

Rotary Plough Feeders



- Manufactured as single or double shelf
- Driven both electrically and hydraulically
- Up to 4300 mm of rotor diameter with highest capacity requirement of 2475 TPH for coal
- Reclaims coal, limestone, iron-ore, etc from track hoppers, underground hoppers below stock piles
- Comprises specially designed curved arms with wear resistant liners

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Rotary Plough Feeders manufactured by TRF provide a convenient means of extracting raw materials from longitudinal slot bunkers and delivering it to a Reclaim Belt Conveyor running underneath.

What is Rotary Plough Feeder ?

A Rotary Plough Feeder is a heavy duty machine used to reclaim stored bulk materials. The feeder is designed to operate in a tunnel beneath a storage pile. A slot opening, running along the length of the tunnel, allows the stored material to flow on to a protruding reclaim shelf. The stored material is prevented from flowing over the edge of the reclaim shelf by designing the shelf to intercept the angle of repose.

The Plough Feeder consists of a paddle wheel, called "Rotor", having six curved arms revolving on a vertical axis that sweep the stored material from the shelf on to a Belt Conveyor. The plough mechanism is transported on to a heavy duty self propelled wheeled frame, called "carriage" that travels on rails mounted either on a canopy of the bunker or on the beams supported on the floor of the tunnel. The Plough Feeder can be continuously traversed or positioned at any point along the reclaim shelf for maximum flexibility.

The speed of the rotor is adjustable so that the reclaim capacity can be controlled to meet the capacity requirement. The self propelled carriage enables the Rotary Plough Feeder to reclaim materials evenly along the entire length of the bunker.

Controlled output

The output capacity of the Rotary Plough Feeder is controlled by varying the rotor speed. This can be accomplished by variable speed drives to meet any specific requirement. Variable speed drive can be electro mechanical like Eddy Current Drive, Frequency Controller or Hydraulic drive. The machine can have local and remote control arrangement or both for operation.

Types of Rotary Plough Feeder

A) Single Plough with single reclaim shelf:

Where low capacities are required- Carriage moves on rails supported on the tunnel floor.

B) Single Plough with double reclaim shelves :

Where high capacities are required - Carriage moves on rails supported on the tunnel floor.

C) Specially designed hanging type double reclaim shelves, as per customer requirement.

Advantages

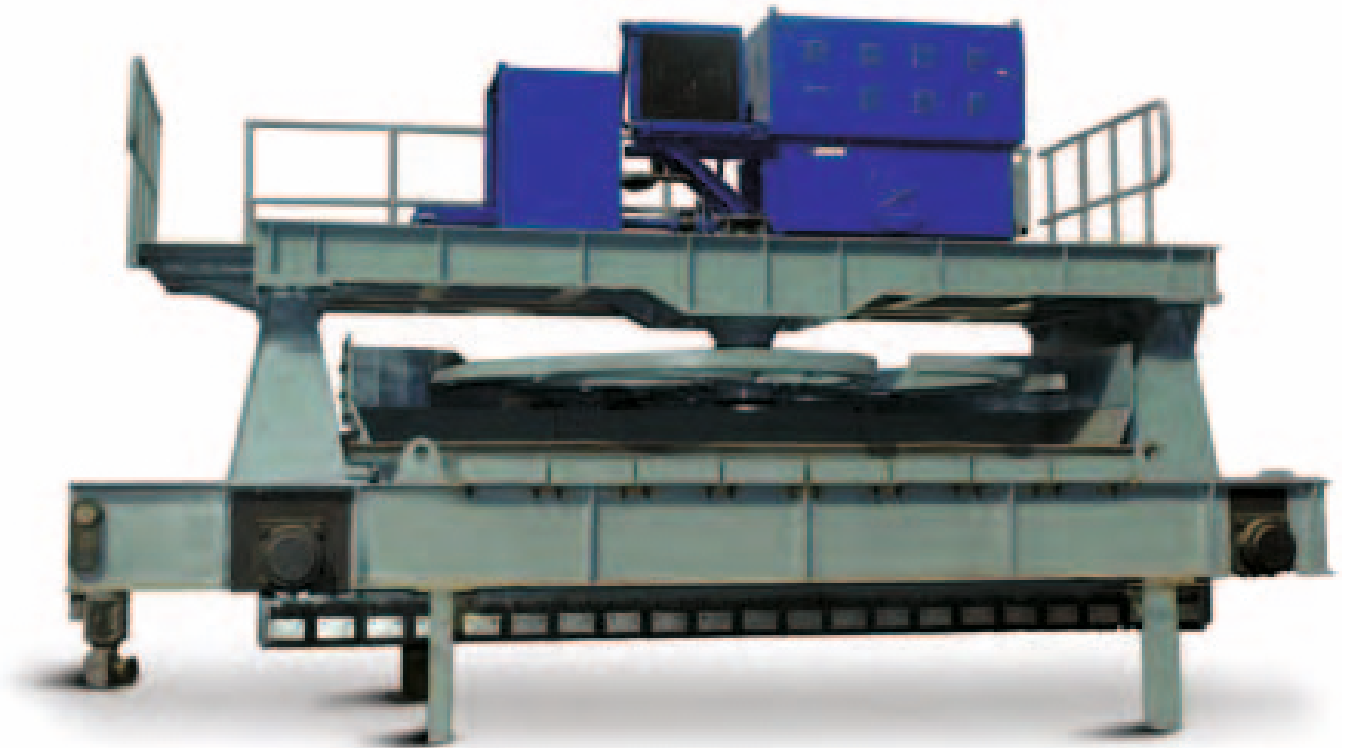
- Eliminates the danger of spontaneous combustion when handling material such as coal.
- Eliminates material bridging and rat holing often experienced with other types of feeders.
- Equipment cost is reduced because only one Plough Feeder is required to reclaim the entire storage pile instead of multiple fixed feeders.
- Adaptability to different materials and weather conditions permits the Plough Feeder to be used where other equipments fail. Since the rotating arms of the Plough Feeder physically undercuts the pile and draws the material out of the reclaim shelves, it is not dependent on gravity alone for the material flow. It can be used for variety of materials like coal, coke, limestone, dolomite, iron ore, etc.
- Environment friendly, Pollution is minimum as it operates below the ground along with dust suppression system.
- Can recollect material at desired portion of hopper as per customer requirement with application of travel braking arrangement.

FEATURES

- Specially designed curved arms are provided with wear resistant liners made from wear resistant steel.
- Various options of Plough Drive System Hydraulic/ Electro Mechanical with Eddy current coupling / Frequency controller.
- Carriage Wheel Drive System can be variable type or with single or two speed AC motor or hydraulic motor.
- Various control schemes to provide either local operation from the machine or remote operation from control station with selector switch or both.
- Machine provided with all safety control and limit switches, such as, over travel limit switch anticollision switch, automatic stop and reverse travel switch, automatic travel reversal in case of jamming of Plough Blades due to large lumps, tramp iron, etc.
- Machine can be provided with a moving cradle assembly consisting of a closely spaced rubber disc impact idlers mounted integrally on the machine to protect the conveyor belt from damage due to impact of discharged material upon demand from customer.

Material Handled, Capacity & Rotor Diameter of Rotary Plough Feeders

Material	Lump size mm	Capacity rated tph	Capacity designed	Shelf Type	Rotor Dia mm	Rotor Drive Type
Coal	-200	600	600	single	3050	Eddy current Drive
Coal	-75	1000	1000	double	3050	Eddy current Drive
Coal	-13	600	600	double	3050	Eddy current Drive
Coal	-100	600	600	single	3050	Eddy current Drive
Coal	-25	675	675	double	3050	Eddy current Drive
Coal	-100	850	850	single	3050	Eddy current Drive
Coal	-300	500	500	double	3050	Eddy current Drive
Iron ore, Dolomite, Lime stone	-75	1000	1000	double	2700	Eddy current Drive
Coal	-300	600	600	single	3050	Eddy current Drive
Coal	-500	1050	1260	single	3050	Eddy current Drive
Coal	-250	200	200	single	2100	Hydraulic
Coal	-500	1260	1260	single	3600	Eddy current Drive
Coal	-250	1200	1440	double	3050	Hydraulic
Coal	-250	1200	1440	double	3600	Hydraulic
Iron ore, classified	8-32	1000	1000	double	2700	V/F drive
Coal	-250	800	960	single	3050	Eddy current Drive
Coal	-250	1200	1440	double	3050	Hydraulic
Coal	-15	1000	1115	double	3050	Eddy current Drive
Coal	-30	1000	1200	double	3050	V/F drive
Coal	-13	600	600	double	3050	Eddy current Drive
Coal	-200	1200	1500	double	3600	Hydraulic
Coal	-400	660	660	single	3050	Hydraulic
Coal	-250	1200	1800	double	3600	Hydraulic
Coal	-400	1200	1200	single	3600	Hydraulic
Coal	-150	350	350	single	3050	Hydraulic
Coal	-150	350	350	single	3050	Eddy current Drive
Iron ore	8-32	1250	1500	double	2750	V/F drive
Coal	-250	800	960	single	3300	Hydraulic
Coal	-250	900	1000	single	3300	Hydraulic
Coal	-250	400	500	single	3050	Hydraulic
Coal	-400	2475	2475	single	4300	Hydro mechanical
Coal	-300	1600	1600	single	4000	Hydraulic
Coal	-400	1800	1800	single	4300	Hydro mechanical



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