Product Code

UTC-5552  100 kN Servo Controlled Universal Automatic Bending Test Machine, 220-240 V 50-60 Hz
UTC-5556  300 kN Servo Controlled Universal Automatic Bending Test Machine, 220-240 V 50-60 Hz

Standards

EN 12390-5, 1339, 1340, 14488-3, 14488-5; ASTM C 78, C 293, C1609, EFNARC Guidelines for Sprayed Concrete

Servo Controlled Universal Automatic Bending Test Machines are specially configured for energy absorption capacity tests on fibre reinforced sprayed concrete specimens.

The Machines can be used:

- for energy absorption capacity test on fibre reinforced sprayed concrete slab specimens
- for four point bending strengths (first peak, ultimate and residual) tests on fibre reinforced concrete beam specimens.
- for EFNARC three point bending test on square panel with notch
- for flexural strength test of concrete beams, paving flags and kerbs
- for measuring of deflection on concrete beams

The machines consist of extremely high stiffness frame and servo controlled hydraulic power pack.

Load Frames

The frames of machines are designed torsionally stiff up to the maximum capacity with anti-rotation system to prevent the natural tendency to rotate the columns of frame. The four columns of frame are clamped with zero clearance.

Test cylinder mounted on the top crosshead has double-action with long piston stroke in servo slide quality (particularly low friction). The displacement measurement is achieved through the displacement transducer built in piston.

A directly actuated servo valve is mounted on the test cylinder, to ensure a quick and highly precise process during testing. An anti-rotation device prevents twisting the piston rod from twisting with the top bending beam and the precision load cell.

The test accessories including energy absorption capacity test assemblies on the frame can be easily removed and the test accessories suitable the test to be performed can be installed.

Different sized frames can be available on request.
Compression and Flexural Testing Machines

SERVO CONTROLLED UNIVERSAL AUTOMATIC BENDING TEST MACHINE

Power Pack

The power pack contains a hydraulic pump and a fine flow oil filter. The hydraulic unit consists of a high-pressure radial piston pump. All operating and control elements are located on the power pack. The powerpack consists of oil level indicator, high temperature indicator, mechanical filter clogged indicator and cooling unit.

Different type tests with automatic test sequence can be performed by help of free software.

Main Features

- Pace rate control from 0.01 kN/s to 100kN/s (depend on the specimen stiffness.
- 3 analogue channels for displacement transducers, extensometers, etc. built in the system as an addition to frame loadcells
- Instrumentation amplifiers for sensor excitation and amplification
- 1/65,000 resolution and 1.000 Hz control for each channel
- Ethernet port for connecting to computer
- 240x320 pixel LCD display
- Touchscreen operator panel
- Can execute load, displacement or strain controlled tests for post peak
- Free of charge PC software for test control and advanced report printout
- Multiple language support
- Real time clock and date

Data Acquisition & Control PC Software

Servo Controlled Universal Bending Test Machines can be controlled [Start, Stop commands] by a computer with the Free of Charge software supplied with the machine. This software provides data acquisition and management for compression, flexure and splitting tensile test throughout the test execution. The engineering values such as modulus, toughness, energy has been supported. The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Test parameters can be set and details about the test carried out such as customer details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.

Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button
- Software controlled maximum load value

Optional Accessories

UTC-5501 Flexural testing asseblies for concrete beams. Set of 2 upper and 2 lower rollers of 38 mm dia and 160 mm lenght
UTC-5502 Flexural testing asseblies for concrete kerb. Set of 2 lower roller of 38mm dia.x620mm lenght and upper load point of 40 mm dia with ball seating
UTC-5504 Flexural Test Assembly Set of 2 lower rollers and 1 upper roller of 38 mm dia. and 620 mm lenght.
UTC-5506 Auxiliary Testing Frames For The Measurement of Deflection on Concrete Beams with 2 pcs Linear Potentiometric Displacement Transducer, for 100x100x400/500 mm and 150x150x500/600 mm beams.
UTC-5507 Auxiliary Testing Frames For The Measurement of Deflection on Concrete Beams with 2 pcs. High Accurate Displacement Transducer, for 100x100x400/500 mm and 150x150x500/600 mm beams.
UTC-5508 Energy absorption capacity test assemblies for fibre reinforced sprayed concrete slab specimens, EN 14488-5 EFNARC Guide
UTC-5511 Flexural Testing Assembly Set for EFNARC Three Point Bending Test on Square Panel with Notch. Set of 2 lower rollers and 1 upper rollers of 30 mm dia and 620 mm lenght.
UTC-5512 Crack Mouth Opening Displacement (CMOD) Transducer measuring range 7mm, gauge length 5mm
UTC-5514 Energy absorption capacity test assemblies for fibre reinforced sprayed concrete slab specimens, UNI 10834
UTC-4511 Upper platen (with ball seating assembly) and lower platen, Ø165mm platens for compressive strenght tests up to the machine capacity.

The optional accessories for the tests performed should be ordered separately.
### SERVO CONTROLLED UNIVERSAL AUTOMATIC BENDING TEST MACHINE

<table>
<thead>
<tr>
<th>Description</th>
<th>UTC-5552</th>
<th>UTC-5556</th>
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</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>100 kN</td>
<td>300 kN</td>
</tr>
<tr>
<td><strong>Accuracy Class</strong></td>
<td>Class 1 EN ISO 7500-1 starting from 1% of the capacity</td>
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<tr>
<td><strong>Force Measurement Range</strong></td>
<td>1 to 100 kN</td>
<td>3 to 300 kN</td>
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<tr>
<td><strong>Test Speed Range</strong></td>
<td>0.01 - 50 mm/min.</td>
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<tr>
<td><strong>Load Rate</strong></td>
<td>0,001-15 kN/s [Depend on specimen stiffness]</td>
<td></td>
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<tr>
<td><strong>Distance Between The Columns (front / side)</strong></td>
<td>900 / 300 mm</td>
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</tr>
<tr>
<td><strong>Maximum Vertical Clearance (Lower crosshead at middle stroke)</strong></td>
<td>450 mm (Without accessories)</td>
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</tr>
<tr>
<td><strong>Maximum Piston Movement</strong></td>
<td>250 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>1500 W</td>
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<tr>
<td><strong>Electrical Requirement</strong></td>
<td>220-240 V 50-60 Hz</td>
<td></td>
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<tr>
<td><strong>Maximum Working Pressure</strong></td>
<td>280 bar</td>
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</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Frame</td>
<td>1200 x 600 x 2045 mm</td>
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<tr>
<td>- Power Pack</td>
<td>1100x700x1030mm</td>
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</tr>
<tr>
<td><strong>Weight</strong></td>
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<td></td>
</tr>
<tr>
<td>- Frame</td>
<td>3000 kg</td>
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</tr>
<tr>
<td>- Power Pack</td>
<td>210 kg</td>
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</tbody>
</table>

Other voltages and frequencies available on request.