VIDEOJET®

Automotive and Aerospace

Cost savings opportunities with inline printing

The challenge

Many automotive companies carry a variety of packaging materials such as cardboard boxes and flexible films for their production lines. Often, different packaging materials are used on the same line for varying product types, sizes, customers, and even for country-specific content and languages. Managing these differences can lead to additional cost for a company. Thermal Transfer Overprinter (TTO), Thermal Inkjet (TIJ), and Large Character Marking (LCM) can be used to help reduce the need for numerous varieties of pre-printed packaging materials.

The Videojet advantage

Automotive companies can benefit from the wide array of solutions Videojet offers to meet their desired coding requirements. Going beyond just batch, date or lot codes, Videojet equipment can print variable text, bar codes, logos, images, and DataMatrix codes, using a variety of different technologies:

- **TTO on bags or labels in-line**

- **TIJ on paper carton or boxes**

- **LCM on large paper cartons, boxes or shipping cases**

Additionally, all Videojet products are supported by the largest service network in the industry.

Managing pre-printed packaging

Managing inventory of multiple versions of your packaging materials can be challenging. Today, much of a product's information is pre-printed onto films, labels, cartons and cases. This can create manufacturing waste and complexity in that pre-printed packaging has to be stored and managed for each unique SKU. Furthermore, some companies have to tie up capital to have safety stock for each package, which takes up storage space. This issue can be exacerbated due to a lack of standardization and the variety of products being produced.

Additionally, any changes to the packaging may require disposal of the old material and significant time and money to design, produce and inventory new packaging.

Managing packaging changes

Many manufacturers produce different products on the same line. The steps required to change the packaging process range from cleaning the machine to making adjustments based on the size of the product and its coding requirements. Typically, the new packaging material will be brought out from storage, swapped with the previous packaging material and then the previous packaging material will be placed back into storage. Add short production runs to the equation, and the time required to change out packaging can really add up. On the other hand, the time required to modify the printer message with an on-demand printing solution is usually only a fraction of the packaging changeover time.

Reducing changeover time is particularly important for smaller manufacturers and co-packers who change products or packages multiple times per day.

# Coding options for automotive packaging

TTO technology diagram

Ribbon Feed

① ② ③ ④ ⑤

Material Feed
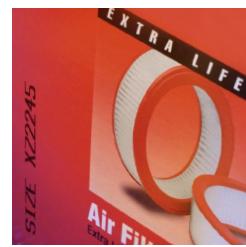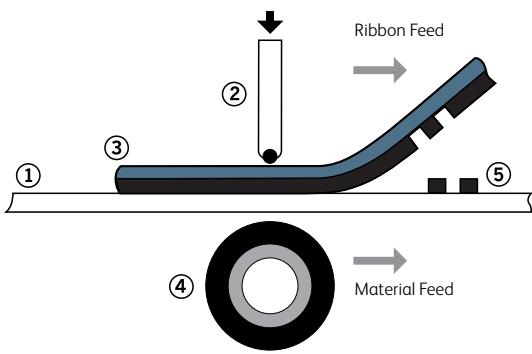
Thermal Transfer Overprinting

Thermal Transfer Overprinting (TTO) is a cost-effective way to print high resolution messages and logos directly onto labels or bags in-line. TTO is a digital technology with the ability to generate variable data including dates, lot codes and time stamps for each print. Examples include printing UPC and product names on bags for spark plugs. TTO technology is directly integrated into the packaging line for an easy and seamless manufacturing process. Technology limitations include typical print speeds of not more than 400 packages per minute and needing to stop the line to change the ribbon.

TTO printers from Videojet provide print resolution up to 300 dpi, print widths of up to 4.21 inches and marking speeds up to 400 ppm. With a choice of ribbon colors and widths, they provide a flexible printing option for a wide variety of flexible packaging applications.
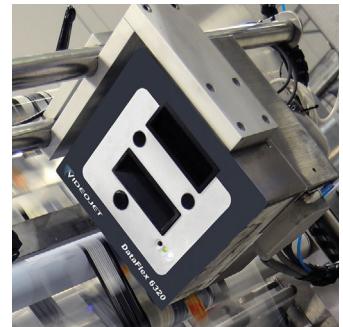
Thermal Inkjet

Select thermal inkjet (TIJ) printers are able to use fast-drying solvent-based inks and can print at speeds up to 220 feet /minute. Benefits of TIJ include a small footprint, maintenance simplicity, and ease of integration into production lines. Unique to TIJ is its ability to print tall, high resolution codes, images, and text up to two inches in height without slowing down the production line. Traditional TIJ printers are ideal for printing on porous substrates, whereas solvent-based TI is ideal on non-porous materials.

Videojet TIJ solutions deliver a maximum resolution of 600 x 600 dpi, print heights up to a half inch per printhead, and the ability to easily stack up to four printheads for 2-inch messages. A solvent-based ink version is also available.

TIJ technology diagram
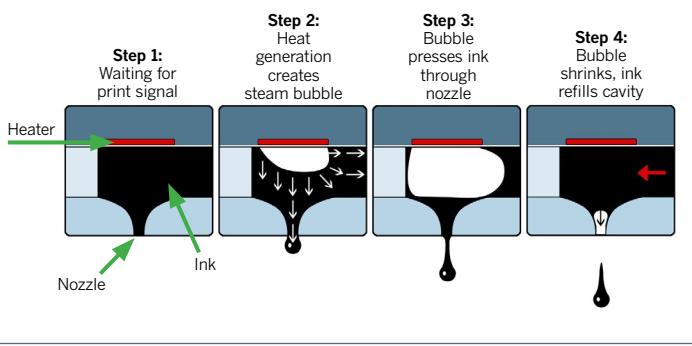
Large Character Inkjet

Large character inkjet printing is a cost-effective way to customize standard corrugate shipping cases and shelf-ready boxes. These systems can replace or customize your pre-printed shipping boxes, making them retail-ready with product pictures, bar codes, logos and shipping information. Customized boxes help enhance efficiency in your supply chain and allow adding software systems which track your product through the distribution channel.

Large character inkjet is ideal for larger graphics, text and bar codes on cases. Videojet high resolution large character printers provide print resolution up to 180 dpi and print heights up to 2.8 inches. In addition, multiple printers can be operated from a single leader unit, or can be controlled remotely from a central location.

Making a case for inline coding

Pros:

Reduced changeover time. Using generic packaging material with a print on demand solution can help reduce changeover time. Instead of finding, replacing and returning varying boxes or bags, you can simply change the code on the printer and immediately start running the new product. Digital printers can also store content for each product on the line, making message changes fast and easy.

Quick packaging changes. Whether due to a design change or new product introduction, changes to packaging would be much easier and less expensive using generic packaging material and applying the variable data in-line. When using pre-printed bags or boxes, changes to the pre-printed information requires ordering new inventory and potentially throwing away the old material still in stock. With generic packaging and a Videojet printer, all that is required is a simple adjustment to the content of the variable code information.

Reduction in packaging inventory. By using generic packaging on some or all products, automotive companies can help eliminate the need for safety stock of multiple films. The amount of packing material in the facility can be reduced, leading to less warehousing space, inventory management and money tied up in inventory. In addition, buying fewer types of specialized packaging material could potentially enable producers to receive volume discounts from their packaging supplier.

Cons:

Multicolored graphics. A TTO, TIJ or LCM printer has the ability to print logos and other information. However, while TTO and LCM printers can print in multiple colors, only one color can be used at a time. This means the content on the package can only appear in more than one color if multiple printers are used, each with a different colored ribbon or ink. Therefore, one should carefully consider which content to have pre-printed on the package (content requiring multiple colors) and which to print with the in-line (single color). For instance, it may make sense to pre-print standard marketing content on the box or bag, such as the logo, and print product-specific information such as product name, bar code and product image with an inline printer.

Print area. When purchasing a TTO, TIJ or LCM printer, there is a definitive print height or print area available, which determines the size of the variable print area on the package. If the print area is not large enough for all of the content, it may be worthwhile to focus on a part of the package where the content varies the most from product to product and to pre-print the remaining information.

The Bottom Line

Using a Videojet TTO, TIJ or LCM solution to print on generic packaging material presents benefits and trade-offs that should be carefully considered. Automotive companies can potentially save money, improve inventory management processes, reduce changeover time and simplify packaging changes with a print on demand solution. However, customers need to weigh these benefits against the color limitations and print width options.

For more information on Videojet print on demand solutions, contact your sales representative or visit www.videojet.ae.

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