

Automated bottle identification at Goody Goody Liquor - Datalogic

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Goody Goody Liquor, a Class B Liquor Distributor, located in Dallas Texas, USA, has been in business since 1964 employing 150 people in three wholesale locations and nine retail locations, and has an excellent reputation for outstanding quality and price.

The Problem

Goody Goody Liquor ships Liquor, Wine, Beer and accessories from the Dallas Texas Distribution Center to bars and restaurants in their geographical area. Prior to the installation of the current system, all order processing and tax stamp labeling was performed by hand requiring the full time attention of up to eight employees. According to Goody Goody IT/Development Manager, Anthony Smith, this process was both time-consuming and prone to error and theft. These problems have virtually disappeared after the installation of the automated order processing system by Cornerstone Automation Systems Incorporated (CASI) that fully automated the order processing and tax stamp application process.

System Overview of the New Solution

The automatic order processing system from CASI utilizes tabletop chain conveyors, fixed position barcode scanners, vision systems, label applicator, conveyor control and software to automate the process. At the beginning of a run, the system uses a communication module to get the order information from the Goody Goody Liquor Enterprise System. This data contains the expected UPC barcodes from the order. A custom modification enables conversion of the 6 digit UPC-E to their twelve digit uncompressed version. After the data for the order is downloaded, the system announces via a pre-recorded .wav file that it is ready to run. Bottles are placed on the conveyor and the array of eight Matrix 2000™ bar code scanners from Datalogic read the UPC barcode from all the positions the numerous manufacturers have placed them. The Matrix 2000 was chosen for this application due to its ability to decode low contrast barcodes at up to a 70-degree pitch or skew angle, as well as a 360-degree tilt.

Once the bottles have been identified, they travel to the label applicator where the Tax stamp is applied. The bottle is tracked from the induct photo eye to the labeler using an encoder. The system measures each bottles diameter and placed the label in the center of the bottle, a critical feature, as

bottles vary from 2.5 to 8 inches.

As the stamp is fed onto the bottle, a Vision System is used to capture the stamp number using the OCR tool. The tax stamp information is included in the customers shipping paperwork for the order providing proof each bottle has a tax stamp number. These OCR images can be saved as well to a hard drive.

Once the stamp is on the bottle, it is seated with an air knife and a secondary wipe brush. Finally, a color vision system is used to positively verify that a properly seated tax stamp is on the bottle. Great care is made to ensure the tax stamp has been captured and is on the bottle, as missing stamps have caused bars to lose their liquor licenses in the past.

Bottles that cannot be processed due to an unreadable barcode or failure of the OCR Capture or Label Verification are diverted to an exception lane.

Benefits from the New Efficiency

Process Improvements have been dramatic and produced a rapid payback on the original investment. Order processing is significantly faster and shipping errors have been drastically reduced. These gains allow Goody Goody Liquor to get their orders out the door faster and more efficiently than before providing an advantage over their competition. According to Goody Goody IT/Development Manager, Anthony Smith, "The conveyors have improved accuracy, reduced headcount and sped the processing of orders. We have gone from being known for the worst service in Dallas to the best in the space of one year."

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