

The last issue described the control of the pressure of petrol into the jets by the float chamber

From the float chamber, the petrol is fed by internal channels to the two jets: the main jet, and the “compensating” jet (see below).

Petrol and air are sucked into the jets by the vacuum created in the inlet manifold by the piston moving down in the cylinder on the induction stroke.

The main jet: air in the main chamber is accelerated by the narrowing in the “choke tube” component. The main jet sits in this narrowing, and the air rushing past it sucks the petrol out of the jet and atomises it. Zenith supplied different size choke tubes to suit different designs of engine. *The everyday word choke does not apply to the choke tube, but refers to what is properly called the air strangler.*

The slow running, or compensating, jet bypasses the throttle, and is the main feed when starting the engine, or when the engine is at low revs, and hence suction is low in the main chamber. This jet is in a separate chamber, and has a conical jet, which is inside a female cone, and separated from it by a small gap. At low engine revs, this mechanism has a higher suction than the main chamber. There is a side channel that links it to the inlet manifold. At higher engine revs it still supplies the engine, but the amount quickly reaches a plateau.

The mixture can be enriched by screwing the female cone down closer to the male, and vice versa. Only 2 turns are needed between maximum and minimum.

The compensator jet also has great influence at low speed, such as when climbing hills

The throttle never fully closes, and when starting the engine, the air-strangler (colloquially know as the choke) is operated, so that very little air is sucked into the main chamber, thus giving an enriched mixture.

Next time: the jet design itself

