KS-P300T Computer control hydraulic steel plate spring pressure testing machine (4 column)

（Picture just for reference）

1.Product Introduction

This machine adopts proportional servo control technology, hydraulic loading, and high-precision sensors to measure load and displacement; The main engine adopts a four column structure, with an upper oil cylinder. The test space can be adjusted through the stroke of the oil cylinder, and the bidirectional oil cylinder can ensure fast unloading; Adopting an automatic entry and exit workbench, with an extended guide rail installed on the base, the workpiece installation is convenient. The microcomputer screen displays the test force of the spring, the deformation amount of the spring, and the spring characteristic curve, automatically collects data, and automatically processes data. Mainly used for testing various large springs.

2.Configuration

No	Main components	Description	Quantity
1.Host			
1.1	Host framework	Four column structure with oil cylinder mounted on top	1 set
1.2	Oil source	The integrated oil source consists of an AC motor, high-pressure plunger pump, overflow valve, air-cooled machine, precision oil filter, temperature control meter, hydraulic pipe fittings, high-pressure rubber hose, liquid level control gauge, etc.	1 set
1.3	solenoid valve	The US SUN Valve effectively reduces The probability of oil Leakage in the hydraulic System and improves the Stability of the hydraulic system	1 set
1.4	proportional servo valve	US Moog	1 set
1.5	hydro-cylinder	Dual directional oil cylinder ensures fast unloading	1pcs
1.6	load sensor	USA	1 pcs
1.7	Grating ruler		1 pcs
2.Controller system			
2.1	Computer	HP	1set
2.2	Printer	HP	1set
2.3	Measurement and control system	EDCH550,Three closed loop (force, deformation, displacement) control system	1set
2.4	measurement and control software	English	1 set
2.5	Electrical cabinet	Kason	1 set

3.Main technical parameter:

NO	Inspection items	Technical requirements
1	Max test force	300kn
2	Test force range	2%-100%
3	Minimum reading value of test force	0.05 kN
4	Minimum displacement resolution	0.01mm
5	Relative error of test force indication	Within the precise measurement range ≤ ± 1.0%
6	Accuracy level	Class 1
7	Maximum piston movement speed	500mm/min
8	Displacement indication accuracy	≤ ± (150+0.3L) μ m, note: L represents the measured distance at any position. Unit: (mm)
9	Distance between the connecting line between the pressure head and the centers of the two pins	600mm

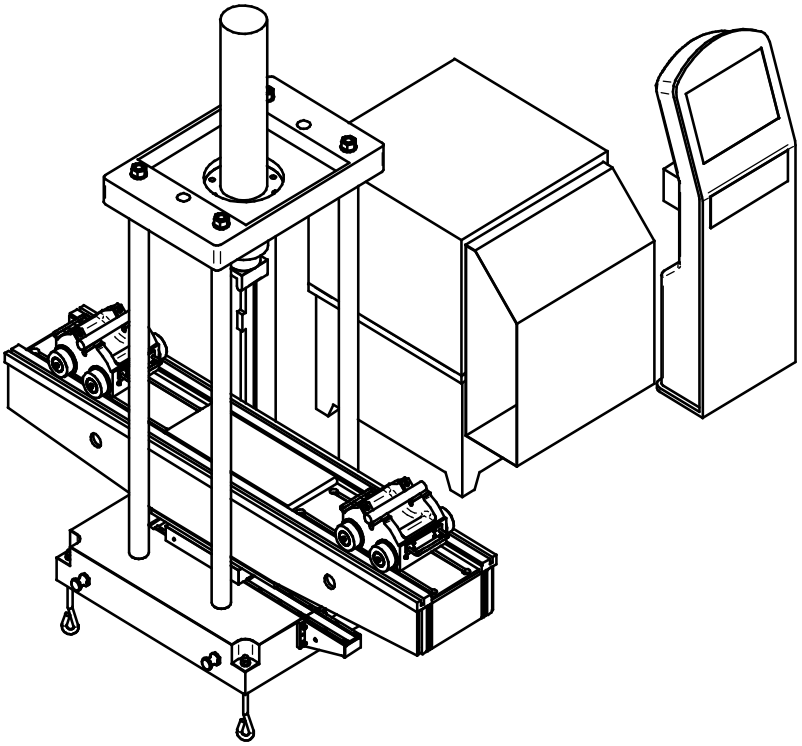
10	Maximum working stroke of the piston	600mm
11	Leaf spring width	70-120mm
12	Leaf spring thickness	100-450mm
13	Center moment of the two ears of the leaf spring	1000-2100mm
14	Power supply voltage (three-phase four wire, reliably grounded)	380VAC±10% 50Hz
15	Pump station flow rate	42L
16	Power of motor	7.5kw

4.Features:

1) Adopting a four column gantry structure, the main frame is analyzed through mechanical finite element analysis, and the overall strength, deformation, and stability of the machine are high. The main frame is guided by four guide pillars, ensuring stability and reliability.

2) Loading system: The spring is loaded hydraulically, and a well-known brand of bidirectional oil cylinder is used to ensure fast unloading. An automatic entry and exit workbench is used, and an extended guide rail is installed on the base to facilitate workpiece installation.

3) Measurement control system: Adopting proportional servo control technology, the PC screen displays the test force, spring displacement, and characteristic curve, calculates the spring stiffness, prints the test report, and queries the test results.



4) Oil source

The integrated oil source consists of an AC motor, high-pressure plunger pump, overflow valve, air-cooled machine, precision oil filter, temperature control meter, hydraulic pipe fittings, high-pressure rubber hose, liquid level control gauge, etc. It has functions such as oil temperature (below 10 º C, above 55 º C), liquid level, oil filter blockage alarm, etc.

5.Function Introduction

1.1 With multiple control modes such as force, displacement, and deformation:

a) Set the test force to detect the deformation of the spring.

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

c) Set the test force to detect the remaining height of the spring;

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

e) Check the stiffness of the spring;

software function

a) Verify load preloading once and measure residual deformation.

b) Load and measure the loading stiffness using 0.7, 1, and 1.3 times the working load, and then unload and measure the unloading stiffness in sequence.

c) It can meet various test requirements for springs with different structures, such as those with two ends of rolling ears, one end of rolling ears and one end of sliding plates, those with both ends of sliding plates, symmetric and asymmetric structures, and those with equal or variable stiffness.

d) It has the function of conducting experiments based on four types of data: loading value, average value of loading and unloading, average value of two point loading, and average value of four points.

e) The specific requirements for test data, characteristic curves, and screen interface display can be negotiated in detail separately.

2.2 General functions

a) According to different design requirements for steel plate springs, by inputting known parameters, automatic experiments can be carried out, and after the experiment is completed, it will automatically return to the initial position of the experiment. If batch testing is conducted, it will demonstrate strong advantages. Users only need to input test parameters at once to achieve all automated operations during the experimental process, except for replacing springs, with very high testing efficiency.

b) Capable of completing sensor parameter calibration, zero clearing, parameter storage and loading functions; The controller has various protection functions such as automatic shutdown or alarm when testing parameters exceed limits or exceed settings.

The computer control system has a Windows Chinese operating interface, and all operations of the testing machine are completed through a computer keyboard and mouse. The computer screen displays the testing force, displacement, beam movement speed, and working status of the testing machine. During the experimental process, real-time data collection and data storage are carried out using Access large databases, facilitating user resource sharing and reanalysis. At the same time, experimental force deformation, experimental force residual height, and stiffness curves are drawn, which can be enlarged or reduced, and the curve can be locally enlarged. Users can also drag the mouse within the enlarged area to achieve the translation of the enlarged curve, with curve printing and preview function. After the experiment is completed, the data is automatically processed, and the test results can be viewed and the test report can be printed at any time. The format of the test report can be changed according to different user requirements. The processing of test data by the testing machine fully complies with the standards of spring testing machines.

Digital zero adjustment and calibration can be performed.

The experimental data is managed through a database, making it easy to query and maintain.

The operation of the software system can achieve three-level user management, which is safe, convenient, and fast.

The control software mainly adopts a modular design concept, and the entire software is divided into six modules: acquisition module, automatic control module, database management module, data analysis module, and experimental parameter configuration module. Through the organic combination of these modules, the complexity of the program is reduced, and the program design, debugging, maintenance, and operation are simplified.

KASON reserves the right to modify the technical and stetics characteristics included in this document, without previous notice.

DuandianIndustrial Park ,
Jingshi Road, Jinan City,
Shandong Province, China.

Tel. +86 531 58595086
Fax. +86 531 86113769
Email: info@jnkason.com

www.syjlab.com