



TapTone

APPLICATION NOTES

News and information from Teledyne TapTone, a leader in the package inspection industry.

PRESSURE INSPECTION IN AEROSOL CONTAINERS

Tested: Various size aerosol cans

Inspection Desired: Pressure Inspection. The purpose of the test was to prove the effectiveness of the TapTone T4000-Force system in detecting low pressure in aerosol cans. Manufacturers have used various methods for inspecting aerosol containers for pressure. When a liquid propellant is used such as (LPG) Liquefied Petroleum Gas or Di Methyl Ether, manufacturers have often used checkweighers to inspect for the presence of the liquid. As the industry moves to safer, non-petroleum based propellants, non-soluble and soluble compressed gasses are more commonly used. Because of the move from a liquid propellant to a gas, checkweighing is no longer an inspection option because the gas can not be weighed. By sensing the tension on the sidewall of the container once the product and propellant have been sealed inside container, the T4000 Force system will detect non-pressurized or under-pressurized regardless of the propellant used.

Tested with: TapTone T4000 Force System



▲ Product tested: various size aerosol cans under pressure.



▲ Aerosol can passing through TapTone 4000-F System.

TECHNOLOGY CORNER *HOW IT WORKS*

The TapTone T4000-F Force Sensor utilizes dual parallel belts to transport the container past a load cell that measures the tension on the sidewall of the container. This action allows the system to measure the pressure inside the container. 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.

T-4000-F Force Controller and Sensor with ▶ cantilevered design that suspends over the existing conveyor.



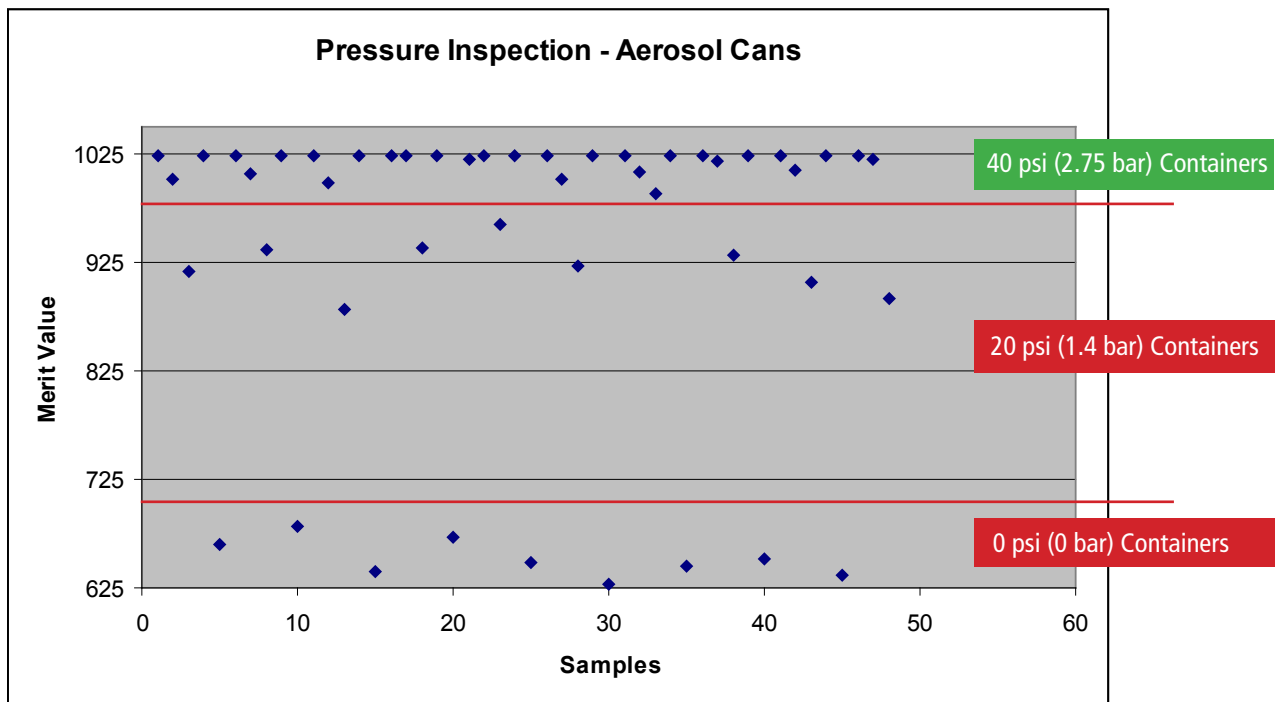
VACUUM INSPECTION TEST:

Forty sample cans were supplied, twenty samples with target pressure of approximately 40 psi (2.75 bar) and twenty samples with low pressure of approximately 20 psi (1.3 bar). Cans without pressure were then generated to develop a baseline for non-pressurized cans.

To establish a base line for target pressure containers, samples with 40 psi (2.75 bar) were tested multiple times to generate a base line value for target pressure containers. The average merit value reading for 40 psi (2.75 bar) pressurized containers was 995.

The low pressure containers with 20 psi (1.3 bar) were tested multiple times to develop a base line for the low pressure containers. The average merit value for a low pressure container was 867. This was 128 merit value less than the average 2.75 bar sample.

The containers with no pressure were tested multiple times to develop a base line for the non-pressurized containers. The containers with 0 bar internal pressure generated merit values consistently below 700 merit value.



The results indicate that the TapTone T4000-Force system is capable of detecting pressure variations in aerosol cans. Contact a TapTone inspection specialist for more information.



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