Accurate

ACCURATE SCIENTIFIC INTERNATIONAL

SERVO CONTROL COMPUTERIZED UNIVERSAL TESTING MACHINE CAPACITY-600 KN FRONT LOADING TYPE

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Universal Testing Machine
Model : AMT - 60SC

Features:

- Precision hydraulic wedge-action grips ensuring a firm hold. (Optional Purchase)
- Extended test stroke and spacious test area for versatility.
- High loading accuracy of 1%.
- Variable straining speeds suitable for a diverse range of materials.
- Advanced servo-controlled motorized valve offering multiple control modes:
  - Manul control
  - Load rate control
  - Elongation rate control
  - Load hold mode
  - Auto start with initial valve open start feature.
- Intuitive Windows-based touchscreen control panel with printing capabilities
- Effortless adjustment of the lower crosshead through motor-driven threaded columns.
- Extensive range of standard and customizable accessories, including load stabilizers.
- Quick and easy adaptability for plain, threaded, screwed specimens.
- Large clearance between columns for accommodating standard specimens and structural elements.
- User-friendly controls ensuring seamless operation.
- Robust and rigid frame construction for enhanced durability.
- Comprehensive safety features for secure operation.
- Fully enclosed pressure transducer for maximum protection.
- Available load capacities: **100 kN, 200 kN, 400 kN, 600 kN, 1000 kN, 1500 kN, and 2000 kN.**

Application:

The ASI UTM AMT - 60SC is designed to test ferrous and non-ferrous materials under various load conditions, including tension, compression, bending, transverse, and shear. The machine can also conduct hardness tests on metals.

Machine Components
Straining Unit:

- Features a hydraulic cylinder with a motor-driven chain and sprocket system.
- Precisely lapped ram and cylinder to eliminate friction.
- Ball seating ensures axial load distribution without side loading.
- Rotary encoder (resolution: 0.01mm) for precise deformation measurement.

Control Panel:

- Features a hydraulic cylinder with a motor-driven chain and sprocket system.
- Precisely lapped ram and cylinder to eliminate friction.
- Ball seating ensures axial load distribution without side loading.
- Rotary encoder (resolution: 0.01mm) for precise deformation measurement.

Operation Modes:

- Manual control
- Load rate control
- Elongation rate control
- Load hold mode
- Auto start with initial value open start to handle slippage or different specimen types.

Calibration and Standards:

- Complies with Grade "A" of BS:1610:Part1:1992 and Class 1 of IS:1828:Part1:1991 standards.
- Calibration performed in accordance with British Standards 1610 and IS 1828 protocols.

Touchscreen Control Panel:

The The AMT - 60SC introduces microcontroller-based technology for advanced functionality:

- 10-inch touchscreen for intuitive operation.
- Input fields for pre-load, rupture %, safe load, and specimen details.
- Real-time load vs. displacement graph display.
- USB printer support for graphs and result printouts.
- Data export options in PDF, Excel, and CSV formats.
- Universal Testing Machine includes a high speed processor board with a Capacitive touch panel display.
- Software designed with advanced Machine Learning Algorithms and hence provides accurate process control in one user interface environment.

Calibration and Standards:

The ASI UTM AMT Series is meticulously calibrated to ensure sensitivity and accuracy.

- Complies with Grade "A" of BS:1610:Part1:1992 and Class 1 of IS: 1828:Part1:1991 standards
- Calibration performed in accordance with British Standards 1610 and IS 1828 protocols.

TECHNICAL SPECIFICATION

Description of Machine The machine should be for monotonic loadings to conduct the Tensile test, Compression test, Bend Test, Shear Test, etc. on different ferrous and non ferrous materials conforming to testing procedure laid down in IS/ASTM standards
It should be based on Servo Hydraulic Closed Loop principle and fully computer controlled.
It should be operated through Windows based software with ease of operation
It should be operated through Windows based software with ease of operation
Machines should be automatic pace setting based on servo hydraulic closed loop principle
In the series of machines the pace setting should be achieved through a combination of advanced electronic and hydraulic system
Pacing speed should be programmed through the software/ touch panel in selectable control modes and controlled by servo/proportional valve through PID controller
It should comply with various International and National standards
The frame should have sufficient number of pillar to have better stability
It should have easy cross head movement on the two pillars to adjust the gap with easy operation for specimen setting as per requirement
It should be easily changeable hydraulically operated front Loading Grips for Tension test
It should have controlling on both Load (kN/sec)/stress (N/mm/sec), Displacement (mm/sec) or Strain Control basis
It should have facility to study Post failure behaviors of specimens
It should have Auto release facility after specimen failure
It should have 8 or 12 Additional input channels for external transducers
It should have load measuring accuracy less than +0.5% of the measured value of Load in the Range from 2% -100% capacity
It should have displacement measuring Accuracy less than +0.5% of the measured value of displacement
It should have high speed Data acquisition and Statistical Analysis software
It should have Online display of test data with real time plotting of Load-Time, Displacement-time, and Load-Displacement graphs, Stress-strain
It should have Statistical analysis of the test results along with facility to export data to Excel
It should have safety features like over travel limit for central cross head, over travel limit for ram and over loading of the system and overheating of oil should be provided as standard in the machine
Hydraulic Pumping system should be based on Servo Hydraulic principle with servo/proportional valve to control motion of the cylinder/actuator
It should be suitable for the supply of required flow and pressure for the movement of the actuator
It should have an oil tank of adequate capacity, vane type pump powered by a three phase motor.
All the electrical controls including the temperature controller should be fixed on one side of the tank.

It should include all the accessories like pressure line filter, return line filter, oil level, relief valve, pressure gauge and air/water cooled heat exchanger
Anti vibration mountings should be provided as standard along with the HPS.
The machine may be operated with Power Supply- 440V, three phase
PC system and Application Software for Controlling and Analysis System shall be supplied with dedicated computer of following configuration or better for operation of the machine and analysis of test results
Window based suitable software
The software should have facility to hold machine load and restart loading or unloading for number of steps
The software should have Independent Taring or Presetting of Load- Facility for auto-zeroing of deflection at preset load
The software should have facility to save and retrieve test data along with order information about the specimen such as age, specimen no., size, dimensions etc. in user defined file/directory
The software should have Calculation of various parameters such as load and elongation at yields, peak load and displacement at break, yield stress, Modulus of Elasticity, Ultimate tensile strength, Proof stress, compressive strength etc.
The software should have facility to export data to Excel or PDF
Desktop or laptop Computer with latest Processor or i7/12" generation
32" TFT Screen
1TB SSD
16 GB RAM extendable
DVD, R/W drive
Key Board
Wireless Optical Mouse
6 USB Ports
Laser Color Printer
Multifunctional B/W printer
1000 VA UPS to operate the computer
Technical Specifications should be as given below:

Max. Capacity (kN)	600
1st Measuring range (kN)	0-200
Least Count (N)	100
2nd Measuring range (kN)	200-600
Least Count (N)	1000
Clearance for Tension test (mm)	50-800
Clearance for compression test (mm)	0-800
Ram Stroke (mm)	250
Piston speed at no load (mm/min)	0-100
Clearance between columns (mm)	600
Connected Load (K.W.)	2.5
Voltage	400-440
Phase	3
For Tension, Clamping jaws for round specimens (mm)	4-25, 25-40
For tension, Clamping jaws for flat specimens (mm)	0-20,20-40
For tension, clamping jaws, Width (mm) of specimen	70
For tension, clamping jaws, Width (mm) of specimen	200
For Transverse, Diameter of rollers (mm) Length of Rollers (mm), Max. span (mm) between the rollers adjustable type	30, 170, 600 respectively
Bend - Rebend Test Attachment	Bend Testing fixture is suitable to carry out bend and rebend test on structural steel having sizes upto 50 mm dia and high strength deformed steel bars and wires upto 40 mm dia.

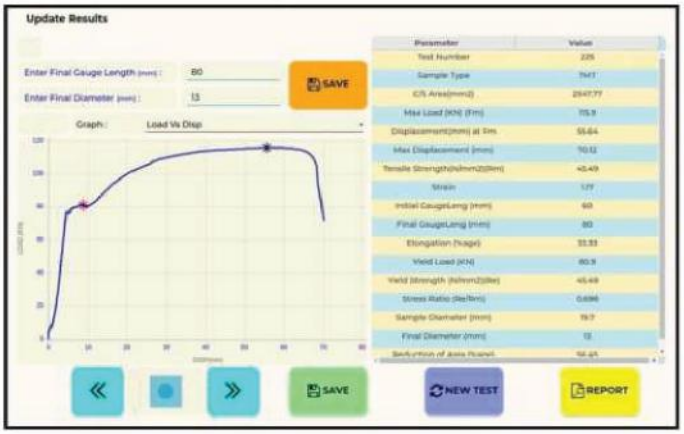
Home Screen

Menu Screen

Sample Screen

Test Screen

Sample Test Screen



PDF Report Screen

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