

Thermo Scientific Teorema Checkweigher for Opened and Closed Cans

The Thermo Scientific Teorema's no-moving parts design provides unparalleled speed and accuracy for today's demanding high rate canning lines. This patented solution meets the accuracy requirements of Europe's R-51 and the USA's Handbook-44 at line speeds up to 660 cans per minute. Coupled with the Thermo Scientific 9000+ controller, the Teorema represents the state-of-the-art in can checkweighing.



The Thermo Scientific Teorema checkweigher provides the new standard in high rate can weighing by combining rugged capability with style and accuracy.

Turnkey Approach

The standard Teorema is configured as a turnkey package. It is designed with side-to-side conveyor transfer capability at the in-feed and out-feed; photo-eyes to provide controlled feed of cans, via a can-stop; a feed-screw to properly space and accelerate cans; and a high rate reject mechanism.

A New Principle

Unlike conventional checkweighers, the Teorema loves speed. Accelerating cans under controlled conditions develop their own inertia. This inertia propels them across short weighing skates that are manufactured from proprietary custom steel, developed specifically for this purpose. This patented arrangement, with no moving parts around the precision weighing device, allows for no mechanical noise.

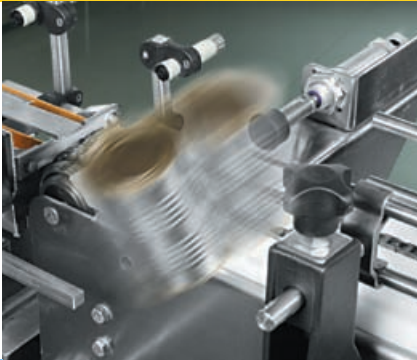
This results in accurate measurements in the order of ± 0.7 g, even at speeds in excess of 600 cans per minute. By comparison, conventional chain checkweighers, if able to run that fast, may achieve ± 3 g.

The Teorema can checkweigher delivers advanced capability for accuracy and speed in a reliable, easy to maintain package. The patented skate mechanism reduces the need for significant distance between cans to speed operation.

The Teorema's choke-fed, in-feed feed-screw ensures proper pitching of cans. Teamed with the combination of a state-of-the-art weighing device and sophisticated software capabilities with continuous auto-zero, this checkweigher ensures immunity from thermal drift and debris build up and condensation, even in the toughest environments. The open design and stainless steel construction facilitate high pressure cleaning. The electronics automatically monitor temperature and humidity to avoid heat and moisture concerns.

Features and Benefits

- Ensure integrity of thermal processing (retort).
- Gather statistical data to improve process efficiency and product quality.
- Ensure compliance with local weight control legislation.
- Ensure consumer satisfaction in both total contents and ratio of ingredients.



Thermo Scientific Teorema

Physical Specifications

Overall Length	3,465 mm less side-to-side overlap of: 900 mm = 2,565 mm
Line Heights	From 800 mm to 1,200 mm (32 in to 47 in) ± 50 mm (± 2 in)
Overall Width	1,080 mm (43 inches) at widest point (excluding controls cabinet)

Services Required

Operating Voltage	230V / 1 phase / 50hz or 220V / 1 phase / 60hz
Maximum Power	2 kW
Air Service Required	Pressure: 3 bar (45 psi); Volume: max 0.01 m ³ (0.04 ft ³) per reject action and 0.4m ³ /hr (0.3 cfm) for auto-lubrication if fitted

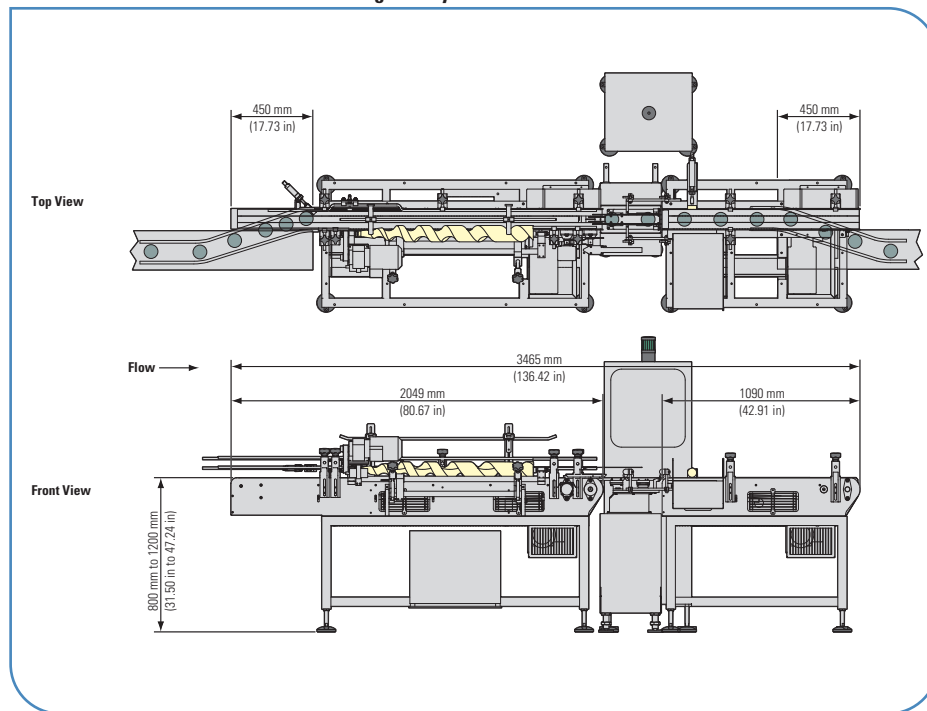
Can Specifications

<i>for sizes outside these limits, please ask your local Thermo Fisher office</i>	
Can Diameter	Minimum: 64 mm (US: 208); maximum: 99 mm (314)
Can Height	Minimum: 35 mm (US: 106); maximum: 180 mm (701)
Filled Weight	Minimum: 40 g (1.4 oz); maximum: 1.5 kg (53 oz)
Style	Metal, 2-piece or 3-piece
Closure	Open or closed (liquid and other content level must be carefully considered with open cans)

Accuracy Capability

<i>Examples in typical working environment, to ± 3 x standard deviation</i>			
64 mm (208) \varnothing	40 g (1.4 oz)	@ 660 cpm	$\geq \pm 0.5$ g
64 mm (208) \varnothing	40 g (1.4 oz)	@ 400 cpm	$\geq \pm 0.25$ g
84 mm (305) \varnothing	200 g (7.0 oz)	@ 600 cpm	$\geq \pm 0.6$ g
99 mm (314) \varnothing	500 g (17.8 oz)	@ 500 cpm	$\geq \pm 1.2$ g
99 mm (314) \varnothing	1.5 kg (3.3 lb)	@ 400 cpm	$\geq \pm 1.2$ g

Thermo Scientific Teorema Can Checkweigher Physical Dimensions



Optional Features

- Servo feedback to a filler
- Tare-gross operation
- 400 product recipe capacity
- Complete guarding of system to meet top levels of safety standards
- Ethernet connectivity
- Automatic lubrication
- Reject confirmation

All accuracies shown in this publication are a reflection of testing carried out by Thermo Fisher Scientific; the ability to repeat these in any given application is a function of environment, installation, vibration, setup, maintenance and other conditions beyond our control. As such we are unable to guarantee these exact results will be replicable in every application.

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