SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

23AUT202 – AUTOMOTIVE ENGINES AND EMISSION CONTROL

II YEAR / III SEMESTER

Topic – **Distributor Pumps**

Distributor System

- Distributor pumps are a critical component in internal combustion (IC) engines, especially in diesel engines. They are part of the fuel injection system, which is responsible for delivering fuel to the engine cylinders at the right time and in the right amount.
- Distributor Type Fuel Injection Pumps normally employ a rotary distributor for distributing the high pressure charges of fuel sequentially to the fuel injectors.
- Number of injection strokes per cycle for the pump equals to the number of cylinder
- One metering element which ensure uniform distribution

- Fuel injection pumps play an important role in delivering fuel to the injectors at the required pressure and timing.
- The injection sequence should be faster, which requires the pump to be compact and light in weight. Distributor type fuel injection pump fits the criteria of light weight and compact design

Function and Operation

Fuel Delivery:

- The primary function of a distributor pump is to meter and distribute the correct amount of fuel to each cylinder of the engine.
- The pump draws fuel from the fuel tank and pressurizes it before delivering it to the fuel injectors.

Timing:

- Distributor pumps ensure that the fuel is injected at the precise moment required for efficient combustion. This timing is crucial for engine performance and efficiency.
- The pump is synchronized with the engine's camshaft, allowing it to inject fuel at the correct point in the engine cycle.

Function and Operation

Pressure Generation:

- The pump generates high pressure to ensure the fuel is atomized properly when injected into the combustion chamber. Proper atomization leads to better mixing with air and more efficient combustion.

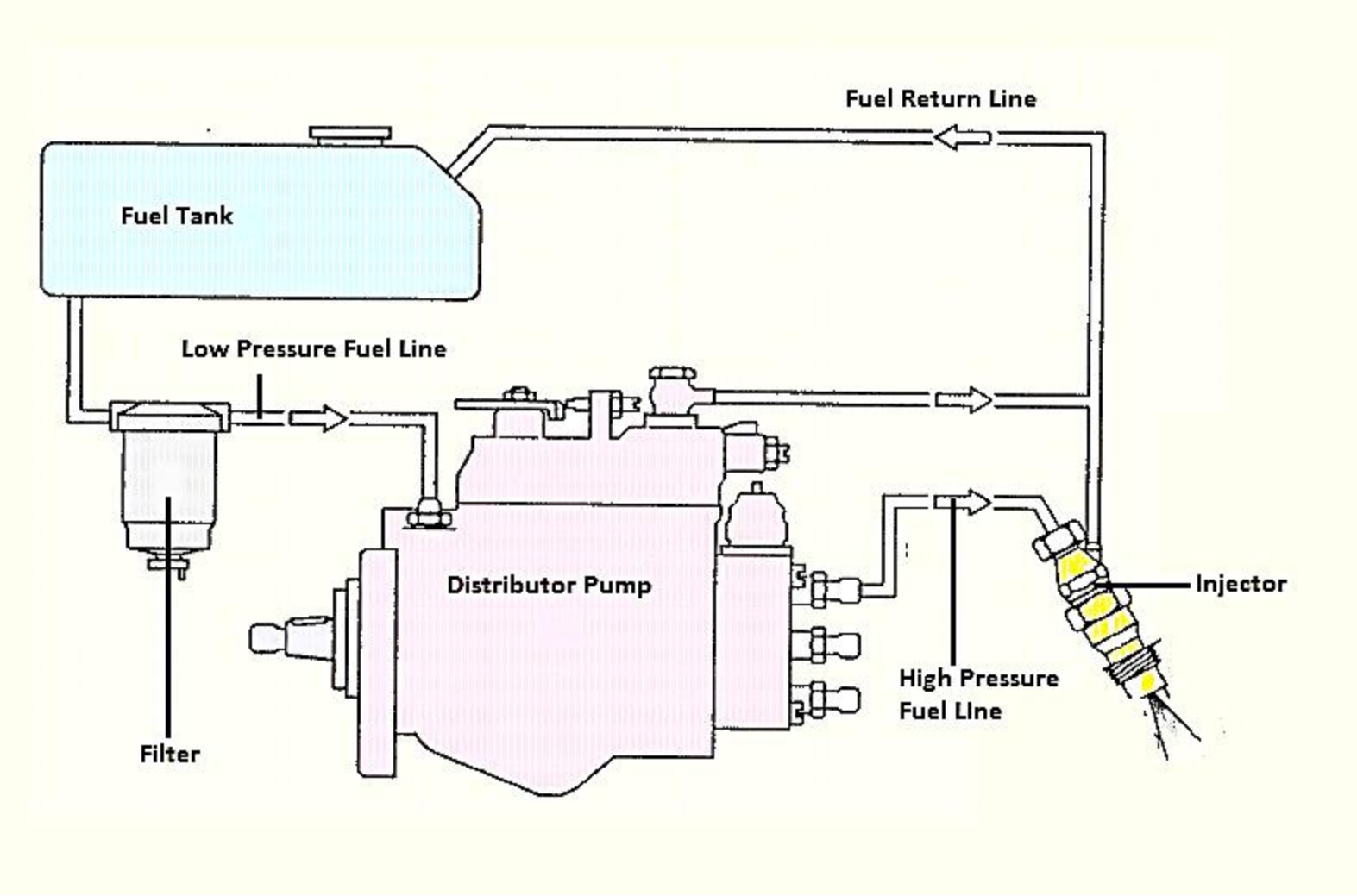
Types of Distributor Pumps

Mechanical Distributor Pumps

- Operated by mechanical linkages connected to the engine.
- Include components like camshafts, plungers, and delivery valves to control fuel injection.

Electronic Distributor Pumps

- Use electronic control units (ECUs) to precisely control the timing and amount of fuel injected.
- Offer better efficiency and performance due to more precise control compared to mechanical pumps.


Fuel Return Line
Fuel Tank
Low Pressure Fuel Line
Distributor Pump
Injector
High Pressure
Fuel LIne
Filter

Thank You !