

Ultrasonic Container Leak Detection

In order to ensure the safety and food-grade packaging of carbonated beverages, rigorous bottle leak testing is essential. This process verifies that each bottle or can filled with carbonated beverages is securely sealed to prevent leaks.

Hielscher Ultrasonics presents a sophisticated yet user-friendly solution for inline leakage detection in bottles, cans, and containers containing carbonated beverages. The technique employed is ultrasonic container leakage detection, specifically applied to sealed beverage bottles or cans that are already filled.



The closed containers, filled with carbonated beverages, undergo ultrasonic excitation as they pass an ultrasonically-agitated guide rail, called sonotrode. This continuous motion leak detection is a vital step in ensuring the integrity of each container. As the beverage containers move on a conveyor, they briefly come into contact with the ultrasonic sonotrode. During this contact, ultrasonic vibrations are transmitted through the container walls into the beverage.

The introduction of ultrasonic vibrations induces expansion in the CO₂ gas of the carbonated beverage, creating pressure within the container. If the container is not properly sealed, or if there are any holes or cracks in the container walls, the beverage will escape. To maintain the quality of the production line, containers that exhibit leaks are promptly identified and removed.

Hielscher Ultrasonics provides a comprehensive solution for inline leakage detection, incorporating advanced ultrasonic technology to guarantee the seal integrity of containers filled with carbonated beverages.

Hielscher Ultrasonics offers a range of configurations for inline leak testing, catering to various container specifications, line speeds, and existing bottling system requirements. This adaptability ensures the effectiveness and applicability of their bottle and can leakage detection systems across different manufacturing setups.



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