

MODEL 5ST ELECTROMECHANICAL TESTING MACHINE



The model 5ST 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 / 1,000 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 be 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



5ST Specifications

Frame	Tension Compression load capability	Yes		
	Frame capacity	kN	5	
		kg	500	
		lbf	1,000	
		50 % over frame capacity		
	Floor or table mounting	Table mounting		
	Test zones	1		
	Number of columns	1		
	Column material	Aluminium Extrusion		
	Column finish	Anodized		
	Column colour	Natural		
	Base material	Mild Steel		
	Base finish	Pre primed, top coat powder coat paint		
	Base colour	TO Cool Grey Web # E6 30 27		
	Crosshead material	Mild Steel solid		
	Croshead finish	Pre primed, top powder coat paint		
	Crosshead colour	TO Green Web # 00 4C 45		
	Base cover	ABS recyclable		
	Base cover colour	Cal Black Web # 11 18 20		
	Distance between columns	mm	N/A	
		in	N/A	
	Max cross head travel	mm	755	
		in	30	
	Optional crosshead travel	mm	254	
		in	10	
	Stiffness	kN/mm	7	
		klbf/in	39	
	Height	mm	1168	
		in	46	
	Width	mm	511	
		in	20	
	Depth	mm	467	
		in	18	
	Weight	kg	46	
		lb	101	
Force protection system	Yes digital			
Displacement protection system	Yes mechanical & 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	Impact resistant plastic			
Feet adjustment & levelling	No			
Reference rule to support cross head positioning	Yes - mm & Inches			
T slots in columns for accessory mounting	4 * M6/M8			
Noise at full crosshead speed 2m radius	18db			

5ST Specifications

Software required for materials tests			
Control-ler	Max data processing rate	168 MHzx	
	Data acquisition rate at PC	1000 Hz	
	Number of instrument de-vice connections external	4	
	Number of instrument de-vice connections internal	3	
	Bluetooth enabled	v4.0 with A2DP, LE, EDR	
	External PC connection	USB	
	User interface connectivity	TO HMC, Proterm, Horizon	
	Force	Force measuring device - type	Strain gauge based load cell
Load cells available		5N, 10N, 25N 50N, 100N, 250N, 500N, 1kN, 2,5kN, 5kN	
Resolution		1 part in 8388608	
Accuracy		+/-0.1% of applied force across load cell force range	
Range		0.2% to 100%	
Calibration standard		+/- 0.5% to ISO 7500-1 ASTM E4	
Internal sampling rate		1000 Hz	
Extension measure-ment	Resolution	0.1um	
	Accuracy	+/-10um	
	Range	+/- 217m	
	Calibration standard	ISO 9513, ASTM E83	
	Internal sampling rate	2.73kHz	
Position control	Test Speed	mm/min	0.001 to 1000 to 2kN
		mm/min	0.001 to 500 to 5kN
		in/min	0.00004 to 40 to 400lbf
		in/min	0.00004 to 20 to 1000lb
	Resolution	um	0.1
		in	0.000004
	Accuracy	+/- 0.005%	
	Return speed post test	mm/min	0.001 to 1500
		in/min	0.00004 to 60
	Resolution	um	0.1
		in	0.000004
	Accuracy	+/- 0.005%	
Crosshead positioning speed	mm/min	0.001 to 1000	
	in/min	0.00004 to 40	
Resolution	um	0.1	
	in	0.000004	
Accuracy	+/- 0.005%		
Return to zero function	Yes		
Power require-ment	Supply voltage options	110/240V	
	Frequency	50/60Hz	
	Power	530W +/- 10%	
Atmo-sphere	Operating temperature	10 to 40 °C	
	Operating humidity	10% to 90% non condensing	
	Storage temperature	10 to 69 °C	
	Storage humidity	10% to 90% non condensing	