

## C. Idle System

Each of the suction canals of the carburetor has its own separate idle system. For this reason the carburetor has two idle fuel jets, two idle suction tubes (or idle air jets) and two idle mixture adjustment screws.

### a) Idle – Phase 1

The fuel which is drawn in via the idle fuel jet (5) is mixed with the air from the idle suction tube (6) (or the idle air jets), forming a mixture which passes into the idle canal (36). In the idle position a further supply of air for the idle mixture enters through the by-pass slot (37) (or the by-pass bores) above the throttle valve and then passes into the suction canal through the idle mixture bore (38) and combines with the air streaming through the throttle valve gap to form the final idle mixture (Fig. 07-0/17).

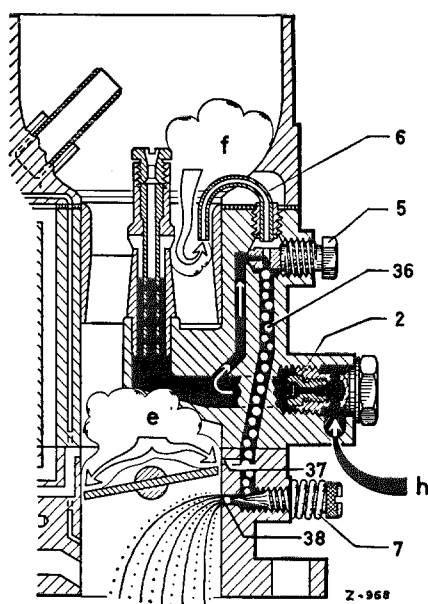


Fig. 07-0/17

Idle — phase 1

- e) Main air supply
- f) Entry of idle air
- h) Fuel feed
- 2 Main jet plug with main jet
- 5 Idle fuel jet
- 6 Idle suction tube
- 7 Idle mixture adjustment screw
- 36 Idle canal
- 37 By-pass slot
- 38 Idle mixture bore

The cross-section of the idle mixture bores can be varied by means of the idle mixture adjustment screws (7). The idle mixture is leaned out when the idle mixture adjustment screw is turned in and is enriched when it is backed out.

The idling speed is adjusted by means of the idle adjustment screw on the throttle valve lever (see Job No. 01-3, Section K).

### b) Idle – Phase 2

When the throttle valve is being slightly opened, idle mixture emerges both through the idle mixture bore (38) and the by-pass slot (37) (or the by-pass bores). The by-pass openings now serve to ensure a proper change-over to the main carburetion system (see Fig. 07-0/17).

**Note:** a) Up to Engine End Nos. 10 95 01618 and 11 95 0083 the carburetor had two idle suction tubes and a by-pass slot in each suction canal. As from Engine End Nos. 10 95 01619 and 11 95 00384 the carburetor has two idle air jets and in each suction canal two by-pass bores and a compensating bore below the air horn (see Section F).

- b) In the right-hand suction canal of the carburetor at the same height as the by-pass slot or the by-pass bores as the case may be, but slightly offset to one side, there is a bore which leads to the threaded union on the throttle valve housing and which serves as a connection for the vacuum line to the distributor.
- c) Recent carburetors have a bore on the carburetor flange for the connection of a vacuum tester; the bore is closed by a grub screw.

## D. Main Carburetion System

The working principles of the main carburetion system are the same on the Solex double downdraft carburetor Type 32 PAATI as on the single downdraft carburetor.

In its standard form the double downdraft carburetor has a float and a float needle valve in the carburetor cover. The float chamber is ventilated through the tube (23) in the carburetor cover. For each of the carburetor suction canals there is an air horn, a main jet and a mixing tube holder with mixing tube and air correction jet (see Fig. 07-0/11).

From the float chamber the fuel flows into the mixing tube holder (4) through the main jet screwed into the main jet plug (2). If the throttle valve is opened beyond the idle position, phase 2, the partial vacuum moves upward and fuel is drawn from the outlet bores of the mixing tube holder and mixes with the air entering through the air intake branch of the carburetor cover.

When the vacuum effect increases at higher engine speeds the fuel level in the mixing tube holder decreases and compensating air enters through the air correction jet (3) and passes through the small bores in the mixing tubes and combines with the fuel flowing through the main jet to form a mixture. With increasing engine speed the proportion of air in the mixture increases so that overenrichment of the fuel-air mixture is prevented and the engine receives a more or less uniform mixture over the whole speed range (Fig. 07-0/18).

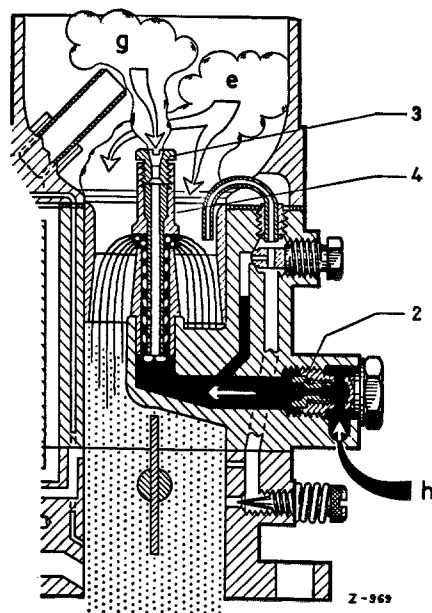


Fig. 07-0/18

Main carburetion system  
(Throttle valve in full-load position)

- e) Main air entry
- g) Entry of compensating air
- h) Fuel feed
- 2 Main jet plug with main jet
- 3 Air correction jet
- 4 Mixing tube holder with mixing tube