

after a certain degree of primary throttle valve opening as explained in the power system operation.

The secondary throttle valves are held closed by a torsion spring located on the secondary throttle shaft. A closing tang on the lever and collar assembly gives a partial closing of the secondary valves in case of breakage of the secondary closing spring.

The basic systems and operation are the same as on the standard Model 4G and 4GC carburetors, as explained in the previous text.

MAJOR SERVICE OPERATIONS DISASSEMBLY, CLEANING, INSPECTION AND ASSEMBLY PROCEDURES

The following disassembly and assembly procedures may vary somewhat between applications due to specific design features. However, the following will basically pertain to all Model 4G and 4GC's.

Air Horn Disassembly (Fig. 16 & 17)

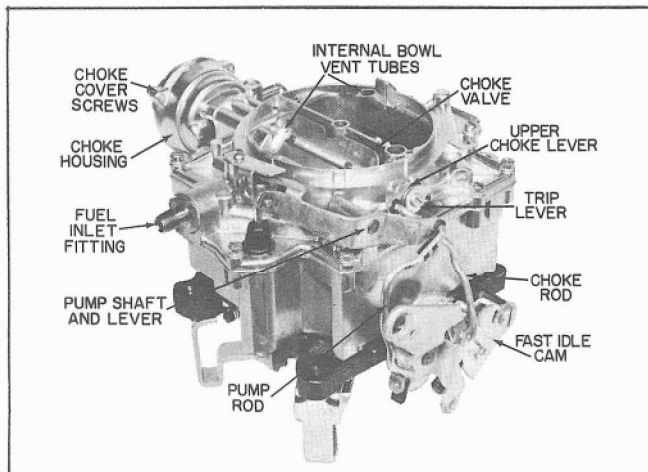


FIGURE 16

1. Mount carburetor on holding fixture.
2. Remove the fuel inlet fitting and gasket. (Remove the filter, filter spring and gasket, where used).

NOTE: Omit steps 3, 4, 7, 8, 9 if choke housing is mounted on float bowl or throttle body. If choke housing is mounted on float bowl or throttle body remove clips from the intermediate choke rod and remove rod from upper choke lever and intermediate choke lever on choke housing.

3. Remove choke cover and gasket by removing three choke cover retaining screws and retainers.
4. Remove baffle plate inside choke housing.
5. Remove choke trip lever retaining screw at opposite end of choke shaft, then remove trip lever.
6. Remove fast idle cam attaching screw, then remove the fast idle cam, choke rod and upper choke lever, as an assembly. If disassembled further note position of parts for ease in re-assembly.

7. File staking off two choke valve attaching screws, then remove screws and choke valve from choke shaft.
8. Rotate choke shaft to free choke piston from choke housing bore, then remove choke piston and shaft and lever assembly from air horn.
9. Remove two choke housing attaching screws, then remove choke housing and gasket from air horn.
10. Remove retaining clips from pump rod and remove rod from pump lever and throttle lever.
11. Remove the clip retainer from the pump plunger shaft. Remove pump lever shaft retaining clip, then slide pump shaft and lever assembly out of air horn casting.
12. Remove the 13 air horn attaching screws, including the one screw recessed in the top of the air horn.
13. Carefully lift the air horn straight up until the float assemblies are clear of the carburetor body, lay air horn inverted, on clean bench.

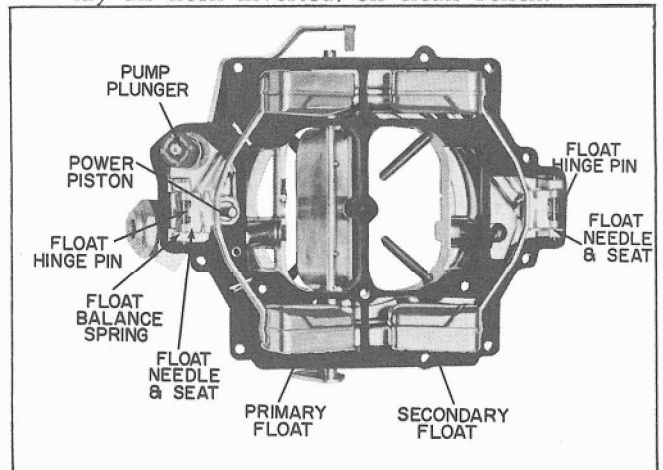


FIGURE 17

14. Remove the hinge pin from the primary float assembly, then slide the float and needle away from the power piston stem. (Mark primary floats with a "P".)
15. Remove primary float needle seat and gasket, using Tool BT 3006.

NOTE: The float needles and seats are factory matched and must be installed in pairs. Needle and seat orifice size may differ between the primary and secondary side.

16. Remove the hinge pin, float assembly, needle seat and gasket from the secondary side of the air horn. *Do not* remove the float balance spring unless it is distorted and needs replacement.
17. Remove the air horn gasket.
18. Remove the power piston and spring assembly by depressing the stem and allowing it to snap back into position.
19. Remove the pump plunger assembly by sliding the shaft through the rubber pump shaft seal. Remove the rubber seal from the top side of the air horn casting.

20. Remove the idle vent valve and guard from top of air horn before putting the air horn in cleaning solvent.

Disassembly of Carburetor Float Bowl (Fig. 18)

NOTE: Omit steps (1) through (5) if choke housing is mounted on air horn or throttle body.

1. Remove the three choke cover attaching screws and retainers, then remove the choke cover and gasket.
2. Carefully lift the baffle plate from the choke housing.
3. Remove the choke piston lever attaching screw, then remove the lever, link and piston assembly from the choke housing.
4. Remove the two choke housing attaching screws, then remove the choke housing from the carburetor bowl.

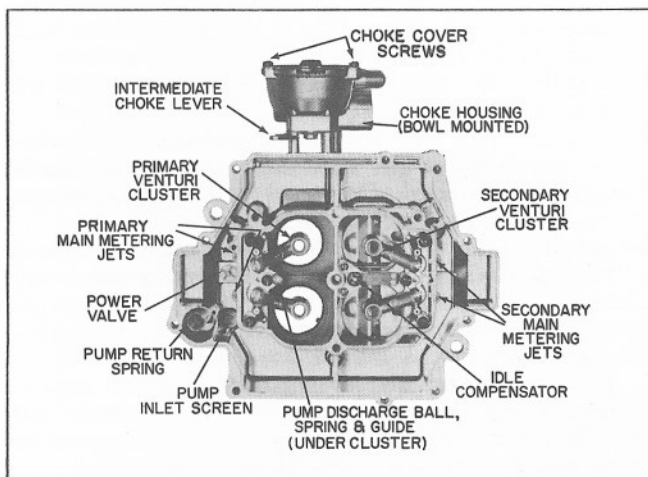


FIGURE 18

5. Remove the intermediate choke shaft and lever assembly from the choke housing, then remove choke housing gasket.
6. Remove the three attaching screws and lock washers from the venturi cluster on the primary side, then carefully remove the cluster and gasket.

NOTE: Some models use main well inserts, or baffles in the primary main wells. Observe position for ease in assembly.

7. Remove the three attaching screws and lock washers from the venturi cluster on the secondary side, then carefully remove the cluster and gasket.
8. (If used): Remove idle compensator valve and gasket between secondary venturi by removing (2) attaching screws.
9. Remove both metering jets from the primary (pump) side of the carburetor body.
10. Remove the power valve and gasket.
11. Remove both metering jets from the secondary side of the carburetor. Keep them in a separate group.

12. Remove the pump return spring from the pump well, then invert the carburetor body to remove the aluminum pump inlet ball from the well (where used).
13. Remove the small "T" shaped pump discharge spring guide, then remove the small spring and steel ball.
14. If it is necessary to clean or replace the small screen next to the pump plunger bore, remove the retainer ring and screen.
15. Invert the carburetor body and remove the four throttle body attaching screws. Remove throttle body and gasket from float bowl.
16. Remove the secondary auxiliary throttle valve assembly from carburetor float bowl (if used).

NOTE: The auxiliary throttle valve assembly should not be disassembled as the closing spring is specifically calibrated for the particular engine on which it is used. Make sure valves close freely after cleaning.

Disassembly of the Throttle Body (Fig. 19)

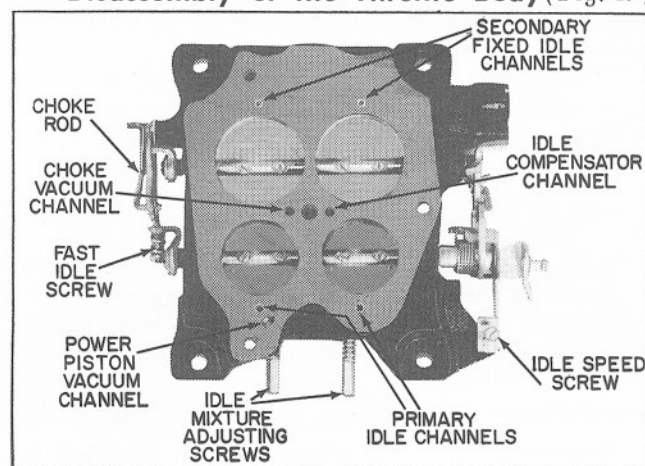


FIGURE 19

No attempt should be made to remove the throttle valves or shafts from the throttle body as it may be impossible to reassemble the throttle valves correctly in relation to the vacuum advance and idle discharge orifices.

The idle mixture needle screws may be removed for cleaning or replacement. Also the slow and fast idle speed screws and springs can be removed and replaced if necessary.

NOTE: If the choke is mounted on the throttle body, use steps (1) through (5) under float bowl disassembly.

Disassembly of 4G Governor (Fig. 20)

1. Remove throttle lever and bearing assembly by removing (4) attaching screws and lockwashers. Then pull outward on lever assembly and remove gasket.
2. Remove governor housing side plate by breaking wire seal and removing (4) attaching screws.
3. To remove governor diaphragm, remove (10) diaphragm cover attaching screws, then remove

Disassembly of 4G Governor (Cont.)

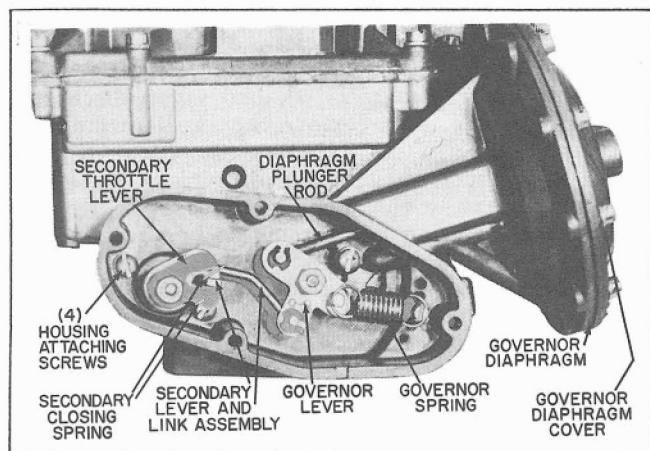


FIGURE 20

diaphragm cover.

4. Disconnect diaphragm plunger rod from governor lever by removing clip on end of plunger rod. Governor diaphragm may now be pulled out of governor housing.
5. Remove governor spring by sliding off the ends of stationary pin and pin on governor lever.
6. Remove (2) 11/32" nuts and lockwashers on ends of primary and secondary throttle shafts.
7. Remove secondary throttle lever and closing spring. *Note position of secondary closing spring for ease in reassembly.*
8. Remove governor lever, link and secondary valve actuating lever as a complete assembly.
9. Remove (4) attaching screws and lockwashers inside governor housing, then remove governor housing and gasket.

Replacement of Throttle Shaft Bearing Seals

1. Remove primary throttle shaft seal (located in rear of governor housing) by removing seal staking; then pry seal from housing.
2. Remove 3/4" welch plug from end of secondary throttle shaft (throttle lever side).
3. Remove (4) secondary throttle valve screws. *Mark throttle valves to insure correct location when re-installing.*
4. Hold valves vertical and slide secondary throttle valves from throttle shaft.
5. Using a soft punch lightly tap end of secondary shaft (throttle lever side). Bearing and shaft seal will then slide out of throttle body (governor side).
6. Remove seal and spring washer from secondary shaft.

No further disassembly of the throttle body is recommended as the other throttle shaft bearings are staked in place and removal may distort the ball bearings and disrupt throttle shaft and valve alignment.

Cleaning of Parts

The carburetor should not be cleaned in any solution other than a cold immersion type cleaner.

1. Thoroughly clean carburetor castings and metal parts in carburetor cleaning solvent.

CAUTION: Any rubber or plastic parts, diaphragms, leather seals and pump plunger should not be immersed in solvent. Clean with stoddard solvent only (or equivalent).

2. Blow all passages in casting dry with compressed air. **DO NOT PASS DRILLS THROUGH JETS OR PASSAGES.**
3. The 4G governor throttle body ball bearings can be cleaned in cold immersion type cleaner without disassembling the throttle valves, if all bearing seals are removed. Make sure ball bearings are lubricated with light motor oil (SAE 10); before reassembly.

Inspection of Parts

1. Check floats for dents or excessive wear at hinge pin holes.
2. Shake floats to check for leaks.
3. Examine float needle and seat. Replace if necessary with a factory matched float needle, seat and gasket assembly.
4. Inspect the idle mixture adjusting needles for burrs or ridges.
5. Inspect the upper and lower surfaces of the carburetor body to see that the small sealing beads are not damaged. Damaged beading may result in air or fuel leaks at that point.
6. Inspect holes in pump lever, fast idle cam, and throttle shaft lever. If holes are worn excessively or out of round to the extent of improper operation of the carburetor, worn parts should be replaced.
7. Inspect the steps on the fast idle cam for excessive wear. If excessive wear is noted, it should be replaced to assure proper engine operation during the warm-up and choking periods.
8. Inspect the pump plunger. If the pump plunger is damaged, replace.
9. Inspect the throttle flange assembly. Make sure the idle passages and vacuum channels are clean.
10. Inspect governor diaphragm for cracks or leaks.
11. Inspect throttle shaft bearing seals for wear. Replace with new seals if removed or worn.
12. Check throttle valve screws for tightness. If loose, tighten screws and stake properly.

CARBURETOR ASSEMBLY ASSEMBLY OF 4G GOVERNOR THROTTLE BODY

Installation of Throttle Shaft Bearing Seals

1. Install spring washer and bearing seal over governor end of secondary shaft next to ball bearing. Chamfered end of seal faces bearing and spring washer. Lubricate seal with light motor oil (SAE 10).
2. Install secondary throttle shaft in throttle body, press seal in flush with casting face.
3. Install secondary throttle valves into slots in secondary shaft as marked under disassembly;