



TORONTECH



SEAL STRENGTH TESTER

Seal Strength Tester - ToronSST™ IP

Burst, Creep, and Seal Strength Tester for Flexible Packaging

The ToronSST™ IP is a package seal strength tester that measures the burst strength, creep, and seal strength of flexible packages by internal pressurization. The instrument inflates a pouch or tray with air and raises the internal pressure until the seals fail, giving the burst strength. It supports testing with and without restraining plates, so the result can reflect seal strength or unrestrained burst behavior.

The ToronSST™ IP runs burst, standard creep, and creep-to-burst tests, and an optional open-package mode extends its range. A pressure range of 0.5 to 800 kPa covers most flexible packages, with a 4 to 1600 kPa option for higher-strength packs. High-speed sampling captures the burst point accurately, and over-pressure protection guards the instrument.

A touchscreen sets the test, and the embedded system supports remote maintenance and upgrades. The ToronSST™ IP (Burst, Creep, and Seal Strength Tester) suits medical and sterile-barrier pouches, food pouches and trays, and pharmaceutical packaging, where seal integrity protects the product. Optional fixtures add bottle-cap and hose testing.

APPLICATIONS

Seal Strength Tester - ToronSST™ IP Applications

The ToronSST™ IP measures package and seal integrity wherever a sealed package must hold pressure and protect its contents.

- **Medical and Sterile Barrier Pouches:** verifies the seal integrity of sterile medical pouches to support ISO 11607 packaging requirements.

- **Food Pouches and Trays:** measures burst and seal strength of food pouches, retort packs, and foil-sealed trays.
- **Pharmaceutical Packaging:** checks the seal strength of drug pouches and sachets.
- **Flexible Package Development:** sets and validates seal parameters during package design.
- **Package Integrity and Leak Screening:** screens nonporous pouches and trays for gross leaks by pressure behavior.
- **Creep and Shelf-Life Studies:** holds packages under pressure to check seal durability over time.
- **Restrained Seal Strength:** uses restraining plates to measure seal strength per ASTM F2054.
- **Quality Control and Incoming Inspection:** verifies package and seal performance in production QC.



Standards

The ToronSST™ IP is designed to align with internationally recognized standards for package burst, creep, and seal strength testing by internal pressurization.

- ASTM F1140 - Standard Test Methods for Internal Pressurization Failure Resistance of Unrestrained Packages
- ASTM F2054 - Standard Test Method for Burst Testing of Flexible Package Seals Using Internal Air Pressurization Within Restraining Plates
- ASTM F2095 - Standard Test Methods for Pressure Decay Leak Test for Flexible Packages With and Without Restraining Plates
- ISO 11607-1 - Packaging for Terminally Sterilized Medical Devices: Part 1: Requirements for Materials, Sterile Barrier Systems, and Packaging Systems
- ISO 11607-2 - Packaging for Terminally Sterilized Medical Devices: Part 2: Validation Requirements for Forming, Sealing, and Assembly Processes

FEATURES

Seal Strength Tester - ToronSST™ IP Key Features

The ToronSST™ IP measures package burst, creep, and seal strength by internal pressurization with touchscreen control.

- **Burst, Creep, and Creep-to-Burst:** runs all three package-integrity tests on one instrument.
- **Internal Pressurization Method:** inflates the package with air and reads the pressure at which the seals fail.
- **Restrained and Unrestrained Testing:** tests with restraining plates for seal strength or without them for unrestrained burst.
- **Optional Open-Package Testing:** an optional mode tests open packages in addition to sealed ones.
- **Wide Pressure Range:** a 0.5 to 800 kPa standard range, with a 4 to 1600 kPa option for higher-strength packages.

- **High-Speed Sampling:** fast pressure sampling captures the burst point accurately.
- **Touchscreen Operation:** a color TFT touchscreen sets the test and shows results.
- **Over-Pressure Protection:** built-in protection guards the instrument during testing.
- **Remote Maintenance:** the embedded system supports remote maintenance and firmware upgrades.
- **Multiple Package Fixtures:** optional bottle-cap and hose fixtures extend the instrument to other package types.
- **Low Power Consumption:** the instrument runs on a standard single-phase supply.
- **RS232 Communication:** a serial port connects the instrument to a PC.
- **Laboratory Data Management Integration:** optional lab data management software centralizes test records.

THEORY & METHOD

Theory and Method

Package burst and seal strength testing measures how well a sealed package holds up under internal pressure. The instrument inflates the package with air through a probe, raising the internal pressure at a controlled rate. As the pressure climbs, it loads the seals around the package perimeter until the weakest point gives way.

The burst test raises pressure until the package fails, and the peak pressure is the burst strength. Restraining plates can be placed on either side of the package to limit how much it balloons, so the seal, rather than the film, governs the result and the reading reflects seal strength more directly. Removing the plates gives the unrestrained burst behavior.

A creep test holds the package at a set pressure for a set time to check whether the seals hold, while a creep-to-burst test holds a pressure until failure. High-speed pressure sampling captures the burst point accurately. Together these tests show how a package and its seals perform against the pressures of shipping, handling, and altitude.

TECHNICAL SPECIFICATIONS

Seal Strength Tester - ToronSST™ IP Technical Specifications

Parameter	Specification
Test Range (Standard)	0.5 to 800 kPa (accuracy 0.3% FS)
Test Range (Optional)	4 to 1600 kPa (accuracy 0.5% FS)
Gas Source	0.4 MPa to 0.7 MPa (user-supplied)
Main Unit Dimensions	345 mm (L) × 410 mm (W) × 170 mm (H)
Package Fixture Size	300 mm (L) × 350 mm (W) × 330 mm (H)
Voltage	AC 220 V, 50 Hz (110V is also available)
Net Weight	25 kg

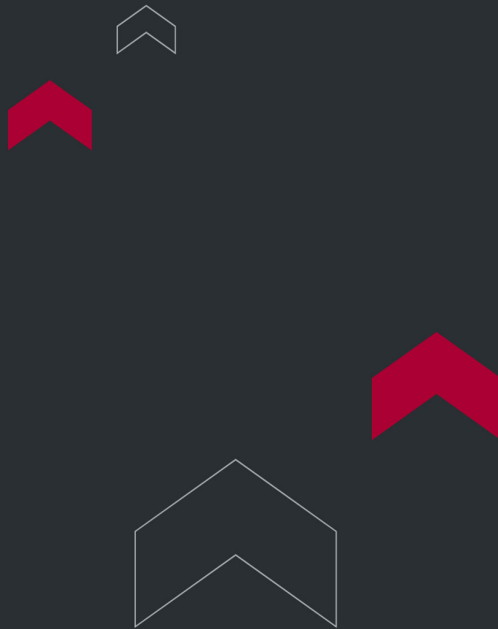
Standard Delivery

Item	Description
Main Unit	Internal-pressurization package seal strength instrument
Package Test Fixture	Standard fixture for burst and seal testing

Optional Accessories

Item	Description
Open Package Test Fixture	Fixture for open-package testing
Restraining Plates	Plates that limit package expansion for restrained seal-strength testing
Bottle Cap Test Fixture	Fixture for testing bottle and cap assemblies

Item	Description
Hose Test Fixture	Fixture for testing hoses and tubing
Laboratory Data Management System	Centralized data management and reporting software



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