

***BESMAK BMT-S Series***  
***UNIVERSAL TESTING MACHINE***



*SERVO-HYDRAULIC SYSTEM*

**TECHNICAL FEATURES:**

<b>Maximum Load Capacity:</b>	<b>Up to 3000kN</b>
<b>Frame Type :</b>	Rigid frame in Column construction.
<b>Electronic Unit:</b>	New generation EDC Electronic Control Unit with 2.5 kHz (2500 data/sec) data acquisition and control system
<b>Control:</b>	1) Hydraulic Unit, Servo-Valve controlled 2) EDC Controller 3) RMC Handheld Unit 4) Besmak Universal Testing Software (Load and Deformation/Displacement Control)
<b>Accuracy:</b>	± 0,5%
<b>Load Measuring Range:</b>	2% - 100%
<b>Resolution:</b>	20 bit
<b>Displacement Resolution:</b>	0,001 mm
<b>Speed of Displacement Control:</b>	0.01 – 100 mm/min
<b>Speed of Load Control:</b>	0,01 kN/s – 25kN/s <i>*depending upon sample properties</i>
<b>Piston Stroke:</b>	>500 mm
<b>Space Between front Columns :</b>	>500 mm (Horizontal Daylight)
<b>Tensile Space:</b>	700 mm (max. distance between jaws)
<b>Max. Compression Daylight:</b>	>600 without accessories
<b>Tensile Grip for Flat Specimen:</b>	1 set (0 to 40 mm) <i>*contact us for other requirements</i>
<b>Tensile Grip for Round Specimen:</b>	1 set (6 to 50 mm) <i>*contact us for other requirements</i>
<b>Software:</b>	Besmak Universal Testing Software
<b>Power Requirement:</b>	380 Volt, 50/60Hz
<b>Ambient Operating Temperature:</b>	0°C ~ 40°C, Moisture 10% - 90%
<b>Dimensions of Load Frame:</b>	Approx. 850x700x3400 mm (WxLxH)
<b>Dimensions of Hydraulic Power Unit:</b>	Approx. 650x1250x970 mm

## **FEATURES:**

**BESMAK BMT-S series Universal Testing Machine**, designed with rigid frame in Column type construction and single workspace. Load measurement is made by a Load Cell. It is suitable for testing long samples or the samples having high strain capacity with its long range piston stroke.

- Ideal system for testing common sized specimen with non-adjustable crosshead design
- Convenient working height and ergonomic controls improve operator productivity and comfort
- Long stroke, high speed actuator is well-suited for tension applications requiring repetitive testing of similar-sized specimens
- Anti-rotation system prevents actuator from rotating during test stroke

## **Load Measurement:**

- High precision load measurement with sensitive load cell class 0.5
- Load Cells can be replaced according to different load ranges to make much more accurate and sensitive measurements
- Load measurement resolution is 20bit

## **Applied Standards:**

BESMAK BMT-S series UTM conform to many international standards, including (but not limited to):

- ASTM A370, A615, C39, C109, E4, E8, E9, E290, F606
- ISO 6892-1, 6892-2, 7438, 7500-1, 9513, 15630-1
- BS 4449
- EN10002-1, 10002-2
- JIS Z2241, Z2248

[\\*Contact us for additional compliance information](#)

## **ELECTRONIC CONTROL SYSTEM:**

**BESMAK BMT- S Series Universal Testing Machine** is controlled by “**New generation EDC Electronic Control Unit**”. EDC electronic control system is world’s one of the sensitive electronic control systems and used since 1975. It controls hydraulic and/or electromechanical systems by closed-loop control method.



Test can be done with both load and displacement/deformation control mode with closed loop control technology. With displacement/deformation control, user can obtain much more accurate and sensitive readings. Load of failure, strain of failure, max load, max strain, etc. can be obtained real-time at 2.5 kHz (2500 data/sec).

Load cell, video extensometer, automatic extensometer, etc. can be connected automatically to electronic control units. Besmak Universal Testing Software and EDC controller can recognize these sensors automatically due to sensor eeprom connectors, and calibration can easily be done with the software.

Controller has the excessive load protection system and can detect the failure automatically. Also, user can reset the load at the beginning of the test which gave easiness in daily tests.

User can control test, can adjust device settings and can control hydraulic grip by PC software and/or Remote control panel. Tests can be carried out by a single button.

Controller can detect indirect loads before the test (these loads can occur because of grips and mechanical system, etc.) and can prevent them affecting the test results.  
\*Sample protection feature.

Return of piston can be done automatically by electronic controller unit and Remote control panel.

Besmak Universal Testing Software has all SI and metric units of sensors. Electronic control unit can be connected to computer via USB or Ethernet.

Machine has emergency button which stops the test immediately when activated. User can use the button whenever an unwanted situation occurs.

### **Remote Control Unit:**

With the help of Remote Control Unit user can perform test, can control speed of actuator for sample adjustment, grips control, load / deformation / displacement and strain values display in real



time, adjust and control movement / positioning of grips, assign max.-min. limit etc.

The most important feature provided by Remote Control console unit is the user does not have difficulty when placing the specimen on the grips because of the flexibility / mobility of device.

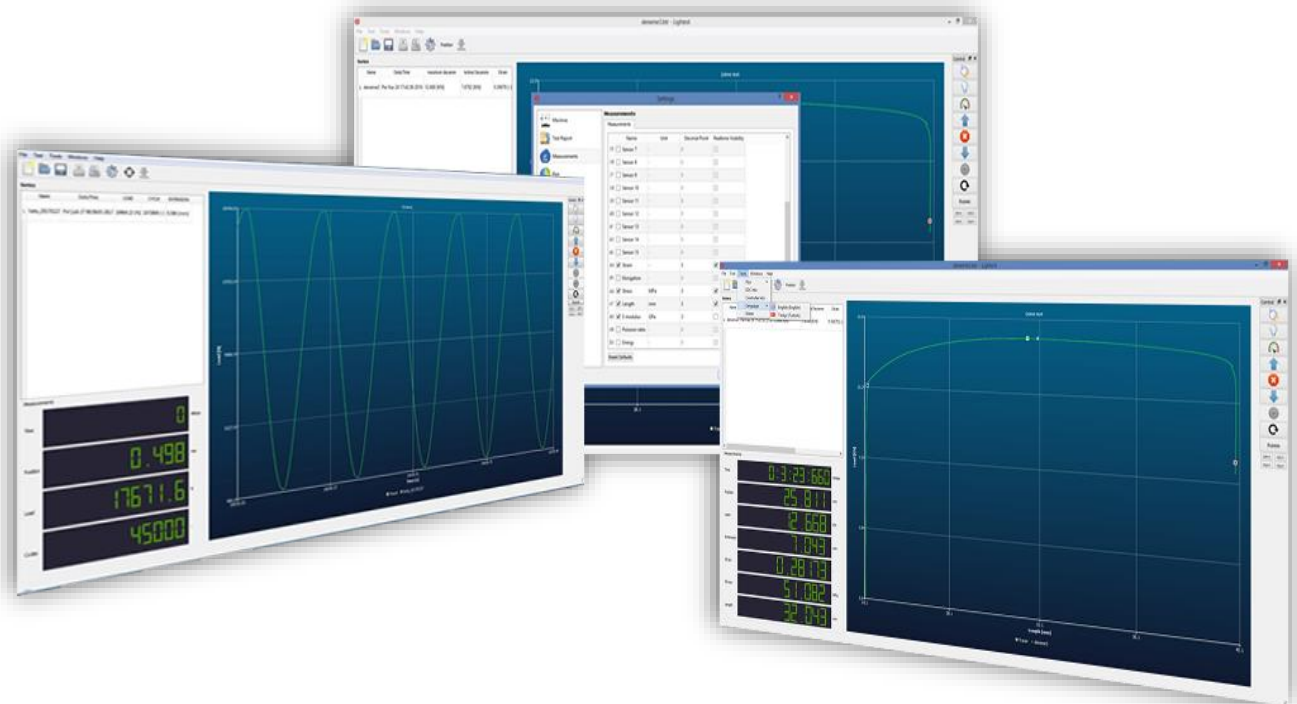
In an emergency case, test can be stopped immediately by pushing the emergency button on the Remote Control console.

#### Features of Remote Console:

- Remote Control console for machine controlling via keys and DigiPoti (Smart Key)
- OLED monochrome display to show real time values and status LEDs
- Magnetic rear for clipping to testing machine chassis
- Connecting cable length 3 m for easy and flexible use

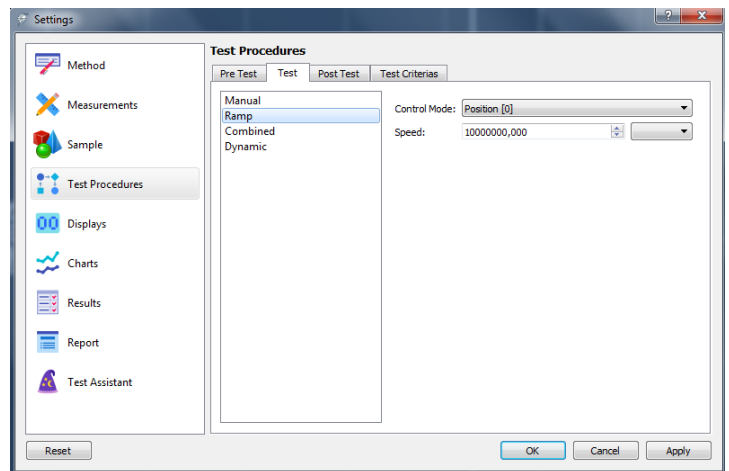
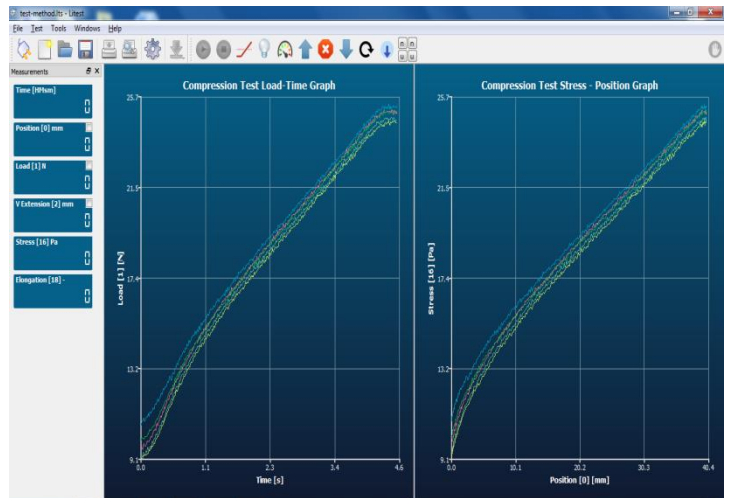
### **BESMAK UNIVERSAL TESTING SOFTWARE:**

Tests can be carried out on computer by Besmak Universal Testing Software. Real time data, test graphs and results can be observed on software. Results and graphs can be saved on computer and printed. User can personalize the software and report format according to company/corporation etc. Besmak Universal Testing Software is compatible with Windows7 and higher operating systems. Universal Testing Software provides solutions to all type of test applications.



#### **Key Features of Software:**

- User Friendly, easy to use interface
- Easy-to-understand icons and workflows make it easy to train new or experienced users, simplifying operator training, and allowing you to start testing even faster
- meticulously crafted visual design, gives the most comprehensive view of the test workspace
- User can make and save test templates with specific name / test standard etc.
- Automatic Save option for test report and/or raw values
- User defined graph axis to get real time vales of desired sensor
- User defined report setup and results definition
- High speed data display with 2.5 kHz data acquisition speed
- Automatic sensor and setup identification
- Series test option to combine test graphs and results of multiple samples
- Real time graphic analyzing feature to see graph data point to point
- User can perform tensile, compression, bending, shear and special test easily
- Test settings, test templates, loading sequences and device settings can be easily done by the software
- Besmak Universal Testing software supports multi languages which make it attractive for international users
- Besmak provides 24/7 online support to our customers.
- Over load detection and sample protection features for advance testing applications to protect sensitive samples
- Auto tare option for each connected sensor
- Auto positioning and return after test feature for actuator
- Software supports All SI and Matric units for sensors and measurements
- PC connection with LAN and USB cable (both available)





**Hydraulic Power Unit:**

- Independent serve-hydraulic unit connected to test actuator and hydraulic grips
- Gear type low noise hydraulic pump with necessary equipment for safe operation
- Servo valve to control test actuator for wide range of testing applications

**Testing Applications:**

- Metals - Bar, Plate, Pipe & Tube, Rebar, Structural
- Wire - Rod, Strand

**Hydraulic Wedge Type Grips ;**

- Hydraulic Wedge Type Grips
- For Flat Specimen 0 to 40 mm
- For Round Specimen 6 to 50 mm



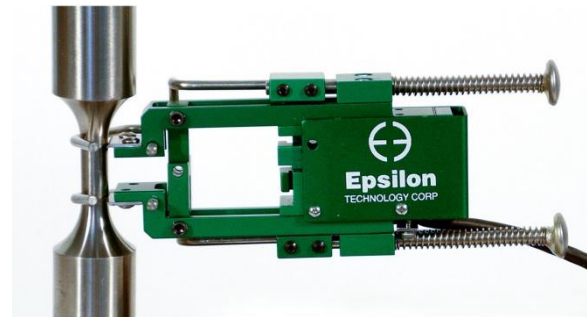
**Video Extensometer:**

- Type : non-contact type transverse strain extensometer.
- During the test, the screen should be synchronized with the extensometer in real time R-value and Poisson's ratio must be able to read in channel form.
- Determination of R-value according to ISO 10113
- No specimen marking is required for test.
- Field of View - 260mm
- Class 1



**Clip-On Extensometer:**

- Gauge Length LO :50 mm
- Measurement Length Lg :25 mm
- Sensitivity :0,01 mm



**Long Travel Extensometer, 900 mm**

- Class : 0.5
- Travel : 900 mm
- Standard gauge length : 10-100 mm in steps of 5 mm
- Measurement system: Ero 1480 (1 Vpp)
- Resolution <1  $\mu$ m

