

SECTION 6C

CARBURETOR

ALL NEW 1977 CHEVROLETS ARE CERTIFIED BY THE UNITED STATES DEPARTMENT OF HEALTH EDUCATION AND WELFARE AS CONFORMING TO THE REQUIREMENTS OF THE REGULATIONS FOR THE CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES. THIS CERTIFICATION IS CONTINGENT ON CERTAIN ADJUSTMENTS BEING SET TO FACTORY STANDARDS. FOR THIS REASON, THE FACTORY PROCEDURE FOR SETTING IGNITION TIMING, AND SLOW IDLE MUST BE FOLLOWED EXACTLY WHEN ADJUSTMENTS ARE MADE.

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INTRODUCTION

A carburetor is designed to meet the particular requirements of the engine, transmission and vehicle and although they may look alike, they are not always interchangeable. Refer to carburetor part number and/or specifications.

This section, divided into sub-sections by carburetor model, covers the repair procedures for the various carburetors, assembly and disassembly procedures and internal carburetor adjustment. Although illustrations showing bench operations are used, most single operations,

when not part of a general overhaul, should be performed (if practical) with the carburetor on the engine. Typical illustrations and procedures are used except where specific illustrations or procedures are necessary to clarify the operation.

Refer to Passenger Car or Light Duty Truck Service Manual Section 6C for external carburetor adjustment procedures.

MODEL 1ME CARBURETOR

DISASSEMBLY

Place carburetor on a holding fixture to prevent damage to throttle valve (Fig. 6C-1 and 2).

Air Horn

Removal

1. Remove choke vacuum break diaphragm hose.
2. Remove vacuum break diaphragm assembly from air horn by removing two attaching screws. These screws have a tapered head and do not use lockwashers. Remove diaphragm plunger stem from diaphragm to choke lever link. (Fig. 6C-3).

CAUTION: Screw that retains vacuum break lever to choke shaft is installed with thread torque retaining compound. It is not necessary to remove this screw and lever unless choke shaft replacement is required.

3. Remove fast idle cam attaching screw; then remove fast idle cam (Fig. 6C-4).

Remove choke rod from choke coil lever on end of choke shaft.

4. Remove electric thermostatic coil assembly from

choke housing by removing (3) screws and retainers.

5. Choke coil housing need not be removed from float bowl unless replacement is necessary. To remove choke housing, remove three attaching screws from float bowl. Two screws have lockwashers and the one facing the choke housing has a tapered head for locating choke housing.

6. Remove four remaining air horn to bowl attaching screws and lockwashers (three long and one short screw).

7. Remove air horn by lifting and twisting back towards choke housing so that the choke coil lever link will disengage from the choke coil lever at the choke housing, invert and place on clean bench. Air horn to float bowl gasket can remain on bowl for removal later (Fig. 6C-5).

Disassembly

1. If required, the choke valve and choke shaft can be removed from air horn by removing the screw that retains the vacuum break lever to the choke shaft. Care should be exercised when removing this screw because it is retained in place by thread torque retaining compound. Remove the two attaching screws from the choke valve, then, remove the choke valve and choke shaft from air horn.

NOTE: The choke valve screws are staked in place so

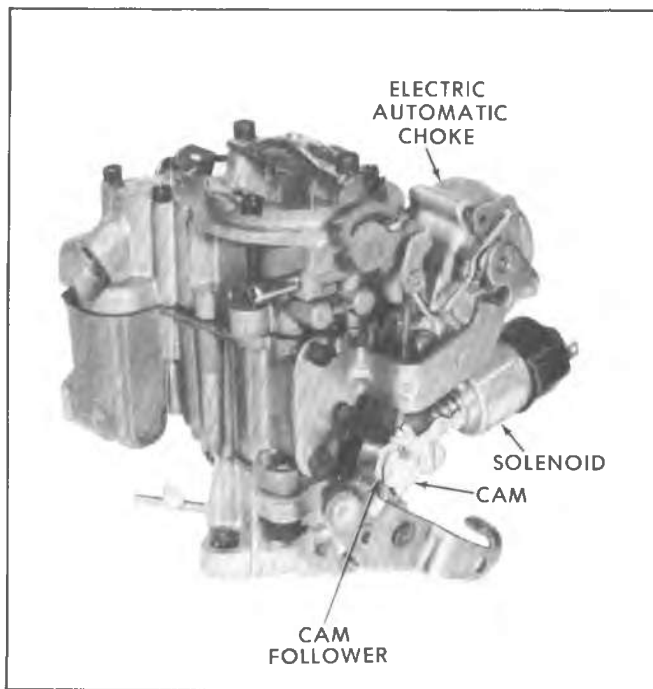


Fig. 6C-1—Model 1ME Carburetor-Rear View

it will be necessary to file off staking and re-stake during assembly.

CAUTION: *Do not bend choke shaft when restaking.*

2. No further disassembly of the air horn is necessary.

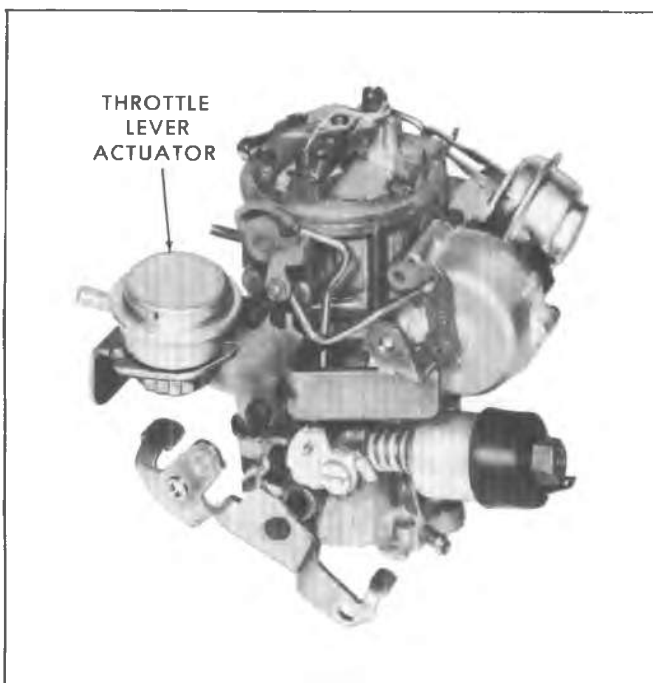


Fig. 6C-2—Model 1ME Carburetor-H.D. Emissions, Cal.

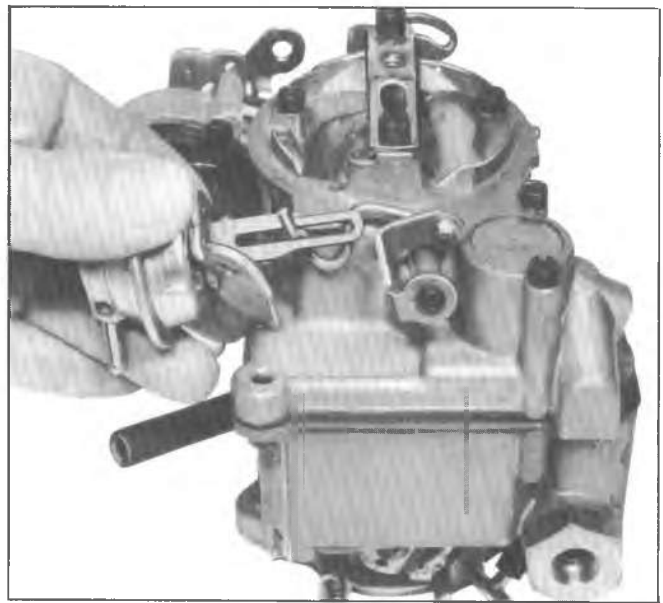


Fig. 6C-3—Vacuum Break Diaphragm

Float Bowl Disassembly

1. Remove air horn to float bowl gasket. Gasket is slit next to metering rod lever so that it can be slid over lever for ease in removal. (Fig. 6C-6).

2. Remove float assembly from float bowl by lifting upward on float hinge pin. Remove hinge pin from float arm.

3. Remove float needle from seat.

4. Disconnect accelerator pump and power piston actuator lever from end of throttle shaft by removing lever attaching screw (Fig. 6C-7).

5. Hold down on power piston while removing lever. Power piston spring and metering rod assembly may now be removed from float bowl (Fig. 6C-8).

6. Remove lower end of power piston link from actuator lever by rotating until tang on rod slides out of notch in lever.

7. Remove actuator lever from lower end of accelerator

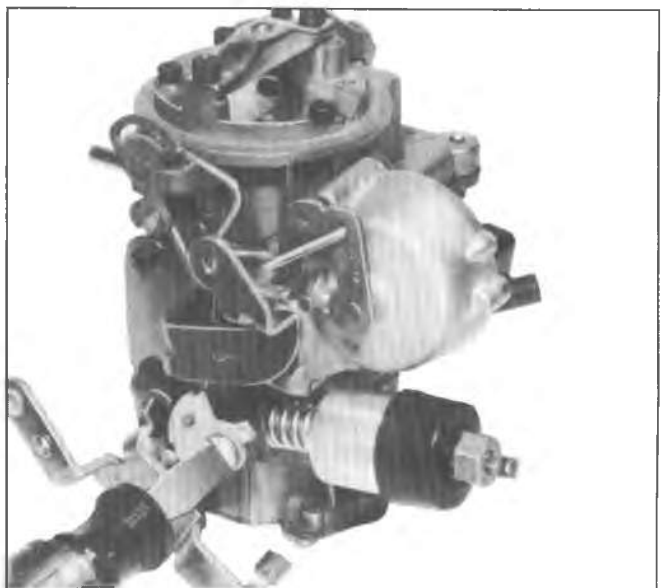


Fig. 6C-4—Fast Idle Cam



Fig. 6C-5--Air Horn Removal

pump link in same manner.

8. Push down on accelerator pump and remove actuator link by rotating until tang on rod aligned with slot on pump plunger lever. Remove the link.

9. Remove pump assembly from float bowl (Fig. 6C-9).

10. Remove pump return spring and power piston spring from float bowl (Fig. 6C-9).

11. Remove "T" guide and pump discharge spring using needle nose pliers (Fig. 6C-10).

12. Pump discharge ball and idle tube can be removed

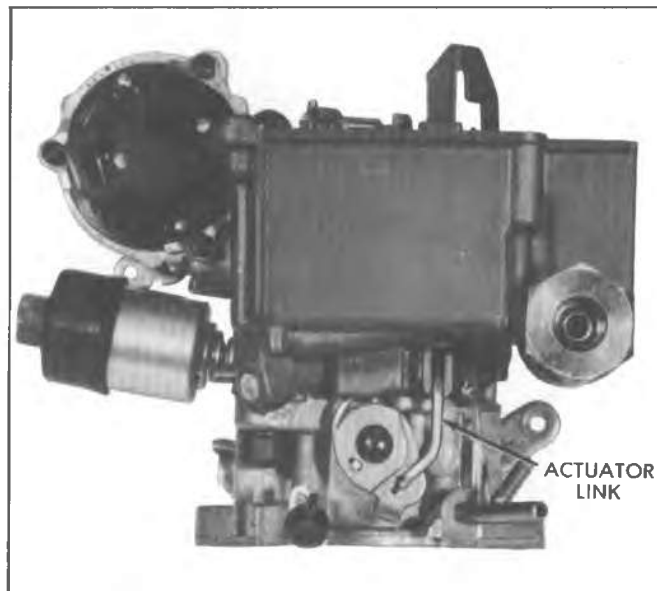


Fig. 6C-7--Pump and Power Piston Actuator Lever

at the same time by inverting the bowl.

13. Remove main metering jets from bottom of fuel bowl.

14. Remove float needle seat and gasket using Tool J-22769.

15. The idle stop solenoid can be removed at this time if desired.

16. Remove the fuel inlet nut, filter and spring (Fig. 6C-11).

No further disassembly of the float bowl is required.

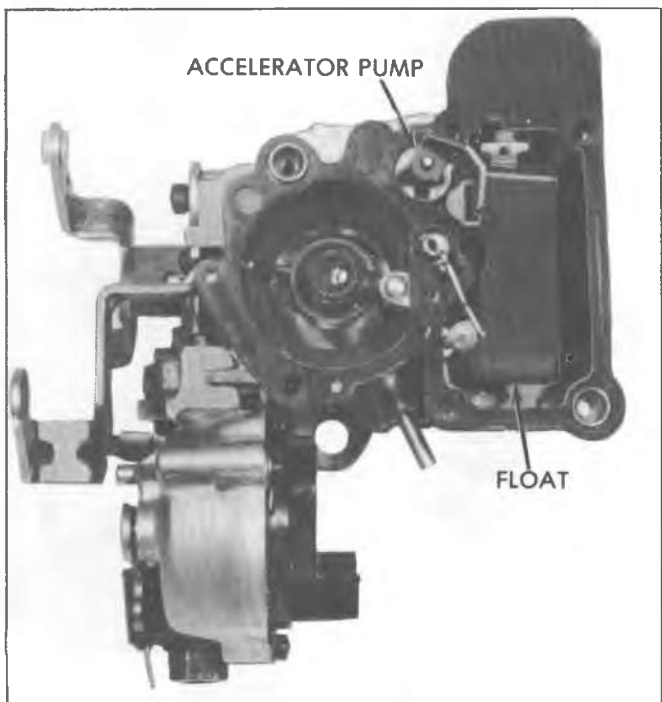


Fig. 6C-6--Float Bowl Disassembly

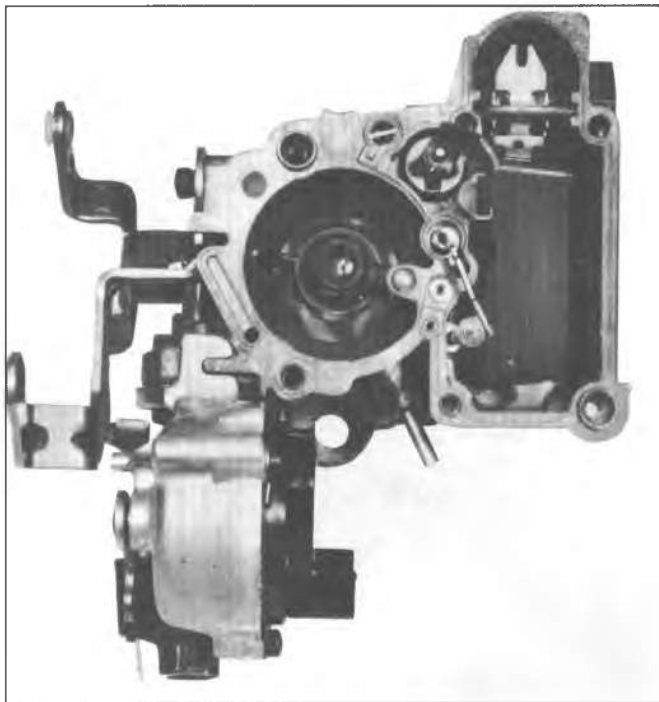


Fig. 6C-8--Float Bowl Assembly

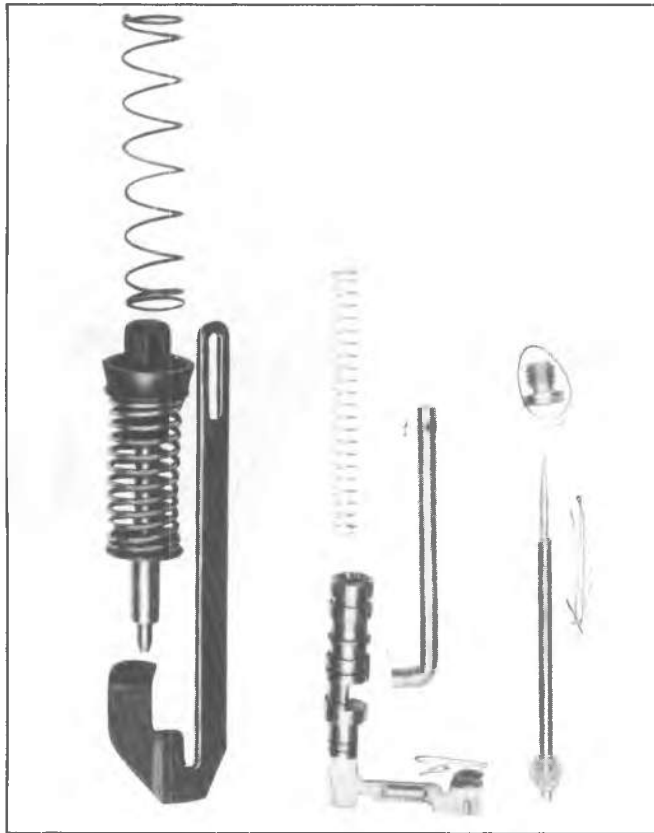


Fig. 6C-9--Metering Rod and Accelerator Pump

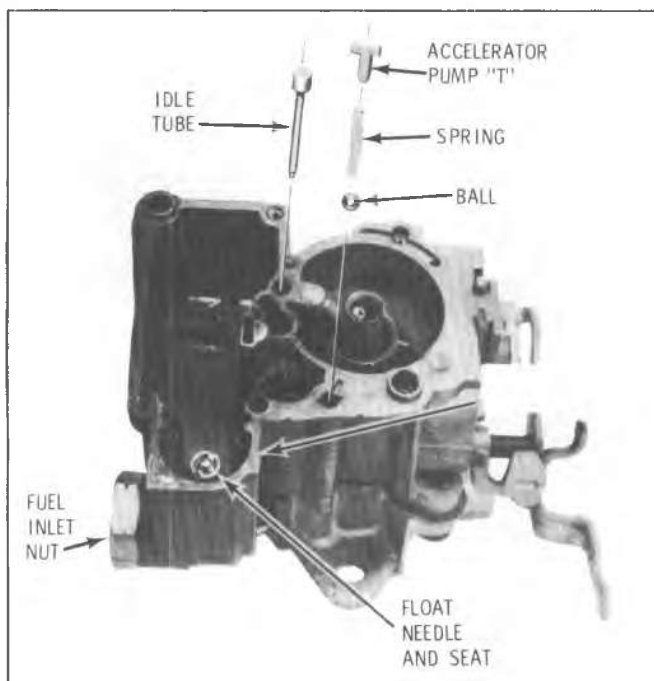


Fig. 6C-10--Pump Discharge "T" Retainer

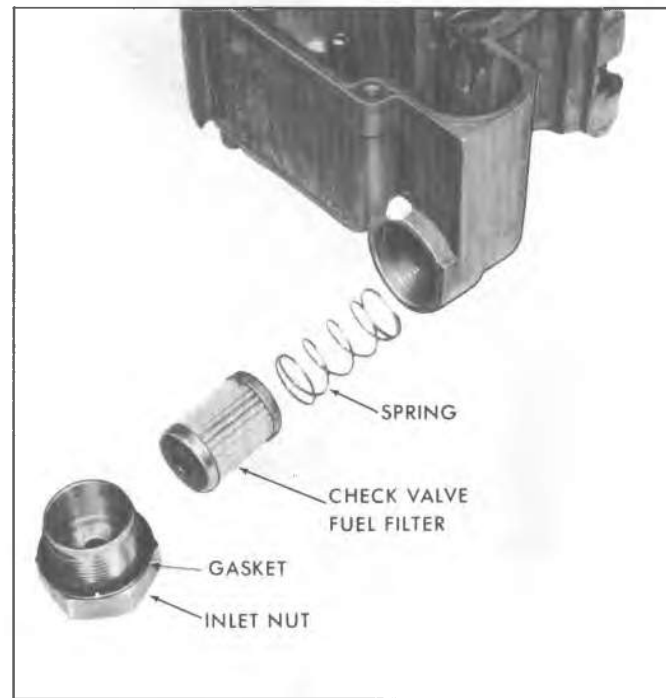


Fig. 6C-11--Fuel Filter and Check Valve

Throttle Body (Fig. 6C-12)

1. Invert carburetor bowl on bench and remove two throttle body to bowl attaching screws. Throttle body and insulator gasket may now be removed.

2. No further disassembly of the throttle body is necessary unless the idle mixture needle is damaged or the idle channels need cleaning. If necessary to remove the idle mixture needle, cut the tang from the plastic limiter cap. Do not install a replacement cap as a bare mixture screw is sufficient to indicate that the mixture has been readjusted.

NOTE: Due to the close tolerance fit of the throttle valve in the bore of the throttle body, do not remove the throttle valve or shaft.

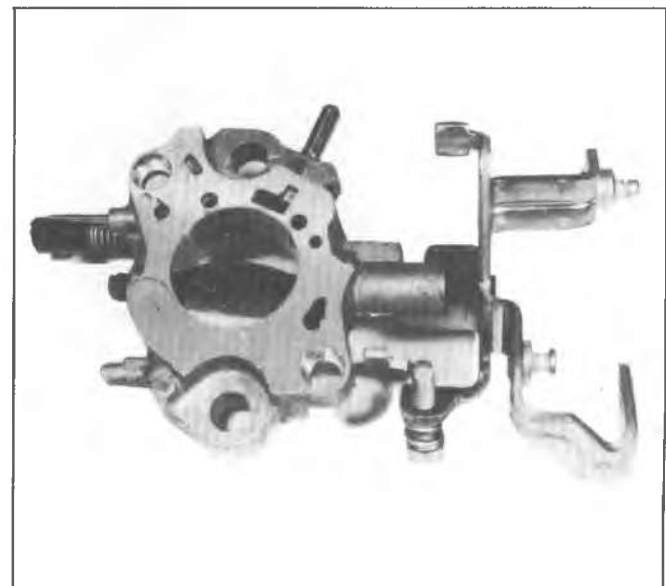


Fig. 6C-12--Throttle Body

CLEANING AND INSPECTION

The carburetor should be cleaned in a cold immersion type cleaner.

1. Thoroughly clean carburetor castings and metal parts in an approved carburetor cleaner such as Carbon X (X-55) or equivalent.

NOTE: Rubber and plastic parts should not be immersed in carburetor cleaner. However, the air horn which has the plastic relief valve will withstand normal cleaning in carburetor cleaner.

2. Blow out all passages in castings with compressed air. Do not pass drills through jets or passages.

3. Examine float needle and seat assembly for wear. Install a new factory matched set if worn.

4. Inspect upper and lower casting sealing surfaces for damage.

5. Inspect holes in levers for excessive wear or out of round condition. If levers are worn they should be replaced.

6. Examine fast idle cam for excessive wear or damage.

7. Check throttle and choke levers and valve for binds and other damage.

8. Check all springs for distortion or loss in tension; replace as necessary.

NOTE: When carburetor has been disassembled, new gaskets and filter must be used.

CARBURETOR ASSEMBLY

Throttle Body (Fig. 6C-12)

1. If removed, install idle mixture needle and spring into throttle body until lightly seated. Back out two turns as a preliminary adjustment. Final idle mixture adjustment will be made on vehicle.

2. Invert float bowl and install new throttle body to bowl insulator gasket.

3. Install throttle body on bowl gasket so all holes in throttle body are aligned with holes in gasket.

4. Install two throttle body to bowl attaching screws and lockwashers. Tighten even and securely to 20 N.m (15 ft. lbs.).

Float Bowl

1. Install fuel filter spring, filter, and check valve assembly, (if used), inlet nut and gasket rubber seal on check valve faces fuel inlet nut.

CAUTION: The fuel inlet check valve must be installed (where required) in the filter to meet Motor Vehicle Safety Standards (M.V.S.S.) for roll-over. New service replacement filter include the check valve, where required.

2. Install idle stop solenoid and spring, if removed. Adjust later for correct idle speed.

3. Install main metering jet into bottom of fuel bowl. Tighten securely.

4. Using wide blade screwdriver install needle seat and gasket.

5. Install idle tube flush with bowl casting.

6. Install pump ball, spring and "T" into pump discharge hole (Fig. 6C-10).

7. Drive pump discharge "T" in until flush with bowl casting.

8. Install accelerator pump return spring.

9. Install power piston return spring into piston cavity in the bowl.

10. Install lower end of pump link into actuator lever

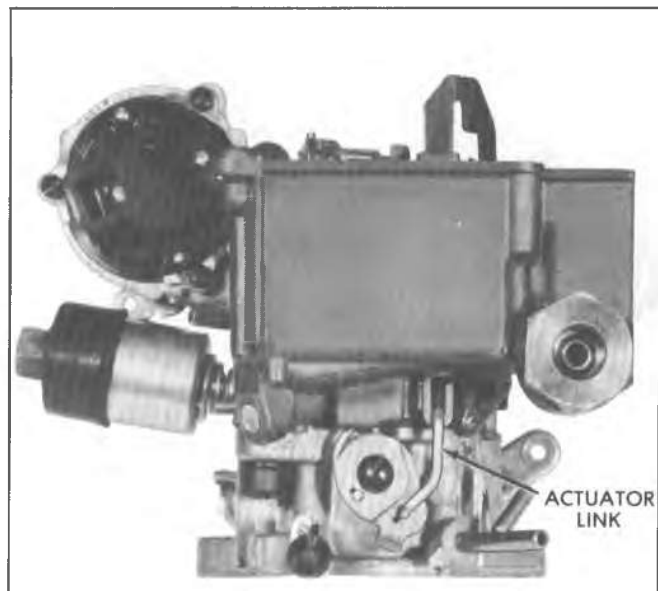


Fig. 6C-13--Pump Drive Link

which fits on throttle shaft. Ends of link point toward carburetor. Bend in link faces fuel inlet nut.

11. Install curved power piston actuator link into throttle actuator lever. End protrudes outward away from throttle bore and has tang which retains link to lever.

12. Install pump plunger assembly into pump well with actuating lever protruding through bottom of bowl casting. Push downward on pump lever and install pump assembly drive link into slot in lower end of shaft. Tang on upper end of link retains link to pump shaft (Fig. 6C-13).

13. Assemble metering rod to holder on power piston. Spring must be on top of arm when assembled correctly. Then install power piston actuating rod (right angle end) into slot in the power piston.

14. Install power piston, metering rod and drive rod assembly into the float bowl. End of drive rod must enter hole in bowl and end of metering rod into jet.

15. Before fastening power piston and pump actuator lever to end of throttle shaft, hold power piston assembly down and slide upper end of curved power piston actuator link into lower end of power piston actuating rod.

16. Install actuating lever on end of throttle shaft by aligning flats or lever with flats on shaft. Install lever retaining screw and tighten securely.

17. Install float needle valve on to float arm hooking pull clip over edge of float arm.

18. Install float hinge pin into float arm. Install float needle into seat and float with hinge pin into float bowl. Hinge pin should in locating channels in float bowl.

Float Level Adjustment (Fig. 6C-14)

1. Hold float retaining pin firmly in place push down on float arm at outer end against top of float needle, as shown.

2. Use adjustable "T" scale and measure distance from top of float at index point on toe to float bowl gasket surface (gasket removed).

3. To adjust, bend float pontoon up or down at float arm junction.

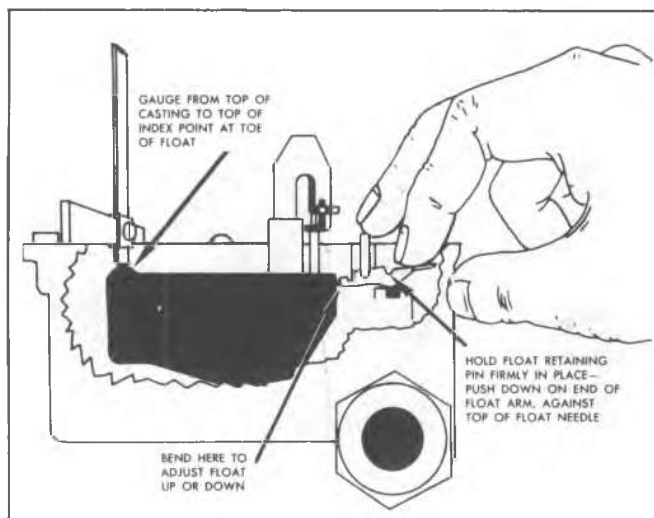


Fig. 6C-14--Float Level Adjustment

Metering Rod Adjustment (Fig. 6C-15)

1. Open throttle valve, slide metering rod out of holder and remove from main metering jet.

2. To check adjustment, back out 1/8" hex screw on idle stop solenoid and rotate fast idle cam so that cam follower is not contacting steps on cam.

3. With throttle valve completely closed, apply pressure to top of power piston and hold piston down against stop.

4. Holding downward pressure on power piston, swing metering rod holder over flat surface of bowl casting next to carburetor bore.

5. Insert gauge between bowl casting and lower surface of metering rod holder. Gauge should have a slide fit between both surfaces, as shown.

6. To adjust, carefully bend metering rod holder up or down.

7. Install air horn gasket on float bowl by carefully sliding slit portion of gasket over metering rod holder. Then align gasket with dowels provided on top of bowl casting and

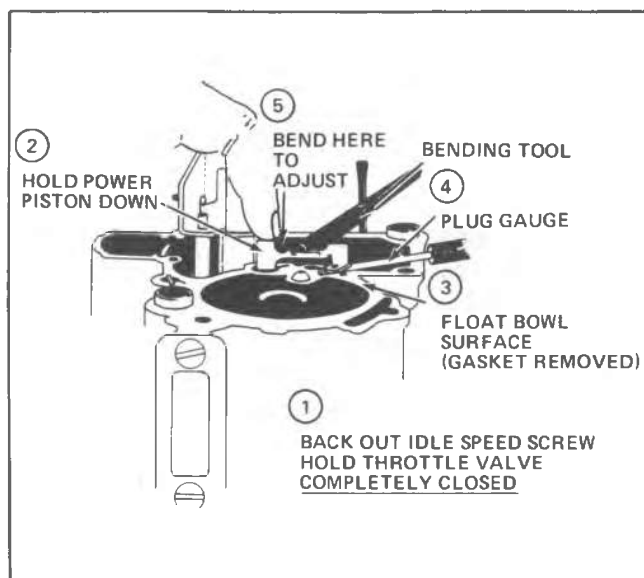


Fig. 6C-15--Metering Rod Adjustment



Fig. 6C-16--Installing Air Horn

press gasket firmly in place.

Air Horn

1. Install choke shaft assembly and choke valve into air horn, if removed. Align choke valve, tighten two retaining screws and stake securely in place.

CAUTION: Apply a torque retaining compound to the vacuum break lever retaining screw and install lever to choke shaft.

2. Install air horn to float bowl by engaging choke coil

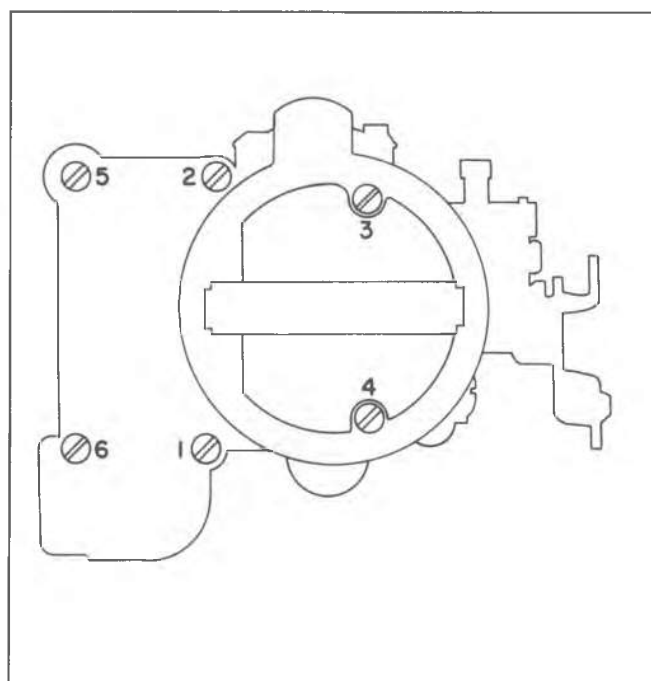


Fig. 6C-17--Tightening Sequence

lever link into notched hole in choke coil lever on choke housing. Then carefully twist and lower air horn onto float bowl. Install three long and one short air horn to float bowl attaching screws and lockwashers (Fig. 6C-16).

3. Install the choke vacuum break diaphragm assembly using two short air horn screws opposite the choke housing, connecting the choke vacuum break diaphragm link to slotted diaphragm plunger stem. The two attaching screws for the choke vacuum break assembly have tapered heads for locating choke diaphragm bracket. Make sure to use these in this location. Tighten all air horn screws evenly and securely using proper tightening sequence (Fig. 6C-17).

4. If removed, install choke housing to float bowl using three attaching screws. Two screws have lockwashers and the other one which face the choke housing has a tapered head

for locating choke housing.

5. Install fast idle cam, and fast idle cam link to upper choke lever assembly. Numbers on fast idle cam face outward.

6. Install electric choke coil assembly on choke housing. Install three retainers and attaching screws. Adjust using choke coil adjustment procedure.

CAUTION: Do not use a gasket between electric coil and housing, as the coil is electrically grounded through housing.

7. Install choke vacuum diaphragm hose to tube on diaphragm and connect to vacuum tube on bowl.

NOTE: Refer to Service Manual for the remaining adjustments.

MODEL 2GC/2GV CARBURETOR

DISASSEMBLY

Place carburetor on a holding fixture to prevent damage to throttle plates (Figs. 6C-18 and 19).

Solenoid Assembly (If Used)

CAUTION: The electrically operated solenoid should be removed from the float bowl for complete carburetor disassembly and should not be immersed in any type of carburetor cleaner.

To remove the solenoid assembly, bend back the retaining tabs on lockwasher; then remove large nut which retains the stop solenoid to the carburetor bracket. It is not necessary to remove the bracket from the float bowl assembly unless replacement of the bracket is necessary.

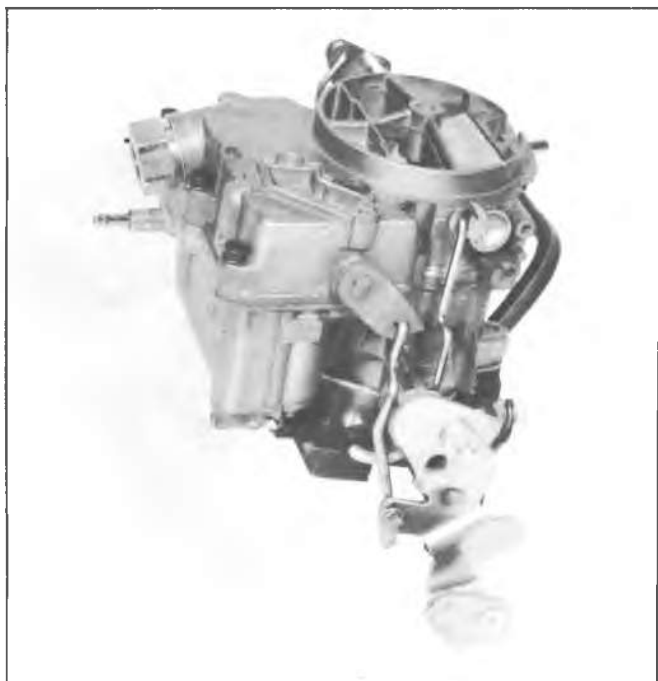


Fig. 6C-18--Model 2GC Carburetor

Air Horn

1. Remove fuel inlet filter nut and gasket, and remove filter and spring.

2. Disconnect lower end of pump rod from throttle lever by removing spring clip (Fig. 6C-20).

3. Remove upper end of pump rod from pump lever by rotating rod out of hole in lever (Fig. 6C-21).

4. Remove the vacuum break diaphragm hose from tube on throttle body and tube on vacuum break diaphragm unit. Then remove the vacuum break diaphragm assembly from air horn by removing two attaching screws. Remove diaphragm and link assembly from lever on end of choke shaft.

5. Remove vacuum break lever from end of choke shaft by removing retaining screw in end of shaft (Fig. 6C-22). Then, remove the intermediate choke rod from the vacuum break lever and from the lever on the thermostatic coil housing (Fig. 6C-23).

6. Remove fast idle cam attaching screw from side of float bowl (Fig. 6C-23).

Remove fast idle cam from end of choke rod by rotating

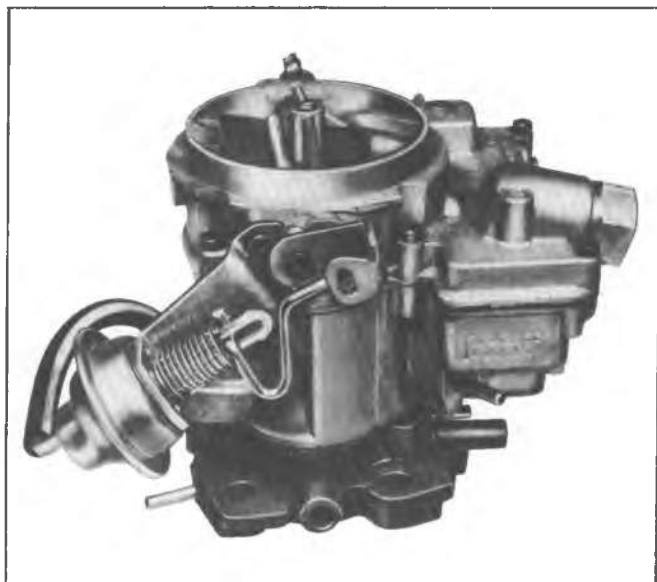


Fig. 6C-19--Model 2GV Carburetor

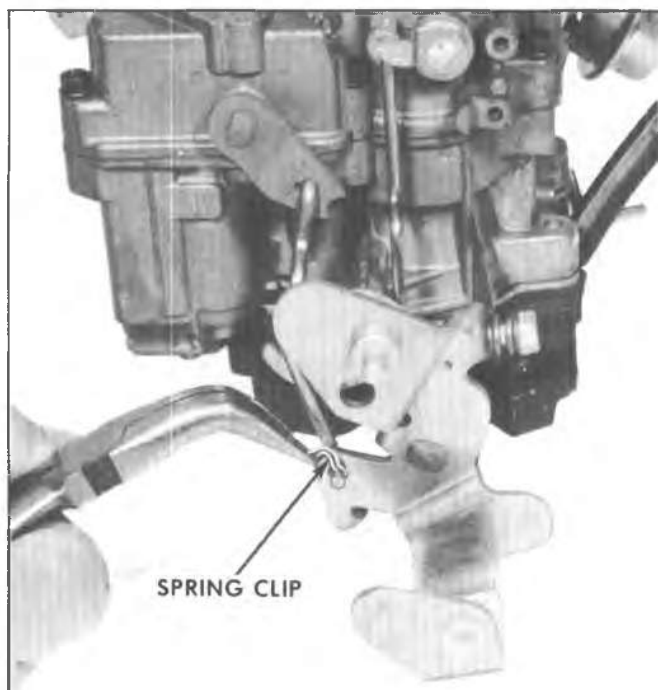


Fig. 6C-20--Removing Pump Rod Spring Clip

rod out of hole in fast idle cam. The upper end of the choke rod cannot be removed from the choke lever until after the air horn has been removed from the float bowl.

7. Remove eight air horn attaching screws and lockwashers, then lift air horn from float bowl. Rotate choke rod to remove upper end of rod from the choke shaft lever.

8. Place air horn on flat surface. Remove float hinge pin and lift float from air horn. Float needle may now be removed from needle seat or from float assembly (if pull-clip is used).

9. Remove float needle seat and gasket with a wide blade

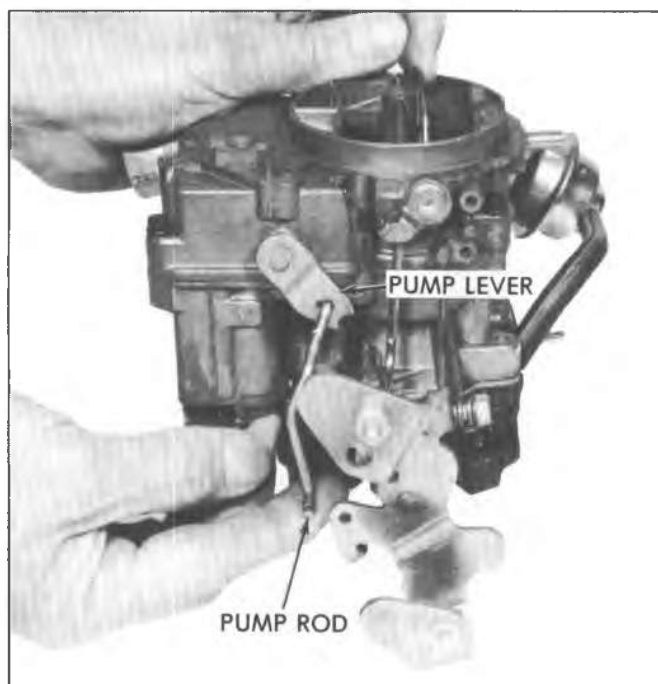


Fig. 6C-21--Removing Pump Rod

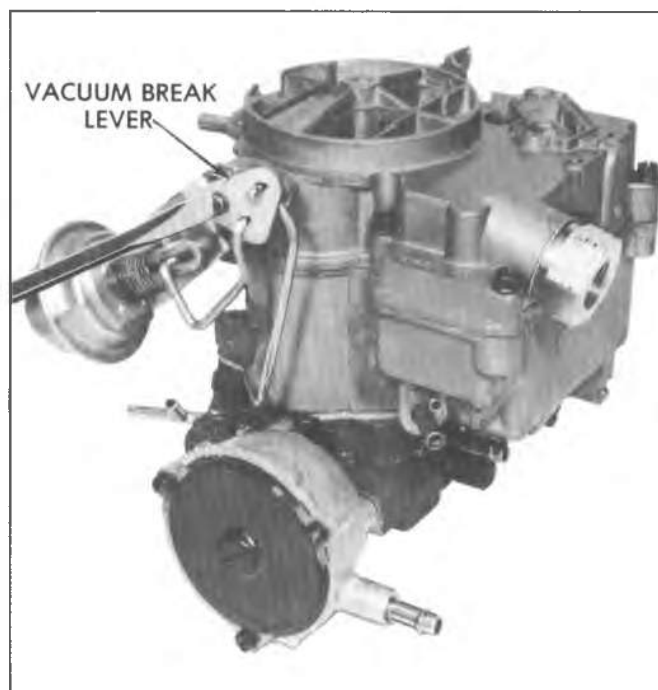


Fig. 6C-22--Removing Vacuum Break Lever

screwdriver.

10. Remove power piston by depressing stem and allowing it to snap free (Fig. 6C-25). Use care not to bend the power piston stem.

11. Remove the pump plunger assembly and inner pump lever from pump shaft by loosening set screw on inner lever. To remove the pump plunger stem from the inner pump lever it will be necessary to break off the swaged or flattened end of the pump plunger stem. This should not be done unless pump assembly replacement is necessary, such as during

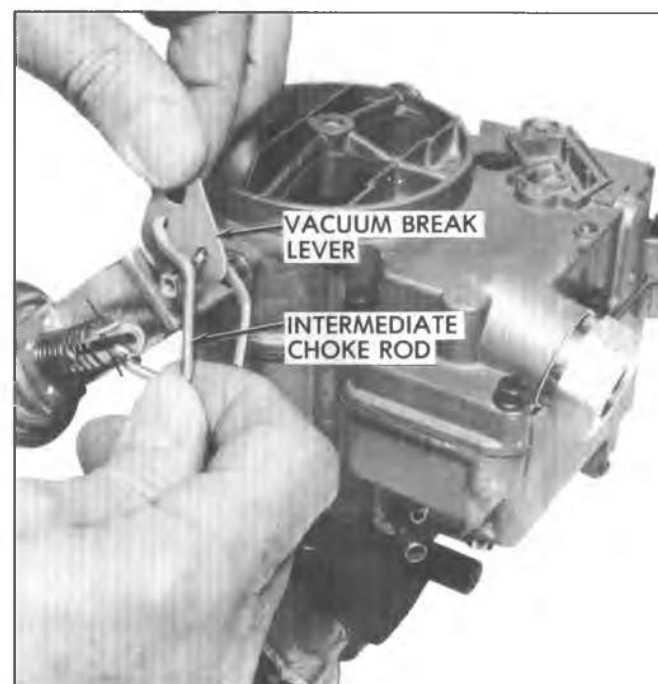


Fig. 6C-23--Removing Intermediate Choke Rod

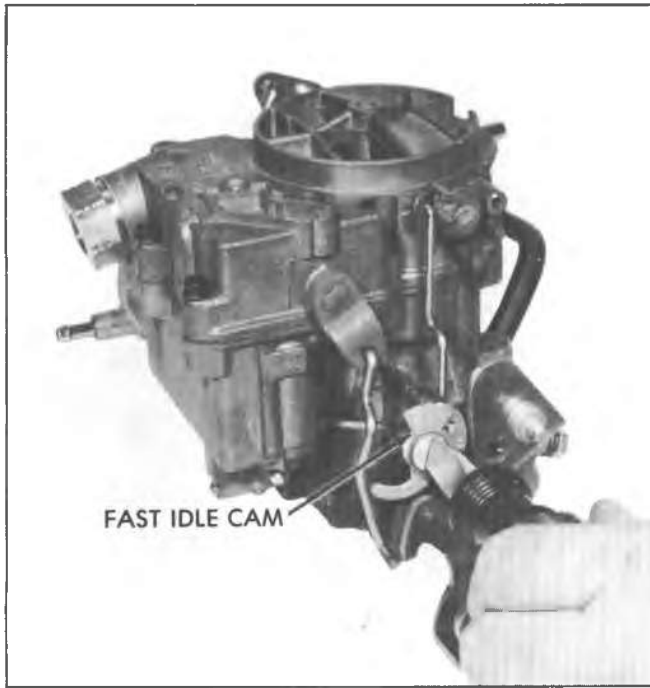


Fig. 6C-24--Removing Fast Idle Cam

overhaul. The service pump assembly uses a grooved pump plunger stem and retaining clip. After removing the inner pump lever and pump assembly, remove the outer pump lever and shaft assembly from air horn. Remove the plastic washer on pump plunger shaft.

12. Remove air horn gasket from air horn.

13. Remove fuel inlet baffle next to needle seat.

14. Remove two choke valve attaching screws, then remove choke valve. Care should be taken when removing attaching screws so that the choke shaft will not be bent. It

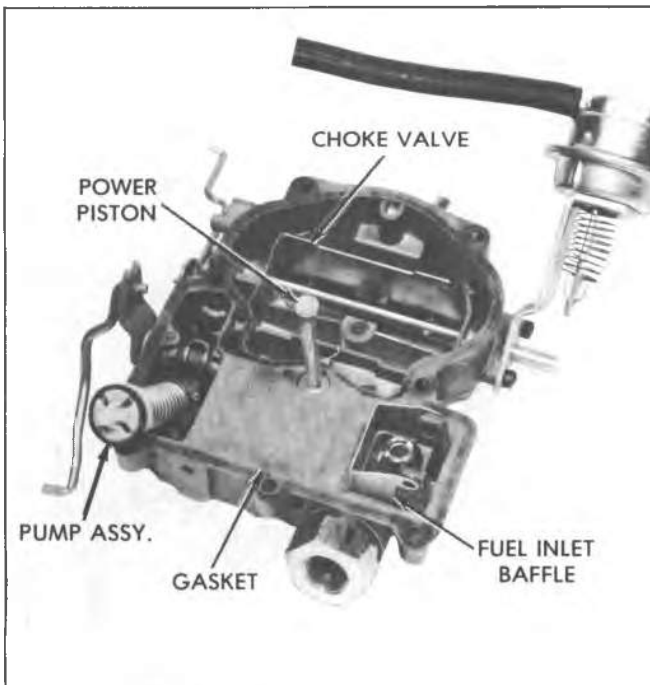


Fig. 6C-25--Power Piston

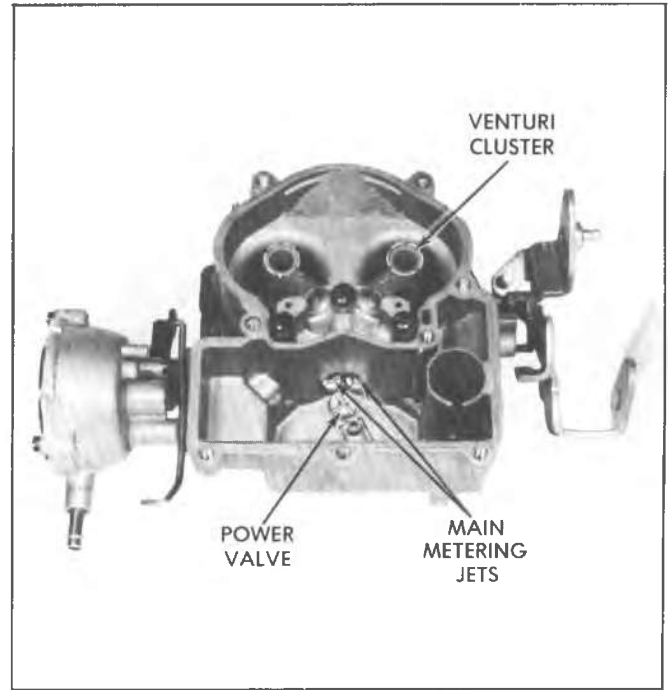


Fig. 6C-26--Float Bowl

may be necessary to file off staked ends on choke valve screws before removing.

15. Remove choke valve shaft from air horn.

16. Remove the fast idle cam rod and lever from the choke shaft.

Float Bowl (Fig. 6C-26)

1. Remove pump plunger return spring from inside pump well (Fig. 6C-27). Then remove aluminum check ball from bottom of pump well by inverting bowl.

2. Remove main metering jets, power valve and gasket from inside float bowl.

3. Remove three screws holding venturi cluster to float bowl and remove cluster and gasket. Then remove the plastic main well inserts in the main well cavity (Fig. 6C-28).

4. Using a pair of long nosed pliers, remove pump discharge spring retainer (Fig. 6C-29). Then, spring and check ball may also be removed from discharge passage.

5. Invert carburetor and remove three large throttle body to bowl attaching screws and lockwashers (Fig. 6C-30). Throttle body and gasket may now be removed.

Throttle Body

1. Remove the three choke cover attaching screws and retainers, then remove thermostatic coil and cover assembly and gasket from choke housing (Fig. 6C-31).

CAUTION: Do not remove cup baffle from beneath thermostatic coil cover because coil distortion may result.

2. Remove baffle plate from inside choke housing (Fig. 6C-31).

3. Remove the two choke housing attaching screws from inside choke housing, then remove choke housing and gasket from throttle body casting (Fig. 6C-31).

4. Remove screw from end of intermediate choke shaft and remove intermediate choke lever from shaft. Remove inner choke coil lever and shaft assembly from choke housing. Remove rubber dust seal from inside choke housing.

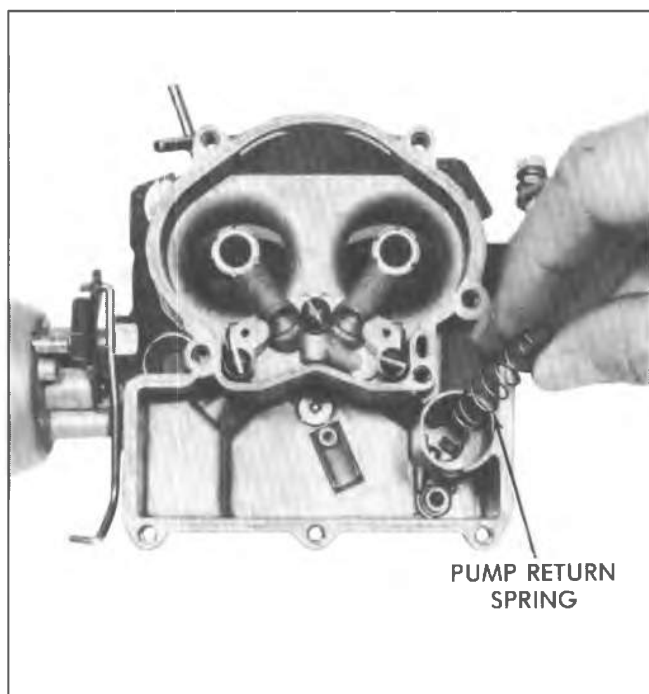


Fig. 6C-27--Removing Pump Return Spring

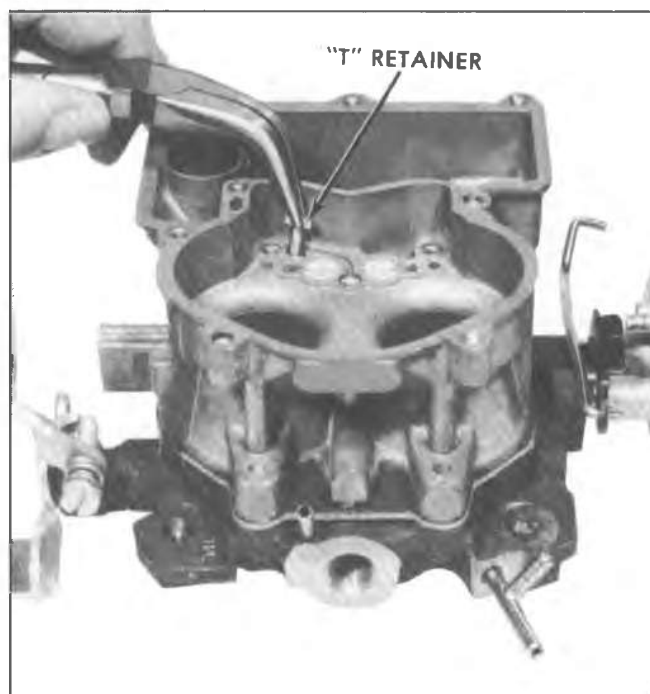


Fig. 6C-29--Pump Discharge "T" Retainer

5. The idle mixture needles have been adjusted and set at the factory and capped, to prevent excessive adjustment in the field. However, the carburetor has limited idle mixture adjustment. If it is necessary to remove the idle mixture needles for cleaning purposes or if they are defective, the following procedure should be used:

Using a pair of side cutter pliers, clip off the limit tang on the limiter cap, and unscrew the idle mixture screw and spring from throttle body. If new idle mixture needles are installed, no plastic limiter caps are required. If the original

idle mixture needles had to be removed, install the idle mixture needle and springs into throttle body as described under Assembly. No further disassembly of the throttle body is necessary.

CAUTION: No attempt should be made to remove the throttle valves or shaft as it may be impossible to reassemble the throttle valves correctly in relation to the idle discharge orifices.

CLEANING AND INSPECTION

The carburetor parts should be cleaned in cold immersion type cleaner.

CAUTION: The electric solenoid, rubber parts, plastic parts, diaphragms, pump plungers, should not be put in immersion type cleaner as they will swell, harden or distort.



Fig. 6C-28--Venturi Cluster Assembly

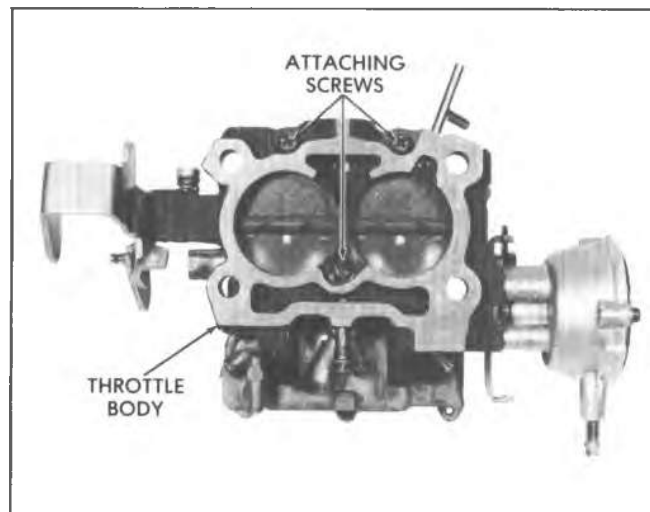


Fig. 6C-30--Throttle Body Attaching Screws

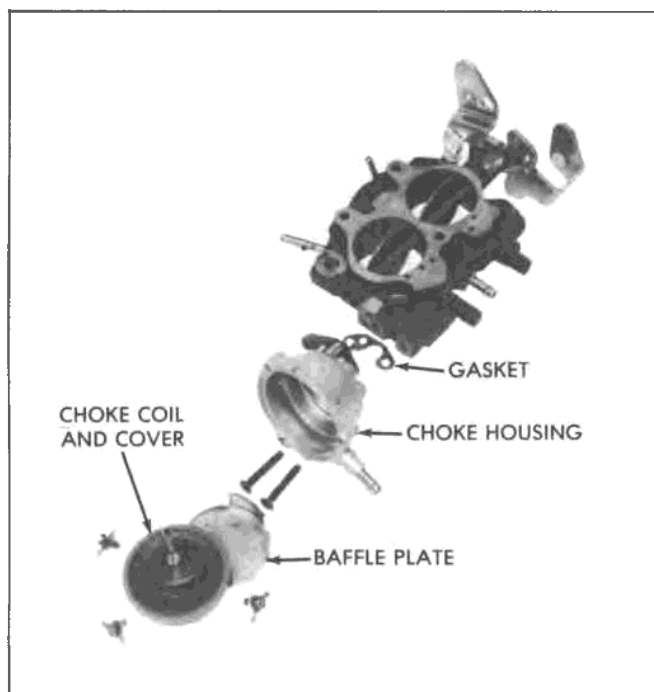


Fig. 6C-31—Choke Housing Assembly

1. Thoroughly clean all metal parts and blow dry with compressed air. Make sure all fuel passages and metering parts are free of burrs and dirt.

2. Check, repair or replace the following parts if the following problems were encountered.

a. Flooding

1. Inspect float needle seat for dirt, deep wear grooves, scores and proper seating.

2. Inspect float, float arm and hinge pin for distortion, binds and burrs. Check float for leaks and/or being loaded (heavier than normal).

b. Hesitation

1. Inspect pump plunger for cracks, scores or cup, excessive wear. A used pump cup will shrink when dry. Soak in fuel for 8 hours before testing if dried out.

2. Inspect pump duration and return spring for being weak or distorted.

3. Check all pump passages and jets for dirt, improper seating inlet or discharge balls, scores in pump well.

4. Check linkage for excessive wear, repair or replace as necessary.

c. Hard Starting - Poor Cold Operation

1. Check choke valve and linkage for excessive wear, binds or distortion.

2. Inspect choke vacuum diaphragm for leaks.

3. Clean or replace carburetor filter.

4. Inspect needle for sticking, dirt, etc.

5. Examine fast idle cam for wear or damage.

6. Also check items under "flooding".

d. Poor Performance - Poor Gas Mileage

1. Power Piston, power valve, metering rods for dirt, sticking, binding, damaged parts or excessive wear.

2. Clean all fuel and vacuum passages in castings.

e. Rough Idle

1. Inspect idle needle for ridges, burrs or being bent.

2. Inspect gasket mating surfaces on castings for damage to sealing bends, nicks and burrs.

3. Clean all idle fuel passages.

4. Check throttle lever and valves for binds, nicks and other damage.

ASSEMBLY

Throttle Body

1. Install idle speed screw and spring assembly in throttle body if removed.

2. If it was necessary to remove the idle mixture needles, install the idle mixture needles and springs into the throttle body until finger tight and seated. Back out screws four turns as a preliminary idle adjustment.

3. Install new rubber dust seal into cavity inside choke housing. Lip on seal faces towards carburetor after the housing is installed.

4. Install inner choke coil lever and shaft assembly into choke housing.

5. With the choke coil lever and shaft assembly installed into housing, install the intermediate choke lever on flats of intermediate choke shaft and retain with screw. Tighten securely.

6. Install new choke housing to carburetor gasket.

7. Position choke housing on throttle body and retain with two attaching screws. Tighten securely.

8. Before installing the choke cover coil and baffle plate assembly, refer to intermediate choke rod adjustment (Service) to adjust intermediate choke rod so that with the choke valve closed, the lever inside the choke housing lines up with gauge.

9. Install choke thermostatic coil and cover assembly with new gaskets and end of coil below plastic tang on the inner choke housing lever. Refer to automatic choke coil adjustment (Service) to index cover. Install three choke thermostatic coil retainers and screws. Tighten securely.

10. Place a new gasket on the bottom of the float bowl with holes in gasket aligned with holes in casting, then position the throttle body on gasket and install the three attaching screws. Tighten screws evenly and securely.

Float Bowl (Fig. 6C-32)

1. Install two main metering jets and vacuum operated power valve into bottom of float bowl. Tighten securely.

2. Drop small aluminum inlet check ball into hole in pump well.

3. Install pump return spring, pressing with finger to center in pump well.

4. Drop steel pump discharge ball into pump discharge hole located beneath the venturi cluster. Ball is 3/16" diameter (do not confuse with aluminum inlet ball). Install pump discharge ball spring and "T" retainer.

5. Install plastic main well inserts into the main fuel wells located beneath the venturi cluster and make sure they are seated in recesses provided. Then install venturi cluster and gasket, tighten three screws evenly and securely. Make certain center screw is fitted with a gasket to prevent pump discharge leakage.

Air Horn

1. Install the upper choke rod lever and collar assembly on to choke shaft. Then install the choke shaft assembly into the air horn from the throttle lever side. Then install the choke valve onto the choke shaft with part number facing upward.

Install the choke valve attaching screws. Center the choke valve before tightening choke valve screws. Tighten

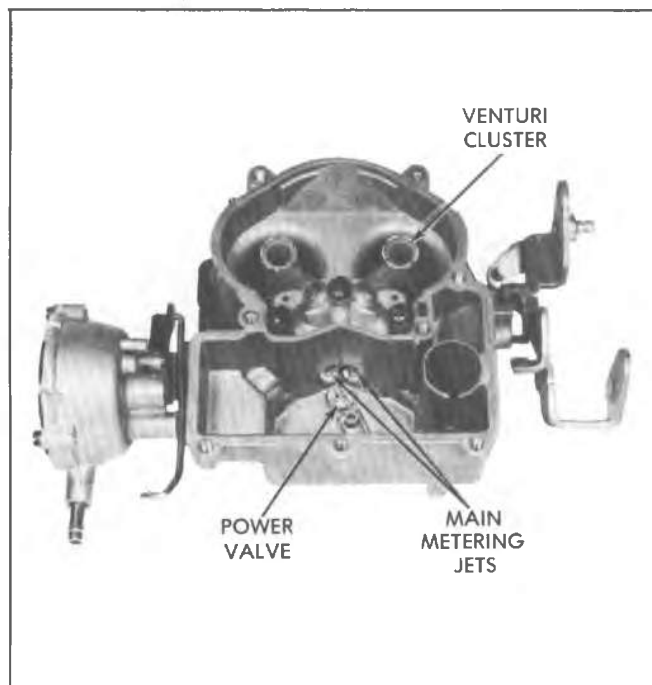


Fig. 6C-32--Float Bowl Assembly

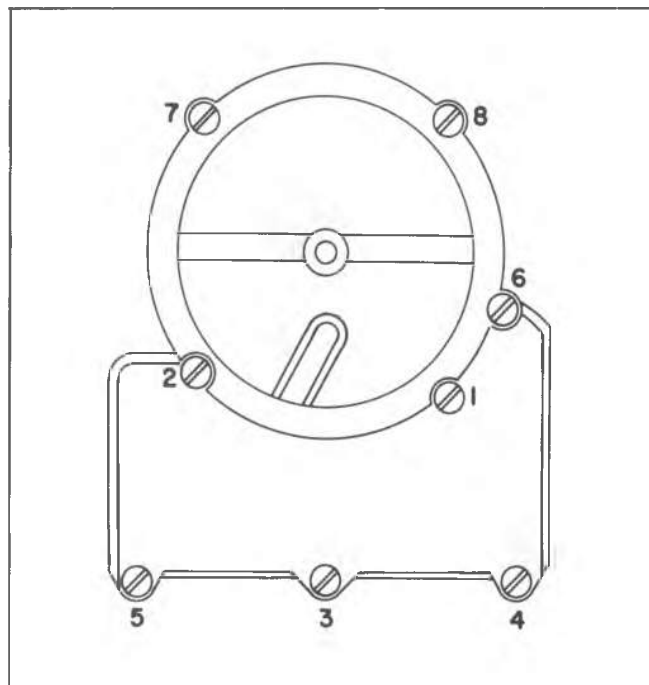


Fig. 6C-33--Air Horn Tightening Sequence

choke valve screws and stake lightly in place. Check choke and shaft for freedom of movement.

2. If removed, install the outer pump shaft and lever assembly into air horn casting. Make sure the plastic washer is in place before installing the outer pump shaft and lever assembly.

3. Install the pump plunger to the inner lever and retain with clip provided in the repair kit. End of pump plunger shaft should point inward towards center of carburetor when installed correctly. Then install inner pump lever onto the pump shaft and tighten set screws securely.

4. Position the float needle seat gasket on the needle seat and install seat in the air horn. Tighten securely.

5. Install the power piston assembly into the air horn casting and lightly stake the retaining washer to casting. Make sure the piston travels up and down freely and is not bent.

6. Install fuel inlet baffle next to needle seat. Make sure baffle is seated in grooves in air horn casting.

7. Install air horn gasket onto air horn casting.

8. Install float needle into needle seat. On models with pull clip, install pull clip and needle in slot in float arm. Then install float assembly on air horn and insert hinge pin. Check float action and for free movement of needle in the seat.

9. Check float level and drop adjustments.

10. Install choke rod in upper choke lever and collar assembly rotating rod until tang on end of rod aligns with slot in lever.

Air Horn to Float Bowl

1. Place the air horn assembly on bowl, making certain that the accelerator pump plunger is correctly positioned into pump well and will move freely.

2. Install lockwashers and tighten eight air horn attaching screws evenly and securely according to sequence

in Figure 6C-33.

3. Install filter spring into air horn casting, then install fuel inlet filter and fuel inlet nut and gasket. Tighten nut to 25 pound feet.

CAUTION: The fuel inlet filter contains a check valve for a vehicle with light duty emission requirements to meet Motor Vehicle Safety Standards. Service replacement filter must contain check valve on these vehicles.

4. Install fast idle cam to lower end of choke rod (part number or identification faces outward on fast idle cam assembly). Then install the fast idle cam to float bowl retaining with the fast idle cam attaching screw. Tighten securely.

Move linkage up and down to make sure that the cam will fall freely.

5. Install pump rod into upper pump lever by rotating offset end into hole in lever and install lower end of pump rod to throttle lever and retain with a spring clip.

6. Install vacuum break diaphragm assembly onto air horn with two attaching screws and tighten securely.

7. Install lower end of intermediate choke rod into intermediate choke lever on choke housing and connect upper end of rod to vacuum break lever. Install vacuum break diaphragm rod into stem of vacuum break diaphragm and vacuum break lever.

8. Install the vacuum break lever onto end of choke shaft making sure that the lever fits over flats on shaft. Install attaching screw and tighten securely.

9. Connect vacuum break hose to diaphragm unit and vacuum tube on throttle body.

After complete carburetor assembly, check and re-set (if necessary) all choke adjustments and pump rod adjustments.

MODEL M4MC/M4ME CARBURETOR

DISASSEMBLY

Place carburetor on a holding fixture to prevent damage to throttle plates (Figs. 6C-34 and 35).

Solenoid (If Equipped)

Remove screws securing the solenoid and bracket to float bowl and remove solenoid and bracket assembly.

CAUTION: *The solenoid should not be immersed in any type of carburetor cleaner and should always be removed before complete carburetor overhaul.*

Air Horn

1. Remove upper choke lever from the end of choke shaft by removing retaining screw (Fig. 6C-36). Then rotate upper choke lever to remove choke rod from slot in lever.

2. Remove choke rod from lower lever inside the float bowl casting by holding lower lever outward with small screwdriver and twisting rod counterclockwise.

3. Remove secondary metering rods by removing the small screw in the top of the metering rod hanger. Lift upward on metering rod hanger until the secondary metering rods are completely out of the air horn. Metering rods may be disassembled from the hanger by rotating ends out of the holes in the end of the hanger. (Fig. 6C-37).

4. Using special tool J-25322, drive small roll pin (pump lever pivot pin) inward just enough until pump lever can be removed from air horn. Then remove pump lever from pump rod (Fig. 6C-38).

CAUTION: *Use care in removing small roll pin to prevent damage to pump lever casting bosses in air horn.*

5. Remove nine air horn to bowl attaching screws; two attaching screws are located next to the venturi. (Two long screws, five short screws, and two countersunk screws). (Fig. 6C-39).

6. Remove air horn from float bowl by lifting straight up. The air horn gasket should remain on the float bowl for removal later (Fig. 6C-40).

CAUTION: *When removing air horn from float bowl, use care to prevent bending the small tubes*

protruding from the air horn. These tubes are permanently pressed into the air horn casting. DO NOT REMOVE.

Air Horn Disassembly

Remove front vacuum break bracket attaching screws. The diaphragm assembly may now be removed from the air valve dashpot rod and the dashpot rod from the air valve lever (Fig. 6C-41).

CAUTION: *Do not place vacuum break assembly in carburetor cleaner.*

Further disassembly of the air horn is not required for cleaning purposes. If part replacement is required, proceed as follows:

1. Remove staking on two choke valve attaching screws, then remove choke valve and shaft from air horn.

2. Air valves and air valve shaft should not be removed.

3. If it is necessary to replace the air valve closing spring or center plastic eccentric cam, a repair kit is available. Instructions for assembly are included in the repair kit.

Float Bowl

1. Remove air horn gasket by lifting out of dowel locating pins and lifting tab of gasket from beneath the power piston hanger, being careful not to distort springs holding the main metering rods (Fig. 6C-42).

2. Remove pump plunger from pump well.

3. Remove pump return spring from pump well.

4. Remove power piston and metering rods by depressing piston stem and allowing it to snap free (Fig. 6C-43).

The power piston can be easily removed by pressing the piston down and releasing it with a snap. This will cause the power piston spring to snap the piston up against the retainer. This procedure may have to be repeated several times.



Fig. 6C-34--Model M4MC Carburetor

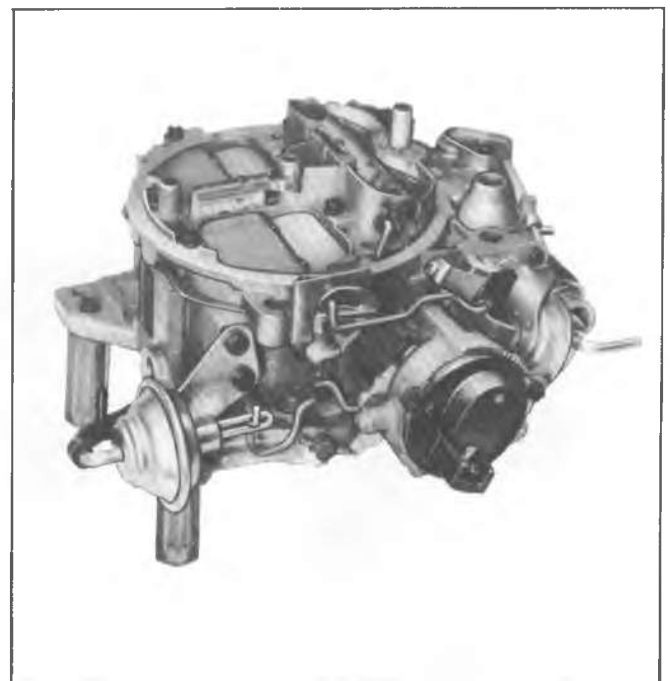


Fig. 6C-35--Model M4ME Carburetor

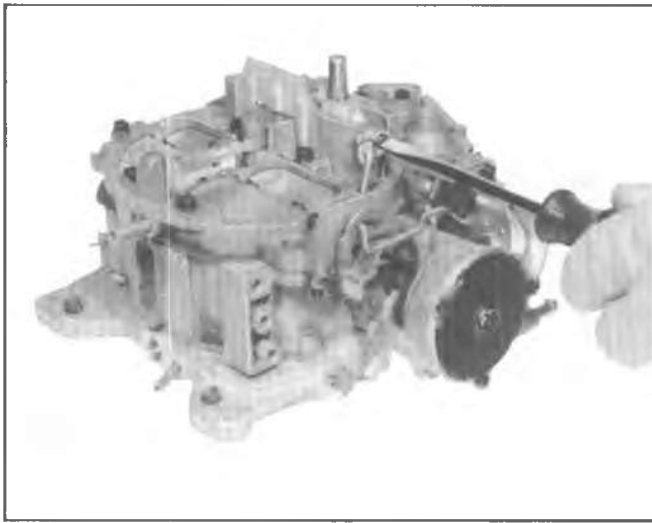


Fig. 6C-36--Removing Upper Choke Lever

CAUTION: Do not remove power piston by using pliers on metering rod hanger.

Remove the power piston spring from the well.

CAUTION: The A.P.T. metering rod adjustment screw is pre-set at the factory and no attempt should be made to change this adjustment in the field. If float bowl replacement is required during service, the new bowl assembly will be supplied with an A.P.T. metering rod screw which will be pre-set as required.

5. Remove metering rods from power piston by disconnecting tension spring from top of each rod, then rotate rod to remove from hanger (Fig. 6C-44).

CAUTION: Use care when disassembling rods to prevent distortion of tension spring and/or metering rods. Note carefully position of tension spring for later reassembly.

6. Remove plastic filler block over float valve.

7. Remove float assembly and float needle by pulling up on retaining pin. Remove float needle seat and gasket. (Fig. 6C-45).

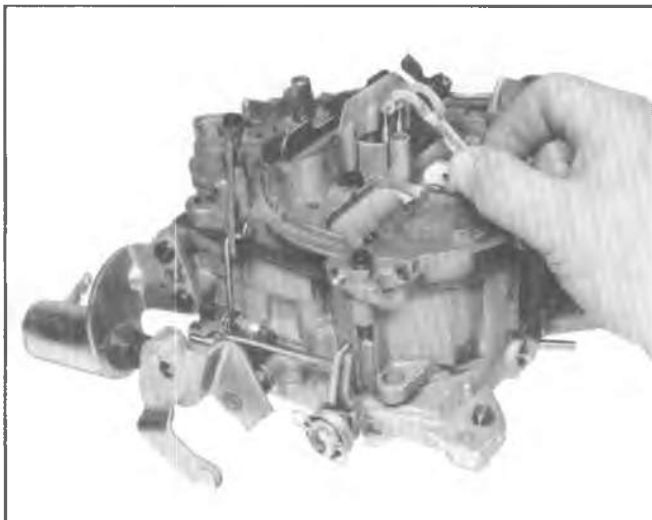


Fig. 6C-37--Removing Secondary Metering Rods

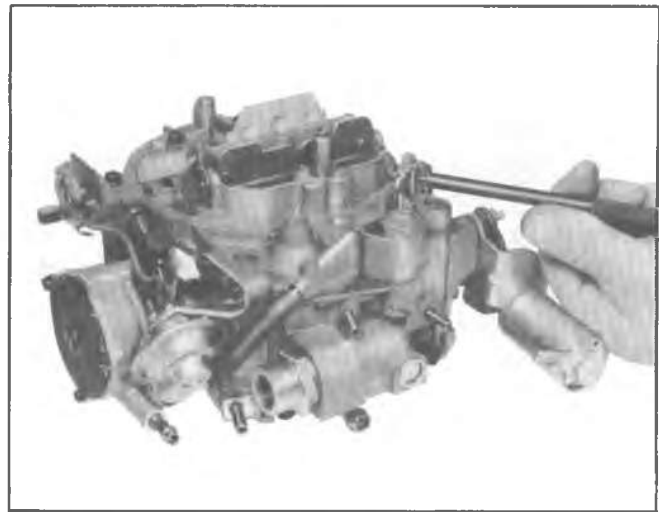


Fig. 6C-38--Removing Pump Lever

8. Remove aneroid cavity insert from float bowl. (Fig. 6C-46).

9. Remove primary main metering jets (only if necessary) (Fig. 6C-47).

NOTE: No attempt should be made to remove the secondary metering jet (metering orifice plates). These jets are fixed and, if damaged, bowl replacement is required.

10. Remove pump discharge check ball retainer and check ball.

11. Remove secondary air baffle, if replacement is required.

12. Remove pump well fill slot baffle.

M4ME Model With Rear Vacuum Break

11. Remove hose from rear vacuum break control assembly. Remove two screws from rear vacuum break bracket and rotate the assembly to remove vacuum break rod from slot in plunger head (Fig. 6C-48).

CAUTION: Do not place vacuum break assembly in carburetor cleaner.

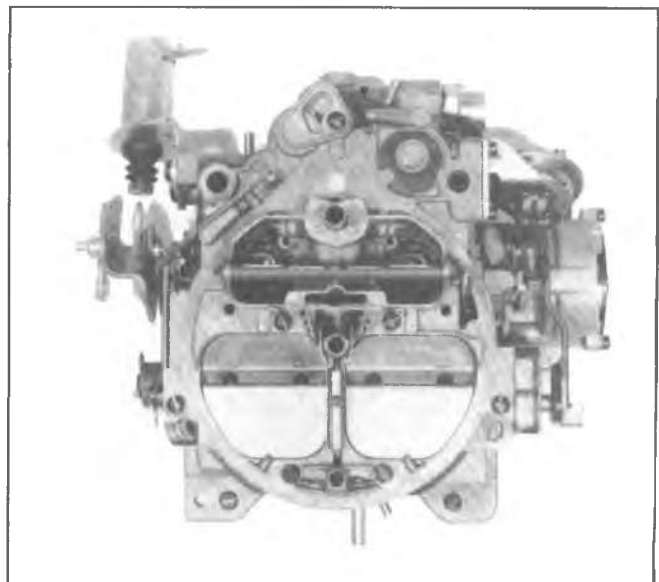


Fig. 6C-39--Removing Air Horn Screws

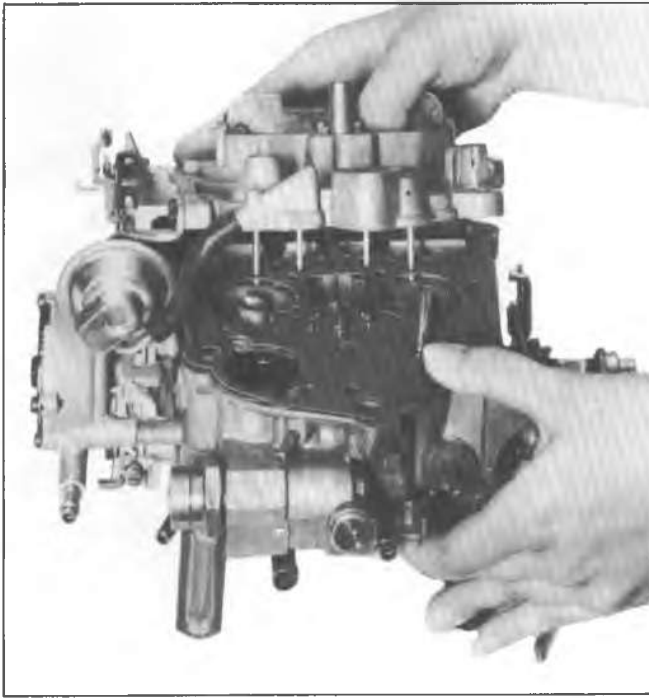


Fig. 6C-40--Removing Air Horn

12. Remove vacuum break rod by holding down on fast idle cam (hot idle position); move end of vacuum break rod away from float bowl; then disengage rod from hole in intermediate choke lever.

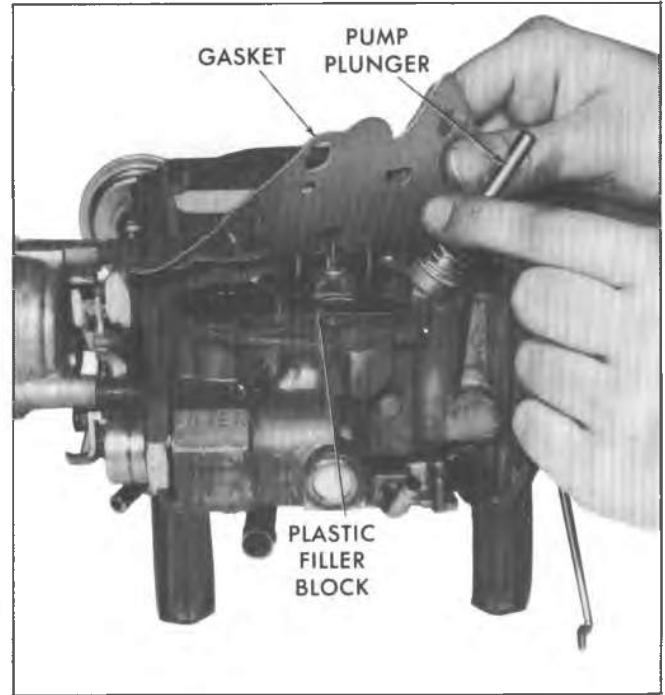


Fig. 6C-42--Removing Air Horn Gasket and Pump Plunger

Choke

1. Remove three attaching screws and retainers from choke cover and coil assembly. Then pull straight outward and remove cover and coil assembly from choke housing. Remove choke cover gasket, if used.

On M4MC hot air choke model, it is not necessary to remove baffle plate from beneath the thermostatic coil. Distortion of the thermostatic coil may result if forced off the center retaining post on the choke cover.

2. Remove choke housing assembly from float bowl by removing retaining screw and washer inside the choke housing (Fig. 6C-49). The complete choke assembly can be removed from the float bowl by sliding outward.

3. Remove secondary throttle valve lock-out lever from float bowl. (Fig. 6C-50).

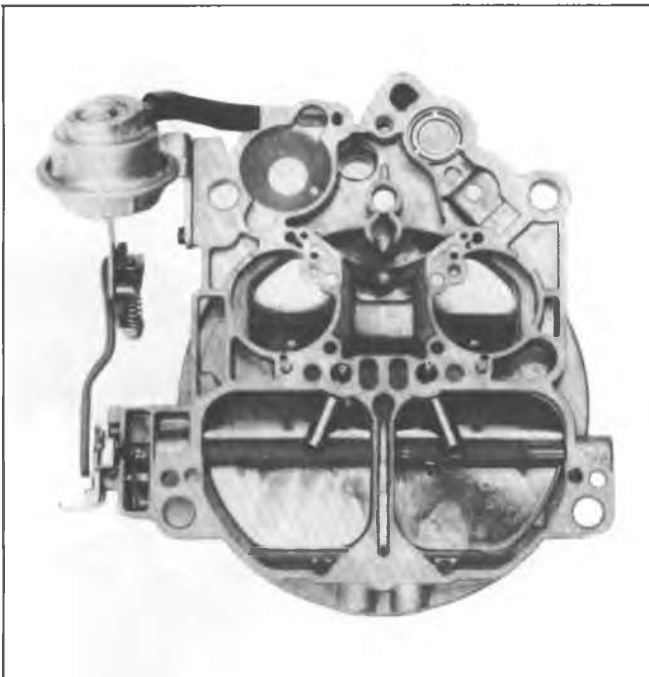


Fig. 6C-41--Removing Front Vacuum Break

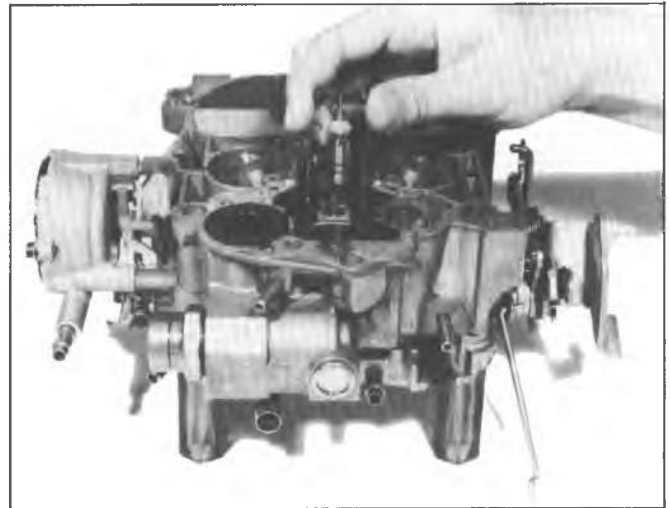


Fig. 6C-43--Removing Power Piston and Metering Rods

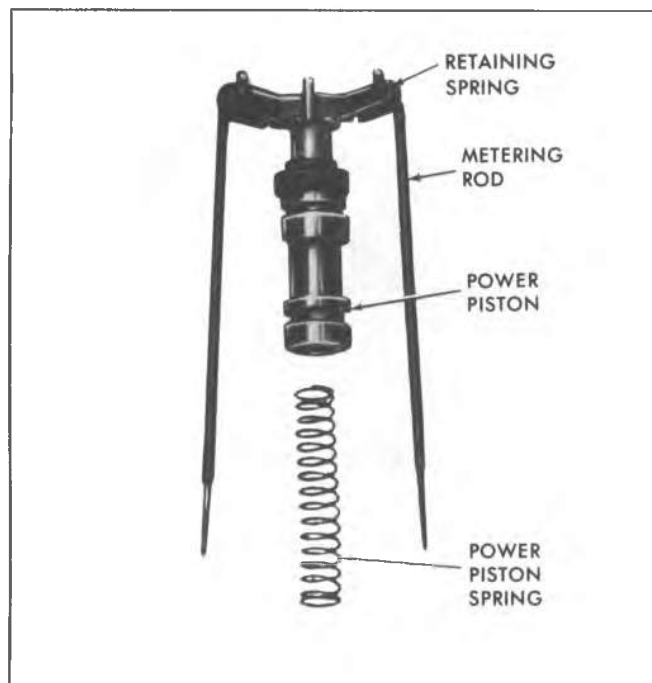


Fig. 6C-44--Power Piston and Metering Rods

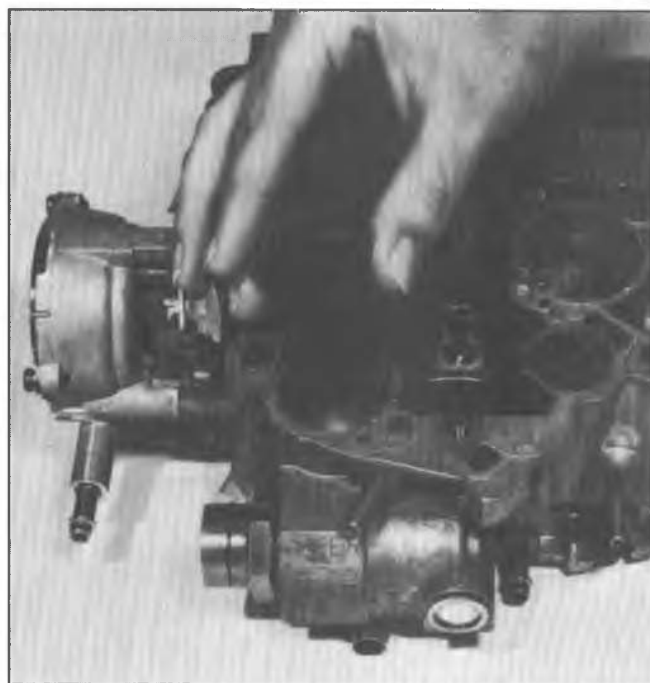


Fig. 6C-46--Removing Aneroid Cavity Insert

4. Remove lower choke lever from inside float bowl cavity by inverting bowl.

5. Remove plastic tube seal from choke housing (Fig. 6C-50).

CAUTION: Plastic tube seal should not be immersed in carburetor cleaner.

6. To disassemble intermediate choke shaft from choke housing, remove coil lever retaining screw at end of shaft inside the choke housing (Fig. 6C-49). Then remove thermostatic coil lever from flats on intermediate choke shaft.

Remove intermediate choke shaft from the choke housing by sliding outward. The fast idle cam can now be removed from the intermediate choke shaft (Fig. 6C-50).

CAUTION: Remove the cup seal from inside choke housing shaft hole if the housing is to be immersed in carburetor cleaner. Also, remove the cup seal from the float bowl plastic insert for bowl cleaning purposes. **DO NOT ATTEMPT TO REMOVE PLASTIC INSERT**

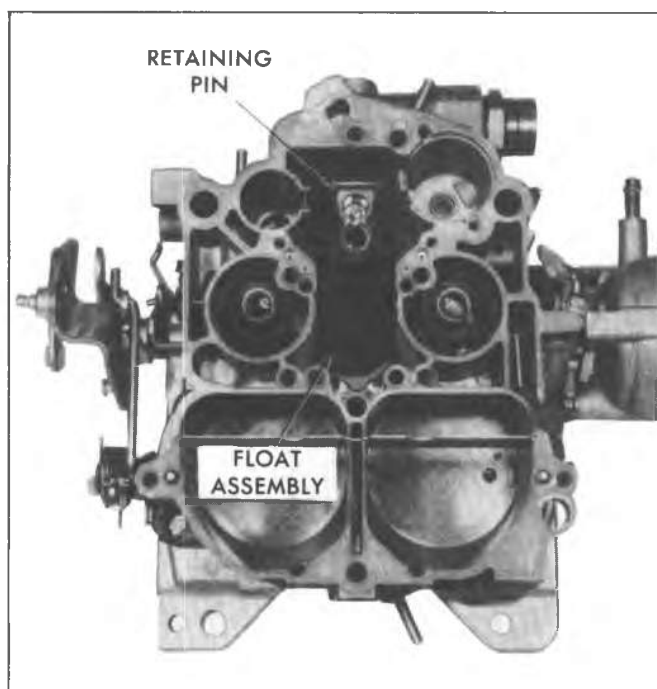


Fig. 6C-45--Float Assembly

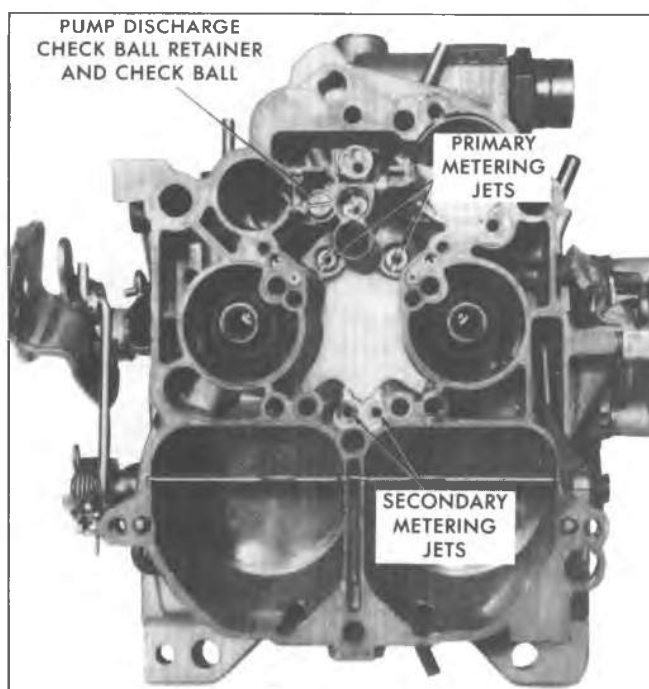


Fig. 6C-47--Float Bowl Jets

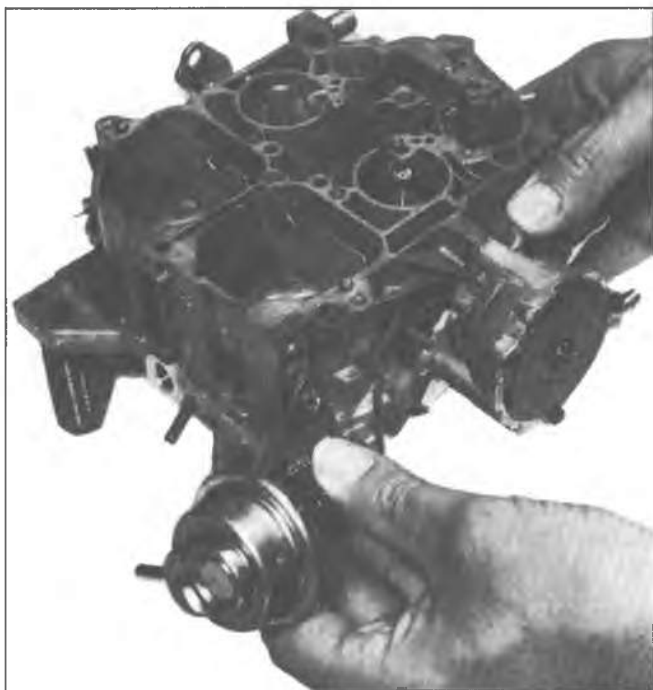


Fig. 6C-48--Rear Vacuum Break - M4ME

Float Bowl Disassembly

1. Remove fuel inlet nut, gasket and filter (Fig. 6C-51).
2. Remove throttle body by removing throttle body to bowl attaching screws (Fig. 6C-52).
3. Remove throttle body to bowl insulator gasket (Fig. 6C-53).

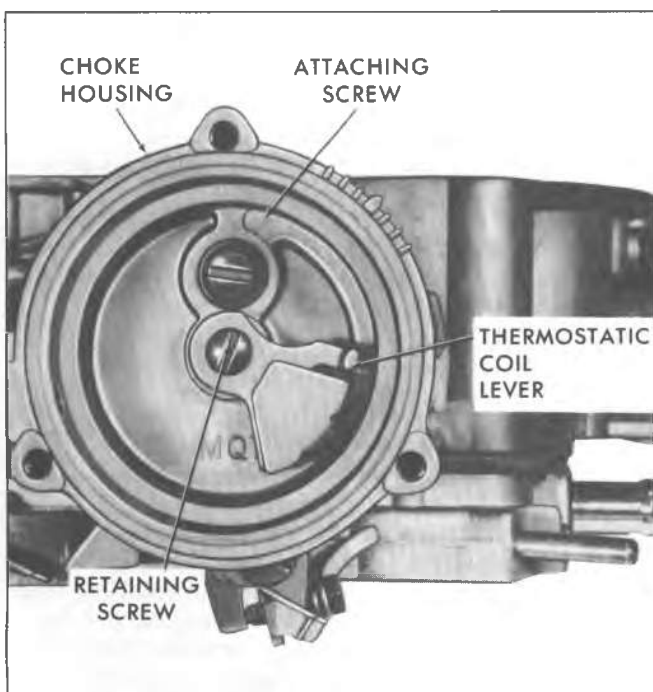


Fig. 6C-49--Removing Choke Housing

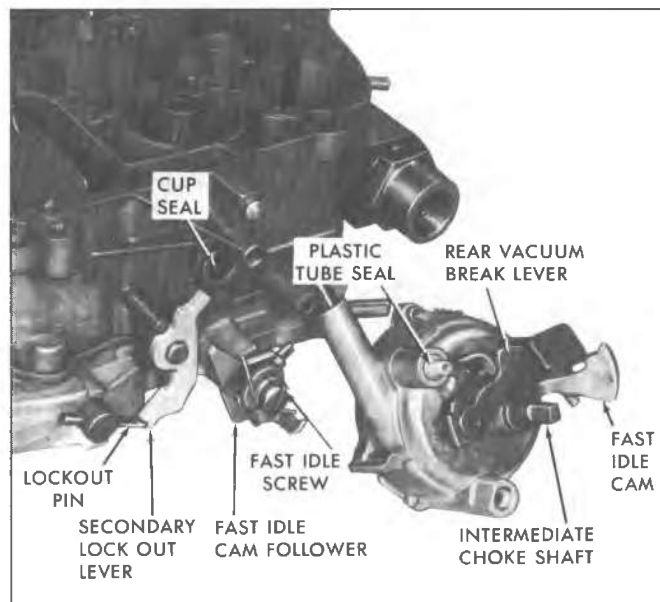


Fig. 6C-50--Choke Housing Assembly

Throttle Body Disassembly

1. Remove pump rod from throttle lever.
2. **DO NOT REMOVE** idle mixture limiter caps, unless it is necessary to replace the mixture needles or normal soaking and air pressure fails to clean the idle passages. If the idle mixture needles are removed, refer to Service Manual for adjustment procedure. If necessary to remove the idle mixture needle, destroy plastic limiter cap. Do not install a replacement cap as a bare mixture screw is sufficient to indicate that the mixture has been re-adjusted.

CLEANING AND INSPECTION

The carburetor parts should be cleaned in cold immersion type cleaner.

CAUTION: The electric solenoid, rubber parts, plastic parts, diaphragms, pump plungers, should not be put in immersion type cleaner as they will swell, harden or distort.

1. Thoroughly clean all metal parts and blow dry with compressed air. Make sure all fuel passages and metering parts are free of burrs and dirt.
2. Check, repair or replace the following parts if the

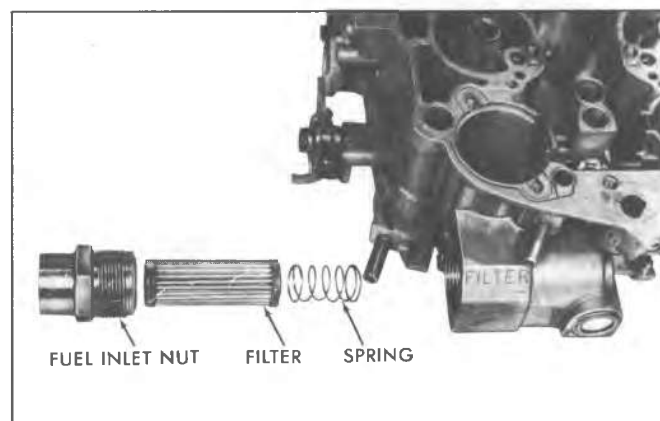


Fig. 6C-51--Fuel Filter

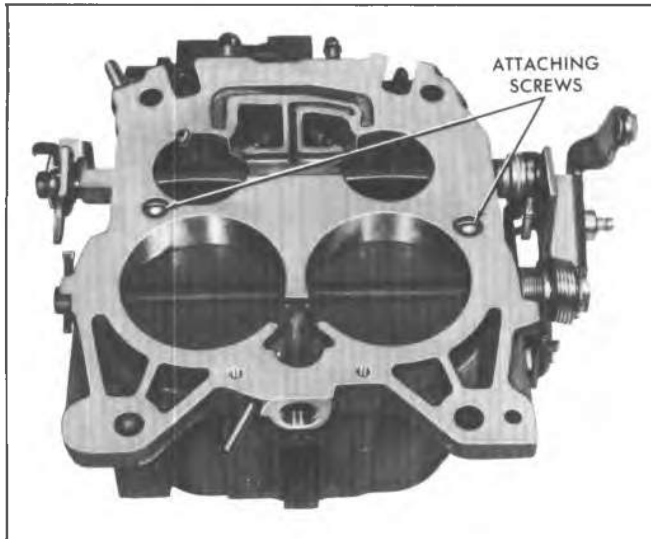


Fig. 6C-52--Removing Throttle Body

following problems were encountered.

a. Flooding

1. Inspect float needle seat for dirt, deep wear grooves, scores and proper seating.
2. Inspect float, float arm and hinge pin for distortion, binds and burrs. Check float for leaks and/or being loaded (heavier than normal).

b. Hesitation

1. Inspect pump plunger for cracks, scores or cup, excessive wear. A used pump cup will shrink when dry. Soak in fuel for 8 hours before testing if dried out.
2. Inspect pump duration and return spring for being weak or distorted.
3. Check all pump passages and jets for dirt, improper seating inlet or discharge balls, scores in pump well.



Fig. 6C-53--Removing Insulator Gasket

4. Check pump linkage for excessive wear, repair or replace as necessary.

c. Hard Starting - Poor Cold Operation

1. Check choke valve and linkage for excessive wear, binds or distortion.
2. Inspect choke vacuum diaphragm for leaks.
3. Clean or replace carburetor filter.
4. Inspect needle for sticking, dirt etc.
5. Examine fast idle cam for wear or damage.
6. Also check items under "flooding".

d. Poor Performance - Poor Gas Mileage

1. Power Piston, power valve, metering rods for dirt, sticking, binding, damaged parts or excessive wear.
2. Clean all fuel and vacuum passages in castings.

e. Rough Idle

1. Inspect idle needle for ridges, burrs or being bent.
2. Inspect gasket mating surfaces on castings for damage to sealing bends, nicks and burrs.
3. Clean all idle fuel passages.
4. Check throttle lever and valves for binds, nicks and other damage.

ASSEMBLY

Throttle Body

1. If removed, install idle mixture needles and springs until seated. Back out the mixture needles 4 turns as a preliminary idle adjustment. Final adjustment must be made on the engine using the procedures described under slow idle adjustment.

2. Install lower end of pump rod in throttle lever by aligning tang on rod with slot in lever. End of rod should point outwards towards throttle lever.

Float Bowl Assembly

1. Install new throttle body to bowl gasket over two locating dowels on bowl.

2. Install throttle body making certain throttle body is properly located over dowels on float bowl, then install throttle body to bowl screws and tighten evenly and securely (Fig. 6C-52).

3. Place carburetor on proper holding fixture J-8328.

4. Install fuel inlet filter spring, filter, new gasket and inlet nut and tighten nut to 18 pounds feet (Fig. 6C-51).

CAUTION: The fuel inlet check valve on a vehicle with light duty emissions must be installed in the filter to meet Motor Vehicle Safety Standards (M.V.S.S.) for roll-over. New service replacement filter includes the check valve.

NOTE: Ribs on closed end of filter element prevent filter from being installed incorrectly unless forced.

CAUTION: Tightening beyond specified torque can damage nylon gasket.

Choke

1. Install new cup seal into plastic insert on side of float bowl for intermediate choke shaft. Lip on cup seal faces outward.

2. Install secondary throttle valve lock-out lever on boss on float bowl with recess in hole in lever facing inward.

3. Install new cup seal into inside choke housing shaft hole. Lips on seal face inward, towards inside of housing.

4. Install fast idle cam onto the intermediate choke shaft (steps on fast idle cam face downward) (Fig. 6C-50).

5. Carefully install fast idle cam and intermediate choke shaft assembly through seal in choke housing; then install

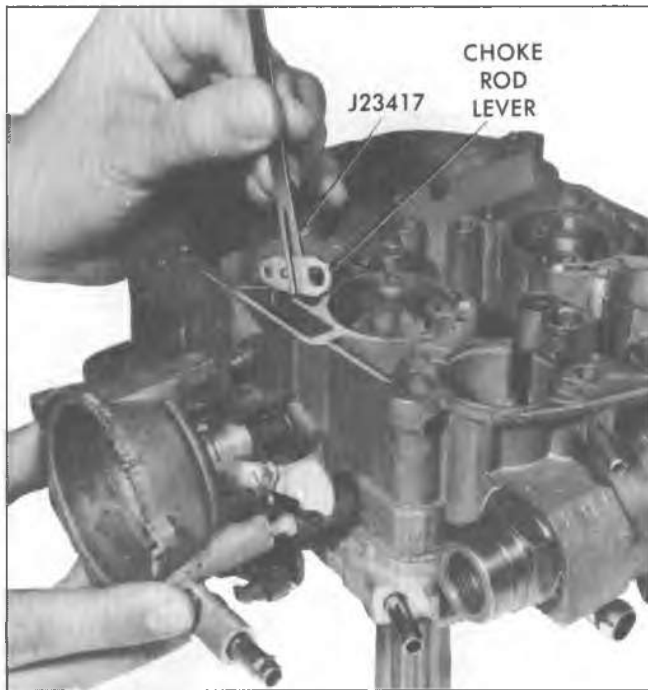


Fig. 6C-54--Installing Choke Rod Lever

thermostatic coil lever onto flats on intermediate choke shaft. Inside thermostatic choke coil lever is properly aligned when both inside and outside levers face towards fuel inlet. Install inside lever retaining screw into end of intermediate choke shaft. Tighten securely.

6. Using Tool J-23417, install lower choke rod lever into cavity in float bowl. Install plastic tube seal into cavity on choke housing before assembling choke housing to bowl. Install choke housing to bowl sliding intermediate choke shaft into lower choke lever (Fig. 6C-54).

NOTE: The intermediate choke shaft lever and fast idle cam are in correct relation when the tang on lever is beneath the fast idle cam. Do not install choke cover and coil assembly until inside coil lever is adjusted. Refer to Service Section for adjustment procedures.

Float Bowl

M4ME Model With Rear Vacuum Break

1. Holding down on fast idle cam (hot idle position), install end of vacuum break rod in hole in intermediate choke lever.

2. Install end of vacuum break rod in slot in rear vacuum break plunger head. Then install rear vacuum break control and bracket assembly to float bowl using two attaching screws (Fig. 6C-48). Tighten securely.

NOTE: Do not attach vacuum break hose until after the vacuum break adjustment is complete. Refer to Service Section for adjustment procedure.

All Models

3. If removed, install air baffle in secondary side of float bowl with notches toward the top. Top edge of baffle must be flush with bowl casting.

4. If removed, install baffle in pump well fill slot.

5. Install pump discharge check ball and retainer in passage next to pump well. Tighten retainer securely.

6. Install primary main metering jets (if removed) (Fig. 6C-47).

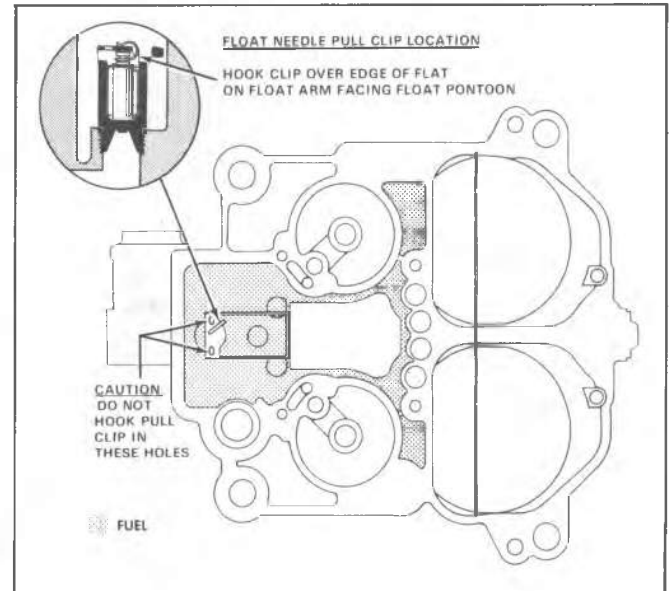


Fig. 6C-55--Pull Clip Location

7. Install aneroid cavity insert into float bowl.

8. Install new needle seat assembly, with gasket.

9. To make adjustment easier, bend float arm upward at notch in arm before assembly.

Install needle by sliding float lever under needle pull clip--correct installation of the needle pull clip is to hook the clip over the edge of the flat on the float arm facing the float pontoon (Fig. 6C-55). With float lever in pull clip, hold float assembly at toe and install retaining pin from aneroid cavity side (ends of retaining pin face the accelerating pump well).

CAUTION: Do not install float needle pull clip into holes in float arm.

10. Adjust float level.

Float Level Adjustment (Fig. 6C-56)

a. Hold float retainer firmly in place.

b. Push float down lightly against needle.

c. With adjustable T-scale, gauge from top of float bowl casting (air horn gasket removed) to top of float gauging point 3/16" back from end of float at toe.

d. Bend float arm as necessary for proper adjustment by pushing on pontoon. Refer to adjustment chart for specification.

e. Visually check float alignment after adjustment.

11. Install plastic filler block over float needle, pressing downward until properly seated.

12. Install power piston spring in power piston well. If main metering rods were removed from hanger, reinstall making sure tension spring is connected to top of each rod (Fig. 6C-43). Install power piston assembly in well (aligning pin on piston with slot in well) with metering rods properly positioned in metering jets. Press down firmly on plastic power piston retainer to make sure the retainer is seated in recess in bowl and the top is flush with the top of the bowl casting. If necessary, using a drift punch and small hammer, tap retainer lightly in place.

13. Install pump return spring in pump well.

14. Install air horn gasket by carefully sliding tab of gasket around main metering rods and beneath the power piston hanger. Position gasket over the two dowel pins on the float bowl.

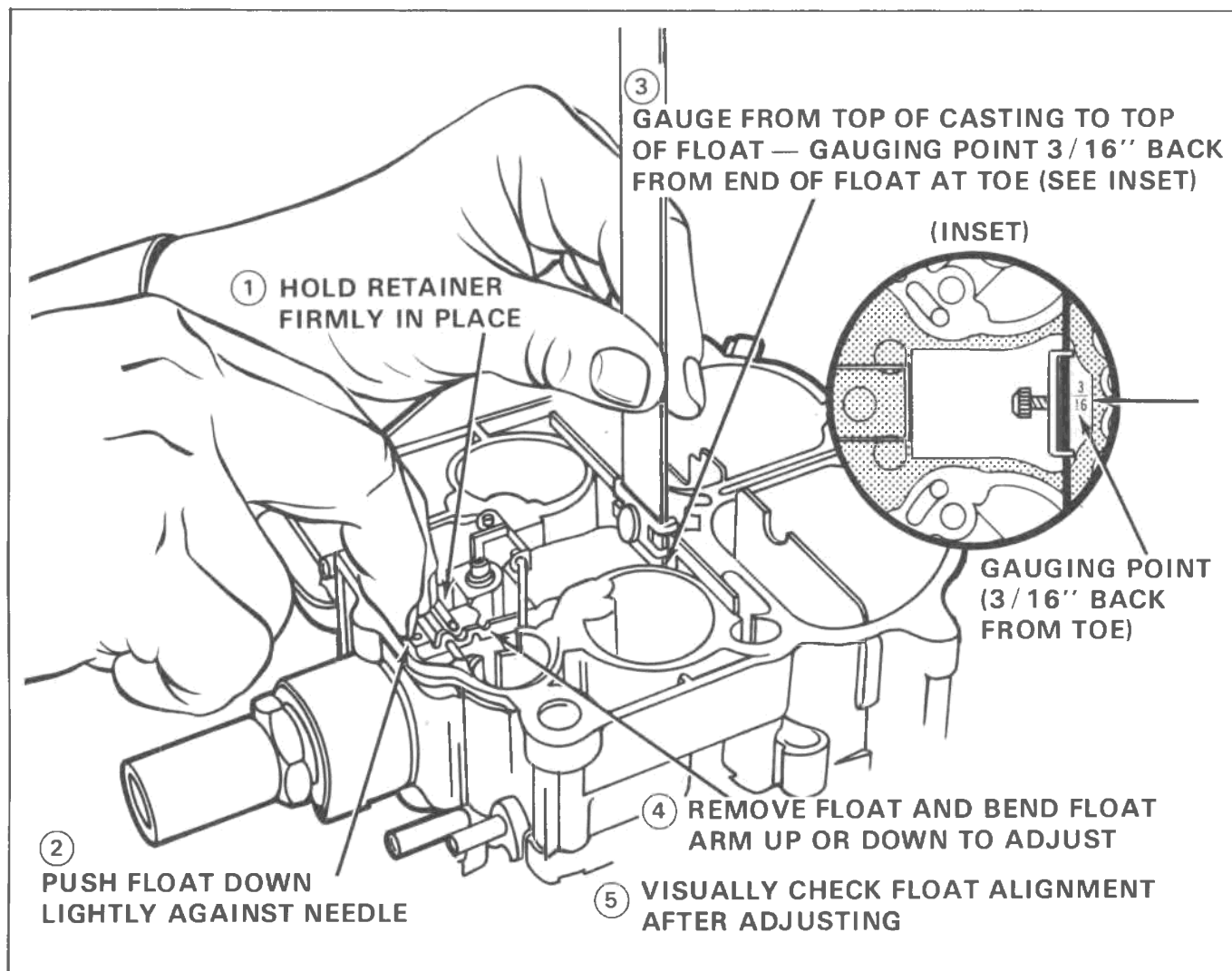


Fig. 6C-56-Float Level Adjustment

15. Carefully lift one corner of the air horn gasket and install pump plunger in the pump well by pushing the plunger to the bottom of the well against return spring tension. While holding in this position, align pump plunger stem with hole in gasket and press gasket in place.

Air Horn

1. If removed, install choke shaft, choke valve, and two attaching screws. Tighten screws securely and stake lightly in place.

2. Check choke valve for freedom of movement and proper alignment before staking screws in place.

Air Horn to Bowl Installation

1. Holding down on air horn gasket at pump plunger location, carefully lower air horn assembly onto float bowl making sure that the bleed tubes, accelerating well tubes, pull-over enrichment tubes (if used), and pump plunger stem are positioned properly through the holes in the air horn gasket.

CAUTION: Do not force the air horn assembly onto the bowl but rather lightly lower in place.

2. Install two long air horn screws, five short screws, and two countersunk screws into primary venturi area.

Install secondary air baffle beneath screw number 3 and 4.

All air horn screws must be tightened evenly and securely. See Figure 6C-57 for proper tightening sequence.

3. Install vacuum break diaphragm rod into the slot in lever on the end of the air valve shaft. Then install the other end of rod into hole in the front vacuum break diaphragm plunger. Install front vacuum break control and bracket assembly to air horn using two retaining screws through the bracket. Tighten screws securely.

NOTE: Do not attach vacuum break hose until vacuum break adjustment is completed. Refer to Service Section for adjustment procedure.

4. Connect upper end of pump rod to pump lever by placing rod in specified hole in lever. Align hole in pump lever with hole in air horn casting using J-25322. Using small screwdriver, push pump lever roll pin back through casting until end of pin is flush with casting bosses in air horn (Fig. 6C-58).

CAUTION: Use care installing the small roll pin to prevent damage to pump lever casting bosses.

5. Install two secondary metering rods into the secondary metering rod hanger (upper end of rods point toward each other). Install secondary metering rod holder, with rods, onto air valve cam follower. Install retaining screw

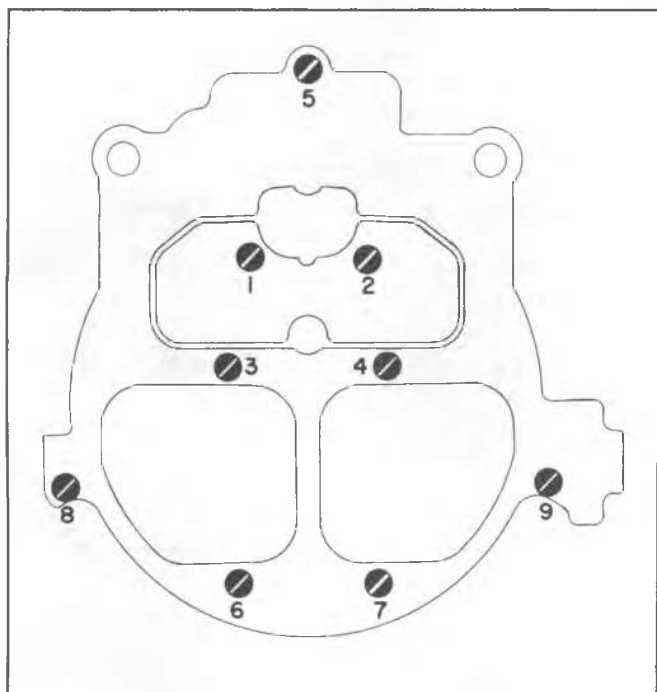


Fig. 6C-57--Air Horn Screw Tightening Sequence

end tighten securely. Work air valves up and down several times to make sure they are free in all positions.

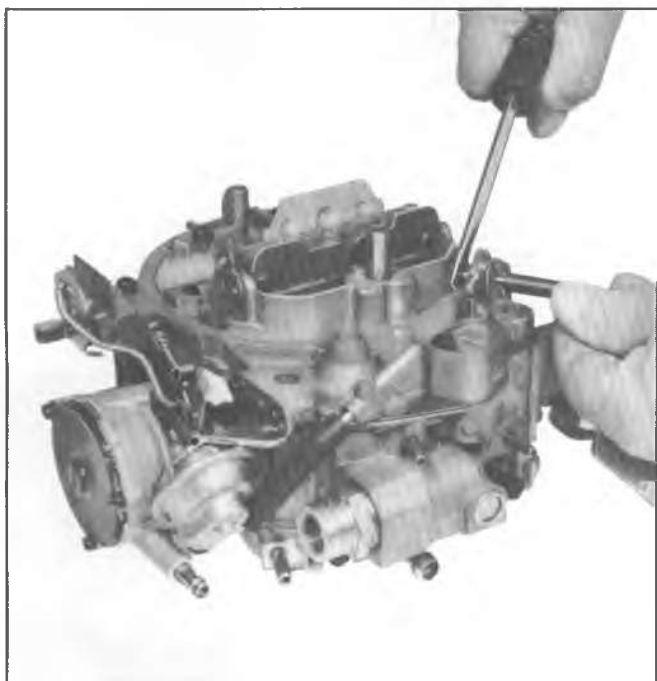


Fig. 6C-58--Installing Pump Lever Pivot Pin

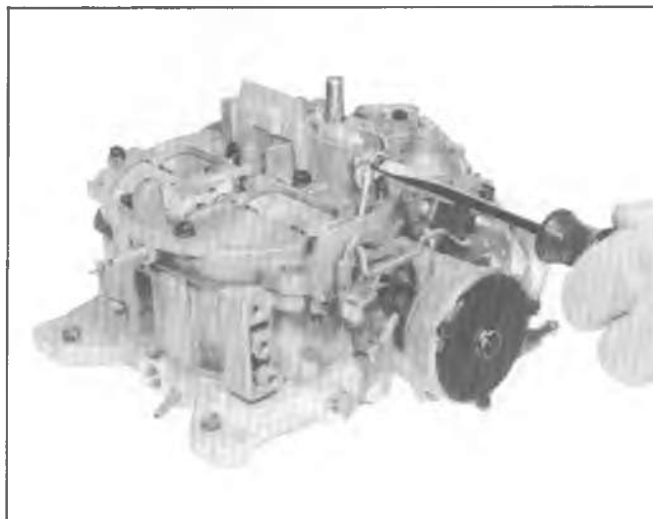


Fig. 6C-59--Choke Lever and Housing

6. Connect check rod into lower choke lever inside bowl cavity; they install choke rod into slot in upper choke lever and retain the choke lever to the end of the choke shaft with attaching screw. Tighten securely. When properly installed, the lever will point to the rear of the carburetor and the number on the lever will face outward (Fig. 6C-59).

Make sure that the flats on the end of the choke shaft align with flats in the choke lever.

The front and rear vacuum break units, fast idle cam (choke rod), and inside thermostatic choke coil lever must be adjusted properly before installing the choke thermostatic coil and cover assembly and gasket. Refer to the Adjustment Procedures, in Service Section.

7. After the vacuum break, fast idle cam (choke rod), and inside thermostatic coil lever are adjusted, the thermostatic coil and cover, and gasket on hot air choke model, should be installed and the cover assembly rotated until the choke valve just closes.

On all models (except 454 V8), tang on thermostatic coil must be installed in slot in inside choke coil lever pick-up arm. On M4ME electric choke model, coil tang contacts bottom side of inside choke coil lever pick-up arm.

CAUTION: On M4ME electric choke model, do not install a choke cover gasket between the electric choke assembly and the choke housing.

Align index point on cover with specified mark on housing as shown on adjustment chart.

Install three choke cover retainers and screws and tighten securely.

8. After making vacuum break adjustment, install vacuum break hose.

9. If used, position and retain solenoid and bracket assembly.

MODEL 4MV CARBURETOR

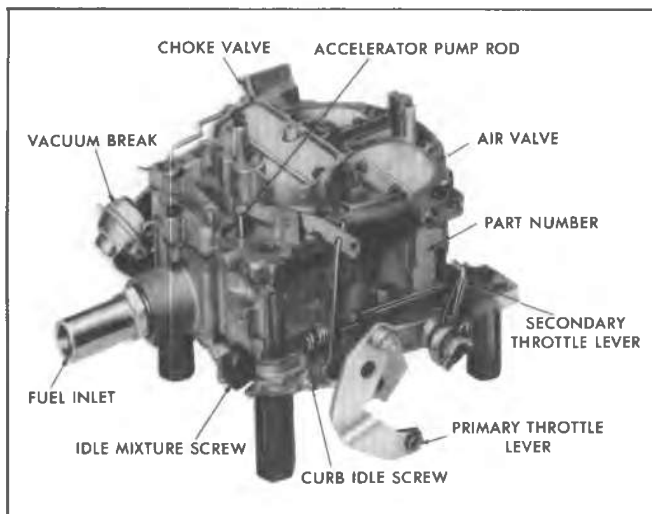


Fig. 6C-60--Model 4MV Carburetor

DISASSEMBLY

Place carburetor on a holding fixture to prevent damage to throttle plates (Fig. 6C-60).

Throttle Return Control Valve (If Equipped)

Remove screws securing the throttle return control valve and bracket assembly to float bowl and remove control valve and bracket.

CAUTION: The control valve should not be immersed in any type of carburetor cleaner and should always be removed before complete carburetor overhaul.

Air Horn

1. Remove horseshoe clip from upper end of choke rod. Disconnect choke rod from upper choke shaft lever.

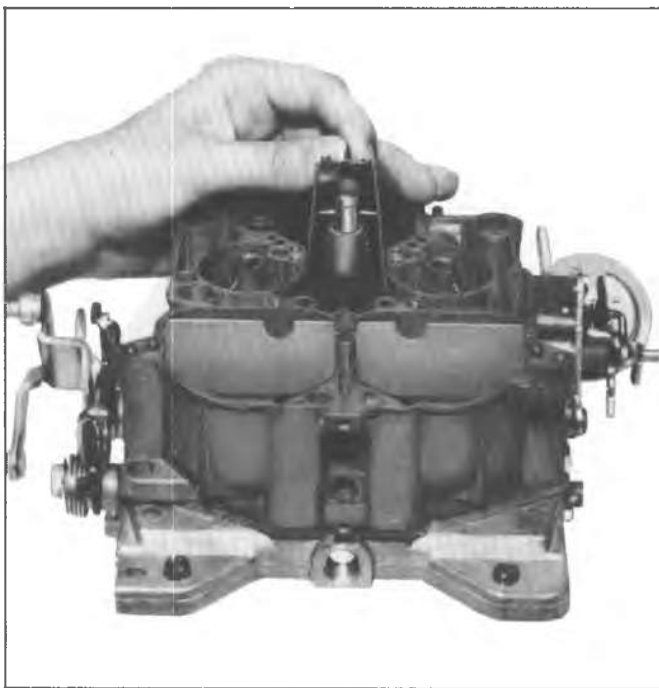


Fig. 6C-61--Removing Secondary Metering Rods

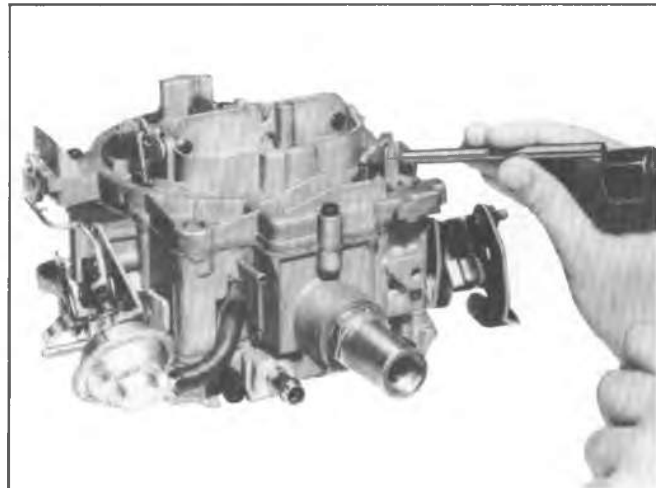


Fig. 6C-62--Removing Pump Lever

2. Remove choke rod from lower lever inside the float bowl casting by holding lower lever outward with small screwdriver and twisting rod counterclockwise.

3. Remove vacuum hose from vacuum break unit.

4. Remove secondary metering rods by removing the small screw in the top of the metering rod hanger. Lift upward on metering rod hanger until the secondary metering rods are completely out of the air horn. Metering rods may be disassembled from the hanger by rotating ends out of the holes in the end of the hanger (Fig. 6C-61).

5. Using special tool J-25322, drive small roll pin (pump lever pivot pin) inward just enough until pump lever can be removed from air horn. Then remove pump lever from pump rod (Fig. 6C-62).

CAUTION: Use care in removing small roll pin to prevent damage to pump lever casting bases in air horn.

6. Remove nine air horn to bowl attaching screws; two attaching screws are located next to the venturi. (Two long screws, five short screws, and two countersunk screws) (Fig. 6C-63).

7. Lift air horn off bowl and twist to disengage vacuum break rod from air valve shaft lever. Air horn gasket should remain on bowl for removal later. (Fig. 6C-64).

8. Remove vacuum break rod from vacuum break diaphragm plunger.

CAUTION: Care must be taken not to bend the small tubes protruding from air horn. These are permanently pressed into the casting. Do not remove.

Air Horn Disassembly

NOTE: Further disassembly of the air horn is not required for cleaning purposes and is not recommended. If part replacement is required, proceed as follows:

1. Remove staking on two choke valve attaching screws and then remove choke valve and shaft.

2. Remove pump lever roll pin.

CAUTION: Air valves and air valve shaft are calibrated and should not be removed. However, should it be necessary to replace the plastic air valve cam on the air valve shaft, a repair kit is available, which includes the plastic cam, closing spring, pin, screw and instructions.

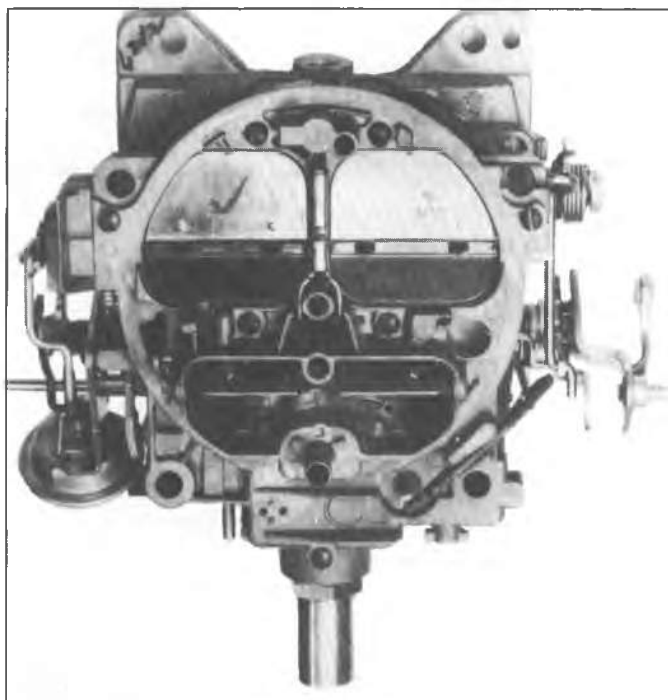


Fig. 6C-63--Removing Air Horn Screws

Float Bowl

1. Remove accelerator pump plunger from pump well.
2. Remove air horn gasket by lifting out of dowel locating pins and lifting tab of gasket from beneath the power piston hanger, being careful not to distort springs holding the main metering rods.
3. Remove pump return spring from pump well.
4. Remove plastic filler block over float valve.
5. Remove power piston and metering rods by

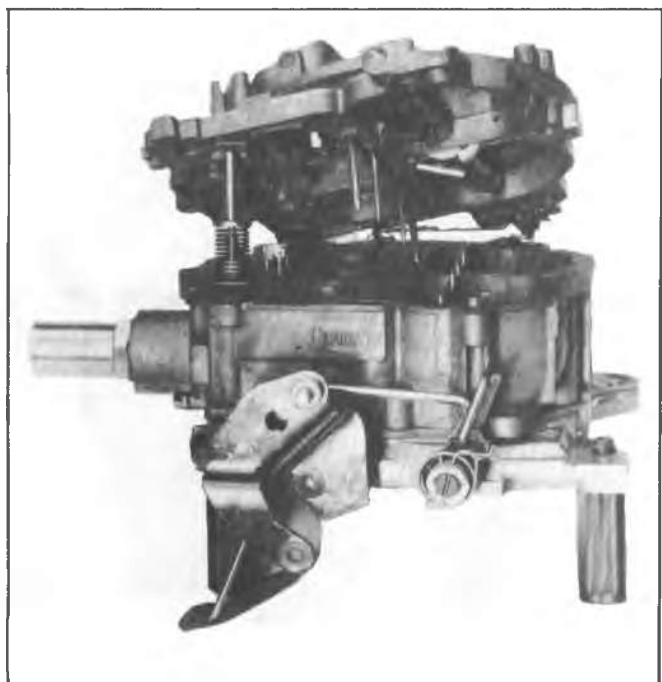


Fig. 6C-64--Removing Air Horn

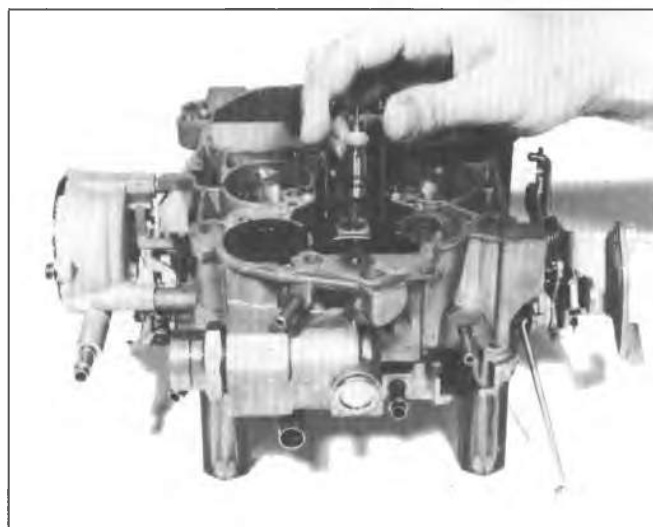


Fig. 6C-65--Removing Power Piston and Metering Rods

depressing piston stem and allowing it to snap free (Fig. 6C-65).

The power piston can be easily removed by pressing the piston down and releasing it with a snap. This will cause the power piston spring to snap the piston up against the retainer. This procedure may have to be repeated several times.

CAUTION: Do not remove power piston by using pliers on metering rod hanger.

6. Remove metering rods from power piston by disconnecting tension spring from top of each rod, then rotate rod to remove from hanger (Fig. 6C-66).

CAUTION: Use care when disassembling rods to prevent distortion of tension spring and/or metering rods. Note carefully position of tension spring for later reassembly.

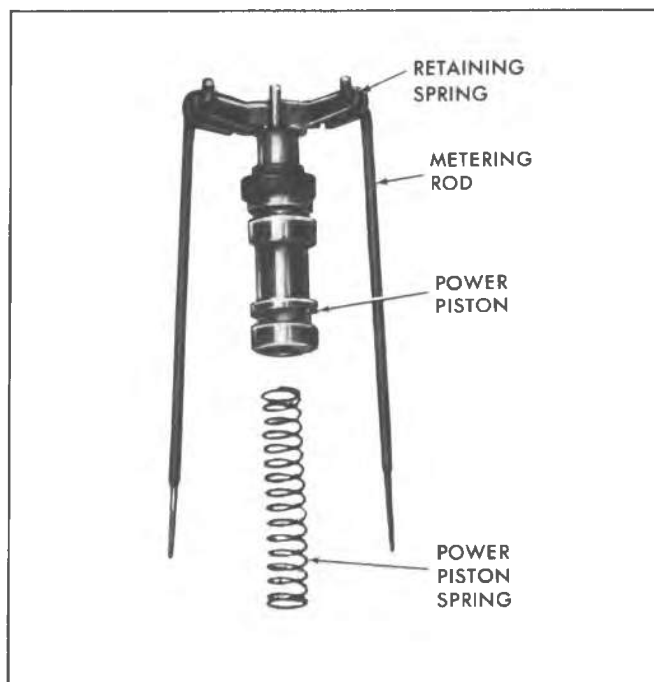


Fig. 6C-66--Power Piston and Metering Rods

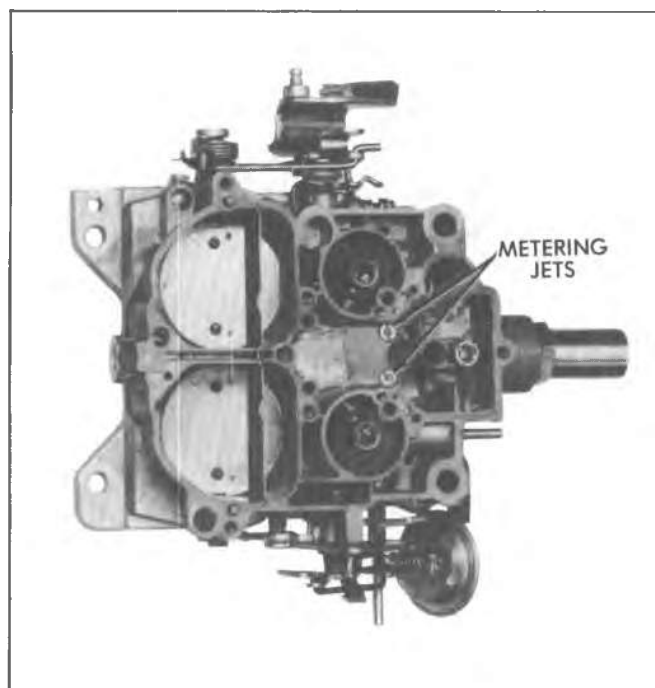


Fig. 6C-67--Metering Jets

7. Remove float assembly and inlet needle by pulling up on retaining hinge pin. Do not remove inlet needle seat unless it is damaged, in which case it and fuel needle must be replaced as an assembly. If needle seat is to be removed, use fuel inlet needle seat remover, J-22769.

8. Do not remove primary metering jets, Figure 6C-67 unless damaged or worn. No attempt should be made to remove secondary metering plates. If jets are removed but not replaced, they should be installed in the same hole from which they were removed.

9. Remove pump discharge check ball retainer screw and check ball.

10. Remove vacuum hose from vacuum break assembly and from tube connection on bowl if not previously removed.

11. Remove retaining screw from vacuum break assembly and remove assembly from float bowl.

NOTE: If further disassembly of vacuum break mechanism is necessary, spread the retaining ears on bracket next to vacuum break assembly, then remove vacuum break assembly from bracket.

12. Remove secondary throttle valve lock-out lever from float bowl.

13. Remove choke rod actuating lever from inside of float bowl well.

Float Bowl Disassembly

1. Remove fuel inlet nut, gasket, filter and spring (Fig. 6C-68).

2. Remove secondary air baffle, if replacement is required.

3. Remove primary main metering jets, if necessary.

NOTE: No attempt should be made to remove the A.P.T. metering screws, or secondary metering orifice plates. These items are fixed and, if damaged, float bowl replacement is required.

4. Turn bowl over and remove throttle body assembly by removing two throttle body to bowl attaching screws (Fig.

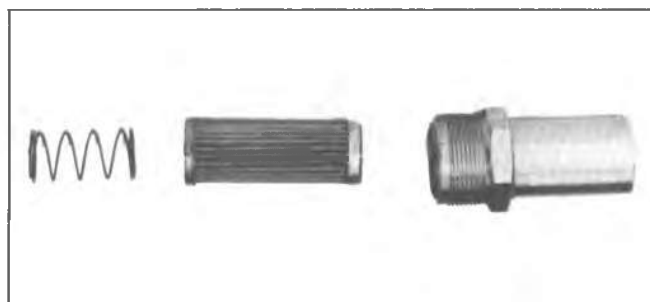


Fig. 6C-68--Fuel Filter

6C-69).

NOTE: Be careful when inverting bowl assembly as smallest venturi protrudes beyond the gasket surface.

5. Remove throttle body to bowl insulator gasket.

Throttle Body Disassembly

1. Remove pump rod from throttle lever by rotating rod out of lever.

2. **DO NOT REMOVE** idle mixture limiter caps unless it is necessary to replace the mixture needles or normal soaking and air pressure fails to clean the idle passages. If the idle mixture needles are removed, refer to Service Manual for adjustment procedure. If necessary to remove the idle mixture needle, destroy plastic limiter cap. Do not install a replacement cap as a bare mixture screw is sufficient to indicate that the mixture has been readjusted.

CAUTION: *Extreme care must be taken to avoid damaging throttle valves.*

No further disassembly of the throttle body is required.

CLEANING AND INSPECTION

The carburetor parts should be cleaned in cold immersion type cleaner.

CAUTION: *The electric choke, rubber parts, plastic parts, diaphragms, pump plungers, should not be put in immersion type cleaner as they will swell, harden or distort.*

The plastic cam on the air valve shaft (where used) and

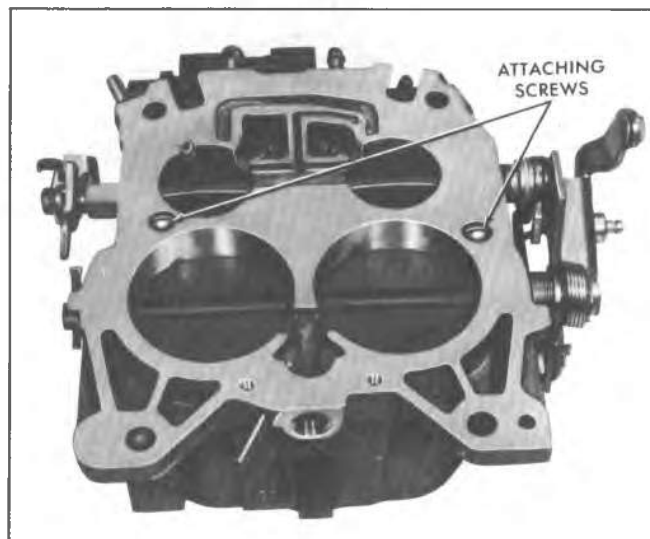


Fig. 6C-69--Removing Throttle Body

bushing in bowl will withstand normal cleaning. Rinse thoroughly after cleaning.

1. Thoroughly clean all metal parts and blow dry with compressed air. Make sure all fuel passages and metering parts are free of burrs and dirt.

2. Check, repair or replace the following parts if the following problems were encountered.

a. Flooding

1. Inspect float needle seat for dirt, deep wear grooves, scores and proper seating.

2. Inspect float, float arms and hinge pin for distortion, binds and burrs. Check float for leaks and/or being loaded (heavier than normal).

b. Hesitation

1. Inspect pump plunger for cracks, scores or cup, excessive wear. A used pump cup will shrink when dry. Soak in fuel for 8 hours before testing if dried out.

2. Inspect pump duration and return spring for being weak or distorted.

3. Check all pump passages and jets for dirt, improper seating inlet or discharge balls, scores in pump well.

4. Check pump linkage for excessive wear, repair or replace as necessary.

c. Hard Starting - Poor cold operation

1. Check choke valve and linkage for excessive wear, binds or distortion.

2. Inspect choke vacuum diaphragms for leaks.

3. Clean or replace carburetor filters.

4. Inspect needle for sticking, dirt, etc.

5. Examine fast idle cam for wear or damage.

6. Also check items under "flooding".

d. Poor Performance - Poor Gas Mileage

1. Power piston, power valve, metering rods for dirt, sticking, binding, damaged parts or excessive wear.

2. (If used) Check air valve for binds and damage. If air valve is damaged, the air horn assembly must be replaced. A torsion spring kit is available for repairs to air valve closing spring. A new plastic secondary metering rod cam is included in kit.

3. Clean all fuel and vacuum passages in castings.

e. Rough Idle

1. Inspect idle needle for ridges, burrs or being bent.

2. Inspect gasket mating surfaces on castings for damage to sealing beads, nicks and burrs.

3. Clean all idle fuel passages.

4. Check throttle levers and valves for binds, nicks and other damage.

ASSEMBLY

Throttle Body

1. If removed, install idle mixture needles and springs until seated. Back out the mixture needles 4 turns as a preliminary idle adjustment. Final adjustment must be made on the engine using the procedures described under idle adjustment.

2. Install lower end of pump rod in throttle lever by aligning tang on rod with slot in lever. End of rod should point outwards toward throttle lever.

Float Bowl

1. Install new throttle body to bowl gasket over two locating dowels on bowl.

2. Install throttle body making certain throttle body is properly located over dowels on float bowl, then install throttle body to bowl screws and tighten evenly and securely

(Fig. 6C-69).

3. Place carburetor on proper holding fixture J-8328.

4. Install fuel inlet filter spring, filter, new gasket and inlet nut and tighten nut securely (18 ft. lbs.).

CAUTION: *Tightening beyond specified torque can damage nylon gasket.*

5. If vacuum break diaphragm was removed from bracket, slide vacuum break diaphragm between retaining ears and bend ears down slightly to hold securely.

6. Install secondary lock-out lever.

7. Install fast idle cam on vacuum break assembly. Be sure arm of vacuum break lever is located beneath the tail of the fast idle cam.

8. Install vacuum hose to connection on bowl and vacuum break assembly.

NOTE: Do not attach vacuum hose to inlet on vacuum break diaphragm until after vacuum break adjustment is complete. (Refer to Service Manual for adjustment procedure).

9. Connect choke rod (plain end) to choke rod actuating lever, then holding choke rod with grooved end pointing inward - position choke rod actuating lever in well of float bowl and install choke assembly, engaging shaft with hole in actuating lever. Install retaining screw and tighten securely. Remove choke rod from lever for installation later.

10. If removed, install air baffle in secondary side of float bowl with notches toward the top. Top edge of baffle must be flush with bowl casting.

11. Install pump discharge check ball and retainer screw in passage next to pump well. Tighten retainer securely.

12. Install main metering jets. If removed, the jets should be installed in the same hole from which they were removed.

13. If fuel inlet needle seat was removed, use new needle seat gasket and position new seat on Fuel Inlet Needle Seat Remover and Installer, J-22769. Carefully thread needle seat into float bowl. Tighten securely.

14. To make adjustment easier, bend float arm upward at notch in arm before assembly.

15. Install needle by sliding float lever under needle pull clip---correct installation of the needle pull clip is to hook the clip over the edge of the flat on the float arm facing the float pontoon (Fig. 6C-70).

With float lever in pull clip, hold float assembly at toe and install retaining hinge pin from A.P.T. metering side (ends of retaining pin face the accelerating pump well).

CAUTION: *Do not install float needle pull clip into holes in float arm. Severe flooding will result.*

16. Adjust Float Level:

FLOAT LEVEL (Fig. 6C-71)

a. Hold float retainer firmly in place.

b. Push float down lightly against needle.

c. With adjustable T-scale, gauge from top of float bowl casting (air horn gasket removed) to top of float - gauging point is 3/16" back from end of float at toe (See inset - Fig. 6C-71).

d. Bend float arm as necessary for proper adjustment by pushing on pontoon. Refer to Service Manual for specification.

e. Visually check float alignment after adjustment.

17. Install power piston spring in power piston well. If main metering rods were removed from hanger, reinstall making sure tension spring is connected to top of each rod. Install power piston assembly in well with metering rods

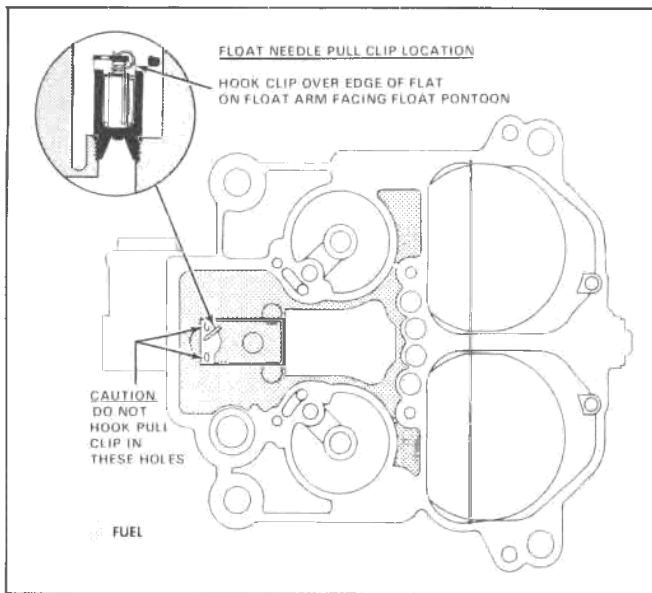


Fig. 6C-70--Pull Clip Location

properly positioned in metering jets. Press down firmly on plastic power piston retainer to make sure the retainer is seated in recess in bowl and the top is flush with the top of the bowl casting. If necessary, using a drift punch and small hammer, top retainer lightly in place.

18. Install plastic filler block over fuel inlet needle, pressing downward until seated properly.

19. Install pump return spring in pump well.

20. Install air horn gasket around primary metering rods and piston. Position gasket over two dowels on secondary side of bowl.

21. Install pump plunger in pump well to complete float bowl assembly.

Air Horn

1. Install the following, if removed: choke shaft, choke valve and two attaching screws. Check for free operation.

The choke valve screws have a special sealing compound to hold them in place. If removed, they should be lightly staked after tightening.

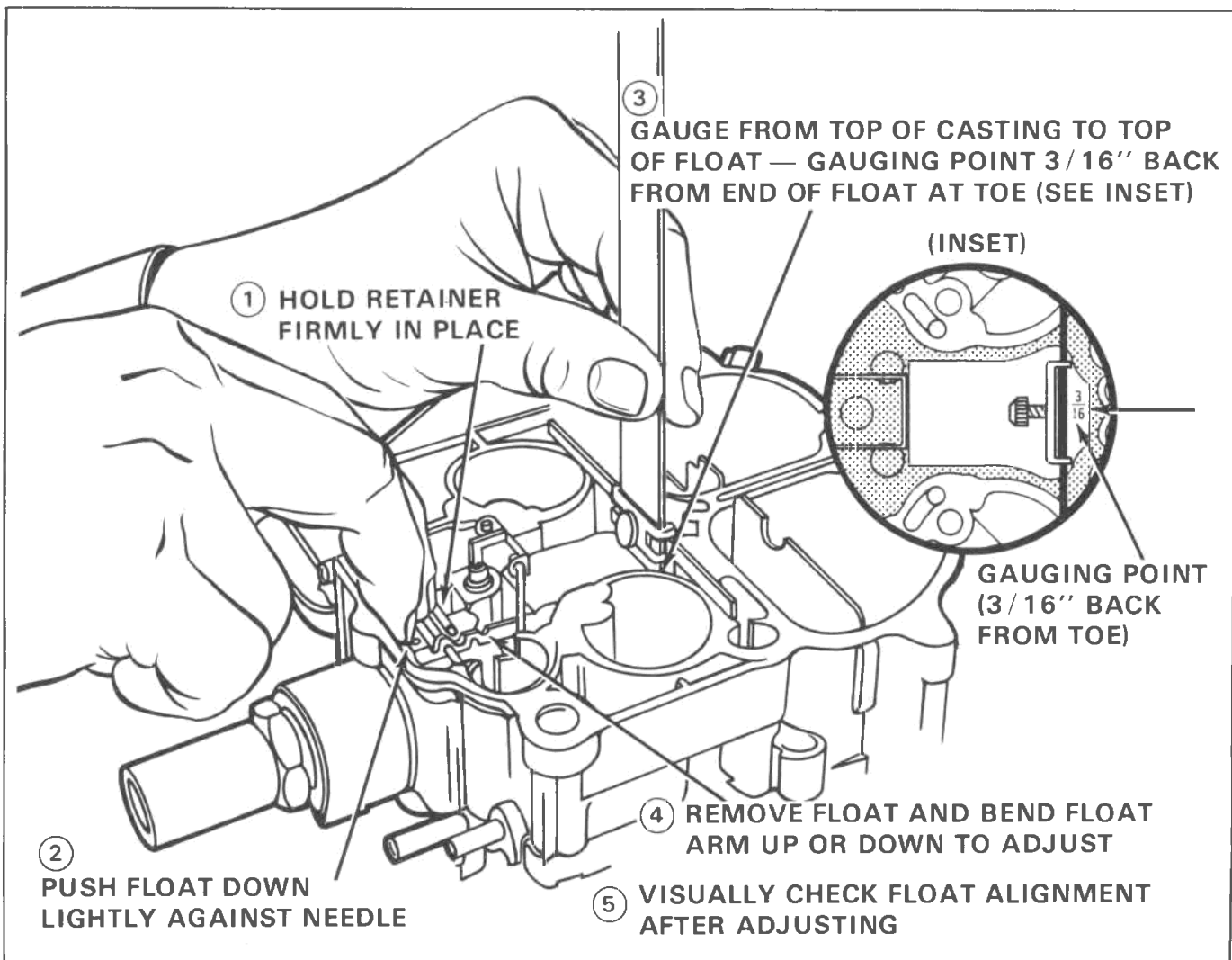


Fig. 6C-71--Float Level Adjustment

Air Horn to Bowl Assembly

1. Install vacuum break rod into vacuum break diaphragm plunger.

2. Insert vacuum break rod in slot of air valve shaft and twist air horn into position.

3. Lower air horn assembly to bowl carefully, positioning vent tubes and accelerating well tubes through air horn gasket.

CAUTION: *Do not force the air horn assembly onto the bowl but rather lightly lower in place.*

4. Install two long air horn screws, five short screws, and two countersunk screws into primary venturi area.

All air horn screws must be tightened evenly and securely. See Figure 6C-57 for proper tightening sequence.

5. Connect choke rod in lower choke lever and retain in upper lever with horseshoe clip.

6. Connect upper end of pump rod to pump lever by placing rod in specified hole in lever. Align hole in pump lever with hole in air horn casting using J-25322. Using small screwdriver, push pump lever roll pin back through casting until end of pin is flush with casting bosses in air horn.

CAUTION: *Use care installing the small roll pin to prevent damage to pump lever casting bosses.*

7. Install two secondary metering rods into the secondary metering rod hanger (upper end of rods point toward each other). Install secondary metering rod holder, with rods, onto air valve cam follower. Install retaining screw end tighten securely. Work air valves up and down several times to make sure they are free in all positions.

8. If used, position and retain throttle stop vacuum assembly.

SPECIAL TOOLS



J9789-02 UNIVERSAL CARBURETOR GAUGE SET



J9789-118 CARBURETOR HOLDING STAND



J9789-111 BENDING TOOL



J25322 PUMP LEVER PIN DRIVE PUNCH



J23417 CHOKE LEVER INSTALLING TOOL



J26701 CHOKE VALVE ANGLE GAUGE

Fig. 6C-72--Special Tools