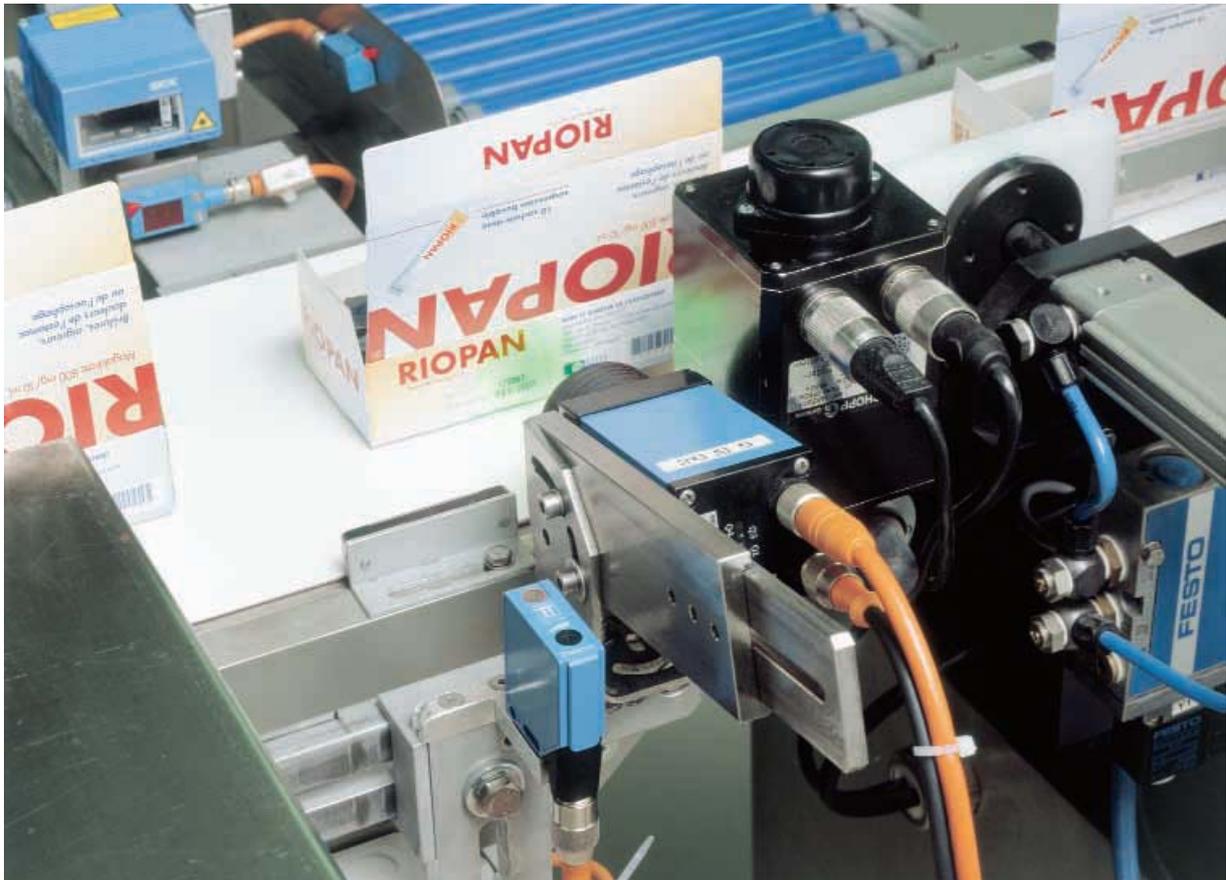




*The Ultimate Digital*

## Machine Vision based packaging Inspection

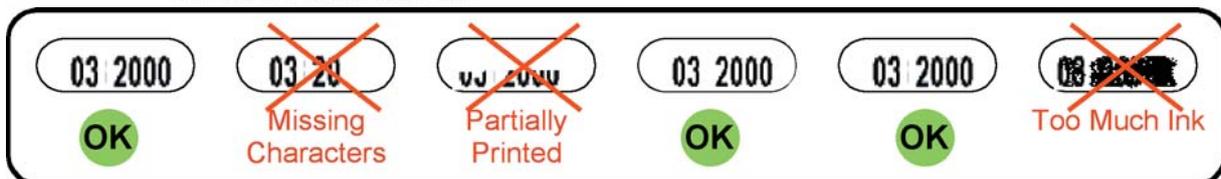
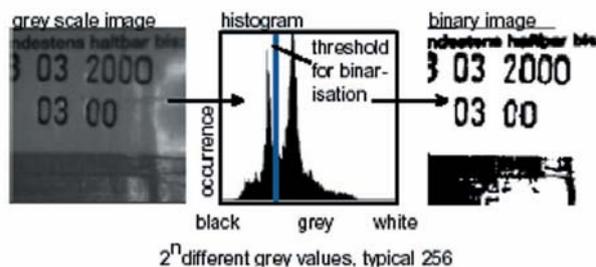


Consumers tend to equate the quality of packaging directly to the quality of the product. Even the slightest imperfections influence purchasing behaviour, irrespective of whether these actually bear any relation to the condition of the contents or not. Reason enough to play it safe with reliable packaging inspection.



### Presence and completeness checking

Presence checking is one of the most frequent applications of industrial image processing. The wide variety of possible distinguishing features which can be detected (colour, geometry, brightness etc.) makes KDI vision ideal for this type of application. There is no restriction imposed by the software on the number of test windows, and operation is simplified by flexible algorithms for segmenting and image processing.



### Print quality control

Print errors are a quality defect and must be detected at first glance. The use of KDI vision permits products to be tested according to identical and objective criteria. This is done by teach-in of a good reference image which is stored in the system. Depending on the setting, errors in both the imprint itself and in the background are detected. Test sensitivity can be adjusted to requirements. Any occurring brightness or position fluctuations are compensated by the software.

## OCR/OCV

A highly developed software system (OCR) permits letters, numbers and logos to be read on fast-moving objects. Other characters can be simply added using a menu. If a legibility check (OCV) is required, target value information and rejection thresholds can be entered into the system using input masks. The flexible software tools even permit the reliable scanning of radially applied or inverted characters.



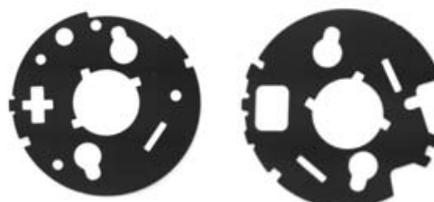
## Colour monitoring

Mass products are frequently differentiated only by their colour. Colour coding is often used in order to avoid confusion during the assembly of industrial products. It is only with the installation of colour cameras that it is possible to distinguish between different colour nuances such as blue and green. Detected colour objects can additionally be checked for completeness, shape and dimensional accuracy.



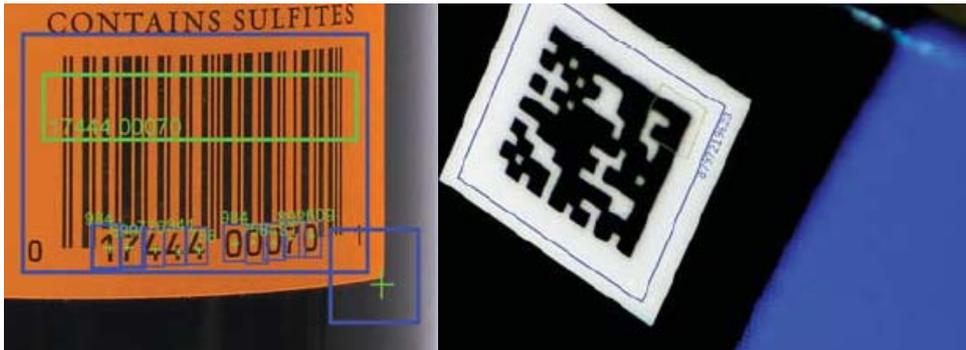
## Type monitoring

Products often bear no distinguishing inscriptions or code markings during the production process but still need to be clearly identified. KDI vision features both a neuronal identification and a pattern and contour control function (optional extras). Typical applications for these functional features include the differentiation of products with differing contours.



## 1D and 2D code scanning

Another software tool permits data matrix codes as well as all commonly used bar codes to be scanned. Benefits include good legibility even where contrast is poor, and scanning of codes applied directly on the end product. If several codes have to be read simultaneously, placement of one inspection window per code is sufficient. Alongside pure code scanning, other applications such as the position output of codes or additional plain text scanning can be implemented without additional expense.



Inspection measuring Skew and Orientation of a Juice Label

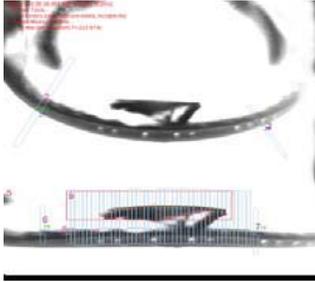
360° Inspection on Jars



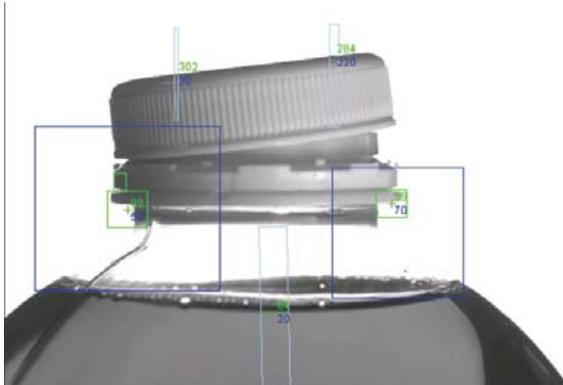
Weeping Lid Inspection for Cans



## Unwrapping Image of Labels



Inspect for Glass Chips in the Bottom of Bottle



Cap Inspection on Bottle



Blister Inspection on Bottle



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