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inkjet technology by hp invent

Versatile, high-definition inkjet coder from ATInfo wins for Faribault Foods

AUTOPRINT® system adds flexibility needed in growing contract packaging operation, eliminates clean-up ritual

Faribault Foods had three goods reasons to choose a thermal inkjet system when it wanted to upgrade the codes it puts on corrugated trays. Its new printing system:

- increases flexibility in code formats and can even print in different colors,
- improves the quality of codes on corrugated trays, and
- simplifies maintenance.

The Faribault, MN, company processes and packages value-added soups, pastas, and Mexican specialties. Its own brands include Pasta Select, Butter Kernel, and Chili Man. However, more than half its volume is contract packaging and processing for other food marketers. The need to meet varying coding needs for customers was a key driver behind the search for a better tray coding system.

Thermal inkjet print heads deliver different information on opposite sides of trays packed by Faribault Foods. The company needed flexibility in coding because it does contract packaging and code format changes with runs for different customers.

Faribault is a century-old food processor that has expanded its services well beyond its base of canned vegetables. In doing that, it took a measured look at new equipment, and decided to try a high-tech digital approach to coding because of its need for flexibility and quality.

Within the tray packer at Faribault Foods is the print head housing that holds three HP thermal inkjet cartridges. It is immediately left of the controller for the AUTOPRINT® coding system. A case, moving to the right, has just received a code and is moving toward a bundling station.

"We needed an upgrade because our customers were requesting more information," explains Steve Dahl, packaging superintendent at the plant. "They were asking for more specific codes, for expiration dates, and for more and better copy. Our old coders could put on only 18 characters. There was no room or ability to make printing bigger or vary it. We did a lot of abbreviations."

Add looming compliance requirements such as being able to print bar codes on trays and even the need to print in color, and it quickly became apparent that the company had to look beyond its old continuous inkjet systems.

Faribault worked with the Minneapolis office of packaging supplier xpedx, division of International Paper Co., to find the right coder. The unit that filled the bill was an AUTOPRINT® system from AT Information Products (ATInfo), Mahwah, NJ. The system relies on HP thermal inkjet technology to deliver clear, crisp codes.

> ***"With the old continuous inkjet system, I had to start each morning by wiping the inkjets clean. . . . We always had the mess of ink that had dripped on the floor."***

One stipulation was that the coder had to fit within the confines of a wrap-around tray packer. The unit positions a corrugated blank on a conveyor, puts a dozen cans onto it, and then wraps and seals the lips of the tray around the cans. Coding is done immediately after the cases are formed, along a short section of conveyor inside the tray packer.

Print heads are mounted on both sides of the conveyor in that short space. Faribault Foods prints codes on both sides of trays to customer specifications. For example, some customers ask for human-readable product description on one side of the tray and code dates on the other side.

Each print head consists of three HP thermal inkjet cartridges. They can print messages that are 1½-inches high and 28-inches long, although Faribault Foods commonly uses only 1-inch high imprints.

The installation uses Message Maker software on a PC, explains AT Information Products' Glenn Mishler. "It's full-featured software for printing all types of package identification and bar codes. The software gives operators a WYSIWYG display of codes and handles switching back and forth from bar codes to human readable codes," he says. In operation at the Faribault plant, the PC is networked into the plant's information systems and handles code changeovers with minimal operator intervention.

"The codes themselves are very readable," says Bill Wagner, packaging warehouse manager at Faribault Foods. "With our earlier continuous inkjet system, we would get codes that you could barely read."

While those improvements address customer needs, the unit also delivers benefits in terms of simplified maintenance. Jim Schulz, operator of the tray packer gives the perspective of someone who has to operate the unit:

"With the old continuous inkjet system, each morning I had to start by wiping the inkjets clean. Sometimes I had to clear clogs with a toothbrush," he says. "Then I would have to run a few cases to be sure nothing was clogged. And, we always had the mess of ink that had dripped on the floor. It might take me 20 minutes to get the coder ready."

The toothbrush is gone, the cleanup ritual is gone, and the new thermal inkjet units fire up each morning as a routine part of the machine start up.

The thermal inkjet units also eliminated the need for expensive print head repairs. Each of the cartridges within the print heads is changed each time the bulk ink supply is changed. It is a "snap-in, snap-out" process. With new cartridges being introduced into the system regularly, the need for time-consuming maintenance and rebuilding is eliminated.

That is a real plus. Wagner says, "You don't want to have a $3 million line down because the coder isn't working. We've had the new thermal inkjet coder in operation for nine months, and we haven't had to buy one new part."

Wagner admits that when he first saw the equipment, its simplicity surprised him. "The hardware is small and compact," he explains. "At first, I had a hard time believing this system could do all we needed to do, especially compared to the older, bulkier hardware."

Faribault Foods has gained experience with features it thinks will be important in the future.

"The unit can deliver readable bar codes," Dahl says. "We've done test prints. The unit also gives us the opportunity to do color printing. It's a matter of snapping in a color cartridge for one of the black cartridges. We see the time when customers will ask us to put a logo on a tray in color, and we know we have the capability to do that."

The ability to deliver bar codes, color, and highly readable type is important to Faribault Foods, especially as its contract packaging business grows and as those customers demand more customization from tray codes. ●

Experience Points to Key Thermal Inkjet Advantages

AT Information Products is an early pioneer in inkjet bar coding and sees HP thermal inkjet technology as the answer on today's packaging line. "We have a lot of history in coding technologies," says Joe Traut, AT Information Products president. "From this experience we know the shortcomings of other methods, and we see thermal inkjet technology as the new core solution for printing identifiers on boxes and cartons."

Traut sees these as key reasons why thermal inkjet is the solution:

- **High quality:** Thermal inkjet technology offers resolution of up to 600 dots per inch. The high-definition capability produces clear text, crisp bar codes, and graphic images such as logos. The quick change cartridges make it possible to add spot colors.
- **Cost-effective:** No maintenance budget for rebuilding print heads, and no downtime to change expensive labeling supplies. Print cartridges are economical and get replaced at regular intervals such as when bulk ink supplies are changed.
- **Easy to use:** No special training is required to use, operate, or maintain thermal inkjet printers. Today's line operations prefer no-tool changes, and the "snap-in, snap-out" installation of the cartridges meets that requirement. HP water-based inks are safe and eliminate special clean-up routines.
- **Fast:** Depending on print resolution, thermal inkjet systems can run at speeds of up to 480 feet per minute, meeting the needs of all box and cartoning lines.
- **Reliable:** Thermal inkjet is less sensitive to clogging, avoiding print quality problems and delays. Tested ink delivery systems reduce clogging.
- **Flexible:** WYSIWYG software systems such as the AUTOPRINT® Message Maker can make it easy to compose and edit different types of package identifiers—human readable or bar codes. Software can be linked to plant information systems, and codes can be automatically updated as run information is changed.
- **Small footprint:** Today's packaging lines are compact, and components such as coders often have to fit into small, tight spaces. Thermal inkjet allows flexible, modular cartridges to be integrated into those tight spaces.

With flexible software and multiple print cartridges, thermal inkjet systems can print a variety of package identifies—both human readable and bar codes.

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