C610G Auto Tensile Tester

C610G Auto Tensile Tester is suitable for testing the tensile strength, peeling, elongation, tearing, heat sealing, adhesion, puncture force, opening force, low-speed unwinding force, and pull-out force of products including plastic films, composite materials, flexible packaging materials, plastic pipes, adhesives, adhesive tapes, self-adhesive labels, medical patches, release paper, protective films, combined aluminum/plastic caps, metal foils, diaphragms, backsheet materials, non-woven fabrics, rubber and paper, etc.

Product Features Note 1

Precise and Efficient

- Utilizing Labthink's latest technological achievement—Multi-axis Positioning Technology—six stations operate simultaneously for more efficient testing.
- 16-bit ADC digital conversion chip realizes force accuracy better than 0.5 grade. Multiple ranges accommodate diverse testing needs.
- Closed-loop servo system achieves displacement accuracy better than 0.5 grade. Stepless speed regulation ensures smooth operation.
- Anti-slip pneumatic clamping system ensures accurate test data.
- Components of world-renowned brands are used for long-term durability.

Powerful Functionality

- Testing items covers professional testing items for flexible packaging materials, including tensile strength, peeling, tearing, heat sealing and elongation-to-tension testing, etc.
- Grip spacing can be automatically adjusted, and testing speed can be set flexibly.
- Intelligent features such as limit protection, overload protection, and automatic return ensure safe operation.

Intelligent Control

- The tester supports operations with a 15.6" industrial touchscreen computer or desktop computer.
- Round desktop design saves space.
- Rotating test platform is easier for operation.
- Multiple sensors for intelligent alerts ensure safer operation.

- Built-in Ethernet port for direct network connection, supporting remote control and system upgrades.
- Professional computer software meets GMP data traceability requirements and pharmaceutical industry compliance needs.
- Multi-level operation permission management, configurable on demand.
- Electronic signature designed in accordance with 21 CFR Part 11.

Test Principle

The specimen is clamped on the grips between the center crossbeam and the base. The center crossbeam and base move relative to each other. A load cell located on the center crossbeam and a displacement sensor built into the tester collect force and displacement changes during testing, allowing calculation of various mechanical performance indicators.

Reference Standards

ISO 37, ASTM E4, ASTM D882, ASTM D1938, ASTM F88, ASTM F904, JIS P8113
GB 8808, GB/T 1040.1-2006, GB/T 1040.2-2006, GB/T 1040.3-2006, GB/T 1040.4-2006, GB/T 1040.5-2008, GB/T 4850-2002, GB/T 12914-2008, GB/T 17200, GB/T 16578.1-2008, GB/T 7122, GB/T 2790, GB/T 2791, GB/T 2792, GB 14232.1-2004, GB 15811-2001, GB/T 1962.1-2001, GB 2637-1995, GB 15810-2001, QB/T 2358, QB/T 1130
YBB00042005, YBB00112004

Applications

The C610 series of Auto Tensile Testers offer a wide range of applications, with over 100 different specimen grips available for users to choose from, satisfying the testing requirements of over 1,000 materials. Labthink also provides customization service to meet diverse testing needs for different materials.

Examples of some applications are as follows:

Basic Applications	**Extended Applications (are to be realized with specific accessories or customization)**			
Tensile Strength and Elongation Rate	Ampoule Breaking Force	Film Puncture Force	Puncture Force of IV Bag Caps with Bags	Puncture/pull-out Force of Soft Rubber Stoppers
Tensile Strength at Break	Opening Force of Combined Aluminum/plastic	Tearing Force of ZD-type Caps	Opening Force of Oral Liquid Caps	Puncture/pull-out Force of Oral Liquid Caps

	Caps			
Heatseal Strength	90-degree Pull-out Force of IV Bag Caps	Pull-out Force of IV Bag Caps with Bags	23-degree Pull-out Force of Bottle Caps	Puncture/pull-out Force of Bottle Caps and Rubber Stoppers with Bottles
Tear Resistance	90-degree Peeling Force of Adhesive Tapes	Tear Resistance of Adhesive Binding Books	90-degree Peeling Force of Water Insoluble Plasters	Tearing Force of Adhesives
180-degree Peeling	Adhesive Strength Test (Soft)	Adhesive Strength Test (Hard)	Peeling Force of Flexible Tube Caps	Disengagement Force of Catheter and Connector
90-degree Peeling	Pull-out Force of Cosmetic Brush Hair	Pull-out Force of Toothbrush Hair	Breaking Force of Ropes	Opening Force of Jelly Cups and Yogurt Cups
Tensile Strength at Defined Elongation	Peeling Force of Milk Cup Films	Pull-out Force of Rubber Stoppers	45-degree Peeling Force of Bottle Films	Tensile Strength of Ziplock Bag Mouths
	Peeling Force of Magnetic Card Cores	90-degree Peeling Force of Magnetic Cards	Tearing Force of Heat Sealing Films	Separating Force of Protection Films
	Separating Force of Release Paper	Trouser-type Tearing Force	Unwinding Force of Adhesive Tapes	Pressure Resistance of Plastic Bottles
	20-degree Bevel Peeling Force	135-degree Peeling Force of Plugs	Floating Roller Peeling Grips	Eccentric Grips
	Grips for Wide Specimens	Japanese-style Sample Grips	British-style Sample Grips	Breaking Force of Contact Lens
	Pressure Resistance of Jelly Cups	Compression Resistance of Packages	Compression Resistance of Sponge	Puncture Resistance of Simulated Skin

Technical Parameters

Table 1: Test Parameters [Note 2]

Parameter/Model		C610G
Loadcell Specification	**N**	500
		50, 100, 250 (optional)
Resolution	**N**	0.001
Accuracy	**N**	±0.5% of indication (2%FS~100%FS)
		±0.01%FS (0%FS~ 2%FS)
Test Speed	**mm/min**	0~500 (can be set as any integer)

Speed Accuracy	**mm/min**	Indication ± 0.5%
Extended Functions	**21 CFR Part11**	Optional
	GMP computer system requirements	Optional

Table 2: Technical Specifications

Number of Test Stations	6
Speicimen Width	≤ 30 mm
Specimen Thickness	≤ 3mm
Clamping Method	Pneumatic
Gas Specifications	Compressed air (gas source is to be prepared by the user)
Gas Source Pressure	≥ 72.5 PSI / 500 kPa
Port Size	Φ 4 mm polyurethane tube
Dimensions	66.1” H x 22.8” W x 22.8”D (168cm× 58cm×58cm)
Power	120VAC±10% 60Hz / 220VAC±10% 50Hz (select one from the two)
Net Weight	440Lbs (200kg)

Table 3: Product Configuration

Standard Configuration	Instrument, Software, Loadcells (6 pieces), Pneumatic Grips (12 sets), Φ4mm Polyurethane Tube
Optionals	Industrial Touch Computer, PC, GMP Computer Systems Requirements, 21 CFR Part11, Printers Air Compressor, Sample Cutter, Test Plate, Standard Roller

Note 1: The product features mentioned above are subject to the specific annotation in the "Technical Parameters" table.

Note 2: The parameters in the tables are measured by professional operators in Labthink laboratory according to the requirements and conditions of relevant laboratory environmental standards.

✧ Labthink is committed to the innovation and improvement of product performance and functions. For this reason, the technical specifications of the products may be changed accordingly. The company reserves the right to modify and interpret the above without prior notice.