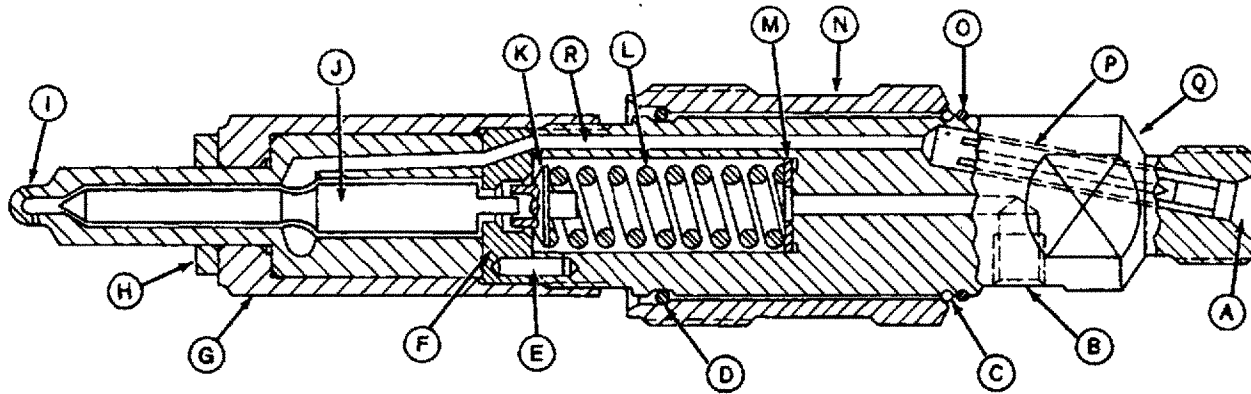


FUEL INJECTION NOZZLES—GENERAL INFORMATION—CONTINUED



RG2242

RG2242
-UN-14DEC88

- | | | | |
|-----------------------|------------------------|---------------|--------------------|
| A—Fuel Inlet | F—Intermediate Plate | K—Spring Seat | O—Snap Ring |
| B—Leak-Off Connection | G—Nozzle Retaining Nut | L—Spring | P—Edge-Type Filter |
| C—O-Ring | H—Washer | M—Shims | Q—Nozzle Holder |
| D—Snap Ring | I—Nozzle | N—Gland Nut | R—Fuel Passage |
| E—Dowel Pin | J—Valve | | |

The nozzle valve (J) is held on its seat by a spring (L). Shims (M) are used to regulate the nozzle opening pressure.

The nozzle (I) and valve fit together by precision lapping. These parts are referred to as a nozzle assembly, and are not serviced separately.

Correct alignment of the nozzle assembly with its holder is essential so that the atomized fuel will be sprayed into the combustion chamber at the angle and location intended by design. KDEL holders use an intermediate plate (F) with dowel pins (E) on both sides to insure alignment.

A retaining nut (G) is used to fasten the nozzle assembly to the holder body. The diameter of the holder body is 21 mm, and from this dimension the fuel injection nozzles are known as 21 mm nozzles.

An edge-type filter (P) is placed in the fuel inlet of the nozzle holder. Its purpose is to prevent coarse, foreign particles from damaging the nozzle assembly or plugging the orifices. Finer particles pass through the filter without harm. The filter is not removable.

To provide a seal between the injection nozzle and the engine cylinder head, a steel washer (H) is used at the base of the nozzle retaining nut.

The fuel injection nozzle is fastened to the engine cylinder head by a gland nut (N). The gland nut also functions as a jack screw to raise the injection nozzle out of cylinder head during removal.

S11,23010,AF -19-18APR94

115
29

FUEL INJECTION NOZZLE OPERATION

Fuel lines (A) deliver the fuel to injection nozzles. Fuel enters the injection nozzle inlet (B), and passes through the edge-type filter (C). Coarse foreign particles are retained by the filter.

115
30

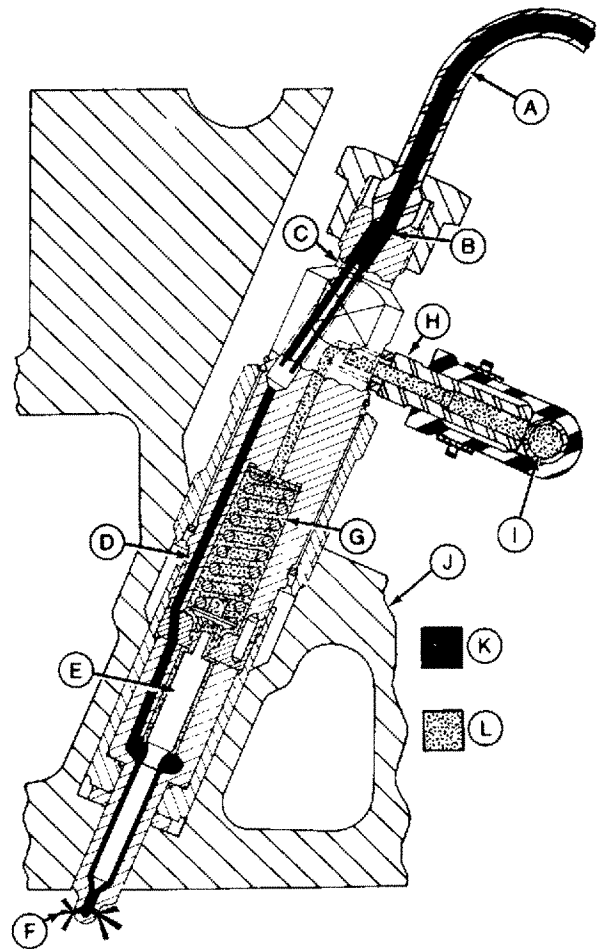
A passage (D) routes fuel through the nozzle holder to the nozzle valve (E). The nozzle valve is lifted instantly off its seat by the high pressure inlet fuel acting on an annulus in the valve.

NOTE: Since the nozzle valve opening pressure is considerably lower than the injection pump output pressure, the inlet fuel pressure easily overcomes the resistance of the nozzle valve spring (G).

When the nozzle valve opens, a definite quantity of fuel (determined by the injection pump output for each plunger stroke) is forced out through orifices (F). The fuel becomes finely atomized as it is sprayed into the combustion chamber at high velocity.

The nozzle assembly is lubricated by a small amount of fuel which seeps between the lapped surfaces of the nozzle and valve which accumulates around the spring (G, refer to previous illustrations).

The leakage fuel is routed out the nozzle holder through a leak-off connector (H) and returned back to the fuel tank by means of a leak-off pipe (I).



Fuel Flow Through KDEL Injection Nozzle

- A—Fuel Delivery Line
- B—Fuel Inlet
- C—Edge-Type Filter
- D—Fuel Passage
- E—Nozzle Valve
- F—Orifices
- G—Nozzle Valve Spring
- H—Leak-Off Connector
- I—Leak-Off Pipe
- J—Engine Cylinder Head
- K—High Pressure Fuel
- L—Low Pressure (Return) Fuel

RG4651 -UN-29AUG94

S55,23010,P -19-16SEP94