TORONTECH

HYDRAULIC STRENGTH COMPREHENSIVE TESTER

Hydraulic Strength Comprehensive Tester — ToronFT™ HSC

ToronFT™ HSC Hydraulic Strength Comprehensive Tester is a high-pressure hydraulic testing platform engineered for the hydraulic strength qualification of a broad spectrum of gas fire extinguishing systems, components, and related fire suppression equipment. With a maximum working pressure of 23.2 MPa and a high-pressure pump range extending to 100 MPa, the ToronFT™ HSC delivers the pressure capacity and precision control required to test the most demanding gas fire extinguishing system components to their rated burst and strength limits.

The hydraulic strength comprehensive tester is also capable of functioning as a hydraulic pressure source for a wide range of ancillary performance tests, providing a versatile, centralized hydraulic infrastructure for laboratories evaluating carbon dioxide, heptafluoropropane (HFC-227ea), trifluoromethane (HFC-23), inert gas (IG01, IG100, IG55, IG541), and cabinet gas fire extinguishing systems — as well as fixed fire extinguishing system drives and internal storage pressure systems.

APPLICATIONS

Hydraulic Strength Comprehensive Tester — ToronFT™ HSC Applications

- Gas fire extinguishing system manufacturers: hydraulic strength qualification of CO_2, HFC-227ea, HFC-23, IG01, IG100, IG55, IG541, and cabinet gas system components
- Third-party certification and listing laboratories: hydrostatic strength testing per ISO 14520, UL 2166, and related international standards
- Fixed fire extinguishing system drive manufacturers: hydraulic strength testing of drive cylinders, valves, and actuators
- Internal storage pressure system manufacturers: hydraulic strength qualification of pressure vessels and fittings
- Multi-test laboratories: centralized hydraulic pressure source for downstream performance tester


TORONTECH
Pressure Regulator
Pressure Gauge

Standards

The ToronFT™ HSC supports hydraulic strength testing in compliance with internationally recognized fire protection and gas suppression standards, including:

- ISO 14520-1: Gaseous fire-extinguishing systems — Physical properties and system design — General requirements
- ISO 14520-9:Gaseous fire-extinguishing systems — HFC 227ea systems
- NFPA 12: Standard on carbon dioxide extinguishing systems
- NFPA 2001: Standard on clean agent fire extinguishing systems
- UL 2166: Standard for halocarbon clean agent extinguishing system units
- EN 15004-1: Fixed firefighting systems — Gas extinguishing systems — Design, installation, and maintenance

FEATURES

Hydraulic Strength Comprehensive Tester — ToronFT™ HSC Key Features

- Broad system coverage: CO_2, HFC-227ea (heptafluoropropane), HFC-23 (trifluoromethane), IG01, IG100, IG55, IG541, cabinet gas, fixed system drives, and internal storage pressure systems — all testable on one platform
- Maximum working pressure: 23.2 MPa — covering the highest rated working pressures in commercial gas fire suppression systems
- High-pressure pump range: 0–100 MPa — providing substantial strength test margin above maximum working pressure
- Controlled pressure increase rate: 10–50 MPa/min — protecting components from shock loading during pressurization
- Pressure hold time: 0–99.99 min (settable) — accommodating standard-specified hold durations for any component type
- Test medium: water — safe, high-incompressibility hydraulic medium eliminating stored energy hazards of gas testing
- Equipped with different product interfaces — enabling testing of diverse component types without instrument modification

- Control mode: automatic control plus manual button control — precise, safe operation across the full pressure range
- Also functions as a hydraulic pressure source for other ancillary performance tester

THEORY & METHOD

Theory and Method

Hydraulic strength testing subjects gas fire extinguishing system components — cylinders, valves, fittings, and pipelines — to pressurized water at levels significantly exceeding the maximum working pressure, verifying that the component has adequate structural strength and will not fail or deform under over-pressure conditions. Water is used as the test medium instead of compressed gas to eliminate the stored energy hazard associated with high-pressure gas testing.

The ToronFT™ HSC applies pressure from the high-pressure pump (0–100 MPa) at a controlled increase rate of 10–50 MPa/min to avoid shock loading. The pressure is raised to the specified test pressure and held for the required duration while the component is inspected for leakage, deformation, or structural failure. The automatic control plus manual button control mode ensures precise, safe operation across the full pressure range. Interchangeable product-specific interfaces allow the same instrument to be used across multiple component types without modification.

TECHNICAL SPECIFICATIONS

Hydraulic Strength Comprehensive Tester — ToronFT™ HSC Technical Specifications

Parameter	Specification
Model	ToronFT™ HSC

Parameter	Specification
Maximum Working Pressure	23.2 MPa
High-Pressure Pump Range	0 – 100 MPa
Pressure Increasing Rate	10 – 50 MPa/min
Pressure Hold Time	0 – 99.99 min (settable)
Test Medium	Water
Product Interfaces	Multiple (interchangeable for different component types)
Control Mode	Automatic control + manual button control

TORONTECH.com

TORONTECH

Torontech Inc.
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com

USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia