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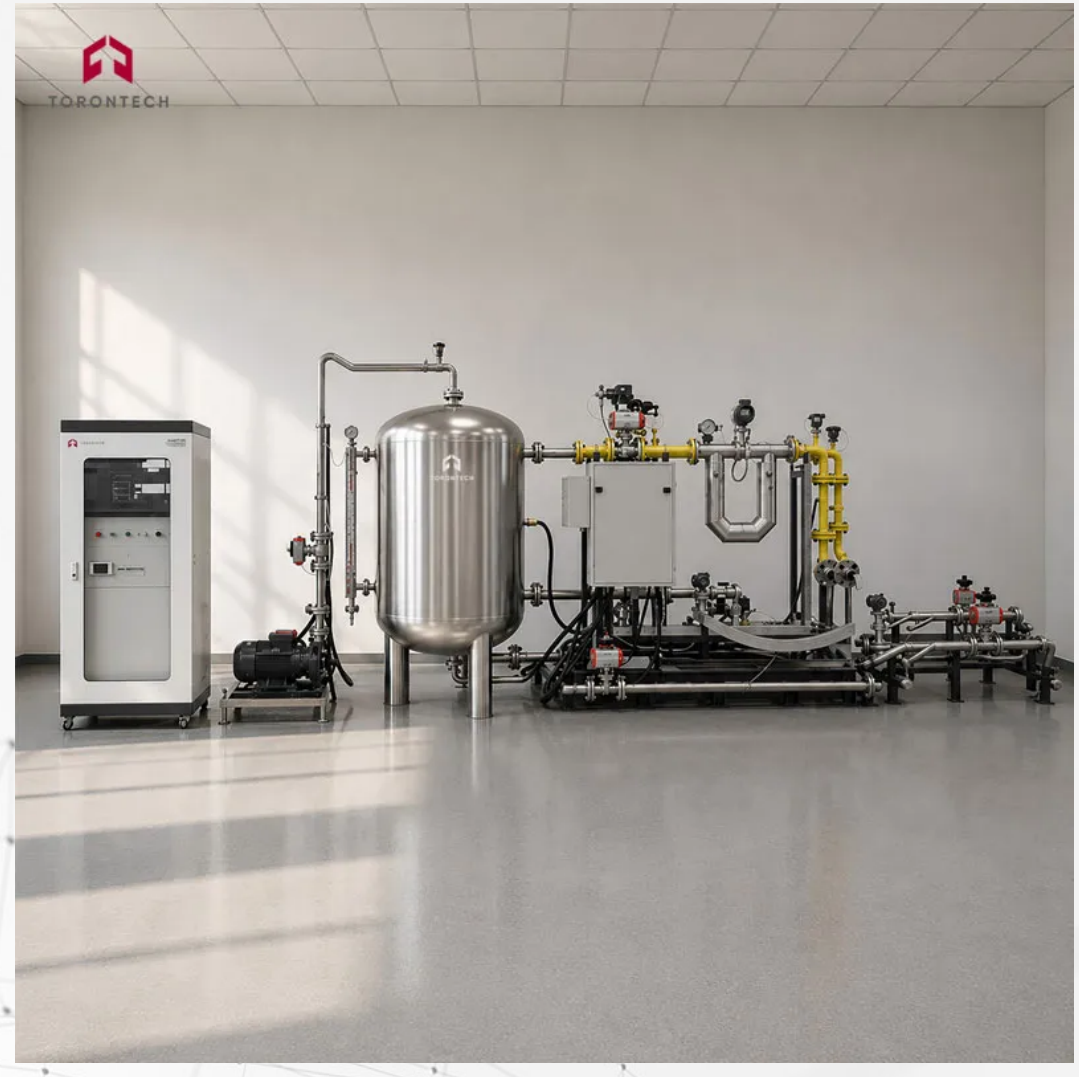


ELECTRIC MOTOR FIRE PUMP TEST BENCH

Electric Motor Fire Pump Test Bench — ToronFT™ EMF

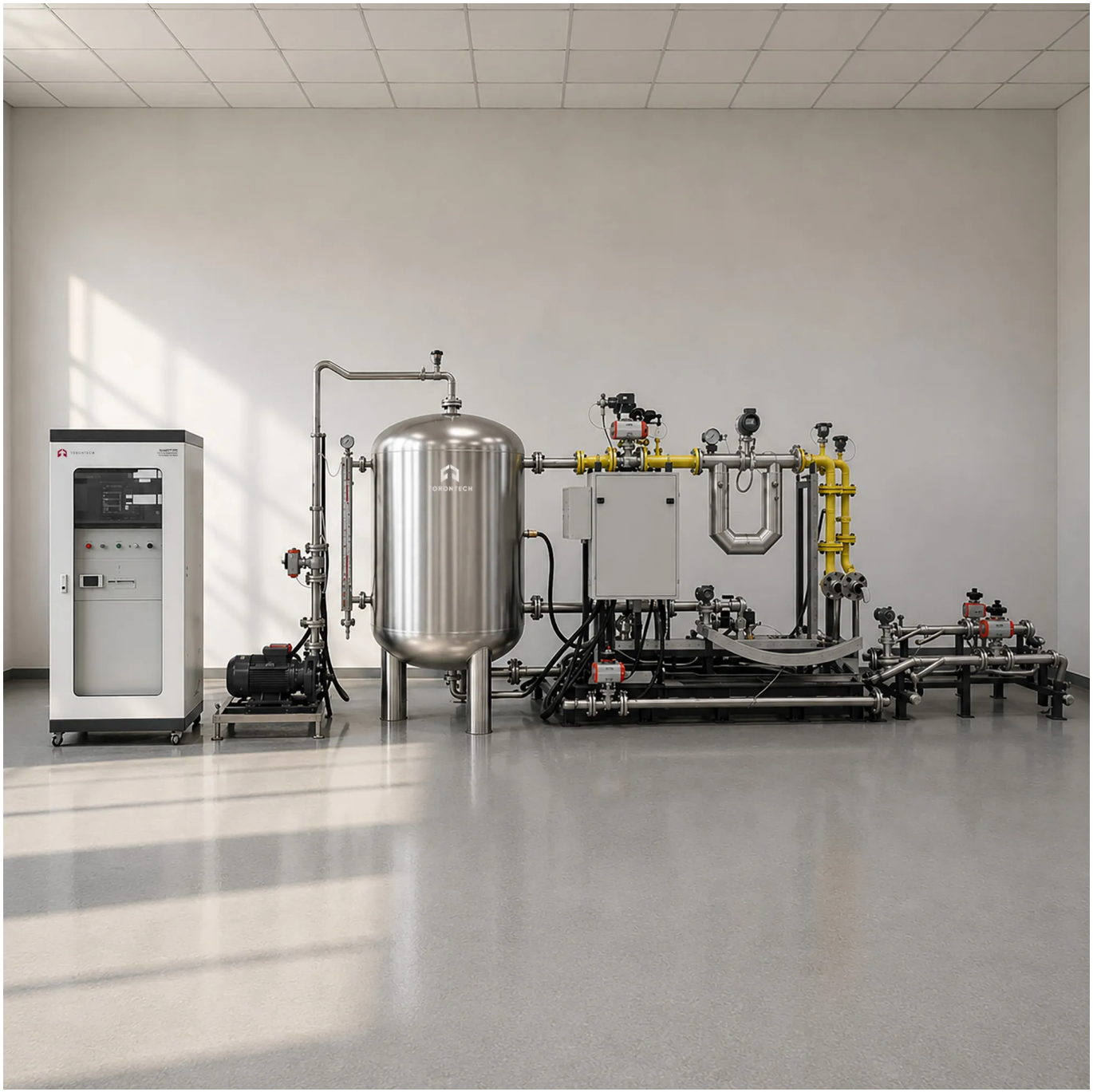
The ToronFT™ EMF Electric Motor Fire Pump Test Bench is a high-capacity hydraulic test system engineered for the complete performance qualification of electric motor-driven fire pumps. Designed to accommodate fire pumps from DN25 to DN250, the ToronFT™ EMF delivers the flow rate, pressure range, and measurement capability required to execute the full suite of fire pump qualification tests — including flow and pressure performance mapping, sealing testing, hydrostatic strength testing, continuous operation testing, and coupling starting cycle testing — all from a single integrated platform.

The fire pump comprehensive performance test bench integrates a water storage tank, high-pressure and low-pressure pump infrastructure, precision measuring instruments, and a computer-integrated control cabinet to provide automated, traceable test data for fire pump certification and quality assurance programs across a broad range of pump sizes and performance classes.

APPLICATIONS

Electric Motor Fire Pump Test Bench — ToronFT™ EMF Applications

- Fire pump manufacturers: comprehensive flow, pressure, efficiency, sealing, and endurance qualification testing
- Third-party certification and listing laboratories: fire pump performance testing for UL, FM, and NFPA compliance certification
- Building services and fire protection engineering: commissioning and acceptance testing of fire pump systems
- Quality assurance departments: production lot sampling and incoming inspection for fire pump performance verification
- Maintenance and inspection organizations: periodic re-qualification and condition assessment of in-service fire pumps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FEATURES

Electric Motor Fire Pump Test Bench — ToronFT™ EMF Key Features

- Comprehensive test capability: flow/pressure performance mapping, sealing test, hydrostatic strength test, continuous operation test, and coupling starting cycle test — all in one platform
- Applicable fire pump sizes: DN25 to DN250 — covering the full range of commercial fire pump nominal diameters
- Compatible with clean water, foam fire extinguishing agent, and foam solution fire pumps
- Main configuration: water storage tank, high-pressure pipeline, high and low pressure pumps, measuring instruments, and computer-integrated control cabinet
- Test medium: water
- Low-pressure pump: 0–0.7 MPa, 100 m^3/H flow rate — high-volume supply for flow performance testing
- System pressure range: 0–4.0 MPa — covering standard and elevated pressure fire pump test requirements
- High-pressure pump: 0.5–4.5 MPa, 12.5 m^3/H flow rate — for sealing and hydrostatic strength testing
- Computer-integrated control cabinet for automated test management, real-time data acquisition, and performance curve generation
- Measures: flow rate, pressure, rotational speed, shaft power, and pump efficiency

THEORY & METHOD

Theory and Method

Fire pump performance testing measures the hydraulic output (flow rate and pressure), shaft power, and pump efficiency across the full operating range of the pump — from shut-off (zero flow) through rated flow to maximum flow — to generate a complete pump performance curve. The ToronFT™ EMF delivers controlled water flow from the low-pressure pump (0–0.7

MPa, 100 m³/H) through the test pump, while the high-pressure pump (0.5–4.5 MPa, 12.5 m³/H) provides the elevated pressure conditions required for hydrostatic strength and sealing tests.

The computer-integrated control cabinet manages test sequencing, acquires flow, pressure, speed, and power data from the measuring instruments, and calculates pump efficiency in real time. Continuous operation and coupling starting cycle tests evaluate the pump's mechanical endurance under repeated start-stop and sustained operating conditions, providing the data required for certification and long-term reliability qualification.

TECHNICAL SPECIFICATIONS

Electric Motor Fire Pump Test Bench — ToronFT™ EMF Technical Specifications

Parameter	Specification
Model	ToronFT™ EMF
Applicable Pump Sizes	DN25 – DN250 fire pumps
Compatible Fluids	Clean water, foam fire extinguishing agent, foam solution
Test Types	Flow/pressure performance, sealing, hydrostatic strength, continuous operation, coupling starting cycle
Main Configuration	Water storage tank, high/low pressure pumps, measuring instruments, computer-integrated control cabinet
Test Medium	Water
Low-Pressure Pump Range	0 – 0.7 MPa
Low-Pressure Pump Flow Rate	100 m³/H
System Pressure Range	0 – 4.0 MPa

Parameter	Specification
High-Pressure Pump Range	0.5 – 4.5 MPa
High-Pressure Pump Flow Rate	12.5 m^3/H
Measured Parameters	Flow rate, pressure, speed, shaft power, pump efficiency

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