

Steel strand/7-wire steel strand tensile testing machine

Model: LW Series



1, General introduction

United Test make Universal Testing Machines are known for their long lasting trouble-free performance and highest quality material used in the manufacturing process. This specialized hydraulic tensile testing machine can perform tension test for the steel strand, 7-wire strand for the reinforcement and prestressing of concrete, reinforcing bars, wire rod and wires.

Conform with standard: ISO 15630-1, ISO 6934, ASTM A370, ASTM A416, GB/T 5224.

Specialized features at the jaws clamping:

- A. extra thick jaws seat to make the steel strand sample completely hold in the seat body during tension process, ensure the breaking position at the middle portion.
- B. High hardness (HRC68-70) lengthen jaws enhance the clamping length and area. To make the clamping more firm and reliable, no sliding during test.

2, Application

Widely used for industrial application, factory quality control, science and research institute, QC & QA college student training, education institute, testing and inspection center, laboratories, construction company, aerospace, mechanical production, electric appliance fields.

3, Key Features

- 1), Computer controlled hydraulic servo operate loading model, double working space, tensile test at upside of crosshead, compression and bending test between working bench and crosshead;
- 2), It adopts the hydraulic pressure to drive the cylinder, so loading on the specimen to perform the test. Hydraulic station supplies super and stable pressure to the system; the soundproof insulation can reduce the noise level of the power pack to 75 dB (A), with lower noise, tiny energy consuming and lower heat.
- 3), Unique screw gap eliminating structure can guarantee the continuity of the test;
Total six columns structure, four column and two leading screw to make the machine more stable and life long working.
- 4), Independent hydraulic clamping structure can guarantee the reliability of the system; it will not hurt person for falling specimen and ensure the safety of operator;
- 5), Limitation and electrical protection system can ensure the security of using;
- 6), The load frame adopts oil cylinder bottom type structure, hydraulic load, hydraulic clamping specimen;
- 7), Servo valve can control the speed arbitrarily through the software. It can carry out loading, unloading and oil quick feedback function (i.e. the cylinder come back to its original position after the test);
- 8), Crosshead (the middle beam) movement is by mean of motor, chain at the bottom of loadframe, driven leading screw to make crosshead up and down.

4, Software



5, Main technical specification

| Model | LW-600 | LW-1000 |
|--|--|----------------------|
| Max. load | 600KN | 1000KN |
| Column Number | 4 column and 2 leading screw, total 6 columns | |
| Measuring force range | 2%~100% | |
| Accuracy of load | ±1% of indicated value | |
| Accuracy of deformation | ±0.5%, resolution: 0.01mm | |
| Constant load, displacement, deformation control Range | 0.4%~100%FS | |
| Deformation rate control accuracy | Rate<0.05%FS, accuracy ±2.0% Rate≥0.05%FS, accuracy ±0.5% | |
| Deformation measuring | Clip-on extensometer, standard gauge 50mm, extension 5/10/25mm | |
| Max. tensile space | 1000mm (can enlarge) | 1000mm (can enlarge) |
| Test width (effective horizontal interval) | 520 | 650 |
| Steel strand clamping range | φ 9.2-φ 12.7mm, φ 12.7-φ 15.24mm | |
| Flat specimen range | 0~30mm | 0~40mm |
| Round specimen range | φ13~φ40mm | φ13~φ60mm |
| Compression platen dia. | 200*200mm | 200*200mm |
| Bending support roller distance | 450 mm | 450 mm |
| Bending roller width | 140mm | 140mm |
| Bending roller dia. | 30mm | 40mm |
| Piston stroke | 250mm | 250mm |
| Max. piston speed | 100mm/min | 100mm/min |
| Clamping mode | Hydraulic automatic | |
| Dim. of frame | 910*550*2370mm | 960*650*2600mm |
| Dim. of control box | 1100×700×950mm | |
| Weight | 3000kg | 4000kg |
| Standard Accessories | Load frame, servo oil source, control box, servo valve, oil Pump; oil pressure sensor (Load cell is optional), liner displacement sensor, tensile test Jaws, compression platen, bending test accessory, PC, printer, Professional software, tools, anchor bolts, operation manual | |

6, Standard

ISO 15630-1, Steel for the reinforcement and prestressing of concrete -- Test methods -- Part 1: Reinforcing bars, wire rod and wire

ISO 6934-4, Steel for the prestressing of concrete -- Part 4: Strand

ASTM A370, Standard Test Methods and Definitions for Mechanical Testing of Steel Products

ASTM A416 / A416M, Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete.

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