ST0050EN02

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/11,000lbf
- 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.

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.

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

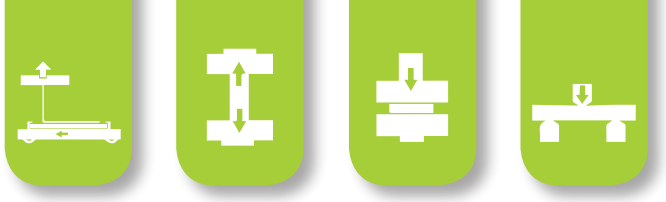
OPTIONS AND ACCESSORIES

- Test frame can be extended by up to 400mm/16in to increase test area size.[1]
- Grips and fixtures can easily be securely mounted 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.

1 Supplied at the time of order

Tinius Olsen

Specifications



MODEL 50ST SPECIFICATIONS

FRAME SPECIFICATIONS		
Tension compression load capability		Yes
Frame capacity	kN	50
	kg	5000
	lbf	11,000
Proof tested		25% 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	410
	in	16
Maximum crosshead 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 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 resistant 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		Eight x M6/M8

MODEL 50ST SPECIFICATIONS

Noise at full crosshead speed 2m radius	31db

NOTE – Software required for materials tests

CONTROLLER SPECIFICATIONS	
Maximum 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 HMC, 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, 25kN, 50kN
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 7500-1 ASTM E4
Internal sampling rate	1000Hz

EXTENSION MEASUREMENT	
Resolution	0.1µm
Accuracy	+/-10µm
Range	+/- 217m
Calibration standard	ISO 9513, ASTM E83
Internal sampling rate	2.73kHz

POSITION CONTROL		
Test speed	mm/min	0.001-500 to 20kN
	mm/min	0.001-250 to 50kN
	in/min	0.00004-20 to 4000lbf
	in/min	0.00004-10 to 11,000lbf
Resolution	µm	0.1
	in	0.000004
Accuracy		+/- 0.005%
Return speed post test	mm/min	0.001-500
	in/min	0.00004-20
Crosshead positioning speed	mm/min	0.001-500
	in/min	0.00004-20
Return to zero function		Yes

POWER REQUIREMENTS	
Supply voltage options	110/240V
Frequency	50/60Hz
Power	2000W +/- 10%

ATMOSPHERIC REQUIREMENTS	
Operating temperature	10-40°C
Operating humidity	10-90% non-condensing
Storage temperature	10-69°C
Storage humidity	10-90% non-condensing