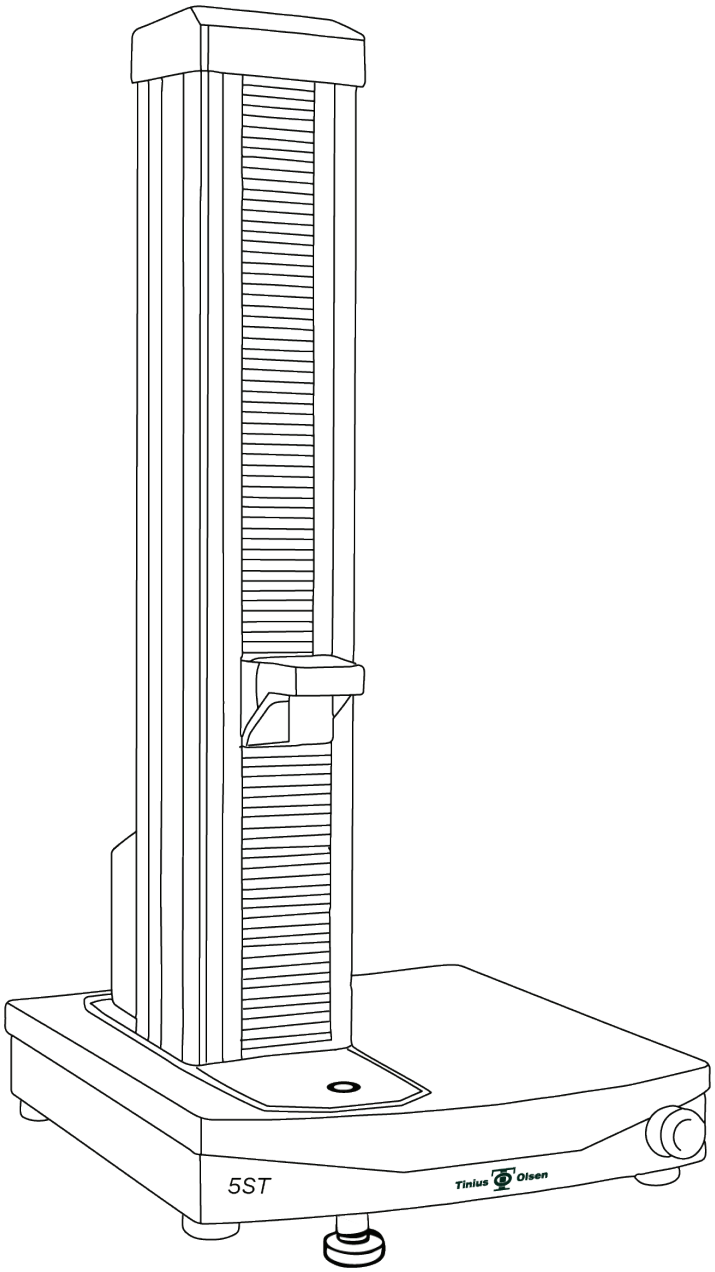
Universal Testing Machine

5ST+B

"Through Base" capable Electromechanical Material Testing Frame



Test Type

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

Interfaces

Horizon software, HMC, VMC, Proterm

Applications

Cartons, boxes, enclosures.

+ Through frame base tie rod for additional testing zone below.
+ Suitable for tension, compression, flexure, shear and other tests to a maximum force of 5kN/1,000lbf.
+ 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 5ST - Through Base Capable

The 5ST through base capability model is designed for tension, compression, flexure and shear strength testing on materials and assemblies. This model allows for a larger and if required enclosed additional test zone below the testing frame and lab table.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, Model 5ST with Dust Modifications, SingleColumn, 5kN
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

Frame capacity	5kN / 500kgf / 1,000lbf	
Proof tested	50% over frame apacity	
Mounting	Table mounting	
Test zone	One	
Number of columns	One	
Column	**Material**	Aluminium extrusion
	Finish	Anodized
	Color	Natural
Base	**Material**	Mild steel
	Finish	Pre-primed, top powder coat paint
	Color	TO Cool Grey Web # E63027
Crosshead	**Material**	Aluminium
	Finish	Pre-primed, top powder coat paint
	Color	TO Green Web # 004C45
Base Cover	**Material**	ABS recyclable
	Color	Cal Black Web # 111820
Crosshead depth	mm	100
	in	3.94
Max. Crosshead travel	mm	755
	in	30
Stiffness	kN/mm	7
	klbf/in	40
Height	mm	1168
	in	46
Width	mm	511
	in	20
Depth	mm	467
	in	18
Weight	kg	58
	lbs	128
Force protection system	Yes, digital	

Specifications

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	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	Yes, mm and inches (to support crosshead positioning)
T slots in columns	4 x M6/M8(for accessory mounting)
Noise at full crosshead speed	18db

Controller Specifications

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

Specifications

Extension Measurement

Resolution	0.1µm
Accuracy	±50µm
Range	0.1µm to 755mm
Calibration standard	ISO 9513
Internal sampling rate	2.73kHz

Position Control

Test Speed	mm/min	0.0001-1,000 to 2.5N
	mm/min	0.0001-500 to 5kN
	in/mm	0.000004-40 to 500lbf
	in/min	0.000004-20 to 1,000lbf
Resolution	µm	0.1
	in	0.000004
Accuracy	±0.05% of indicated speed	

Specifications

Return speed post test	mm/min	0.0001-1,500
	in/min	0.000004-60
Crosshead positioning speed	mm/min	0.0001-1,000
	in/min	0.000004-40
Return to 0 function	Yes	

Power Requirements

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

Atmospheric Requirements

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