

ALCOHOL FUELS.

Concerning Alcohol fuels, the G.P. range of Carburettors function perfectly satisfactorily on any alcohol blend up to and including straight methanol. It will be necessary to fit a .125" diameter needle jet (1) for any alcohol content over 50%. With this larger needle jet a standard taper needle (11) should be used, which means for the Type 15 G.P. a needle marked G.P. is required, for the Type 10 G.P. a needle marked G.P. is required (both these types using the same needle); for the Type 5 G.P. a needle marked 5 G.P. is needed. An approximately correct needle position will be No. 4, that is:— the fourth groove from the top of the needle.

Regarding main jet sizes, these have to be increased in the following proportions, taking the basic size as that used for 80 octane fuel or petrol benzol.

Straight Methanol	Increase the basic jet size by 150%.
J.A.P. Racing Fuel	Increase the basic jet size by 150%.
Esso No. 1 Fuel	Increase the basic jet size by 150%.
Esso No. 2 Fuel	Increase the basic jet size by 120%.
Esso No. 3 Fuel	Increase the basic jet size by 130%.
Shell A.M.M. Fuel	Increase the basic jet size by 150%.
Shell A.M.1 Fuel	Increase the basic jet size by 140%.
Shell A.M.8 Fuel	Increase the basic jet size by 120%.
Shell A.M.9 Fuel	Increase the basic jet size by 100%.
Shell A.M.12 Fuel	Increase the basic jet size by 50%.

NOTE.—When calculating the jet size on the basis of the jet size used for petrol-benzol mixtures—the per cent. increase must be added to the original jet size and the total is the new size of jet to be used for the particular fuel. EXAMPLE : If a Jet No. 300 was used for petrol-benzol and it was decided to change over to METHANOL, which requires an increase of 150% adding to the original jet size 300.

Calculate this way $\left(\frac{\% \text{ increase} \times \text{original jet size}}{100} \right) + \text{original jet size}$ namely $\left(\frac{150 \times 300}{100} \right) + 300 = 450 + 300 = 750$.

The answer is, use main jet 750 and the appropriate needle-jet for alcohol fuels as given in a paragraph above.

When using alcohol mixtures, the alcoholic content of which is not exactly known, "trial and error" will be necessary in finding the correct jet size, in which case it should be remembered that although quite an excessively over-rich mixture can be used on alcohol, the slightest weakness will result in trouble. Therefore, always err on the rich side for the start of the "trial and error" tests. On the other hand, if the exact composition of the fuel should be known and you get in touch with our Technical Department, they will be able to give you a fairly close approximation of the jet size required for the alcohol mixture in question.

The sparking plug, of course, is the focal point of the "trial and error" tests. This should be examined after each run after the throttle has been cleanly cut. Any suspicion of grey at the electrodes is a sign of weak mixture and larger main jets should be immediately fitted. A perfect plug condition is a rather polished jet black colour where mica plugs are used, with a rather harsher-looking brown colour where ceramic plugs are used.

A cross-check on the plug condition can always be effected by closing the air control during the run, when no appreciable increase should be noted in the R.P.M., and; ultimately, a decrease should take place. In the event of any increase being perceptible during the closing of same, this is a definite indication of a larger jet being necessary.

Normally, when changing over from petrol to alcohol on the G.P. range of Instruments, no alteration will be necessary to the air jets fitted.

GUARANTEE.—The Company take all possible reasonable care in the manufacture and the quality of their products. Purchasers are informed that, any part proved to be defective in manufacture or quality, and returned to the works within six months of its purchase new, will be replaced. The Company must respectfully point out however, that its responsibility and that of its agents, stockists and dealers, is limited to this Guarantee, and that they cannot, under any circumstances, be held responsible for any loss or for any contingent or resulting liability arising through any defect. These conditions of sale and use also apply when the Company's products form part of the original equipment of machines purchased new.

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