



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



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DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 19AUE308 - SPECIAL VEHICLES

III YEAR /VI SEMESTER

Unit 1- Earth Moving Equipments

Topic 5 : Scraper



CONTENT



- ❖ Introduction
- ❖ Need for Scraper
- ❖ Components
- ❖ Construction & Working
- ❖ Advantages & Disadvantages
- ❖ Applications
- ❖ Manufacturing Companies



INTRODUCTION



- **Scraper** is a machine used for moving earth loosen materials over short distances.
- It is either self-propelled or towed.
- It consists of a wagon with a gate having a bladed bottom.
- The blade scrapes up earth as the wagon pushes forward and forces the excavated material into the wagon





NEED FOR SCRAPER



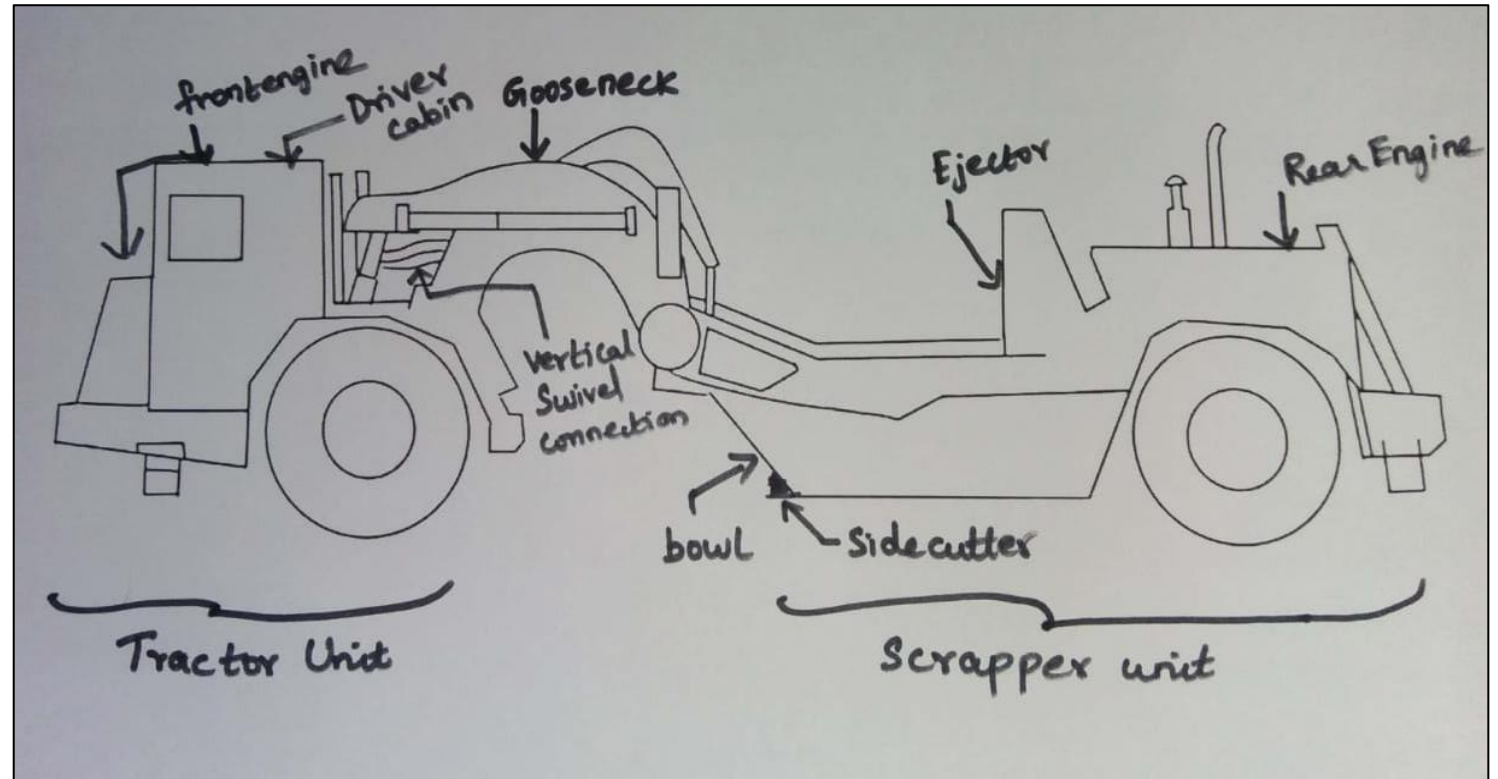
- The loosen earth materials like sand are normally carried out from one place to another by means of man power.
- Since it is a time consuming process and requires more man power.
- For overcoming this problem, the scraper is used for carrying the loosen materials.





COMPONENTS

- Tractor unit
- Scraper unit
 - Bowl
 - Apron
 - Ejector
- Goose neck
- Push block





CONSTRUCTION

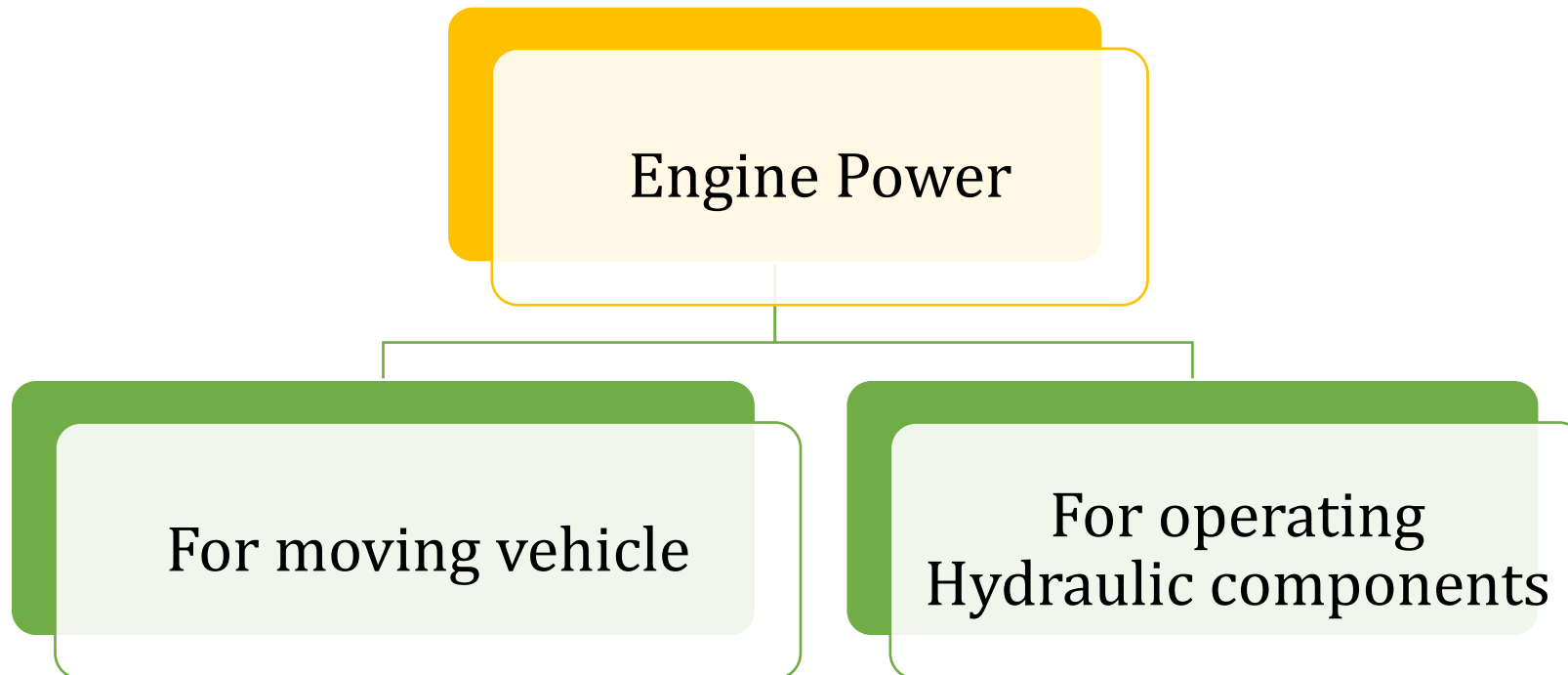


- The rear part of the scraper has a vertically movable hopper with a sharp horizontal front edge which can be raised or lowered.
- The front edge cuts into the soil and fills the hopper.
- When the hopper is full it is raised and closed.
- The hopper can be hydraulically lowered and raised.





WORKING





WORKING



- When the hopper is lowered, the front edge cuts into the soil or clay like a plane and fills the hopper.
- When the hopper is full it is raised, and closed with a vertical blade.





WORKING



- The scraper can transport its load to the fill area where the blade is raised.
- The back panel of the hopper is hydraulically pushed forward and the load tumbles out.
- Then the empty scraper returns to the cut site and repeats the cycle.





ADVANTAGES



- Reduces man power
- Less operating time
- More efficient work





DISADVANTAGES



- High Capital cost
- High operating cost
- Requires Skill driver
- Tough to operate in all terrains.





APPLICATION



- For carrying the loosen material and transfer to another place
- Used in mining areas
- Used in construction sites
- Used in agriculture field





MANUFACTURING COMPANIES



- Caterpillar
- John Deere
- K-Tec
- Komatsu
- Volvo



JOHN DEERE

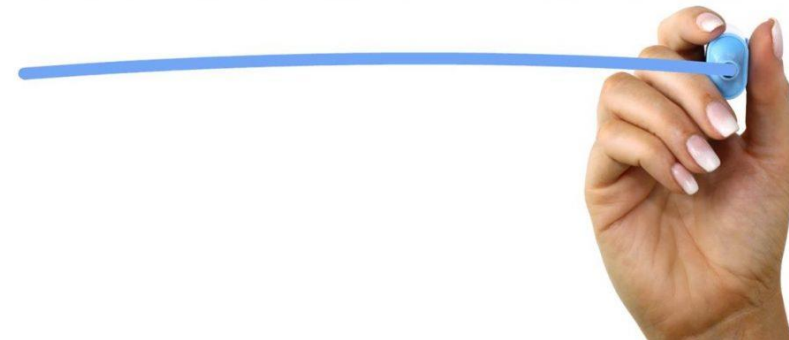


KOMATSU



1. Mention the components in Scraper unit.
2. Mention the application of Scraper.
3. what is the cost of Scraper?

ASSESSMENT





REFERENCE



- ❖ https://en.wikipedia.org/wiki/Wheel_tractor-scraper#:~:text=The%20scraper%20is%20a%20large,a%20sharp%20horizontal%20front%20edge.
- ❖ <https://www.youtube.com/watch?v=1wX2OjAA-NM&t=13s>



THANK YOU !!!