

The new Manobloc carburetor features a float bewl and mixing chamber cast as one unit. A hinged float and nylon float needle are used.

around the needle jet is a well which contains gasoline when the throttle opening is small. This extra fuel momentarily enriches the mixture for snap acceleration when the throttle is opened wide; in fact it has an effect similar to

that of the accelerating pump on automobile carburetors.

The pilot jet is demountable for cleaning purposes and, when assembled in the carburetor body, is sealed by a cover nut.

The S.U. Carburetor

A very interesting carburetor is the S.U. carburetor. The S.U. is a widely known make and it practically dominates the British sports-and-racing car field.

After a long absence, the company is re-entering the motorcycle field (early Douglas machines were fitted with S.U. carburetors). The new 1955 Ariel Square Four is fitted with an S.U. carburetor.

The S.U. resembles the Amal design in that it also employs the needle jet principle and correction methods also are by variable jet orifice and variable choke. There are, however, very essential differences.

In the first place, the S.U. has only one fuel jet which takes care of the correct mixture from idling speeds to full bore, and there is no air bleed to a primary venturi.

Secondly, the movement of the taper needle in the S.U. instrument is not directly controlled by the throttle. It also has a separate butterfly throttle.

The essential part of this carburetor is the piston and suction disc body carrying the taper needle, which terminates in the single fuel jet. The piston movement to vary the choke diameter has

a function similar to that of the Amal throttle slide, but in the case of the S.U. the piston is vacuum operated. The suction disc is subjected to atmospheric pressure on the underside and the depression in the region of the jet is conveyed to the top side. A vertical passage in the piston connects the top side of the disc to the jet area.

The position of the piston and vacuum disc depends on three factors: throttle opening, engine speed and engine load.

At wide throttle openings when the depression in the jet area—and consequently on top of the disc—tends to be considerable, the suction disc will lift, withdrawing the needle from the jet, thus increasing the flow of fuel. Lifting of the piston has at the same time increased the choke diameter; the taper of the needle and varying choke diameter combining in such a way that a correct mixture is delivered through the speed

At idling speeds, the piston drops to a very low position and although the taper needle has sunk into the jet, almost closing the orifice, the small choke insures a high velocity of air near the jet; and this is the reason why a separate idling jet is not necessary. This piston action results in an approximate uniform degree of depression in the region of the fuel jet, and that is why the S.U. is called a constant vacuum carburetor.

An interesting feature is that the jet-

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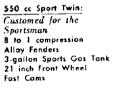
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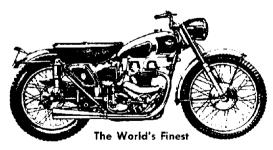
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