

PROBLEM SOLVED



The Proof is in the Flow!

AIRSWEEP

MATERIAL ACTIVATION SYSTEMS

Material Activation Systems Keep Pet Food Ingredients Flowing

For pet food manufacturers, avoiding cross-contamination is central to their production process. Bulk material flow problems such as ratholing, bridging and other material blockages decrease flow through a process system which can contribute to possible cross-contamination. Additionally, these problems quickly become expensive. Decreased output from vessels, increased downtime for vessel clean-outs, and increased processing time raise the bottom line. Several material flow activation equipment options are available yet many companies resort to hammering containers to stimulate stuck material because the activation system they chose is not effective for their specific application. Hammering causes damage and wear to the vessel, and may also lead to operator safety issues such as shoulder and back problems from continual swinging of the heavy hammers. Elmira Pet Products, the largest Canadian private-label dry pet food manufacturer, produces well-known brands for mass merchandise, grocery and the pet specialty channels, as well as unique diets for distribution to niche markets. In 2018, they researched a new material activation system to replace an ineffective system. Their research led them to the AirSweep Material Activation System.

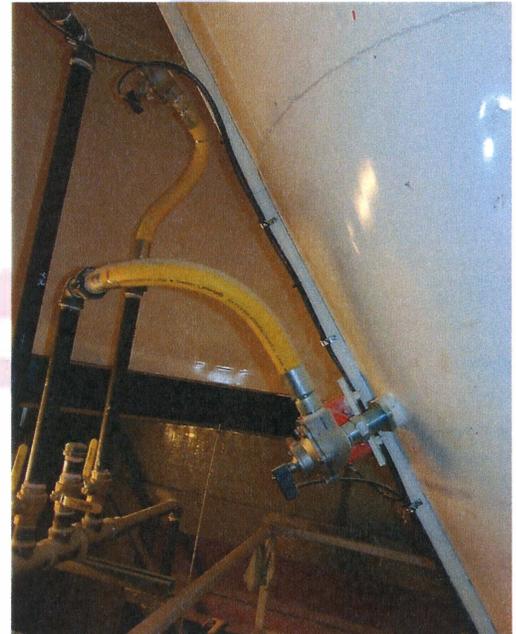
Bridging and Blockages in Dry Mix Bins

In 2014, Elmira Pet Products added two dry mix staging bins to existing bins. The two new bins immediately had issues with product flow due to bridging in the bottom of the bins, particularly above the slide gate. The feed blend consisted of meat and vegetable meal, ground grains and minerals, with a moisture content of approximately 7%. Vibrators and pneumatic hammers were employed to activate the material flow and eliminate the bridging. Neither solution was effective. Operators resorted to hammering the bins with sledgehammers to dislodge the material. Consequently, downtime increased, bins were being damaged from the hammering, and operators had to climb two stories of stairs and ladders to get the product moving again creating a safety risk.

In 2018, Riley Dahmer, Processing Engineering Specialist for Elmira Pet, inquired about the AirSweep® system to replace the vibrators and pneumatic hammers. Designed to break friction to lift and sweep stalled material back into the flow stream, the AirSweep system delivers powerful bursts of compressed air or inert gas in a 360° radius, immediately resealing to prevent material feedback. Each AirSweep nozzle can activate up to 8 feet (2.4 m) of material without causing wear or damage to vessel walls.

Based on drawings provided by Dahmer, an AirSweep system design was furnished for each bin paying particular attention to the area above the discharge flange. The recommended system consisted of three carbon steel 1-1/2" VA-12 AirSweeps per dry-mix bin, strategically placed to stimulate flow in areas that were backed up with material. A programmable sequence controller triggered 0.25 second air pulses every 20 seconds to activate the material for a first-in, first out controlled flow.

Elmira Pet Products' installation of Airsweeps to replace the vibrators and pneumatic hammers, is keeping pet food ingredients flowing through their process systems effectively and safely.



Strategically-positioned VA-12 units on dry-mix bin

To request a demonstration of the Airsweep or for a recommendation give us a call at 800-875-1918 or email: rbrowning@industrial-tech.com.



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