CARBURETTOR

TYPE—STROMBERG 125 CDS

DESCRIPTION (See Figs. 1, 2 and 3)

The Stromberg carburettor suffix letters CDS, denote that it is a constant depression type of carburettor. This principle of operation, sometimes referred to as constant vacuum, uses a variable choke and a needle of suitable profile moving in a single jet, to provide the fuel air mixture needed to meet all conditions of engine operation. Part sectional and external views of this carburettor are shown in Figs. 1, 2 and 3. The principal parts of the carburettor are: the main body (5) containing the throttle (27), the float chamber (19), the depression or vacuum chamber (31) and the starter assembly (33) to (36).

The float chamber (19) is situated around the jet bush retaining screw (18). The float (20) is made from a synthetic rubber or nylon.

While the engine is stationary the air valve piston (9) rests on the carburettor body as shown in Fig. 1.

When the choke control is pulled out the cam (41) partly rotates and opens the throttle (27) to the correct position for cold starting. It also operates the starter assembly disc valve (35) which controls the additional fuel needed for starting and driving away while the engine is cold.

Directly the engine starts the air valve piston (9) is lifted by air pressure to a position dependent upon the amount of throttle opening.

At idling speed the air valve piston (9) is raised by air pressure a small distance from the carburettor body. The jet (24) to needle (21) annulus area is then set by the jet adjustment (17) so that in conjunction with the throttle slow running setting, correct idling is obtained.

Above idling speed, the needle (21) and piston (9) are raised by air pressure acting on the underside of the diaphragm (3) above which a lower pressure exists, due to PARTIAL transference of inlet manifold vacuum to the depression chamber as the throttle is opened. Opening the throttle raises the piston and closing the throttle lowers the piston. This action gives the required fuel/air ratio and at the same time maintains an almost constant air speed over the jet orifice where the needle (21) enters the jet (24). This ensures good atomisation of the fuel as it leaves the jet annulus.

A light compression spring (30) assists to return the piston when the depression above the diaphragm (3) is reduced, as the throttle is closed.

The hydraulic damper (1) in the piston guide (2) prevents sudden rising of the air valve piston (9) when the throttle is opened quickly for acceleration. This action gives the temporary enrichment needed during acceleration.

The flexible diaphragm (3) is clamped between the depression chamber cover (32) and air valve piston (9) upper end. It provides the means needed to give an air seal between the air valve piston and depression chamber and locates the air piston correctly.

In this particular application, where two carburettors are used, the throttles are coupled together with a universal coupling type of linkage that allows both throttles to open together.

OPERATION

Fuel level (See Figs. 1 and 3)

The flow of fuel into the float chamber is controlled by the needle valve (12) which is closed by the float (20) when the fuel rises to its correct level. As the fuel level falls the float lowers and the needle valve admits fuel until the correct level is again reached.

The float chamber is air vented internally into the air cleaned. Fuel reaches the jet (24) through a drilling in the jet assembly securing screw (18).