

FIRE EXTINGUISHER HYDROSTATIC AND BURST TESTER



Fire Extinguisher Hydrostatic and Burst Tester — ToronFT™ FE-HS

ToronFT™ FE-HS is a high-performance hydraulic strength comprehensive tester engineered for pressure testing and burst/explosion testing of a broad range of portable fire extinguishers. The system accommodates water-based, dry powder, carbon dioxide, and clean-agent fire extinguisher cylinders, delivering rigorous hydrostatic verification required by product certification standards in North America and globally.

Equipped with a precision programmable controller, inverter-driven pressure modulation, and a wide working pressure range of up to 15 MPa, the ToronFT™ FE-HS provides test engineers with the throughput and accuracy needed for production line quality assurance, type approval testing, and in-service inspection of fire extinguisher pressure vessels. Its all-in-one design covers both deformation tests and explosion (burst) tests within a single compact enclosure, reducing lab footprint and capital expenditure.

APPLICATIONS

Fire Extinguisher Hydrostatic and Burst Tester — ToronFT™ FE-HS

Applications

- Hydraulic pressure testing of portable water-based fire extinguisher cylinders during production and type approval
- Hydrostatic strength verification for dry powder fire extinguisher vessels
- Pressure testing of carbon dioxide (CO₂) fire extinguisher cylinders
- Burst and explosion testing of clean-agent fire extinguisher bodies
- Deformation testing of simple fire extinguishers that are freely movable and have a fire-suppressing agent fill capacity of less than 1,000 mL (or g)
- Production line quality-control screening at fire extinguisher manufacturing facilities
- Third-party laboratory certification testing and periodic in-service pressure re-qualification



FEATURES

Fire Extinguisher Hydrostatic and Burst Tester — ToronFT™ FE-HS Key Features

- Wide pressure control range of 0–15 MPa covers the full spectrum of portable fire extinguisher test requirements
- High-pressure pump with maximum output of 0–15 MPa and high-pressure water output of 16 L/min for efficient vessel filling
- Inverter-driven frequency modulation (0–50 Hz) for smooth, stepless pressure ramp control
- Current-transmitter pressure sensing with accuracy of 0.25% F.S. and resolution of 0.1 MPa
- Rapid pressure collection interval of less than 100 ms for real-time monitoring during dynamic tests
- Integrated voltage-stabilizing device rated to 15 MPa for consistent power delivery
- Dedicated explosion (burst) test station supporting fire extinguisher specimens up to 12 kg
- Covers deformation and explosion testing for simple, movable extinguishers with agent capacity under 1,000 mL/g
- Suitable for water-based, dry powder, CO₂, and clean-agent fire extinguisher cylinder types
- Compact all-in-one enclosure reduces laboratory footprint while enabling comprehensive testing

THEORY & METHOD

Theory and Method

Hydraulic strength testing subjects a fire extinguisher cylinder to controlled internal water pressure significantly above its rated working pressure. The ToronFT™ FE-HS uses an inverter-driven pump to ramp pressure at a controlled, programmable rate. Pressure is applied to the sealed extinguisher body and held for a defined dwell period. Instrumentation continuously

monitors and logs internal pressure, and the sensing system — based on current-transmitter technology — provides high-accuracy readings throughout each test cycle.

For deformation tests, the volume of water injected into the vessel is measured before and after pressurization to calculate permanent volumetric expansion, confirming that the cylinder wall has not yielded beyond permissible limits. For explosion/burst tests, pressure is raised incrementally until specimen failure, establishing the actual burst pressure. A dedicated explosion test station accommodates one-station testing of fire extinguisher test samples up to 12 kg, ensuring operator safety through full enclosure containment. All data — pressure ramp rates, peak pressure, dwell time, and volumetric measurements — are collected automatically, supporting traceable test records required for certification.

TECHNICAL SPECIFICATIONS

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Technical Specifications

Parameter	Specification
Pressure Control Range	0 - 15 MPa
High-Pressure Pump Maximum Pressure	0 - 15 MPa
High-Pressure Water Output	16 L/min
Pressure Sensing Method	Current transmitter
Sensing Accuracy	0.25% F.S.
Pressure Resolution	0.1 MPa
Pressure Collection Interval	< 100 ms
Voltage Stabilizing Device Rating	15 MPa

Parameter	Specification
Inverter Frequency Modulation Range	0 - 50 Hz
Explosion Test Station Capacity	Fire extinguisher specimens $\leq$ 12 kg
Applicable Extinguisher Types	Portable water-based, dry powder, CO ₂ , and clean-agent fire extinguishers
Deformation Test Applicability	Freely movable simple extinguishers with agent fill capacity < 1,000 mL (or g)



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