

Fig. 07-0/31

Solex Carburetor Type 44 PHH

(Sand-cast carburetor)

I Stage 1

II Stage 2

- 1 Main jets
- 2 Air correction jets with mixing tubes
- 3 Diffuser
- 4 Overflow control tube
- 5 Throttle valve of stage 1
- 6 Choke valve
- 7 Air horn
- 8 Throttle valve of stage 2
- 9 Fuel suction line
- 10 Vacuum line to vacuum box
- 11 Fuel outlet line
- 12 Vacuum box
- 13 Adjusting screw

- 14 Diaphragm spring
- 15 Diaphragm with diaphragm rod
- 16 Ball valve (delay valve on atmosphere side)
- 17 Ball valve (delay valve on vacuum side)
- 18 Accelerating pump
- 19 Connecting rod with pressure spring and adjustment nuts
- 20 Throttle valve lever of stage 2 with counterweight
- 21 Relay lever

B. Arrangement and Function of the Throttle Valves

The compound cross-draft carburetor has two suction canals with one throttle valve each. Each suction canal forms one "stage" and there is no connection between the throttle valve (27) of stage 1 and the throttle valve (26) of stage 2 (see Fig. 07-0/30). Whereas the throttle valve shaft of stage 1 is actuated as usual via the throttle valve lever (38), the throttle valve of stage 2 is opened automatically via the vacuum box (17). The diaphragm (20) in the vacuum box is connected to the throttle valve lever (25) of stage 2 by means of the diaphragm rod (34), the relay lever (35) and the relay arm (36). In the "at rest" position the diaphragm (20) is pushed to the right by the diaphragm spring (19) and thus closes the throttle valve of stage 2.

The counterweight on the throttle valve lever (25) prevents the throttle valve of stage 2 from fluttering when it is closed. The space to the left (spring side) of the diaphragm in the vacuum box is connected via the vacuum line (22) to the suction canal of stage 1 at the narrowest point of the air horn (32).

The space to the right of the diaphragm (atmosphere side) is under atmospheric pressure. The vacuum obtaining in the air horn of stage 1 when the throttle valve is fully open causes the throttle valve (26) of stage 2 to open at an engine speed of approx. 3500 rpm. The two ball valves (delay valves) (21) on the vacuum side and (18) on the atmosphere side of the vacuum box prevent a sudden opening of the throttle valve of stage 2 (Figs. 07-0/32 and 07-0/33).

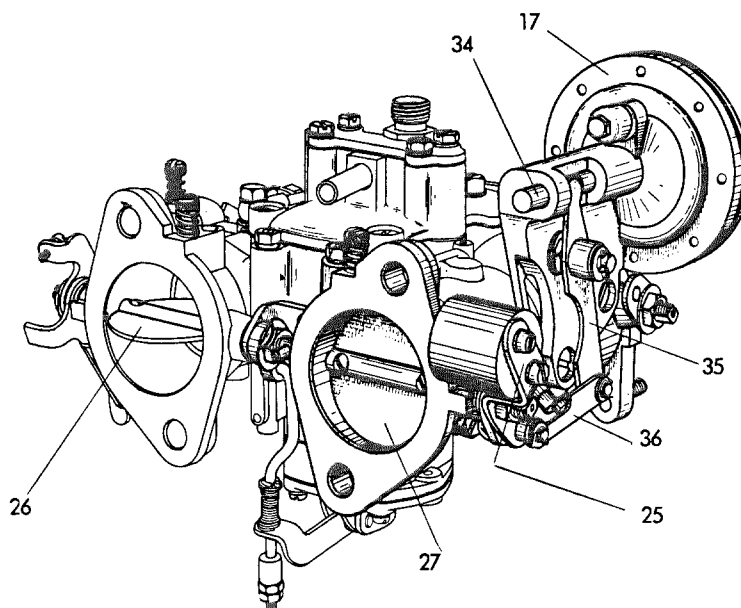


Fig. 07-0/32

Throttle valve of stage 2 not yet operative
(Stage 1 in full-load position)

- 17 Vacuum box
- 25 Throttle valve lever of stage 2 with counterweight
- 26 Throttle valve of stage 2
- 27 Throttle valve of stage 1
- 34 Diaphragm rod
- 35 Relay lever
- 36 Relay arm

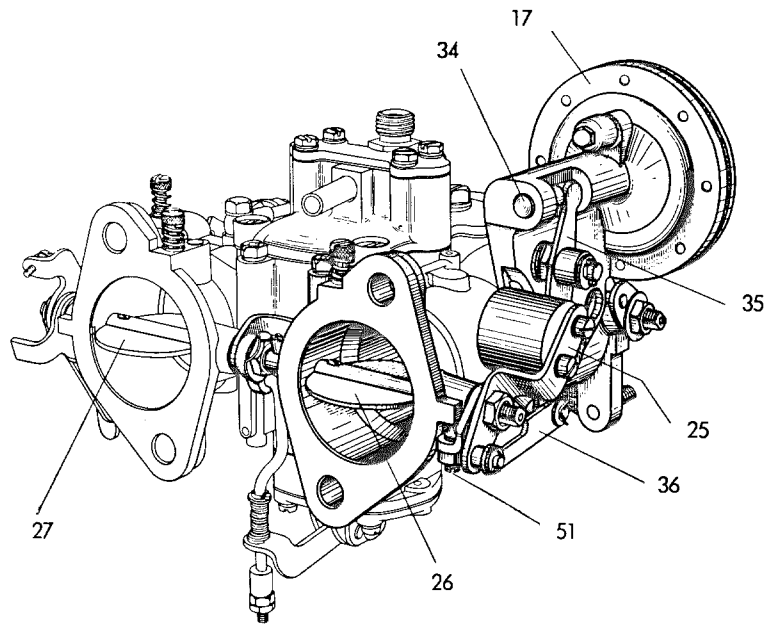


Fig. 07-0/33

Throttle valve of stage 2 operative
(Stages 1 and 2 in full-load position)

- | | |
|--|---|
| 17 Vacuum box | 34 Diaphragm rod |
| 25 Throttle valve lever of stage 2
with counterweight | 35 Relay lever |
| 26 Throttle valve of stage 2 | 36 Relay arm |
| 27 Throttle valve of stage 1 | 51 Aperture limiting screw for
throttle valve of stage 2 |

When the accelerator pedal is released, the so-called automatic return mechanism of stage 2 causes the throttle valve of stage 2 to be closed by the throttle valve shaft of stage 1. The automatic return mechanism consists of the relay lever (59) on the throttle valve shaft (53) of stage 1, the set screw (69), the clamping strap (67) of the clamping screw (68) and the abutment screw (70) screwed into the throttle valve shaft (61) of stage 2 (Fig. 07-0/34).

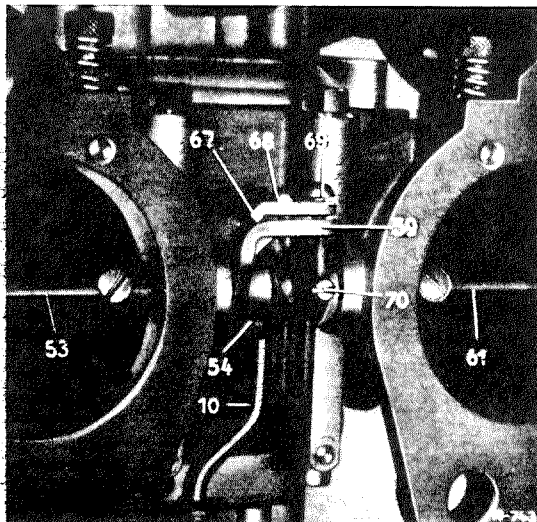


Fig. 07-0/34

- | |
|--|
| 10 Connecting rod with pressure spring |
| 53 Throttle valve shaft of stage 1 |
| 54 Transmission lever for connecting rod
of accelerating pump |
| 59 Relay lever |
| 61 Throttle valve shaft of stage 2 |
| 67 Clamping strap |
| 68 Button head screw (clamping screw) |
| 69 Button head screw (set screw) |
| 70 Abutment screw |

In the idle position of the carburetor linkage the set screw (69) must rest against the abutment screw (70) without any clearance.

When the two throttle valves of stages 1 and 2 are fully opened, the set screw also rests against the abutment screw, so that the throttle valve shaft of stage 1 makes stage 2 automatically inoperative when the accelerator pedal is released.

The automatic return mechanism of stage 2 should be adjusted after the idle adjustment has been made (see Job No. 01-3, Section K).

C. Starter Mechanism

The starter mechanism of the carburetor works on the choke valve system, a stepless and progressive system in which there is a fixed relationship between choke valve position and start mixture enrichment. The starter mechanism is actuated by a pull knob on the instrument board and a bowden cable. The starter mechanism consists of a choke valve in the suction canal of stage 1; the choke valve shaft (71) is offset from the center of the suction canal.

In the sand-cast carburetors the starter mechanism is located in a special choke valve section screwed to the carburetor housing. The die-cast carburetors have no special choke valve section and the choke valve shaft is located in the carburetor housing itself.

When the starter mechanism is not in operation under normal running conditions, the choke valve (33) is open (Fig. 07-0/35).

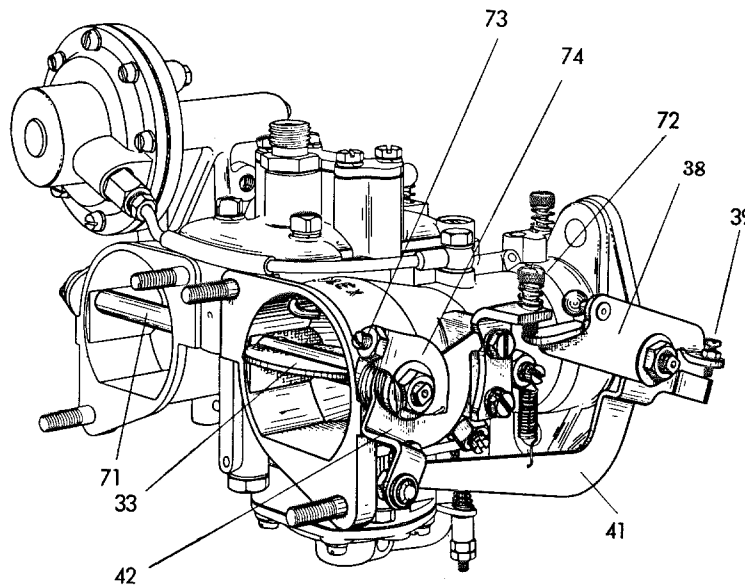


Fig. 07-0/35

Normal running position — Starter mechanism inoperative
(Choke valve open)

33 Choke valve
38 Throttle valve lever of stage 1
39 Adjusting screw

41 Relay lever
42 Choke valve lever with cam plate
71 Choke valve shaft

72 Idle adjustment screw
73 Adjusting screw
74 Abutment