

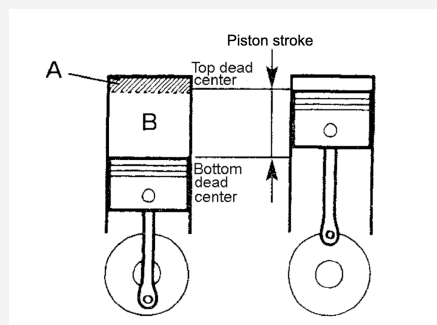
OPERATION OF DIESEL ENGINE

fundamentals

flash point temperature at which diesel fuel will briefly ignite when a flame is near it.

ignition point lowest temperature at which it will spontaneously ignite **without** a spark.

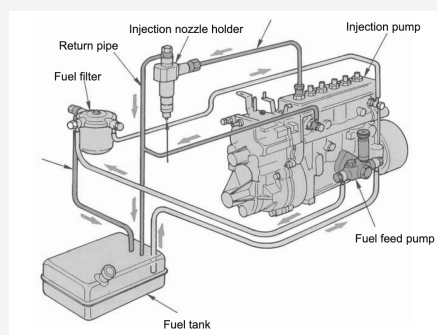
Compression ratio = $(A+B) / A$



Diesel oil has a **lower ignition point**

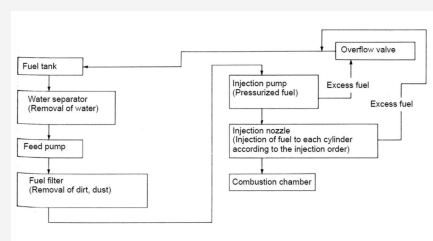
Diesel engine have a **higher compression ratio** compared to petrol engine is the **self-ignition system** that uses **heat created compression** to ignite fuel.

Fuel System



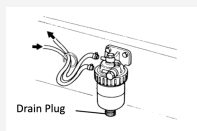
Used to **pressurize** fuel and inject it into the combustion chamber.

Out line



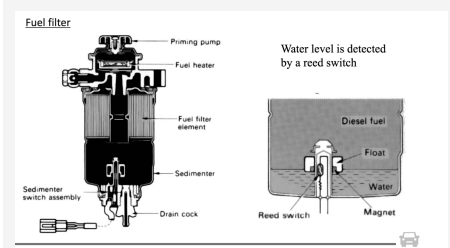
Consists of fuel tank, **fuel feed pump** to supply fuel to the **injection pump**, a fuel filter to remove contaminants, an **injection pump** to **pressurize** the fuel and to deliver an **appropriate quantity** of it under pressure at **optimal timing**, **injection nozzle** to **inject high pressure fuel** into the combustion chamber and components connected.

water separator



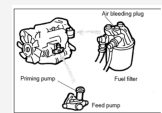
Water separator separates water that is in the fuel due to the **difference in the specific gravity** from diesel oil.

CONSTRUCTION AND FUNCTION (copy)



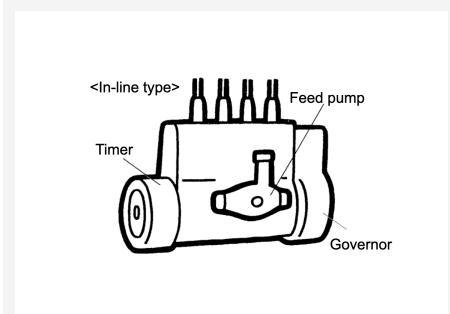
Fuel filter Spiral V-shaped paper with pore size of 8 μm or less is commonly used for cartridge in modern systems. **Sediment** is usually fitted under filter for **water collection** to **avoid corrosion** fuel injection components.

CONSTRUCTION AND FUNCTION (copy)



Feed pump used to **feed fuel** from the tank to the **injection pump**. Controls fuel pressure to **prevent any unusual status**. Also **designed to bleed air**

Injection pump



Injection pump applies pressure to fuel to be **injected** in the **combustion chamber** or **uniformly injects** the **appropriate amount** of fuel at **optimal time** (the function of timer) according to the engine revolution.

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