

UTC-4231 UTC-4331 AUTOMATIC COMPRESSION MACHINE



INTRODUCTION

Automatic Compression Machines are used to determine compression, split and flexural strengths, usually applied to materials of high compression but low tensile strength, in which the specimen is subjected to increasing compressive forces until failure occurs.

The UTEST Automatic range of 2000 kN and 3000 kN capacity compression testing machines has been designed for reliable and consistent testing of concrete samples. UTC 4231 (4331) meets the requirements of CE norms for safety and health of operator and the standards **EN 12390-4** in terms of its technical properties.

APPLICATIONS

- Early age compression strength test
- Flexural and splitting tests by using proper accessories
- Mortar (Cement) compression tests by using proper accessories
- Core testing

OPERATION

- Setting test parameters, including pace rate
- Pressing the START button on the control unit
- The machine automatically starts the rapid approach; switches the test speed after 1% of the load capacity of the machine, and stops once the specimen fails
- Automatically saves the test parameters and results

DESCRIPTION OF THE MACHINE

The main parts of the UTC 4231 (4331) compression machine are the Frame, Hydraulic Power Pack and Data acquisition and control unit BC 100.

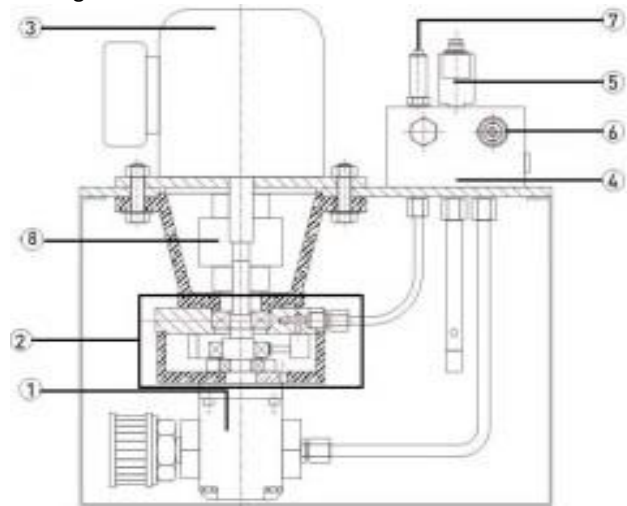
LOAD FRAME ASSEMBLY

The load frame consists of the followings:

Load frame, Compression platens, Upper platen with ball seating, lower platen, Loading Cylinder Assembly, Distance pieces, Limit Switch and Front and rear protective doors.

HYDRAULIC POWER PACK

UTEST dual stage power pack which is controlled by BC 100 is designed to supply required oil to the load frames for loading.



1. LOW PRESSURE GEAR PUMP
2. HIGH PRESSURE RADIAL PISTON PUMP
3. ENGINE
4. SPREADERS
5. SELENOID VALVE
6. SAFETY VALVE
7. TRANSDUSER
8. COUPLING COMPONENTS

DATA ACQUISITION AND CONTROL SYSTEM BC 100 UNIT.

LCD Graphics Data Acquisition and Controls System BC100 unit is designed to control the machine and processing of data from load cells or pressure transducers (installed on the compression machine frame and additional frames). Data is able to be collected from the data acquisition system and transferred to data management systems via serial port or network cable. Data such as peak load, load rating, etc. can be transferred automatically.



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ACCESSORIES

- An additional flexural frame can be connected to the hydraulic control system. Load ratings are 100 kN, 200 kN and 300 kN. Switching between frames only requires switching a valve and selecting the flexural option within the control system
- Software allows the user to control multiple testing frames with predefined settings to match the relevant standard. It also allows for the output of data in custom format to the users data management system of choice
- Optional part list for special tests and specimens;
 - Block test platens, splitting tensile and distance pieces.

SAFETY FEATURES

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button
- Frontal and rear transparent durable Plexiglas guards
- Software controlled maximum load value

TECHNICAL SPECIFICATIONS

Models	UTC 4231	UTC 4331
Capacity	2000 kN	3000 kN
Dimensions (WxLxH)	800mm x 500mm x 964mm	845mm x 540mm x 1048mm
Lower platens dimensions (DxH)	Ø300mm x 40mm	Ø300mm x 40mm
Upper platens dimensions (DxH)	Ø300mm x 40mm	Ø300mm x 40mm
Roughness value for texture of machine and auxiliary platens	0.4 µm	3.2 µm
Piston Diameter	250mm	300mm
Maximum piston movement	50mm	50mm
Power consumption	1350 watt	1350 watt
Voltage	220-240 V, 50-60 Hz, 1ph	220-240 V, 50-60 Hz, 1ph
Oil capacity	20 litre	20 litre
Maximum working pressure	410 bar	425 bar
Rapid approach rate	50 mm/min	40 mm/min
Weight	800 kg	1000 kg

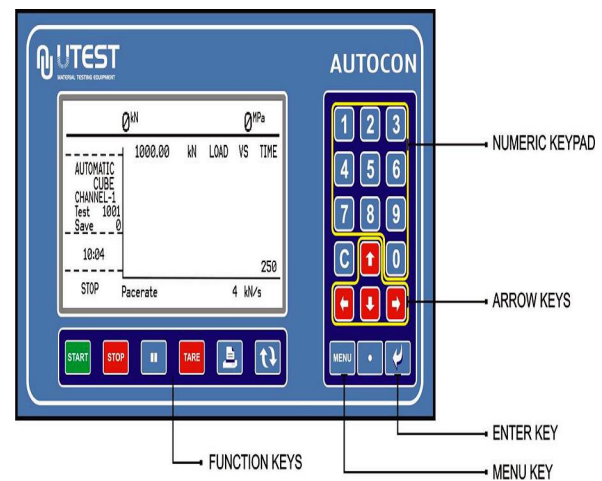
General Specifications of different models according to EN 12390-4 standards.

APPLICABLE STANDARDS

- EN 12390-3/12390-4
- BS 1881
- ASTM C39

COMMAND AND CONTROL UNIT

All Data Acquisition and Controls System BC100 operations are controlled from a front panel which consists of a 120x240 LCD display, a keypad and function keys.



OTHER AVAILABLE SYSTEMS

Manual, Semi-Automatic hydraulic power packs are also available. UTEST also produce a range of advanced servo controlled Automatic Power Pack with proportional valve. See website for further information.

ABOUT PCTE

PCTE have over 30 years' experience in the measurement and testing of concrete. With experience in research, consulting and construction they are able to assist you in reviewing the issues and developing solutions. PCTE can provide more than just the equipment. They can provide leading technical support for your business.

OTHER EQUIPMENT

The full Proceq range of equipment is available for insitu non-destructive concrete measurement, including Schmidt Hammers, Covermeters, Half Potentials, Resistivity, Ultrasonics and Permeability. The Olson Instrument range also includes the CTG, Freedom Data PC and DAS as well as the resonance tester.

We also supply IntelliRock maturity, temp and humidity logging systems, corrosion rate monitoring equipment & GPR.