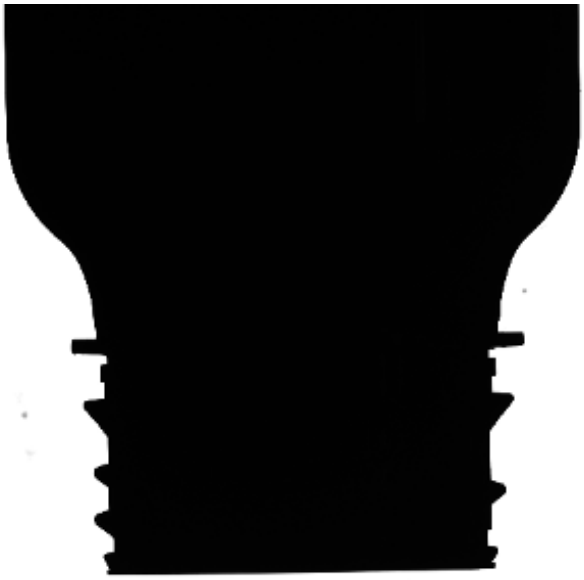
ELECTRIC & ELECTRONICS

Precision Radius Measurement for Improved Quality Control in Plastic Container Manufacturing

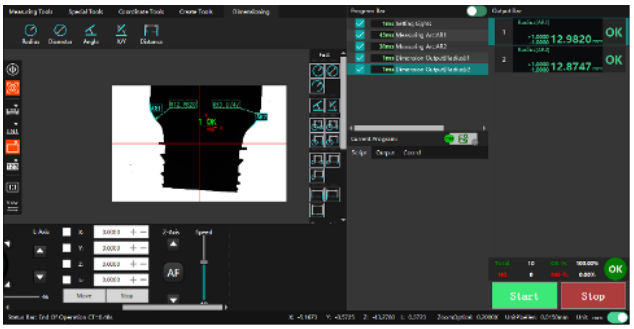


Problem Identified

Inconsistent bottle dimensions, particularly at the shoulder radius, were causing quality concerns in plastic container production. These dimensional variations risked poor sealing performance, leading to potential leakage and product wastage. Manual inspection methods lacked precision and consistency, resulting in measurement errors and delayed quality feedback.

The absence of accurate data also made it challenging to identify and rectify manufacturing process deviations in real time. This problem directly impacted on production efficiency and overall customer satisfaction.

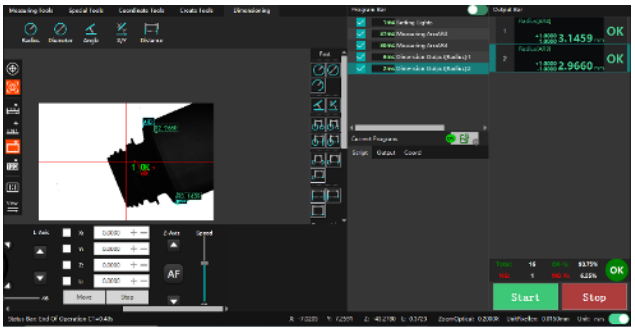
Solution Provided



A precision measurement process was implemented to accurately capture the radius at the bottles shoulder area for both large and small container types. Using a targeted inspection approach, the system provided precise dimensional readings to detect even slight deviations. The process allowed for consistent, repeatable, and quick data acquisition, improving quality assurance without slowing production.

Measurement data enabled proactive adjustments in the manufacturing process to maintain strict dimensional tolerances. This approach replaced inconsistent manual checks with a reliable, data driven method.

Results & Summary



The implementation of precise radius measurement successfully captured accurate data for both large and small container variants. This data helped in identifying minor deviations early, significantly reducing the rate of dimensional defects. Production downtime due to sealing and fitting issues was minimized, improving overall efficiency. Consistence in bottle dimensions enhanced sealing reliability, preventing leaks and improving customer satisfaction.

This study highlights a key quality control challenge in the packaging industry and the successful adoption of a precise measurement solution.