

## Dual-Column Servo Tensile Testing Machine RC-101B



### Main Functions:

1. Primarily applicable to testing of metallic and non-metallic materials, such as rubber, plastics, wires and cables, fiber optic cables, safety belts, seat belts, leather belts, composite materials, plastic profiles, waterproof membranes, steel pipes, copper materials, profiles, spring steel, bearing steel, stainless steel (and other high-hardness steels), castings, steel plates, steel strips, and non-ferrous metal wires, including tensile, compression, bending, shearing, peeling, tearing, and two-point extension tests (extensometer required separately).
2. This machine adopts an electromechanical integrated design, mainly composed of a force sensor, transmitter, microprocessor, load drive mechanism, computer, and color inkjet printer. It features a wide and accurate loading speed and force measurement range, high precision and sensitivity in load and displacement measurement and control, and can also perform automatic control tests for constant velocity loading and constant velocity displacement. The floor-standing model's design and paint finish fully consider modern industrial design and ergonomic principles.
3. Main Features: Displacement measurement is performed using an imported photoelectric encoder. The controller employs an embedded single-chip microcomputer structure with powerful built-in measurement and control software, integrating measurement, control, calculation, and storage functions. It automatically

calculates stress, elongation (requires an extensometer), tensile strength, and elastic modulus, and automatically compiles the results. It automatically records the force or elongation at the maximum point, fracture point, and specified points. The test process and test curves are dynamically displayed using a computer, and data processing is performed. After the test, the curves can be magnified for further analysis and editing via the graphics processing module, and reports can be printed. The product performance reaches international advanced levels.

#### 4. Control Software Introduction

Software Operating System Language: Simplified Chinese/English

Force Units: N, KN, Kgf, Lbf; Length Units: mm, cm, in (can be freely converted)

Automatic Zeroing: Upon receiving the test start command, the measurement system automatically zeros out;

Display Method: Data and curves are dynamically displayed during the test;

Result Reproduction: Test results can be accessed arbitrarily, and data curves can be re-analyzed;

Result Comparison: Multiple test characteristic curves can be overlaid, reproduced, magnified, and presented for the analysis and comparison of a set of samples using different colors;

Emergency Stop: Equipped with an emergency stop switch to cut off the power supply to the entire machine in an emergency;

#### 5. Control Methods:

Multiple control methods are available, including setting speed, load breaking (cracking), and running time using computer software.

Automatic detection of material fracture and crushing occurs, and automatic shutdown is implemented. Automatic return can be set.

Curve Types:

Load-displacement, Load-time, Displacement-time.

Stress-strain, Strain-time, Stress-time.

The horizontal and vertical axes of the curves can be arbitrarily set.

Available Test Data:

Maximum force, minimum force, breaking value, upper and lower yield strength, tensile strength, compressive strength, elastic modulus, elongation, maximum, minimum, and average values of the peel interval, etc. Multiple protections are provided, including overload, overcurrent, overvoltage, undervoltage, overspeed, and stroke protection.

Data results are exported in the currently accepted national standard Crystal Report format.

### Technical Parameters:

| Model                             | RC-101B                                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Maximum Load                      | 10000kg                                                                                                                       |
| Accuracy Class                    | 0.5                                                                                                                           |
| Effective Force Measurement Range | 0.4%~100% (0.5 class)                                                                                                         |
| Force Measurement Accuracy        | Within $\pm 0.5\%$ of the indicated value                                                                                     |
| Testing Machine Resolution        | 1/200000 of the maximum load, no range distinction, and constant resolution throughout the entire range                       |
| Basic Load Sensor Configuration   | One tension/compression sensor (maximum load)                                                                                 |
| Expanded Configuration            | Multiple sensors can be added                                                                                                 |
| Effective Test Width              | 400mm (customizable)                                                                                                          |
| Effective Tensile Space           | 800mm (including fixtures)                                                                                                    |
| Test Speed Range                  | 0.01~250mm/min                                                                                                                |
| Displacement Measurement Accuracy | Within $\pm 0.5\%$ of the indicated value                                                                                     |
| Deformation Measurement Accuracy  | Within $\pm 0.5\%$ of the indicated value (Large or small deformation options available upon request)                         |
| Test Bench Safety Devices         | Electronic limit protection                                                                                                   |
| Test Bench Lifting Device         | Automatic control with both fast and slow speeds, jogging capability                                                          |
| Test Bench Return Function        | Manual or automatic selection; automatically or manually returns to the initial test position at maximum speed after the test |
| Overload Protection               | Automatic protection if the load exceeds the maximum load by 10%                                                              |
| Fixed Fixture Configuration       | One set of tensile clamps (or one set depending on the product's testing requirements)                                        |
| Main Unit Dimensions              | 900*600*2000mm (L*W*H)                                                                                                        |
| Power System                      | Servo motor + high-precision ball screw                                                                                       |
| Power Supply                      | 380V/50HZ                                                                                                                     |
| Power                             | 2KW (different power motors are available as standard depending on the force requirements)                                    |
| Main Unit Weight                  | (approx.) 300 Kg                                                                                                              |