

- usually in conversions an increase in the carburettor size also requires an increase in the main jet size of about 10 % for each 1 mm increase in the choke size, without changing the other setting parts.
- on a modified engine, whenever you require a carburettor larger than the original, it is preferable to use one which has already been set up for a similar engine ie. an engine having the same operation (two or four stroke), a similar power output and similar cylinder displacement, in order to have a good comparable base for subsequent tuning.
- tuning of racing engines is best carried out on the racing circuit with well run-in engines which are thoroughly warmed up.

3.2 Fuel system

First of all, ensure that, with the engine running, fuel flows continuously from the tank to the carburettor as vibrations from the engine or from the road surface could reduce fuel flow.

It is therefore advisable to use fuel taps and pipes of adequately-large size.

Further, check that fuel filter (5) in the union banjo (4) of the carburettor is clean.

Fuel from the tank supplies the carburettor (fig.9) through a valve in which a float-controlled needle operates (2).

The inlet valve has a brass valve seat inserted (6) where the needle-valve (7) regulates the entry of fuel, pushed upwards by the float by means of the float fork (8) until fuel has reached the specified level.

During engine operation, this provides a constant fuel level in the float chamber so that the distance fuel has to rise to reach the venturi from the various circuits is also constant.

It is important that this level is always constant throughout the operating range because, with a constant depression in the venturi, a rise in the float chamber level would cause an increase in fuel delivery and consequently enrich the mixture; conversely, lowering of the float level causes a weakening of the mixture.

Fuel in the float chamber (3) is always at atmospheric pressure because of the vent holes (1).

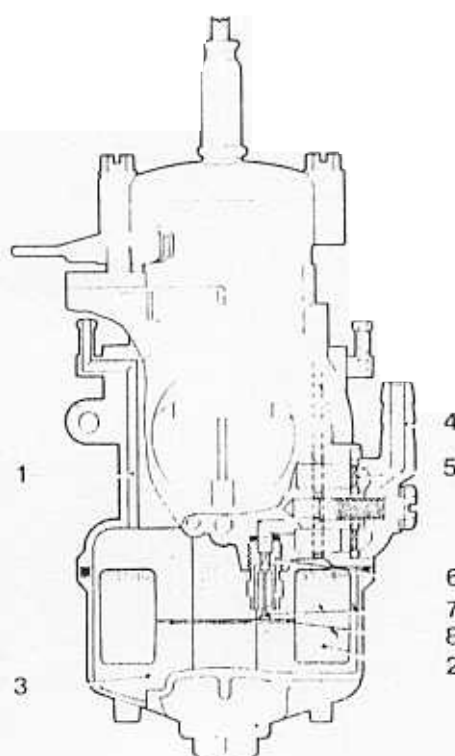


fig. 9

3.2.1 Selection of the needle valve size

For a motorcycle with gravity feed from a fuel tank, the fuel inlet valve size, stamped on the seat of the needle-valve itself, should always be 30 % greater than the main jet size.

In case of malfunctioning, you may find that the needle valve size is too small when running the engine at full throttle for a long stretch and that the engine rpm falls, due to the progressive weakening of the carburation.

Conversely, you may get repeated flooding in use where the needle valve seat size is too large.