

Tinius  Olsen

SUPER "L"™

**Hydraulic universal testing machines for
critical materials testing up to 3,000 kN.**



THE SUPER "L"

**Up to 3,000 kN
of force applied
by advanced
digital control.**



Fig. 1. Typical 60,000 lbf (300 kN) Super "L".



Fig. 2. Typical 60,000 lbf (300 kN) Super "L" with handheld controller and optional computer system.

For more than a century, Tinius Olsen has been setting the standards by which testing machinery is measured.

The Tinius Olsen Super "L" has long been recognized as the standard for accuracy, dependability and versatility in hydraulic universal testing machines. The many thousands of Super "L"s currently in use throughout the world attest to this fact.

Now more than ever before, the Super "L" represents the highest standard in hydraulically powered universal testing machines.

It features a patented dual-pressure hydraulic loading system and a rugged four-column construction for exceptional load frame rigidity. In addition, it has a new space-saving console with a smaller footprint design.

Tinius Olsen recently developed a new portable controller and display for basic manual testing and convenience for handheld operation at the load frame.

Super "L" systems are guaranteed to meet ASTM, ISO, and other national and international specifications for accuracy. Accuracy is within +/- 0.5% of the indicated load from 0.2% to 100% of capacity. All equipment used to calibrate the weighing and indicating systems of the Super "L" is traceable to the National Institute of Standards and Technology (NIST).

For consistent accuracy and rugged reliability in testing at capacities from 30,000 to 600,000 lbf (150 to 3,000 kN) or more, the Tinius Olsen enhanced Super "L" is still the standard of excellence.

Rugged load frame.

Four-column construction provides exceptional load frame rigidity.

Modular design.

All Super “L”s are furnished with our handheld display terminal for manual control and optionally with closed loop servo control via a variety of software/hardware options.

Versatile.

Suitable for tension, compression, transverse, and other tests on materials and assemblies.

Easy-to-use testing software.

Tinius Olsen has a wide variety of software that can be added to the Super “L” for data acquisition and for computer-assisted control of the testing machine (for machines equipped with the optional servo control).

Testing and crosshead remote control with handheld controller.

For manual control and convenient operation, each Super “L” includes as standard a remote handheld controller with an LCD and an extended cord. It allows positioning of the adjustable crosshead, prior to the test, and opening and closing of the optional hydraulically actuated grips. A portion of the 3-line LCD reads force in either lbf, N, or kgf in 10 mm high numbers. In addition to displaying load, it can be optionally equipped with appropriate instrumentation and signal conditioners to display position and strain values. If the position instrumentation (high resolution encoder) and signal conditioning module are ordered, the speed will be displayed.

Optional servo control.

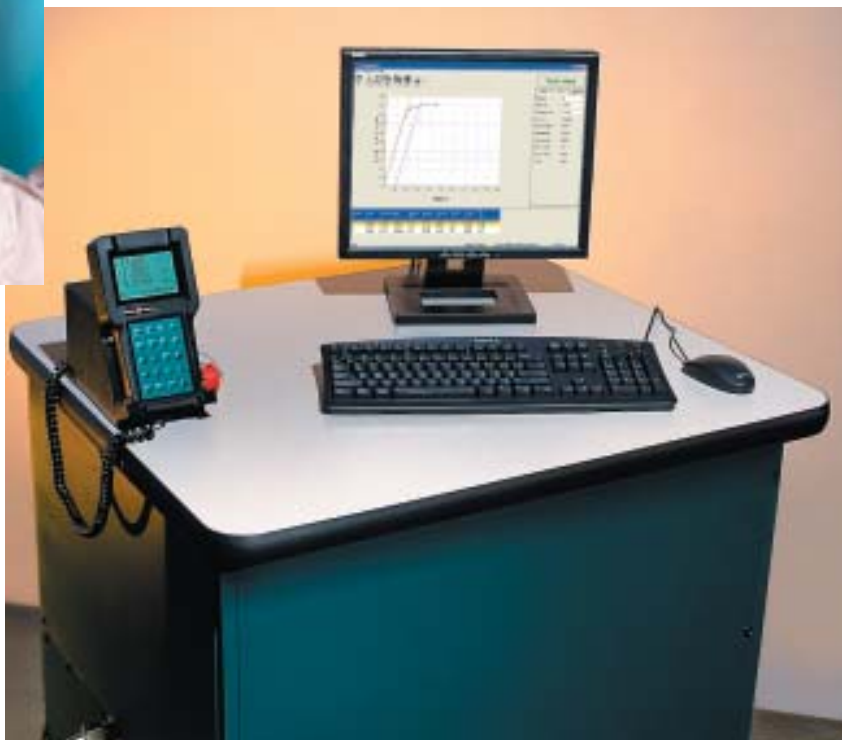
As dependable as the basic manually-controlled Super “L” is, the rate at which load is applied is determined by the operator. Therefore, as an option, the Super “L” can be supplied with closed-loop servo control capability. This closed-loop control system constantly monitors the test in progress and regulates the testing rate to maintain the preset conditions. This option enables you to conduct tensile, compression, flexure, and other tests automatically and ensures consistent testing control free from operator variability. Proof tests can also be performed automatically as can tests requiring different control modes (e.g. crosshead speed to start, strain rate through yield, and back to crosshead speed to failure). Also, this valuable closed-loop servo control upgrade can be added easily to the machine at a later date.

This servo capability can be accomplished by adding hardware and software options.

Fig. 3. Handheld controller supplied with every Super “L”.



Fig. 4. Super “L” console with handheld controller and optional computer.



CAPACITIES AND CONFIGURATIONS



Fig. 5. Typical 60,000 lbf (300 kN) Super "L" with handheld controller.



Fig. 6. Typical 60,000 lbf (300 kN) Super "L" with optional computer running Tinius Olsen's Test Navigator software.



Fig. 7. Typical 120,000 lbf (600 kN) Super "L" with closed crossheads and rack and pinion grips.

Fig. 8. Typical 400,000 lbf (2,000 kN) standard Super "L" load frame with semi-open front crossheads.

For most users, the standard Super "L" line:
30,000 to 400,000 lbf (150 to 2,000 kN)

For rapid sequence production testing, Super "L" Models A and AF:
30,000 to 200,000 lbf (150 to 1,000 kN);
open-front crossheads

For extraordinary testing, high capacity and special purpose Super "L"s:
600,000 lbf (3,000 kN) and beyond

Options for all Super "L" models:

- Extra-length screws and columns, with or without an adjustable upper crosshead, to increase the available test space for longer test samples
- Semi-open front crossheads for easier loading of samples
- Hydraulically actuated lever grips to allow rapid loading and unloading of samples
- Accordion-type, non-metallic screw covers to protect the screws and increase the life of your system
- Tooling for tension, compression, shear, flexure, and other tests
- Broad range of instrumentation
- Low capacity load cells
- Tee-slotted table for locating and securing customized tooling
- Controlled temperature cabinets for temperatures from -300° to $1,000^{\circ}$ F (-185° to 535° C)
- Furnaces for temperatures to 2200° F (1200° C)



MODEL		30	60	120	200 ₆	300 ₆	400 ₆
CAPACITY	lbf	30,000	60,000	120,000	200,000	300,000	400,000
	kN	150	300	600	1,000	1,500	2,000
	kgf	15,000	30,000	60,000	100,000	150,000	200,000
MACHINE SPECIFICATIONS	Stroke in mm	6 152	6 152	6 152	9 229	9 229	9 229
	Testing Speeds in/min mm/min	0-3 0-76	0-3 0-76	0-3 0-76	0-3 0-76	0-3 0-76	0-3 0-76
	Adjustable Crosshead Speed in/min mm/min	20 508	20 508	12 305	12 305	12 305	12 305
LOAD FRAME DIMENSIONS₁	(A) Clearance Between Screws₇ in mm	14 356	14 356	20 508	22 556	24 610	24 610
	(B) Standard Opening in mm	29 737	29 737	36 914	42 1067	46.25 1175	46.25 1175
	(C) Crosshead Thickness in mm	3.5 89	3.5 89	5.5 140	8 203	8.5 216	8.5 216
	(D) Grip Guard Thickness in mm	1 25	1 25	2.75 70	2.75 70	4.5 114	4.5 114
	(E) Lever Height in mm	— —	— —	— —	8.75 222	8.75 222	8.75 222
	(F) Width₃ in mm	29 737	29 737	30 762	34 864	37 940	37 940
	(G) Depth₃ in mm	19 483	19 483	25 635	26 660	33.5 851	33.5 851
	(H) Height_{2, 4} in mm	72.5 1842	72.5 1842	77 1956	90.125 2289	96.25 2445	96.25 2445
MACHINE WEIGHT₁	Net lbs kg	2600 1180	2600 1180	4700 2132	9000 4082	12,000 5444	12,000 5444
	Gross lbs kg	3100 1406	3100 1406	5700 2586	9900 4490	13,300 6034	13,300 6034
NOMINAL MAXIMUM SPECIMEN SIZES₂	Max.-TL Rack & Pinion in mm	24 610	24 610	32 813	34 837	38 965	38 965
	Max.-TL Lever Grips in mm	— —	— —	— —	30 762	32 813	32 813
	Width in mm	2 51	2 51	2.5 64	3 76	3.5 89	3.5 89
	Thickness in mm	1 25	1 25	1.75 44	2.125 54	2.125 54	2.125 54
	Diameter in mm	1.125 29	1.125 29	2.25 57	2.375 60	2.625 67	2.625 67
Compression Height	Max.-CH Rack & Pinion in mm	22 559	22 559	24 610	28 711	32 813	32 813
	Max.-CH Lever Grips in mm	— —	— —	— —	30 762	36 914	36 914

**Standard Super “L” UTMs
Console Dimensions**

MODEL		30	60	120	200	300	400
Width	in	36	48				
	mm	915	1219				
Depth	in	31	31				
	mm	788	788				
Height	in	40	40				
	mm	1016	1016				

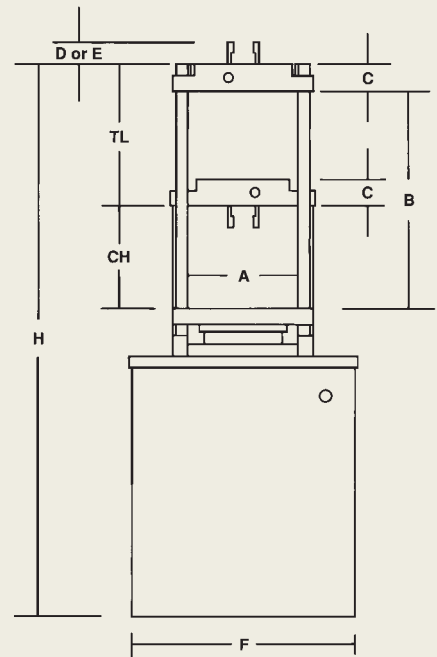


Fig. 9. Schematic of load frame. Refer to table at left for actual dimensions.

Notes:

1. Approximate
2. Additional height clearances can be provided
3. Dimension of footprint base; overall dimensions will depend on options selected
4. Add D or E as applicable and add stroke
5. With full stroke remaining
6. These machines can be floor- or pit-mounted to meet customer testing requirements; pit mounting may require additional components
7. If wider clearance is required, please consult factory
8. Load measurement meets or surpasses the following standards: ASTM E4, BS 1610, DIN 51221, EN 10002-2 and ISO 7500-1
9. Strain measurement meets or surpasses the following standards: ASTM E83, BS 3846, ISO 10002-4 and ISO 9513
10. These systems conform to all relevant European directives and carry a CE mark
11. Specifications subject to change without notice

CONTROL

A complete family of Tinius Olsen testing software that moves monitoring, control, and reporting to your desktop.

To further enhance the data acquisition and analysis capabilities of the Super "L" and to add optional closed-loop servo control, Tinius Olsen offers a variety of Windows-based software packages. Each version features multiple levels of functionality and extensive flexibility — you can customize the parameters you use to collect and document data, as well as control your machine. A built-in Wizard simplifies tasks by serving as an intuitive guide for the creation and modification of test settings.

From the simplicity of plotting a curve to the sophisticated creation of test results using your own formulas, Tinius Olsen has a Super "L" software package that can address your needs.

Windows is a registered trademark of Microsoft Corporation.



Fig. 10.



Fig. 11.



Fig. 12.

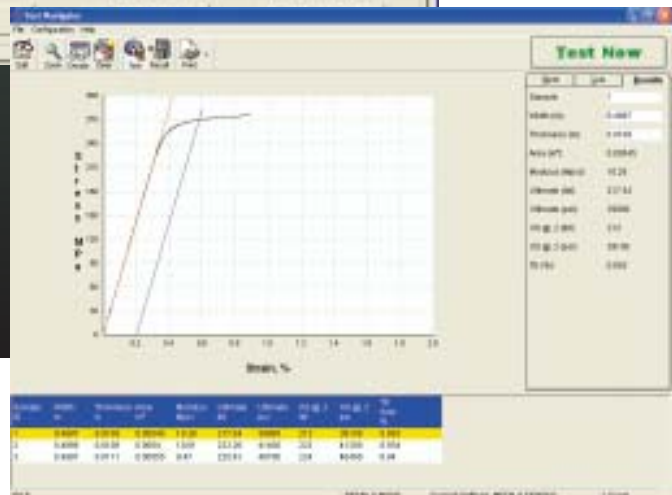


Fig. 13.

TAILORED TESTING



Fig. 14. Standard 60,000 lbf (300 kN) Super "L".

Fig. 15. Typical semi-open front crossheads with manual lever grips.

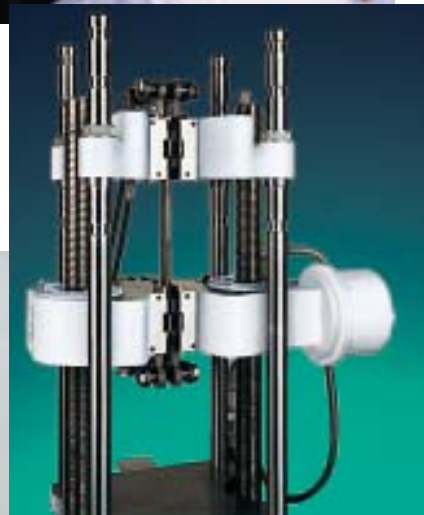
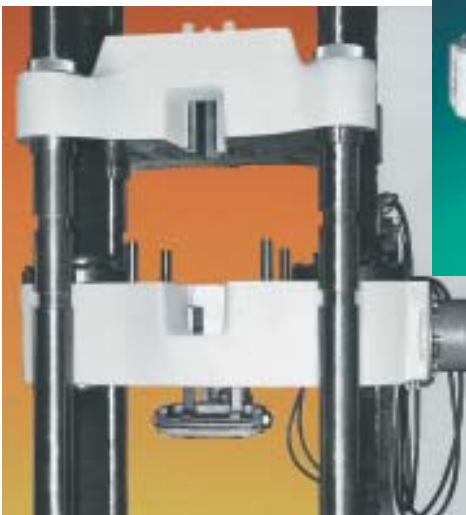


Fig. 16. 120,000 lbf (600 kN) Super "L" with fully open crosshead, hydraulically actuated grips and adjustable crosshead and columns.

Tinius Olsen has grips, fixtures, frames, crossheads, columns, and special purpose Super "L"s for most requirements.

Tinius Olsen can supply a Super "L" structured to handle nearly any sample. The keys are grips and fixtures properly fitted to hold your sample, as well as accessible crosshead and column designs that enable easy sample loading.

Grips

- Crank-operated rack and pinion type wedge grips with flat and/or vee gripping faces for all closed crosshead Super "L"s
- Manually operated lever-type grips for standard or deluxe Super "L"s (1,000 kN/200,000 lbf to 2,000 kN/400,000 lbf) with optional semi-open front crossheads
- Hydraulically operated lever type grips for semi-open and fully-open front crossheads
- Additional external grips for testing flats, rounds, headed and threaded specimens, fasteners, and many other types of products and materials

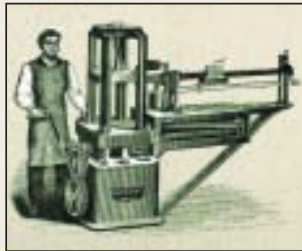
Crosshead Options

- Adjustable
- Closed
- Semi-open front
- Fully-open front

Columns and Screws

Columns and screws can be lengthened and crossheads can be made adjustable to meet your specific requirements. If we don't have an existing design that meets your testing needs (very unlikely given that we've been developing solutions since 1880), we will develop a custom configuration that addresses them precisely.

SERVICE/SUPPORT



TIME TESTED

The first universal testing machine was the inspiration of Tinius Olsen, an inventor passionate about finding new ways to test the limits of materials. By 1880, he had proven and patented enough of his revolutionary

ideas and designs to create an entire line of testing machines and launch his own company.

Today, Tinius Olsen is still family-owned but has long since emerged as a global leader in the manufacture of materials testing equipment. With the emergence and growth of new materials, from engineered plastics to advanced composites, our product line has expanded concurrently. Likewise our A2LA and UKAS accredited technical teams that support an ever-growing worldwide customer base. Tinius Olsen is an essential resource for anyone with materials to test.



SERVICE/SUPPORT

Every testing machine we make comes with responsive customer service and expert technical support made possible by our industry leadership extending back to 1880. You're not just getting a piece of equipment, you're leveraging an unrivaled materials testing knowledge base and committed service team.



Tinius Olsen's calibration service is A2LA accredited as meeting the requirements of ISO/IEC 17025 (equivalent to the relevant requirements of ISO 9002-1994) and ANSI/NCSL Z540-1-1994. Calibrations can be performed to the following ASTM & ISO specifications: E4, E10, E18, E23, E384, E1012, D256, D648, D747, D1238, D1525, and ISO 75, 179, 180, 306, and 1133. Also Olsen Displacement Verification on Universal Testing Machines (Crosshead Position), Rate Verification — Load, Strain, Position, or Crosshead.

The calibration service of Tinius Olsen's European division is UKAS accredited as meeting the requirements of: ISO/IEC 17025; European Standards EN 45011, EN 45012, and EN 45013; ISO/IEC Guide 66: 1999; EN 45012; EU Council Regulation No. 761/2001; ISO/IEC 17020 and EN 45004; European Standard EN 45503: 1996; and ISO/IEC Guide 43-1: 1997.



We are also able to verify a variety of other manufacturers' tensile, compression, and hardness equipment, which translates into one source for all your certification needs.

Tinius  Olsen

World Headquarters:

1065 Easton Road
Horsham, PA 19044 USA
(215) 675-7100
Fax (215) 441-0899
www.TiniusOlsen.com
info@TiniusOlsen.com

European Headquarters:

6 Perrywood Business Park
Honeycrook Lane, Salfords
Redhill, Surrey RH1 5DZ England
++44 (0) 1737 765001
Fax ++44 (0) 1737 764768

Contact Your Local Representative: