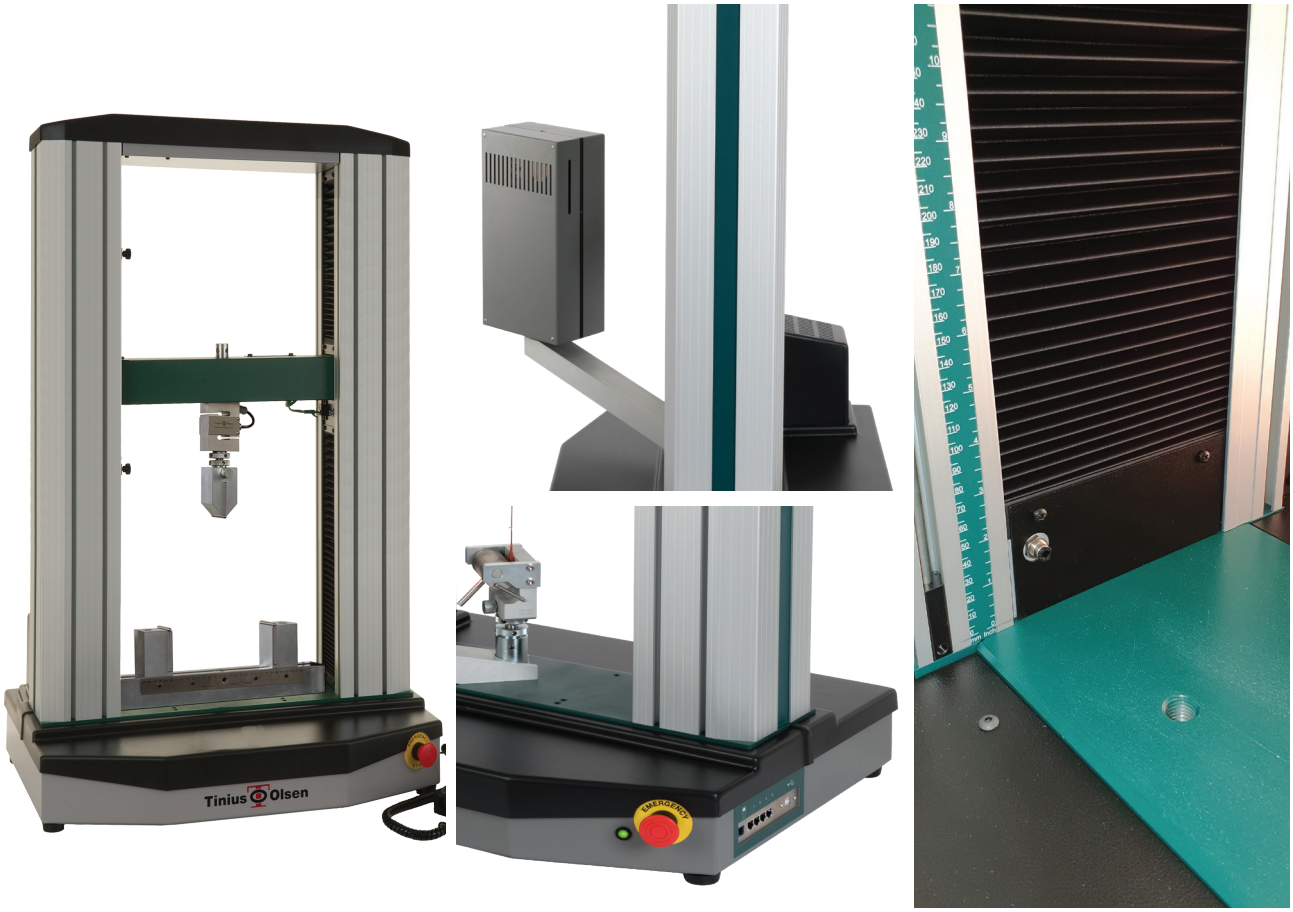
Tinius Olsen

The first name in materials testing

Model 10ST Reduced height

Electromechanical Materials Testing Machine



The 10ST reduced height model is an Electromechanical Materials Testing Machine. It is a robust design for use in a range of materials testing.

Model 10ST Reduced height

The 10ST reduced height model is designed for tension, compression, flexure and shear strength testing on materials and assemblies. The frame has reduced height by 400mm 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

- **Reduced crosshead travel (690mm)**
- **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 10kN/2,000lbf.**
- **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)

- Where lab ceiling height of lab is a problem or where the testing machine frame is to be placed inside a gas or environment controlled chamber

Specifications

Frame specifications		
Part #		99-991-1010/30
Tension compression load capability		Yes
Frame capacity	kN	10
	kg	1,000
	lbf	2,000
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	410
	in	16
Maximum crosshead travel	mm	690
	in	27
Stiffness	kN/mm	100
	klbf/in	571
Height	mm	1225
	in	48
Width	mm	729
	in	29
Depth	mm	506
	in	20
Weight	kg	119
	lb	262
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
Noise at full crosshead speed 2m radius		22db

NOTE – Software required for materials tests

Frame specifications		
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		5N, 10N, 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%
		10N load cell - 0.5-100%
		5N load cell - 1-100%
Calibration standard		+/- 0.5% to ISO 7500-1, ASTM E4
Internal sampling rate		1000Hz
EXTENSION MEASUREMENT		
Resolution		0.1µm
Accuracy		+/-50µm
Range		0.1µm to 690mm
Calibration standard		ISO 9513
Internal sampling rate		2.73kHz
POSITION CONTROL		
Test Speed	mm/min	0.0001-500 to 10kN
	mm/min	0.0001-1,000 to 5kN
	in/min	0.000004-20 to 2,000lbf
	in/min	0.000004-40 to 1,000lbf
Resolution	µm	0.1
	in	0.000004
Accuracy		+/-0.05% of indicated speed
Return speed post test	mm/min	0.0001-1,000
	in/min	0.000004-40
Crosshead positioning speed	mm/min	0.0001-1,000
	in/min	0.000004-40
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

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