

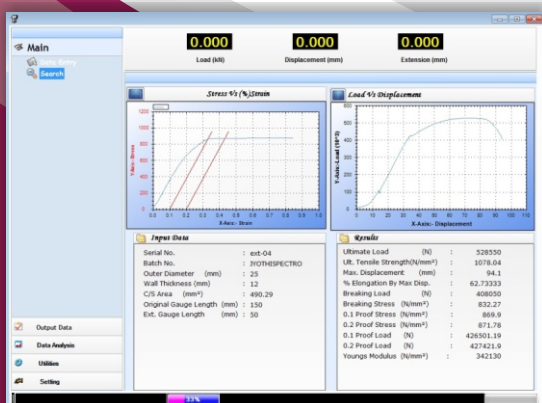
TENSILE TESTING MACHINE

Model - TNE Series

DRIVE - DD

DRIVE - SD

TNE-MC Based



Input Data	
Serial No.	: ext-04
Batch No.	: JYOTHSPECTRO
Outer Diameter (mm)	: 25
Wall Thickness (mm)	: 12
C/S Area (mm ²)	: 490.29
Original Gauge Length (mm)	: 150
Ext. Gauge Length (mm)	: 50

Results	
Ultimate Load (N)	: 528550
Ult. Tensile Strength(N/mm ²)	: 1078.04
Max. Displacement (mm)	: 94.1
% Elongation By Max Disp.	: 62.73333
Breaking Load (N)	: 408050
Breaking Stress (N/mm ²)	: 832.27
0.1 Proof Stress (N/mm ²)	: 869.9
0.2 Proof Stress (N/mm ²)	: 871.78
0.1 Proof Load (N)	: 426501.19
0.2 Proof Load (N)	: 427421.9
Youngs Modulus (N/mm ²)	: 342130

DI 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 100 kN. With the help to computer and micro-computer, all the operations 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 and 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 DC motor drive and ball lead screw with servo drive. The machines confirm 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 :

DC motor with thyristor drive to give speed ratio of 1:10 as standard and 1:100 as optional.

DRIVE - 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. A 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 and Clamping Device :

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

Model TNE-MCP :

Micro Controller based operation Micro Controller 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
- Predetermined 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 br 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 toe fully computerized system by providing computer with RS-232 port and windows.

Evaluating % Elongation : Long Travel Extensometer

MLT-600 is a balanced clip-on type extensometer used to measure strain accurately. In association with DI control unit, true extension of the sample with 0.01 mm 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 and semi rigid plastics. Maximum extension is 600mm & gauge length continuously variable.

Model TNE-MP (PC) :

Computerised Operation DI-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 2000/xp
- User friendly windows software for complete test control
- Real time graph with online display of load, disp / extn.
- Wide range of input / output 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 graph load vs disp. stress vs strain, load vs % Elong

Evaluating Proof Stress : Electronic Extensometer

DI-2 is 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 young's modulus. DI 2 has two fixed gauge length of 25mm & 50mm. Change of gauge length is by means of replacing button knife-edge extender. DI 2 is fabricated from high strength light weight aluminium with a durable anodized finish the knife-edges are made from oil hardened tool steel to withstand heavy usage. The sample need not be machined Supports maximum dia of 40mm & maximum extension 2mm suitable for round, flat pipe and torsteel application

Model	TNE 5	TNE 10	TNE 20	TNE 50	TNE 100
Maximum Test load	5 kN	10 kN	20kN	50 kN	100 kN
Load Measurement	By means of exchangeable strain gauge based load cell.				
Load Measuring Range and Accuracy	+ 1 % on indicated load from 2 % to 100 % of load capacity.				
Maximum Crosshead Stroke	1000 mm without load cell & grips.				
Distance between Columns	450 mm				
Drive System Option - DD with DC drive	1:10speed ratio 5 - 50 mm / min, 25 - 250 mm/min, 50 - 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 Microcontroller Panel Crosshead Display Resolution Load range & Resolution	Model DI-MP 0.1 mm by means of rotary encoder 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 DI-2 • Extensometer Model MLT-50 • Long Travel Extensometer Model MLT-600 • Special Testing Software				



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