



- Inspection time reduced from 90 minutes to 4 seconds, minimising scrap-rate
 - 49 inspection points digitally quantified and recorded, replacing manual recording of "PASS/FAIL" results
 - Actionable data is harvested, enabling automated process improvements

Automotive fuel tank SmartGauge

Introduction

The customer currently uses the New Generation Fuel System blow molding process to produce plastic fuel systems. Due to the complicated nature of this process, machines are required to run 24/7 as a high level of heat is required before production can start. As with all manufacturing processes, parts are inspected regularly to ensure they adhere to stringent quality standards. With around 49 points of data to inspect, this process can take around 40-90 minutes. To complicate this further, a number of components are enclosed within the tank. If the production line stops due to a fault, a substantial amount of scrap can occur.

A fuel tank is one of the most safety-critical components of a car. The production process produces roughly 1 plastic fuel system every 38 seconds, quality inspections can take up to 90 minutes per system. If defects are found, production would stop, but worse than this, up to 42 fuel systems have potentially become waste.



The SmartGauge has been introduced to significantly reduce our in-line product inspection times, from a manual process taking 40 minutes, to a digitised process taking just a few seconds.

The SmartGauge can support uninterruped production during the inspection process, so this is a huge reduction in the risk of us continuing to produce scrap products during the inspection process.

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Solution

By using a range of different technologies used in multiple sectors, our MetLase Engineers offered a solution for our customer's unique problem. Digital technology was applied to solve the manual inspection process, turning this into a digital solution that automates the inspection, providing an instant assessment of the fuel tanks.

Result

The result, a SmartGauge with over 50 different sensors which can inspect the fuel system instantly, reducing the inspection time from up to 90 minutes to just 4 seconds. Actionable data is harvested, providing continuous feedback on process stability, and enabling automated continuous improvements.

MetLase engineers developed this technology which includes 'plug and play' integrated into the SmartGauge fixturing system which could not be done with existing technologies.

MetLase offer digitally-led and mechanical manufacturing solutions providing added value through rapid problem soving for high value manufacturers



Rapid Tooling Development



Digital Manufacturing Solutions



Customised Solutions





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