



# Physical Test Solutions

Innovative Solutions in Material Test Equipment

## CTM Series of Compression Testing Machines



COMPRESSION  
COMPRESSION



# CTMC and CTMD Series Compression Testing Machines

Physical Test Solutions (PTS) provides a full range of compression testing machines for tests on cement and concrete. The CTMC and CTMD series compression testing machines are designed for compression tests of building materials such as concrete and cement. They are also used for compression performance test of rubber pads and top forge tests on metals. The CTMC and CTMD conform to ASTM E4, ASTM C39 standard, IS07500-1 and DIN51220. Model CTMD has a digital readout and model CTMC is a computerized servo controlled system.

Physical Test Solutions (PTS) compression testers are manufactured in an ISO 9001 certified facility, and comply with ASTM, ISO, EN and all relevant international standards.

## Specifications:

Main specifications	CTM-1000	CTM-2000	CTM-3000
Maximum Load	1000kN	2000kN	3000kN
Measuring range	0-200kN 0-500kN 0-1000kN	0-400kN 0-1000kN 0-2000kN	0-600kN 0-1500kN 0-3000kN
Accuracy	±1%		
Compression plates	300 mm diameter		350 mm diameter
The distance between two compression plates	320 mm		410 mm
Piston stroke	100 mm		
Motor	1.47 HP	2 HP	3 HP
Dimensions	900 x 530 x 1350 mm		1060 x 550 x 1850 mm
Weight	1,080 Kg		2,500 Kg



CTMD



CTMC



CompuSoft Software

# FACTM Series Fully Automatic Cement Strength Testing Machine

The **FACTM** is a technological design that integrates mechanics, electronics to produce LCD data and graphic displays of constant stress loading curve with low noise and high accuracy. The **FACTM** has the following features:

- ◆ Advanced multiple-function throttle valve control system that substitutes traditional proportional speed-adjusting valve, which avoids the block caused by oil pollution.
- ◆ High accuracy load cell substitutes the traditional oil press transducer.
- ◆ High quality parts such as inner meshing high-speed & high-pressure gear pump, Omron frequency conversion control system, Sharp LCD display and most electromagnetic valves guarantees reliable performance.
- ◆ Cement compression and bend test can be performed on one machine, thus significantly boosting the performance / price ratio.
- ◆ Patented oil bursa cylinder technology eliminates oil leakage.
- ◆ Intelligent – easy operation that elevates and breaks the specimen, records and stores data with the stroke of a key.
- ◆ Test results can be analyzed and connected to a computer via an RS232 port.
- ◆ Modular machine design facilitates installation, adjustment and maintenance.
- ◆ **FACTM** conforms to EN 196, ISO 679, and ASTM C 109

## Specifications

### 1. Indicating value accuracy

- 1.1 Indicating value relative error:  $\pm 1\%$
- 1.2 Indicating value repeatability error: 1%
- 1.3 Zero-return relative error:  $\pm 0.1\%$
- 1.4 Load resolution: 0.5%

### 2. Compression test

- 2.1 Max. Load: 200/ 300kN
- 2.2 Min. Load: 0.5kN
- 2.3 Constant speed tracking point: 100%FS, 0-200/ 0-300kN
- 2.4 Constant loading speed:  $2.4 \pm 2.5\%$  Kn/s
- 2.5 Diameter of upper and lower platen:  $\phi 125\text{mm}$
- 2.6 Distance between upper and lower bearing plates: 233mm
- 2.7 Max. Travel of lower bearing plate: 20mm

### 3. Flexural test:

- 3.1 Max. Load: 10 / 15kN
- 3.3 Constant speed tracking point: 0-10 / 0-15kN
- 3.4 Constant loading speed: 50 N/s
- 3.5 Diameter of upper and lower platen:  $\phi 125\text{mm}$
- 3.6 Distance between upper and lower bearing plates: 185mm
- 3.7 Max. Travel of lower bearing plate: 20mm

### 4. Machine parameters

- 4.1 Main motor power: AC 750W
- 4.2 Elevating motor power: DC 100W
- 4.3 Power supply: 220V (1 10%), 1 PH, 50Hz
- 4.4 Working dimensions: 1300mm x 600mm x 1450mm  
Inner dimensions: 1300mm x 600mm x 1020mm
- 4.5 Weight: 320 / 330 Kg



# CCTM Compression Testing Machine

The **CCTM** compression testing machine is mainly designed for testing the compression strength of cement. Test data, curves and parameters are visible on the LCD display. The **CCTM** complies with international standards including ISO679 and DIN EN196-1.

## Features:

- The **CCTM** has a double columns structure, the upper platen is mounted on the fixed crosshead, the lower platen applies load on the specimen through driving lead screw, and AC servo control and driving system is at the bottom of the load frame. The variable speed of 0.01-50 mm/min is adjusted by an AC servo system with high control accuracy.
- A high frequency AC servo motor drives a ball screw mechanism to perform the test.
- An LCD controller is used to set test parameters, control test processes, perform data acquisition, analysis and display results. The unit can be programmed to perform single specimen tests or batch tests.
- The unit is connected to a computer and printer for data processing and printout of test curves and reports.

The combination of the ball screw mechanism driven by the AC servo motor and the load cell for force measurement eliminates oil leakage inherent to hydraulic systems.

## Specifications:

- Maximum load: 300kN
- Load accuracy:  $\leq \pm 1\%$
- Load range: 6-300kN
- Load speed adjusting range: 1-10kN/s, can set at will.
- Test speed control range: 0.01-50mm/min
- Maximum distance between upper and lower platen: 250mm
- Size of upper and lower platen: 140 mm diameter
- Load frame dimension: 830 x 530 x 1450 mm
- Weight: Approximately 300kG
- Power: 220V, 2kW



## CFT Series of Hydraulic Compression & Flex Testing System with Servo Control

The **CFT** series is designed for compression and bending test of building material items, such as concrete and cement specimens. The system is also used for compression performance test of rubber pads and top forge tests on metals. The systems is ideal test equipment for quality control at industry & mineral enterprises, educational teaching in high schools, and technology searching at scientific institutes. The **CFT** series is available in compression capacities of 1000KN and 2000KN.

### Product configuration and feature:

- ⇒ Two load frames; one is for compression test and another to do flexural test.
- ⇒ One control console controls both compression and flexural tests.
- ⇒ Compusoft software controls test, performs data processing and features report generation capabilities.
- ⇒ Conforms to BS1881: Part 115, ASTM E4, ASTM C39, C1231 -AASHTO T22 -NF P18-411 -UNE 83304, 7242 IS07500-1, DIN51220

### Specifications:

- ❖ Maximum compression loads: 1000kN or 2000KN
- ❖ Accuracy:  $\pm 1\%$
- ❖ Compression plates:  $\varnothing 300\text{mm}$  (suitable for specimen Cubic 100mm, 150mm and 200mm, Cylinder Dia. 150mmX300mm, Dia. 160x320mm) or others customer required.
- ❖ The distance between two compression plates: 320mm for 1000KN model; 330mm for 2000KN model.
- ❖ Piston stroke: 100mm
- ❖ Motor power: 1.KW for 1000KN model, 1.5KW for 2000KN model
- ❖ Dimensions: 900x530x1350mm
- ❖ Weight: 1100 kg



**Controller:** Servo control with control console, LCD display, on board memory. Computer can be connected to the controller. Also test report and data processing are performed by the computer.

With 20mm, 40mm, 50mm square platen, the test space can be adjusted for different specimens to be tested.

### Flexural Testing load frame:

- Maximum load: 100kN
- Maximum vertical clearance: up to 490mm.
- Horizontal clearance: 650mm
- Roller size: 40mm diameter x 300mm (long) or 38mm diameter x160mm (long)
- Distance between upper rollers: adjustable from 150 to 1200mm
- Piston stroke: 110mm
- Overall dimensions: 879x1450x1500mm.
- Weight approx.: 200kg
- Standard specimen: 150x150x600/750(mm), 100x100x400/500mm or others required by customer.



### Software:

According to standards of building construction materials, the software can be written. Load in real time, maximum load, test time, load speed can be displayed. Test curves can be also showed through the windows in real time. The operator can also edit the software according to test requirement.

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