Workflow Solutions

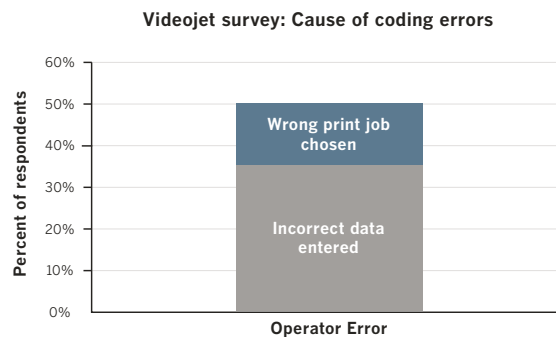# Template management and code inspection systems
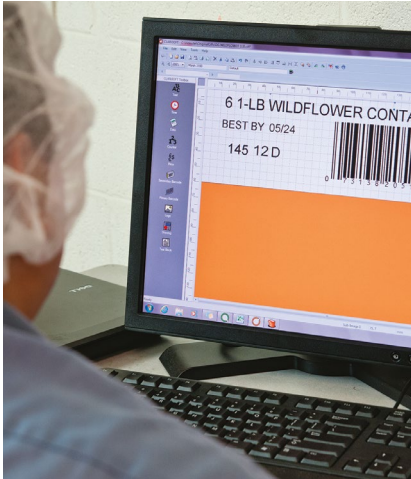
Videojet Packaging Line Workflow Solutions

Streamlining the coding process, improving quality and helping to ensure the right code is printed on the right package time after time.

Avoid coding mistakes by removing inefficiencies and the risk of human error

Selection of a print job, entry of code data and on-going validation of code accuracy and legibility are often left to a human operator. This approach not only provides the potential for costly error, but also creates significant process variation due to inconsistency among plant personnel.

Up to 70% of coding errors are caused by operator error. The most common mistakes are incorrect data entry and incorrect job selection. Our survey found that these two mistakes accounted for 45% of all coding errors.

Videojet survey: Cause of coding errors

Percent of respondents

- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

Wrong print job chosen

Incorrect data entered

Operator Error

Benefits of Videojet Workflow Solutions

- Remove human error from the print job setup process
- Minimize costly scrap caused by incorrect codes
- Limit re-supply costs to replace recalled or withdrawn products
- Reduce potential for lost business from incorrect products being shipped
- Alleviate brand damage by narrowing the scope of a recall
- Meet retail and regulatory requirements for accuracy and traceability

Videojet Workflow Solutions are based on a simple two-part concept: ensuring that the printer has the right information and validating that the right information was printed. Videojet Workflow Solutions consist of software, hardware and service products that automate your coding process, helping to minimize errors. This powerful combination enables you to create reliable, repeatable quality assurance procedures and results.

CLARiSUITE™ template management software
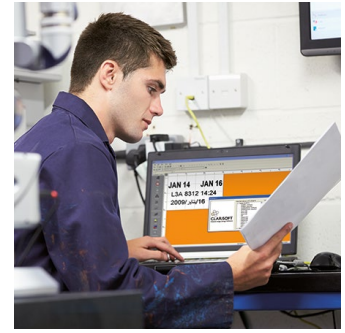
Streamline, simplify and reduce errors

It is possible to streamline your coding process and reduce the occurrence of costly and time-consuming errors. CLARiSUITE template management software enables the removal of operators from the data entry process. Users can either select print job information from a pre-populated database or designated personnel can perform the activity from a centralized location.

If your coding process requires plant floor personnel to manually enter code data, CLARiSUITE can simplify and help mistake-proof the process. Data can be triggered automatically by scanning a bar code on a work order, pallet, etc. This allows users to bypass the keying in of codes altogether. If, however, data still needs to entered directly at the printer, CLARiSUITE can create error-proofing rules to make it easy to enter the right information and make it extremely difficult to get it wrong.
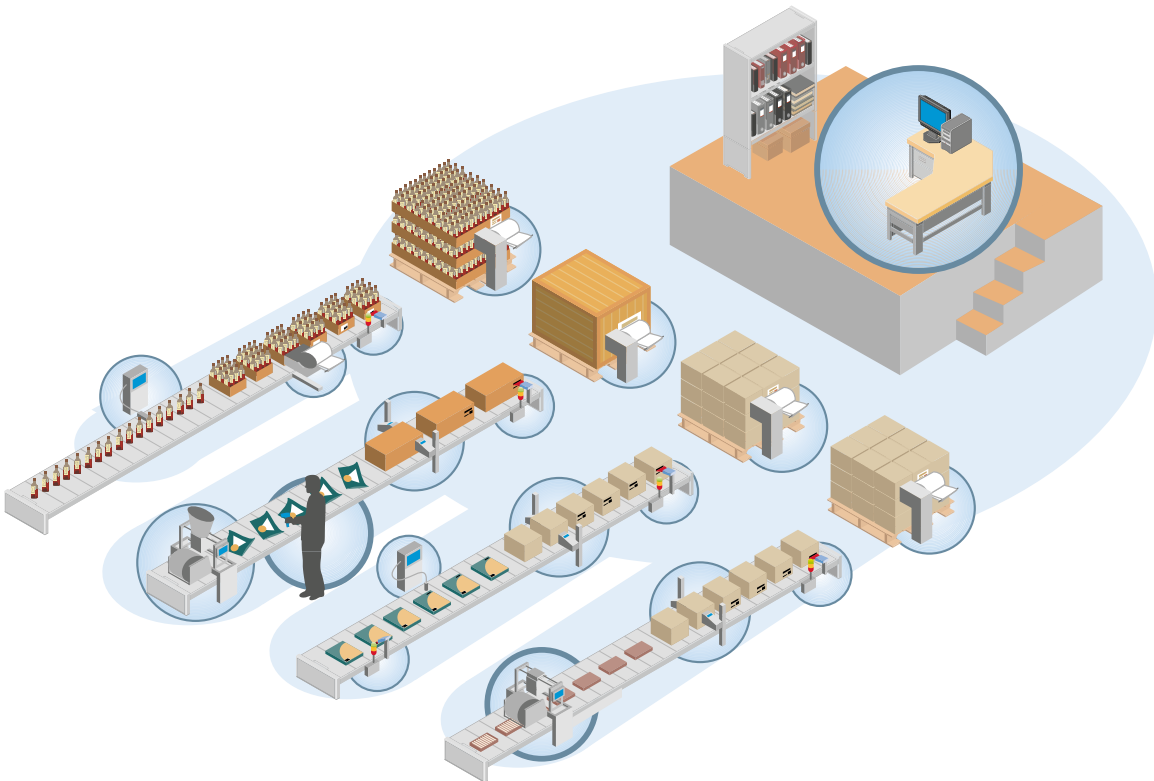
PC-based message design software

Simplifying the job creation process, job templates no longer need to be generated on each printer. PC-based software allows for centralized template creation away from the plant floor which improves accuracy and provides consistency. The intuitive WYSIWYG interface with configurable data entry rules (e.g. lot codes must be six digits) simplifies the process and helps to error-proof job creation. This software is compatible with most Videojet and popular desktop label printers.
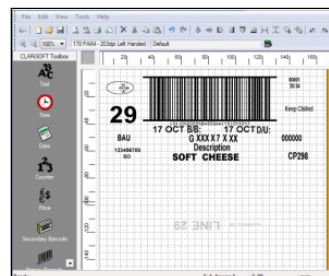

Centralized database

The software collects coding data in a central repository, creating a single-source database. This database removes the complexity and potential errors associated with using varying job selection and data entry methods across your packaging lines. Data can easily be exchanged with other systems via standard methods such as an OPC server or through more customized approaches.
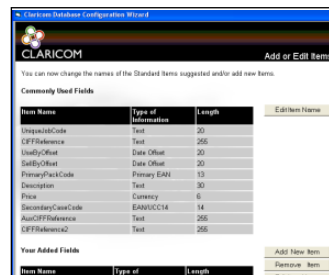

Plant-wide coding user interface

View the status of all your printers across the plant and deploy jobs individually or in a coordinated manner to, for example, help ensure the codes are synced between the primary package and the case. This user interface can also can serve as a basic dashboard to view performance information, such as throughput, in your packaging operation.
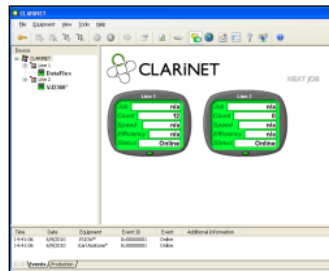
Videojet Visual Code Inspection System (VCIS)

Ease of use, simplicity of integration and a cost-effective way to meet visual code inspection needs
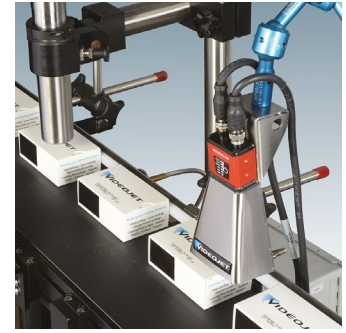
While ensuring that the printer has the right data is an essential starting point for code assurance, it does not fully guarantee each individual product will have the necessary code information when it leaves your packaging line. For various reasons, the code may be missing, applied in the wrong place or most commonly, become illegible over the course of the production run.
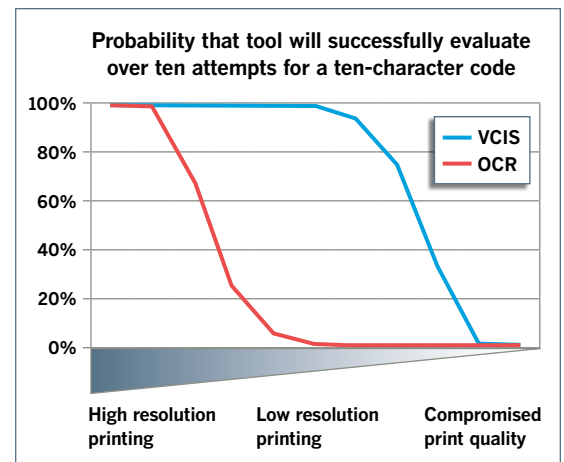
Manufacturers typically use manual inspection processes to address this issue, which are inefficient. Also, because the inspections are periodic, if an issue is not caught, a significant amount of scrap can accumulate. While automated inspection devices have existed for some time, standard vision systems are powerful multi-use tools that often require excessive time and expense to work effectively in code inspection applications.

The Videojet Visual Code Inspection System is designed specifically to address the challenges of verifying machine-readable and alphanumeric codes on consumer goods packaging.

Optical Character Recognition (OCR) systems are designed to capture an image and attempt to read the code in its entirety to confirm its correctness and legibility. However, with the low resolution printing of a continuous inkjet printer, decoding every character on every package can be too high a standard. This high standard often causes OCR systems to "fail" codes that have minor imperfections or even ones with no visible flaws to the human eye. Even with available smoothing techniques, these types of false rejects can occur and negatively affect packaging line throughput.

A truly effective code inspection system would be able to filter out random decodability issues common with OCR, but still alert you to an actual deterioration in print quality. Proprietary to the VCIS, the Videojet Code Quality Trend (CQT) algorithm delivers on this need by using the basic constructs of OCR, but processing the data in a different manner. Instead of passing judgment on every single code, CQT independently analyses the readability of each character on the code and accumulates data over multiple samples. This approach provides a solution that is statistically more likely to filter out basic decodability issues, but still pick up a negative trend in print quality.

Once a negative trend is detected, the VCIS can trigger an output for a stack light or be used to stop the line. Additionally, an e-mail with recent image captures can be sent to QA personnel to alert them to the potential issue.

Probability that tool will successfully evaluate over ten attempts for a ten-character code

Legend: VCIS, OCR

Y-axis: 100%, 80%, 60%, 40%, 20%, 0%

X-axis: High resolution printing, Low resolution printing, Compromised print quality

The probability of OCR getting even one "perfect" read over ten codes drops quickly, except for the highest quality codes. VCIS, however, identifies a pattern of compromised print quality before it fails codes.

Videojet VCIS

- **Innovative intelligence** to minimize false rejects, help ensure readable codes

- **Quick and easy** integration, installation and operation

- **Automated alerts** to notify operational staff and help keep production moving

- **Cost-effective solutions** for addressing the challenges of code verification

Tight integration with the printer simplifies configuration

Videojet VCIS works in tandem with Videojet 1000 Line Ethernet-enabled CIJ printers, with configuration for both the printer and camera being done from one user interface and stored and loaded via a single file. With this approach, duplicate set-up is minimized since items such as the camera 'region of interest' are already known, based on the print job data. The VCIS is also designed to recognize Videojet CIJ fonts, lessening one of the more challenging and time-consuming aspects of commissioning.
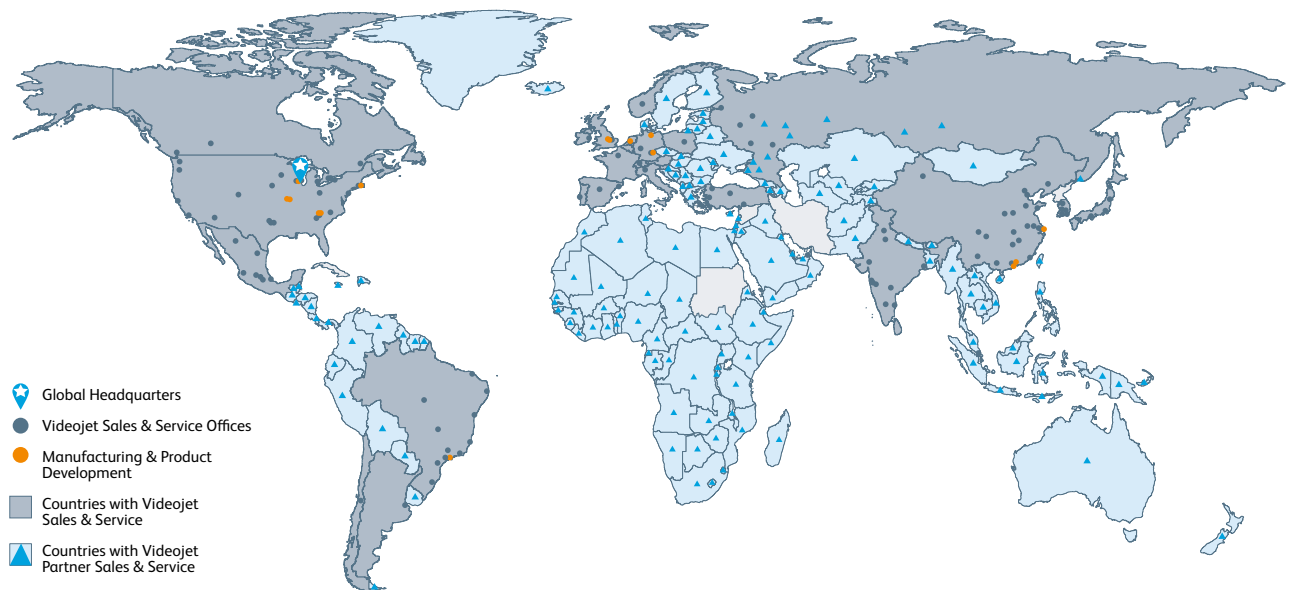
Single source of support

With both the printer and inspection system being supplied from a single vendor, there is no wondering who to call if an issue arises. Additionally, Videojet can pre-qualify and optimize your application in our sample labs using your packaging, along with the intended Videojet printer and ink that will be deployed in production.

Easy-to-use and cost-effective

Since the VCIS is designed for the specific purpose of inspecting codes, there is no need for costly third-party integration services. As the VCIS is a fully-integrated system, the same personnel can operate both the printer and the VCIS with minimal additional training. Day-to-day operation for both pieces of equipment can be handled through the VCIS user interface. The interface utilizes simple visual conventions such as tapping on a picture of the SKU to be run, easily configuring and readying the printer and camera for production.
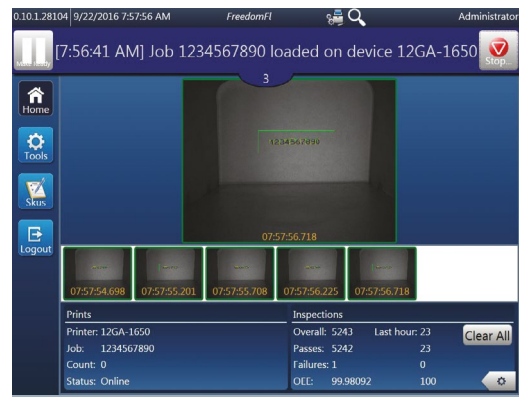
VCIS tracks key production statistics such as throughput and pass/fail rate and provides a visual display of associated trends

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 Inkjet (CIJ), Thermal Inkjet (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.

- Global Headquarters
- Videojet Sales & Service Offices
- Manufacturing & Product Development
- Countries with Videojet Sales & Service
- Countries with Videojet Partner Sales & Service

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