

# Vision Capture System, VCS

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## An Automated Visual Auditing System



### A Picture Tells the Story!

- Reduce Shrinkage and Duplicate Shipments
- Reduce Labor and Paperwork Costs
- Internet/Intranet Browser Based Image Review
- Verify Shipped Cartons (Top – Side – Contents)
- Eliminate Picking and Shipping Errors
- Electronic Operation Transactions History
- Improve Customer Service Through Visibility

**Vision Capture System, VCS** is a computer-based image data collection system that provides real-time captures of case contents or full case auditing for Manufacturing and Distribution Centers. **VCS** utilizes high-speed digital color cameras along with identification data from barcode scanners to capture an image of the top, side, and/or contents of a case. The system can be used for both stationary or in-motion applications.

***VCS** provides the tool to verify and audit shipment to your customers.*

The *image capture* function is triggered from the barcode reader scanning the shipping/order label. This message triggers the cameras to capture the desired view. The image data and barcode are stored in a high performance Database allowing a supervisor or manager a simple and rapid means to retrieve images based on the case order number. The images can also be transmitted to the customer's host system for order tracking, order delivery verification, quality audits, and to satisfy regulatory agency compliance requirements.

**Reports and Inquiry:** A Windows NT Workstation manages Images from the camera and carton-tracking numbers. The system contains a search feature to inquire on any carton by the order number. When an order number is keyed into the search field, the carton image and time of capture is displayed on the screen. All information is retained on the system for use whenever needed.

**Mounting and Operation Overview:** The VCS is typically mounted prior to the shipping sorter over the induct meter belt. The frame should be fixed to the floor or to the mezzanine platform in such a way that it does not come in contact with the conveyor. The high-speed digital camera, incandescent lights, a photo-eye, and a scanner are positioned on this frame. As cartons pass beneath the camera, they break the photo-eye beam, which triggers the camera to capture the carton image. The bar code scanner is mounted on the top or side of the conveyor (Depending on where the Carton ID Tracking Number is placed) to capture the Carton ID Tracking Number. The picture and the carton tracking number are married together in the database.

**Specifications:** The Workstation is housed in an Industrial enclosure adjacent to the frame. The system is powered by an uninterruptible power supply. An air conditioner can be supplied as an option to protect the system in high ambient temperature environments.

**Vision-Spect™ Software Module** is an *optional* on-line image inspection tool. This software module matches learned color and pixel patterns of your product and compares it to the actual image captured in the VCS. It is used to identify miss-applied bar codes and to determine picking and shipping errors. The software module operates in real-time and prevents wrong product from shipping to **Your Customer**. This provides your facility with an on-line product fulfillment validation. If carton characteristics do not match the known characteristics contained in the SKU's database, the carton is diverted to the exception lane.

### ***Additional Features of the Vision Capture System***

Adjustment settings for the camera parameters are done through the PC Workstation. All the parameter adjustments are in software.

High-speed shutter control providing 1/100K image capture without the need of specialty lighting or strobe lighting.

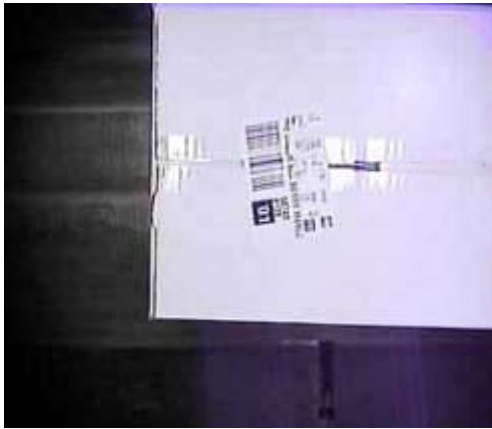
Camera includes integral 12x zoom lens with motorized zoom, iris, and focus to easily adapt to each unique installation requirement.

High-Speed fire wire camera interface allows transfer of images without compressing the file, eliminating lost images or data.

Browser based viewing tools allows access to the data from several departments without the need of any special software.

## **An Automated Visual Auditing and Inspection System for Wine and Spirits Distribution Industry.**

**Top View**



**Side View**



### **A Picture Tells the Story!**

- Reduce Shrinkage and Duplicate Shipments
- Reduce Picking Errors
- Real-time Validation of Shipped Cartons
- Real-time Bottle count and Content Image
- Query All Orders Loaded Into Your Trucks
- Keep Visual History of All Order Transactions
- Improve Customer Service Through Visibility
- Verify Driver Returns or Shortage Claims

**Vision Capture System, VCS** is a computer-based vision capture and barcode based data collection system that provides a lower cost and faster means to validate and inspect the picking process in the Wine and Spirits Industry. The system provides a labor-free real-time capture of case contents or full case auditing for the distribution center. The system can be used for both Bottle Picking and full case image capture and analysis on conveyed product or at a static work-station. VCS utilizes dual high-speed digital color cameras along with identification data from a barcode scanner to capture an image of the top, and side of full case picks or the bottle counts at the exit end of the Bottle Picking Process.

**How it works,** The **image capture function** is triggered from a barcode reader scanning the shipping/order label. This message triggers the cameras to capture the side and/or the top of the case. The image data and barcode are time-stamped and stored in a high performance SQL Database allowing a supervisor or manager a simple and rapid means to retrieve images based on the case order number. The images can also be transmitted to the customer's host system for use by customer service or regulatory agency compliance requirements. Stored images of the carton, product and label are clear and easy to distinguish. VCS provides management the tool to verify and audit shipment to your customers.

**Vision Analysis and Electronic Inspection Software Module** is an optional on-line image inspection tool. The software module is based on a heuristic, robust cluster analysis algorithm that matches learned color and pixel patterns of known product (SKU) and matches the actual picked case image to the learned SKU image detecting picking and shipping errors prior to the truck loading process. The software module operates in real-time and prevents wrong cases or bottle counts from shipping to **Your Customer**. This provides your facility with on-line product fulfillment validation. If carton characteristics or carton bottle counts do not match, the carton is flagged as a pick error suspect and is diverted to the exception lane or an inspection station.

**Reports and Inquiry:** A Windows NT Workstation manages Images from the camera and carton-tracking and carton history. The system contains a Browser based search feature to inquiry on any carton by the order number. Data and reports are available to any PC connected to your existing network. When an order number is keyed into the search field, an operator or customer service representative presses the search icon and the carton image and time of capture is displayed on the screen. All information is retained on the system for up to 60 days or longer.

**Security Integration: VCS** can also communicate with and manage a new generation of Digital Security Recording Systems available from Protech Security. The Digital Recorder replaces the existing Security VCR and is used to digitally record the trailer loading process from your existing or new security cameras located at the outbound shipping lanes. **VCS** receives sort confirmation from the Shipping Sorter and synchronizes the security camera recording and carton image record together in the **VCS** database. If a picked carton is reported as a short from the customer or driver, both the carton image and a video recording of the truck loading operation can be recalled and viewed to determine if the disputed case was actually loaded onto the truck.

*Browser based viewing tools allows access from several departments without the need of any special software.*

**Top View Photos of Split Case Orders**



Automatically Count Every Bottle

