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Introduction to seed drill, planter, strip till drill, no till drill



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Introduction to seed drill



A **seed drill** is a sowing device that sows the seed precisely in the soil at proper depth and distance. Then it covers them with soil. It protects the seeds from birds and saves time and labour.

The **mechanical seed drill** is used to plant the seeds of various types of autumn/winter cereals (e.g. mainly wheat, oilseed rape, barley, soya bean, alfalfa etc.) in parallel furrows.

It essentially comprises a load-bearing frame equipped with a hopper containing the seeds to be sown, a seed distributor with a series of delivery elements which direct the seed toward the soil, and furrowing elements equipped with seed covering devices which open small furrows in the soil, into which the seeds are deposited.

Cost of a seed drill is approximately Rs-53000/-



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Parts of seed drill:-

A seed drill with mechanical seed metering device mainly consists of : (i) Frame (ii) Seed box (iii) Seed metering mechanism (iv) Furrow openers (iv) Covering device (vi) Transport wheels.

Frame: The frame is usually made of angle iron with suitable braces and brackets. The frame is strong enough to withstand all types of loads in working condition.

Seed box :It may be made of mild steel sheet or galvanized iron with a suitable cover. A small agitator is sometimes provided to prevent clogging of seeds.

Covering device: It is a device to refill a furrow after the seed has been placed in it. Covering the seeds are usually done by patta, chains, drags, packers, rollers or press wheels, designed in various sizes and shapes.

Transport wheel: There are two wheels fitted on the main axle. Some seed drills have got pneumatic wheels also. The wheels have suitable attachments to transmit power to operate seed dropping mechanism.



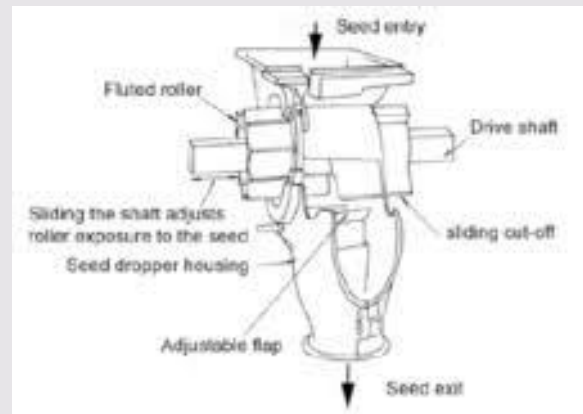
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Parts of seed drill:-

SEED METERING MECHANISM The mechanism of a seed drill or fertilizer distributor which delivers seeds or fertilizers from the hopper at selected rates is called seed metering mechanism. Seed metering mechanism may be of several types: (a) Fluted feed type (b) Internal double run type (c) Cup feed type (d) Cell feed mechanism (e) Brush feed mechanism (f) Auger feed mechanism (g) Picker wheel mechanism (h) Star wheel mechanism.

- (a) **Fluted feed type-** It is a seed metering device with adjustable fluted roller to collect and deliver the seeds into the seed tube. Fluted feed type mechanism consists of a fluted wheel, feed roller, feed cut-off and adjustable gate for different sizes of grains. (Fig.1). The feed roller and the feed cut-off device are mounted a shaft, running through the feed cups. The roller carries grooves throughout its periphery. It rotates with the axle over which it is mounted throws the grains out on the adjustable gate from where it falls into the seed tube. The fluted rollers which are mounted at the bottom of the seed box, receive seeds into longitudinal grooves and pass on to the seed tube through the holes provided for this purpose. By shifting the fluted wheel side ways, the length of the grooves exposed to the seed can be increased or decreased and hence the amount of seed is controlled.



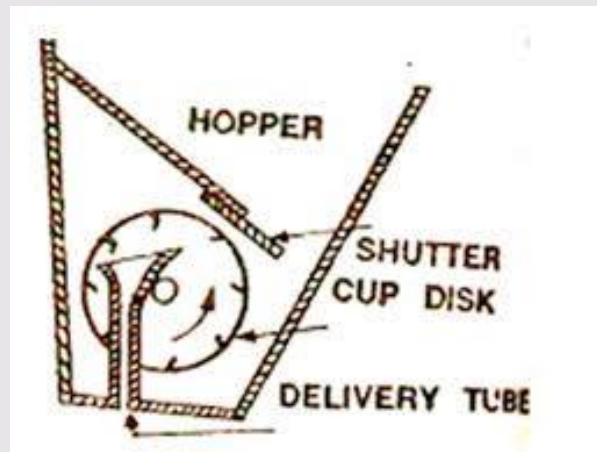


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Parts of seed drill:-

- (c) **Cup feed mechanism-** It is a mechanism consisting of cups or spoons on the periphery of a vertical rotating disc which picks up the seeds from the hopper and delivers them into the seed tubes. It consists of a seed hopper which has two parts. The upper one is called grain box and the lower one is called feed box. The seed delivery mechanism consists of a spindle, carrying a number of discs with a ring of cups attached to the periphery of each disc (Fig. 3). The spindle with its frame and attachment is called seed barrel. When the spindle rotates, one disc with its set of cups rotates and picks up few seeds and drops them into small hoppers. The cups have two faces, one for larger seeds and the rate at which the seed barrel revolves. This type of mechanism is common on British seed drills.





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planter

A **planter** is a farm implement, usually towed behind a tractor, that sows (plants) seeds in rows throughout a field. It is connected to the tractor with a drawbar or a three-point hitch. Planters lay the seeds down in precise manner along rows.

The row units are spaced evenly along the planter at intervals that vary widely by crop and locale. The most common row spacing in the United States today is 30 inches.

Various machines meter out seeds for sowing in rows. The ones that handle larger seeds tend to be called planters, whereas the ones that handle smaller seeds tend to be called seed drills, grain drills, and seeders (including precision seeders).



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Strip till drill

Strip-till is a conservation system that uses a minimum tillage. It combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the portion of the soil that is to contain the seed row. This type of tillage is performed with special equipment and can require the farmer to make multiple trips, depending on the strip-till implement used, and field conditions. Each row that has been strip-tilled is usually about eight to ten inches wide.





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No till drill

No-till farming (also called **zero tillage** or **direct drilling**) is an agricultural technique way of growing crops or pasture without disturbing the soil through tillage. Proponents claim no-tillage increases the amount of water that infiltrates into the soil, the soil's retention of organic matter, and its cycling of nutrients. In a few agricultural regions, it may reduce soil erosion. It increases the amount and variety of life in and on the soil, including disease-causing organisms and disease organisms.

