

Tube Feeder® Screw Reclaimer

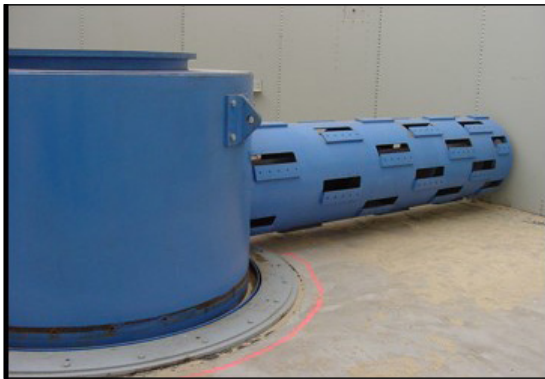
Uses up to 70% less energy than conventional screw reclaimers

Features/Advantages

The Perfect Solution to Reclaim Wood Chips, Fibrous Materials, Most Dry Bulk Materials, and Some Wet Bulk Materials

The Tube Feeder reclaiming system's state-of-the-art under-pile reclaiming technology guarantees efficient, long life and trouble-free operation. This heavy-duty machine is intended for continuous 24/7 operation with reliable service and unparalleled uptime.

The Tube Feeder is an energy and process efficient design which results in overall improved



equipment and process performance. Due to the unique design of the Tube Feeder, there is a greatly reduced shear force transmitted into the wood chips, biomass, or other applicable materials. This increases the wear-life of the screw.

Compared to a traditional exposed screw, the Tube Feeder minimizes any degradation of product into fines during operation. It also provides a significant reduction in wear on the screw flights, which in a traditional screw reclaimer causes significant downtime for maintenance and additional screw replacement costs.

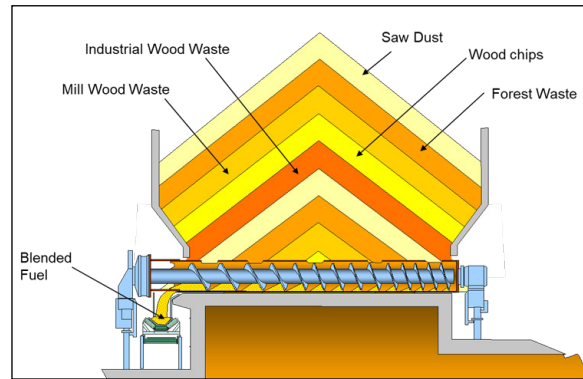
Over 80 Tube Feeders are currently installed in North America, Australia, Asia and Europe.

Tube Feeders are utilized for both the Forest Products industry and for Biomass Energy Generation on wood chips, shredded biomass and sawdust.

Storage capacities for Tube Feeder installations can range from 100 m³ to over 1,000,000 m³ with reclaim rates ranging from 10 to 1000 m³/hr.

Advantages

- First-in, first-out reclaim technology
- Linear storage systems
- Low energy consumption
- Reduced fines generation
- Reduced footprint of storage area due to minimally restricted material pile depth
- Minimal wear on screw and tube due to elimination of shear forces
- No thrust loads into structure



- Consistent reclaim independent of traveling direction
- Homogenization of reclaimed product

Linear Reclaimers

The Tube Feeder can be installed in circular silos ranging from 8 to 20 meters in diameter or in linear traveling reclaimer applications with reclaim widths up to 16 meters and traveling distances exceeding 100 meters.

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Features/Advantages (continued from other side)



Operation

The Tube Feeder reclaimer travels under the bulk storage

pile, reclaiming the stored material in either travel direction.

The tube with the reclaim slots is driven by a variable speed drive controlling the tube rotation speed and the discharge rate. Tube rotation activates a layer of material around the tube.

Activated material is gravity fed through the slots. Material is then fed equally along the entire tube length and a conventional screw conveyor inside the tube transfers the chips to a collecting belt conveyor.

A Tube Feeder reclaims bulk material from silos or storage piles.



It is composed of an outside tube with slots which rotates at 1-10 rpm and a screw conveyor operating inside this tube at a fixed rpm, typically 40 rpm. The slots are furnished with activators which reclaim material when the tube rotates. Reclaim rates can be adjusted using variable frequency drives to within a 15 to 100% range of maximum reclaim capacity.

Material that is fed into the tube is conveyed to the end by the internal screw. The material being conveyed is protected from the static pressure exerted by the remaining material in the pile/silo.

The whole unit traverses across the base of square

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silos on rails in a linear system. Tube rotation depends on travelling direction thereby ensuring consistent operation.

The intelligent design employed in the tube and screw configuration constitutes a “closed forces system,” therefore no thrust forces into the structure are generated.



Since the conveying is done through gravity flow, the required power is reduced by up to 70% compared to a traditional open screw reclaimer.

Each slot is identical and reclaim is uniformly distributed along the entire length of the tube. In round silos more slots towards the outer end of the tube compensate for larger swept area.

By definition, the design produces a mass flow which allows for first-in, first-out reclaim. Feed rate is uniform and is a linear function of adjustable tube rotation.

Another significant process advantage of the Tube Feeder is its uniform distribution of slots and reversible tube rotation, which allows for full reclaim homogenization and process control. In economical terms this means less operational cost for energy and maintenance.

The Tube Feeder’s uniform feed rate and homogenization results in improved boiler efficiency as well as better quality and reliability of chips to a digester.

The energy efficient design also means investments in electrical infrastructure and building design will also be substantially reduced.

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