FLOAT CHAMBER. The float chamber fitted to the current model T.T. Carburetter is of a modified top-feed design incorporating a large-headed needle and seating, which ensures that the float chamber is capable of passing 10 gallons an hour, which is more than enough even when pure alcohol fuel is used. Consequently, the introduction of this float chamber has removed the necessity for a double float chamber as previously, except in one or two exceptional cases such as dirt track use and occasional sidecar use, but in every normal case we recommend the usage of the single large-flow Racing Float Chamber.

LOCKING DEVICES. Vibration causes parts to come undone, so we have devised simple and quick locking devices that are sure, *viz.*, a screw in the mixing chamber cap* to lock the ring at the top, and a drilled boss for wiring up to hold the float chamber holding screw to prevent it from vibrating loose. For the petrol pipe union we leave you to make your own device.

***Note:**—Certain models may have the mixing chamber cap secured by a leaf spring which is anchored on to the air funnel, instead of the screw 5 as illustrated on page 1.

COMPENSATION AND AIR CONTROL. The main jet does not spray directly into the choke bore of the mixing chamber. It first passes through the needle-jet and is there partially atomised by a blast of primary air, and passes up as a rich mixture through a primary choke, which can be seen at the base of the main choke. The richness of the mixture as it passes through the primary choke can be handlebar regulated by the air control at the side of the carburetter, less air being admitted to richen the mixture for starting or atmospheric conditions demanding more liquid fuel to give the correct mixture strength. As the engine speed increases at a given throttle opening so the mixture would tend to get rich, but as the air flow through the primary choke above the main jet also increases, there is a damping effect on the flow of liquid and a compensated mixture is obtained.

NEEDLE-JET. Before tuning the carburetter, confirm that the correct size needle-jet is fitted as specified below. The needle-jets for Types 10 and 15 T.T. carburetters are the same length but they may have different bores—the diameters of which are stamped on them. The following are the sizes to be used :—

80 Octane Petrol and Petrol-Benzol Carburetters with bores of up to $1\frac{1}{32}$", needle-jet ·107.
80 Octane Petrol and Petrol-Benzol Carburetters with bores of over $1\frac{1}{32}$", needle-jet ·109.
Alcohol fuels, as set out below. { For 350 c.c. cylinders or less use needle-jet ·113. / For cylinders of over 350 c.c. use needle-jet ·120.

ALCOHOL FUELS. When an alcohol fuel is used, the needle-jet as mentioned above must be used and it is also necessary to use a larger main jet than for petrol-benzol or 80 octane fuels.

CHOICE OF FUEL. We are often asked which is the most suitable fuel to use, and we answer :—Consult your engine maker as to valve timing, compression ratio, etc., and when you know the appropriate fuel for these conditions, follow the instructions given here for carburetter tuning.

MAIN JETS FOR ALCOHOL FUELS. The size of these jets has to be calculated as an increase on the size of the jets used for 80 octane petrol, an indication of which is given at the top of page 4 overleaf. The increases are set out as follows for different standard fuels :—

Methanol, increase by 150%.	SHELL fuel AMM, increase by 150%.
JAP Racing fuel, increase by 150%.	AM1, increase by 140%.
ESSO No. 1 fuel, increase by 150%.	AM8, increase by 120%.
ESSO No. 2 fuel, increase by 120%.	AM9, increase by 100%.
ESSO No. 3 fuel, increase by 130%	AM12, increase by 50%.

NOTE.—When calculating the jet size on the basis of the jet size used for 80 octane petrol—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 80 octane petrol and it was decided to change over to METHANOL, which requires an increase of 150% adding to the original jet size 300, add 450 to 300 so making the jet size 750.

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, entitled *Needle-Jet.*

When using " alcohol mixtures " we cannot say the size of increase, and these sizes must be tried by experiment, always bearing in mind that there is a danger of overheating in a weak mixture, even though the machine is running well. The sparking plug is a good indication:—If after a fast run at full throttle you stop the engine at once and take out the plug, if it is grey at the end put in a bigger main jet. The colour of the plug should be a polished jet black for safety.

P.T.O. for 80 Octane Petrol Setting Guide.