



BOTTLE GROUP TIPPING IMPACT TESTER

Bottle Group Tipping Impact Tester — ToronFT™ BG-TI

ToronFT™ BG-TI Bottle Group Tipping Impact Tester is a mechanical testing instrument designed for the tipping (dumping) impact qualification of fire extinguishing agent bottle group assemblies used in gas fire extinguishing systems. By applying a controlled horizontal force to the bottle group until it tips over without resistance and the container valve strikes the mild steel rod, the ToronFT™ BG-TI evaluates whether the bottle group assembly maintains structural and functional integrity — ensuring that all components remain secure, undamaged, and fully operational following a tipping impact event.

The bottle group tipping impact tester accommodates standard fire extinguishing agent bottle groups on its workbench, secured with clamps and steel pads, and performs the complete tipping test sequence followed by air tightness verification and functional container valve opening tests — providing a comprehensive, end-to-end tipping impact qualification in a single instrument platform.

APPLICATIONS

Bottle Group Tipping Impact Tester — ToronFT™ BG-TI Applications

- Gas fire extinguishing system manufacturers: tipping impact qualification of fire extinguishing agent bottle group assemblies
- Third-party certification and listing laboratories: bottle group tipping test per ISO 14520 and related international standards
- Quality assurance departments: production-line and batch sampling tipping impact verification for bottle group assemblies
- R&D departments: evaluation of new bottle group mounting systems, clamp designs, and anti-tip structural configurations

- Regulatory compliance testing: mechanical durability qualification for gas fire suppression system certification programs



FEATURES

Bottle Group Tipping Impact Tester — ToronFT™ BG-TI Key Features

- Designed for tipping impact qualification of all types of fire extinguishing agent bottle groups used in gas fire extinguishing systems
- Machine dimensions: 2300 mm (L) × 700 mm (W) × 1400 mm (H) — accommodating standard commercial bottle group assemblies
- Low carbon steel rod: 50 mm diameter × 350 mm length — standardized impact target per test protocol
- Rigid pad: useful steel column construction, pad height at 10° angle — ensuring correct impact geometry
- Angle ruler: calibration angle of 10° measured before each test — reproducible, standard-compliant tipping geometry
- Complete post-test qualification sequence: visual inspection → air tightness test → automatic container valve opening test → manual container valve opening test
- Acceptance criteria: no loose, fallen-off, or damaged parts; no air leakage; automatic and manual container valves open normally
- Workbench with clamps and steel pads for secure, repeatable bottle group mounting

THEORY & METHOD

Theory and Method

The tipping impact test evaluates the structural and functional integrity of a fire extinguishing agent bottle group assembly following a controlled tipping event. The bottle group is secured to the test workbench with clamps and steel pads, and a horizontal force F is slowly applied to the container, causing the bottle group to tip over without resistance until the container valve strikes the mild steel rod. This impact simulates an accidental tipping event in storage, transportation, or

installation.

Following the tipping event, all parts of the bottle group assembly are inspected to confirm that no components are loose, fallen off, or damaged. The bottle group is then subjected to an air tightness test to confirm that no leakage has occurred as a result of the impact, and both the automatic and manual start container valves are actuated to verify that they open normally. Before testing, the angle ruler is used to measure and confirm the 10° calibration angle to which the bottle group should be poured — ensuring consistent, reproducible tipping geometry across all test events.

TECHNICAL SPECIFICATIONS

Bottle Group Tipping Impact Tester — ToronFT™ BG-TI Technical Specifications

Parameter	Specification
Model	ToronFT™ BG-TI
Machine Dimensions (L×W×H)	2300 mm × 700 mm × 1400 mm
Low Carbon Steel Rod	Diameter 50 mm, Length 350 mm
Rigid Pad Construction	Useful steel column; pad height at 10° angle
Calibration Angle	10° (measured by angle ruler before test)
Post-Test Sequence	Visual inspection → air tightness test → auto valve opening test → manual valve opening test
Applicable Assemblies	All types of fire extinguishing agent bottle groups



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