C. Adjustment of Carburetor Linkage

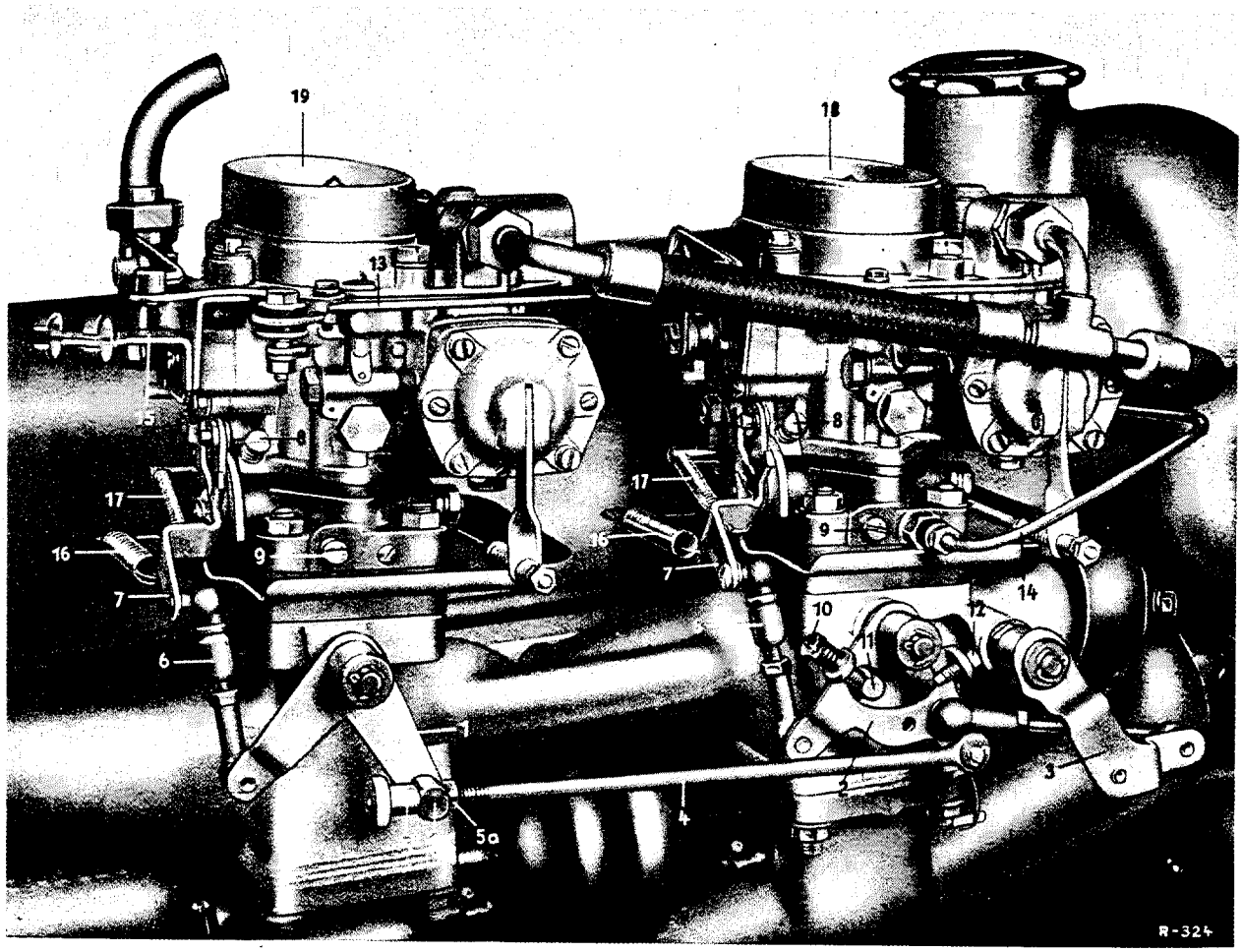

Fig. M 31 S/5

1 Angle relay lever
1a Drive lug
2 Angle relay lever (Adjustment lever)
3 Relay lever
4 Pull rod
5 Milled nut
5a Hexagon nut
6 Connectors
7 Throttle valve lever
8 Idle adjustment screw
9 Idle mixture adjustment screw
10 Idle stop screw
11 Stop pin
12 Full load limiter screw with hexagon nut
13 Connecting rod of starter carburetors
14 Vacuum line to distributor
15 Bowden cable bracket with angle relay lever for start mechanism
16 Return spring for control linkage
17 Tension spring between throttle valve and drive crank
18 Front carburetor
19 Rear carburetor

The complete adjustment process is as follows:

1. Detach the connectors (6) at both carburetors and slacken and back out the nuts (5) and (5a) of the pull rod (4) at the rear angle relay lever (1) until the pivoting drive lug (1a) is completely free (Fig. M 31 S/5).
2. Check the throttle valves of the carburetors for freedom of movement and if in doubt about this, detach the return springs (16) and (17).
3. Back out the idle adjustment screws (8) on both carburetors to the point where the throttle valves are completely closed. Then bring the idle adjustment screw (8) up to the point where it lies against the idle stop and screw it in exactly one turn.

Note: When making the adjustment, press the throttle valve levers onto the stop with the thumb.

4. In order to adjust the front carburetor, screw the idle stop screw (10) up to the point where it lies against the stop pin (11) and screw it in approximately two turns.

5. Check and if necessary adjust to the same length the two spring-loaded connectors (6) at the front carburetor and lock them by tightening up the hexagon nut at the ball cup.

Note: When adjusting the length of the spring-loaded connectors, both the front angle relay lever (adjustment lever) (2) and the throttle valve lever (7) of the front carburetor must be against the stop in the idle position. Similarly, care should be taken to ensure that the connectors (6) are not extended, i. e., the spring pressure must not be overcomé in order to obtain the required length.

6. When the connectors have been adjusted to the same length, press them into position on the two throttle valve levers (7). Now adjust the idle stop screw (10) accurately. To do this, back out the idle stop screw a little and screw it in again to the point where the throttle valve lever of the front carburetor is about to move. Then back out the idle stop screw $^1/_8$ of a turn. This will ensure that even if the ball joints are slightly worn there will be no play in the mechanism.
7. To adjust the rear carburetor, turn the hexagon nut (5a) toward the angle relay lever (1) until the throttle valve lever (7) is about to move. Then back out the hexagon nut (5a) $^1/_8$ of a turn and tighten up the milled nut (5).

Note: When adjusting the pull rod (4), do not tighten the hexagon nut (5a) too much toward the angle relay lever (1) since this would cause the throttle valve of the rear carburetor to be forced open. On the other hand, the hexagon nut (5a) must not be turned in too little since this would cause the rear connector (6) to be expanded when the milled nut (5) is tightened.

8. After adjusting, lock with the hexagon nut (5a).
9. Now adjust the idle stop screw (10) at the front angle relay lever (adjustment lever) (2) in such a way that there is approx. 0.1 mm play between the stop screw (10) and the stop pin (11).

Note: When the accelerator pedal is suddenly released the initial movement of the linkage generates a considerable shock force in the mechanism. Retracting the idle stop screw (10) has the effect of keeping to a minimum the force that has to be absorbed by the throttle valves. On impact, the spring-loaded connectors (6) are extended and the majority of the shock force developed is absorbed by the stop pin (11). This arrangement, by taking the strain off the throttle valves, virtually eliminates hammering of the idle adjustment screws (8).

10. In order to adjust the full load stop, slacken and back out the full load limiter screw (12) at the front angle relay lever (adjustment lever) (2). Now press the carburetor linkage into the full load position and screw in the full load limiter screw (12) toward the stop pin (11) so that the front angle relay lever (adjustment lever) (2) is just beginning to move. (The mechanical throttle valves of both Stage 1 and Stage 2 of both carburetors must be fully opened.) Then lock the limiter screw (12) by tightening the hexagon nut.
11. Once more check the functioning and the free movement of the control linkage and the actuating mechanism for the start mechanism on both carburetors.
    Make sure at the same time that the vacuum valves with shock-absorbers move quite freely.

D. Adjustment of Idle

1. After adjusting the carburetor linkage, screw in the idle mixture adjustment screw (9) completely on both carburetors as far as it will go and then back it out exactly two turns (see Fig. M 31 S/5).
2. Warm up the engine to its normal working temperature (70 — 80 ° C. cooling water temperature) and then, by evenly adjusting the idle adjustment screws (8), adjust the idle to a speed of approx. n = 800 r.p.m., using Revolution Counter 000 589 12 21.
3. Adjust the two idle mixture adjustment screws (9) by screwing **evenly** in and out so that

a) the engine ticks over perfectly and

b) the highest possible idle speed is obtained.

4. Once more adjust the idle speed to approx. n = 800 r.p.m. by means of the idle adjustment screws (8).