ST0001EN02

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/200lbf.
- 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.
- Four 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

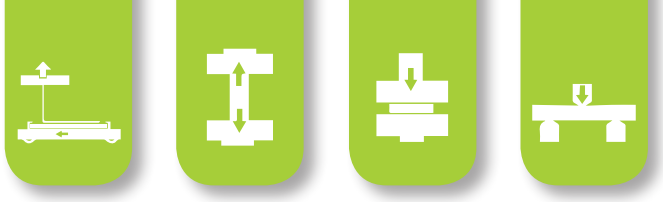
OPTIONS AND ACCESSORIES

- Test frame can be extended by up to 254mm/10in 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.
- 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 1ST SPECIFICATIONS

FRAME SPECIFICATIONS		
Tension Compression load capability		Yes
Frame capacity	kN	1
	kg	100
	lbf	200
Proof tested		100%
Floor or table mounting		Table mounting
Test zones		One
Number of columns		One
Column material		Aluminium extrusion
Column finish		Anodized
Column color		Natural
Base material		Mild Steel
Base finish		Pre-primed, top coat 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	N/A
	in	N/A
Maximum crosshead 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 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

MODEL 1ST SPECIFICATIONS

T slots in columns for accessory mounting	Four x M6/M8
Noise at full crosshead speed 2m radius	18db

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	5N, 10N, 25N, 50N, 100N, 250N, 500N, 1kN
Resolution	One part in 8388608
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	0.001-1000
	in/min	0.00004-40
Resolution	µm	0.1
	in	0.000004
Accuracy		+/- 0.005%
Return speed post test	mm/min	0.001-1500
	in/min	0.00004-60
Crosshead positioning speed	mm/min	0.001-1000
	in/min	0.00004-40
Return to zero function		Yes
POWER REQUIREMENTS		
Supply voltage options		110/240V
Frequency		50/60Hz
Power		530W +/- 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