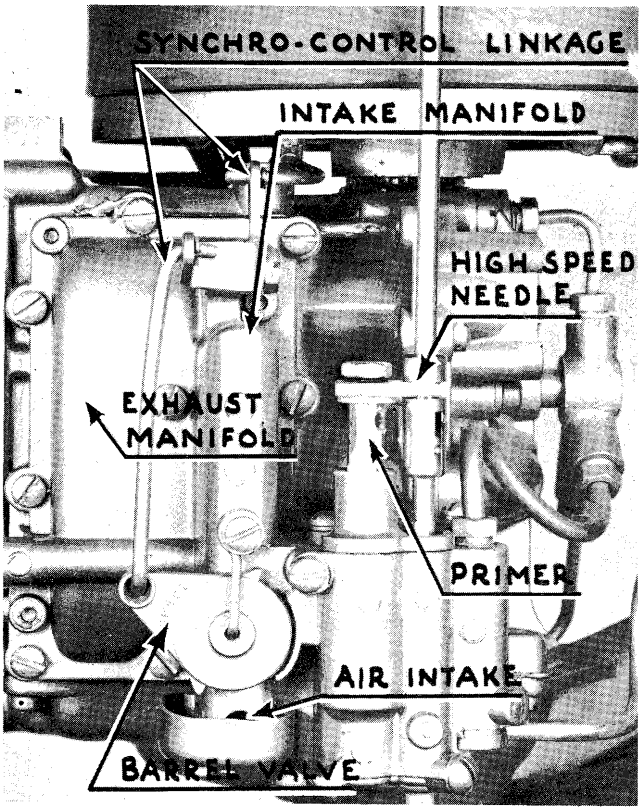
CARBURETION – H AND T SERIES

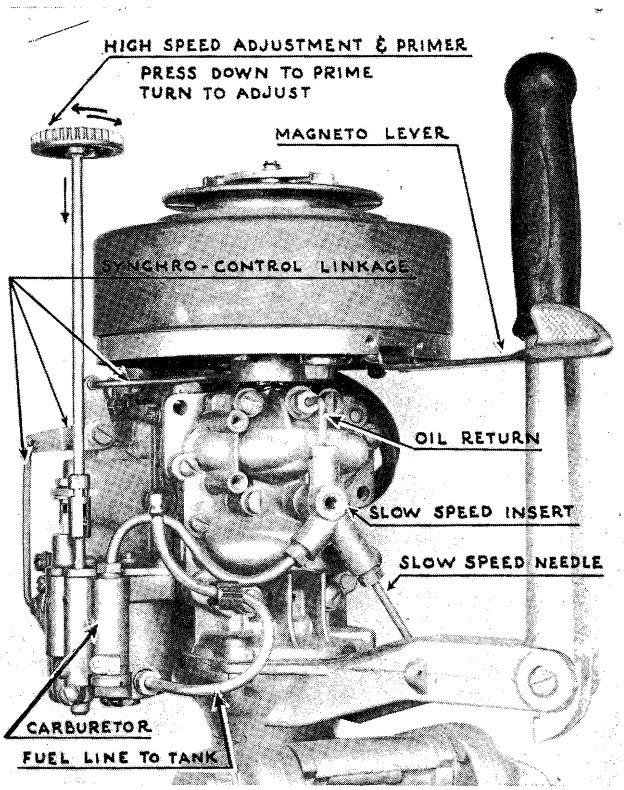
Carburetion is of the full range type, thus providing efficient carburetion at all speeds—some departure from customary construction has been made nevertheless, in that only the high speed needle and jet are built into the carburetor body; the slow speed needle and jet are actually not a part of the carburetor proper—this feature is made a part of the crankcase assembly and functions throughout the entire speed range of the motor.



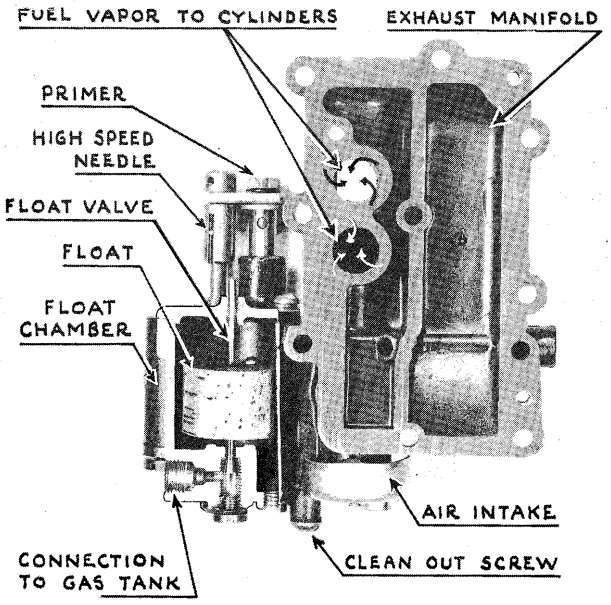
Carburetor and Manifold Assembly

Since both third port and rotary valve principles are employed, there are two independent systems of carburetion. The carburetor itself is of the conventional type—consisting of a float chamber, mixing chamber, throttle valve, needle for adjusting mixture and a connection to the intake manifold. The carburetor and third port operate only at intermediate and high speeds and cease to function entirely at slow speeds. Slow speed operation is maintained, however, by mixing air and fuel in the slow speed mixing valve to produce a combustible vapor which is conducted into the crankcase chamber by way of the rotary valve.

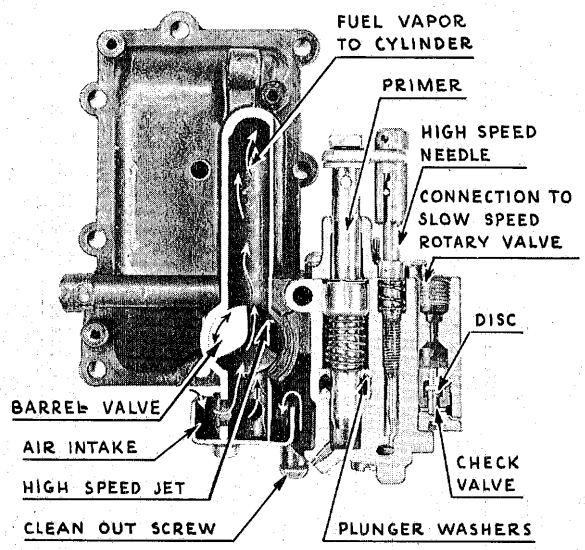
Some difficulty was experienced during the latter part of the summer (1947) with the Model HD-25 in that there was a tendency towards irregular running at high speed. The motors could be easily started and operated very well at slow speed for trolling, but at high speed there was a noticeable fluctuation, that is, they would run at high speed for a short period and then momentarily slow down and pick up speed again, etc.



Carburetor and Slow Speed Insert



HS-HD Carburetor, Rear Sectional View

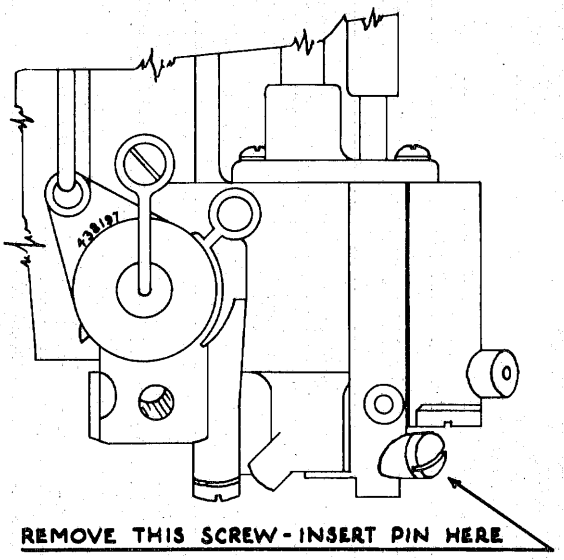


HS-HD Carburetor, Front Sectional View

Performance of this nature is frequently the result of too hot spark plugs; faulty action of the water pump and cooling system, or misalignment of the reciprocating and revolving parts to create excessively high operating temperatures, "drag" on the motor or to cause a vapor lock in the fuel system, etc., but in this particular case, it's different.

Note horizontal clean-out screw underneath the float bowl of the carburetor (see illustration), provided for clearing the passage between the bowl and mixing chamber of foreign matter. Motors prior to #618633 were not equipped with facilities for clearing the passage—those following were, however, the fuel passage was drilled too large which permitted formation of vapor bubbles to interfere with constant flow of fuel to the mixing chamber. Later, production was corrected in this respect.

Wherever necessary to overcome this condition, a small pin (1/8" x 1-5/16") can be installed in the passage to reduce its effective area. This can be accomplished by (1) removing the clean-out screw; (2) then unscrew the high speed needle five or six turns (far enough to clear the passage); (3) insert pin; (4) replace clean-out screw and (5) readjust high speed needle to best running position.



CARBURETOR ADJUSTMENT—HS-HD

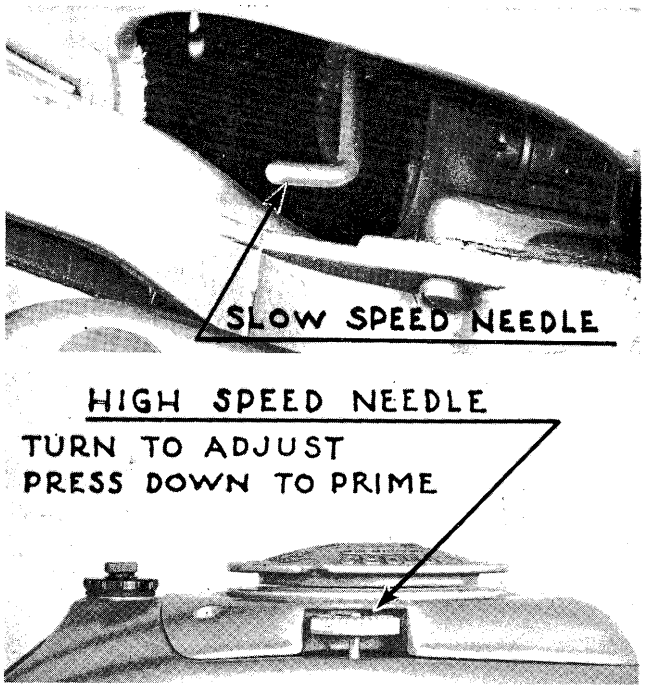
To adjust carburetor, proceed as follows:

[There are two (2) adjustments—namely, High and Slow speed.]

1. Close slow speed needle, turn right until it rests gently on its seat, then unscrew approximately 3/4 turn. (Turn left.)
2. Close high speed needle, turn right until it rests gently on its seat, then unscrew approximately 3/4 to 1 turn. (Turn left.)
3. Start motor as instructed.
4. Operate at full speed with spark at full advance until normal motor running temperature is reached. Turn high speed needle to left or right as required to obtain maximum speed.
5. Retard spark by moving magneto lever to position midway between center and full retard (left of center facing motor). Turn slow speed needle to left or right as required to obtain smooth and consistent running at slow speeds.

High and slow speed needles should be adjusted separately—adjusted one at a time. Some may prefer to close the high speed needle entirely when making the slow speed adjustment. In this case open the slow speed needle approximately 3/4 turn from closed position, start the motor and run until warm. Retard spark to slow speed range, turn slow speed needle to right or left slightly to obtain consistent slow speed operation.

Move spark lever to full advance position, gradually open the high speed needle until maximum speed is reached.



Do not change position of the slow speed needle to correct high speed performance. Once the slow speed needle is set, it should require little or no attention—do not change setting unless necessary.

In event the slow speed intake is obstructed with foreign matter, simply open the slow speed needle three or four turns — depress primer vigorously several times to force out obstruction. Readjust slow speed needle as instructed above. Be sure check valve screen is clean.

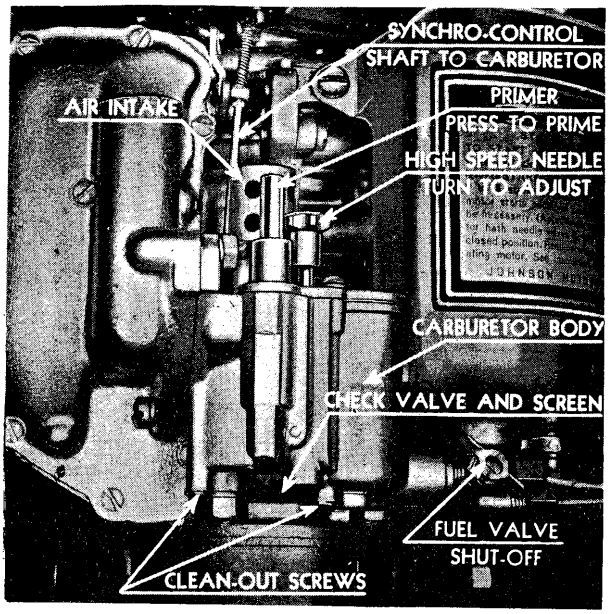
Spark and magneto levers are synchronized, therefore movement of the magneto lever controls both spark and carburetor simultaneously.

THE PRIMER consists of a small cylinder and plunger built into the carburetor body, which, when depressed, forces a small amount of gasoline into the slow speed opening to provide rich starting mixture. Since priming is accomplished through the slow speed opening, the slow speed needle must be open. The motor cannot be primed if the slow speed needle is closed. Do not, however, open the slow speed needle beyond that required for best slow speed operation of the motor.

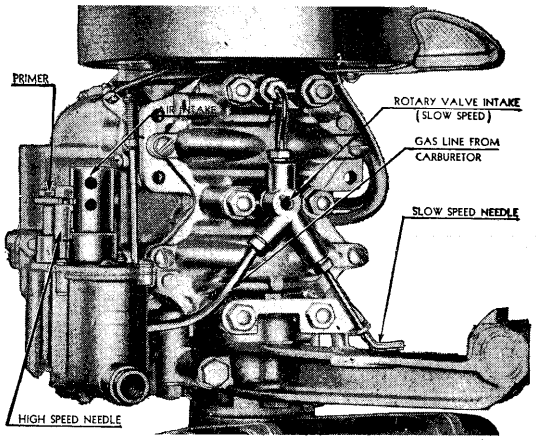
STARTING MIXTURE – TD AND TN SERIES

Since a rich starting mixture is essential for starting purposes, some arrangement must be built into the carburetor to accomplish it. Models TD and TN do not employ use of the conventional choke built into the carburetor, but rely on a primer (manually operated) to provide additional fuel for starting purposes.

The primer is operated by depressing the plunger or high speed needle adjusting button as desired to obtain necessary starting mixture.



Carburetor – Models TS and TD.



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