

2025

BESMAK

FOUR COLUMN SERVO HYDRAULIC COMPRESSION FRAMES

SERVO TECHNOLOGY



BCO-C/ST

DESCRIPTION

A compression test determines behavior of materials under crushing loads. The specimen is compressed and deformation at various loads is recorded. BESMAK can provide and offer a lot of options for users such as 4-Column and Wall Type Frame Structures, Fully and Semi Automatic, Membrane and Touch Screen concrete compression machines.

While manufacturing machines compliant to standards, BESMAK carries out a number of research and development studies and makes innovations that revolutionize compression machines. Sematron Touch Series Control and Software System, which is fully developed in-house, is capable of high speed data display with 1 kHz data acquisition speed, and reading of different sensors like LVDT, strain gauge, load cell and pressure transducers. Thanks to multiple channel, the controller unit allows to attach different frames with single hydraulic power pack.

With industrial 10 inch LCD display and user-friendly BESMAK Universal Testing Software, users can view the real time graphs and analyze the data point by point, make and save their own test templates, create their own test methods, email results directly from LCD, use the machine in their own language and get online support from BESMAK team.

- **Highly stiff, floor-standing servo-hydraulic load frames for a range of force requirements**
- **Intuitive, versatile, and user-friendly software with powerful test design capabilities**
- **Digital controllers with high channel density, high capacity, and superior configurability**
- **Rugged, high-performance grips and fixtures**

The BCO-C/S series compression machines come with:

- ✓ **PC software**
- ✓ **Hydraulic unit**
- ✓ **Software user manual**
- ✓ **8-channel electronic controller**
- ✓ **Rigid welded wall type frame**
- ✓ **2 x 50 mm and 1 x 70 mm distance pieces**

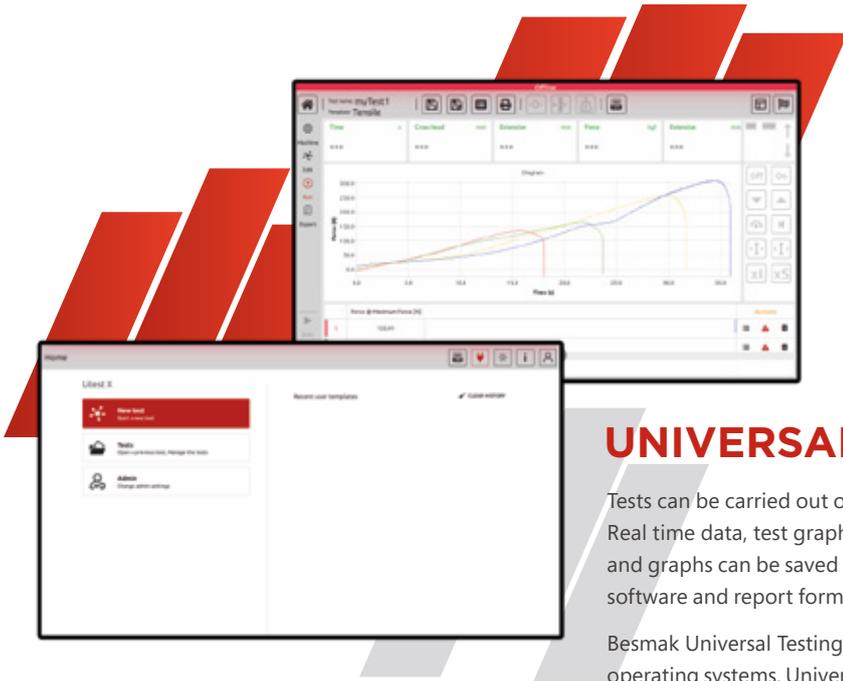
APPLIED STANDARDS

- ✓ ISO 7500-1 class 1
- ✓ EN 12390-4
- ✓ ASTM C39



**DESIGN
COMPACT**





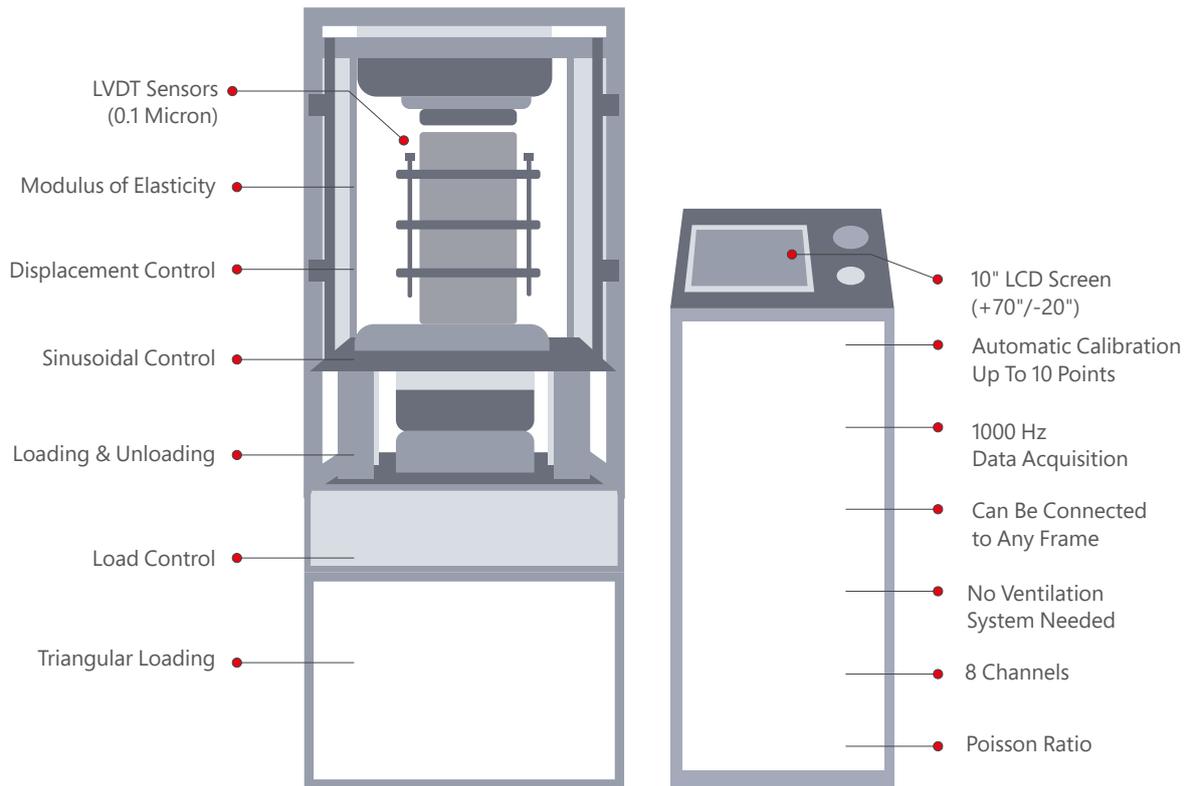
UNIVERSAL TESTING SOFTWARE

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.

GENERAL FEATURES OF THE UNIT

Load Capacity:	0.1-5000 KN (Depending on frame specifications)
Measurement Resolution:	Up to 20 Bit (Different resolutions available upon request)
Operating System of the Controller:	Linux Based (Extremely stable and reliable)
Communication Port:	USB Connection and Internal LAN
USB Connection:	Available - Internally: <ul style="list-style-type: none"> • Data Transfer (Report, Raw Data etc.) • Communication with PC Software • For all external hardware connections
LAN Connection:	Available - Internally: <ul style="list-style-type: none"> • Communication with computer • A direct internet connection can be set up and results can be sent directly via e-mail without using a computer.
Memory:	4 GB internal memory, expandable memory up to 32 GB with SD card.
Data Collection:	1000 data per second (Different sampling can be set upon request)
Data and Experiment Operating System:	Can save, open and run method-based test parameters.
Reporting Types:	• With separate graphics • Serial Reporting (Multiple results in the same graph)
Number of Channels:	Total 8 Channels (Optional) <ul style="list-style-type: none"> • 4 Analog (Load cell, Strain Gauge, Pressure etc.) • 4 Digital (Encoder, LVDT, Linear Converter etc.)
Control Type of Machines:	Closed Double Loop PID
Control Type Loading Procedure:	<ul style="list-style-type: none"> • Automatic and Manual Mode options • Linear Load Increase and Decrease • Standby at Constant Load • Ramp Loading • Step Loading
Fast Preloading:	Available (With automatic contact detection)
Modulus of Elasticity and PoissonRatio Calcs:	Available (Optional)
Calibration Types:	<ul style="list-style-type: none"> • Single Point Calibration • Automatic Calibration Up to 10 Points (The machine automatically leads up to the first calibration point and sets the reference value, continues loading for the next point after it is entered.)
External Device Connectivity:	Mouse, Keyboard and Printer Connection (AA Printers and Mini Printers can be connected without using a computer)
Software Update:	<ul style="list-style-type: none"> • Automatic from the internet • Automatic with Flash Disk
Report Formats:	PDF, EXCEL - CSV
Report Customization:	User defined logo and test information



TECHNICAL SPECIFICATIONS

CONTROL UNIT AND DISPLAY

- Fully automatic compression test machine with closed-loop "Sematron Touch Series" advanced controller
- Controller has 1000 Hz (1 kHz) data acquisition-processing and automatic calibration feature (2.5 kHz option available)
- Controller has 2 channels, expandable up to 8 channels
- Automatic user-defined pace rate adjustment with high accuracy
- Users can hold the load at any desired point for a specific time
- Linux-based 10-inch LCD touch screen with built-in test software
- Fast response real-time graphic display

LOAD MEASUREMENT AND CONTROL

Load measurement and control is carried out with a pressure sensor with a sensitivity of class 1 or better, according to EN-ISO-7500-1 standard, starting from 1% of the capacity

HYDRAULIC UNIT

Advanced hydraulic unit: multi-piston hydraulic pump, electrically driven, smooth and high flow rate, fast piston approach, with manifold and pressure limit valve, oil tank, and necessary joints

FRAME

- Rigid load frame in 4-column construction
- The columns are screwed free from play to the machine's upper and lower blocks
- Suitable for testing 150 x 150 x 150 mm, 200 x 200 x 200 mm cube and 150 x 300 mm, 160 x 320 mm cylinder samples (Other dimensions are available upon request)
- Upper platen spherically seated, allowing an inclination up to 3° for homogeneous loading
- Provided with corrosion-resistant distance platens for different sample sizes (30 mm, 50 mm, 70 mm, 80 mm)
- All transmission surfaces are additionally plane-parallel treated and precision machined
- Lower platen is marked to allow centering of both cubes and cylinders
- Safety door switch for secure operations
- Piston limit switch for secure operations
- At the end of the test process, the piston automatically returns to the default position for a new test

FRAMES

PRODUCT CODE	PRODUCT NAME	PRODUCT CODE	PRODUCT NAME
BCO-C400/FR	4 Column Frame, 400 kN Capacity	BCO-C3000/FR	4 Column Frame, 3000 kN Capacity
BCO-C600/FR	4 Column Frame, 600 kN Capacity	BCO-C4000/FR	4 Column Frame, 4000 kN Capacity
BCO-C1000/FR	4 Column Frame, 1000 kN Capacity	BCO-C5000/FR	4 Column Frame, 5000 kN Capacity
BCO-C1500/FR	4 Column Frame, 1500 kN Capacity	BCO-C10000/FR	4 Column Frame, 10000 kN Capacity
BCO-C2000/FR	4 Column Frame, 2000 kN Capacity		

PRODUCT CODE	PRODUCT NAME
BCO-C300/ST	Fully Automatic Hydraulic Compression Machine, 300kN Capacity
BCO-C500/ST	Fully Automatic Hydraulic Compression Machine, 500kN Capacity
BCO-C1000/ST	Fully Automatic Hydraulic Compression Machine, 1000kN Capacity
BCO-C2000/ST	Fully Automatic Hydraulic Compression Machine, 2000kN Capacity
BCO-C2500/ST	Fully Automatic Hydraulic Compression Machine, 2500kN Capacity
BCO-C3000/ST	Fully Automatic Hydraulic Compression Machine, 3000kN Capacity
BCO-C4000/ST	Fully Automatic Hydraulic Compression Machine, 4000kN Capacity
BCO-C5000/ST	Fully Automatic Hydraulic Compression Machine, 5000kN Capacity
BCO-C3000/ST	Fully Automatic Hydraulic Compression Machine, 3000kN Capacity
BCO-C4000/ST	Fully Automatic Hydraulic Compression Machine, 4000kN Capacity
BCO-C5000/ST	Fully Automatic Hydraulic Compression Machine, 5000kN Capacity

ACCESORIES

 <p>BALL SEAT FOR 2000/3000 KN COMPRESSION MACHINE BCO-199/1</p>	 <p>HARDNESS PLATEN FOR CONCRETE COMPRESSION MACHINE BCO-HP</p>	 <p>BLOCK PLATEN (RECTANGULAR) BCO-CBP</p>
 <p>SPLITTING TENSILE APPARATUS BCO-115</p>	 <p>AUTO - CENTERING DEVICE BGE-671/1</p>	 <p>PISTON SEAL SET BGE-605/3</p>
 <p>COMPRESSOMETER-EXTENSOMETER COMP</p>	 <p>TOUCH SCREEN BMT-CUT/LCD-10</p>	 <p>DISTANCE FOR 2000/3000 KN CONCRETE PRESS BCO-DP</p>
 <p>BESMAK ELECTRONIC CONTROL UNIT BMT-SCU</p>	 <p>LVDT LVDT</p>	 <p>CEMENT COMPRESSION APPARATUS BCE-CCJ</p>
 <p>CEMENT FLEXURAL APPARATUS BCE-CFJ</p>	 <p>COMPRESSION JIG ASSEMBLY FOR ROCK-CORE SPECIMENS BRC-710</p>	 <p>PRESSURE TRANSDUCER BGE-PT</p>

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



BESMAK

MATERIAL TESTING MACHINES



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