



Superior mark contrast  
at high speed on robust  
plastics and metals

Coding and marking sample guide

# Fiber laser marking systems



**Achieving high contrast  
laser marks on robust  
materials demands both  
speed and power.**

## Speed, contrast & quality

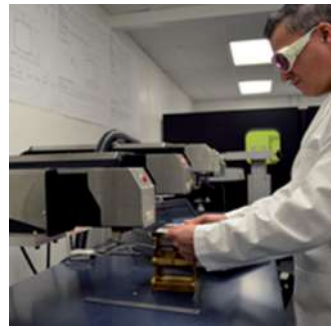


Fiber lasers are designed to meet the needs of manufacturers who code onto robust, high-density packaging materials such as metals and plastics. Industries including beverage, extrusion and pharmaceutical who run demanding production schedules with increasing throughput expectations need a laser that can keep pace and provide a level of contrast that exceeds expectations. Compared to traditional CO<sub>2</sub> laser sources, fiber laser sources can achieve better mark contrast at faster speeds.

With over 30 years of laser innovation, Videojet understands the important combination of speed and power to deliver your desired mark effect.

**We can help you achieve high contrast marks at up to 600m/min:**

- Aluminum cans
- Cable and wire
- White polypropylene extrusion
- Blister pack materials
- Aseptic packaging

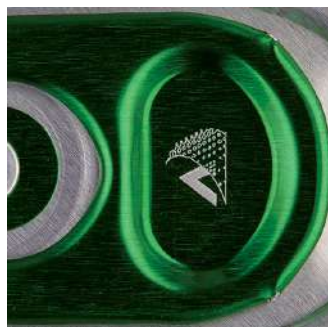


# Metal

## Typical coding requirements:

Aluminum canning applications typical in the beverage industry have various drivers for coding information, including the need for traceability data, gaming applications or simple expiration dates. Code quality expectations demand high legibility contrast.

Throughput in such applications is often high, demanding the additional power of the 50-Watt fiber laser to achieve sufficient code contrast in the available marking time.



**Logo and graphics**



**Alphanumeric code**

## Marking effects:

- Color/paint removal as on green painted opening piece
- Engraving as on top of can

## Mark speeds:

Up to 80,000 cans/hour





**Alphanumeric code including date**



**Alphanumeric code on vial**



# Plastics

color

## Typical coding requirements:

Different plastic materials have different reactions to fiber laser; typically a color change or engraving effect is achieved. On certain plastics fiber lasers have an advantage relative to CO<sub>2</sub> lasers by generating high quality, readable codes at the line speeds typically found in pharmaceutical and extrusion applications.

As code content is becoming more diverse, from alphanumeric information to logos and 2D codes, manufacturers require a coding solution that can keep pace with the changing demands while allowing them to maintain or increase line speeds. Fiber lasers benefit from more power and speed, which provides more available mark time to achieve the best readable codes.

## Marking effects:

- Carbonization on blister pack materials as well as cable and tubing
- Foaming on cable - the generation of gas under the surface, due to the high absorption of carbon black pigment by means of thermal processes, produces a foaming effect which disperses the light producing a crisp white color
- Engraving on cable – some materials evaporate due to the fast increase in temperature producing removal of the material



## Mark speeds:

Cable + wire: Line speeds of 600m/min

Blister pack materials: 600m/min



**1 line alphanumeric code on PVC blister pack**

**Color change on cable**

change on



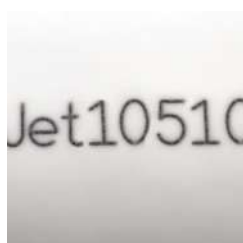
Code  
engraved  
on cable



Logo,  
alphanumeric  
code on  
PA tube



Logo,  
alphanumeric  
code on  
PVC tube



Alphanumeric  
code on  
white tube

# Plastic bottle closures

## Typical coding requirements:

Beverage closures are marked with various information including lot numbers, best before dates and gaming and lottery codes. The coding may need to be applied on the outside of the closure or on the inside based on the application. Due to the large variety of materials and colors used, the mark result may vary on each substrate.



**Alphanumeric code on bottle closures top**



**Alphanumeric code on bottle closures inside**

# Aseptic packaging

## Typical coding requirements:

Most aseptic packaging lines run at moderate to high-speeds and therefore demand a coding solution that can keep pace. Fiber laser is ideal as it has the power to meet the speed expectations, but also provides a very high quality and highly visible mark onto various colors of packaging. As many aseptic packaged products use attractive artwork to promote their brand, fiber laser provides the perfect solution for a code that complements the design.

More importantly, fiber laser is able to mark crisp, quality codes by removing the ink layer without removing the protective laminate layer. This protects the integrity of the packaging by ensuring there is no piercing or damage to the top layer of the packaging.

## Marking effects:

- Color/ink removal without affecting the top layer laminate (as shown on green carton)

## Mark speeds:

- Line speeds up to 600m/min



## 2 line alphanumeric code on carton



# Other applications on metal and plastic

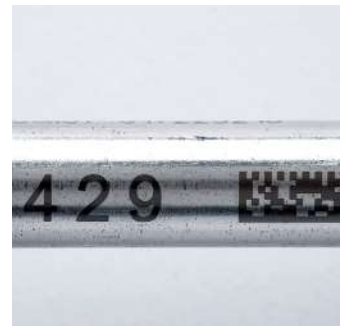
## Metals



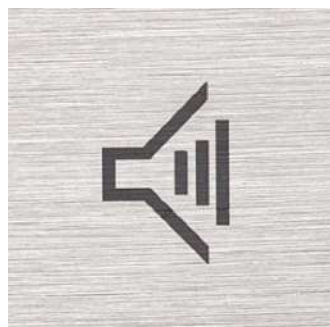
**Nickel  
tube**



**Respirator  
box**



**Fuel supply  
pipe code**



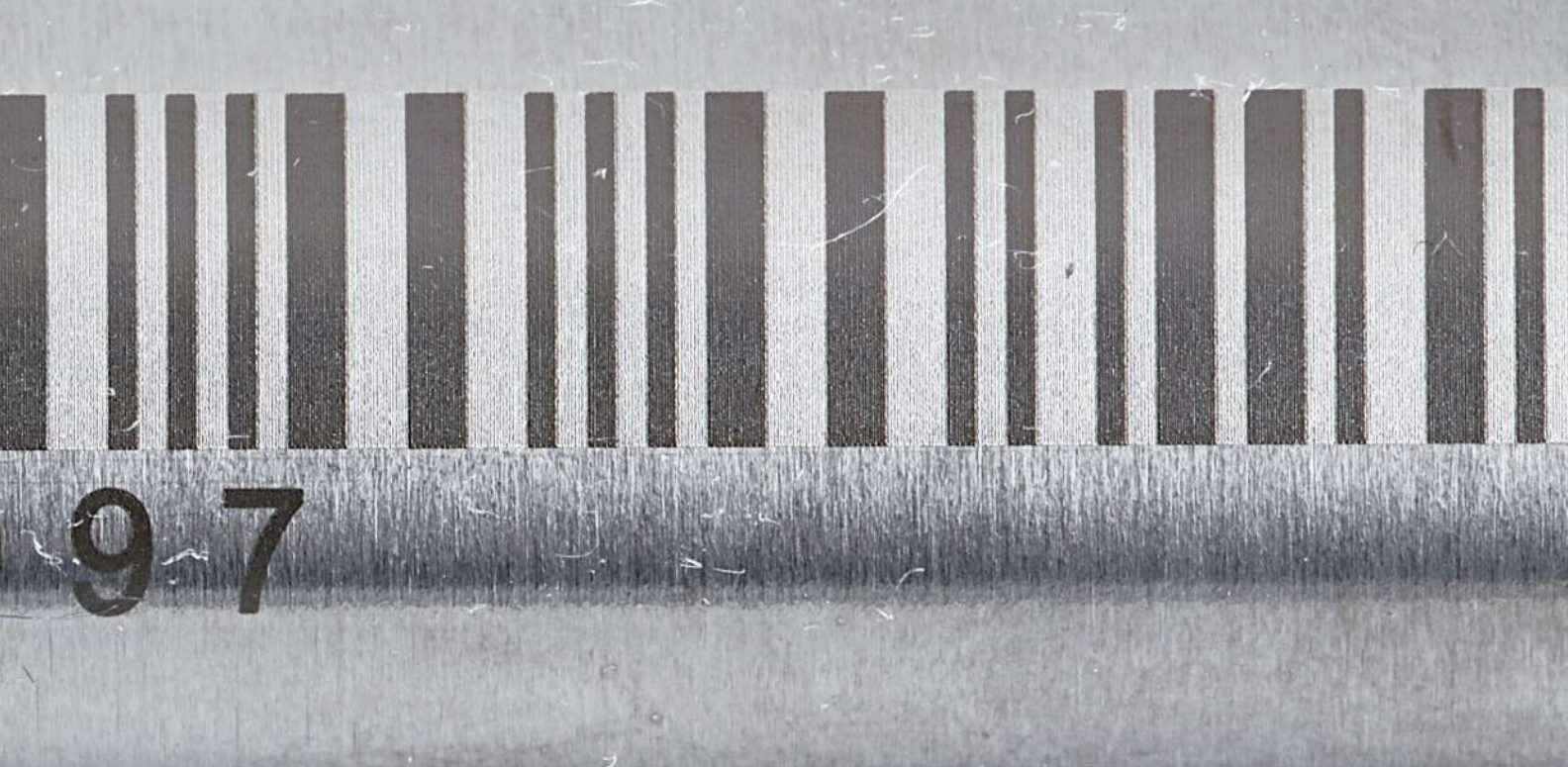
**Automotive  
stainless steel plate**



**Aluminum and  
steel extrusion**



**Stainless  
steel**



## Plastics



**Electronic housing**



**Contact lens lidding material**



**Automobile switches**



**Deep well plate**



**Electronic housing**



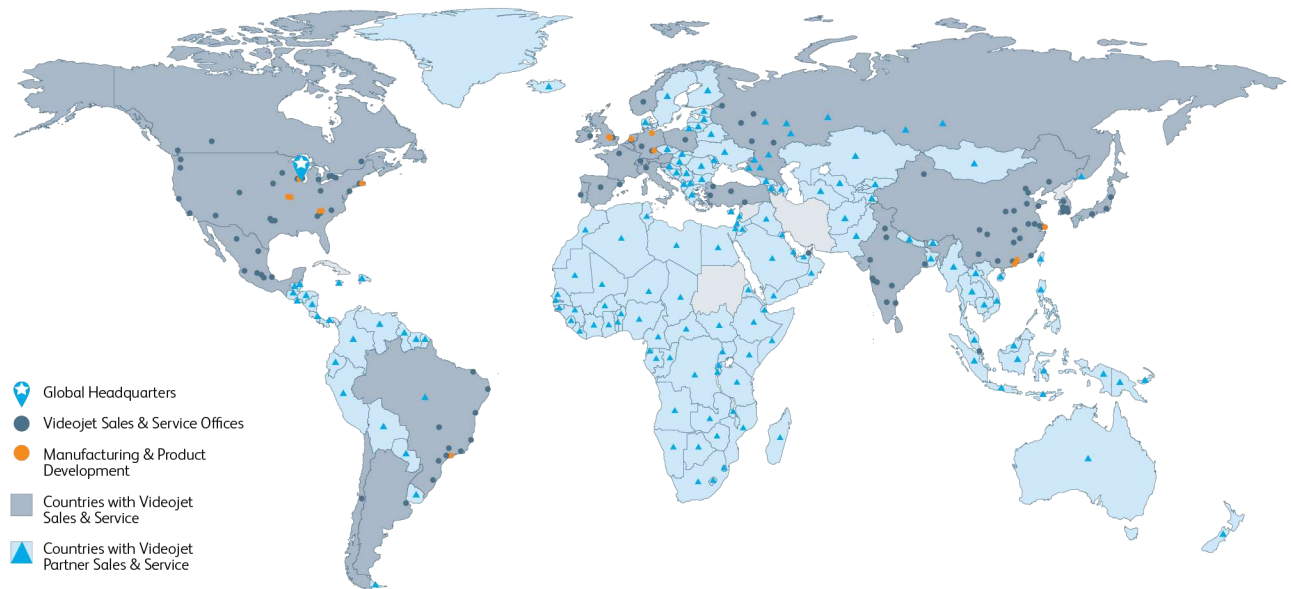
**Terminal strip**

# Peace of mind comes as standard

Videojet Technologies is a world-leader in the product identification market, providing in-line printing, coding, and marking products, application specific fluids, and product life cycle services.

Our goal is to partner with our customers in the consumer packaged goods, pharmaceutical, and industrial goods industries to improve their productivity, to protect and grow their brands, and to stay ahead of industry trends and regulations. With our customer application experts and technology leadership in Continuous Ink Jet (CIJ), Thermal Ink Jet (TIJ), Laser Marking, Thermal Transfer Overprinting (TTO), case coding and labeling, and wide array printing, Videojet has more than 345,000 printers installed worldwide.

Our customers rely on Videojet products to print on over ten billion products daily. Customer sales, application, service and training support is provided by direct operations with over 4,000 team members in 26 countries worldwide. In addition, Videojet's distribution network includes more than 400 distributors and OEMs, serving 135 countries.



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