Dairy

Thermal Transfer Overprinting: Versatile, high resolution coding for flexible packaging

The Challenge

Dairy packaging designs are evolving to meet changing consumer demand for more variety, single serving, and ease of use. Brand owners would like coding flexibility to print more targeted marketing information. This leads to production challenges like increasing product changeover frequency, legible coding in smaller space, and improving production efficiency and uptime. What's the best way to improve flexibility and accuracy into your coding process?

The Videojet Advantage

As a leader in Thermal Transfer Overprinters (TTO) – the technology of choice in flexible dairy packaging – our high-resolution TTO printers reliably print high-quality text, bar codes, and logos on flexible materials. With an intuitive user interface, easy to select information, and long-length simple to change ribbon, our TTO printers help ensure you print the right information, longer – for greater uptime.

Clear, legible printing in less space

With an increase in product variation and single-serve pack sizes, available print area for expiration and production codes is smaller than ever. This challenge is compounded by the growing amount of required code information for dairy products. Older coding methods used in this industry have limitations in regards to print size and code quality. Technologies such as hot stamp or roll coders are unable to print variable information and have difficulties printing legibly in small font sizes as is needed by the move to convenience-sized packs. Additionally, the high temperatures of the stamps can easily melt through polyethylene films commonly used in dairy packaging, potentially compromising product integrity.

Thermal Transfer Overprintering (TTO) is an on-demand digital printing technology. When a print is requested, the correct code is electronically transferred onto the packaging film, with limited operator interaction. TTO printers print at 300 DPI (dots per inch or 12 dots per mm) to produce consistent and legible high resolution text, logos, and 1D and 2D bar codes. This helps enable dairy producers to accurately print information with small font sizes in space constrained areas.

The printer's advanced control electronics accurately and discretely maintain temperature across the printhead, leading to better transfer of the printed image without sacrifice to film integrity. They also manage print quality consistently for a longer period of time as compared with hot stamping and roller coder print quality, which can vary as the type characters wear unevenly, or the print fades completely. This helps maintain consistent print quality package after package, helping ensure consumers can easily read the printed information.

Fast changeover with real-time variable data

Size and product variations lead to increased product changeover, all of which intensify the need to maintain packaging and coding accuracy without slowing your lines down. Analog coding technologies, which use fixed type, are not capable of printing real-time data, or changing the printed information rapidly, and are more susceptible to mistakes during changeover. On-demand printing shortens product changeovers to seconds, by merely selecting different information to print. TTO printers can automatically update date and time information and easily manage calendar calculations for less operator intervention and accurate expiration codes. For dairy producers, this simplifies product changeovers and helps enable greater flexibility to meet production planning schedules or as consumer product demand fluctuates.

Increasing production uptime

Analog coding technology, like hot stamping, generally requires long ribbon replacement times due to the fact that they don't utilize quick-load ribbon cassettes. They also require several minutes to re-heat the stamp block to printing temperature. Combined, these lead to longer downtime, and less productivity.

Older TTO printer designs have shorter ribbon lengths and inferior ribbon drive systems, leading to more frequent stoppages and higher levels of operator intervention. Ribbon breaks and poor print quality also contribute to line downtime. Additionally, our advanced ribbon-saving features can help extend the ribbon length by 2 or more times, further increasing the number of packages that can be printed between ribbon changes.

Videojet's TTO printers address these challenges with a patented direct drive ribbon system that uses real-time software controls to manage ribbon tension and movement. This is especially important as the ribbon roll diameter (and therefore tension) changes during use. Our cassette ribbon loading system combined with 1,200M (3,937 ft) of ribbon, makes ribbon replacement fast and less frequent.

Code Assurance helps prevent printing wrong information

Making sure that your product has the right information in the correct format is critical to avoiding waste, rework and added expense.

Videojet's Code Assurance technology helps to alleviate costly errors by virtually eliminating the opportunity for incorrect information to be printed. By combining a Videojet TTO printer with a proven Code Assurance solution, you can help reduce the waste associated with improperly configured mechanical coding technologies.

Our TTO printers offer several innovative features that help ensure accurate product information and reliable printer operation.

- CLARiSOFT® code design software integrated with CLARiTY® user interface reduces the opportunity for operators to enter incorrect information, like a date of Feb 30.

- CLARiSUITE™ integration solution helps enable improved job changeover accuracy with integrated bar code scanners so job setup can be as fast and easy as scanning a work order or UPC bar code.

- Customizable password controls help prevent users from changing printer settings, reducing the risk of inadvertent production interruptions or unplanned code changes.

- Controlling the printing process from your packaging equipment's HMI eliminates manual job setup. Our software communication features, supported by our data interfaces, enable the printer to be integrated into packaging equipment.

Expanding printing capabilities

TTO printers help enable you to expand your printing capabilities to better meet your production and customer needs, including:

- Printing of logos or graphics for applications where you need to differentiate a particular brand for marketing purposes.

- Printing 2-dimensional bar codes that can encode production information for traceability or that can enable mobile phone interaction which can enhance marketing, promotion and similar applications.

- Printing that supports common packaging design initiatives. On-demand printing of ingredient, nutrition, and allergen information gives you greater processing flexibility.

The Bottom Line

With tens of thousands of proven installations, Videojet TTO printers offer many operational benefits to your dairy production. They include:

- **Ability to print clear, legible codes even on small, single-serve packages.**

- **A patented clutchless ribbon drive with few wear parts increasing mechanical reliability and minimizing maintenance-related downtime.**

- **Increased production line efficiency via a simple ribbon cassette design for fast changeovers.**

- **A user-friendly, icon-based touch screen interface for quick job selection or review of job and/or printer status.**

- **Code Assurance solutions that minimize operator interaction and help eliminate the problems caused by human error.**

- **A wide range of printer options including large format and an IP-rated printer designed for wash down environments.**

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