



Application note



Continuous inkjet

The benefits of modern technology for micro printing



Manufacturers of small parts, high-end personal care products, electronic components, and wire and cable often require the need for product traceability. In order to optimize supply chain traceability and meet customer demands, increasing information must be printed at high quality onto small parts and materials with limited surface area.

The challenge:

Manufacturers are being faced with demands for an increasing amount of code content to be printed in the same, often limited, space. This challenge comes from the need to accommodate additional customer information as well as both internal and external traceability needs. The limited substrate space common in such applications can challenge the capabilities of traditional continuous inkjet (CIJ) printers to achieve legible codes. In addition, keeping production going without unexpected downtime from maintenance or printing errors is a necessity to achieve today's efficiency goals.

Videojet advantage:

The Videojet High Resolution (HR) micro printers have been specifically engineered based on real application needs outlined by manufacturers who require micro text printing. As a result, all design features work towards improved print legibility (when compared to traditional CIJ printers) at high speed, as well as offering advanced functionality for increased productivity and uptime. Videojet HR micro printers allow for multiple lines of text, 2D and linear bar codes, and a standard 90 dpi resolution to print more relevant information in less space.

In addition, the HR inks range includes halogen-free formulations to meet stringent standards in your industry, and are RoHS-compliant to suit a host of applications.

What are the advantages of Videojet High Resolution micro printers?



Smaller nozzle size

In order to print legible micro text, the amount of ink per droplet needs to be lower than traditional CIJ systems. To fit the required content in less space, each ink drop will be placed more closely and if not small enough, the drops will start to interfere, creating smudged images. Highly-precise, the nozzles used with the HR micro printer are 40 micron in size (less than half the diameter of a human hair) and are engineered to deliver high quality, legible text down to 0.6mm high.



Higher nozzle frequency

Delivering the desired print quality without sacrificing speed is achieved by producing more than 100,000 droplets per second. This results in more ink drops available to print higher quality codes at higher speeds than other inkjet printers with lower frequency. The Videojet Precision Ink Drop™ technology helps ensure precise character formation across the entire speed range of the printer.

Uptime advantage

Your production schedules are important and minimal disturbance for maintenance and unexpected downtime is essential for manufacturing efficiency. Thanks to Videojet CleanFlow™ technology, which minimizes ink build-up on nozzle ends, it is possible to run the printer up to 300 hours between printhead cleanings. When ambient temperature and humidity change throughout the day and across the seasons, our Dynamic Calibration™ technology helps ensure consistent print quality by automatically adjusting the printer settings. Finally, up to 14,000 hours life time of the printer core helps minimize the necessary maintenance interval.





Applicable industries

Though there are multiple applications that will require multi-line and micro text printing, the electronics and component industry adds additional challenges, including:

- Consistent print quality required over longer production intervals
- Clean room environments that don't allow for messy fluid replenishment
- Inks that meet specific requirements for physical and chemical resistance, but also comply with industry standards

No waste, no mess cartridge system

The best protection to eliminate the risk of fluids spillage is the use of sealed ink and make-up containers. The Videojet 1000 Line Smart Cartridge™ fluid system features a needle and septum design that makes it virtually impossible to leak when re-filled. Thanks to the intelligent design of the printer's core, a reservoir of ready-to-print fluids keeps the production going for several hours, so replenishment can be done during shift breaks. Finally, the smart chip on each cartridge prevents downtime caused by inserting the incorrect fluid and all fluid levels are displayed clearly on the printer interface.



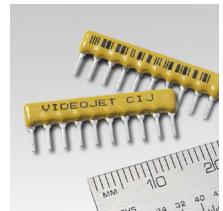
Halogen-free ink for use on RoHS-compliant products

Suppliers of components and finished products cannot risk introducing non-compliant materials. Directives like EC 2011/65/EU Annex II and JGPSSI (Japan Green Procurement Survey Standardization Initiative) of JEITA (Japan Electronics and Information Technology Industries Association) are clear about the use of halogens. Videojet offers halogen-free, RoHS-compliant inks for use in our high resolution printers to meet such industry regulations.

Furthermore, inks are formulated to meet the specific requirements in micro printing applications including electronics, components, and wire and cable. The printed code needs to resist abrasion, high temperatures and certain chemicals. The Videojet expert ink development team constantly researches and improves fluids that are ideally-suited to perform in combination with the 1000 Line HR micro printers.

Planned maintenance to match production schedules

Production environments typically don't allow for on-the-line maintenance due to the risk of introducing contamination. Equally, necessary line maintenance will need to be carried out following clear schedules. Run-to-break or user dependent frequent wear parts replacement printer concepts are contradictory to this. The Videojet 1000 Line core concept stretches maintenance out up to 14,000 run hours. The printer interface signals the upcoming need to change wear parts and allows for timing the necessary intervention with other routine maintenance activities. The core is a clean and contained unit with the necessary key components to help ensure printer uptime during its intended life.



The bottom line

When print size is everything and legibility critical, you demand high performance equipment to meet your production objectives. It takes many years of inkjet experience, a dedication for quality, a profound understanding of your industry, and finally an excellent team to deliver the desired results. Videojet Technologies and the 1620 HR and 1650 HR continuous inkjet printers are a winning team to address the challenges your application provides.

Speak to us today about your micro printing needs.

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