



Marking coding and systems solutions

Pharmaceutical & Medical Devices



CODING

in the Pharmaceutical Industry

Perhaps to a greater degree than other industries, pharmaceutical and medical device packaging demands the highest quality variable coding. Legibility and contrast are non-negotiable when it comes to regulatory and traceability codes and high read-rate bar codes. And yet, coding solutions must also facilitate line productivity and seamless integration for today's competitive environment.

Videojet understands your challenges and delivers consistently reliable performance to help exceed your production requirements.

Safety and traceability

YOUR CHALLENGE:

New regulations including serialization requirements, highest quality standards, and supply chain complexity combine to place increased demands on your lines.

THE VIDEOJET SOLUTION:

Serialization ready printers to help ensure clear, accurate coding for regulatory and supply chain requirements; IQ/OQ validation packages and printers that facilitate adherence to 21 CFR Part II technical controls to help meet your documentation needs.



Uptime and profitability

YOUR CHALLENGE:

Managing complex operations and packaging schedules means production uptime and quality are essential.

THE VIDEOJET SOLUTION:

Our extensive product line significantly enhances the efficiency of your production lines, giving you the technologies and supplies you need to achieve optimal code quality and durability, while keeping your operations moving.



Innovative solutions for every step of your process

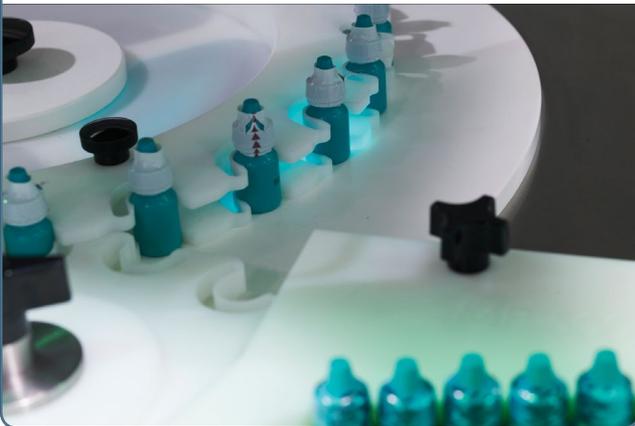
Coding integration

YOUR CHALLENGE:

Productivity of costly packaging assets cannot be compromised by poor integration of coding technologies.

THE VIDEOJET SOLUTION:

Track record of successful OEM equipment and line integration for some of the most challenging applications including specialized accessories communications options and global technical support.



Multiple substrates

YOUR CHALLENGE:

The wide variety of evolving packaging materials and solutions including bulk and unit-of-use packaging introduces a range of packaging substrates into your production environment.

THE VIDEOJET SOLUTION:

The industry's broadest portfolio of coding technologies including laser, ink jet, and thermal transfer, and the largest range of application specific inks to address your production needs.



Accurate, consistent, dependable:

VIDEOJET



CODING TECHNOLOGIES

Videojet offers a full suite of coding systems that reliably, safely and efficiently meet the demands for accurate coding on paperboard, plastic, glass, labels, foils and specialty medical packaging materials.



Laser

A beam of infrared light focused and steered with a series of carefully controlled small mirrors to create marks where the heat of the beam interacts with the packaging surface.



Thermal Ink Jet (TIJ)

High-resolution, ink-based, non-contact printing used for coding on flat substrates. Generally used to print traceability information including 2D DataMatrix codes.



Continuous Ink Jet (CIJ) and Traversing CIJ

Fluid based, non-contact printing of up to five lines of text, linear and 2D bar codes, printed on a variety of packaging types including stationary packaging via traversing systems.



Thermal Transfer Overprinter (TTO)

A digitally controlled printhead precisely melts ink from a ribbon directly onto flexible films to provide high-resolution, real time prints.



Label Printer Applicator (LPA)

Prints and places labels of various sizes on multiple package types.

Large Character Marking (LCM)

Ink-based, non-contact printing of multiple data types (alphanumeric, logos and bar codes) in large sizes primarily used for large packaging such as cases.

Coding technologies for your packaging type:

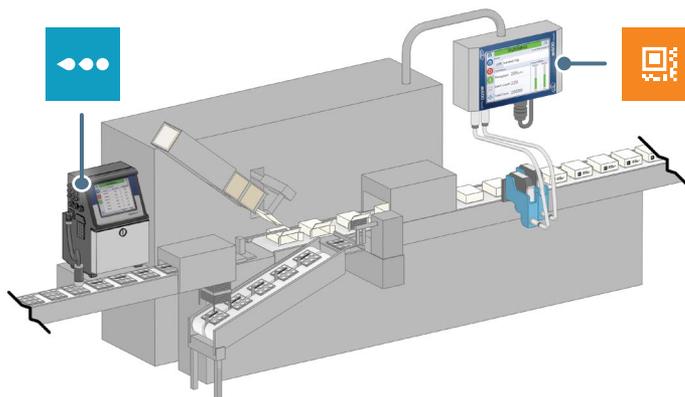
Packaging Type	Laser	TIJ	CIJ	TTO	LPA	LCM
Cartons	✓	✓	✓			
Bottles	✓		✓			
Labels	✓	✓	✓	✓		
Vials/Ampules	✓		✓			
Tubes	✓		✓			
Blister Foils	✓	✓	✓			
Pouches & Barrier Materials		✓	✓	✓		
Cases					✓	✓
Bundles					✓	
Stick Packs	✓		✓			

YOUR CODE, YOUR LINE

Videojet coding systems can be integrated with a variety of pharmaceutical packaging equipment and processes.

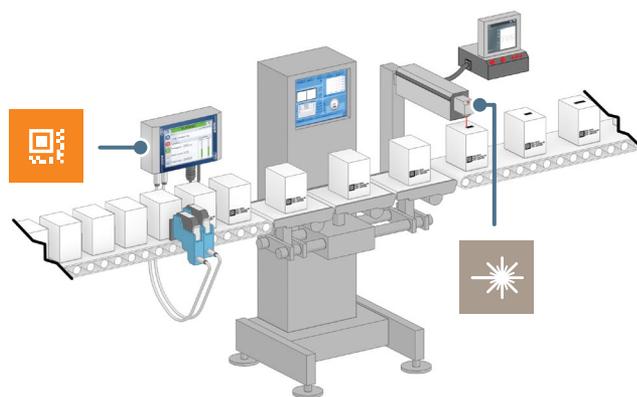
Cartoner

Coding may occur in several locations, either integrated into the cartoner itself or on the outfeed conveyor. Printing may also occur upstream of the cartoner on the primary pack as required.



Checkweigher

Code integration with checkweighing equipment leverages the checkweigher's precise material handling to improve overall print and DataMatrix quality.

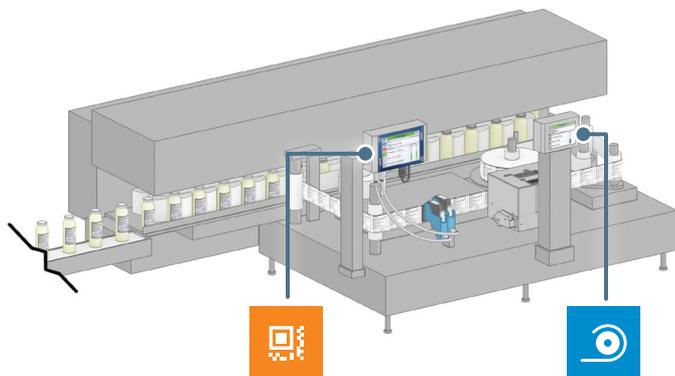


Sidegrip Conveyor

Simple coder integration with a sidegrip conveyor allows for marking of either visible or covert codes on the top or bottom of pharmaceutical bottles. Downstream code verification can be easily accommodated while the bottle is engaged by the conveyor.

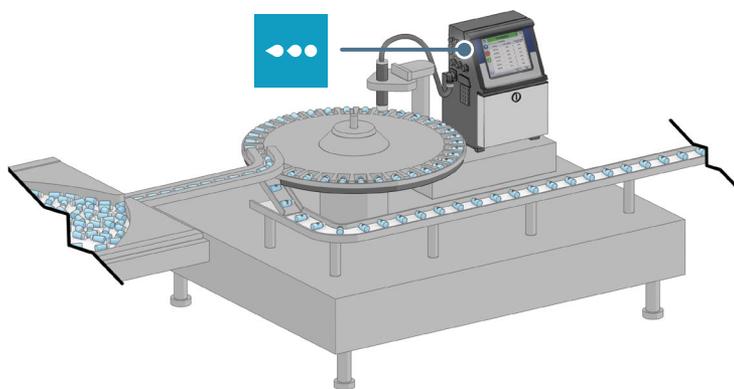


YOUR CODE, YOUR LINE



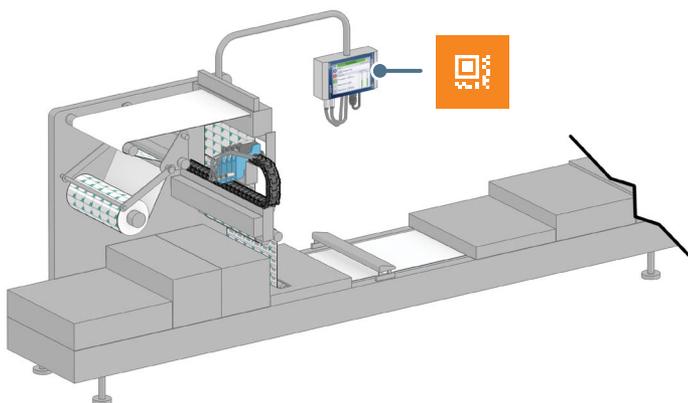
Bottle Labeler

Several coding technologies can be utilized for contact or non-contact marking of the label before application. Precise label control facilitates high quality alphanumeric and bar code printing.



Vial/Ampule Starwheel

Drop placement accuracy is critical for traceability codes placed on small pharmaceutical packaging, common in brite stocking applications. The highly precise motion of the starwheel offers the ideal material handling for this application.

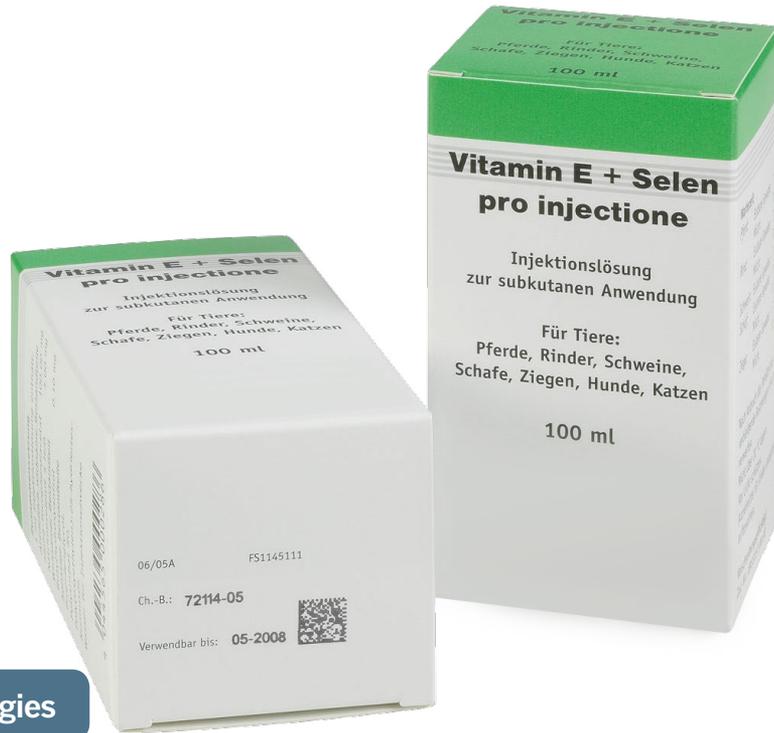


Thermoformer

Precise mechanical and controls integration helps ensure high quality marking on web-based materials, including blister lidding foils and other barrier films.

CARTON CODING

Cartons are one of the most common packaging formats used by pharmaceutical and medical products. Marking these cartons with high-quality human readable and machine readable codes is a critical element of a company's traceability plan. Videojet, along with its sister company, Wolke Inks and Printers GmbH, offers a breadth of carton marking solutions.



Suggested Technologies



Laser coding on cartons is a simple and clean method of marking

text, bar codes or images while utilizing virtually no consumables. Laser creates entirely permanent codes and can often mark multiple adjacent products during indexing.



Thermal Ink Jet (TIJ)

is the pharmaceutical and medical industry standard

for marking **porous carton materials**. It has the **advantage** of printing at a **higher resolution** than other ink-based systems. **High performance inks** ideal for pharmaceutical applications are essential.



Continuous Ink Jet (CIJ) is a **versatile** coding method, particularly

when paired with a wide offering of **specialized ink formulations**. CIJ codes have demonstrated **adherence** to virtually all common carton materials, including those with non-porous or **water-resistant coatings**.

Did You Know?

There are two ways to obtain even higher quality bar codes using lasers on white pharmaceutical cartons. (1) Ask your carton converter to add Calcium Carbonate or Aluminum Oxide to the underlying white paperboard coating so the contrast of the marking is higher. (2) Apply a clear, laser reactive coating solution to the cartons in a defined area during production, allowing a laser to produce a color-change effect and yielding a high-contrast black code against a white background.

BOTTLE CODING

An extremely common pharmaceutical packaging format, bottles can be coded in numerous locations. Visible and ultraviolet (UV) or infrared (IR) visible marks on the bottle side, underside, label or cap are just a few of the options.



Suggested Technologies



Continuous Ink Jet (CIJ)

is a highly flexible coding solution for marking bottles. In addition to a wide range of visible inks, special **UV or IR-visible inks** in addition to a range of **invisible inks**, can be used for covert marking to aid brand protection efforts.



Laser

can be an effective method for creating indelible marks directly on the surface of the bottle or cap. Using small mirrors or galvos to direct a laser beam, laser marking technology can engrave directly on to plastic bottles or ablate the top layer of ink on labels.

What is Serialization?

Serialization refers to the marking of unique, non-predictive serial numbers on each packaging unit. The serial number can be used to trace the product across the supply chain, offering several benefits: 1) Combat counterfeiting and protect patient safety; 2) Limit reimbursement fraud (especially in countries with single government payer for pharmaceuticals); 3) Counter diversion that erodes safety and producer margins or controls.

LABEL MARKING

Marking directly on labels often requires thoughtful integration with labeling equipment but can yield high quality, precisely positioned codes. Videojet offers numerous technologies for marking labels.

Suggested Technologies



Thermal Transfer Overprinter (TTO)

offers a **simple method of direct contact coding** on labels before application to the bottle or package. Seamless integration and robust **bracketry** are key. Capable of high resolution printing, TTO is ideal for bar codes, high content codes, and product information.



Continuous Ink Jet (CIJ)

means **simple integration** of the small marking printhead and flexible umbilical hose into labeling equipment. With a **wide variety of inks**, CIJ enables printing on both paper and plastic label stocks and offers color variety depending on desired contrast.



Laser

may be utilized to ablate specially pre-printed "mark windows" on labels, offering crisp codes and low operating costs from limited required consumables.



Thermal Ink Jet (TIJ)

is an ideal method for marking labels prior to application. TIJ offers **high code quality** and contrast while delivering complex 2D or **DataMatrix codes**. A small printhead integrates easily into label application equipment.



What is Aggregation?

Serialization and aggregation go hand-in-hand. Once unique codes are marked on individual products (serialization), producers need to **know where those products are located**. Unique codes on outer packaging are linked to the contents within via different aggregation schemes. Aggregation can be accomplished via machine vision solutions with automated bundlers or case packers or through implied aggregation techniques including, batching conveyors, based on your needs.

VIAL & EYE DROPPER MARKING

Vial marking and eye dropper bottle marking is inherently a challenging marking application due to the small size, reduced radius packaging. Coding of these packaging types is best achieved when the coder is integrated into OEM packaging specifically designed to convey this form factor.



Suggested Technologies



Continuous Ink Jet (CIJ) remains an effective marking technology

for glass vials. Today's CIJ's use sophisticated software to help ensure high **drop placement accuracy**, which is especially critical for small 2D codes. **Autoclave resistant, visible and UV inks** can be used for brite stocking applications.



Videojet possesses one of the **broadest laser portfolio** in the industry. Videojet engineers can help select among CO₂ lasers, Fiber lasers, and UV lasers for the ideal mark on your packaging. Fiber lasers can be employed to mark **on the vial crimping**.

Did You Know?

High quality codes require precise material handling and rigid, vibration-free coder mounting. This becomes particularly relevant when marking complex DataMatrix codes. Before installing a new line or coding system, make sure to evaluate if your product conveyance provides smooth vibration-free movement of your packaging.

FLEXIBLE MATERIAL MARKING

Blister lidding foils, Tyvek® (and other barrier materials), pouches and a variety of flexible materials are utilized in packaging pharmaceutical and medical products. Coder integration in OEM packaging systems is often essential for reliable, high quality coding of flexible packaging.



Suggested Technologies



Thermal Ink Jet (TIJ) features a **small, high resolution** printhead optimal for printing on porous and semi-porous materials. **Multiple printheads** mounted in an array or integrated into a **traversing** system can be used for marking **web-fed materials**.



Thermal Transfer Overprinter (TTO) may be integrated into the web handling of packaging systems with **bracketry specific to each packaging equipment OEM**. TTO offers high resolution, wide format printing of **alphanumerics, bar codes, and simple one-color icons**.



Laser marking systems can be used for marking a variety of blister lidding materials. A properly specified and installed laser marking system can easily mark multiple lanes with high quality codes.

Multi-lane blister and traversing coding solution

The multi-lane configuration used for packaging of pharmaceutical and medical device products creates unique integration challenges. Videojet's Wolke brand TIJ printers drive multiple printheads with one controller, enabling coding of multiple packages with one printer. In addition, Videojet CO₂ lasers offer large marking fields that enable the laser to engage multiple lanes in either intermittent or continuous motion applications.

CASE CODING

Effective supply chain management and traceability only works with highly accurate, clearly readable information on your shipping cases. For case coding, the right solution depends on your specific needs, the requirements of your supply chain partners, and local standards and regulations. Videojet's product range can address both your internal and external supply chain marking requirements, from high resolution printing direct to case to automatic label application.



Suggested Technologies



Label Printer Applicator (LPA) is the standard way to identify product for delivery to trading partners, and automated labeling solutions can **significantly reduce mislabeling** for **optimum routing and tracking**. Automatic application of labels on-demand to cases is faster and **more consistent** than hand-labeling helps eliminate potential mislabeling.



Large Character Marking (LCM) prints **directly on the case** and is both **cost-effective** and **dependable**. It eliminates the cost, stocking and management of labels, as well as the need for customer-specific pre-printed cases.



Thermal Ink Jet Printing (TIJ) is used in high resolution printing directly on the case. Its **high resolution** printhead can be stacked to create large **images on the sides of cases** and other porous substrates.

Improve Supply Chain Efficiency and Save Money

Printing lot, batch and supplier-specific information clearly on the case creates a traceability point visible to all supply chain participants – providing rapid identification in case of recall. Where not precluded by local standards such as HDMA, printing this information directly on the case simplifies packaging by helping standardize to generic packaging.

VIDEOJET PRODUCTS

These are just a few Videojet products that are ideal for coding in the pharmaceutical industry.

Continuous Ink Jet (CIJ)



CIJ is the most versatile of all variable coding technologies and can print on nearly any package type or product shape. Fast print speeds and a range of application-specific inks make it a common choice for pharmaceutical applications.

Suggested Solution:
Videojet's 1000 Line offers Dynamic Calibration™ to automatically adjust jetting parameters to help ensure high quality print throughout the production run.

Laser



CO₂ laser printing systems simplify the process and improve the appearance and readability of pharmaceutical codes by permanently etching the material surface without physical contact or need for ink supplies.

Suggested Solutions:
Videojet's 10 watt and 30 watt CO₂ laser printers offer 21 mark window options to address a wide range of applications, including multi-lane, continuous and intermittent motion.

Videojet's fiber laser utilizes a Ytterbium laser source offering additional substrate range for coding metal, plastic or other hard-to-mark materials.

Thermal Ink Jet (TIJ)



TIJ technology is ideal if you print high quality text and bar codes on cartons and paper-based substrates, helping ensure that even complex and detailed codes are clearly readable for downstream verification.

Suggested Solution:
The Wolke m600 touch TIJ coder delivers high resolution prints and bar codes on packaging. Its compact design integrates easily into production processes, and its flexible communications and menu-driven interface are easy to configure and use.

VIDEOJET PRODUCTS

Thermal Transfer Overprinter (TTO)



Ideal for marking flexible packaging, thermal transfer coders offer high quality codes from date, lot, and time stamps to more complex codes such as bar codes, use warnings, and ingredients lists.

Suggested Solution:
Videojet's DataFlex printers combine high-resolution printing and ribbon-saving technology to produce highly legible codes and minimal waste.

Large Character Marking (LCM)



LCM makes pre-printed cartons and labels unnecessary by printing supply chain information directly on the cases. Codes printed on white pharmaceutical cases offer particularly sharp, machine readable bar codes.

Suggested Solution:
Videojet's 2300 line of printers are ideal for carton-coding applications. Through our patented micropurge process, the printhead is automatically cleaned and maintained – helping to ensure consistent, legible codes.

Label Printer Applicator (LPA)



When your customers demand labels or you require high grade bar codes on brown corrugate cases, an LPA can automatically apply labels to help ensure accurate label placement and high contrast coding.

Suggested Solution:
The P3400 Label Printer Applicator is a proven solution across many industrial environments, making it extremely capable in a range of applications.

SERVICE, SUPPLIES & ACCESSORIES

Every coding application is different. That is why we provide one of the most comprehensive offerings of supplies, accessories, service and support to configure a solution for your unique application needs.

Specially developed inks, fluids, and high performance consumables

- With over 640 application-unique fluids, Videojet has a range of ink ideal for pharmaceutical applications, including auto-clave resistant visible and UV inks, high contrast TIJ inks for carton coding, and pigmented inks for dark vials.
- 100% batch testing helps ensure repeatable and reproducible ink composition and performance across all global manufacturing locations.
- High performance thermal transfer ribbons to aid code contrast, and smudge and scratch resistance



Printer accessories

Videojet offers a range of quality accessories to aid successful integration. Examples include:

- Beam turning units and beam shields to properly and safely integrate laser systems into OEM equipment and packaging lines.
- Laser fume extraction systems with advanced filtration to help ensure a clean and safe coding application
- OEM-specific bracketry to help ensure TTO printers are properly mounted and deliver the expected mark quality



Service and support

Videojet offers global service and support with over 800 direct service and technical support resources in 24 countries and factory-certified distributor support in 100 additional countries.

- Onsite installation, commissioning, and operational support including IQ/OQ documentation packages to aid manufacturers' validation efforts
- 24 x 7 help desk/technical support operations in 16 countries
- Service offerings can be configured to your unique needs from operator maintenance training or time and material service, to specialized service contracts offering part replacement, preventive maintenance and supplies.

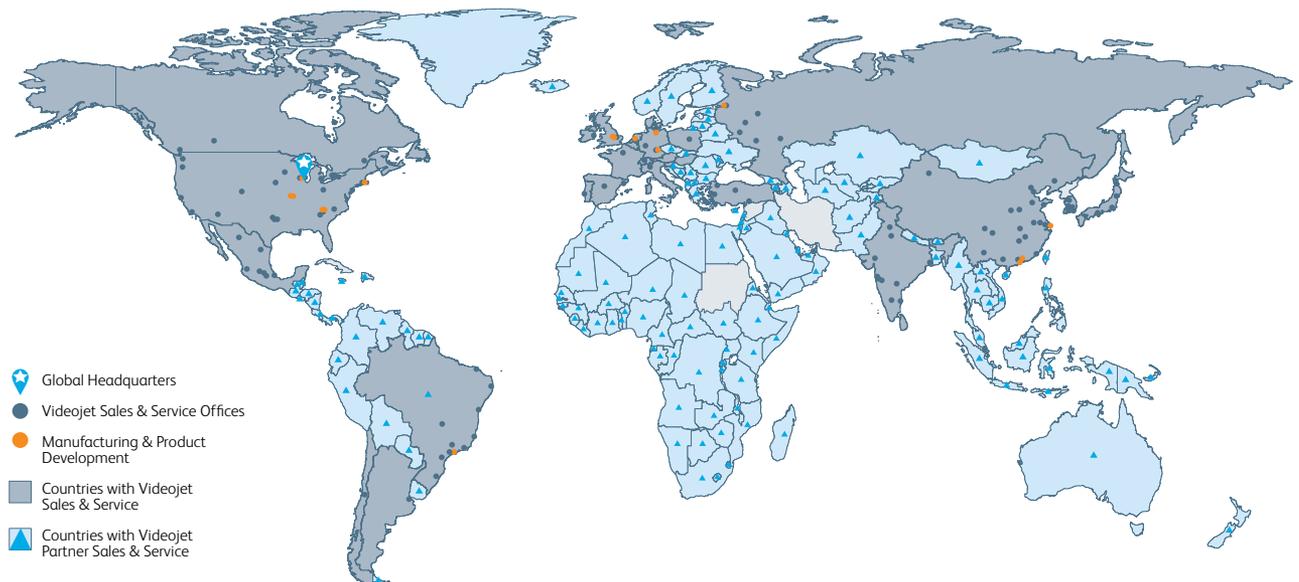


Peace of mind comes as standard

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 325,000 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 3,000 team members in 26 countries worldwide. In addition, Videojet's distribution network includes more than 400 distributors and OEMs, serving 135 countries.



Call **91-75063 45599**
Email **marketing.india@videojet.com**
or visit **www.videojet.in**

Videojet Technologies (I) Pvt.Ltd.
Unit 101/102, Rupa Solitaire,
Building No. A-1, Sector -1,
Millennium Business Park,
Mahape, Navi Mumbai - 400710,
Maharashtra, India.

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