

# MODEL 2000SL

## Hydraulic Materials Testing Machine



The Model 2000SL is designed for tension, compression, flexure and shear strength testing on materials and assemblies. The robust design incorporates quality materials and components to ensure that our reputation for superior system performance, ease of use and longevity is maintained.

### Features and benefits

- Suitable for tension, compression, transverse, shear and other tests to a maximum force of 2000kN/400,000lbf.
- Four-column rugged design allows larger samples to be tested.
- Friction-free piston operation allows smooth, controlled operation and minimal downtime.
- Different system control options are available, from a familiar tethered handheld controller running with a PC-based virtual machine control application, or a wireless Bluetooth interface.

### OPTIONS AND ACCESSORIES

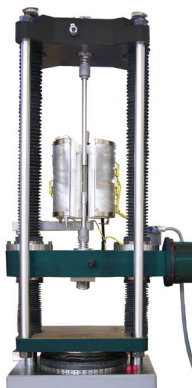
- Crossheads can be closed/semi-open/or fully open for easier specimen loading and unloading.<sup>1</sup>
- Columns can be extended by up to 914mm/36in to increase test area size.<sup>1</sup> Note – screw extensions require holes in the floor.
- Top crosshead can be made adjustable and columns can be notched to allow the adjustable top crosshead to be repositioned for more comfortable working heights.<sup>1</sup>
- In-head pocket grips can be supplied to accommodate flat or round tensile specimens.
- External grips and fixtures can be easily mounted securely.
- Full range of precision extensometers and deflectometers are available using video, laser, encoder, strain gage and/or LVDT technologies.
- Safety enclosures with interlocks can be installed to protect operators from violent specimen breaks.
- Furnaces and environmental chambers can be installed for tests at high or low temperatures.
- Tinius Olsen's Horizon software can be connected to the tester by the operator.

<sup>1</sup> Supplied at the time of order



**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



# Specifications



## MODEL 2000SL SPECIFICATIONS

### FRAME SPECIFICATIONS

Tension compression load capability	Yes	
Frame capacity	kN	2000
	kg	200,000
	lbf	400,000
Proof tested	To frame capacity	
Floor or table mounting	Floor mounting	
Test zones	Two	
Number of columns	Four	
Column material	Steel	
Column finish	Chrome	
Column color	Chrome	
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 screws	mm	565
	in	22.25
Maximum piston stroke travel	mm	229
	in	9
Maximum travel of adjustable crosshead	mm	959
	in	38
Stiffness	kN/mm	1700
	klbf/in	9500
Height	mm	2445
	in	96
Width	mm	940
	in	37
Depth	mm	851
	in	33.5
Weight	kg	5444
	lb	12,000
Optional extension to crosshead screws	305, 610, or 914mm 12, 24 or 36in	
Optional extension to column heights	305, 610, or 914mm 12, 24 or 36in	
Adjustable top crosshead and adjustable columns	Optional	
Pit mountable	Optional	
Screw cover/protection	Optional	
Feet material	Mild steel with provision for anchor bolts	
Noise at full crosshead speed 2m radius	68db	
<b>CONTROLLER SPECIFICATIONS</b>		
Maximum data processing rate	168MHz	
Data acquisition rate at PC	1000Hz	

## MODEL 2000SL SPECIFICATIONS

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	
<b>FORCE MEASUREMENT</b>		
Force measurement device	Pressure transducer	
Resolution	One part in 8,388,608	
Accuracy	+/- 0.2% of applied force across load range	
Range	0.2-100%	
Calibration standard	+/- 0.5% per ISO 7500-1 ASTM E4	
Internal sampling rate	1000Hz	
<b>EXTENSION MEASUREMENT</b>		
Resolution	0.1µm	
Accuracy	+/- 10µm	
Range	+/- 217m	
Calibration standard	ISO 9513, ASTM E83	
Internal sampling rate	2.73kHz	
<b>POSITION CONTROL</b>		
Test speed	mm/min	0.001-76
	in/min	0.00004-3
Resolution	µm	0.1
	in	0.000004
Accuracy	µm	+/- 10
Crosshead positioning speed	mm/min	305
	in/min	12
Resolution	µm	0.1
	in	0.000004
Accuracy	µm	+/- 10
Home function	Yes	
<b>POWER REQUIREMENTS</b>		
Supply voltage options	208-500V	
Frequency	50/60Hz	
<b>ATMOSPHERIC REQUIREMENTS</b>		
Operating temperature	10-40°C	
Operating humidity	10-90% non-condensing	
Storage temperature	10-69°C	
Storage humidity	10-90% non-condensing	
<b>CONSOLE DIMENSIONS</b>		
Width	mm	1010
	in	39.75
Depth	mm	831
	in	32.66
Height	mm	865
	in	34
Oil reservoir volume	liters	113
	US gal	30