INSTRUCTIONS FOR O.S. TYPE 7B, 5B, 4BK-4D & 4E AUTOMATIC CARBURETTOR

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 airbleed 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.

Under average operating conditions, the carburettor will normally function satisfactorily as factory set. Simply start the engine in the normal way and adjust the needle-valve for maximum r.p.m. On closing the throttle, the engine should idle at between 2,000 and 2,500 r.p.m. and also run steadily at all intermediate speeds. However, different fuels and/or climatic conditions, may require minor readjustments for optimum results.

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 Valve (recessed screw on right-hand side).
3. The Throttle Rotor Set-Screw (angled at rear of body).

L 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. Make sure that the engine is fully "broken-in" (about 1 hour of total running time in short runs) before operating it continuously at full throttle.

M 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 runs with a good deal of smoke and hesitates or even stops, it will be necessary to close the Mixture Control Screw. Do this by inserting a small screwdriver into the recessed screw on the right-hand side and turning it clockwise. About a quarter turn should be sufficient.
3. If 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 when the throttle is opened again. In this case, turn the Mixture Control Screw about one-half turn counter-clockwise.

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 is for establishing the minimum idling speed. If the engine runs too fast with the throttle closed, the Rotor Set-Screw should be turned counter-clockwise to allow the throttle opening to be reduced.

CARBURETTOR INSERT
A muffler pressurised fuel system should be used with the Type 7B carburettor for best results. If, however, ordinary suction feed is to be used, it is advisable to fit the carburettor insert, which is supplied, as follows:
1. Unscrew rotor set-screw and remove rotor.
2. Remove the mixture control screw.
3. Insert the carburettor insert into the throttle rotor throat.
4. Reassemble carburettor.

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.

PARTS LIST

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The specification is subject to alteration for improvement without notice.

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