

Refrigerated FOOD AGE

A high-efficiency fan/motor retrofit is opening up new opportunities to expand perimeter departments and frozen foods through significant reductions in energy costs.

Shoppers in a Miller's Markets store in Michigan may have taken little notice of the activity under the dairy case last year, when 20 aging fan/motor systems were being pulled out and replaced, but it was a big deal for this 10-store chain, which is a Supervalu customer store.

The initial dairy case installation produced a 50% energy savings for the retailer, and Ken Kilgore, director of operations, is "eagerly awaiting" the arrival of many hundreds more of these GE fan/motor systems as part of the chain's goals of lowering its refrigeration and freezer unit operating costs and a broader commitment to its perimeter departments and frozen foods.

"Retailers have to have the foresight to dramatically change the way they market their refrigerated and frozen departments," says Kilgore. "Customers are looking for grab-and-go items, and we have to become their pantry by having what they want. Retailers who don't invest in these areas are just not going to be around."

Following the initial installations, and the proven energy savings, the rest of the test stores received the same fan/motor retrofits, and plans now call for the installation of thousands of others throughout the chain early next year. Kilgore notes that even a small store uses 150 of these motors in its refrigeration and freezer cases, so the task of replacing



The Power Hits The Fan

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all the rest, where the new unit is compatible, is a major undertaking.

Kilgore also credits Mark Sattison, of Sattison Refrigeration, in Waterloo, Ind., with helping to tweak the original GE system to fit existing refrigeration and freezer units in Miller's Markets. "A lot of the reengineering that was done is due to Mark. GE had a good fan, but Mark made it better," he explains.

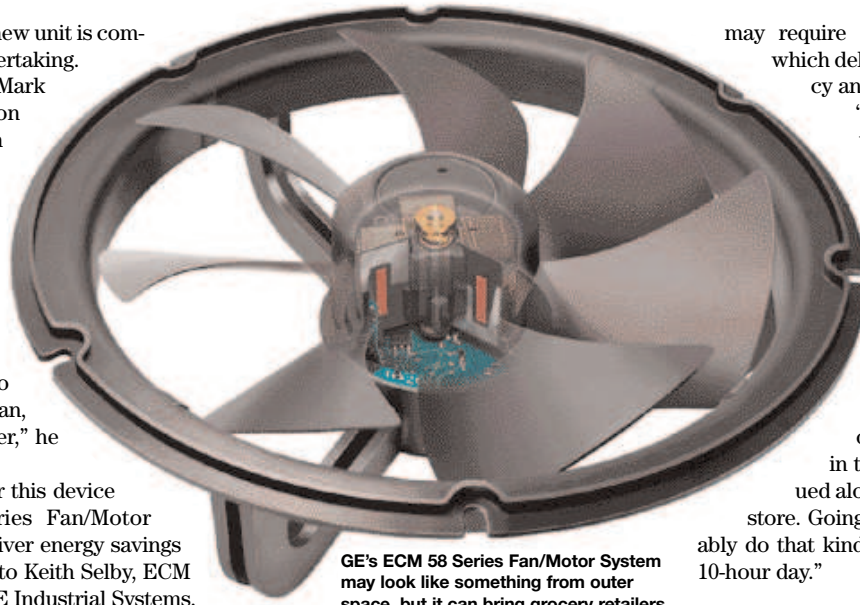
The official name for this device is GE's ECM 58 Series Fan/Motor System, which can deliver energy savings up to 300%, according to Keith Selby, ECM market manager for GE Industrial Systems, based in Plainville, Conn.

Super Efficiency

The key to the energy savings is due to the operating efficiency of the fan/motor itself, which is 20% to 25%, compared to the 5% to 10% efficiency of systems equipped with shaded-pole motors. The ECM's permanent-magnet, DC design allows the motor to achieve very high efficiency and maintain that efficiency over a wide speed range, the company reports. The new system has been designed with a smaller fan-tip clearance to provide optimum system efficiency. It also offers programmable controls through a built-in microprocessor, and delivers constant speed regardless of static pressure, by automatically adjusting its torque to maintain the programmed-speed set point. The ECM 58 Series also allows two operating speeds which can be selected from its speed range of 950 rpm to 2000 rpm. The payback period in energy savings for the cost of the motor (excluding installation costs) ranges from six months to a year.

The ECM technology is not that new. It was first introduced way back in 1984 to the HVAC market, but a newer application was developed eight years ago, and the newest version now being marketed to supermarkets and retailers, is about two years old, he says.

"When we initially came out with this, we focused on the OEMs, the actual case manufacturers. We got a good response but we didn't have a huge amount of success, so we went to the end customers and showed them the advantages of the system. And that's been a huge success. The end users are just amazed and they're wondering why



GE's ECM 58 Series Fan/Motor System may look like something from outer space, but it can bring grocery retailers down-to-earth energy savings of up to 300%.

the OEMs have not embraced this technology" as original equipment in their cases, Selby observes.

Chains See Huge Savings

GE Industrial System's current sales effort is two-pronged: Selling teams are seeking out senior managers at the nation's top 10 supermarket chains, among others, while also calling on major case manufacturers to have their own vendors use GE as their fan/motor supplier.

"We had a booth at the most recent FMI [show], and a retailer told us he was frustrated that his case vendors were not using this product. One of the top chains we are working with has put us ahead of many other equipment projects. They see a huge potential for energy savings. It's a way for them to increase their profits by decreasing their costs," he says.

The key retail contacts for GE are proving not to be the equipment manager, but someone at the vice presidential level "who has P&L responsibility," says Selby. "By the end of that meeting he will have set up three retrofit projects. It happens quickly when you get to the right level."

Typical questions begin with, "will it save what you say it saves (in energy costs), will it fit my cases, will the installations disrupt the store?" he reports.

Addressing all three points Selby notes, "The energy savings are pretty easily verified. They fit most of the Husmann cases (along with other major brands), although some of the island cases and smaller cases

may require a smaller fan/ motor, which delivers the same efficiency and energy savings.

"For the installation, we went into one store during regular hours and replaced 270 motors over a two-day period. We had the new motors in a shopping cart, and started with the produce cases. As we pulled the old ones out we put them in the cart, and we continued along the perimeter of the store. Going forward we can probably do that kind of installation in one, 10-hour day."

Integration Underway

GE is already working with most of the major case manufacturers, resolving questions like the fan/motor's compatibility with performance features in their existing designs. Questions like: Can they tie in an electronic thermostat to allow for a sleeper mode or go to a rapid pull-down motor? Can the new motor be integrated as a complete system, and can the microchip in the retrofit be tied into a central control, with temperature sensors?

"A lot of the integration has yet to be done, but right now the OEMs are in that mode," says Selby.

That process of adapting new fan/motors to existing cases was a key element in the successful installations at Miller's Markets, where the retailer's vendor, Sattison Refrigeration was able to help GE make the appropriate adjustments. Sattison is now a regional distributor for the new motors.

"With the new fan/motors we've gone from a four-amp pull to a two-amp pull, and the fan is cooling at a more efficient rate, which means it's generating less heat and it helps offset our air conditioning costs," says Kilgore.

Based on his conversations with managers in SuperValu's regional offices, he expects the company to move forward with installing these same fan/motors in corporately-owned stores. For the independent owners, like Miller's Markets, Kilgore says, "SuperValu has worked hard to bring innovations to their customers and I'm sure there is going to be an effort to go to the independent retailers and present ways to compete with the Wal-Mart supercenters." ■