Multiplex Machines

UTM-0107 is a Multiplex machine with a servo motor and LCD display. It is the frame only.

For analogue measurement, the frame can be completed with load ring and dial gauge. These parts should be ordered separately.

If the machine will be used with a data logger, the unilogger (UTG-0325), load cell and displacement transducers should be ordered separately.

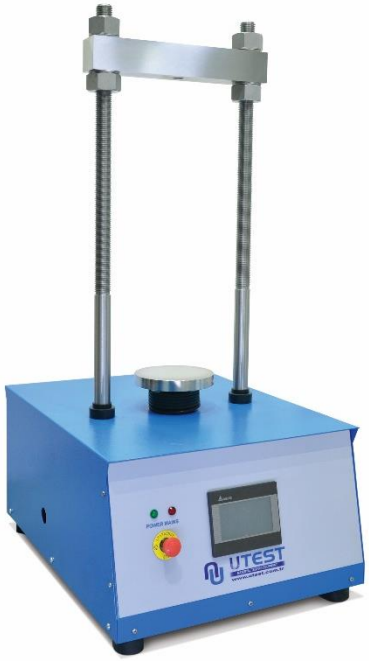
Uniaxial, Triaxial, Marshall and CBR tests can be completed with the UTM-0107 by adding the test accessories.

UTM-0108 and UTM-0109 are Multiplex machines with a servo motor and BC100 TFT Graphics Data Acquisition and Control System. The UTM-0108 has a capacity of 50kn and the UTM-0109 has a capacity of 100kn.

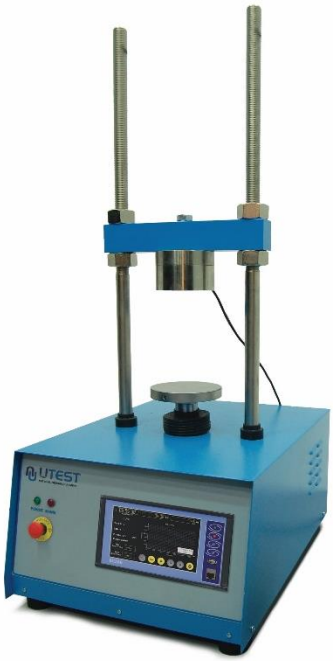
The Multiplex Machine is used to perform Uniaxial, CBR and Marshall Tests. The UTM-0108 is equipped with a servo motor and BC100 TFT graphics data acquisition and control system. The apparatus is capable of doing tests with the speed range of 0.00001 mm/min to 51 mm/min. The machine can also be used to carry out load controlled tests. The UTM-0108 has been designed with a sturdy and compact two column frame, with an adjustable upper cross beam.

Technical Specifications

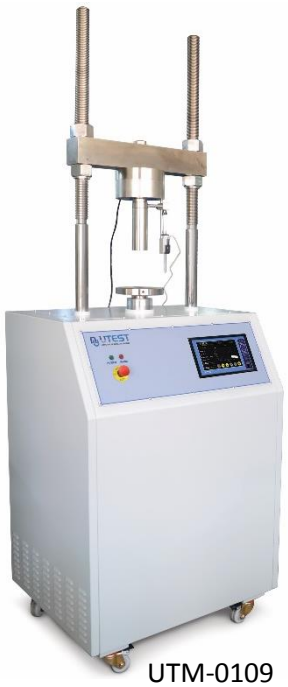
Model	UTM-0109	UTM-0108	UTM-0107
Test Speed	0,00001 – 51 mm/min	0,00001 – 51 mm/min	0,00001 – 51 mm/min
Capacity	100 kN	50 kN	50 kN
Dimensions (mm)	710x555 x1910	550x700 x1200	550x700 x1200
Weight (approx.)	235 kg	102 kg	102 kg
Vertical Daylight	610 mm	NA	NA
Horizontal Daylight	370 mm	NA	NA
Power	1000 W	NA	NA



UTM-0107



UTM-0108



UTM-0109

Multiplex Machines

Test accessories should be ordered separately according to the tests.

To perform Uniaxial tests:

UTM-0115	Compression Platens, used to perform uniaxial and unconfined compression tests. Supplied complete with ball seating assembly.

To perform Triaxial tests:

Typical configuration of system for different tests (UU-CU-CD)			
Product Code	**Description**	**UU**	**UU-CU-CD**
UTGM-0010	Load Cell 5 k N	1	1
UTGM-0062	Linear Potentiometric Displacement Transducer, 25 mm	1	1
UTS-0400 UTS-0401	Triaxial Cell**	1	1
UTS-0405	Block with One Connection Line for Triaxial Test Cells,	1	-
UTS-0406	Block with 3 Connection Lines for Triaxial Test Cells	-	1
UTGM-0110	Pressure Transducer	1	3
UTS-0408	Oil and Water Constant Pressure System	1	2
UTS-0415	Automatic Volume Change Unit	-	1
UTG-0320	Static Unilogger4 Channels	-	1
UTS-0416	Software to Perform UU Triaxial Tests	1	1
UTS-0417	Software to Perform CU-CD Triaxial Tests	-	1
UTS-1330 and UTGP-1140	De-Airing Water Tank, 7 L. and Hose	1	1

To perform Marshall tests:

UTAS-0057	Breaking Head Stability Mould, cast iron, for 4” (101,6 mm) Marshall Samples
UTAS-0058	Breaking Head Stability Mould, cast iron, for 6” (152,4 mm) Marshall Samples
	Adaptor for Breaking Head

To perform CBR tests:

UTS-0870	CBR Penetration piston, used to perform CBR tests

Multiplex Machines

BC 100 Unit TFT Graphic Display Data Acquisition and Control Unit

BC100 TFT Graphic Display Data Acquisition and Control Unit is used to control the machine and processing of data from load-cells, pressure transducers or displacement transducers, which are fitted to the machine.

The front panel of the unit consists of a 800x480 pixel 65535 colour-resistive touch screen and function keys. All the operations can be controlled using this front panel. The BC100 includes 4 analogue channels for load cells, pressure transducers or displacement transducers.

BC100 TFT unit has easy to use menu options. It displays all menu option listings simultaneously, allowing the operator to access the required option easily, to activate the option or enter a numeric value to set the test parameters. The BC100 digital graphic display is able to draw real-time "Load vs. Time", or "Stress vs. Time" graphs.

BC100 unit offers many addition unique features. You can save more than 10000 test results in its internal memory. BC100 unit has support for various off-the-shelf USB printers, supporting both inkjet and laser printers. Thanks to its built-in internet protocol suite, every aspect of BC100 device can be controlled remotely from anywhere around the world.

- Calibration Range Class 1 from 2% of the full capacity
- Maximum piston travel 80 mm
- Distance between columns 260 mm

Main Features

General:

- Can make test with displacement or load control
- Displacement control from 0.00001 mm/minute to 50,8 mm/minute
- Pace rate control from 0.01 kN/s to 2 kN/s (respect to stiffness)

When used for CBR Test:

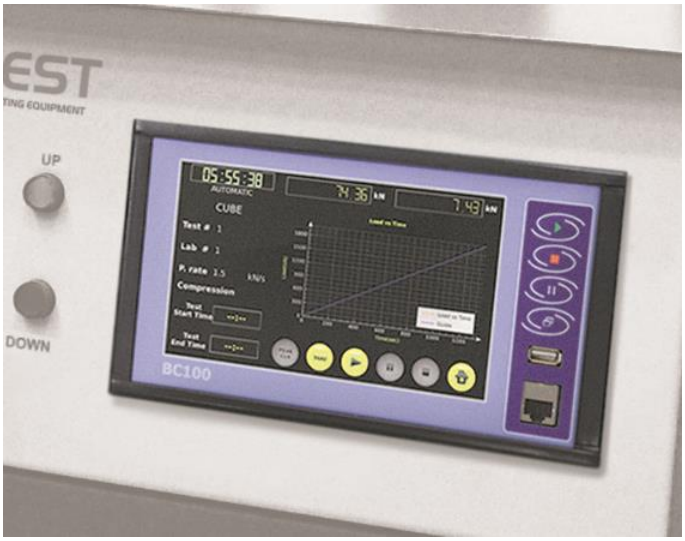
- Calculates corrected CBR value at 2.5 and 5 mm the digital unit saves the load value at user defined displacement values such 0.625, 1.25, 1.875, 2.5, 3.75, 5, 7.5, 10, 12.5 mm
- The load corresponds to the displacements corrected respect to the linear region of the data has also saved
- The % CBR at 2.5 mm and % CBR at 5 mm is also automatically calculated and saved

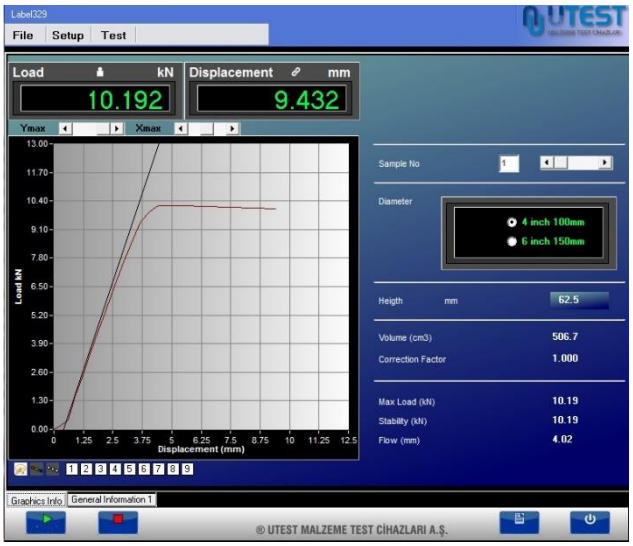
When used for Marshall Test:

- Automatically calculates flow and stability values.

When used for Triaxial Test:

- It shows stress value corrected respect to the displacement sensor.





Multiplex Machines

Main features when the machine is used for Load Control Type Tests on different type of specimens:

- The stress is shown.
- Real time display of test graph.
- CPU card with 32-bit ARM RISC architecture
- Permanent storage capacity up to 10000 test results
- 4 analogue channels (it would be simultaneous or not depending on the application at the factory) for
  - One analogue channel for high capacity load cell
  - One analogue channel for displacement transducer
  - One analogue channel for low capacity load cell
  - One analogue channel for pressure transducer for oil-water constant pressure unit
- Programmable digital gain adjustment for load-cell, pressure transducers, strain-gauge based sensors, potentiometric sensors, voltage and current transmitters
- 1/256000 points resolution per channel
- 10 data per second sample rate for each channel
- Ethernet connecting for computer interface
- 800x480 resolution 65535 colour TFT-LCD industrial touchscreen
- 4 main function keys
- Multi-language support
- 3 different unit system selection; kN, Ton and Lb
- Real-time clock and date
- Test result visualization and memory management interface
- Remote connection through Ethernet
- USB flash disc for importing test results and for firmware
- USB printer support for inkjet and laser printers (ask for compatible models)
- Camera support for real-time video recording during test (ask for compatible models)
- Free of charge PC software for the test control and advanced report generation
- All UTEST software including Marshall, CBR, Triaxial (UU,CU,CD), Uniaxial etc. can be used with multiplex machines.

About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction materials. PCTE can provide more than just the equipment, they can provide expert training. PCTE have a service centre in Sydney in which they can provide calibration, repairs and warranty repairs.

Other Equipment

PCTE supply three main ranges: NDT, Lab and Geotech Instrumentation.

NDT includes: Rebound Hammers, Covermeters, Ultrasonics, GPR, Corrosion Testing, Coating Testing and Foundation Testing

Lab includes equipment for: Concrete, Cement, Aggregate, Soil, Asphalt and Metal

Geotech Instrumentation includes: Strain Gauges, Piezometers, Inclinometers, Extensometers, Tiltmeters, Load Cells and Dataloggers