

TAPTONE

APPLICATION NOTE

Volume 2, No. 3

LEAK DETECTION IN MOTOR OIL BOTTLES

Tested: Plastic HDPE Bottles with Foil Induction Seals

Tested with: TapTone 1000-C Compression System

The purpose of the evaluation was to prove the effectiveness of the T1000 Compression sensor in identifying containers with improper foil seals or defects in the container closure itself.

Packagers in the oil and chemical industry employ compression inspection in order to ensure that containers are not leaking.

The system is capable of detecting leaks as small as .020 inches or .508 mm.

The TapTone 1000-C compression system is ideal for finding leaking plastic containers before they leave the processing plant.



HDPE Bottles with Foil Induction Seals

TECHNOLOGY CORNER

How it Works

TapTone 1000-C Compression System

The TapTone 1000-C detects leaks in plastic containers. As a container passes through the system, dual parallel belts apply force to the sidewalls of the container. This action compresses the head space of the container, which allows a load cell to take a force measurement at the discharge of the system. Utilizing DSP technology, the controller analyzes the measurement and assigns a merit value to each container. If the merit value is outside of the acceptable range, a reject signal activates a remote reject system.



See next page for test results



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Package Inspection Systems
A Teledyne Technologies Company

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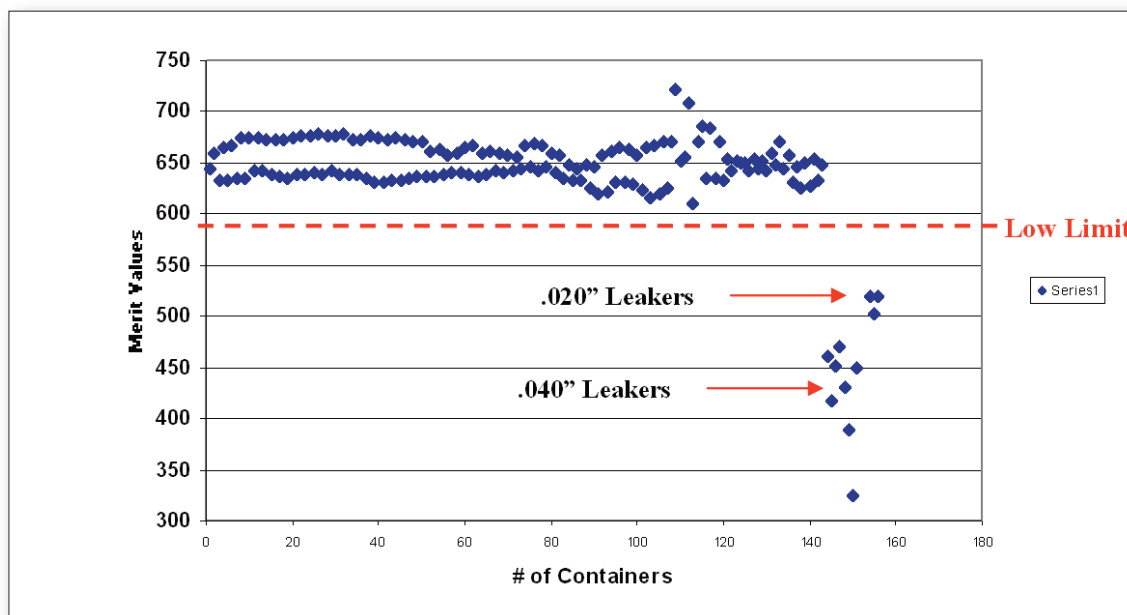
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TEST

The bottles were tested at a speed of 45 feet per minute, which calculates to more than 120 bottles per minute. A merit value difference of approximately 150 counts separated the good containers from the bad. This application was a successful one for the TapTone 1000-C and is the recommended inspection system for the testing of HDPE bottles with induction foil seals. The system will remove defective containers from the production line with seal defects as small as .020 inch in diameter.



*Merit value is a calculated number determined using an algorithm to compute a resultant from a set of data values.

SUMMARY

The results indicate that the TapTone 1000 compression sensor can successfully be used to detect leaks in an HDPE plastic bottle.



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