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BRAKE



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Support Lives...
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Brake is used to stop or slow down the motion of a tractor. It is mounted on the driving axle and operated by two independent pedals.

Each pedal can be operated independently to assist the turning of tractor during the fieldwork or locked together by means of a lock.



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Principle of operation:

Brake works on the principle of friction. When a moving element is brought into contact with a stationary element, the motion of the moving element is affected.

This is due to frictional force, which acts in opposite direction of the motion and converts the kinetic energy into heat energy.



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Classification of brake:

Brake can be classified as:

(1) Mechanical brake

(a) Internal expanding shoe type

(b) External contracting shoe type and

(c) Disc type and

(2) Hydraulic brake.



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(a) Internal expanding shoe type:

Two brake shoes made of frictional material fitted on the inside of the brake drum are held away from the drum by means of springs.

One end of each shoe is fulcrum whereas the other is free to move by the action of a cam, which in turn applies force on the shoes.

The movement of the cam is caused by the brake pedal through the linkage.

The drum is mounted on the rear axle whereas the shoe assembly is stationary and mounted on the back plate.



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(b) External contracting shoe type:

This type of brake system is normally available on crawler tractors.

The drum mounted on the drive axle is directly surrounded by the brake band.

When the pedal is depressed, the band tightens the drum.



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(c) Disc brake:

Two actuating discs have holes drilled in each disc in which steel balls are placed.

When the brake pedal is depressed, the links help to move the two discs in opposite directions.

This brings the steel balls to shallow part of the holes drilled in the disc.

As a result, the two discs are expanded and braking discs are pressed in between the discs and the stationary housing.



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Hydraulic brake:

Hydraulic brake system is based on the principle of Pascal's law.

The brake fluid which is usually a mixture of glycerine and alcohol is filled in the master cylinder

When the pedal is depressed, the piston of the master cylinder is forced into the cylinder and the entire system turns to a pressure system.