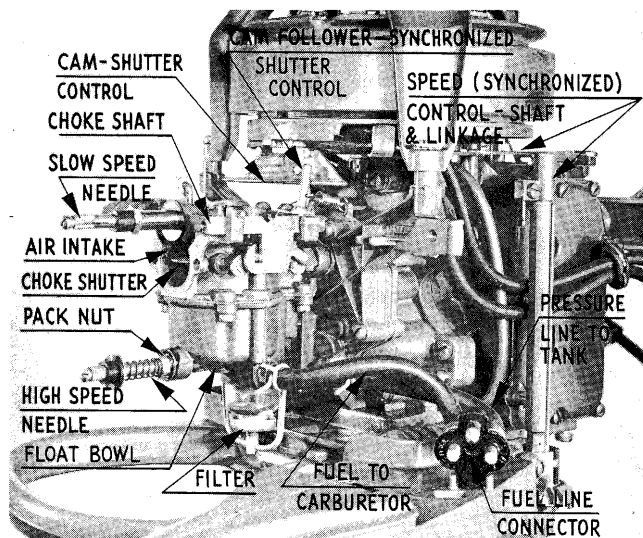


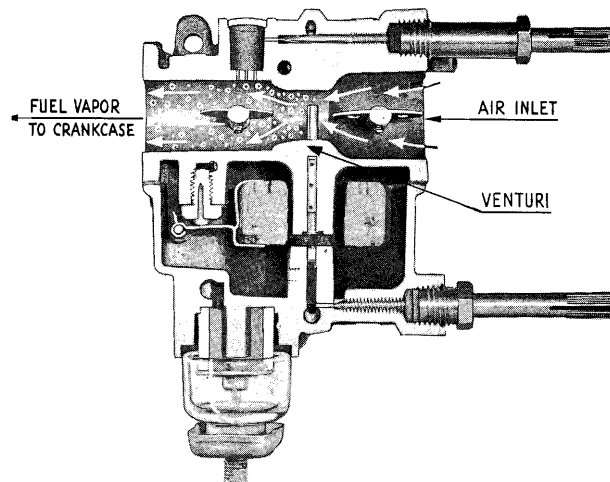


**CARBURETOR — MODELS CD AND AD**

Carburetion built into the Models CD and AD assembly is identical in principle to that used in the JW, QD, and the RD. Except for minor details in construction, functioning is similar, employing two carburetor adjustments to achieve efficient carburetion throughout entire speed range of the motor (high and slow speed), reed type of fuel vapor intake valve to the crankcase, synchronized shutter control (spark-gas), manually operated choke and a fuel filter attached as an integral part of the carburetor float body casting. Fuel supply is by means of pressurizing the Mile Master Tank.



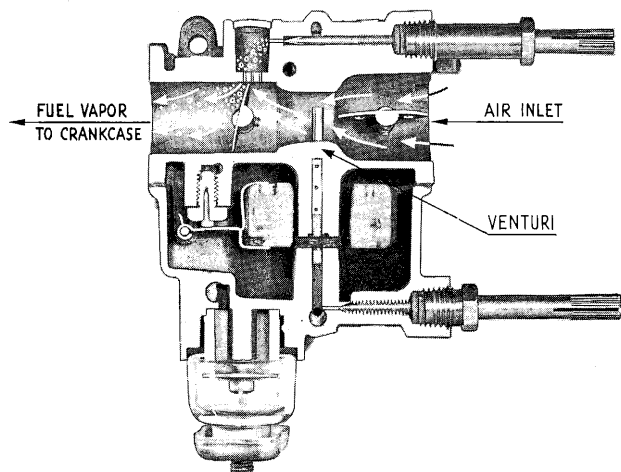
trol mechanism — Spark and fuel vapor (gas) are synchronized to obtain correct volume of fuel charge with relation to degree of spark advance to obtain maximum efficiency and over-all performance throughout speed range of the motor — slow, intermediate and high speeds, and during moments of rapid acceleration — deceleration.



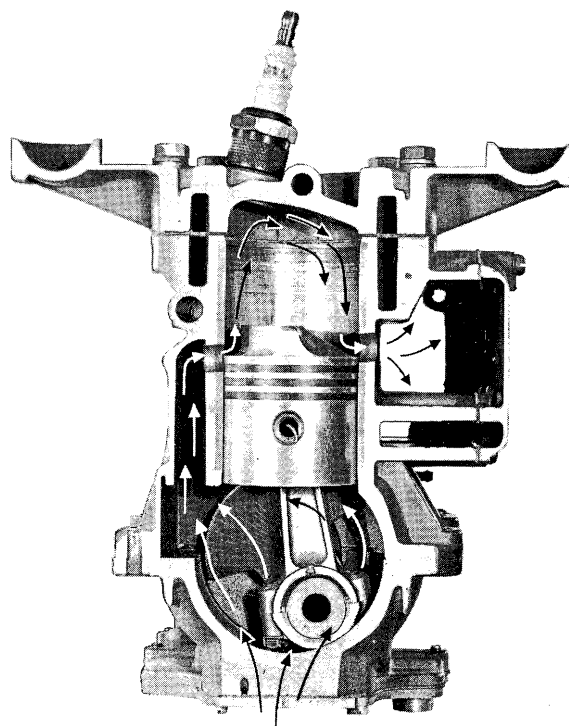
Sectionalized view of mixing chamber—butterfly shutter full open for high-speed performance. Note maximum fuel vaporization at the high speed jet with a minimum of vaporization at the slow speed jets. Also effect of restriction caused by the Venturi ring to increase air velocity in area of the high speed jet.

**CARBURETOR INSTALLATION**

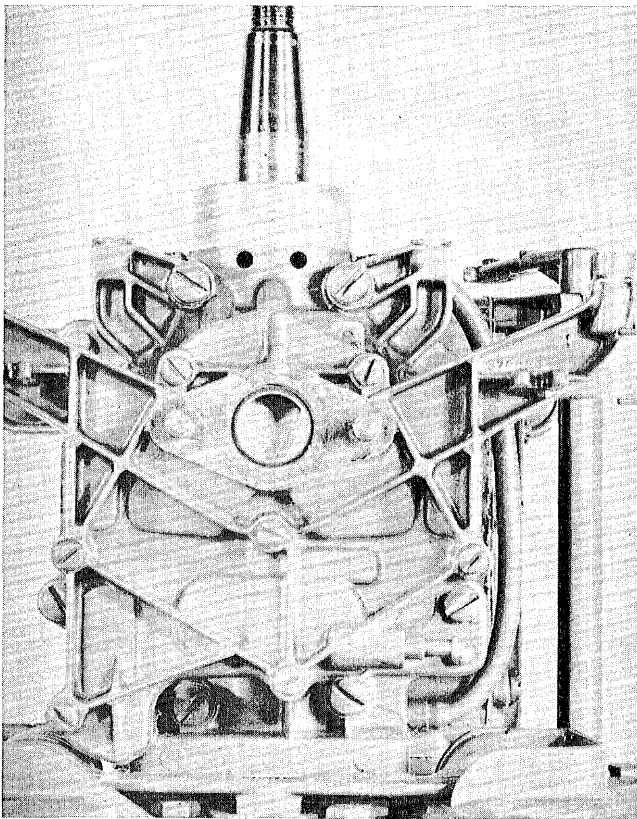
Shown above, carburetor and synchronizing con-



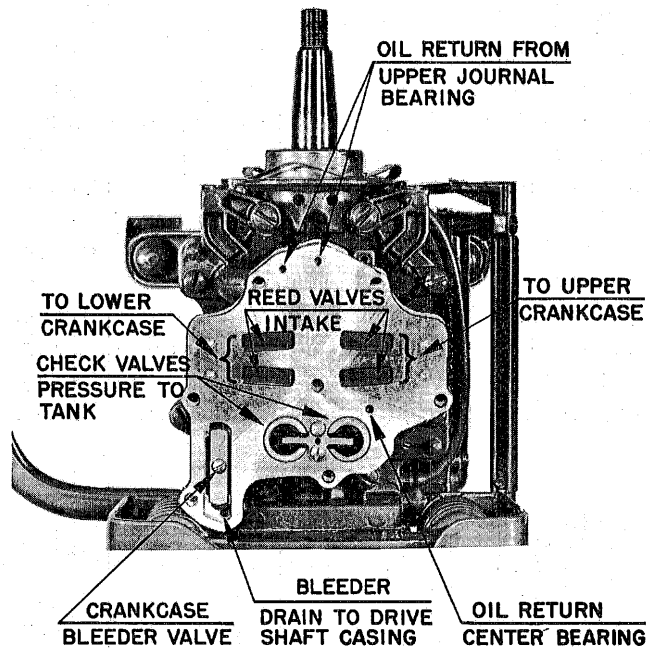
Sectionalized view of mixing chamber—showing butterfly shutter set for slow speed operation (closed). Note maximum fuel vaporization at slow speed jet—vaporization at high speed jet is nil.



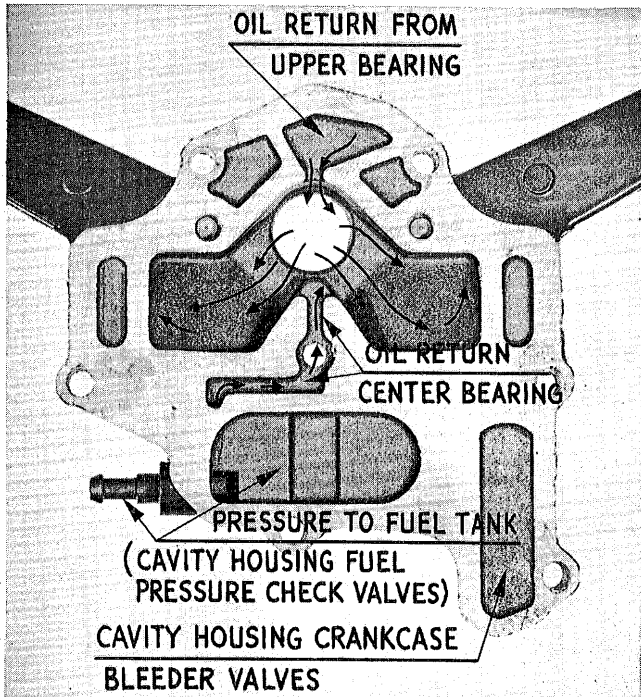
Showing path of fuel vapor as it progresses through the powerhead during completion of its cycle.



Carburetor removed to expose "Throat" in the intake manifold

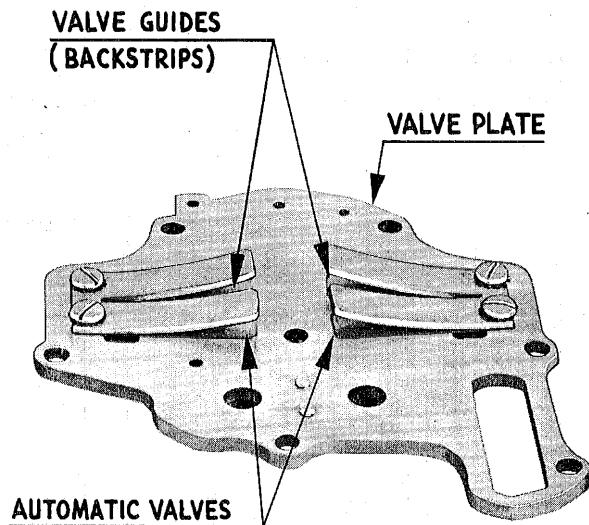


Shown here are carburetor and intake manifold detached to expose the valve plate, showing installation of the reed (automatic intake) valves, check valves — releasing crankcase pressure to the Mile Master Tank and crankcase bleeder valve arrangement employed for escape of "heavy" fuel vapor ends which settle out during slow speed running of the motor. See explanation on pages 173 and 174.



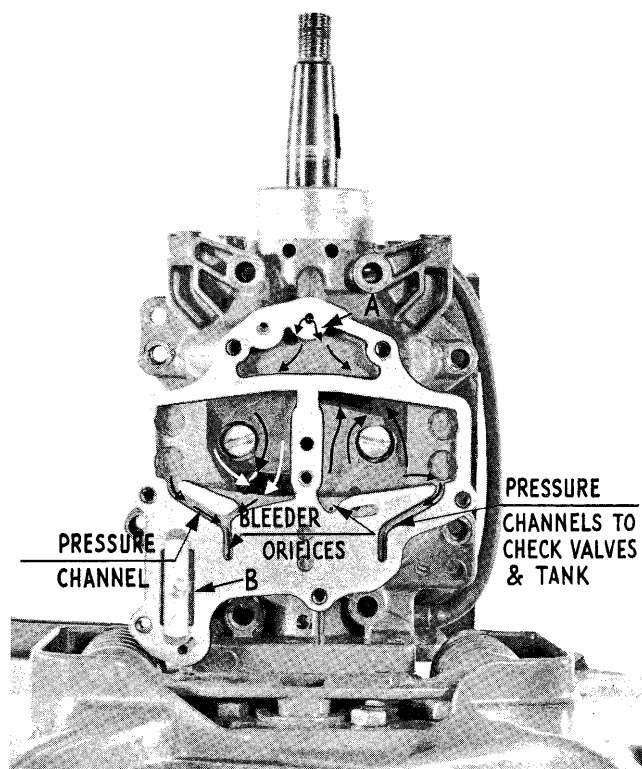
Illustrated above is back view of the intake manifold showing oil return channels leading into the manifold proper. Here, oil returning from the upper and center bearings enters the fuel-vapor stream to be conducted into crankcase chambers.

Shown also are cavities housing the fuel pressure check valves and crankcase bleeder valves.



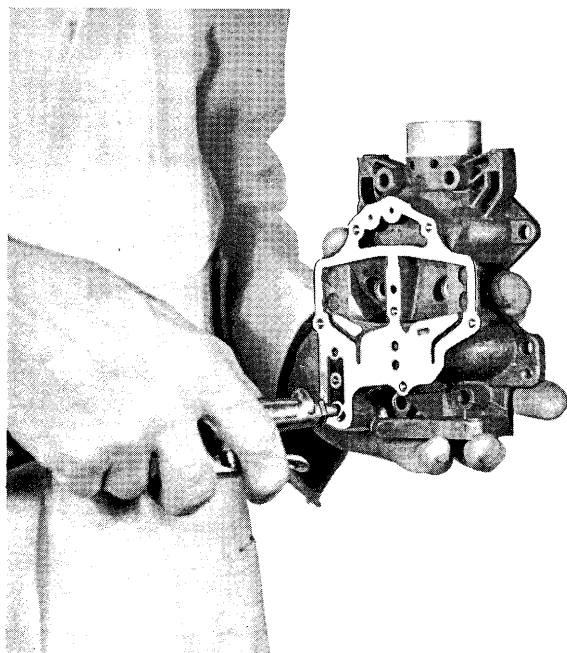
Back View of Valve Plate, Exposing the Automatic Valves and Guides (Back Strips).



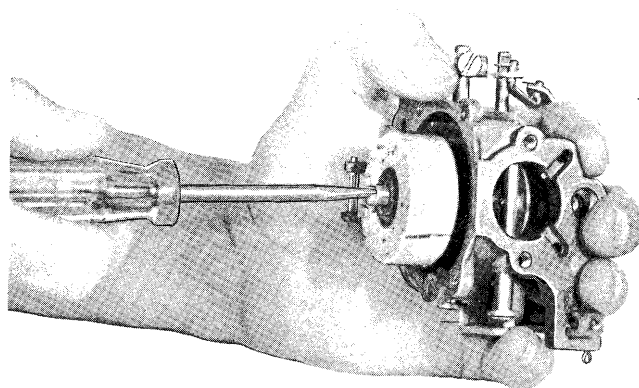


Above shows intake manifold and valve plate assembly removed to expose channels leading to upper and lower crank chambers — arrows indicate fuel-vapor entering each.

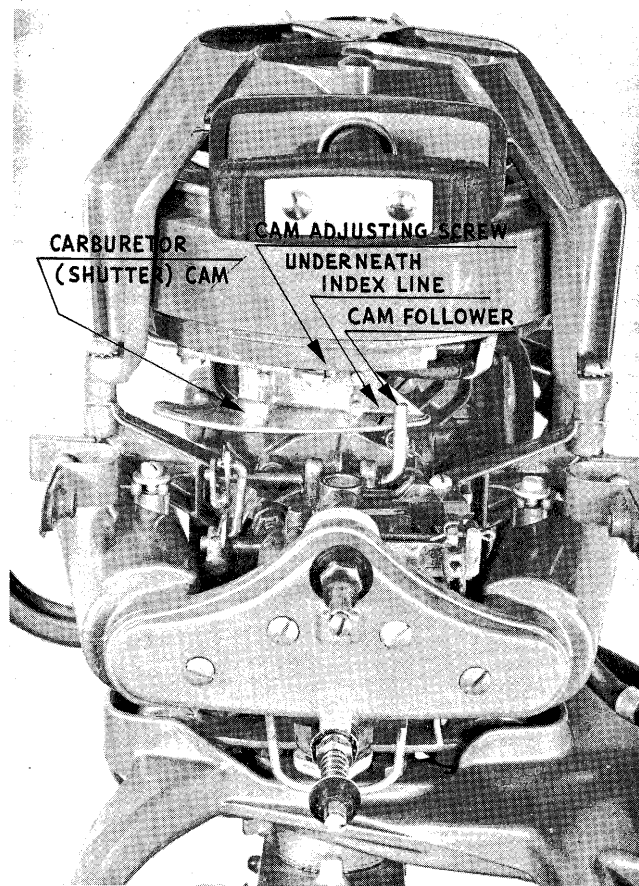
Small arrows A indicate oil return from the upper journal bearing where it flows through a corresponding hole in the valve plate to enter the fuel-vapor stream flowing through the intake manifold, re-entering the crankcase for further use. For explanation of check valves B, crankcase bleeder, see page 173.



Blowing out the Oil Bleeder Orifices.



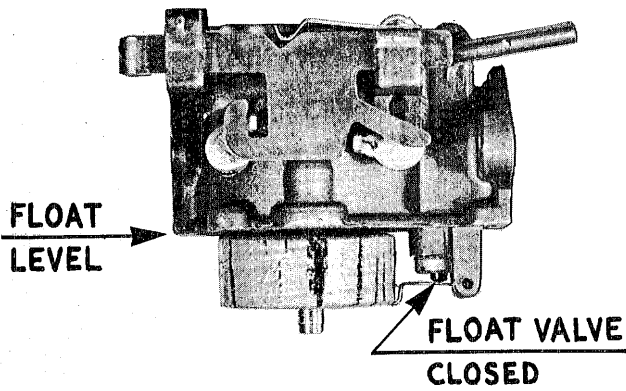
Removing the High Speed Jet



Spark and "gas" are synchronized by means of a cam and linkage arrangement for best motor performance shown above—some adjustment may be required. Note index line cast onto the cam and spring loaded cam follower. When properly adjusted, cam follower should "contact" or meet contour of the cam at point of the index line, but only after slack in linkage has been taken up with the carburetor shutter just on verge of opening. To adjust if necessary, loosen adjusting screw under the armature plate slightly (hole in cam is elongated), move "low" end of cam in or out as required to achieve correct indexing or contact of cam follower. Re-tighten adjusting screw. Carburetor shutter is closed when follower "rides" on low end of the cam—open at the "high" end for maximum top speed.



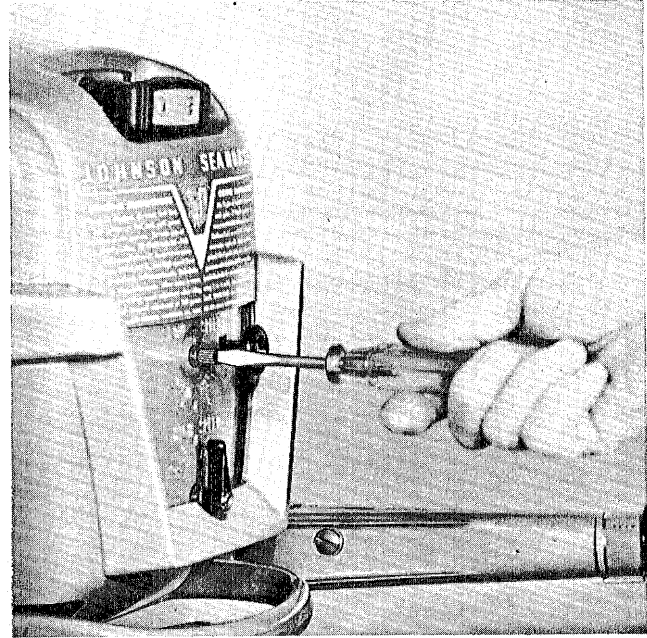
## CARBURETOR ADJUSTMENT



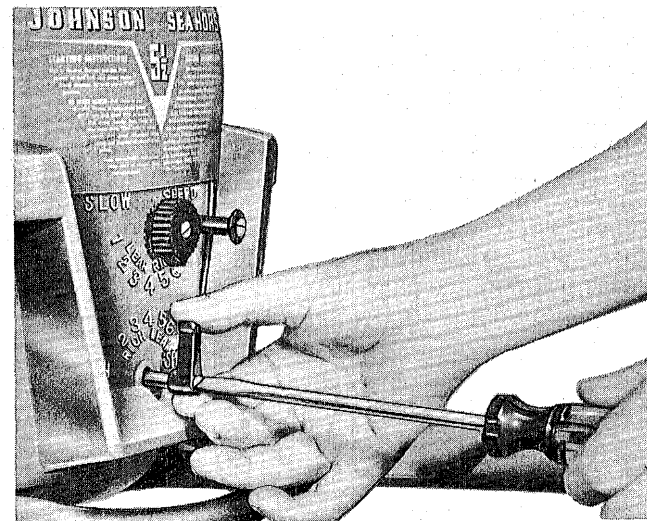
Maintaining correct fuel level in the float bowl is important to proper functioning of the carburetor throughout speed range of the motor. Since fuel level is controlled by the cork float acting on the float valve, some adjustment may be required in this respect. Fuel level is correct when top face of the float comes to rest "flush" with face of the carburetor body when turned up-side-down or as shown here.

In event the float is too high or too low, carefully bend the float arm up or down as required to obtain position indicated by arrow — Float level too high causes overflowing, "dripping" of the carburetor and/or sluggish motor operation; level too low results in faulty operation — in extreme instance, "spitting" back through the carburetor.

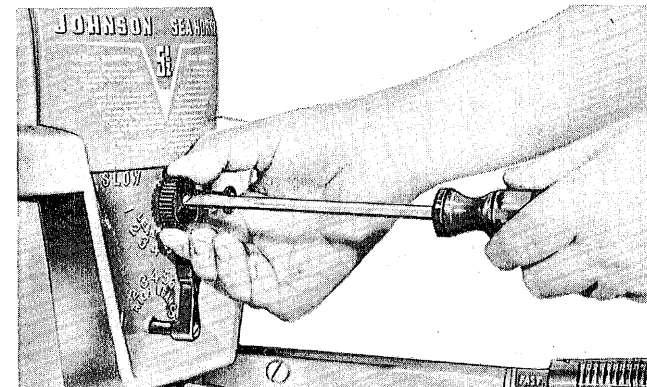
In either case, carburetor needle adjustment appears to have little effect.



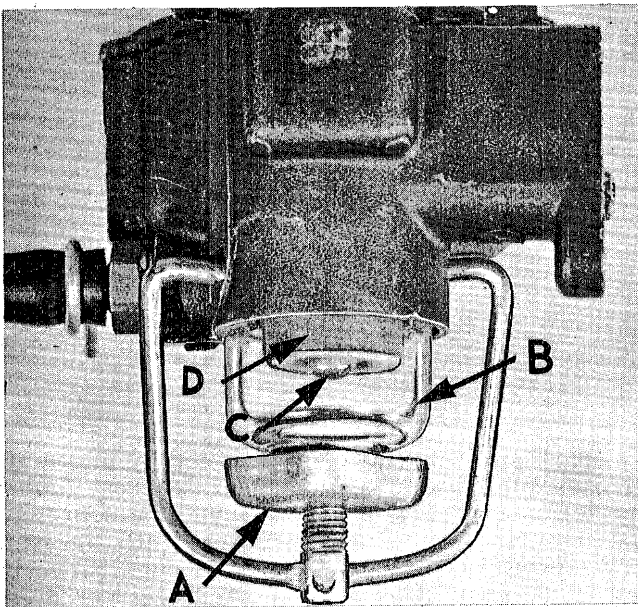
Adjusting needle setting with screwdriver prior to final placing of the slow speed dial and high speed lever.



Adjusting Position of High Speed Lever



Adjusting Position of Slow Speed Dial



Showing above filter assembly attached to the carburetor float bowl — To clean, loosen nut A; swing supporting bracket aside to permit removing the filter bowl B; remove screw C to free filter element D for cleaning. Wash the filter element free of foreign accumulation in vessel of clean gasoline. Replace and complete assembly in order reverse of that described above. Check condition of filter bowl gasket at this time to insure against fuel seepage later on—install new gasket if in doubt.





**CARBURETOR ADJUSTMENT — SLOW AND HIGH SPEEDS**

Both high and slow speed needles are adjusted at the factory on final assembly and testing, with a limited range for further adjustment provided the ultimate owner to compensate for local operating conditions such as temperature (atmospheric and water), atmospheric or barometric pressure (altitude), humidity, etc., which frequently require slight variations in needle settings. A boss or "stop" is cast on to the carburetor panel and a similar arrangement cast on to the back or inside of the slow speed adjusting knob which permits somewhat more than a half turn of the knob as and if required to achieve best performance—Note pointer on knob and numerals 1 to 7 on the control panel.

Similar provisions are made for compensating adjustment of the high speed needle for like reasons except that the limiting "stops" for the high speed adjusting lever are built into the cover—Note numerals 1 to 7 which limits adjusting to less than a half turn.

In event the carburetor has been "torn down" for cleaning and/or repairs, primary or initial adjustment will be required for both high and slow speed needles—best accomplished with the motor cover removed. Proceed as follows:

1. Note—that the slow speed knob and high speed lever are made fast to their respective needles by means of serrations on the slotted end of the needle as result of expansion when drawing up on the taper headed screw—remove both screws to gain access to slot at the extreme end of each needle.

2. Insert screw driver bit into slotted end of the high speed needle—turn right to close until the face of the pointed needle rests gently on its seat in the carburetor body (this is important, do not turn down tightly—to do so will cause the face of the needle to "ring" and the seat to expand or distort after which further adjustment becomes impos-

sible due to damage caused). Then turn left or "unscrew" approximately 1/2 turn high speed.

3. Perform same function on the slow speed needle but open or "unscrew" about 1-1/8 turn.

4. Attach test wheel—start and run the motor in a test tank until normal running temperature has been attained.

5. Turn high speed needle (with screw driver) to right or left as required to obtain best setting for maximum performance.

6. Reduce motor speed towards idling position—turn slow speed needle to right or left as required to obtain smooth operation in the lower speed range. Further retard motor speed—adjust position in like manner for best performance. Repeat the operation until best setting for maximum slow speed running has been accomplished.

NOTE—rough or "jumpy" running of the motor denotes an excessively rich carburetor mixture (too much fuel—too little air) and as evidenced by a "smoky" exhaust. Spitting back or "coughing" through the carburetor is indication of a too lean mixture (too little fuel—too much air). Turning needle adjusting valve to right reduces flow of liquid fuel into the carburetor air stream thus "leaning out" the fuel vapor mixture; turning to left, increases the flow of liquid fuel to result in a correspondingly richer mixture.

7. Re-check both needle settings to assure best performance.

8. Without disturbing position of the slow speed needle, install the slow speed knob over the protruding serrated end, with pointer directed towards numeral 4. Insert and draw up snugly on the taper headed screw provided for the purpose.

9. Locate position of the high speed needle lever as described above—lever directed towards the numeral 4

10. Make certain the taper headed screws are drawn up securely to hold the knob and lever fast on their respective needles.

**NOTES**

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