Tinius Olsen

The first name in materials testing

Model 5kL

Electromechanical Materials Testing Machine

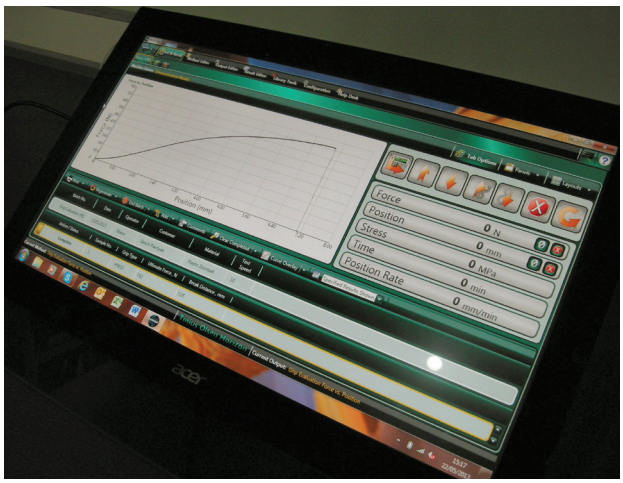
The model 5kL is an Electromechanical Materials Testing Machine. It is a robust design for use in a range of materials testing.

Model 5KL

The model 5kL is designed for tension, compression, flexure and shear strength testing on materials and assemblies. The robust design that incorporates quality materials and components ensures that our reputation for superior system performance, ease of use, and longevity is maintained. A variety of loadcells are available at differing capacities that give precise applied load measurements from the smallest test specimen to ones that go to full machine capacity. Test machines become complete, powerful test systems with the addition of grips to hold the specimen, strain measurement instrumentation and Tinius Olsen's Horizon Data Analysis software.

Features and benefits

- Suitable for tension, compression, flexure, shear and other tests to a maximum force of 5kN/1,000lbf
- Meets or exceeds the requirements of national and international standard for materials testing systems
- Built-in pneumatic distribution ports provide local air supply to pneumatic grips
- Primary system interface is a PC running Tinius Olsen's Horizon data analysis software connected via USB
- System features local Jog up, jog down and stop buttons so the crosshead can be positioned for easy specimen loading
- Protective screen supporting panels on the sides, USB connectivity, Sunken power connector to ease service



OPTIONS AND ACCESSORIES

- Grips and fixtures can be easily mounted securely with a simple locking pin, which also allows simple and rapid changes.
- Full range of precision extensometers and deflectometers are available using video, laser, encoder, strain gage and/or LVDT technologies
- Furnaces and environmental chambers can be installed for tests at high or low temperatures.
- Safety enclosures with interlocks can be installed to protect operators from violent specimen breaks.
- Tinius Olsen's Horizon software can be connected to the tester by the operator.

MACHINE INTERFACE

- Whether the test sample is metal, paper, composite, polymer, rubber, textile or a micro-component, Tinius Olsen's Horizon software goes far beyond data collection and presentation. It will help automate operations, from R&D to the charting and analysis of QC testing.

Specifications

5KL Frame specifications		
Item #		99-999-0706
Tension compression load capability		Yes
Frame capacity	kN	5
	kg	500
	lbf	1,000
Proof tested		50% over frame capacity
Floor or table mounting		Table mounting
Test zones		One
Number of columns		One
Column material		Steel sheet
Column finish		Powder coat paint
Column color		TO Cool Grey Web # E6 30 27
Base material		Steel sheet
Base finish		Powder coat paint
Base color		TO Cool Grey Web # E6 30 27
Crosshead material		Aluminium alloy
Crosshead finish		Pre-primed, top powder coat paint
Crosshead color		TO Green Web # 00 4C 45
Crosshead Depth	mm	115
	in	4.5
Maximum crosshead travel	mm	730
	in	29
Stiffness	kN/mm	7
	klbf/in	40
Height	mm	1140
	in	45
Width	mm	490
	in	19
Depth	mm	450
	in	18
Weight	kg	60
	lb	132
Force protection system		Yes, digital
Displacement protection system		Yes, mechanical and user programmable
Accessory fitting interface type		Female diameter
Ball screw type		High precision low backlash
Ball screw cover/protection		Yes
Crosshead drive system		DC servo motor
Feet material		Non-adjustable impact resistance plastic
Pneumatic air distribution		4mm OD hose with pushfit coupling, rated to 100psi maximum
Noise at full crosshead speed 2m radius		18db

NOTE – Software required for materials tests

Frame specifications		
CONTROLLER SPECIFICATIONS		
Max data processing rate		168MHz
Data acquisition rate at PC		1000Hz
Number of instrument device connections – external		One
External PC connection		USB
FORCE MEASUREMENT		
Force measuring device type		Strain gage-based load cell
Load cells available		5N, 10N, 25N, 50N, 100N, 250N, 500N, 1kN, 2.5kN, 5kN
Resolution		One part in 64,000
Accuracy		0.5% of applied force across load cell force range
Range		0.2-100%
		10N load cell - 0.5-100%
		5N load cell - 1-100%
Calibration standard		+/- 0.5% to ISO 7500-1, ASTM E4
Internal sampling rate		1000Hz
EXTENSION MEASUREMENT		
Resolution		0.1µm
Accuracy		+/-10µm
Range		0.1µm to 730mm
Calibration standard		ISO 9513
Internal sampling rate		2.73kHz
POSITION CONTROL		
Test Speed	mm/min	0.0001-1000 up to 2.5kN, 0.0001-500 up to 5kN
	in/min	4µ"-40" up to 0.5klbf 4µ"-20" up to 1klbf
Resolution	µm	0.1
	in	4µ"
Accuracy		+/-0.05% of indicated speed
Return speed post test	mm/min	0.0001-1,500
	in/min	4µ"-60"
Crosshead positioning speed	mm/min	0.0001-1,000
	in/min	4µ"-40"
Return to zero function		Yes
POWER REQUIREMENTS		
Supply voltage options		115/230V
Frequency		50/60Hz
Power		530W +/- 10%
ATMOSPHERIC REQUIREMENTS		
Operating temperature		0-38°C
Operating humidity		10-90% non-condensing
Storage temperature		-10-45°C
Storage humidity		10-90% non-condensing

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