

The idling speed of an engine is the lowest speed at which the unloaded engine continues to run without stalling; during this operation the engine is only carrying the load caused by its internal friction and the aggregates such as generator, injection pump, fan etc. which are always coupled with the engine.

Therefore, the engine needs a small injection quantity. This is automatically adjusted by the governor of the injection pump, as soon as the throttle butterfly is in the idling position.

The engine must be at operating temperature to allow the correct adjustment of the idling speed (cooling water temperature at least 60° C). The engine can be warmed up during a previous short trial run if necessary.

The specified idling speed should only be adjusted at the throttle duct and not at the injection pump governor. The adjustment of the helper spring in the governor serves only to eliminate "sawing and galloping" during idling (see Job No. 07-8, Section III).

The idling speed should be set to 550 to 600 rpm for OM 636 and 700 to 800 rpm for the OM 621. If no revolution counter or no hand revolution indicator is available, then the charging control light can be employed as a serviceable indicator. The idling speed is adjusted in such a way that the charging control light is just dimmed. The idling speed of diesel engines should rather be adjusted too high than too low in order to obtain a smooth and balanced operation of the engine. Furthermore, this will reduce the strain on the flexible suspension of the engine and exhaust assembly used for passenger car engines.

a) Adjusting the idling speed at the throttle duct

1. On vehicles with bowden cable idling control, turn the knob at the instrument panel fully clockwise. The throttle lever (4) should not touch the setting ring of the bowden cable (see Fig. 00-11/1), loosen the setting ring if necessary.
2. Then adjust the idling speed by tightening or loosening the idling stop screw (2) (Idling Speed see Job No. 00-0).

Note: If the speed cannot be lowered sufficiently, then check whether the vacuum line, the diaphragm housing or the diaphragm is leaking. If there is a leak in the vacuum system, an idling adjustment is not possible, because the vacuum will be too weak to pull the control rod far enough in the direction STOP (also see Job No. 07-8, Section I and III).

Regarding the OM 621: besides the operations according to items 1 and 2, the connection rod (26) of the mechanical additional control should also be checked for correct length and/or adjusted.

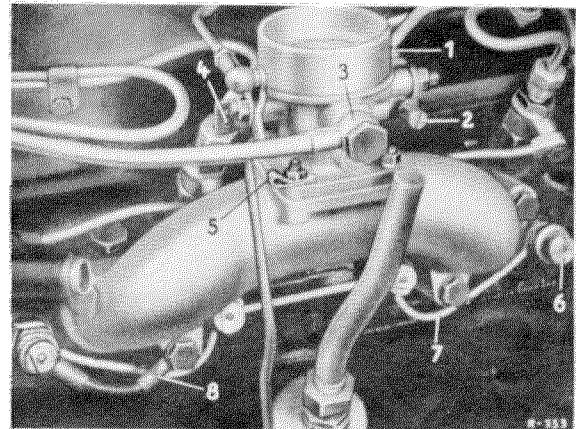


Figure 00-11/1

- 1 Full-load stop screw
- 2 Idling stop screw
- 3 Vacuum connector
- 4 Throttle lever with slotted hole to attach the bowden cable
- 5 Fixing clip for bowden cable of idling control
- 6 Glow plug
- 7 Power lead
- 8 Ground cable

To do this unhook the connection rod (26) from the angular lever (24) on the cylinder head cover to the lever (28) of the mechanical additional control (Stupser) on the injection pump governor and press downwards to the idling stop (see Figure 00-11/2).

In this position, i.e., throttle in idling position and lever (28) on the injection pump governor, a distance of approx. 1 mm must exist between the ball socket of the connection rod (26) and ball head on the angular lever (24), that means for hooking of the connection rod (26) into the ball head of the angular lever (24), the connection rod (26) must have a lift of approx. 1 mm. If, for hooking in, the connection rod must be lifted by more than 1 mm, then elongate the connection rod by unscrewing

the ball socket. If the distance is smaller than 1 mm, the connection rod must be made shorter.

b) Adjusting the bowden cable of the idling control OM 636 and OM 621

Adjust the bowden cable only after the idling speed has been adjusted at the idling stop screw (2) (see Fig. 00-11/1).

1. Turn the knob at the instrument panel fully clockwise.
2. Clamp the set ring on the wire cable in such a way that there is a distance of 0.1 to 0.2 mm between set ring and throttle lever or angular lever resp., so that the idling stop screw surely touches its stop on the throttle duct. With this adjustment, the engine speed increases when turning the turn button towards left approx. as from the 4th notch.

Note: With the OM 621, do not fail to check the wire cable (18) for free movement in the slot of the stop angle at the angular lever (24) (see Figure 00-11/2).

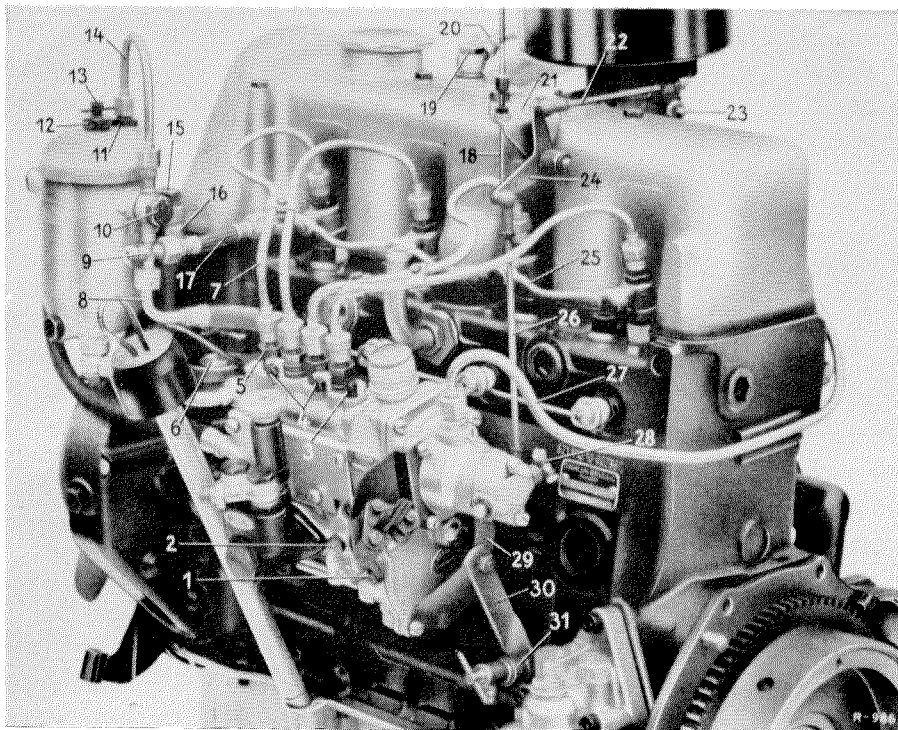


Figure 00-11/2

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| 1 adjusting lever | 16 spacer |
| 2 oil level check screw | 17 flexible hose from leakage line to cross fitting |
| 3 bleeder screw | 18 wire cable for idling adjustment |
| 4 hex. hd. screw for clamping jaws | 19 hollow screw |
| 5 pipe connection | 20 bleeder line |
| 6 screw plug (connection for revolution counter) | 21 bracket |
| 7 injection line | 22 connection rod (200 mm long) |
| 8 flexible hose from by-pass valve of injection pump to the cross fitting | 23 throttle shaft with lever |
| 9 cross fitting | 24 angular lever |
| 10 hex. hd. screw | 25 leakage line |
| 11 fitting | 26 connection rod to lever for mechanical additional control |
| 12 tension nut | 27 vacuum line from injection pump governor to throttle duct |
| 13 bleeder screw | 28 lever for mechanical additional control |
| 14 bleeder line from filter to cross fitting | 29 supporting bell |
| 15 hex. hd. screw for filter mounting | 30 supporting carrier |
| | 31 screwed nipple |