



Data Acquisition & Control System

GENERAL PROPERTIES:

Automatic range of 2000 kN and 3000 kN capacity compression testing machines has been designed to meet the need for reliable and consistent testing of concrete samples. All our machines feature the complete automatic test cycle with a closed loop digital readout. Once the specimen parameters have been introduced, it is sufficient to press the START button to complete the test.

Compression machines consist of their main parts: Frame, power pack and data acquisition & control system. Each part has been designed to manufacture machines with a high degree of mechanical stability and complies to EN 12390-4; BS 1881 and ASTM C39 (with suitable platen set) standards.

Main Characteristics :

- Automatic test cycle with standard Rapid Approach
 - Graphical - LCD Data Acquisition and Control System
 - Menu Driven Software for easy operation
 - Load vs time plot and instantaneous load rate displayed
 - Accurate load rate control within ± 5 from 1 kN/sec to 20 kN/sec
 - Class 1 starting from % 10 of the full range
- Ready Stress Calculation for the standards of EN 12390-3, EN 12390-5, EN 12390-6, EN 1338, EN 1340, EN 196
SI, Metric, Imperial Units
Data storage up to 256 tests
RS 232 output for printer or PC
PC software for test control and advanced report printout

Frame:

The load frame is a welded steel fabrication carrying the ball-seated upper platen. Positively located on the loading ram which is protected from debris by a cover, the lower platen is marked for the centering of cube and cylinder specimens. The dimensions of the frame allow the testing of concrete cylinders up to 320 mm long x 160 mm diameter; 100, 150 mm and 200 mm cubes. All machines are supplied complete with 30 mm, 50mm and 90 mm distance pieces. To test samples shorter than 150 mm extra distance pieces should be ordered. All machines are supplied with flexiglass front and rear removable safety doors. All frames have a single acting upstroking ram with over travel protection to stop the motor when the maximum platen travel be reached.

Main Characteristics :

- High stability welded assembly
- 50 mm piston stroke with safety limit switch
- Platen hardness of min 55 HRC
- Distance pieces and safety door included
- Ball seating assembly and frame tested for stability

Data Acquisition & Control System:

LCD graphics data acquisition and controls system is designed to control the machine and processing of data from load cells or pressure transducers installed on the compression machine frame. The easy to read LCD graphic display and touch-button data pad keys make the unit quick and straight forward to operate. All interactions with the measuring system are via the front control panel by using simple menu-driven procedures.

The Data Acquisition & control system is contained in light alloy housing and its design satisfies the ergonomic requirements for various use. Its digital graphic display allows real time load vs time graph. At the end of the test cycle, the results can be stored in the large memory or downloaded to a PC in software format. Dedicated software package is available for further online data processing, database management and certificate printing.

Main characteristics:

- High resolution 65.000 points
- 240x120 pixel blue-white graphic LCD display
- Standalone full automatic testing capacity
- CPU card by microprocessor 32 bit ARM risk architecture
- Can make manual tests if required
- Large permanent memory up to 256 test results
- RS232C (optional Ethernet) connection at 57600 band
- One RS232 serial port for connecting either PC or printer for data transmission
- Two analogical channels, use for Load Cell or pressure transducer
- A sample type and dimensions can be entered respect to the standards
- 18 key touch membrane keyboard
- Easy to operate with 6 main function keys
- Language select; English, Russian
- Can control two frames

Power Pack:

Dual stage power pack which is controlled by Data Acquisition & Control System is designed to supply required oil to the frames. Very silent power pack can load a specimen between 1 kN/ sec to 20 kN/sec. On the dual stage pump high delivery low pressure pump is used for rapid approach and low delivery high pressure radial piston pump is used for test execution. On all power packs maximum pressure valve is used to avoid machine overloading.

Main Characteristics:

- Dual stage pump
- 750 W power
- 25 liter oil capacity
- 60-100 mm/min fast approach speed

Safety Features:

- All compression machines are fitted with
- Max pressure valve to avoid machine overloading
- Ram travel switch to prevent excessive piston travel
- Front and rear gates with transparent durable flexi-glass.

TECHNICAL SPECIFICATIONS:

Capacity (kn)	2000	3000
Class 1 range (kN)	200-2000	20-200
Resolution	1/64.000	1/64.000
Dimensions	800 x 425 x 964	845 x 465 x 1048
Power (W)	750	750
Travel (mm)	50	50
Max. Distance between Platens (mm)	340	340
Platen Diameter (mm)	300	300
Weight (Kg)	800	1100

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