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Total Quality Solutions

Case Study: Convertible Top Manufacturer Collins & Aikman Closes the Loop on Quality Data

The Challenge

The Collins & Aikman Adrian, Michigan convertible roof manufacturing facility recently utilized ASI DataMyte equipment to address the task of getting all of their various data processing systems on the same page. What Collins & Aikman's customers were searching for was a simple proof statement that would easily identify that a specific convertible top had passed all of its final assessment checks and had been properly processed.

The Solution

The solution proposed and implemented by Gregory Brasic, of system integrator LeMatic Inc., integrates an ASI DataMyte quality assurance system with the corporate order entry and tracking systems. The solution offers positive proof in the form of a unique serialized barcode label. The label confirms the top has passed its final assessment inspection.

Brasic explains "This new project redefined the term "state-of-the-art" for their ASI DataMyte system." The project completes a whole series of integration steps. These steps include:

- Upgrading of final assessment fixture controller card and test stand controller allowing them to communicate with three different data networks.
 - Ethernet
 - DH-485
 - RS232 ASCII
- Adding bar code scanners to capture the Collins & Aikman internal serialized part number for each specific top manufactured.
- Allowing data to flow between different systems, including:
 - The ASI DataMyte system that integrates the final assessment fixture
 - The local central database in the Adrian, facility that provides the common data indexing between the different systems and transmits the transaction data to the corporate data center
 - The corporate data center IBM® AS 400® validates each transaction against the expected assemblies being produced and integrates required vendor information to the shop floor production information. Each assembly is then marked as tested
- Once processing is complete the corporate data center transmits the label information which is printed at the final assessment fixture station in Adrian. This label contains the following customer information:
 - Bar coded customer part number (serialized)
 - Top Color (Black, Camel, etc.)
 - Top Material (Vinyl or Cloth)
 - Production Date



Collins & Aikman manufactures convertible tops for the new Ford Mustang.

The label is then printed for that specific convertible top, confirming it has successfully passed its final assessment. Tops that fail the final assessment are released for rework. In addition the label provides traceability and proof that the corporate order fulfillment process has been completed for that specific top. Once the top is received at the vehicle assembly plant, production personnel scan the top and the traceability loop is complete.

Benefits

The presence of a bar code ID offers confirmation that the top has completed the final assessment process successfully. This integration has automated the product release function and assures only proper processed product is released to the customer. This enhances the customer's confidence that only quality product will be delivered to the customer's assembly plants.

Future System Enhancements

A pilot project is currently underway to replace the Linear Variable Differential Transformer (LVDT) probes on one of the final assessment fixtures with laser measurement technology. This would replace a contact measurement device with a non-contact laser designed to be less prone to damage.

A review is also being conducted to integrate an ASI DataMyte system with a heat-seal bonding process that monitors the amount of electrical energy being used by a radio frequency sealant cure system. This system bonds the rear windshield glass to the fabric panels of the top.

Quality Assurance Integration at Collins & Aikman

