Universal Testing Machine

Model - UNITEK – 97050 α
Technical Description:

'FIE' Universal Testing Series UNITEK-97000 are microprocessor based electro-mechanical machines with servo drive designed for testing & studying mechanical behavior of various materials like metals, polymers etc. These machines offer good built-in features so offer excellent stand alone performance for standard tests & great flexibility for complex analysis.

These machines confirm to IS, BS & ASTM standards.

Features:

- Precision AC servo motor & drive with ball lead screw gives an advanced drive system with 0.5 to 350 standard speed range.

- PLC & HMI based system to measure store load & displacement values.

- Provision for load cell interchangeability & thereby automatic selection of load full scale.

- Speed selection through data entry or variable speed through potentiometer.

- Facility for mounting different load cells & clamping devices to suit various tests & materials like thin wires, metal sheets, fiber glass, leather, spring, card boards etc.

- Safety interlock for overload & limit switch sensing to ensure protection during test.

- Universal applications in R & D, Education, Quality control and Production for tests like Tensile, Compression, Bending etc.

Optional Accessories:

'FIE' offers a wide range of optional accessories along with Unitek-9700 Machines to cover almost every material test requirements.

Load Cells:

'FIE' offers Strain gauge type Universal load cell indifferent capacities in the following nominal ranges:
100 N, 250 N, 1 kN, 2.5 kN, 5 kN load cell as per customers requirements.

Grip & Clamping Devices:

A wide range of grips are available from 'FIE' such as:
- Wedge type grips
- Vice type grips
- Single threaded grips
- Compression plates
- Bending fixtures
- Shearing attachments

Extensometers:

Electronic extensometers are offered with extension on the touch screen to measure with resolution of 1 micron.

Model : EE2.

Touch Screen Control Panel:

PLC based panel incorporating following features:

- Front panel 7" Touch Screen
- Data entry of test parameters (like speeds, rupture %, pre-load, test data & specimen data) with touch screen
- Data storage ranges as: at input, at output; during power off
- Optional remote to ease specimen loading/unloading
- RS 232, USB & Ethernet ports for communication.
- The data will be stored in JPG format & accessible for external system with USB drive storage.

USB port for printer or USB drive interface for:

- Graph & result print-out
- Test certificate print-out
- Simple statistics print-out
- RS 232 interface for data transfer to desktop.
- Ethernet port for network printer access.
- Facility to export X, Y points in .csv format.
- Facility to export batch results in .csv format.

Built – In Electronic Control Panel

<table>
<thead>
<tr>
<th>Fuel Instruments &amp; Engineers Pvt. Ltd.</th>
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<tbody>
<tr>
<td>Load ZERO</td>
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<tr>
<td>Disp. ZERO</td>
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</table>

Home Screen
### Screen Display for Test

**Tensile Strength**

**Load** N 1911.00

**Disp.** mm 16.41

**Ultimate Load** : 1919.250 N
**Displ. @Fmax** : 15.18 mm
**Max Displ.** : 18.95 mm
**Area** : 8.400001 mm²
**Elongation** : 12.50 %
**Red in Area** : 100.00 %
**Load Unit** : Newton
**Disp Unit** : mm

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### TEST REPORT

- **Sample No.** : 1
- **Sample ID** : R
- **Heat No.** : none
- **Batch No.** : none
- **Sample Type** : none
- **Area (mm²)** : 8.40
- **G.L. (mm)** : 200.0

**Ultimate Load** : 1919.250 N
**Elongation** : 12.50 %
**Max Disp.** : 18.95 mm
**Displ. @ Fmax** : 15.18 mm
**UTS** : 228.482 Mpa

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### MODEL

<table>
<thead>
<tr>
<th>Load Range</th>
<th>UNITEK-97050</th>
<th>UNITS</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>0-5</td>
<td>kN</td>
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<table>
<thead>
<tr>
<th>Load Resolution</th>
<th>1/20000 of Nominal Load Cell Connected</th>
<th></th>
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<table>
<thead>
<tr>
<th>Load Measuring Accuracy</th>
<th>± 1% from 2% to 100% of Nominal load of load cell used</th>
<th></th>
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<table>
<thead>
<tr>
<th>Max Crosshead Stroke</th>
<th>900 (without grips &amp; load cell)</th>
<th>mm</th>
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</thead>
<tbody>
<tr>
<td>Crosshead displacement measurement</td>
<td>0.01</td>
<td>mm</td>
</tr>
<tr>
<td>Crosshead speed range</td>
<td>0.5-350</td>
<td>mm/min</td>
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<tr>
<td>Power Supply</td>
<td>230 VAC, 50 Hz, Single Phase</td>
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*Due to constant Research & Development, Specifications and Features are subject to change without notice.*