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Familiarization with different models of tractor

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Introduction

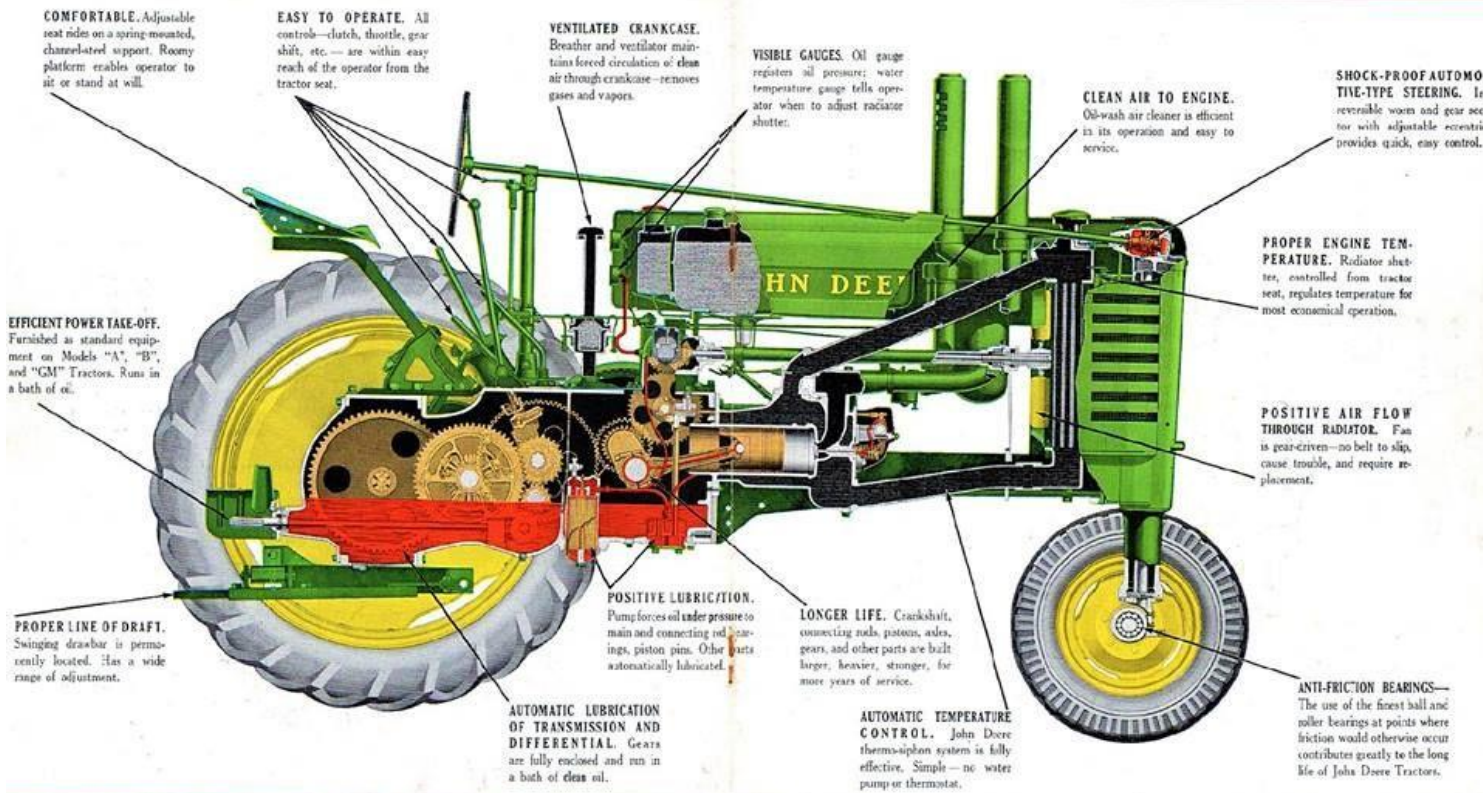
- The tractor is a prime-mover which can be used for carrying out farm operations such as ploughing; harrowing, seeding, inter-cultivation, harvesting, transportation, land levelling and operating stationary machines
- All the machines require periodical servicing, maintenance and repairs for efficient and economical performance to stay in good operating conditions throughout working life.
- Although, most of the tractor manufacturers have appointed their dealers to provide operational know how, after sales and services of their products, yet, these are inadequate.
- Due to improper maintenance and servicing of the tractors, it has been found that many tractors have been rendered unserviceable within a short period of 5000 hours or even less.



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A typical 4-wheel general purpose tractor :





View of tractor power train



Tractor Assembly & Controls

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1. Power Trains: The power trains consist of engine, clutch, transmission (gear box), differential, final drives, axle shafts, wheels or tracks, steering & brakes



View of power transmission system of tractor



Types of tractor

- Crawler tractor
- Standard tractor
- High-clearance tractors
- Utility tractor
- Lawn or garden tractor
- Tree skidder
- Four wheel drive tractors
- Power tiller

Crawler tractor



The crawler tractor originally introduced in the 1930s had steel tracks. In the early 1990s introduced the Challenger series with a rubber-belted track drive. It is designed for row-crop and tillage operations.



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High-clearance tractors



It was developed primarily for traction. It is characterized by a drive through the two rear wheels, with center of gravity located at approximately one-third the wheelbase ahead of the rear axles.



usually modified row-crop tractors designed especially for crops that require extra clearance, such as cane. It is usually a standard tractor which has high ground clearance for spraying, fertilizer broadcasting and other operations at later stage of crop growth.

Utility tractor



generally have less clearance than standard or row-crop tractors. They are used for many jobs on the farm or ranch and are often equipped with a front loader.

Tree skidder



It is a four-wheel-drive tractor developed especially for **moving tree trunks** out of the forest to an area where they can be loaded onto trucks. This vehicle has four-wheel drive. Power ranges from 75 to 150 kW.



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Four wheel drive tractors

Lawn or garden tractor



Lawn or garden tractor have a power output of less than **15kW** and are primarily designed for the **care of large lawns**. They can tow or carry a lawn mower, a sweeper, a snow blower, a bulldozer blade, and many other attachments. Because these tractors have very low clearance and are designed for light-duty use, they are not generally used for agricultural production.

Power tiller



A power tiller is a two-wheeled tractor guided by hand and used commonly in the rice-growing region. The power tiller is equipped with a rotary tiller and powered by a horizontal single-cylinder engine of 5 to 12 kW.



Daily, starting and safety checks in tractor:

1. Check fuel in fuel tank (is there enough fuel to complete the task).
2. Check coolant level in the radiator, or inspect cooling fins on air cooled models of tractor.
3. Check tire inflation pressure (refers to owner's manual for proper inflation of front and rear tyres for each job).
4. Check the condition of the tyres. Look for cuts, cracks and buckling.
5. Check the battery, cables and terminals and electrolyte level.
6. Check the transmission and hydraulic oil levels.
7. Check air filter elements, or the oil level in an oil bath type air cleaner.
8. Check the guards and shields to ensure that they are correctly installed and in good conditions.
9. Check operator's station. Be sure that it is clear of spilled fuel, oil, grease, crop residue, or loose objects.
10. Check the lighting system and ensure "Slow Moving Vehicle Emblem" is placed