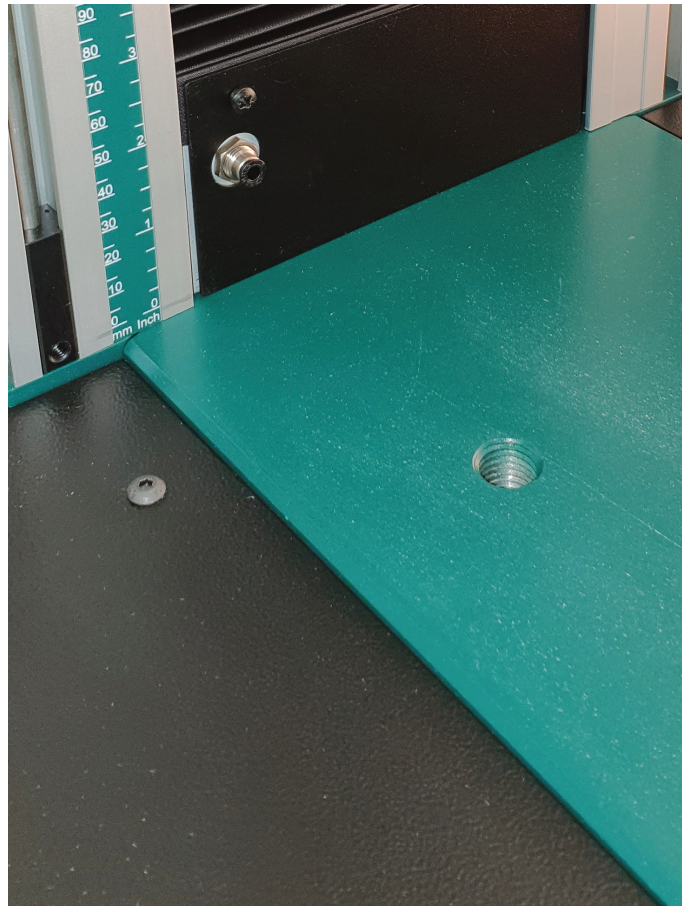




The first name in materials testing

# 50ST low temperature tolerant

## Electromechanical Materials Testing Machine



The 50ST Low temperature tolerant model is a variation of the Tinius Olsen 50ST Electromechanical Materials Testing Machine. It is a robust design for use in a range of materials testing.



# Model 50ST Low temperature tolerant

The 50ST low temperature tolerant model designed for tension, compression, flexure and shear strength testing on materials and assemblies. The frame is capable of use within a cold box down to a temperature of -18°C non-condensing air as compared to standard model. 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

- Capable of use within a cold box down to a temperature of -18°C non-condensing air
- Bluetooth-enabled handheld interface allows maximum flexibility when paired to a testing machine.
- Suitable for tension, compression, flexure, shear and other tests to a maximum force of 50kN/11,000lbf.
- 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.
- Eight full-length T slots built into the machine column to allow accessories to be securely mounted to the test frame.
- Built-in pneumatic distribution ports provide local air supply to pneumatic grips.

## INTERFACE OPTIONS

### HMC 3.0

Wireless handheld interface that is connected to the machine by a Bluetooth link.

The 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.



### Proterm

Familiar handheld interface that is tethered to the machine. With its larger, tactile, sealed keypad, this interface is ideal for operators who 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.



## APPLICATIONS

Most common application for this particular model includes (but not limited to)

- Medical devices
- Electrical component

# Specifications



Frame specifications		
Item #	99-991-1050/1Q	
Tension compression load capability	Yes	
Frame capacity	kN	50
	kg	5,000
	lbf	11,000
Proof tested	50% over frame capacity	
Floor or table mounting	Table mounting	
Test zones	One	
Number of columns	Two	
Column material	Aluminium extrusion	
Column finish	Anodized	
Column color	Natural	
Base material	Mild Steel	
Base finish	Pre-primed, top powder coat paint	
Base color	TO Cool Grey Web # E6 30 27	
Crosshead material	Mild Steel solid	
Crosshead finish	Pre-primed, top powder coat paint	
Crosshead color	TO Green Web # 00 4C 45	
Base cover	ABS recyclable	
Base cover color	Cal Black Web # 11 18 20	
Distance between columns	mm	405
	in	16
Maximum crosshead travel	mm	1065
	in	42
Stiffness	kN/mm	100
	klbf/in	571
Height	mm	1655
	in	65
Width	mm	729
	in	29
Depth	mm	506
	in	20
Weight	kg	192
	lb	423
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	
Reference rule to support crosshead positioning	Yes, mm and inches	
T slots in columns for accessory mounting	8 x M6/M8	

Frame specifications		
Noise at full crosshead speed 2m radius	22db	
NOTE - Software required for materials tests		
CONTROLLER SPECIFICATIONS		
Max data processing rate	168MHz	
Data acquisition rate at PC	1000Hz	
Number of instrument device connections - external	Four	
Number of instrument device connections - internal	Three	
Bluetooth enabled	v4.0 with A2DP, LE, EDR	
External PC connection	USB	
User interface connectivity	TO HMC2.0, Proterm, Horizon	
FORCE MEASUREMENT		
Force measuring device type	Strain gage-based load cell	
Load cells available	25N, 50N, 100N, 250N, 500N, 1kN, 2.5kN, 5kN, 10kN	
Resolution	One part in 8,388,608	
Accuracy	0.2% of applied force across load cell force range	
Range	0.2-100%	
Calibration standard	+/- 0.5% to ISO 7500-1ASTM E4	
Internal sampling rate	1000Hz	
EXTENSION MEASUREMENT		
Resolution	0.1µm	
Accuracy	+/- 50µm	
Range	0.1µm to 1065mm	
Calibration standard	ISO 9513	
Internal sampling rate	2.73kHz	
POSITION CONTROL		
Test Speed	mm/min	0.0001-500 @ 25kN
	mm/min	0.0001-250 @ 50kN
	in/min	0.000004-20 @5klbf
	in/min	0.000004-10 @11klbf
Resolution	µm	0.1
	in	0.000004
Accuracy	+/-0.05% of indicated speed	
Return speed post test	mm/min	0.0001-500
	in/min	0.000004-20
Crosshead positioning speed	mm/min	0.0001-500
	in/min	0.000004-20
Return to zero function	Yes	
POWER REQUIREMENTS		
Supply voltage options	115/230V	
Frequency	50/60Hz	
Power	530W +/- 10%	
ATMOSPHERIC REQUIREMENTS		
Operating temperature	5-40°C (41-104°F)	
Operating humidity	10-80% non-condensing wet bulb method	
Storage temperature	-10-45°C (14-113°F)	
Storage humidity	10-80% non-condensing wet bulb method	

# Tinius Olsen



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