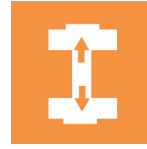


# MODEL 50ST ELECTROMECHANICAL MATERIALS TESTING MACHINE



The model 50ST 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 50kN / 11,000 lbf
- 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.
- 8 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 400mm / 16 inches to increase test area size. <sup>1</sup>
- 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
- 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.



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.

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 requires virtual machine control software running on a connected pc to operate the basic machine functions and report basic numerical test data.



<sup>1</sup>Supplied at the time of order

# SPECIFICATIONS



## Model 50ST Specifications

### FRAME SPECIFICATIONS

Tension Compression load capability	Yes	
Frame capacity	kN	50
	kg	5,000
	lbf	11,000
Proof tested	25 % over frame capacity	
Floor or table mounting	Table mounting	
Test zones	1	
Number of columns	2	
Column material	Aluminium Extrusion	
Column finish	Anodized	
Column colour	Natural	
Base material	Mild Steel	
Base finish	Pre primed, top 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	410
	in	16
Max cross head travel	mm	1065
	in	42
Optional crosshead travel	mm	400
	in	16
Stiffness	kN/mm	100
	klbf/in	557
Height	mm	1655
	in	65
Width	mm	729
	in	29
Depth	mm	506
	in	20
Weight	kg	163
	lb	359
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	non adjustable impact resistant plastic	
Pneumatic air distribution	4mm OD hose with pushfit coupling, rated to 100 psi max.	
Reference rule to support cross head positioning	Yes mm & Inches	
T slots in columns for accessory mounting	8 * M6/M8	
Noise at full crosshead speed 2m radius	31db	
NOTE - Software required for materials tests		

## Model 50ST Specifications

### CONTROLLER SPECIFICATIONS

Max data processing rate	168 MHz	
Data acquisition rate at PC	1000 Hz	
Number of instrument device connections - external	4	
Number of instrument device connections - internal	3	
Bluetooth enabled	v4.0 with A2DP, LE, EDR	
External PC connection	USB	
User interface connectivity	TO HMC, Proterm, Horizon	
FORCE MEASUREMENT		
Force measuring device - type	Strain gauge based load cell	
Load cells available	25N 50N, 100N, 250N, 500N, 1kN, 2,5kN, 5kN, 10kN, 25kN, 50kN	
Resolution	1 part in 8,388,608	
Accuracy	+/-0.2% 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 MEASUREMENT		
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 500 to 20kN
	mm/min	0.001 to 250 to 50kN
	in/min	0.00004 - 20 to 4,000lbf
	in/min	0.00004 - 10 to 11,000lbf
Resolution	um	0.1
	in	0.000004
Accuracy	+/- 0.005%	
Return speed post test	mm/min	0.001 to 500
	in/min	0.00004 to 20
Crosshead positioning speed	mm/min	0.001 to 500
	in/min	0.00004 to 20
Return to zero function	Yes	
POWER REQUIREMENTS		
Supply voltage options	110/240V	
Frequency	50/60Hz	
Power	2000W +/- 10%	
ATMOSPHERIC REQUIREMENTS		
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	