

MODEL 1ST ELECTROMECHANICAL TESTING MACHINE



The model 1ST 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 1kN / 200 lbf
- Single column design allows compact, economical and easy testing
- Different system interface options are available, from a familiar tethered handheld interface, a wireless Bluetooth interface panel running an Android application, or virtual machine controller application running on a pc. All interfaces work with Horizon Data Analysis software.
- Meets or exceeds the requirements of national and international standard for materials testing systems.
- 4 full-length T slots built into machine column to allow accessories to securely mounted to the test frame.
- Built-in pneumatic distribution ports that provide local air supply to pneumatic grips.

OPTIONS AND ACCESSORIES

- Test frame can be extended by up to 254mm / 10 inches to increase test area size. ¹
- 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 gauge and/or LVDT technologies
- Tinius Olsen's Horizon software can be connected to the tester by the operator.



Familiar handheld interface which is tethered to the machine. With its larger, tactile, sealed keypad, this interface is ideal for operators whose use gloves to load and unload specimens and prefer a push button keypad. It can be used to operate the basic machine functions and will report basic numerical test data or can be linked with Horizon software.

Wireless handheld interface which is connected to the machine by a Bluetooth link. This interface features an Android based operating platform and can be used to control the machine by itself or in conjunction with Tinius Olsen's Horizon software.



¹Supplied at the time of order

SPECIFICATIONS



1ST Specifications			1ST Specifications				
Frame	Tension Compression load capability	Yes		Software required for materials tests			
	Frame capacity	kN	1	Controller	Max data processing rate	168 MHz	
		kg	100		Data acquisition rate at PC	1000 Hz	
		lbf	200		Number of instrument device connections external	4	
	Proof tested	100%			Number of instrument device connections internal	3	
	Floor or table mounting	Table mounting			Bluetooth enabled	v4.0 with A2DP, LE, EDR	
	Test zones	1			External PC connection	USB	
	Number of columns	1			User interface connectivity	TO HMC, Proterm, Horizon	
	Column material	Aluminium Extrusion					
	Column finish	Anodized		Force	Force measuring device - type	Strain gauge based load cell	
	Column colour	Natural			Load cells available	5N, 10N, 25N 50N, 100N, 250N, 500N, 1kN	
	Base material	Mild Steel			Resolution	1 part in 8388608	
	Base finish	Pre primed, top coat powder coat paint			Accuracy	+/-0.1% of applied force across load cell force range	
	Base colour	TO Cool Grey Web # E6 30 27			Range	0.2% to 100%	
	Croshead material	Mild Steel solid			Calibration standard	+/- 0.5% to ISO 7500-1 ASTM E4	
	Croshead finish	Pre primed, top powder coat paint			Internal sampling rate	1000Hz	
	Croshead colour	TO Green Web # 00 4C 45					
	Base cover	ABS recyclable		Extension measurement	Resolution	0.1um	
	Base cover colour	Cal Black Web # 11 18 20			Accuracy	+/-10um	
	Distance between columns	mm	N/A		Range	+/- 217m	
		in	N/A		Calibration standard	ISO 9513, ASTM E83	
	Max cross head travel	mm	755		Internal sampling rate	2.73kHz	
		in	30				
	Optional crosshead travel	mm	254	Position control	Test Speed	mm/min	0.001 to 1000
		in	10			in/min	0.00004 to 40
	Stiffness	kN/mm	7		Resolution	um	0.1
		klbf/in	39		in	0.000004	
	Height	mm	1168		Accuracy	+/- 0.005%	
		in	46		Return speed post test	mm/min	0.001 to 1500
	Width	mm	511		in/min	0.00004 to 60	
in		20	Resolution		um	0.1	
Depth	mm	467	in		0.000004		
	in	18	Accuracy		+/- 0.005%		
Weight	kg	46	Crosshead positioning speed		mm/min	0.001 to 1000	
	lb	101	in/min		0.00004 to 40		
Force protection system	Yes digital		Resolution	um	0.1		
Displacement protection system	Yes mechanical & user programmable		in	0.000004			
Accessory fitting interface type	Female diameter		Accuracy	+/- 0.005%			
Ball screw type	High precision low backlash		Return to zero function	Yes			
Ball screw cover/protection	Yes						
Crosshead drive system	DC servo motor		Power requirement	Supply voltage options	110/240V		
Feet material	Impact resistant plastic			Frequency	50/60Hz		
Feet adjustment & levelling	No			Power	0.53kW +/- 10%		
Reference rule to support cross head positioning	Yes mm & Inches						
T slots in columns for accessory mounting	4 * M6/M8		Atmo-sphere	Operating temperature	10 to 40 °C		
Noise at full crosshead speed 2m radius	18db			Operating humidity	10% to 90% non condensing		
				Storage temperature	10 to 69 °C		
				Storage humidity	10% to 90% non condensing		