VIPAC

VITRONIC
machine vision people

Sorting of books, CDs and DVDs at HIS

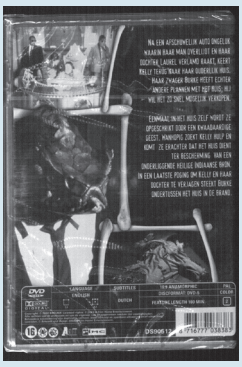
VIPAC reads barcodes on the top and bottom sides of parcels

Task

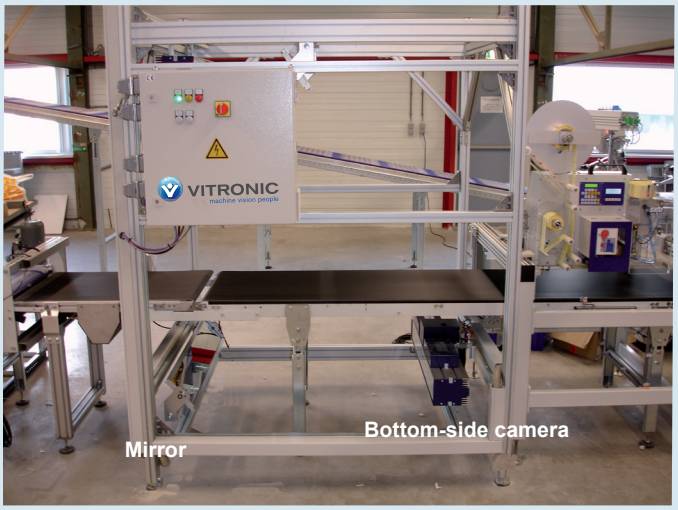
The Dutch mail-order company HIS distributes mainly CDs, DVDs and books. The company operates its distribution center at its location in Hoorn, the Netherlands. The company wants to do the sorting in a fully automated and reliable way. For this to happen HIS requires each product to be accurately identified. The sorting takes place on the basis of unique identification by barcode which can be located on the top and the bottom side of the object. The particular challenge: even shipments that are positioned close to each other have to be unambiguously identified.

Benefits

The camera-based barcode-reading system VIPAC offers a custom-tailored solution to this problem: Unlike a laser scanner, taking a picture of the bottom side can be performed through a 25mm (1inch) wide gap on the conveyor belt. The codes on the top side can be read out with highest read rates even behind film.
The special sorting technique (the Dual Tray Sorter by DistriSort) has two trays lying close to each other, both can be covered with a single camera. Accordingly, VIPAC must under such circumstances read two barcodes in parallel and assign the result unambiguously to the corresponding sides.



The barcodes are identified reliably even under film – as on this DVD



The VIPAC identification system identifies barcodes on the top and bottom sides. The bottom-side camera "sees" the bottom side of the package through a small gap and across a mirror.

Implementation

The sorting capacity in the HIS distribution center is designed for 14,400 pieces per hour. The VIPAC system is used at the entry side of the conveyor belt. VIPAC is built on the basis of a modular design and consists of two camera units and one computer unit with barcode-reading software. VIPAC identifies the barcodes on the top and bottom sides of the shipments. For reading the bottom side, a VICAM^{ssi} camera is mounted under the inbound conveyor belt. It takes pictures with a resolution of more than 200dpi at a conveying speed of 1m/s (197fpm). Only a 25 mm (1inch) wide gap between two conveyor belts is sufficient for image acquisition in order to be able to generate high-quality images. A barcode scanner cannot be used at this place because it cannot read omnidirectionally through the gap. Another VICAM^{ssi} camera identifies the barcodes on the top side of the shipment.

Technical Data

Camera	each system has 1 high-resolution autofocus line-scan VICAM^{ssi} camera for top reading.1 high-resolution fixed-focus line-scan VICAM^{ssi} camera for bottom reading.
Speed/ Throughput	Up to 1.0m/s /197 fpm 14,400 packages/hour
Hardware/Interface	Ethernet LAN to the central computer I/O interface for equipment control

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