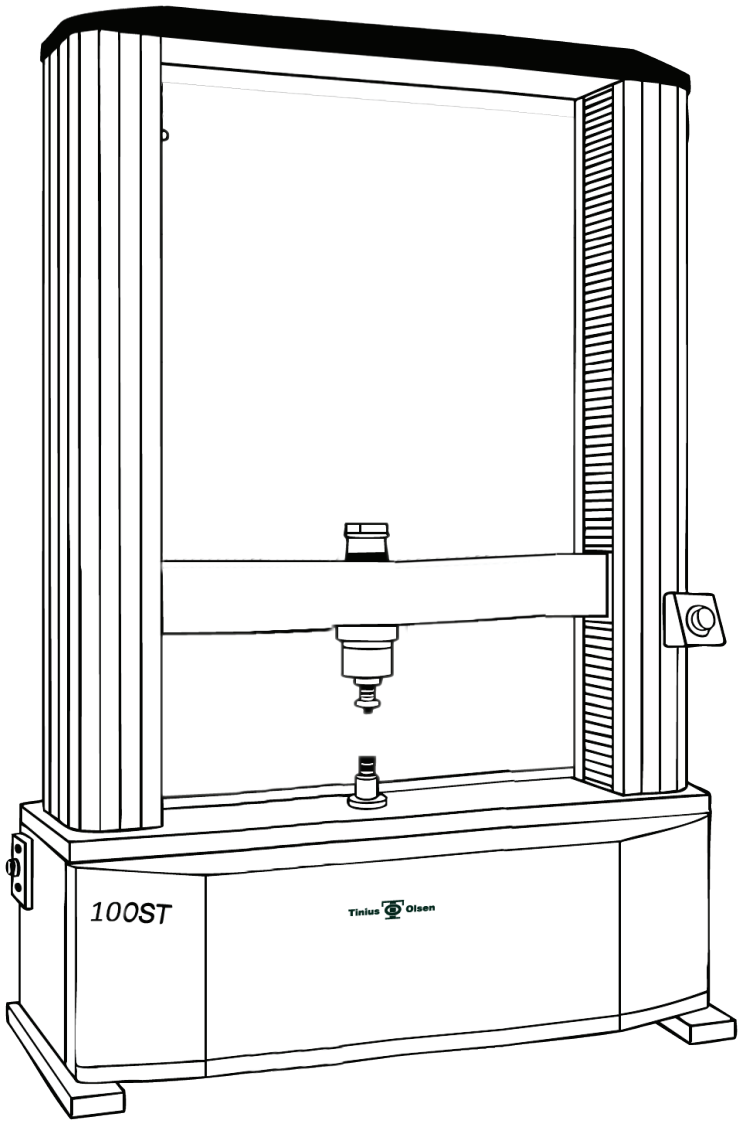
Universal Testing Machine

100ST+W

Extended Width Electromechanical Material Testing Frame



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

Interfaces
Horizon software, HMC, VMC, Proterm

Applications
Component testing, large auto, aero components, stearing wheels, large tyres.

+ Extended width between upright columns (1000mm)
+ Suitable for tension, compression, flexure, shear and other tests to a maximum force of 100kN/20,000lbf.
+ 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.
+ Twelve 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.

Model 100ST Extended width

The 100ST extended width model is designed for tension, compression, flexure and shear strength testing on materials and assemblies. The frame has extended width by 350mm as compared to the 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.

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

99-991-1100/40	Materials Testing Machine, Model 100ST Wide, Twin Column, 100kN
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	100kN / 10,000kgf / 20,000lbf	
Proof tested	To frame capacity	
Mounting	Floor standing	
Test zone	One	
Number of columns	Two	
Column	**Material**	Aluminium extrusion
	Finish	Anodized
	Color	Natural
Base	**Material**	Solid steel
	Finish	Pre-primed, top powder coat paint
	Color	TO Cool Grey Web # E63027
Crosshead	**Material**	Solid steel
	Finish	Pre-primed, top powder coat paint
	Color	TO Green Web # 004C45
Base Cover	**Material**	ABS recyclable
	Color	Cal Black Web # 111820
Distance between columns	mm	1000
	in	39
Max. Crosshead travel	mm	1170
	in	46
Stiffness	mm	460
	in	2627
Height	mm	2330
	in	92
Width	mm	1510
	in	59
Depth	mm	700
	in	28
Weight	kg	1000
	lbs	2205
Force protection system	Yes, digital	
Displacement protection system	Yes, mechanical and user programmable	

Specifications

Accessory fitting interface type	Female diameter
Ball screw type	High precision low backlash
Ball screw cover/ protection	Yes
Crosshead drive	Servo motor
Feet material	Steel plate, pre-drilled for anchor bolts
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	12 x M6/M8
Noise at full crosshead speed 2m radius	42db

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	2.5kN, 5kN, 10kN, 25kN, 50kN, 100kN
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

Specifications

Extension Measurement

Resolution	0.1µm
Accuracy	±50µm
Range	0.1µm to 1170mm
Calibration standard	ISO 9513
Internal sampling rate	2.73kHz

Position Control

Test Speed	mm/min	0.0001-500
	in/min	0.000004-20
Resolution	µm	0.1
	in	0.000004
Accuracy	±0.05% of indicated speed	
Return speed post test	mm/min	0.0001-700
	in/min	0.000004-27.5

Specifications

Crosshead positioning speed	mm/min	0.0001-700
	in/min	0.000004-27.5
Return to 0 function	Yes	

Power Requirements

Supply voltage	230V ±10%, Single phase
Frequency	50/60Hz
Power	4kW ± 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