

### III. Checking and Adjusting of Additional Spring (Spring to eliminate Faltering or Hunting of Engine during Idling, OM 636)

The variations of vacuum present in the injection pump governor during idling and the resulting oscillation of the diaphragm and the control rod can cause an irregular idling of the engine. To limit these movements of the diaphragm the stop screw (6) must be adjusted as specified for the respective injection pump (see Test Sheet, Section C, Paragraph 9) (Fig. 07-8/6).

While the engine is in operation a checking and/or correcting of the adjustment of the adjusting screw (6) can be conducted as follows (see Fig. 07-8/6 and 07-8/7).

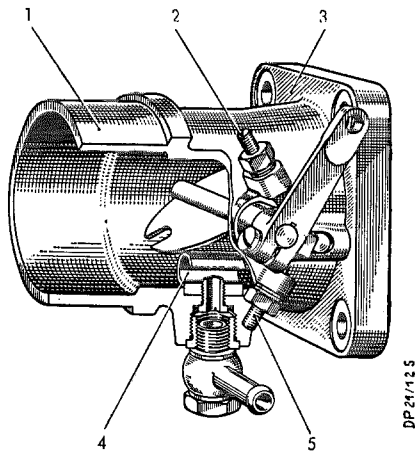


Fig. 07-8/5

- |                         |                          |
|-------------------------|--------------------------|
| 1 Connector for venturi | 4 Auxiliary venturi pipe |
| 2 Idling stop screw     | 5 Full load stop screw   |
| 3 Mounting flange       |                          |

1. **In the vehicle** with the engine warm first turn the knob of the idling control at the instrument panel fully clockwise; the idling stop screw (2) must then be pressed against the stop at the throttle duct. If this is not the case, readjust the cable control of the idling control (see Fig. 07-8/5).

2. Adjust idling speed to 550 to 600 rpm by regulating the idling stop screw (2) at the throttle duct (see Fig. 07-8/5).

An irregular idling speed can be caused by too large a distance of the stop bolt (9).

Check by moving the adjusting lever (15) slowly in the direction STOP; the oscillations of the diaphragm with diaphragm bolt (18) during idling are limited by the double lever (14) (see Fig. 07-8/6).

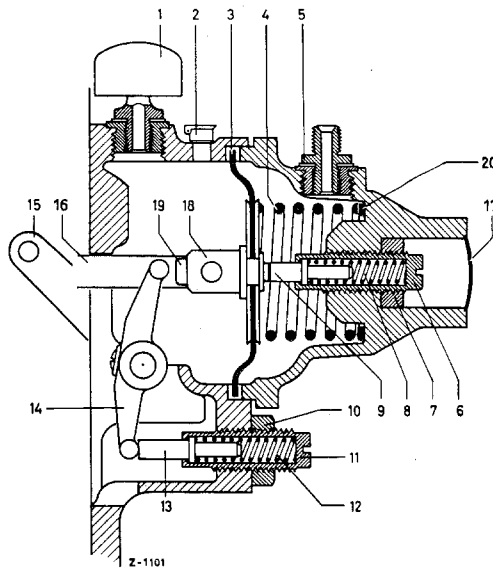
If the idling performance now becomes smoother, a correction can be achieved by adjusting the additional spring by means of the adjusting screw (6). This correction is also necessary, if the engine stalls during clutching at intersections, even though the idling speed is high enough.

3. Adjusting additional spring and/or adjusting screw: In order to adjust the additional spring of MZ type governors of the newer version the end plate (17) must be removed from the diaphragm housing (see Fig. 07-8/6).

At the MZ governor versions EP/MZ 60 A 39 d and 51 d the diaphragm housing cover must be removed for the readjusting of the adjusting screw (6), because the adjusting screw is only accessible from the inside.

Screw in the adjusting screw (6) (Fig. 07-8/6) with the Bosch Special Wrench EFEP 95 while the engine is in operation (idling speed), until the engine is running smoothly when idling (Fig. 07-8/7).

Fig. 07-8/6



#### Partial Load or Idling Position

- 1 Air filter for atmospheric chamber
- 2 Cap oiler to lubricate governor linkage
- 3 Diaphragm
- 4 Control spring
- 5 Vacuum connector on the vacuum chamber
- 6 Adjusting screw with additional spring (Stupser)
- 7 Lock nut of adjusting screw
- 8 Additional spring
- 9 Stop bolt (Stupser)
- 10 Lock nut
- 11 Adjusting screw with full load stop
- 12 Spring
- 13 Stop bolt
- 14 Double lever
- 15 Adjusting lever
- 16 Control rod
- 17 End plate in diaphragm housing cover
- 18 Diaphragm bolt
- 19 Pressure bolt of adapting spring
- 20 Washer

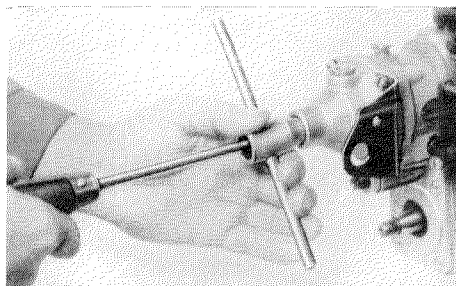


Fig. 07-8/7

The adjustment of the additional spring must be fairly accurate, so that the stop bolt (9) barely touches the diaphragm (3) which is oscillating during idling. The adjusting screw (6), however, must be adjusted more than **just** necessary to smoothen idling, because the idling speed would otherwise be increased. An additional result would be that

- a) the degree of unbalance is too high during final governing
- b) during coasting, that is especially during down-hill drives with the throttle butterfly closed, the injection pump would still inject a small quantity of fuel and thereby reduce or completely cancel the braking effect of the engine.

In order to check warm up engine after adjusting the helper spring, then fully open the throttle butterfly against the full load stop and measure the obtained max. no-load speed. The max. no-load speed must not be higher than specified (see Page 0-1/11 and following pages). If necessary, adjust with the full load stop screw at the throttle duct (see Section II, Paragraph 1).

The adjusting screw (6) must be secured by tightening the lock nut (7) and a new end plate (17) has to be installed in the governor housing after completing adjustment (see Fig. 07-8/6).

Check for operational ease of the control linkage and apply a few drops of oil if necessary. A few drops of motor oil must be poured into the cap oiler (2) of the atmospheric chamber and the vacuum connector (5) of the vacuum chamber of the injection pump governor. After that reinstall the vacuum line at the vacuum connector (5) (see Fig. 07-8/6). Depending on the respective version of governor wash the air filter of the atmospheric chamber in gasoline, blow out with compressed air and lightly oil again.

After the completion of these operations the governor must be lead-sealed again. Furthermore, on vehicles with cable control for the idling adjusting make sure that there is a distance of 0.1 to 0.2 mm between the adjusting collar and the adjusting lever, so that the idling stop screw (2) is properly pressed against the stop at the throttle duct (see Fig. 07-8/5).