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DISC PLOUGH



The disc plough is a rolling type plough unlike the MB plough, which is dragged inside the soil.

The disc plough can operate in soils where a MB plough is either difficult or not advisable to operate.

The disc plough creates no suction like MB plough and its penetration depends on the disc angles and the weight on the plough.

Disc plough inverts the soil when used with scrapers otherwise; it gives more mixing action than inversion.

Disc ploughs cannot be used at high speed because for cutting action slow speed is necessary.



ADVANTAGES OF DISC PLOUGH

Can operate in sticky and non-scouring soil

Can work in dry and hard soil

Can ride over the stones or stumps than try to penetrate or uproot them

Can be used effectively after the crop is harvested and the ground is hard

Can be used for deep ploughing

In abrasive soil, the life of the disc is much more than that of the MB plough

Less specific draft or unit draft compared to MB plough

TYPES OF DISC PLOUGH

According to power source

Tractor drawn

Animal drawn

According to type of hitch

Trailed type

Semi mounted type

Mounted type

According to direction of throw of soil.

One way

Reversible

According to mounting of disc.

Standard disc plough

Vertical disc plough



Centurion
UNIVERSITY

DISC PLOUGH

Width of cut : 36" (3 Bottom)
Weight : 295 kg. approx. (2B)
395 kg. approx. (3B)
* Specifications subject to change without notice.
Note :Also available in extruded square pipe.

Specification

Frame : Extra heavy Duty tubular frame
Discs ϕ : 26" dia X 6mm thick
Scrapers : 6mm (Adjustable)
Colter Wheel : 20" dia
Bearings : Taper roller
Height : 1185mm
Width of cut : 36" (3 Bottom)
Weight : 295 kg. approx. (2B)
395 kg. approx. (3B)

* Specifications subject to change without notice.
Note :Also available in extruded square pipe.



CROSS
SHAFT

DISC

SCRAPER

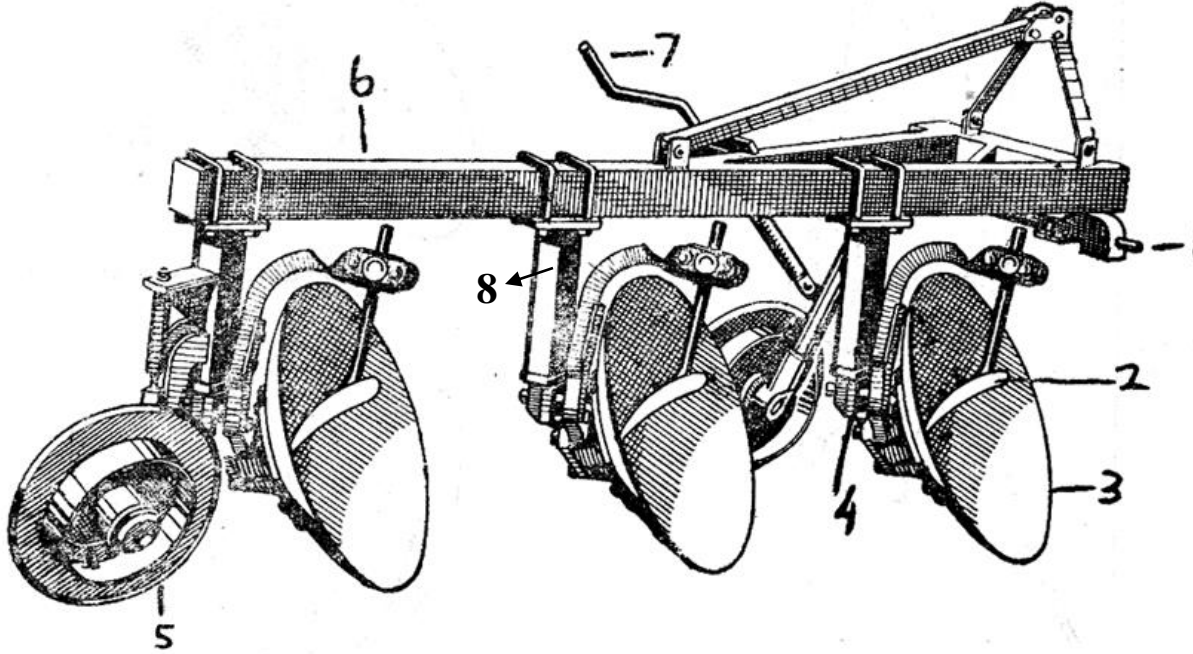
FRAME

STANDARD

REAR FURROW
WHEEL



STANDARD DISC PLOUGH



1. Hitch bolt,
3. Disk,
5. Rear furrow wheel,
7. Lift crank.

2. Disk scraper,
4. Disk hub,
6. Beam or Frame, and

- 1 Hitch bolt
- 2 Disc Scraper
- 3 Disc
- 4 Disc hub
- 5 Rear furrow wheel
- 6 Beam or frame
- 7 Lift crank
- 8 Standard



DISC OF DISC PLOUGH

The discs on a plow are mounted on bearings.

Depth of cut: $\frac{1}{3}$ rd of disc diameter

Width of cut: 0.4 times the disc diameter

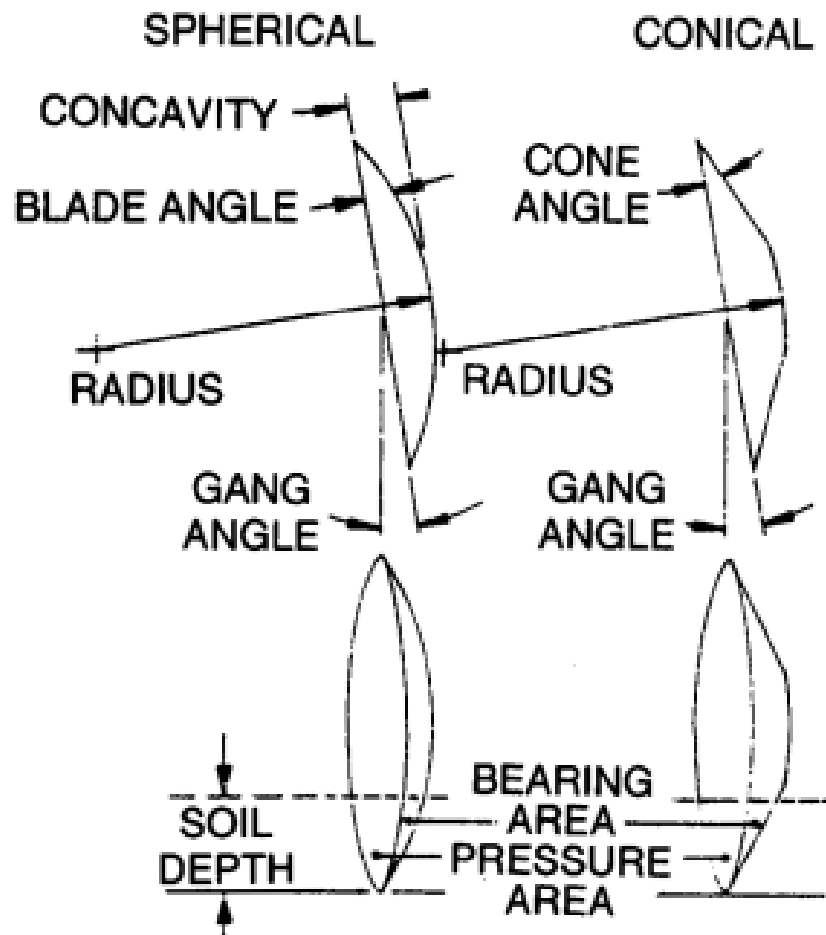
Discs specified in term of diameter and edge thickness i.e 26 x $\frac{3}{16}$ where 26 inch and $\frac{3}{16}$ inch are diameter and thickness of the disc material in inches.

Discs like mould board ploughs lift, pulverize, partially invert and throw the soil to open furrow at one side

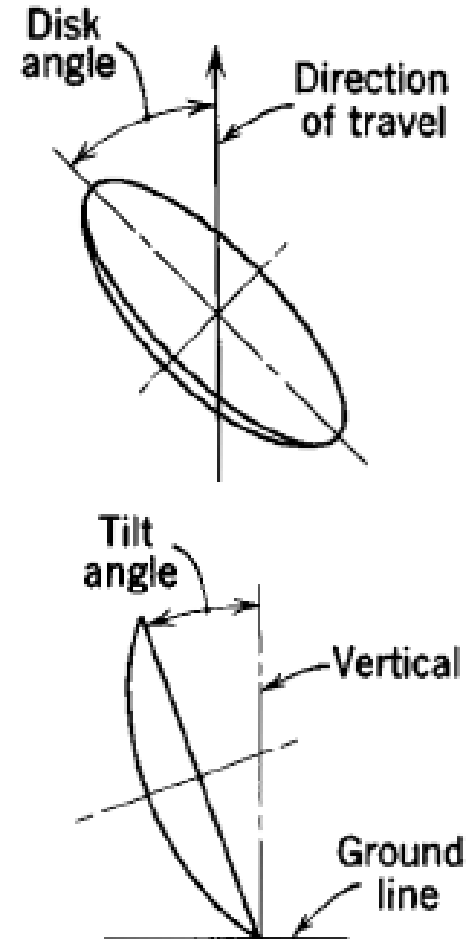
Shallow concavity permits a greater angle to the line of travel.

A 24 inches diameter disc has a concavity of 3.75 to 4 inches whereas, a 26 inches diameter disc has a concavity of 3.75 to 4.5 inches.

(a) Disk blade geometry (b) disk and tilt angles



(a)



(b)

SCRAPER

Each disc has one scraper

Gives good turning effect for better covering

Cleans the disc to get a better pulverization

Scrapers place low to catch and turn the furrow slice before it falls away from the disc. (1/4 inch away from outer edge and 1/8 inch away from centre)

Types:-

MB type

Turns and covers soil & trash better

Hoe type

Cleans the disc best, used in sticky soil

Disc type

Used in non scouring soil



Other parts of disc plough

Standard connects the disc bearing and plough frame. In some plough there is no standard but the frame bends downward for disc attachment.

Plough frame: standards are attached to plough frame. The frame has provision of adjustment of disc angle, adding weights.

Cross shaft:

Positioned at extreme front of the plough & at right angle to the frame

Ends of the cross shaft are cranked to which the lower links are attached

Cranks are diametrically opposed so that as the shaft rotates, the plough takes wider or narrower front furrow

Rotates clockwise to increase width

Disc bearing: tapped roller bearings are used to take the soil trust load