

FIRE COUPLING FORCE AND TORQUE METER



Fire Coupling Force and Torque Meter - ToronFT™ FC-OFT

ToronFT™ FC-OFT Fire Coupling Force and Torque Meter is a precision measurement instrument designed for the quantitative evaluation of the mechanical engagement performance of indoor fire hydrant couplings.

The system simultaneously measures the operating torque required to engage or disengage internal buckle-type fire couplings and the axial force required to engage card-type fire couplings. Compact and portable in design, this apparatus is an essential tool for fire equipment inspection authorities, maintenance departments, and manufacturers to verify that coupling engagement forces remain within safe and operable limits.

APPLICATIONS

Fire Coupling Force and Torque Meter - ToronFT™ FC-OFT Applications

The ToronFT™ FC-OFT is used for:

- Measuring operating torque of internal buckle-type fire hose couplings
- Measuring card force value of card-type fire couplings
- In-service inspection of indoor fire hydrant coupling performance
- Acceptance testing and quality control of newly manufactured fire couplings
- Maintenance and periodic inspection programs for fire protection systems



FEATURES

Fire Coupling Force and Torque Meter - ToronFT™ FC-OFT Key Features

- Dual-function measurement: both operating torque and card force value detectable in a single instrument
- Internal buckle fire coupling torque measurement range: 0.3–6 N·m
- Measurement accuracy: ± 1 N·m
- Compact and portable design for on-site inspection and laboratory use
- Digital readout for immediate results
- Suitable for acceptance testing and routine maintenance inspection of fire coupling assemblies

THEORY & METHOD

Theory and Method

The apparatus measures two distinct parameters. For internal buckle coupling torque measurement, the instrument applies a rotational force via a calibrated torque sensor to the coupling's operating mechanism. The torque required to complete one full engagement or disengagement cycle is recorded in Newton-meters (N·m).

For card-type coupling force measurement, the instrument applies a controlled axial force through a linear load cell to determine the engagement and disengagement force in Newtons. Both measurement channels use high-sensitivity strain gauge-based transducers to achieve precise and repeatable readings. Digital display of results enables immediate comparison against acceptance criteria specified in fire safety regulations.

TECHNICAL SPECIFICATIONS

Fire Coupling Force and Torque Meter - ToronFT™ FC-OFTTechnical Specifications

Parameter	Specification
Model	ToronFT™ FC-OFT
Test Items	Internal buckle fire coupling operating torque; card fire coupling force value
Torque Measurement Range	0.3-6 N·m
Measurement Accuracy	±1 N·m
Applicable Coupling Types	Internal buckle type, card type



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