



GENESS ENGINEERS

ELECTRONIC UNIVERSAL TESTING MACHINE

MODEL – UTE 40 HGFL



FIE introduces its new model of universal testing machine with design flexibility, a modern appearance and high performance electronics. Some of the features include -

Features :

- Open type crosshead
- Hydraulic wedge action grips
- Load cell technology
- Long test stroke and test space
- Straining at variable speeds to suit a wide range of materials
- Touch screen control panel Black and White or colour with printing & computer connectivity
- Tension, Compression and Transverse test facility.

Principle of Operation :

A static hydraulic technology is used to apply a tensile or compression load to the test specimen. Double acting cylinder operates crossheads precisely by using the hydraulic controls. Displacement is measured by an encoder and load is precisely measured using Load cell.

Machine consist of :

Straining Unit :

Typical HGFL design includes a rigid two column frame, open type crossheads with hydraulic wedge action grips and a double acting cylinder.

Control Panel :

The control panel consists of a power pack with drive motor, oil tank and two separate manifolds with solenoid valves.

A) Power Pack :

The power pack is a dual output type. The hydraulic pump provides continuously non – pulsating oil flow hence the load application is very smooth.

B) Hydraulic Controls :

Hand operated wheels are used to control the flow to and from the hydraulic cylinder. The regulation of the oil flow is infinitely variable. Up and down direction of the crosshead and jaw actuation cylinders are by means of solenoid valve

Electronic Control Panel

Series Universal 2011 (TS) PLC based panel incorporating state of art technology with following features,

- Front panel 5.7" touch screen display
- Data entry of test parameters including preload, rupture %, Safe Load & Specimen data etc.
- Online graph of load Vs Displacement directly on screen.
- Printer port for printer interface with graph & result print out.
- RS 232 serial port. Optional windows based software available for....
Online graph on PC, Data analysis, Statistics, Point tracing, superimposing graphs to compare with standard, zooming graph etc.

Optional Software packages on PC

The UNIVERSAL 2011 (TS) series control panel can be hooked to any PC using RS232 communication port. FIE offers different exhaustive application, windows based software packages with real time graph on PC to enable the user to effectively evaluated different parameters. The following features include:

- Real time graph, user friendly software
- Extensive graphics on screen for curve plotting, magnification and zooming
- Software features include graph comparison, point tracing facility. Different units selection for load and displacement.
- Statistical evaluation with water fall diagram, mean deviation, frequency distribution, skew diagram, histogram. Also calculates max. value, min. value, mean value, variance, standard deviation. (other statistical parameters on request). Selectable batch & statistical printouts.
- Evaluation of wide range of user selectable parameters such as % elongation, % reduction in area, young's modulus, yield stress, proof stress etc.
- Software packages for shear, bend, torsion, rubber, textile testing etc.
- Custom built application software to suit customer requirements.

Accuracy and Calibration

FIE Electronic Universal testing machine is closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Machine is then calibrated over each of its measuring range in accordance with the procedure laid down in British standards 1610: Part1: 1992 and IS 1828: Part1: 1991

FIE Electronic Universal Testing Machine complies with Grade "A" of BS: 1610:Part1:1992 and class 1 of IS-1828-Part1:1991.

***PC and Printer is not in our standard scope of supply.**

Specifications :

Description	Unit	Specification
Maximum Capacity	kN	400
Measuring Range	kN	0-400
Load Resolution (20,000 counts full scale)	N	20
Resolution of Piston movement (Displacement)	mm	0.01
Clearance for tensile test at fully descended working piston	mm	500
Clearance between columns	mm	500
Ram Stroke		500
Straining/Piston speed (at no load)	mm/min	140 mm/min
Connected Load		3 HP, 400-440V, 3 Phase
Dimensions (L x W x H)	mm	2410 x 750 x 2910
Standard Accessories : For Tension test Clamping jaws for round specimen of diameters	mm	10-30 30-40
Clamping Jaws for flat specimen of thickness Width	mm	0-15 15-30 88
For Compression test Pair of compression plate of dia	mm	120

Special Accessories & Option : Electronic Extensometer, Shear Test Attachment, Mechanical Extensometer

FIE reserves the rights of change in the above specifications due constant improvement in design. The dimensions given above are all approximate.