

New, improved mixers for snack and bakery dough applications

Mixer customers want pre-hydration, automation, sanitation.

By Ed Finkel



Courtesy of Buhler

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Companies in the market for new or improved mixers for snack and bakery dough applications have displayed a recent focus on specific features and benefits. These include efficiency, cost savings, pre-hydration, handling of ancient grains, automation of processes, and stepped-up sanitation and maintenance, especially in the wake of COVID-19.

Insights from the field

In the past, when customers of Reading Bakery Systems, Robesonia, PA, talked about contamination, they mostly meant contamination of the product, says Jim Warren, vice president, Exact Mixing Systems. “We want the product to be sanitary; we don’t want anything to get into it,” customers previously told him. “Now there’s a new concept: contamination of the workforce. They say to vendors, ‘We see a real risk.’”

In addition to wanting to keep workers safe, companies know that an outbreak could lead to the entire facility having to shut down, Warren says. To bring that about, snack and bakery facilities need to find equipment that moves operators apart and allows them to work safely. “It’s equipment that’s designed to keep people apart and reduce the number of people required, specifically so customers are comfortable they can keep their plant running,” he says.

Automation is top of mind for customers of Shaffer Mixers, part of Bundy Baking Solutions, Urbana, OH, says Andrew McGhie, director of sales. Among the purposes involved is ensuring that machines tilt to the proper angle and then automatically discharge dough, he says. Also, “Internet of Things” solutions more and more often take data from different equipment and consolidate it into one supervisory control system.

Notes McGhie: “A lot of customers are striving to figure out, ‘What is the best use of this? Will it help me to manage, improve my processes, improve my product quality?’” They’re also looking for improved sanitary design, the ability to mix many different products on the same equipment, and the ability to handle artisan bread, he says.

Buhler Inc., Plymouth, MN, has been responding customers to interested in efficiency and cost savings, consistency of product quality, sanitary design, sustainability, and connectivity, says Jessica Davis, sales account manager, bakery and ingredient handling.

Efficiency and cost savings go hand-in-hand and remain perennial concerns. Customers are looking for shorter mixing and fermentation times, lower energy use, and increased water absorption, says Davis. Other specific priorities include a controllable and reproducible process, stainless steel construction, clean-in-place (CIP) systems, and the ability to monitor and control system parameters, all while receiving real-time data for analysis and predictive maintenance.

Customers of Charles Ross & Son Company, Hauppauge, NY, are increasingly investing in systems with automated recipes and data logging features, as well as wireless connections enabling remote control from tablets, laptops, and smart phones, according to Christine Banaszek, sales manager. Sanitary-design features raised most often include types of materials, surface finishes, seals, feed ports, and discharge valves, she says.

Charles Ross & Son Company's rental program has become popular in meeting surges in demand, or for the purpose of testing new rollouts, Banaszek says. High Shear Mixers and Ribbon Blenders have been in high demand for preparing emulsions and power blends, respectively, she says, adding that the company's mixers are all custom built.

Bakery Concepts International, Harrisburg, PA, distributors of Rapidojet, has seen a strong desire for continuous mixing, as well as a trend toward pre-hydration, according to Ken Schwenger, president. "There's an interest in the ability to substantially reduce the time required for grain soaking," he says.

Schwenger has also seen a marked trend toward use of ancient grains and other clean-label or differentiating initiatives. "There's an increasing need for pre-hydration of grains and bran, those sort of things," he says. "Because there's an increase demand for whole grain, natural, and organic."

Mixer features of note

Baker Perkins, Grand Rapids, MI, has been upgrading all of its machinery—including the Tweedy range of mixers that handle breads, buns, pizza dough, pastries, and cakes—to make it "Industry 4.0 ready," according to Keith Graham, business development manager. "Baker Perkins also now has the capability to remotely commission and start up new unit machines throughout the world, again including the bread dough mixer range," he says.

The key piece in this is the Ewon Flexy Gateway, a modular router and data gateway that samples and uploads all sensor and device data to a secure cloud server, which is also accumulating data from the rest of the plant, enabling broad-scale—rather than siloed—data analysis, Graham says. Customers who lack cloud-based systems can use internal networks instead, he says.

Bakery Concepts International has upgraded the internal software within its Rapidojet line, which ranges from mixing 1,000 to 5,000 kilograms per hour on average across different sizes of machines, to increase the accuracy of dry and liquid output, Schwenger says. The company also has been working to boost the level of hydration available for gluten-free doughs, which require 20 percent more hydration to get the same dough feel and machineability, he says.

Rapidojet does not require a metal mixing tool because the mix falls vertically into the mixing chamber with large exposed surface area, and then is shot through with high-pressure liquid, which leads to a more-homogenous mix, Schwenger says. "We're using the machine for continuous mixing of gluten-free products, like corn masa," he says. "Because there is no metal mixing tool, we can run every single hydration level, from an extremely fluid 5 percent solution, all the way to almost any free-flowing dry mix."

Reading Bakery Systems has been offering instant hydration for the past few years, a process that reduces the amount of energy required to hydrate dough from 30 percent of the batch mixer's capacity to more like 1 percent, Warren says. "You're putting in flour that has already absorbed the water," he says. "Because you're hydrating instantly, you're not seeing the increase in temperature that you normally would see in the hydration process."

More recently, the company has boosted the size of its Hydrator brand of mixers, from the ability to handle 3,000 to 4,000 pounds per hour all the way up to 20,000 pounds per hour. "Now, you can do it for very high-capacity lines," Warren says. It's used for breads, buns, and pizza doughs—basically any flour-based product that you make at that high of a rate."

Shaffer has been upgrading its Double Sigma mixers to better handle the disparate groupings of ingredients that go into health food bars and similar products, McGhie says. The company also has developed a version of its chunker with multiple cutters. "With a nut and fruit bar product, you're usually worried about damaging an inclusion," he says. The feature allows dough portioning as it comes out of the handling system to get an even fill.

Shaffer also has gone to high-pressure, 2,000 psi CIP systems for its mixers that can be turned on while the agitator is rotating to clean the mixer and drain the water away. "The 2,000 psi does a great job of cleaning the bowl," he says. "And because it's high pressure, it doesn't use as much water. It still has to be finished up by hand."

Buhler offers the JetMix Hydration System, which can be used in lieu of a standard dough mixer and provides the capability of dosing up to three different dry ingredients, Davis says. She notes that the JetMix ideal for sourdough products, using a gentle, 360-degree water jet that hydrates each individual flour particle as it passes through the machine.

KEYWORDS: [dough handling](#) [sanitation](#)

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