This new carburettor incorporates an automatic mixture control device which ensures that the engine receives a correctly balanced mixture of fuel and air at all throttle settings. The device progressively reduces the effective size of the fuel jet orifice as the throttle is closed, thereby preventing the engine from running too rich at low speeds. This also means that an air bleed is no longer required and, with its elimination, maximum suction is maintained at the fuel jet at all times. This is a most important factor where manoeuvres have to be executed at low engine speeds and through wide variations of fuel level within the fuel tank.

Adjusting the carburettor

Three adjustable controls are provided on this carburettor:

1. The Needle-Valve (located on left-hand side of carburettor).
2. The Mixture Control Screw (located on right-hand side).
3. The Throttle Rotor Set-Screw (angled at rear of body).

I. The Needle-Valve is used in the same way as on all model engines, i.e., for adjusting the high-speed mixture strength. Start the engine and, with the throttle fully open, gradually close the Needle-Valve until it is running at its maximum speed. Caution: Do not close Needle-Valve to too "lean" a setting as this will cause the engine to overheat and slow up. Set the Needle-Valve very slightly to the "rich" side of the peak r.p.m. setting.

II. The Mixture Control Screw is for adjusting fuel mixture strength at part-throttle and idling speeds. Having set the Needle-Valve as detailed above, close the throttle. The engine should idle continuously and steadily without further adjustment.

(a) If, however, the engine begins to idle unevenly, open the throttle. If the engine then hesitates before picking up to full speed, it is probable that the idling mixture is too rich. Check this by closing the throttle again and letting the engine idle for a little longer before again opening up. If the engine now puffs out a good deal of smoke and hesitates or even stops, it will be necessary to close the Mixture Control Screw. Do this by turning it clockwise about 10 ~ 20 degrees turn should be sufficient.

NOTE: In the event of the factory carburettor settings having been accidentally disturbed — or otherwise interfered with — the carburettor should be returned to the factory settings as follows:

(1) Release Throttle Rotor Set-Screw Locknut and unscrew Throttle Rotor Set-Screw just sufficiently to allow the throttle to close completely.
(2) With the Throttle Rotor set as above, carefully screw in the Mixture Control Screw to this point as its tapered tip may damage the fuel jet hole. Now unscrew the Mixture Control Screw 1 1/2 turn from this point.
(3) If necessary, fine-tune the carburettor in accordance with the procedure explained above.
(b) If instead of being set too rich, the Mixture Control Screw is set too lean, the engine will stop when the throttle is closed, or will lose speed while idling and then cut-out abruptly (without smoking) when the throttle is opened again. In this case, turn the Mixture Control Screw counter-clockwise about 30 degrees, and make sure that the mixture gets rich, then turn it clockwise gradually.

Mixture Control Screw adjustment is not critical and by remembering the symptoms of rich and lean running quoted above, it is a very simple matter to establish the best setting.

III. The Throttle Rotor Set-Screw

SUBSEQUENT OPERATION AND CARE

Once the required settings have been established, it should be unnecessary to alter them. Such slight needle-valve alterations as may be necessary to cope with differences in atmospheric conditions or fuels, do not affect the other two adjustments. The engine should start readily with the throttle in the idle position. It is important that the carburettor operates under clean conditions. Make sure that fuel is properly filtered before use. We advise fitting a filter to your fuel can and another filter in the delivery tube between tank and engine, to reduce the risk of the carburettor jet becoming partially clogged and upsetting running adjustments. Remember to clean the filters periodically.

If, despite the use of filters, foreign matter should reach the carburettor, causing it to malfunction, it should be carefully dismantled and cleaned as follows:

1. Remove complete carburettor from engine. Clean off any external dirt.
2. Remove throttle rotor set screw.
3. Withdraw rotor from carburettor body, taking care not to lose the rotor spring placed behind rotor.
4. Remove needle from needle-valve assembly, followed by hexagonal retaining nut and ratchet spring. Now push nozzle unit through body from outside.
5. Remove fuel inlet nipple.
6. Immerse parts in solvent (e.g. gasoline, alcohol or carbon tetrachloride) and clean thoroughly.
7. Re-assemble in reverse order. Note that periphery of nozzle flange is specially shaped to key into carburettor body.

The specification are subject to alteration for improvement without notice.

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