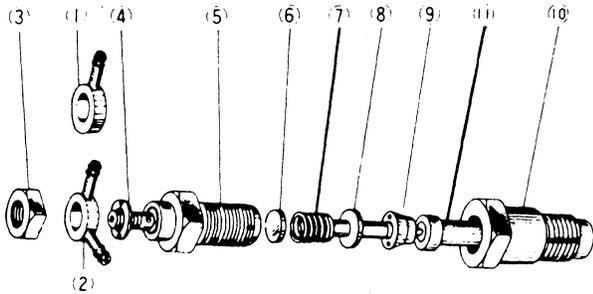


■ Fuel injection nozzle

The fuel injection nozzle, like the fuel injection pump, is also a precision piece of equipment and should be treated with the same amount of care.

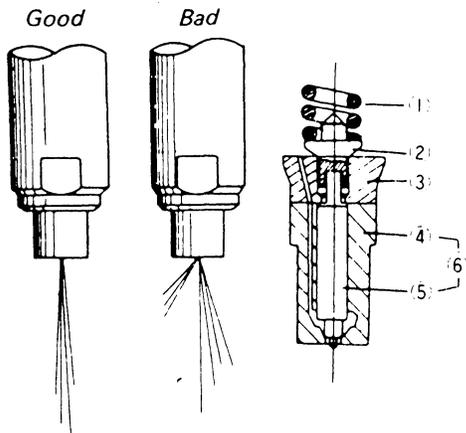
■ The injection pressure

The injection pressure is adjusted by adding or subtracting shims from the top of the nozzle spring. Adding a 0.004 in. (0.1 mm) shim will increase the injection pressure by about 142 psi (10 kgf/cm<sup>2</sup>). The injection pressure is 1990 to 2133 psi. (140 to 150 kgf/cm<sup>2</sup>)



- |                       |                        |
|-----------------------|------------------------|
| 1. Delivery nipple 1  | 7. Nozzle spring       |
| 2. Delivery nipple 2  | 8. Pressure pin        |
| 3. Nut                | 9. Pressure pin holder |
| 4. Washer             | 10. Nozzle nut         |
| 5. Nozzle holder body | 11. Nozzle piece       |
| 6. Adjusting washer   |                        |

Fig. 6. Fuel Injection Nozzle



- |                        |                 |
|------------------------|-----------------|
| 1. Nozzle spring       | 4. Nozzle body  |
| 2. Pressure pin        | 5. Needle valve |
| 3. Pressure pin holder | 6. Nozzle piece |

Fig. 7. Nozzle

■ Spray pattern

The injection pressure and fuel spray pattern are most accurately checked by using a nozzle pressure tester. If a nozzle pressure tester is not available, remove the nozzles from the engine, leaving the pressure lines connected.

[[CAUTION]]

Hold the nozzles so that the high pressure spray from them will not in any way impinge upon unprotected skin. The atomized fuel will easily penetrate the skin and cause blood poisoning.

Set the speed control lever at W. O. T. and operate the starter. The needle valve, if it is working properly, will produce a high pitched pulsating sound like that of a flute as fuel is sprayed out. If this sound is not heard or other problems are noted, refer to the "Fuel Injection Pump & Nozzle Maintenance Std." in 4.1 in "Engine".

[[Precaution]]

- (1) Assembly and disassembly of the nozzle should be done in fresh clean fuel.
- (2) The nozzle should always be installed as an assembly, never by component parts.
- (3) Remember never to let the nozzle spray contact unprotected flesh.
- (4) Tighten the retaining nut to 43.5 to 58 ft-lb (6 to 8 kgf-m) Any torque higher than this will cause slow action of the needle valve and poor injection.

2.2 Lubrication System

■ Oil pump pick-up screen

The oil pump pick-up is located in the crankcase as shown in Fig. 9 and is fitted with a metal screen. If the screen becomes plugged, wash it off with diesel fuel or kerosene.

■ Lubrication system

The trochoid oil pump suck up lubricating oil through oil filter and the oil flows down to the filter cartridge where it is further completely filtered and also the pressure regulating valve installed in the gear case regulate the oil pressure at 36 ~ 50 psi (2.5 ~ 3.5 kgf/cm<sup>2</sup>). From the filter, one part of the lubricating oil will be fed through crank shaft passage to crank pin metal and the remainder of oil will be fed through the frame to the rocker arm shaft. An oil pressure switch is provided for on the way for watching the oil pressure. If the oil pressure falls below 7.1 psi (0.5 kgf/cm<sup>2</sup>), the oil warning lamp\* on the dash panel will be lighted warning the operator. In case the oil warning lamp should stay on while engine, being running at normal revolution, shut the engine off immediately and check the causes of the pressure drop.

NOTE

\*Oil warning lamp and dash panel are optional parts.