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SERVICE Counselor

PACKARD MOTOR CAR COMPANY

APPROVED Packard SERVICE

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"WCFB Carburetor"

Model 985S

A new 4-barrel carburetor, known as the "WCFB" Carburetor, Model 985S, now is being installed on 2631, 2602, 2606 and 2626 Model Packards.

The 4-barrel carburetor provides the advantages of a compound installation of two 2-barrel carburetors in one compact unit. It is possible to use smaller venturis, leaner metering rods and jets when a carburetor only takes care of speeds up to approximately ¾ throttle opening. Greater throttle opening requires additional air and fuel which is supplied by the additional 2-barrels; therefore, the overall performance and efficiency are improved.

The 4-barrel carburetor is divided into a *primary section* and a *secondary* section.

The *primary section* is composed of the 2-barreled forward half of the assembly. This section is essentially a complete 2-barrel carburetor containing a float system, low speed system, high speed and power system and accelerating system. This section also includes an accelerator switch for starting the engine and the climatic control (automatic choke) mechanism.

The *secondary section* includes the 2-barreled rearward half of the carburetor assembly. This section is essentially a supplementary 2-barrel carburetor which cuts in to assist the primary section when a greater throttle opening or a greater engine load is reached. This section contains a float system, low speed system with fixed jets (no idle adjusting screws) and a high speed system (no metering rods). It has a separate set of throttle valves.

The *primary* throttle valves are operated by the accelerator pedal and the connecting throttle linkage. The *secondary* throttle valves are operated by the primary throttle valve shaft through delayed action linkage which permits an approximate ¾ opening of the primary valves before the secondary valves start to open. The geometry of the linkage then causes both sets of throttle valves to reach the wide open position at the same time.

In general, this carburetor is serviced in practically the same manner as the "WGD" unit, however, a number of adjustments differ. The following paragraphs describe the adjustments necessary to service the 4-barrel carburetor. To disassemble the carburetor for cleaning and adjusting, follow the procedure outlined. *It is important that the following adjustments be performed in the exact sequence given:—*

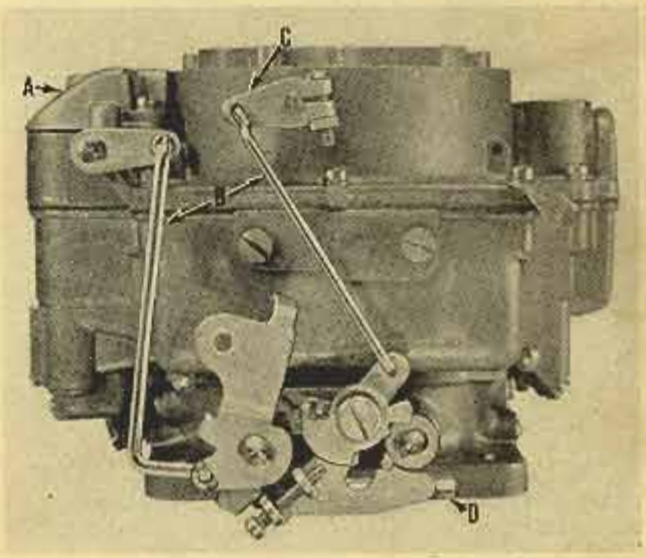

Fig. 1

1. Remove the metering rods dust cover, "A," Fig. 1. Disconnect the metering rods from the vacumeter link by using a scratch awl or a pointed instrument and pushing outward on the eye of the rod and then extract the rod.

Unsnap the clips and remove the choke rod and the accelerator pump rod, "B," Fig. 1. Do not loosen or remove the choke shaft lever, "C," Fig. 1.

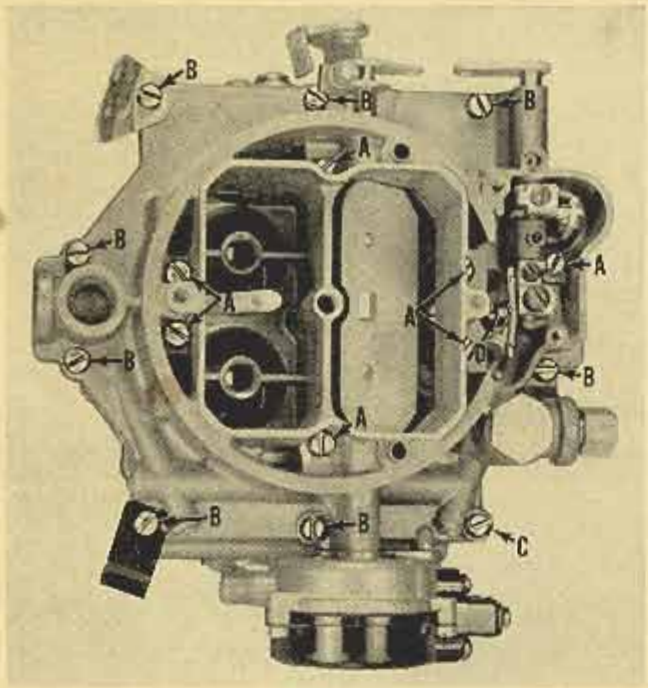

Fig. 2

Remove the air horn and floats assembly. *Note:* 7 long screws, "A," 8 short screws, "B," and 1 medium length screw, "C," attach the air horn to the carburetor main body as indicated in Fig. 2.

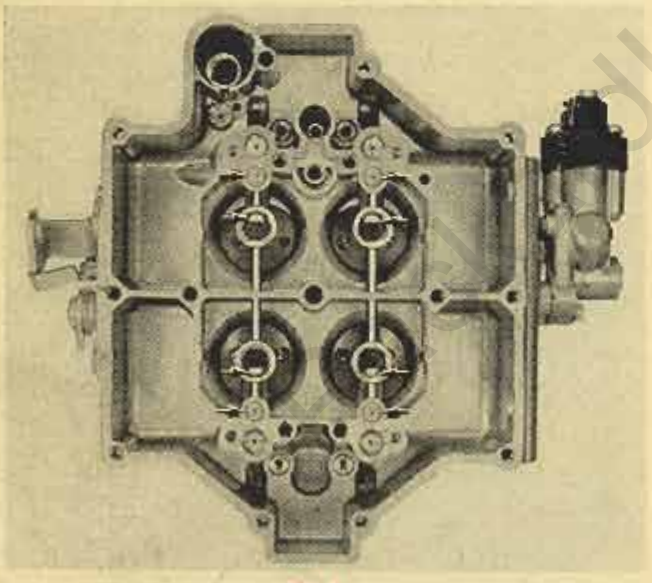

Fig. 3

CAUTION: Under no circumstances should the discharge nozzles or the anti-percolator well plugs be removed when servicing this carburetor, indicated by "Arrows," in Fig. 3.

2. Float Settings: Do not mix up the floats or float needles from one side to the other as float needles and seats are mated and flooding may occur if the needles are not installed in their original seats. Both floats are set to the same measurements, and adjustments are made in the same manner. The float level adjustment is made with the bowl cover (air horn) gasket removed.

A. Float Level: Place float level gauge, Tool No. T109-236 in position as shown. Both floats

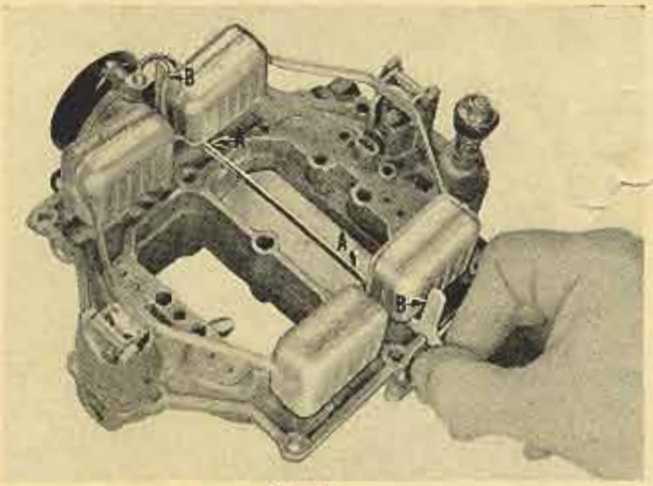

Fig. 4

should just clear the horizontal section of the gauge, "A," Fig. 4 (vertical distance between top of float and machined surface of casting is 5/32" Bend float arms as required, Fig. 5.

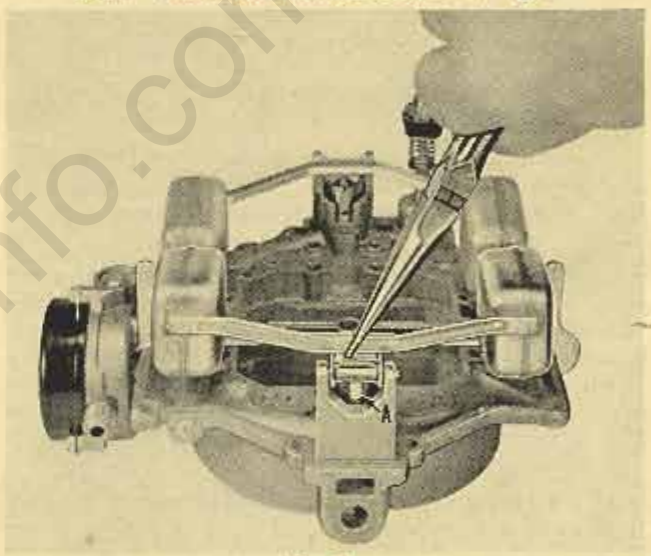

Fig. 5

B. Float Alignment: With gauge in position, the float arms should be bent for sideways adjustment until floats just clear the vertical uprights of the float gauge, "B," Fig. 4.

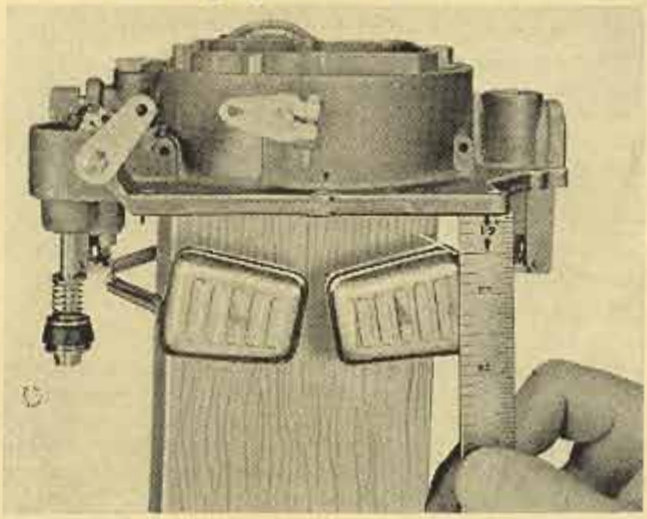

Fig. 6

C. Float Drop: With the bowl cover (air horn) supported in an upright position, the distance from the machined surface of bowl cover to the top of the both floats should be ½", Fig. 6. Adjust as necessary by removing float and bending the small tang which contacts the float needle seat, "A," Fig. 5. Bend tang toward needle seat to lessen drop, or away from seat to increase drop.

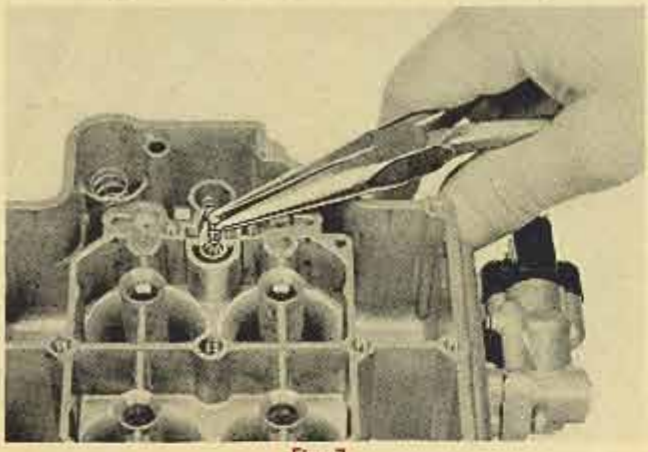

Fig. 7

Be sure to install the accelerator pump check needle as shown in Fig. 7, before installing the pump jet gasket, jet housing and retainer screw. Install a new bowl cover gasket, "A," Fig. 8. IMPORTANT: *Vacumeter link must be installed with lip toward air horn.* (See "D," Fig. 2.) Attach the vacumeter piston to the vacumeter link "B," Fig. 8, carefully start the accelerator pump plunger in its bore, "C." Install the bowl cover assembly to the carburetor body, and secure it with the screws, "A," "B," "C," Fig. 2.

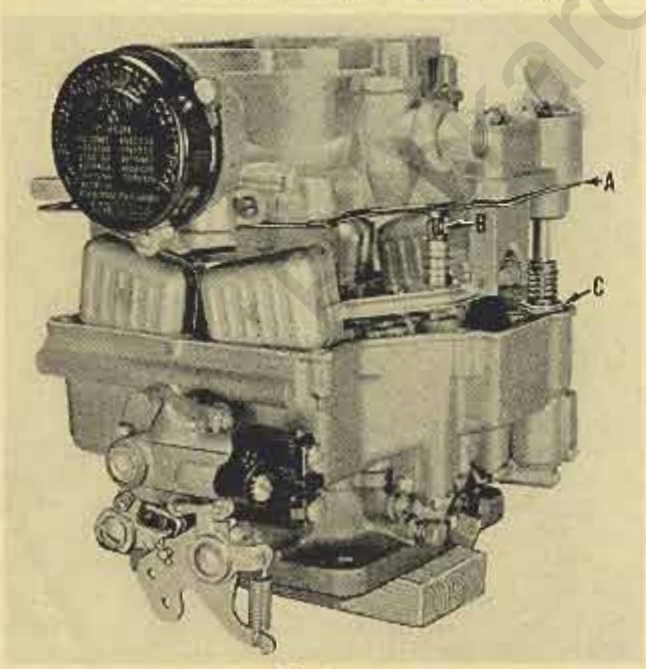

Fig. 8

3. Accelerator Pump Adjustment:

A. Block choke valve open with cardboard, "A," Fig. 9.

B. Back off idle speed screw, "D," Fig. 1, approximately two turns so that the throttle valves seat in the bores of the flange body. Be sure pump

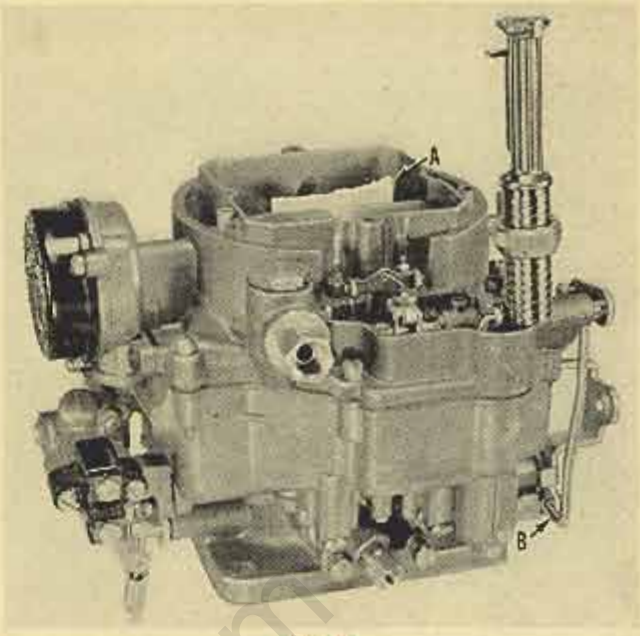

Fig. 9

connector link is in outer hole (long stroke) of pump arm.

C. Place the universal pump travel gauge T109-117S on the edge of the dust cover flange of the bowl cover as shown in Fig. 9. Turn the knurled nut on the gauge until the finger at the end of the gauge extension just touches the top of the plunger shaft. The number indicated on the gauge should be "29" which represents a distance of 9/32" from the top of the plunger shaft to the top of the flange. Adjust by bending the throttle connector rod at the lower angle, "B," Fig. 9, using bending Tool T109-75.

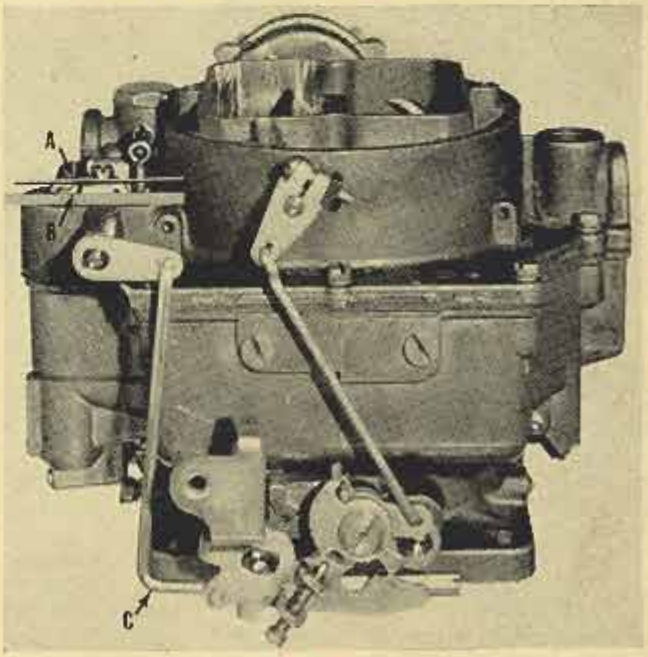

Fig. 10

Optional accelerator pump adjustment:

A. and B. same as previously described.

C. Hold straight edge across top of dust cover boss at pump arm. The flat on top of pump arm,

"A," Fig. 10, should be parallel to straight edge, "B," Fig. 10. Adjust by bending throttle connector rod at lower angle, "C," Fig. 10, using bending Tool T109-75.

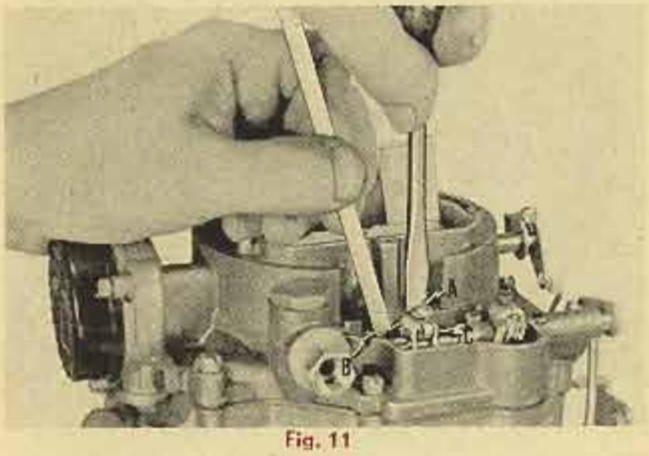

Fig. 11

4. Metering Rod Adjustment: *The metering rods must be adjusted after the pump adjustment has been made.* First, loosen the clamp screw, "A," Fig. 11. With the idle speed screw backed out and the throttle valves seated in the bores of the flange body, press down on the vacumeter link with a scale, "B," or small screw driver until the metering rods bottom. While holding the rods in this position, revolve the clamp, "C," forward away from the air horn until lip of clamp contacts the vacumeter link, then tighten the clamp screw. To check for proper metering rod adjustment, hold the vacumeter link and rods at their bottomed position and open the throttle. There should be no lost motion before the link and rods move upward when the throttle lever is moved from its closed position. Install the dust cover using a new gasket.

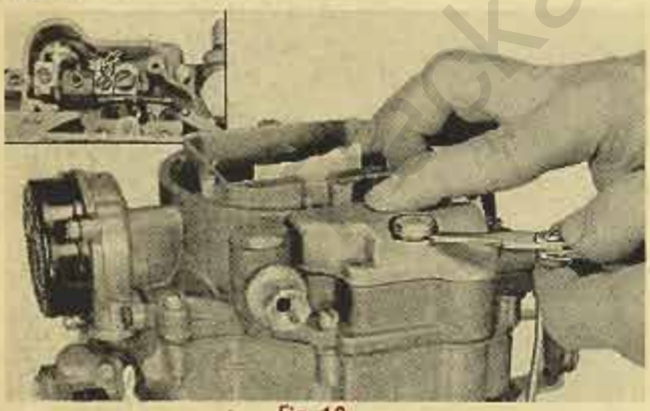
Fig. 12

5. Bowl Vapor Vent Adjustment: With the throttle valves closed and the choke blocked open, the vapor vent should open .094". Using a feeler gauge, measure between the metering rod dust cover and the lower edge of the vapor vent cover, Fig. 12. Adjustment of the vapor vent valve can be made by bending the tang on the vapor vent arm, "Insert Fig. 12."

6. Fast Idle Adjustment:

A. Loosen choke lever clamp screw on choke shaft, "A," Fig. 13. Insert .020" wire gauge Tool No. T109-29 between lip of fast idle cam and boss of

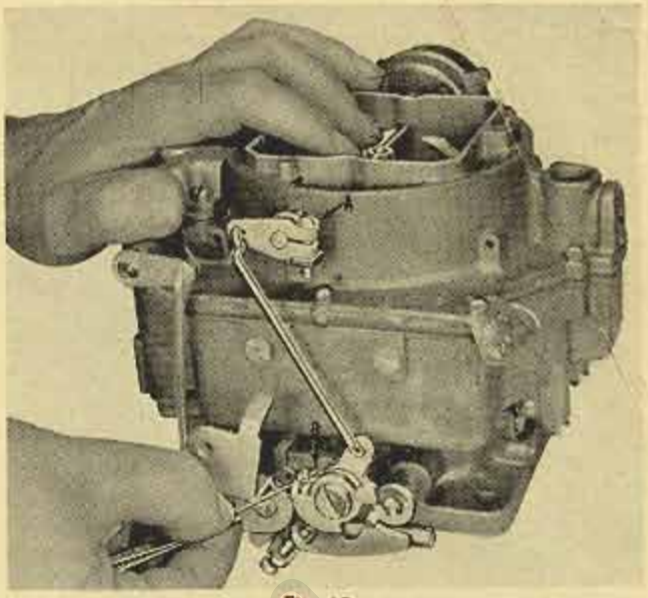

Fig. 13

flange casting, "B," Fig. 13. Hold choke valve tightly closed and take slack out of linkage by pressing choke lever toward closed position, hold in place and tighten clamp screw, "A."

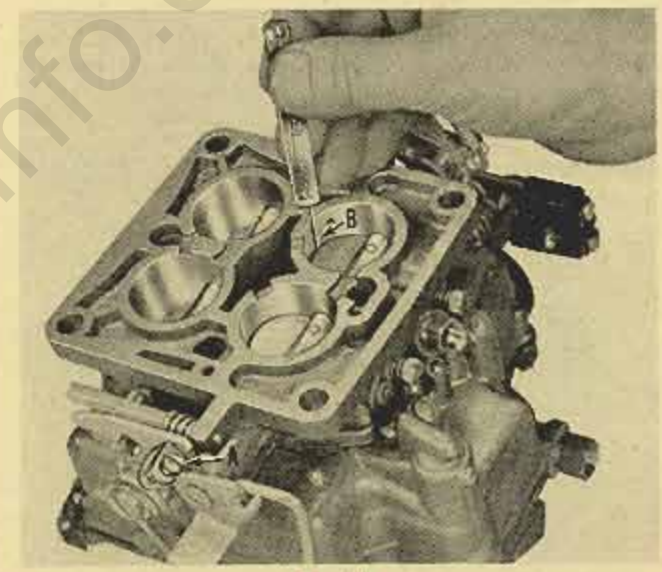

Fig. 14

B. With choke valve tightly closed, adjust fast idle adjusting screw, "A," Fig. 14, until a .020" wire gauge Tool No. T109-29 can be inserted between the rear side of the primary throttle valves and the carburetor body bore, "B," Fig. 14. Be sure fast idle adjusting screw is on high step of cam while making this adjustment.

7. Unloader Adjustment: First hold the choke wide open, then push the throttle wide open, Fig. 15, release the choke so it will close. While holding the throttle wide open, there should be 9/32" clearance between the upper edge of the choke valve and the inner wall of the air horn. Use gauge T109-126 to measure the 9/32" clearance, "A," Fig. 16. Bend unloader lip, "B," Fig. 16 to get the proper choke valve clearance. Use Bending Tool T109-41 to bend the lip.

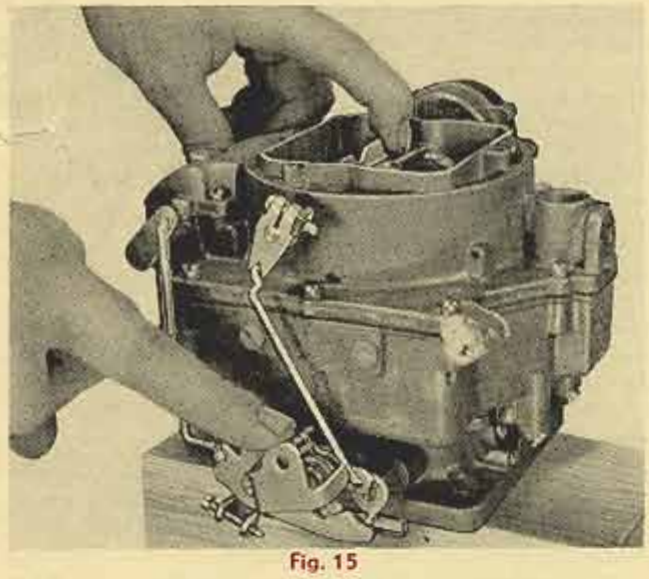

Fig. 15

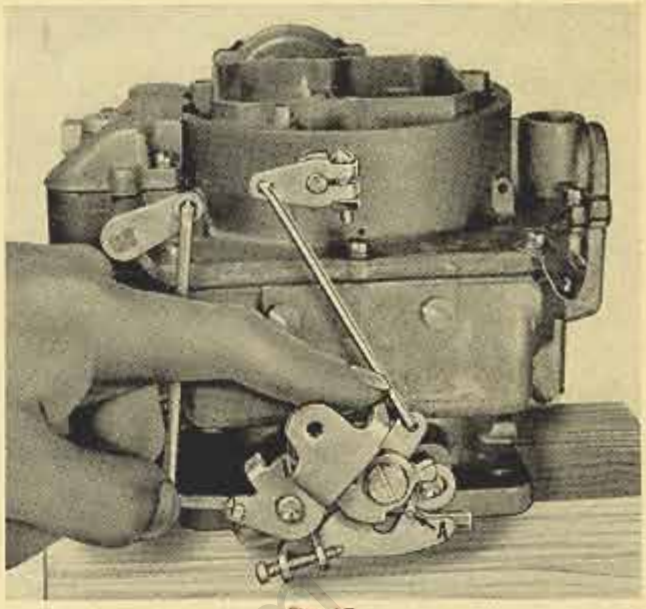

Fig. 17

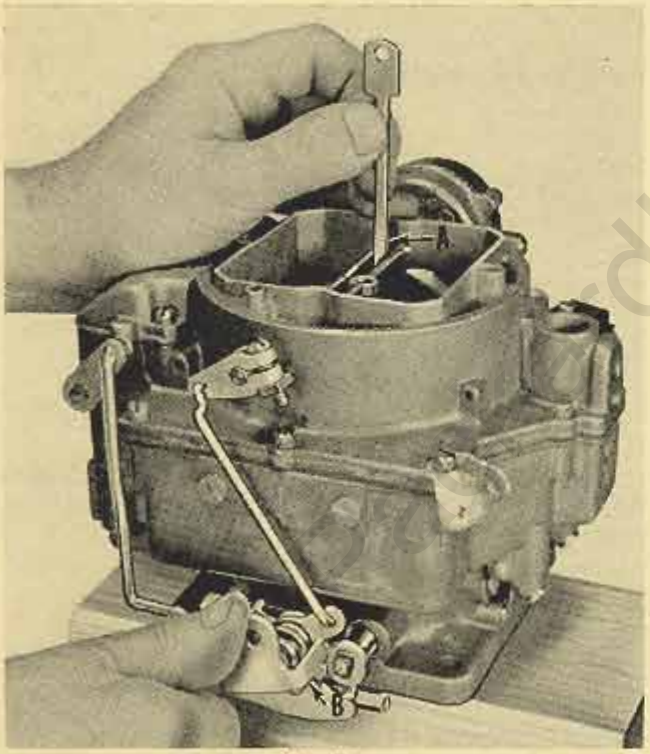

Fig. 16

8. Secondary Throttle Lock-out Adjustment: The secondary lock-out, "A," Fig. 17, is provided to prevent the possibility of opening the secondary throttle valves with the choke closed or partially closed with a cold engine.

A. With choke valve held tightly closed, open primary throttle valves all the way. Tang "A," Fig. 17, on secondary throttle arm should engage in notch on lock-out lever preventing secondary throttle shaft movement.

B. Hold choke valve in wide open position. Open primary throttle valves all the way. With carburetor in up-right position, the lock-out lever should fall free allowing secondary throttle valves to be opened before primary throttle valves are fully open. If necessary, bend tang "A," Fig. 18, on secondary throttle lever to provide clearance for proper operation of lock-out lever.

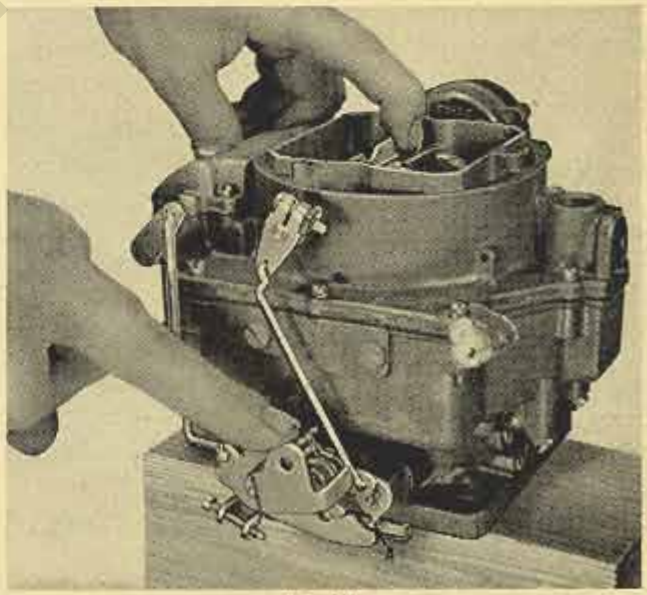

Fig. 18

9. When installing the choke thermostatic coil and housing, the baffle plate should be installed ahead of the gasket.

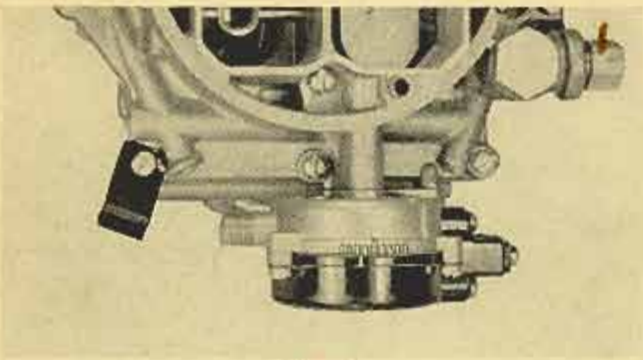

Fig. 19

The choke thermostat housing should be set 1½ points rich as indicated in Fig. 19.

Fig. 20

10. Fig. 20 shows an exploded view of the starter switch and is installed as shown. The switch plunger must be installed with the milled groove upward.

WCFB Carburetor Tools

2602-06-26-31

Two additional tools are required to service the 4-barrel "WCFB" carburetor: Float Level Gauge—Unloader Adjustment Gauge.

These tools are new to the carburetor line of tools and should be ordered to complete the carburetor tool set. They are definitely required in order to properly adjust the "WCFB" Model carburetor.

These tools should be ordered direct from the Kent-Moore Organization, Inc., General Motors Bldg., Detroit 2, Michigan, as listed:

J5509 Float Level Gauge—Carter No. T109-236, Price $0.35

J5510 Unloader Adjustment Gauge, 9/32"—Carter No. T109-126, Price $0.25

Loose Support Arm Pins and Bushings

Numerous front suspension support arm pivot pins and bushings are being returned for credit because of being loose, noisy, etc.

Inspection finds that out of several sets that were checked they were all within limits.

A clearance of .011" to .020" on the upper pin and bushing is to provide space for lubricant and free movement, while a clearance of .021" to .030" on the lower pin and bushing is to provide the necessary clearance for tilting the vertical support for caster adjustment, as well as space for the lubricant and free movement. Any clearance less than the above specifications is not desirable.

The pivot pin should rotate very freely in the bushing. The pin and bushing are designed so there will be a full bearing or thread contact only on the side which carries the load. The free side does not make contact due to the clearance between the threads of the pin and bushing. This space on the free side also acts as a reservoir for the lubricant which works itself around the pin as the load shifts.

Before replacing pins and bushing which might be noisy and the diagnosis is excessive clearance, it is suggested that the alignment, installation, and lubricant be checked as described in your Service Manual, under "Suspension and Steering". Be sure to check the spread of the support arms as described in the manual as this is very important and will cause pin and bushing noise. It is also important when lubricating the front suspension that the weight be taken off the wheels so that the lubricant can be forced completely around the threaded section of the pins and bushings.

Window Regulator Handle Escutcheon Plate

Models 2692-62-72-95-65

A recent alteration, now effective in production, increased the diameter of the escutcheon plate hole to prevent the escutcheons from turning with the handles which in some instances have damaged the trim.

The diameter of the escutcheon plate hole has been enlarged $\frac{1}{32}$" on both the door lock remote control handles and window regulator handles.

A correction can be made in the field by removing the escutcheon plates and enlarging the hole $\frac{1}{32}$" by using a reamer, a round file or a bearing scraper.

Easamatic Power Brake Air Cleaner

Recently a change was made in the location of the Easamatic Brake Power Unit Air Cleaner. It is now attached to the outside of the vacuum cylinder body thus eliminating one hose and two clamps.

Some of the last production 25th Series cars were equipped with the 26th Series Easamatic power unit having the air cleaner mounted on the vacuum cylinder body.

When ordering service replacement parts, use the 26th Series listing for the 25th Series cars that are equipped with a power unit having the air cleaner attached.

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