



EIE – GT – 107

Geotextile Universal Tensile Testing Machine



Applications

To carry out GRAB, CBR PUNCTURE, TRAPEZOID TEAR & WIDE WIDTH TENSILE TEST of Geo-synthetic material including Geotextile, Composite Geo-textile, Geo-grid, Geo-membrane, Geo-Net etc, Which are used in traffic, water conservancy, tunnel, building construction and other industries.



Technical Specifications of Twin Load Cells UTM Machine

(To carry out various tests of GEOTEXTILE TEST SPECIMEN)

Model No	GT-107SU	GT-107IU
Type of machine	Floor standing model	Floor standing model
Horizontal clearance	400-450 mm	400-450 mm
Vertical clearance	1200 mm	1200 mm
Total cross head travel (Excluding grips)	1000 mm	1000 mm
Applicable Standards	ASTM D6421, ASTM D4533, ASTM D4833, ASTM D4595, ASTM D4632, ISO 10319, ISO 12236, IS 14293	ASTM D6421, ASTM D4533, ASTM D4833, ASTM D4595, ASTM D4632, ISO 10319, ISO 12236, IS 14293
Application	Suitable to conduct Grab Test , Static Puncture (CBR Puncture) Test, Index puncture Test, Trapezoid Tear Test and Wide Width Tensile test of GEOTEXTILE MATERIAL	Suitable to conduct Grab Test , Static Puncture (CBR Puncture) Test, Index puncture Test, Trapezoid Tear Test and Wide Width Tensile test of GEOTEXTILE MATERIAL
Motor	Servo Motor	Induction Motor
Motor capability	3 KW, 15 NM	3 KW
Speed range	0.01 mm/min to 450mm/min	10 mm/min to 350mm/min
Speed variation	Dedicated SERVO DRIVE	Variable AC Frequency drive
No of load cells	02 Nos	02 Nos
Load cell capacity	5kn & 50kn	5kn & 50kn
Load cell least count	0.01 kn & 0.1 kn respectively	0.01 kn & 0.1 kn respectively
Encoder	Elongation indication, 2500 PPR	Elongation indication, 2500 PPR
Elongation least count	0.01 mm	0.1 mm



Controlling system	PLC Controller & 7” HMI Touch screen	Microprocessor based LCD Controller
Indication parameter	<ul style="list-style-type: none"> • Maximum Load • Current Load • Breaking Load • Maximum Elongation • %Elongation • Elongation @ Break 	<ul style="list-style-type: none"> • Maximum Load • Current Load • Breaking Load • Maximum Elongation • %Elongation • Elongation @ Break
Unit selection	N, KN, KGF, LBF, TONE	N, KN, KGF, LBF, TONE
Exterior structure	<ul style="list-style-type: none"> • High grade steel • Robust machine frame • High stiffness • Column protection over total traverse stroke 	<ul style="list-style-type: none"> • High grade steel • Robust machine frame • High stiffness • Column protection over total traverse stroke
Paint	Powder coating paint	Powder coating paint
Power supply	440 volts, 50 hz, 3-phase, AC Supply	440 volts, 50 hz, 3-phase, AC Supply

Load Cell capacity

Different capacity models are available as per following table. The rigidity and stiffness of design structure of the frame varies based on the load cell capacity. Select the one which best suits to your needs.

Type of model	Twin load cell model	Trio model (Three load cells)
Twin column floor standing structure	5kn & 50kn	1kn, 5kn, 50kn
Twin column floor standing structure	3kn & 30kn	1kn, 3kn, 30kn
Twin column floor standing structure	10kn & 20kn	1kn, 10kn, 20kn

Load accuracy

Depends on selected model. Refer to the above table for model selection.

Mechanical structure

- High grade steel gives unmatched performance, accuracy and precision
- Rigid machine frame with high stiffness
- Equipped with multi-position limit detectors for best protection of test sample and machine
- Column protection over total traverse stroke

Cross head driven

Cross head driven by conventional screw & nut system, which is guided by hardened, ground finished and hard chrome plated tie rods. Backlash free ball screw assembly is also available on request.

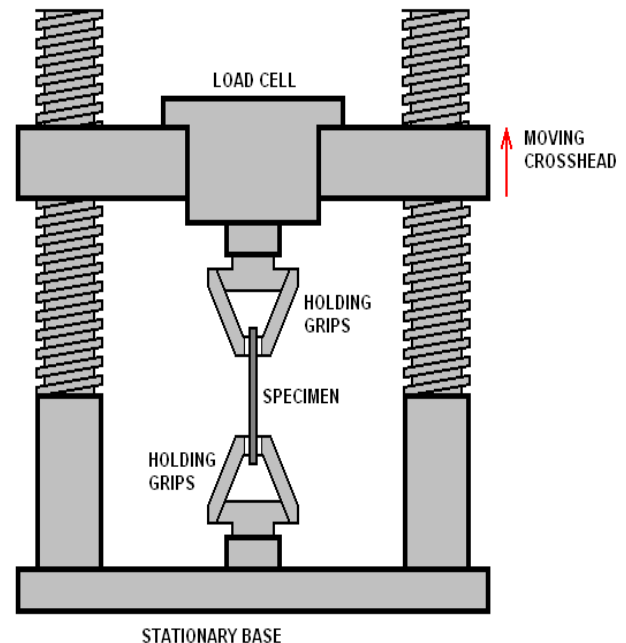


Traveling length

Maximum travel from grip to grip is 1000mm at extension least count of 0.01mm. Higher length is also available on demand (optional).

Controlling device

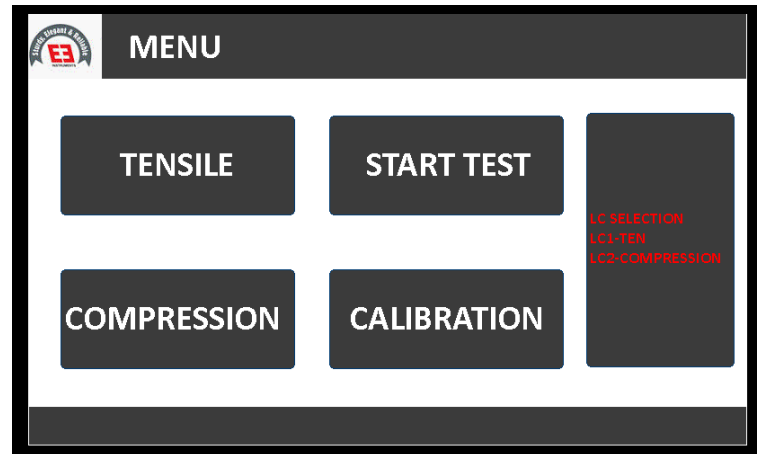
PLC (Programmable Logic Controller) and Smart Touch Screen HMI Display. Economy models comprises of Microprocessor based Digital controller in place of PLC & HMI





Computer interfacing facility & software

- RS-232/RS-485/Ethernet based PLC controller
- Profile based software to start the test quicker
- Menu driven software parameters
- User-friendly and easy to understand software
- Software can provide full control of all parameters
- Full test analysis with statistical and graphical print-out
- User can export the generated data in Excel, PDF, Word format.



Grips (Test Jaws)

Supplied with following fixtures / Jaws / Test Grip. Grips are available in both pneumatic and regular versions. An operator should select the one which he desires.

Sr No	Applicable standard	Regular Grips	Pneumatic Grips	
			Jaw	Pneumatic Cylinders
1	ASTM D4632	Grab test fixture	Grab test fixture	02 Cylinder
2	ASTM D4833	Index puncture test fixture	Index puncture test fixture	02 Cylinders
3	ASTM D6241, ISO : 12236	CBR Puncture Test fixture (Using 50mm probe)	CBR Puncture Test fixture (Using 50mm probe)	04 Cylinders
4	ASTM D4533, IS 14293	Trapezoid tear test fixture	Trapezoid tear test fixture	02 cylinders
5	ASTM D4595, ISO 10319	Wide width tensile test fixture	Wide width tensile test fixture	02 cylinders

Note : Above grips can be supplied separately at optional cost.



Result and parameters

Max Load, Max Elongation, Yield force, Yield Elongation, Break force, break elongation, GPD, etc test results and parameters can be observed on HMI Screen & In dedicated software.

Mode of test

Tensile as well as compression test facility available, mode selection via software. No need to change mode every times before starting the new test.

Safety features

Over load protection, reverse direction load protection, Maximum elongation protection for load cell, Limit switches on either end etc.

Modes of Operation

- Tensile
- Compression
- Cyclic test (On request)



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(An ISO 9001 : 2008 Certified Company)

www.eieinstruments.com | info@eieinstruments.com | service@eieinstruments.com |