Improving Screw Conveyor Discharge

Question

I have a screw conveyor with flights covering the entire center pipe. The bulk material is not discharging properly and is building up at the discharge, causing the conveyor to amp out. We need the conveyor to operate reliably and prevent material from packing at the discharge. What options do I have to improve product discharge?

Answer

Several screw modifications can improve discharge depending on the bulk material characteristics and conveyor design.

For free-flowing bulk materials, the simplest option is to add bare pipe over the discharge opening. The bare pipe allows material to fall freely and reduces the chance of overfeeding or packing.

Bare Pipe Over Discharge Opening Allows Free-Flowing Bulk Materials to Discharge Easily

For cohesive or compressible materials, a short section of reversing flighting can be added near the discharge. As most screw conveyors utilize screws with right hand flighting, the reversing flight is typically a single section of left-hand flighting. The reversing flight pushes material slightly backward, relieving pressure at the discharge and reducing plugging.

Reverse Flight Pushes Cohesive Bulk Materials Backward into Discharge

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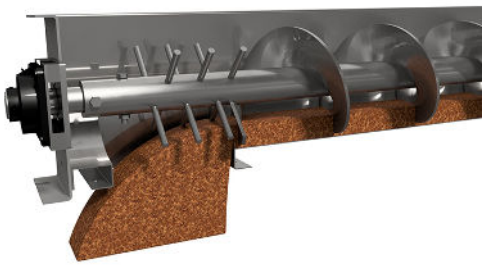
Breaker bars, also referred to as “beater bars”, can also be welded radially at the discharge to break up sticky, compacted, or caking materials to promote flow.



Breaker Bars Break Up Bulk Materials that Tend to Cake

For sluggish, clumpy, fibrous, or irregular bulk materials, KWS discharge kicker paddles are an excellent solution. Kicker paddles rotate through the discharge zone and quickly eject material before it can build up.

Paddles Work Well with Clumpy, Fibrous, or Irregular Bulk Materials

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