

## Reduced Height Electromechanical Material Testing Frame

### Test Type

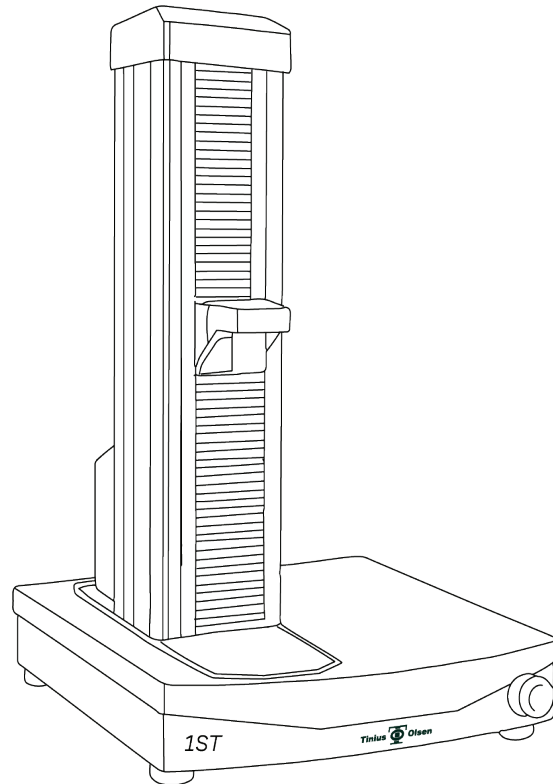
Tension, Compression,  
Flex, Peel, Shear and  
more..

### Interfaces

Horizon software,  
HMC, VMC,  
Proterm

### Applications

Small electronic  
components -  
solenoids, switches..



- + Reduced crosshead travel (340mm)
- + Suitable for tension, compression, flexure, shear and other tests to a maximum force of 1kN/200lbf.
- + Meets or exceeds the requirements of national and international standard for materials testing systems.
- + Bluetooth-enabled handheld interface allows maximum flexibility when paired to a testing frame.
- + 4 full-length T-slots built into the columns to allow accessories to be securely mounted to the test frame.
- + Built-in pneumatic distribution ports provide local air supply to pneumatic grips.

# Model 1ST Reduced Height

The model 1ST is designed for tension, compression, flexure and shear strength testing on materials and assemblies. The frame has reduced height by 415mm 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 frame capacity. Test frames 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.

## Interface Options

### HMC3.0

Wireless handheld interface that is connected to the frame via Bluetooth. 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.



## Options and Accessories

- + 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 optical, 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 frame by the operator.

## TO order numbers

Contact Sales	Materials Testing Machine, Reduced Model 1ST -415mm Height, Single Column, 1kN
99-991-9000/03	HMC 3.0 Wireless Handheld Sys. w/Locking dock and arm assembly; Fit ST Series
03070246	Handheld Terminal for Mech. Sys. w/ Display, Keypad, Interface, Black Case; 1114

# Specifications

<b>Frame capacity</b>	1kN / 100kgf / 200lbf	
<b>Proof tested</b>	50% over frame capacity	
<b>Floor or table mounting</b>	Table mounting	
<b>Test zone</b>	One	
<b>Number of columns</b>	One	
<b>Column</b>	<b>Material</b>	Aluminium extrusion
	<b>Finish</b>	Anodized
	<b>Color</b>	Natural
<b>Base</b>	<b>Material</b>	Mild steel
	<b>Finish</b>	Pre-primed, top powder coat paint
	<b>Color</b>	TO Cool Grey Web # E63027
<b>Crosshead</b>	<b>Material</b>	Aluminium
	<b>Finish</b>	Pre-primed, top powder coat paint
	<b>Color</b>	TO Green Web # 004C45
<b>Base Cover</b>	<b>Material</b>	ABS recyclable
	<b>Color</b>	Cal Black Web # 111820
<b>Crosshead depth</b>	mm	100
	in	3.94
<b>Max. Crosshead travel</b>	mm	340
	in	13.4
<b>Stiffness</b>	kN/mm	7
	klbf/in	40
<b>Height</b>	mm	753
	in	30
<b>Width</b>	mm	511
	in	20
<b>Depth</b>	mm	467
	in	18
<b>Weight</b>	kg	53
	in	117
<b>Force protection system</b>	Yes, digital	

# Specifications

<b>Displacement protection system</b>	Yes, mechanical and user programmable
<b>Accessory fitting interface type</b>	Female diameter
<b>Ball screw type</b>	High precision low backlash
<b>Ball screw cover/protection</b>	Yes
<b>Crosshead drive</b>	DC servo motor
<b>Feet material</b>	Non-adjustable impact resistance plastic
<b>Pneumatic air distribution</b>	4mm OD hose with pushfit coupling, rated to 100psi maximum
<b>Reference rule</b>	Yes, mm and inches (to support crosshead positioning)
<b>T slots in columns</b>	4 x M6/M8 (for accessory mounting)
<b>Noise at full crosshead speed</b>	18db

## Controller Specifications

<b>Max data processing rate</b>	168MHz	
<b>Data acquisition rate at PC</b>	1000Hz	
<b>Number of instrument device connections</b>	<b>Internal</b>	Three
	<b>External</b>	Four
<b>Bluetooth enabled</b>	v4.0 with A2DP, LE, EDR	
<b>External PC connection</b>	USB	
<b>User interface connectivity</b>	TO HMC3.0, Proterm, Horizon	

## Force Measurement

<b>Force measuring device type</b>	Strain gage-based load cell
<b>Load cells available</b>	5N, 10N, 25N, 50N, 100N, 250N, 500N, 1kN
<b>Resolution</b>	One part in 8,388,608
<b>Accuracy</b>	0.2% of applied force across load cell force range
	0.2-100%
	10N load cell - 0.5-100%
<b>Range</b>	5N load cell - 1-100%
	± 0.5% to ISO 7500-1, ASTM E4
<b>Calibration standard</b>	± 0.5% to ISO 7500-1, ASTM E4
<b>Internal sampling rate</b>	1000Hz

# Specifications

## Extension Measurement

<b>Resolution</b>	0.1µm
<b>Accuracy</b>	±50µm
<b>Range</b>	0.1µm to 340mm
<b>Calibration standard</b>	ISO 9513
<b>Internal sampling rate</b>	2.73kHz

## Position Control

<b>Test Speed</b>	mm/min	0.0001-1,000
	in/min	0.000004-40
<b>Resolution</b>	µm	0.1
	in	0.000004
<b>Accuracy</b>	±0.05% of indicated speed	
<b>Return speed post test</b>	mm/min	0.0001-1,500
	in/min	0.000004-60

# Specifications

<b>Crosshead positioning speed</b>	mm/min	0.0001-1,000
	in/min	0.000004-40
<b>Return to 0 function</b>	Yes	

## Power Requirements

<b>Supply voltage</b>	115/230V
<b>Frequency</b>	50/60Hz
<b>Power</b>	530W ± 10%

## Atmospheric Requirements

<b>Operating temp.</b>	5 to 40°C (41 to 104°F)
<b>Operating humidity</b>	10-80% non-condensing wet bulb method
<b>Storage temp.</b>	-10 to 45°C (14 to 113°F)
<b>storage humidity</b>	10-80% non-condensing wet bulb method