



SUZUKI INSTRUMENTS

Think Reliability. Come To Us

Analogue Cum Electronic Universal Testing Machine

MODEL : S-UTNE



High reading accuracy due to large size and design of dial



Loading accuracy as high as $\pm 1\%$



Motor driven threaded columns for quick & effortless adjustment of lower cross-head-to facilitate rapid fixing of test specimen



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Plot No. A-803/804, Ajanta Ellora,
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Features :

- Loading accuracy as high as $\pm 1\%$
- Suitable at variable speeds to suit a wide range of materials.
- Continuous roll autographic recorder supplied as standard to enable study of the behavior of materials.
- Motor driven threaded columns for quick effortless adjustment of lower cross-head-to facilitate rapid fixing of test specimen.
- High reading accuracy due to large size and design of dial.
- Wide range of standard and special accessories, including Servo control mode, Hydraulic grip front loading, Touch screen control panel & load stabilizer.
- Easy change from plain to threaded and screwed specimens.
- Large effective clearance between columns enables testing of standards specimens as well as structures.
- Simple controls for ease of operation.
- Robust straining frame of an extremely rigid construction.
- Safe operation ensured by means of safety devices.
- Fully enclosed and protected pendulum.
- Directional control valve provided to change the testing for analogue to digital mode.
- RS 232 serial port to transfer data to computer for analysis/storage evaluation etc.
- Printer & PC graphs enable study the behavior of the material.
- Simplicity in reading because of digital readouts.
- Load Capacity : 100 kN, 200 kN, 400 kN, 600 kN, 1000 kN.

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Principle of Operation for - (Digital Mode)

Model : UTNE

Operation of machine is by hydraulic transmission of load from the test specimen through pressure transducer to a separately housed load indicator. The system is ideal since it replaces transmission of load through levers and knife edges, which are prone to wear and damage due to shock on rupture of test pieces. Load is applied by a hydrostatically lubricated ram.

Main cylinder pressure is transmitted to the pressure transducer housed in the control panel.

The transducer gives the signal to the electronic display unit, corresponding to the load exerted by the main ram.

Simultaneously the encoder fitted on the straining unit gives the mechanical displacement to the electronic display unit. Both the signals are processed by the microprocessor and load and displacement is displayed on the digital readouts simultaneously.

Principle of Operation for - (Analogue Mode)

Model : UTNE

Operation of machine is by hydraulic transmission of load from the test specimen to a separately housed load indicator.

The hydraulic system is ideal since it replaces transmission of load through levers and knife edges, which are prone to wear and damage due to shock on rupture of test pieces.

Load is applied by a historically lubricated ram. Main cylinder pressure is transmitted to the cylinder of the pendulum dynamometer system housed in the control panel.

The cylinder of the dynamometer is also of self-lubricating design. The load transmitted to the cylinder of the dynamometer is transferred through a lever system to a pendulum.

Displacement of the pendulum actuates the rack and pinion mechanism which operates the load indicator pointer and the autographic recorder.

The deflection of the pendulum represents the absolute load applied on the test specimen.

Return movement of the pendulum is effectively damped to absorb energy in the event of sudden breakage of a specimen.

Load indicator System :

This system consists of a large dial and a pointer. A dummy pointer is provided to register the maximum load reached during the test.

Different measuring ranges can be selected by operating the range selection knob. An overload trip switch is incorporated which, automatically cuts out the pump motor when the load range in use is exceeded.

Displacement :

An elongation scale, with a minimum graduation of 1mm, is provided to measure the deformation of the specimen.

Pendulum Dynamometer :

This unit permits selection of favorable hydraulic ratios producing relatively small frictional forces.

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Accuracy and Calibration :

SUZUKI Electronic Universal testing machine is closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Machine is 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. 'SUZUKI Electronic Universal Testing Machine' complies with Grade "A" of BS: 1610:Part1:1992 and class 1 of IS-1828-Part1:1991.

Control Panel :

The Control Panel consists of a power pack complete with drive motor and an oil tank, control valves and electronic display unit.

Power Pack :

The power pack generates the maximum pressure of 200 kgf/cm². The hydraulic pump provides continuously non-pulsating oil flow.

Hence the load application is very smooth.

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. Incorporated in the hydraulic system is a regulating valve, which maintains a practically constant rate of piston movement.

Control by this valve allows extensometer reading to be taken.

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Technical Specifications for - Analogue cum Electronic Universal Testing Machines Model – UTNE

MODEL	UNIT	UTN 10	UTN 20	UTN 40	UTN60	UTN 100
Maximum Capacity	kN	100	200	400	600	1000
FOR ANALOGUE MODE						
1 st Measuring range	kN	0-100	0-200	0-400	0-600	0-1000
Minimum Graduations	kN	0.2	0.4	1	1	2
2 nd Measuring range	kN	0-50	0-100	0-200	0-300	0-500
Minimum Graduations	kN	0.1	0.2	0.5	0.5	1
3 rd Measuring range	kN	0-25	0-50	0-100	0-120	0-250
Minimum Graduations	kN	0.05	0.1	0.25	0.2	0.5
4 th Measuring range	kN	0-10	0-20	0-40	0-60	0-100
Minimum Graduations	kN	0.02	0.04	0.1	0.1	0.2
FOR DIGITAL MODE						
Measuring range	kN	0-100	0-200	0-400	0-600	0-1000
Load resolution (20000 counts full scale)	N	5	10	20	30	50
Load range with accuracy of Measurement +/-1%	kN	2 to 100	4 to 200	8 to 400	12 to 600	20 to 1000
Clearance for compression test (At fully descended working piston)	mm	0-700	0-700	0-700	0-800	0-850
Clearance between columns	mm	500	500	500	600	750
Ram Stroke	mm	150	200	200	250	250
Straining/ Piston Speed (at no load)	mm/min	0-300	0-150	0-150	0-100	0-80
CONNECTED LOAD						
Power for UTNE	HP	1.3	1.3	2.3	2.5	3.5
V		400-440	400-440	400-440	400-440	400-440
Φ		3	3	3	3	3
STANDARD ACCESSORIES						
FOR TENSION TEST						
Clamping jaws for round specimens of diameter (Optional)	mm	10-20	10-20	10-25	10-25	10-25
		20-30	20-30	25-40	25-40	25-45
		.....	.....	.....	40-55	45-65
Clamping jaws for flat specimens of thickness	mm	0-10	0-10	0-15	0-15	0-22
		10-20	10-20	15-30	15-30	22-44
		.....	.....	.....	.....	44-65
Clamping jaws for flat specimens of thickness	mm	0-10	0-10	0-10	0-10	0-10
		10-20	10-20	10-20	10-20	10-20
		.....	.....	20-30	20-30	20-30
Width	mm	.....	.....	.....	.....	30-40
		50	50	65	70	70
FOR COMPRESSION TEST						
Pair of Compression Plates of Dia.	mm	120	120	120	120	160
FOR TRANSVERSE TEST						
Table with adjustable rollers						
width of rollers	mm	160	160	160	160	160
Diameter of Rollers	mm	30	30	30	50	50
Maximum clearance between supports	mm	500	500	500	600	800
Radius of punch tops	mm	6,12	6,12	12,16	16,22	16,22

● Due to constant R& D specifications & features are subject to change without notice.

● Colour scheme subject to confirm at the time of order.

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