



HAIYUDA

海优达智能科技

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# Universal Material Testing Machine

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# Universal Material Testing Machine

## DESCRIPTION

Haiyouda is different from other test equipment suppliers in that we focus on each element of the system so that we can accurately report the accuracy, repeatability, and reproducibility of the results.

- Automatic identification and calibration of load and strain sensors and verification performed by factory trained field maintenance engineers
- Pre-stressed ball screw, precise guide post and symmetrical drive system improve frame rigidity and alignment
- Complete accessories to meet the test requirements of almost any application or industry: plastics, metals, biomedicine, composite materials, elastomers, components, automobiles, aerospace, textiles and more
- All test systems include load cell options
- 12-month maintenance guarantee (spare parts )

## APPLICATIONS

1. **Tested sample:** plastic films, laminated materials, adhesive tapes, adhesive bandage (plaster), release paper, leather, paper, fiber, rubber & plastic, metal. etc.
2. **Different test with different grips:** tensile, peel, tear, heat seal, adhesive, bend and open force.
3. **Deformation under defined load:** Test deformation under defined load of tested sample
4. **Load under defined deformation:** Test load under defined deformation of tested sample
5. **Software** can issue **word/excel report** with results for max. force, elongation, tensile strength, peel strength, tear strength, compression strength, etc.

## Technical Parameters of Electromechanical Models :

| Models               | HUD-B609-S  | HUD-B604-S                 | HUD-B615-S   | HUD-B612-S                  |
|----------------------|---|----------------------------|--|-----------------------------|
| Max. Force           | 200 kg (2KN)  | 2T (20KN)                  | 5T (50KN)  | 10T (100KN)                 |
| Load cell            | Germany brand load cell for high accuracy   |                            |  |                             |
| Control system       | PC with windows 7 system or windows 10 system   |                            |  |                             |
| Motor                | Panasonic servo motor w/AC variable speed drive system, high-precision mechanical ball screw rod  |                            |  |                             |
| Force reading        | kgf, lbf, N, KN, T etc  |                            |  |                             |
| Stoke                | 900mm including fixture   | 1200mm including fixture   | 1100mm including fixture   | 1200mm including fixture    |
| Load cell Resolution | 1/250,000   |                            |  |                             |
| Load Precision       | ≤0.5%   |                            |  |                             |
| Test speed           | 0.1~500mm/min (adjustable)  | 0.1~500mm/min (adjustable) | 0.01~300mm/min (adjustable)                                      | 0.01~300mm/min (adjustable) |
| Test width           | N/A   | ≤400mm                     | ≤420mm   | ≤400mm                      |
| Dimension (L×W×H)    | 520*515*1250mm  | 880*510*1490mm             | 985*510*2100mm   | 868*580*1836mm              |
| Weight               | 68KG Approx   | 155KG Approx               | 320KG Approx   | 600KG Approx                |
| Software             | TM 2101   |                            |  |                             |
| Curves display       | Load- elongation, Elongation-time, Time-elongation, Stress-strain   |                            |  |                             |
| Data display         | Max. force, speed, sample information, strength(Kpa, Mpa, N/mm, N/mm <sup>2</sup> ) etc...  |                            |  |                             |
| Safety features      | 1.E-Stop<br>3.Upper and lower limit switches  |                            | 2. Over-load protection<br>4. Load sensor with automatic retreat |                             |
| Application          | This series of material testing machine is widely used in all kinds of hardware, metal, rubber, footwear, leather, clothing, textiles, insulators, wire and cable, terminals and other materials, testing its tensile, tearing, peeling, compression , bending resistance, three-point bending resistance, etc. |                            |  |                             |

## Technical Parameters of Hydraulic Models :

| Models                       | HUD-B616-1                         | HUD-B616-2  | HUD-B616-3    |
|------------------------------|------------------------------------|-------------|---------------|
| Max. capacity                | 30T (300KN)                        | 60T (600KN) | 100T (1000KN) |
| Measure range                | 2%-100%FS                          |             |               |
| Sensor                       | Transcell load cell or other brand |             |               |
| Load Accuracy                | ±1%                                |             |               |
| Elongation resolution        | 0.01mm                             |             |               |
| Elongation accuracy          | ±1%                                |             |               |
| Available tensile stroke     | 600mm                              |             |               |
| Available compression stroke | 600mm                              |             |               |
| Test width                   | 500mm                              |             |               |
| Test Speed                   | 0.01-200mm/min                     |             |               |
| Round sample diameter        | φ9-φ26mm                           |             |               |
| Flat sample thickness        | 0-20 mm                            |             |               |
| Compression diameter         | φ120mm                             |             |               |
| Clamp control                | Hydraulic                          |             |               |



|                             |  |               |                |
|-----------------------------|--|---------------|----------------|
| Operation control & display | PC   |               |                |
| Screw                       | High precise ball screw  |               |                |
| Motor                       | Servo Motor  |               |                |
| Software                    | MaxTest  |               |                |
| Host Machine dimension      | (L×W×H) 750*600*2000mm   |               | 910*710*2300mm |
| Controller dimension        | (L×W×H)1100*750*1000mm   |               |                |
| Weight                      | Approx.1600KG  | Approx.1900KG | Approx.2850KG  |
| Power                       | 3 φ , AC380V ± 10%, 50Hz   |               |                |
| <b>Application</b>          | This series of machine with underneath type oil cylinder and four columns structure is mainly used to do tension, compression, bending, shearing test for metal materials, non-metal material. It is applied for fields of metallurgy, construction, light industry, aviation, aerospace, materials, universities, scientific research units, etc. |               |                |



## Machine photos:



HUD-B609-S (2KN)



HUD-B604-S (20KN)

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HUD-B615-S (5T)



HUD-B612-S (10T)



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HUD-B616 Series (300KN, 600KN,1000KN)

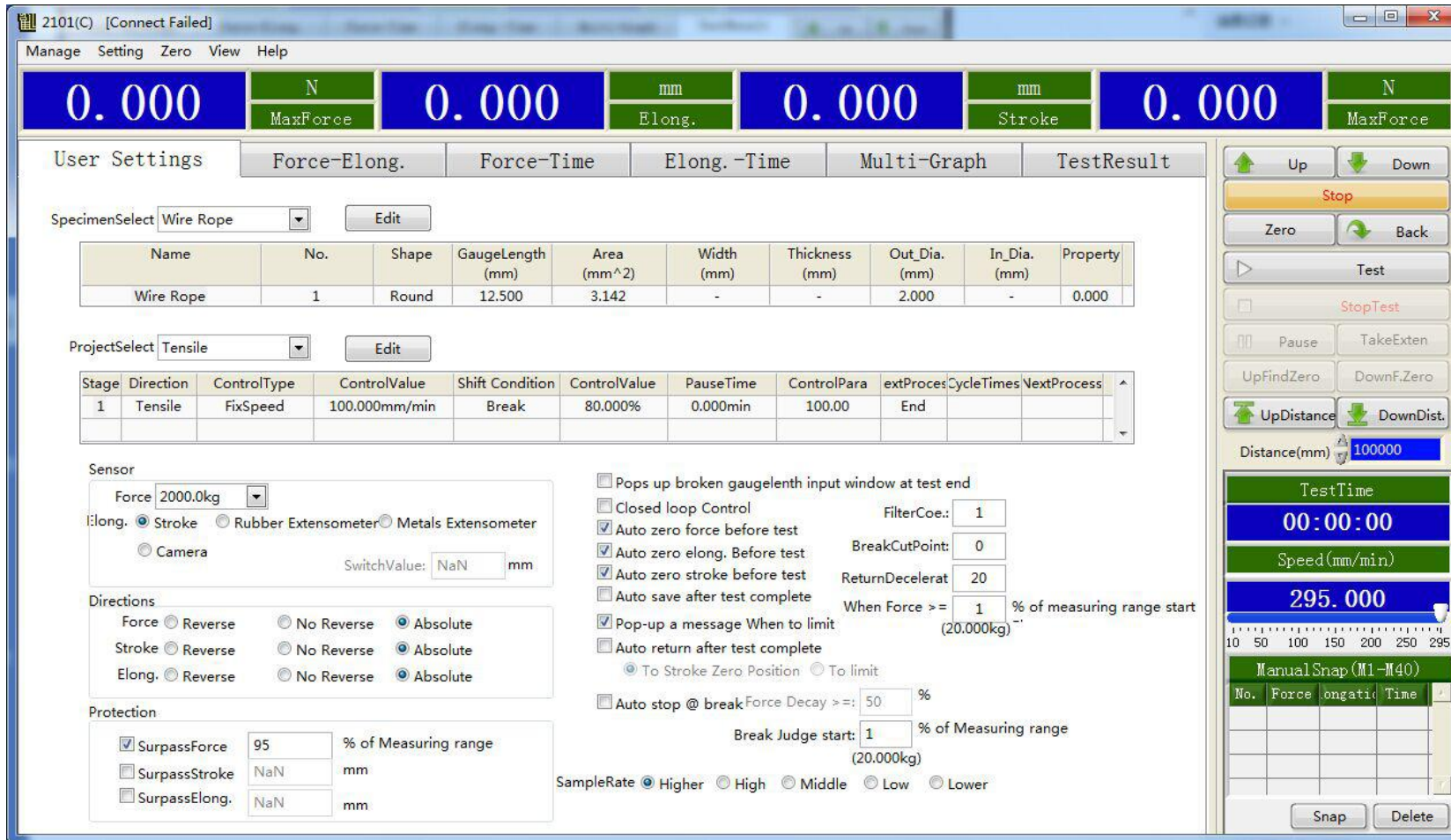
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## Software – TM 2101



The screenshot shows the 'User Settings' page of the TM 2101 software. The interface includes a menu bar (Manage, Setting, Zero, View, Help) and a top status bar with numerical readouts for Force, Elong., and Stroke. The main area is divided into several sections:

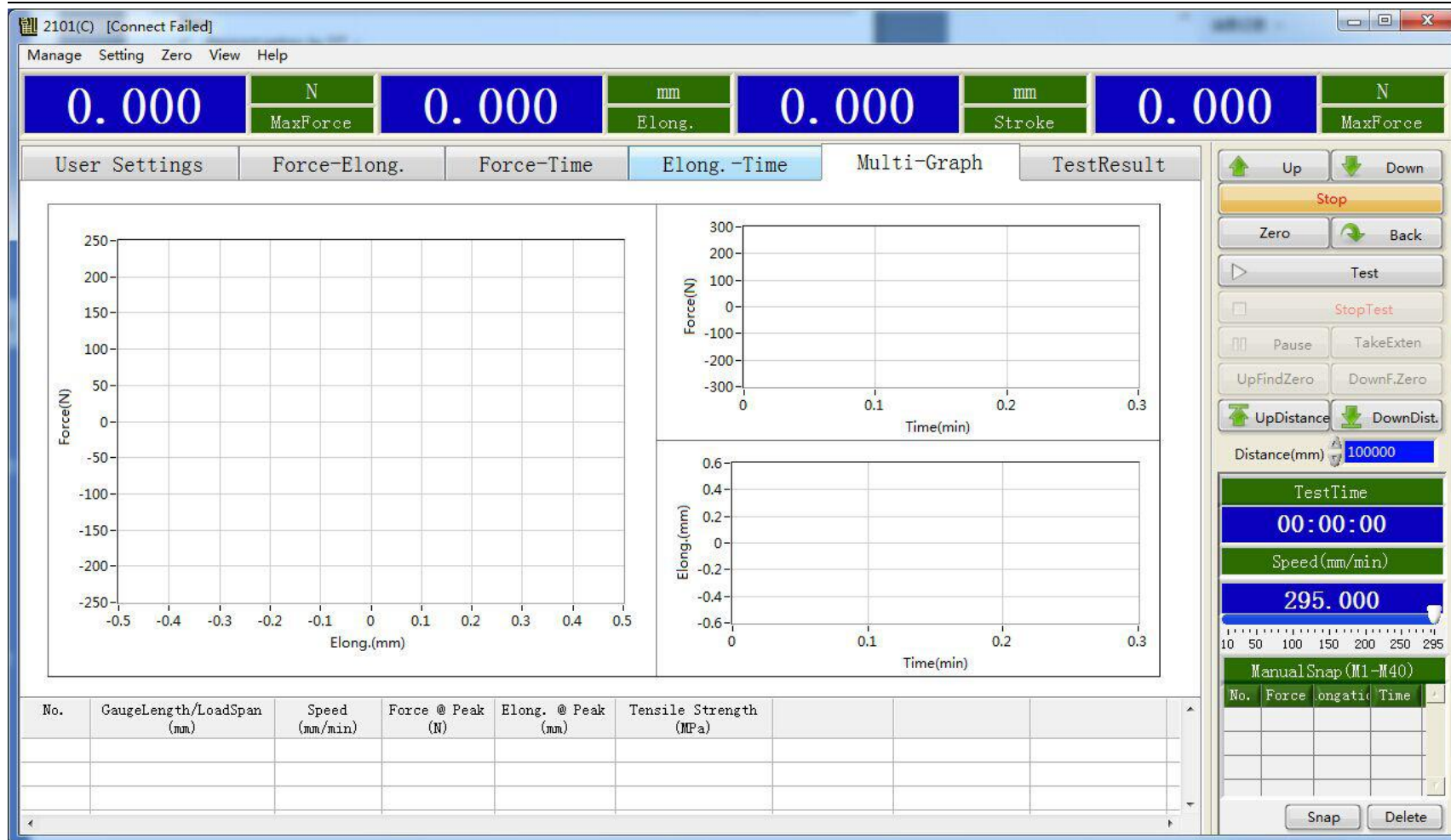
- SpecimenSelect:** Wire Rope (dropdown), Edit button.
- ProjectSelect:** Tensile (dropdown), Edit button.
- Table 1:** Specimen properties table.
 

| Name      | No. | Shape | GaugeLength (mm) | Area (mm <sup>2</sup> ) | Width (mm) | Thickness (mm) | Out_Dia. (mm) | In_Dia. (mm) | Property |
|-----------|-----|-------|------------------|-------------------------|------------|----------------|---------------|--------------|----------|
| Wire Rope | 1   | Round | 12.500           | 3.142                   | -          | -              | 2.000         | -            | 0.000    |
- Table 2:** Test parameters table.
 

| Stage | Direction | ControlType | ControlValue  | Shift Condition | ControlValue | PauseTime | ControlPara | extProces | CycleTimes | NextProcess |
|-------|-----------|-------------|---------------|-----------------|--------------|-----------|-------------|-----------|------------|-------------|
| 1     | Tensile   | FixSpeed    | 100.000mm/min | Break           | 80.000%      | 0.000min  | 100.00      | End       |            |             |
- Sensor:** Force: 2000.0kg (dropdown); Elong.: Stroke (selected), Rubber Extensometer, Metals Extensometer, Camera; SwitchValue: NaN mm.
- Directions:** Force: Reverse, No Reverse, Absolute (selected); Stroke: Reverse, No Reverse, Absolute (selected); Elong.: Reverse, No Reverse, Absolute (selected).
- Protection:** SurpassForce: 95 % of Measuring range; SurpassStroke: NaN mm; SurpassElong.: NaN mm.
- Advanced Settings:**
  - Pops up broken gaugelenth input window at test end
  - Closed loop Control
  - Auto zero force before test (FilterCoe.: 1)
  - Auto zero elong. Before test (BreakCutPoint: 0)
  - Auto zero stroke before test (ReturnDecelerat: 20)
  - Auto save after test complete
  - Pop-up a message When to limit (When Force >= 1 % of measuring range start (20.000kg))
  - Auto return after test complete
  - Auto stop @ break Force Decay >= 50 % (Break Judge start: 1 % of Measuring range (20.000kg))
  - SampleRate: Higher (selected), High, Middle, Low, Lower

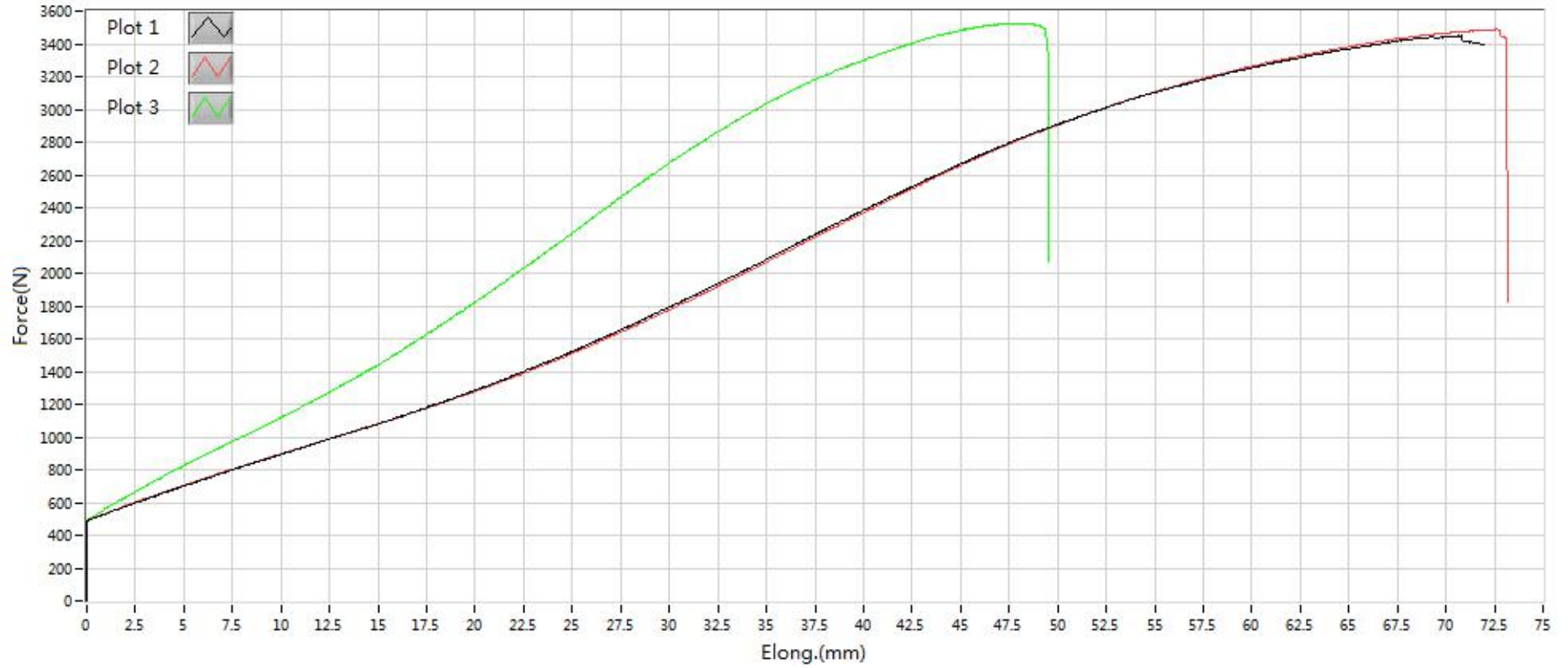
The right-hand side of the interface features a control panel with buttons for Up, Down, Stop, Zero, Back, Test, StopTest, Pause, TakeExten, UpFindZero, DownF.Zero, UpDistance, DownDist., Distance(mm) (100000), TestTime (00:00:00), Speed(mm/min) (295.000), Manual Snap (M1-M40), and Snap/Delete buttons.

User setting page



Curves display picture

Test result picture



Test curve page

## Fixtures with sample :



