laserlinc

Industrial Hose Manufacturer Automates Surface Flaw Detection and Realizes Significant Value

AT A GLANCE

CHALLENGES

- Cameras create false positives with labels and text when inspecting products
- Laser micrometers miss flaws in dead zones
- Requirements to pass extensive measurement system evaluation

BENEFITS

- Delivers process efficiencies
- Improves product quality
- Protects against reputational damage and product liability

"For the Site Acceptance Test, we received a sample that failed two rounds of manual inspection (i.e., hands were on the product twice and flaws still got through undetected). We were able to detect the flaws on this sample with FlawSense." — QA Manager

ABOUT THE COMPANY

A leading manufacturer of industrial hose produces high-pressure gas and fluid handling products for a wide range of technical and commercial applications. Products range from smooth to wrapped to threaded hoses, and the company is recognized industry-wide for delivering the highest quality solutions.

CHALLENGES

In respool applications for automotive hose lines, labels and text are applied to the surface of finished products and then run through a defect detection system. This manufacturer has used camera inspection and laser micrometers, but they have proved inadequate for detecting all flaws of interest. For instance, camera inspection constantly produced false positives for flaws when imaging text and labels. Laser micrometers have large blind spots causing flaws to be missed.

In addition, operators are tasked with manual inspection. They feel the product for flaws as it runs through the respool operation at 450 ft/min. Operators have received cuts on their hands from performing this harmful task. Some operators wear gloves for protection which reduces their sensitivity to feel a flaw as it passes through their hands.

Laser Micrometer   Camera Inspection   Manual Inspection

FLAWSENSE PUT TO THE TEST

The hose manufacturer turned to LaserLinc and decided to trial the new FlawSense surface defect detection system. The company required that the system delivers an accuracy better than +/-0.001 in. To prove this, FlawSense had to pass an extensive measurement system evaluation which included:

- Evaluating the bias and repeatability of the gauge
- Assessing the linearity of the bias over the measurement range
- Determining the variations in the process versus variations in the measuring device

Also during the initial trials, FlawSense was paired with an operator to ensure surface flaws were not missed during the respooling process. It soon became apparent that the operator was likely to miss real flaws that FlawSense could accurately detect. These missed flaws were considered real and potentially detrimental to the quality of the high-pressure hose products.

FLAWSENSE SOLVES PROBLEMS

FlawSense passed the trials with flying colors and was installed in the manufacturer's extrusion process to eliminate the need for the manual inspection of flaws. FlawSense detects and measures flaw details at any orientation in the field, regardless of text, labels, or visual patterns on the product.

FlawSense is connected to the line PLC, allowing for the line to stop at the precise flaw location so the defective section can be removed.

"The LaserLinc team provided outstanding consultation and support throughout the evaluation and implementation process. We truly value that level of commitment to our success." — QA Manager

Learn how FlawSense can give you the competitive and quality advantage. Contact us today!

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