2024
NEW
CATALOGUE

SERVO HYDRAULIC UNIVERSAL TESTİNG MACHINE WITH DOUBLE TEST AREA BMT-SD

BESMAK
Material Testing Machines

Servo Hydraulic Universal Testing Machine

BESMAK BMT-SD Series Servo Hydraulic systems are designed for high load capacities, featuring high-flow hydraulic transmission with high-precision control via a servo technology, synchronized with the EDC Series electronic control unit. These systems are known for their high precision and efficiency, low maintenance costs, and environmental friendliness. The main components include the main body, hydraulic jaws, servo valve-controlled hydraulic power unit, electronic control unit, suitable test software, and RMC hand control system.

The BMT-SD Series Test system offers a single test area with a top-mounted actuator and universal movement capability. Due to its universal design, the BMT-SD Series Servo Hydraulic Test Devices can perform tensile, compression, and bending applications with high precision and stability. It is adaptable for many different applications with both special and standard test accessories. This versatility makes the Universal Hydraulic Test Device suitable for the fundamental universal physical testing needs of sectors such as automotive, defense and aerospace, medical, iron and steel, construction materials, and many more. It is easy to use and functional.

The body is designed with a four-column structure, high rigidity, robustness, and a floor-standing design, providing high stability and performance for tensile, compression, bending, cyclic loading, and many other applications on almost all materials. These test systems, manufactured for high precision and durability, offer extensive testing flexibility to meet varying user requirements. Additionally, they are designed with features that enhance test efficiency and improve the testing experience for the operator.

General Specifications Of Besmak Hydraulic Unit

Load Capacity	0,1 - 5000 KN (Depends on frame features)
Measurement Resolution	Up to 20 Bit (Different resolutions are optional)
OS of The Controller	Linux Based (Highly stable and reliable)
Communication Port	Internal LAN and USB
USB Connection	Available - Internally; • Data Transfer (Report, Raw data etc.) • Communication with PC Software • For all external hardware connection.
LAN Connection	Available - Internally; • Communication with computer, • Can be set direct internet connection. Results can be sent directly as e-mail without using computer.
Memory	• 4 GB internal memory, • 32 GB Expandable memory with SD card
Data Acquisition	1000 to 2500 Data Per Second (Different sampling speeds can be provided on demand)
Data and Experiment Operating System	Can save, open and operate method based test parameters.
Reporting Types	• By separate charts, • By serial reporting (More than one result in the same graphic)
Number of Channels	8 channels in total (Optional) • **4 Digital Channels** (Load cell, Strain Gauge, Pressure etc.) • **4 Analog Channels** (Encoder, LVDT, Linear Transducer etc.)
Control Type of Machine	Closed Double Loop PID
Control Type - Loading Procedure	• Automatic and Manual Mod options, • Linearly Incraesing Loading and Unloading, • Holding at Constant Load, • Ramp Loading, • Step Loading,
Fast Preloading	Available (With automatic contact detection.)
Modulus of Elasticityand Poisson Ratio Calculations	Available (Optional)
Calibration Types	• Single Point Calibration, • Automatic calibration up to 10 Points (Machine makes automatic loading up to first calibration point and after entering reference value continues to loading for the next point.)
External Device Connectivity	Eligible to Connect Mouse, Keyboard and Printer (A4 Printers and Mini Printers can be connected without using computer.)
Software Update	• Automatically from **Internet**, • Automatically with **Flash Disc**,
Report Formats	PDF, EXCEL - CSV
Report Customization	User defined logo and test information,

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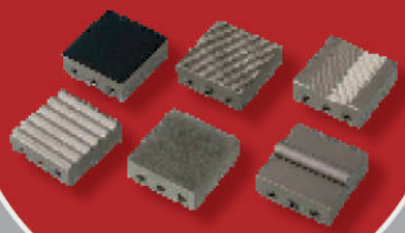
Servo Hydraulic Universal Testing Machine Features

The four-column structure guarantees sufficient strength to bear test loads within various capacities.
Various materials such as steel bars and concrete can be tested in tension, compression, bending, shearing according to relevant standards.
The test results are highly accurate and repeatable.
Hydraulic universal testing machines with different capacities, including 100 kN, 300 kN, 600 KN, 1000 KN, etc., can be provided to meet diverse testing needs.
Equipped with high-quality oil pump, servo valve, and professional test software to realize multi-channel closed-loop control (automatic control of test force, displacement, and deformation).
It integrates data acquisition, automatic measurement, automatic control, graphic display, and test result processing.
Support custom various test parameters.
The program supports hierarchical user management authority (two levels: administrator and operator).
The computer screen displays the test curve and test results in real time.
Test reports and test curves can be printed out.
The test results are presented in an open EXCEL report format, supporting user-defined report formats.
The machine has overload and limits protection functions.
A separate electric motor drive device is used to rapidly adjust test space when mounting the specimen.
Fitted with a hand-held remote control for quick operation on specimen mounting.
A pair of tensile test clamps, compression test attachments, flexural test fixtures, and an electronic extensometer are configured for the machine.

Besmak LC Series Load Cells

Extensometer

Hydraulic Pressure Adjustable Jaw System



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UNIVERSAL TESTING SOFTWARE

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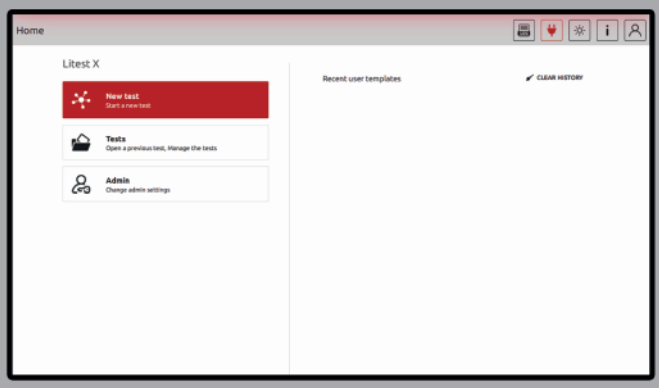
Tests can be carried out on computer by Besmak Universal Testing Software. Real time data, test graphs and results can be observed on software. Results and graphs can be saved on computer and printed. User can personalize the software and report format according to company/corporation etc.

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
- Meticulously crafted design provides a 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 2.5kHz 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, templates, sequences, and device settings are easily configured.
- Besmak provides 24/7 online support to our customers.
- Besmak Universal Testing software supports multiple languages
- It has a sample protection feature for 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)

Electronic Control Unit

SEMATRON V4

BESMAK Test Machines are controlled by “New generation Sematron V4 Electronic Control Unit”. Sematron Control Unit system is world’s one of the sensitive electronic control systems and used since 1993. 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 1 kHz (1000 data/sec).
Load cell, video extensometer, automatic extensometer, etc. can be connected automatically to electronic control units.

Besmak Litest X Testing Software and Sematron V4 Electronic 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.

SEMATRON

PROVIDES RELIABLE SOLUTIONS WITH ADVANCED TECHNOLOGY

8 CHANNELS

AUTOMATIC CALIBRATION UP TO 10 POINTS

DOUBLE LOOP SERVO ARCHITECTURE

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Material Testing Machines

"BESMAK: THE PIONEERING FORCE OF THE INDUSTRY, A GLOBAL LEADER EXPORTING TO OVER 50 COUNTRIES!"

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