



Thermal Transfer Printing

Thermal Transfer Technology

Thermal Transfer Printing Technology (TTO) was engineered as advancement over traditional analog coding technologies like hot stamp and roller coders. Thermal transfer printing brings digital technology to flexible film packaging applications, common in many food industries. The printing process applies a code to a flexible film or label by using a thermal print head and a thermal ribbon. The technology produces a very high-resolution code onto the package that is easy to read and also helps ensure no degradation of the aesthetic quality of the packaging film artwork and design.

Typical Markings

- Expiration dates
- Production date
- Barcodes
- Characters and text
- 2D codes, e.g. QR codes, DataMatrix codes, etc.
- Batch numbers/lot numbers

Thermal Transfer Ribbon

Thermal transfer ribbon has a very thin layer of dry ink on one side of a polyester film and a suitable print head lubricant on the other side. The ink layer is either a resin material or a mixture of wax and resin materials.

Examples of Typical Applications

- Intermittent Thermal Transfer Printing

Intermittent thermal transfer printing is used on lines where the packaging film moves in an intermittent motion (stop/start). The stop-time (dwell) within the cycle is used for printing. Using a signal from the packaging machine, the printer lowers the printhead onto the material and moves across the film to print. When complete, the printhead is raised and moves to the start position for the next package.

- Continuous Thermal Transfer Printing

On continuous flow lines, the packaging material is printed while the film is moving. The film runs between the printhead and a platen roller. After a start signal from the packaging machine, the printhead is pressed against the platen roller and printing is started. As the film is pulled through the filler, the printer prints on every package. A stop print signal causes the printhead to be raised.



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