Premium Fitness Bars Precisely and Flexibly Topped

A Dynamic Production Environment Requires Innovative Dosing Technology

Dosing experts have long known: To achieve efficient dosing, rheological influences must be minimized as much as possible. With this goal in mind, the four-person team at ViscoTec tackled a project for an Austrian food company. The company produces fitness bars that are enhanced with a topping on the upper surface. For this specialized processing step, the company brought in ViscoTec to design, build, and commission a five-lane dosing system within approximately 18 months.

Precision and Efficiency: A Challenge at 100,000 mPas

With a viscosity exceeding 100,000 mPas, conventional piston pumps are not suitable for dosing these highly viscous toppings. They tend to create stringing effects, leading to material waste and quality issues – none of which are desired for this premium snack manufacturer.

Another challenge for ViscoTec’s engineers: Each batch contains bars of varying lengths. The dosing process must function seamlessly despite this variability while maintaining a consistent production speed to ensure continuous conveyor belt operation.

Advanced Control Technology Enables an Efficient Solution

The topping is applied using a system based on the endless piston principle. This allows for pulsation-free and gentle application in the automated bar production process. High repeatability and ultra-precise dosing with minimal dead space ensure consistently verifiable product quality.

In collaboration with the system integrator, the ViscoTec team developed a production line with the following process: Dough bars are transported directly from the mixer to the dosing system via a conveyor belt. An optical sensor detects each individual bar and triggers the dosing process. Valveless dispensers ensure the reliable application of the highly viscous topping. As soon as a bar is positioned under a filling nozzle, the dosing pump starts. The topping is applied. Each pump operates independently, activating as soon as the sensor detects a bar beneath the nozzle.

A key advantage of the endless piston principle is the ability to adjust the dosing quantity in real-time: As long as the sensor detects a bar, the pump continues dosing, allowing for the precise application of topping even on bars of varying lengths within a batch. Once the bar leaves the detection area, the pump stops. An adjustable retraction mechanism prevents stringing, eliminates topping waste, and ensures a uniform bead shape—even with differently sized bars—a must for premium products.

Customer Benefits: Performance and Reliability

Unlike conventional systems, the ViscoTec dosing system does not require a synchronized stop-and-go operation of the conveyor belt. This significantly increases production efficiency and enables smooth, high-speed filling. By combining precise control, flexible dosing volume adjustment, and reliable handling of challenging materials, the company has found a powerful and dependable solution tailored to its specific requirements.

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Pictures:



Dough bars on the conveyor belt approaching the dosing system (Source: ViscoTec)



*Bars with evenly applied topping (Source: ViscoTec)*

ViscoTec – perfectly dosed!

ViscoTec Pumpen- u. Dosiertechnik GmbH is a leading system manufacturer for fluid technology: from extraction and product preparation to the dosing of medium to high-viscosity media. The product portfolio covers dosing and filling applications in the automotive, e-mobility, electronics manufacturing, food processing, aerospace, medical technology, pharmaceutical and many other industries.

The headquarters of the technological market leader is in Töging a. Inn (Bavaria, near Munich). In addition to an international distributor network, ViscoTec has subsidiaries in the USA, China, Singapore, India, France, Hong Kong, and Denmark and employs around 330 people worldwide. In 2024, ViscoTec recorded a global turnover of 66 million euros.

Further information on products and fields of application can be found at [www.viscotec.com](http://www.viscotec.com).

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