

Figure 07-4/19
OM 636

- 1 Drive gear of injection pump
- 2 Fixing screws of segment plate
- 3 Thrust washer
- 4 Segment plate
- 5 Centrifugal weights
- 6 Segment flange
- 7 Bush for drive gear

- 8 Drive shaft of injection pump
- 9 Spring seat bolt
- 10 Tension spring
- 11 Stop bolts for the timing limit
- a Contact surfaces for the centrifugal weights on the segment plate and the segment flange

VII. Injection Nozzle DNO SD 211 and DNO SD 151

The injection nozzle has the task of injecting the fuel delivered by the injection pump at a high pressure in the most favorable spray pattern and at the proper moment into the combustion chamber and distribute it in such a way, that a good combustible mixture is produced in the combustion chamber. The nozzle is controlled by the fuel pressure. During the discharge stroke of the plunger the pressure impulse is transferred through the injection lines, the pressure passage (14) in the nozzle holder, the annular groove and the inlet holes (16) of the nozzle holder insert (3), the annular groove and the pressure passages (17) in the nozzle head (2), until it reaches the pressure chamber (19) in the injection nozzle (see Figure 07-4/20). If the discharge pressure becomes stronger than the tension force of the tension spring (6), the nozzle needle is lifted off its seat and the fuel is injected through the injection hole into the pre-combustion chamber and the main combustion chamber to produce a combustible mixture there.

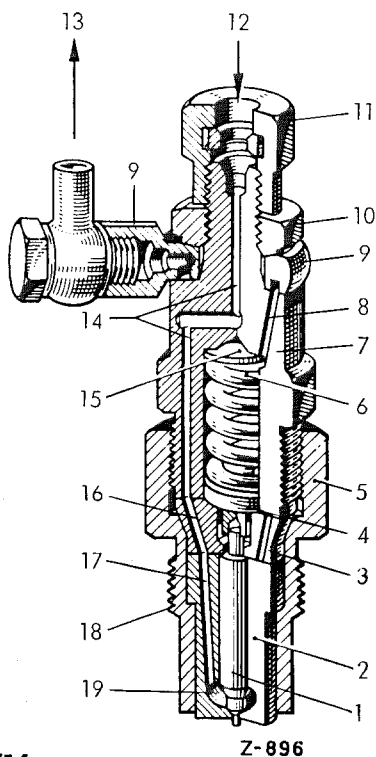


Figure 07-4/20

Nozzle Holder with Injection Nozzle DNO SD 211

- 1 Nozzle needle
- 2 Nozzle head
- 3 Nozzle holder insert
- 4 Pressure bolt
- 5 Cap nut to secure injection nozzle
- 6 Tension spring
- 7 Nozzle holder
- 8 Drip-oil passage in nozzle holder
- 9 Adapter with annular groove for drip-oil connector
- 10 Hex nut to fix adapter
- 11 Cap nut to fix injection line
- 12 Fuel inlet
- 13 Drip-oil outlet back to fuel tank
- 14 Pressure passage in nozzle holder
- 15 Washers of tension spring
- 16 Annular groove and inlet holes in nozzle holder insert
- 17 Annular groove and pressure passages in nozzle head
- 18 Mounting thread
- 19 Pressure chamber in nozzle head

The drip-oil reaching the nozzle holder (7) has access to the annular groove of the drip-oil connector (9) via the passage (8) and flows back through the drip-oil outlet (13) into the fuel tank. If, towards the end of the discharge stroke, the fuel pressure becomes weaker than the tension spring (6), the latter presses by way of the pressure bolt (4) the nozzle needle (1) back again on its seat; the injection is completed. With this the nozzle is closed until actuated again by the next discharge stroke. There must be no dribbling of fuel.

The opening pressure of the nozzle can be adjusted by changing the initial load of the tension spring with the help of the washers (15).

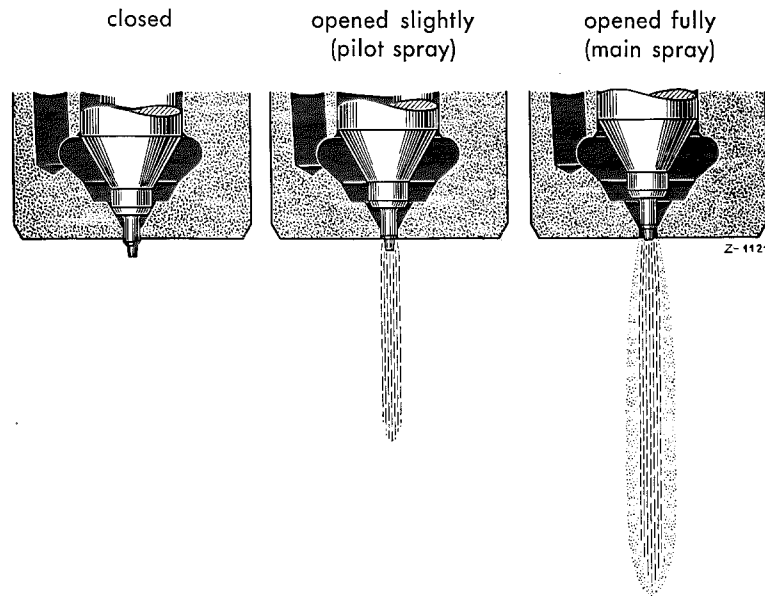


Figure 07-4/21

Throttle Nozzle DNO SD 211 with pilot injection

With the throttle nozzle installed in the Models OM 636 and OM 621 the injection process is influenced by the shape of the spray pin of the nozzle needle and the throttle bore in the nozzle head, meaning a pilot injection is obtained. The nozzle needle opens at first only a narrow annular gap, through which can only pass a little fuel very finely sprayed (throttle effect). During further opening (caused by increase of pressure) the cross section of the passage becomes larger, the main portion of the fuel is injected towards the end of the needle stroke. The combustion and the engine performance is therefore smoother, because there is a slower increase of pressure in the combustion chamber.

The two injection nozzles DNO SD 211 (OM 636) and DNO SD 151 (OM 621) are different regarding the shape of the throttle pin (9) and the travel of the nozzle needle (see Figure 07-5/32).

The injection nozzle DNO SD 211 must only be used for the OM 636 and the nozzle DNO SD 151 must only be used for the OM 621.

VIII. Fuel Feed Pump

a) General

The fuel feed pump is a single-acting plunger pump, which has the task of pumping fuel at a certain pressure (approx. 1.5 atm.) through the fuel main filter into the suction end of the injection pump. This is necessary to guarantee a satisfactory fuel supply of the pump elements,