



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**

**COIMBATORE-35.**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade  
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 7 : Driller Rig**



# CONTENT



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



# INTRODUCTION



- Driller Rig is suitable for deep-hole piling in building foundations
- It is also widely used in different foundation constructions.





# NEED FOR DRILLERS



- Large apartments, shopping malls and the bridges across the river requires a deep foundation.
- Laying deep foundation with the aid of man power is impossible.
- For serving this purpose, the Driller is used.

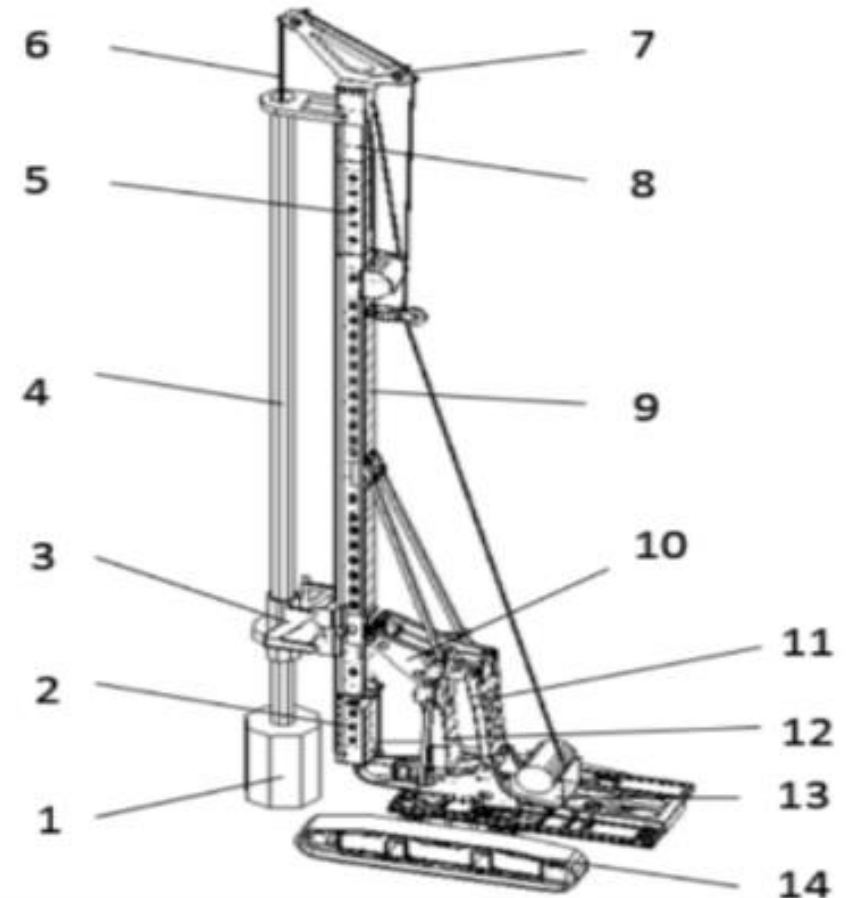




# COMPONENTS



- Engine
- Mast Assemblies
- Slewing platform
- Lower boom & Upper boom
- Triangular frame
- Drilling head
- Drilling Pipe
- Power head



1. Drilling head, 2.Mast I, 3.Power head, 4.Drilling pipe, 5. Mast III, 6.Rope, 7.Goose-head frame, 8. Mast IV, 9. Mast II, 10.Triangular frame, 11.Upper boom, 12.Lower boom, 13.Slewing platform, 14.Chassis.





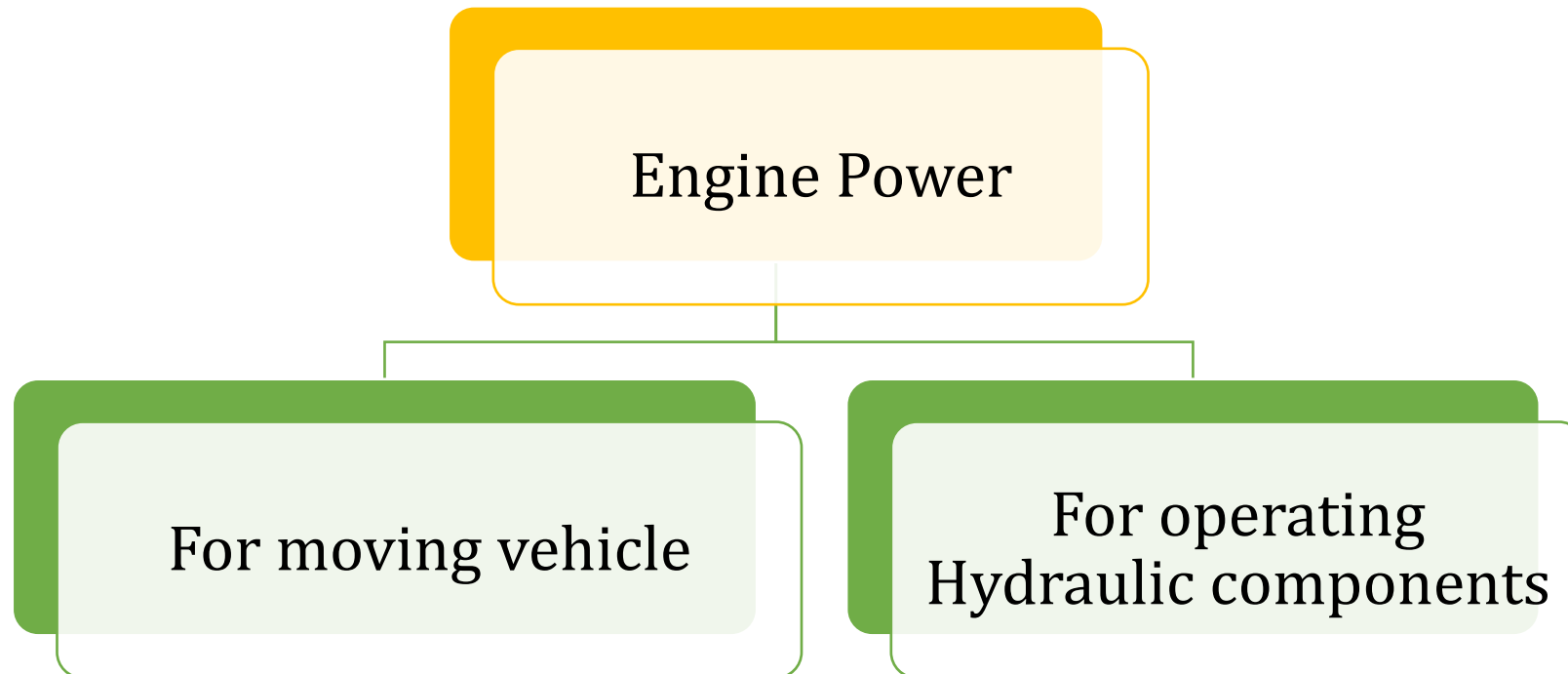
# CONSTRUCTION



- A hydraulic motor enables the slewing platform to rotate full 360°.
- It consist of lower boom, upper boom, triangular frame, mast leaning hydraulic cylinder and luffing mechanism hydraulic cylinder.
- The drilling pipe assembly is suspended by a wire rope from the main hoist, which serves the function to pull out the drilling pipe after every drilling operation.
- Another hydraulic motor is placed inside the power head.



# WORKING





# WORKING



- With the help of rope assembly, the mast is raised or lowered.
- The engine power runs the hydraulic motor inside the power head.
- The hydraulic motor runs the driller bit connected to the power head.
- The controlling of the hydraulic system is done by the use of valve control lever.







# ADVANTAGES



- Reduces man power
- More efficient work than manual process
- Less operating time





# DISADVANTAGES



- High Capital cost
- High operating cost
- Requires Skill driver





# APPLICATION



- Used in Construction sites for deep foundation.
- Used in oil wells for deep digging.





# MANUFACTURING COMPANIES



- Pride Engineering Company
- Komatsu
- Kubota
- JCB

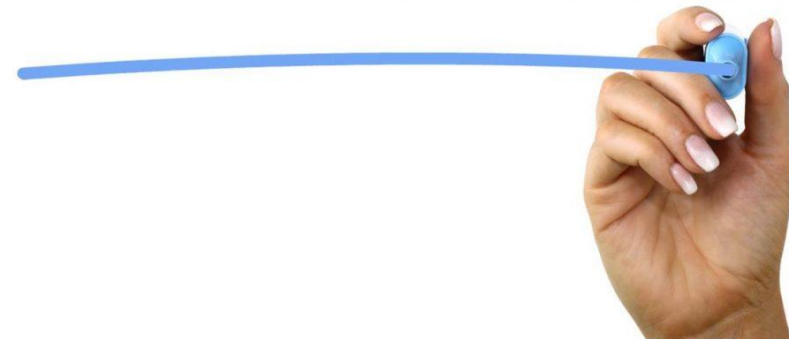


# KOMATSU



1. Where the engine is located in Driller rig?
2. What is the use of Driller rig?
3. What is the cost of Driller rig?

ASSESSMENT







## REFERENCE



- ❖ [https://en.wikipedia.org/wiki/Driller\\_\(oil\)#:~:text=The%20Driller%20is%20a%20team,in%20the%20Rig%20crew%20hierarchy.&text=While%20tripping%2C%20the%20driller%20will,floor%20and%20work%20the%20Orig.](https://en.wikipedia.org/wiki/Driller_(oil)#:~:text=The%20Driller%20is%20a%20team,in%20the%20Rig%20crew%20hierarchy.&text=While%20tripping%2C%20the%20driller%20will,floor%20and%20work%20the%20Orig.)
- ❖ <https://www.youtube.com/watch?v=zpoOtorW58A>





**THANK YOU !!!**