Continuous vs thermal inkjet printing

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The two primary inkjet technologies used in the packaging industry are continuous inkjet (CIJ) and thermal inkjet (TIJ) printing. When deciding which is best for a specific application, there are several operating features to consider.

CIJ is ideal for high-speed applications that use a lot of ink, such as date or lot codes for bottling or canning lines, or printing on extrusions or films.

TIJ technology uses standard ink cartridge systems and is ideal for high print quality, barcode compliance for pharma and medical applications, and quick cartridge switching for colour changes.

CIJ technology works by creating a continuous flow of ink by pushing liquid ink through a gun body and microscopic nozzle via a high-pressure pump. Many industries demand high-speed printing, which CIJ can achieve. A non-contact continuous ink system, CIJ virtually eliminates potential damage to packaging or products during the printing process. It is perfect for use in harsh environments and can be used with a variety of inks depending on industry needs. Solvent-based inks that contain alcohol or ketones can be used in CIJ printers to ensure fast drying times.

CIJ strengths include:

- It adheres to most packaging substrates and is effective on curved surfaces.
- It achieves high speeds for alpha numeric codes.
- It offers significantly improved reliability with decreased maintenance requirements in latest generation printers.
- Efficient operation where the printhead cannot be mounted too close to the product.

CIJ is ideal for high-speed applications that use a lot of ink, such as date or lot codes for bottling or canning lines, or printing on extrusions or films.

TIJ technology uses standard ink cartridge systems that don't need bottles of inks or solvent, making them clean and simple to use. The drop ejection process uses ink stored in the cartridge that regulates the fluid's pressure. Inks are delivered to the firing chamber where they are heated by an electric resistor. A heated microfilm of ink then forms a bubble that expels the ink. As a drop of ink releases, the bubble collapses and the firing chamber refills to repeat the process.

TIJ strengths include:

- High print quality.

- Barcode compliance for pharma and medical applications.
- Quick cartridge switching for colour changes.
- The ability to meet solvent-reduction programmes.
- When multiple printheads are needed to print across a web.

When deciding on a print technology, the coder’s strengths must match line integration needs that include communication, speed and application demands.

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