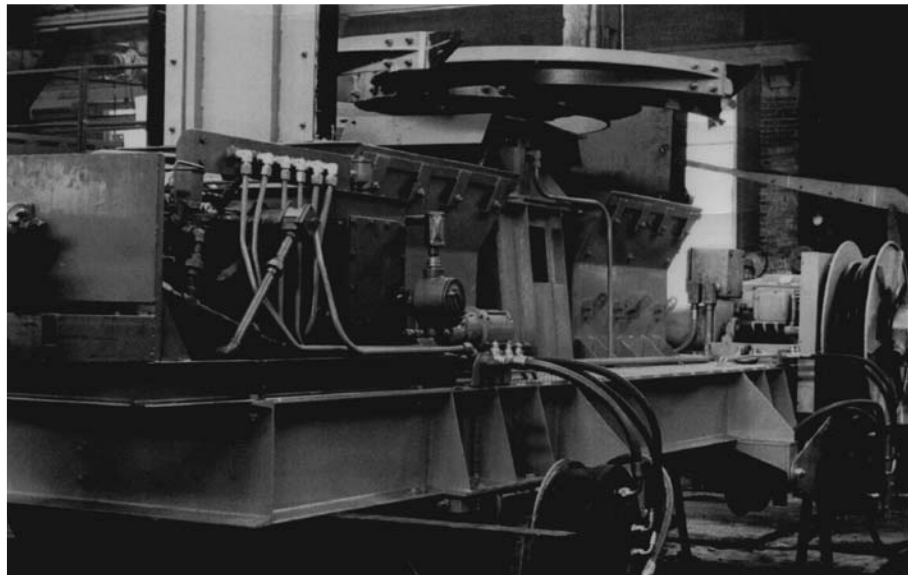
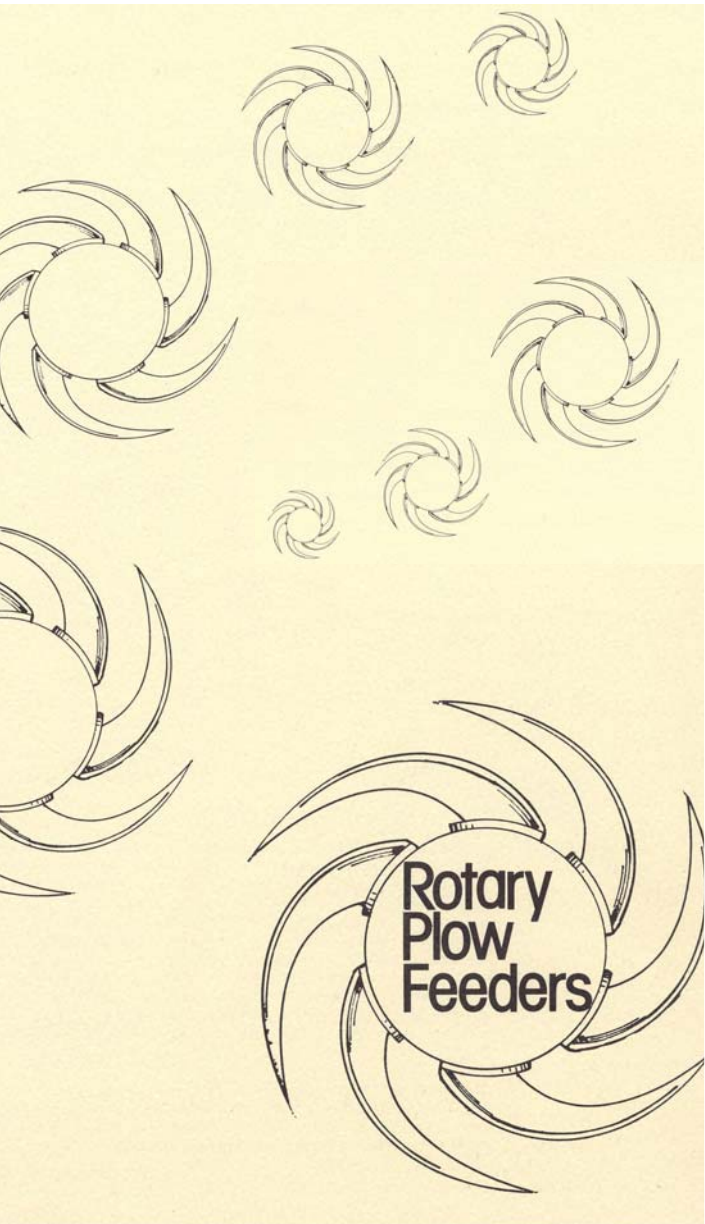


# Plow Feeders



**ThyssenKrupp Robins**



**ThyssenKrupp**

# The Systems Approach

**ThyssenKrupp Robins Inc.** is an industry leader in the design and construction of bulk material handling systems. Our designs, including those for Rotary Plow Feeder Reclaim Systems are installed at major sites throughout the world. The plow feeder systems discussed in this brochure are used to efficiently reclaim sticky hydroscopic ores as well as free flowing and highly abrasive materials.

A TKRI Rotary Plow Feeder, with its patented blade design, ensures stable and regular flow of material from storage to the reclaim conveyor belt with minimum power consumption, blade liner wear, or material degradation.

## WHAT IS A ROTARY PLOW FEEDER?

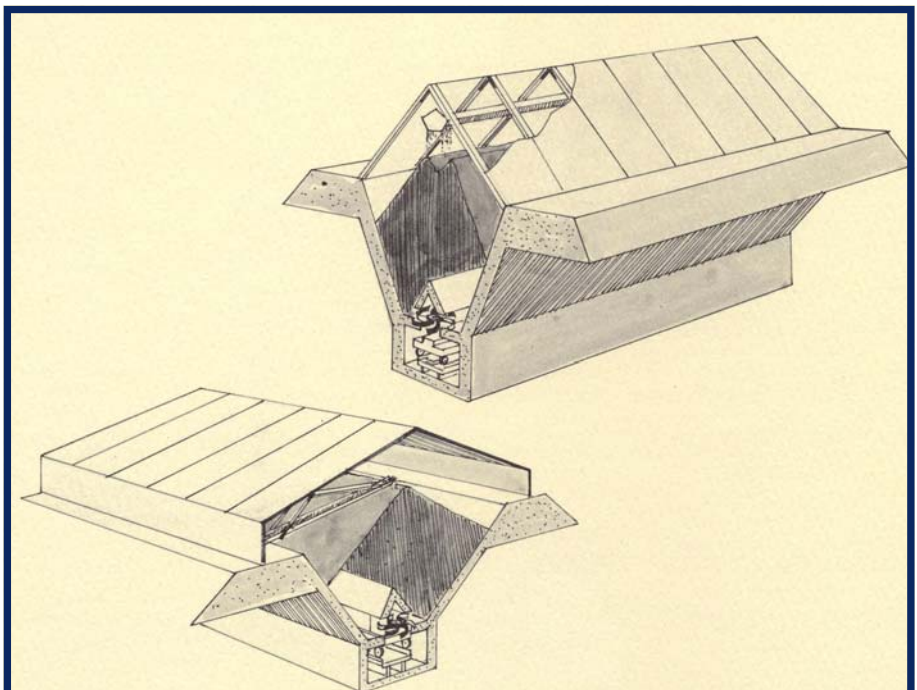
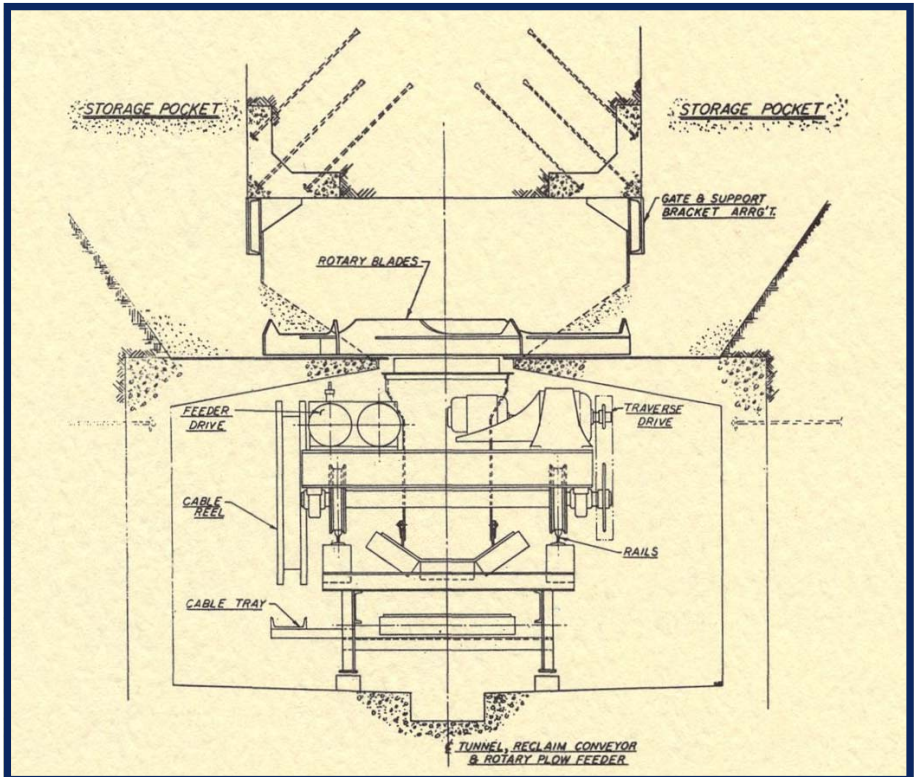
A Rotary Plow Feeder is a heavy-duty machine used to reclaim stored bulk materials. The feeder is designed to operate in a tunnel beneath a storage pile or in bins, or in bulk vessels. A slot opening, running the length of the tunnel allows the stored material to flow onto a protruding reclaim shelf. 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 plowing mechanism, the key to the system's operation, consists of curved arms revolving on a vertical axis that sweep the stored material from the shelf onto a belt conveyor. The plow mechanism is transported on a heavy-duty, self-propelled, wheeled frame that operates on rails directly above the reclaim conveyor. The Plow Feeder can be continuously traversed or positioned at any point along the reclaim shelf for maximum flexibility.

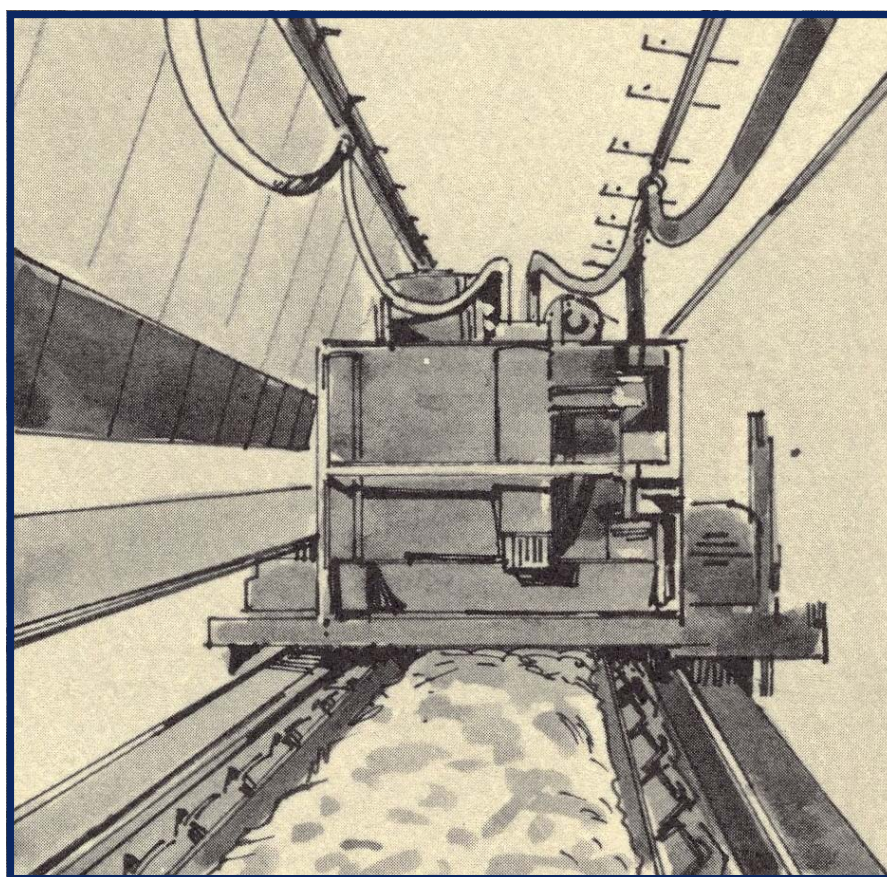
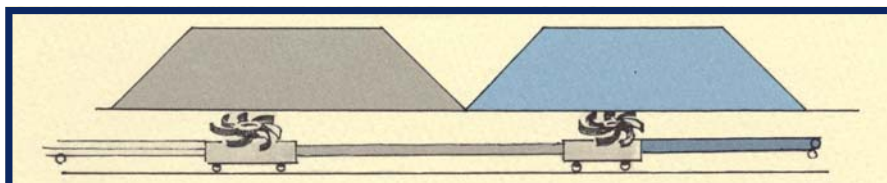
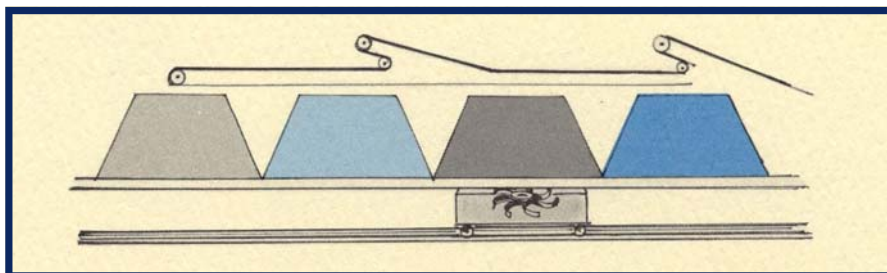
The speed of the plowing mechanism, or rotor, is automatically, or operator adjustable so that the reclaim capacity can be controlled to meet project ton per hour requirements. The traversing machinery enables the Rotary Plow Feeder to reclaim materials evenly along the entire length of the system.

## HOW THE STORAGE AND PLOW FEEDER RECLAIM SYSTEM WORKS

A traveling stacker, tripper, or shuttle conveyor discharges the incoming material to the storage pile above the reclaim conveyor and rotary plow feeder. The stoking system can be either an open structure or one that completely encloses the storage pile.

The use of a traveling stacker eliminates the need for an "A" frame structure. However, should covered storage be required a separate building enclosing both storage pile and stacker can be provided.





**THE PLOW FEEDER SYSTEM THAT HANDLES MORE THAN ONE TYPE OR KIND OF MATERIAL.**

Separation of incoming materials, irrespective of quantity, is easily handled by the plow feeder systems. Incoming materials are stored in separate sections of the storage area through selective positioning of the stockpiling equipment. Using the TKRI patented retractable arm plow feeder, the desired stored material can be reclaimed independently without disturbing any of the other materials in the storage pile.

**BLENDING**

Reclaiming from separate storage piles of uniform analysis in varying proportions by individual feeders will provide a feed that when mixed together, will produce the desired product mix.

**RECLAIM CONTROL**

The output tonnage of the Rotary Plow Feeder is controlled by varying the plow rotor speed. This can be accomplished by numerous types of adjustable speed drives built into the machine to meet any specific requirement. The mechanical, variable speed drive is most economical as it requires only local manual adjustment. Remote control capability from a central control point can be built into the machine to accommodate rotor speed adjustments as an added feature.

**ADVANTAGES OF THE SYSTEM**

First in-first out... as well as 100% live storage. This virtually eliminates the danger of spontaneous combustion when handling materials such as coal.

The long slot-type opening in the tunnel wall and the undercutting action of the Rotary Plow Feeder eliminates material bridging and rat-holing often experienced with other type feeders.

Equipment cost is reduced because only one plow feeder is required to reclaim the entire storage pile instead of multiple fixed feeders.

Adaptability to many materials and weather conditions permits the plow feeder to be used where other machinery has failed. Since the rotating arms of the machinery physically undercut the pile and draw the material out to the reclaim conveyor, it is not dependent on gravity alone to create material flow.

**APPLICATIONS**

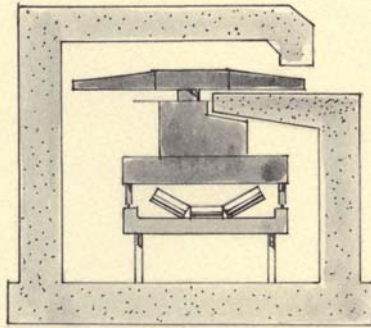
TKRI has an extensive list of installations throughout the world handling:

- |           |                |           |                   |
|-----------|----------------|-----------|-------------------|
| Coal      | Shale          | Trona Ore | Phosphate         |
| Lignite   | Iron Ore       | Sinter    | Dolomite          |
| Limestone | Gypsum         | Potash    | Petroleum Coke    |
| Sand      | Burned Lime    | Alumina   | Metalurgical Coke |
| Tuff      | Cement Clinker |           |                   |

**TYPES OF EQUIPMENT DESIGNS**

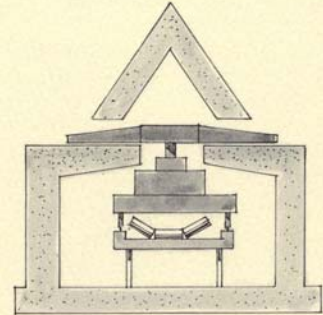
**TYPE A**

Single plow... with single reclaim shelf... for use where lower capacities are required.



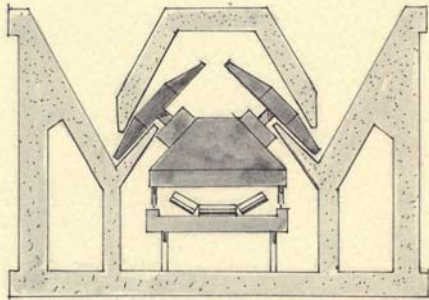
**TYPE B**

Single plow ... with double reclaim shelves... for use where intermediate capacities are required. Double plow also available for high capacities.



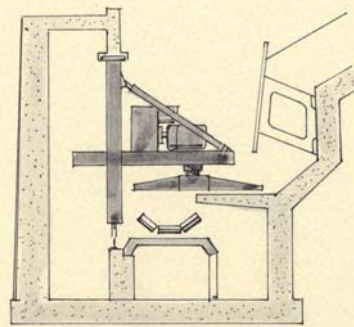
**TYPE C**

Double incline plow... with double reclaim shelves... uses two opposite incline plows on same frame for high capacity reclaim... for use with very free flowing or wet materials where spillage or drainage is of concern. Also used in self-unloading vessels where list could cause unwanted material flow.



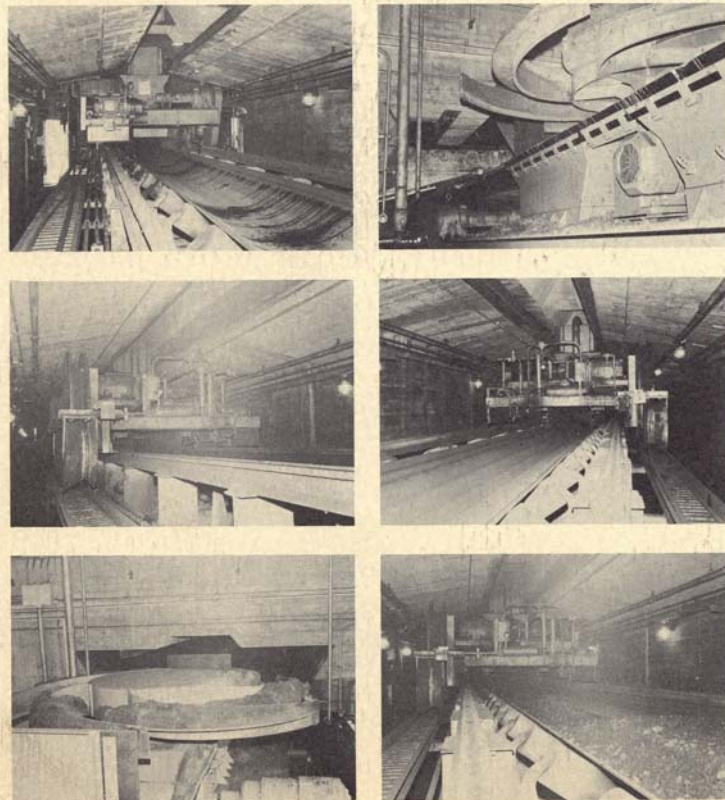
**TYPE D**

Single plow... with single reclaim shelf... for use in conjunction with coke wharves.



The TKRI Rotary Plow Feeder installations have been 100% successful. This kind of performance record has built an outstanding reputation for the system that today ranks as one of the preferred methods for reclaiming coal from ready storage piles used in the utility industry.

TKRI is a total capability company in the bulk handling systems field. For further information about Rotary Plow Feeders, their application to new or existing installations, as well as other ThyssenKrupp engineered systems, contact us direct.



**ThyssenKrupp Robins Inc.**  
7730 East Belleview Ave. Suite 404  
Greenwood Village, Colorado  
80111-5820 U.S.A.

www.krupprobins.com  
Phone: 303-770-0808  
Fax: 303-770-8233  
E-mail: sales.tkri@thyssenkrupp.com