DANBY barcoding

CASE STUDY: THE DANBY GROUP'S DG-110 VIN LABELING SYSTEM INCREASES EFFICIENCY AND CUTS WASTE FOR MAJOR AUTO MANUFACTURER

Known for added value and reliability, a major manufacturer of one of the top- selling car brands in the U.S. needed help in keeping pace with consumer demand in several plants throughout the U.S. and Canada. Each assembly plant must keep its assembly line efficiently humming to produce 1200 new vehicles per day for customers throughout North America and Canada.

Labeling is a key component in the assembly process, and perhaps the most critical labeling requirement is the identification of each vehicle with a vehicle identification number (VIN)) located on the driver's side doorframe. The VIN label includes information that is added when the label is actually affixed to the automobile. The label content is represented by human readable text, a unique VIN bar code, logos, icons or other graphics.

The VIN label is particularly critical because it carries the information that uniquely identifies the vehicle and its options, making it imperative that the right label be affixed to the right vehicle in the production process. The VIN information is subsequently used for motor vehicle registration, auto insurance, theft recovery and other vehicle identification purposes. Without these labels, it is nearly impossible to trace and identify a vehicle. Therefore, each label must be tamper-proof, transfer resistant, chemical resistant, and durable enough to withstand changing weather conditions throughout the life of the car. These basic requirements mandate the use of special materials and labeling techniques.

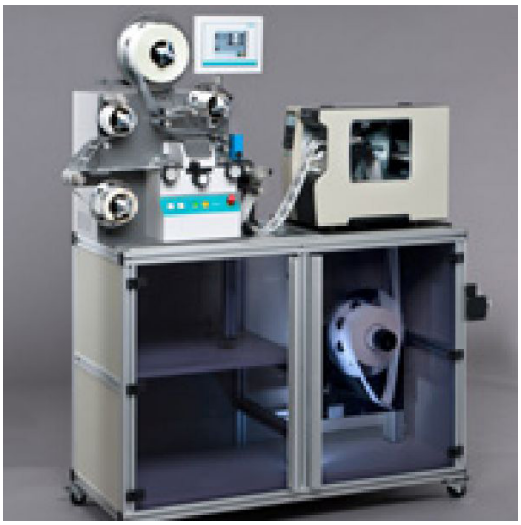
CHALLENGE

To ensure that the information content on the label survives the life of the automobile, VIN labels are often protected by a clear film or over-laminate, which is made of a special synthetic material that is resistant to normal abrasion and the damaging effects of automotive fluids or cleaners. The label adhesive also must not weaken in extreme cold or when exposed to chemical attack.

To better automate the lamination process this leading-edge auto manufacturer originally implemented a label printer/laminator system in 1989 in one mid-west plant that applied a pre-cut over-laminate film to the labels, separately cut the labels, and caught them in a tray for use on the assembly line. However, the system had several serious drawbacks.

Because the printer/laminator was custom-designed to use vision systems to align the precut over-laminate with the VIN label, the complexity of the alignment mechanisms made it difficult to consistently place the over-laminate film onto the VIN label. Adjustments to the laminator and the vision system were difficult to master and were continually required for the proper alignment of the over- laminate film to the VIN label. In addition to the 2.5 hours per week or more in maintenance required to keep the system running correctly, the lack of local technical support or parts availability caused tremendous difficulty. Parts that weren't kept on hand had to be ordered from Japan, taking weeks to arrive unless expensive air shipment methods were used. The manufacturer recognized that U.S support was a basic requirement.

In addition, the labels were separately cut after being printed and laminated, creating the potential for them to be retrieved out of order and inadvertently applied to the wrong vehicle, forcing rejection and rework.

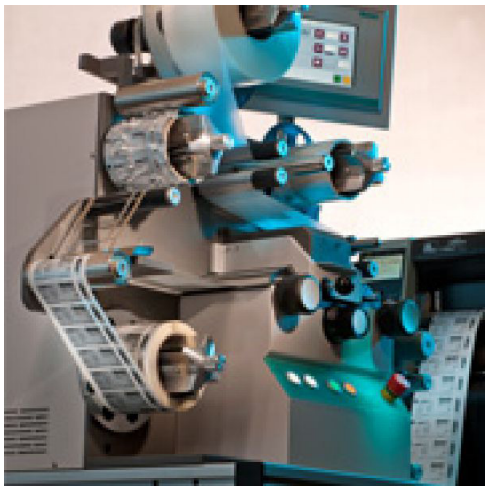


SOLUTION

Engineers at the plant contacted The Danby Group and found a solution that met their needs. The Danby Group's DG-110 printer/laminator, combined with a desktop PC and integration software that queries ERP data files and refreshes the variable data placed into a label format designed with off-the shelf label design software, and a Zebra 110Xi4 printer was put into place for a trial run.

The DG-110 printer/laminator prints the information content for each certification label using Zebra's 110XiIIIPlus printer. Thermal transfer printing is the preferred printing technology for this label because, in addition to printing the label in real- time, thermal transfer printing produces VIN number bar codes that are the most easily read of any other print-on-demand technology. An added benefit of this print technology is the clarity of any graphics, logos, or the text printed in various fonts and point sizes.

A Microscan scanner reads each label and ensures bar code readability. If a label has a bar code that does not properly correspond to the data from the database, a hole is punched in the label indicating it has failed verification/data validation testing and renders the label unusable. If a poor quality bar code is printed, the printer repeats the printing process with a replacement label that is not punched. After this step, a clear over-laminate automatically covers the label before the labels are individually die-cut. The waste matrix left around the die-cut label can be stripped away from the label allowing the die-cut labels to be rolled or used immediately. To avoid production errors such as having the labels used out of order, they are removed from the label liner in the sequential order that they are printed.



RESULTS

Fully satisfied with the results of trial, this major Japanese-based auto-manufacturer purchased the initial system and placed it into production in January of 2004. At roughly half the cost of the original system designed for the company, it proved to be a good decision. The DG-110 printer & laminator is easy to maintain and printing or cutting adjustments to it are user-friendly and minimal. More importantly, the potential to apply an incorrect certification label to a vehicle has been virtually eliminated. A dozen more systems have been installed in auto plants in N. America since then.

MAINTENANCE and SUPPORT

Operators say they do not perform anything but routine preventive maintenance, so very little production line down time has occurred. In addition, label supplies waste due to printing or lamination problems has been significantly reduced.

Local support is no longer an issue either. Most replacement parts are supplied next-day by the Danby Group and service support is a phone call away.

ROI

While return on investment was not initially a company mandate or goal, system analysts at all plants have concurred that the new VIN Tracking and Certification System has more than returned their investment over the course of it's first year in less downtime, reduced paperwork and materials waste, and streamlined QA data processes and queries. The system has proved so successful that many more systems have been installed for its assembly locations in the U.S. and Canada.

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