

TECH & TECHNIQUES

MIXERS

IN THE MIX

Bakers and snack makers keep versatility, automation top of mind when shopping for mixers.

Ed Finkel, Contributing Writer

Versatility, automation, and sanitation are among the top considerations of snack food and bakery companies in the market for new or improved mixers, according to manufacturers. Manufacturers operating in the space point toward the ever-changing needs of today's consumer, need for efficiency and minimal downtime, and other drivers as reasons why producers are expecting more of such equipment than ever before.

THE BOTTOM LINE

- Product changes fuel the need for flexible machines
- Automation helps mitigate operation costs and labor shortages
- Easy, efficient cleaning is a must with bakery and snack mixers



Courtesy of Koenig-Rex

FLEXIBLE FUNCTIONS

Flexibility seems top-of-mind for customers of **PPM Technologies**, who typically can't precisely predict what future use-cases they will be asked to address, according to Nick Schoen, marketing communications manager: "Customers never know what product they're going to be asked to make next month or three months down the road, driven by consumer demand or dietary trends or things like that," he says.

Understanding the limitations of components like tank systems and pumps when trying to spec out the best machine for customers with open-ended needs can be critical, Schoen notes.

"Depending on the viscosity [needed] and some of the other characteristics of these slurry solutions or liquid solutions, we choose specific pumps," he says. "We're trying to get as much information about what viscosity and what flow rates are you using today. If you know the high and low end—this is the maximum and minimum viscosity you're going to be able to move through these tanks—that's good to know for the future."

Customers sometimes will want to incorporate different measurement devices into their mixers—for example flow meters used to measure the flow of products, which can be programmed into the PLC, Schoen remarks.

"They can look at how much product is moving through the tank system over the course of a day, or per minute, or per hour," he says. "They can use that data to tell, with these systems almost always using tanks in combination with drum-coating systems, how much slurry, liquid, or oil is moving through. And see how much they're wasting, and how efficiently the drum-coating system is working."

Between the potential for automation, and twin desires to save costs and boost production speeds, customers of PPM Technologies are turning to incorporation of level sensors, Schoen claims.

"That depends on the technical competency of customers, how much staff they have and whether they can fully or partially automate," he says. "If they don't want to fully automate, we hook [the mixer] up to a holding tank and use level sensors that will tell the holding tank when to refill the mix-tank systems—fully automating that [part of the] process."



Courtesy of Rapidojet

COST CONSCIOUSNESS

Ken Schwenger, president of **Bakery Concepts International**, says he sees a significant shift in the industry, particularly among commercial bakeries, toward straight-dough mixing—and he sees a number of reasons for that.

"The biggest reason is the cost of a sponge-and-dough process, but also square footage, sanitation, and other things," he says. "If you look at the cost of equipment, the square footage, labor, sanitation, and maintenance for sponge-and-dough, it's very expensive. It's a lot of equipment and a lot of energy."

Instead, Schwenger notes he has seen a move toward straight-dough mixing, along with pre-hydration of flour and use of natural dough conditioners that his company delivers through its Rapidojet line.

"That pre-hydrated flour goes into an intermediate fermentation vessel, and it can achieve floor time for as long as the baker wants—an hour, three hours, four hours—in order to develop the flavor and aroma that is mimicking the sponge-and-dough process," he says.

When it comes to dough conditioning, he adds, "Enzymes are becoming huge because of [a desire for] natural, clean-label ingredients, replacing the old cysteine or calcium propionate being eliminated by every large bakery. These natural enzymes can replace those things while increasing or providing fermentation flavor, and aroma, and volume, and all of those things."

CLEANING CONSIDERATIONS

PerMix Americas most often hears from customers about cleaning- and sanitation-related desires, whether it's wet or dry clean-in-place, the ability to washdown, or the use of a safer, cantilevered design, says John Paul, CEO and managing director.

"Most mixer manufacturers run their motors and gear drivers horizontally; we run vertically because we give everybody a cover to put over the motor," he states. "Water follows that horizontal run. The motor goes into a fan system when you get water into the motor. We eliminated that by mounting the gear box and motor in the vertical system."



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z, master baker, Koenig

PerMix understands the continued need for maintenance, so the company mounted its gearbox in a pin hinge position, Paul says. "If you need to maintain the motor, you pull the pin, it swings down into a horizontal position, and you have access without need a ladder."

Upon hearing regular concerns about product traveling into the seal area, the company contracted with CinchSeal to put air purge seals on all mixers as a standard feature, Paul says. "That air purge seal maintains seal integrity," he notes. "We're getting, on average, two to three years out of our seals, vs. other manufacturers getting six months or less."

Customers of **Koenig** most often ask about the differences between mixing methods of spiral or twin twist mixers, both of which are very efficient, says Werner Koetz, master baker. "Spiral mixers tend to mix doughs with high water content very well," he says. "Twin twist mixers are very efficient with high energy input and, thus, optimized mixing times."

Other areas of interest include how best to clean mixers and availability of technical features such as controls with programs or temperature sensors, according to Koetz: "We have perceived a continuously rising demand for easier cleaning of mixers. Bakeries want to have faster cleaning for shorter downtimes and more hygiene in the bakery."

Finally, Koenig hears from other customers concerned about mixing their doughs for too long, such as Ciabatta doughs for high dough yield. "If they do not mix their doughs properly, the dough cannot develop right and will be too sticky," he advises. We recommend to give the doughs enough mixing time and to test properly. Mixing is a crucial part, and we recommend to invest time into mixing trials for the best product outcome." **SF&WB**

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