

Computer Controlled Universal Testing Machines



SALIENT FEATURES-

Method of loading by Re-circulating Ball Screws
AC Servo motor for crosshead control with infinitely variable speed drive
Computerized crosshead control
Load measurement by load cell
Over travel safety by fixed and set table limit switches at both upper & lower ends
Overload protection for load cell, software operated and electronically operated
Latest Windows based, user friendly, menu driven software
On Line display of Load, Elongation/Displacement (Stress, Extension, Strain) etc. at any instance throughout the test
User selectable units for load, displacement like N, kg, kN, lbf, mm, inch etc. m Real Time Display of Load- Displacement Graph
The Graph is auto-scaled and displayed on completion of test
Variable sample break detection
Tare load and reset elongation facilities. Available
Fully automatic on screen calculations of parameters like UTS, Y.S, Proof Stress etc.
Built in facility for printing of test results and the graph
Test data is stored in Access data base format
Large storage space for storing test data of upto 50,000 tests
Specific routines for Tensile, Compression, Shear tests etc.
Provision for statistical evaluation
If Electronic Extensometer is used then proof stress values from 0.1% to 1% can be determined
In order to cover wide load range more load cells can be supplied (optional) In that case auto detection of load cell
Standard load resolution is with 10,000 counts. Finer resolution with 20,000 or 50,000 counts can be offered (optional)
Other slower crosshead speeds on specific request (optional)

APPLICATION

A wide variety of tests can be conducted on this machine viz. Tensile, Compressive, Transverse, Peel test for Adhesive Tapes. The materials like rubber, plastics, ferrous metals, non ferrous metals etc. can be tested as per different standards. The test specimens can have a number of forms like round, flat, threads, wires, dumbbells, fabric, belts, straps, ropes, etc. Or sometimes components directly also can be tested. In order to cater to this variety of forms, shapes and materials a range of grips can be offered.

DESCRIPTION

The Computer Controlled Universal Testing Machines are rugged, versatile, user friendly, accurate and can test a variety of materials. A wide choice of grips is available to suit the application. The Windows based software is comprehensive and covers most of the applications. The automatic calculations of parameters from the observed test values, Real time graphs, storage and retrieval of data are immensely useful. The state of art electronics, high quality material used, and the user friendly software makes the machine reliable and user friendly. The machine comprises a rigid assembly of lower table and Top plate connected by Guide rods. The two ball screws (One on Left and the other on Right) also are fixed in this assembly. The crosshead, in the center, houses the Nuts of the Ball screws. This entire assembly is fixed on the base, which accommodates driving arrangement including Motor, Gear Box, Timing Belts & Pulleys. The Machine has metallic covers for the ball screws and the base. A set of bellows protects the ball screws from ingress of dust. The interface and Computer are placed on a computer table by the side of the machine.

STANDARD ACCESSORIES

1. Basic machine along with one load cell and a pair of compression plates
2. Computer with necessary interface
3. Computer table
4. U.P.S.
5. Software (Windows based)

DETAILS OF GRIPS (extra accessories)

Model	Capacity	Description	Specification	Application
FGI / 1	2kN	Eccentric Roller Grip	25mm wide x 5 thk	For Dumbell shaped specimens of rubber & plastics
FG1 / 2	5kN	Eccentric Roller Grip	50mm wide x 6 thk	For Dumbell shaped specimens of rubber & plastics
FG2 / 1	1kN	Vice Type Grip	25mm wide x 4 thk	For thin flat samples of paper or materials with
FG2 / 2	5kN	Vice Type Grip	50mm wide x 10 thk	For fabric asbestos leather & similar flat & thin material
FG2 / 3	10kN	Vice Type Grip	100mm wide x 10 thk	For fabric asbestos leather & similar flat & thin materials smaller strength
Fg6 / 1	1 kN	Motorised Ring Grip		For '0' rings
FG7 / 1	2kN	Ballard Type grip	20 SWG & finer	For fine flexible wires
FG7 / 2	5kN	Ballard Type grip	Upto 5mm dia	For fine cords
FG7 / 3	20kN	Ballard Type grip	20 mm wide	For flexible non metallic straps
FG7 / 4	10kN	Double Ballard grip	Upto 2mm dia	For flexible wires
FG8 / 1	5kN	Vice cum Wedge type Grip	25mm wide x 5 thk	For rigid wire & strips
FG8 / 2	30kN	Vice cum Wedge type Grip	35mm wide x 5 thk	For rigid wire & strips
FG8 / 3	50kN	Vice cum Wedge type Grip	35mm wide x 5 thk	For rigid wire & strips
FG10 / 1	2kN	Grip for special	Moulded dumbell	As per IS 867-1963
FG11 / 1	2kN	Compression cage	100 x 65 x 200 mm	For conducting compression test
FG11 / 2	10kN	Compression cage	150 x 80 x 200 mm	For conducting compression test
FG11 / 3	50kN	Compression cage	150 x 150 x 200 mm	For conducting compression test
FG12 / 1	15kN	Bend Test Attachment to 250 mm / bend test	Span variable from 40	For Conducting transverse
FG13 / 1	Elongation Measures upto 800 mm	High elongation electronic extensometer	L.C 0.01 mm Max dist. between knife edges 800 mm	

Specification	M1	M2	M5	M30	M50	M75	M100
Max capacity (kN)	1	2	5	30	50	75	100
Max Crosshead traverse excluding grips (mm)	1000	1000	1000	1000	1000	1000	1000
Max. Working width (mm)	400	400	400	400	400	600	600
Fixed and working upper & lower limit switches	✓	✓	✓	✓	✓	✓	✓
Overall dimensions H x W x D mm (approx)	1780 x 630 x 505	1780 x 630 x 505	1780 x 630 x 505	1780 x 630 x 505	1780 x 630 x 750	1780 x 630 x 1050	1780 x 630 x 1050
Weight Kg (approx)	150	150	150	150	150	150	150
Power supply	3.Ph. 415 V 50 Hz						
Overload protection for load	✓	✓	✓	✓	✓	✓	✓
	Software operated and electronically operated in the event of loadcell overload						
Drive systems							
Method loading	By recirculating ball screws						
Cross head drive motor	AC servo with feed back						
Crosshead speed	0.5 to 500 mm per min						
crosshead control	computer controlled						
Accuracy of speed in percent	±1 %	±1 %	±1 %	±1 %	±1 %	±1 %	±1 %
Measurement							
Load	By precision loads cells						
Load resolution	10,000 counts standard (20,000 or 50,000 counts optional)						
Load accuracy	±1% as per IS 1828 -1991 & Bs 1610 - 1964						
Resolution of cross head displacement in mm	0.01 mm						