Saxlund INTERNATIONAL

TubeFeeder®

For Energy Efficient and Eco-friendly Storage of Biomass Bulk Materials

Saxlund International offers a wide range of material handling equipment including the TubeFeeder® (patented product) bulk material reclaim system. The TubeFeeder® is a patented product and represents a system designed for the continuous discharge of bulk materials from rectangular bunkers, large-diameter silos, and open-air stockpiles. The TubeFeeder® gently handles hacked wood chips, re-cycled chips, sawdust etc. used in the board, paper and biomass energy industries, as well as other types of non free-flowing bulk materials.

Saxlund International is a diversified engineering, design, and fabrication company, supplying materials handling and energy systems to industrial and municipal clients throughout the world. For more than 50 years Saxlund International has been developing the 'know how' and experience necessary to solve challenging materials handling problems. We are able to apply this knowledge to develop systems that can move your difficult bulk materials.

www.saxlund.co.uk

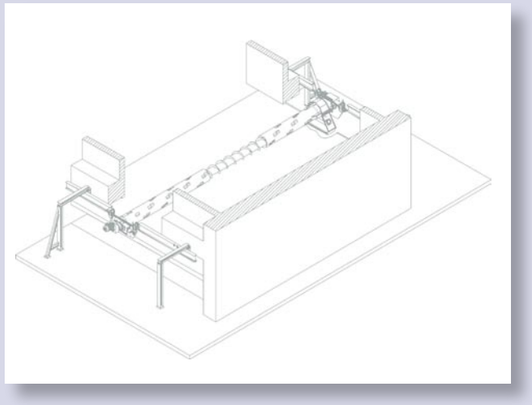
Specialist in

bulk material handling with particular expertise in flat bottom silo and bunker designs.

The TubeFeeder® is designed to provide continuous, high-volume reclamation of bulk materials.
The system is energy efficient, consuming as little as 25% of the power needed for traditional exposed screw reclaimers. It also provides for gentle handling of the materials and can be installed in flat-bottomed bunkers and silos with large spans and diameters, in addition to open-air stockpiles.
The TubeFeeder® is well suited for processes that require a high level of accuracy;
it offers a superior solution for industries that place exacting demands on efficiency and performance of their materials handling processes.

Function

The TubeFeeder® system consists of a screw conveyor housed inside a 'floating' tube, that serves to relieve external pressure from the surrounding material. The tube rotates independently of the screw and uniformly 'ingests' the bulk solids through slots along the tube.
The inner screw conveys material to the end of the tube where it is discharged to a belt conveyor.
When installed in rectangular bunkers, the unit is supported at both ends by electronically-driven trolleys that travel on rails.



The TubeFeeder® can also be installed in large, round silos and open-air stockpiles. In this type of application, the tube and conveyor screw rotate in a circular motion from a central pivot point, thus 'sweeping' the silo bottom to collect and discharge the material.

The special shape of the tube slots ensures efficient rotation of the tube in either direction as it sweeps the silo floor. The rotational speed of the tube can be accurately adjusted to achieve the required rate of discharge. The tube reverses its direction of rotation according to travel direction to prevent foreign objects from getting wedged in between the tube and the bunker or silo floor.

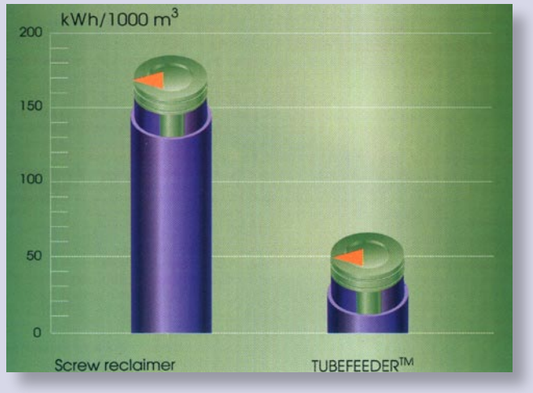
Working Principal

- Feeds along the entire length as the tube rotates.
- Material is fed through special toothed slots when the tube rotates.
- Material bridges over the slots when not in operation.
- It activates a layer of material around the tube when rotating.
- The screw inside is a conventional transport screw.

1. Energy consumption. The screw is inside the tube so it is protected from pressure from the stored material during operation. Energy consumption is thereby dramatically reduced by at least 70%. Low energy consumption is becoming more important for companies seeking environmental certifications.

2. Power installation. Due to the lower installed power, savings are made in the cost of cables and frequency inverters.

3. No axial forces. The forces between the screw/tube/material is a closed force system.



Therefore there are no axial forces to be taken into the rails and thus the civil construction cost is greatly reduced.

4. Low wear. As the tube is working in a layer of activated material, it is not subject to full head load. Therefore friction against the tube is low. Low wear is also a result of the low energy input. The 'Tubefeeder' installed at Billingsfors in Sweden for example is still in operation today after working for some 88,000 hours.

5. Adjustability. 15 - 125% is possible but 25 - 100% is guaranteed. The reclaim rate is almost proportional to tube rotation speed.

6. Even feed. Material is taken into the screw through slots positioned along the whole length of the tube. Possible variations in feed are therefore evened out. All reclaimed material must pass through the slots before passing onto the belt conveyor.

7. Mass flow. Due to the even feeding and the material passing through the slots along the whole tube length, mass flow in the storage hall is achieved. We therefore guarantee 'first in - first out'.

8. Consolidated material. Material such as wood chips can become very hard and packed in the bottom of a storage hall. When the TubeFeeder® activators work into this material it is gradually loosened and reclaimed.

9. Reversing rotation. The TubeFeeder® reverses its rotation according to the travelling direction so that the advancing side is always going upwards. This is because it cannot then jamb should a log or other large foreign object appear in its path. This foreign object will then be safely pushed to one end for clearance later.

Such a foreign object may jamb and cause a travelling screw to fail - a travelling screw is unable to reverse.

10. The Tube floats. When in operation the TubeFeeder® 'swims' in the stored material and is virtually subject only to radial forces. This means that it can work beneath great head loads since the head load is eliminated during operation.

11. Large capacities. Because of the minimised forces as indicated above, we can supply the TubeFeeder® up to 20m long and with discharge rates of 1000 m^3/hr and above.

12. Homogenisation. The material is reclaimed through many small slots so that any variations in quality (moisture or size) are evened out when the material is blended within the Tube. Segregation is a common problem when a storage hall is filled with fines in the centre and larger pieces along the sides. The TubeFeeder® solves this problem and acts as a mixer.

Conclusion. The TubeFeeder® is the latest 'State of the Art' reclaimer machine that is a development from the old travelling screw concept but it has very many advantages and no disadvantages. The price is naturally a little more but this is paid back many times over because of the advantages listed above. It has been proven over 24 years in the board, paper and wood energy industries worldwide. It is available to you now from Saxlund International Ltd.

Saxlund products for silo and conveying technology:

Solids Handling Pumps • Troughed Chain Conveyors
Screw Conveyors • Control Systems
Sliding Frames • Rotary Valves
Push Floors • Elevators

Energy System Products

Congeneration System • Boiler and Steam Systems
Combustion Systems • Thermal Oil Systems
Hot Gas Systems •

Offices, subsidiaries and agents in:

Australia
Belgium
Brunei
China
Denmark
Estonia
France
Germany
Holland
Hong Kong
Indonesia
Italy
Ireland
Japan
Malaysia
New Zealand
Philippines
Poland
Portugal
Singapore
Spain
Switzerland
Taiwan
Thailand
United Kingdom
United States

Saxlund International Ltd.
11 Freemantle Business Centre
Millbrook Road East
Southampton
SO15 1JR
Tel: + 44 (0) 23 8063 6330
Fax: + 44 (0) 23 8063 6343
E-mail: info@saxlund.co.uk
Website: www.saxlund.co.uk