



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

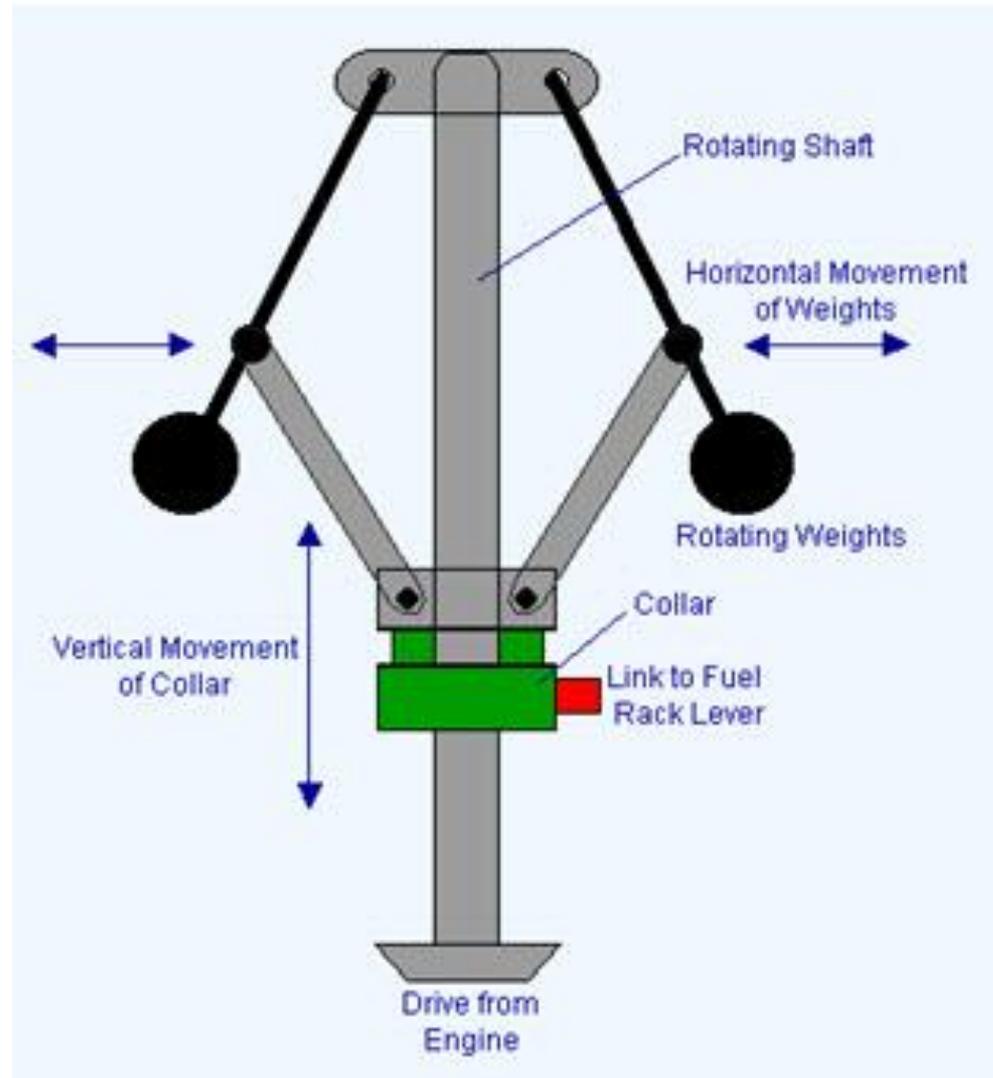
Topic – **Diesel Engine Governor**



Introduction



- A diesel engine governor is a crucial component in diesel engines, designed to regulate the engine speed by controlling the fuel injection rate.
- This ensures that the engine operates efficiently under varying loads and conditions, preventing over speeding and maintaining desired performance levels.
- In petrol engines, the carburetor controls both air and fuel delivery at various speed and load conditions. However, in diesel engines, governor is the device used to control the engine speed.





- Governor regulates the engine speed by varying the fuel flow as per the load conditions. Engine speed tends to overshoot to hazardous values on reduction of load and also to very low speed (almost on the stage of engine halt) on increase in sudden and unexpected load application.
- To avoid such conditions, the engine speed is controlled by regulating the fuel supply by using engine governor. All injection pumps operate in conjunction with the governor.
- When the engine speed increases, the air intake decreases and hence results in more injection of fuel. On the other hand, at idling speed (no load conditions) or when the engine speed is relatively low, the fuel supply is also minimum.



- A governor is, therefore, a necessity to control the fuel injected to ensure optimum conditions at all speeds and loads within the range specified.
- A governor capable of holding any speed between idling and maximum speed is called variable speed governor.



- The basic principle of working of governor is that the governor spring and flyweights are so selected that at any designed engine speed centrifugal force and spring force are in equilibrium.
- If the speed increases, the increasing centrifugal force of the flyweights acts through the system of levers to reduce the delivery of fuel and when the speed decrease, the control rod moves to step up the fuel delivery rate to increase the speed to desired level.
- The governor maintains all speeds automatically including idling and minimum speed.
- Governors are often included in the design of the fuel injection pump.
- The diesel engine governors should have following certain qualities or characteristics.



Function Engine Governor

Speed Regulation:

- The primary function is to maintain a constant engine speed despite changes in load.
- It adjusts the fuel injection rate to control the engine speed.

Prevent Over-speeding:

- Protects the engine from damage caused by running at excessively high speeds.

Engine Stability:

- Ensures smooth and stable operation of the engine by preventing sudden speed fluctuations.



Thank You !