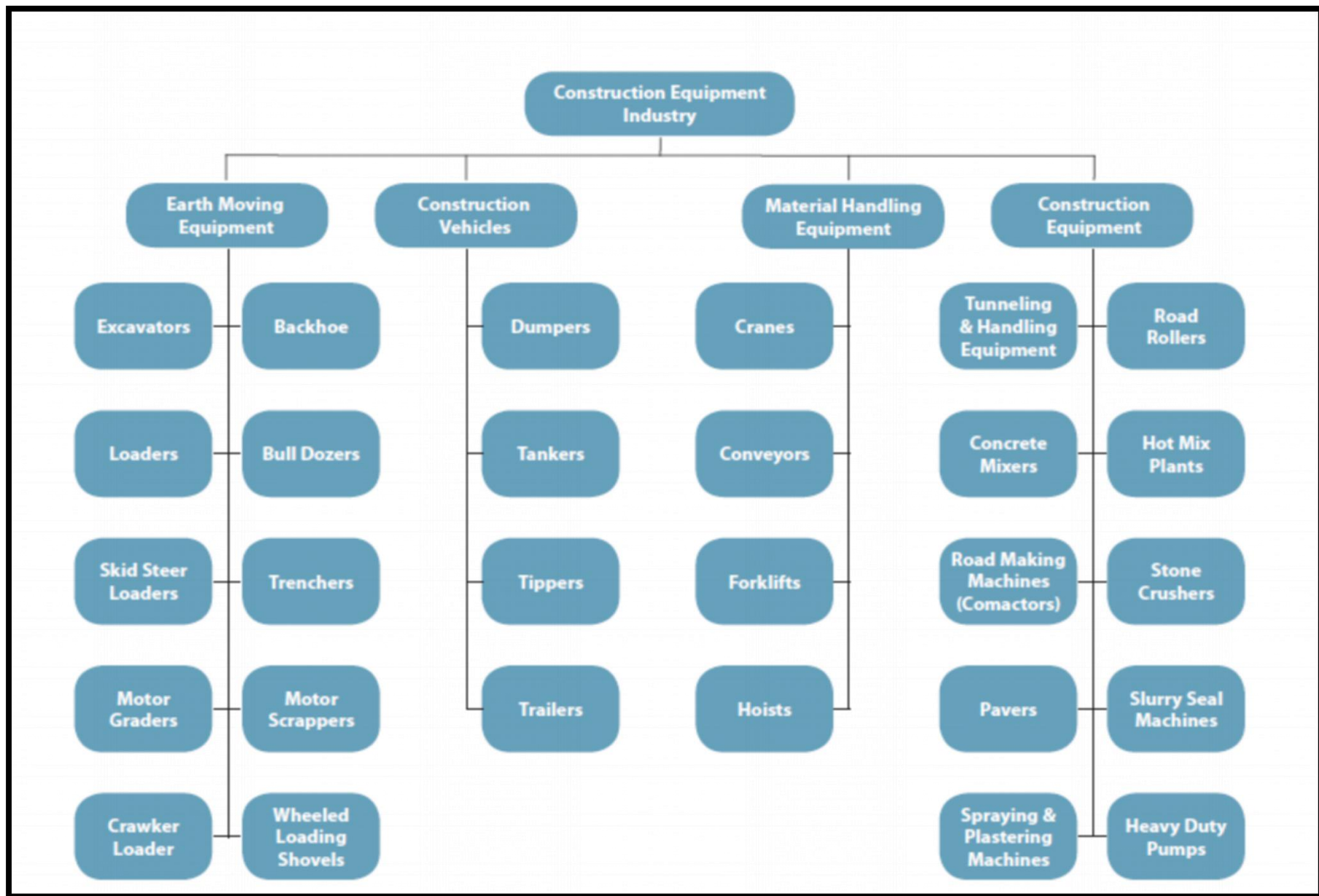


UNIT 1

INTRODUCTION TO OFF ROAD VEHICLES

Classification of Off Road Vehicles



See pdf : Unit - 1_chp 1_2

Land clearing machines

Land clearing is an essential process in both commercial and residential property development and agriculture. Frequently, homes have backyards or surrounding areas which are unoccupied and covered with large trees, shrubs and undergrowth. Here, land clearing can be useful as the process eliminates the trees, bushes, shrubs, undergrowth and stumps to make the piece of land suitable for gardening or construction.

Hand tools

These tools are used by do-it-yourselfers who want to clear their land. In this matter, the tools are usually used for gardening or lawn work. Some of hand tools for clearing land are loppers, pruners, hand saws, shovels, pickaxes, rakes and hoes. However, each tool has its function so that someone should choose the right tool before doing the land-clearing

hand saws



loppers



pruners



shovels



pickaxes

Mowers

You can use a mower to clear large area of land covered with undergrowth. For areas that are walk able you can choose a self-propelled model. For areas that are very large you can use a tow-behind model that is commonly known as **brush hog**. These machines are good at clearing saplings, tough weed and grasses. They are extremely powerful and make the job a lot easier for you.



Grubber

The grubber is an effective grass removal equipment, ideal for those cases in which you just need to remove a small section of bushes or a few saplings here and there. For this you do not need equipment as powerful as the mower but something more powerful than the lawn mower and chainsaw. The grubber has spikes that can dig into a tree with a chain attached to the other end. A truck or tractor can be used to pull out the tree. This is available in different sizes and is the best way to remove one sapling at a time.



Bulldozers

Bulldozers are pieces of equipment that are used in large land-clearing needs. These are one of the most pieces of equipment that are usually used. For land-clearing needs, there are many attachments that can be attached in these tools to make the job easily. Some of the attachments are a root plow to remove shrubs and bushes and a heavy-duty rake to remove small trees, rocks and stumps.



Excavators

Excavators are other pieces of equipment that are usually used for land-clearing needs. These machines are usually used in larger applications. As the bulldozers, there are some attachments that can be attached in these machines so that the machines can be used properly. Grapples are the attachments that make these machines reach, grab onto and remove small trees, brush and logs. Other attachments are stump pullers for removing stumps and heavy-duty rakes for gathering rocks before they are loaded into trucks.



Grapples

Chassis

<https://www.youtube.com/watch?v=PYje-4D76kc>

Types of Transmission used in Automobiles

<https://www.youtube.com/watch?v=LqalS1iFgr>

Multi-axle Motor Vehicle

A motor vehicle with more than two axles. Multiple axles are used most often on trucks and tractor-trailers and less frequently on buses and trolleybuses. Because of the distribution of the vehicle's weight over a greater number of axles, such vehicles usually have greater load-carrying capacity and better off-road performance than the two-axle types. However, their purchase and operating costs are higher.

<https://www.youtube.com/watch?v=MQyO2O3GRfU>

Working Principle of diesel Engine

<https://www.youtube.com/watch?v=fTAUq6G9apg>

Working of final drive of Tractor

<https://www.youtube.com/watch?v=j7mtzE646Qc>

Working of Lubrication system

<https://www.youtube.com/watch?v=mmmcyj53TNic>

Working of Braking system

https://www.youtube.com/watch?v=bMg_j5_AGMg

<https://www.youtube.com/watch?v=dMxilatT0qw>

Working of Steering system

<https://www.youtube.com/watch?v=em1O8mz7sF0>

Thank You

Unit 1
Completed