

Technology enhances mixing capabilities

Recent advancements in continuous, high speed, horizontal and vertical mixing give bakers more flexibility and efficiency.

by **Melissa Hillebrand**,
assistant editor

During the last 10 years, advancements in mixing technology have skyrocketed. Mixer manufacturers now can offer bakers more sophistication and control.

Manufacturers can provide mixers that are faster, gentler and sturdier than what was available. These mixers are ideal for handling the new waves of high-fiber and whole grain doughs, due to new mixers' robust designs and efficiencies. They also improve the processing of traditional doughs through better controls and designs.

Continuous, high speed, horizontal and vertical mixers all have undergone transformations to offer bakers state-of-the-art technology and controls.

Continuous mixing

For bakers who want more efficiency in a high-speed environment, advancements in continuous mixing have evolved. In continuous mixing, ingredients are fed into one end of the mixer nonstop, and dough continuously feeds out of the other end.

These mixers have evolved to handle highly developed doughs, such as sweetgoods, honey buns and whole grains. "Continuous mixers have gone through an evolution so they can offer more mixing, but less sheering," one manufacturer says. "The highly developed doughs don't like the sheering or



Donatos Pizzeria uses a mixer that automatically collects scrap on a conveyor and feeds it into the hopper.

the tearing action."

High-speed mixing with low shear is one trend to hit continuous mixing. Another trend in this mixing field is flexibility. With new mixer designs, changes to the mixing profile can be made on the fly while the equipment is running, one manufacturer says. "This is a very important design feature," he says, "because when you go from product A to product B, you want to quickly change the mixer without spending a lot of time in the changeover."

High-speed mixing

Like continuous mixers, high-speed mixers offer more mixing in less time. One manufacturer offers a mixer that turns the dough at 1,200 rpm. It can mix pizza dough in two minutes, as opposed to 10 minutes for a traditional

mixer, the manufacturer says. Because this mixer is so intense, it hydrates the flour and ingredients better, the manufacturer says. This ability to hydrate the dough makes this mixer ideal for handling stiff doughs, such as whole grain or high fiber. "You are not going to get the development of that dough until you get those ingredients fully hydrated," he says. "And they are difficult to hydrate."

This mixer is able to turn fast because it uses a direct drive motor, which spins at 1,200 rpm, and is mounted to the motor shaft. Mixing tools also are attached to the shaft, allowing the mixer to turn at 1,200 rpm. This mixer also features variable speeds. It can run as slow as 150 rpm, if a baker wants to incorporate particulates into the dough.

This high-speed mixer also features



In continuous mixing, ingredients are fed into the mixer nonstop and dough continuously feeds out.

an automated system that adds scrap back to the mix. This system trims the dough from the baker's production line, weighs it, and adds the dough to the mixer when the program calls for it.

Donatos Pizzeria LLC took advantage of the benefits of this mixer. Seven years ago, the chain moved dough making from its restaurants to a facility located in Columbus, Ohio. Donatos was using three bowl mixers and needed to expand its capacity. Instead of purchasing a fourth bowl mixer, the company bought an automated high-speed mixer that replaced its existing mixers.

The company used to collect the scrap by hand and place it into the bowl mixers. Now, scrap conveyors gather web trim from the sheet-and-cut pizza shells, move the scrap to one cross conveyor, then discharge the scrap into a chunker hopper once the scrap has reached a certain weight.

"It's all hands-off," says Bob Zaborski, Donatos' executive director of commissary operations. "There's very little physical labor involved with the mixing."

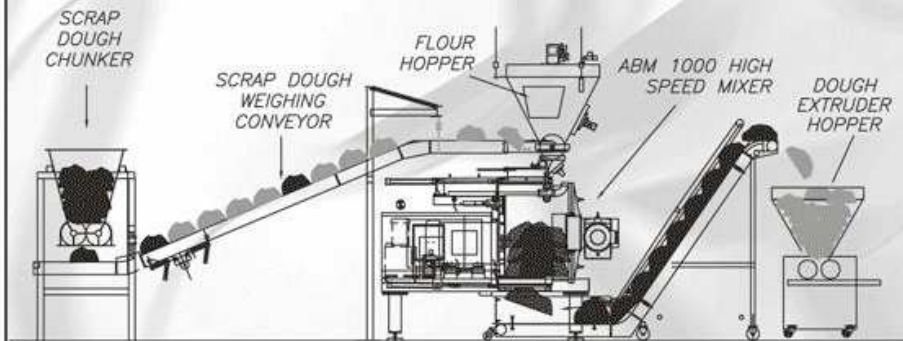
After purchasing the mixer, Donatos' mix times dropped from six and a half minutes to 90 seconds. Furthermore, the company's efficiency increased significantly. "I wrote the project and sold it on what I thought would be an 18% efficiency increase," Zaborski says, "and we actually realized a 35% efficiency increase. What it's done for us is huge."

Horizontal, vertical options

Like continuous and high-speed mixers, horizontal and vertical mixers also have seen advancements. One manufac-

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