

### 1966 4-4-2 TRI-CARB ADJUSTMENTS

The 4-4-2 TRI-CARB engine consists of three two-barrel carburetors, mounted in tandem, on a special intake manifold, see Fig. 6. The center (primary) carburetor contains all the conventional systems of a regular two-barrel carburetor, such as the float, idle, part throttle, power, pump and choke systems. The front and rear (secondary) carburetors contain only the float, pump and main metering systems.

The center carburetor also contains an idle compensator to avoid over-rich idle mixtures on hot idle. When underhood temperatures are high, the idle compensator, located inside the center carburetor opens allowing additional air to enter the manifold below the throttle valves.

The center, (primary) carburetor is in operation at all times. The front and rear carburetors are actuated simultaneously through linkage, whenever the center carburetor throttle is opened more than 40°. This setting can be changed to 30° to actuate the secondary carburetors earlier, see Fig. 7. A detent feel can be noted in the accelerator pedal linkage when the front and rear carburetors start to open.

Since the front and rear carburetors do not contain a choke valve, the engine should be at normal operating temperature before the front and rear carburetors are brought into use at low speeds to prevent stalling.

The choke system, center carburetor only, consists of a choke valve in the air horn, a vacuum diaphragm, fast idle cam, choke linkage and a thermostatic coil located on the engine intake manifold. The thermostatic coil is connected to the choke valve by a rod. The choke operation is controlled by a combination of intake manifold vacuum, the offset choke valve and ambient temperature.

The thermostatic coil on the intake manifold is calibrated to hold the choke valve closed when the engine is cold. When starting the engine, air velocity against the offset choke valve causes the valve to open slightly against the spring tension of the thermostatic coil. With the engine running, manifold vacuum is applied to the vacuum diaphragm which opens the choke

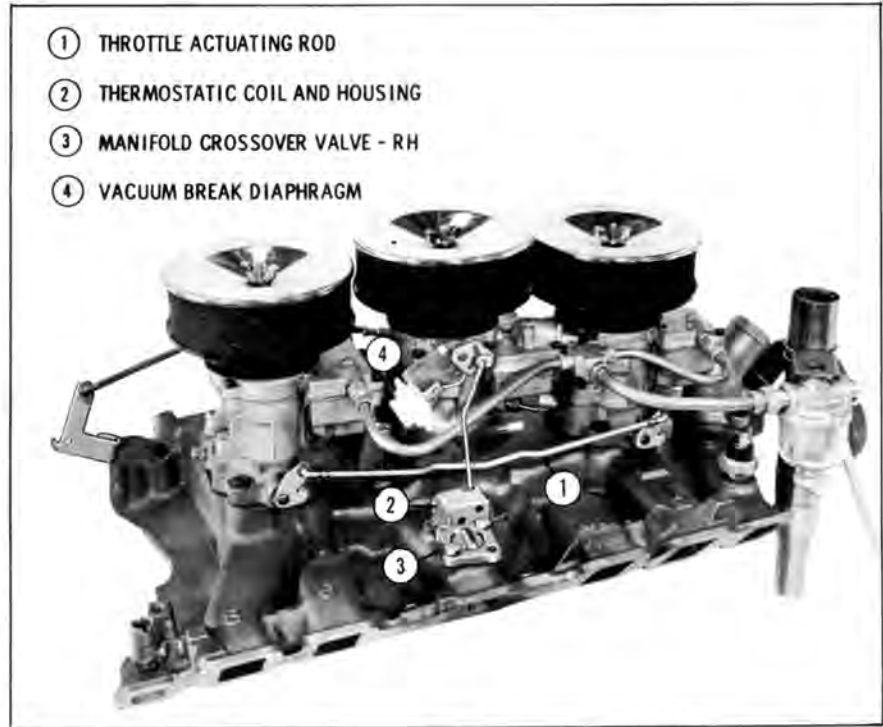


Fig. 6

valve to a point where the engine will operate without loading or stalling. The choke valve remains in this position until the engine begins

to warm up and heat from the intake manifold warms the thermostatic coil to relax its tension

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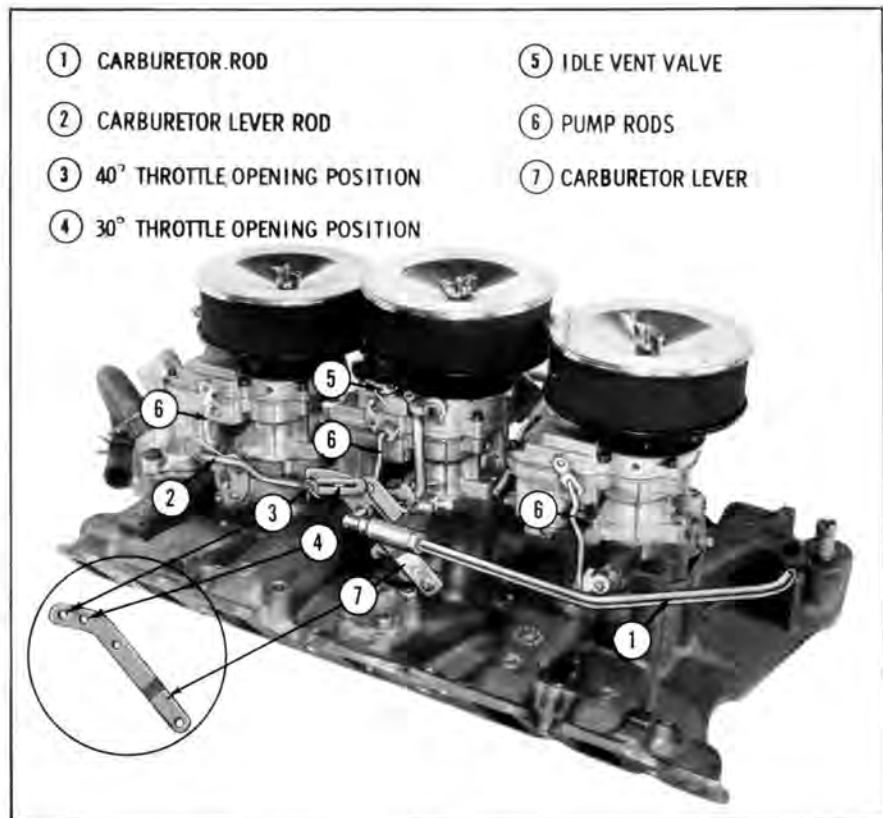


Fig. 7

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allowing the choke to open gradually.

For additional performance, a means is provided to prevent exhaust gases from flowing through the intake manifold crossover. This is accomplished by two valves, one on the right side of the intake manifold and one on the left, in the manifold crossover. Fig. 8. The valves can be opened or closed by removing the two attaching bolts and rotating the valves 90°. A rib on top of the valve indicates the relation of the valve in respect to the manifold crossover opening. With the rib pointing toward the carburetors the crossover is open. With the rib parallel with the carburetors, the crossover is blocked and the exhaust gases cannot flow through the intake manifold. With the valves in the closed position, the exhaust manifold heat control valve spring should be disconnected.

**NOTE:** The choke valve must open when the engine is warm. It may be necessary to remove the choke rod and choke housing to insure the choke valve opening since, with the exhaust gases blocked off, the intake manifold may not reach a high enough temperature to relax the choke spring. The engine must be at operating temperature for best performance. The choke rod and housing should be reinstalled when top performance conditions are not required. It is recommended that the exhaust gases not be blocked off from the intake manifold at temperatures below 60°F as

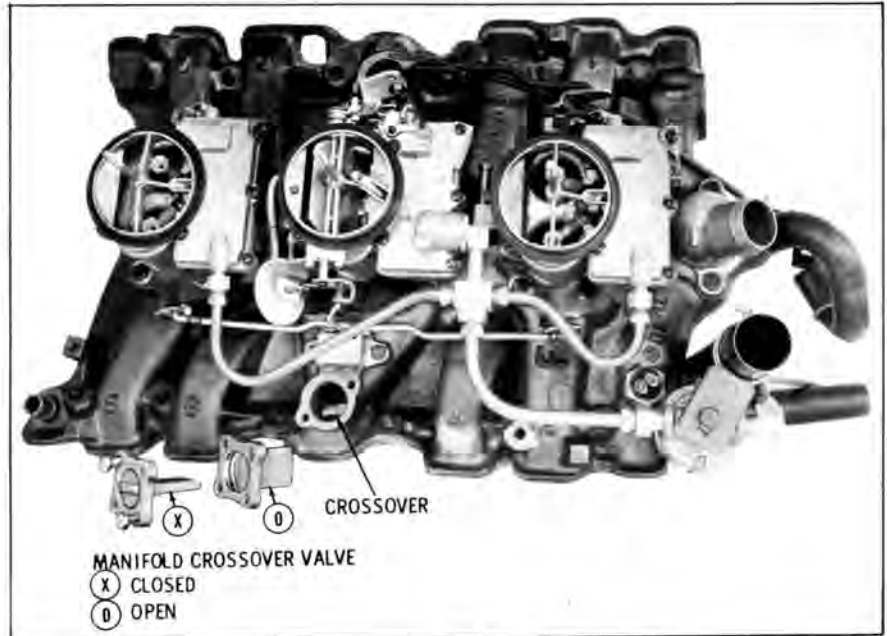


Fig. 8

this will result in poor performance.

**DISASSEMBLY AND ASSEMBLY**

The three carburetors can be disassembled and assembled using essentially the same procedure that is used for the standard model 2GC carburetor. Operations pertaining to the choke, idle and part throttle systems are not used on the front or rear carburetors. When parts replacement is required, refer to Parts Catalog for correct parts usage.

**ADJUSTMENTS  
FLOAT LEVEL ADJUSTMENT  
(ALL CARBURETORS)**

1. Remove air horn and gasket from carburetor bowl.
2. With air horn inverted and

gasket in place, measure float level as shown in Fig. 9.

3. Dimensions from the sharp edge of the float seam to the air horn gasket should be as follows:

All Carburetors—20/32" ± 1/32"

**FLOAT DROP ADJUSTMENT  
(ALL CARBURETORS)**

1. Position air horn so the float can hang free.

2. Measure the distance from the air horn gasket surface to the lowest point of the float, see Fig. 10. Dimension should be 1 3/4".

3. If necessary to adjust, bend tang at rear of float toward needle seat to decrease float drop and away from needle to increase float drop.

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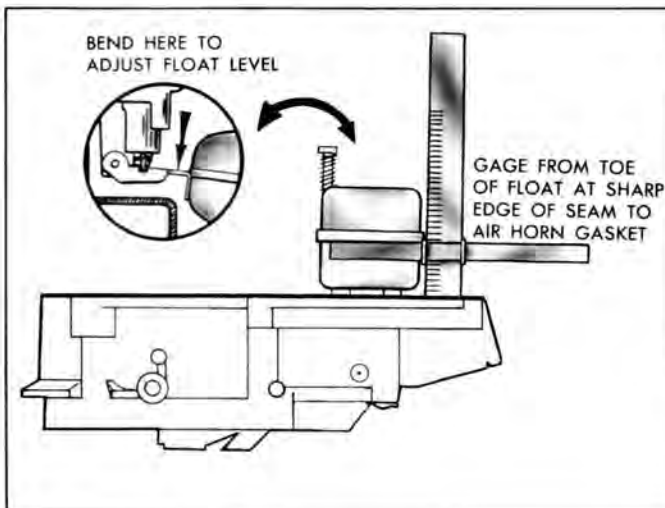


Fig. 9

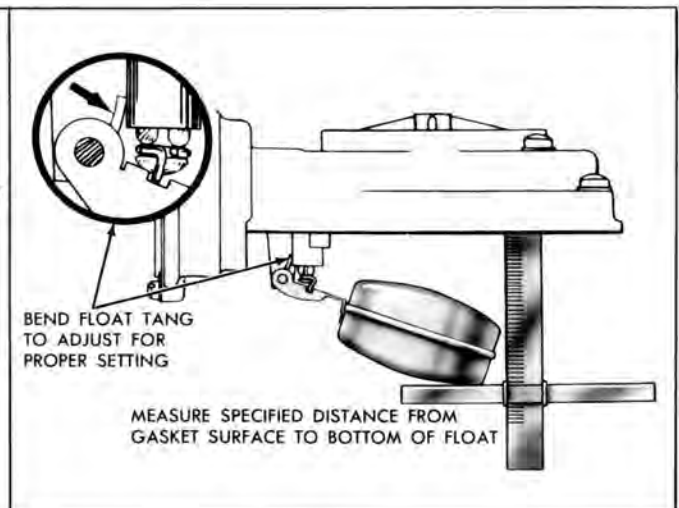


Fig. 10

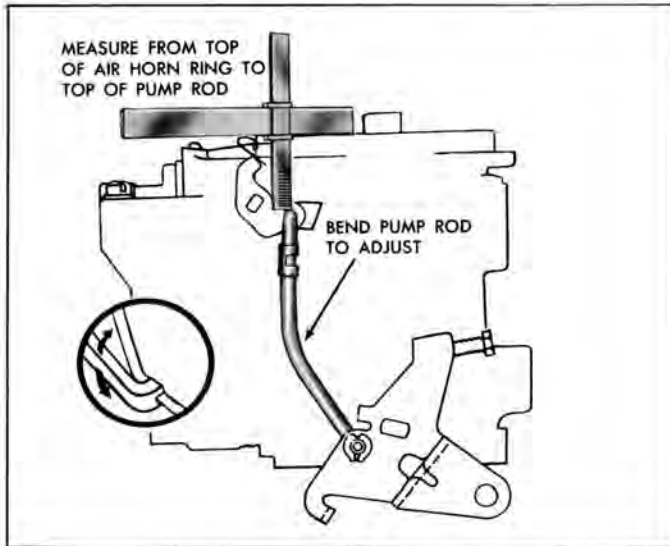


Fig. 11

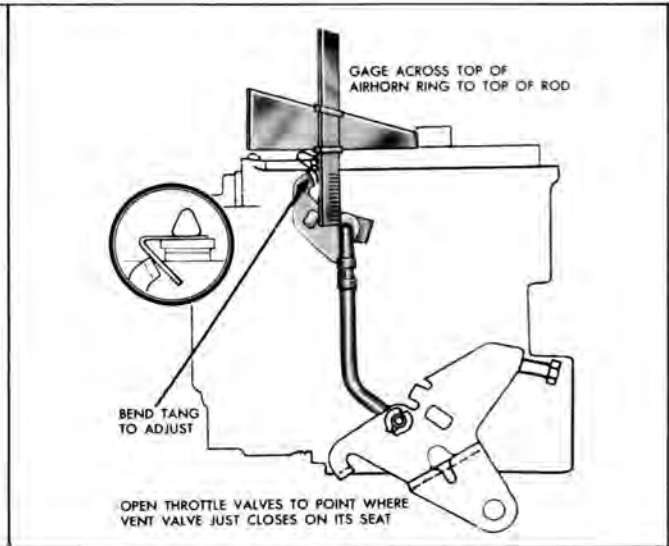


Fig. 12

**TRI-CARB ADJUSTMENTS** (Continued on Page 15)

**PUMP ROD ADJUSTMENT (ALL CARBURETORS)**

1. Back off idle speed adjustment screw on center carburetor until throttle valves are completely closed.

NOTE: When checking pump rod adjustment on any of the three carburetors, the throttle valves must be completely closed.

2. With throttle valves closed, check distance from top of air horn ring to the top of the pump rod, see Fig. 11. Dimension should be as follows:

Center Carburetor —  
1-10/32" ± 1/32"

Front or Rear Carburetors —  
31/32" ± 1/32" (Pump Rod in

Inner Hole)

3. If necessary to adjust, bend lower section of pump rod to obtain correct dimension as shown in Fig. 11.

**IDLE VENT VALVE ADJUSTMENT (CENTER CARBURETOR)**

Before making the atmospheric idle vent valve adjustment, the pump rod adjustment must be checked and adjusted as required.

1. Slowly open the throttle valves to a point where the idle vent valve just closes.

2. With throttle held in this position, measure distance between top of air horn ring and top of pump rod. This dimension should be 1-9/32" ± 1/32".

3. To adjust, bend vent valve actuating tang on the pump lever up or down to obtain specified dimension, Fig. 12.

**VACUUM BREAK ADJUSTMENT (CENTER CARBURETOR)**

1. Disconnect vacuum line from vacuum break diaphragm.

2. Position a length of vacuum hose on the vacuum break diaphragm. Apply vacuum to the vacuum diaphragm until diaphragm is fully retracted.

3. Push choke valve closed until vacuum break control rod is at the end of the slot in the choke shaft lever, see Fig. 13.

4. In this position there should be .260" clearance between the up-

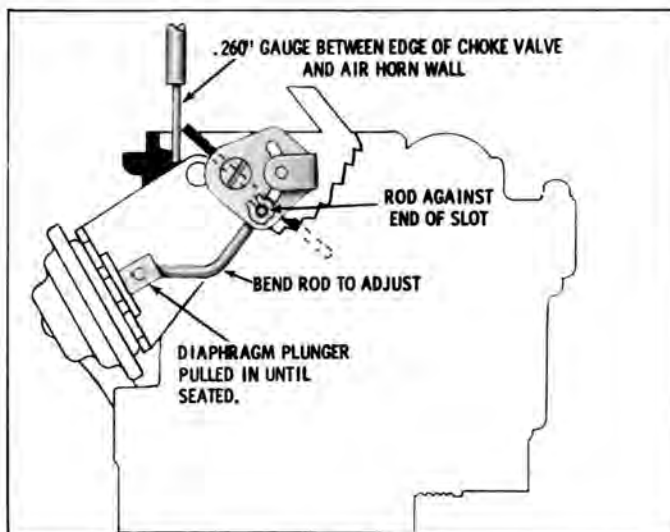


Fig. 13

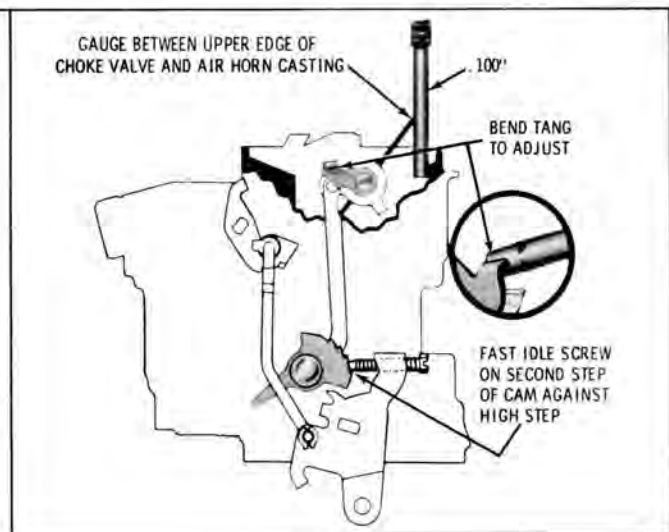


Fig. 14



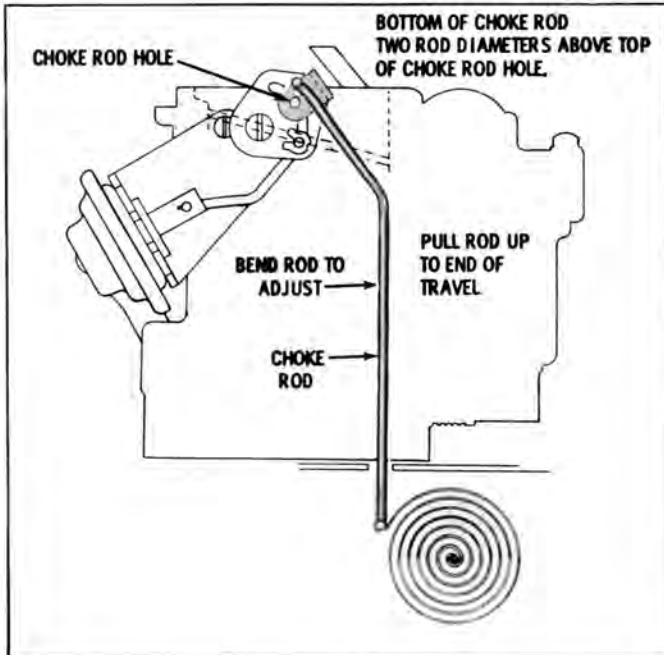


Fig. 15

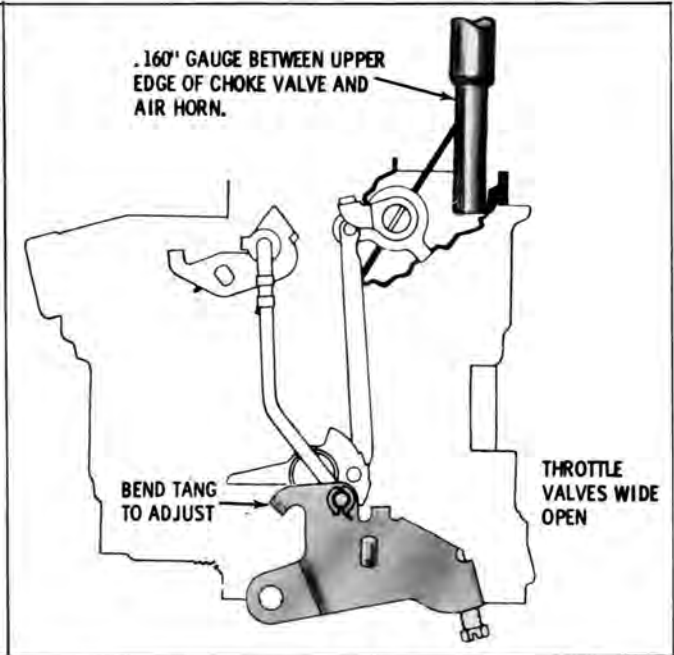


Fig. 16

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per edge of the choke valve and the inside wall of the air horn casting. Bend rod as shown if adjustment is necessary.

**CHOKEROD VALVE ADJUSTMENT (CENTER CARBURETOR)**

1. Turn the fast idle screw until it just contacts the second step of the fast idle cam.
2. With the fast idle screw on the second step and against the high step of the fast idle cam, hold the choke valve toward the closed position, Fig. 14.
3. There should be .100" clearance between the edge of the choke valve and the air horn wall.
4. If necessary to adjust, bend choke lever tang to obtain correct dimension.

**THERMOSTATIC COIL ROD ADJUSTMENT (CENTER CARBURETOR)**

To adjust, disconnect upper end of choke thermostatic coil rod from choke lever. Hold choke valve completely closed and pull upward on thermostatic coil rod to limit of its travel. The bottom surface of rod end should be 2 rod diameters above top of hole in choke lever, Fig. 15. To adjust, bend rod.

**UNLOADER ADJUSTMENT**

With throttle valves held wide open (preferably by helper sitting in diver's seat and depressing accelerator pedal), the choke valve

should be open enough so that gauge will fit freely between wall of air horn and choke valve, see Fig. 16. Choke valve must be held toward the closed position when checking dimension. Bend unloader tang on throttle lever to adjust. The adjustment specification is .160" ± .020".

**THROTTLE-ACTUATING ROD ADJUSTMENT**

(Front and Rear Carburetors) Disconnect throttle-actuating rod from rear carburetor. With both throttle valves closed on front and

rear carburetors, the rod should center in slot in rear throttle lever, see Fig. 17. Bend throttle rod to adjust. Connect throttle rod after adjustment.

**SLOW IDLE ADJUSTMENT**

With the engine at normal operating temperature and air cleaner removed, adjust slow idle.  
 Without A.C. — 600 R.P.M.  
 With A.C. (A.C. Off) — 700 R.P.M.  
 After the idle rpm is stabilized, turn in or out on each idle adjusting

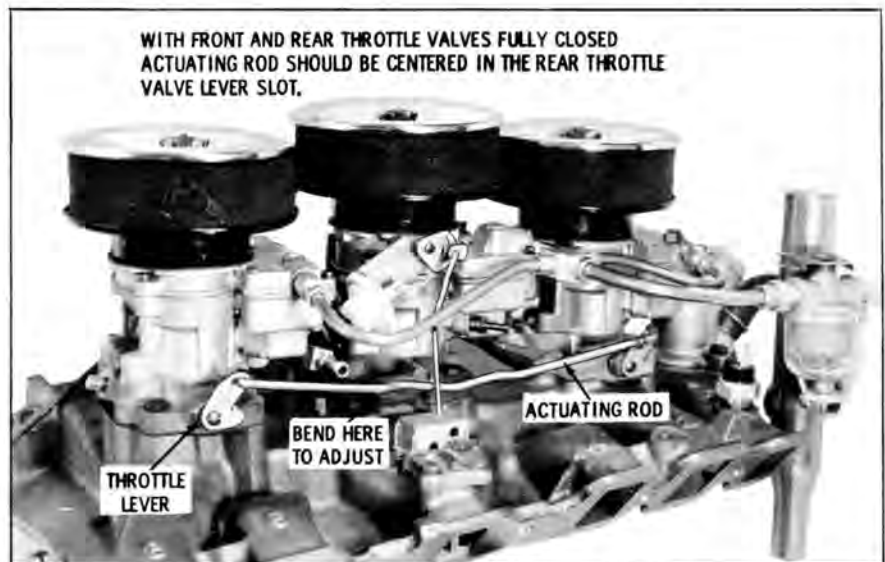


Fig. 17

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screw until the smoothest possible idle is obtained. This is normally accompanied by a higher manifold vacuum reading and/or an increase in idle rpm. Then turn out each needle  $\frac{1}{8}$  turn, at which time both vacuum and idle rpm will drop off slightly. Tool BT-1000 can be used to turn idle mixture adjusting screw. Fig. 18.

**NOTE:** It may be necessary to readjust idle speed and mixture after air cleaner is installed on car.

When setting idle speed and mixture make sure the idle compensator is closed by holding it down with a pencil or other suitable tool. If the idle speed increases when the air cleaner is installed, do not reduce idle speed setting since the idle compensator is open. If idle speed decreases, readjust to correct rpm.

### CARBURETOR ROD ADJUSTMENT (PEDAL HEIGHT)

1. Adjust slow idle to correct specification.

2. Position the fast idle cam to allow the throttle return spring to hold the throttle lever in the slow

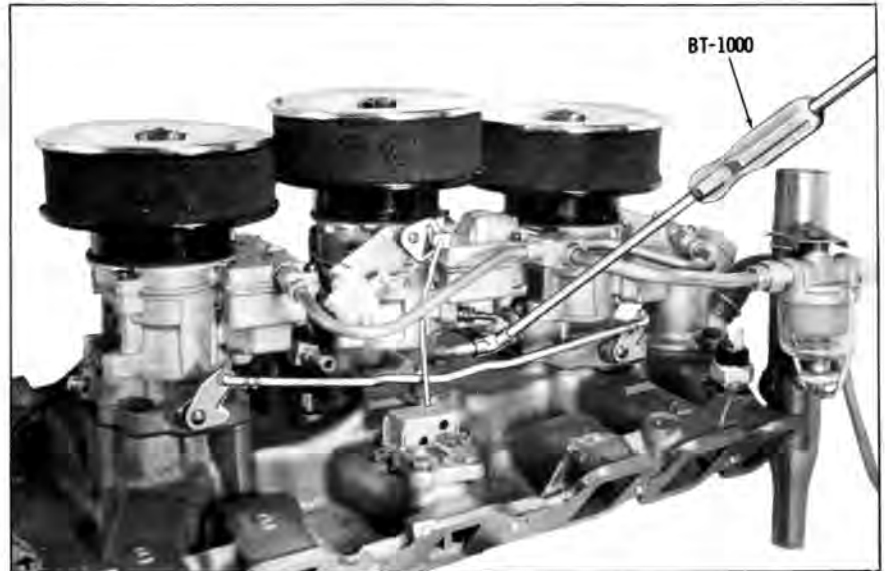


Fig. 18

idle position.

3. Using Tool BT-6506, adjust carburetor rod to obtain a dimension of  $4\text{-}5/16'' \pm 1/16''$  from a perpendicular on the floor pan under the accelerator pedal, to the center of the roller on the accelerator lever.

### AIR CLEANER MAINTENANCE

Each carburetor has its own in-

dividual air cleaner. The air cleaner is the non-disposable type. At every other oil change, more often under dusty conditions, remove the filter element, wash in Kerosene, dip in SAE 10W-30 oil and squeeze to remove excess oil. On installation, make sure gasket is in position before installing air cleaner.