4MV QUADRAJET CARBURETOR

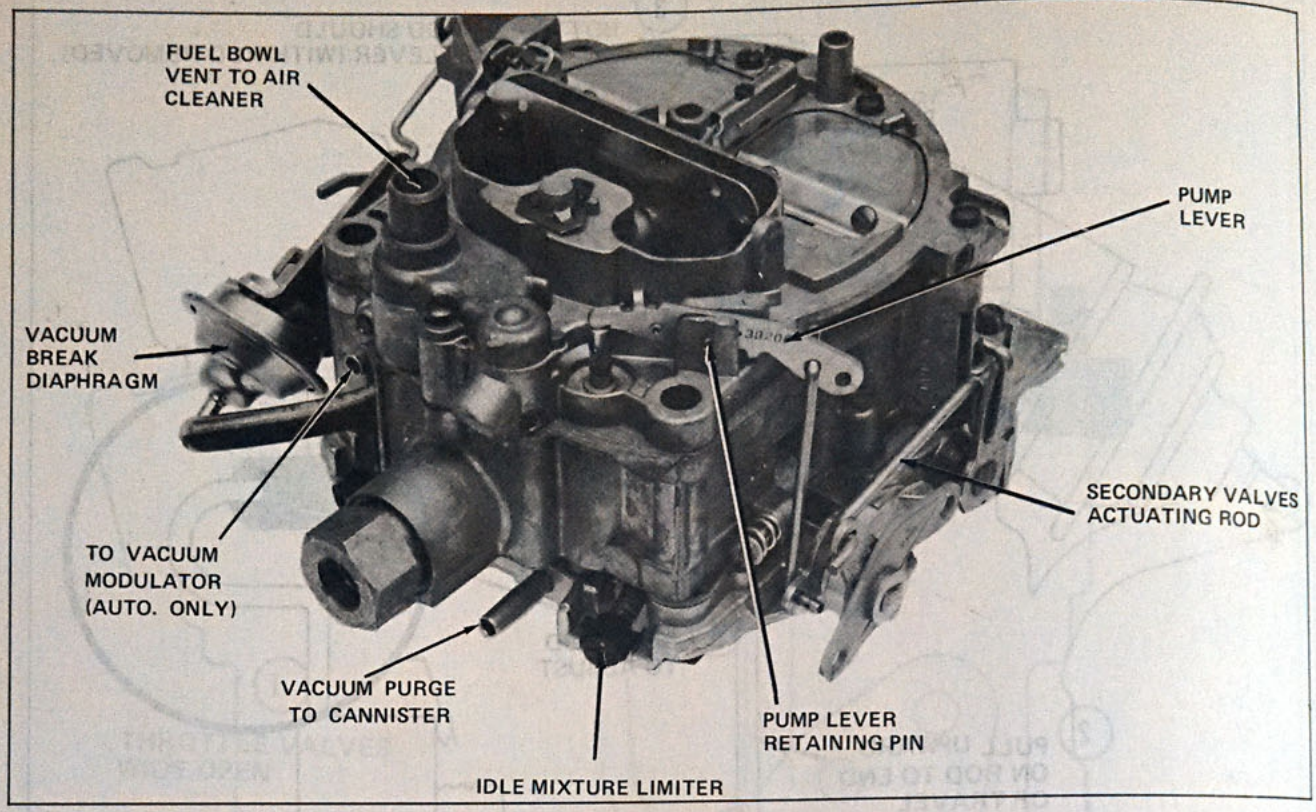


Fig. 6B-53 4MV Quadrajet Carburetor

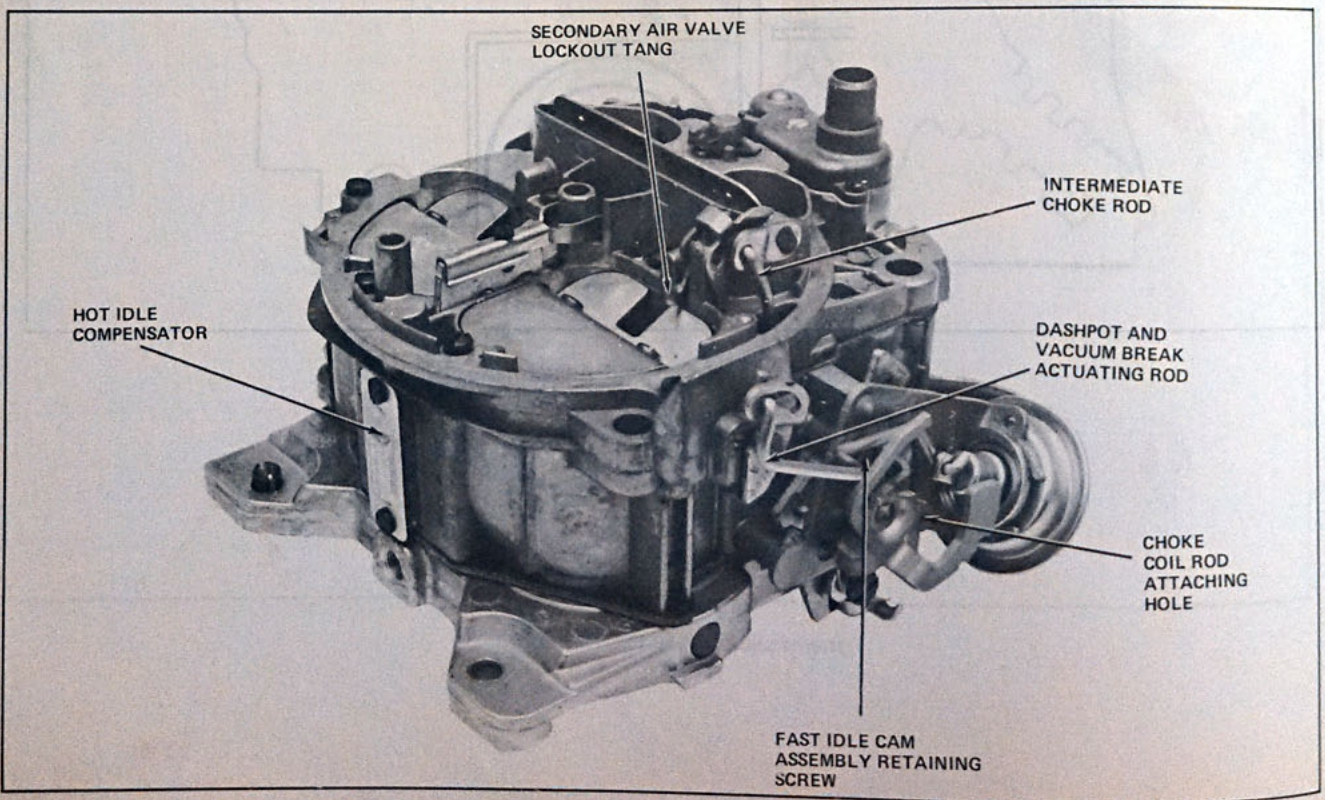


Fig. 6B-54 4MV Quadrajet Carburetor

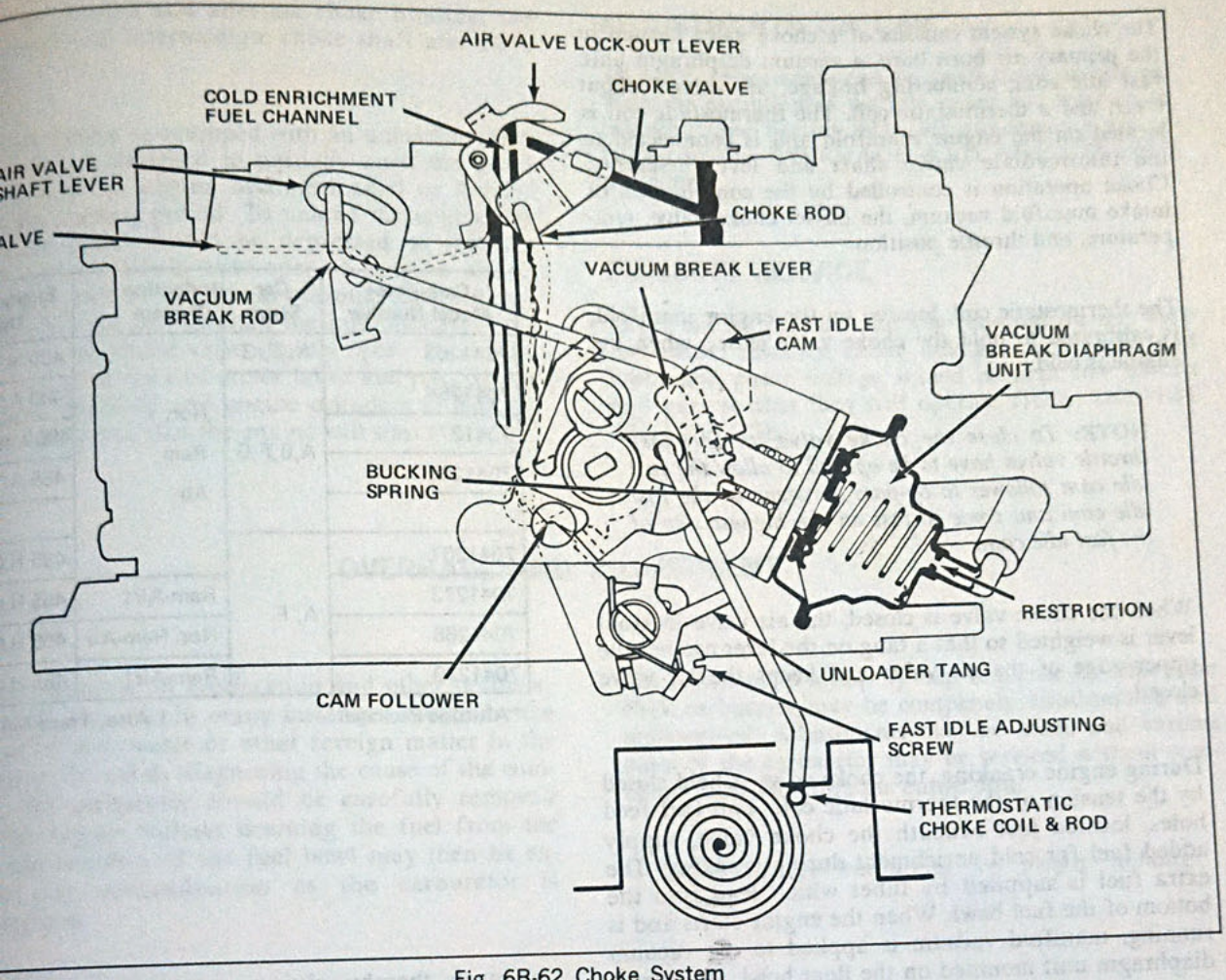


Fig. 6B-62 Choke System

plunger head). When the pump plunger is moved l the flat on the top of the cup unseats from the the plunger head and allows free movement of fuel n the inside of the cup into the bottom of the pump his also vents any vapors which may be in the of the pump well so that a solid charge of fuel maintained in the fuel well beneath the plunger When the primary throttle valves are opened, the ting linkage forces the pump plunger downward. mp cup seats instantly and fuel is forced through mp discharge passage, where it unseats the pump ge check ball and passes on through the passage to mp jets located in the air horn where it sprays into turi area of each primary bore.

uld be noted that the pump plunger is spring . The top pump duration spring is balanced with ttom pump return spring so that a smooth sus- charge of fuel is delivered during acceleration.

ump discharge check ball seats in the pump dis- passage during upward motion of the pump plunger so that air will not be drawn into the passage; otherwise, a momentary acceleration lag could result.

During high speed operation, a vacuum exists at the pump jets. A cavity just beyond the pump jets is vented to the top of the air horn, outside the carburetor bores. This acts as a suction breaker so that when the pump is not in operation fuel will not be pulled out of the pump jets into the venturi area. This ensures a full pump stream when needed and prevents any fuel "pull over" from the pump discharge passage.

CHOKE SYSTEM

The Quadrajet choke valve (Fig. 6B-62) is located on the primary side of the carburetor. It provides the correct air/fuel mixture enrichment to the engine for quick cold engine starting and during the warm-up period. The air valve is locked closed until the engine is thoroughly warm and choke valve is wide open.

The choke system consists of a choke valve located in the primary air horn bore, a vacuum diaphragm unit, fast idle cam, connecting linkage, air valve lockout lever, and a thermostatic coil. The thermostatic coil is located on the engine manifold and is connnected to the intermediate choke shaft and lever assembly. Choke operation is controlled by the combination of intake manifold vacuum, the off-set choke valve, temperature, and throttle position.

The thermostatic coil, located on the engine manifold, is calibrated to hold the choke valve closed when the engine is cold.

> **NOTE:** *To close the choke valve, the primary throttle valves have to be opened to allow the fast idle cam follower to by-pass the steps on the fast idle cam and come to rest on the highest step of the fast idle cam.*

When the choke valve is closed, the air valve lock-out lever is weighted so that a tang on the lever catches the upper edge of the air valve and keeps the air valve closed.

During engine cranking, the choke valve is held closed by the tension of the thermostatic coil. Two fuel feed holes, located just beneath the choke valve, supply added fuel for cold enrichment during cranking. The extra fuel is supplied by tubes which lead into the bottom of the fuel bowl. When the engine starts and is running, manifold vacuum is applied to the vacuum diaphragm unit mounted on the float bowl, and slowly opens the choke valve to a point where the engine will run without loading or stalling. A restriction, located in the vacuum diaphragm tube, delays choke valve opening slightly to allow the manifold to be wetted and prevent stalling due to leanness.

As the choke valve is opened to the vacuum break position, the cold enrichment feed holes, no longer in a low pressure area, cease to feed fuel.

Included in the vacuum break unit is a spring loaded plunger. The purpose of the spring is to off-set choke thermostatic coil tension and balance the greater opening of the choke valve with tension of the choke coil. This enables further refinement because the coil which senses engine and ambient temperatures will allow the choke valve to open gradually against spring tension in the diaphragm plunger head. In other words, in very cold temperatures the extra tension created by the thermostatic coil will overcome the tension of the diaphragm plunger spring and provide less choke valve opening with the results of slightly richer mixture. In warmer temperatures the thermostatic coil will have less tension and consequently will not press the spring as much, thereby, giving a greater choke valve opening for slightly leaner mixtures.

Carburetor Model Number	Car Series	Induction System	Engine-Trans Usage
7041263	A, F, G	Non Ram Air	400 M.T.
7041264	A,B,F,G		400 A.T.
7041271			400 & 455 A.T.*
7041262			455 A.T.
7041267	A, F		455 H.O.M.T.
7041273		Ram-Air†	455 H.O. M.T.
7041268		Non Ram-Air	455 H.O. A.T.
7041270		Ram-Air†	455 H.O. A.T.

*Altitude Package † Also, Trans Am

As the choke valve is opening, the fast idle cam follower on the end of the primary throttle shaft will drop from the highest step on the fast idle cam to the second step when the throttle valve is opened. This gives the engine sufficient fast idle and correct fuel mixtures for running until the engine begins to warm up and heat the thermostatic coil. As the thermostatic coil on the engine manifold becomes heated, it relaxes its tension and allows the choke valve to open further because of intake air pushing on the off-set choke valve. Choke valve opening continues until the thermostatic coil is completely relaxed, at which point the choke valve is wide open.

When the engine is thoroughly warm, the choke coil pulls the intermediate choke lever completely down and allows the fast idle cam to rotate so that the cam follower drops off the last step of the fast idle cam, allowing the engine to run at normal speeds. When the choke moves toward the up position, the end of the rod strikes a tang on the air valve lock-out lever. As the rod moves to the end of its travel, it pushes the lock-out tang upward and unlocks the air valve.

To reduce friction and alleviate choke binding, the choke shaft and intermediate choke shaft are teflon coated.

The choke system is equipped with an unloader mechanism which is designed to partially open the choke valve, should the engine become loaded or flooded during the starting period. To unload the engine, the accelerator pedal should be depressed so that the throttle valves are held wide open. A tang on a lever on the choke side of the primary throttle shaft contacts the fast idle cam and through the intermediate choke shaft forces the choke valve slightly open. This allows extra air to enter the carburetor bores and pass on into the engine manifold and engine cylinders to lean out the fuel mixture so that the engine will start.

ADJUSTMENTS ON CAR

All 4MV adjustments can be performed on the car. With the exception of the idle speed and mixture adjustment (See Section 6D), all adjustments are included in the OVERHAUL AND ADJUSTMENTS procedure.

PERIODIC SERVICE

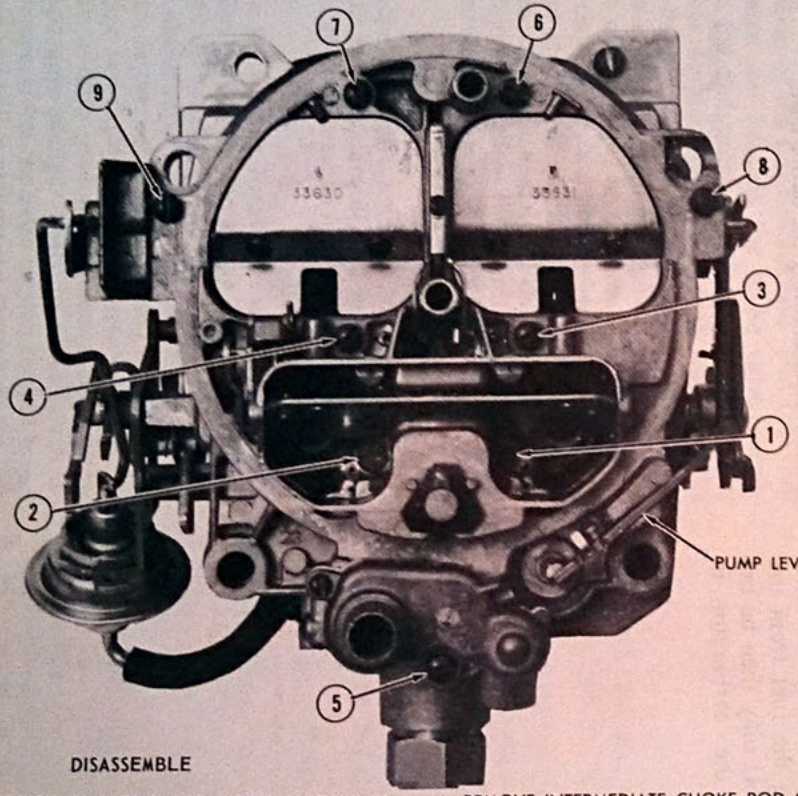
There are no periodic services required on the 4MV carburetor; however, choke linkage, choke valve and levers and pump linkage should be kept free of dirt and gum so that they will operate freely. DO NOT OIL LINKAGE.

OVERHAUL AND ADJUSTMENT

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

The following is a step-by-step sequence by which the 4MV carburetor may be completely disassembled and reassembled. Adjustments may be made and various parts of the carburetor may be serviced without completely disassembling the entire unit.

NOTE: *Place carburetor on proper holding fixture.*



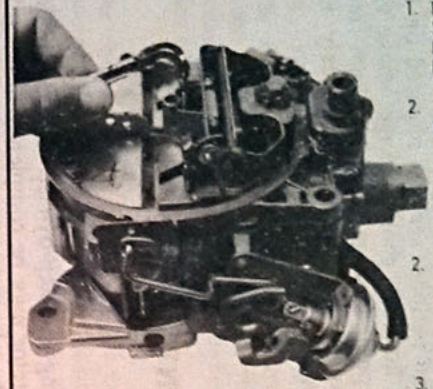
DISASSEMBLE

1. REMOVE PUMP LEVER & ROD ASS'Y. BY DRIVING THE PUMP HINGE PIN INWARD TOWARDS AIR HORN WITH A SMALL DRIFT PUNCH JUST FAR ENOUGH UNTIL PUMP LEVER IS FREE. THEN ROTATE PUMP LEVER FROM PUMP ROD AND PUMP ROD FROM LOWER THROTTLE LEVER.
2. REMOVE SECONDARY METERING RODS (INSERT A).
3. REMOVE NINE AIR HORN ATTACHING SCREWS (NUMBERED).
4. REMOVE INTERMEDIATE CHOKE ROD CLIP AND REMOVE ROD.
5. REMOVE IDLE VENT COVER & IDLE VENT ASS'Y.

REMOVE AIR HORN BY LIFTING STRAIGHT UP, UNTIL THE BLEED TUBES AND PUMP PLUNGER STEM CLEAR THE FLOAT BOWL, THEN ROTATE VERTICALLY TO REMOVE THE VACUUM BREAK ROD FROM THE AIR VALVE DASHPOT LEVER.

ASSEMBLE

REVERSE DISASSEMBLY STEPS.



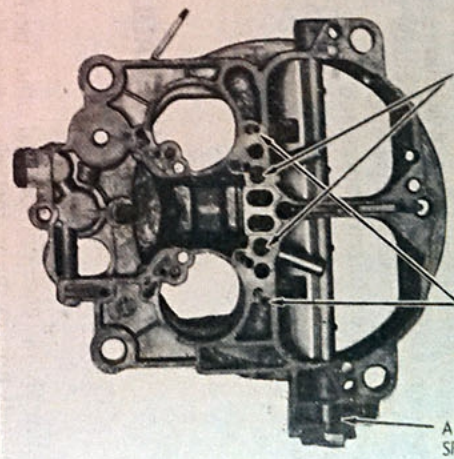
REMOVE

1. REMOVE RETAINING SCREW AND LIFT METERING RODS AND HANGER STRAIGHT UP
2. SLIDE RODS FROM HANGER.

REPLACE

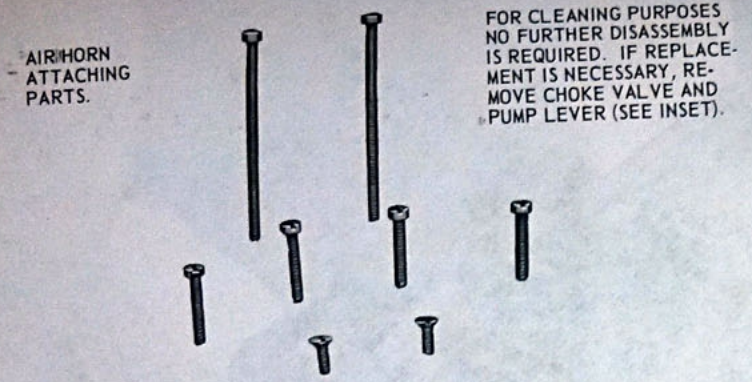
1. INSERT RODS IN HANGER.
2. HOLD HANGER AS SHOWN. SLIDE RODS INTO LOCATING HOLES IN AIR HORN AND REPLACE SCREW.
3. CHECK FOR FREE OPERATION OF RODS IN METERING DISCS BY OPENING AND CLOSING AIR VALVE.

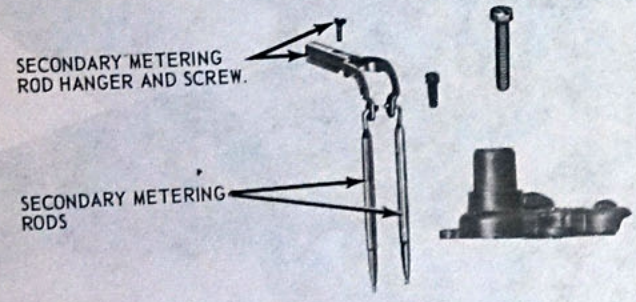
INSERT A

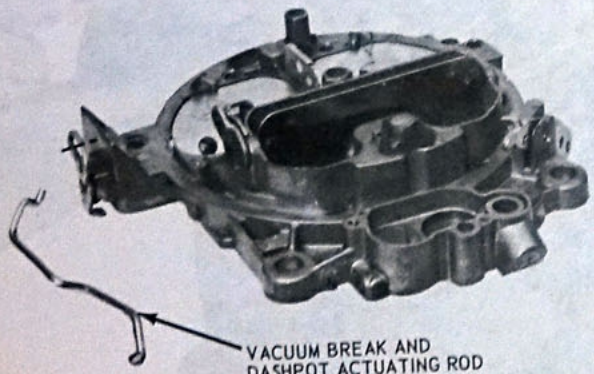


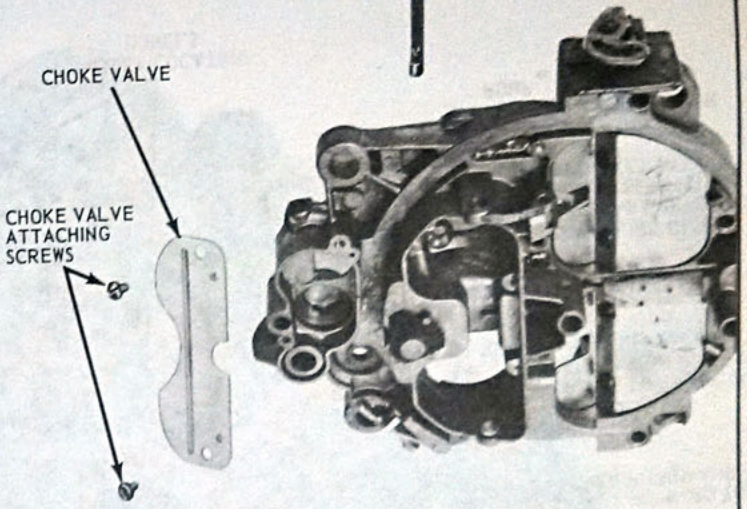
INSERT B

Fig. 6B-63 Air Horn R & R









DISASSEMBLE

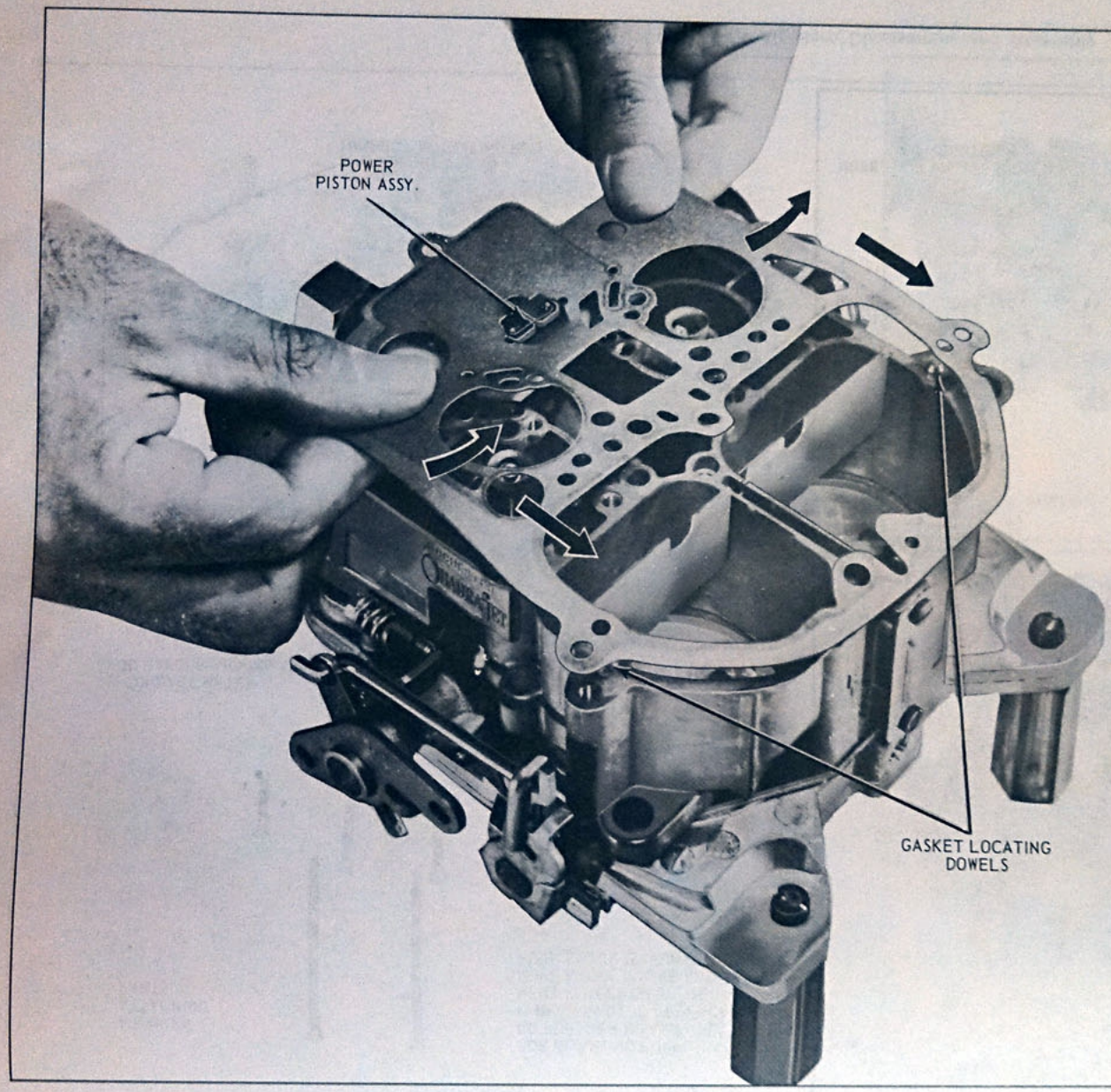
1. REMOVE CHOKE VALVE SCREWS.
2. LIFT CHOKE VALVE FROM AIR HORN AND REMOVE SHAFT.

ASSEMBLE

1. INSTALL CHOKE VALVE, SHAFT AND TWO NEW RETAINING SCREWS, LIGHTLY STAKE SCREWS.
2. CHECK FOR FREE OPERATION OF CHOKE VALVE.

NOTE: AIR VALVES SHOULD NOT BE REMOVED.

Fig. 6B-64 Air Horn Disassembly and Assembly



DISASSEMBLE

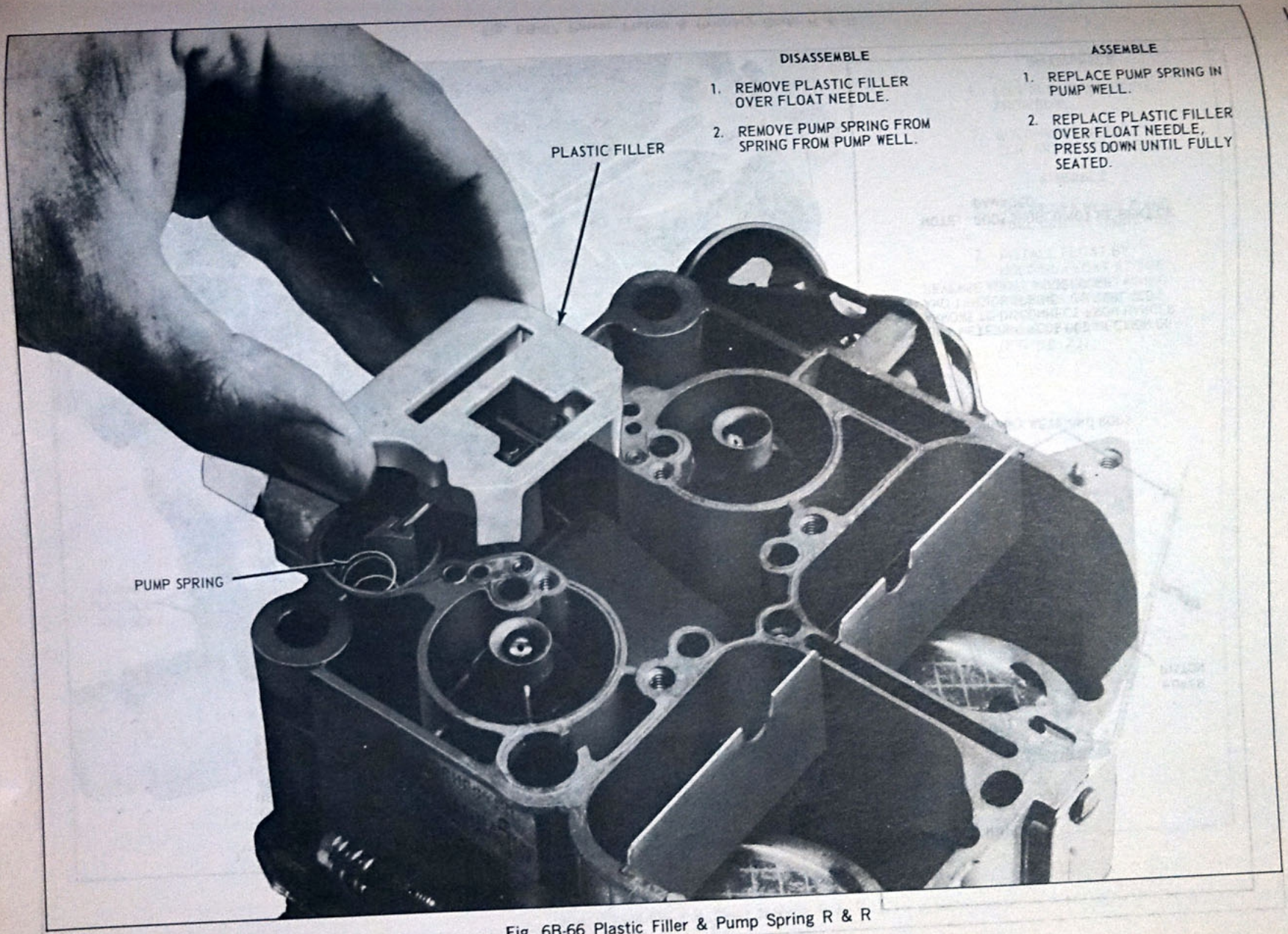
1. REMOVE ACCELERATOR PUMP
2. LIFT AIR HORN GASKET FROM LOCATING DOWELS.
3. SLIDE GASKET FORWARD TO CLEAR POWER PISTON AND LIFT OFF

NOTE: GASKET IS CUT AWAY IN AREA OF POWER PISTON FOR EASE OF REMOVAL AND REPLACEMENT

ASSEMBLE

1. INSTALL AIR HORN GASKET AROUND PRIMARY METERING RODS AND POWER PISTON. POSITION GASKET OVER DOWELS
2. REPLACE ACCELERATOR PUMP

Fig. 6B-65 Air Horn Gasket R & R



DISASSEMBLE

1. REMOVE PLASTIC FILLER OVER FLOAT NEEDLE.
2. REMOVE PUMP SPRING FROM SPRING FROM PUMP WELL.

ASSEMBLE

1. REPLACE PUMP SPRING IN PUMP WELL.
2. REPLACE PLASTIC FILLER OVER FLOAT NEEDLE, PRESS DOWN UNTIL FULLY SEATED.

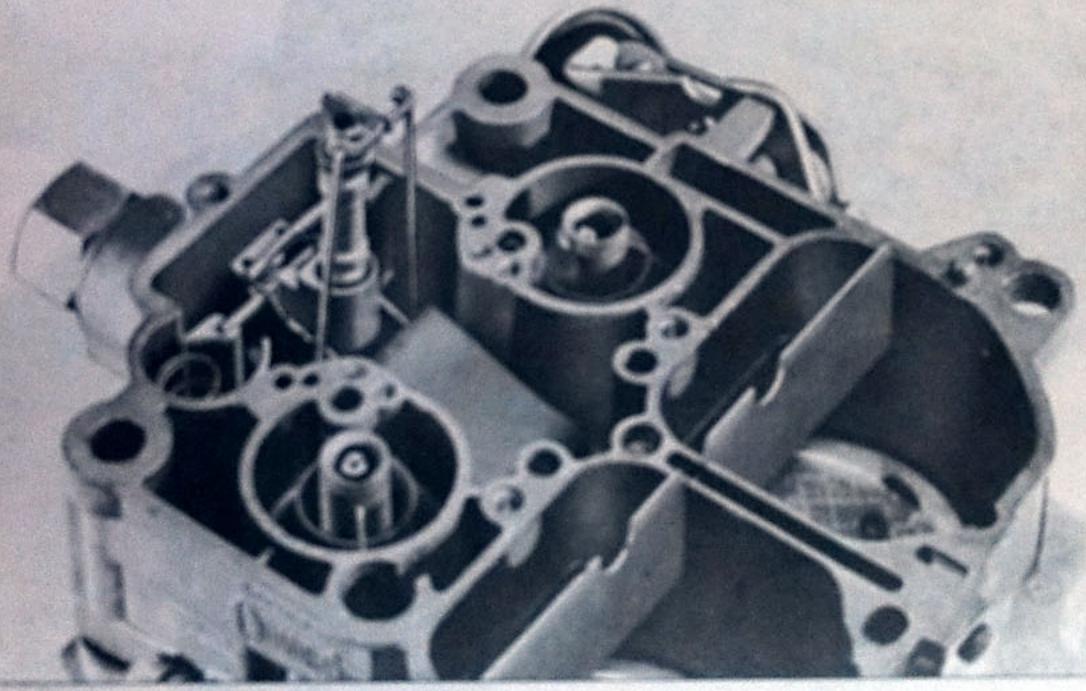
Fig. 6B-66 Plastic Filler & Pump Spring R & R

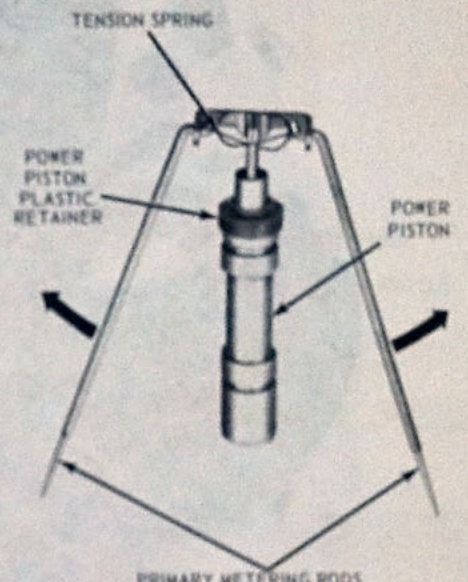
DISASSEMBLE

1. REMOVE POWER PISTON AND RODS FROM POWER PISTON WELL BY PRESSING DOWN ON HANGER AND ALLOWING ASSEMBLY TO "SNAP" FREE. DO NOT USE PLIERS TO REMOVE POWER PISTON ASSEMBLY.
2. REMOVE RODS, IF NECESSARY TO REPLACE, FROM HANGER. (SEE INSET)

ASSEMBLE

1. REPLACE RODS IN HANGER.
2. SLIDE POWER PISTON INTO BORE AND LINE UP METERING RODS WITH JETS.
3. WITH RODS IN PRIMARY JETS PUSH DOWN ON POWER PISTON TO LOCATE PLASTIC RETAINER PROPERLY IN BORE, THEN PRESS PLASTIC RETAINER INTO MACHINED RECESS IN BORE (USING BLADE OF SCREWDRIVER) EVENLY UNTIL RETAINER IS FLUSH WITH TOP OF CASTING.

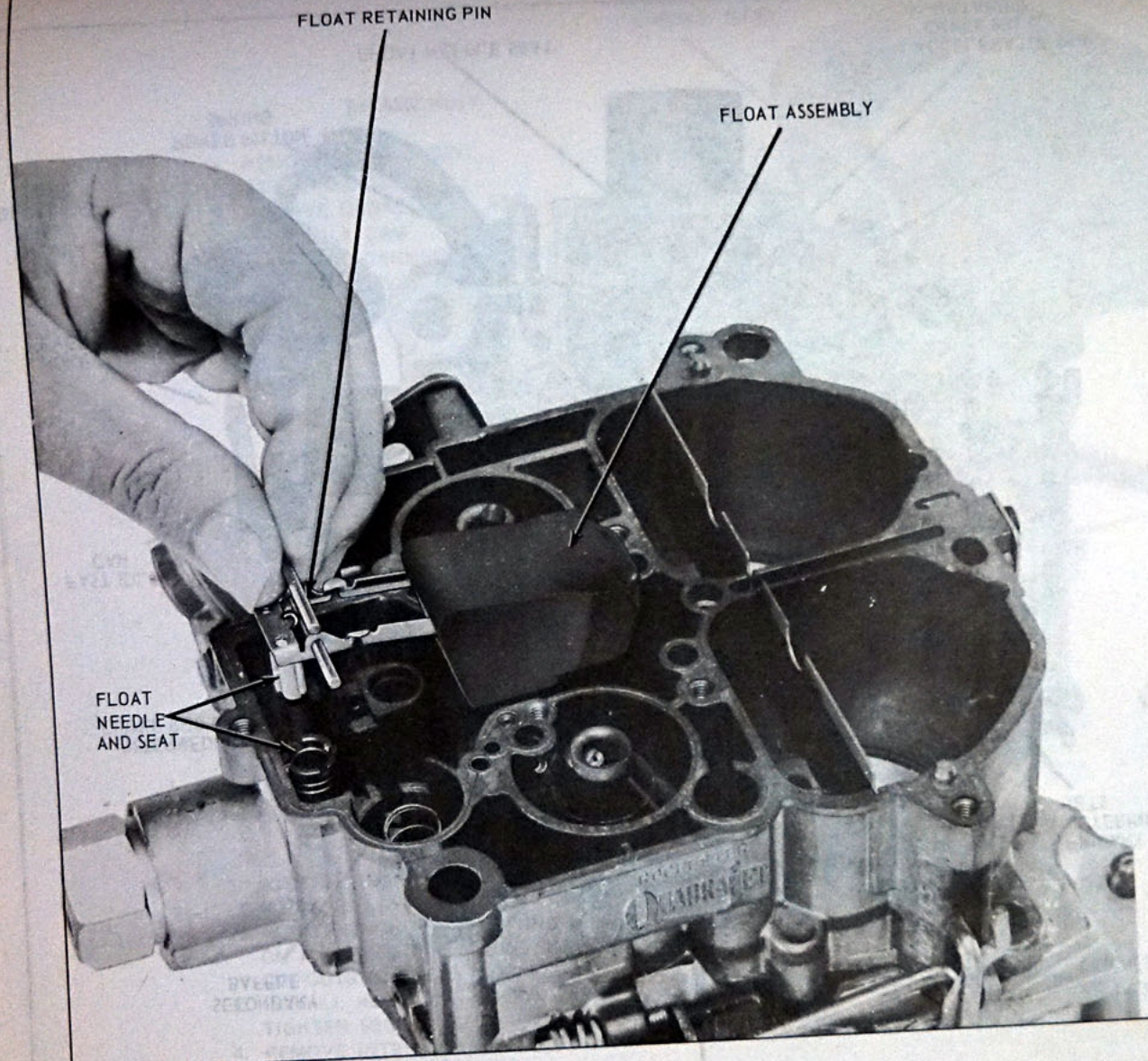




LIFT METERING RODS IN DIRECTION OF ARROWS TO DISCONNECT FROM HANGER AND TENSION SPRING. TO REPLACE REVERSE ABOVE PROCEDURE.

NOTE: RODS SHOULD NOT BE BENT OR DAMAGED.

Fig. 6B-67 Power Piston & Primary Rods R & R



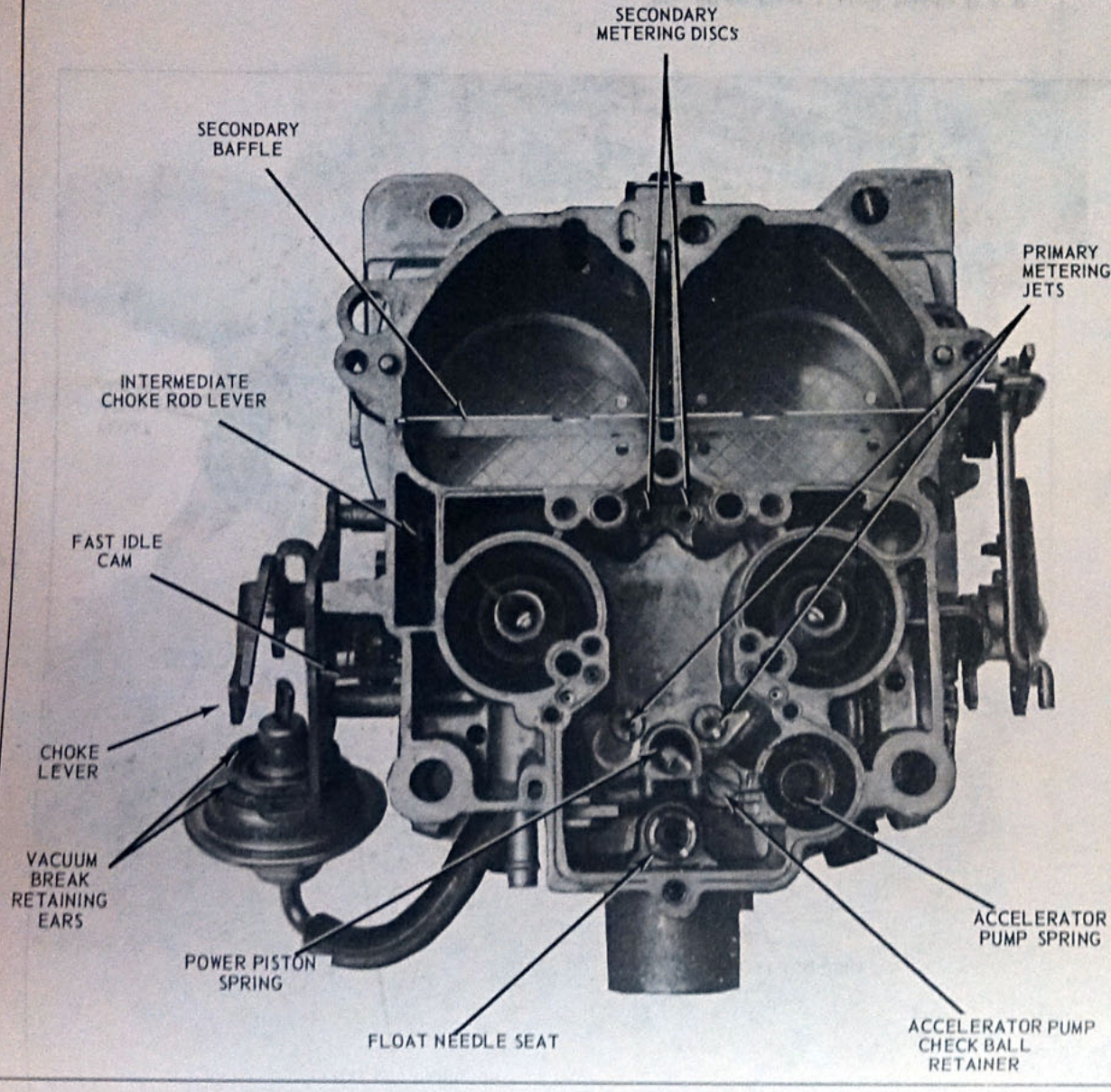
DISASSEMBLE

1. LIFT FLOAT AND NEEDLE FROM BOWL.
2. DISCONNECT NEEDLE PULL CLIP AND REMOVE NEEDLE

ASSEMBLE

1. INSERT NEW NEEDLE AND PULL CLIP IN FLOAT PIN.
2. INSTALL FLOAT BY HOLDING FLOAT AT TOE AND INSTALL RETAINING PIN FROM CHOKE SIDE.
3. ADJUST FLOAT LEVEL (FIG. 6B-73)

Float Needle R & R



DISASSEMBLE

1. REMOVE PUMP PLUNGER SPRING
2. REMOVE POWER PISTON SPRING
3. REMOVE FLOAT NEEDLE SEAT
4. REMOVE PRIMARY METERING JETS.

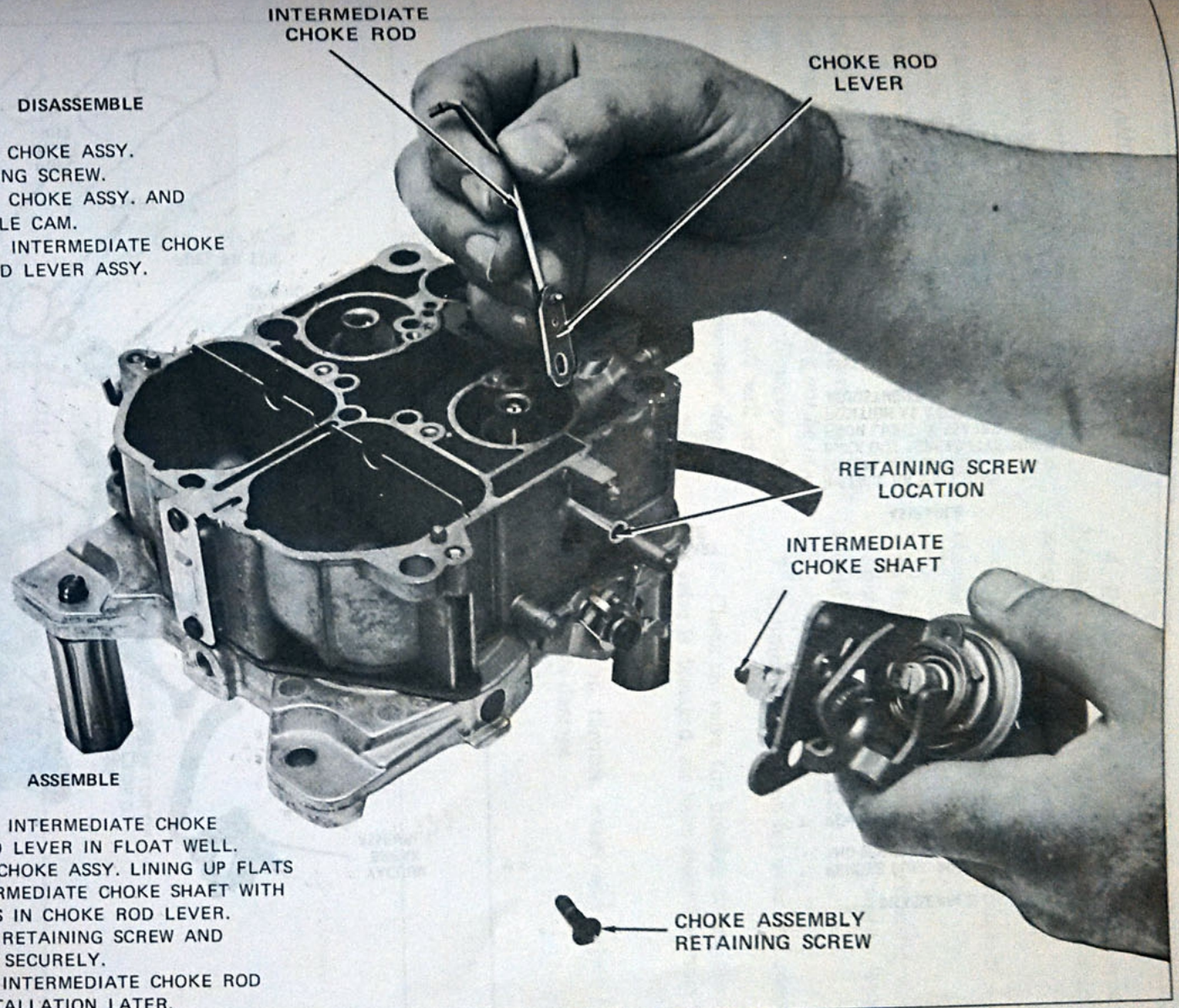
CAUTION: SECONDARY METERING DISCS ARE NOT REMOVABLE.

5. REMOVE ACCELERATOR PUMP CHECK BALL RETAINER AND BALL.
6. REMOVE SECONDARY BAFFLE.
7. SPREAD RETAINING EARS WITH PLIERS TO REMOVE VACUUM BREAK ASSEMBLY.

ASSEMBLE

1. REPLACE VACUUM BREAK UNIT. CLOSE EARS TO RETAIN.
2. REPLACE SECONDARY BAFFLE WITH NOTCHES TOWARD TOP.
3. REPLACE ACCELERATOR PUMP CHECK B AND RETAINER.
4. REPLACE PRIMARY JETS.
5. REPLACE FLOAT NEEDLE SEAT.
6. REPLACE POWER PISTON SPRING.
7. REPLACE PUMP RETURN SPRING.

Fig. 6B-69 Float Bowl Disassembly & Assembly



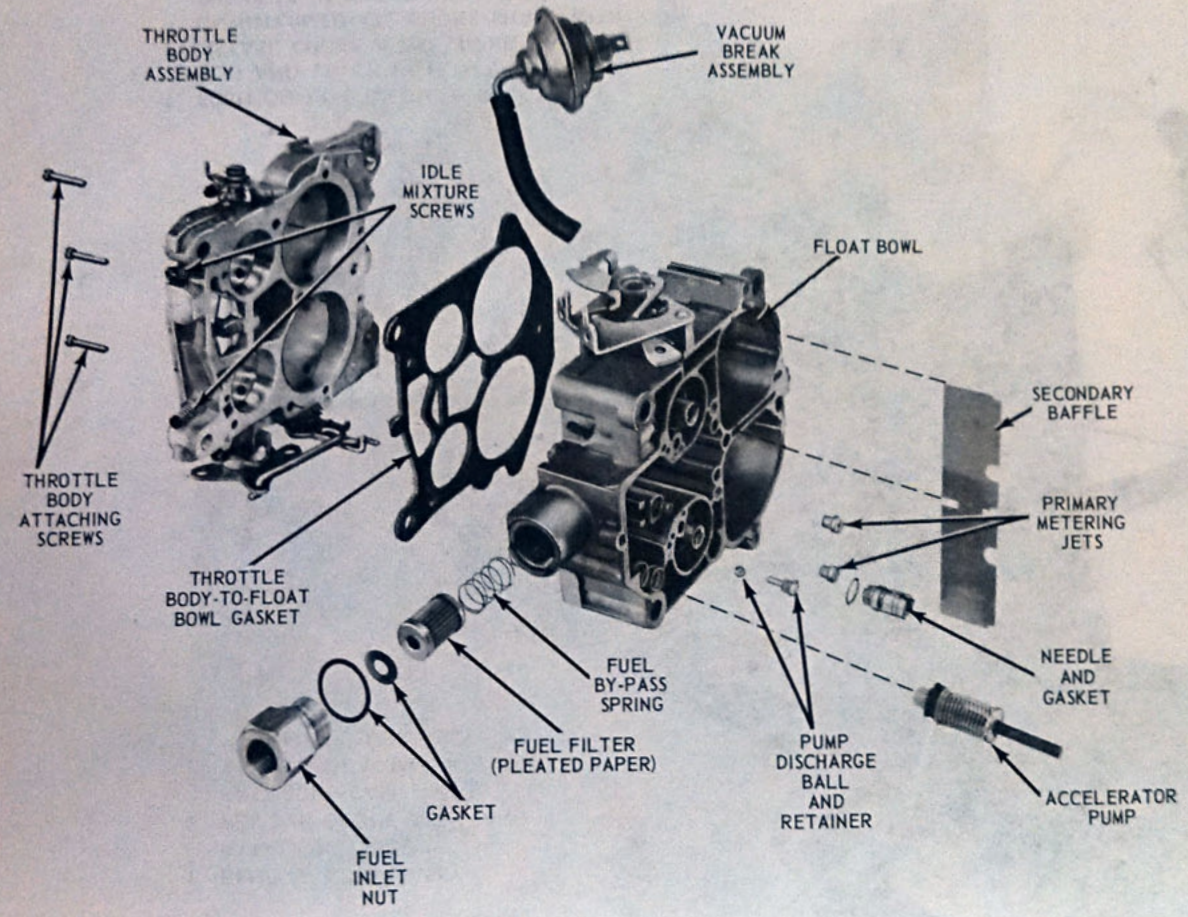
DISASSEMBLE

1. REMOVE CHOKE ASSY. ATTACHING SCREW.
2. REMOVE CHOKE ASSY. AND FAST IDLE CAM.
3. REMOVE INTERMEDIATE CHOKE ROD AND LEVER ASSY.

ASSEMBLE

1. POSITION INTERMEDIATE CHOKE ROD AND LEVER IN FLOAT WELL.
2. INSTALL CHOKE ASSY. LINING UP FLATS ON INTERMEDIATE CHOKE SHAFT WITH CUT-OUTS IN CHOKE ROD LEVER.
3. INSTALL RETAINING SCREW AND TIGHTEN SECURELY.
4. REMOVE INTERMEDIATE CHOKE ROD FOR INSTALLATION LATER.

Fig. 6B-70 Choke & Fast Idle Mechanism R & R



DISASSEMBLE

1. REMOVE FUEL INLET NUT, FILTER AND SPRING.
2. REMOVE THREE THROTTLE BODY-TO-FLOAT BOWL ATTACHING SCREWS.
3. REMOVE THROTTLE BODY AND GASKET.
4. REMOVE IDLE MIXTURE SCREWS AND SPRINGS.

NO FURTHER DISASSEMBLY OF THE THROTTLE BODY IS REQUIRED.

ASSEMBLE

1. INSTALL IDLE MIXTURE SCREWS AND SPRINGS. BACK OUT SCREWS FIVE TURNS FROM LIGHTLY SEATED POSITION AS A PRELIMINARY ADJUSTMENT.
2. INSTALL NEW THROTTLE BODY-TO-BOWL GASKET.
3. INSTALL THROTTLE BODY GASKET OVER DOWELS ON FLOAT BOWL, INSERT THREE ATTACHING SCREWS, TIGHTEN EVENLY AND SECURELY.
4. PLACE CARBURETOR ON HOLDING FIXTURE.
5. INSTALL FUEL INLET SPRING, NEW FUEL FILTER, GASKET AND RETAINING NUT.

Fig. 6B-71 Throttle Body & Float Bowl Disassembly & Assembly

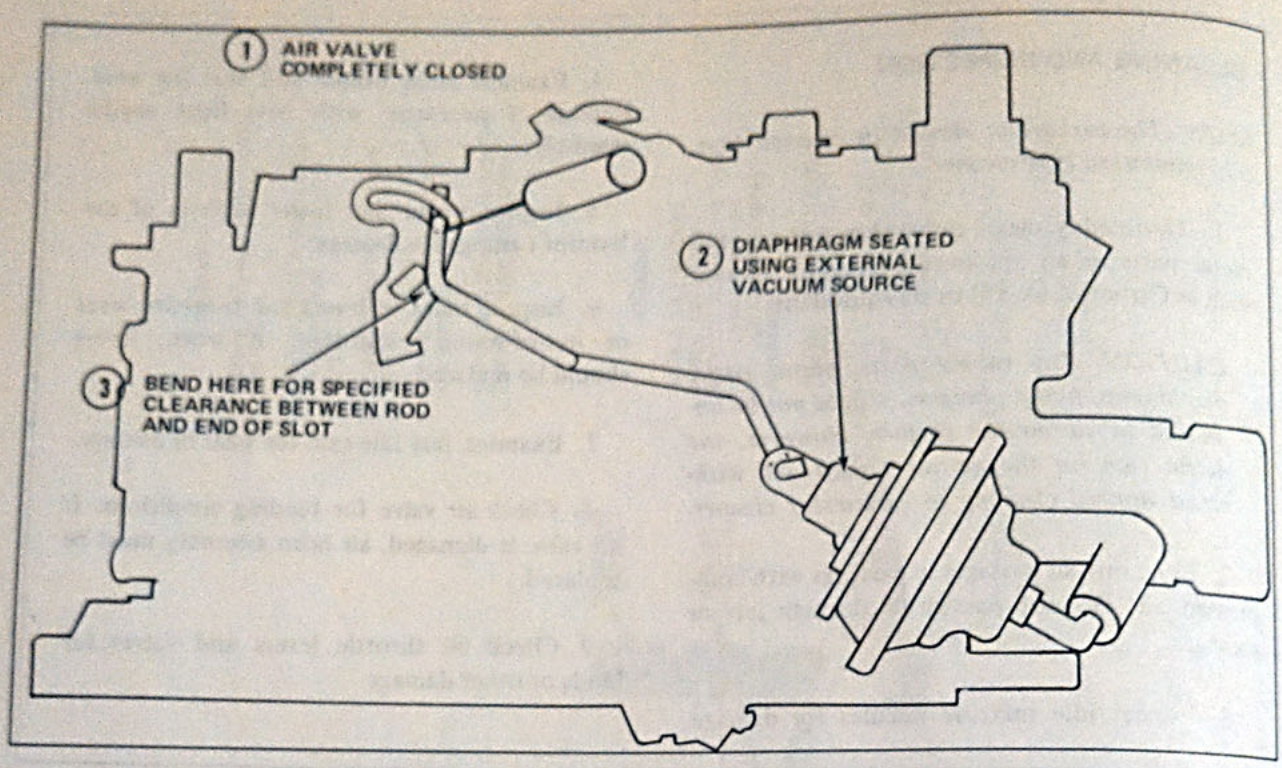


Fig. 6B-74 Air Valve Dashpot Adjustment

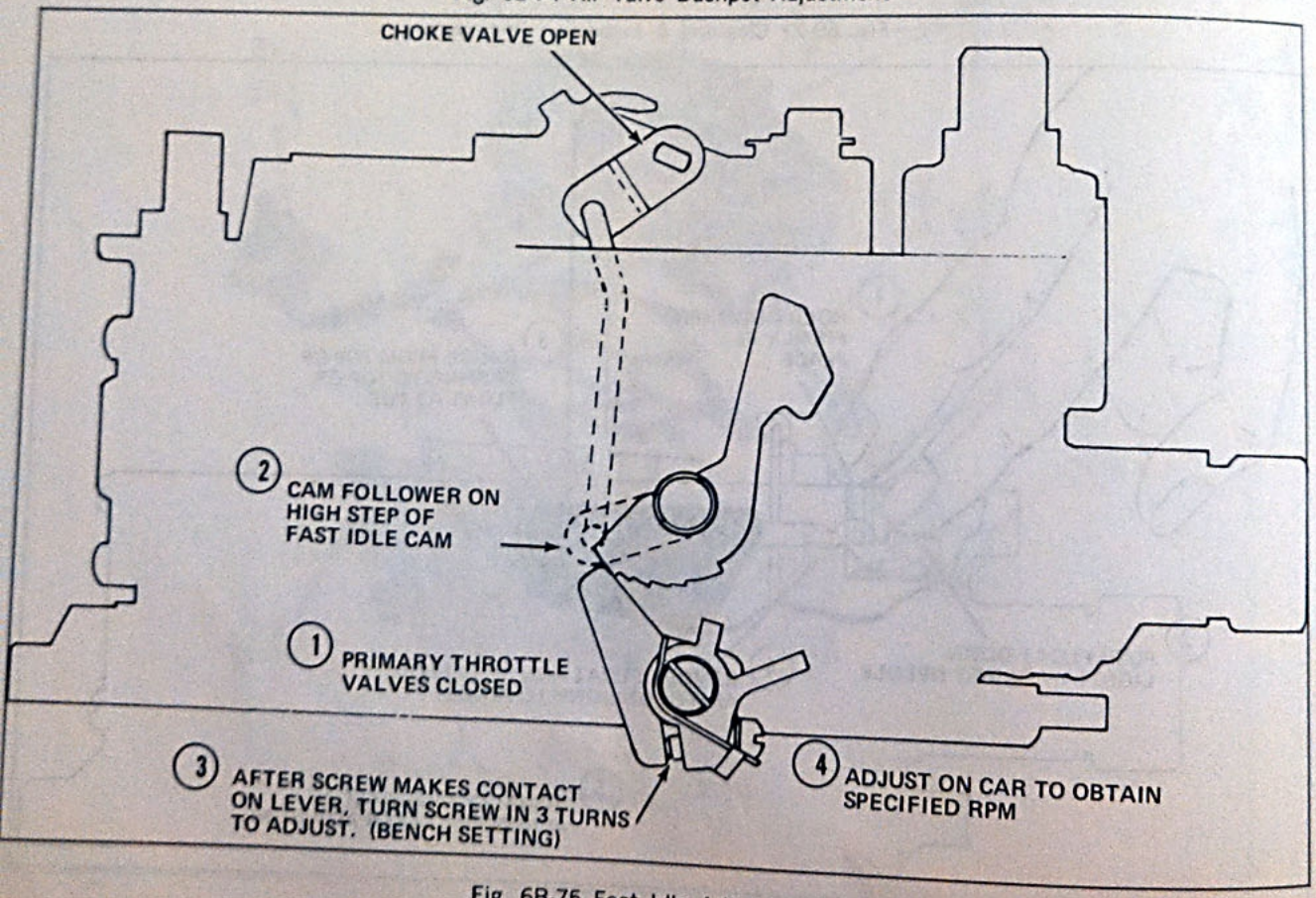


Fig. 6B-75 Fast Idle Adjustment

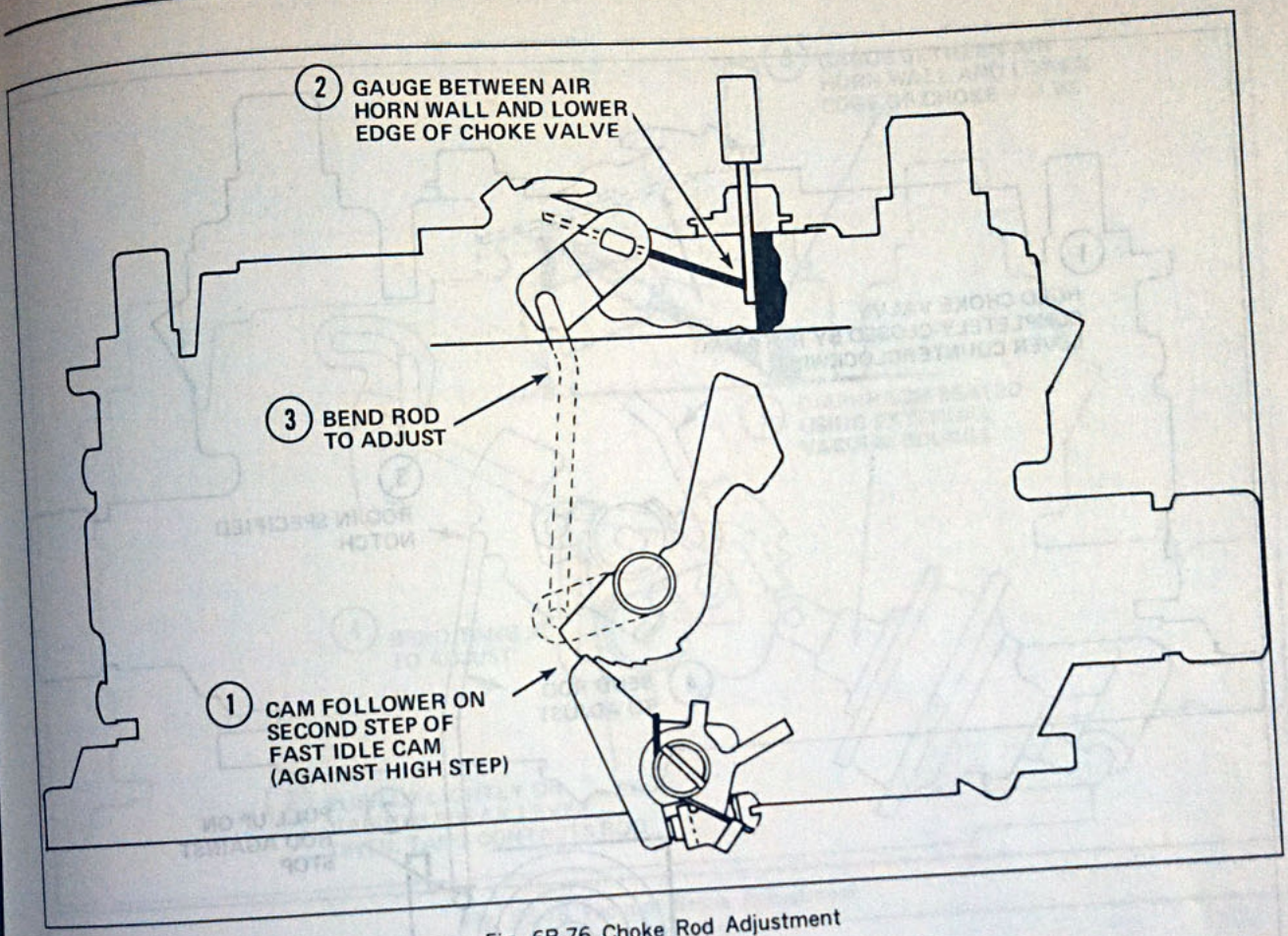


Fig. 6B-76 Choke Rod Adjustment

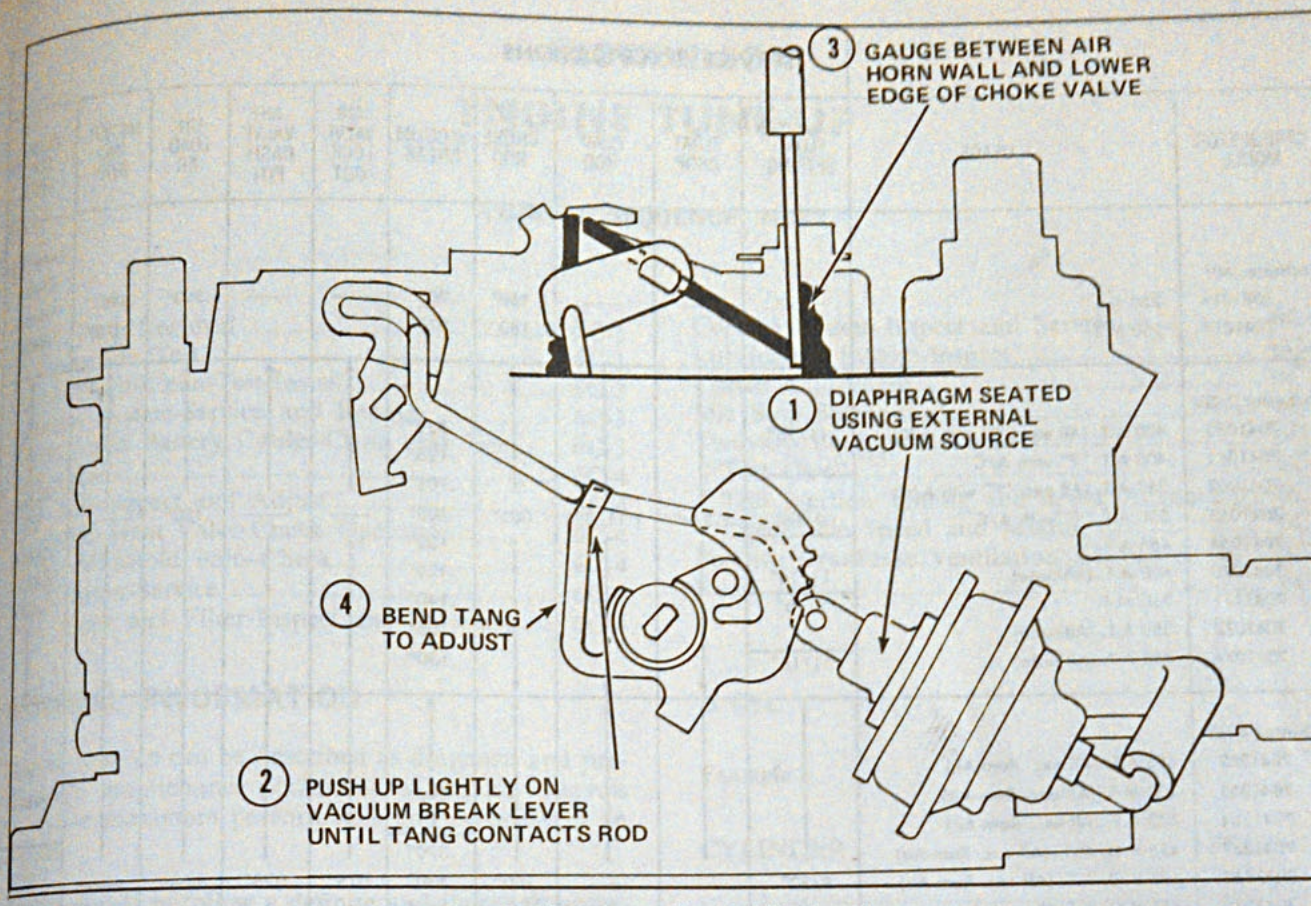


Fig. 6B-78 Vacuum Break Adjustment

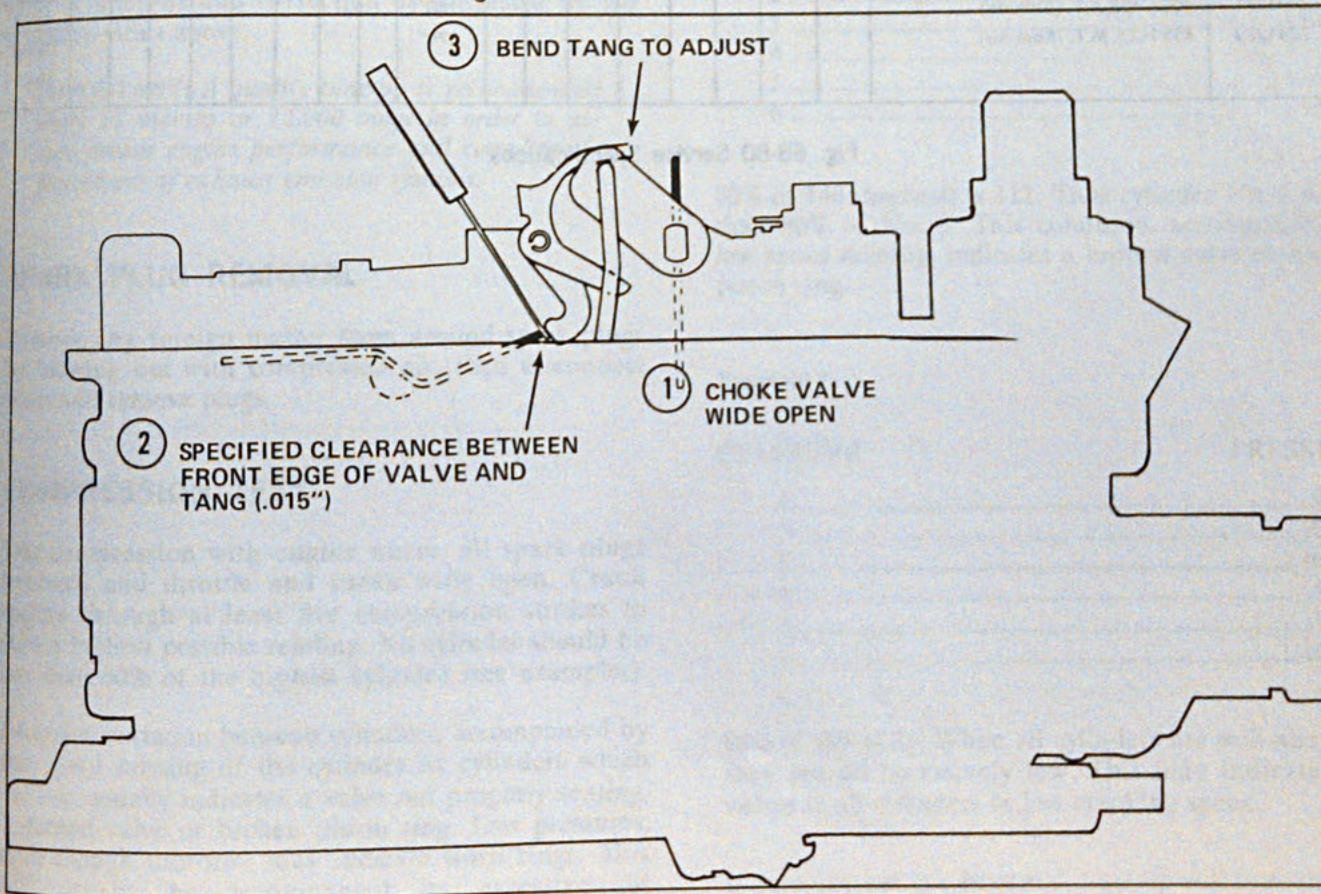


Fig. 6B-79 Air Valve Lockout Adjustment