



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 3 : Hoist



CONTENT



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



INTRODUCTION



- Hoist is a device for raising or lowering a load by means of a drum or wheel lift to which wraps the rope or chain.
- It is driven electrically or pneumatically.
- The chain or wire rope fibres are used as lifting device.





NEED FOR HOIST



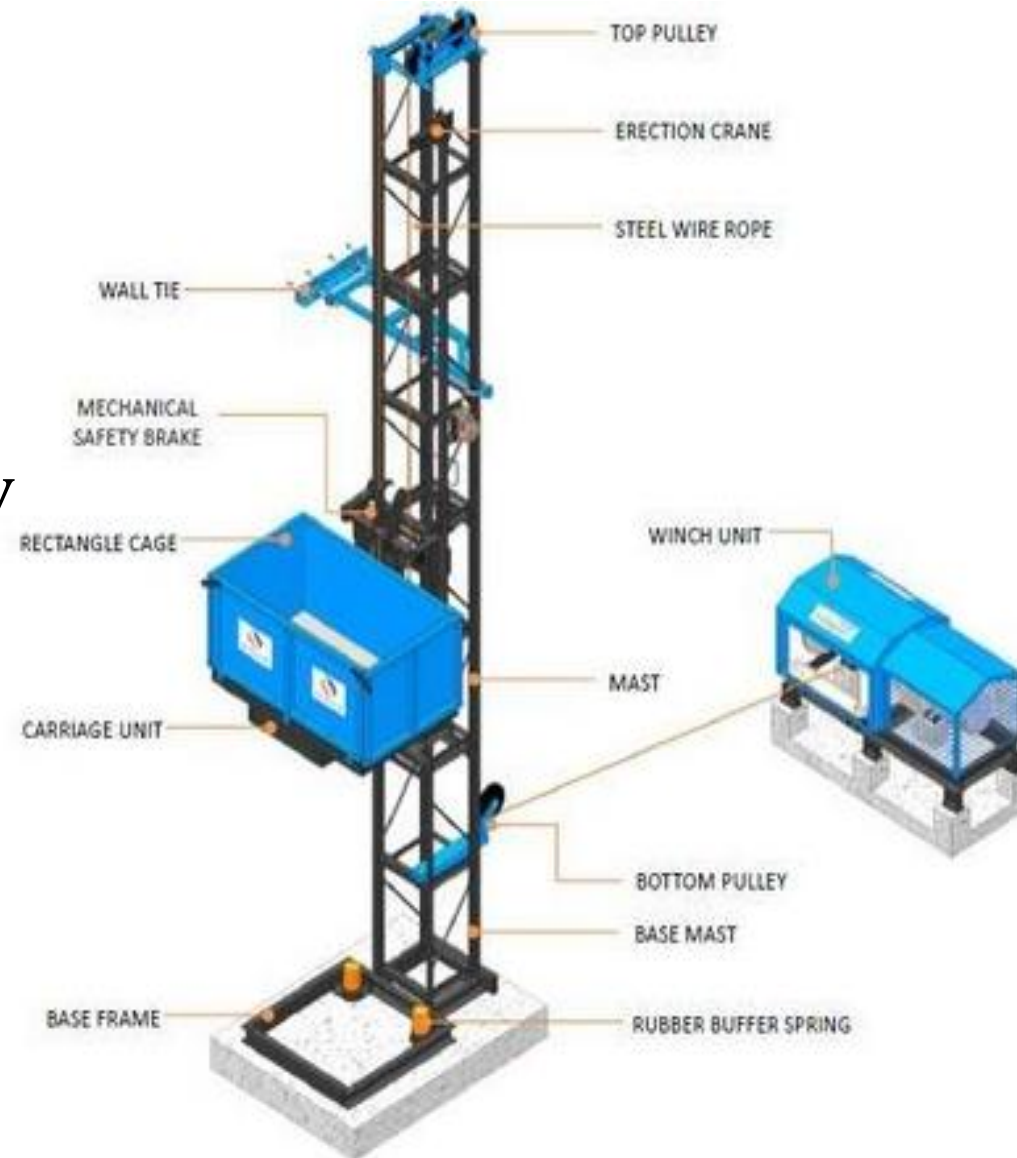
- The construction of big building require more products to be transmitted from ground floor to top floor, including the workers.
- It is impossible to move all the construction materials with the aid of man power.
- Time taken for the process will be more in manual process.
- For overcoming this, the hoist is used in constructional sites.





COMPONENTS

- Electric motor
- Winch unit
- Mast
- Rope mechanism with pulley
- Carriage unit
- Erection crane
- Mechanical Safety brake
- Base frame
- Rubber buffer spring





CONSTRUCTION



- The winch is a mechanical device that is used to adjust the tension of a rope.
- The power for operating the winch unit is provided by the use of electric motor.
- The mast is the vertical frame assembly which serve as the back bone for the Hoist.





CONSTRUCTION



- The rope mechanism along with two pulleys one at top and another at bottom.
- The carriage unit is fixed to the mast along with the rope mechanism.
- The base frame along with the rubber buffer spring is placed at the bottom.
- The mechanical safety brake is provided to safeguard the materials or workers inside the carriage unit during the transmission failure.





WORKING



- The materials needed to be carried is placed inside the carriage unit.
- With the help of the power from an electric motor the carriage unit is lifted top.
- Then after unloading the electric motor spins in reverse direction, so that the carriage returns to its original position.





ADVANTAGES



- Reduces human effort.
- Less operating time.
- Increases working efficiency.
- Human also transported.





DISADVANTAGES



- High Capital cost.
- High Operating cost.
- Incase of accident, it creates more destruction.





APPLICATION



- Used in Big constructions like Shopping mall, Apartment, Big Companies.
- Used for transporting both goods and man.





MANUFACTURING COMPANIES



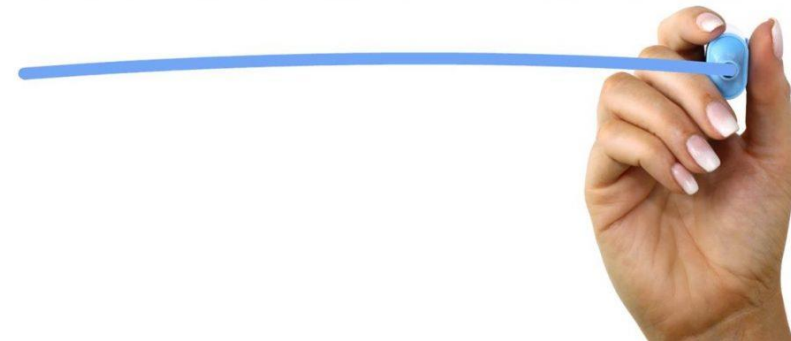
- ❖ Jaypee India Limited
- ❖ Morrow
- ❖ Julian
- ❖ XMT
- ❖ Xuanyu





1. Mention the difference between hoist and jip cranes.
2. Mention the application of Hoist.
3. What is the cost of Hoist?

ASSESSMENT





REFERENCE



- ❖ [https://en.wikipedia.org/wiki/Hoist_\(device\)](https://en.wikipedia.org/wiki/Hoist_(device))
- ❖ <https://www.youtube.com/watch?v=wkssUCNLxiE&t=157s>



THANK YOU !!!