# SUPERB

## AUTOCON

**COMPRESSION TESTING MACHINES MANUFACTURER**

**ESTD. 1969**

# COMPRESSION TESTING
# ECO MODEL DIGITAL

## Eco Compression Testing Machine

The Eco Compression Testing Machine is designed to conduct compression tests on concrete cube and cylinder specimens. This robust, welded plate load frame is equipped with an attached hydraulic power pack. It includes solid machined spacers for testing various sizes of concrete specimens, and the piston is hard-chromed for quick lift and return.

Capacity Options:

- 1000 kN
- 2000 kN
- 3000 kN

Key Features:

- Overload Cut Off Facility
- Piston Over Lift Cut Off Facility
- Compact and Sturdy Design: Load frame is base-mounted with the pump clamped to the frame.
- Matt Finished PU Paint: Available in a dark color.
- Push Buttons: Equipped with built-in light indicators.
- Safety Lockable Door
- Hardened and Ground Platen ID Provided

Key Observations

- Testing Capability: The 25 and 50 Ton models are designed for smaller samples (50, 60, 70 mm cubes), whereas the 100 Ton through 300 Ton models are rated for standard 100 mm and 150 mm concrete cubes.

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- Pressure Intensity: Interestingly, the 120 Ton model operates at the highest pressure ($640 kg/cm^2$), even higher than the 200 and 300 Ton models, due to its specific ram-to-capacity ratio.
- Consistency: All models share a Ram Travel of 50 mm and a Vertical Daylight (working height) of 310 mm, which is standard for most concrete specimen testing.

**Note: At the time of ordering, please specify, motor - phase: (i) 440 V AC, Three Phase or (ii) 230V AC, Single Phase**

# SPECIFICATIONS

| CAPACITY | 25 Ton | 50 Ton | 100 Ton | 120 Ton | 200 Ton | 300 Ton |
|---|---|---|---|---|---|---|
| **Ram Diameter** | 80 mm | 120 mm | 165 mm | 165 mm | 234 mm | 250 mm |
| **Max Pressure** | 480 kg/cm^2 | 480 kg/cm^2 | 480 kg/cm^2 | 640 kg/cm^2 | 480 kg/cm^2 | 600 kg/cm^2 |
| **Motor Power** | 0.5HP (230V) | 0.5HP (230V) | 1HP (440V) | 1HP (440V) | 1HP (440V) | 1HP (440V) |
| **Platen Dia.** | 200 mm | 200 mm | 220 mm | 220 mm | 300 mm | 300 mm |
| **Horiz. Clearance** | 210 mm | 210 mm | 240 mm | 240 mm | 310 mm | 350 mm |
| **Machine Weight** | 210 kg | 210 kg | 330 kg | 340 kg | 580 kg | 850 kg |

# COMPRESSION TESTING
# ECO SMART

**SMART SERIES**

**CAPACITY: 1000KN / 2000KN / 3000KN**

The Eco Smart Compression Testing Machine features a robust welded plate-type load frame, accompanied by a hydraulic power pack. It comes with solid machined spacers designed for testing various sizes of concrete specimens. Additionally, the piston is hard-chromed to ensure quick lifting and returning.

## Features:

- 7" LCD touch screen
- 10-point dynamic calibration capability
- Onboard printing functionality
- Overload safety cut-off mechanism
- CNC-finished distance pieces provided to accommodate specimens of various shapes and sizes
- Compact and sturdy load frame designed for base mounting, with the pump securely clamped to the frame
- Matte-finished PU paint in a dark color
- Lockable safety door
- Hardened and ground platen
- Real-time graph for load versus time
- Onboard input for sample ID, test ID, and lab ID
- Onboard input for specimen weight and age
- SCADA software available (additional cost applies)
- Complies with key specifications of IS-516, IS-14858, and other ASTM, EN, and BS standards as applicable
- Actual pace rate displayed in kN/sec
- Automatic stress determination and display
- Self-aligning platen
- Data storage for approximately 100,000 records on a pen drive, with graphs available in .csv/.jpeg format
- Peak stress calculation based on specimen type and shape
- No external PC or software required, making it easy to learn and use
- 5% overload protection for machine calibration to full load

| Specification | 1000 kN (~100T) | 200 Ton | 300 Ton |
|---|---|---|---|
| **Ram Diameter** | 165 mm | 234 mm | 250 mm |
| **Max Pressure** | 480 kg/cm^2 | 480 kg/cm^2 | 600 kg/cm^2 |
| **Least Count** | **0.001 kN** | **0.001 kN** | **0.001 kN** |
| **Specimen Range** | Up to 150mm Cube | Up to 200mm Cube | Up to 200mm Cube |
| **Horizontal Space** | 260 mm | 320 mm | 350 mm |
| **Machine Weight** | 250 kg | 580 kg | 800 kg |

# CTM ECO AUTO SMART

**SMART SERIES**
**CAPACITY:**
**1000KN / 2000KN / 3000KN**

Eco AutoSmart Compression Testing Machine is a Sturdy welded plate type load frame complete with hydraulic power pack attached to it. Solid machined spacers are supplied to test different sizes of concrete specimen. The piston is duly hard chromed for fast lift and return.Pace rate specific for 150mm cube

## FEATURES:

- 7" LCD touch screen
- 10 point dynamic calibration facility
- On board printing facility
- Overload safety cut off facility
- CNC finished distance pieces supplied to accommodate specimen of different shapes / sizes
- Compact & sturdy design load frame to be base mount with pump Clamped to frame
- Matt finished PU paint in dark color
- Emergency stop push button
- Safety lockable door
- Hardened and grinded platens
- Real-time graph for load vs time
- Sample id, test id and lab id can be input onboard
- Weight and age of specimen can be input onboard
- 230 V AC, single phase motor
- SCADA software available (at additional cost)
- Meets the key specification of IS -516 & IS 14858 and other ASTM, EN and BS standard depending on platens and accessories chosen.
- Actual pace rate display in KN/sec
- Automatic stress determination and display.
- Self aligning platen.
- Data storage approx 10000 records on pendrive with graph in .csv/.jpeg format
- Peak stress calculation based on sample type and shape.
- 5% overload protection to calibrate the machine to full load

| Specification | 1000 kN | 200 Ton | 300 Ton |
|---|---|---|---|
| **Ram Diameter** | 165 mm | 234 mm | **300 mm** |
| **Pace Rate Control** | 1.0 to 15.0 kN/sec | 1.0 to 15.0 kN/sec | 1.0 to 15.0 kN/sec |
| **Power Supply** | 1 HP, 230V | 1 HP, 230V | 1 HP, 230V |
| **Max Pressure** | $480 kg/cm^2$ | $480 kg/cm^2$ | $600 kg/cm^2$ |
| **Horiz. Clearance** | 260 mm | 320 mm | 380 mm |
| **Machine Weight** | 250 kg | 580 kg | 850 kg |

# ECO SERVO SMART

**THE SUPERB AUTOCON ADVANCED SERVO COMPRESSION TESTING MACHINE IS A HIGH-PERFORMANCE SOLUTION ENGINEERED TO MEET RIGOROUS INTERNATIONAL TESTING STANDARDS. THIS ROBUST MACHINE FEATURES A STURDY, WELDED-PLATE LOAD FRAME WITH AN INTEGRATED HYDRAULIC POWER PACK, COMBINING DURABILITY WITH A COMPACT FOOTPRINT.**

**THE USER EXPERIENCE IS CENTERED AROUND AN INTUITIVE 7" LCD TOUCH SCREEN, MAKING OPERATION AND MAINTENANCE SEAMLESS. TO ENSURE VERSATILITY ACROSS VARIOUS MATERIALS—INCLUDING CONCRETE CUBES, CYLINDERS, ROCK, AND PAVING TILES—THE MACHINE INCLUDES SOLID MACHINED SPACERS AND A HARD-CHROMED PISTON FOR RAPID LIFT AND RETURN. WITH PRECISION-ENGINEERED PACE RATE CONTROL, IT DELIVERS CONSISTENT, RELIABLE RESULTS FOR ANY SPECIMEN SIZE.**

**Control & Interface**

INSTRUMENT IS Equipped with a 7" LCD touch screen for intuitive operation and data entry.
Precision Calibration: Includes a 10-point calibration facility, ensuring high accuracy across the entire loading range.
Data Portability: Features a USB port for easy data transfer via pen drive.
Software Integration: While the on-board system handles standard tests, it is SCADA-ready, allowing for advanced computer-based data logging and analysis (optional).

**Performance & Automation**

Pace Rate Control: Fully automatic regulation from 0.1kN/sec to 20kN/sec. This ensures the test complies with international standards (like ASTM, EN AND IS) which require a constant loading rate.
Live Visualization: Displays a Real-time Graph (Load vs. Time) on the screen, allowing operators to monitor the specimen's behavior until failure.
Hydraulics: The pump is integrated and clamped directly to the frame for a compact, space-saving "base mount" footprint.

**Safety & Durability**

Triple-Layer Protection: 1. Overload Cut-off: Prevents the machine from exceeding its maximum capacity.
2. Piston Over-lift Cut-off: Uses a limit switch to prevent the hydraulic jack from extending too far.
3. Safety Door: A lockable door protects the operator from flying debris during specimen failure.

**Build Quality:**

The load frame is CNC-finished with a Matt PU paint coating. It includes hardened and ground platens to ensure uniform load distribution on the specimen.

# ECO SERVO SMART

| CAPACITY | 25 TON | 50 TON | 100 TON | 200TON | 300 TON |
|---|---|---|---|---|---|
| RAM DIAMETER(MM) | 100 | 120 | 170 | 250 | 300 |
| RAM TRAVEL (MM) | 50 | 50 | 50 | 50 | 50 |
| PACE RATE (KN/SEC) | .1KN-6KN | .1KN-6KN | .1KN-10KN | .5KN-20KN | 1KN-20KN |
| MOTOR CAPACITY | .5HP 230 V | .5HP 230 V | 1HP 440V | 1HP 440V | 1HP 440V |
| LEAST COUNT (KN) | 0.1KN | 0.1KN | 0.001KN | 0.001KN | 0.001KN |
| MAXIMUM PRESSURE(KG./CM) | 320 | 440 | 440 | 400 | 400 |
| PLATEN DIAMETER(MM) | 200 | 200 | 220 | 300 | 300 |
| HORIZONTAL CLEARENCE(MM) | 210 | 210 | 240 | 310 | 380 |
| VERTICAL DAY LIGHT (MM) | 310 | 310 | 310 | 310 | 310 |
| HEIGHT OF LOAD FRAME(MM) | 670 | 670 | 750 | 890 | 990 |
| WEIGHT APPROX (KG) | 210 | 210 | 330 | 580 | 950 |
| CUBE SPECIMEN (MM) | 50,70.6 | 50,70.6 | 100,150 | 100,150 | 100,150 |
| CYLINDER SPECIMEN(MM) | 100X200<br>150X300 | 100X200<br>150X300 | 100X200<br>150X300 | 100X200<br>150X300 | 100X200<br>150X300 |

# 3IN 1 ECO SERVO SMART

**THE 3IN1 SERVO SMART FLEXURE CTM BY SUPERB AUTOCON IS A VERSATILE, HIGH-END LABORATORY SYSTEM DESIGNED TO PERFORM THREE DISTINCT TYPES OF TESTS WITHIN A SINGLE INTEGRATED UNIT.**
**UNLIKE STANDARD MACHINES THAT ONLY TEST CUBE STRENGTH, THIS "3-IN-1" SYSTEM IS ENGINEERED TO HANDLE COMPRESSION, FLEXURE (BENDING), AND OFTEN SPLITTING TENSILE TESTS, MAKING IT A SPACE-SAVING POWERHOUSE FOR CONSTRUCTION LABS.**

## 1. High-Precision Control & Accuracy

- Siemens Control & Italian Sensor: The use of a Siemens PLC (Programmable Logic Controller) provides industrial-grade reliability, while an Italian pressure sensor ensures high sensitivity and durability compared to standard generic sensors.
- Automatic Pace Rate Control (1\% \pm): This is the most critical feature. Concrete testing requires a constant loading speed (e.g., 0.25 \text{ MPa/s). This machine uses a closed-loop system to automatically adjust the hydraulic flow to maintain that speed, removing human error.
- 10-Point Calibration: Most basic machines only use 3 or 5 points. A 10-point calibration creates a highly accurate linear curve across the entire capacity of the machine, ensuring the 0.5% calibration accuracy is maintained even at very low or very high loads.

## 2. Advanced Data & Interface

- 10 Lakh (1 Million) Test Storage: The ability to store a massive amount of data directly to a pen drive in Excel format is ideal for audit trails and high-volume commercial labs.
- 7" Touch Screen & Live Graph: The "Load vs. Time" graph allows you to visualize the elastic and plastic deformation of the specimen in real-time.
- Auto MPA Indicator: The system automatically divides the Peak Load by the cross-sectional area of your Preset Sizes (150mm cubes, 100mm cylinders, etc.) to give you the final strength in $N/mm^2$ (MPa) instantly.

## 3. Key Hardware & Safety Features

- BenefitLVDT (Optional)Enables the machine to measure displacement. This is required if you need to calculate the Modulus of Elasticity (Young's Modulus), which measures the "stiffness" of the concrete.
- Automatic ValvesAllows the controller to switch between different frames (e.g., a 2000kN frame for cubes and a 100kN frame for cement mortar) without manual hose switching.
- Auto CutoffProtects the machine from damage if a sample is too strong (Overload) or if the test takes too long (Overtime), preventing hydraulic overheating.

# Capacity Range
# 100kN / 500kN / 3000kN & 2000kn

| CAPACITY | 100 KN | 500KN | 3000KN |
|---|---|---|---|
| RAM DIAMETER(MM) | 165 | 300 | 300 |
| RAM TRAVEL (MM) | 50 | 50 | 50 |
| LEAST COUNT (KN) | 0.001KN | 0.001KN | 0.001KN |
| MAXIMUM PRESSURE | 50 BAR | 70BAR | 400 BAR |
| PLATEN DIAMETER(MM) | FLLEXTURE | 300 | 300 |
| HORIZONTAL CLEARENCE(MM) | | 380 | 380 |
| VERTICAL DAY LIGHT (MM) | 160 | 310 | 310 |
| PACE RATE | 0.03KN/SEC-2KN/SEC | 0.1KN-6KN/SEC | 1KN-20KN/SEC |
| HEIGHT OF LOAD FRAME(MM) | ATTACHED | 1000 | 1000 |
| WEIGHT APPROX (KG) | | 1100 | 1100 |
| CUBE SPECIMEN (MM) | | 50,70.6,100 | 100,150 |
| CYLINDER SPECIMEN(MM) | | 100X200<br>150X300 | 100X200<br>150X300 |
| BEAM | 100X100X500<br>150X150X750 | | |

| CAPACITY | 100 KN | 500KN | 2000KN |
|---|---|---|---|
| RAM DIAMETER(MM) | 165 | 250 | 250 |
| RAM TRAVEL (MM) | 50 | 50 | 50 |
| LEAST COUNT (KN) | 0.001KN | 0.001KN | 0.001KN |
| MAXIMUM PRESSURE | 50 BAR | 100BAR | 400 BAR |
| PLATEN DIAMETER(MM) | FLLEXTURE | 300 | 300 |
| HORIZONTAL CLEARENCE(MM) | | 320 | 320 |
| VERTICAL DAY LIGHT (MM) | 160 | 310 | 310 |
| PACE RATE | 0.03KN/SEC-2KN/SEC | 0.1KN-6KN/SEC | 1KN-20KN/SEC |
| HEIGHT OF LOAD FRAME(MM) | ATTACHED | 900 | 900 |
| WEIGHT APPROX (KG) | | 750 | 750 |
| CUBE SPECIMEN (MM) | | 50,70.6,100 | 100,150 |
| CYLINDER SPECIMEN(MM) | | 100X200<br>150X300 | 100X200<br>150X300 |
| BEAM | 100X100X500<br>150X150X750 | | |

# AUTO RAPTOR

## COMPRESSION TESTING MACHINE

- **Key Technical Insights**
- **10-Point Dynamics Calibration:** This is a high-level accuracy feature. While many machines use a 3 or 5-point calibration, a 10-point system ensures the load cell remains linear and accurate across its entire range, from very low to maximum capacity.
- **Pace Rate Control (1.0 to 10.0 kN/sec):** This is crucial for Automatic machines. Standards require specific loading speeds to ensure consistent results. The machine will automatically adjust the motor speed to maintain the "pace" you set.
- **Data & Visuals:** The 4" LCD Touch Screen and the ability to store 10,000 records mean you can run weeks of testing without needing to export data to a PC immediately. The Real-Time Load vs. Time Graph is excellent for spotting "early failure" or seating issues during a test.
- **Safety & Build:** The Overload Safety Cut-off prevents the hydraulic ram from over-extending or damaging the load cell if a sample is much stronger than expected or if the machine is left unattended.

| Feature | Specification | Importance |
|---|---|---|
| **Capacity** | 200 Ton / 2000 kN | High enough to test M60+ grade concrete cubes. |
| **Least Count** | 0.001 kN | Extremely fine resolution; ideal for research or high-precision certification. |
| **Horizontal Clearance** | 280 mm | The width between columns; easily fits standard 150mm cubes and 150mm cylinders. |
| **Vertical Daylight** | 310 mm | The max height for a sample. Fits a 150x300mm cylinder with a small margin for the platen. |
| **Ram Diameter** | 215 mm | Large diameter ensures the load is distributed evenly, reducing frame "flex" during high-stress tests. |
| **Motor Capacity** | 1HP, 440V (3-Phase) | 3-phase power provides the constant torque needed for the smooth, steady "Pace Rate" mentioned in your first list. |

# POINT LOAD TEST APPARATUS

**CAPACITY - 60KN**

## INTRODUCTION

**A point load tester is a portable device that measures the strength of a rock or concrete specimen by applying a concentrated force to a small area of the material.**

**The tester measures the load required to cause the material to fail, usually by breaking or fracturing it.**

The point load tester is used in geotechnical engineering and in laboratories.

- **Assess rock strength:** The tester provides quick estimates of rock strength in the field.
- **Analyze rock samples:** In the lab, the tester helps classify and analyze rock samples in detail.
- **Make rocksamples:** In the lab, the tester helps classify in detail.

**Make engineering design decisions:** Engineers and geologists use the data from the tester to make decisions for projects like construction, mining, and infrastructure development.

## SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **LOAD CAPACITY** | 60KN | **DISPLAY** | SCREEN |
| **PISTON STROKE** | 100MM | **ACCURACY** | +/- .5% |
| **DISPLAY** | TOUCH SCREEN | **STORAGE** | 5000 TEST RECORD |