Single Column Tensile Strength Testing Machine

Model : RC-106

Key Features::

1. This machine is suitable for rubber, tires, hoses, tapes, soles, plastics, films, acrylic, FRP, ABS, EVA, PU, aluminum-plastic pipes, composite materials, waterproof materials, fibers, textiles, wires and cables, paper, gold foil, tapes, silk threads, springs, wood, pharmaceutical packaging materials, tapes, etc. for tensile, compression, tearing, peeling (90 degrees and 180 degrees) and other mechanical properties test and analysis.

2. This machine is a combination of electronic technology and mechanical transmission of a new type of material testing machine, load, deformation, displacement measurement and control has high precision and sensitivity, the series of models using a single space structure, test space in the lower space, mainly suitable for test load less than 5kN metal, non-metallic material test, with stress, strain, displacement control mode, can find the maximum force, tensile strength, bending strength, compressive strength, elastic modulus, elongation at break, yield strength and other parameters.

3. Control software introduction Software operating system language: Chinese Simplified/English Force unit: N, KN, Kgf, Lbf, length unit: mm, cm, in can be freely converted

Automatic zeroing   : the computer receives the test start command, and the measurement system automatically returns to zero;

Display mode   : data and curves are dynamically displayed with the test process;

Result reproduction   : The test results can be accessed arbitrarily, and the data curve can be reanalyzed

Comparison of results   : Multiple test characteristic curves can be superimposed with different colors, reproduced, enlarged, and presented with the analysis and comparison of a set of samples

Emergency stop : equipped with an emergency stop switch for cutting off the power supply of the whole machine in an emergency;

4. Control mode: computer software sets speed, sets load fracture (rupture), running time and other control methods Automatically determine material fracture, crushing, etc. and automatically stop, can set automatic return Curve types: load-displacement, load-time, displacement-time. Stress-strain, strain-time, stress-time.

The curve aspect and abscissa can be set arbitrarily.

Available test data: maximum force, minimum force, fracture value, upper and lower yield strength, tensile strength, compressive strength, elastic modulus, elongation, peel interval maximum, minimum, average, etc. With overload, overcurrent, overvoltage, undervoltage, overspeed, stroke and other multiple protection. The data results are exported from the crystal report format currently used by the national standard.

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Technical parameters:

Capacity selection   : 2, 5, 10, 20, 50, 100, 200KG (choose one)

Accuracy class : 0.5 class Effective force measurement range: 0.4%~100%

Force measurement accuracy   : within ±0.5% of the indicated value

Data sampling frequency : 200 times/min

The force value resolution of the testing machine : the maximum load is 1/± 500000 yards, and the internal and external are not divided, and the resolution of the whole process remains unchanged

Basic configuration of load cell   : tension and pressure sensor (maximum load)

Effective test width   : 150mm

Effective stretching space   : 500mm (without fixture, can be customized)

Test speed range: 0.01~500mm/min

Displacement measurement accuracy   : within ±0.5% of the indicated value

Test bench safety device : electronic limit protection

Test bench return function   : manual or automatic options, automatic or manual return to the initial position of the test after the test

Overload protection   : more than 10% of the maximum load, machine automatic protection

Main machine size   : 420×350×1520mm

Motor : 220V±10% 0.4KW Taiwan TECO servo motor

Transmission mechanism: high-precision ball screw

Main machine weight   : (approx) 50 kg

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Configure the reference materials

★ Adopt the latest control board for better sample rate

Key features:

✓ The main controller adopts the most advanced 32-bit ARM processor in the 21st century, and the processing speed reaches the level of the Pentium-level general-purpose computer, which greatly improves the overall performance compared with the traditional 8-bit single-chip microcomputer measurement and control system, and the calculation speed is faster and the control accuracy is higher.

✓ The data acquisition core device adopts the latest ultra-high-precision 24-bit AD in the United States, with a sampling rate of up to 2000 times per second, which can capture the instantaneous change process of power, and the resolution of the whole process is up to 500000 points. And the original 6-point calibration technology is adopted to further improve the accuracy, and the force measurement accuracy is better than the national 0.5 (the highest level) standard.

✓ Displacement encoder counting adopts 4 times technology to increase displacement resolution by 4 times, up to 0.0005mm.

✓ Pulse and voltage two output control modes, can control any servo motor, frequency conversion motor or DC motor with pulse or voltage control interface to achieve smooth stepless speed regulation, and there are also rising, falling and stopping switching signal outputs can be used to directly drive external relays or solenoid valves, which can be used to control DC motors or pneumatic, hydraulic and other power devices.

✓ Advanced speed, displacement, force three closed-loop technology, can achieve accurate arbitrary waveform control.

✓ Rich interface expansion capabilities: up to 4 24-bit analog inputs, 3 16-bit analog outputs, 3 pulse outputs, 3 AB phase photoelectric encoder inputs, 9 switch inputs, 8 switch outputs, 1 USB interface, 1 RS232 interface, 1 RS485 interface, 4 LCD interfaces, 1 parallel port microprinter interface, 1 serial port microprinter interface, 1 8×4 matrix keyboard interface.

✓ All input and output interfaces adopt high-speed photoelectric isolation technology, with strong anti-interference ability!

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★ Taiwan TBI ball screw is adopted for better transmission accuracy
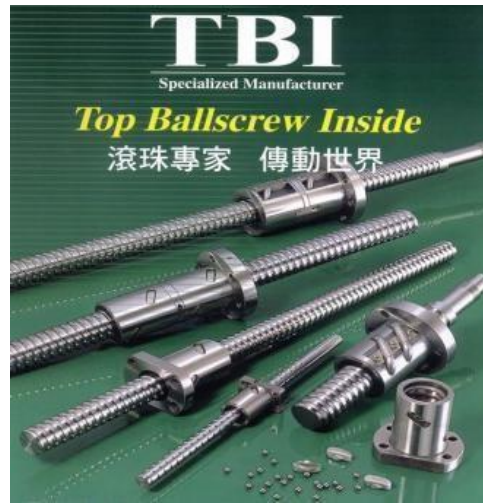
High transmission efficiency. The transmission efficiency of the ball screw pair is as high as 90%~98%, which is 2~4 times that of the sliding screw pair, which can efficiently convert torque into thrust, sensitive and stable transmission, small friction resistance, good sensitivity, no flutter at start-up, no crawling at low speed, and can control micro feed in μ stages.

High positioning accuracy, low temperature rise during ball screw secondary transmission, preload to eliminate axial clearance and primary elastic deformation, and pre-stretch the lead screw to compensate for thermal elongation, so high positioning accuracy and repeated positioning accuracy can be obtained.

Good precision retention, accurate raceway shape, minimal rolling friction wear, good accuracy retention, reliability and service life. The ball screw pair and inner and outer raceways are all eccentric angle double circular arc surface, which can be flexibly transmitted when the raceway gap is extremely small. Good synchronization performance, ball screw secondary factor has the characteristics of high lead accuracy and good sensitivity.

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★ Using Taiwan TECO servo drive, better ensure error-free

Accuracy: Closed-loop control of position, speed and torque is realized;

Overcomes the problem of stepper motor loss of stepper;

Speed: good high-speed performance, generally rated speed can reach 2000~3000 rpm;

Adaptability: strong overload resistance, can withstand three times the rated torque load, especially suitable for occasions with instantaneous load fluctuations and fast starting; Stable: The low-speed operation is stable, and the stepper operation phenomenon similar to that of the stepper motor will not be produced during low-speed operation. Suitable for occasions with high-speed response requirements;

Timeliness: the dynamic correspondence time of motor acceleration and deceleration is short, generally within tens of milliseconds;

Comfort: Heat generation and noise are significantly reduced.

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