Application of equipment

Computer control spring compression testing machine is specially for spring inspection. It is mainly used to test the strength of various springs and elastic components, that is, to test the test force of a spring under a certain amount of deformation (or residual height) or to determine the remaining height or amount of deformation of a spring under a certain test force. With test force value display, speed setting, batch test setting and other functions, it also has limit protection and overload protection functions.

Main technical parameters

1 Measurement parameters

- Maximum test force: 10kN

- Accuracy class: 0.5

- Measuring range of test force: 0.4%～100%FS (full scale)

- Indicating error of test force: within ±0.5% of indicating value

- Minimum resolution of test force: 0.05% of full scale per range

- Minimum resolution of displacement: 0.01mm

- Loading speed: 0.05mm / min-500mm/min

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2 Other parameters

- Effective test width: 400mm

- Distance of tension: 1100mm (it can according to customer's requirements)

-Electrical source power: single phase, 1.0kW, 110V, 60Hz

Performance and Characteristics

1. Mainframe: adopts door structure. The mainframe's rigidity and strength are fully guaranteed through mechanical finite element analysis. The transmission system uses a zero-clearance ball screw pair to ensure the accuracy and durability of the test results. The host frame is guided by four guide columns to ensure the rigidity of the frame.

2. Transmission system: It consists of synchronous toothed belt, precision ball screw pair and guide part.

3. Driving system: Taiwan Dongyuan AC servo governor and its motor are used to drive the system.

4. Measurement and control system: The test force measurement and control system is composed of high-precision load sensors, measurement amplifiers, A/D converters, and regulated power supplies, etc.; the displacement measurement and control system is

composed of photoelectric encoders, frequency doubling shaping circuits, and counting circuits, etc. Through various signal processing, realize computer display, control and data processing functions.

5.Safety protection device: 10% overload protection, crosshead overload limit position protection, over current, over voltage, over speed protection, etc.

6.Control software system

1- The measurement and control software is composed of functional modules such as dynamic communication, data acquisition, result observation, record query, data processing and printing, so than can keep the efficiency and accuracy of data collection, and the result output is convenient and fast.

In terms of appearance, the measurement and control software has the advantages of clear interface, beautiful appearance and convenient operation. (The main interface is as follows)

Software is English version

2- Different test projects can be established according to requirements. Multiple batch numbers can be established under one project for batch tests. Data are collected in real time during the test, curves are plotted in real time, and a large Access database is used for data storage to facilitate user resource sharing and reanalyze.

NOTA: las imágenes y características pueden cambiar sin previo aviso.

After the test is completed, the data is automatically processed and saved. You can view the test results and print the test report at any time. The test report format can be changed according to the different requirements of the user. The processing of test data by the testing machine is in full compliance with the standards of spring testing machines.
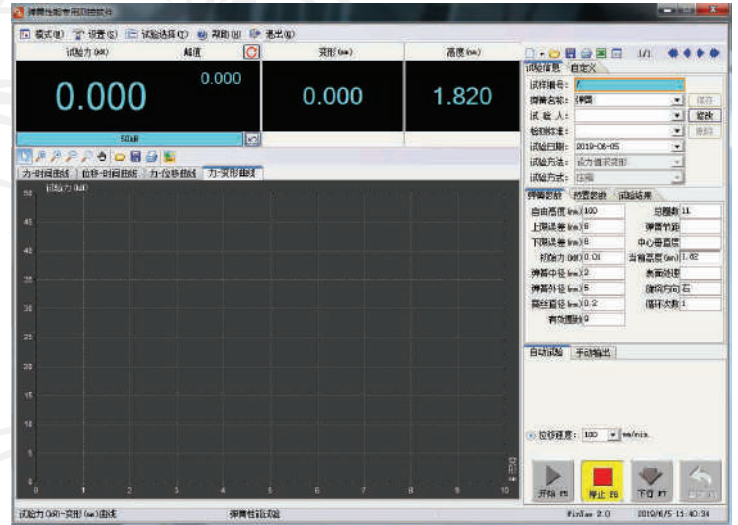
3- Control methods: A variety of control methods are used, which are described as follows:

    a) Set the test force P and detect the spring deformation F.

    b) Set the deformation amount F and detect the test force P of the spring.

    c) Set the test force P and detect the remaining height H of the spring;

    d) Set the remaining height H of the spring and detect the test force P of the spring;

4- Ten detection points can be set. The spring can be pre-compressed by setting the pre-compression height, and the number of pre-compressions can be set at will.

5- The batch test greatly facilitates the user's use. After setting the number of tests, the test machine automatically tests according to the set number of times without manual intervention.

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6- High-speed approximation and low-speed acquisition are realized during the test, which ensures the efficiency and accuracy of the data collection of the test machine.

7- Set the test speed by yourself, and return to the initial position automatically after the test is completed.

8- With automatic stop function for overload.

9- Equipped with manual and jog feed device, it can realize jog feed under various load conditions, which is convenient for calibration and displacement fine adjustment.

10- For the test of the spring, the section stiffness PI of the compression spring can be automatically calculated. The calculation formula is: spring stiffness $PI = (P2—P1) / (F2—F1)$

11- Software calibration part

- Force value calibration: The three-point calibration method is used to make the test force value more accurate and higher accuracy.

- Displacement compensation: The amount of deformation caused by the sensor can be compensated. That is, the amount of deformation caused by the stiffness of the sensor and the machine does not affect the accuracy of the displacement.

Software is English version

1. host: door structure

    Frame: CMSUTM series frame ———————————————— one set

    Ball screw: two high precision, gap-free (Korea) ————————— two pcs

2. control and measurement system

    Servo motor and servo speed control system (Taiwan brands) ——— one set

    Synchronous toothed belt (America Imported) ————————— one set

    Load sensor: 10kN (America imported) ——————————— one pcs

    All-digital spring test dedicated control and measurement system — one set

    Hand control box (with magnetic force, can be adsorbed to any position of the rack) ————————————————————— one pcs

    A commercial brand computer (Lenovo) —————————— one set

    Brand printer (HP color inkjet A4) ———————————— one set

3. Attachments (can be customized according to customer needs)

    Spring special compression test fixture: (compression platen dia.200mm)

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