



COMPUTERISED UNIVERSAL TESTING MACHINE



MCS make TNE series machines are electronic screw driven machines with precision screw and column construction and variable speed drive. These are high precision, high performance universal testing machines, maximum capacity up to 200 kN. With the help of computer and micro-computer from control of load to processing of data are carried out with excellent performance, reliability, flexibility and easy operation.

The machines are suitable for studying mechanical behavior of various materials like iron & metals, rubbers, plastics, ceramics, fabrics, composites, cables and wires. As a matter of fact, it is an indispensable instrument for the modern industries. Two options are available mainly acme threaded screw with AC motor drive and ball screw with servo drive. The machines confirms to IS, BS & ASTM standards.

Machine Features

- Computer controlled mechanism under windows 2000/XP.
- Variable speed drive with DC / AC servo drive options.
- Automatic identification and interchangeability of load cells.
- Different clamping devices to suit specific test requirement.
- Safety interlock by end limit switches and by overload sensing.

TNE SERIES

Depending upon test requirements and budget, TNE series machines are available with following options. DRIVE - DD : AC motor with variable frequency drive to give speed ratio of 1:20 as standard and SD : Servo motor & PWM drive to give speed ratio of 1:1000.

Economical models : These machines are with a rigid, stable structure with high stiffness, two columns and a single screw. Machine uses three phase induction motor with fixed speed as standard & variable speed drive is available as option.

Load Cells

Universal load cells of following capacities are available.

50N, 100N, 250N, 500N, 1kN, 2.5kN, 5kN, 10kN, 25kN, 50kN, 100kN.

any other load cell as per requirement.

Grips & Clamping Device

- Wedge type grips for flat / round specimen.
- Compression plate.
- Special grips as per requirement
- Vise type grips
- Bending fixture
- Shear attachment

We are what we repeatedly do, excellence, then is not an act but a habit.

Model TNE-MP : Micro processor based operation Micro processor controlled system with digital display of load and disp. / Extn. Machine operations like speed, crosshead direction are controlled from the control panel.

Control Panel Features (Panel Control Mode)

- Sealed membrane keyboard with numeric keypad.
- Pre determined test data can be entered.
- Digital tare for Load and Reset for Disp/Extn.
- Load vs Disp. graph available on Dot matrix printer.
- Auto scaling for graph plotting at the end of test.
- Selection of stop / Return of cross head and direction.
- Results include Peak Load, Max, Disp, UTS, % Elong.

This system can be up dated in to a fully computerized system by providing computer with RS-232 port and windows XP/7 based application software.

Evaluating % Elongation : Long Travel Extensometer

MLT-600 IS A balanced clip-on type extensometer used to measure strain accurately. In association with MCS's control unit, true extension of the sample with 0.01mm resolution is directly displayed. The distance between two small clamps attached to the sample is preset to any desired gauge length. Cords attached to each clamp transmit the movement to two sensors mounted at the top of the extensometer column. These produce pulses which drive the digital strain display thus detecting strain accurately. This is suitable for rubber & semi rigid plastics. Maximum extension is 600 mm & gauge length continuously variable.

TECHNICAL SPECIFICATION

Model	TNE 5	TNE 10	TNE 20	TNE 50	TNE 100
Maximum Test load	5 kN	10 kN	20 kN	50 kN	100 kN
Load Measurement	By means of exchangeable strain gauge based load cell				
Load Measuring Range & Accuracy	+ 1% on indicated load from 2% to 100 % of load capacity				
Maximum Crosshead Stroke	1000 mm without load cell & grips				
Distance between Columns	400 mm				
Drive System Option - DD with AC drive	1:20 speed ratio 5 - 100 mm / min, 25 - 500 mm / min (Any other speed range available on request)				
Drive System Option - SD with servo drive	0.5 mm to 500 mm/min (Any other speed range available on request)				
Power Supply	230 V AC / 50Hz, 1 Ph			415 V AC / 50Hz, 3 Ph	
Measuring System Microprocessor Panel	Model MCS-MP				
Crosshead Display Resolution	0.1 mm by means of rotary encoder				
Load range & Resolution	1 / 10000 from 0 - 40 % of range and 1 / 4000 from 40 - 100% of range				
Options	● 0.01 mm Crosshead Displacement Resolution.		● 1/20000 or 1/50000 Load Resolution		
	● Extensometer Model MCE-2		● Extensometer Model MLT-50		
	● Long Travel Extensometer Model MLdel MLT-600		● Special Testing Software		

Manufactured by : _____



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Model TNE-MP (PC) : Computerised operation MCS-MP panel is connected to computer through RS-232 port The control is transferred to PC and with the help of windows based application software, complete testing can be performed. This system has two modes of operations, PANEL & PC control

Software Features

- System is independent of the type of computer used.
- Supports windows XP/7.
- User friendly windows software for complete test control.
- Real Time Graph with online display of Load, Disp. / Extension
- Wide range of input data selection.
- Unit interchangeability for input and result as per Standard.
- Extensive graphics. curve fitting, Zooming.
- Results include Peak Load, UTS, Max Disp.% Elong. Area under the curve, % Red. in Area, Yield and Proof Stress.
- Multi graphs Load vs Disp, Stress vs Strain, Load vs % Elong.

Evaluating Proof Stress : Electronic extensometer

MCS-2 is a strain gauge type extensometer to measure material extension with a resolution of one micron. It is designed to be clamped directly on specimen. This is used to measure strain up to elastic limits to determine important parameter like 0.1% to 1% proof stress and youngs modulus. MCS 2 has two fixed gauge lengths of 25 mm & 50 mm. Change of gauge length is by means of replacing button knife-edge extender. MCE 2 is fabricated from high strength light weight aluminum with a durable anodized finish. the knife-edges are made from oil hardened tool steel to with stand heavy usage. The sample need not be machined.

Supports maximum di. of 40 mm & maximum extension 2 mm Suitable for Round, Flat, pipe & Torsteel applications.