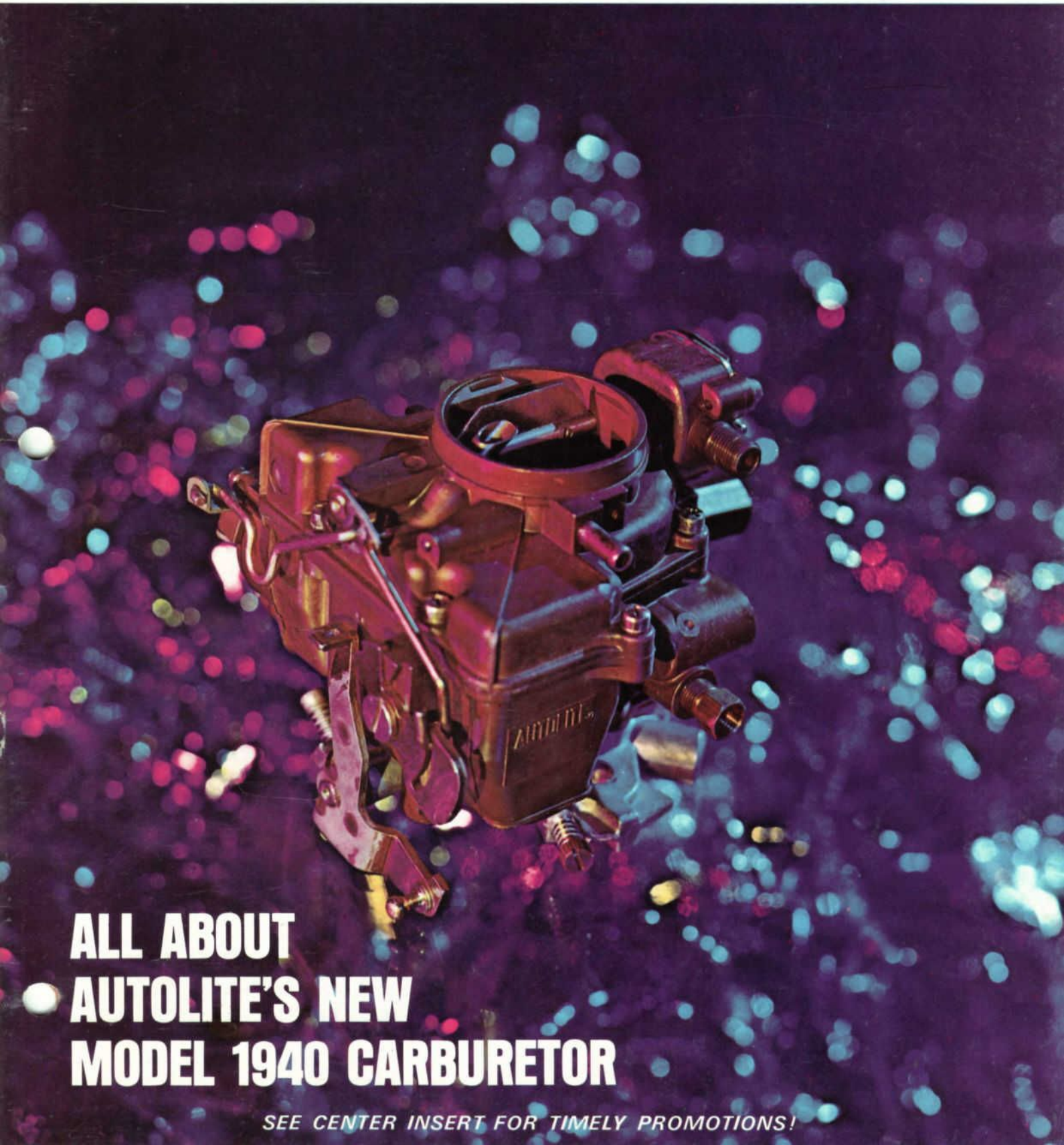
SHOP TIPS

Autolite Ford

VOL. 8, NO. 6 FEBRUARY, 1970



ALL ABOUT AUTOLITE'S NEW MODEL 1940 CARBURETOR

SEE CENTER INSERT FOR TIMELY PROMOTIONS!

Technical parts and service information published by the Autolite-Ford Parts Division and distributed by Ford and Lincoln-Mercury dealers to assist servicemen in Service Stations, Independent Garages and Fleets.

IN THIS ISSUE

AUTOLITE'S *NEW* MODEL 1940 1-BBL SERVICE REPLACEMENT CARBURETOR

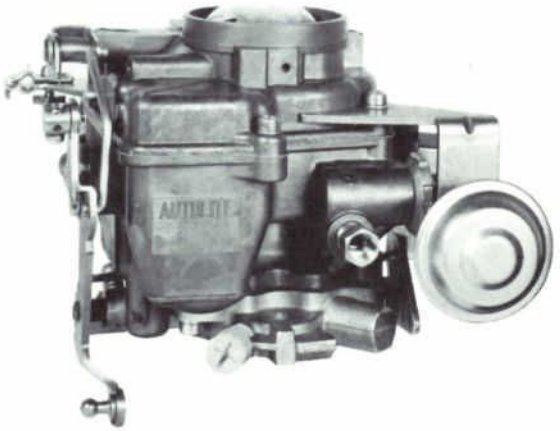
Be sure and file this and future bulletins for ready reference. If you have any suggestions for additional information that you would like to see included in this publication, please write to: Autolite-Ford Parts Division of Ford Motor Company, Merchandising Services Dept., P.O. Box 3000, Livonia, Michigan 48151.

The descriptions and specifications contained in this book were in effect at the time the publication was approved for printing. The Ford Motor Company, whose policy is one of continuous improvement, reserves the right to discontinue models at any time, or to change specifications or design without notice and without incurring obligation.

Autolite Ford

VOL. 70 MSD 26 LITHO IN U.S.A.

AUTOLITE'S *NEW* MODEL 1940 1-BBL SERVICE REPLACEMENT CARBURETOR



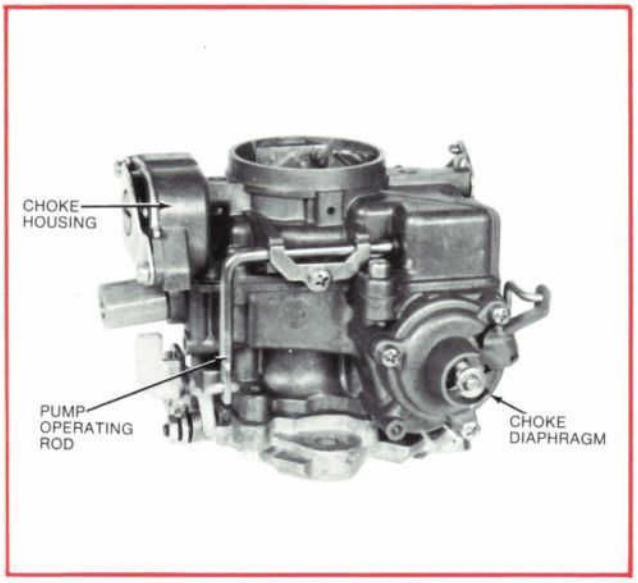
GENERAL DESCRIPTION

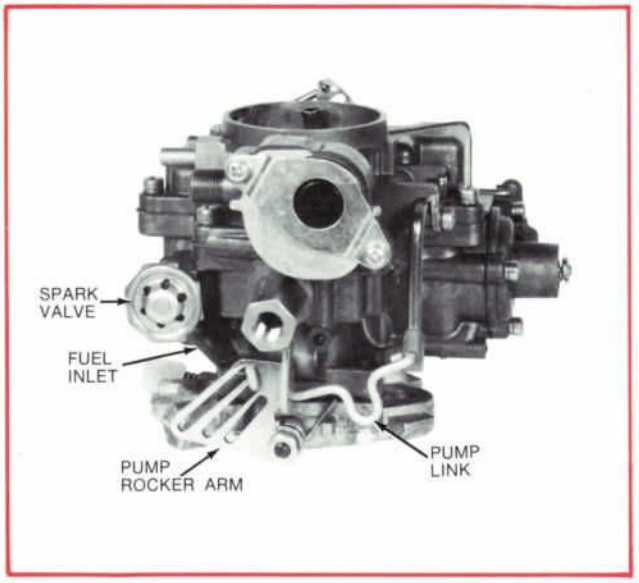
Ford is first again . . . with the industry's first strictly service replacement carburetor . . . the Autolite Model 1940. It's a cleverly designed 1V (Venturi) concentric downdraft carburetor that fits more than 200 applications. The fuel bowl completely surrounds the venturi. A dual lung, nitrophyl float controls the fuel level. This permits high angularity operation to meet the severest driving conditions such as required in government and military specifications. The closed-cell nitrophyl material also eliminates a possible malfunction due to a punctured metal float.

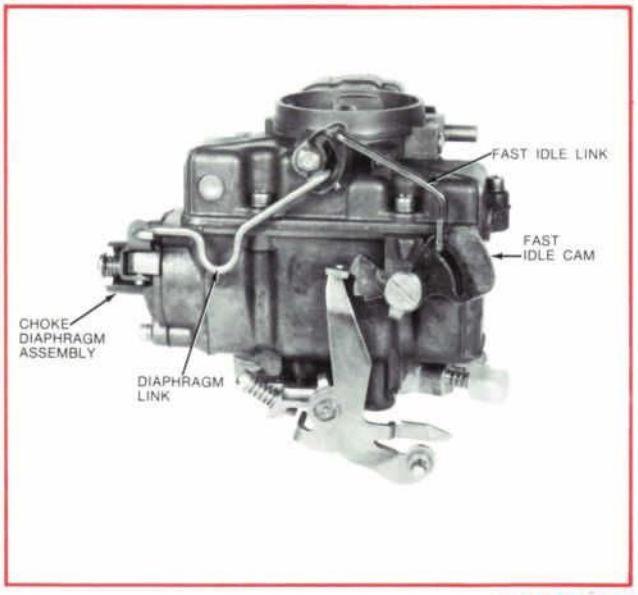
Principal sub-assemblies include a bowl cover, carburetor body and throttle body. A thick gasket between the throttle body and main body retards heat transfer to the fuel to resist percolation in warm weather. The photos on page 3 illustrate important external parts and linkages. As can be seen from these pictures, the same basic carburetor body is used for both hand choke and automatic choke models. To correctly identify the carburetor model, always check the part number stamped on the main body or attached tag. The carburetor includes four basic fuel metering systems (Pgs. 4 & 5). The idle system provides a rich mixture for smooth idle and a transfer system for low speed operation. The main metering system provides an economical mixture for normal cruising conditions. The accelerator system provides additional fuel during acceleration. The power enrichment system provides a richer mixture when high power output is desired.

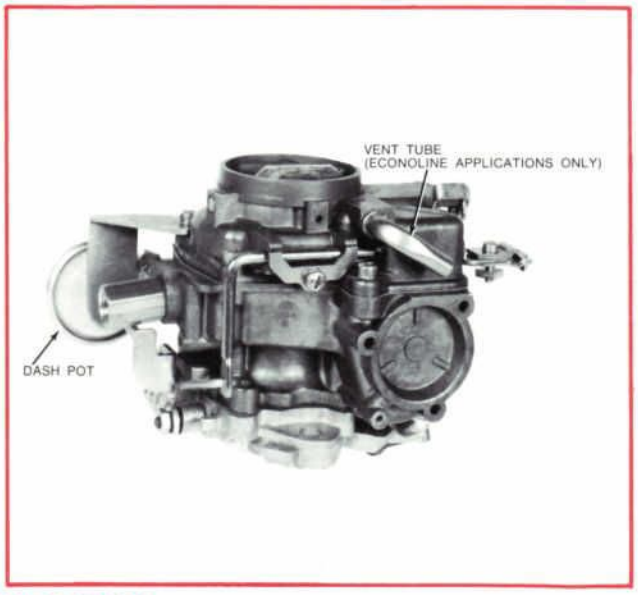
In addition to these four basic systems, there is a fuel inlet system that constantly supplies the fuel to the basic metering systems. A choke system, either manual or automatic temporarily enriches the mixture to aid in starting and running a cold engine.

EXTERNAL COMPONENTS and LINKAGES





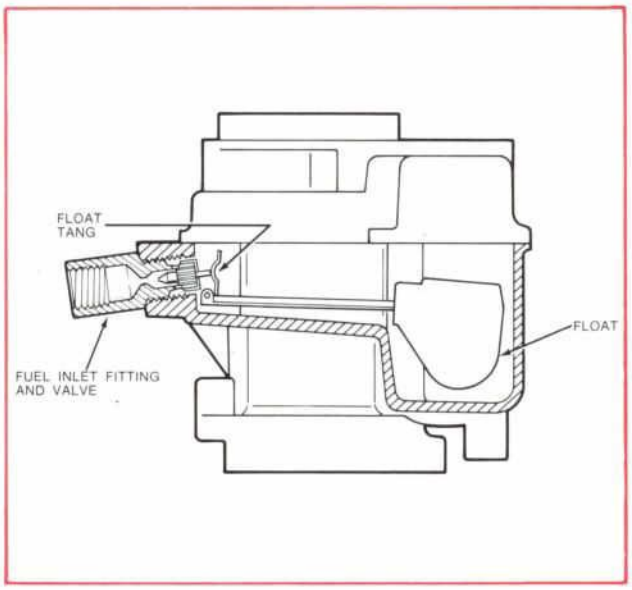




APPLICATION CHART

ENGINE C.I.D.	VEHICLE TYPE	MODEL YEARS	TRANS.	CHOKE TYPE	EMISSION TYPE	FORD PART NO.*	AUTOLITE CARBURETOR	AUTOLITE TUNE-UP KIT	AUTOLITE GASKET SET
170	Bronco	1966-68	Manual & Automatic	Manual		DOPF-R	CA-374-A	CT-223	CG-305
170	Bronco	1966-67	Manual & Automatic	Manual	Thermactor	DOPF-S	CA-600-TA	CT-223	CG-305
170-200 200 170-200 170 170-200	Comet Fairlane Falcon Meteor Mustang	1963-68 1965-67 1965-68 1963 1965-67	Manual & Automatic	Auto		DOPF-K	CA-308-A	CT-223	CG-305
170-200	Falcon-Fairlane	1963-64	Manual & Automatic	Manual		DOPF-M	CA-307-A	CT-223	CG-305
144-170	Truck	1963-67	Manual & Automatic	Manual		DOPF-N	CA-359-A	CT-223	CG-305
170-200 200 200	Falcon Mustang Comet-Fairlane	1966-69 1966-69 1966-68	Manual & Automatic	Auto		DOPF-L	CA-746-A	CT-223	CG-305
170	Truck	1966-67	Manual & Automatic	Manual	Thermactor	DOPF-T	CA-602-TA	CT-223	CG-305
240	Ford	1965-68	Manual & Automatic	Auto		DOPF-A	CA-368-A	CT-223	CG-305
240	Ford	1966-69	Manual & Automatic	Auto		DOPF-C	CA-613-A	CT-223	CG-305
240	Ford	1966-67			Thermactor	DOPF-B	CA-596-TA	CT-223	CG-305
240	Truck	1965-67	Manual & Automatic	Manual		DOPF-F	CA-378-A	CT-223	CG-305
240	Truck	1966-68	Manual & Automatic	Manual	Thermactor	DOPF-H	CA-601-TA	CT-223	CG-305
240-300	Truck	1966-69	Manual & Automatic	Manual		DOPF-G	CA-745-A	CT-223	CG-305
240-300	Truck	1965-68	Manual & Automatic	Manual		DOPF-E	CA-357-A	CT-223	CG-305
240-300	Truck	1965-68	Manual	Manual		DOPF-J	CA-358-A	CT-223	CG-305
250	Mustang Montego-Fairlane	1969	Manual & Automatic	Auto		DOPF-D	CA 694-A	CT-223	CG-305

*Appears on carburetor tag and on carburetor casting with basic number 9510.

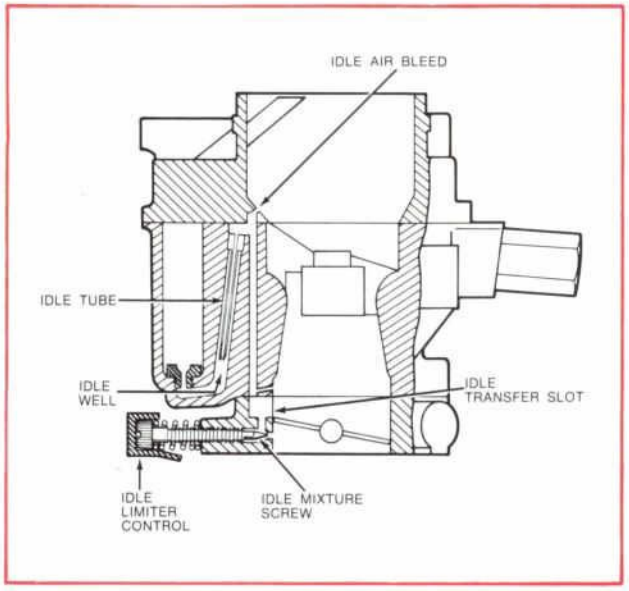


FUEL INLET SYSTEM

All fuel enters the fuel bowl through the fuel inlet fitting in the carburetor body. The "Viton" tipped fuel inlet needle seats directly in the fuel inlet fitting. The needle is retained by a cap that permits the fuel to flow out holes in the side of the cap. The design of the fuel bowl eliminates the necessity of a fuel baffle. The fuel inlet needle is controlled by a dual lung nitrophyl float (a closed cellular buoyant material which cannot collapse or leak) and a stainless steel float lever which is hinged by a stainless steel float shaft.

The fuel inlet system must constantly maintain the specified level of fuel as the basic fuel metering systems are calibrated to deliver the proper mixture only when the fuel is at this level. When the fuel level in the bowl drops the float also drops permitting additional fuel to flow past the fuel inlet needle into the bowl.

The float chamber is vented internally into the air horn. In some Econoline applications a vent tube may release fuel vapors through a tube to the bottom of the engine compartment.



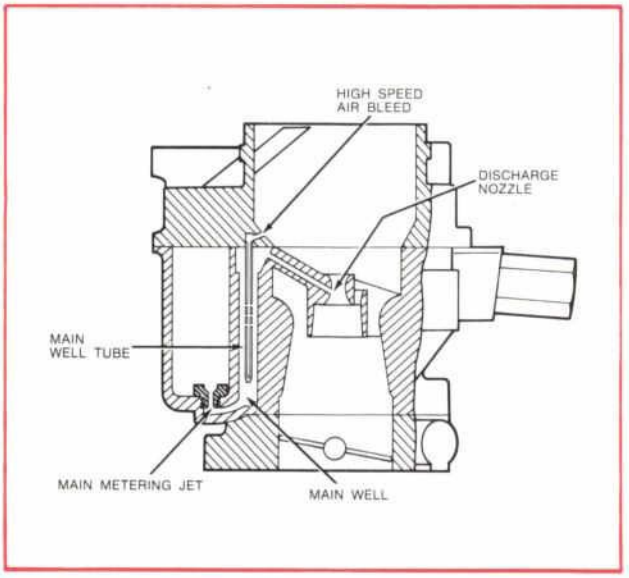
IDLE SYSTEM

Fuel used during curb idle and low speed operation flows through the main metering jet into the main well.

An angular connecting idle well intersects the main well. An idle tube is installed in the idle well. Fuel travels up the idle well and mixes with air which enters through the idle air bleed located in the bowl cover.

At curb idle the fuel and air mixture flows down the idle channel and is further mixed or broken up by air entering the idle channel through the transfer slot which is above the throttle plate at curb idle.

During low speed operation the throttle plate moves exposing the transfer slot and fuel begins to flow through the transfer slot as well as the idle port. As the throttle plates are opened further and engine speed increases, the air flow through the carburetor also increases. This increased air flow creates a vacuum or depression in the venturi and the main metering system begins to discharge fuel.



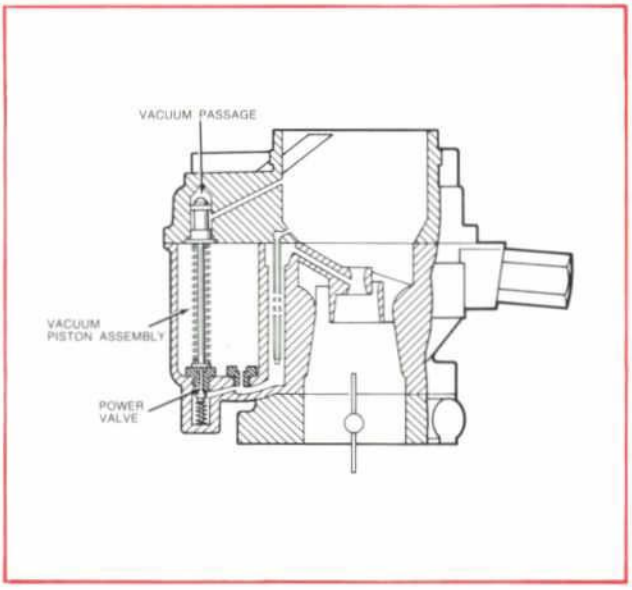
MAIN METERING SYSTEM

As the engine approaches cruising speed the increased air flow through the venturi creates vacuum (low pressure area) in the venturi of the carburetor. Near-atmospheric pressure present in the bowl in the area above the fuel causes the fuel to flow to the lower pressure area created by the venturi and magnified by the dual booster venturi.

Fuel flows through the main jet into the main well; air enters through the main well air bleed and into the main well through holes in the main well tube. The mixture of fuel and air being lighter than raw fuel responds faster to changes in venturi vacuum and is also more readily vaporized when discharged into the venturi.

The main discharge nozzle passage is a part of the dual booster venturi which is an integral part of the main body casting. Distribution tabs in the main venturi provide further vaporization of the fuel and air mixture.

The main metering system is calibrated to deliver a lean mixture for best overall economy. When additional power is required a vacuum operated power system enriches the fuel-air mixture.



POWER ENRICHMENT SYSTEM

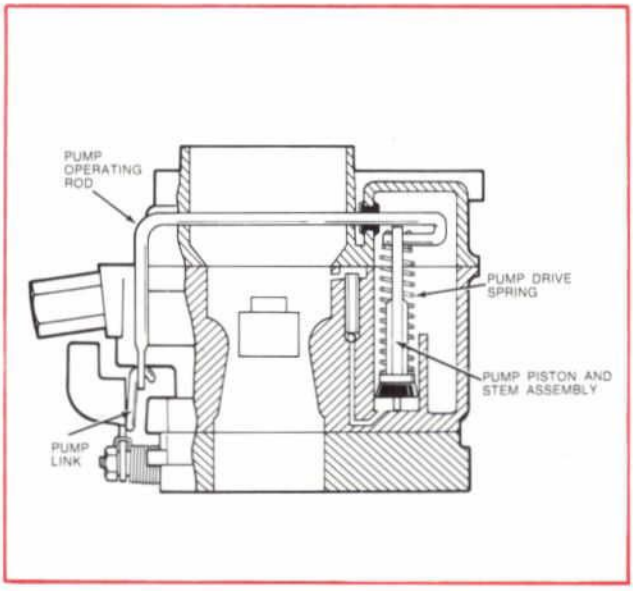
The power enrichment system consists of a power valve installed near the center of the carburetor body and a vacuum piston installed in the bowl cover. A vacuum passage leads from the top of the piston down to the manifold flange.

When manifold vacuum is high the vacuum piston is raised to the top of its cylinder and the spring on the piston is compressed.

When manifold vacuum drops to a predetermined level the spring overcomes the vacuum and pushes the piston stem down.

The piston stem in turn pushes the power valve stem down, opening the power valve and permitting fuel to flow through the power valve, through the power valve channel restriction and into the main well located near the power valve.

The power valve includes a power valve seat, a valve and a valve spring. The three parts are sold and installed as an assembly.



ACCELERATING PUMP SYSTEM

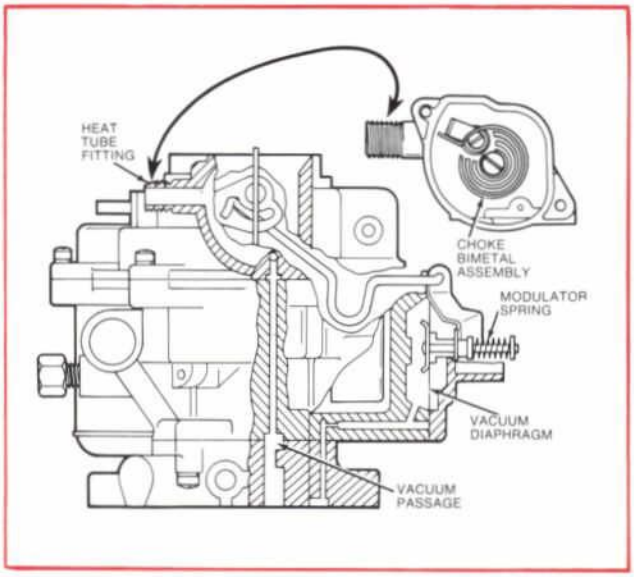
When the throttle plates are opened suddenly the air flow through the carburetor responds almost immediately. However, there is a brief time interval or lag before the fuel can overcome its inertia and maintain the desired fuel-air ratio.

The piston type accelerating pump system mechanically supplies the fuel necessary to overcome this deficiency for a short period of time.

Fuel enters the pump cylinder from the fuel bowl through the pump cup with the fuel level well above the normal position of the pump piston.

As the throttle lever is moved the pump link operating through a system of levers and a pump drive spring pushes the pump piston down seating the pump cup against the face of the stem. Fuel is forced through a passage around the pump discharge needle valve and out the pump discharge jet which is drilled in the main body.

When the pump is not in operation vapors or bubbles forming in the pump cylinder can escape around the pump stem through the inlet of the floating piston cup.



AUTOMATIC CHOKE SYSTEM

The automatic choke provides the richer fuel-air mixture required for starting and operating a cold engine. A bimetal spring is installed inside the choke housing which is a part of the bowl cover.

When the engine starts, manifold vacuum is applied to the choke diaphragm through a passage from the throttle body to the choke diaphragm assembly. The adjustment of the choke plate opening, when the engine starts and vacuum is applied to the choke diaphragm, is called vacuum kick.

Manifold vacuum alone is not strong enough to provide the proper degree of choke opening during the entire choking period. The impact of in-rushing air past the offset choke plate provides the additional opening force.

A modulator spring permits correct initial choke opening after initial start in relation to outside temperature.

As the engine warms up manifold heat transmitted to the choke housing relaxes the bimetal spring until it eventually permits the choke to open fully.

DISTRIBUTOR VACUUM ADVANCE

As engine speed increases, the spark timing must be advanced so that the burning in the cylinder may be completed at the proper time to achieve maximum pressure and efficiency.

A vacuum spark port located in the throttle bore, just above the closed throttle plate, is connected to the distributor vacuum chamber by a series of passages to a fitting in the carburetor body and a flexible hose.

As the throttle is opened, this port is exposed to manifold vacuum which varies with changes in engine speed and load.

This changing vacuum is applied to the distributor vacuum diaphragm.

The diaphragm, in turn rotates the distributor breaker plate through a connecting rod changing the spark timing to meet engine demands.

SPARK VACUUM SYSTEM WITH SPARK VALVE

Some engines equipped with a vacuum advance or pressure distributor utilize a spark valve.

The spark valve is a diaphragm-operated spring loaded valve in the main body connected to the throttle bore port passage. When the spark valve closes off the vacuum passage of the throttle bore port, the net result is a decrease in spark vacuum. The spark vacuum is then obtained from the venturi port. A by-pass is frequently included in the spark valve, so the valve cannot completely shut off the passage. The spark valve opening and closing vacuum is pre-set in production.

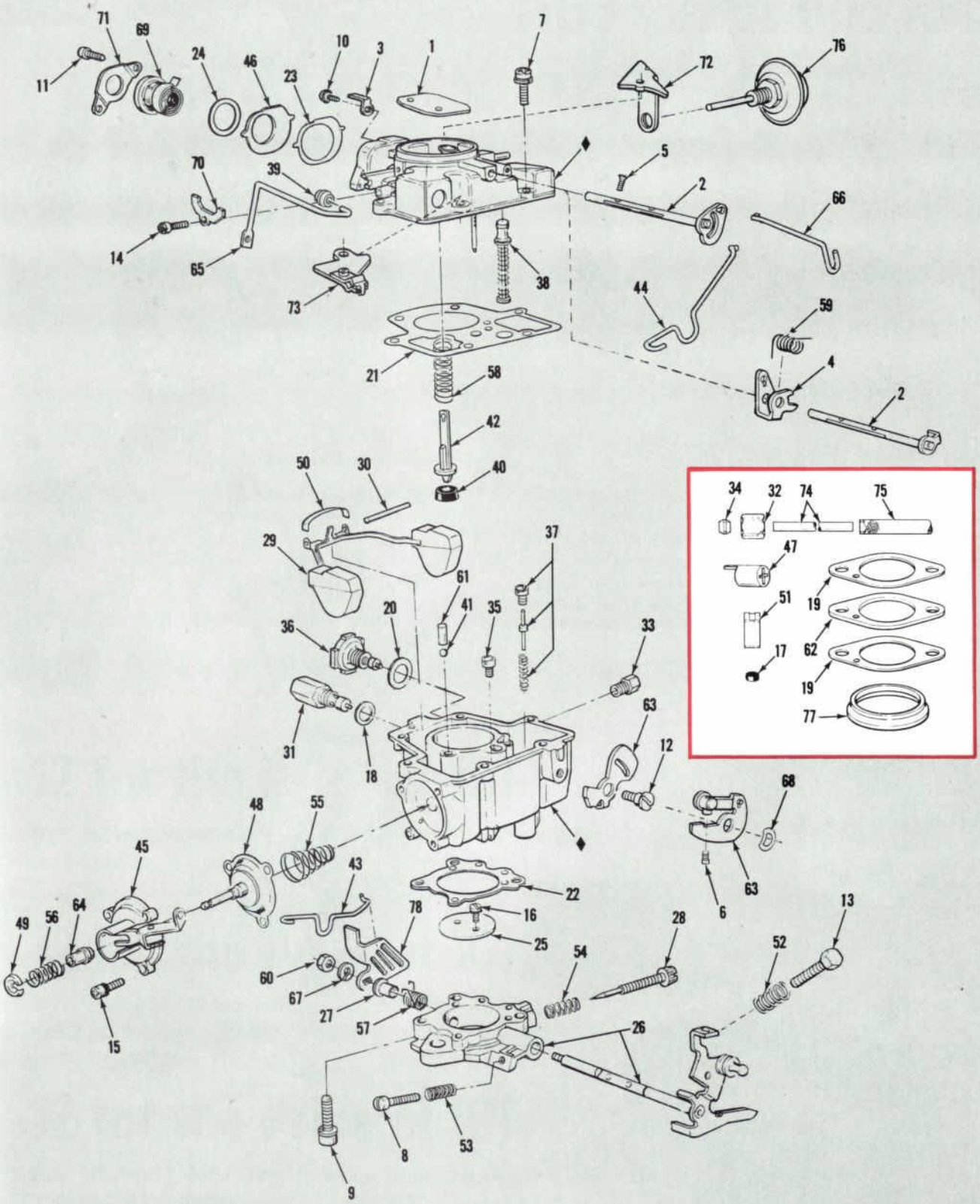
Calibration of a centrifugal-vacuum type (pressure) distributor ordinarily does not provide any Part Throttle advance for heavy engine loads when the intake manifold vacuum is below 6 or 7 inches Hg. The spark advance provided by the pressure distributor in this load range frequently improves the engine's performance.

AUTOLITE MODEL 1940 1-BBL PARTS LIST

Key No.	Nomenclature
1	Choke Plate
2	Choke Shaft & Lever Assembly
3	Choke Thermostat Lever
4	Choke Control Lever
5	Choke Plate Screw
6	Choke Bracket Swivel Screw
7	Air Horn to Main Body Screw & L.W.
8	Throttle Adjusting Screw
9	Throttle Body to Main Body Screw & L.W.
10	Choke Thermostat Lever Screw
11	Choke Thermostat Cover Clamp Screw
12	Fast Idle Cam Screw
13	Fast Idle Adjusting Screw
14	Pump Rod Clamp Screw
15	Choke Diaphragm Cover Screw & L.W.
16	Throttle Plate Screw
17	Rubber Plug
18	Fuel Inlet Seat Gasket
19	Flange Gasket
20	Spark Valve Gasket
21	Main Body Gasket
22	Throttle Body Gasket
23	Thermostat Housing Gasket
24	Thermostat Cover Gasket
25	Throttle Plate
26	Throttle Body & Shaft Assembly
27	Throttle Return Spring Bushing
28	Idle Adjusting Needle
29	Float & Hinge Assembly
30	Float Hinge Shaft
31	Fuel Inlet & Needle Seat Assembly
32	*Compression Nut*
33	Spark Fitting
34	Ferrule
35	Main Jet
36	Spark Valve Assembly
37	Power Valve Assembly
38	Power Valve Piston Assembly
39	Pump Rod Seal
40	Pump Piston Cup
41	Pump Discharge Valve
42	Pump Piston Stem
43	Pump Operating Link
44	Choke Diaphragm Link
45	Choke Diaphragm Cover Assembly
46	Thermostat Housing Plate
47	Limiter Cap
48	Choke Diaphragm Assembly
49	Choke Modulator Spring Retainer
50	Float Shaft Retainer
51	Fuel Line Clamp
52	Fast Idle Adjusting Screw Spring
53	Throttle Adjusting Screw Spring
54	Idle Adjusting Needle Spring
55	Choke Diaphragm Spring
56	Choke Modulator Spring
57	Throttle Return Spring
58	Pump Drive Spring
59	Choke Lever Spring
60	Nut
61	Pump Discharge Valve Weight
62	Throttle Body Spacer
63	Fast Idle Cam
64	Choke Modulator Sleeve
65	Pump Rod
66	Fast Idle Rod
67	Lockwasher
68	Spring Washer
69	Thermostat & Cover Assembly
70	Pump Rod Clamp
71	Thermostat Cover Clamp
72	Dashpot Bracket
73	Choke Bracket Assembly
74	Choke Heat Tube
75	Choke Heat Tube Sock
76	Dashpot Assembly
77	Air Cleaner Adapter
78	Pump Operating Lever

CARBURETOR DISASSEMBLY

AUTOLITE MODEL 1940 CARBURETOR



CARBURETOR DISASSEMBLY

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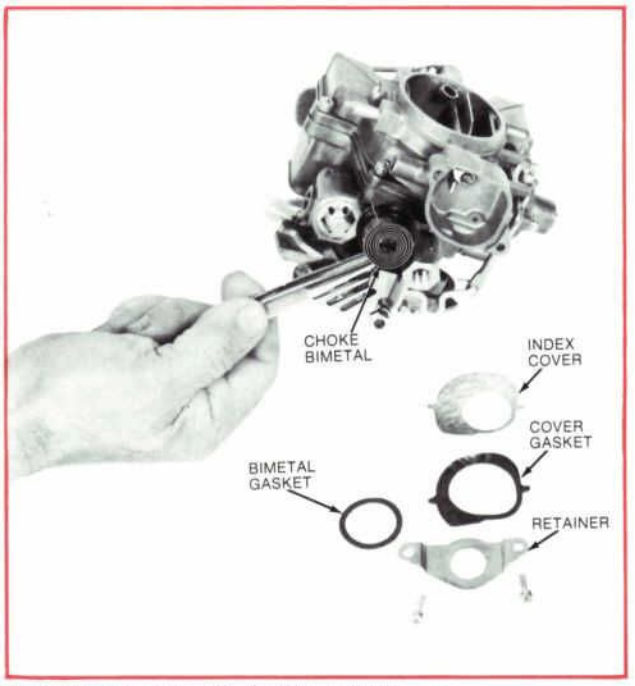

Figure 1–Removing Choke Bimetal Element

If the carburetor has an automatic choke, the choke diaphragm and bimetal element can be disassembled first. Remove the bimetal retainer screws, retainer, gasket and bimetal cover (Figure 1).

NOTE: Do not immerse the bimetal assembly in cleaner. Clean by wiping off dirt from cover and gently blowing out the inside. If the assembly is corroded or damaged by exhaust gases, it should be replaced.

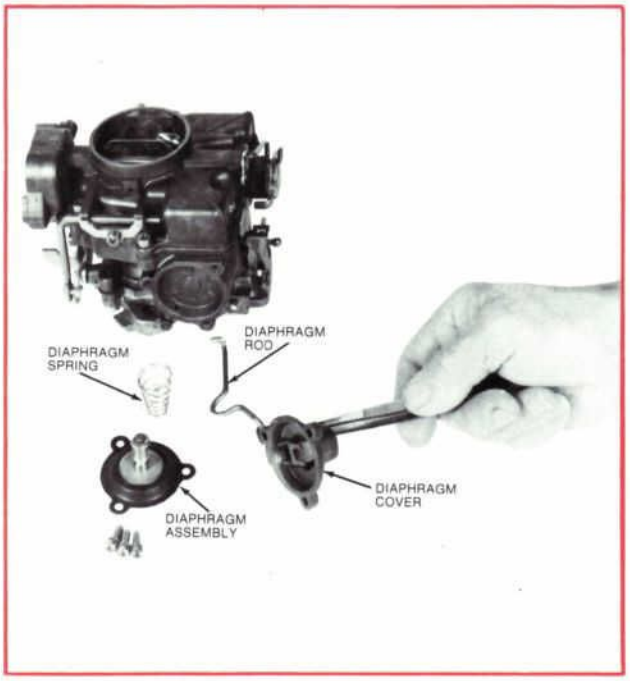

Figure 2–Removing Choke Diaphragm

Remove the three screws retaining the diaphragm cover and disconnect the diaphragm link (Figure 2). Remove the diaphragm assembly and diaphragm spring from the cover.

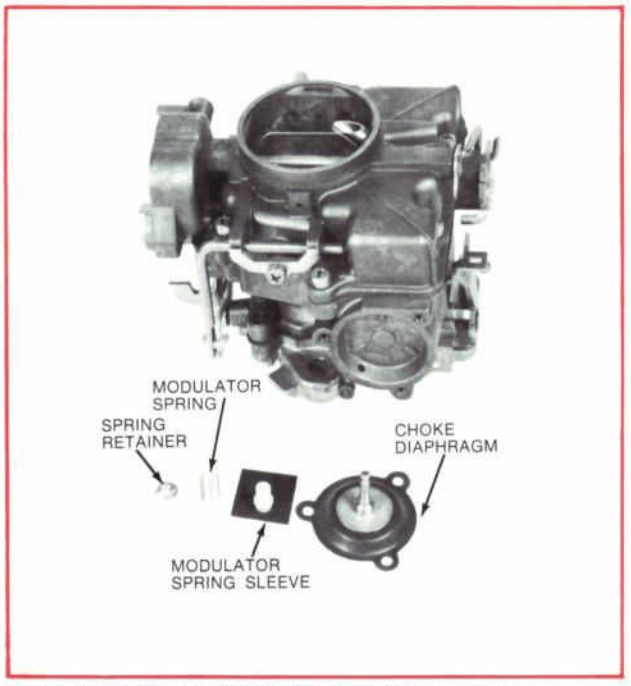

Figure 3–Choke Diaphragm Assembly Components

Depress diaphragm modulator spring and remove spring retainer, spring and modulator spring sleeve (Figure 3).

THE REMAINING DISASSEMBLY PROCEDURES ARE IDENTICAL FOR BOTH THE AUTOMATIC CHOKE AND HAND CHOKE CARBURETORS

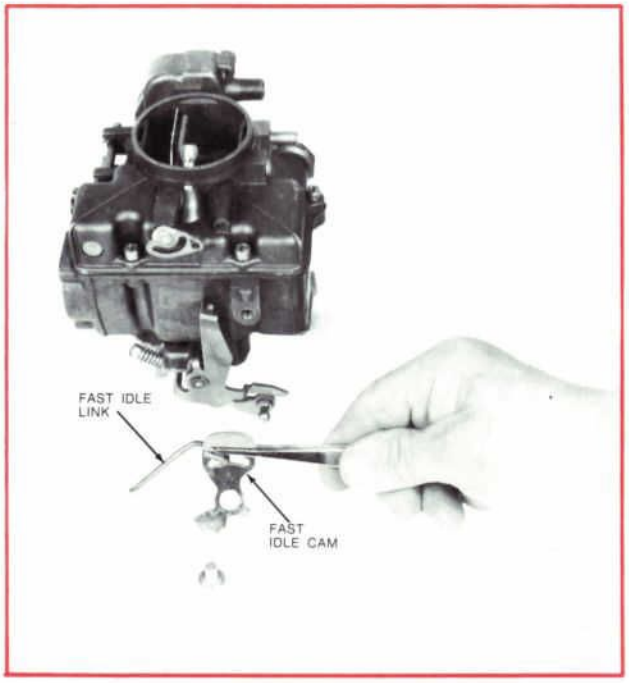

Figure 4–Removing Fast Idle Cam and Link

Remove the fast idle cam retaining screw, fast idle cam and link. Disconnect the link (Figure 4).

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BOWL COVER DISASSEMBLY

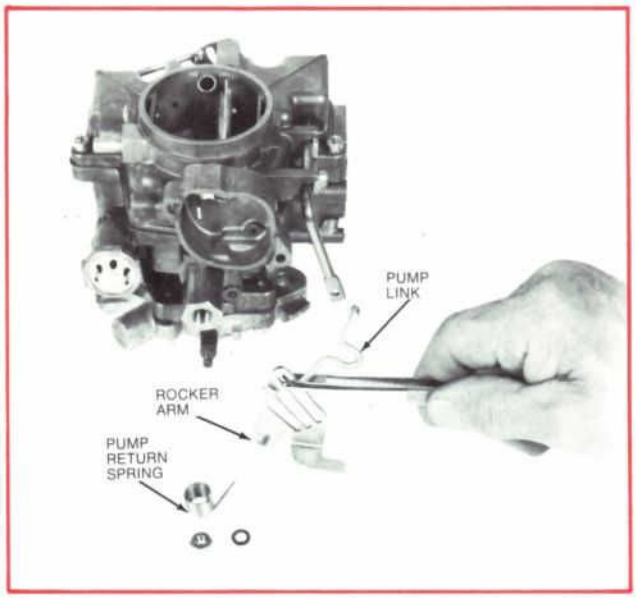

Figure 5–Removing Accelerating Pump Rocker Arm and Link

Remove the accelerating pump rocker arm retaining nut, washer, spring and pump link. Separate the link from the rocker arm (Figure 5).

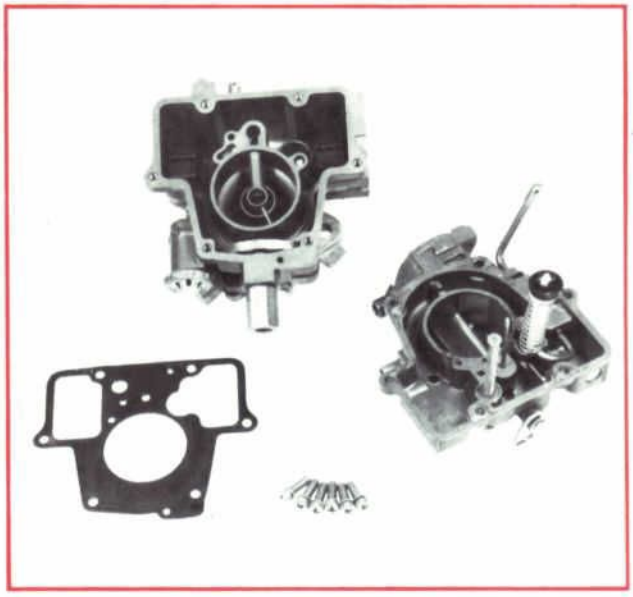

Figure 6–Bowl Cover Removed from Carburetor Body

Remove the six bowl cover screws, choke wire bracket and dashpot from the bracket if one is used (Figure 6).

NOTE: Do not immerse the dashpot assembly in cleaner.

Separate the bowl cover from the carburetor body by tapping with a plastic hammer or handle of a screwdriver.

NOTE: Do not pry cover off with screwdriver blade.

Remove the gasket. If any gasket material is remaining on either surface, remove with a suitable cleaner.

NOTE: Do not use a metal scraper such as a carbon scraper or screwdriver on either the bowl cover surface or carburetor body surface. A nylon or hard plastic material such as a delrin body moulding remover, however, can be used as a suitable scraper.

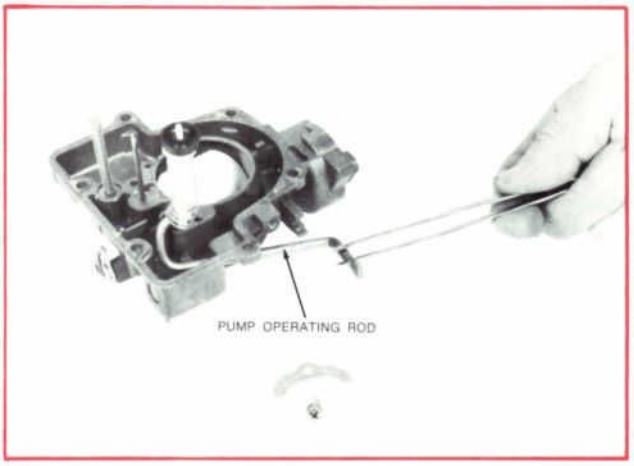

Figure 7–Removing Accelerating Pump Assembly

Remove the accelerating pump operating rod retainer screw and retainer (Figure 7).

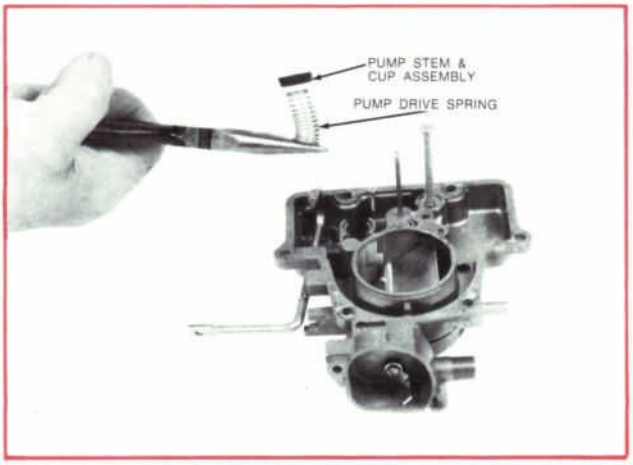

Figure 8–Accelerating Pump Assembly

Rotate the pump operating rod and disconnect the pump drive spring and accelerating pump assembly (Figure 8). Set the pump stem and cup aside. *NOTE: Do not immerse it in cleaner.*

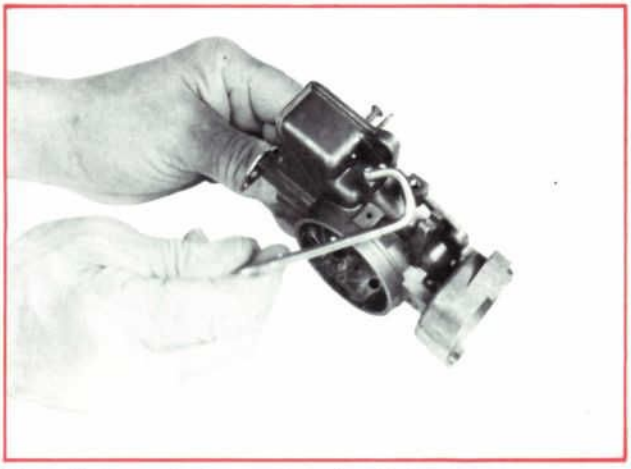

Figure 9–Removing Pump Operating Rod

Rotate the pump operating rod and remove from bowl cover (Figure 9).

BOWL COVER DISASSEMBLY (continued)

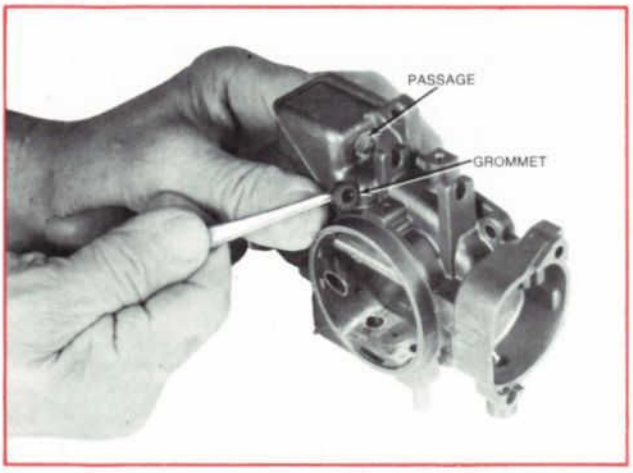

Figure 10–Removing Grommet

Remove the pump operating rod grommet.

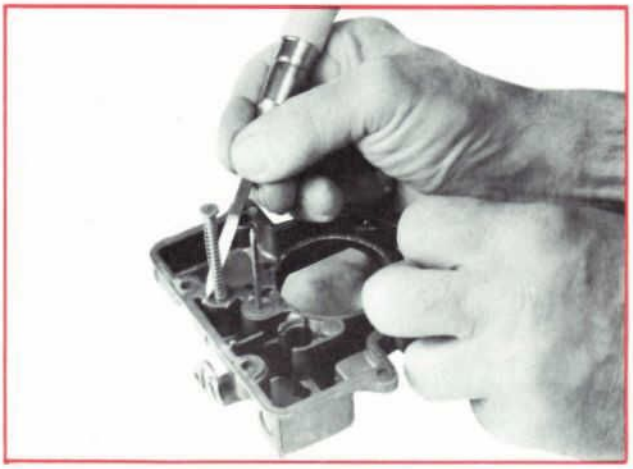

Figure 11–Removing Staking from Vacuum Piston Washer

With a bearing scraper, or a scraper made from an old triangle file, carefully remove the staking from the vacuum piston retainer (Figure 11).

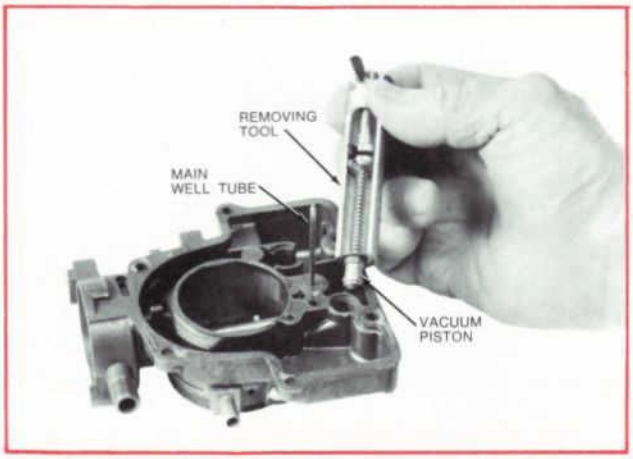

Figure 12–Removing Vacuum Piston

With a suitable puller, remove vacuum piston (Figure 12).

This completes disassembly of the bowl cover. The main well tube cannot be removed and must be blown out carefully from both inside and outside of the cover (Figure 23).

NOTE: If parts are placed in a cleaning basket, be sure and place the bowl cover on top so it will not be damaged.

MAIN BODY DISASSEMBLY

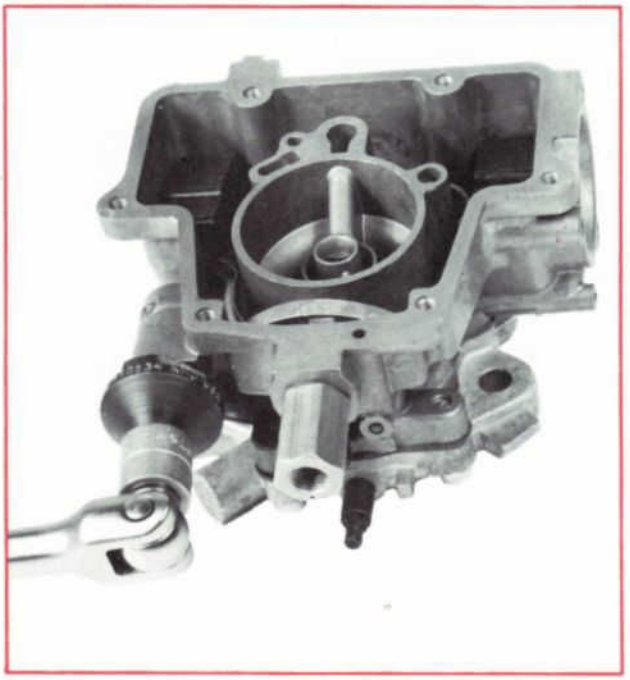

Figure 13–Removing Spark Valve

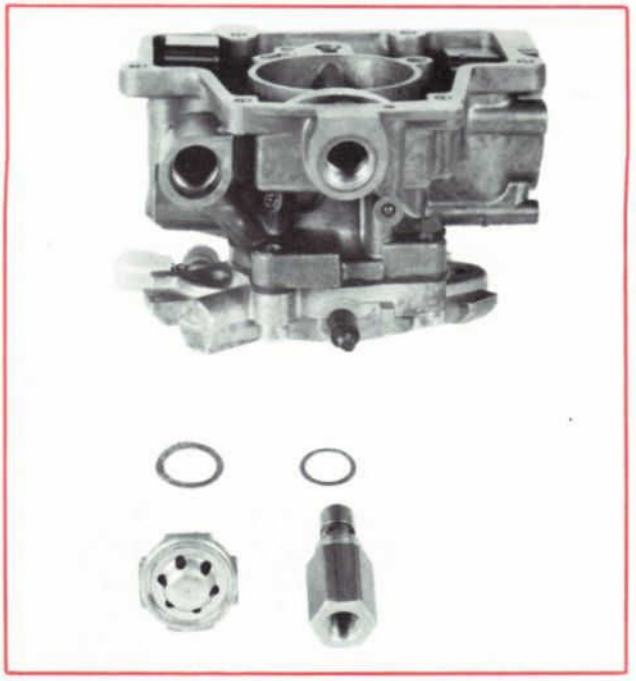

Figure 14–Spark Valve and Fuel Inlet Fitting

Remove the spark valve and spark fitting if one is used (Figure 13). Remove the fuel inlet fitting and fuel inlet valve assembly. Separate the gaskets from the parts (Figure 14).

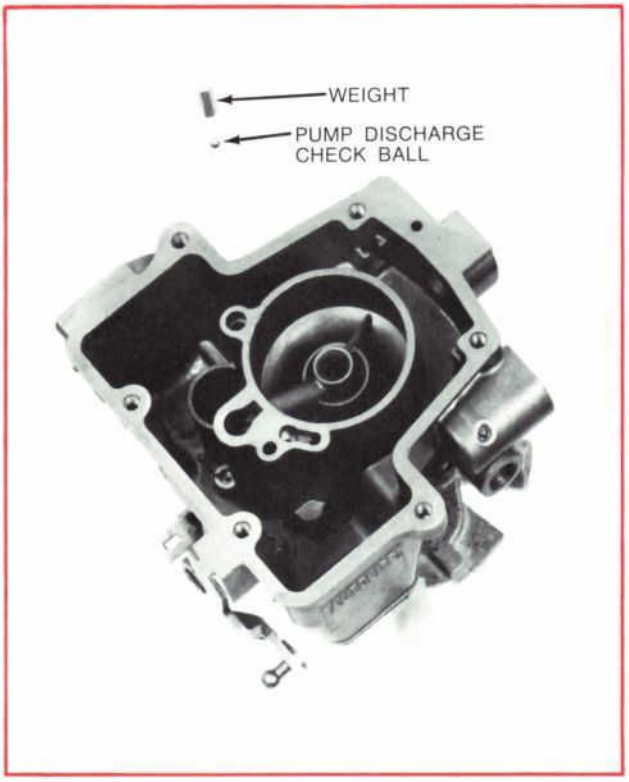

Figure 15–Pump Discharge Check Ball and Weight

Turn the main body upside down and remove the pump discharge check ball and weight (Figure 15).

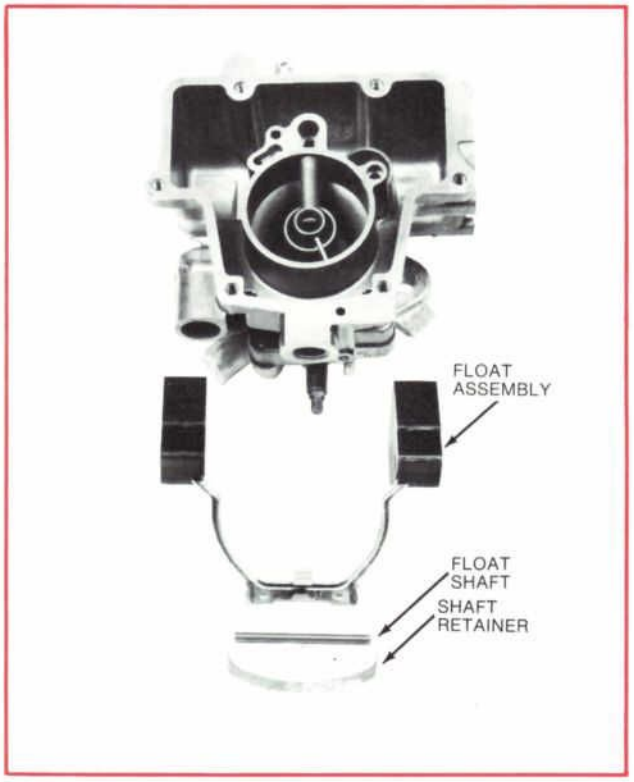

Figure 16–Float Assembly

Remove the spring float shaft retainer, float shaft and float assembly (Figure 16).

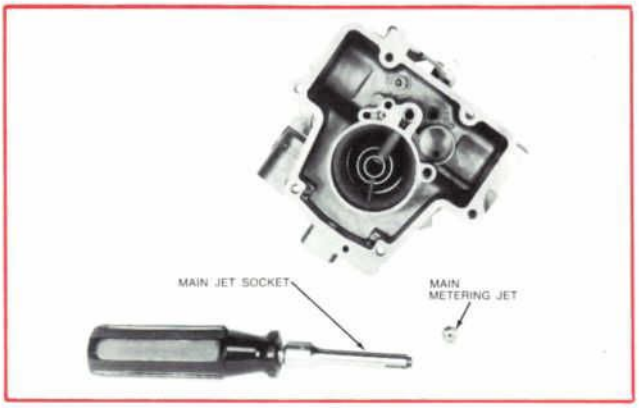

Figure 17–Removing Main Jet

Remove the main jet with a jet wrench socket such as Kent-Moore #10174-01, or equivalent (Figure 17). A ⅜" or wider screwdriver can also be used, but be sure it has a good square point.

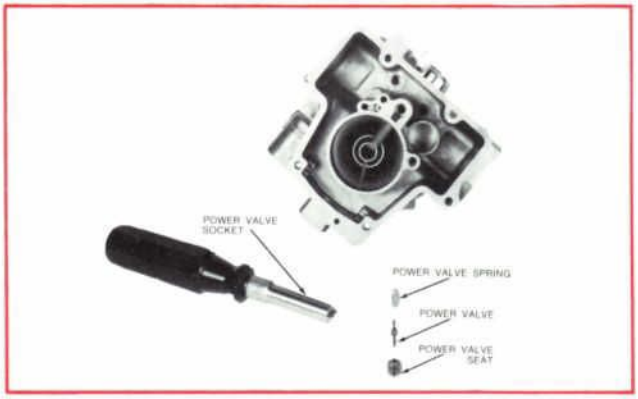

Figure 18–Removing Power Valve

Remove the power valve with a power valve socket wrench such as Kent-Moore #10185, or equivalent, (Figure 18). A screwdriver can also be used, but a 1/16" x ⅛" slot must be cut in the blade to clear the stem of the power valve. The power valve assembly consists of the valve body, valve and valve spring. All of these components of the service power valve should be used if replacement is required.

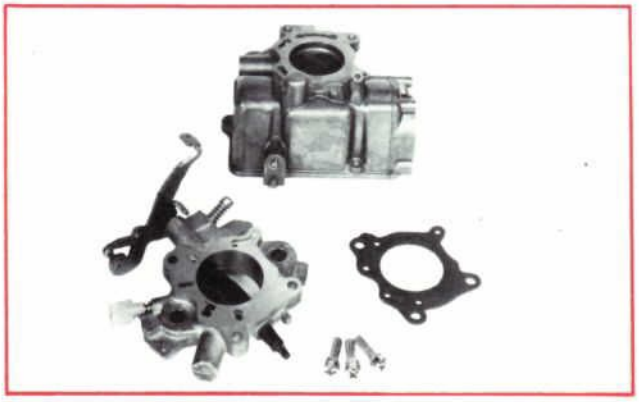

Figure 19–Separation of Main Body and Throttle Body

This completes disassembly of the main body. Remove the three main body-to-throttle body screws. Separate the throttle body from the main body and remove the gasket (Figure 19).

THROTTLE BODY DISASSEMBLY

Remove the curb idle speed screw (Figure 22).

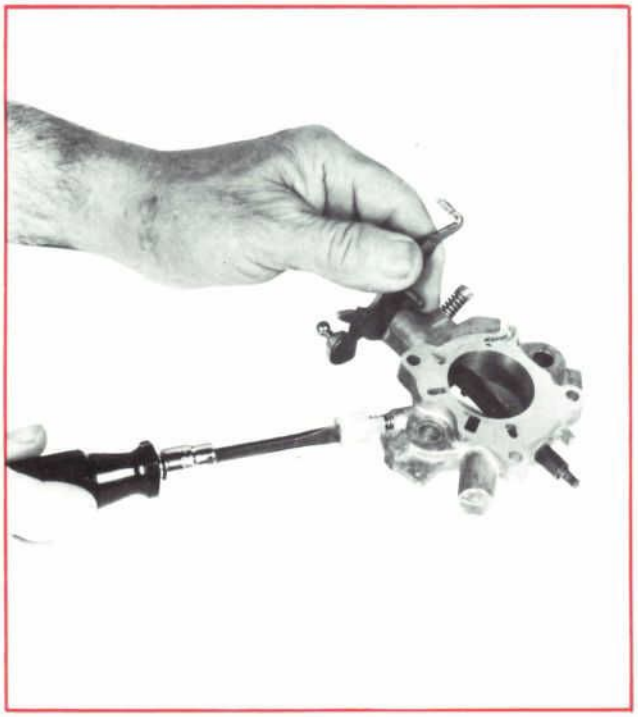

Figure 20–Turning Limiter Cap to Maximum Lean

Turn the idle limiter cap to its leanest position and remove the cap (Figure 20).

Figure 21–Seating Idle Mixture Screw

Gently turn the idle mixture screw clockwise until it seats. Record the starting position and the exact number of turns required to seat the screw. This is necessary to re-install it in the same position after cleaning (Figure 21).

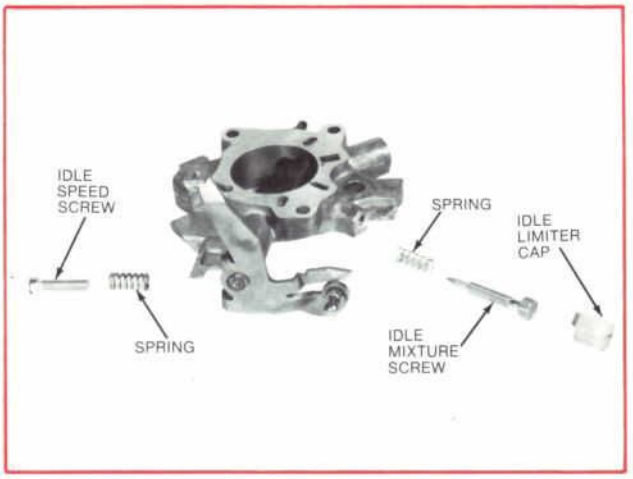

Figure 22–Maximum Throttle Body Disassembly

Carefully inspect the disassembled throttle body (Figure 22) for nicks, burrs or a worn shaft. Do not disassemble any further as it can only be replaced as an assembly at this point.

CLEANING

Before disassembly, wash the exterior of the carburetor with solvent and a clean brush. After disassembly, clean the parts in a suitable carburetor cleaner or solvent. Blow out all passages with compressed air. *NOTE: Do not immerse the choke bimetal element, choke diaphragm, dashpot or spark valve in any cleaner.* If parts are agitated while immersed in cleaner, the main well tube, which is pressed into the bowl cover, must be protected from bending or damage. It cannot be replaced. Dry it out by blowing out with compressed air (Figure 23).

Before reassembly, procure a carburetor tune-up kit, Autolite Part Number CT-223. It contains:

1. The Gasket Kit (all gaskets in the carburetor are included in the gasket kit)
2. Fuel Inlet Needle & Seat Assembly
3. Fuel Inlet Fitting
4. Power Valve Assembly
5. Pump Piston Cup

Discard all old parts as there is no point in wasting time inspecting parts that will be replaced with the tune-up kit.

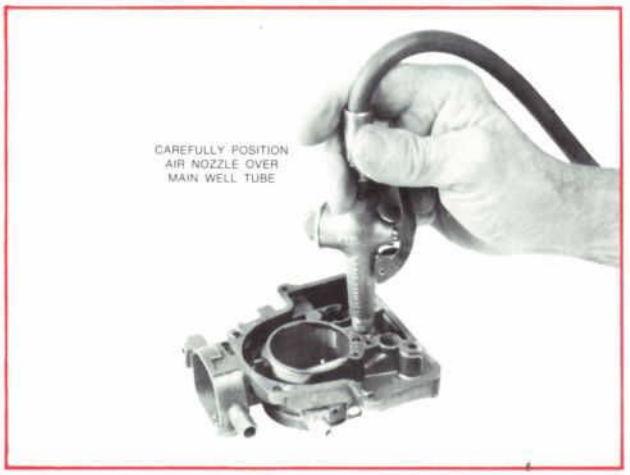

Figure 23–Blowing Out Main Well Tube

RE-ASSEMBLY

Except for the following vacuum piston staking operation, reassembly is the reverse of disassembly (Figures 1 through 22). Before installing the vacuum piston assembly, be sure and remove all staking from the washer cavity (Figure 11). Install the piston in the vacuum cylinder, seat the washer and stake lightly with a suitable tool.

Test the pump discharge valve prior to assembly by coating the pump piston with oil, or filling the fuel bowl with clean fuel. Hold the discharge valve and weight down with a small drift and operate the pump plunger by hand. If the valve and seat are leaking, no resistance will be experienced when operating the plunger (Figure 24).

If the valve is leaking, remove the hexagonal weight and stake the ball using a suitable drift punch. Exercise care when staking the ball so as not to damage the bore containing the pump weight. After staking the old ball, remove and replace with new ball from tune-up kit. Install weight and re-check for leaks.

ADJUSTMENT DURING ASSEMBLY

Install the float shaft in the float lever and insert the assembly in the float shaft cradle. Insert the retaining spring and while holding with fingers, invert the bowl. A straight edge placed across the surface of the bowl should just touch the toes of the float. (The portion of the float lungs farthest from the fuel inlet.) If necessary bend the float tang (Fuel Inlet System, Page 4) to obtain this adjustment. Use new gaskets and assemble the throttle body to the bowl. Torque the screws to 30 inch-pounds.

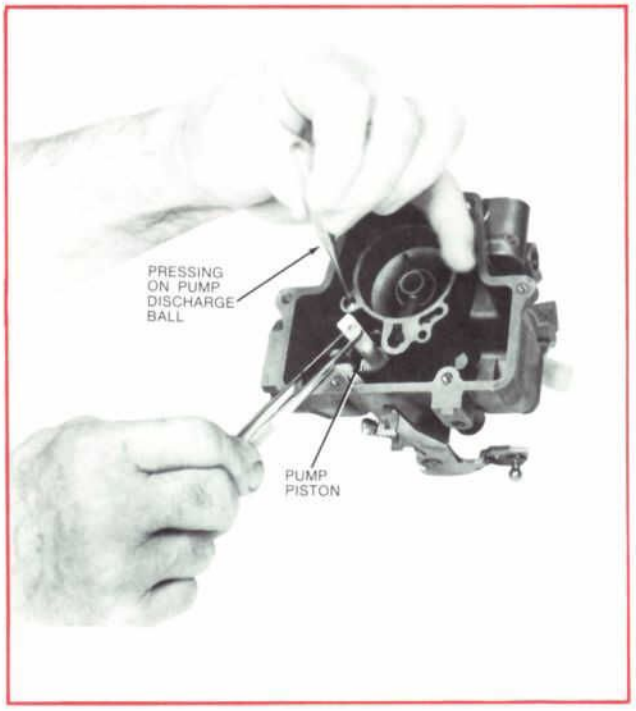

Figure 24—Testing Pump Discharge Valve

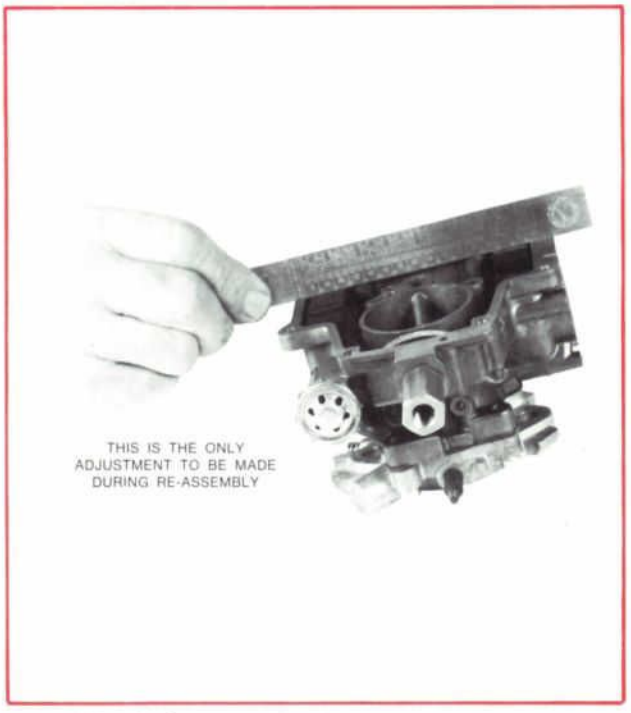

Figure 25—Checking Dry Float Setting

ADJUSTMENT AND SPECIFICATIONS

AUTOLITE TUNE-UP KIT	CA-368-A	CA-613-A	CA-694-A	CA-357-A	CA-378-A	CA-745-A	CA-601-TA	CA-358-A	CA-308-A	CA-746-A	CA-307-A	CA-359-A	CA-374-A	CA-602-TA
Bore Diameter	1 11/16"								1 7/16"					
Main Jet	68	68	68	68	67	68	66	68	61	60	61	61	61	61
Float (Dry) Adj.	Toe of Float, Flush with Gasket Surface of Main Body													
Pump Piston Stroke Adj.	27/32" from Centerline of Pump Link Hole in Pump Rod to Edge of 5/16" Boss on Main Body													
Fast Idle Cam Position Adj.	5/64"	5/64"	5/64"	No Vacuum Second Step					1/16"	1/16"	—	—	—	—
Choke Vacuum Kick (Pull Down) Adj.	3/16"	3/16"	3/16"	—	—	—	—	—	5/32"	5/32"	—	—	—	—
Choke Unloader (Dechoke) Adj.	5/32"	5/32"	5/32"	At Wide Open Throttle					1/8	1/8	—	—	—	—
Automatic Choke Adj.	Index	Index	Index	—	—	—	—	—	Index	Index	—	—	—	—
Curb Idle RPM	A-500 S-500	A-500 S-500 A-550E S-600E	A-550 W/AC 600 S-600 W/AC 650	A-500 S-500	A-500 S-500	A-550 S-700	A-550 S-700	A-500 S-500	A-500 S-500	A-550 S-700	A-500 S-500	A-500 S-500	S-500	A-550 S-700
Dashpot Adj.			3/32"			3/32"	3/32"	3/32"	3/32"	3/32"	3/32"	3/32"	3/32"	3/32"
Fast Idle RPM	2100	2100	2100	—	—	—	—	—	2100	2100	—	—	—	—

A-Automatic Transmission S-Synchromesh Transmission AC-Air Conditioning E-Emission

ADJUSTMENTS AFTER ASSEMBLY

Replacing Idle Mixture Screw and Limiter Cap

Re-install the idle mixture screw and lightly turn into seat. Back out the exact number of turns recorded during disassembly. Install the new idle limiter cap in the maximum lean position.

Pump Piston Stroke Adjustment

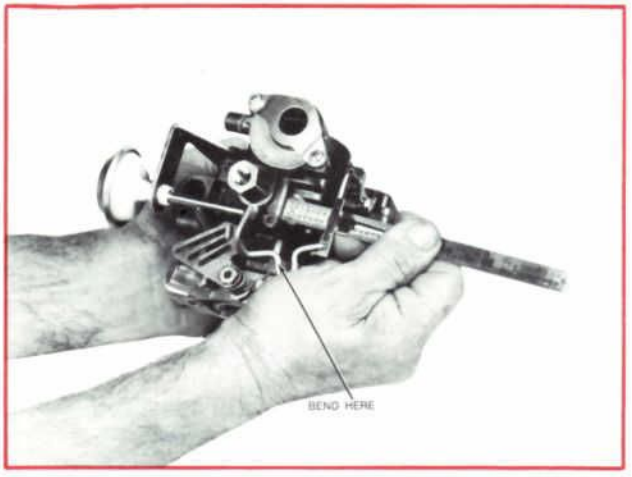

Figure 26–Pump Piston Stroke Adjustment

With the throttle in the curb idle position, the pump piston stroke adjustment (distance from the vacuum passage casting to the center of the hole in the pump operating rod) should be $^{27}/_{32}$" (Figure 26).

Fast Idle Speed and Cam Position Adjustment

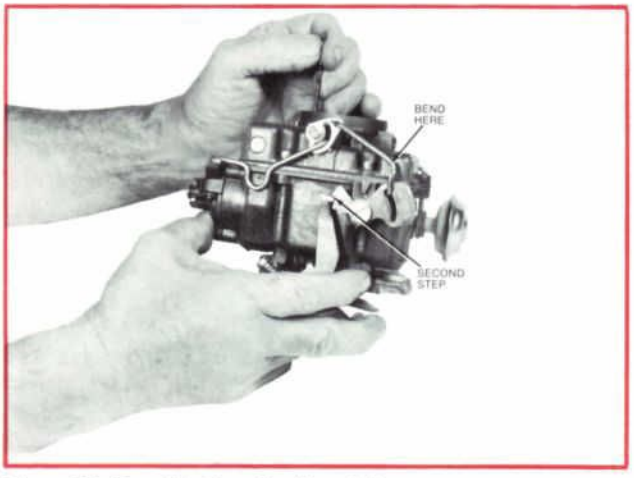

Figure 27–Fast Idle Cam Position Adjustment

The fast idle engine speed adjustment should be made on the vehicle, as described in the "Fast Idle Speed Adjustment (On Vehicle)" paragraph on page 15. However, the Fast Idle Cam Position Adjustment can be made on the bench. This "position" adjustment is important to assure that the speeds of each step of the cam occur at the proper time during engine warm-up. With the throttle lever contacting the second highest speed step on the fast idle cam, move choke valve toward closed position with light pressure on choke shaft lever.

Insert specified drill between choke valve and wall of air horn (Figure 27). A slight drag should be felt as the drill shank is removed. If no drag, or too much drag occurs, an adjustment is necessary. Adjust by bending fast idle connector rod with suitable bending tool until correct choke valve opening has been obtained.

Vacuum Kick (Pull Down) Adjustment (This test can be made On or Off vehicle.)

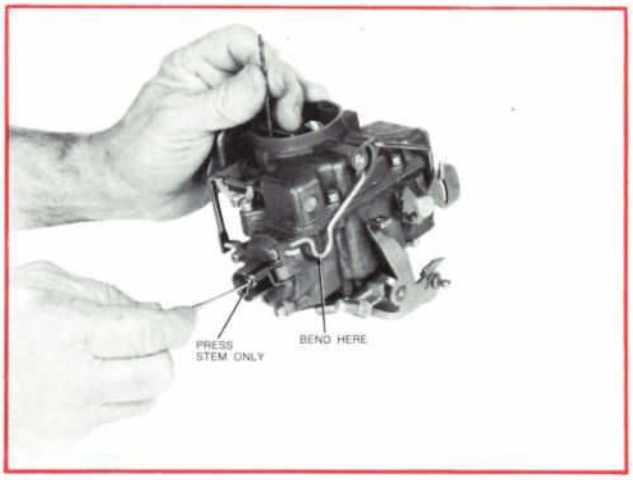

Figure 28–Vacuum Kick Adjustment

The choke diaphragm adjustment controls fuel delivery while the engine is running. It positions the choke valve within the air horn by action of the linkage between the choke shaft and the diaphragm. Depress the diaphragm with a small drift as shown in Figure 28.

Insert specified drill between choke valve and wall of air horn. Apply sufficient closing pressure on lever to which choke rod attaches to provide a minimum choke valve opening, without distortion of diaphragm link. Note that the cylindrical stem of diaphragm extends as internal spring is compressed. This spring must be fully compressed for proper measurement of vacuum kick adjustment.

An adjustment will be necessary if a slight drag is not obtained as drill is removed. Shorten or lengthen diaphragm link to obtain correct choke opening. Length changes should be made carefully by bending (opening or closing) the bend provided in diaphragm link (Figure 28). *CAUTION: DO NOT APPLY TWISTING OR BENDING FORCE TO DIAPHRAGM.*

Choke Unloader (Dechoke)

Two types of unloader tangs are used on the Autolite Model 1940 carburetor (Figures 29 and 30). This mechanical device partially opens the choke valve at wide open throttle to eliminate choke enrichment during cranking of the engine. Engines that have flooded or stalled because of excessive choking can be cleared by use of the unloader. Adjust the choke unloader as follows:

(1) Hold throttle valves in wide open position. Insert specified drill between upper edge of choke valve and inner wall of air horn (Figures 29 and 30).

(2) With a finger lightly pressing against shaft lever, a slight drag should be felt as drill is withdrawn. If an adjustment is necessary, bend unloader tang on throttle lever until correct opening is obtained. Use a suitable bending tool.

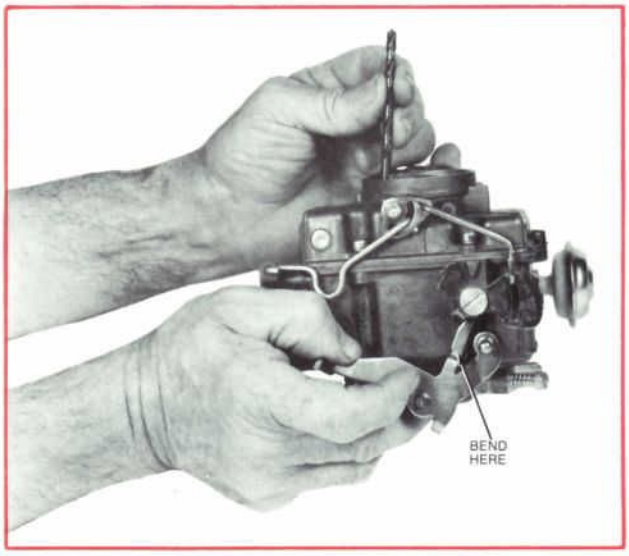

Figure 29—Unloader Adjustment—Type "A" Tang

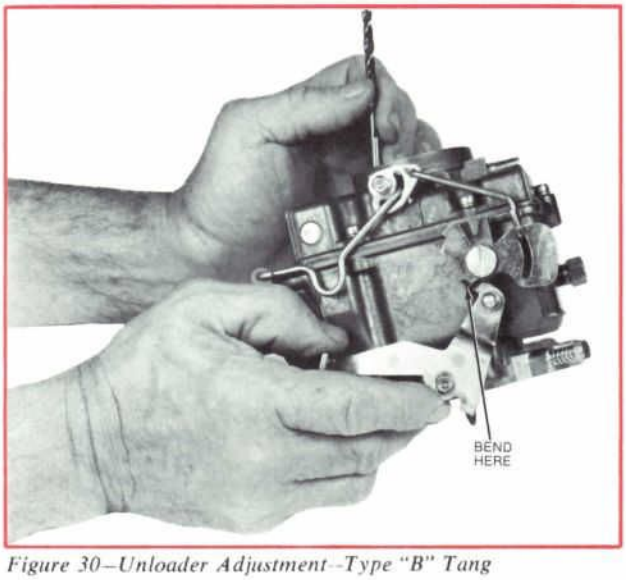

Figure 30—Unloader Adjustment—Type "B" Tang

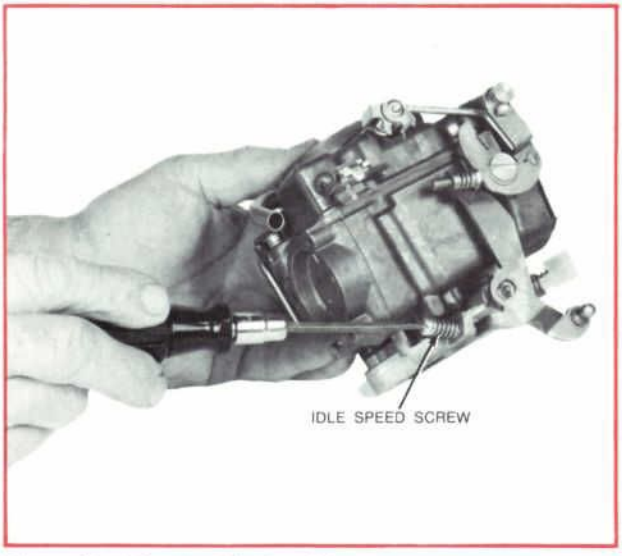

Figure 31—Adjusting Idle Speed Screw

Idle Speed Adjustment

Before adjusting the idle speed, the engine temperature must be normalized and engine timing set to proper specifications with a tachometer attached to engine.

Adjust the idle speed screw (Figure 31) to obtain the specified idle speed. The idle mixture limiter cap permits approximately ¾ of a turn enrichment of the idle mixture, if this should prove necessary.

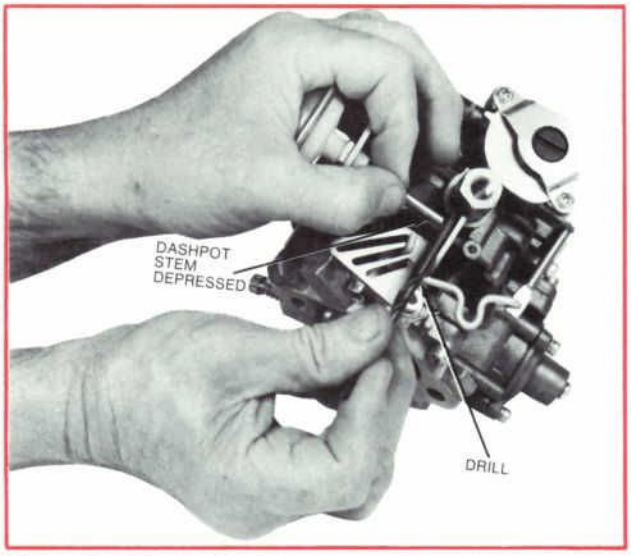

Figure 32—Adjusting Dashpot

Dashpot Adjustment

With the curb idle speed properly adjusted and the engine at idle, depress the dashpot stem (Figure 32). There should be 0.09" (3/32") clearance between the end of the stem and the tang. Make the adjustment by screwing the dashpot in or out with the fingers and then tightening the lock nut.

Fast Idle Speed Adjustment (On Vehicle)

Fast idle engine speed overcomes cold engine friction stalls after cold starts, and stalls due to carburetor icing. If carburetor is installed on a new engine, do not set this adjustment until the engine has 500 miles on it to insure normal engine friction level. Prepare engine by normalizing engine temperature. Connect a tachometer and set the curb idle speed and mixture. Then proceed as follows:

(1) With engine off and transmission in PARK or NEUTRAL, open throttle slightly.

(2) Close choke valve until fast idle cam screw can be positioned on second highest step of fast idle cam (Figure 27).

(3) Start the engine and determine stabilized speed. Insert proper size screwdriver blade in the slot in the throttle lever tang. Twist the screwdriver clockwise or counterclockwise to achieve correct idle speed.

The unloader adjustment and fast idle kick adjustment may also be made or checked with the carburetor mounted on the engine.

Correct specifications for all adjustments are found on page 13, along with Autolite Tune-Up Kit numbers.

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