozzles in each barrel of carburetor. This occurs only momentarily during the accelerating period. The pump duration spring provides a follow-up action so that the fuel discharge carries out over a brief period of time. The relief valve in the pump piston prevents excessive build-up of pressure in the accelerating systems when the throttle is suddenly snapped open.

When the desired speed is reached and the throttle is held in fixed position, the pressure on the fuel in the pump cylinder decreases sufficiently so that the outlet check valve closes and fuel ceases to discharge from the pump nozzles. With the throttle held in a fixed position the fuel flows only through the idle or main metering systems as previously described.

3-29 DESCRIPTION AND OPERATION OF STROMBERG AUTOMATIC CHOKE

a. General Description

The Stromberg automatic choke consists of a choke valve mounted on a stem or shaft in the carburetor air horn, a bi-metal thermostat and cover, a vacuum actuated piston located in a choke housing attached to the air horn, a fast idle rod connecting the choke valve to a fast idle cam mounted on carburetor throttle body. An upper heat pipe connects the choke housing to a lower heat pipe in the exhaust manifold.

The choke valve is mounted off-center in the choke stem so that the force of air stream passing through the air horn tends to move valve to the open position. A short lever mounted on the choke stem in choke housing is engaged by the free outer end of the thermostat which, when cold, tends to close the choke valve. The piston, which is actuated by intake manifold vacuum, is connected by a link to the short lever on choke stem and tends to open the choke valve when the engine is running.

The lower heat pipe in the exhaust manifold heats the air which is drawn through it and the upper heat pipe into the choke housing. A small slot in the vacuum piston and a small hole in choke housing permit manifold vacuum to draw the air into the choke housing to heat the thermostat.

The fast idle cam is connected by the fast idle rod to a lever on the outer end of the choke stem so that it is rotated as the choke valve moves. In closed throttle position, the throttle stop screw bears against one edge of the fast idle cam which has a number of steps of different heights to give different amounts of throttle opening, depending on positions of the cam and choke valve.

b. Choke Operation—Cold Engine

When the engine becomes cold the choke thermostat also becomes cold and increases its spring tension sufficiently to close the choke valve. It is prevented from closing the valve, however, because the throttle stop screw holds the fast idle cam in the slow idle position; consequently, the choke valve is held partially open.

When the accelerator pedal is depressed to start the engine, the throttle stop screw is lifted clear of the fast idle cam and the thermostat then closes the choke valve. See figure 3-78.

After the engine starts running, intake manifold vacuum causes the piston to partially open the choke valve against the spring tension of thermostat, thereby admitting sufficient air to give a satisfactory running mixture.

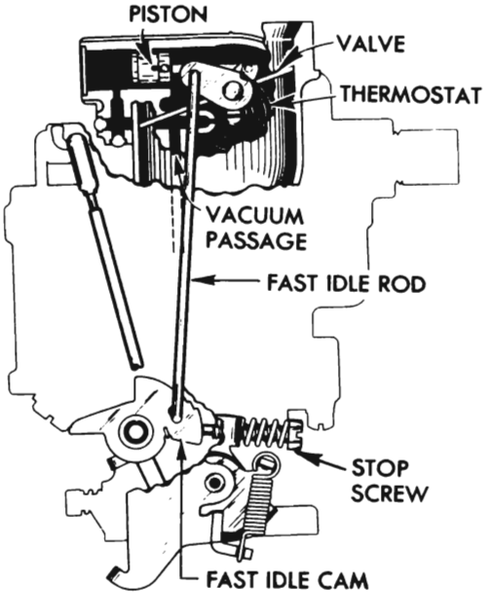

Figure 3-68—Stromberg Choke in Cold Starting Position

When accelerator pedal is released after starting the engine, the throttle stop screw comes to rest against a step of fast idle cam which was rotated to the fast idle position by the closing of choke. This provides proper throttle opening to prevent stalling of the cold engine. See figure 3-68.

If the throttle is partially opened while the running engine is cold, the vacuum piston and the increased force of air flow against the offset choke valve will open the valve against the spring tension of the thermostat. These opposing forces balance the choke valve at a position which provides the required choke action without causing loading or an excessively rich mixture. At wide open throttle the vacuum piston does not help to open the choke valve.

c. Choke Operation—Warm-up Period.

As the engine and exhaust manifold warm up, warm air is drawn through the heat pipes into the choke housing by manifold vacuum operating through the small slot in vacuum piston and hole in choke housing. This warms the thermostat, causing it to reduce its spring tension on choke valve in proportion to the increase in temperature.

When the throttle is opened and throttle stop screw is lifted from the fast idle cam, the choke valve then moves to a more open position and the fast idle cam is rotated to bring a lower

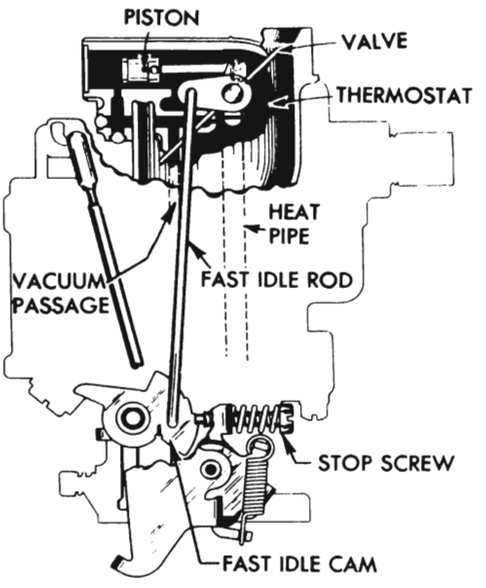

Figure 3-69—Stromberg Choke During Warm-up

step into position for the throttle stop screw. The engine will then run at a lower speed at closed throttle. See figure 3-69.

d. Choke Operation—Hot Engine

When the engine reached normal operating temperature, the choke thermostat is heated to the point where it no longer exerts any spring tension on the choke valve. The choke valve is in the wide open position and the fast idle cam is in the slow idle position so that the throttle stop screw bears against the lowest step of fast idle cam at closed throttle. See figure 3-70.

e. Choke Unloader Operation

If the engine becomes flooded for any reason, the choke valve can be partially opened by de-

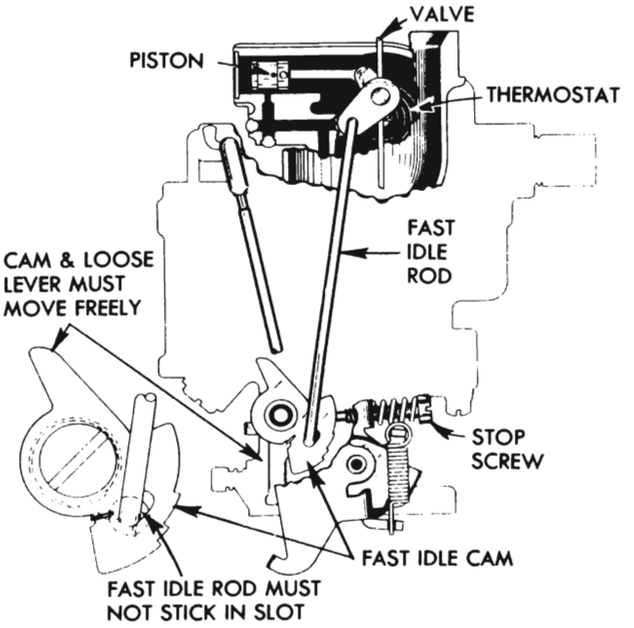

Figure 3-70—Stromberg Choke in Hot Position

pressing accelerator pedal to the full extent of its travel. This causes a tongue or arm on the throttle lever to contact and rotate the fast idle cam, which forces the choke valve open. See figure 3-73.

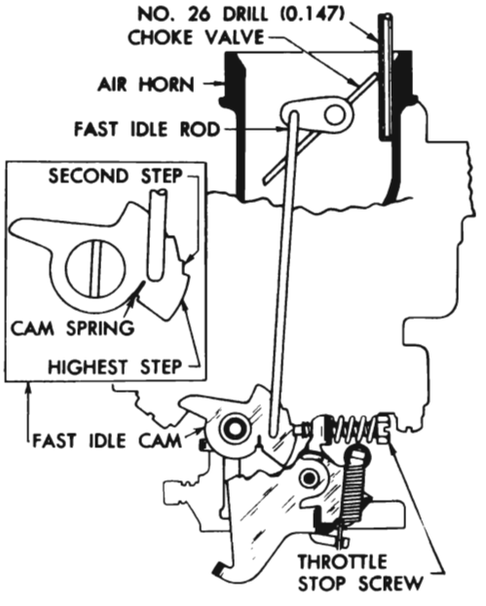

Figure 3-71—Stromberg Fast Idle Cam Adjustment

3-30 ADJUSTMENT OF FAST IDLE CAM AND CHOKE UNLOADER

If the engine operates on fast idle too long after starting or else moves to slow idle too soon, or the choke unloader does not operate properly, adjust fast idle cam and choke unloader as follows:

1. Remove air cleaner and silencer.
2. Place a No. 26 drill (0.147") between wall of air horn and the center of upper edge of choke valve, and hold valve firmly closed against the drill. See figure 3-71.
3. Check fast idle cam spring to make sure it holds the cam upward against the end of fast idle rod.
4. Close the throttle until stop screw contacts the fast idle cam. The screw should just clear the edge of the highest step of cam and bear against the second step, as shown in figure 3-71.
5. If stop screw does not contact fast idle cam as specified, bend fast idle rod at the large curve as required to obtain specified contact.
6. Remove the No. 26 drill and place a No. 53 drill (0.595") at the same point, then hold choke valve firmly closed against the drill. See figure 3-72.
7. Slowly open and close throttle valve several times and check clearance between the lock

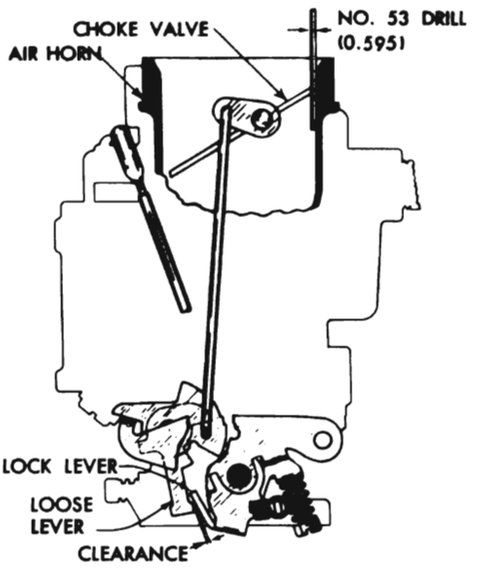

Figure 3-72—Stromberg Lock Lever Adjustment

lever on throttle stem and the loose lever behind the fast idle cam, as indicated in figure 3-72.

8. Clearance should be just enough to allow the lock lever to pass the loose lever. Bend end of lock lever up or down as required to secure proper clearance.

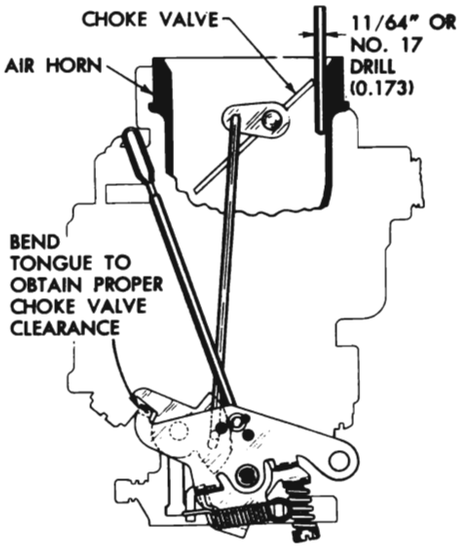

Figure 3-73—Stromberg Choke Unloader Adjustment

9. Open throttle valve to full wide open position, making sure that stop on throttle lever is against boss on throttle body.
10. Check the clearance between wall of air horn and the center of upper edge of choke valve. The clearance should be 0.173", and may be measured with a No. 17 or 11/64" drill. See figure 3-73.
11. Bend the tongue on throttle lever as re-

quired to obtain specified clearance.

12. Install air cleaner and silencer.

3-31 DISASSEMBLY, CLEANING, ASSEMBLY OF STROMBERG AUTOMATIC CHOKE

a. Removal and Disassembly

1. Remove carburetor assembly from engine.

2. Remove three screws and lug-washers; then remove thermostat cover with thermostat. See figure 3-74.

3. Remove lock nut from choke stem, using Wrench T-25047; then remove lock washer and serrated washer.

4. Remove choke housing screws and while removing housing slide the vacuum piston lever off choke stem. Remove piston from housing.

5. Disconnect fast idle rod from choke stem lever. Remove choke valve and the choke stem and lever assembly.

6. Remove lead ball plugs from choke housing, using Plug Remover T-25052, shown in figure 3-85. Be careful not to damage plug seats in housing.

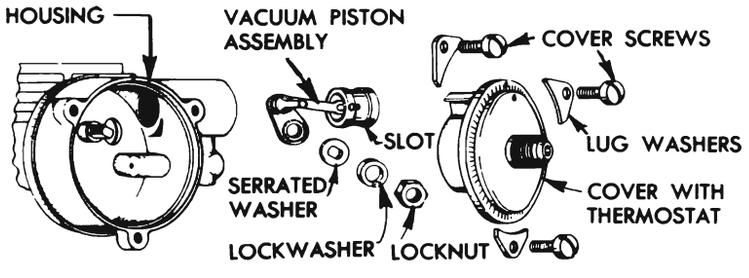

Figure 3-74—Stromberg Choke—Disassembled

b. Cleaning and Inspection

1. Allow all parts to soak in suitable cleaner bath to remove all foreign material. Bendix Carburetor Cleaning Solvent is recommended for this purpose. Regardless of cleaning material used, however, be sure to thoroughly rinse the parts in kerosene, distillate, or white gasoline to remove all gummy deposits that have been softened by the cleaner.

2. It is particularly necessary for the piston and the cylinder in housing to be thoroughly clean and free of burrs or scores. Do not use any abrasive material for cleaning piston and cylinder. If piston or cylinder is scored, replace the affected part.

3. If thermostat is distorted or damaged it must be replaced with a new thermostat cover with thermostat assembly. The thermostat is not furnished separately because the "V" index mark is stamped on cover after installation of thermostat, to insure proper calibration.

4. Remove gum or other foreign material from the choke stem bearings in air horn, using cleaning fluid; do not scrape bearings with a cutting tool. Check choke stem for free action in air horn. If stem is worn so that excessive play in bearings exists, replace the stem and lever assembly. If choke valve is bent or otherwise damaged it should be replaced.

c. Assembly and Installation

1. Install lead ball plugs in choke housing, using Plug Set T-25053 (tool in figure 3-88).

2. Install choke stem and valve in air horn. Close valve and check for uniform clearance between edges of valve and wall of air horn. If clearance is not uniform, or valve sticks in air horn at any point, loosen screws and shift valve to obtain uniform clearance and freedom from sticking. It is important to have the choke valve fit properly, otherwise hard starting may result.

3. Place vacuum piston in cylinder with *slot on piston down; this is very important. Do not use lubricant of any kind on piston or in cylinder.*

4. With the housing gasket in place, install choke housing on the air horn; at the same time place piston lever on choke stem. Install housing screws, making certain choke stem does not bind.

5. Install serrated washer with the serrations matching those on the lever. Install lock washer and lock nut; at this time turn the nut only finger-tight.

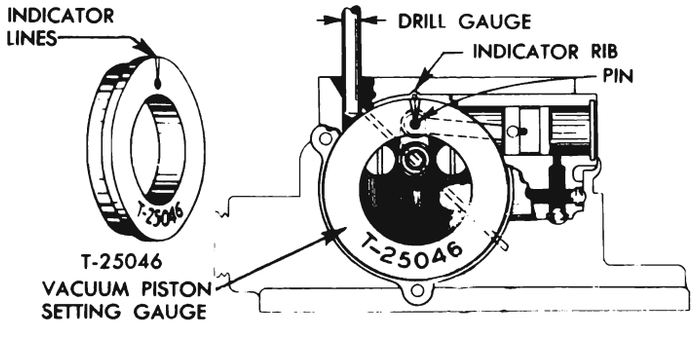

Figure 3-75—Setting Vacuum Piston with Gauge T-25046

6. Place piston setting Gauge T-25046 on choke housing with a small hole fitting over the pin of the choke lever. There are two indicator lines on the face of the gauge. The gauge should be positioned so that the indicator rib on top of the choke housing is centered between the indicator lines. See figure 3-75.

7. Place drill, of size specified below, between choke valve and wall of air horn and hold choke

valve tight against drill while tightening lock nut lightly with Wrench T-25047.

Car Series	*Carburetor Code No.*	*Drill Size*
40-50	7-69	15/64"
70	7-70	No. 3

8. Remove drill and Setting Gauge T-25046. Hold choke valve closed and tighten lock nut securely, using Wrench T-25047. Recheck choke valve opening to be certain the setting has not been changed. Do not try to change the position of the piston lever without first loosening the lock nut and serrated washer.

9. Make certain the choke stem operates freely and that the choke valve will drop freely of its own weight, then attach fast idle rod to choke stem lever with a cotter pin.

10. Place thermostat cover on housing with thermostat hook in "down" position. Rotate cover in direction of arrow until "V" punch mark is located in line with indicator rib on top of housing for Series 70 (code No. 7-70), or is one notch "lean" (clockwise) for Series 40-50 (code No. 7-69). Install lug-washers and tighten screws securely.

11. Check adjustment of fast idle cam and choke unloader (par. 3-30).

12. Install carburetor assembly on engine. When attaching choke upper heat pipe to thermostat cover avoid excessive tightening which may change the position of cover and affect the thermostat setting.

3-32 DISASSEMBLY, CLEANING, INSPECTION OF STROMBERG CARBURETOR

a. Removal and Disassembly

1. Remove air cleaner and silencer. Disconnect throttle rod, accelerator vacuum switch wires, choke upper heat pipe, vacuum spark control pipe, and gasoline pipe.

2. Remove gasoline filter assembly, then remove carburetor from engine.

3. Remove automatic choke parts from air horn as described in paragraph 3-31. Disconnect fast idle rod from fast idle cam by unhooking the cam spring from rod.

4. Disconnect pump rod from pump lever by pushing upward on spring housing on rod and pulling outward. Remove pump lever fulcrum screw *(left hand thread)* and spring washer; then disconnect pump lever from stem of accelerating pump piston.

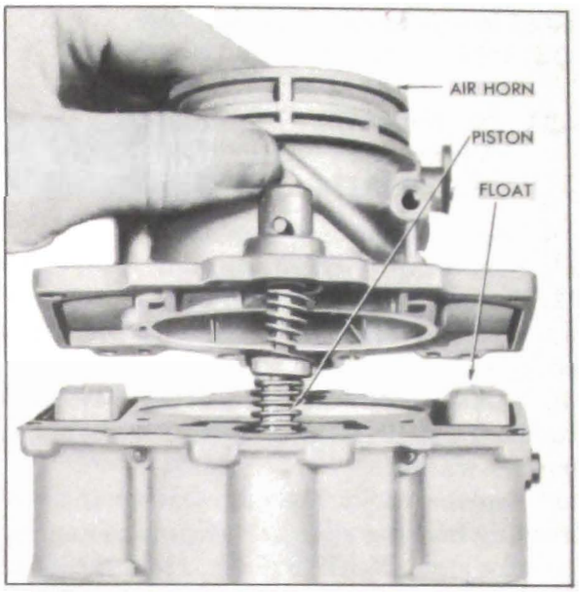

Figure 3-76—Removing Air Horn

5. Remove screws and lift off air horn assembly with float attached. See figure 3-76.

6. Remove pump piston assembly from air horn. Remove felt washer, splash washer, and retainer spring from piston link.

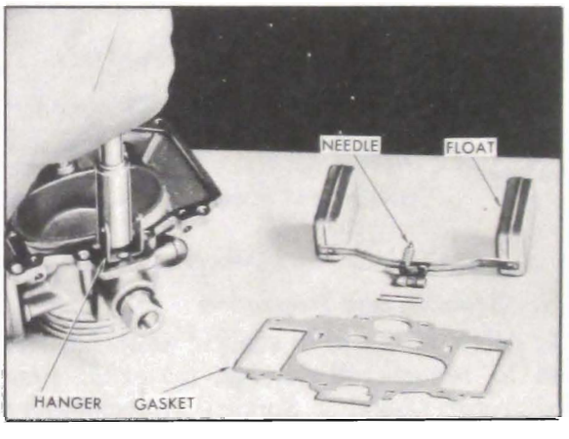

Figure 3-77—Removing Needle Valve Seat and Float Hanger

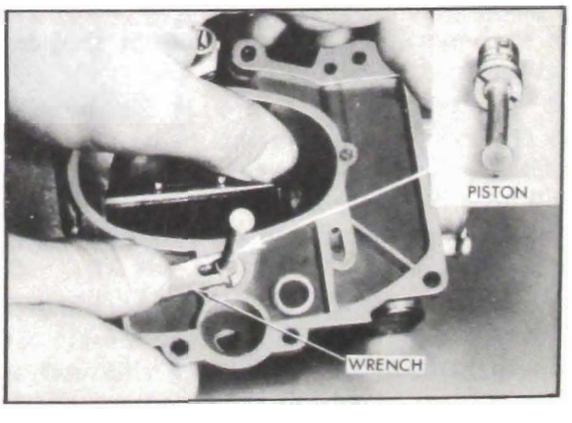

Figure 3-78—Removing Power Piston

7. Tap end of float fulcrum pin which is not serrated to remove the pin, then remove float and needle valve. Shake float to see whether it is "loaded" with gasoline due to a leak. Remove needle valve seat and float hanger using Wrench T-20140. See figure 3-77.

8. Remove vacuum power piston from air horn, using Wrench T-29733. See figure 3-78. Remove gasoline connection and screen.

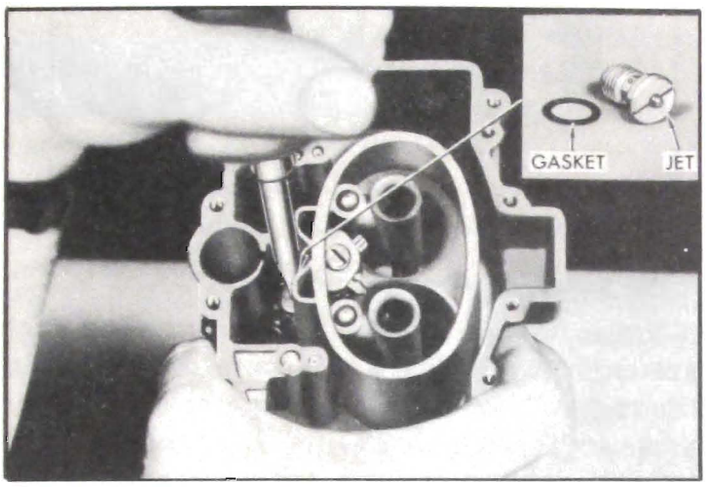

Figure 3-79—Removing By-Pass Jet

9. Remove accelerator vacuum switch, which is attached to throttle body by two screws.

10. Remove power by-pass jet and gasket from main body, using a large screw driver. See figure 3-79.

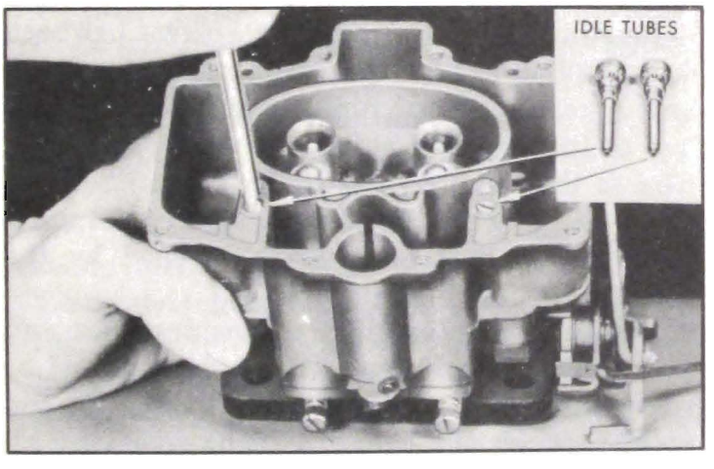

Figure 3-80—Removing Idle Tubes

11. Remove both idle tubes from main body. See figure 3-80. Handle each tube carefully to avoid damaging the small end which contains the metering orifice.

12. Remove pump discharge nozzle screw, nozzle and gaskets. See figure 3-81. Place hand on top of main body and invert body to catch the check valve ball.

13. Remove main discharge jet plugs and gaskets, then remove main metering jets. See figure 3-82.

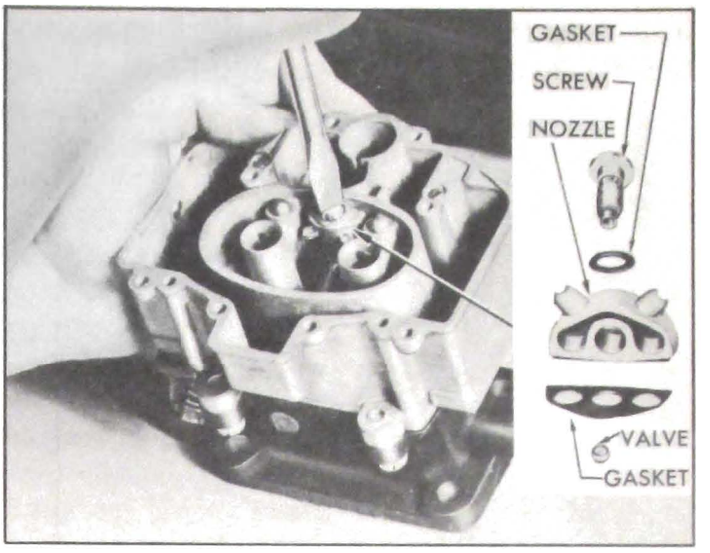

Figure 3-81—Removing Pump Discharge Nozzle

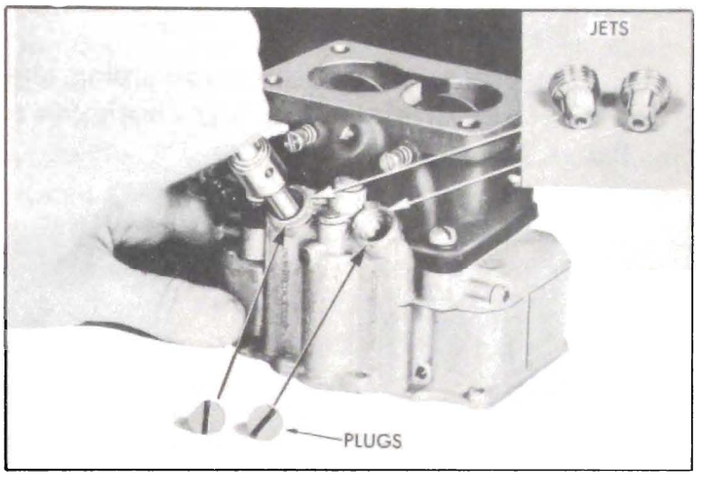

Figure 3-82—Removing Main Metering Jets

14. Remove main discharge jets by screwing Jet Remover T-24967 (R.H. thread) into base of jet, then pulling jets from main body. See figure 3-83. The threads formed in the main discharge jet by the tool will not affect the metering characteristics of the jet. NOTE: *Make sure that main discharge jet lead gaskets are removed from main body.*

15. Remove screws and separate the main

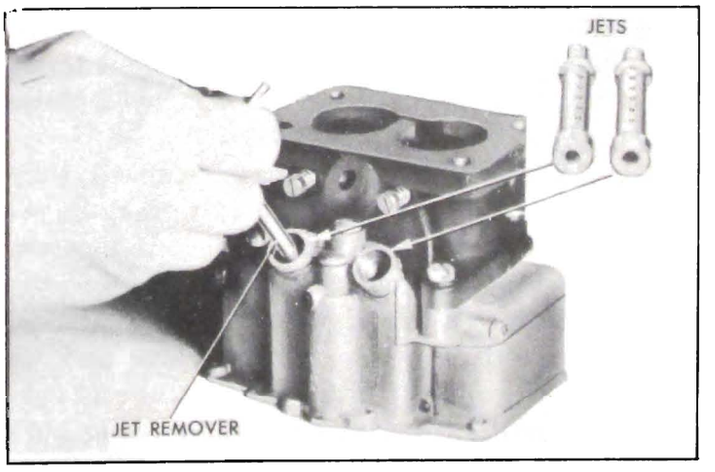

Figure 3-83—Removing Main Discharge Jets

body from the throttle valve body, then remove the idle channel reducer wires.

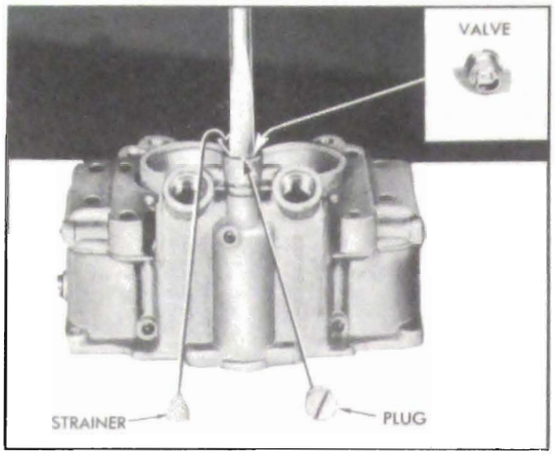

Figure 3-84—Removing Inlet Check Valve

16. Remove pump inlet check valve plug and gasket. Remove strainer and inlet check valve. See figure 3-84.

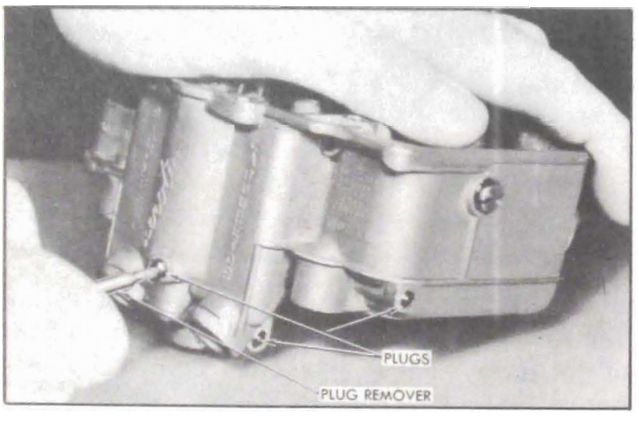

Figure 3-85—Removing Lead Ball Plug

17. Remove all lead ball plugs from main body, using Plug Remover T-25052. See figure 3-85. Be careful not to damage the plug seats in body.

18. Remove both idle needle valves and springs. If carburetor is exceptionally dirty it may be advisable to remove the adjacent taper drive plugs from throttle body; otherwise these plugs should be left in place.

19. Before throttle valves are removed, they should be marked so that each valve may be reinstalled in the barrel from which it was removed and may be accurately positioned in the barrel of throttle body. Using a sharp scriber, lightly scratch one line on one valve and its barrel and two lines on the other valve and barrel; also scribe lines on each valve along both edges of the valve stem. See figure 3-86. After marking the parts, remove the valves and the throttle lever and stem assembly.

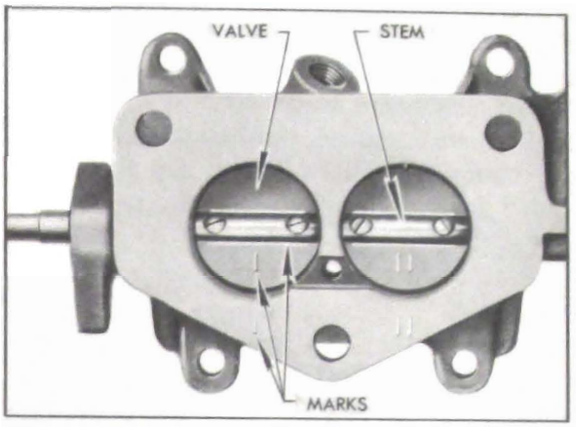

Figure 3-86—Marks on Throttle Valves

b. Cleaning Carburetor Parts

Regardless of the number of new parts that are used in rebuilding a carburetor, the job in the end will not be satisfactory unless all metal parts are thoroughly cleaned. Because of the nature of carburetor parts, with numerous small passages subject to fouling with tenacious carbon and gum deposits, ordinary cleaning processes are entirely inadequate. The correct procedure is to use a cleaning bath in which metal parts can be immersed and "soaked" for sufficient time after disassembly to thoroughly clean all surfaces and channels.

Bendix Carburetor Cleaning Solvent has been developed especially for cleaning carburetors, and is recommended for this purpose. Regardless of the cleaning material used, however, be sure to thoroughly rinse the parts in kerosene, distillate, or white gasoline to remove all gummy deposits that have been softened by the cleaner.

Before immersing in the cleaning bath, all lead ball plugs and taper drive plugs should be removed so that the cleaner can penetrate and wash through the channels, thus removing all foreign material. Removal of all carbon from the inside of the throttle barrel is particularly important.

c. Inspection of Carburetor Parts

All metal parts should be thoroughly cleaned and each part should be carefully inspected for wear or damage as follows:

1. Automatic Choke. Inspect choke parts as described in paragraph 3-31.

2. Air Horn. Make certain that the vacuum cylinder is thoroughly clean. Check wear of

choke stem bearings.

3. Float Needle Valve and Seat. Because of the wear that normally occurs in these parts and the necessity of having a tight seating valve, it is advisable to replace these parts if the carburetor has been used for considerable mileage.

4. Vacuum Power Piston and By-Pass Jet. Make certain that the surface of the piston is thoroughly clean. Do not use any abrasive material for polishing the piston surface. Inspect for wear or damage. Replace if necessary. Test by-pass jet for tight seating by sucking on the upper end. Replace jet if doubtful.

5. Main Body. Make certain the main body is thoroughly clean and that all passages are free of foreign material. Check high speed and idle air bleeders for correct sizes, using a drill shank as a gauge. For drill sizes see Stromberg Carburetor Calibrations, paragraph 3-1.

6. Main Discharge Jets and Idle Tubes. Inspect tips of main discharge jets to make certain that they are not damaged, and that walls are not distorted so as to deform the holes. Test idle tubes by blowing or sucking to make sure that metering holes are clear. Inspect small ends to make sure that they are not damaged so as to deform the metering holes.

Replace any parts whose condition appears doubtful.

7. Pump Piston, Check Valves, Strainer, Discharge Nozzle. Inspect pump piston leather washer for cracks, creases, turned edges, or other damage. Test relief valve in piston for tight seating by blowing on lower end of piston; if valve is seating tightly it will not be possible to blow through it.

Test inlet check valve for tight seating by sucking on lower end. Inspect outlet check valve ball for rough surfaces.

Inspect inlet strainer for holes or other damage.

Test discharge nozzle by sucking or blowing to make sure that all holes are clear.

Replace any part whose condition appears doubtful.

8. Throttle Valve Body and Idle Needle Valves. Be sure that the idle discharge holes, the air bleeders, and the barrels of the throttle valve body are clean of all carbon deposits. A comparatively small amount of carbon in the barrel may have the effect of decreasing the bore sufficiently to prevent the throttle valves resting at the correct angle when closed. This can have serious effects on performance because the distance from the throttle valve, when closed, to the edge of the idle discharge hole must be kept within close limits to the established dimension.

Check the size of the upper idle discharge hole by inserting the shank of the correct size drill. This has the further advantage of removing any foreign matter that may be obstructing the hole. The lower discharge hole for the idle needle valve should be checked in the same manner. For drill sizes see Stromberg Carburetor Calibrations (par. 3-1).

Inspect seats for idle needle valves for scoring or other damage. If ends of idle needle valves are grooved or bent, replace the valves.

Check wear of throttle stem bearing. There should not be more than about .006" play, otherwise air leaks will interfere with performance.

9. Throttle Valves, Throttle Lever and Stem Assembly. See that throttle valves are not bent and do not have burrs or sharp edges. Replace if damaged.

Inspect throttle lever and stem assembly for wear on bearing surfaces. Check pump rod holes for wear and also see that lever is not loose on stem. Replace if necessary.

3-33 ASSEMBLY AND ADJUSTMENT OF STROMBERG CARBURETOR

a. Assembly of Carburetor

In the assembly of the carburetor, use all new gaskets and any additional new parts found to be necessary during inspection.

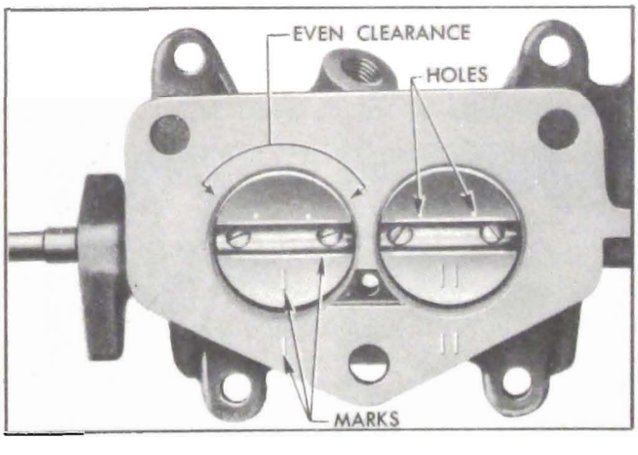

Figure 3-87—Correct Position of Throttle Valves

1. Install throttle lever and stem assembly in throttle body. Insert each valve through the stem in the same barrel from which it was removed as indicated by the marks previously made, placing the two small holes in valve toward the idle discharge holes in throttle body.

Loosely install valve screws and align the valves carefully with the scribe marks previously made along edges of valve stem.

With valves held in closed position, hold throttle body to the light and check for even clearance between each valve and the barrel. See figure 3-87. If clearance is excessive at any point, shift valve in stem until it fits the barrel with the least amount of light showing around the edge, then tighten screws firmly.

2. Install new taper drive plugs in throttle body at upper idle discharge holes, if old plugs were removed. Install spring and idle needle valves. Seat needle valves lightly with fingers, then turn each valve out exactly 1¾ turns off seat. Do not use a screwdriver or otherwise force a needle valve against its seat; this will score the valve and ruin it for service.

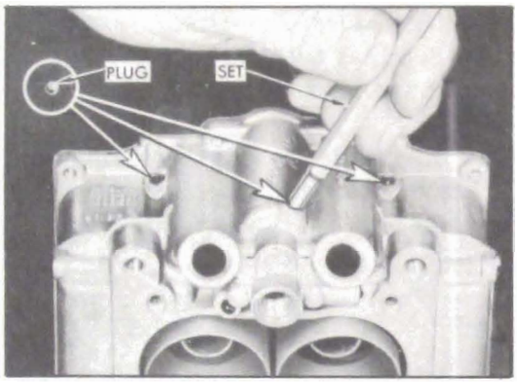

Figure 3-88—Installing Lead Ball Plugs

3. Install lead ball plugs in main body, using Plug Set T-25053. See figure 3-97.

4. Install pump inlet check valve. See figure 3-84.

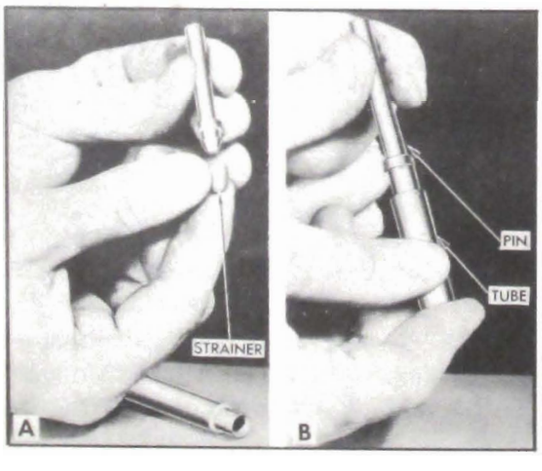

Figure 3-89—Assembling Screen in Installer T-25097

5. Using Screen Installer T-25097, install pump inlet strainer as follows:

(a) Place inlet strainer over the rounded end of pin in Installer T-25097. See figure 3-89, view A.

(b) Insert the strainer into tube of Installer T-25097. See figure 3-89, view B.

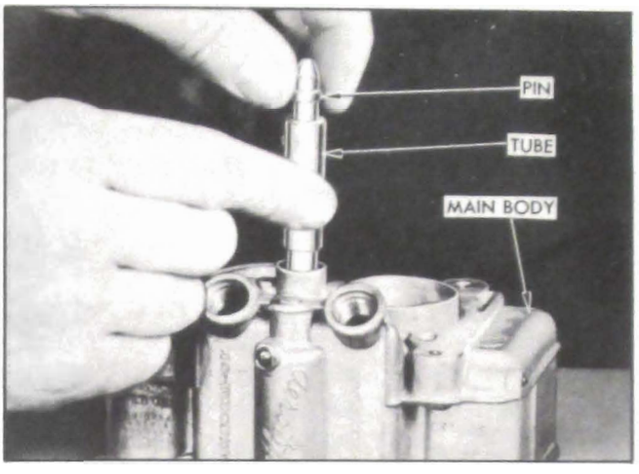

Figure 3-90—Installing Strainer in Main Body

(c) Remove the pin and place tube in the main body, then use reverse end of the pin to slide strainer into place in body. See figure 3-90.

(d) Install check valve plug. Use a new copper gasket if available; otherwise, make sure that plug and seat are clean to insure tight joint.

6. Place new gasket on main body. Insert *long* ends of reducer wires in idle channels in throttle body, and guide *short* ends of wires into idle channels in main body as bodies are assembled together. Install screws with lock washers.

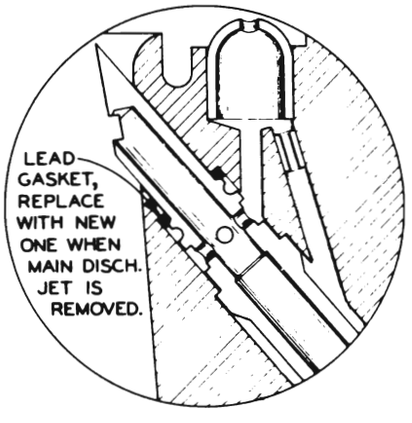

Figure 3-91—Location of Main Discharge Jet Gasket

7. Place new lead gaskets over beveled ends of main discharge jets. Use tool T-24967 to install jets in main body, being careful to position jets so that flat surface is parallel with the di-

rection of air flow. See figures 3-91 and 3-83.

8. Install main metering jets, using Wrench T-24924. See figure 3-82. Install main discharge jet plugs, using new copper plug gaskets if available; otherwise make sure that plugs and seats are clean to insure tight joint.

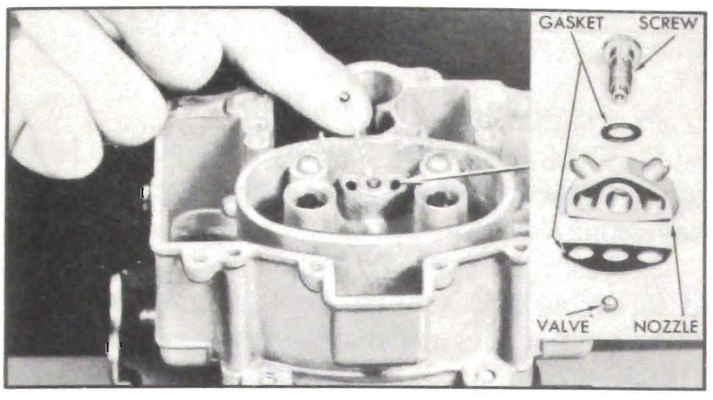

Figure 3-92—Installing Check Valve Ball and Pump Discharge Nozzle

9. Install the pump outlet check valve ball, new nozzle gasket, the discharge nozzle, the nozzle attaching screw and a new gasket. See figure 3-92.

10. Install idle tubes in main body. See figure 3-80.

11. Install power by-pass jet and a new gasket in main body, using a large screwdriver. See figure 3-79.

12. Attach accelerator vacuum switch to throttle body with two screws, using a new gasket between switch and body. Check switch timing as described in paragraph 10-33.

13. Install the vacuum power piston in air horn, using Wrench T-24733. Hold the tool flat against the gasket surface to avoid damage to the piston or to the tool. See figure 3-78. No lubricant of any type should be used on the piston or in the cylinder in the air horn. Piston must operate freely without any lubrication.

14. Install float hanger with a new gasket on each side and install new float needle valve seat, using Wrench T-20140. See figure 3-77. Place strainer over boss in inlet opening of air horn and install gasoline connection.

15. Place new gasket on air horn. Attach float needle valve to clip on float lever and attach float assembly to float hanger with fulcrum pin which should be tapped lightly so that serrated end "bites" into hanger leg. Make certain float lever does not bind in float hanger due to distortion of the legs. NOTE: *All 1948 and 1949 carburetors use floats designed for 5 pound fuel pump pressure. These floats are identified by a small numeral 5 stamped on float lever. No other float should be used. Float may be either brass or steel.*

16. *Adjust Float for Proper Fuel Level.* To obtain the most efficient operation of the carburetor, the fuel level must be maintained in the bottom of the threads of the sight hole in the side of float chamber, with engine idling. See figure 3-17. This level will be produced in practically all cases by carefully setting the floats with Float Gauge T-24971.

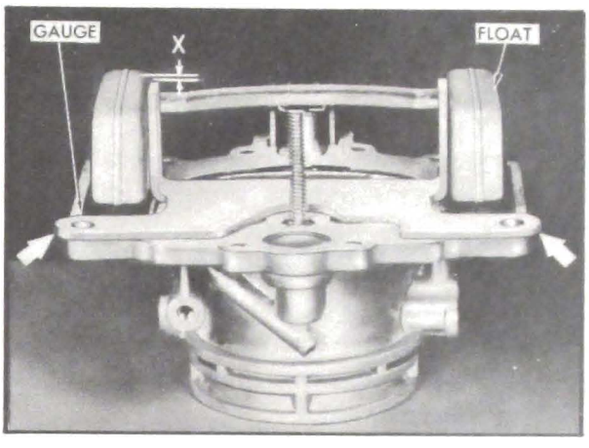

Figure 3-93—Checking Float Height

(a) With air horn inverted, place the float gauge on top of gasket so that the locating buttons on gauge fit in holes in air horn. Gauge must rest flat and solid on the gasket. See figure 3-93.

(b) Adjust each float so that the inner side just touches the upright guide of the gauge; this must be a light fit, without clearance and without excessive drag on the gauge upright guide.

(c) Both floats must be the same height with reference to the ends of upright guides on gauge. Brass floats must be $\frac{3}{64}$" *above* ends of gauge guides. *Steel* floats must be $\frac{1}{32}$" *below* ends of gauge guides. The distance is measured between the top inside edge of float *(not the seam)* and top end of gauge guide as shown at "X" in figure 3-93. If any change in height is required it can be made by bending the float lever with pliers at point shown in figure 3-94. *Do not use pressure on floats.*

(d) The float needle valve must have $\frac{1}{16}$" of travel from closed position. Check travel and adjust, if necessary, by bending the float lever stop to give specified travel.

17. Install retainer spring, splash washer, and felt washer on stem of pump piston assembly, then install piston assembly in air horn.

18. Install air horn assembly on main body,

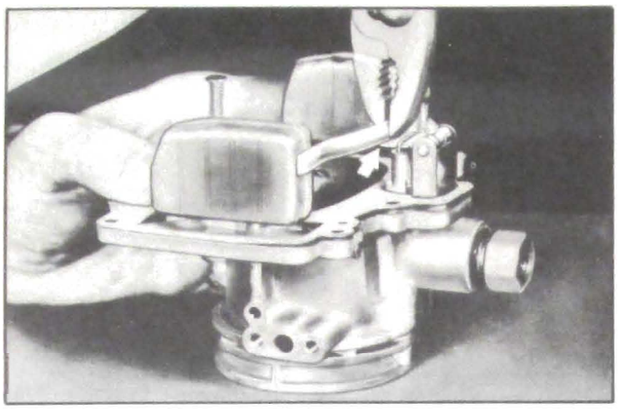

Figure 3-94—Adjusting Float Height

using care to avoid distortion of float assembly and making certain that pump piston leather washer does not have any creases or curled edges when it is inserted into the cylinder in main body. See figure 3-76. Install cover screws and lock washers, with accelerator vacuum switch wire clip attached by the corner screw located to rear of choke.

19. Attach pump lever to pump piston stem and install cotter pin. Attach lever to air horn with lever fulcrum screw *(left hand thread)*, with spring washer placed between lever and screw head. Push upward on spring housing of pump rod while connecting rod to ball end of pump lever. *The rod must be connected to the middle hole in the throttle lever.*

20. Connect fast idle rod to fast idle cam by placing washer over end of rod and an engaging hooked end of cam spring in groove in rod. Install automatic choke parts on air horn as described in paragraph 3-31.

b. Installation of Carburetor

1. Make sure that carburetor gasket is in good condition; then install carburetor on intake manifold.

2. Clean the gasoline filter (par. 3-9), install it in carburetor, and connect the gasoline pipe. Connect the vacuum spark control pipe.

3. Connect the choke upper heat pipe to check thermostat cover, avoiding excessive tightening which may change the position of cover and affect the thermostat setting.

4. Adjust and connect throttle linkage as described in paragraph 3-10.

5. Connect the accelerator vacuum switch wires and check switch timing as described in paragraph 10-33.

6. Install air cleaner and silencer.

7. Check float bowl fuel level and adjust carburetor as described in paragraph 3-12.