



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

COURSE NAME : 19AUE308 - SPECIAL VEHICLES

III YEAR /VI SEMESTER

Unit 2- Constructional Vehicles

Topic 6 : Concrete Ready Mixers



CONTENT



- Introduction.
- Need for Concrete Ready Mix Truck.
- Components.
- Construction & Working.
- Advantages & Disadvantages.
- Applications.
- Manufacturing Companies.



INTRODUCTION



- Ready-mix concrete is concrete that is manufactured in a batch plant, according to a set engineered mix design.
- It is often used over other materials due to the cost and wide range of uses in building.
- **The ready mix concrete truck** carries and transports concrete to the required destination.





NEED FOR CONCRETE READY MIX TRUCK



- The assurance of perfect mixing is not ensured in manual mixing.
- Manual mixing within the site for large buildings is a complex process.
- For overcoming this, the concrete mixture is prepared ready made in plant.
- It is transported to the site through the concrete ready mix truck.





COMPONENTS



- Engine
- Hydraulic system
- Rotating Drum
- Feeding and discharging system
- Water tank
- Auxiliary frame
- Pneumatic braking system
- Control switch





CONSTRUCTION



- The truck comprises of an engine along with the transmission unit.
- The Hydraulic system is mainly composed of hydraulic pump, hydraulic motor, radiator and high-pressure tubing.
- The Hydraulic system helps in the rotation of the mixing drum.





CONSTRUCTION

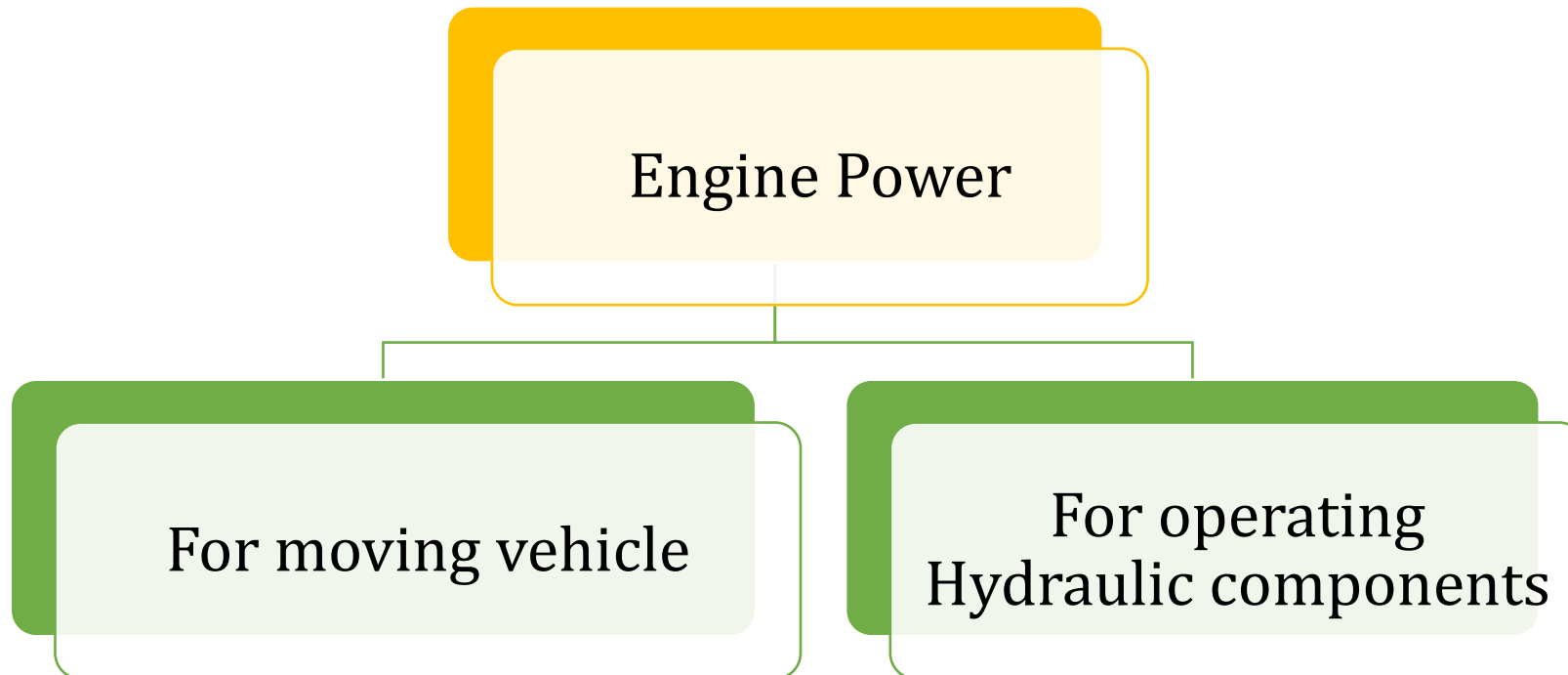


- The readymade mixture is placed inside the rotating drum through the opening provided above the drum which is known as feeding system.
- The readymade mixture is transported as two types of mixtures
 - ✓ Dry mixture
 - ✓ Wet mixture.





WORKING



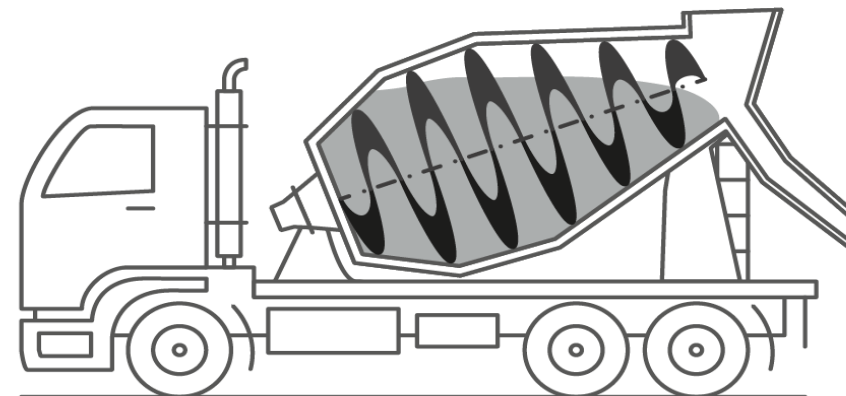


WORKING



- The controlling of the hydraulic system is done by the use of valve control lever.
- The Engine power is used for rotating the drum through the hydraulic system.
- The truck starts its journey after the mixture is feeded to the drum.
- Then after reaching to the destination, the mixture is discharged by rotating the drum in anti-clock wise direction.

OPERATION
OF A TRUCK MIXER





REASON FOR CONTINUOUS ROTATION OF DRUM



- The drum is continuously rotated until the destination is reached.
- This is because to prevent the concrete from hardening.
- In case of dry mixture, the water is continuously supplied to the concrete.





ADVANTAGES



- Ready to use.
- Ensure perfect mixing.
- Reduces man power.
- Less operating time.
- More efficient work





DISADVANTAGES

- Requires proper water supply during transport.
- Cleaning the drum manually is a difficult process.
- High Capital cost.
- High operating cost.





APPLICATION

- Used in construction site for filling the concrete in ready mix condition
- Used in the construction of concrete roads.
- Used in the construction of bridges
- Used for filling concrete in the damaged concrete roads.





MANUFACTURING COMPANIES



- Tata
- Ashok Leyland
- Mahindra
- Bharath Benz
- Eicher
- Volvo



EICHER





1. How the concrete in the drum is feeded and discharged?
2. Give the reason for rotation of drum during travelling.
3. What is the cost of Concrete ready mix truck?

ASSESSMENT





REFERENCE



- https://en.wikipedia.org/wiki/Ready-mix_concrete
- <https://www.youtube.com/watch?v=oRyNPUaP4P0>



THANK YOU !!!