

Air jet

This controls the amount of air which pre-atomises the fuel before it enters the mixing chamber body. Normally the air jet fitted as standard for the particular size of carburetter should be correct, but it is a component that can be changed should the depression on the main jet need to be influenced. Fitting a smaller jet will increase the depression while a larger jet will reduce the depression.

All of these adjustments overlap to some extent and in order to obtain the optimum setting it may be necessary to go through this procedure more than once to get the final degree of accuracy.

Air filters

These may affect the jet setting, so if one is fitted afterwards to the carburetter the main jet may have to be smaller. If a carburetter is set with an air filter and the engine is run without it, take care not to over-heat the engine due to too weak a mixture.

Effect of altitude on carburetter

Increased altitude tends to produce a rich mixture. The greater the altitude, the smaller the main jet required. Carburetters ex-works are set for altitudes up to 3,000 feet approximately. Carburetters used constantly at altitudes 3,000 feet to 6,000 feet should have a reduction in main jet size of 5 per cent and thereafter, for every 3,000 feet in excess of 6,000 feet altitude, further reductions of 4 per cent should be made.

Tuning twin engines with twin carburetters

(Where each cylinder has its own carburetter)

First slacken the throttle stop screws and put the twist grip into the shut position to allow the throttles to close: there should be a slight backlash in the cables which backlash can be obtained, if necessary, by screwing in the cable adjusting screws on the top of the carburetter. Then, with the handlebars in the normal position, and with the throttles closed, adjust the cable adjusting screws so that on the slightest opening of the twist grip both throttles begin to open simultaneously.

To set the carburetters, follow the tuning sequence given previously, and bear in mind these 'hints' which may be useful: main jet sizes are selected by checking the effect of the mixture on the sparking plugs after running at full throttle on a straight road:

the smallest pair of jets that gives the maximum speed is usually correct provided that the plugs do not show any signs of excessive heat. It might be that for critical tuning, one carburetter might require a slightly different jet size from the other.

For slow running, set the twist grip to make the engine run slowly but just faster than 'tickover': then gently screw in the throttle stops to just hold the throttles in that position, and return the twist grip into the shut position, leaving the engine running on the throttle stops.

Next set each carburetter, according to instructions already given for pilot jet settings, to obtain the idling by screwing down the throttle stop screws and adjusting the pilot air screws accordingly.

For setting the pilot, a fairly satisfactory method is to detach one sparking plug lead, and set the pilot adjusting screw on the other cylinder as a single unit, and then reversing the process to the other cylinder. When both leads are connected to the sparking plugs, the engine may run slightly quicker than desirable; a slight adjustment of the throttle stop screws will put this right. It is essential that the speed of idling on both cylinders is approximately the same, as this will either make or mar the smoothness of the get-away on the initial opening of the throttle.

It is essential with twin carburetters that the throttle slides are a good fit in the bodies, and also that there is no suspicion of air leaks at either of the flange attachments to the cylinder.

For the lower end of the throttle range, which is always the more difficult to set, one can only take great pains to ensure that the control cables are perfectly adjusted without any excessive backlash, or difference in the amount of backlash between one carburetter and another: otherwise one throttle slide will be out of phase and so result in lumpy running.