



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 4- Cranes and Special Utility Vehicle

Topic : Fork Lift Truck



CONTENT



- Introduction
- Need for Fork Lift Truck
- Components
- Construction & Working
- Advantages & Disadvantages
- Applications
- Manufacturing Companies



INTRODUCTION



- Forklift is a small industrial vehicle, having a power operated forked platform attached at the front.
- It can be raised and lowered for insertion under a cargo to lift or move it.
- Forklifts serve the needs of various industries including warehouses etc.
- Forklifts are powered by electric battery or combustion engines.





NEED FOR FORK LIFT TRUCK



- Transporting the things within the small warehouse can be done by man power.
- But incase of big warehouse, it is difficult to transport the object manually.
- By the use of forklift truck, we can easily transfer product from one place to another.





COMPONENTS

- Engine or Electric motor
- Hydraulic system
- Tilt cylinder
- Fork
- Mast
- Overhead guard
- Carriage
- Counterweight





CONSTRUCTION



- Truck Frame is the most vital component which forms the base of the machine.
- Wheels, counterweight and mast are attached to the truck frame.
- The Counterweight is a cast iron weight attached to the rear part of the forklift.
- . Forklifts use rear wheel steering.





CONSTRUCTION



- The carriage serves as the base to the forklift.
- The Mast is a vertical part that lifts up and pushes down the loads.
- There are two pairs of additional hydraulic cylinders attached to the base of the masts.

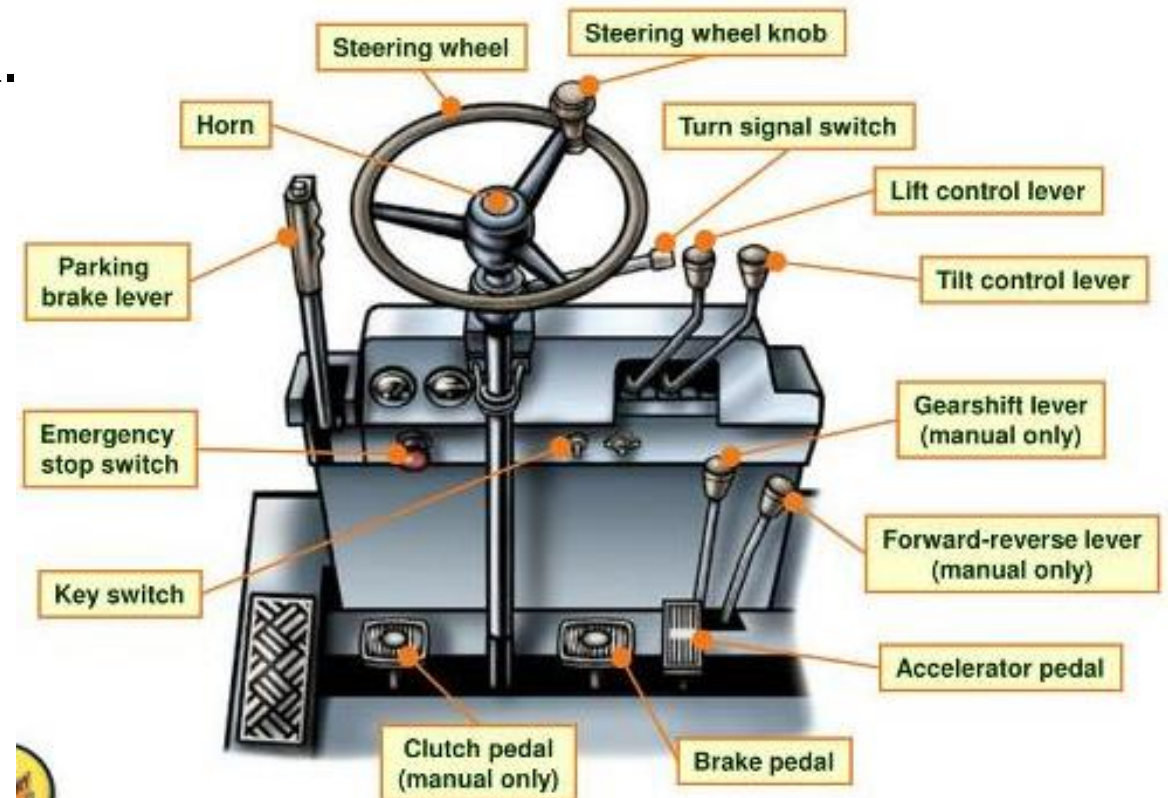




CONSTRUCTION



- The Lifting Control comprises two levers
 - ❖ One for Lifting the Fork up & down
 - ❖ Other for tilting the Load Back & Forth.





WORKING PRINCIPLE

- Once the Tilt Handle is moved in forward direction.
- The rise in pressure is enough to push the masts go away from the vehicle's body.
- Once the Tilt Handle is moved back the masts are pushed back to the vehicle.





ADVANTAGES



- Reduces human effort.
- Reduces process time.
- Less maintenance.





DISADVANTAGES



- Requires skill driver.
- High Capital Cost.
- High Fuel cost.





APPLICATION



- Construction sites
- Warehouses
- Dockyards

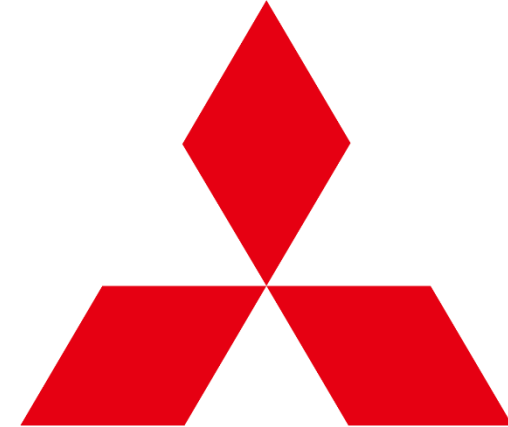




MANUFACTURING COMPANIES



- Caterpillar
- Toyota
- JCB
- Komatsu
- Mitsubishi

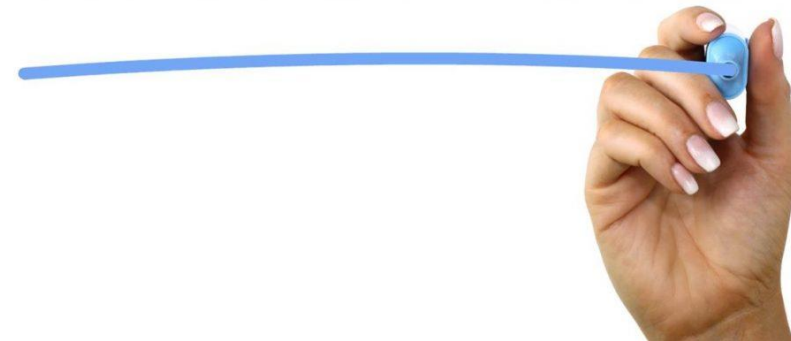


KOMATSU



1. The steering system is attached to which wheels in Fork Lift Truck?
2. Mention the component of Fork Lift Truck.
3. What is the cost of Fork Lift Truck?

ASSESSMENT





REFERENCE



- ❖ <https://en.wikipedia.org/wiki/Forklift>
- ❖ <https://www.youtube.com/watch?v=ZcATrAwOG64&t=35s>



THANK YOU !!!