



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 5 : Mixing Machine



CONTENT



- Introduction.
- Need for Mixer Machine.
- Components.
- Construction & Working.
- Advantages & Disadvantages.
- Applications.
- Manufacturing Companies.



INTRODUCTION



- A **concrete mixer** is a device that homogeneously combines cement, aggregate such as sand or gravel, and water to form concrete.
- A typical concrete mixer uses a revolving drum to mix the components.
- For smaller volume works, portable concrete mixers are often used.





NEED FOR MIXER MACHINE



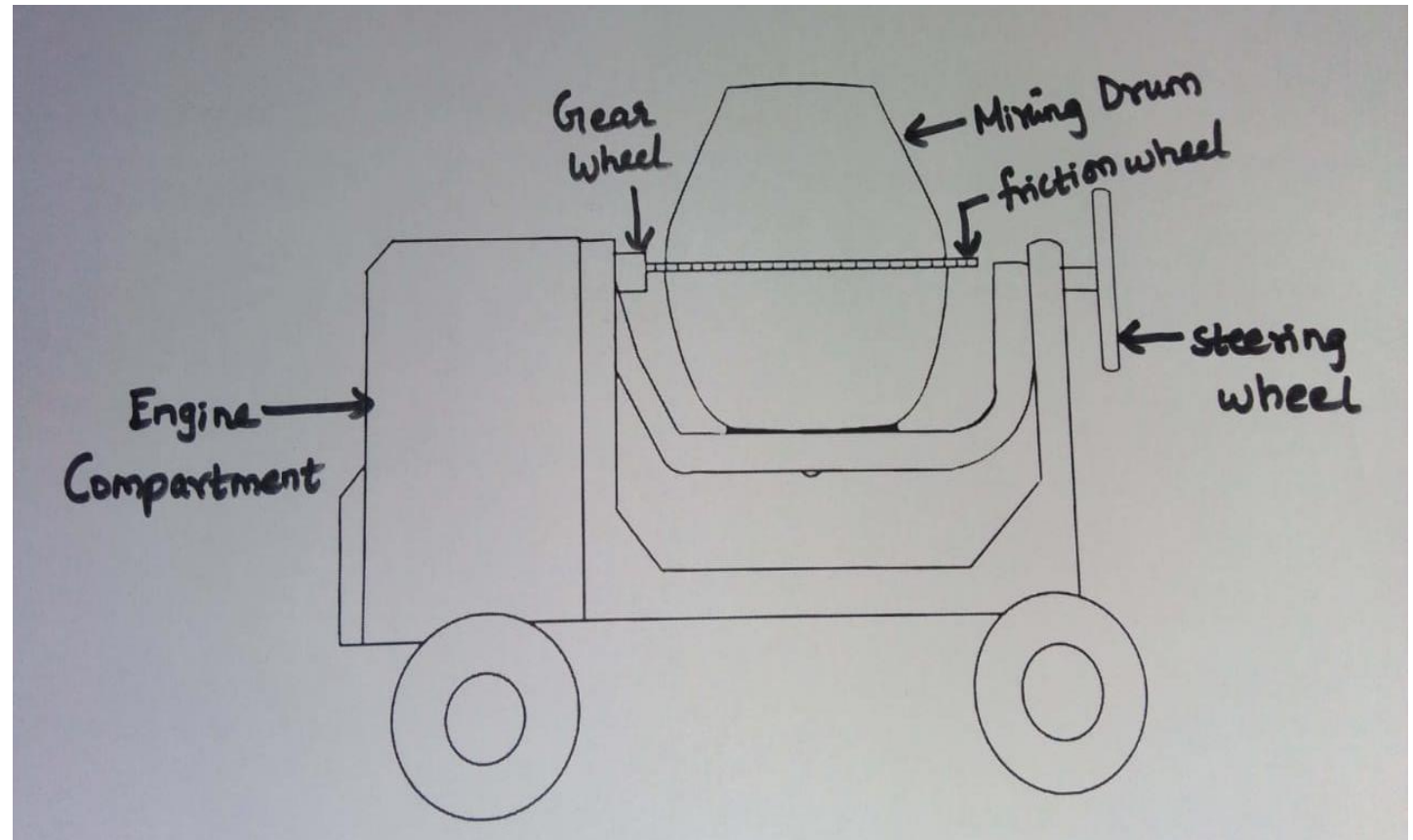
- The concrete mixing is normally done with the help of a man power
- It consumes more time and also the proper mixing is not ensured.
- The manual mixing will not be suitable for the construction of big buildings.
- For overcoming this problems, the Mixing machine is used.





COMPONENTS

- Engine or electric motor
- Mixing Drum
- Steering Wheel
- Friction wheel
- Manual Control device





CONSTRUCTION



- The mixing machine is operated by means of either an engine or an electric motor.
- The engine used mostly is a diesel engine.
- The mixing drum used for mixing the sand, gravel, water to form concrete.
- The steering wheel is used for moving the drum for uploading and discharging.





CONSTRUCTION



- The drum outer layer comprises of the friction wheel.
- The manual control device is used for controlling the throttle of an engine.
- The engine's final drive is contacted with the friction wheel in the drum.
- The other end of the drum setup is connected to a steering wheel for moving the drum up and down.





WORKING



- The engine is cranked by means of a rope start.
- The engine throttling is controlled through manual control device.
- Engine power is transmitted to the rotating drum through the gear wheel.
- With the help of a steering wheel the drum is moved up





WORKING



- The sand, gravel and water at appropriate ratio is feeded into the mixing drum
- The mixing is done continuously until the perfect concrete mixture is obtained.
- Then with the help of a steering wheel the mixing drum is moved down for discharging the mixed concrete.
- Then the mixed concrete is taken and used for the construction purpose





PORTABLE MIXER MACHINE





ADVANTAGES



- Reduces man effort.
- Less operating time.
- Efficient than manual mixing.





DISADVANTAGES

- High operating cost.
- Cleaning the drum manually is a difficult process.
- Need an external vehicle to transport Mixer Machine to the site .





APPLICATION



- Used in Building construction
- Used in Road construction
- Used for filling concrete or asphalt in the damaged road.





MANUFACTURING COMPANIES



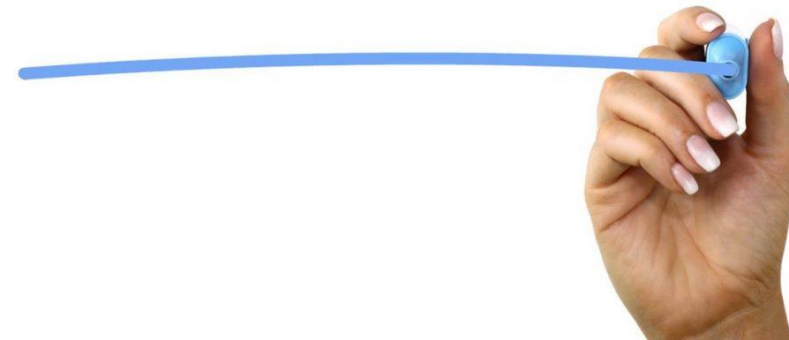
- Jaypee India Limited
- Lokpal Industries
- Unity Construction equipments





1. Mention the function of steering wheel in mixing machine.
2. Mention the power sources used for operating the mixing machine.
3. What is the cost of Mixer Machine?

ASSESSMENT





REFERENCE



- https://en.wikipedia.org/wiki/Concrete_mixer
- <https://www.youtube.com/watch?v=ygj2EpuLWzc>



THANK YOU !!!