d) Recent models have a bore in the carburetor flange for the connection of a vacuum tester; this bore is closed with a grub screw.

B. Arrangement and Function of Throttle Valves

The actuating linkage for the throttle valves of stages 1 and 2 has been modified (Fig. 07-0/21). However, the arrangement and the function of the throttle valves correspond to the description given in Workshop Manual Model 190.

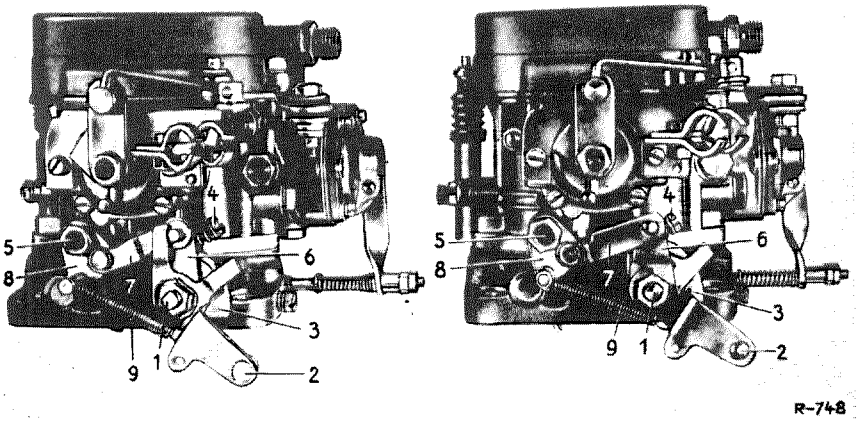

Fig. 07-0/21

1st Version

1 Throttle valve of Stage 1
2 Throttle valve lever
3 Abutment
4 Idle adjustment screw
5 Throttle valve shaft of Stage 2

2nd Version

6 Relay lever
7 Relay arm
8 Drag lever
9 Tension spring

The carburetors with the 1st version of the actuating linkage were installed as a standard part up to Engine End Nos N 85 04580 and Z 85 01748. The carburetors with the 2nd version of the actuating linkage have been installed as a standard part as from Engine End Nos N 85 04581 and Z 85 01749.

C. Starter Mechanism

On Model 220 S, as from Engine End Nos N 75 11273 and Z 75 00522 carburetors with a three-stage starter mechanism were installed. In the cold-start position (starter knob pulled right out) and in the warm-up position (starter knob pushed halfway in) the functioning of the starter mechanism is as described in the Model 190 Workshop Manual.

In the new third position, warm-up position II (starter knob pushed in about 3/4 of the way), the engine receives in addition to the idle mixture an additional mixture from the starter system when the normal running temperature has not yet been reached; this additional mixture ensures satisfactory idling of the engine even at this stage. When the engine is warming up, warm-up position I (starter knob pushed in about halfway) may cause overenrichment of the mixture; by using warm-up position II (starter knob pushed in about 3/4 of the way) the starter mechanism can now remain operative until the engine has reached the working temperature of at least 70° C. This is of particular advantage in cars with a hydraulic automatic DB clutch, since when a gear is engaged, the shift surge is so strong that the idling speed may decrease and cause the engine to stall. Furthermore, the shift surge is slightly larger when the oil in the hydraulic automatic clutch is cold than when it has warmed up to operating temperature.

Warm-Up Position II

(Starter knob pushed in about 3/4 of the way)

When the engine is warmed up, but if the idling speed with the starter mechanism inoperative is still too low, the starter knob can be pushed in about 3/4 of the way. As a result, the starter rotary slide valve is turned toward the right as seen from warm-up position I. The chamber (19) of the slide valve is now opposite the second part (26) of the split fuel slot in the starter flange on the carburetor housing. Since this second part of the slot is connected to the first part (22) of the fuel slot only by a very fine graded bore, the amount of fuel passed from the starter mechanism is decreased still further (Fig. 07-0/22).

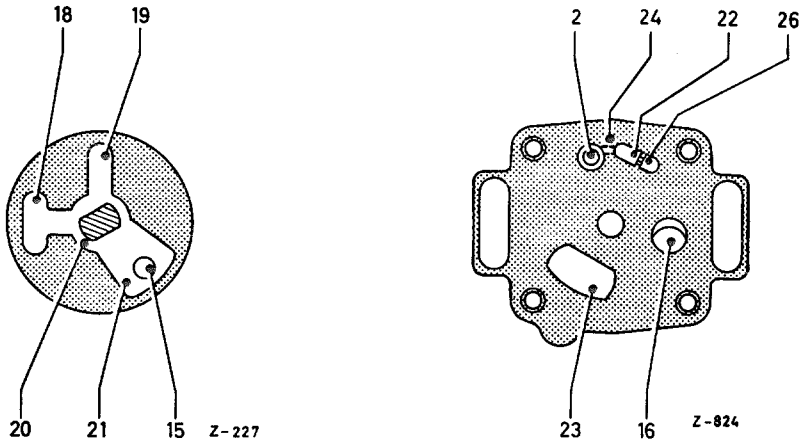

Fig. 07-0/22

Starter rotary slide valve

Starter flange of carburetor housing

2 Graded bore of fuel canal
15 Starter air bore in starter rotary slide valve
16 Graded bore of additional air canal
18 Chamber in starter rotary slide valve
19 Chamber in starter rotary slide valve
20 Mixing chamber in starter rotary slide valve
21 Cavity in starter rotary slide valve
22 Fuel slot, part 1
23 Starter mixture canal
24 Graded intake bore for fuel slot
26 Fuel slot, part 2

D. Scavenging Device for Fuel System

a) General

On Model 220 S a scavenging device for the fuel system can be installed as an optional extra. Even at high outside temperatures and when driving in a line of traffic, this scavenging device prevents the formation of vapor bubbles in the fuel system. The scavenging device consists mainly of the return valve (3) on the front carburetor which is connected to the fuel tank by the hose (7) and the fuel return line (12).

The fuel return valve is actuated mechanically by the pump arm (9) of the accelerating pump (8). When the return valve is open, the excess fuel runs back into the fuel tank through the return valve and the return line. This fuel circulation cools the fuel line and prevents the formation of vapor bubbles.