

Focus on **POWDER & BULK OPERATIONS**

Precision dosing key factor in packaging drink mix

▶ Weigh belt feeder reduces product giveaway, improves quality.



▶ **The SWB-300 weigh belt feeder, installed at Wander Foods' Berne, Switzerland, Ovomaltine drink mix facility, has a low profile to accommodate low-headroom applications.** Source: K-Tron.

In today's tough global economy, food manufacturers have become very sensitive to the effect of exact product dosing and ingredient delivery during packaging. An improvement of even 0.25% in dosing weights can equate to thousands of dollars saved in long-term operating costs, as well as valuable improvements in overall product quality.

Wander Foods, located in Berne, Switzerland, recently found itself facing a similar situation with its Ovomaltine drink mix packaging line. Known to US consumers as Ovaltine, the chocolate-malt flavored drink mix was previously packaged using a manual delivery and dosing process that was unreliable. In automating the process, Wander

required a contained, high-accuracy metering solution. It selected Smart Weigh Belt (SWB) gravimetric feeders from K-Tron.

The designed solution required two lines for the contained transfer of the powdered drink blend to a dosing device with design rates of up to 6,000 kg/hour. Additionally, the existing space offered limited headroom to accommodate equipment height. The low profile of K-Tron's SWB-300, coupled with a system for contained vacuum transfer of the powder, offered the solution.

The addition of a rotary valve directly above the feeder facilitates controlled delivery of the material to the weigh belt below. Flexible bellows in between the airlock outlet and the feeder inlet isolate the belt feeder so that accurate weighing and dosing can occur.

The current installation operates on a three-shift basis, processing approximately 4.5 ton/hour of the Ovomaltine mixture. The material is conveyed directly to a hopper mounted above the feeder. It is then metered, via the weigh belt principle, directly to the packaging line.

The SWB is designed for continuous controlled gravimetric feeding of bulk materials, but it can also be used for gravimetric batch feeding or continuous metering of bulk material flow. The feeder includes a primary weigh bridge located below a continuously rotating belt. In addition, an optional secondary weigh bridge — which was included in the Wander installation — reduces maintenance, frequency of calibration and improves long-term stability.

As material falls onto the belt, the material weight on the primary weigh deck and belt tare weight on the secondary weigh deck are determined by K-Tron's patented SFTIII weighing technology with vibration and temperature immunity, zero deflection and one part in four million resolution. A controller compares the desired mass flow or setpoint with the actual mass flow measured and adjusts the belt speed accordingly. The combination of the weighing technology and the detailed control algorithms provide high-accuracy metered feeding of the product to the process below.

The SWB can be designed for capacities ranging from 20 to 40,000 kg/hour and is available with a variety of options; high pressures and temperature requirements can also be accommodated.

"K-Tron did not only supply us with a single piece of equipment, they provided us with a whole solution," said Peter Roth, tonic food production manager, Wander Foods. ♦

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