Stainless Bucket Elevator for Elevating Pressed Beet Pulp at Wyoming Sugar in Worland, WY

General Description of the Application

At the Wyoming Sugar facility in Worland, WY, sugar beets are processed and refined into sugar. Two byproducts are produced during this process, molasses and beet pulp. The beet pulp is then processed and sold as either dried flakes or pellets as an additive for animal feeds to provide extra energy, protein and fiber. Wyoming Sugar works 19,000 acres and sells 59,000 tons of refined sugar annually.

Bucket elevators are not very commonly used throughout the pressed pulp process. Elevator design must meet specific criteria and constructed for easy bulk material flow as the pressed beet pulp can be very sticky. Downtime is not an option. Equipment is closely monitored and maintained for production standards. 304 stainless steel is used as the materials of construction for bucket elevators and other material handling and processing equipment.

In one area of the process at the Worland plant, the pressed beet pulp had to be elevated vertically almost 40-feet to the next process. The existing bucket elevator was falling apart and not meeting capacity requirements. Another problem with the existing bucket elevator was that the inlet and discharge were clogging and shutting down the process. Wyoming Sugar needed a new bucket elevator that could meet the increased capacity requirements and not be a maintenance problem. The new KWS bucket elevator provided a long term solution to Wyoming Sugar by increasing process capacity and eliminating downtime.

Design Parameters of Application

Product Type: Pressed Beet Pulp
Material Density: 35 Lbs. per Cubic Foot
System Capacity: 2,000 Cubic Feet per Hour
Moisture Content: 70-Percent
Duty: 24 Hours per Day, 7 Days per Week

Advantages Provided by KWS

Engineers from KWS worked with Wyoming Sugar to design a bucket elevator that only had a slightly bigger foot print than the original and used larger size buckets to handle the increase in capacity. KWS included extra inspection doors on the head and boot section of the bucket elevator to allow for easy inspection and maintenance.

Special Features of KWS Design

The bucket elevator inlet was designed to help fill the buckets and keep the pressed beet pulp from sticking. KWS lined the inlet and discharge areas with UHMW to improve bulk material flow. The original bucket elevator was designed for a capacity of 1,250 cubic feet per hour. The new KWS bucket elevator increased the capacity by over 40-percent to over 2,000 cubic feet per hour without radically changing the size of the overall housing and other critical dimensions of the unit.

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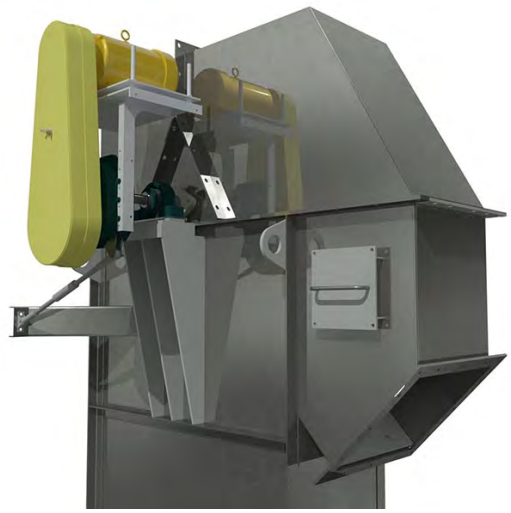
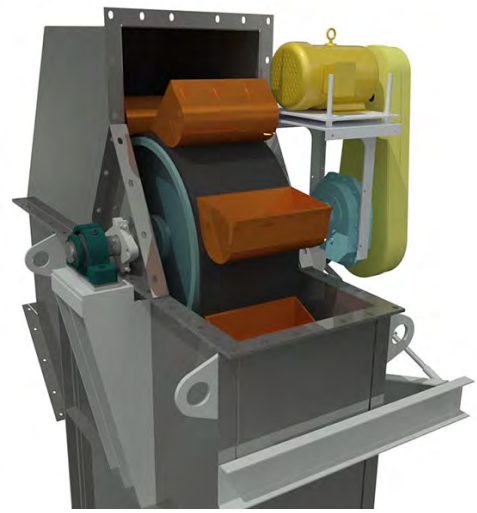
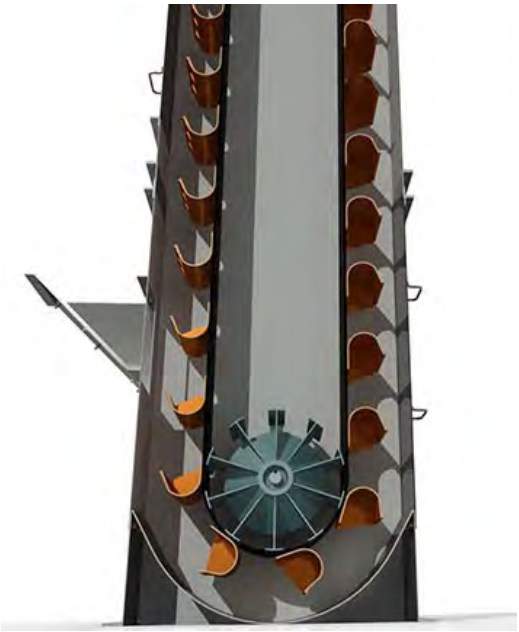
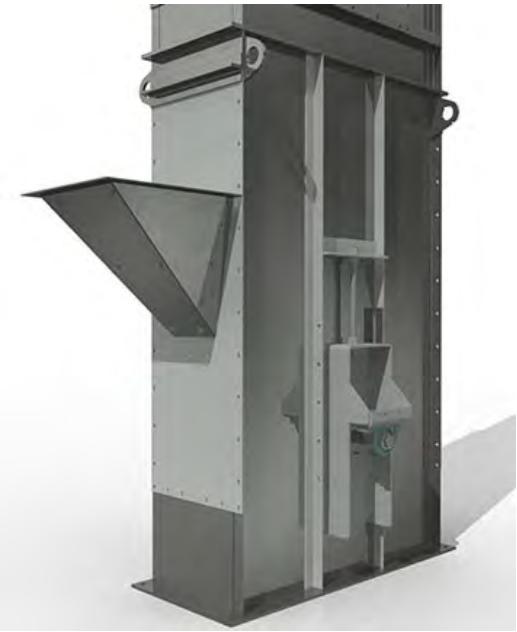
Wyoming Sugar recently contacted KWS about increasing the capacity even more on the bucket elevator. KWS able to increase the capacity of the current bucket elevator by decreasing the spacing between buckets and by increasing the bucket size once more. The most recent modifications to the new KWS bucket elevator increased the capacity again by over 40-percent to 3,312 cubic feet per hour. Wyoming Sugar was extremely satisfied with the level of engineering, manufacturing quality and all-around service provided by KWS.









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