### Rotary Plough Feeders

**TRF LIMITED**

**Business Development Department**

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**Assistant Divisional Manager**

V/F drive

Hydraulic

Eddy current

3050

3050

3050

3050

3050

3600

3050

3050

2750

3300

3300

3050

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**Port &Yard Equipment Division**

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e-mail : hyd@trf.co.in

**Cell : + 91 - 9334002278**

**Capacity**

<table>
<thead>
<tr>
<th>Lump size</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>600</td>
<td>Coal</td>
</tr>
<tr>
<td>660</td>
<td>Coal</td>
</tr>
<tr>
<td>600</td>
<td>Coal</td>
</tr>
<tr>
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<td>Coal</td>
</tr>
<tr>
<td>600</td>
<td>Coal</td>
</tr>
<tr>
<td>660</td>
<td>Coal</td>
</tr>
<tr>
<td>350</td>
<td>Coal</td>
</tr>
<tr>
<td>350</td>
<td>Coal</td>
</tr>
<tr>
<td>960</td>
<td>Coal</td>
</tr>
<tr>
<td>1200</td>
<td>Coal</td>
</tr>
</tbody>
</table>

**TECHNICAL SPECIFICATIONS**

- Drained both electrically and hydraulically
- Manufactured as single or double shelf
- Various control schemes to provide either local operation from the machine or remote operation
- Machine provided with all safety control and limit switches
- Various options of Plough Drive System Hydraulic/Electro Mechanical with Eddy current coupling / Frequency controller, or with single or two speed AC motor or hydraulic motor
- Controlled output
- Material handled: Capacity & Focus Planner of Rotary Plough Feeders

**Rotary Plough Feeders**

- A Rotary Plough Feeder is a heavy duty machine used to conveniently means of extracting raw materials from various types of feeders.
- The output capacity of the Rotary Plough Feeder is controlled by varying the rotor speed. This can be accomplished by application of travel braking arrangement.
- Can recollect material at desired portion of hopper as per customer requirement with application of travel braking arrangement.

**Features**

- Various schemes to provide either local operation from the machine or remote operation
- Machine provided with all safety control and limit switches
- Various options of Plough Drive System Hydraulic/Electro Mechanical with Eddy current coupling / Frequency controller, or with single or two speed AC motor or hydraulic motor
- Controlled output
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## Rotary Plough Feeders

### Rotary Plough Feeder

A Rotary Plough Feeder is a heavy duty machine used to reclaim stored bulk materials. The header 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 onto a reclaiming plough. The reclaimed material is returned to the storage pile using the plough mechanism. The plough is transported on rails supported on the tunnel floor.

### 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.**
- **Adaptable to different materials and weather conditions permits the Plough Feeder to be used where other equipment fail.**
- **A variety of control schemes to provide either local control from the control station with selector switch or both.**
- **Machine provided with all safety control and limit switches.**
- **Carriage Wheel Drive System can be variable type or with single or two speed AC motor or hydraulic motor.**
- **Environment friendly, Pollution is minimum as it operates below the ground along with dust suppression system.**
- **Can reclaim material at desired portion of horopter as per customer requirement with application of travel braking arrangement.**

### Material Handled, Capacity & Rotor Diameter of Rotary Plough Feeders

<table>
<thead>
<tr>
<th>Material</th>
<th>Lift up (in.)</th>
<th>Capacity (ton/hr)</th>
<th>Capacity designed</th>
<th>Shelf Type</th>
<th>Rotor Dia (mm)</th>
<th>Rotor Drive Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>75</td>
<td>1000</td>
<td>1000</td>
<td>single</td>
<td>2700</td>
<td>Eddy current Drive</td>
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<tr>
<td>Coal</td>
<td>100</td>
<td>600</td>
<td>600</td>
<td>double</td>
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<td>Eddy current Drive</td>
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<tr>
<td>Coal</td>
<td>1000</td>
<td>800</td>
<td>800</td>
<td>single</td>
<td>3600</td>
<td>Eddy current Drive</td>
</tr>
<tr>
<td>Coal</td>
<td>1000</td>
<td>600</td>
<td>600</td>
<td>double</td>
<td>3050</td>
<td>Eddy current Drive</td>
</tr>
<tr>
<td>Coal</td>
<td>1000</td>
<td>800</td>
<td>800</td>
<td>single</td>
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<td>3050</td>
<td>1000</td>
<td>1000</td>
<td>single</td>
<td>2700</td>
<td>Eddy current Drive</td>
</tr>
<tr>
<td>Coal</td>
<td>3600</td>
<td>1200</td>
<td>1200</td>
<td>double</td>
<td>3500</td>
<td>Eddy current Drive</td>
</tr>
<tr>
<td>Coal</td>
<td>3050</td>
<td>1200</td>
<td>1200</td>
<td>double</td>
<td>3500</td>
<td>Eddy current Drive</td>
</tr>
</tbody>
</table>

### FEATURES

- **Specially designed curved arms are provided with wear resistant lined made from wear resistant steel.**
- **Various options of Plough Drive System Hydraulics/ Electric Motor 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.**
- **Machine provided with all safety control and limit switches, such as, over travel limit switch, emergency switch, automatic stop and reverse travel switch, automatic travel reverse in case of jamming of Plough Blades due to large lumps, trapped iron, etc.**
- **Machine can be provided with a moving cradle assembly consisting of a closely spaced roller rack.**
- **Impact idlers mounted integrally on the machine to protect the conveyor belt from damage due to impact of discharged material upon demand from customer.**
Rotary Plough Feeders

Rotary Plough Feeders manufactured by TRF provide a convenient means of extracting raw materials from lengthened 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 header 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 prototyping reclaim shell. The stored material is prevented from flowing over the edge of the reclaim shell by deflection of the shell to interrupt the angle of repose.

The Plough Feeder consists of a paddle wheel, called “Rotor”, having six curved arms revolving on a vertical axis that sweeps the stored material from the shell on to a Belt Conveyor. The plough mechanism is transported on to a heavy duty self propelled wheeled frame, called “carriage” that travels on tracks mounted either on a canopy of the bunker or on the beams supported on the floor of the tunnel. The Plough Feeder can be continually traversed or positioned at any point along the reclaim shell to the 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: When 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, lime, sandstone, dolomite, iron ore, etc.
- Environment friendly. Pollution is minimum as no operation below the ground level with dust suppression system.
- Can reclaim 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 lined made from wear resistant steel.
- Various options of Plough Drive System (Hydraulic/ Electric) 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 with selector switch or control panel.
- Machine provided with all safety control and limit switches such as, over travel limit switch, anti collision switch, automatic stop and reverse travel switch, automatic travel reversal in case of jamming of Plough Blades due to large lumps, tram- ion, etc.
- Machine can be provided with a moving crate assembly consisting of a closely spaced roller plate, impact idlers mounted integrally on the machine to protect the conveyor belt from damage due to impact of discharged material upon demand from customer.
Rotary Plough Feeders manufactured by TRF provide a unique and versatile solution for material handling. These feeders are designed to reclaim materials evenly along the entire length of the storage pile, unlike fixed feeders that require multiple units.

Advantages:
- Controlled output can be achieved to meet any specific requirement.
- Assured uniformity in reclaimed material can be maintained.
- Controlled flow of material helps in reducing bridging in the storage pile. 
- Easier material flow reduces the chances of rat holing.
- The Plough Feeder consists of a paddle wheel, called the rotating arms, that physically undercuts the pile and draws the material alone for the material flow. It can be used for various materials like coal, coke, limestone, dolomite, iron ore, etc.
- Environmentally friendly, as it operates with minimum pollution.
- Equipment cost is reduced because only one Plough Feeder is required to reclaim the entire storage pile instead of multiple fixed feeders.
- Can recollect material at desired portion of hopper as per customer requirement with application of travel braking arrangement.
- Specially designed curved arms are provided with wear resistant liners made from wear resistant steel.
- Various options of Plough Drive System Hydraulic/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 from control station with selector switch or both.
- Switches, such as, over travel limit switch, anticollision switch, automatic stop and reverse of Plough Blades due to large lumps, tramp damage due to impact of discharged material upon demand from customer.

Features:
- Composite specially designed curved arms with wear resistant liners.
- Up to 4300 mm of rotor diameter with highest capacity requirement of 2475 TPH for coal.
- Comprises specially designed curved arms with wear resistant liners.
- Environment friendly, pollution is minimum as it operates.
- Material bridging and rat holing often experienced with other types of feeders is eliminated.
- 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 alone for the material flow.
- Driven with single or double speed AC motor or DC motor or chain drive with either current drive, frequency controller or hydraulic drive. The Carriage moves on rails supported on the tunnel floor.
- Where high capacities are required - Carriage moves on rails supported on the tunnel floor.
- Can recollect material at desired portion of hopper as per customer requirement with application of travel braking arrangement.
- Assured uniformity in reclaimed material can be maintained.
- Controlled flow of material helps in reducing bridging in the storage pile.

Rotary Plough Feeders

Material Handled, Capacity & Rotor Diameter of Rotary Plough Feeders

<table>
<thead>
<tr>
<th>Material Handled</th>
<th>Capacity</th>
<th>Rotor Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>2475 TPH</td>
<td>4300 mm</td>
</tr>
<tr>
<td>Iron ore</td>
<td>2000 TPH</td>
<td>3050 mm</td>
</tr>
<tr>
<td>Limestone</td>
<td>1500 TPH</td>
<td>2700 mm</td>
</tr>
<tr>
<td>Dolomite</td>
<td>1000 TPH</td>
<td>2250 mm</td>
</tr>
<tr>
<td>Coke</td>
<td>500 TPH</td>
<td>1800 mm</td>
</tr>
</tbody>
</table>

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TECHNICAL SPECIFICATIONS

- Manufactured as single or double speed.
- Driven with single or double speed AC motor or DC motor or chain drive with either current drive, frequency controller or hydraulic drive.
- Up to 4300 mm of rotor diameter with highest capacity requirement of 2475 TPH for coal.
- Comprises specially designed curved arms with wear resistant liners.