



The Big Squeeze

JBT Marel produces fresh juice via Nord gearmotors

Nord Drivesystems

A Nord SMI worm gearmotor with a three-phase 1 hp motor drives the Fresh'n Squeeze 1880 machine. (All images: Nord Drivesystems)

Few things say good morning like a glass of fresh orange juice. Thanks to the rise of in-store juicing machines, you no longer need an orange grove out back, let alone a hand press and strong forearms to enjoy one. Just walk into any Sam's Club in the country and you'll find gallons of fresh juice in the cooler, squeezed on-site that same day.

The machines behind all that juice come from JBT Marel. From its operation in Lakeland, FL, the food and beverage equipment manufacturer builds the Fresh'n Squeeze family of point-of-sale juicers, self-contained machines that turn whole citrus fruit into clean, great-tasting juice on demand.

Leveraging JBT Marel's patented whole-fruit extraction technology, Fresh'n Squeeze systems deliver high juice yields, exceptional flavor, and the ability for retailers to produce fresh juice directly at the point of sale.

It's a win for everyone involved. Retailers can offer juice made in-house rather than trucked in from a bottler, consumers no longer must wonder where their juice was made, and JBT Marel can continue serving an important market segment, just as it has for many decades.

The newest member of its juicer family is the Fresh'n Squeeze 1800, a compact unit aimed at hotels, cafes, juice bars, and grocery stores. Yet several years ago, as JBT Marel continued evolving its citrus juicer

portfolio, the team faced an important design challenge. The gearmotor supplier for an earlier version of 1800 announced it was leaving the single-phase motor business. This created a need for a replacement that could fit within a highly constrained installation space while meeting the performance requirements of the application.

Fortunately, Nord Drivesystems had just the thing, kicking off a partnership that has since spread across all the juicer manufacturer's new equipment.

From Spray Pumps to Citrus

JBT Marel traces its roots to 1884, when inventor John Bean developed a continuous spray pump to combat scale in his California almond orchards. The company that grew from his invention—John Bean Technologies—became JBT Marel in January 2025 after its merger with the Icelandic food-processing leader Marel, making it a global provider of equipment, software, and services for the food and beverage industry. In fact, its technology touches nearly every aisle of the supermarket, from poultry, meat, and seafood to prepared foods, dairy, and beverages.

In Lakeland, though, citrus rules. The company's industrial extractors process roughly 75 percent of the world's orange juice, and the same patented whole-fruit extraction principle used in those

machines—developed in the 1930s and refined ever since—powers every Fresh'n Squeeze juicer. That technology helps Fresh'n Squeeze systems maximize the juice squeezed from each fruit while producing clean, great-tasting juice, bringing decades of citrus-processing expertise to retail and foodservice environments.

Ricky Negrón, Nord's district sales manager based in Clearwater, FL, supports JBT Marel and picks up the story of how the two companies met. "The original equipment was using a competitor's gearmotor, but when that supplier moved away from single-phase in 2017, JBT had a real need on its hands," he says. "The biggest obstacle back then was size. The machine was small, and the gearmotor was installed in a very tight cavity, so you needed a gearbox that would not only work but also fit in the available space. Nord had one, and that's really what opened the doors for us."

Wade Roberts, mechanical design engineer for Fresh'n Squeeze at JBT Marel, was there at the start. "We were redesigning our mid-sized Multi-Fruit Juicer, or MFJ, when we learned our existing supplier was moving away from single-phase motors," he says. "That prompted us to evaluate alternatives, and the Nord motor looked like a strong fit for the application, and from there, we've established a great relationship. We've long since begun using Nord in all our new equipment designs."

Maximizing Value

To appreciate what those gearmotors are up against, it helps to understand how a Fresh'n Squeeze machine works. Most competing juicers use a cut-and-press design that slices the fruit in half, then pushes each half against a rotating press. It's a simple, inexpensive approach, but one with consequences for flavor. "You're pressing on the entire orange, which means you get most of the oil on the peel's surface," Roberts explains.

In JBT Marel's whole-fruit extraction process, a pair of specially shaped cups encase the fruit, peel and all. A cutter opens a small hole in the bottom of the orange, and as the cups close, the fruit's contents are forced through the hole into a strainer tube. A plunger then compresses everything into a volume measuring roughly an inch across, ejecting the juice through the tube's tiny perforations—ranging from 0.028 in. to 0.055 in. in diameter—while the seeds, membrane, and excess pulp exit separately. The result is clean juice free of oil-induced bitterness, and up to 50 percent more juice per fruit than cut-and-press machines can deliver. That combination of flavor and yield is one of the key advantages of the Fresh'n Squeeze platform, helping operators maximize the value of every piece of fruit while delivering a premium consumer experience.

Better yet, one set of components handles everything. "Lemons, limes,

grapefruit, oranges, tangerines, mandarins—any kind of citrus you can think of is juiced with the same set of components," Roberts points out. "The only thing we change is the strainer tube, and that just controls how much pulp you want in the juice."

The 1800 is the smallest machine in the Fresh'n Squeeze lineup, sitting below the mid-sized MFJ. It processes up to 18 fruits per minute, yielding 50 ounces of juice, and accepts fruits up to 3.25 in. in diameter. Operators simply load the hopper, which holds around 20 pounds of fruit, and press a button. And with just six removable parts, each hose down safe, cleanup is equally easy.

Driving it all is a Nord SMI worm gearmotor with a three-phase 1 hp motor, while the MFJ, found in Sam's Club stores nationwide, carries a 1.5 hp version of the same right-angle drive. Both operate on a variable frequency drive (VFD), an arrangement that gives each machine multiple speed settings and earned the company an unexpected piece of intellectual property.

"When we did the design for the second-gen MFJ, we moved to three-phase and put a VFD in there," Roberts recalls. "We actually have a patent on running a three-phase motor with a VFD on a juice machine."

And what happens if an operator drops in an oversized orange? Not much, as it turns out. "If it's too big, you'll know because it just won't go into the cup—you just pull it out and keep running," he says, pointing out that most customers sidestep this question entirely by ordering fruit to size, something many people outside the produce business might never have considered. Roberts explains that all boxes of fruit weigh 40 pounds, and you buy them by the number of fruits in the box—a 72-count box contains 72 fruits; a 138-count box has 138, and so on. "You can specify whatever size you want."

The Proof Is in the Pour

He goes on to point out that the Sam's Club machines provide a punishing endurance test: operating seven days a week and four



hours a day, they generate a tremendous volume of juice. But with more than 1,000 units in the field, failures are notable for their absence. "I can count on one hand the number of times we've had to change out a motor," Roberts asserts. "And on the rare occasion we've had an issue, Ricky and the Nord support team are always quick to help us out."

Part of that longevity comes down to the gearmotor's ability to shrug off citrus oil, an acidic compound aggressive enough to attack aluminum. The MFJ's drives wear Nord's NSD2+ coating, and the results speak for themselves. "Many of those machines have been in the field for eight years now," Roberts says.

"You can take a wet rag, wipe the citrus oil off, and that paint still looks brand new. I can tell you from extensive experience that citrus oil eats straight through aluminum over time, and that coating holds up well."

Nord's online tools have also earned a permanent place in the company's design workflow. "myNORD allows us to get the exact motor we want for every application and get it quoted pretty much on the spot," he adds. "It's one of the many reasons we began using Nord for all of our gearmotors."

The view from the purchasing department is largely the same. Sergio Correa, site procurement manager at JBT Marel, has spent nearly twelve years buying Nord gearmotors, the overall impression reflects a highly reliable and solutions-oriented partnership. Nord has consistently demonstrated strong performance from the outset, with dependable lead times, responsive customer service, and a proactive approach to problem solving.

Their team works collaboratively to address challenges efficiently, helping streamline procurement processes and ensure operational continuity.

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The Fresh'n Squeeze platform maximizes the value of every piece of fruit while delivering a premium consumer experience.