

Achieving High Quality Codes on Plastic Label Materials

Videojet Application Note

➤ The Challenge

Traceability requirements for primary package labeling has presented unique challenges to packaging engineers looking to retain existing labeling practices.

Digital coding solutions required for serialization marking often requires a larger footprint than legacy devices. Plastic label stock, used for its durability and water resistance, compounds this challenge since it is inherently difficult to mark.

➤ The Videojet Advantage

Videojet offers a range of products and support to deliver high quality traceability codes. Advantaged printers provide solutions for a broad range of substrates, including a range of label stock materials.

Videojet engineering services can provide solutions for the unique integration requirements that are an equally important element of project success.

Identifying a solution to meet traceability needs within existing system constraints

Packaging engineers throughout the pharmaceutical industry are working to identify robust coding and marking solutions to meet pending traceability requirements. With significant prior investments in packaging line equipment and well-established processes, starting over from scratch is an unacceptable option. And while an upgrade to new coding and marking equipment is often required to meet these regulations, companies understandably want to continue the usage of high value capital equipment on their packaging lines.

One of the world's leading providers of eye health products recently embarked on a project to upgrade its legacy coding devices in anticipation of pending traceability requirements.



Laser mark on plastic label stock

This customer had a corporate preference for laser coders but struggled to identify a laser solution that would not result in burn-through on plastic label stock materials. The key concern was that the codes would be unreadable if the laser coder burned entirely through the label since part of the letter could remain on the release liner (the center part of an "O", for example).

This project required additional factors to ensure successful integration of the coding solution:

- (a) Small form factor coder required to aid integration with existing labeling equipment
- (b) Proper safety shielding needed to meet ANSI standards for safe use of lasers
- (c) Prefabricated mounting brackets to avoid unnecessary packaging line downtime during installation
- (d) On-site installation and start up support from the coding supplier

Small footprint coder delivers required marks

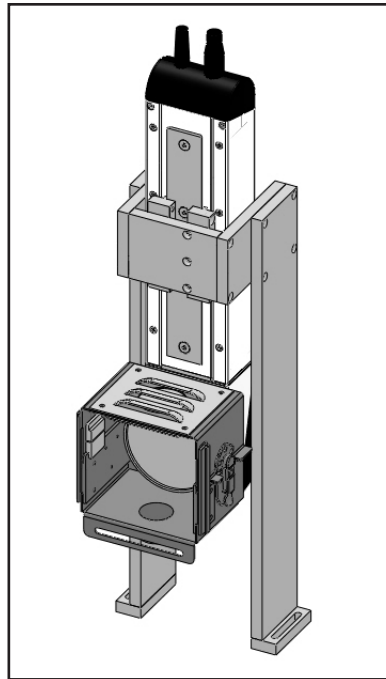
Working closely with the customer's corporate and facility engineering, Videojet proposed the 7310 pulsed fiber laser coder to meet the project requirements. Fiber laser technology offers a unique advantage that makes it ideal for this application. The wavelength of the beam (1,060 nm) is inherently different than CO₂ lasers. The 7310 fiber laser uses a Ytterbium laser source which delivered a better mark on this customer's preferred substrate materials (plastic label stock) and minimized the risk of burn through.

In addition, the 7310 offers other inherent advantages:

- (1) Compact design comprised of two modules, a marking unit and a laser supply unit – minimizing the required footprint
- (2) Higher inherent power efficiency ratio than comparable output CO₂ lasers
- (3) Ultra-reliable fiber laser source that eliminates conventional laser maintenance (CO₂ tube replacement)

Once the fiber laser was selected as the appropriate means to mitigate label burn-through, installation and safety issue became important. Videojet addressed the customer's unique project needs with in-house and field engineering services. These services included:

- (1) Custom designed and manufactured laser beam shield to meet safety requirements
- (2) Pre-fabricated brackets to speed installation
- (3) Videojet field service engineers to complete installation, commissioning, and training



Videojet 7310 Fiber Laser drawing showing beam shield and mounting brackets

➔ The Bottom Line

The Videojet 7310 pulsed fiber laser coder delivered higher quality codes than traditional CO₂ lasers on this pharmaceutical label substrate, eliminating the risk of burn-through and occurrence of "dropped" code characters upon label release. Consider a similar arrangement for your unique pharmaceutical labels.

By addressing both the coding and integration requirements, Videojet enabled the customer to quickly install this solution and return to operation, while eliminating the risk of burn through label and code damage.