



Centrifugal vs. Continuous Bucket Elevators

Question

What is the difference between a centrifugal and continuous bucket elevator?

Answer

Bucket elevators are typically manufactured in two different styles: centrifugal and continuous. The determining factor in choosing either a centrifugal or continuous bucket elevator for your application is based on the specific characteristics of the bulk material being handled.

Centrifugal Bucket Elevators

Centrifugal bucket elevators typically operate at speeds between 225 to 300 feet per minute (fpm) and are better suited for bulk materials that are free flowing, mild to moderately abrasive, and non-degradable. Due to the high speed of a centrifugal bucket elevator, the bulk material is discharged by centrifugal force at the head section. Some bulk materials will collect in the boot section requiring the use of oversized buckets with a reinforced lip along the front edge, also known as "digger buckets" to withstand the constant digging of material. Digger buckets are typically placed every 7th to 10th bucket, depending on the application.

Continuous Bucket Elevators

Continuous bucket elevators typically operate at speeds between 100 to 150 feet per minute (fpm) and are better suited for bulk materials that need gentle handling, have good to average flowability, and are moderately to extremely abrasive. The slower speed gently discharges fragile bulk materials to reduce degradation. In a continuous bucket elevator, most of the bulk material flows directly in the buckets at the inlet, so digger buckets are not needed. Due to the slower operating speeds, the bulk material exits the buckets due to gravity and slides down the back of the preceding bucket and into the discharge chute. Continuous bucket elevators are ideal for abrasive bulk materials and reduce wear to components.

When selecting between a centrifugal and continuous bucket elevator, it is essential to consider the characteristics of the bulk material being handled and the desired discharge rate to determine which type of bucket elevator is most suitable for the specific application. With extensive experience in solving bulk material handling problems, KWS engineers can help design the correct equipment for your application.



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